12. Dosimetric E-Field Probe Calibration (EX3DV3,S/N: 3507)

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
Servizio svizzero di taratura
S Swiss Calibration Service

Accredited by the Swiss Federal Office of Metrology and Accreditation
The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

Client UL-Apex (MTT) Certificate No: EX3-3507_Apr05

CALIBRATION CERTIFICATE

Object	EX3DV3 - SN:3507
Calibration procedure(s)	QA CAL-01.v5 and QA CAL-14.v2 Calibration procedure for dosimetric E-field probes
Calibration date:	April 12, 2005
Condition of the calibrated item	In Tolerance

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	5-May-04 (METAS, No. 251-00388)	May-05
Power sensor E4412A	MY41495277	5-May-04 (METAS, No. 251-00388)	May-05
Reference 3 dB Attenuator	SN: S5054 (3c)	10-Aug-04 (METAS, No. 251-00403)	Aug-05
Reference 20 dB Attenuator	SN: S5086 (20b)	3-May-04 (METAS, No. 251-00389)	May-05
Reference 30 dB Attenuator	SN: S5129 (30b)	10-Aug-04 (METAS, No. 251-00404)	Aug-05
Reference Probe ES3DV2	SN: 3013	7-Jan-05 (SPEAG, No. ES3-3013_Jan05)	Jan-06
DAE4	SN: 617	19-Jan-05 (SPEAG, No. DAE4-617_Jan05)	Jan-06

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092180	18-Sep-02 (SPEAG, in house check Oct-03)	In house check: Oct 05
RF generator HP 8648C	US3642U01700	4-Aug-99 (SPEAG, in house check Dec-03)	In house check: Dec-05
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Nov-04)	In house check: Nov 05

	Name	Function	Signature
Calibrated by:	Nico Vellieux	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: April 12, 2005

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.

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Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,y,z * frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- *DCPx,y,z:* DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- *ConvF and Boundary Effect Parameters:* Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to *NORMx,y,z * ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- *Spherical isotropy (3D deviation from isotropy)*: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- *Sensor Offset*: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe EX3DV3

SN:3507

Manufactured:	December 15, 2003
Last calibrated:	February 20, 2004
Recalibrated:	April 12, 2005

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

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EX3DV3 SN:3507 **April 12, 2005**

DASY - Parameters of Probe: EX3DV3 SN:3507

Sensitivity in Free Space[A]

NormX	**0.71** ± 10.1%	$\mu V/(V/m)^2$	DCP X	**96** mV
NormY	**0.74** ± 10.1%	$\mu V/(V/m)^2$	DCP Y	**96** mV
NormZ	**0.73** ± 10.1%	$\mu V/(V/m)^2$	DCP Z	**96** mV

Diode Compression[B]

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL **900 MHz** **Typical SAR gradient: 5 % per mm**

Sensor Center to Phantom Surface Distance		**2.0 mm**	**3.0 mm**
SAR_{be} [%]	Without Correction Algorithm	3.4	1.2
SAR_{be} [%]	With Correction Algorithm	0.2	0.4

TSL **1810 MHz** **Typical SAR gradient: 10 % per mm**

Sensor Center to Phantom Surface Distance		**2.0 mm**	**3.0 mm**
SAR_{be} [%]	Without Correction Algorithm	3.3	1.8
SAR_{be} [%]	With Correction Algorithm	0.6	0.7

Sensor Offset

Probe Tip to Sensor Center **1.0** mm

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

[A] The uncertainties of NormX,Y,Z do not affect the E^2-field uncertainty inside TSL (see Page 8).
[B] Numerical linearization parameter: uncertainty not required.

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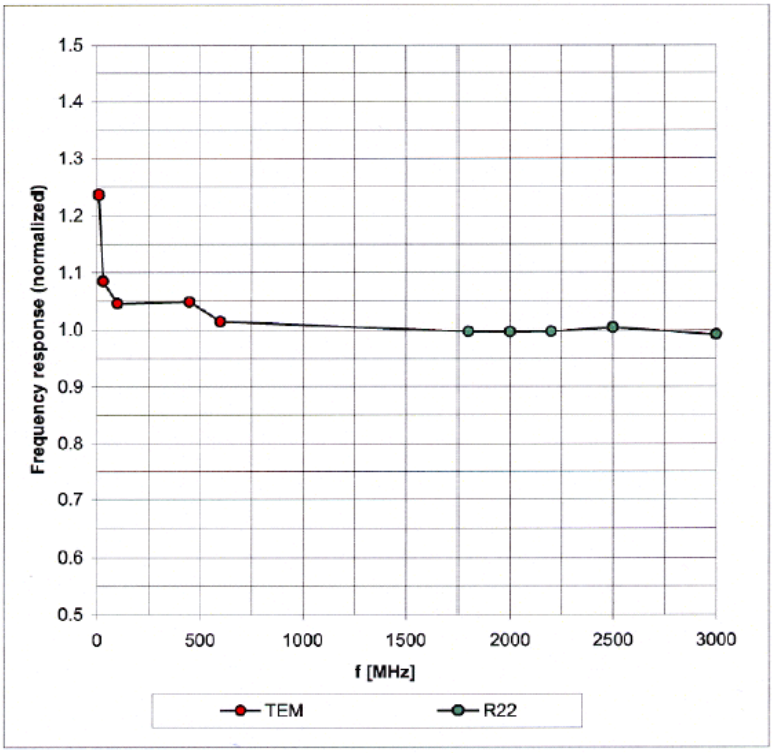
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

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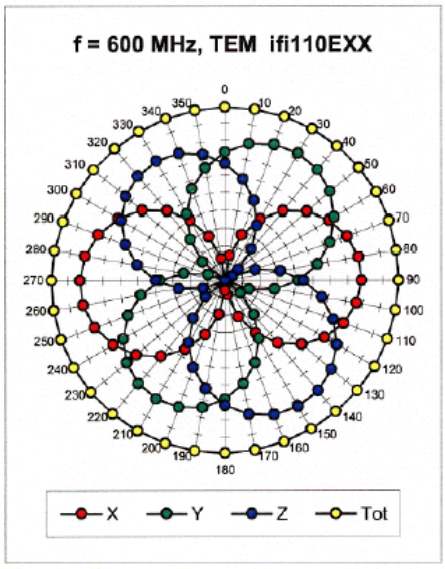
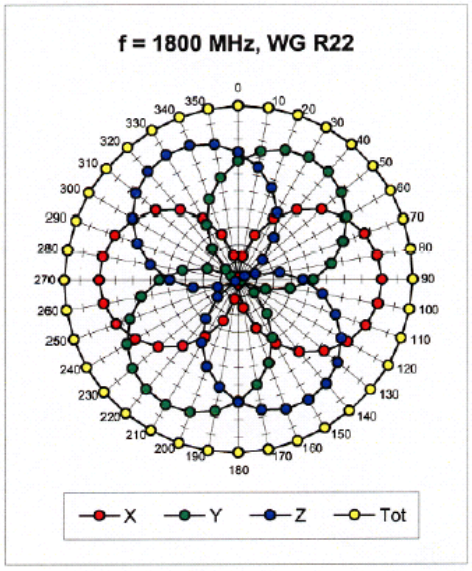
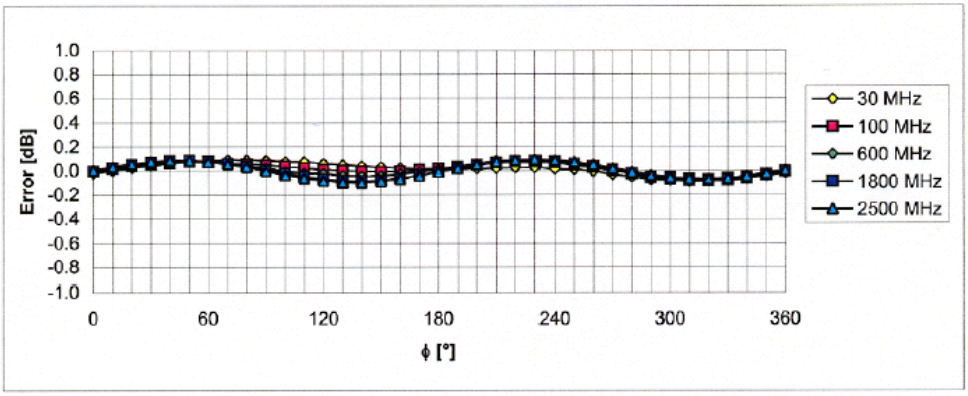
Receiving Pattern (ϕ), ϑ = 0°







Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

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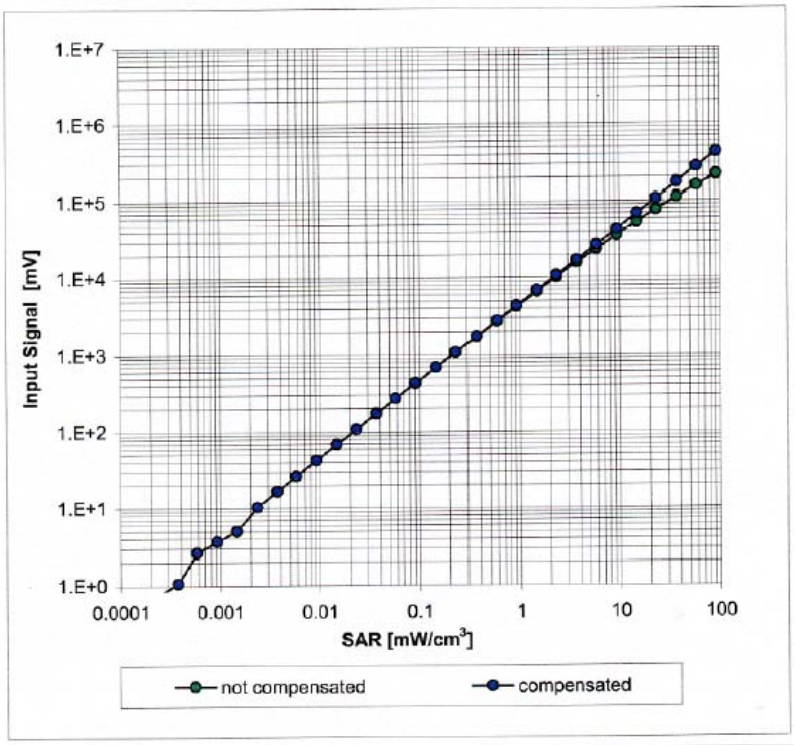
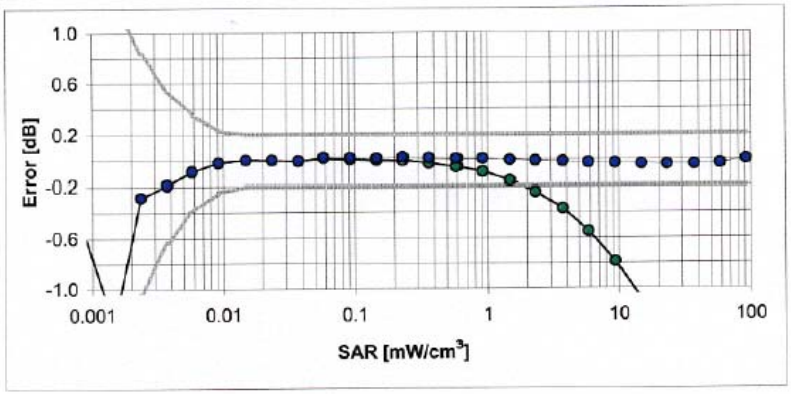
Dynamic Range f(SAR_{head})

(Waveguide R22, f = 1800 MHz)





Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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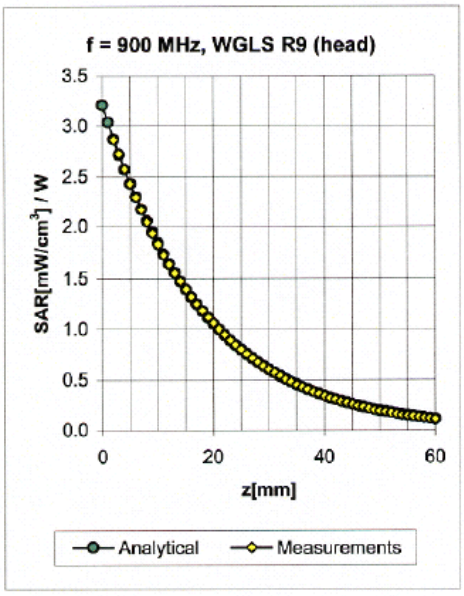
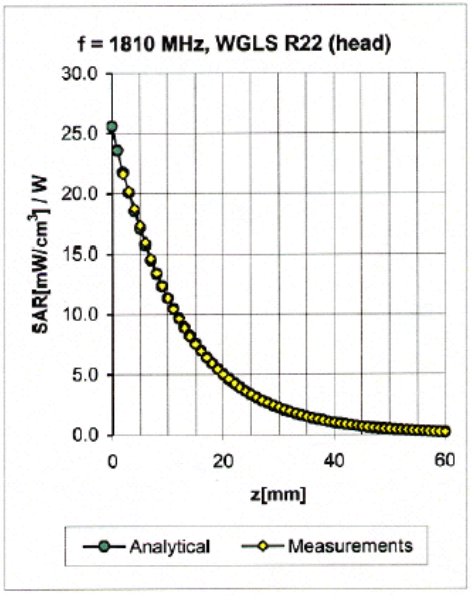
EX3DV3 SN:3507 **April 12, 2005**

Conversion Factor Assessment





f [MHz]	Validity [MHz][c]	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF	Uncertainty
900	± 50 / ± 100	Head	41.5 ± 5%	0.97 ± 5%	0.74	0.66	10.48	± 11.0% (k=2)
1810	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.51	0.77	9.10	± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.46	0.81	8.25	± 11.8% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.79	0.62	10.42	± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.30	1.78	8.70	± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.33	1.59	7.72	± 11.8% (k=2)

[c] The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

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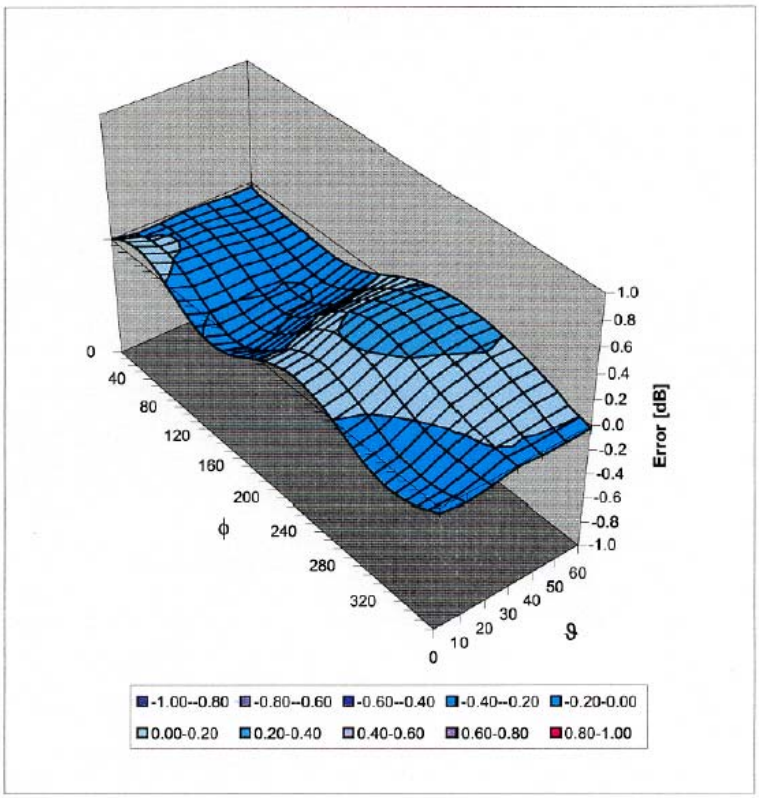
Deviation from Isotropy in HSL

Error (ϕ, ϑ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

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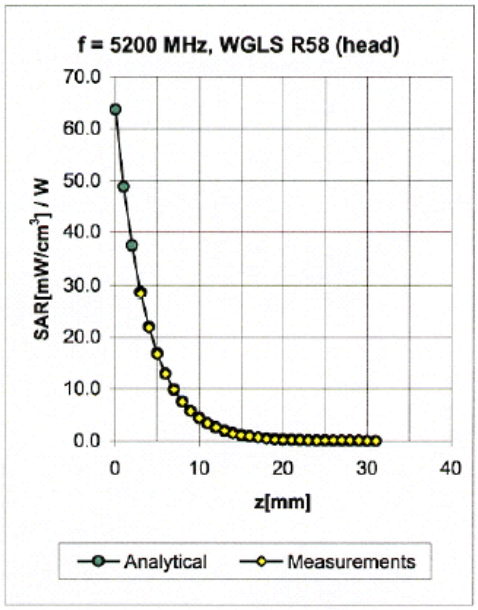
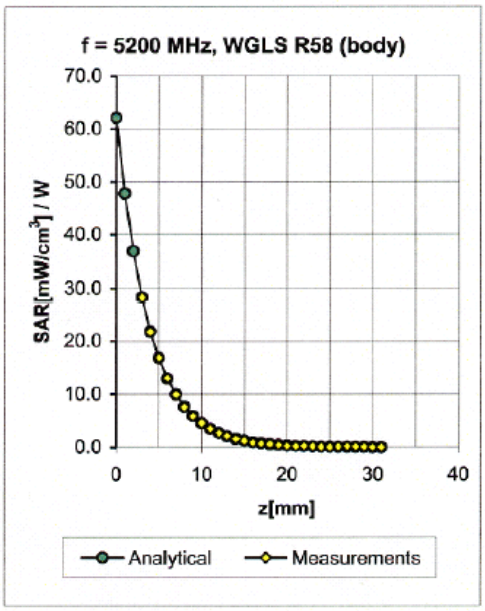
Appendix[D]





f [MHz][D]	Validity [MHz]	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF	Uncertainty
5200	± 50	Head	36.0 ± 5%	4.76 ± 5%	0.41	1.80	5.37	± 13.6% (k=2)
5800	± 50	Head	35.3 ± 5%	5.27 ± 5%	0.45	1.80	4.67	± 13.6% (k=2)
5200	± 50	Body	49.0 ± 5%	5.30 ± 5%	0.45	1.90	4.86	± 13.6% (k=2)
5800	± 50	Body	48.2 ± 5%	6.00 ± 5%	0.45	1.90	4.32	± 13.6% (k=2)

[D] Accreditation for ConvF assessment above 3000 MHz is currently applied for. Accreditation is expected in spring 2005.

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13. References

[1]ANSI, ANSI/IEEE C95.1-1992: IEEE Standard for Safety Levels with Respect to Human Exposure to Radio Frequency Electromagnetic Fields, 3 kHz to 300 GHz, The Institute of Electrical and Electronics Engineers, Inc., New York, NY 10017, 1992.
[2] Katja Pokovic, Thomas Schmid, and Niels Kuster, “Robust setup for precise calibration of E-field probes in tissue simulating liquids at mobile communications frequencies”, in ICECOM ‘97, Dubrovnik, October 15-17, 1997, pp. 120-124.
[3] Katja Pokovic, Thomas Schmid, and Niels Kuster, “E-_field probe with improved isotropy in brain simulating liquids”, in Proceedings of the ELMAR, Zadar, Croatia, 23-25 June, 1996, pp.172-175.
[4] W. Gander, Computermathematik, Birkhaeuser, Basel, 1992.
[5] W. H. Press, S. A. Teukolsky,W. T. Vetterling, and B. P. Flannery, Numerical Recepies in C, The Art of Scientific Computing, Second Edition, Cambridge University Press, 1992.
[6]SPEAG uncertainty document for DASY 4 System from SPEAG (Shimid & Partner Engineering AG).
[7]SPEAG uncertainty document for "the 5-6GHz Extension" from SPEAG (Shimid & Partner Engineering AG).

APPENDIX 3 : SAR Measurement data

1. Evaluation procedure

The evaluation was performed with the following procedure:

Step 1: Measurement of the E-field at a fixed location above the ear point or central position of flat phantom was used as a reference value for assessing the power drop.

Step 2: The SAR distribution at the exposed side of head or body position was measured at a distance of each device from the inner surface of the shell. The area covered the entire dimension of the antenna of EUT and the horizontal grid spacing was [20 mm x 20 mm] or [15mm x 15mm] Based on these data, the area of the maximum absorption was determined by spline interpolation.

Step 3: Around this point found in the Step 2 (area scan) , a volume of 32mm x 32mm x 30mm was assessed by measuring 5 x 5 x 7 points. And for any secondary peaks found in the Step2 which are within 2dB of maximum peak and not with this Step3 (Zoom scan) is repeated. On the basis of this data set, the spatial peak SAR value was evaluated under the following procedure:

(1). The data at the surface were extrapolated, since the center of the dipoles is 1mm away from the tip of the probe and the distance between the surface and the lowest measuring point is 1.3 mm. The extrapolation was based on a least square algorithm [4]. 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.

(2). The maximum interpolated value was searched with a straightforward algorithm. Around this maximum the SAR values averaged over the spatial volumes (1 g or 10 g) were computed by 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) [4], [5]. The volume was integrated with the trapezoidal-algorithm. One thousand points (10 x 10 x 10) were interpolated to calculate the average.

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

Step 4: Re-measurement of the E-field at the same location as in Step 1.

2. Measurement data / Body (Main antenna)

PCG-4H2L/ Body / Right side / Main Ant. / 2437MHz /11b CCK (11Mbps) / Spaced 5mm

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

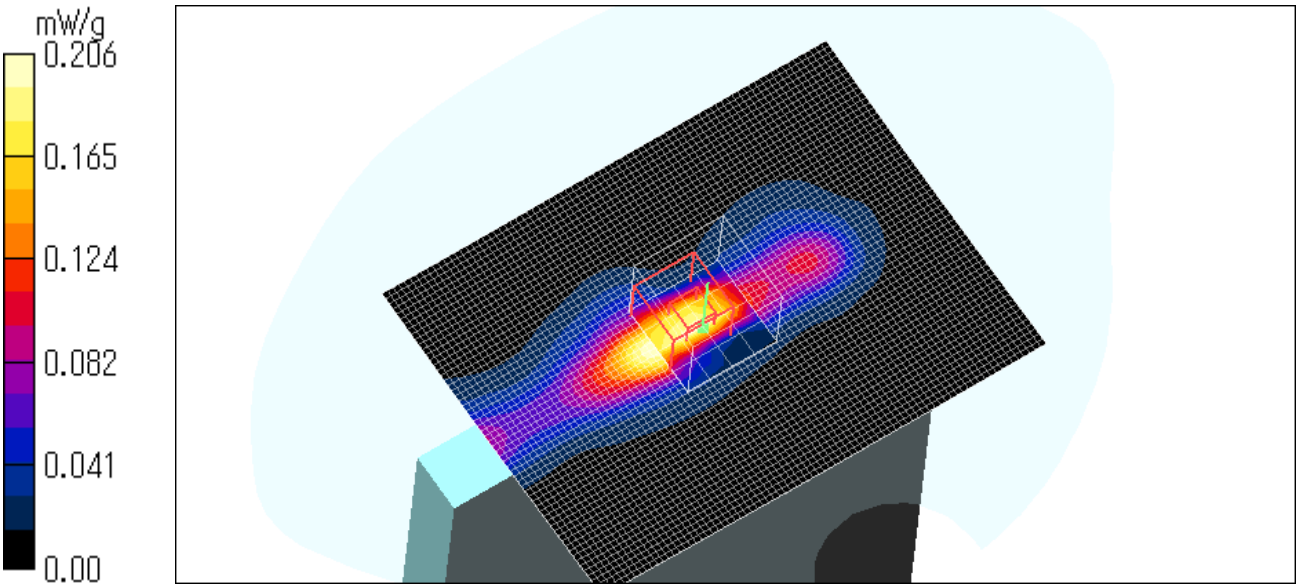
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.225 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.71 V/m; Power Drift = -0.142 dB
Peak SAR (extrapolated) = 0.307 W/kg

SAR(1 g) = 0.152 mW/g; SAR(10 g) = 0.067 mW/g
Maximum value of SAR (measured) = 0.206 mW/g

Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.6 degree C. , After 24.6 degree C.



PCG-4H2L/ Body / Right bottom / Main Ant. / 2437MHz / 11b CCK (11Mbps)

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

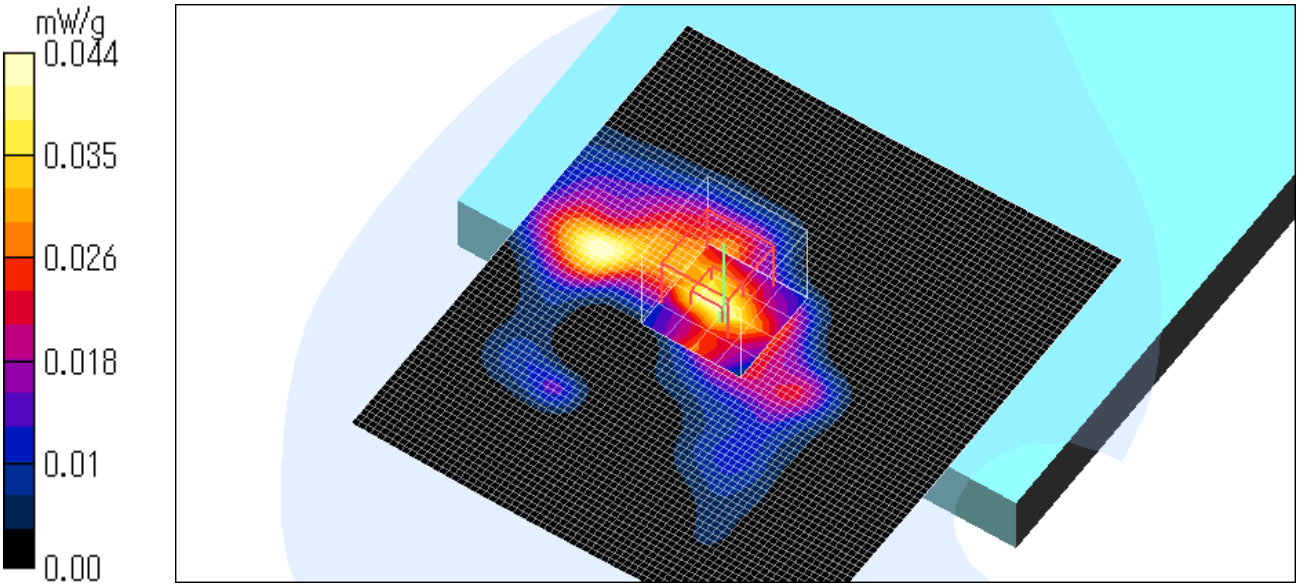
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (71x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.046 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.14 V/m; Power Drift = 0.221 dB
Peak SAR (extrapolated) = 0.073 W/kg

SAR(1 g) = 0.038 mW/g; SAR(10 g) = 0.018 mW/g
Maximum value of SAR (measured) = 0.044 mW/g

Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.3 degree C. , After 24.3 degree C.



PCG-4H2L/ Body / Right top / Main Ant. / 2437MHz / 11b CCK (11Mbps)

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

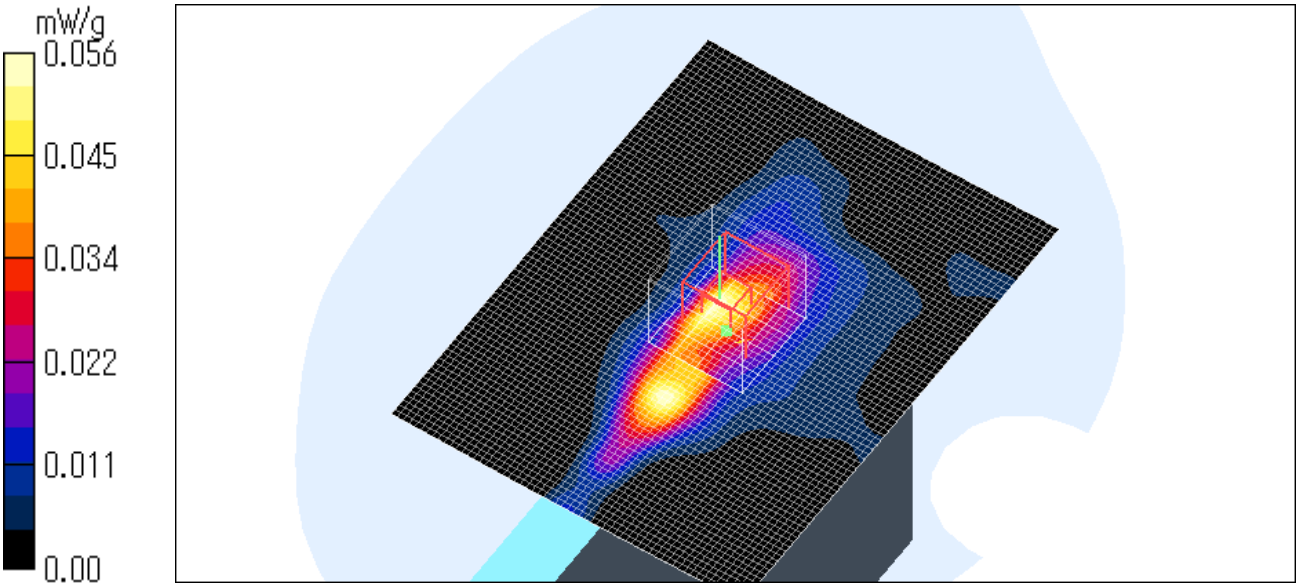
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.056 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.69 V/m; Power Drift = 0.231 dB
Peak SAR (extrapolated) = 0.072 W/kg

SAR(1 g) = 0.038 mW/g; SAR(10 g) = 0.017 mW/g
Maximum value of SAR (measured) = 0.056 mW/g

Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.5 degree C. , After 24.4 degree C.



PCG-4H2L/ Body / Right Back of display / Main Ant. / 2437MHz / 11b CCK (11Mbps)

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

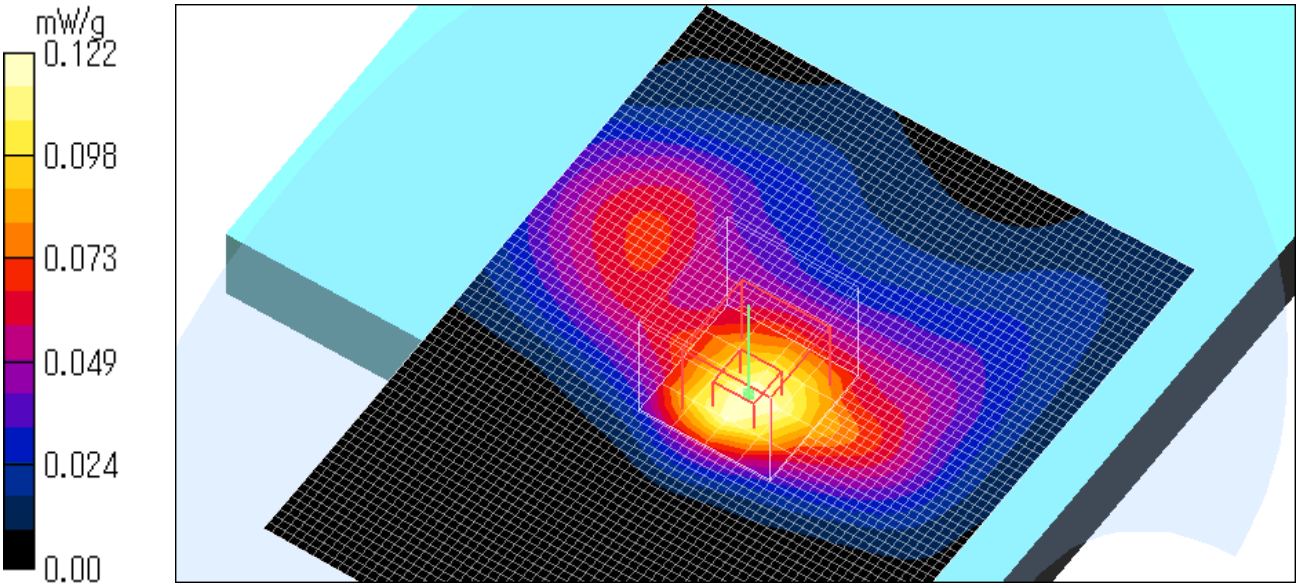
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.135 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.15 V/m; Power Drift = -0.046 dB
Peak SAR (extrapolated) = 0.158 W/kg

SAR(1 g) = 0.090 mW/g; SAR(10 g) = 0.050 mW/g
Maximum value of SAR (measured) = 0.122 mW/g

Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.3 degree C. , After 24.3 degree C.



PCG-4H2L/ Body / Right side / Main Ant. / 2412MHz / 11b CCK (11Mbps) / Spaced 5mm

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

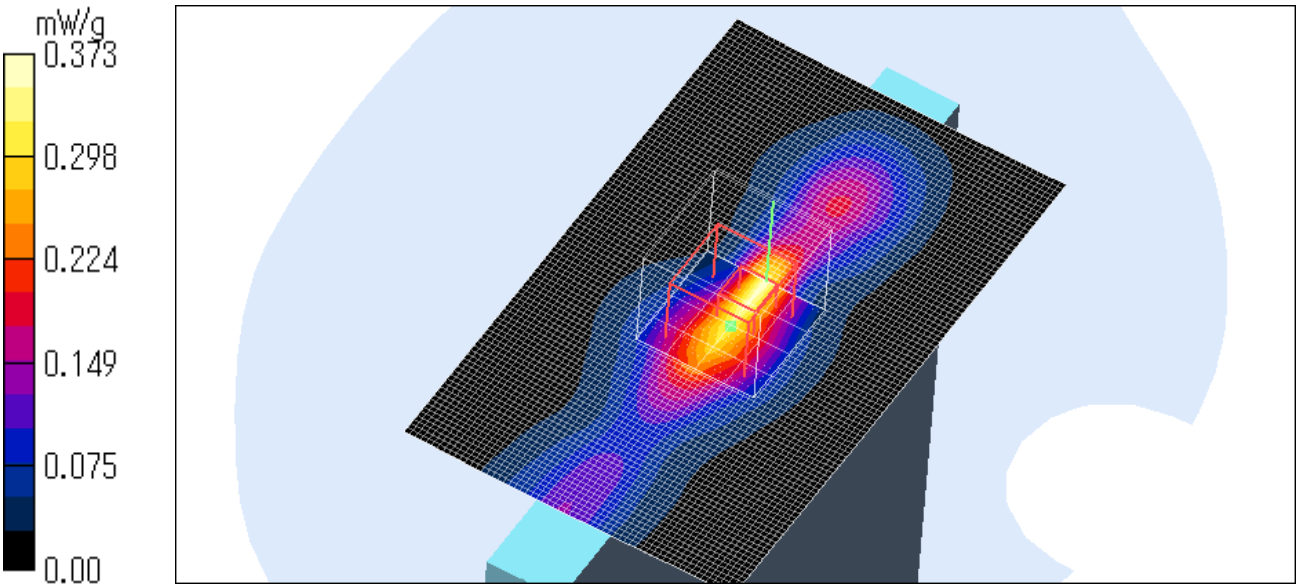
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.335 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 14.1 V/m; Power Drift = -0.146 dB
Peak SAR (extrapolated) = 0.462 W/kg

SAR(1 g) = 0.227 mW/g; SAR(10 g) = 0.110 mW/g
Maximum value of SAR (measured) = 0.373 mW/g

Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.2 degree C. , After 24.2 degree C.



PCG-4H2L/ Body / Right side / Main Ant. / 2462MHz / 11b CCK (11Mbps) / Spaced 5mm

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

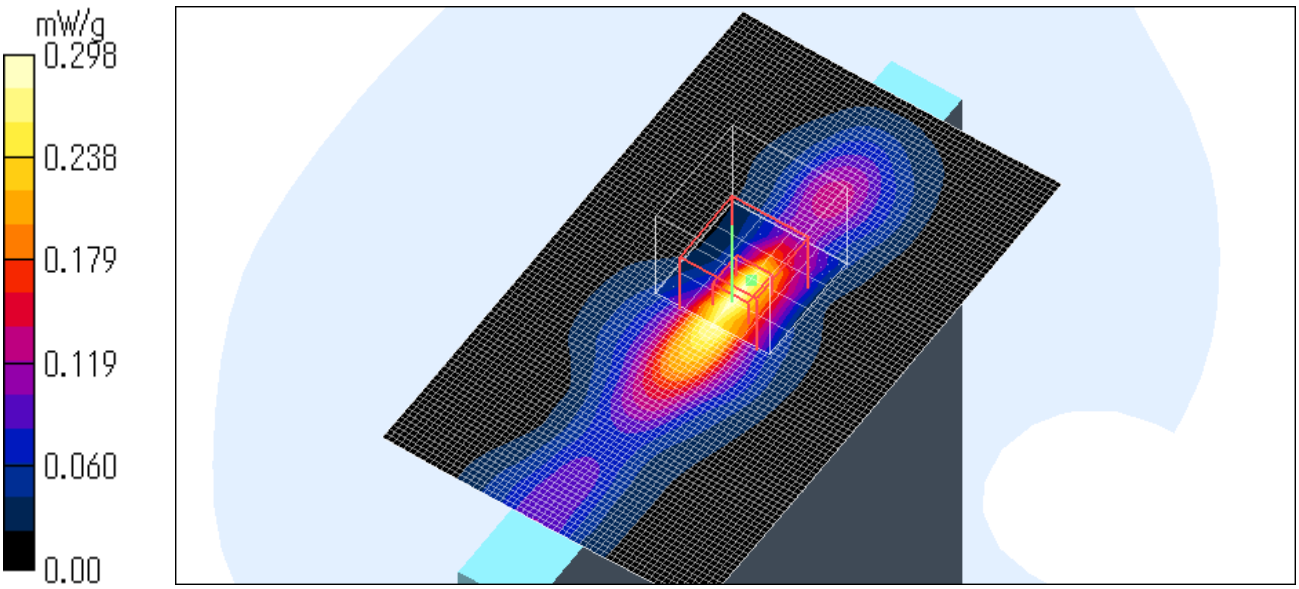
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.285 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 13.5 V/m; Power Drift = -0.143 dB
Peak SAR (extrapolated) = 0.387 W/kg

SAR(1 g) = 0.192 mW/g; SAR(10 g) = 0.082 mW/g
Maximum value of SAR (measured) = 0.298 mW/g

Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.2 degree C. , After 24.2 degree C.



PCG-4H2L/ Body / Right side / Main Ant. / 2437MHz / 11g BPSK (9Mbps) / Spaced 5mm

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

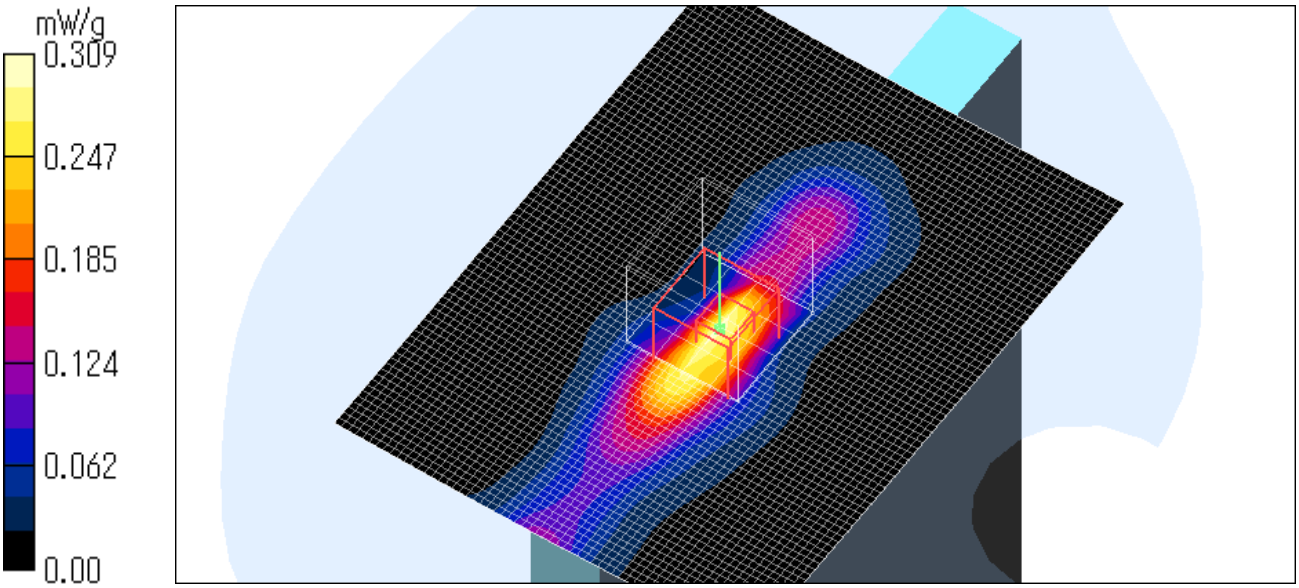
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.326 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.7 V/m; Power Drift = -0.164 dB
Peak SAR (extrapolated) = 0.427 W/kg

SAR(1 g) = 0.217 mW/g; SAR(10 g) = 0.100 mW/g

Maximum value of SAR (measured) = 0.309 mW/g
Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.6 degree C. , After 24.6 degree C.



PCG-4H2L/ Body / Right side / Main Ant. / 2437MHz / 11g QPSK (18Mbps) / Spaced 5mm

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

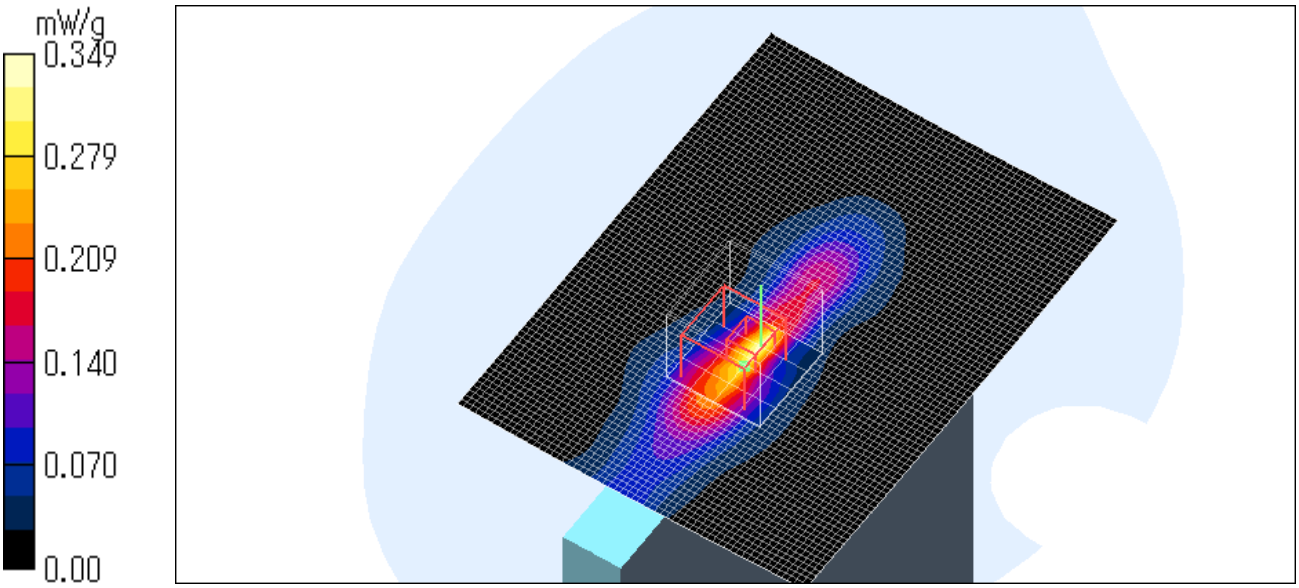
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.303 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.40 V/m; Power Drift = 0.271 dB
Peak SAR (extrapolated) = 0.398 W/kg

SAR(1 g) = 0.201 mW/g; SAR(10 g) = 0.092 mW/g
Maximum value of SAR (measured) = 0.349 mW/g

Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.6 degree C. , After 24.6 degree C.



PCG-4H2L/ Body / Right side / Main Ant. / 2437MHz / 11g 16QAM (36Mbps) / Spaced 5mm

Crest factor: 1.5
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

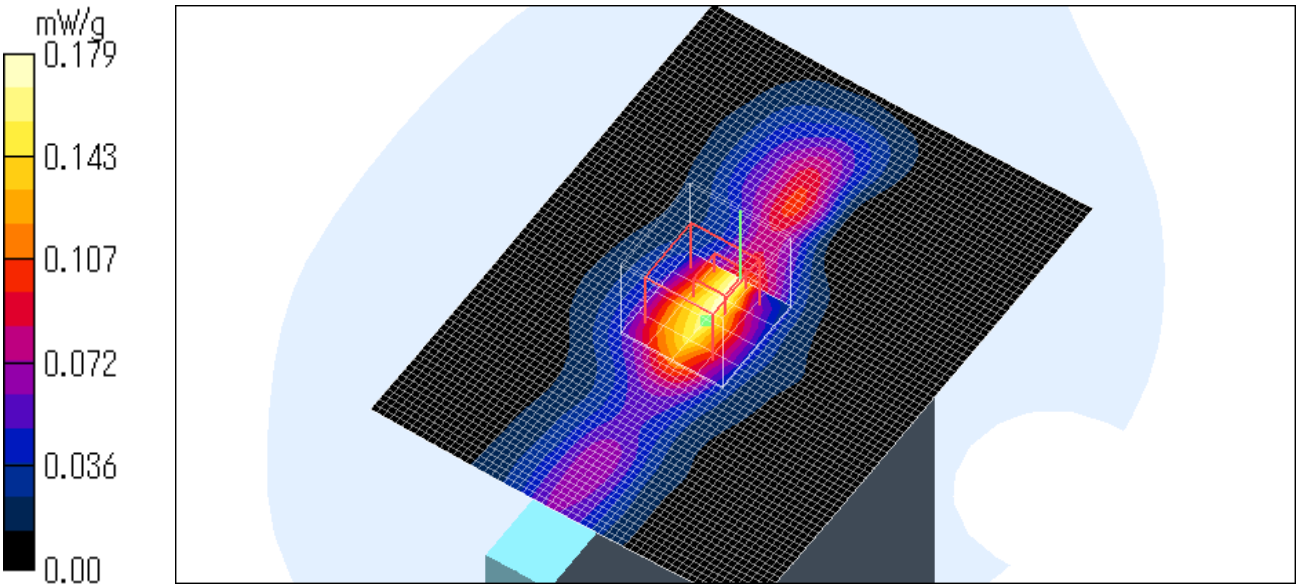
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.148 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.38 V/m; Power Drift = 0.187 dB
Peak SAR (extrapolated) = 0.227 W/kg

SAR(1 g) = 0.121 mW/g; SAR(10 g) = 0.062 mW/g
Maximum value of SAR (measured) = 0.179 mW/g

Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.6 degree C. , After 24.6 degree C.



PCG-4H2L/ Body / Right side / Main Ant. / 2437MHz / 11g 64QAM (54Mbps) / Spaced 5mm

Crest factor: 2
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

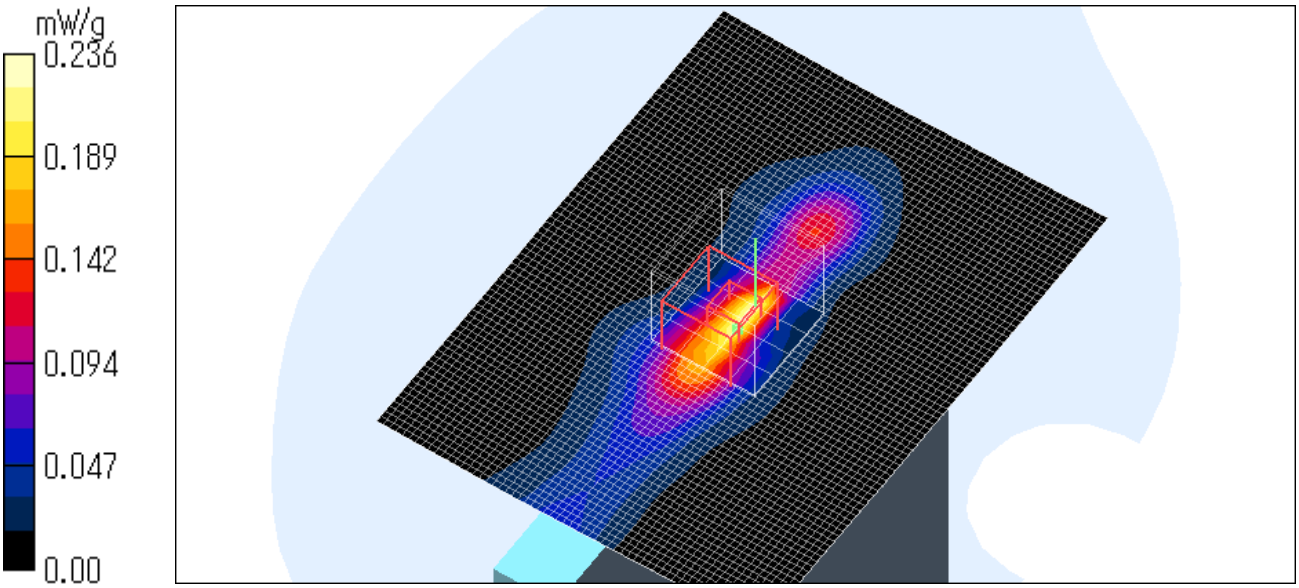
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.230 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.14 V/m; Power Drift = 0.179 dB
Peak SAR (extrapolated) = 0.290 W/kg

SAR(1 g) = 0.147 mW/g; SAR(10 g) = 0.067 mW/g
Maximum value of SAR (measured) = 0.236 mW/g

Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.6 degree C. , After 24.6 degree C.



PCG-4H2L/ Body / Right bottom / Main Ant. / 2437MHz / 11g BPSK (9Mbps)

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

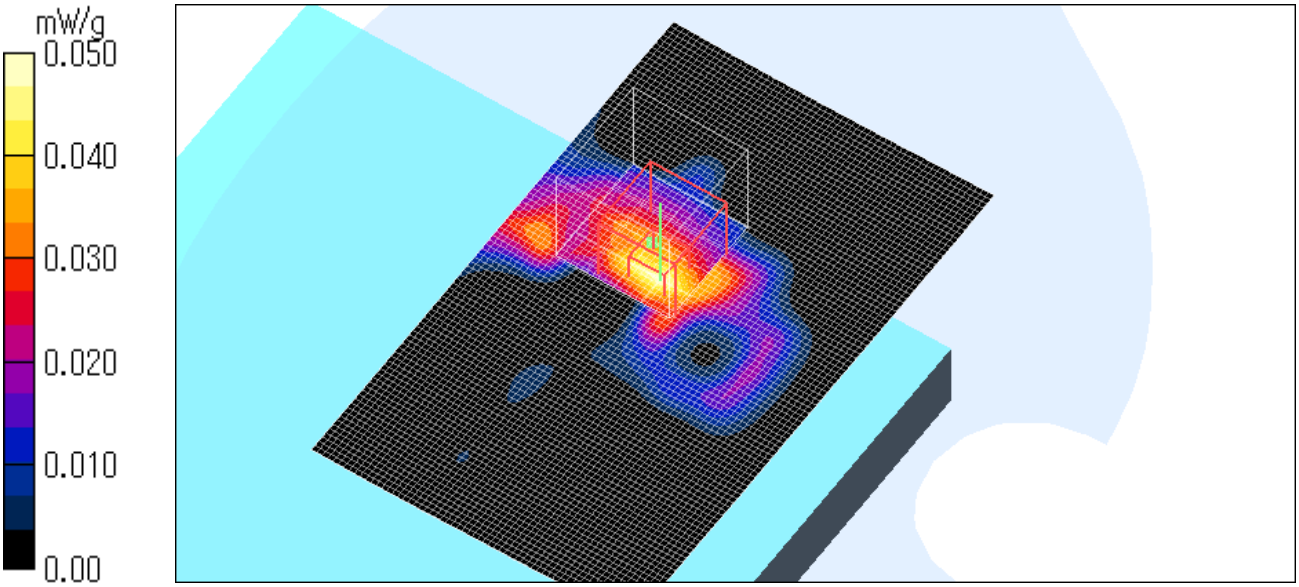
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.055 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.98 V/m; Power Drift = 0.188 dB
Peak SAR (extrapolated) = 0.064 W/kg

SAR(1 g) = 0.034 mW/g; SAR(10 g) = 0.016 mW/g
Maximum value of SAR (measured) = 0.050 mW/g

Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.4 degree C. , After 24.4 degree C.



PCG-4H2L/ Body / Right top / Main Ant. / 2437MHz / 11g BPSK (9Mbps)

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

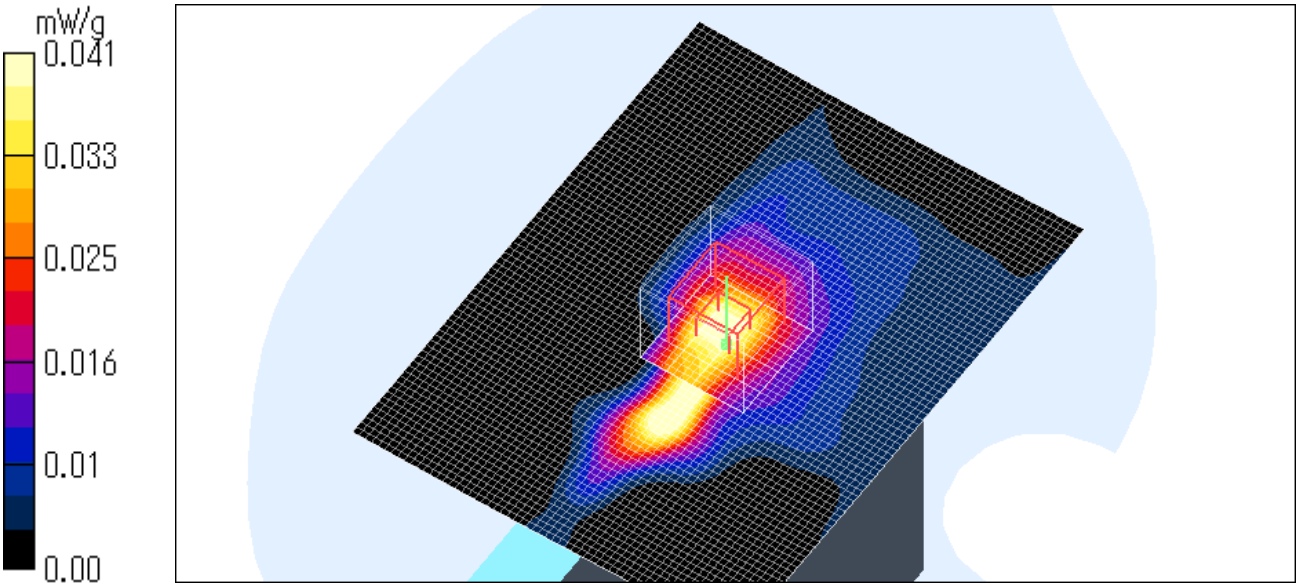
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.047 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.21 V/m; Power Drift = 0.146 dB
Peak SAR (extrapolated) = 0.058 W/kg

SAR(1 g) = 0.031 mW/g; SAR(10 g) = 0.015 mW/g
Maximum value of SAR (measured) = 0.041 mW/g

Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.4 degree C. , After 24.4 degree C.



PCG-4H2L/ Body / Right back of display / Main Ant. / 2437MHz / 11g BPSK (9Mbps) / Spaced 15mm

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

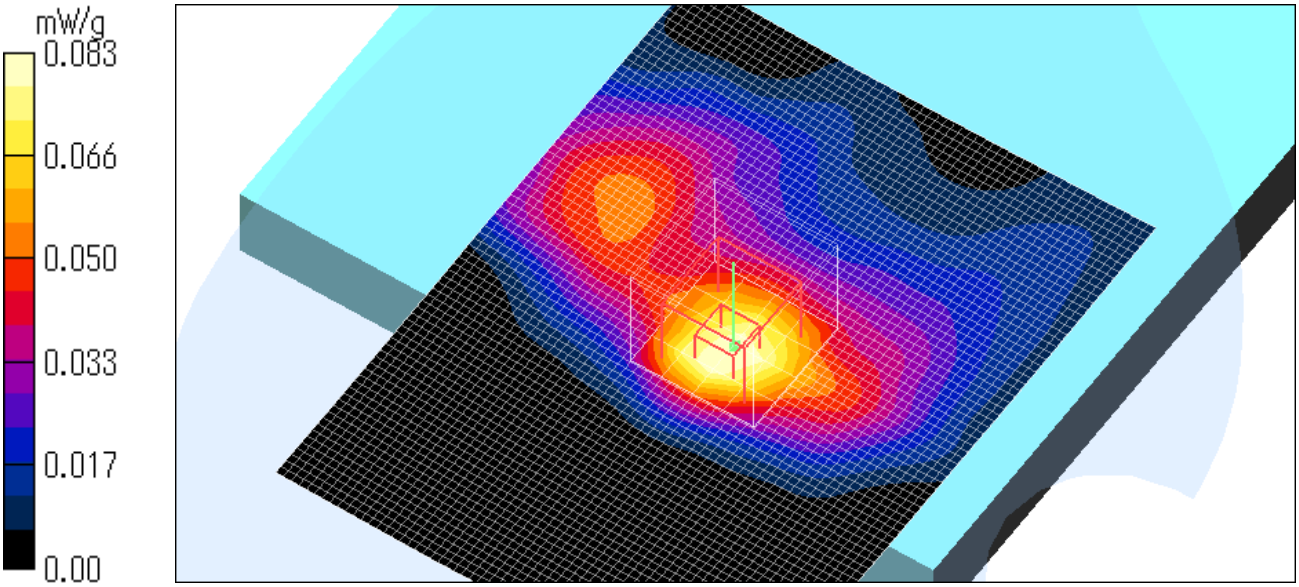
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.093 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.01 V/m; Power Drift = -0.071 dB
Peak SAR (extrapolated) = 0.108 W/kg

SAR(1 g) = 0.062 mW/g; SAR(10 g) = 0.035 mW/g

Maximum value of SAR (measured) = 0.083 mW/g
Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.3 degree C. , After 24.3 degree C.



PCG-4H2L/ Body / Right side / Main Ant. / 2412MHz / 11g BPSK (9Mbps) / Spaced 5mm

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

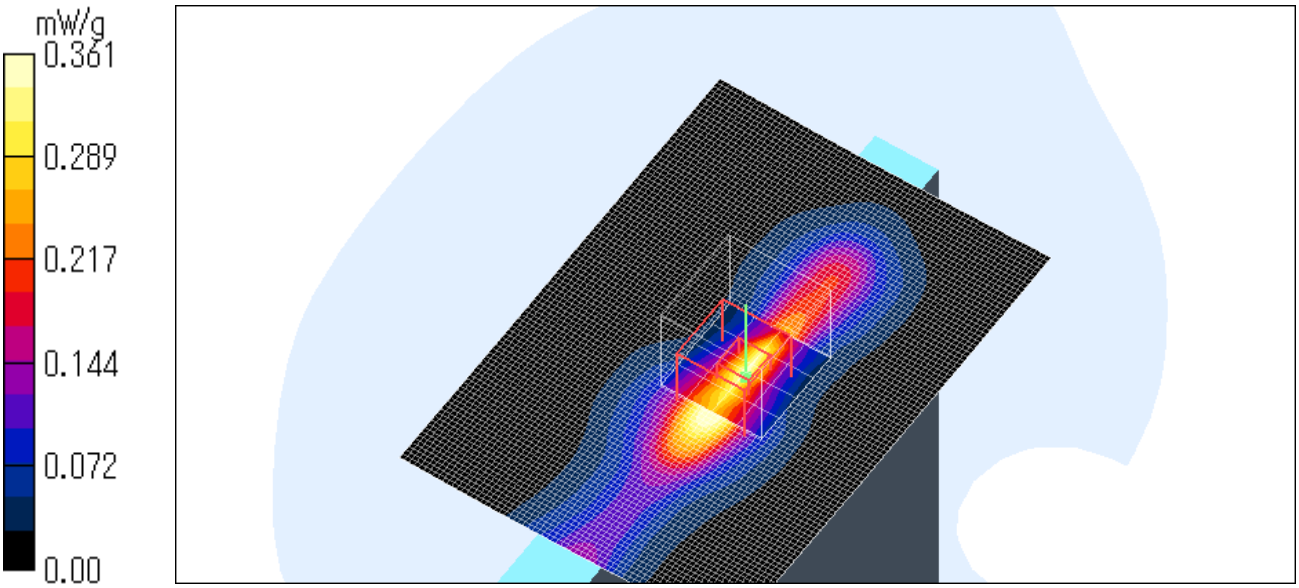
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (71x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.488 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.66 V/m; Power Drift = -0.120 dB
Peak SAR (extrapolated) = 0.565 W/kg

SAR(1 g) = 0.276 mW/g; SAR(10 g) = 0.127 mW/g
Maximum value of SAR (measured) = 0.361 mW/g

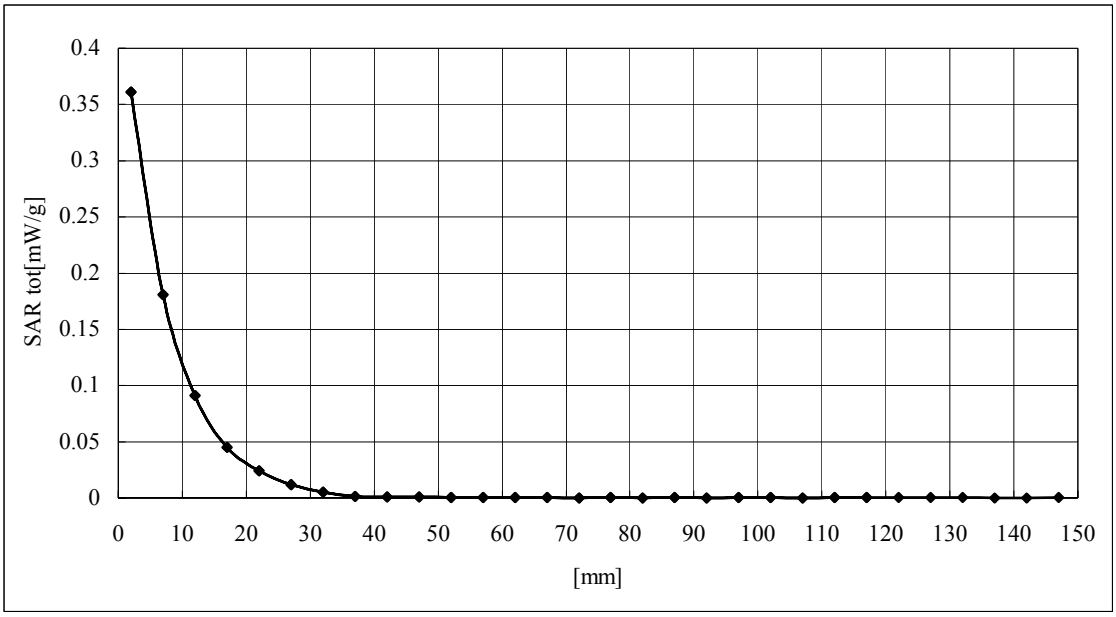
Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.2 degree C. , After 24.2 degree C.



Z-axis scan at max SAR location

PCG-4H2L/ Body / Right side / Main Ant. / 2412MHz / 11g BPSK (9Mbps)
Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145



PCG-4H2L/ Body / Right side / Main Ant. / 2462MHz / 11g BPSK (9Mbps) / Spaced 5mm

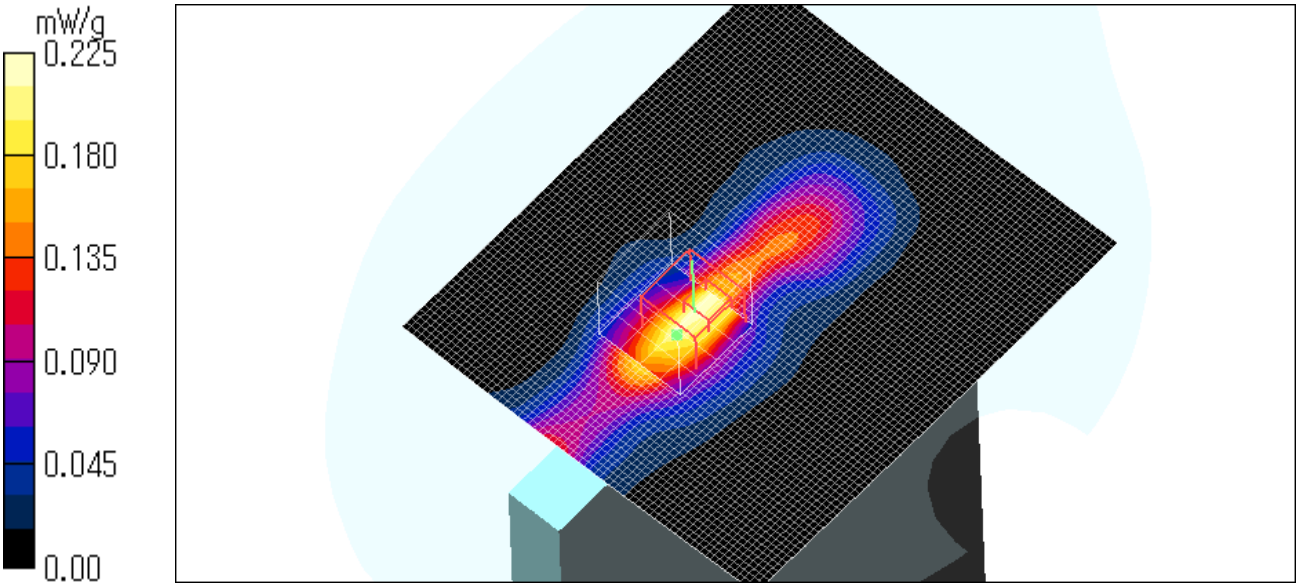
Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.2; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (71x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum / value of SAR (interpolated) = 0.249 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.2 V/m; Power Drift = 0.018 dB
Peak SAR (extrapolated) = 0.411 W/kg

SAR(1 g) = 0.208 mW/g; SAR(10 g) = 0.103 mW/g
Maximum value of SAR (measured) = 0.225 mW/g

Test Date = 04/10/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.8 degree C. , After 24.8 degree C.



PCG-4H2L/ Body / Right side / Main Ant. / 2412MHz / 11g BPSK (9Mbps) / Spaced 10mm

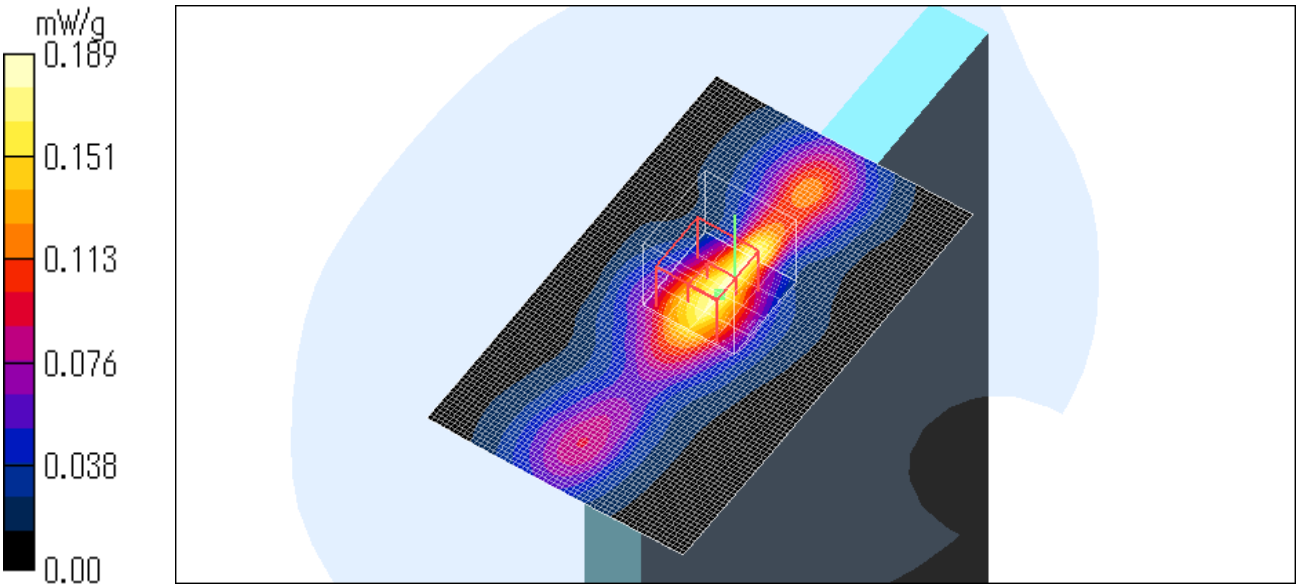
Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2 mho/m; ε_r = 50.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.196 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.2 V/m; Power Drift = -0.093 dB
Peak SAR (extrapolated) = 0.234 W/kg

SAR(1 g) = 0.131 mW/g; SAR(10 g) = 0.069 mW/g
Maximum value of SAR (measured) = 0.189 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.6 degree C. , After 24.6degree C.



3. Measurement data / Body (AUX antenna)

PCG-4H2L/ Body / Left side / AUX Ant. / 2437MHz /11b CCK (11Mbps) / Spaced 5mm

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

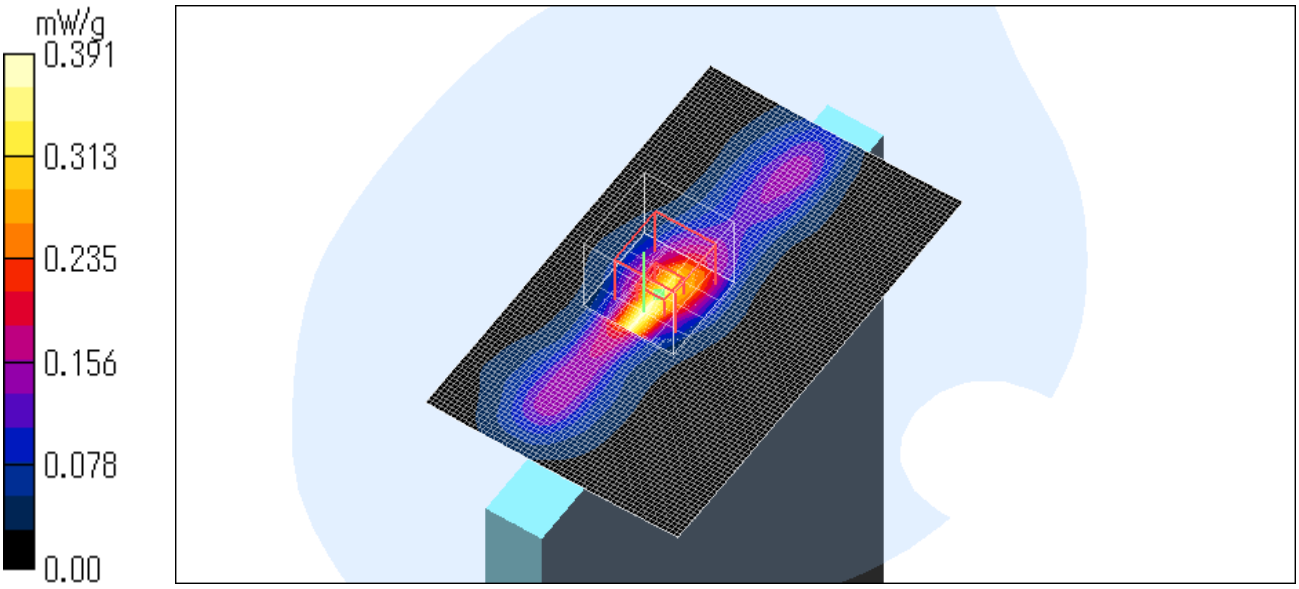
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.288 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = -0.048 dB
Peak SAR (extrapolated) = 0.462 W/kg

SAR(1 g) = 0.246 mW/g; SAR(10 g) = 0.121 mW/g
Maximum value of SAR (measured) = 0.391 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.8 degree C. , After 24.8 degree C.



PCG-4H2L/ Body / Left bottom / AUX Ant. / 2437MHz / 11b CCK (11Mbps)

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

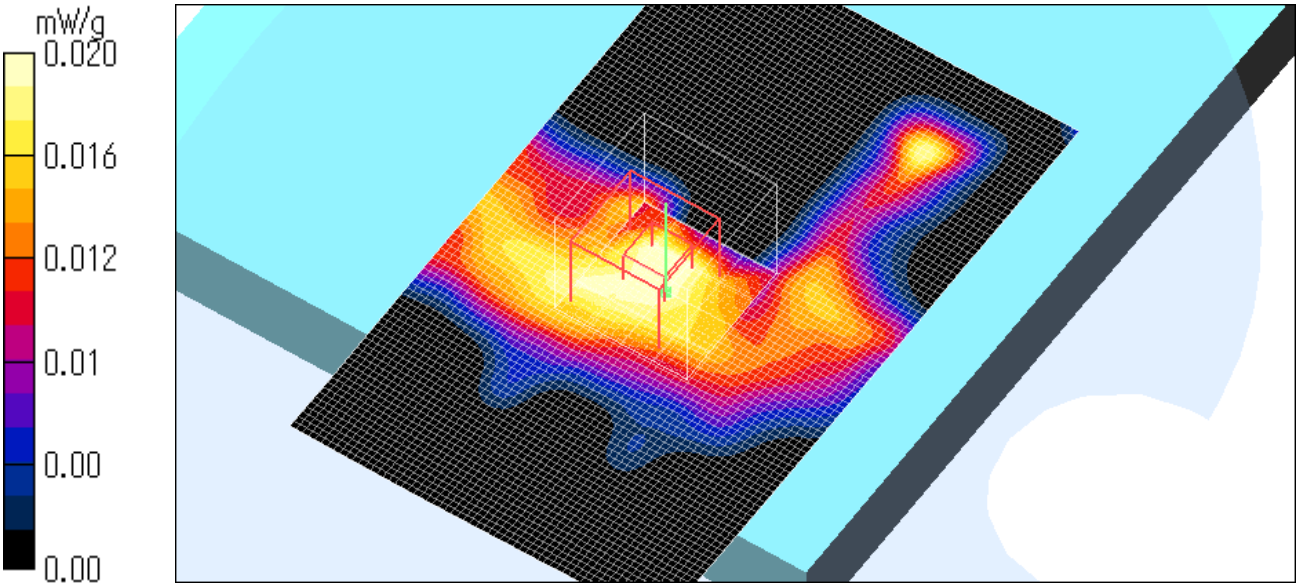
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.025 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.85 V/m; Power Drift = 0.188 dB
Peak SAR (extrapolated) = 0.027 W/kg

SAR(1 g) = 0.015 mW/g; SAR(10 g) = 0.00866 mW/g
Maximum value of SAR (measured) = 0.020 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.5 degree C. , After 24.5 degree C.



PCG-4H2L/ Body / Left top / AUX Ant. / 2437MHz / 11b CCK (11Mbps)

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

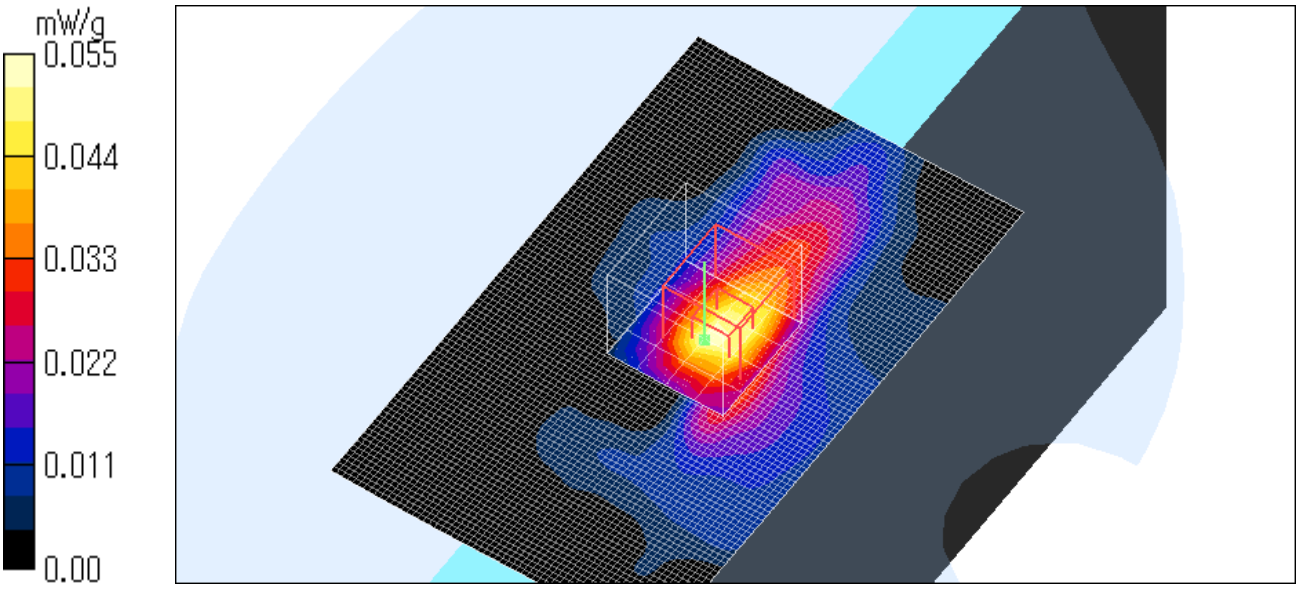
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.070 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.10 V/m; Power Drift = -0.216 dB
Peak SAR (extrapolated) = 0.073 W/kg

SAR(1 g) = 0.039 mW/g; SAR(10 g) = 0.020 mW/g
Maximum value of SAR (measured) = 0.055 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.8 degree C. , After 24.8 degree C.



PCG-4H2L/ Body / Left Back of display / AUX Ant. / 2437MHz / 11b CCK (11Mbps) / Spaced 15mm

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

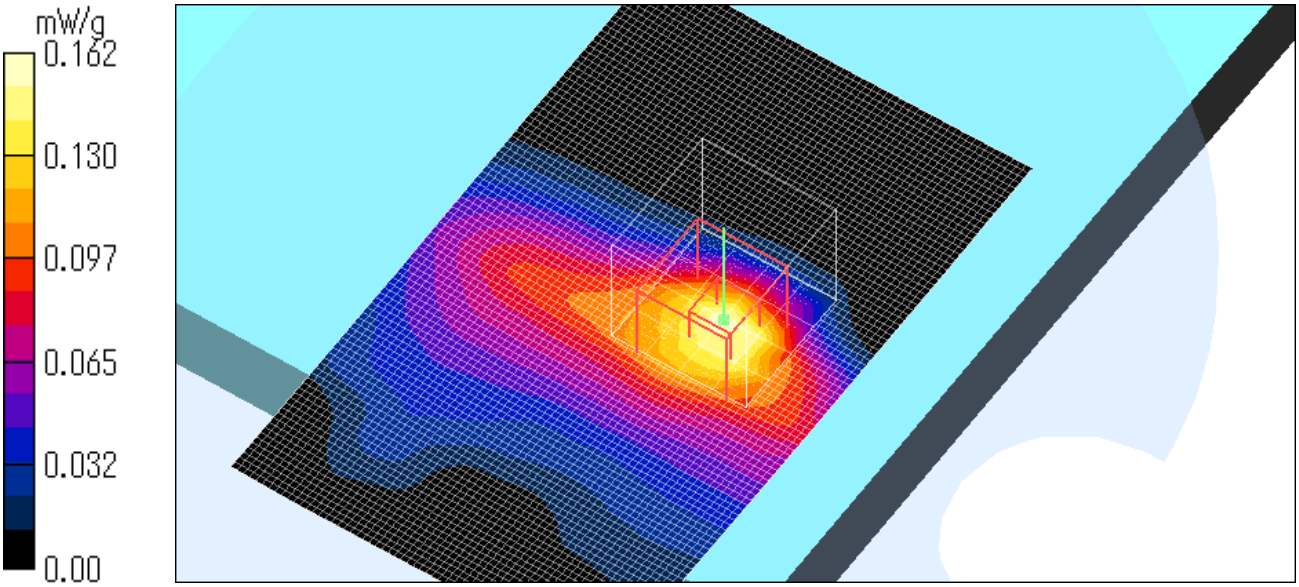
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.180 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.70 V/m; Power Drift = -0.066 dB
Peak SAR (extrapolated) = 0.210 W/kg

SAR(1 g) = 0.116 mW/g; SAR(10 g) = 0.063 mW/g
Maximum value of SAR (measured) = 0.162 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.6 degree C. , After 24.6 degree C.



PCG-4H2L/ Body / Left side / AUX Ant. / 2412MHz / 11b CCK (11Mbps) / Spaced 5mm

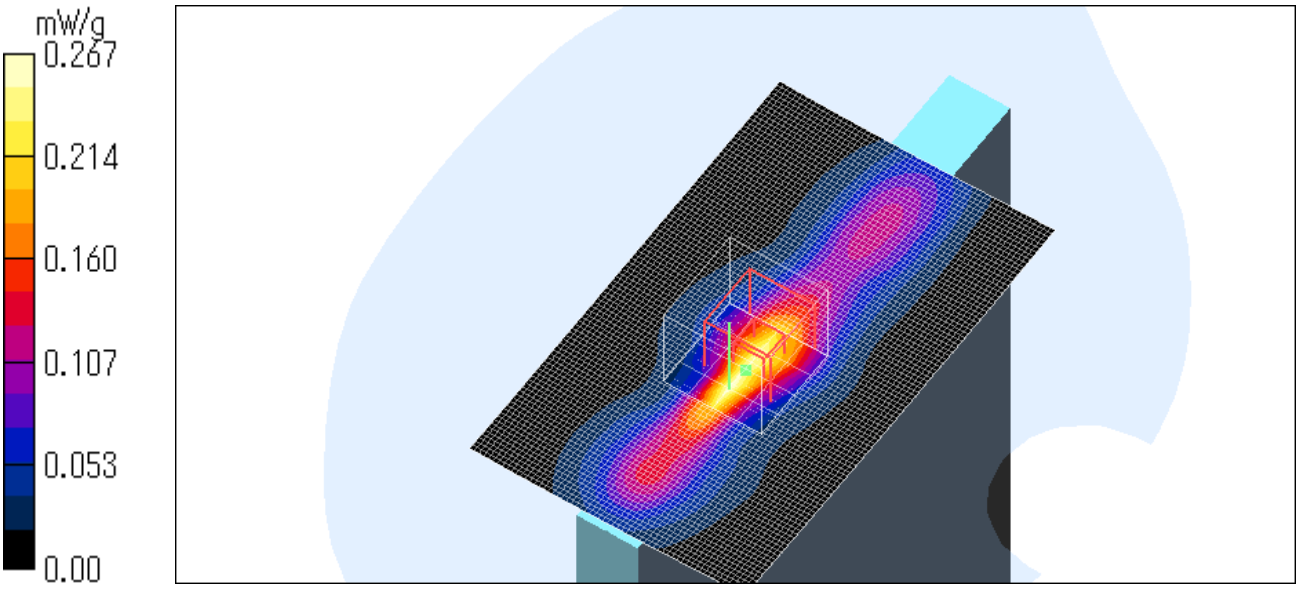
Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.265 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.3 V/m; Power Drift = -0.235 dB
Peak SAR (extrapolated) = 0.315 W/kg

SAR(1 g) = 0.175 mW/g; SAR(10 g) = 0.089 mW/g
Maximum value of SAR (measured) = 0.267 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.8 degree C. , After 24.8 degree C.



PCG-4H2L/ Body / Left side / AUX Ant. / 2462MHz / 11b CCK (11Mbps) / Spaced 5mm

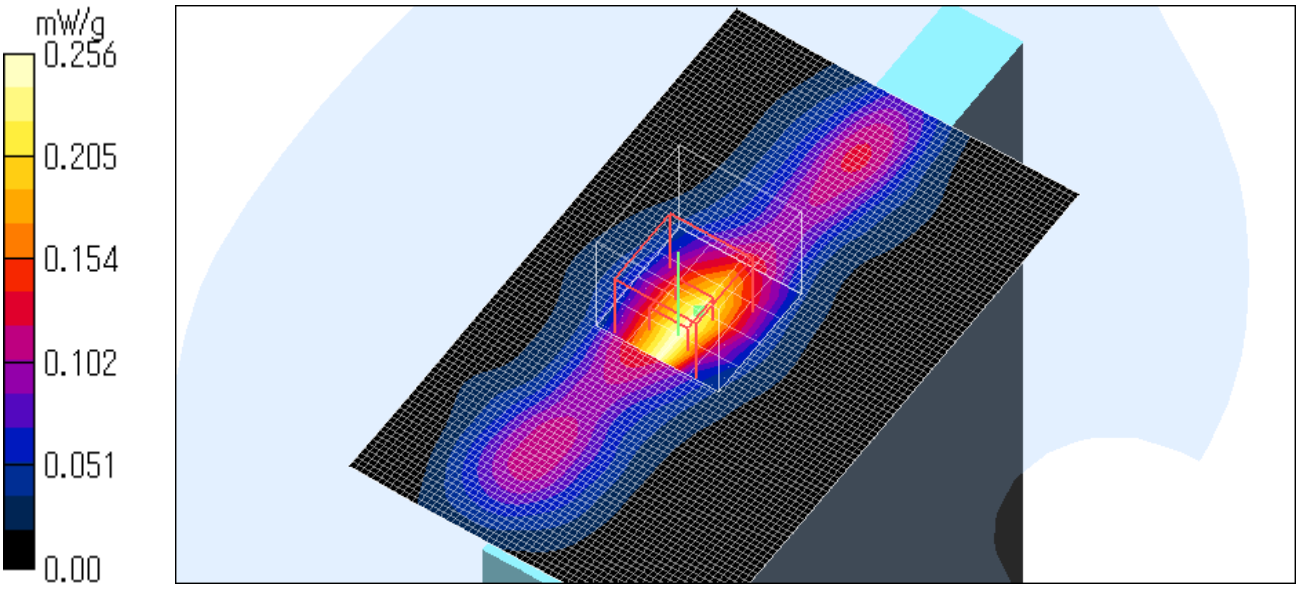
Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.223 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.70 V/m; Power Drift = 0.224 dB
Peak SAR (extrapolated) = 0.322 W/kg

SAR(1 g) = 0.172 mW/g; SAR(10 g) = 0.086 mW/g
Maximum value of SAR (measured) = 0.256 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.8 degree C. , After 24.8 degree C.



PCG-4H2L/ Body / Left side / AUX Ant. / 2437MHz / 11g BPSK (6Mbps) / Spaced 5mm

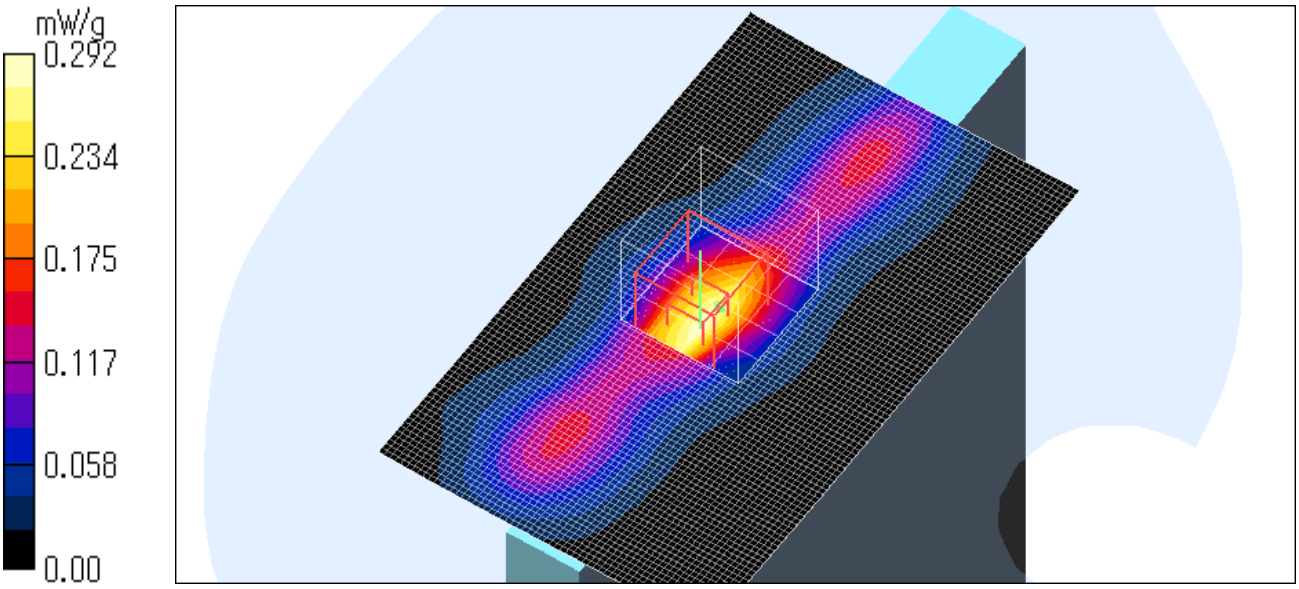
Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.269 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.4 V/m; Power Drift = -0.228 dB
Peak SAR (extrapolated) = 0.378 W/kg

SAR(1 g) = 0.208 mW/g; SAR(10 g) = 0.105 mW/g
Maximum value of SAR (measured) = 0.292 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.7 degree C. , After 24.7 degree C.



PCG-4H2L/ Body / Left side / AUX Ant. / 2437MHz / 11g QPSK (18Mbps) / Spaced 5mm

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

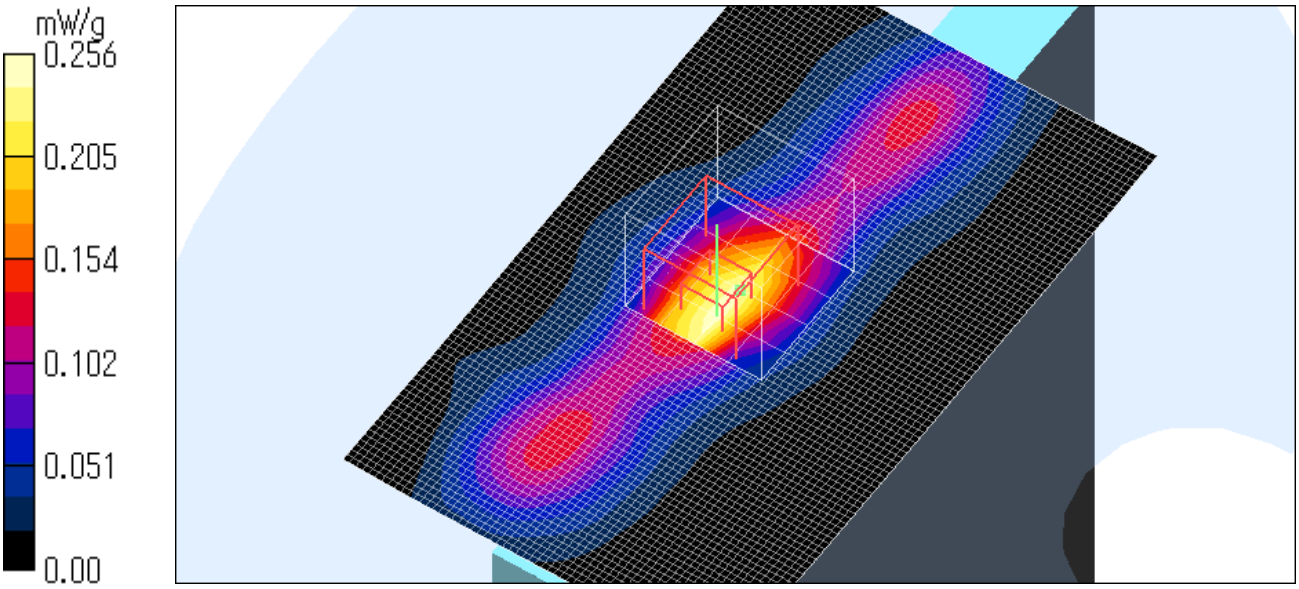
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.236 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.5 V/m; Power Drift = 0.071 dB
Peak SAR (extrapolated) = 0.331 W/kg

SAR(1 g) = 0.183 mW/g; SAR(10 g) = 0.093 mW/g
Maximum value of SAR (measured) = 0.256 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.7 degree C. , After 24.7 degree C.



PCG-4H2L/ Body / Left side / AUX Ant. / 2437MHz / 11g 16QAM (24Mbps) / Spaced 5mm

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

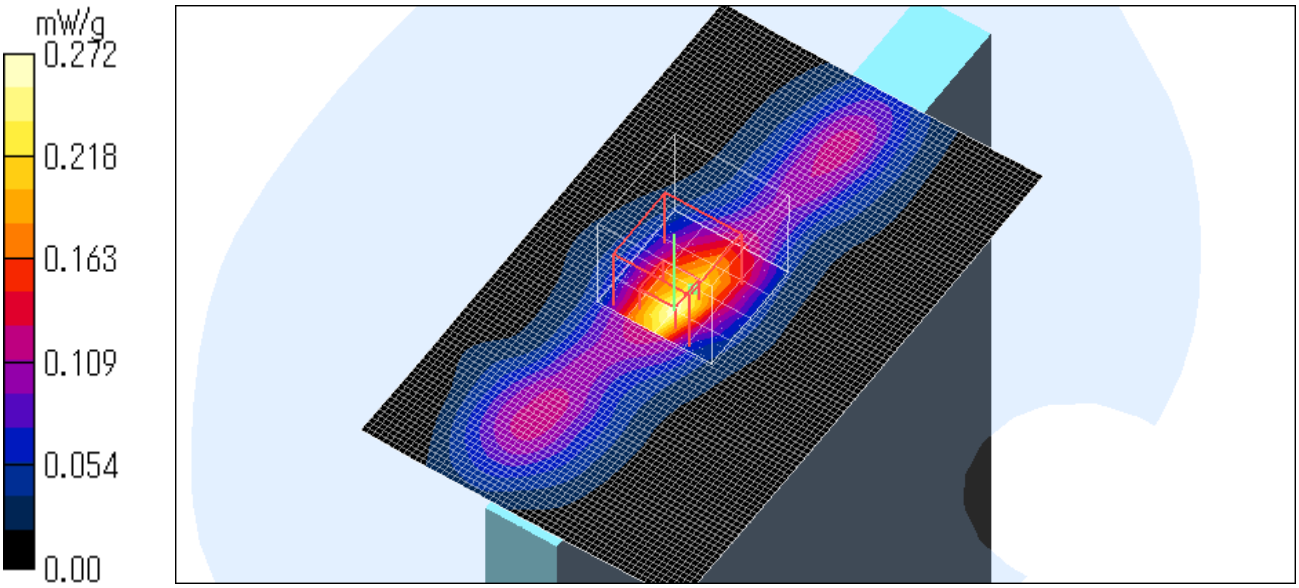
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.217 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 10.1 V/m; Power Drift = 0.176 dB
Peak SAR (extrapolated) = 0.338 W/kg

SAR(1 g) = 0.179 mW/g; SAR(10 g) = 0.088 mW/g
Maximum value of SAR (measured) = 0.272 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.7 degree C. , After 24.7 degree C.



PCG-4H2L/ Body / Left side / AUX Ant. / 2437MHz / 11g 64QAM (54Mbps) / Spaced 5mm

Crest factor: 2
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

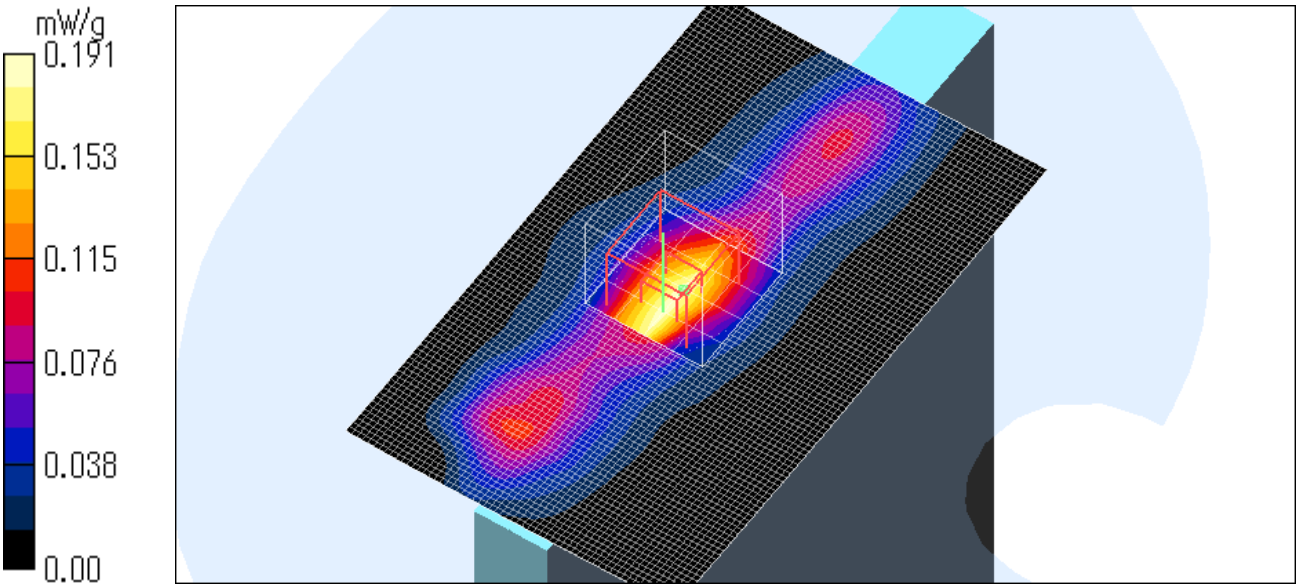
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.176 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.19 V/m; Power Drift = -0.010 dB
Peak SAR (extrapolated) = 0.243 W/kg

SAR(1 g) = 0.133 mW/g; SAR(10 g) = 0.067 mW/g
Maximum value of SAR (measured) = 0.191 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.7 degree C. , After 24.7 degree C.



PCG-4H2L/ Body / Left bottom / AUX Ant. / 2437MHz / 11g BPSK (6Mbps)

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

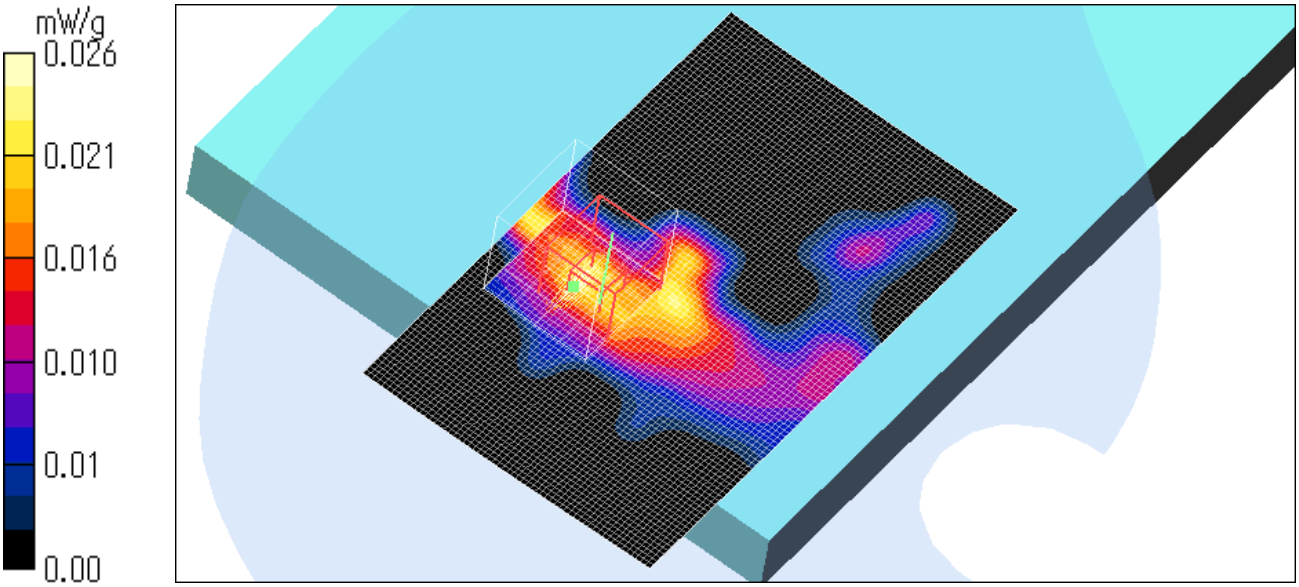
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.026 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.04 V/m; Power Drift = 0.225 dB
Peak SAR (extrapolated) = 0.027 W/kg

SAR(1 g) = 0.015 mW/g; SAR(10 g) = 0.00822 mW/g
Maximum value of SAR (measured) = 0.020 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.6 degree C. , After 24.6 degree C.



PCG-4H2L/ Body / Left top / AUX Ant. / 2437MHz / 11g BPSK (6Mbps)

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

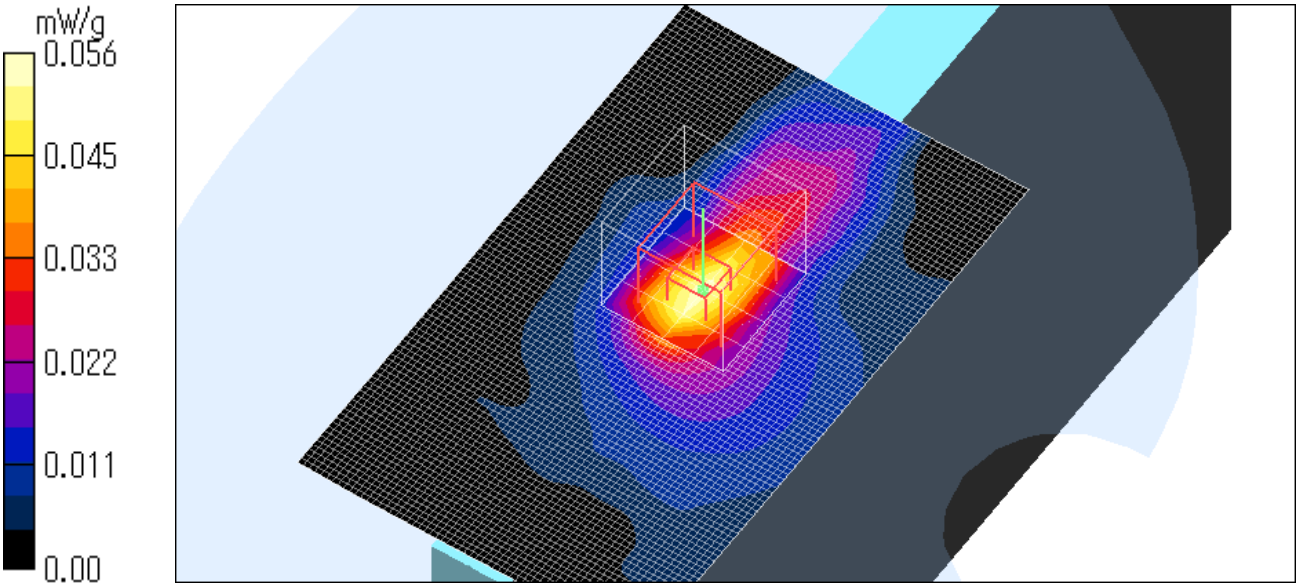
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.052 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.41 V/m; Power Drift = -0.076 dB
Peak SAR (extrapolated) = 0.070 W/kg

SAR(1 g) = 0.039 mW/g; SAR(10 g) = 0.020 mW/g
Maximum value of SAR (measured) = 0.056 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.8 degree C. , After 24.8 degree C.



PCG-4H2L/ Body / Left back of display / AUX Ant. / 2437MHz / 11g BPSK (6Mbps) / Spaced 15mm

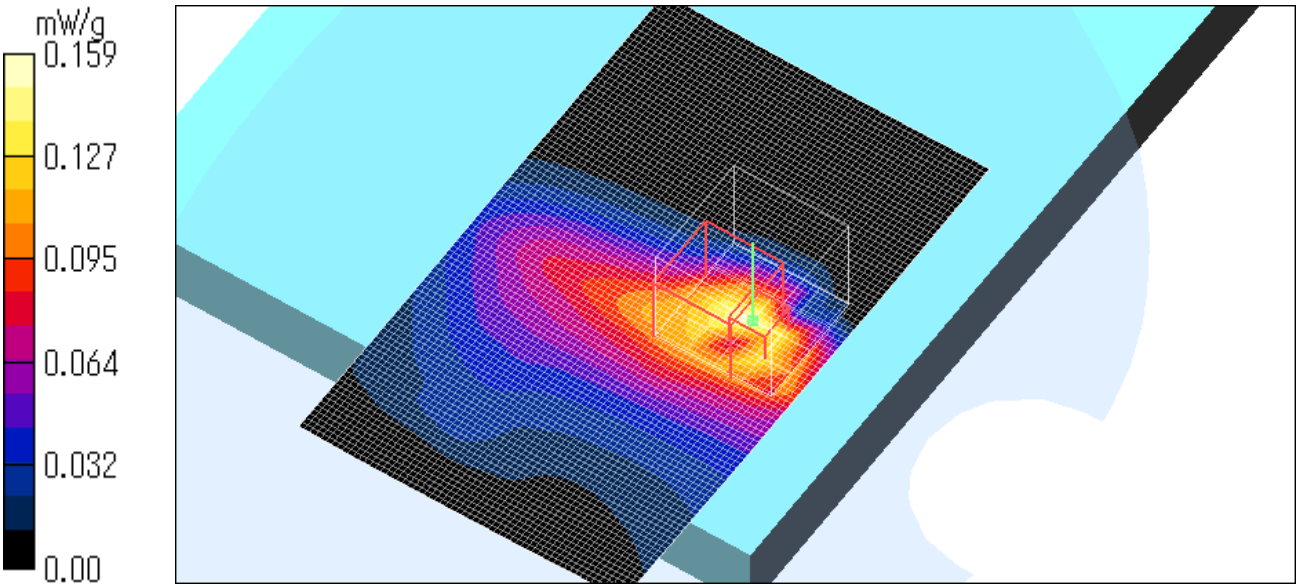
Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.172 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.28 V/m; Power Drift = -0.159 dB
Peak SAR (extrapolated) = 0.229 W/kg
SAR(1 g) = 0.093 mW/g; SAR(10 g) = 0.044 mW/g
Maximum value of SAR (measured) = 0.159 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.6 degree C. , After 24.6 degree C.



PCG-4H2L/ Body / Left side / AUX Ant. / 2412MHz / 11g BPSK (6Mbps) / Spaced 5mm

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

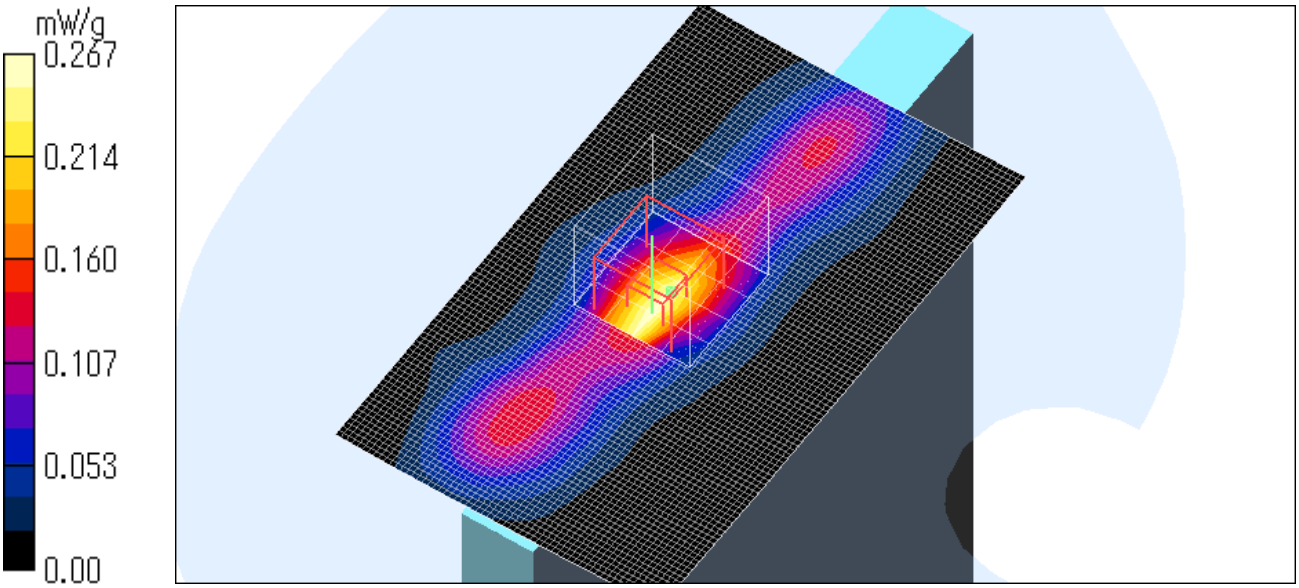
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.247 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 11.6 V/m; Power Drift = -0.172 dB
Peak SAR (extrapolated) = 0.335 W/kg

SAR(1 g) = 0.186 mW/g; SAR(10 g) = 0.094 mW/g
Maximum value of SAR (measured) = 0.267 mW/g
Test Date = 04/11/06

Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.7 degree C. , After 24.7 degree C.



PCG-4H2L/ Body / Left side / AUX Ant. / 2462MHz / 11g BPSK (6Mbps) / Spaced 5mm

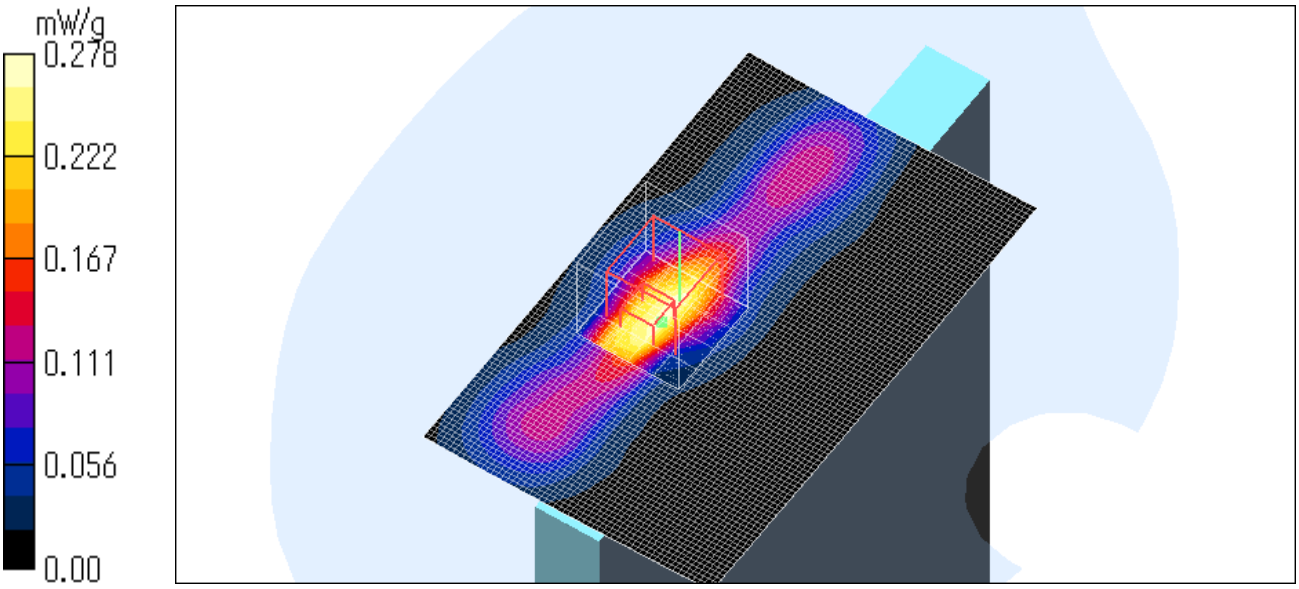
Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 2.01 mho/m; ε_r = 51; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (61x101x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (interpolated) = 0.287 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.76 V/m; Power Drift = 0.195 dB
Peak SAR (extrapolated) = 0.382 W/kg
SAR(1 g) = 0.204 mW/g; SAR(10 g) = 0.100 mW/g
Maximum value of SAR (measured) = 0.278 mW/g

Test Date = 04/11/06
Ambient Temperature = 25.0 degree C.
Liquid Temperature = Before 24.7 degree C. , After 24.7 degree C.



4. Measurement data (Bluetooth)

PCG-4H2L / Right Back / 2441MHz / BT

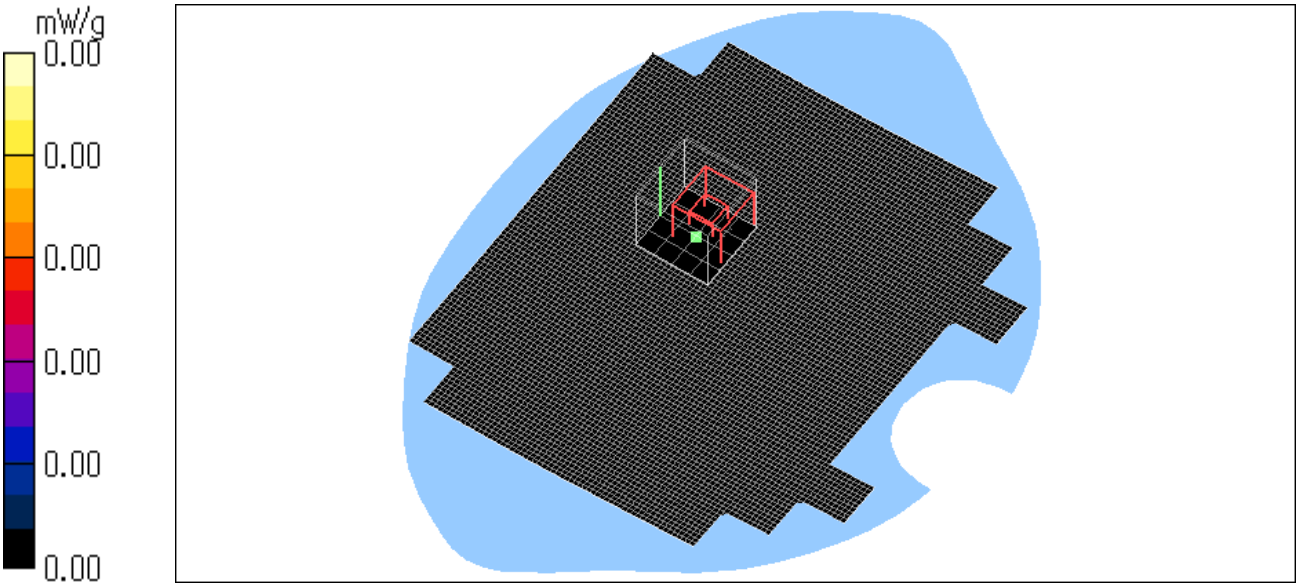
Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 1.96 mho/m; ε_r = 50.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (91x101x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.00 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.373 V/m; Power Drift = -0.221 dB
Peak SAR (extrapolated) = 0.00 W/kg

SAR(1 g) = 7.48e-005 mW/g; SAR(10 g) = 8.72e-006 mW/g
Maximum value of SAR (measured) = 0.00 mW/g

Test Date = 04/05/06
Ambient Temperature = 24.5 degree.C.
Liquid Temperature = Before 24.0 degree C. , After 24.0 degree C.



PCG-4H2L / Right Side / 2441MHz / BT

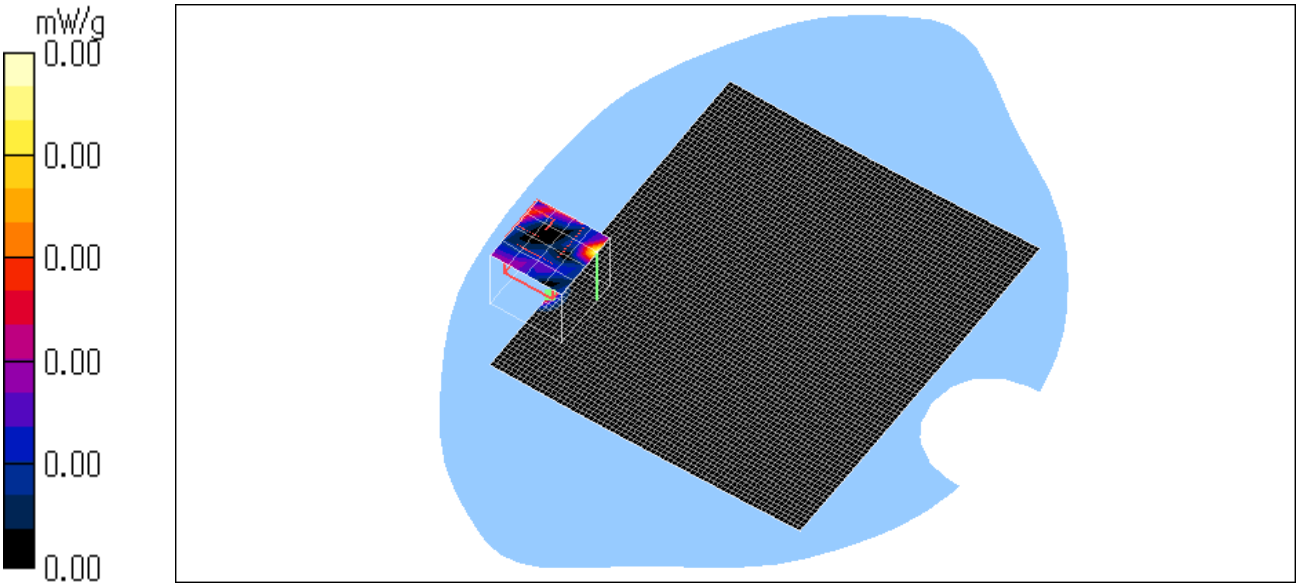
Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 1.96 mho/m; ε_r = 50.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (71x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.00 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.577 V/m; Power Drift = -0.233 dB
Peak SAR (extrapolated) = 0.00 W/kg

SAR(1 g) = 6.29e-005 mW/g; SAR(10 g) = 1.17e-005 mW/g
Maximum value of SAR (measured) = 0.00 mW/g

Test Date = 04/05/06
Ambient Temperature = 24.5 degree.C.
Liquid Temperature = Before 24.0 degree C. , After 24.0 degree C.



PCG-4H2L / Right Bottom / 2441MHz / BT

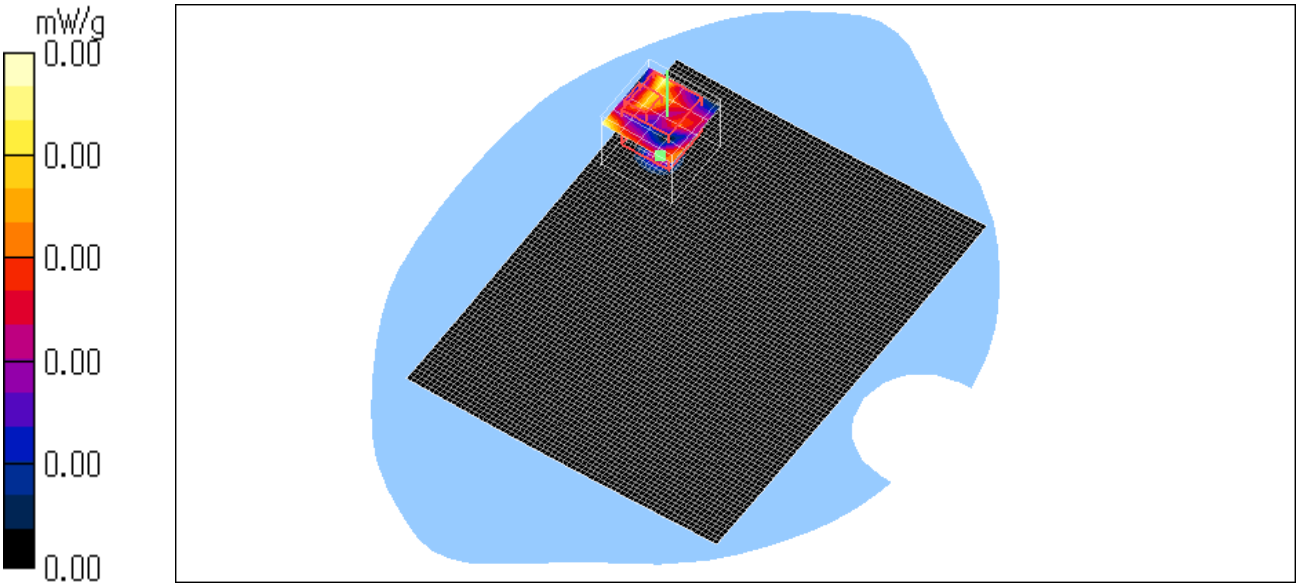
Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 1.96 mho/m; ε_r = 50.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (71x91x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.00 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.821 V/m; Power Drift = -0.192 dB
Peak SAR (extrapolated) = 0.00 W/kg

SAR(1 g) = 3.08e-005 mW/g; SAR(10 g) = 3.83e-006 mW/g
Maximum value of SAR (measured) = 0.00 mW/g

Test Date = 04/05/06
Ambient Temperature = 24.5 degree.C.
Liquid Temperature = Before 24.1 degree C. , After 24.1 degree C.



PCG-4H2L / Surface of key board / 2441MHz / BT

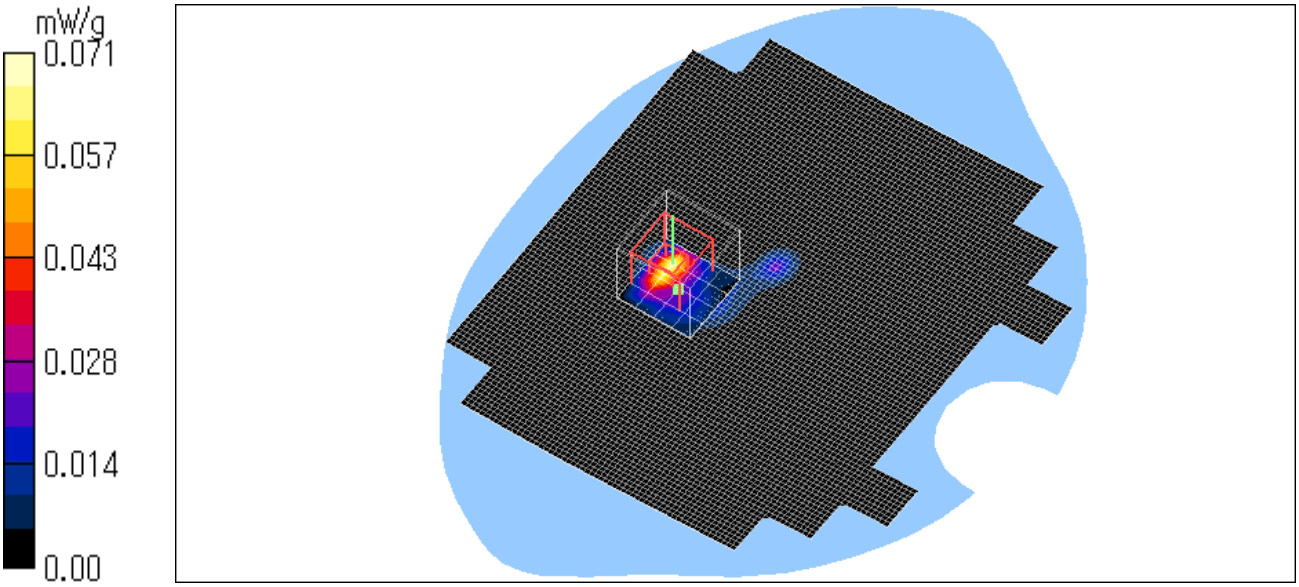
Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 1.96 mho/m; ε_r = 50.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (91x101x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.048 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.01 V/m; Power Drift = 0.152 dB
Peak SAR (extrapolated) = 0.106 W/kg

SAR(1 g) = 0.037 mW/g; SAR(10 g) = 0.014 mW/g
Maximum value of SAR (measured) = 0.071 mW/g

Test Date = 04/05/06
Ambient Temperature = 24.5 degree.C.
Liquid Temperature = Before 24.1 degree C. , After 24.1 degree C.



PCG-4H2L / Surface of key board / 2402MHz / BT

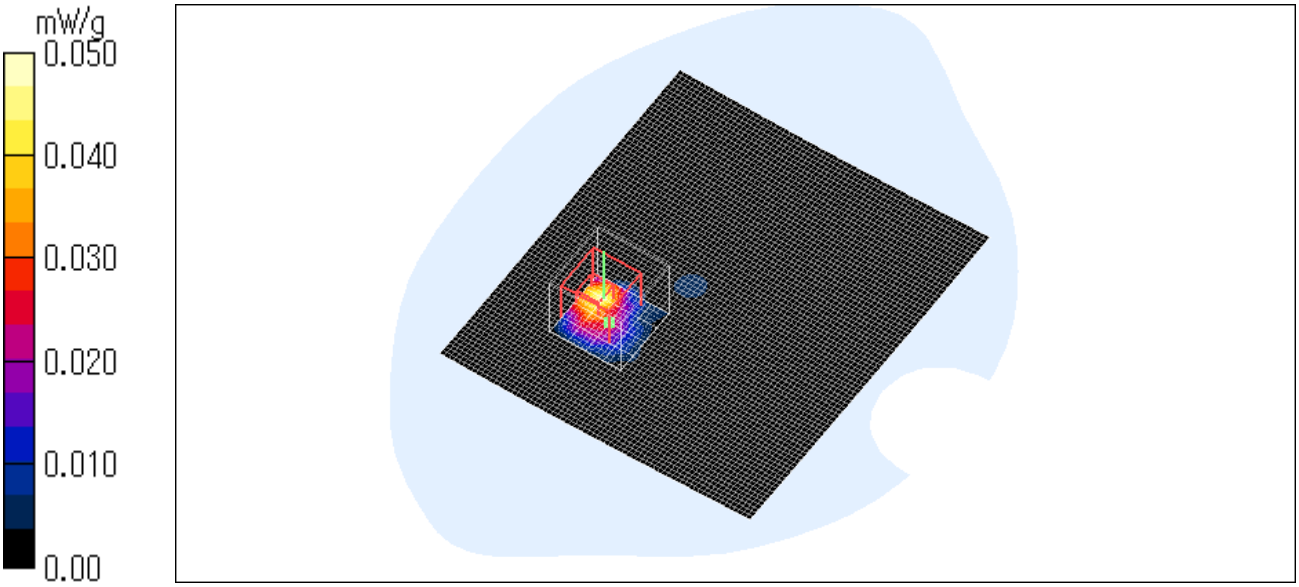
Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 1.96 mho/m; ε_r = 50.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (71x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.041 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.61 V/m; Power Drift = 0.165 dB
Peak SAR (extrapolated) = 0.063 W/kg

SAR(1 g) = 0.032 mW/g; SAR(10 g) = 0.013 mW/g
Maximum value of SAR (measured) = 0.050 mW/g

Test Date = 04/05/06
Ambient Temperature = 24.5 degree.C.
Liquid Temperature = Before 24.2 degree C. , After 24.2 degree C.

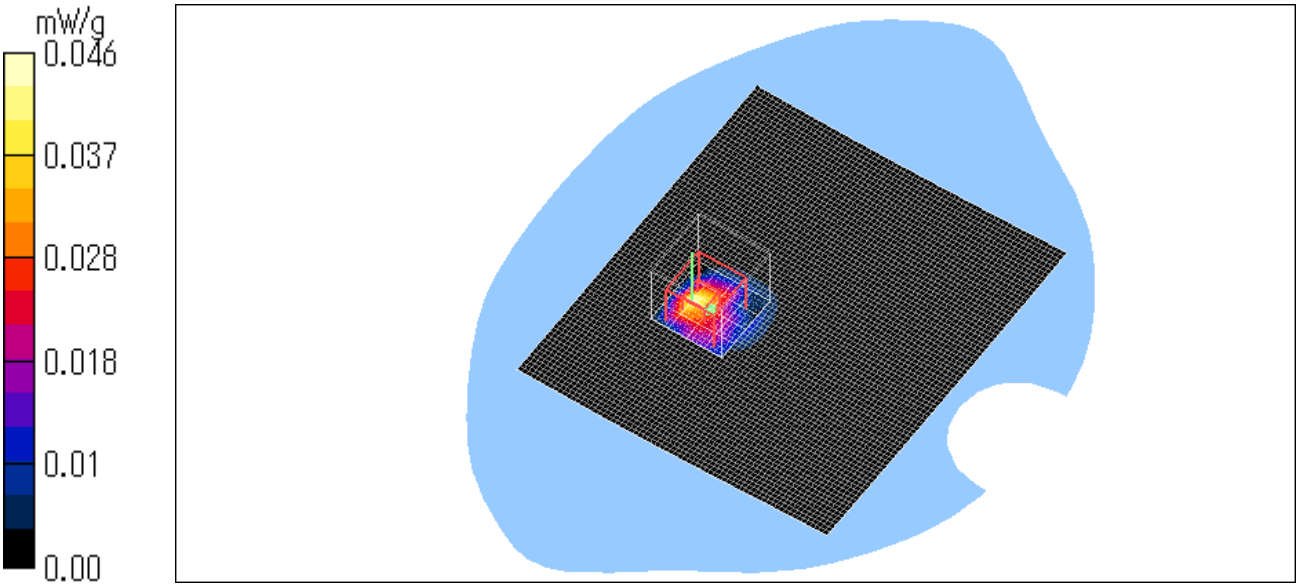


PCG-4H2L / Surface of key board / 2480MHz / BT

Crest factor: 1
Medium parameters used: f = 2450 MHz; σ = 1.96 mho/m; ε_r = 50.3; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)
DASY4 Configuration:
Probe: EX3DV3 - SN3507; ConvF(7.72, 7.72, 7.72); Calibrated: 2005/04/12
Sensor-Surface: 2mm (Mechanical Surface Detection)
Electronics: DAE3 Sn509; Calibrated: 2005/05/26
Phantom: SAM 1196
Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (71x81x1): Measurement grid: dx=20mm, dy=20mm
Maximum value of SAR (interpolated) = 0.081 mW/g

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.70 V/m; Power Drift = 0.037 dB
Peak SAR (extrapolated) = 0.073 W/kg

SAR(1 g) = 0.030 mW/g; SAR(10 g) = 0.011 mW/g
Maximum value of SAR (measured) = 0.046 mW/g

Test Date = 04/05/06
Ambient Temperature = 24.5 degree.C.
Liquid Temperature = Before 24.2 degree C. , After 24.2 degree C.