
Appendix for the Report

Dosimetric Assessment of the BenQ Siemens C81 (FCC ID: PWX-C81)

According to the FCC Requirements

SAR Distribution Plots

March 31, 2006
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The test results only relate to the items tested.
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1 SAR Distribution Plots, PCS 1900 Head

Test Laboratory: Imst GmbH; File Name: [561yplm_1.da4](#)

DUT: BenQ; Type: C81; Serial: 004401490002561

Program Name: Cheek Left

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(8.25, 8.25, 8.25); Calibrated: 23.09.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 09.03.2006
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

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

Maximum value of SAR (measured) = 0.417 mW/g

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

Reference Value = 12.5 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 0.818 W/kg

SAR(1 g) = 0.427 mW/g; SAR(10 g) = 0.226 mW/g

Maximum value of SAR (measured) = 0.476 mW/g

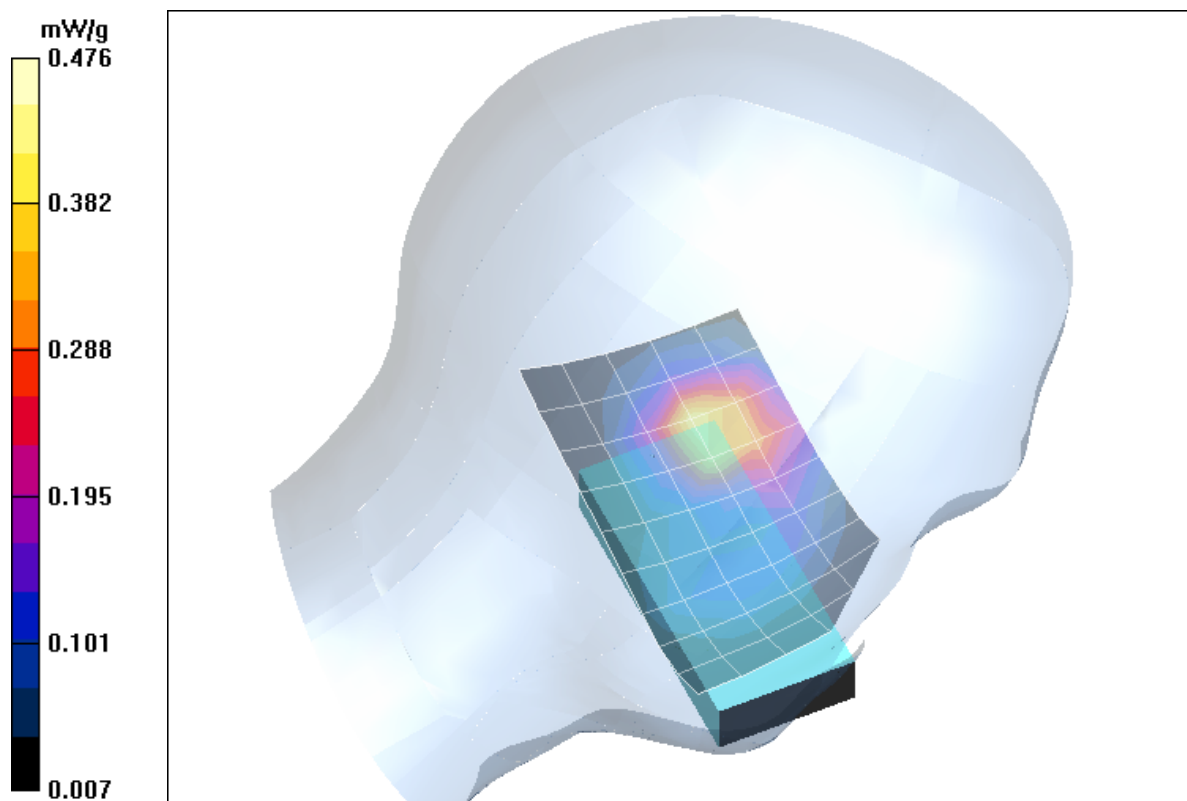


Fig. 1: SAR distribution for PCS 1900, channel 661, cheek position, left side of head (March 28, 2006; Ambient Temperature: 22.3° C; Liquid Temperature : 21.5° C).

Test Laboratory: Imst GmbH; **File Name:** [561yplm 2.da4](#)

DUT: BenQ; **Type:** C81; **Serial:** 004401490002561

Program Name: Tilted Left

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(8.25, 8.25, 8.25); Calibrated: 23.09.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 09.03.2006
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

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

Maximum value of SAR (measured) = 0.407 mW/g

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

Reference Value = 13.5 V/m; Power Drift = -0.026 dB

Peak SAR (extrapolated) = 0.679 W/kg

SAR(1 g) = 0.362 mW/g; SAR(10 g) = 0.191 mW/g

Maximum value of SAR (measured) = 0.404 mW/g

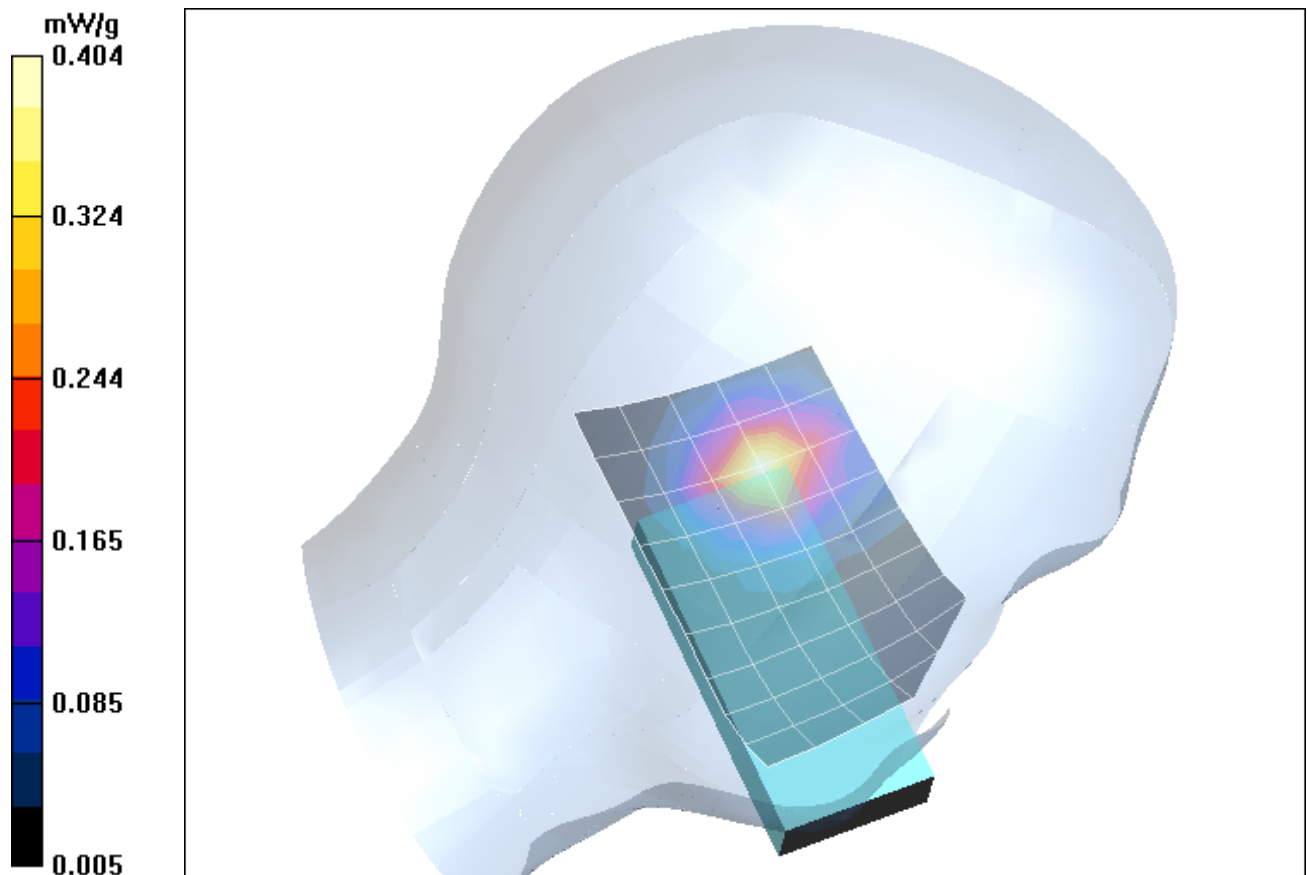


Fig. 2: SAR distribution for PCS 1900, channel 661, tilted position, left side of head (March 28, 2006; Ambient Temperature: 22.2°C; Liquid Temperature: 21.4°C).

Test Laboratory: Imst GmbH; File Name: [561yprm_1.da4](#)

DUT: BenQ; Type: C81; Serial: 004401490002561

Program Name: Cheek Right

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(8.25, 8.25, 8.25); Calibrated: 23.09.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 09.03.2006
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

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

Maximum value of SAR (measured) = 0.237 mW/g

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

Reference Value = 11.6 V/m; Power Drift = -0.011 dB

Peak SAR (extrapolated) = 0.432 W/kg

SAR(1 g) = 0.248 mW/g; SAR(10 g) = 0.141 mW/g

Maximum value of SAR (measured) = 0.272 mW/g

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

Reference Value = 11.6 V/m; Power Drift = -0.011 dB

Peak SAR (extrapolated) = 0.323 W/kg

SAR(1 g) = 0.178 mW/g; SAR(10 g) = 0.100 mW/g

Maximum value of SAR (measured) = 0.198 mW/g

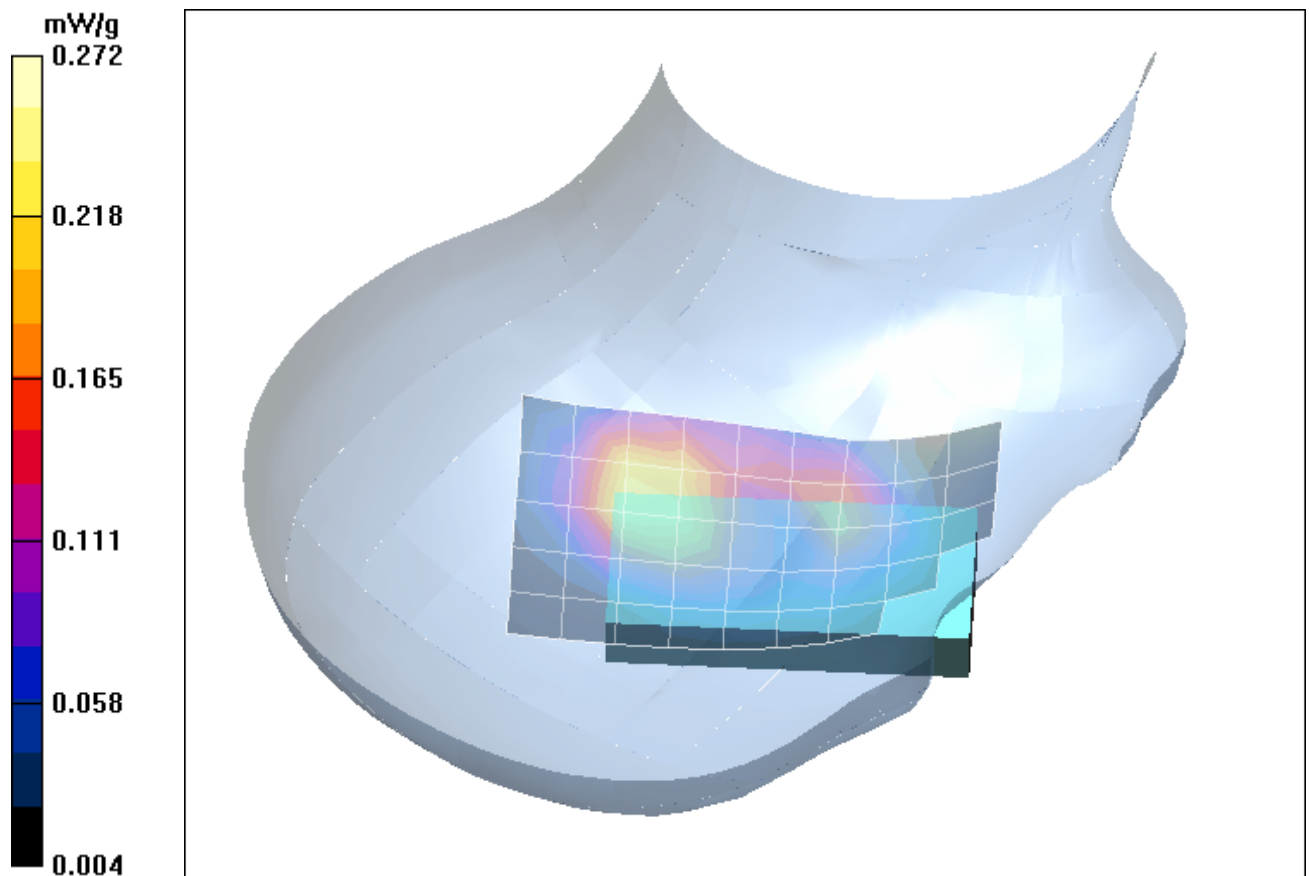


Fig. 3: SAR distribution for PCS 1900, channel 661, cheek position, right side of head (March 28, 2006; Ambient Temperature: 22.3° C; Liquid Temperature : 21.5° C).

Test Laboratory: Imst GmbH; File Name: [561yprm 2.da4](#)

DUT: BenQ; Type: C81; Serial: 004401490002561

Program Name: Tilted Right

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(8.25, 8.25, 8.25); Calibrated: 23.09.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 09.03.2006
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

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

Maximum value of SAR (measured) = 0.275 mW/g

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

Reference Value = 13.3 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 0.463 W/kg

SAR(1 g) = 0.269 mW/g; SAR(10 g) = 0.150 mW/g

Maximum value of SAR (measured) = 0.293 mW/g

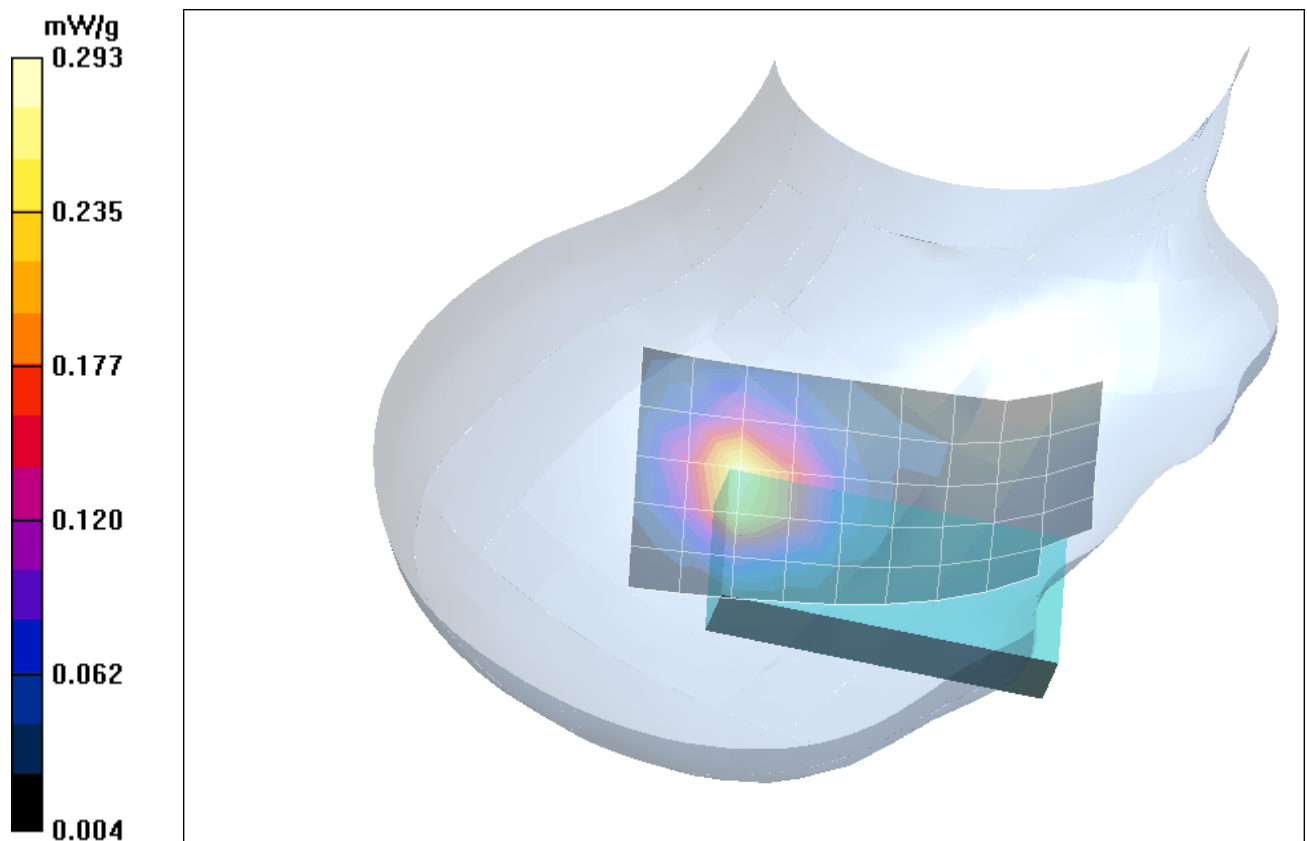


Fig. 4: SAR distribution for PCS 1900, channel 661, tilted position, right side of head (March 28, 2006; Ambient Temperature: 22.4 °C; Liquid Temperature : 21.6° C)

2 SAR Distribution Plots, PCS 1900 Head, worst case with BT activated

Test Laboratory: Imst GmbH; File Name: [561yplm_1_BT.da4](#)

DUT: BenQ; Type: C81; Serial: 004401490002561

Program Name: Cheek Left

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 38.9$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(8.25, 8.25, 8.25); Calibrated: 23.09.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 09.03.2006
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

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

Maximum value of SAR (measured) = 0.470 mW/g

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

Reference Value = 13.5 V/m; Power Drift = 0.086 dB

Peak SAR (extrapolated) = 0.865 W/kg

SAR(1 g) = 0.443 mW/g; SAR(10 g) = 0.233 mW/g

Maximum value of SAR (measured) = 0.495 mW/g

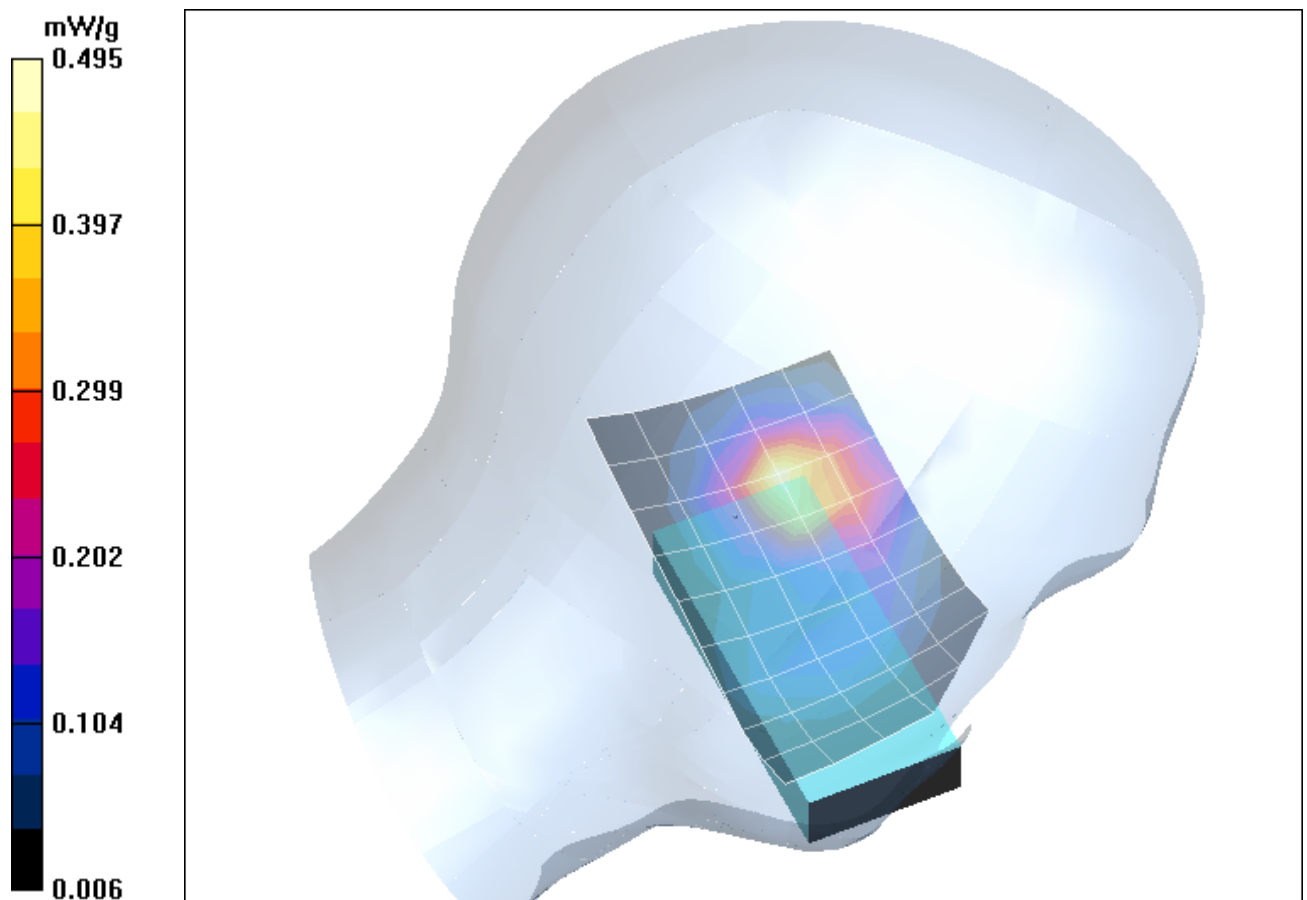


Fig. 5: SAR distribution for PCS 1900, channel 661, cheek position, left side of head (March 28, 2006; Ambient Temperature: 22.3° C; Liquid Temperature : 21.5° C).

3 SAR Distribution Plots, PCS 1900 Body, GSM mode

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [561bphm_4_ohne_15mm.da4](#)

DUT: BenQ; Type: C81; Serial: 004401490002561

Program Name: Body Worn

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.47, 4.47, 4.47); Calibrated: 15.02.2006
- 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 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Body Worn/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.334 mW/g

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

Reference Value = 8.34 V/m; Power Drift = 0.047 dB

Peak SAR (extrapolated) = 0.517 W/kg

SAR(1 g) = 0.315 mW/g; SAR(10 g) = 0.184 mW/g

Maximum value of SAR (measured) = 0.345 mW/g

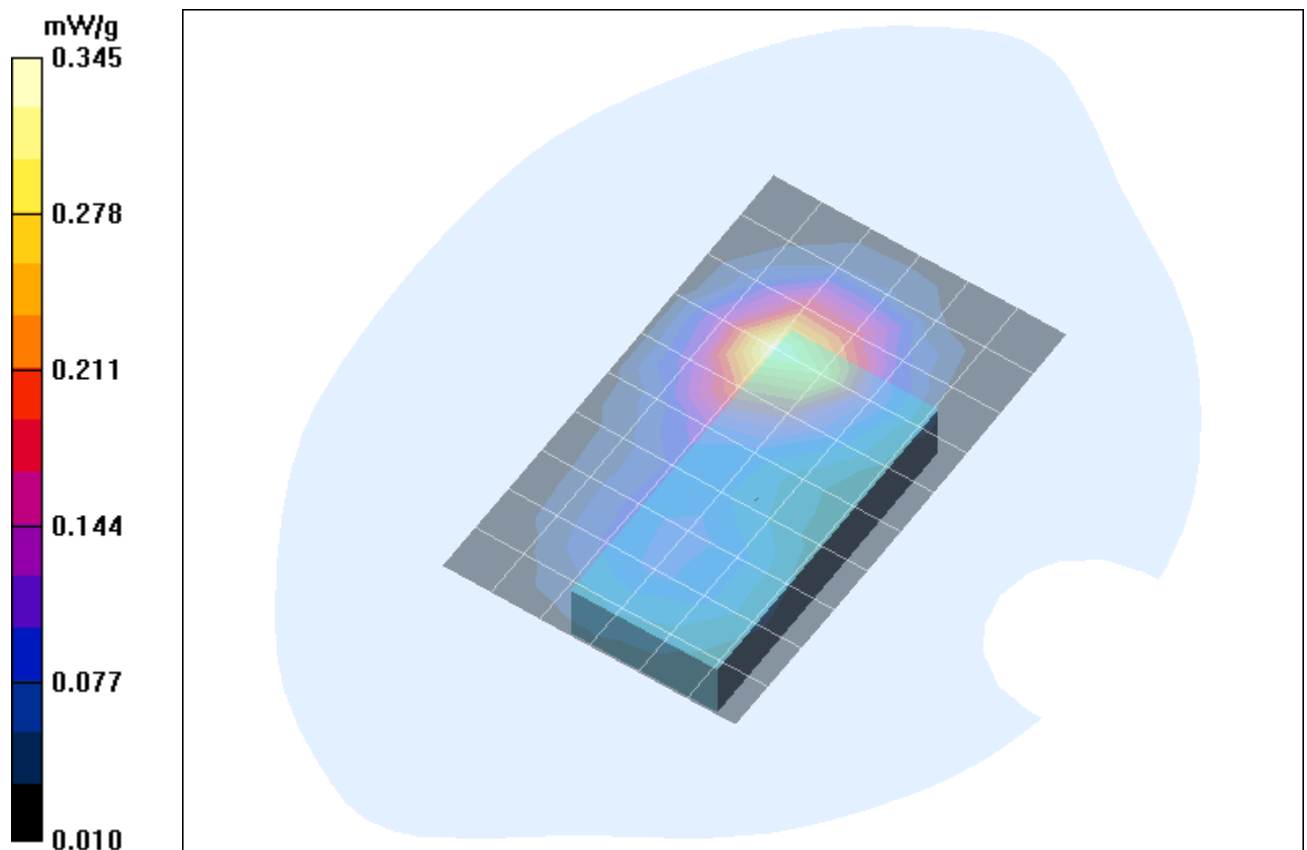


Fig. 6: SAR distribution for PCS 1900, channel 661, body worn configuration, antenna towards the phantom, without accessory with 15 mm distance (March 30, 2006; Ambient Temperature: 22.1° C; Liquid Temperature: 21.3° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [561bphm_6_BT_15mm.da4](#)

DUT: BenQ; Type: C81; Serial: 004401490002561

Program Name: Body Worn

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.47, 4.47, 4.47); Calibrated: 15.02.2006
- 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 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Body Worn/Area Scan (7x11x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.304 mW/g

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

Reference Value = 7.94 V/m; Power Drift = 0.091 dB

Peak SAR (extrapolated) = 0.464 W/kg

SAR(1 g) = 0.288 mW/g; SAR(10 g) = 0.169 mW/g

Maximum value of SAR (measured) = 0.316 mW/g

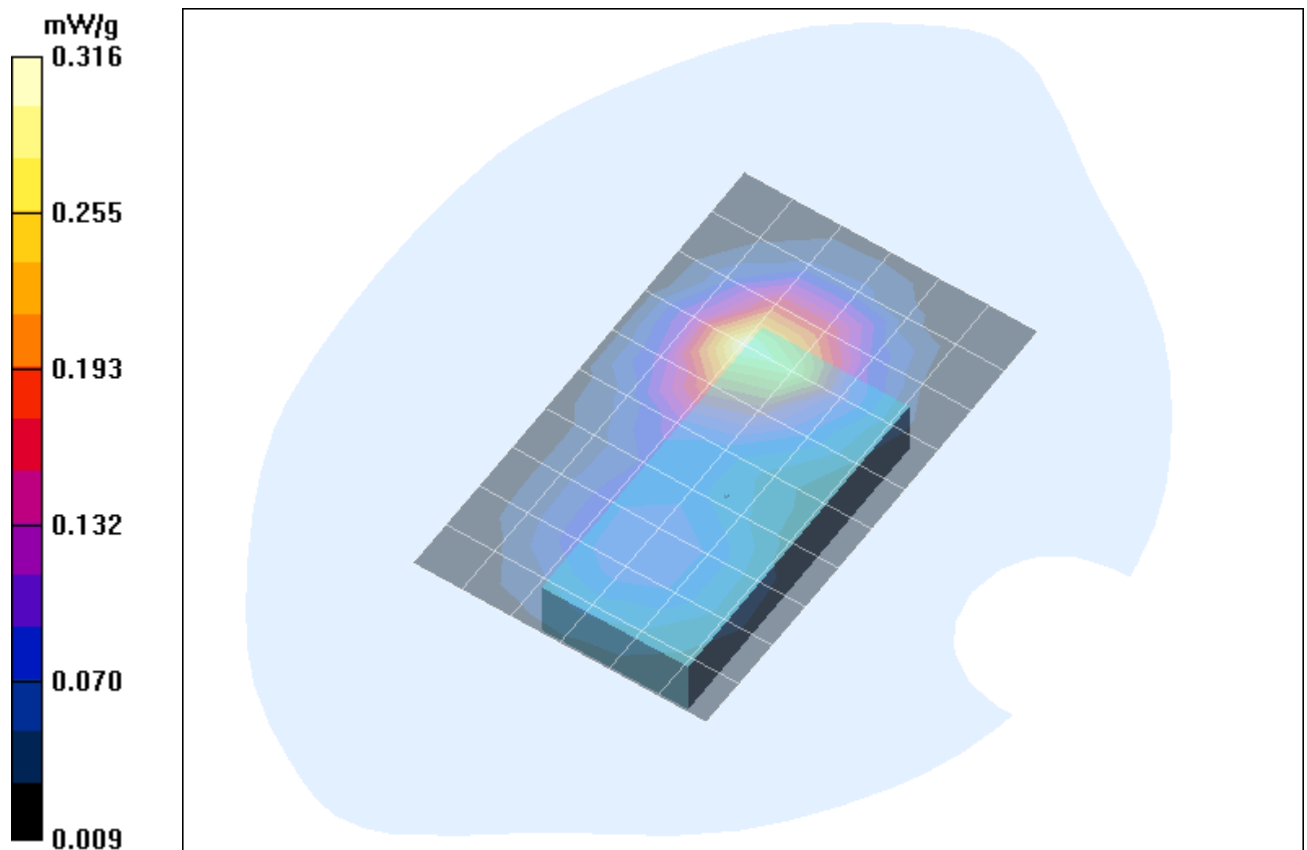


Fig. 7: SAR distribution for PCS 1900, channel 661, body worn configuration, antenna towards the phantom, without accessory and BT activated (March 30, 2006; Ambient Temperature: 22.1° C; Liquid Temperature: 21.3° C).

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [561bphm 5 headset 15mm.da4](#)

DUT: BenQ; Type: C81; Serial: 004401490002561

Program Name: Body Worn

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.47, 4.47, 4.47); Calibrated: 15.02.2006
- 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 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Body Worn/Area Scan (7x11x1): Measurement grid: $dx=15$ mm, $dy=15$ mm

Maximum value of SAR (measured) = 0.327 mW/g

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

Reference Value = 8.18 V/m; Power Drift = 0.063 dB

Peak SAR (extrapolated) = 0.496 W/kg

SAR(1 g) = 0.309 mW/g; SAR(10 g) = 0.182 mW/g

Maximum value of SAR (measured) = 0.336 mW/g

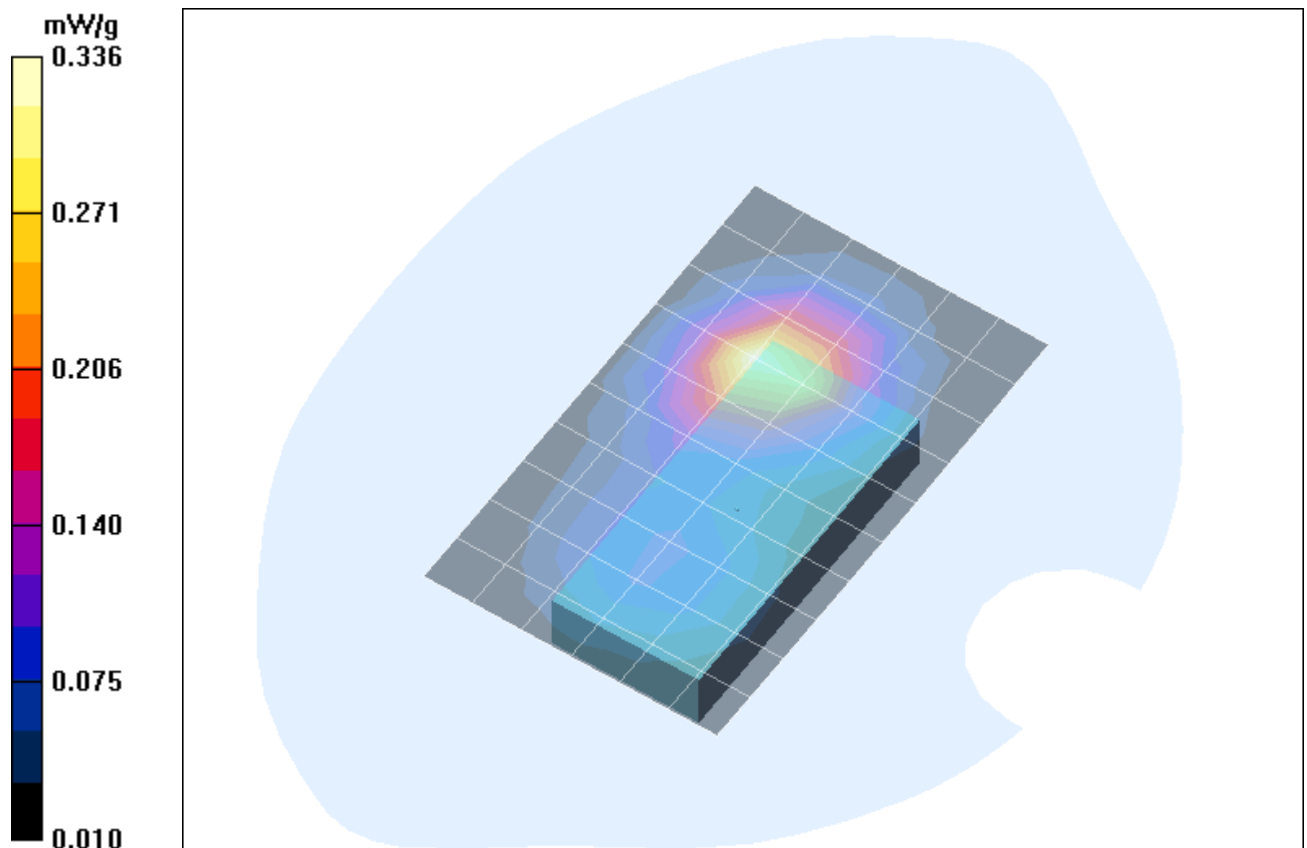


Fig. 8: SAR distribution for PCS 1900, channel 661, body worn configuration, antenna towards the phantom, with headset (March 30, 2006; Ambient Temperature: 22.0° C; Liquid Temperature: 21.2° C).

4 SAR Distribution Plots, PCS 1900 Body with data cable, GPRS mode

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: 561bphm_8_data_20mm.da4

DUT: BenQ; Type: C81; Serial: 004401490002561

Program Name: Body Worn

Communication System: GPRS 1900; Frequency: 1880 MHz; Duty Cycle: 1:4

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 52.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.47, 4.47, 4.47); Calibrated: 15.02.2006
- 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 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Body Worn/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.356 mW/g

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

Reference Value = 9.64 V/m; Power Drift = -0.020 dB

Peak SAR (extrapolated) = 0.544 W/kg

SAR(1 g) = 0.339 mW/g; SAR(10 g) = 0.205 mW/g

Maximum value of SAR (measured) = 0.373 mW/g

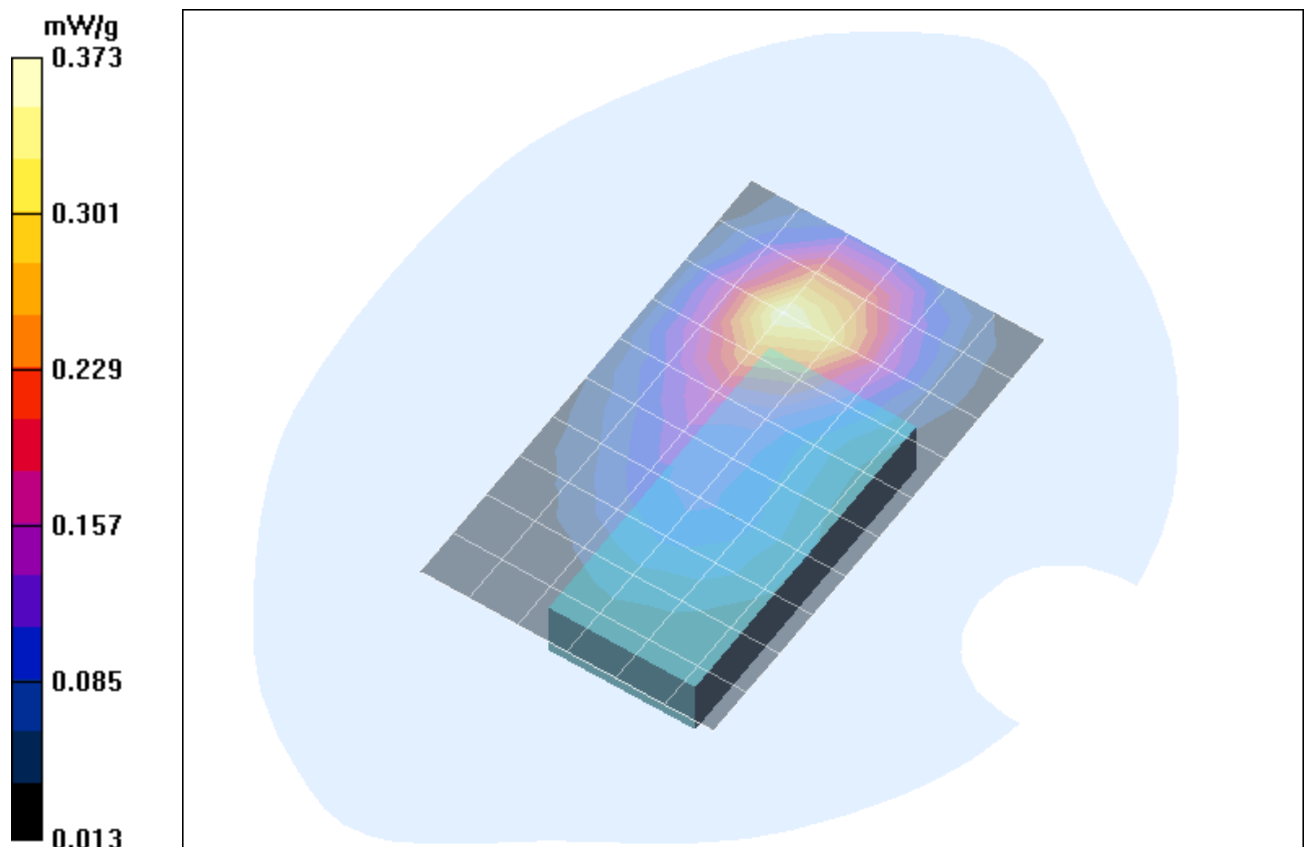


Fig. 9: SAR distribution for GPRS 1900 (Class 10), channel 661, body worn configuration, antenna towards the phantom, with data and 20 mm distance (March 30, 2006; Ambient Temperature: 22.0° C; Liquid Temperature: 21.2°C).

5 SAR z-axis scans (Validation)

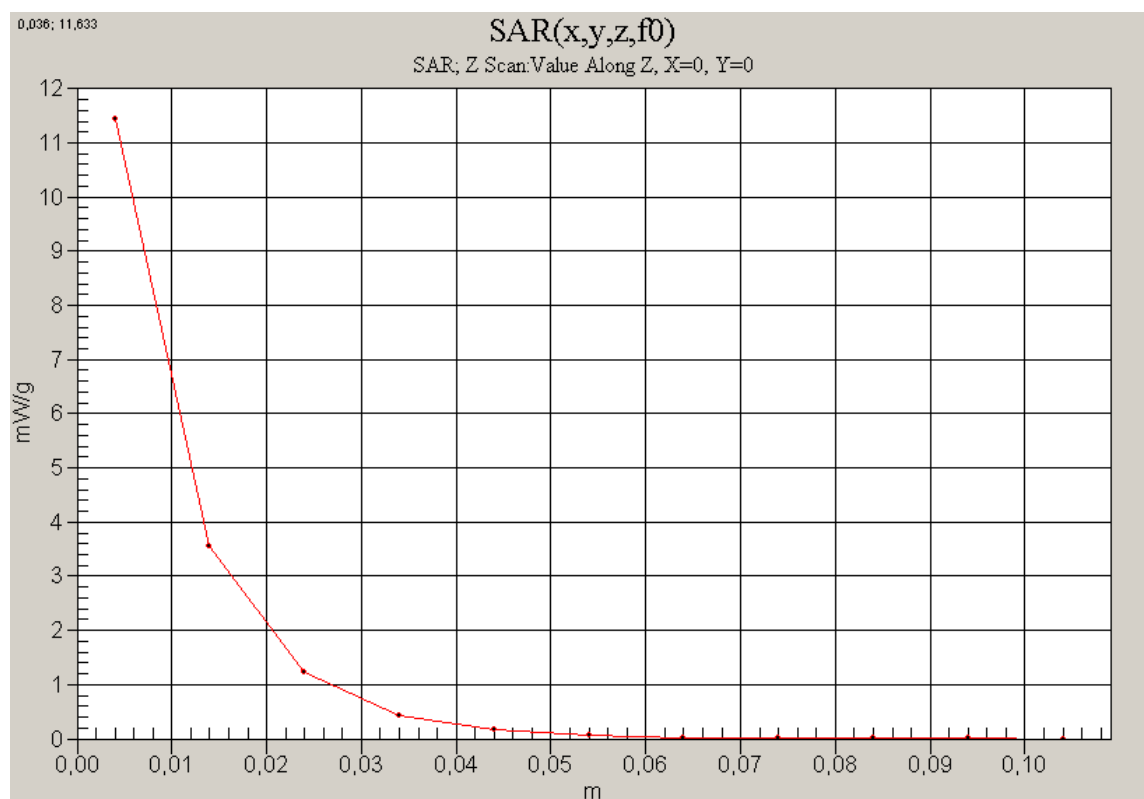


Fig. 10: SAR versus liquid depth, 1900 MHz, head (March 28, 2006; Ambient Temperature: 21.8° C; Liquid Temperature : 20.9° C).

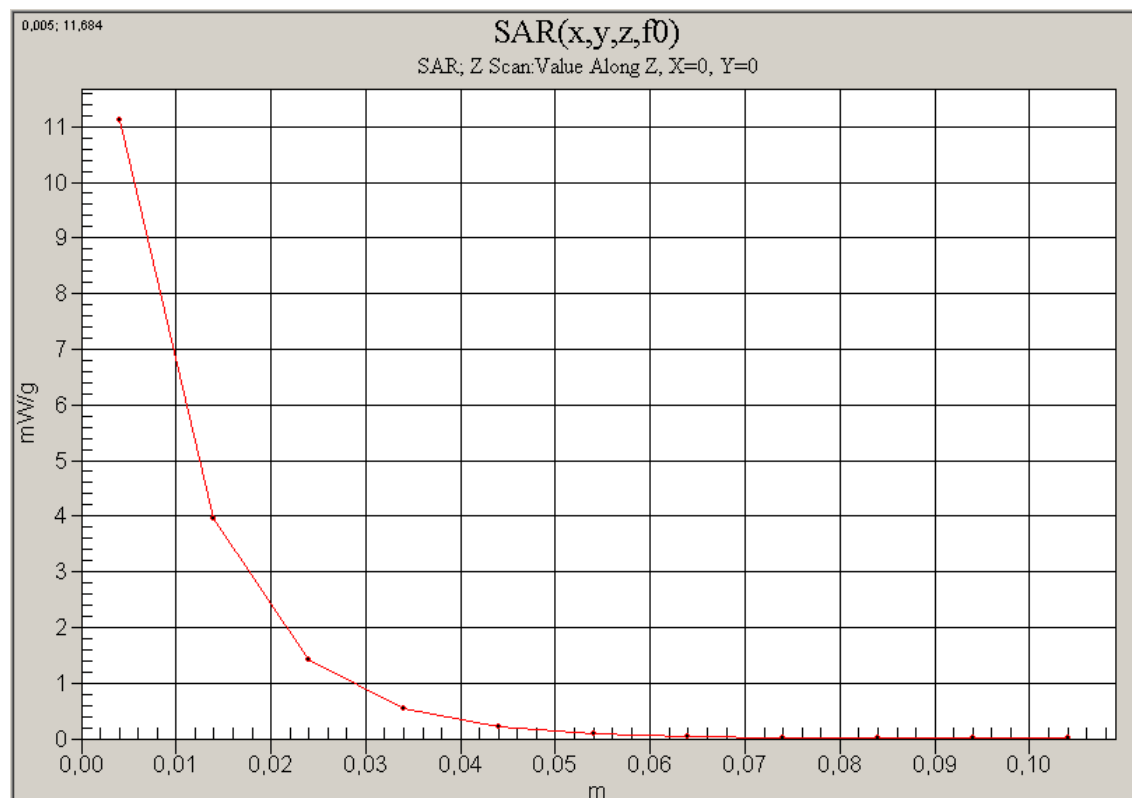


Fig. 11: SAR versus liquid depth, 1900 MHz, body (March 30, 2006; Ambient Temperature: 21.9° C; Liquid Temperature : 20.5° C).

6 SAR z-axis scans (Measurements)

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

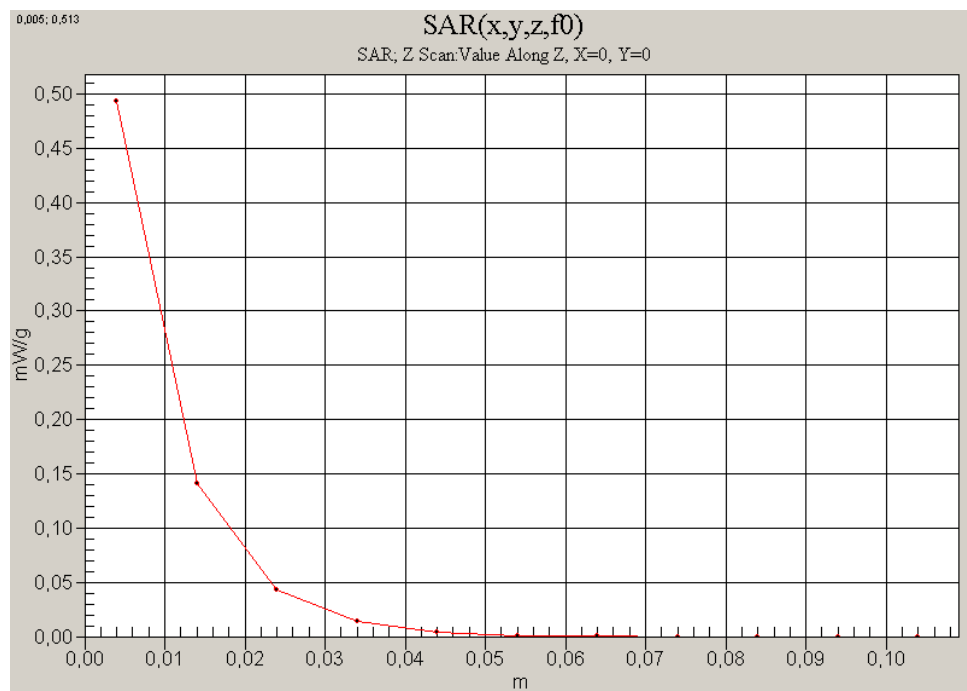


Fig. 12: SAR versus liquid depth, head: PCS 1900, channel 661, cheek position, left side of head with BT activated (March 28, 2006; Ambient Temperature: 22.3° C; Liquid Temperature : 21.5° C).

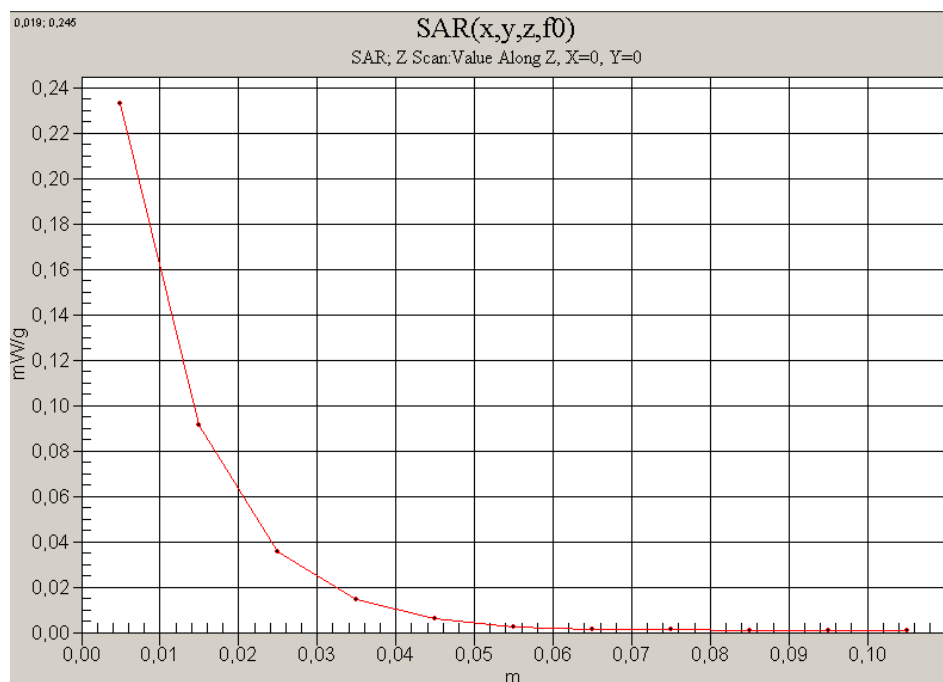


Fig. 13: SAR versus liquid depth, body: GPRS 1900 (Class 10), channel 661, data cable and 20 mm distance (March 30, 2006; Ambient Temperature: 22.0° C; Liquid Temperature: 21.2° C).