
Appendix for the Report

Dosimetric Assessment of the BenQ Siemens S68 (FCC ID: PWX-S68)

According to the FCC Requirements

SAR Distribution Plots

July 28, 2006
IMST GmbH
Carl-Friedrich-Gauß-Str. 2
D-47475 Kamp-Lintfort

Customer
BenQ Mobile GmbH & Co OHG
Haidenauplatz 1
D-81667 München

The test results only relate to the items tested.
This report shall not be reproduced except in full without the written
approval of the testing laboratory.

Table of Contents

1	SAR DISTRIBUTION PLOTS, PCS 1900 HEAD	3
2	SAR DISTRIBUTION PLOTS, PCS 1900 BODY WORN CONFIGURATION.....	8
3	SAR Z-AXIS SCANS (VALIDATION)	13
4	SAR Z-AXIS SCANS (MEASUREMENTS).....	14

1 SAR Distribution Plots, PCS 1900 Head

Test Laboratory: Imst GmbH, DASY Yellow (II); File Name: [390yplm_1.da4](#)

DUT: BenQ; Type: S68 Ceramic; Serial: 358439002262390

Program Name: Cheek Left

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 40.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.99, 4.99, 4.99); Calibrated: 15.02.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 11.07.2006
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

Maximum value of SAR (measured) = 0.170 mW/g

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

Reference Value = 10.4 V/m; Power Drift = -0.074 dB

Peak SAR (extrapolated) = 0.251 W/kg

SAR(1 g) = 0.154 mW/g; SAR(10 g) = 0.085 mW/g

Maximum value of SAR (measured) = 0.172 mW/g

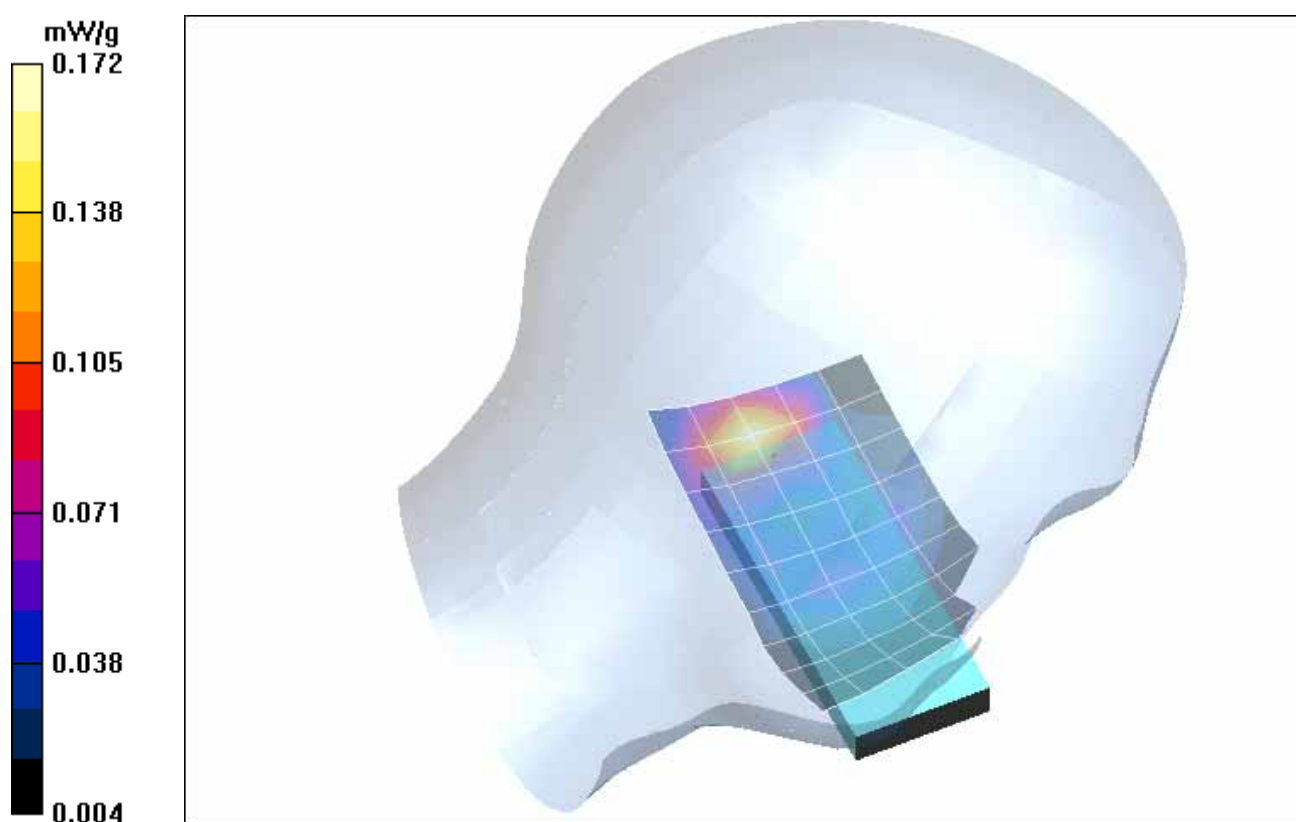


Fig. 1: SAR distribution for PCS 1900, channel 661, cheek position, left side of head (July 26, 2006; Ambient Temperature: 22.1° C; Liquid Temperature : 21.2° C).

Test Laboratory: Imst GmbH, DASY Yellow (II); **File Name:** [390yplm 2.da4](#)

DUT: BenQ; **Type:** S68 Ceramic; **Serial:** 358439002262390

Program Name: Tilted Left

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 40.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.99, 4.99, 4.99); Calibrated: 15.02.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 11.07.2006
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

Maximum value of SAR (measured) = 0.203 mW/g

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

Reference Value = 11.7 V/m; Power Drift = -0.049 dB

Peak SAR (extrapolated) = 0.283 W/kg

SAR(1 g) = 0.180 mW/g; SAR(10 g) = 0.102 mW/g

Maximum value of SAR (measured) = 0.202 mW/g

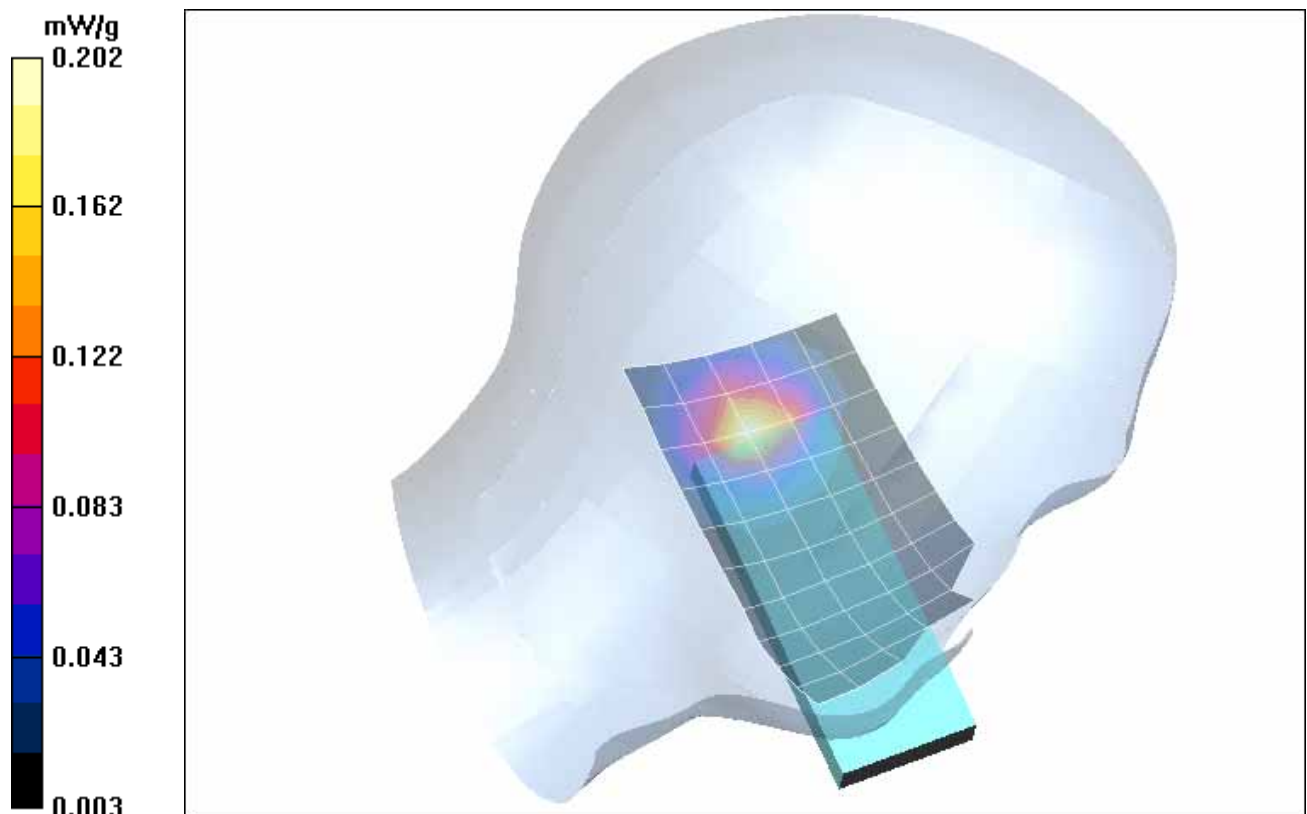


Fig. 2: SAR distribution for PCS 1900, channel 661, tilted position, left side of head (July 26, 2006; Ambient Temperature: 22.1° C; Liquid Temperature : 21.2° C).

Test Laboratory: Imst GmbH, DASY Yellow (II); **File Name:** [390yprm_1.da4](#)

DUT: BenQ; **Type:** S68 Ceramic; **Serial:** 358439002262390

Program Name: Cheek Right

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 40.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.99, 4.99, 4.99); Calibrated: 15.02.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 11.07.2006
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

Maximum value of SAR (measured) = 0.250 mW/g

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

Reference Value = 8.61 V/m; Power Drift = -0.153 dB

Peak SAR (extrapolated) = 0.400 W/kg

SAR(1 g) = 0.223 mW/g; SAR(10 g) = 0.117 mW/g

Maximum value of SAR (measured) = 0.257 mW/g

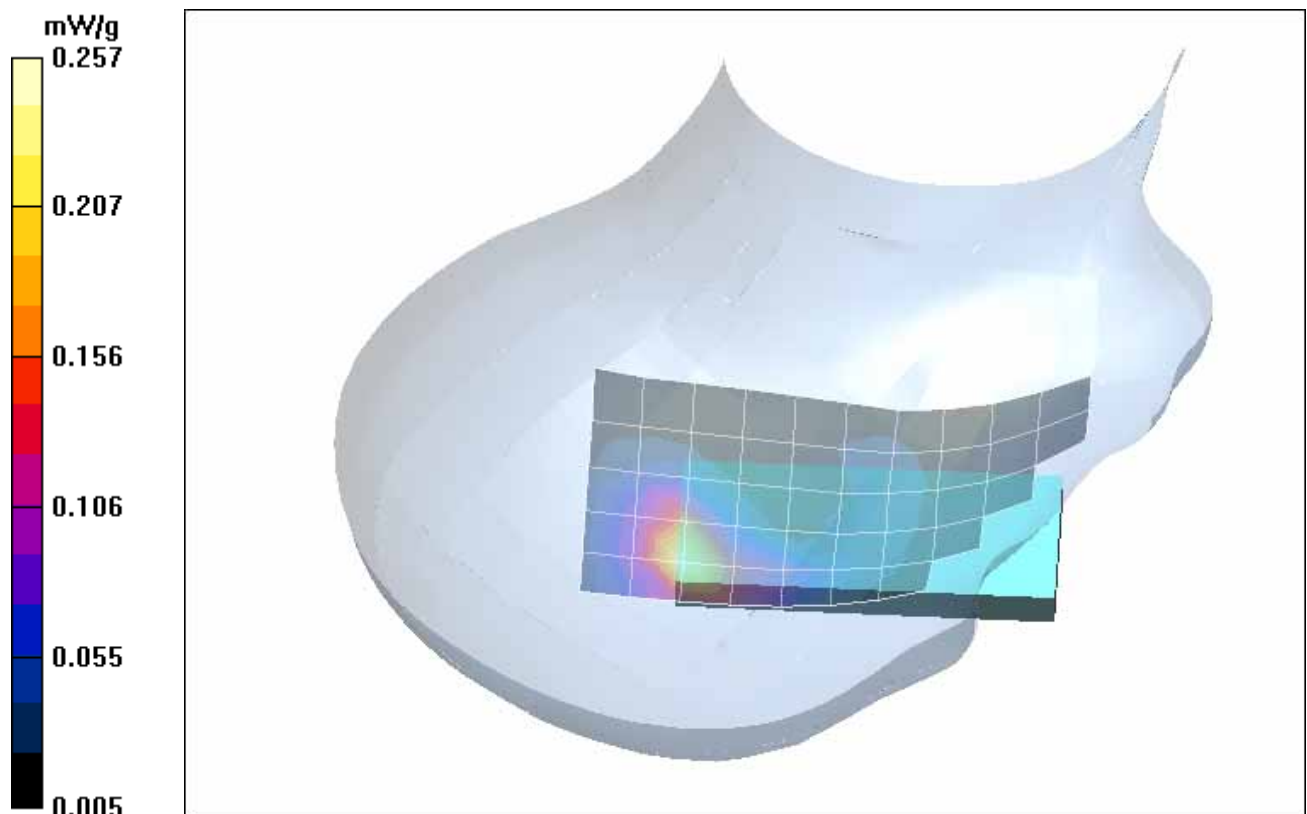


Fig. 3: SAR distribution for PCS 1900, channel 661, cheek position, right side of head (July 26, 2006; Ambient Temperature: 22.1° C; Liquid Temperature : 21.2° C).

Test Laboratory: Imst GmbH, DASY Yellow (II); **File Name:** [390yprm_2.da4](#)

DUT: BenQ; **Type:** S68 Ceramic; **Serial:** 358439002262390

Program Name: Tilted Right

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 40.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.99, 4.99, 4.99); Calibrated: 15.02.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 11.07.2006
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

Maximum value of SAR (measured) = 0.241 mW/g

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

Reference Value = 9.93 V/m; Power Drift = -0.067 dB

Peak SAR (extrapolated) = 0.402 W/kg

SAR(1 g) = 0.230 mW/g; SAR(10 g) = 0.119 mW/g

Maximum value of SAR (measured) = 0.262 mW/g

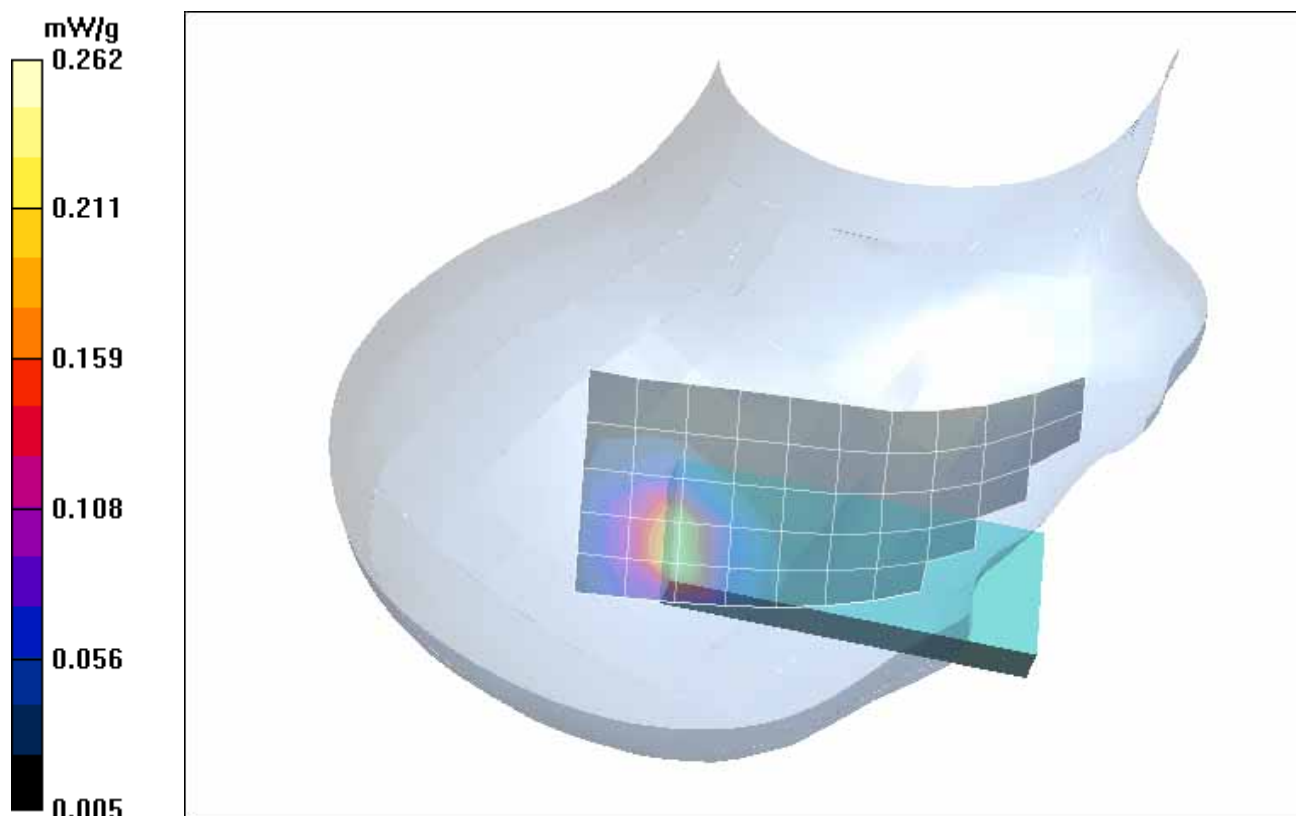


Fig. 4: SAR distribution for PCS 1900, channel 661, tilted position, right side of head (July 26, 2006; Ambient Temperature: 22.1 °C; Liquid Temperature : 21.2° C)

Test Laboratory: Imst GmbH, DASY Yellow (II); **File Name:** [390yprm 2 BT.da4](#)

DUT: BenQ; **Type:** S68 Ceramic; **Serial:** 358439002262390

Program Name: Tilted Right

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 40.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.99, 4.99, 4.99); Calibrated: 15.02.2006
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 11.07.2006
- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

Maximum value of SAR (measured) = 0.223 mW/g

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

Reference Value = 10.5 V/m; Power Drift = 0.012 dB

Peak SAR (extrapolated) = 0.388 W/kg

SAR(1 g) = 0.226 mW/g; SAR(10 g) = 0.119 mW/g

Maximum value of SAR (measured) = 0.257 mW/g

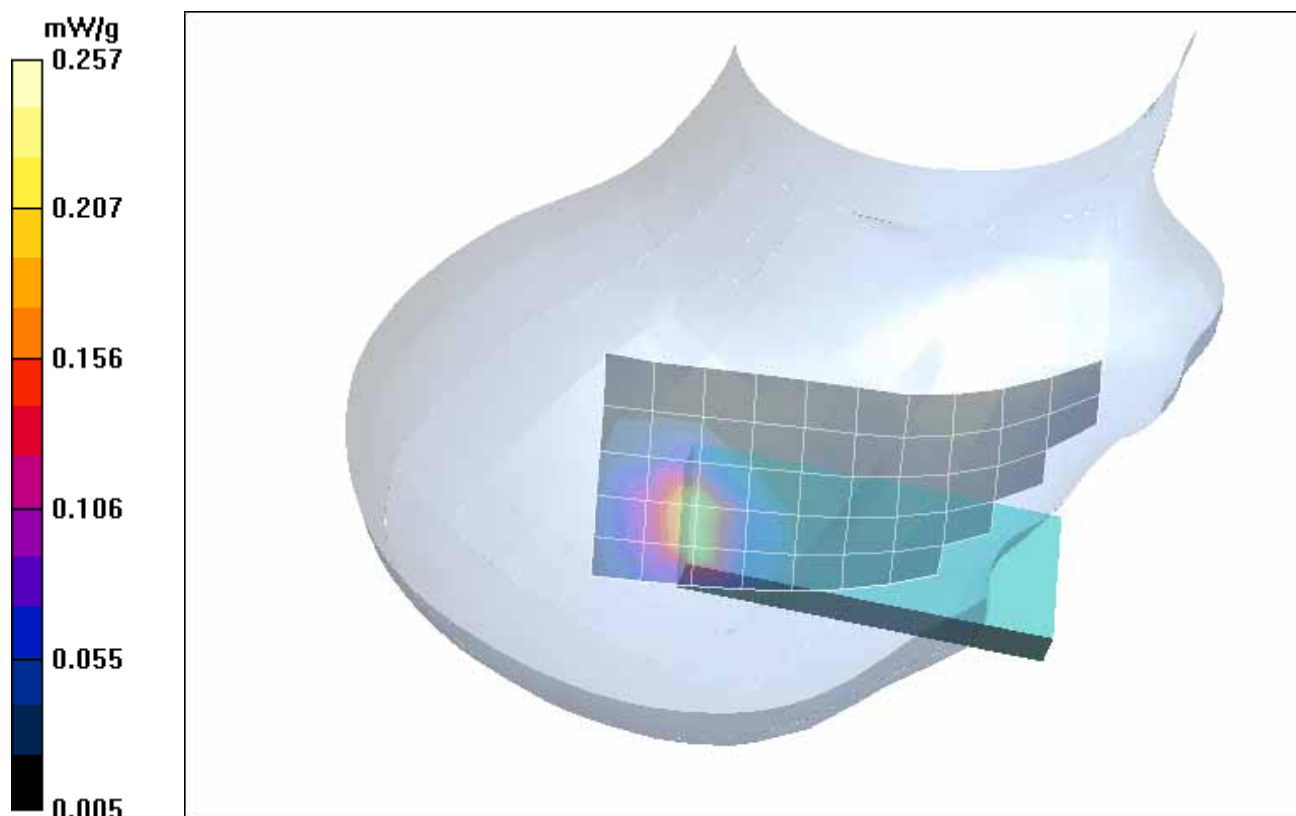


Fig. 5: SAR distribution for PCS 1900 at worst case position with Bluetooth activated, channel 661, tilted position, right side of head (July 26, 2006; Ambient Temperature: 22.1 °C; Liquid Temperature : 21.2° C)

2 SAR Distribution Plots, PCS 1900 Body worn configuration

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [390bphm_1_ohne_20mm.da4](#)

DUT: BenQ; Type: S68 Ceramic; Serial: 358439002262390

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; $\epsilon_r = 53.5$; $\rho = 1000$ 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: 11.07.2006
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

Maximum value of SAR (measured) = 0.204 mW/g

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

Reference Value = 6.75 V/m; Power Drift = 0.009 dB

Peak SAR (extrapolated) = 0.291 W/kg

SAR(1 g) = 0.188 mW/g; SAR(10 g) = 0.108 mW/g

Maximum value of SAR (measured) = 0.208 mW/g

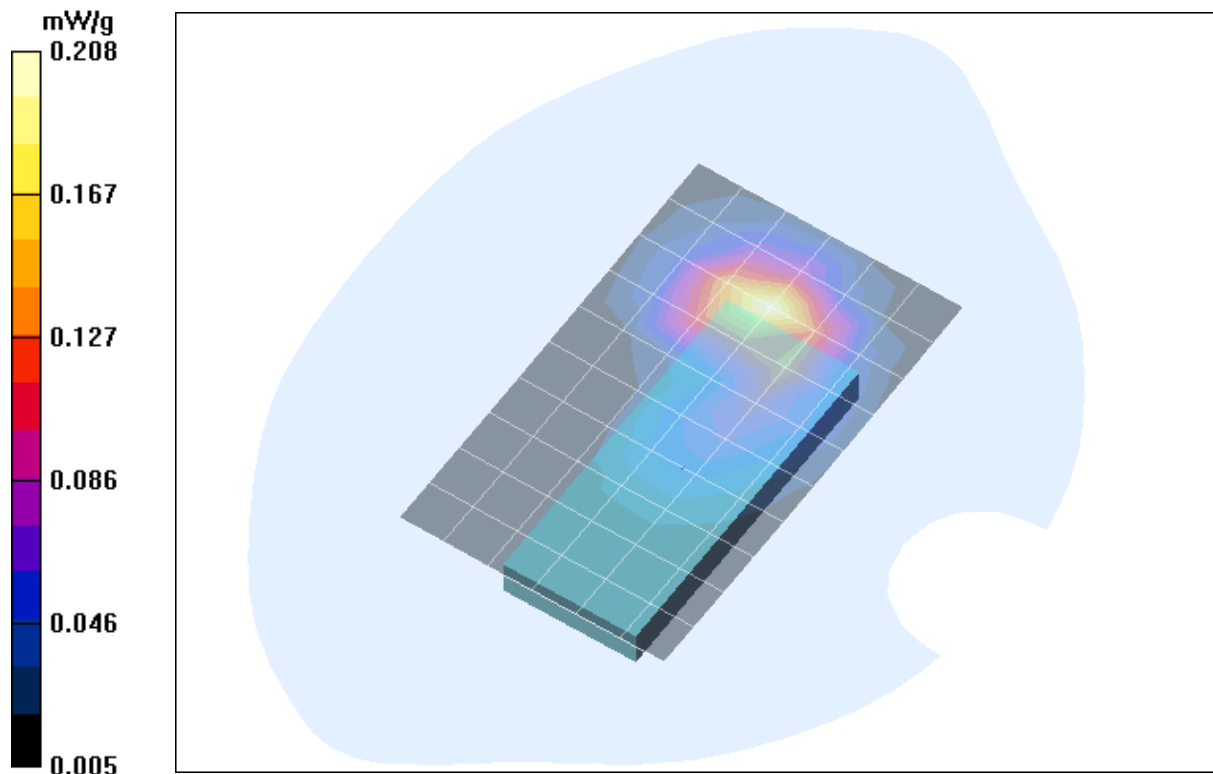


Fig. 6: SAR distribution for PCS 1900, channel 661, body worn configuration, antenna towards the phantom, without accessory, with 20 mm distance (July 28, 2006; Ambient Temperature: 22.4° C; Liquid Temperature: 21.3° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [390bphm 2 headset 20mm.da4](#)

DUT: BenQ; **Type:** S68 Ceramic; **Serial:** 358439002262390

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; $\epsilon_r = 53.5$; $\rho = 1000$ 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: 11.07.2006
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

Maximum value of SAR (measured) = 0.201 mW/g

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

Reference Value = 6.57 V/m; Power Drift = -0.135 dB

Peak SAR (extrapolated) = 0.313 W/kg

SAR(1 g) = 0.187 mW/g; SAR(10 g) = 0.107 mW/g

Maximum value of SAR (measured) = 0.208 mW/g

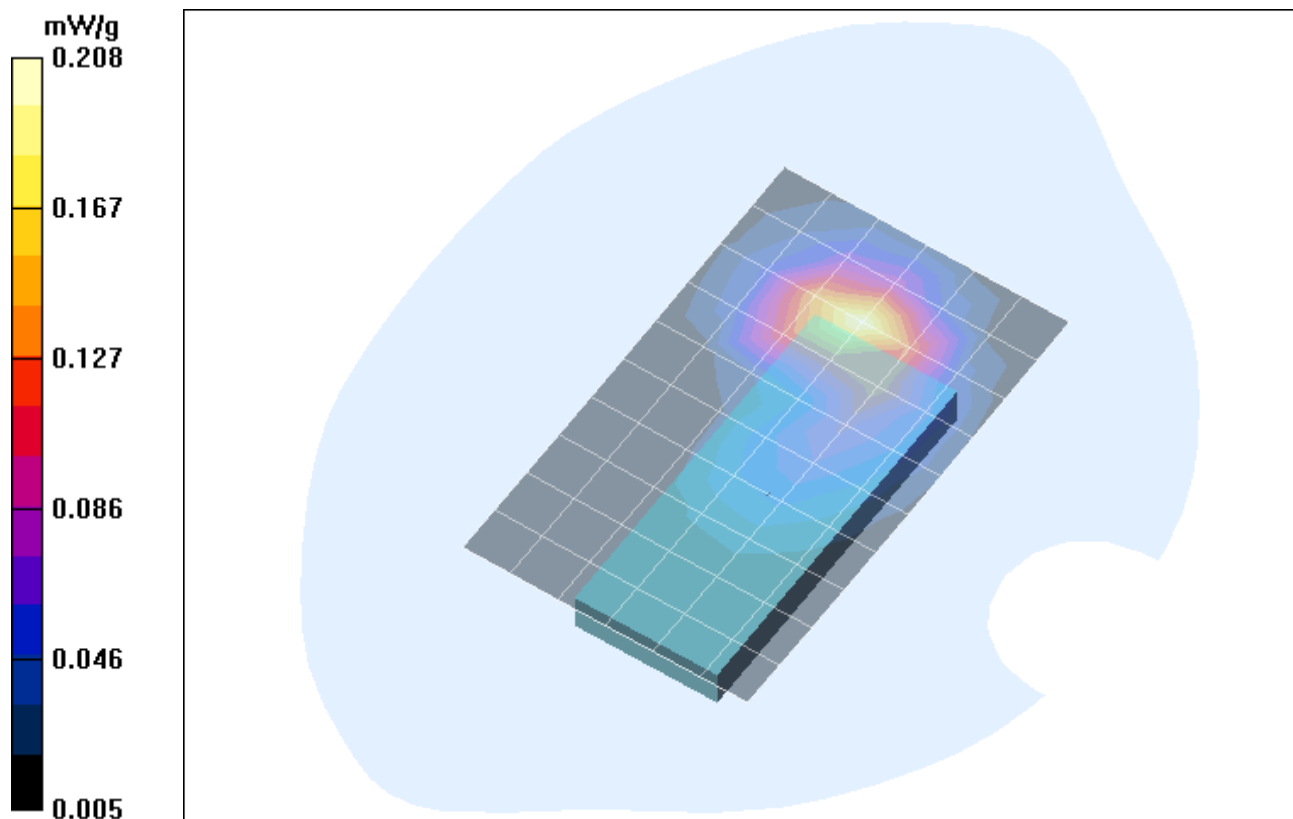


Fig. 7: SAR distribution for PCS 1900, channel 661, body worn configuration, antenna towards the phantom, with headset, with 20 mm distance (July 28, 2006; Ambient Temperature: 22.4° C; Liquid Temperature: 21.3° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [390bphm 4 data 22mm.da4](#)

DUT: BenQ; **Type:** S68 Ceramic; **Serial:** 358439002262390

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; $\epsilon_r = 53.5$; $\rho = 1000$ 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: 11.07.2006
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

Maximum value of SAR (measured) = 0.297 mW/g

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

Reference Value = 8.53 V/m; Power Drift = -0.104 dB

Peak SAR (extrapolated) = 0.447 W/kg

SAR(1 g) = 0.277 mW/g; SAR(10 g) = 0.163 mW/g

Maximum value of SAR (measured) = 0.303 mW/g

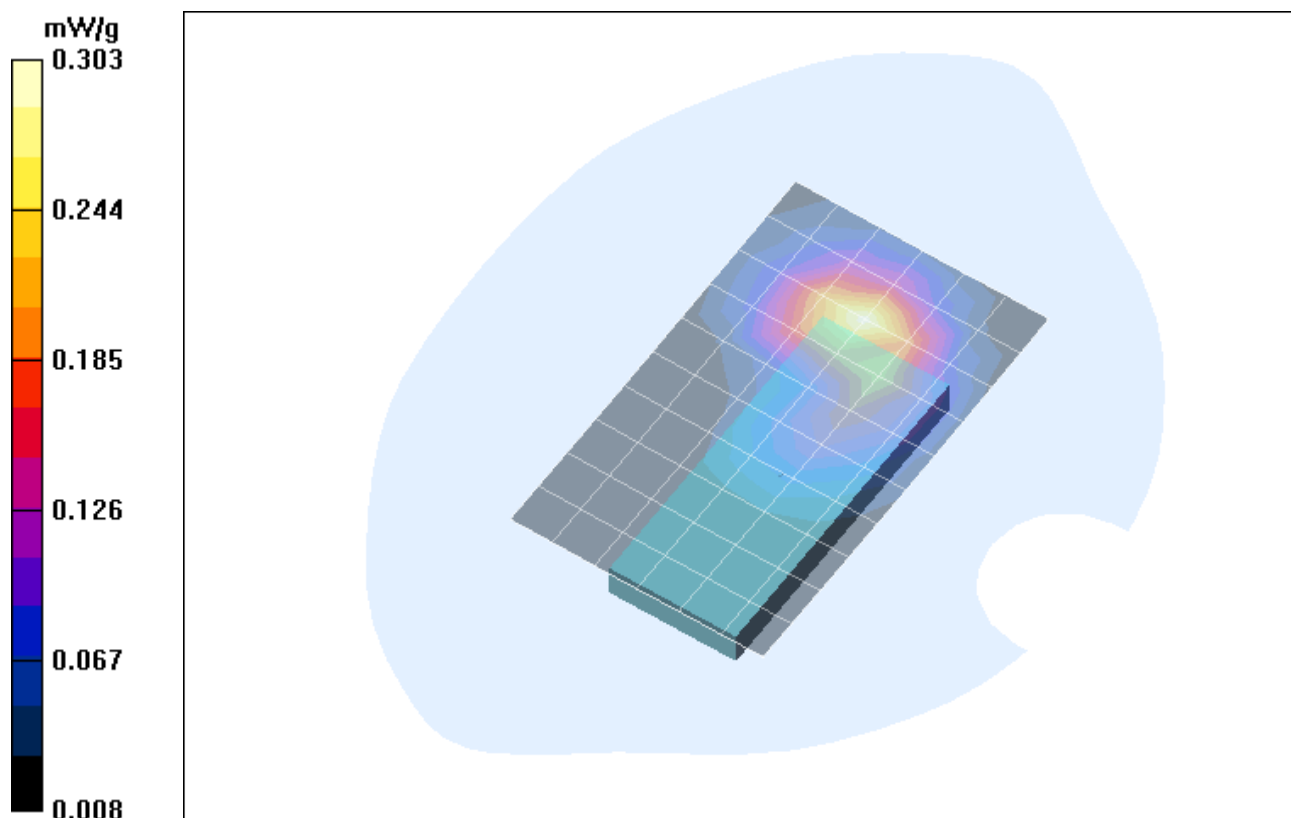


Fig. 8: SAR distribution for GPRS 1900 (Class 10), channel 661, body worn configuration, antenna towards the phantom, with data cable, with 22 mm distance (July 28, 2006; Ambient Temperature: 22.4° C; Liquid Temperature: 21.3° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [390bphm 5 BT 22mm.da4](#)

DUT: BenQ; **Type:** S68 Ceramic; **Serial:** 358439002262390

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; $\epsilon_r = 53.5$; $\rho = 1000$ 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: 11.07.2006
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

Maximum value of SAR (measured) = 0.319 mW/g

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

Reference Value = 7.99 V/m; Power Drift = -0.187 dB

Peak SAR (extrapolated) = 0.429 W/kg

SAR(1 g) = 0.279 mW/g; SAR(10 g) = 0.165 mW/g

Maximum value of SAR (measured) = 0.305 mW/g

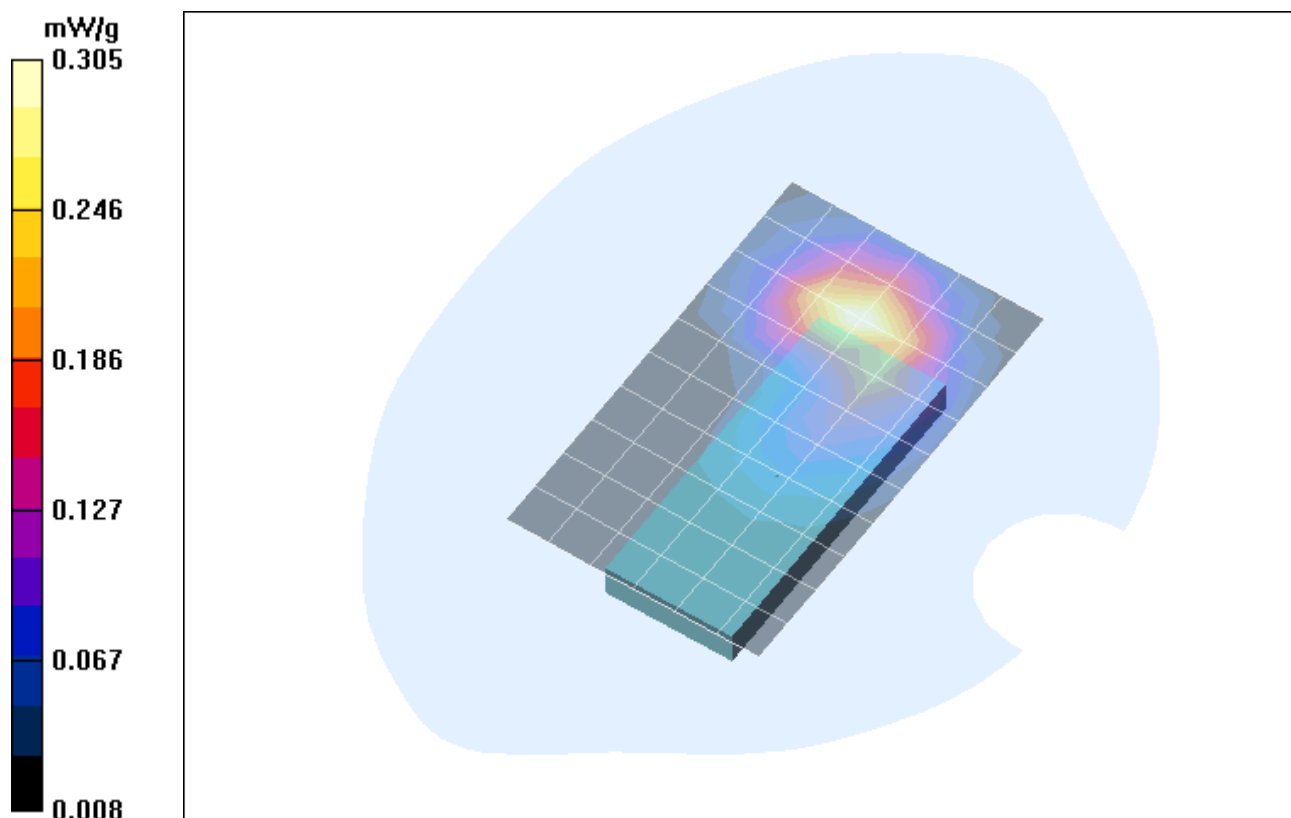


Fig. 9: SAR distribution for GPRS 1900, channel 661, body worn configuration, antenna towards the phantom, without accessory, with BT activated, with 22 mm distance (July 28, 2006; Ambient Temperature: 22.4° C; Liquid Temperature: 21.3° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [390bphm 6 PTT 25mm.da4](#)

DUT: BenQ; **Type:** S68 Ceramic; **Serial:** 358439002262390

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; $\epsilon_r = 53.5$; $\rho = 1000$ 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: 11.07.2006
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

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

Maximum value of SAR (measured) = 0.058 mW/g

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

Reference Value = 3.43 V/m; Power Drift = -0.016 dB

Peak SAR (extrapolated) = 0.082 W/kg

SAR(1 g) = 0.056 mW/g; SAR(10 g) = 0.036 mW/g

Maximum value of SAR (measured) = 0.059 mW/g

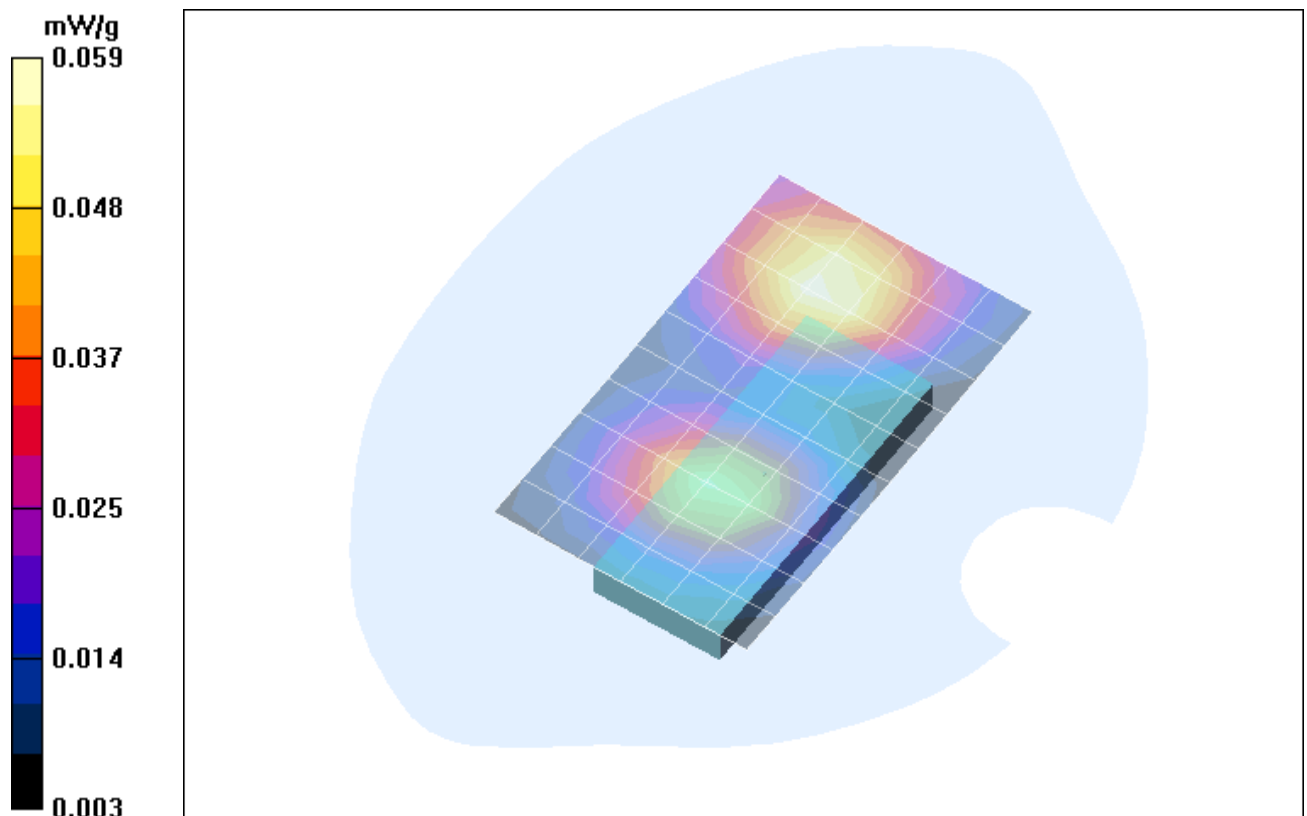


Fig. 10: SAR distribution for GPRS 1900, channel 661, body worn configuration, display towards the phantom, PTT mode, 25mm distance (July 28, 2006; Ambient Temperature: 22.4° C; Liquid Temperature: 21.3° C).

3 SAR z-axis scans (Validation)

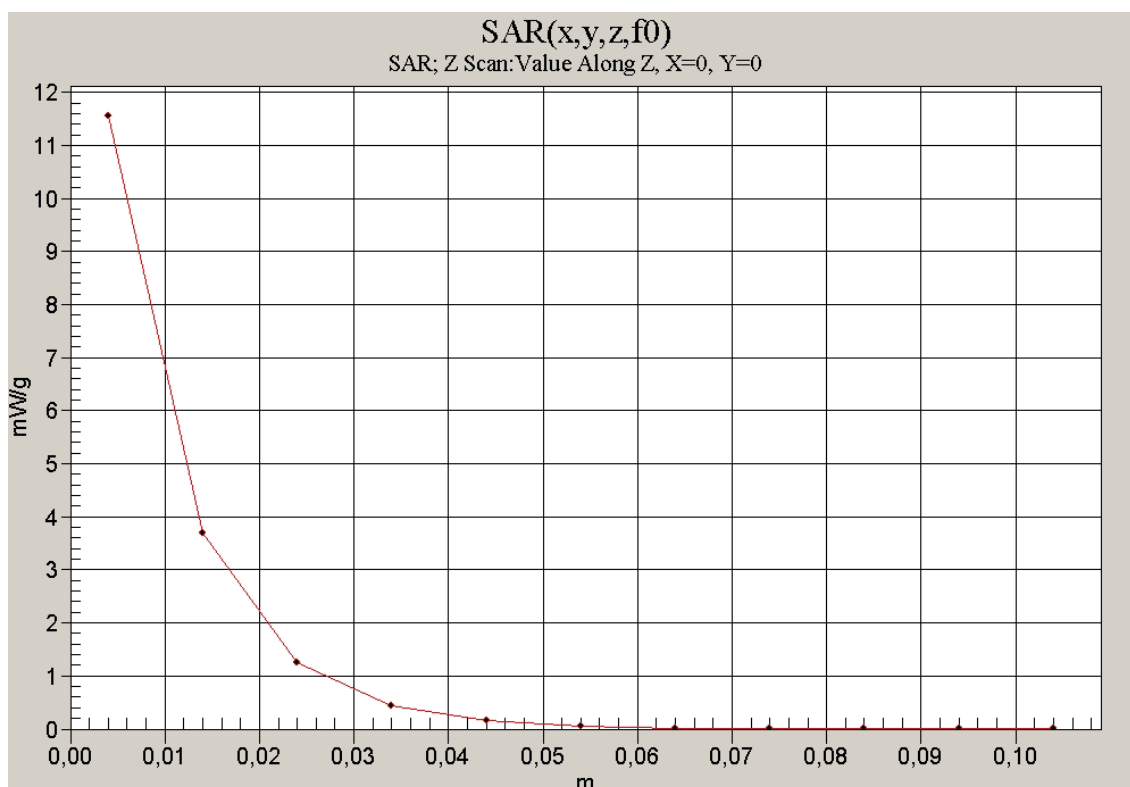


Fig. 11: SAR versus liquid depth, 1900 MHz, head (July 26, 2006; Ambient Temperature: 22.5° C; Liquid Temperature : 21.3° C).

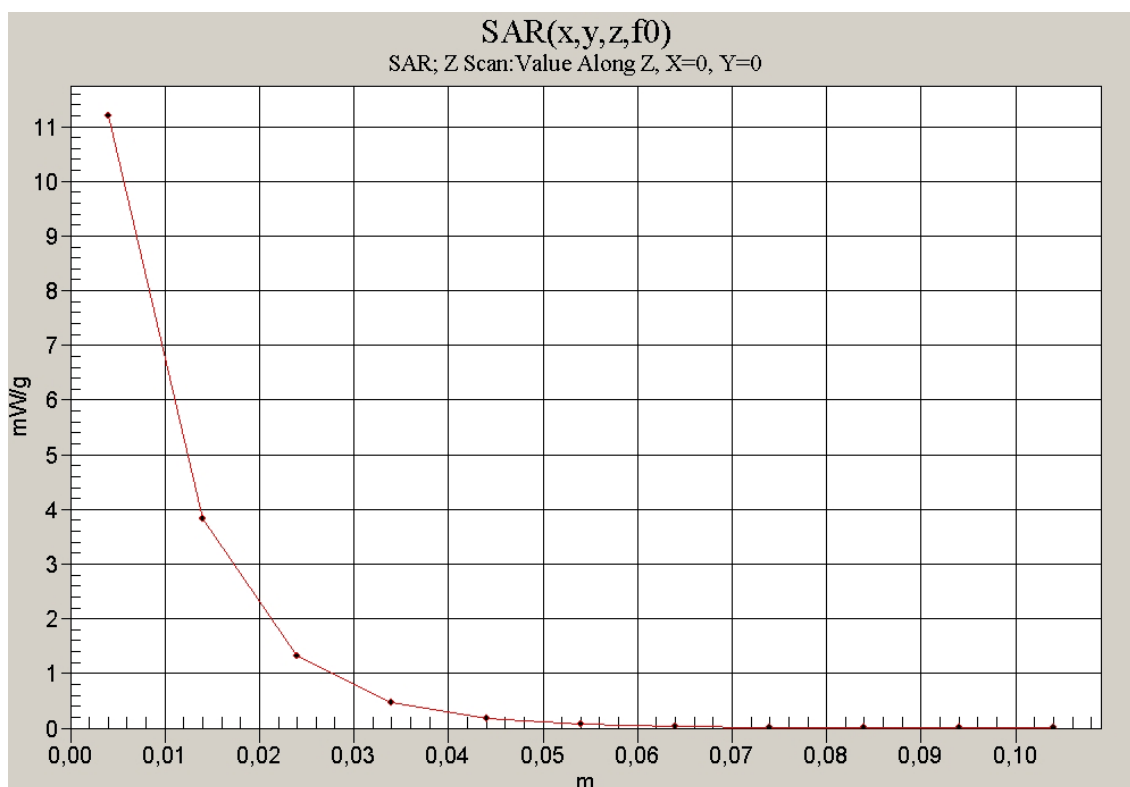


Fig. 12: SAR versus liquid depth, 1900 MHz, body (July 28, 2006; Ambient Temperature: 22.3° C; Liquid Temperature : 21.2° C).

4 SAR z-axis scans (Measurements)

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

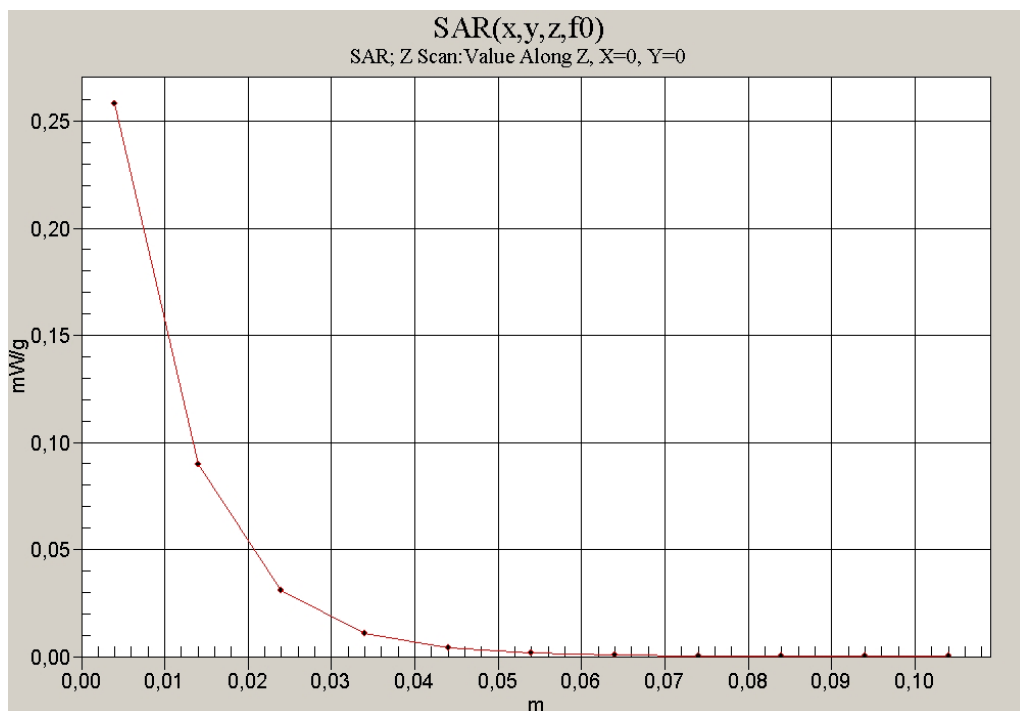


Fig. 13: SAR versus liquid depth, head: PCS 1900, channel 661, tilted position, right side of head (July 26, 2006; Ambient Temperature: 22.1° C; Liquid Temperature : 21.2° C).

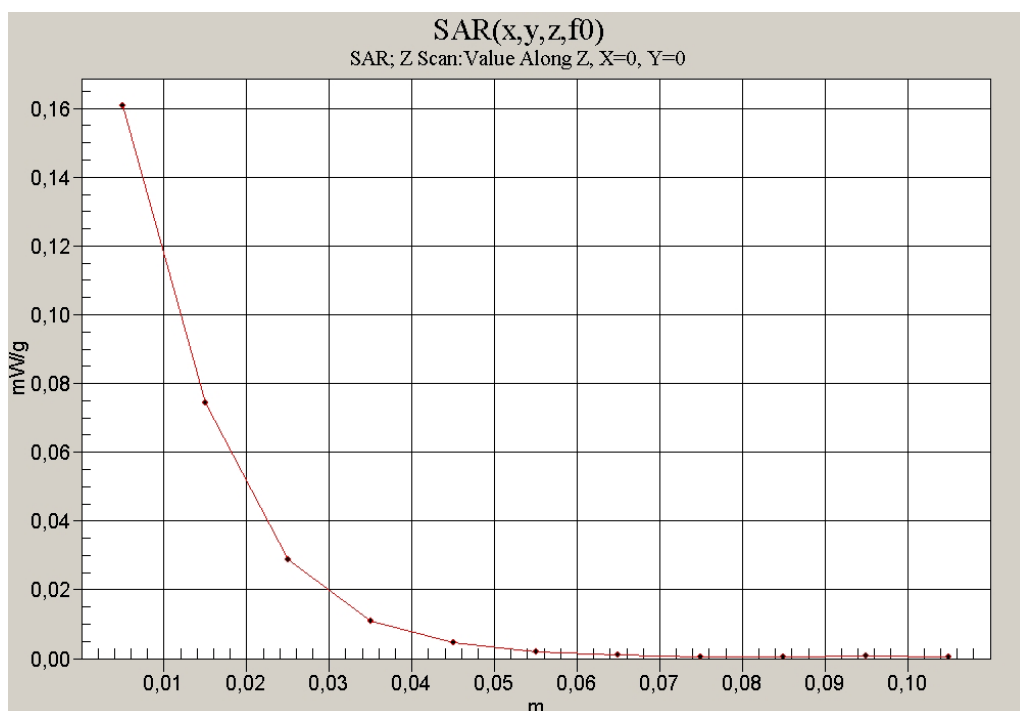


Fig. 14: SAR versus liquid depth, body: GPRS 1900 (Class 10), channel 661, without accessory and BT activated, with 22 mm distance (July 28, 2006; Ambient Temperature: 22.4° C; Liquid Temperature: 21.3° C).