
Appendix for the Report

Dosimetric Assessment of the BenQ Siemens A31a (FCC ID: PWX-A31a)

According to the FCC Requirements

SAR Distribution Plots

February 02, 2006
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The test results only relate to the items tested.
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1 SAR Distribution Plots, GSM 850 Head

Test Laboratory: Imst GmbH; File Name: [991yalm_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Left

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 836.6$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Left/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.862 mW/g

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

Reference Value = 26.2 V/m; Power Drift = -0.164 dB

Peak SAR (extrapolated) = 1.21 W/kg

SAR(1 g) = 0.859 mW/g; SAR(10 g) = 0.603 mW/g

Maximum value of SAR (measured) = 0.911 mW/g

Cheek Left/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 26.2 V/m; Power Drift = -0.164 dB

Peak SAR (extrapolated) = 1.03 W/kg

SAR(1 g) = 0.792 mW/g; SAR(10 g) = 0.539 mW/g

Maximum value of SAR (measured) = 0.849 mW/g

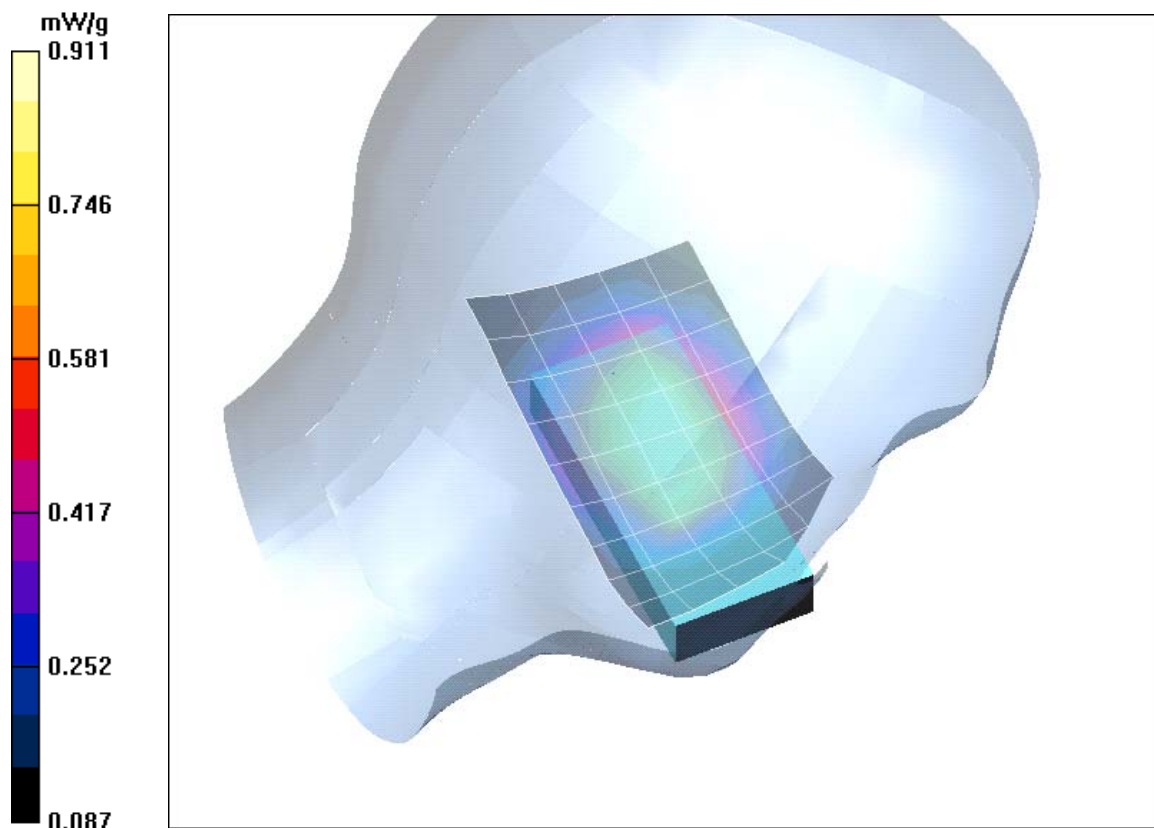


Fig. 1: SAR distribution for GSM 850, channel 190, cheek position, left side of head (January 30, 2006; Ambient Temperature: 21.6°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yalm 2.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Tilted Left

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 836.6$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Tilted Left/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.650 mW/g

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

Reference Value = 27.3 V/m; Power Drift = -0.113 dB

Peak SAR (extrapolated) = 0.854 W/kg

SAR(1 g) = 0.637 mW/g; SAR(10 g) = 0.446 mW/g

Maximum value of SAR (measured) = 0.679 mW/g

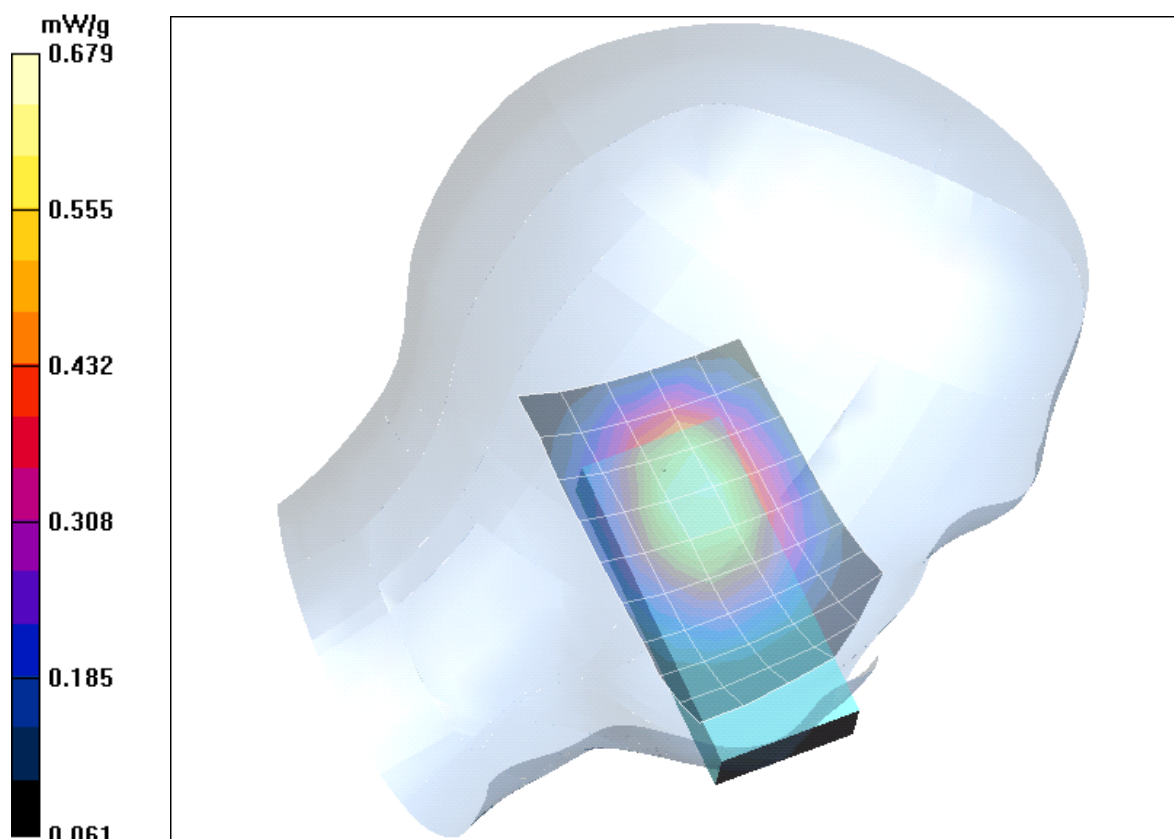


Fig. 2: SAR distribution for GSM 850, channel 190, tilted position, left side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yarm_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Right

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 836.6$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Right/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.918 mW/g

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

Reference Value = 24.9 V/m; Power Drift = -0.038 dB

Peak SAR (extrapolated) = 1.29 W/kg

SAR(1 g) = 0.894 mW/g; SAR(10 g) = 0.646 mW/g

Maximum value of SAR (measured) = 0.961 mW/g

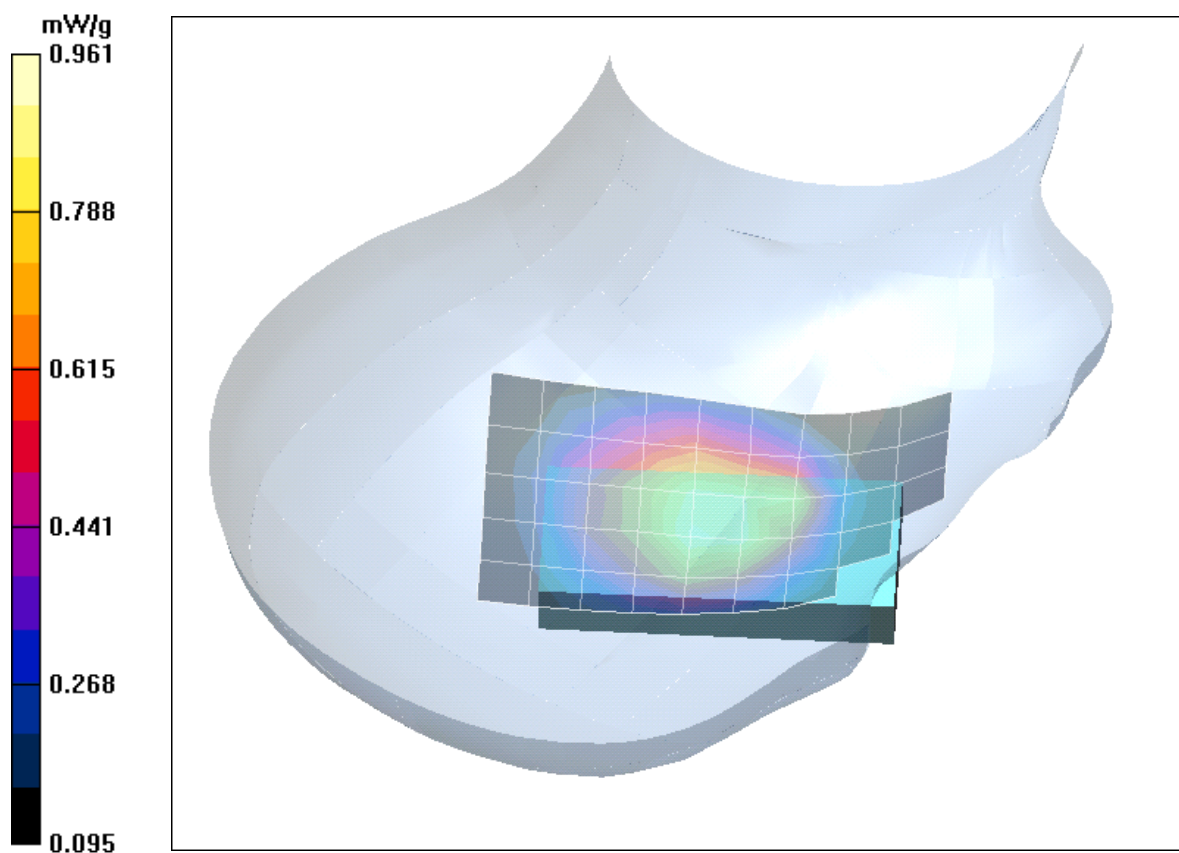


Fig. 3: SAR distribution for GSM 850, channel 190, cheek position, right side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yarm 2.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Tilted Right

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 836.6$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Tilted Right/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.754 mW/g

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

Reference Value = 28.0 V/m; Power Drift = -0.093 dB

Peak SAR (extrapolated) = 0.982 W/kg

SAR(1 g) = 0.738 mW/g; SAR(10 g) = 0.523 mW/g

Maximum value of SAR (measured) = 0.787 mW/g

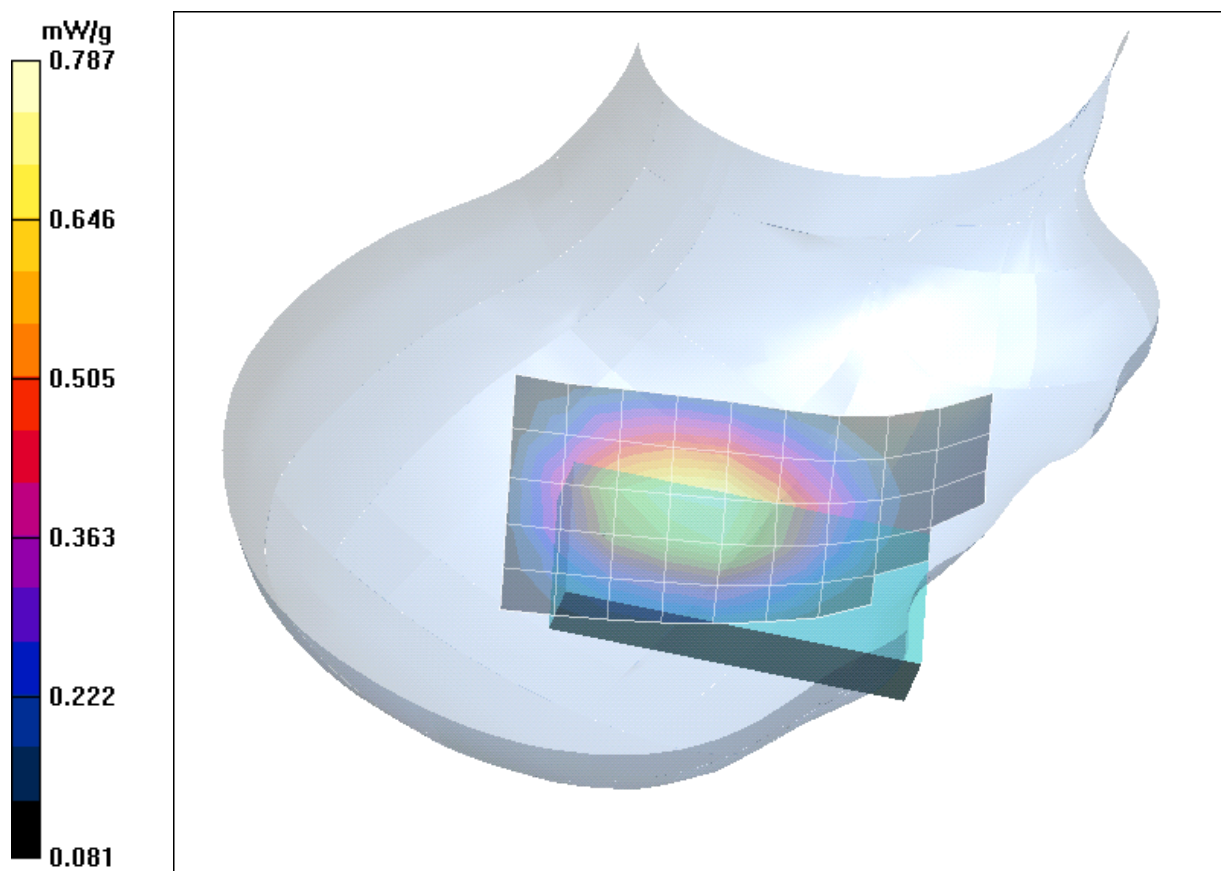


Fig. 4: SAR distribution for GSM 850, channel 190, tilted position, right side of head (January 30, 2006; Ambient Temperature: 21.8°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991vall_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Left

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 824.2$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Left/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.784 mW/g

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

Reference Value = 24.3 V/m; Power Drift = 0.119 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.758 mW/g; SAR(10 g) = 0.544 mW/g

Maximum value of SAR (measured) = 0.831 mW/g

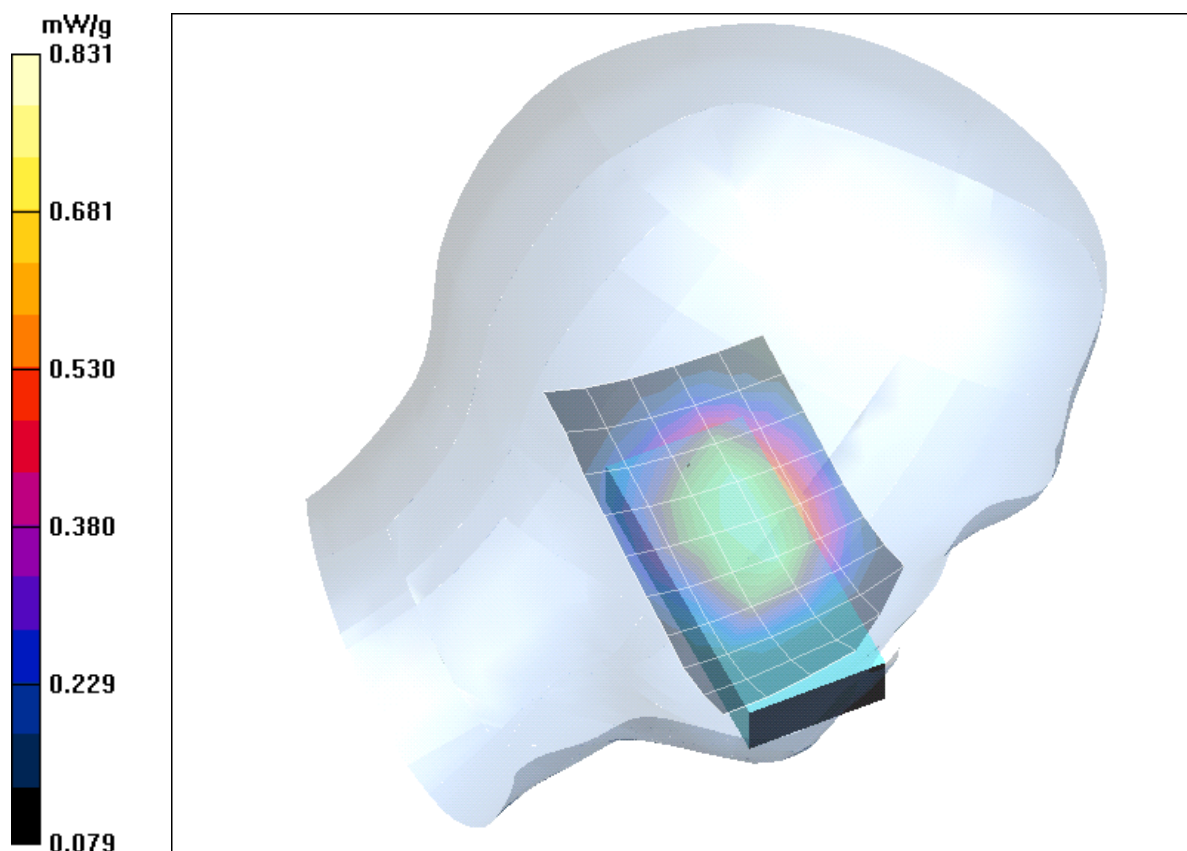


Fig. 5: SAR distribution for GSM 850, channel 128, cheek position, left side of head (January 30, 2006; Ambient Temperature: 21.6°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yalh_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Left

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 848.8$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Left/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.921 mW/g

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

Reference Value = 25.9 V/m; Power Drift = 0.070 dB

Peak SAR (extrapolated) = 1.25 W/kg

SAR(1 g) = 0.909 mW/g; SAR(10 g) = 0.642 mW/g

Maximum value of SAR (measured) = 0.967 mW/g

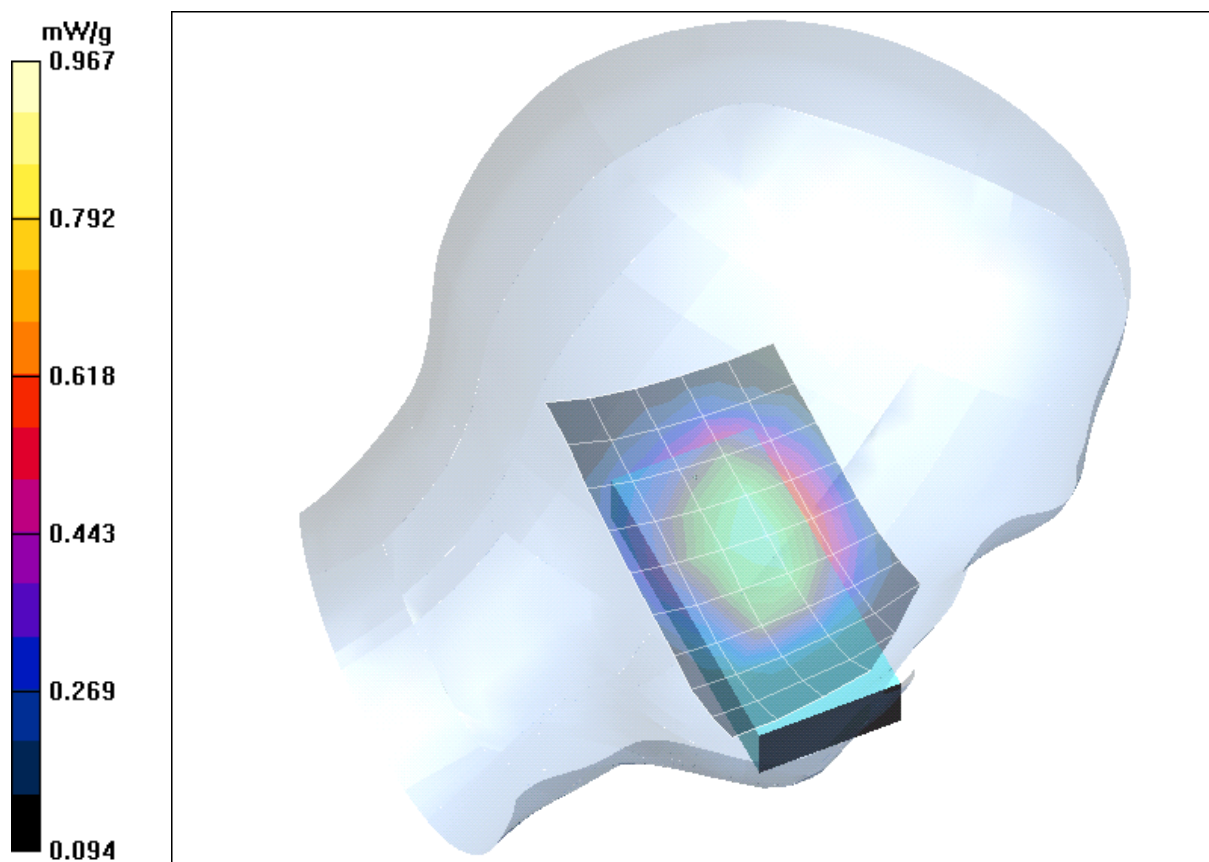


Fig. 6: SAR distribution for GSM 850, channel 251, cheek position, left side of head (January 30, 2006; Ambient Temperature: 21.6°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yarl_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Right

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 824.2$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Right/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.817 mW/g

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

Reference Value = 23.4 V/m; Power Drift = 0.046 dB

Peak SAR (extrapolated) = 1.10 W/kg

SAR(1 g) = 0.785 mW/g; SAR(10 g) = 0.567 mW/g

Maximum value of SAR (measured) = 0.864 mW/g

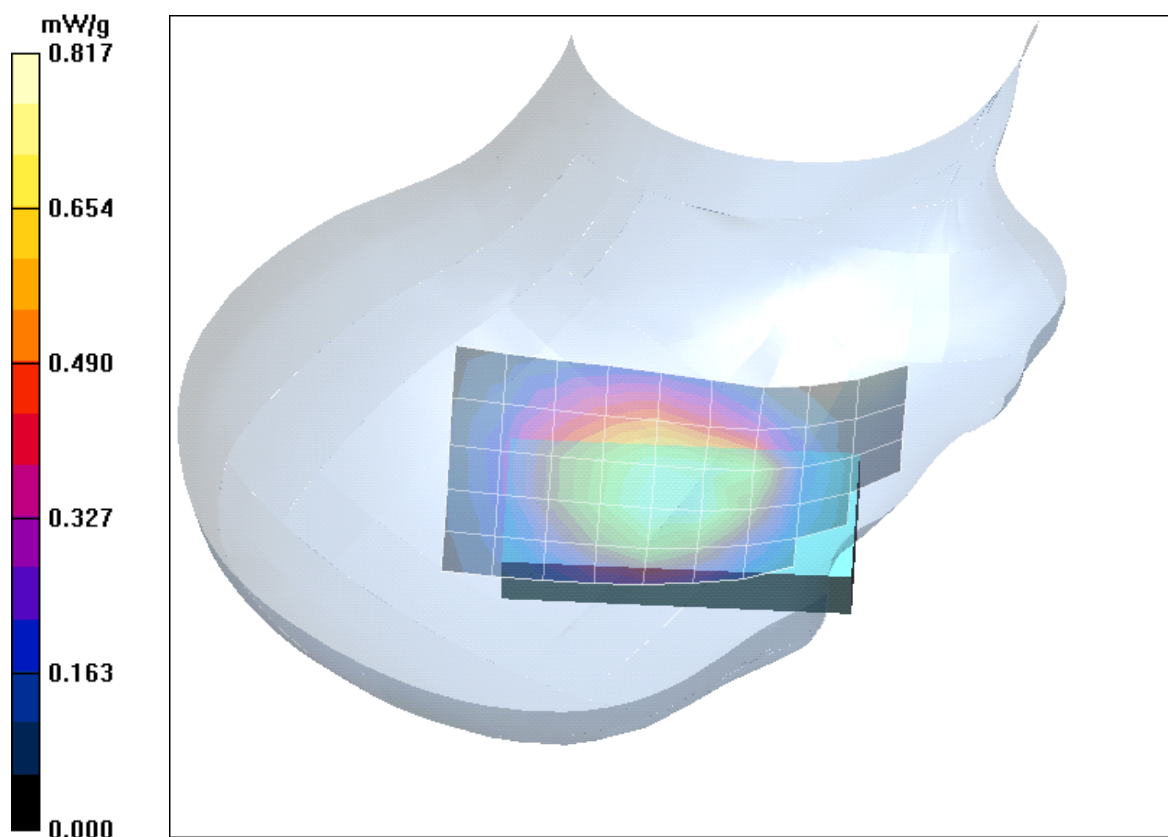


Fig. 7: SAR distribution for GSM 850, channel 128, cheek position, right side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yarh_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Right

Communication System: GSM 850; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 848.8$ MHz; $\sigma = 0.89$ mho/m; $\epsilon_r = 40.7$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1579; ConvF(6.62, 6.62, 6.62); Calibrated: 18.01.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 17.03.2005
- Phantom: SAM Sugar 1341; Type: QD 000 P40 CB; Serial: TP-1341
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

Cheek Right/Area Scan (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.987 mW/g

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

Reference Value = 25.3 V/m; Power Drift = -0.054 dB

Peak SAR (extrapolated) = 1.34 W/kg

SAR(1 g) = 0.950 mW/g; SAR(10 g) = 0.681 mW/g

Maximum value of SAR (measured) = 1.01 mW/g

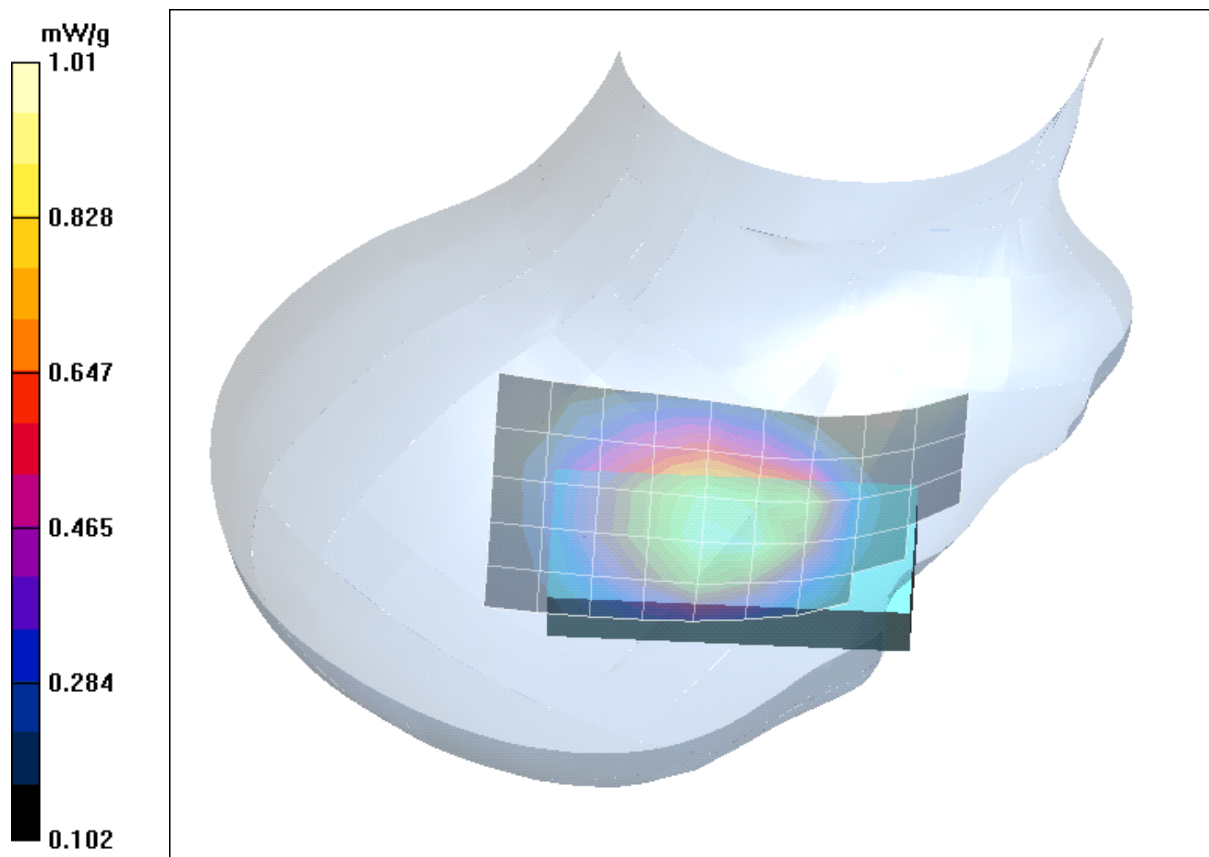


Fig. 8: SAR distribution for GSM 850, channel 251, cheek position, right side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

2 SAR Distribution Plots, PCS 1900 Head

Test Laboratory: Imst GmbH; File Name: [991yplm_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Left

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ 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 (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.477 mW/g

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

Reference Value = 18.7 V/m; Power Drift = -0.117 dB

Peak SAR (extrapolated) = 0.704 W/kg

SAR(1 g) = 0.440 mW/g; SAR(10 g) = 0.248 mW/g

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

Cheek Left/Zoom Scan (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.7 V/m; Power Drift = -0.117 dB

Peak SAR (extrapolated) = 0.426 W/kg

SAR(1 g) = 0.292 mW/g; SAR(10 g) = 0.182 mW/g

Maximum value of SAR (measured) = 0.322 mW/g

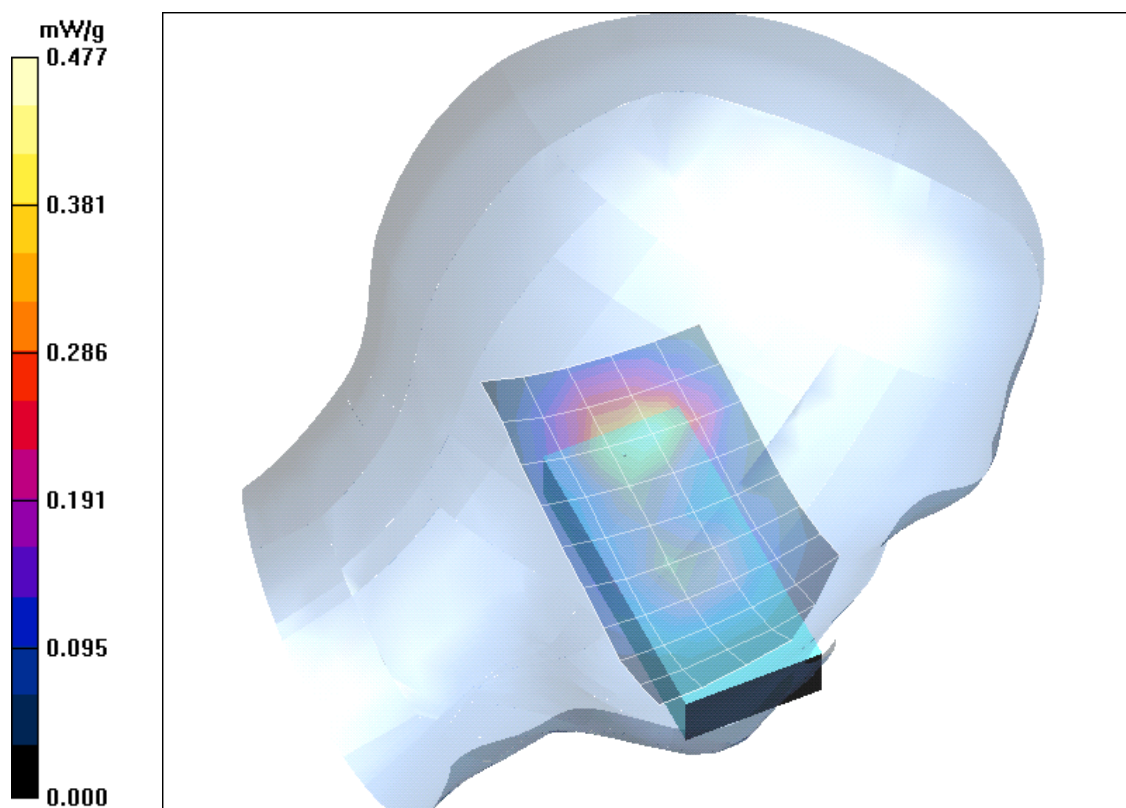


Fig. 9: SAR distribution for PCS 1900, channel 661, cheek position, left side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yplm_2.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Tilted Left

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ 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 (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.445 mW/g

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

Reference Value = 17.8 V/m; Power Drift = 0.061 dB

Peak SAR (extrapolated) = 0.712 W/kg

SAR(1 g) = 0.412 mW/g; SAR(10 g) = 0.230 mW/g

Maximum value of SAR (measured) = 0.449 mW/g

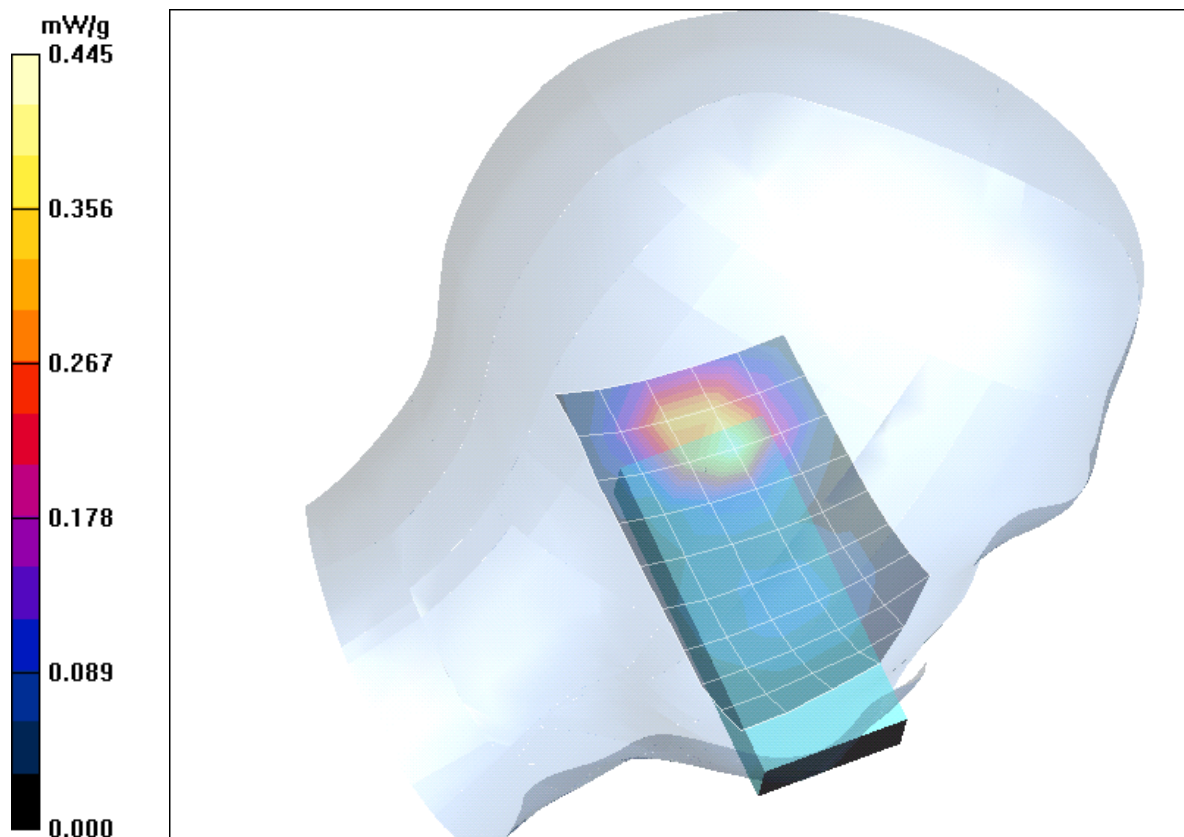


Fig. 10: SAR distribution for PCS 1900, channel 661, tilted position, left side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yprm_1.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Cheek Right

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ 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 (6x10x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.434 mW/g

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

Reference Value = 17.7 V/m; Power Drift = 0.046 dB

Peak SAR (extrapolated) = 0.719 W/kg

SAR(1 g) = 0.418 mW/g; SAR(10 g) = 0.248 mW/g

Maximum value of SAR (measured) = 0.456 mW/g

Cheek Right/Zoom Scan (7x7x7)/Cube 1: Measurement grid: $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 17.7 V/m; Power Drift = 0.046 dB

Peak SAR (extrapolated) = 0.418 W/kg

SAR(1 g) = 0.277 mW/g; SAR(10 g) = 0.171 mW/g

Maximum value of SAR (measured) = 0.321 mW/g

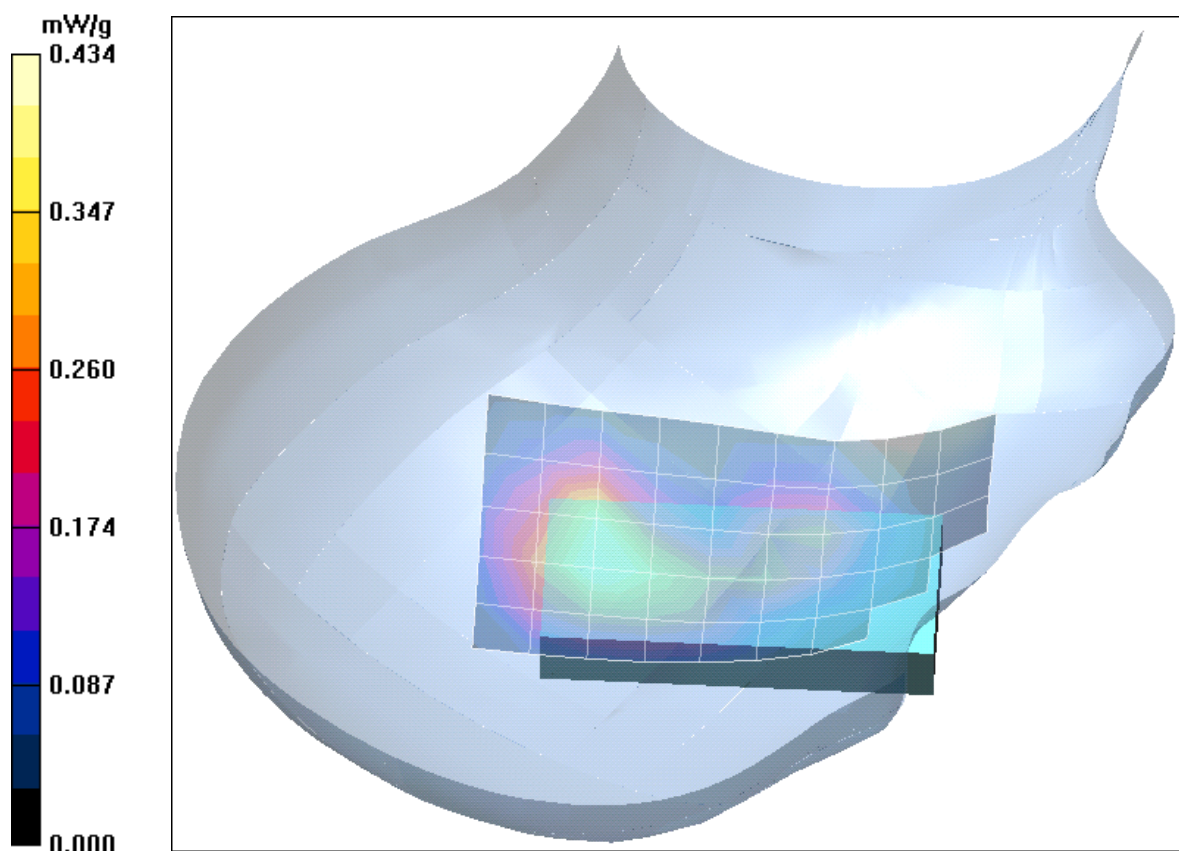


Fig. 11: SAR distribution for PCS 1900, channel 661, cheek position, right side of head (January 30, 2006; Ambient Temperature: 21.7°C; Liquid Temperature: 21.0°C).

Test Laboratory: Imst GmbH; File Name: [991yprm_2.da4](#)

DUT: BenQ A31a; Type: BenQ A31a; Serial: 004400017142991

Program Name: Tilted Right

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.46$ mho/m; $\epsilon_r = 38.5$; $\rho = 1000$ 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 (6x10x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.361 mW/g

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

Reference Value = 17.5 V/m; Power Drift = 0.065 dB

Peak SAR (extrapolated) = 0.651 W/kg

SAR(1 g) = 0.375 mW/g; SAR(10 g) = 0.212 mW/g

Maximum value of SAR (measured) = 0.412 mW/g

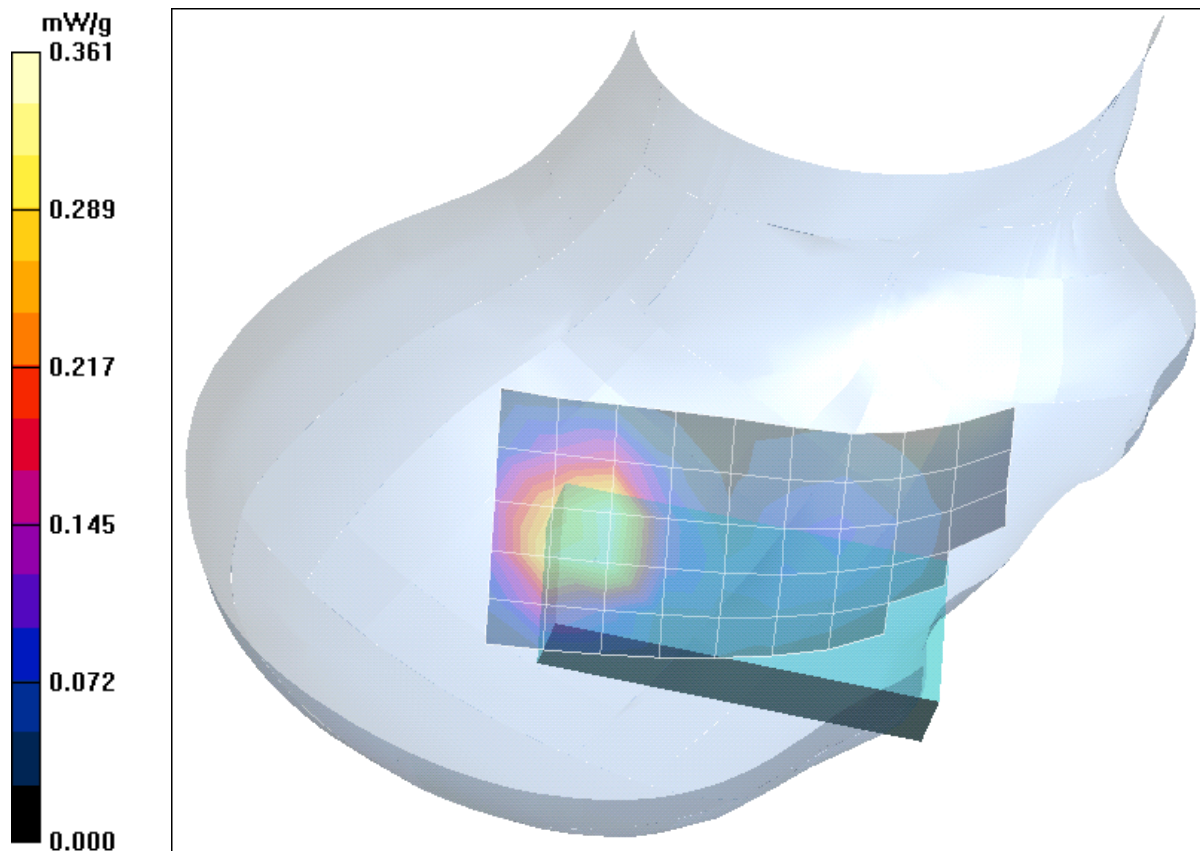


Fig. 12: SAR distribution for PCS 1900, channel 661, tilted position, right side of head (January 30, 2006; Ambient Temperature: 21.7 °C; Liquid Temperature: 21.0°C)

3 SAR Distribution Plots, GSM 850 Body GSM mode

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [991bahl 4 7mm ohne.da4](#)

DUT: BenQ A31a (Body Config); Type: BenQ A31a; Serial: 004400017142991

Program Name: Body Worn

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 824.2$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(9.74, 9.74, 9.74); Calibrated: 23.09.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 07.07.2005
- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

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

Maximum value of SAR (measured) = 1.13 mW/g

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

Reference Value = 26.9 V/m; Power Drift = 0.037 dB

Peak SAR (extrapolated) = 1.47 W/kg

SAR(1 g) = 1.07 mW/g; SAR(10 g) = 0.727 mW/g

Maximum value of SAR (measured) = 1.15 mW/g

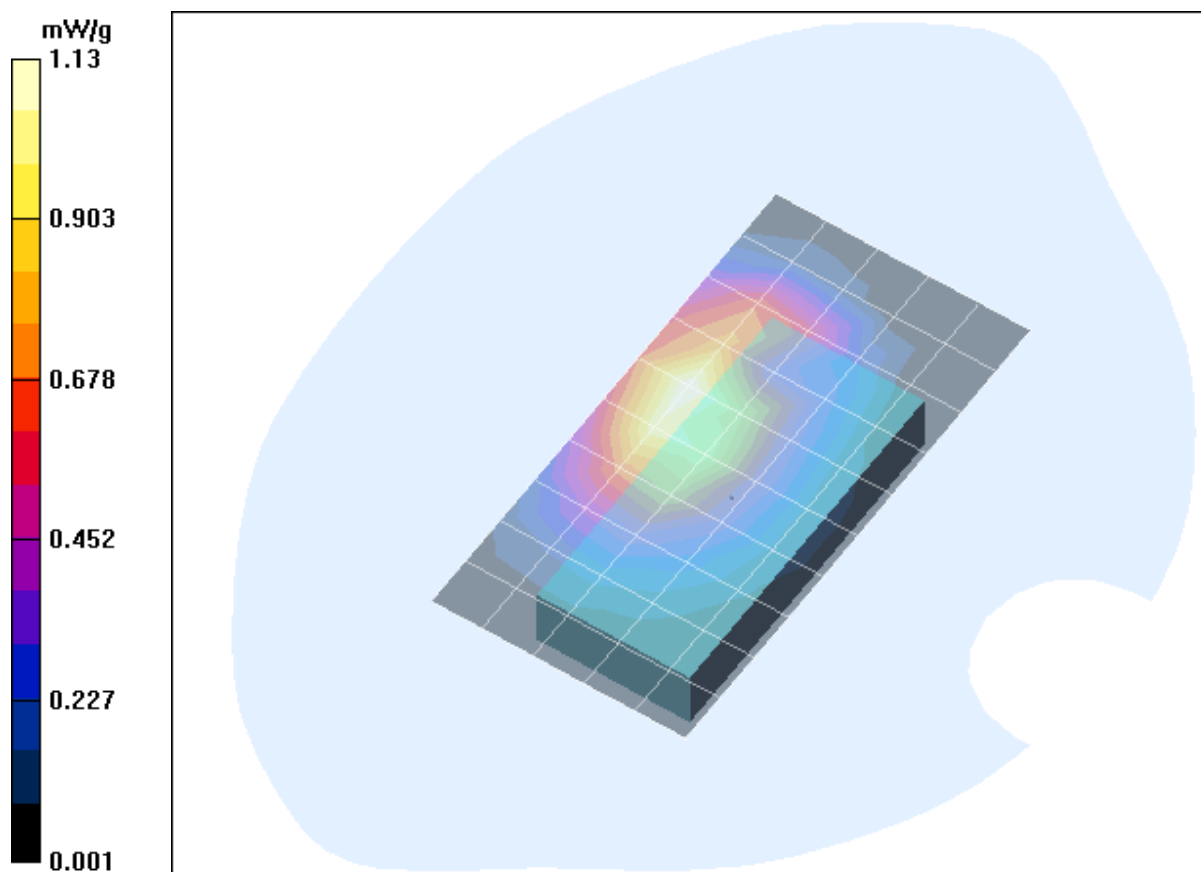


Fig. 13: SAR distribution for GSM 850, channel 128, body worn configuration, antenna towards the phantom, without accessory, with 7 mm distance (January 31, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.1° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [991bahl 5 7mm headset.da4](#)

DUT: BenQ A31a (Body Config); Type: BenQ A31a; Serial: 004400017142991
Program Name: Body Worn

Communication System: GSM 850; Frequency: 824.2 MHz; Duty Cycle: 1:8.3
Medium parameters used: $f = 824.2$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.5$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(9.74, 9.74, 9.74); Calibrated: 23.09.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 07.07.2005
- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

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

Maximum value of SAR (measured) = 1.01 mW/g

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

Reference Value = 26.0 V/m; Power Drift = -0.040 dB

Peak SAR (extrapolated) = 1.35 W/kg

SAR(1 g) = 0.967 mW/g; SAR(10 g) = 0.652 mW/g

Maximum value of SAR (measured) = 1.04 mW/g

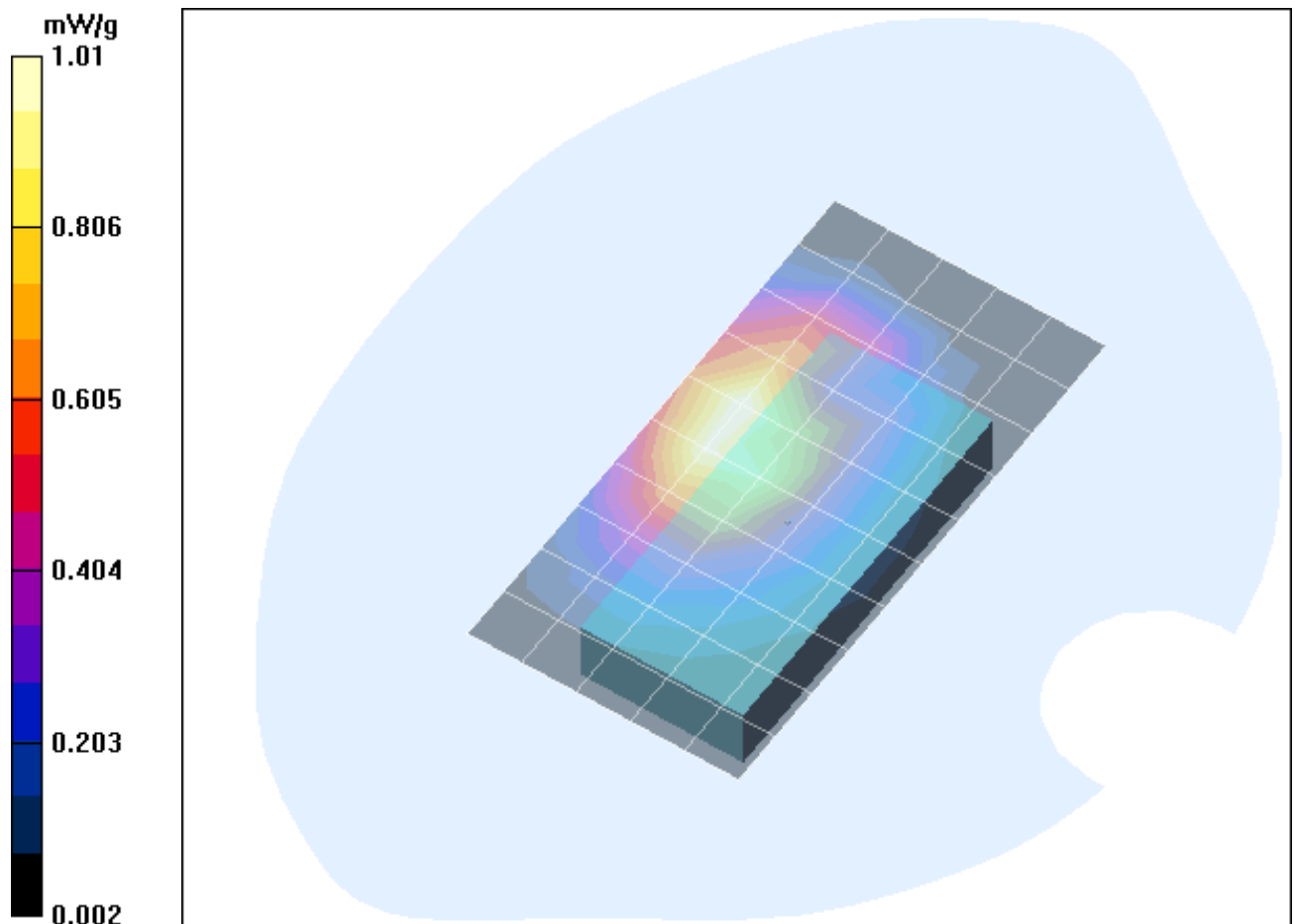


Fig. 14: SAR distribution for GSM 850, channel 128, body worn configuration, antenna towards the phantom, with headset, with 7 mm distance (January 31, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.0° C).

4 SAR Distribution Plots, GSM 850 Body in GPRS mode

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 991bahm_6_7mm_data.da4

DUT: BenQ A31a (Body Config); Type: BenQ A31a; Serial: 004400017142991

Program Name: Body Worn

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 836.6$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(9.74, 9.74, 9.74); Calibrated: 23.09.2005

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

- Electronics: DAE4 Sn631; Calibrated: 07.07.2005

- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059

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

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

Maximum value of SAR (measured) = 0.640 mW/g

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

Reference Value = 19.7 V/m; Power Drift = 0.019 dB

Peak SAR (extrapolated) = 0.852 W/kg

SAR(1 g) = 0.597 mW/g; SAR(10 g) = 0.397 mW/g

Maximum value of SAR (measured) = 0.645 mW/g

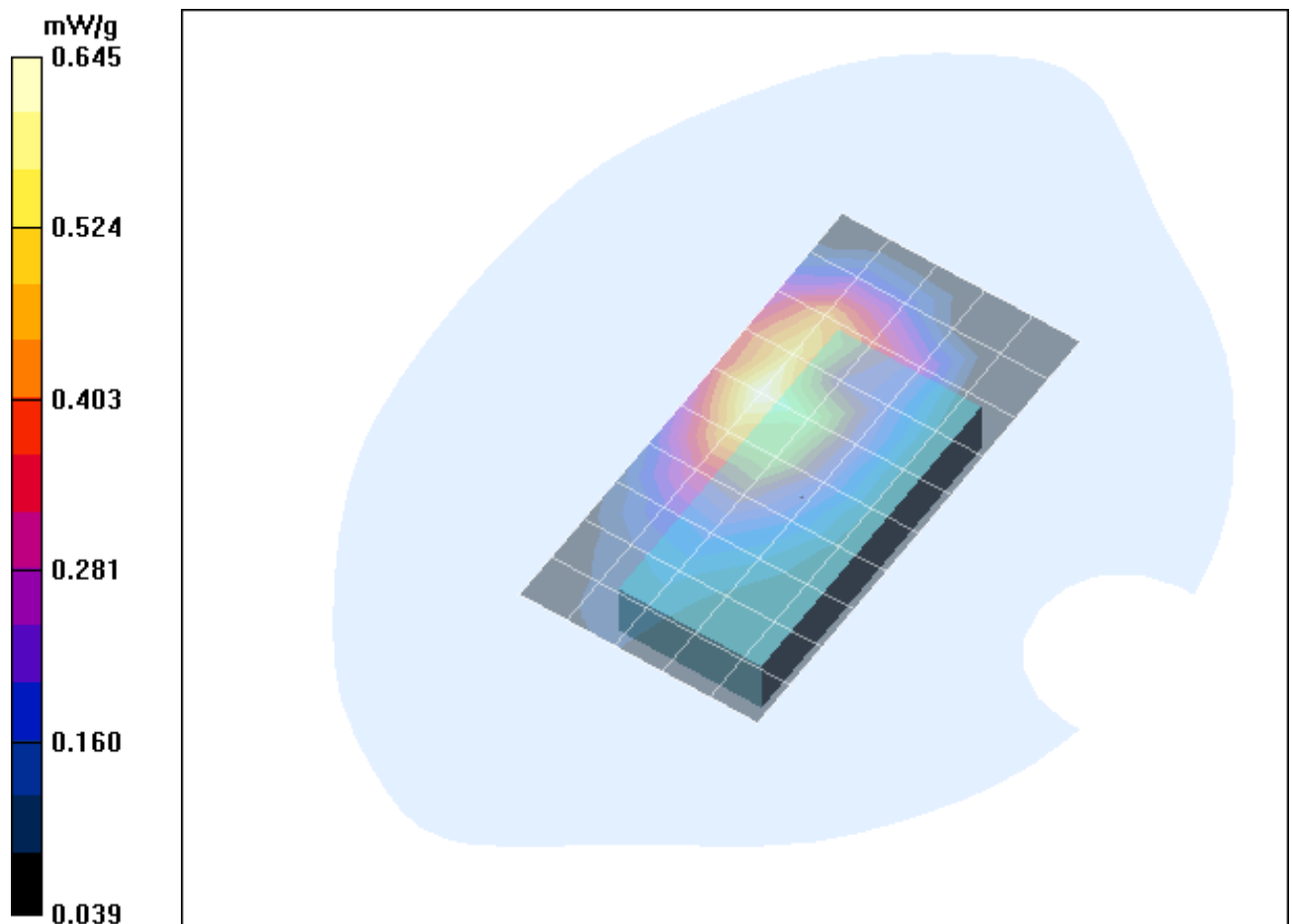


Fig. 15: SAR distribution for GPRS 850, channel 190, body worn configuration, antenna towards the phantom, with data cable, with 7 mm distance (January 31, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.1° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [991bahm_7_25mm_PTT.da4](#)

DUT: BenQ A31a (Body Config); Type: BenQ A31a; Serial: 004400017142991
Program Name: Body Worn

Communication System: GSM 850; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium parameters used: $f = 836.6$ MHz; $\sigma = 1.01$ mho/m; $\epsilon_r = 53.5$; $\rho = 1000$ kg/m³
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(9.74, 9.74, 9.74); Calibrated: 23.09.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 07.07.2005
- Phantom: SAM Sugar 1059; Type: Speag; Serial: 1059
- Measurement SW: DASY4, V4.6 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 159

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

Maximum value of SAR (measured) = 0.376 mW/g

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

Reference Value = 18.3 V/m; Power Drift = -0.035 dB

Peak SAR (extrapolated) = 0.482 W/kg

SAR(1 g) = 0.361 mW/g; SAR(10 g) = 0.261 mW/g

Maximum value of SAR (measured) = 0.383 mW/g

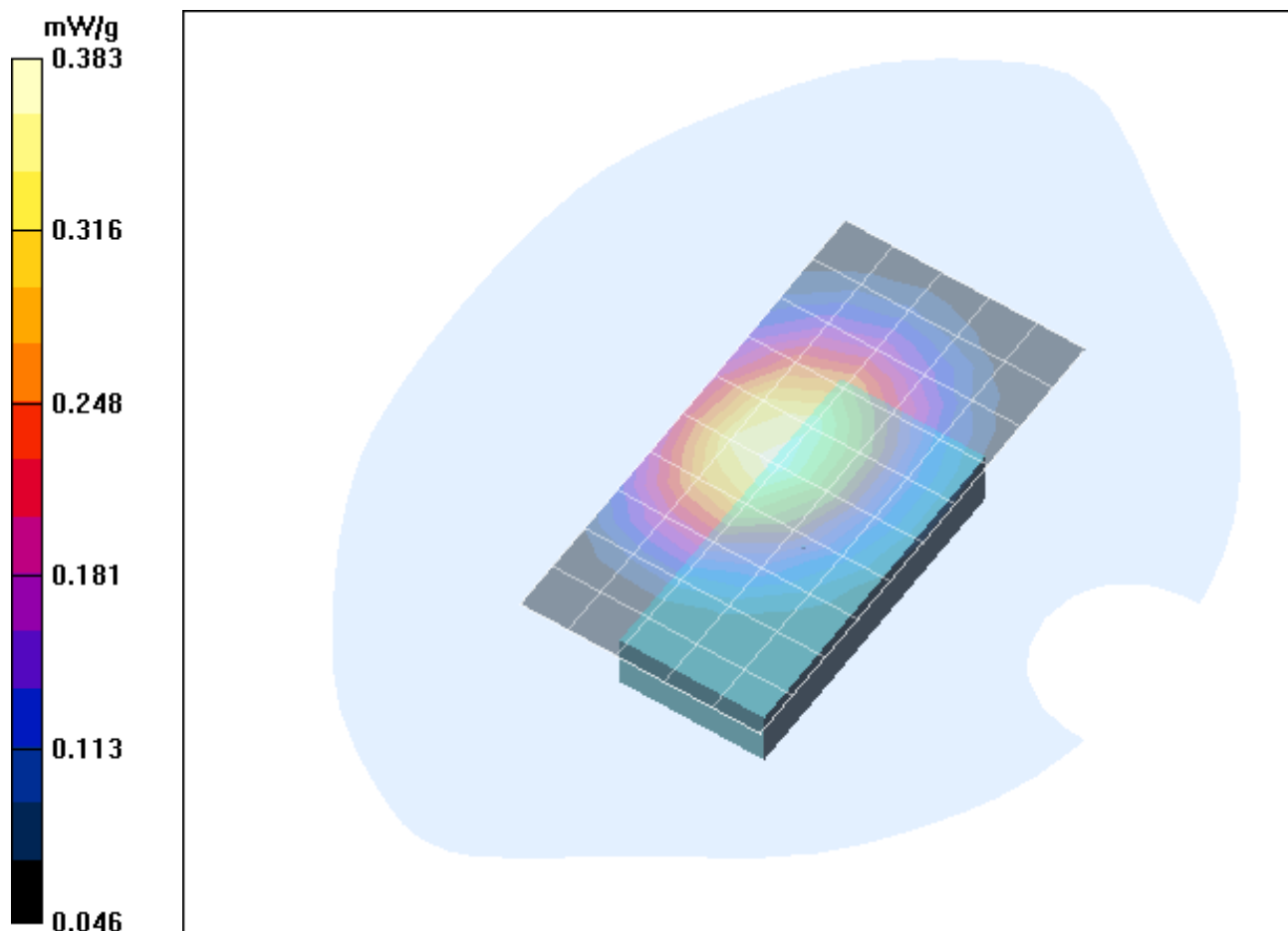


Fig. 16: SAR distribution for GPRS 850, channel 190, body worn configuration, display towards the phantom, PoC configuration, with 25 mm distance (January 31, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.0° C).

5 SAR Distribution Plots, GSM 1900 Body GSM mode

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [991bphm_4_7mm_ohne.da4](#)

DUT: BenQ A31a (Body Config); Type: BenQ A31a; Serial: 004400017142991

Program Name: Body Worn

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.56$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.84, 7.84, 7.84); Calibrated: 23.09.2005

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

Maximum value of SAR (measured) = 0.736 mW/g

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

Reference Value = 17.3 V/m; Power Drift = -0.041 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.707 mW/g; SAR(10 g) = 0.436 mW/g

Maximum value of SAR (measured) = 0.763 mW/g

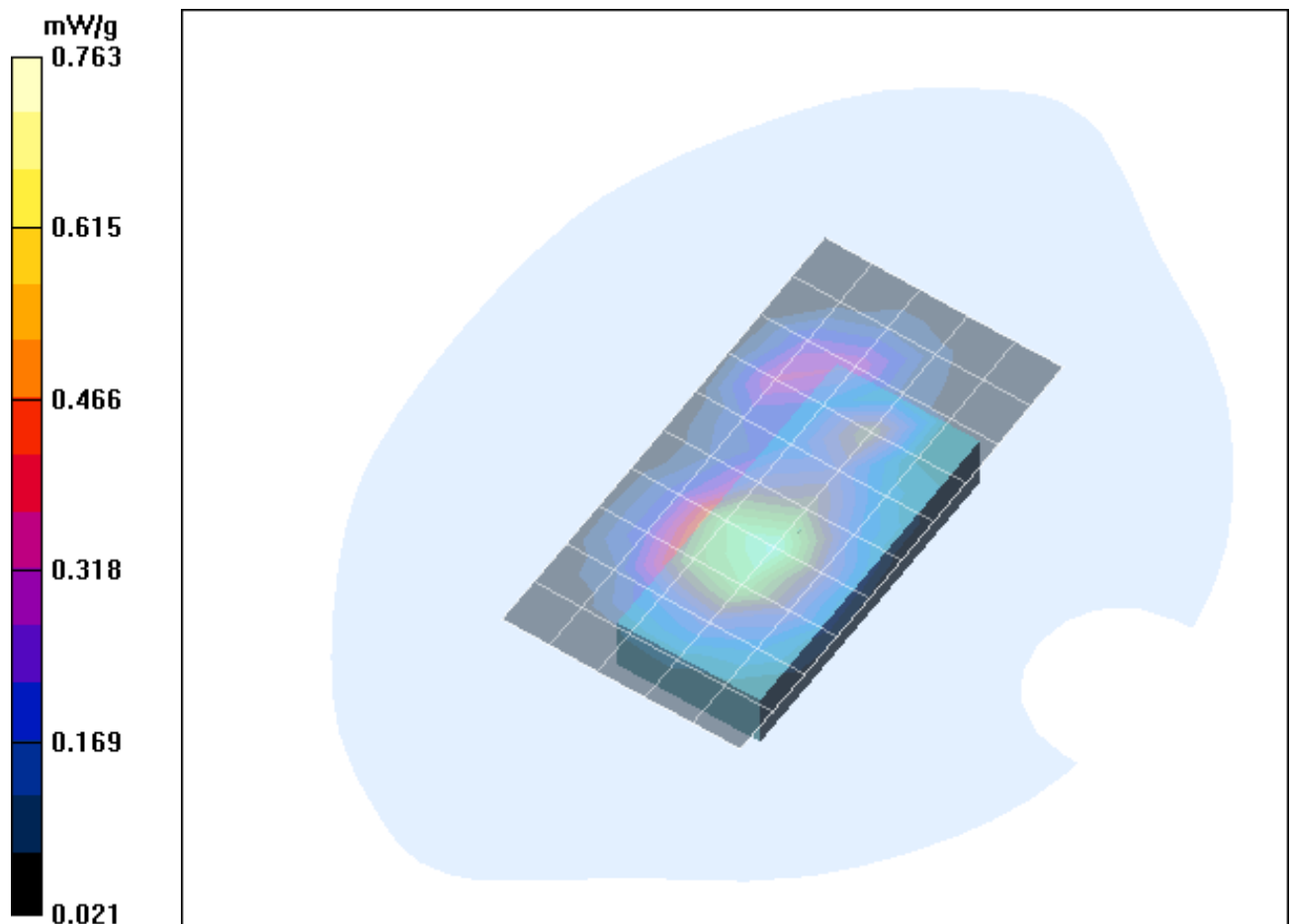


Fig. 17: SAR distribution for GSM 1900, channel 661, body worn configuration, antenna towards the phantom, without accessory, with 7 mm distance (February 01, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.1°C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [991bphm 5 7mm headset.da4](#)

DUT: BenQ A31a (Body Config); Type: BenQ A31a; Serial: 004400017142991

Program Name: Body Worn

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.56$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.84, 7.84, 7.84); Calibrated: 23.09.2005
- 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 Worn/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.800 mW/g

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

Reference Value = 17.3 V/m; Power Drift = -0.140 dB

Peak SAR (extrapolated) = 1.17 W/kg

SAR(1 g) = 0.777 mW/g; SAR(10 g) = 0.479 mW/g

Maximum value of SAR (measured) = 0.839 mW/g

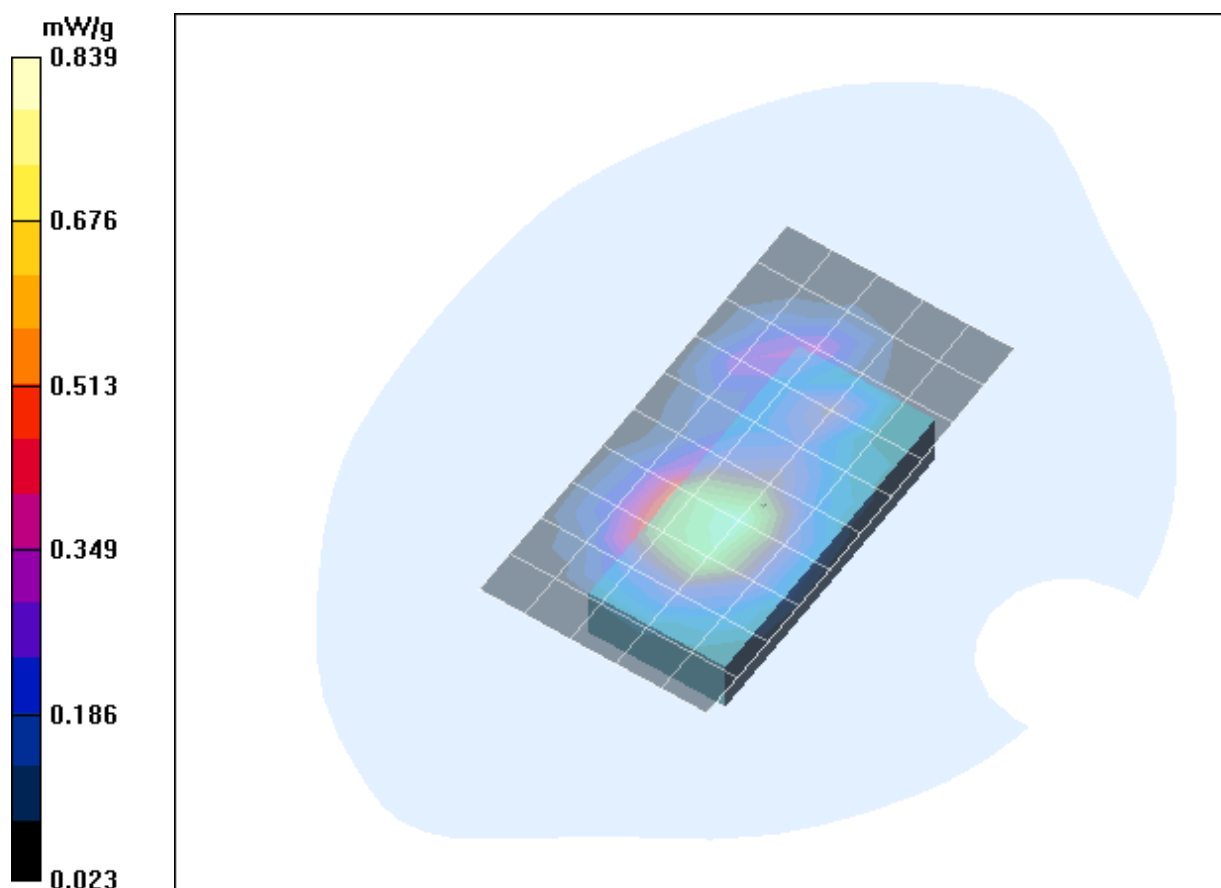


Fig. 18: SAR distribution for GSM 1900, channel 661, body worn configuration, antenna towards the phantom, with headset, with 7 mm distance (February 01, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.0° C).

6 SAR Distribution Plots, GSM 1900 Body in GPRS mode

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 991bphm_6_7mm_data.da4

DUT: BenQ A31a (Body Config); Type: BenQ A31a; Serial: 004400017142991

Program Name: Body Worn

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.56$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.84, 7.84, 7.84); Calibrated: 23.09.2005

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

Maximum value of SAR (measured) = 0.535 mW/g

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

Reference Value = 18.2 V/m; Power Drift = -0.086 dB

Peak SAR (extrapolated) = 1.11 W/kg

SAR(1 g) = 0.567 mW/g; SAR(10 g) = 0.273 mW/g

Maximum value of SAR (measured) = 0.634 mW/g

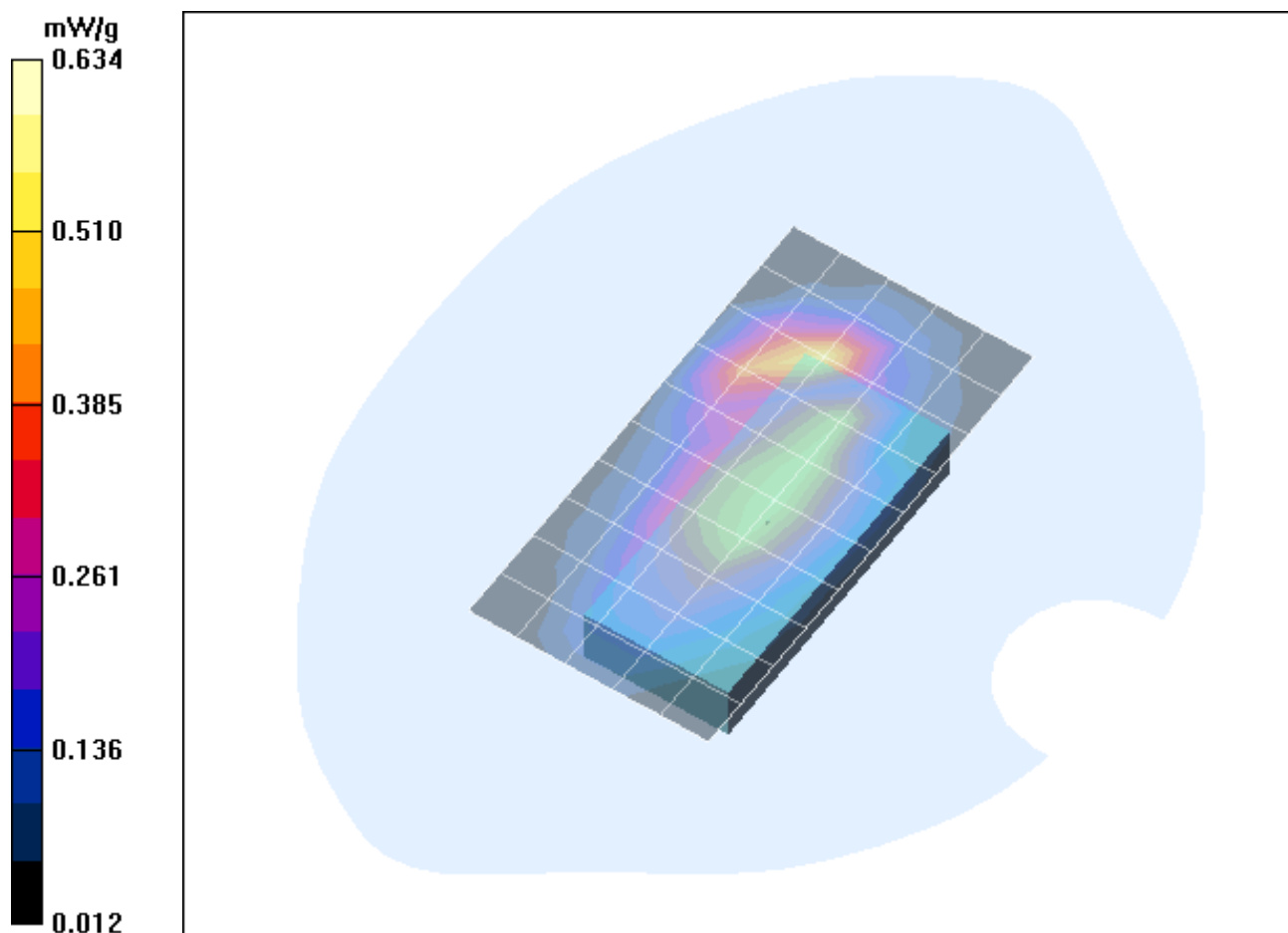


Fig. 19: SAR distribution for GPRS 1900, channel 661, body worn configuration, antenna towards the phantom, with data cable, with 7 mm distance (February 01, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.1° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [991bphm 7 25mm PTT.da4](#)

DUT: BenQ A31a (Body Config); **Type:** BenQ A31a; **Serial:** 004400017142991

Program Name: Body Worn

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.56$ mho/m; $\epsilon_r = 55.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.84, 7.84, 7.84); Calibrated: 23.09.2005
- 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 Worn/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.077 mW/g

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

Reference Value = 4.37 V/m; Power Drift = 0.135 dB

Peak SAR (extrapolated) = 0.117 W/kg

SAR(1 g) = 0.076 mW/g; SAR(10 g) = 0.048 mW/g

Maximum value of SAR (measured) = 0.082 mW/g

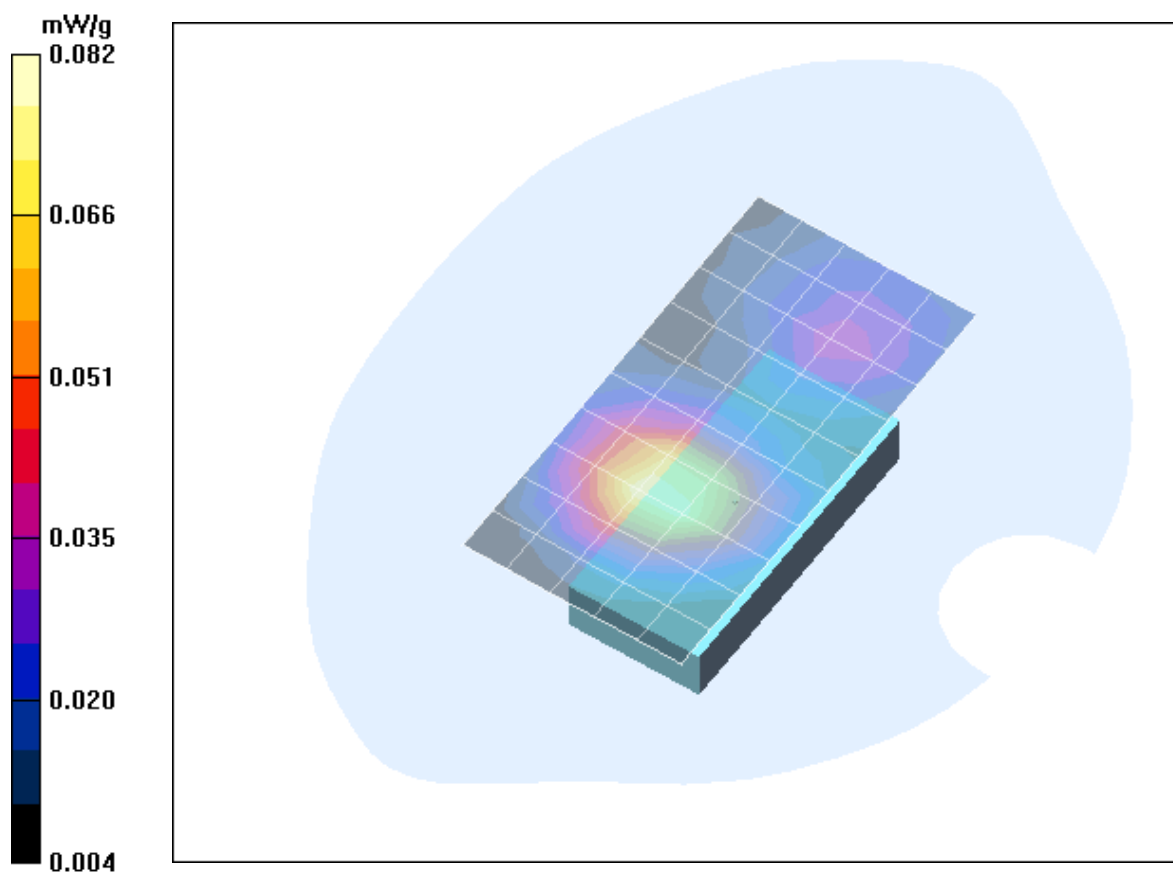


Fig. 20: SAR distribution for GPRS 1900, channel 661, body worn configuration, display towards the phantom, PoC configuration, with 25 mm distance (February 01, 2006; Ambient Temperature: 21.7° C; Liquid Temperature: 21.0° C).

7 SAR z-axis scans (Validation)

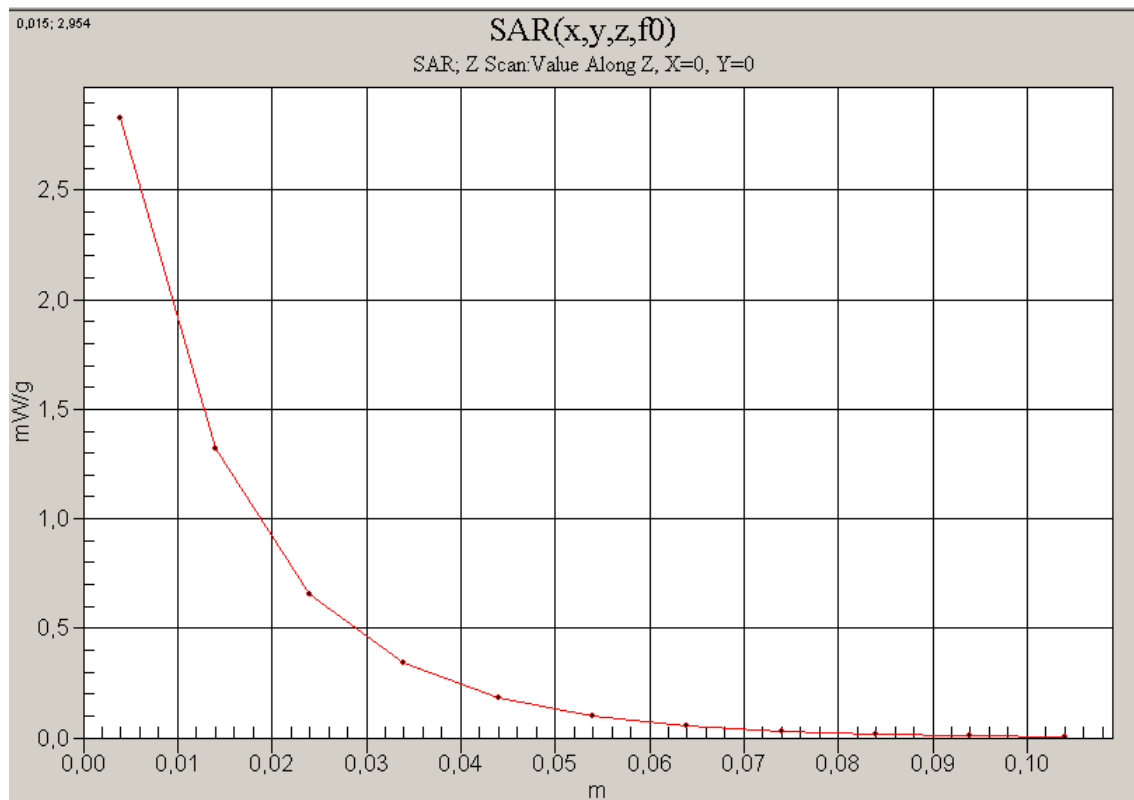


Fig. 21: SAR versus liquid depth, 835 MHz, head (January 30, 2006; Ambient Temperature: 21.6° C; Liquid Temperature : 21.0° C).

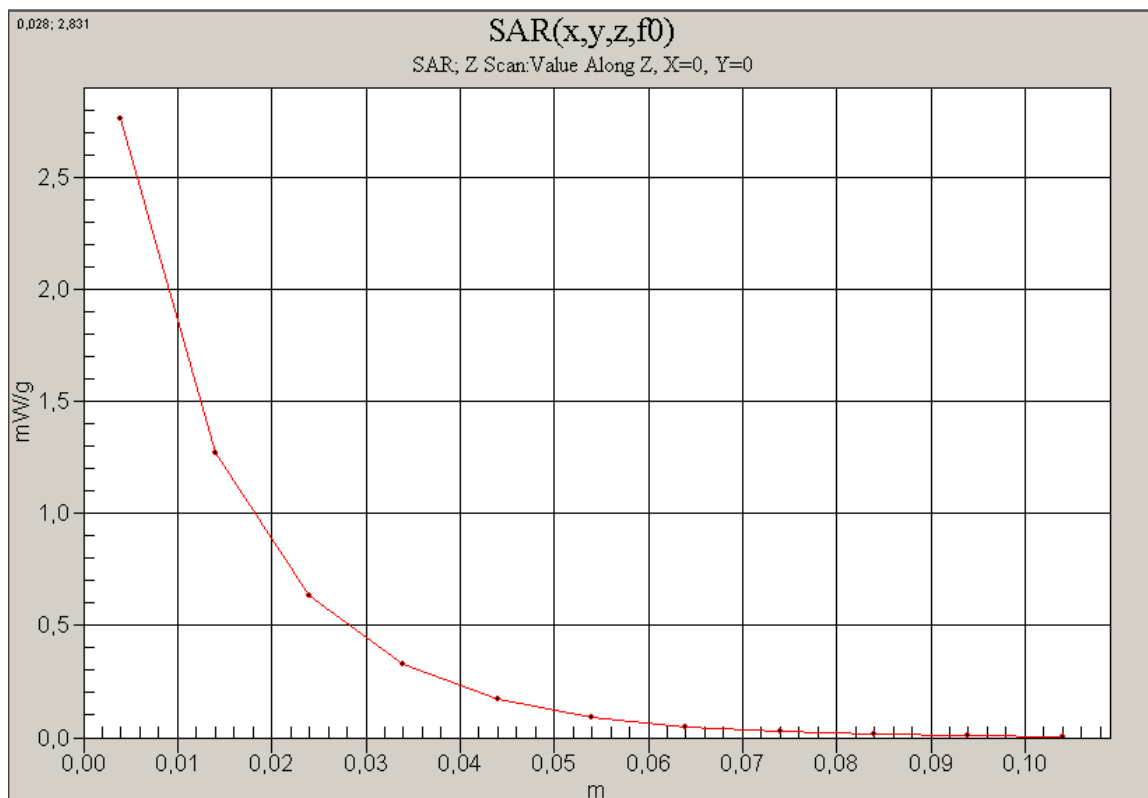


Fig. 22: SAR versus liquid depth, 835 MHz, body (January 31, 2006; Ambient Temperature: 21.6° C; Liquid Temperature : 21.0° C).

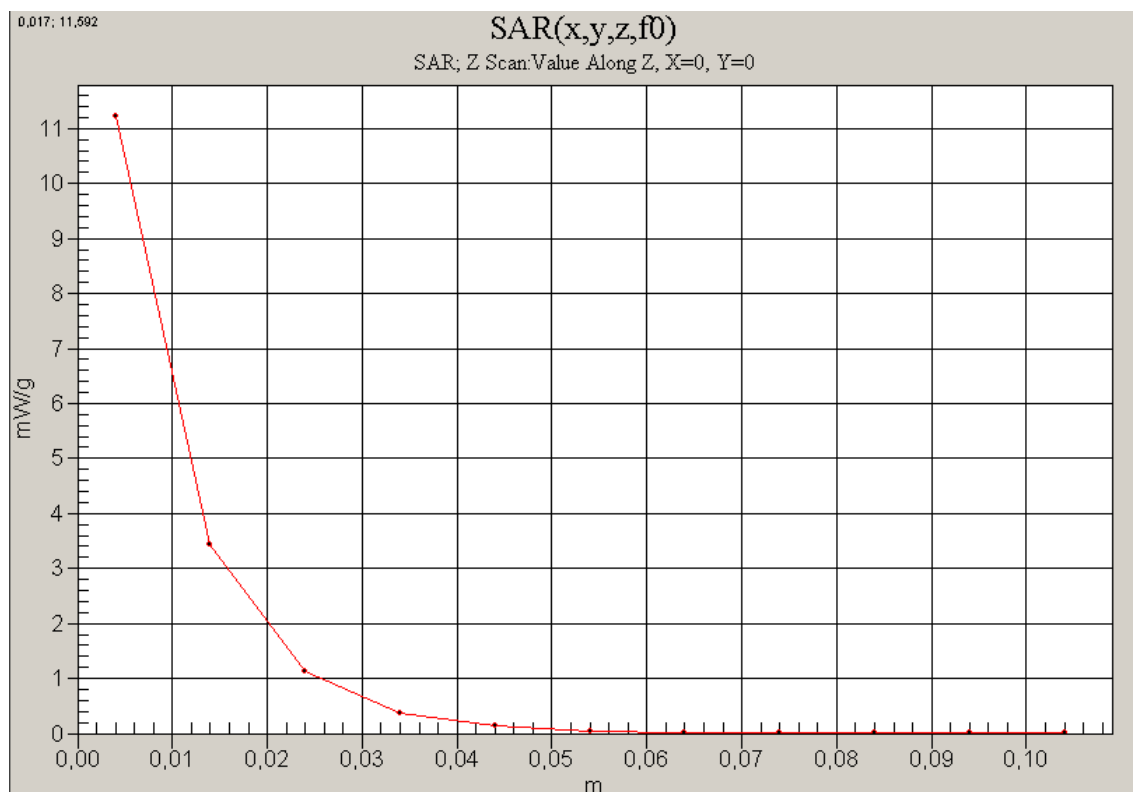


Fig. 23: SAR versus liquid depth, 1900 MHz, head (January 30, 2006; Ambient Temperature: 21.6° C; Liquid Temperature : 21.0° C).

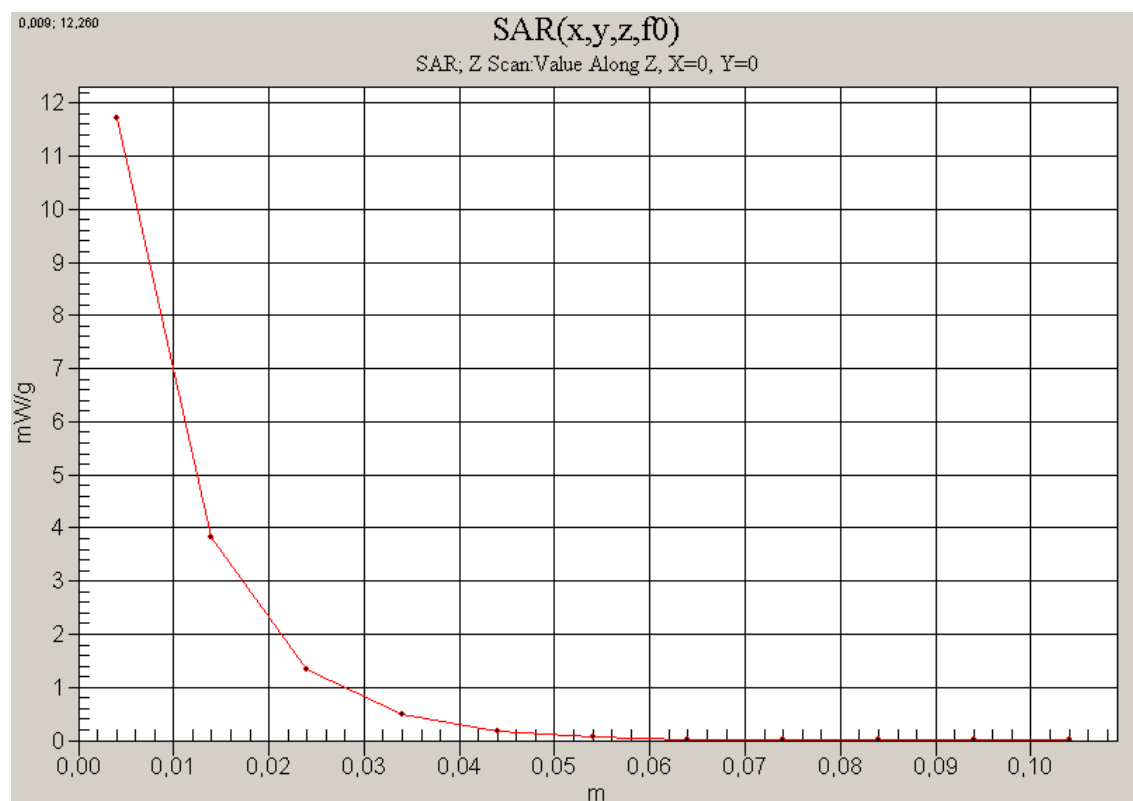


Fig. 24: SAR versus liquid depth, 1900 MHz, body (February 01, 2006; Ambient Temperature: 21.4° C; Liquid Temperature : 20.9° C).

8 SAR z-axis scans (Measurements)

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

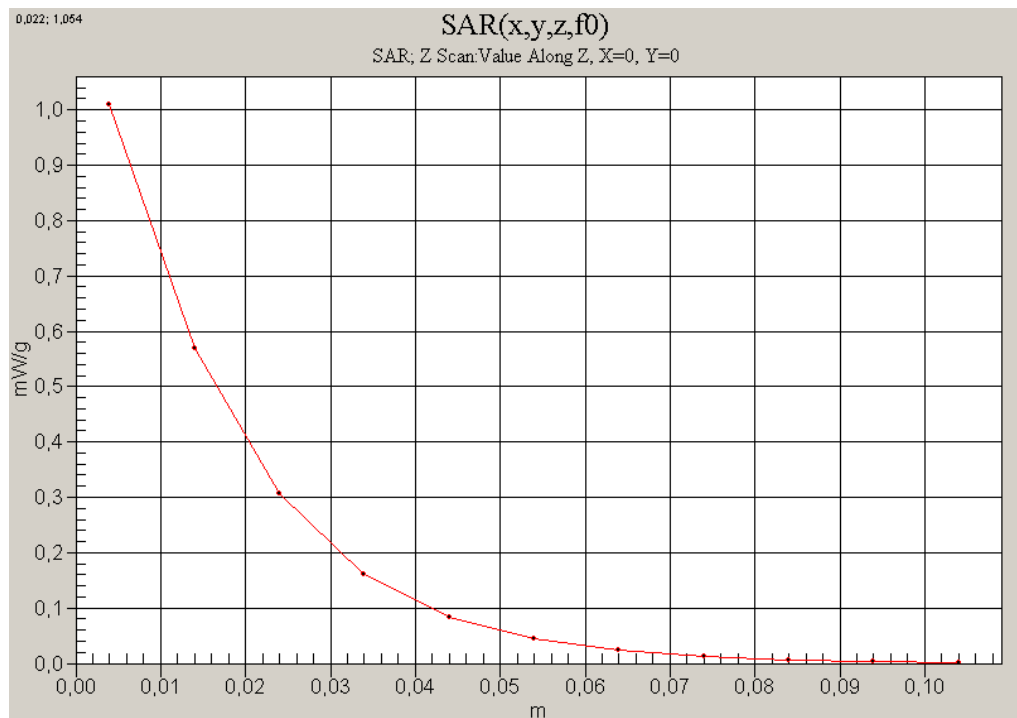


Fig. 25: SAR versus liquid depth, head: GSM 850, channel 251, cheek position, right side of head (January 30, 2006; Ambient Temperature: 21.6° C; Liquid Temperature : 21.0° C).

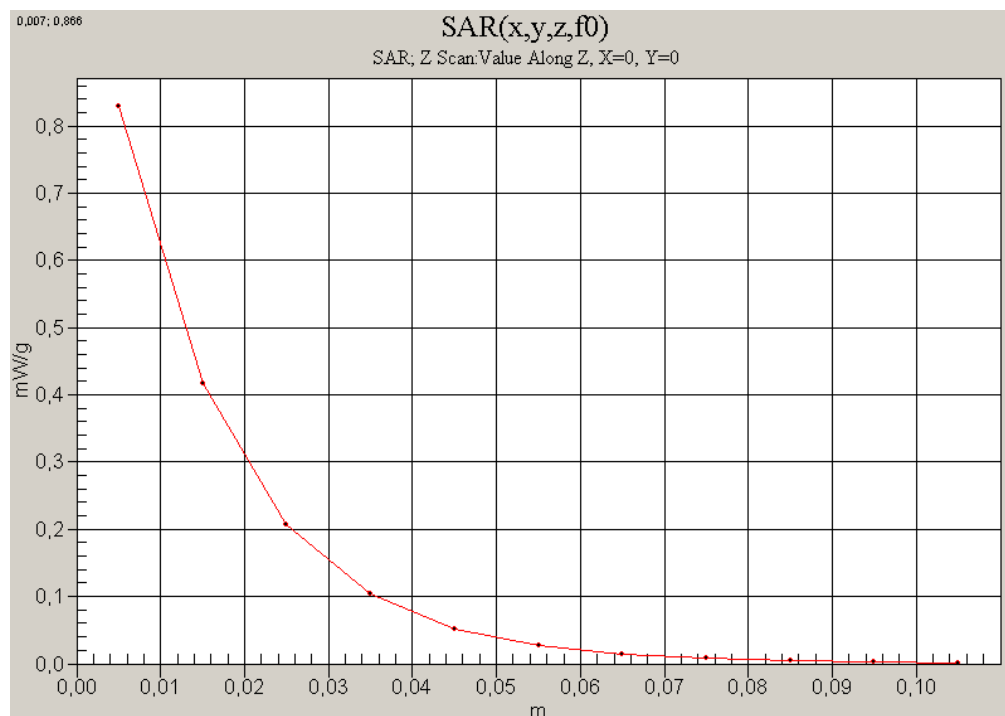


Fig. 26: SAR versus liquid depth, body: GSM 850, channel 128, without accessory, with 7mm distance (January 31, 2006; Ambient Temperature: 21.7° C; Liquid Temperature : 21.1° C).

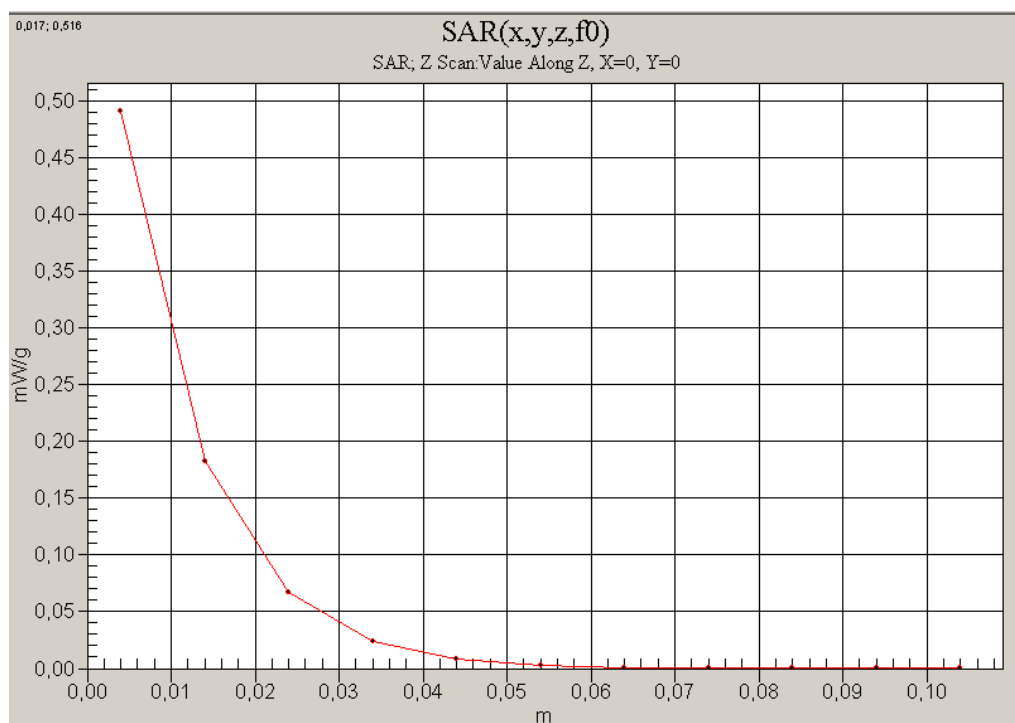


Fig. 27: SAR versus liquid depth, head: PCS 1900, channel 661, cheek position, left side of head (January 30, 2006; Ambient Temperature: 21.7° C; Liquid Temperature : 21.0° C).

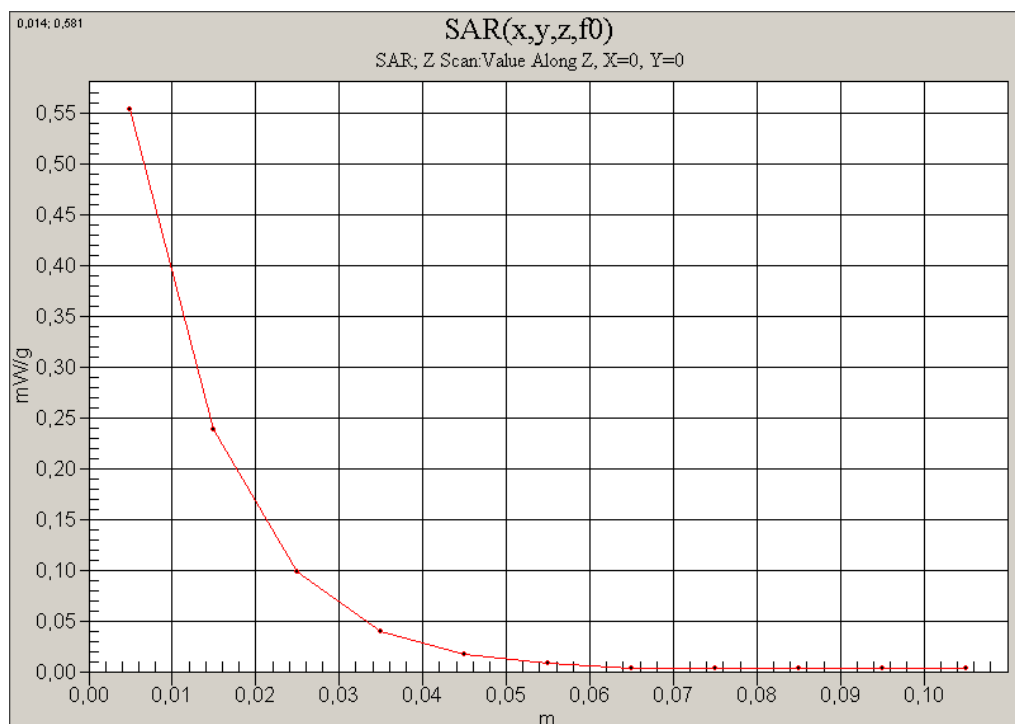


Fig. 28: SAR versus liquid depth, body: PCS 1900, channel 661, headset, with 7 mm distance (February 01, 2006; Ambient Temperature: 21.7° C; Liquid Temperature : 21.1° C).