

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 10 mm x 10 mm . 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 25.8mm x 25.8mm x 21mm was assessed by measuring 7 x 7 x 8 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.

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2. Measurement data

KX-TGA572 / Left Head /Cheek / 44ch(5798.05084MHz)

Duty Cycle: 1:5

Medium parameters used: $f = 5800$ MHz; $\sigma = 5.49$ mho/m; $\epsilon_r = 33.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DASYS4 (High Precision Assessment)

DASY4 Configuration:

Probe: EX3DV3 - SN3507; ConvF(4.67, 4.67, 4.67); Calibrated: 2005/04/12

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE3 Sn509; Calibrated: 2005/05/26

Phantom: SAM 1196

Measurement SW: DASYS4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (101x121x1): Measurement grid: $dx=10$ mm, $dy=10$ mm

Maximum value of SAR (interpolated) = 0.144 mW/g

Zoom Scan (7x7x8)/Cube 0: Measurement grid: $dx=4.3$ mm, $dy=4.3$ mm, $dz=3$ mm

Reference Value = 2.81 V/m; Power Drift = -0.102 dB

Peak SAR (extrapolated) = 0.218 W/kg

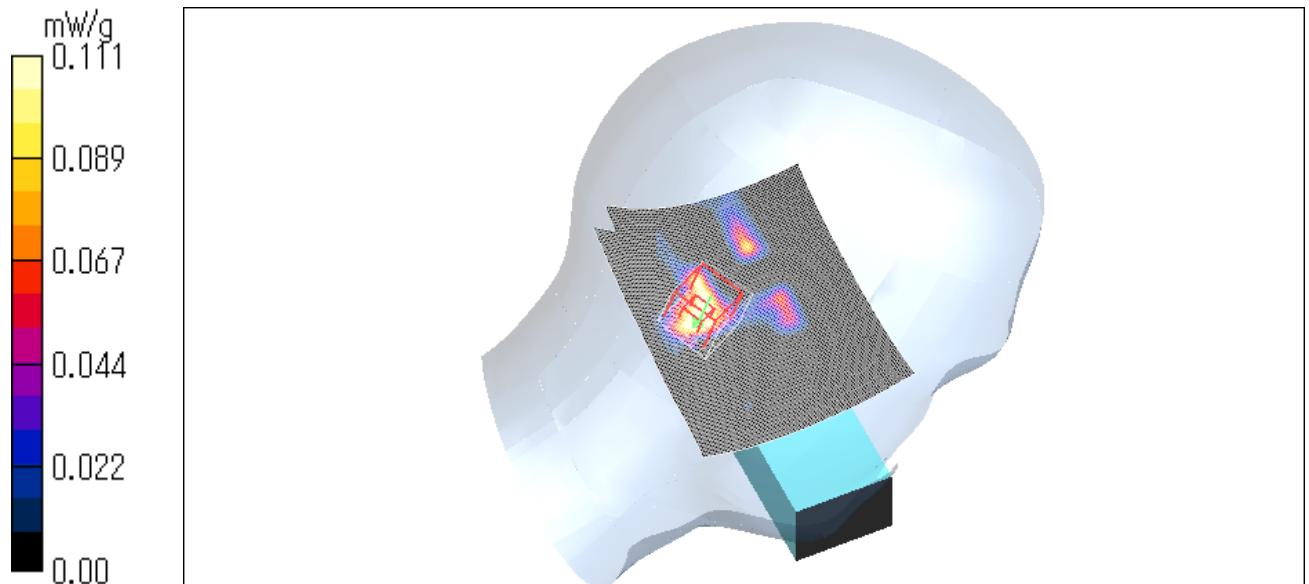
SAR(1 g) = 0.058 mW/g; SAR(10 g) = 0.020 mW/g

Maximum value of SAR (measured) = 0.111 mW/g

Test Date = 04/09/06

Ambient Temperature = 24.5 degree.C.

Liquid Temperature = Before 23.5 degree C. , After 23.5 degree C. .



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KX-TGA572 / Left Head /Tilt / 44ch(5798.05084MHz)

Duty Cycle: 1:5

Medium parameters used: $f = 5800$ MHz; $\sigma = 5.49$ mho/m; $\epsilon_r = 33.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

Probe: EX3DV3 - SN3507; ConvF(4.67, 4.67, 4.67); Calibrated: 2005/04/12

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE3 Sn509; Calibrated: 2005/05/26

Phantom: SAM 1196

Measurement SW: DAS4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.128 mW/g

Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 1.72 V/m; Power Drift = 0.103 dB

Peak SAR (extrapolated) = 0.344 W/kg

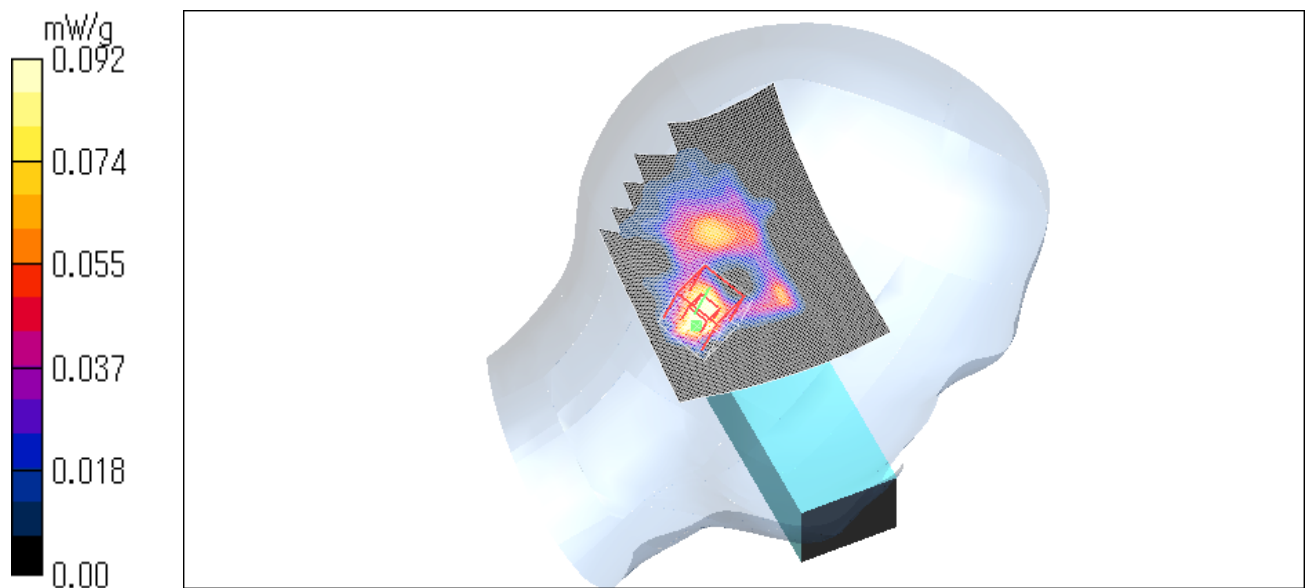
SAR(1 g) = 0.047 mW/g; SAR(10 g) = 0.015 mW/g

Maximum value of SAR (measured) = 0.092 mW/g

Test Date = 04/09/06

Ambient Temperature = 24.5 degree.C.

Liquid Temperature = Before 23.5 degree C. , After 23.5 degree C.



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KX-TGA572 / Right Head / Cheek / 44ch(5798.05084MHz)

Duty Cycle: 1:5

Medium parameters used: $f = 5800$ MHz; $\sigma = 5.49$ mho/m; $\epsilon_r = 33.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASYS4 (High Precision Assessment)

DASY4 Configuration:

Probe: EX3DV3 - SN3507; ConvF(4.67, 4.67, 4.67); Calibrated: 2005/04/12

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE3 Sn509; Calibrated: 2005/05/26

Phantom: SAM 1196

Measurement SW: DASYS4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (121x121x1): Measurement grid: $dx=10$ mm, $dy=10$ mm

Maximum value of SAR (interpolated) = 0.109 mW/g

Zoom Scan (7x7x8)/Cube 0: Measurement grid: $dx=4.3$ mm, $dy=4.3$ mm, $dz=3$ mm

Reference Value = 1.61 V/m; Power Drift = -0.125 dB

Peak SAR (extrapolated) = 0.144 W/kg

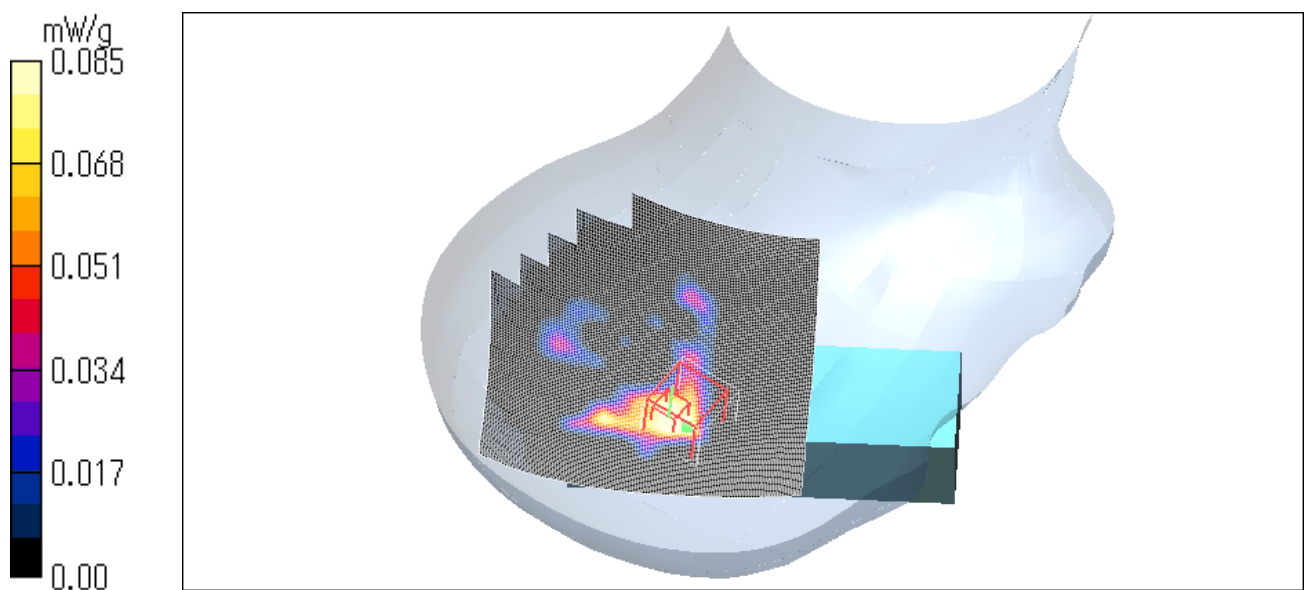
SAR(1 g) = 0.043 mW/g; SAR(10 g) = 0.011 mW/g

Maximum value of SAR (measured) = 0.085 mW/g

Test Date = 04/09/06

Ambient Temperature = 24.5 degree.C.

Liquid Temperature = Before 23.6 degree C. , After 23.6 degree C.



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KX-TGA572 / Right Head / Tilt / 44ch(5798.05084MHz)

Duty Cycle: 1:5

Medium parameters used: $f = 5800$ MHz; $\sigma = 5.49$ mho/m; $\epsilon_r = 33.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

Measurement Standard: DASYS4 (High Precision Assessment)

DASY4 Configuration:

Probe: EX3DV3 - SN3507; ConvF(4.67, 4.67, 4.67); Calibrated: 2005/04/12

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE3 Sn509; Calibrated: 2005/05/26

Phantom: SAM 1196

Measurement SW: DASYS4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (121x121x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.119 mW/g

Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 1.44 V/m; Power Drift = -0.111 dB

Peak SAR (extrapolated) = 0.179 W/kg

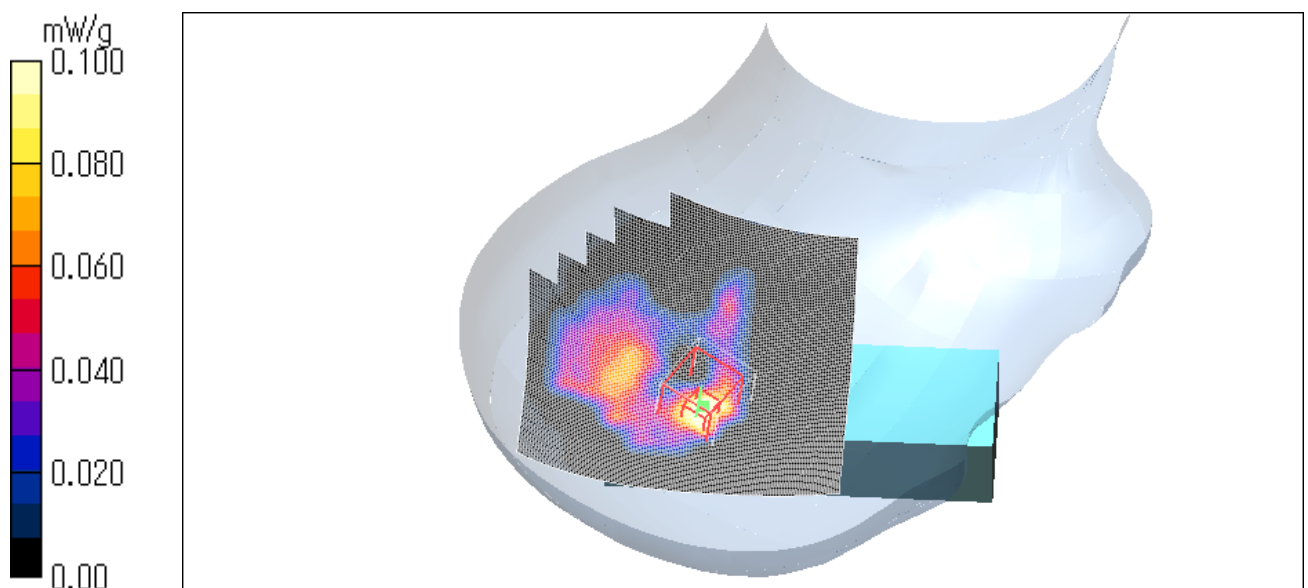
SAR(1 g) = 0.051 mW/g; SAR(10 g) = 0.018 mW/g

Maximum value of SAR (measured) = 0.100 mW/g

Test Date = 04/09/06

Ambient Temperature = 24.5 degree.C.

Liquid Temperature = Before 23.6 degree C. , After 23.6 degree C.



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KX-TGA572 / Left Head / Cheek / 1ch(5759.70240MHz)

Duty Cycle: 1:5

Medium parameters used: $f = 5800$ MHz; $\sigma = 5.49$ mho/m; $\epsilon_r = 33.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

Probe: EX3DV3 - SN3507; ConvF(4.67, 4.67, 4.67); Calibrated: 2005/04/12

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE3 Sn509; Calibrated: 2005/05/26

Phantom: SAM 1196

Measurement SW: DAS4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (101x121x1): Measurement grid: $dx=10$ mm, $dy=10$ mm

Maximum value of SAR (interpolated) = 0.332 mW/g

Zoom Scan (7x7x8)/Cube 0: Measurement grid: $dx=4.3$ mm, $dy=4.3$ mm, $dz=3$ mm

Reference Value = 2.55 V/m; Power Drift = -0.143 dB

Peak SAR (extrapolated) = 0.303 W/kg

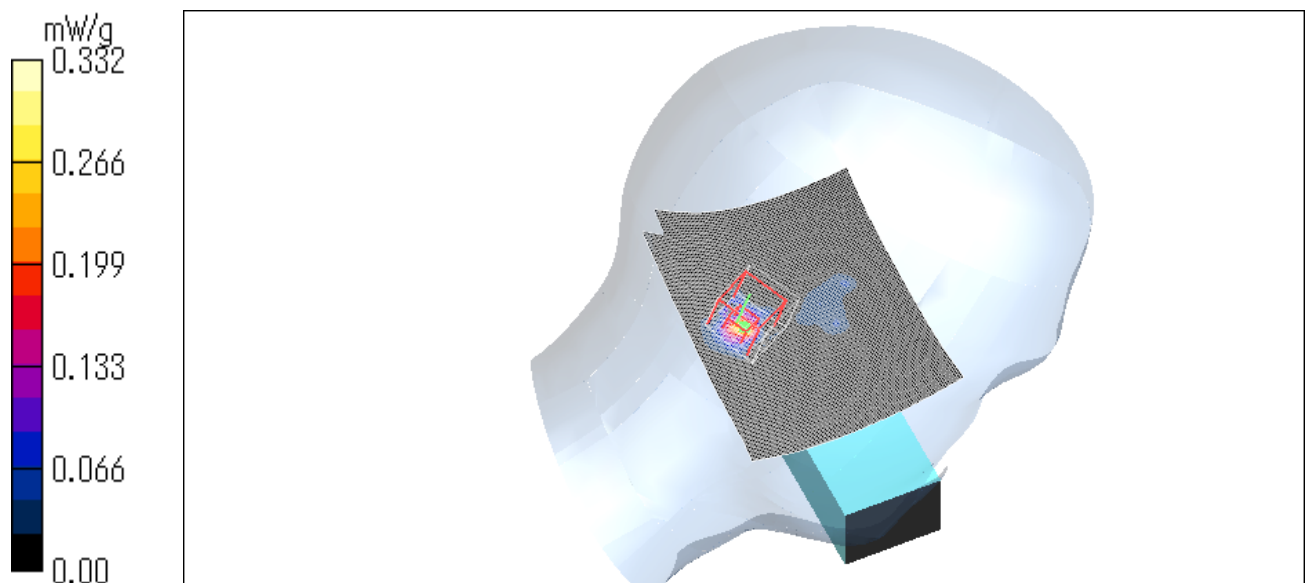
SAR(1 g) = 0.078 mW/g; SAR(10 g) = 0.026 mW/g

Maximum value of SAR (measured) = 0.152 mW/g

Test Date = 04/09/06

Ambient Temperature = 24.5 degree.C.

Liquid Temperature = Before 23.5 degree C. , After 23.5 degree C.



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KX-TGA572 / Left Head / Cheek / 89ch(5838.18697MHz)

Duty Cycle: 1:5

Medium parameters used: $f = 5800$ MHz; $\sigma = 5.49$ mho/m; $\epsilon_r = 33.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

Probe: EX3DV3 - SN3507; ConvF(4.67, 4.67, 4.67); Calibrated: 2005/04/12

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE3 Sn509; Calibrated: 2005/05/26

Phantom: SAM 1196

Measurement SW: DAS4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (101x121x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.153 mW/g

Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 2.18 V/m; Power Drift = 0.071 dB

Peak SAR (extrapolated) = 0.238 W/kg

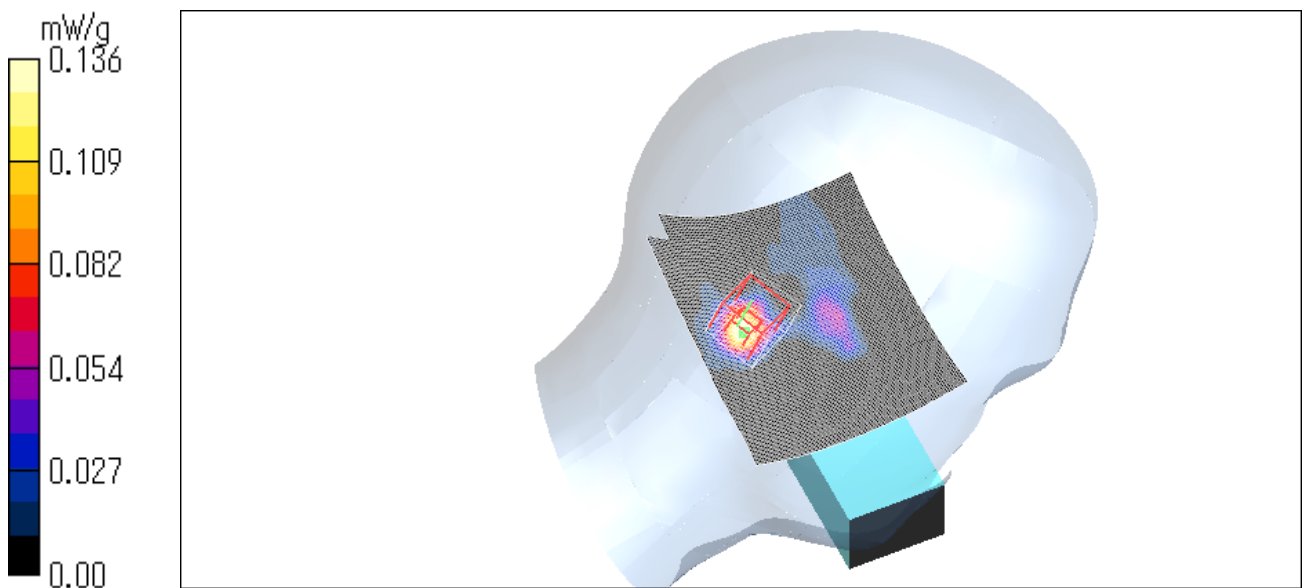
SAR(1 g) = 0.070 mW/g; SAR(10 g) = 0.022 mW/g

Maximum value of SAR (measured) = 0.136 mW/g

Test Date = 04/09/06

Ambient Temperature = 24.5 degree.C.

Liquid Temperature = Before 23.6 degree C. , After 23.6 degree C.



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KX-TGA572 / Body / Back / 1ch(5759.70240MHz)

Duty Cycle: 1:5

Medium parameters used: $f = 5800$ MHz; $\sigma = 6.28$ mho/m; $\epsilon_r = 45.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

Probe: EX3DV3 - SN3507; ConvF(4.32, 4.32, 4.32); Calibrated: 2005/04/12

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE3 Sn509; Calibrated: 2005/05/26

Phantom: SAM 1196

Measurement SW: DAS4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (101x141x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 0.494 mW/g

Zoom Scan (7x7x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 9.55 V/m; Power Drift = -0.032 dB

Peak SAR (extrapolated) = 0.896 W/kg

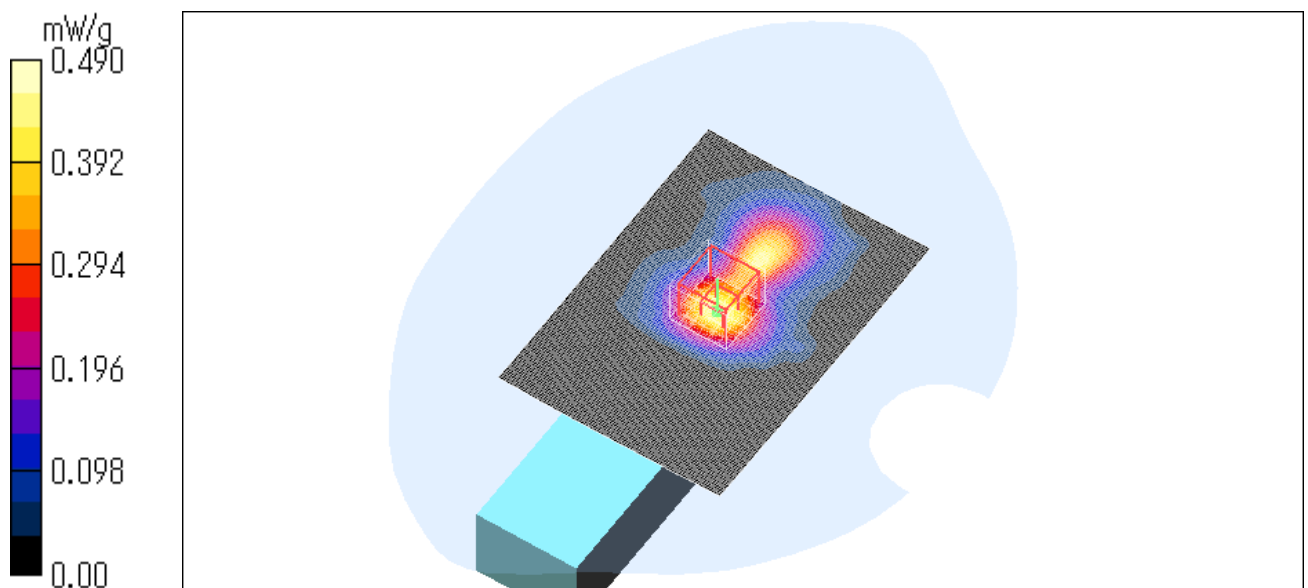
SAR(1 g) = 0.261 mW/g; SAR(10 g) = 0.104 mW/g

Maximum value of SAR (measured) = 0.490 mW/g

Test Date = 04/06/06

Ambient Temperature = 24.5 degree.C.

Liquid Temperature = Before 24.0 degree C. , After 24.0 degree C.



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Z-axis scan at max SAR location

KX-TGA572 / Body / Back / 1ch(5759.70240MHz)

Duty Cycle: 1:5

Medium parameters used: $f = 5800$ MHz; $\sigma = 6.28$ mho/m; $\epsilon_r = 45.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

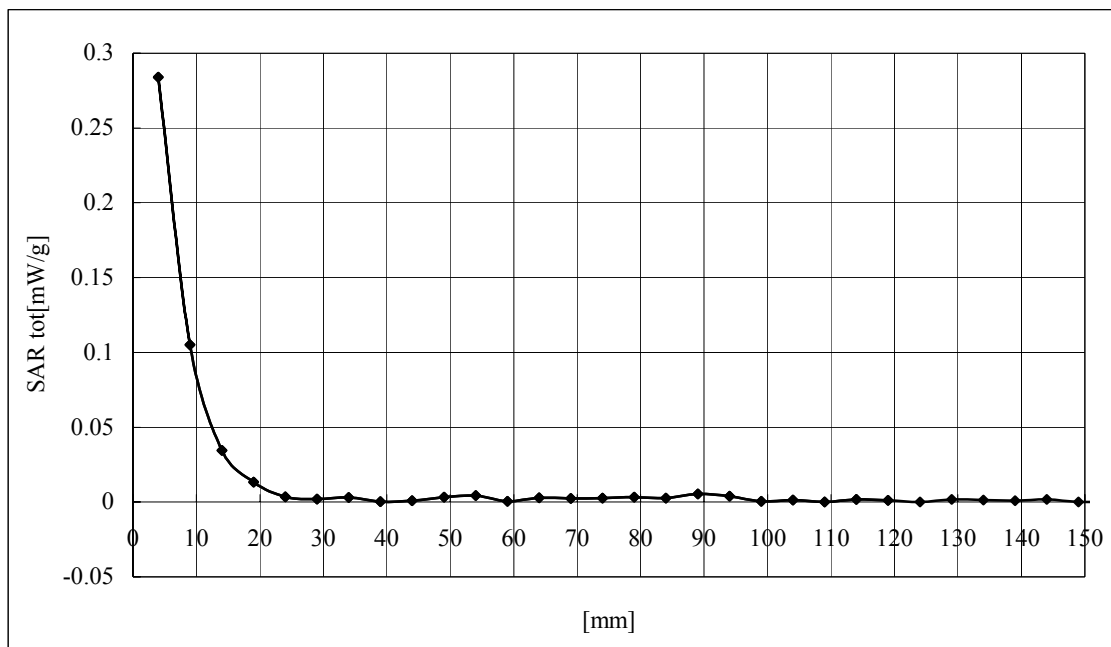
Probe: EX3DV3 - SN3507; ConvF(4.32, 4.32, 4.32); Calibrated: 2005/04/12

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE3 Sn509; Calibrated: 2005/05/26

Phantom: SAM 1196

Measurement SW: DAS4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145



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KX-TGA572 / Body / Back / 44ch(5798.05084MHz)

Duty Cycle: 1:5

Medium parameters used: $f = 5800$ MHz; $\sigma = 6.28$ mho/m; $\epsilon_r = 45.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DAS4 (High Precision Assessment)

DAS4 Configuration:

Probe: EX3DV3 - SN3507; ConvF(4.32, 4.32, 4.32); Calibrated: 2005/04/12

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE3 Sn509; Calibrated: 2005/05/26

Phantom: SAM 1196

Measurement SW: DAS4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (101x141x1): Measurement grid: $dx=10$ mm, $dy=10$ mm

Maximum value of SAR (interpolated) = 0.465 mW/g

Zoom Scan (7x7x8)/Cube 0: Measurement grid: $dx=4.3$ mm, $dy=4.3$ mm, $dz=3$ mm

Reference Value = 7.73 V/m; Power Drift = 0.040 dB

Peak SAR (extrapolated) = 0.841 W/kg

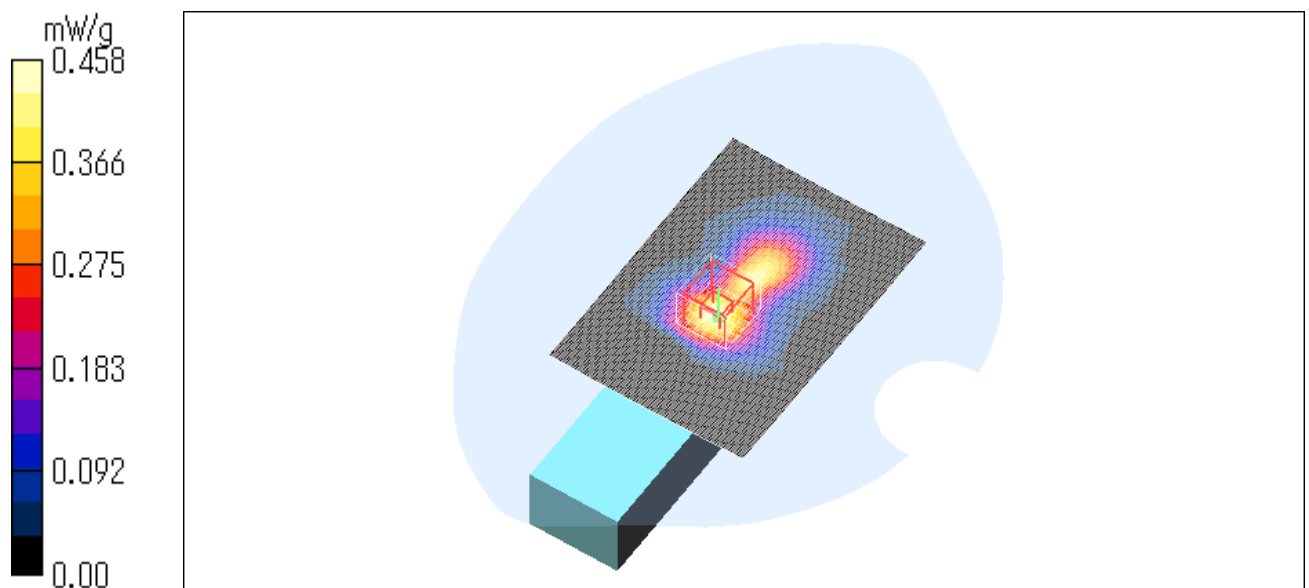
SAR(1 g) = 0.251 mW/g; SAR(10 g) = 0.102 mW/g

Maximum value of SAR (measured) = 0.458 mW/g

Test Date = 04/06/06

Ambient Temperature = 24.5 degree.C.

Liquid Temperature = Before 24.0 degree C. , After 24.0 degree C.



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KX-TGA572 / Body / Back / 89ch(5838.18697MHz)

Duty Cycle: 1:5

Medium parameters used: $f = 5800$ MHz; $\sigma = 6.28$ mho/m; $\epsilon_r = 45.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASYS4 (High Precision Assessment)

DASY4 Configuration:

Probe: EX3DV3 - SN3507; ConvF(4.32, 4.32, 4.32); Calibrated: 2005/04/12

Sensor-Surface: 2mm (Mechanical Surface Detection)

Electronics: DAE3 Sn509; Calibrated: 2005/05/26

Phantom: SAM 1196

Measurement SW: DASYS4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 145

Area Scan (101x141x1): Measurement grid: $dx=10$ mm, $dy=10$ mm

Maximum value of SAR (interpolated) = 0.513 mW/g

Zoom Scan (7x7x8)/Cube 0: Measurement grid: $dx=4.3$ mm, $dy=4.3$ mm, $dz=3$ mm

Reference Value = 7.54 V/m; Power Drift = -0.174 dB

Peak SAR (extrapolated) = 0.887 W/kg

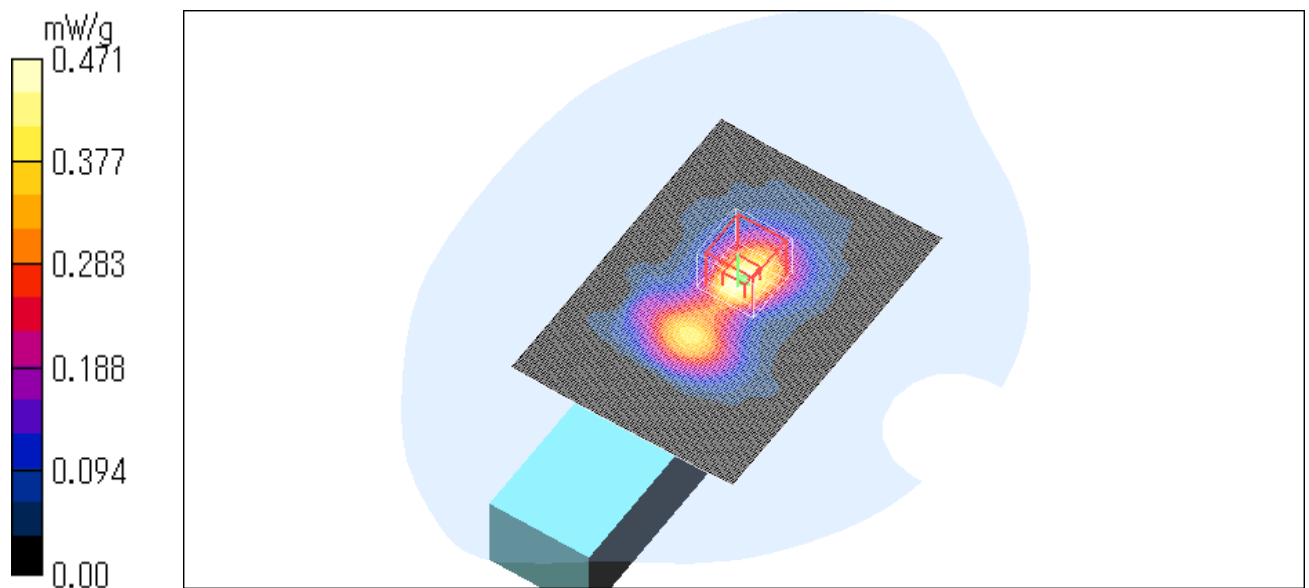
SAR(1 g) = 0.256 mW/g; SAR(10 g) = 0.102 mW/g

Maximum value of SAR (measured) = 0.471 mW/g

Test Date = 04/06/06

Ambient Temperature = 24.5 degree.C.

Liquid Temperature = Before 24.0 degree C. , After 24.0 degree C.



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