
Appendix for the Report

Dosimetric Assessment of the Ascom RAID2 (FCC ID: BXZ-RAID2)

According to the FCC Requirements

SAR Distribution Plots

February 10, 2006
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The test results only relate to the items tested.
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1 SAR Distribution Plots, Head Measurements, Antenna 1

Test Laboratory: Imst GmbH; File Name: [Protector_ant1_yplm_1.da4](#)

DUT: Ascom; Type: Protector MKII;

Program Name: Cheek Left

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used (extrapolated): $f = 1924.99$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(5.18, 5.18, 5.18); Calibrated: 18.01.2006

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn335; Calibrated: 17.03.2005

- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340

- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Left/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.004 mW/g

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

Reference Value = 1.56 V/m; Power Drift = -0.140 dB

Peak SAR (extrapolated) = 0.006 W/kg

SAR(1 g) = 0.0040 mW/g; SAR(10 g) = 0.00235 mW/g

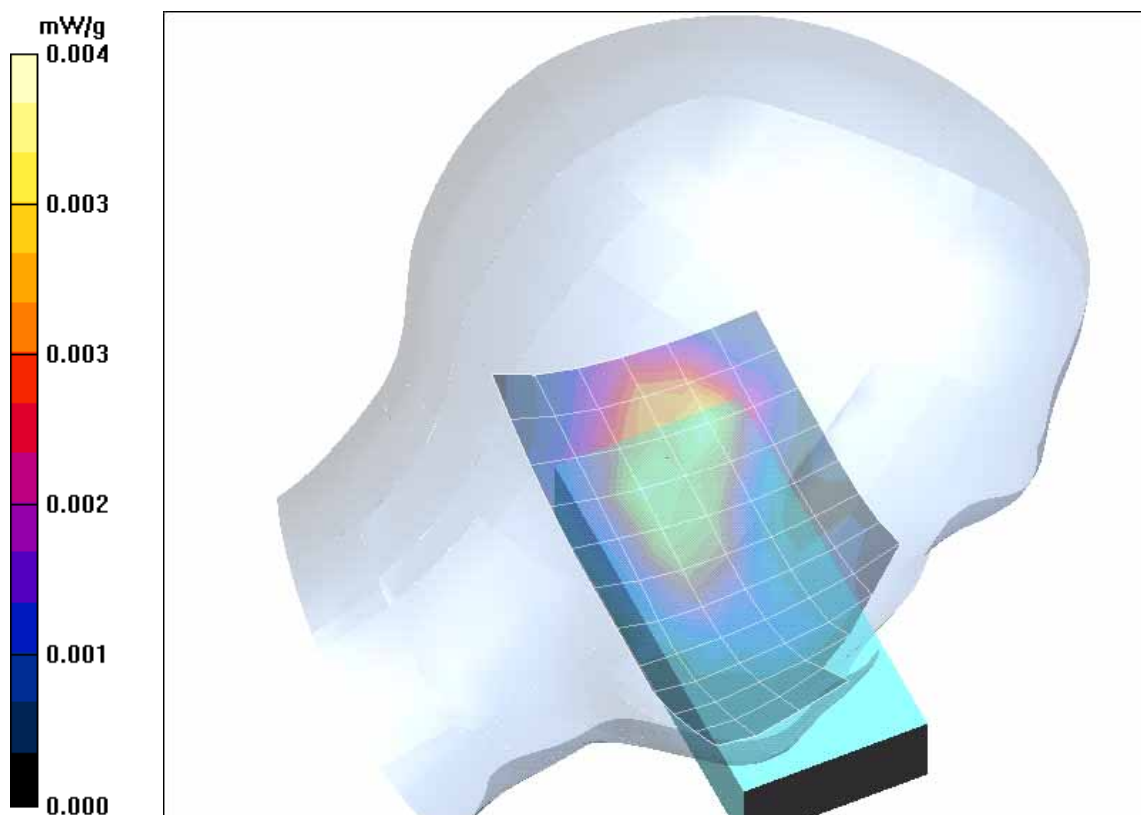


Fig. 1: SAR distribution for DECT US, channel 2, cheek position, left side of head (February 06, 2006; Ambient Temperature: 22.0°C; Liquid Temperature: 21.5°C).

Test Laboratory: Imst GmbH; File Name: [Protector ant1 yplm 2.da4](#)

DUT: Ascom; Type: Protector MKII;

Program Name: Tilted Left

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used (extrapolated): $f = 1924.99$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(5.18, 5.18, 5.18); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Tilted Left/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.004 mW/g

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

Reference Value = 1.73 V/m; Power Drift = -0.094 dB

Peak SAR (extrapolated) = 0.014 W/kg

SAR(1 g) = 0.0043 mW/g; SAR(10 g) = 0.00224 mW/g

Maximum value of SAR (measured) = 0.005 mW/g

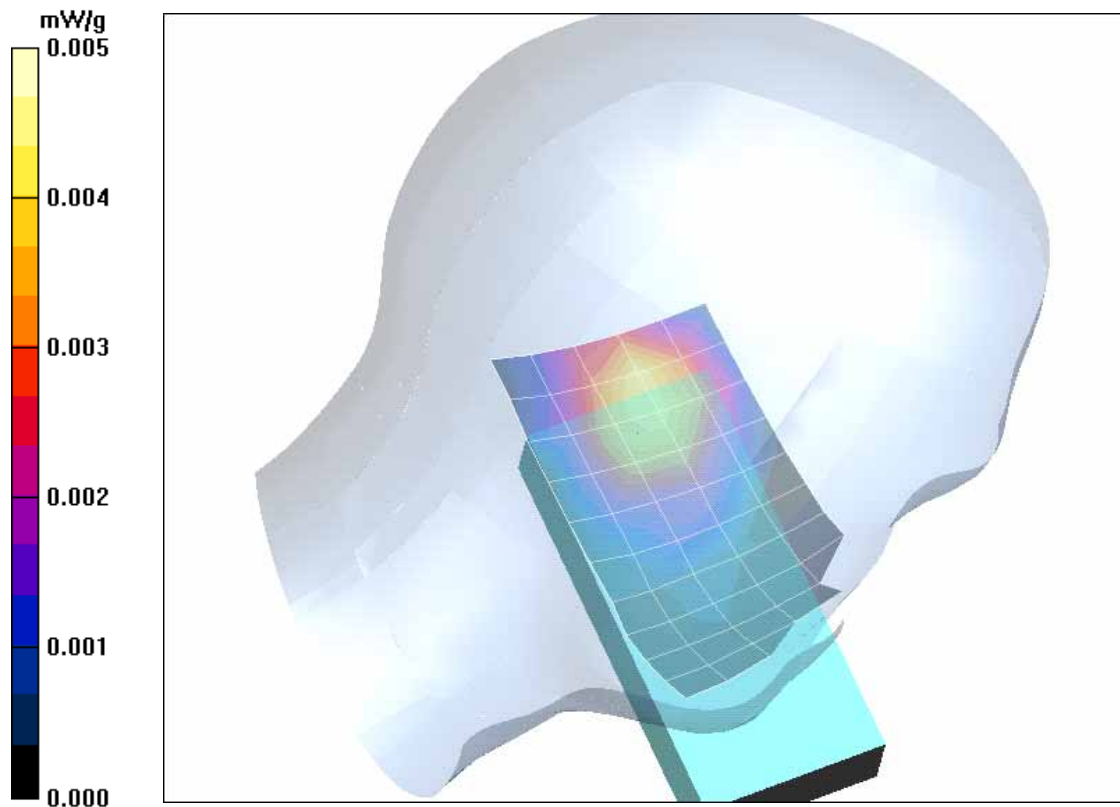


Fig. 2: SAR distribution for DECT US, channel 2, tilted position, left side of head (February 06, 2006; Ambient Temperature: 22.0°C; Liquid Temperature: 21.5°C).

Test Laboratory: Imst GmbH; **File Name:** [Protector_ant1_yprm_1.da4](#)

DUT: Ascom; **Type:** Protector MKII;

Program Name: Cheek Right

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used (extrapolated): $f = 1924.99$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(5.18, 5.18, 5.18); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Right/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.006 mW/g

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

Reference Value = 1.63 V/m; Power Drift = -0.029 dB

Peak SAR (extrapolated) = 0.009 W/kg

SAR(1 g) = 0.0056 mW/g; SAR(10 g) = 0.00339 mW/g

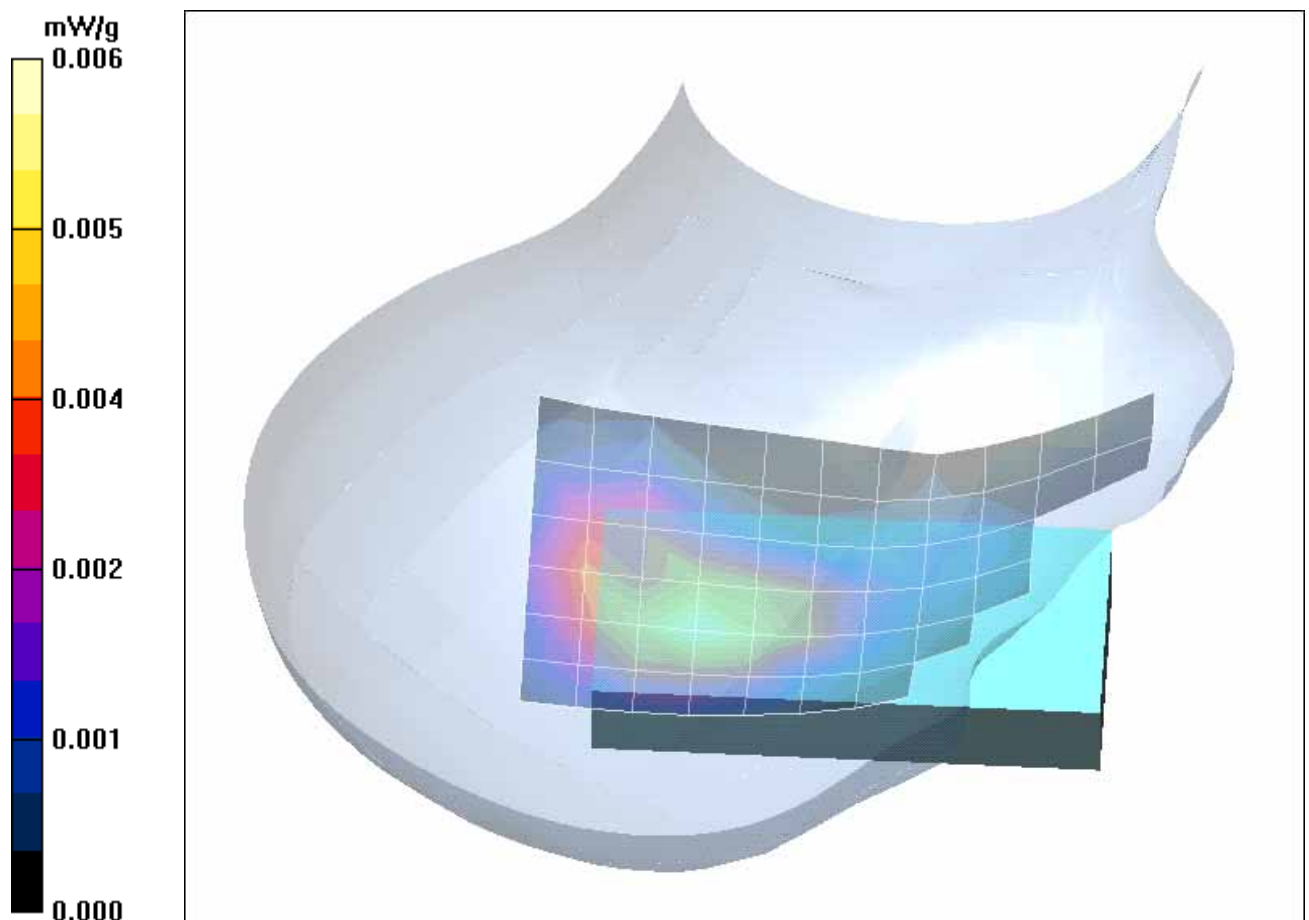


Fig. 3: SAR distribution for DECT US, channel 2, cheek position, right side of head (February 06, 2006; Ambient Temperature: 22.0° C; Liquid Temperature : 21.5° C).

Test Laboratory: Imst GmbH; **File Name:** [Protector ant1_yprm 2.da4](#)

DUT: Ascom; **Type:** Protector MKII;

Program Name: Tilted Right

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used (extrapolated): $f = 1924.99$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(5.18, 5.18, 5.18); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Tilted Right/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.005 mW/g

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

Reference Value = 1.82 V/m; Power Drift = 0.122 dB

Peak SAR (extrapolated) = 0.009 W/kg

SAR(1 g) = 0.0048 mW/g; SAR(10 g) = 0.00264 mW/g

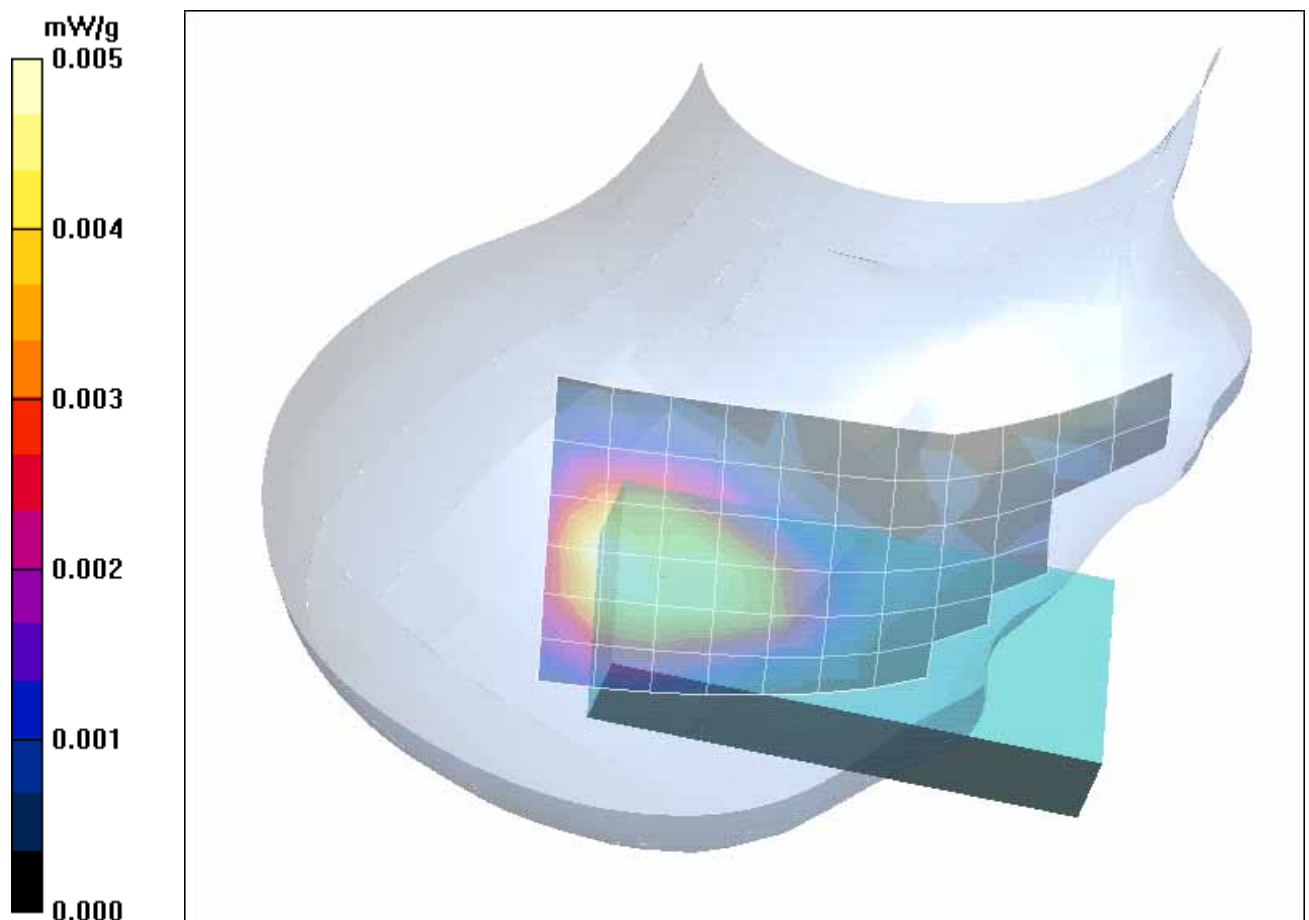


Fig. 4: SAR distribution for DECT US, channel 2, tilted position, right side of head (February 06, 2006; Ambient Temperature: 22.0 °C; Liquid Temperature : 21.5 °C)

2 SAR Distribution Plots, Head Measurements, Antenna 2

Test Laboratory: Imst GmbH; File Name: [Protector_ant2_yplm_1.da4](#)

DUT: Ascom; Type: Protector MKII;

Program Name: Cheek Left

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used (extrapolated): $f = 1924.99$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(5.18, 5.18, 5.18); Calibrated: 18.01.2006

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn335; Calibrated: 17.03.2005

- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340

- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Left/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.008 mW/g

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

Reference Value = 2.11 V/m; Power Drift = -0.033 dB

Peak SAR (extrapolated) = 0.013 W/kg

SAR(1 g) = 0.0081 mW/g; SAR(10 g) = 0.00491 mW/g

Maximum value of SAR (measured) = 0.009 mW/g

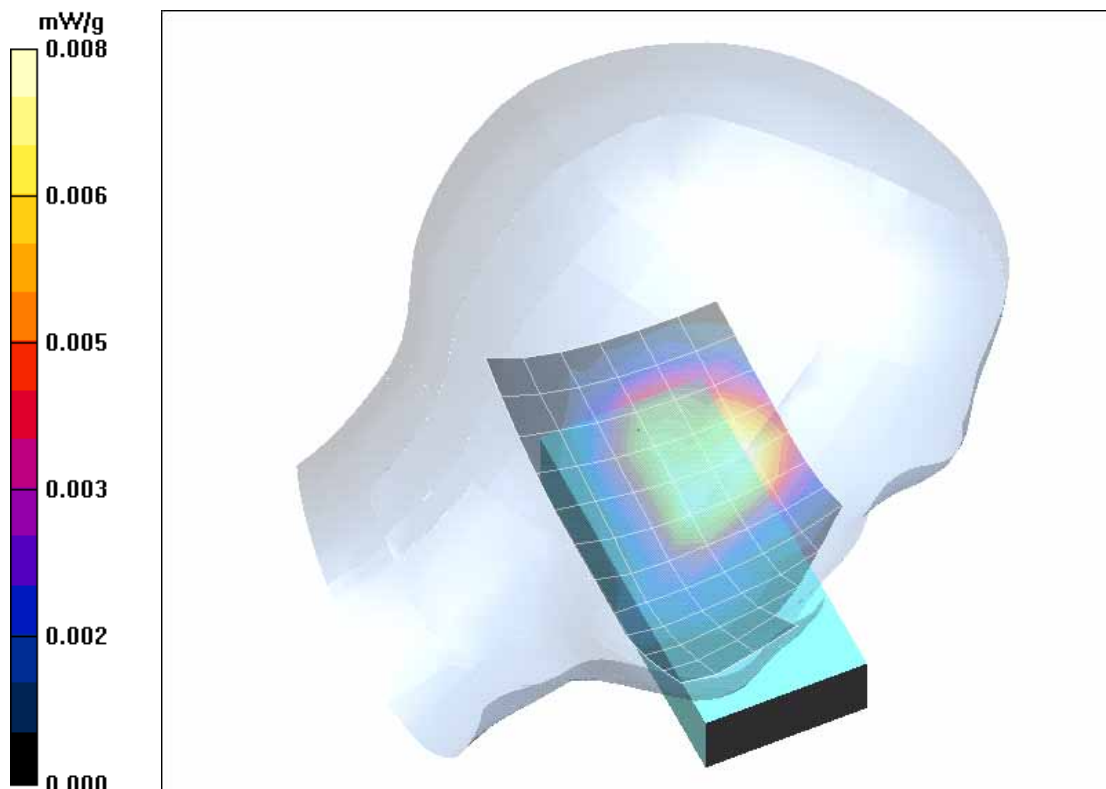


Fig. 5: SAR distribution for DECT US, channel 2, cheek position, left side of head (February 06, 2006; Ambient Temperature: 22.1°C; Liquid Temperature: 21.5°C).

Test Laboratory: Imst GmbH; File Name: [Protector_ant2_yplm_2.da4](#)

DUT: Ascom; Type: Protector MKII;

Program Name: Tilted Left

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used (extrapolated): $f = 1924.99$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(5.18, 5.18, 5.18); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Tilted Left/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.005 mW/g

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

Reference Value = 1.94 V/m; Power Drift = 0.173 dB

Peak SAR (extrapolated) = 0.008 W/kg

SAR(1 g) = 0.00494 mW/g; SAR(10 g) = 0.00293 mW/g

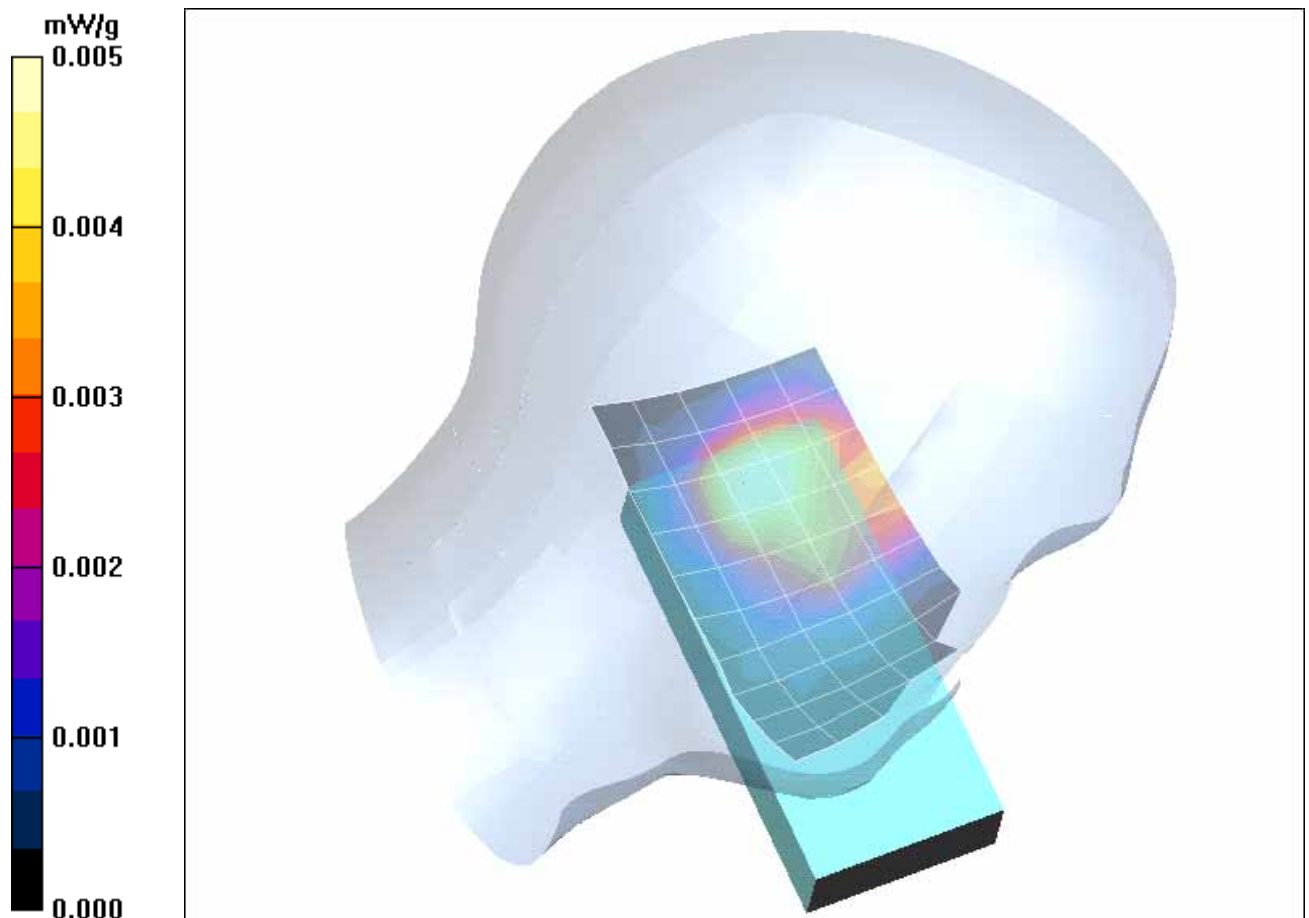


Fig. 6: SAR distribution for DECT US, channel 2, tilted position, left side of head (February 06, 2006; Ambient Temperature: 22.0°C; Liquid Temperature: 21.4°C).

Test Laboratory: Imst GmbH; **File Name:** [Protector_ant2_yprm_1.da4](#)

DUT: Ascom; **Type:** Protector MKII;

Program Name: Cheek Right

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used (extrapolated): $f = 1924.99$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(5.18, 5.18, 5.18); Calibrated: 18.01.2006

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn335; Calibrated: 17.03.2005

- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340

- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Right/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.007 mW/g

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

Reference Value = 2.11 V/m; Power Drift = -0.052 dB

Peak SAR (extrapolated) = 0.009 W/kg

SAR(1 g) = 0.0061 mW/g; SAR(10 g) = 0.00363 mW/g

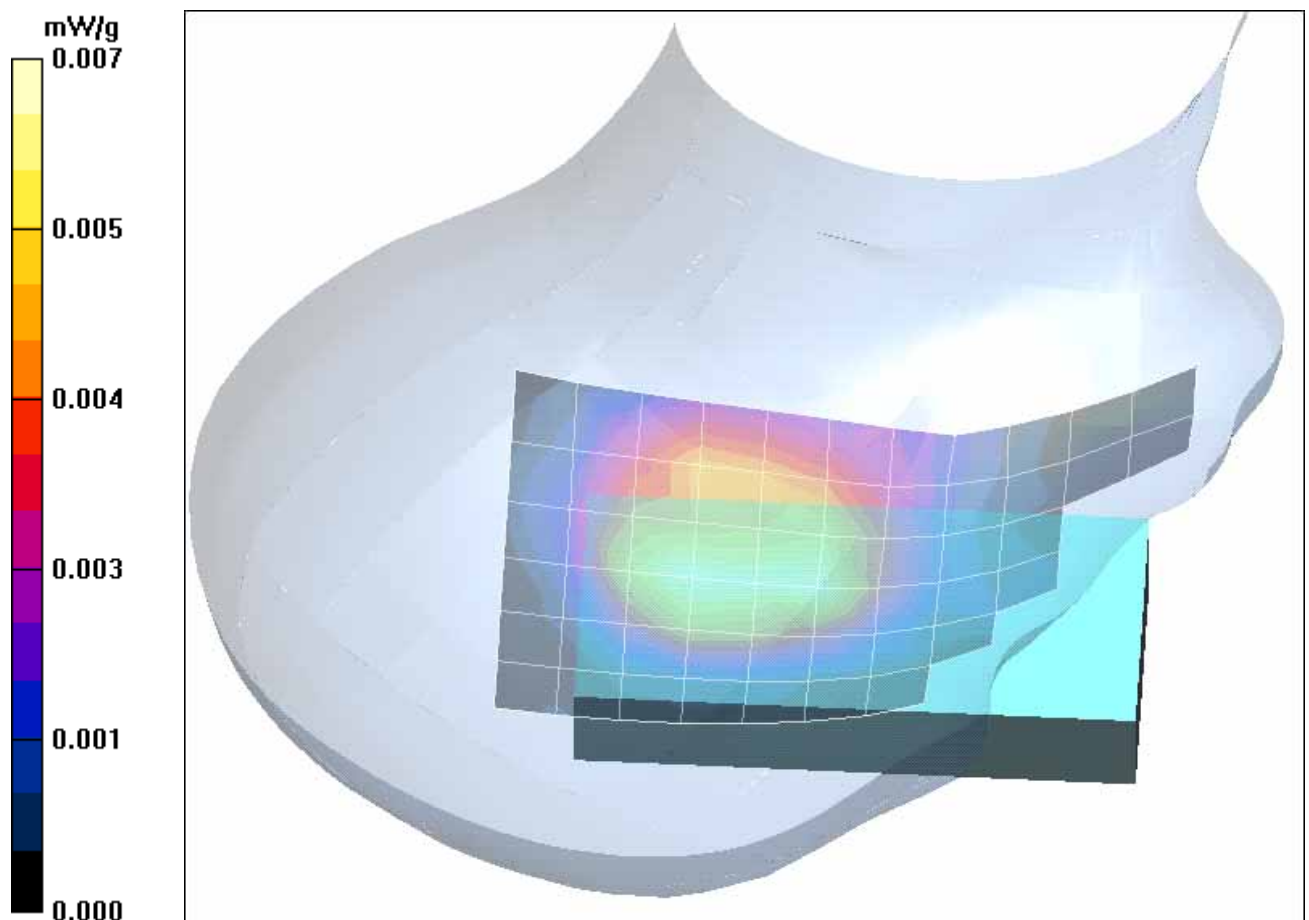


Fig. 7: SAR distribution for DECT US, channel 2, cheek position, right side of head (February 06, 2006; Ambient Temperature: 22.0° C; Liquid Temperature : 21.4° C).

Test Laboratory: Imst GmbH; **File Name:** [Protector_ant2_yprm_2.da4](#)

DUT: Ascom; **Type:** Protector MKII;

Program Name: Tilted Right

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used (extrapolated): $f = 1924.99$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(5.18, 5.18, 5.18); Calibrated: 18.01.2006

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn335; Calibrated: 17.03.2005

- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340

- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Tilted Right/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.005 mW/g

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

Reference Value = 1.97 V/m; Power Drift = -0.188 dB

Peak SAR (extrapolated) = 0.008 W/kg

SAR(1 g) = 0.0049 mW/g; SAR(10 g) = 0.00278 mW/g

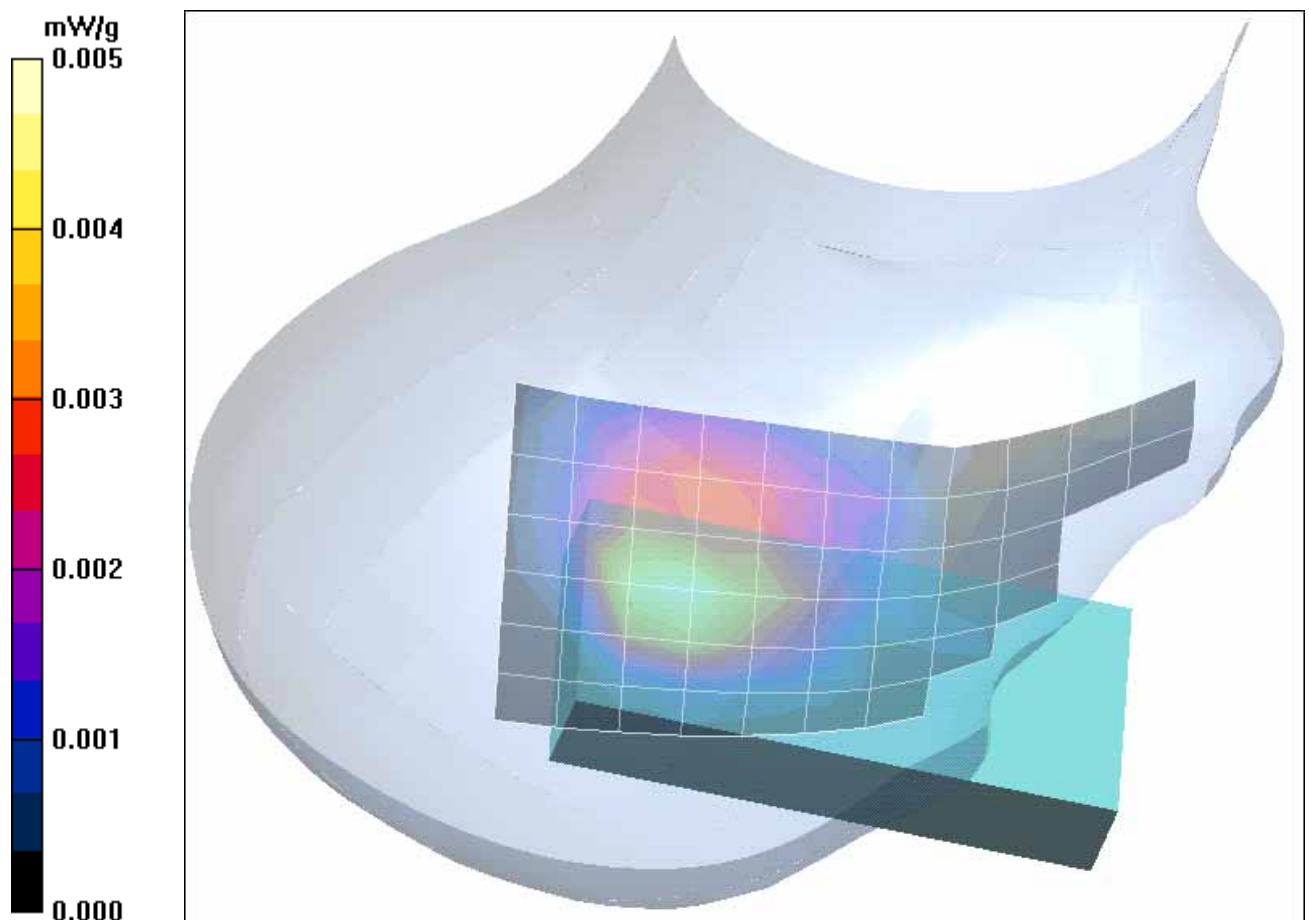


Fig. 8: SAR distribution for DECT US, channel 2, tilted position, right side of head (February 06, 2006; Ambient Temperature: 22.1 °C; Liquid Temperature : 21.5° C)

3 SAR Distribution Plots, Body Measurements, Antenna 1

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [Protector_ant1_yphm_1.da4](#)

DUT: Ascom; Type: Protector MKII;

Program Name: Body

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used (extrapolated): $f = 1924.99$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(4.55, 4.55, 4.55); Calibrated: 18.01.2006

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE4 Sn631; Calibrated: 07.07.2005

- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176

- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Body/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.027 mW/g

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

Reference Value = 2.92 V/m; Power Drift = 0.077 dB

Peak SAR (extrapolated) = 0.046 W/kg

SAR(1 g) = 0.025 mW/g; SAR(10 g) = 0.014 mW/g

Maximum value of SAR (measured) = 0.028 mW/g

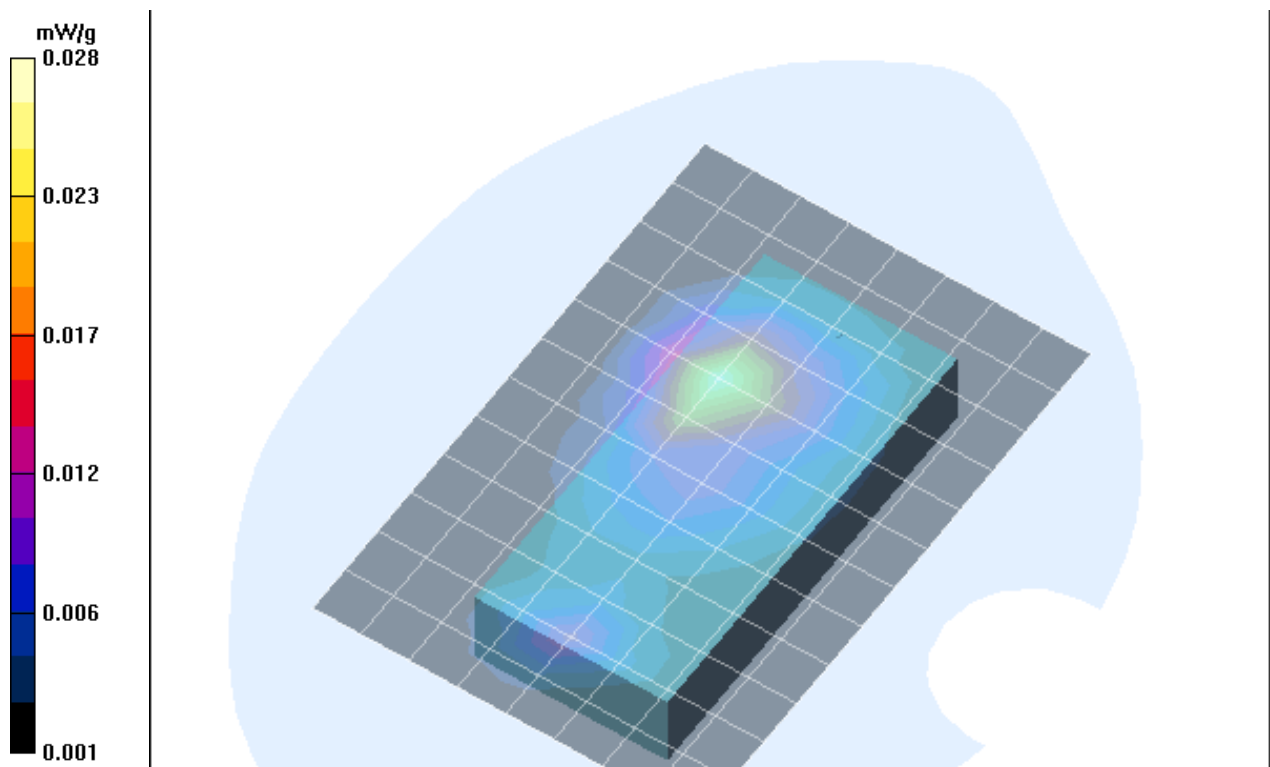


Fig. 9: SAR distribution for DECT US, channel 2, body worn configuration, display towards the ground, with headset and 0 mm distance (February 07, 2006; Ambient Temperature: 22.0° C; Liquid Temperature: 21.5° C).

4 SAR Distribution Plots, Body Measurements, Antenna 2

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [Protector_ant2_yphm_1.da4](#)

DUT: Ascom; Type: Protector MKII;

Program Name: Body

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used (extrapolated): $f = 1924.99$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 52.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(4.55, 4.55, 4.55); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 07.07.2005
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Body/Area Scan (9x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.027 mW/g

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

Reference Value = 2.96 V/m; Power Drift = -0.191 dB

Peak SAR (extrapolated) = 0.046 W/kg

SAR(1 g) = 0.0255 mW/g; SAR(10 g) = 0.0142 mW/g

Maximum value of SAR (measured) = 0.028 mW/g

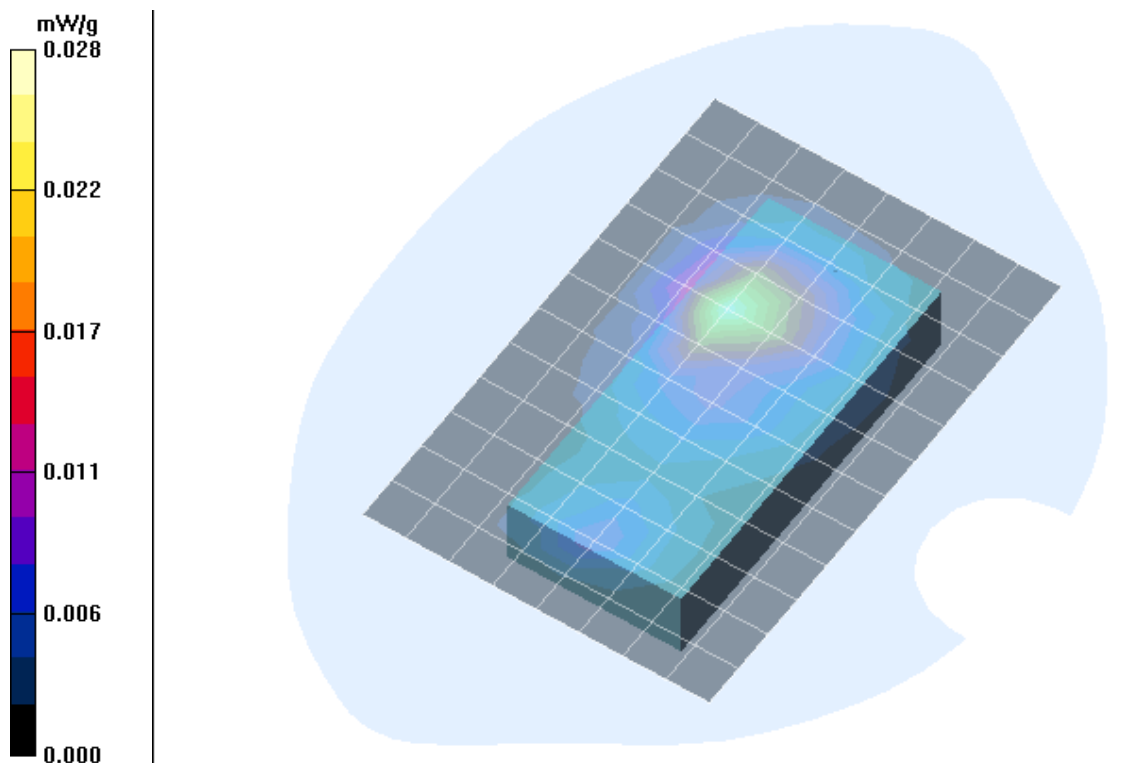


Fig. 10: SAR distribution for DECT US, channel 2, body worn configuration, display towards the ground, with headset and 0 mm distance (February 07, 2006; Ambient Temperature: 22.0° C; Liquid Temperature: 21.5° C).

5 SAR z-axis scans (Validation)

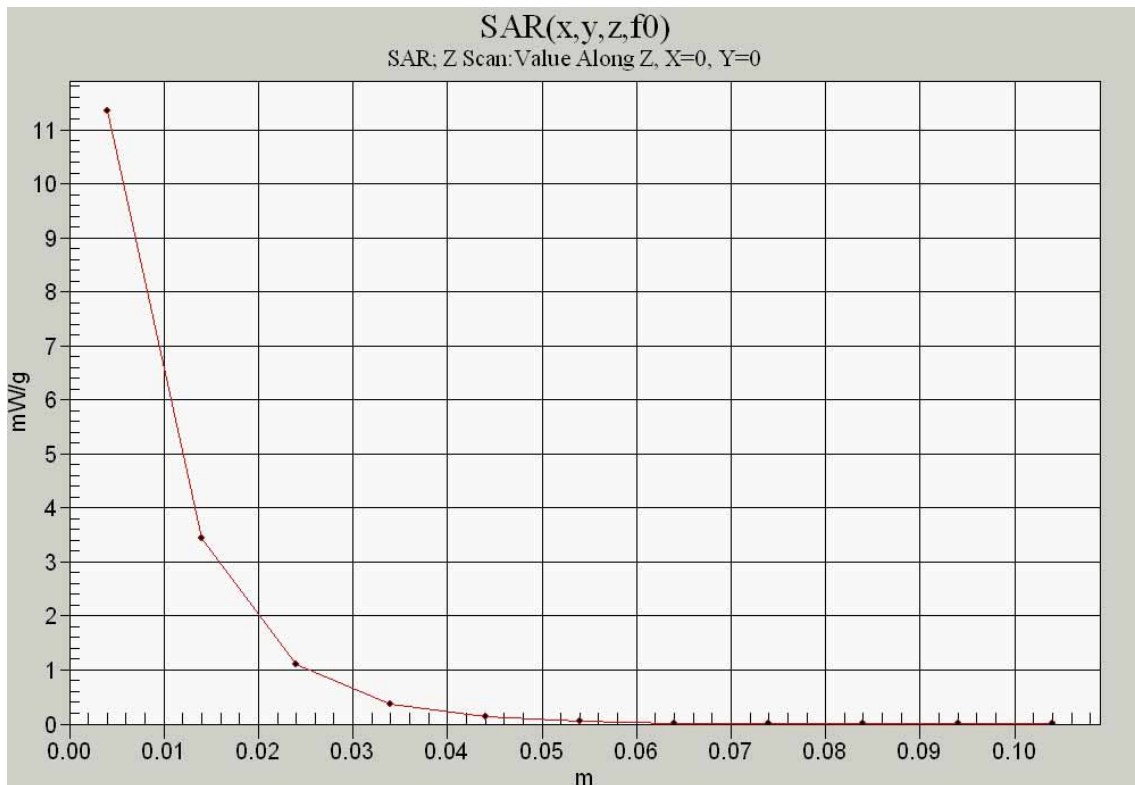


Fig. 11: SAR versus liquid depth, 1900 MHz, head (February 06, 2006; Ambient Temperature: 22.1° C; Liquid Temperature : 21.5° C).

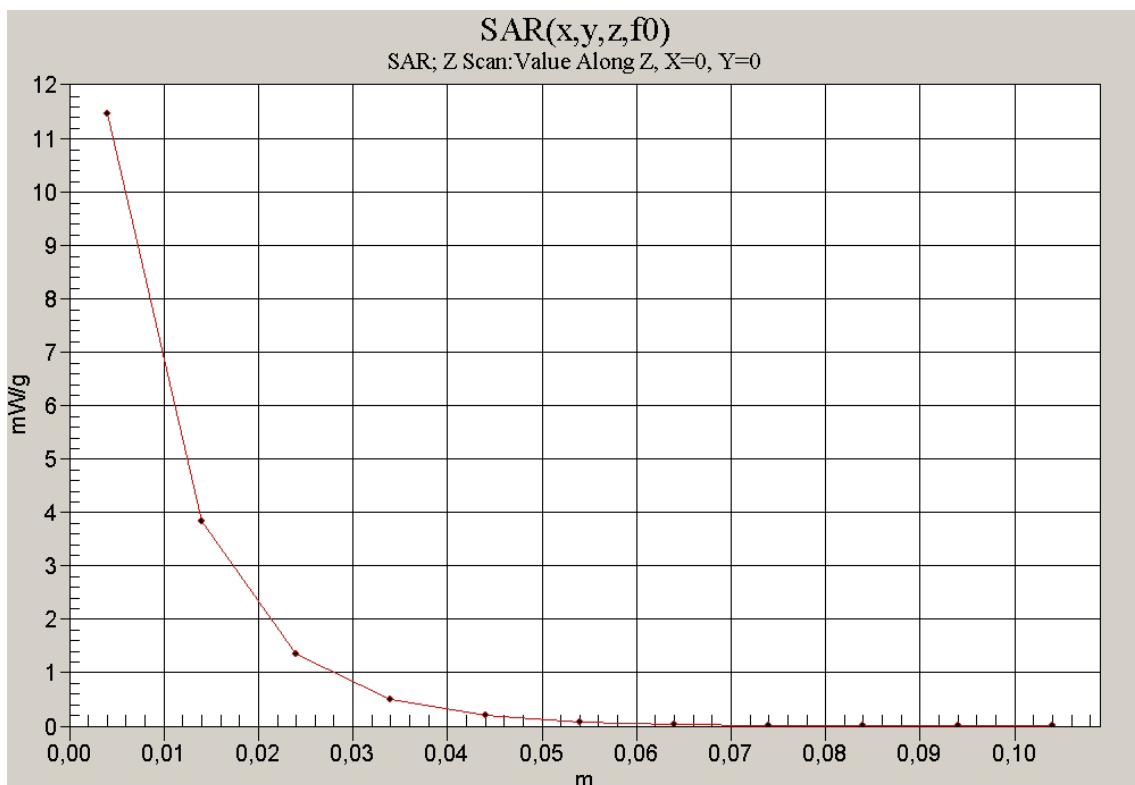


Fig. 12: SAR versus liquid depth, 1900 MHz, body (February 07, 2006; Ambient Temperature: 22.0° C; Liquid Temperature : 21.5° C).

6 SAR z-axis scans (Measurements)

The following pictures show the plots of SAR versus liquid depth for the worst case values.

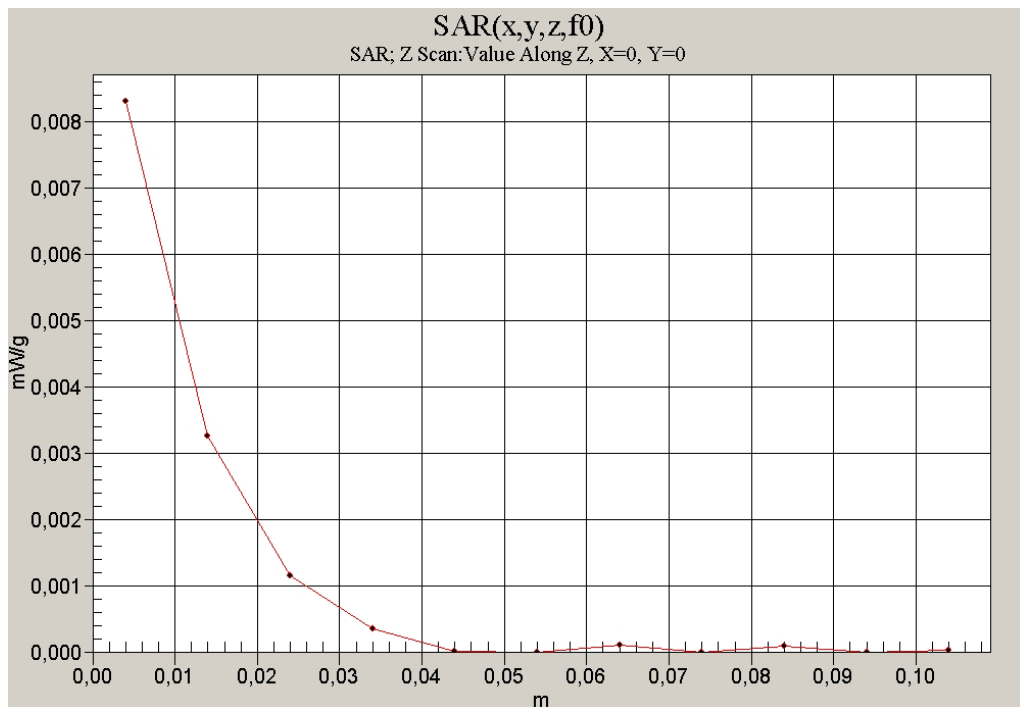


Fig. 13: SAR versus liquid depth, head: DECT US, channel 2, cheek position, left side of head, antenna 2 (February 06, 2006; Ambient Temperature: 22.1° C; Liquid Temperature : 21.5° C).

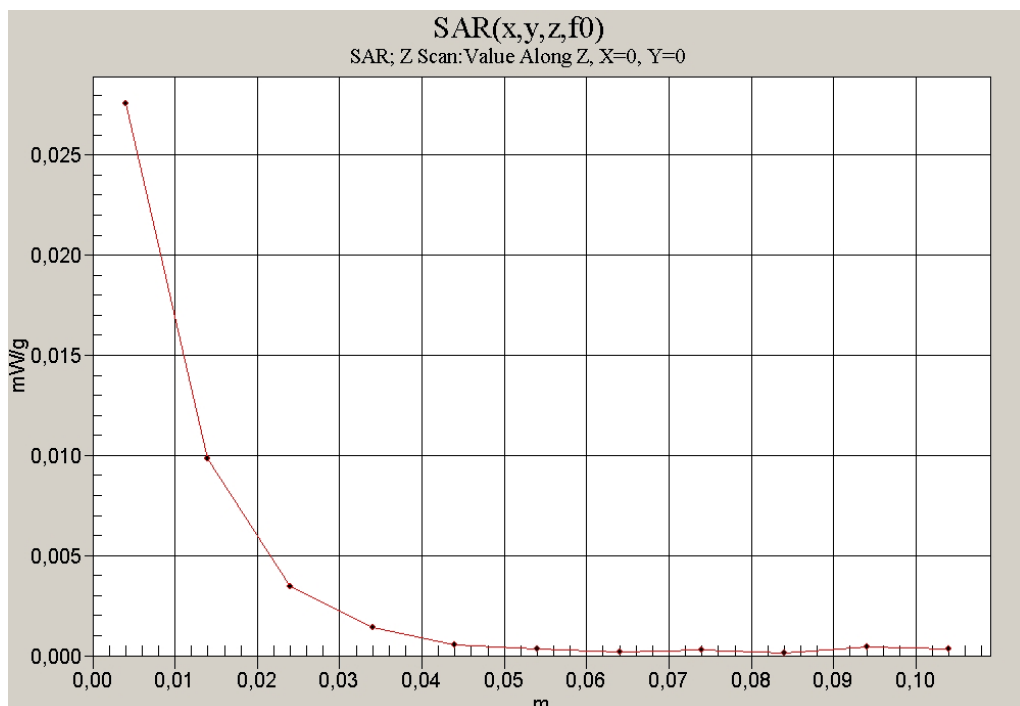


Fig. 14: SAR versus liquid depth, body: DECT US 1900, channel 2, headset and 0 mm distance, antenna 2 (February 07, 2006; Ambient Temperature: 22.0° C; Liquid Temperature: 21.5° C).