
Appendix for the Report

Dosimetric Assessment of the BenQ Siemens M81 (FCC ID: PWX-M81)

According to the FCC Requirements

SAR Distribution Plots

June 13, 2006
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The test results only relate to the items tested.
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Table of Contents

1	SAR DISTRIBUTION PLOTS, PCS 1900 HEAD	3
2	SAR DISTRIBUTION PLOTS, PCS 1900 HEAD, WORST CASE WITH BLUETOOTH ACTIVATED7	
3	SAR DISTRIBUTION PLOTS, PCS 1900 BODY, GSM MODE.....	8
4	SAR DISTRIBUTION PLOTS, PCS 1900 BODY WITH DATA CABLE, GPRS MODE	11
5	SAR Z-AXIS SCANS (VALIDATION)	12
6	SAR Z-AXIS SCANS (MEASUREMENTS).....	13

1 SAR Distribution Plots, PCS 1900 Head

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [724bplm_1.da4](#)

DUT: BenQ; Type: M81; Serial: 004401490103724

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; $\epsilon_r = 40.6$; $\rho = 1000$ 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 1176; Type: Speag; Serial: 1176
- 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) = 0.496 mW/g

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

Reference Value = 13.3 V/m; Power Drift = -0.198 dB

Peak SAR (extrapolated) = 0.975 W/kg

SAR(1 g) = 0.496 mW/g; SAR(10 g) = 0.258 mW/g

Maximum value of SAR (measured) = 0.545 mW/g

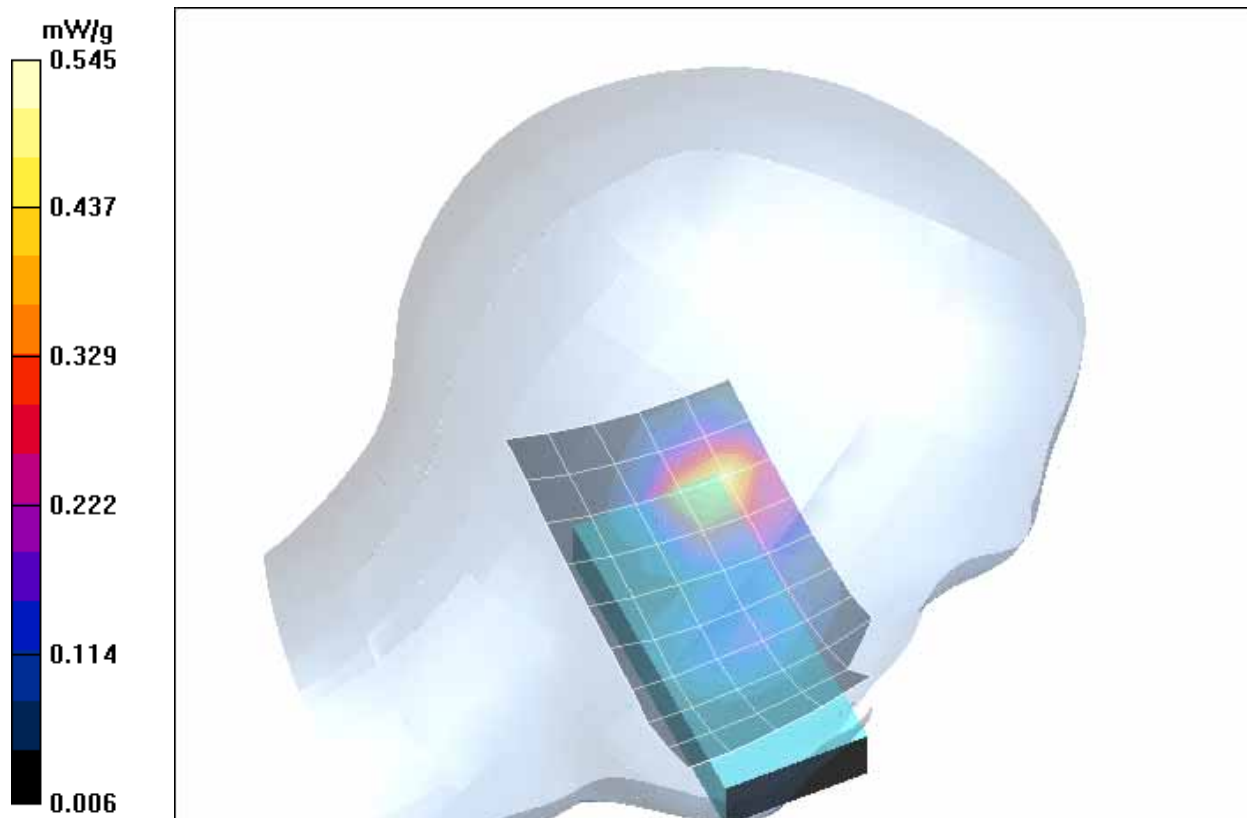


Fig. 1: SAR distribution for PCS 1900, channel 661, cheek position, left side of head (June 12, 2006; Ambient Temperature: 22.1° C; Liquid Temperature : 21.4° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [724bp1m 2.da4](#)

DUT: BenQ; **Type:** M81; **Serial:** 004401490103724

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; $\epsilon_r = 40.6$; $\rho = 1000$ 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 1176; Type: Speag; Serial: 1176
- 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) = 0.426 mW/g

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

Reference Value = 14.3 V/m; Power Drift = -0.165 dB

Peak SAR (extrapolated) = 0.780 W/kg

SAR(1 g) = 0.419 mW/g; SAR(10 g) = 0.222 mW/g

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

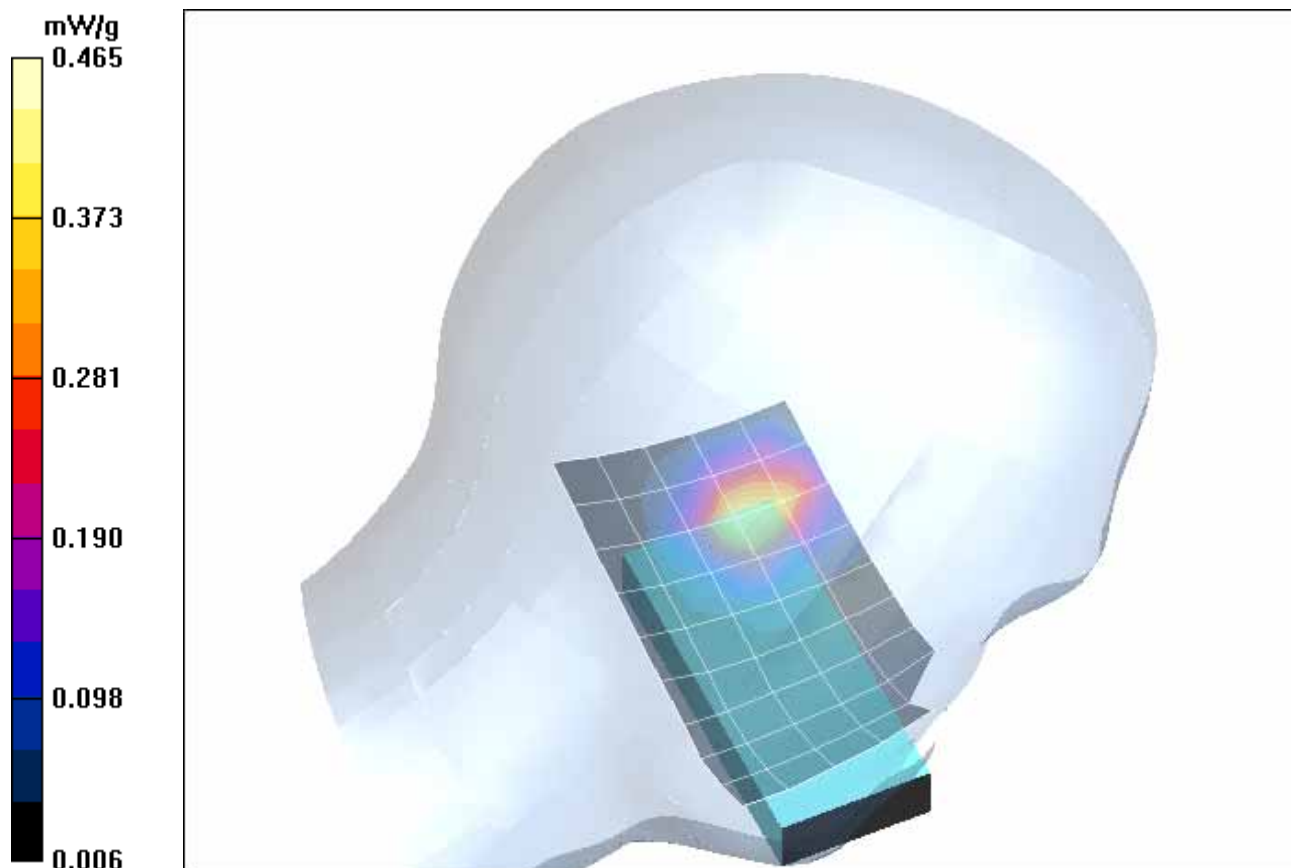


Fig. 2: SAR distribution for PCS 1900, channel 661, tilted position, left side of head (June 12, 2006; Ambient Temperature: 22.1° C; Liquid Temperature : 21.4° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [724bprm 1.da4](#)

DUT: BenQ; **Type:** M81; **Serial:** 004401490103724

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; $\epsilon_r = 40.6$; $\rho = 1000$ 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 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

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

Maximum value of SAR (measured) = 0.270 mW/g

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

Reference Value = 12.8 V/m; Power Drift = -0.062 dB

Peak SAR (extrapolated) = 0.479 W/kg

SAR(1 g) = 0.284 mW/g; SAR(10 g) = 0.163 mW/g

Maximum value of SAR (measured) = 0.312 mW/g

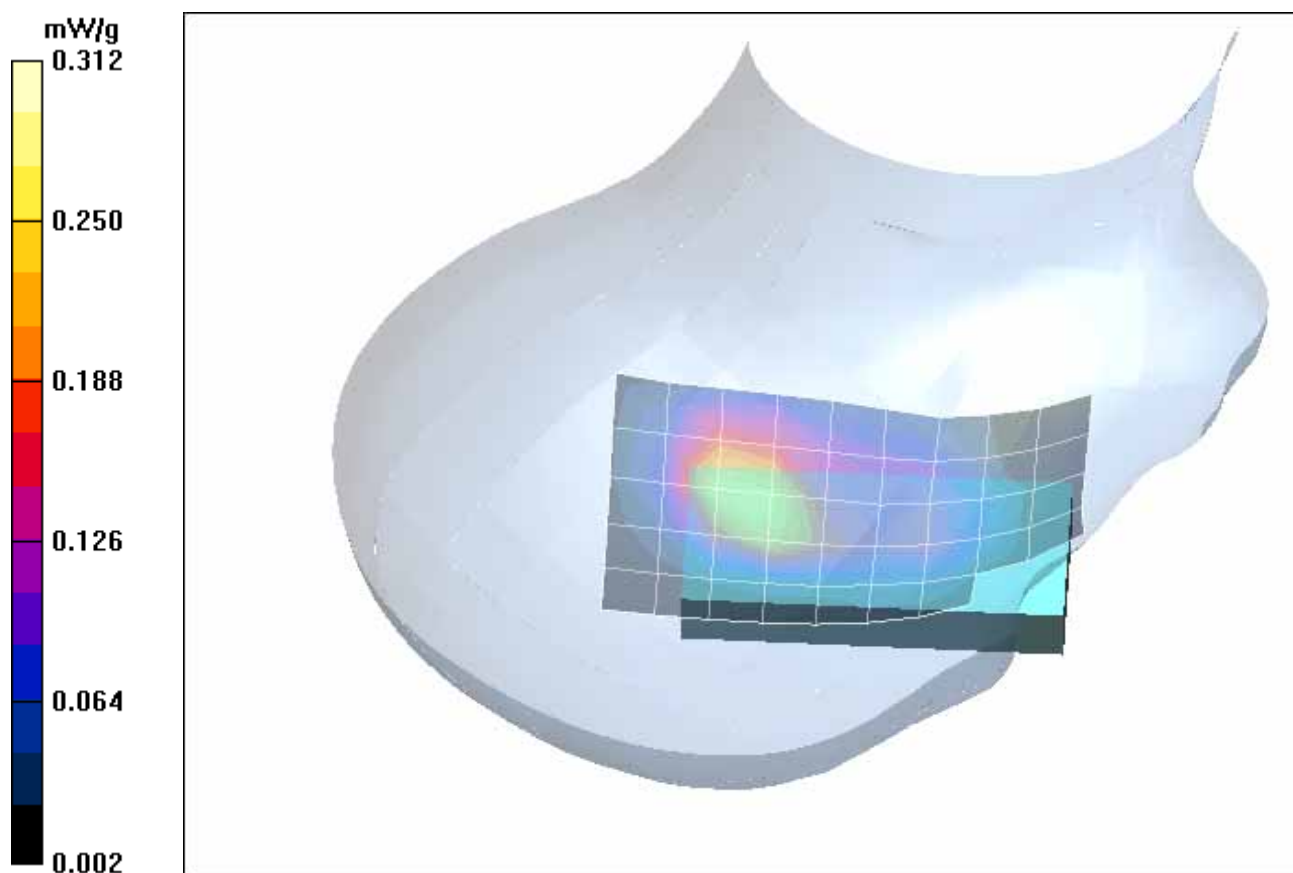


Fig. 3: SAR distribution for PCS 1900, channel 661, cheek position, right side of head (June 12, 2006; Ambient Temperature: 22.1° C; Liquid Temperature : 21.4° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [724bprm 2.da4](#)

DUT: BenQ; **Type:** M81; **Serial:** 004401490103724

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; $\epsilon_r = 40.6$; $\rho = 1000$ 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 1176; Type: Speag; Serial: 1176
- 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) = 0.288 mW/g

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

Reference Value = 13.1 V/m; Power Drift = -0.015 dB

Peak SAR (extrapolated) = 0.443 W/kg

SAR(1 g) = 0.260 mW/g; SAR(10 g) = 0.143 mW/g

Maximum value of SAR (measured) = 0.289 mW/g

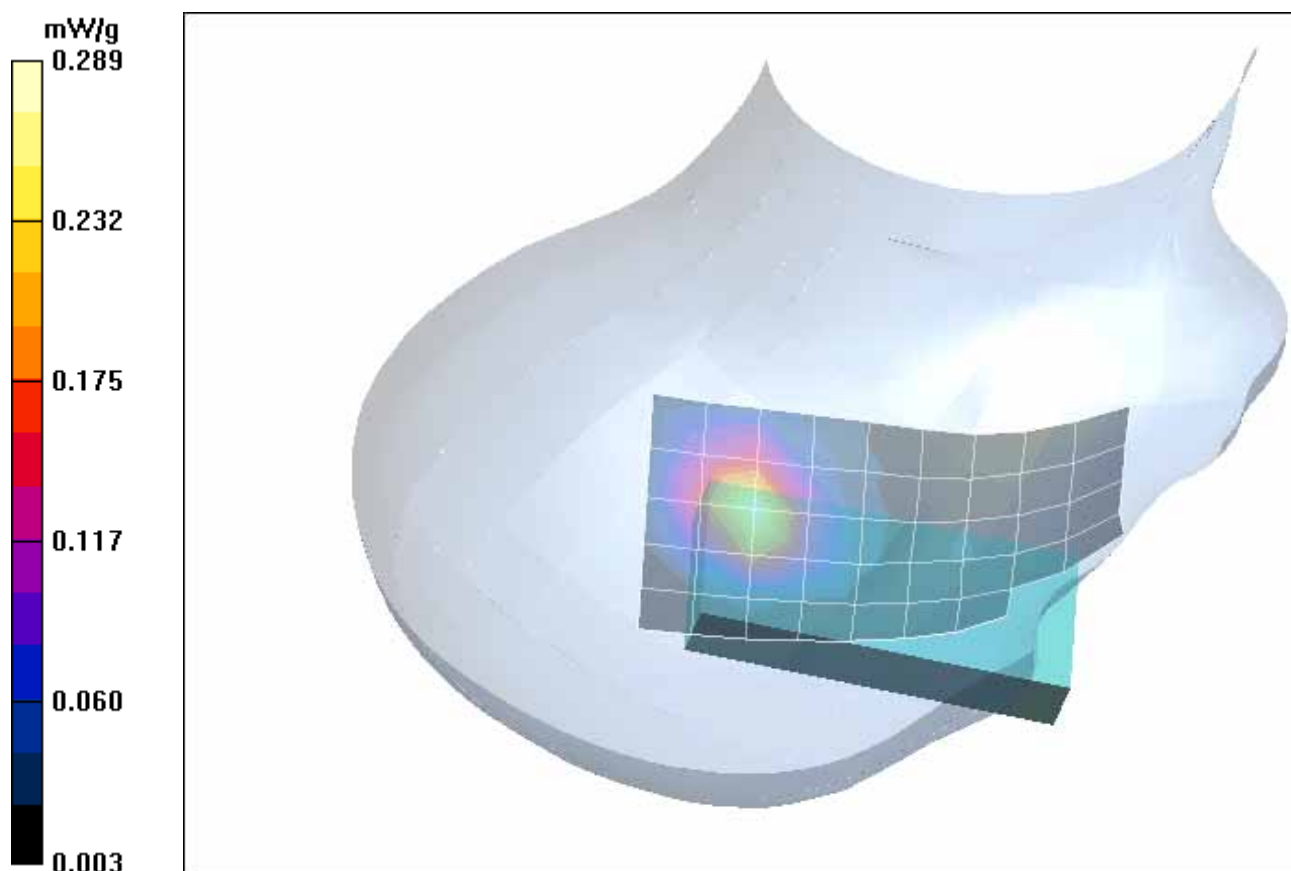


Fig. 4: SAR distribution for PCS 1900, channel 661, tilted position, right side of head (June 12, 2006; Ambient Temperature: 22.2 °C; Liquid Temperature : 21.4° C)

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

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [724bplm_1_BT.da4](#)

DUT: BenQ; Type: M81; Serial: 004401490103724

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; $\epsilon_r = 40.6$; $\rho = 1000$ 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 1176; Type: Speag; Serial: 1176
- 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) = 0.397 mW/g

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

Reference Value = 11.4 V/m; Power Drift = 0.070 dB

Peak SAR (extrapolated) = 0.812 W/kg

SAR(1 g) = 0.431 mW/g; SAR(10 g) = 0.225 mW/g

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

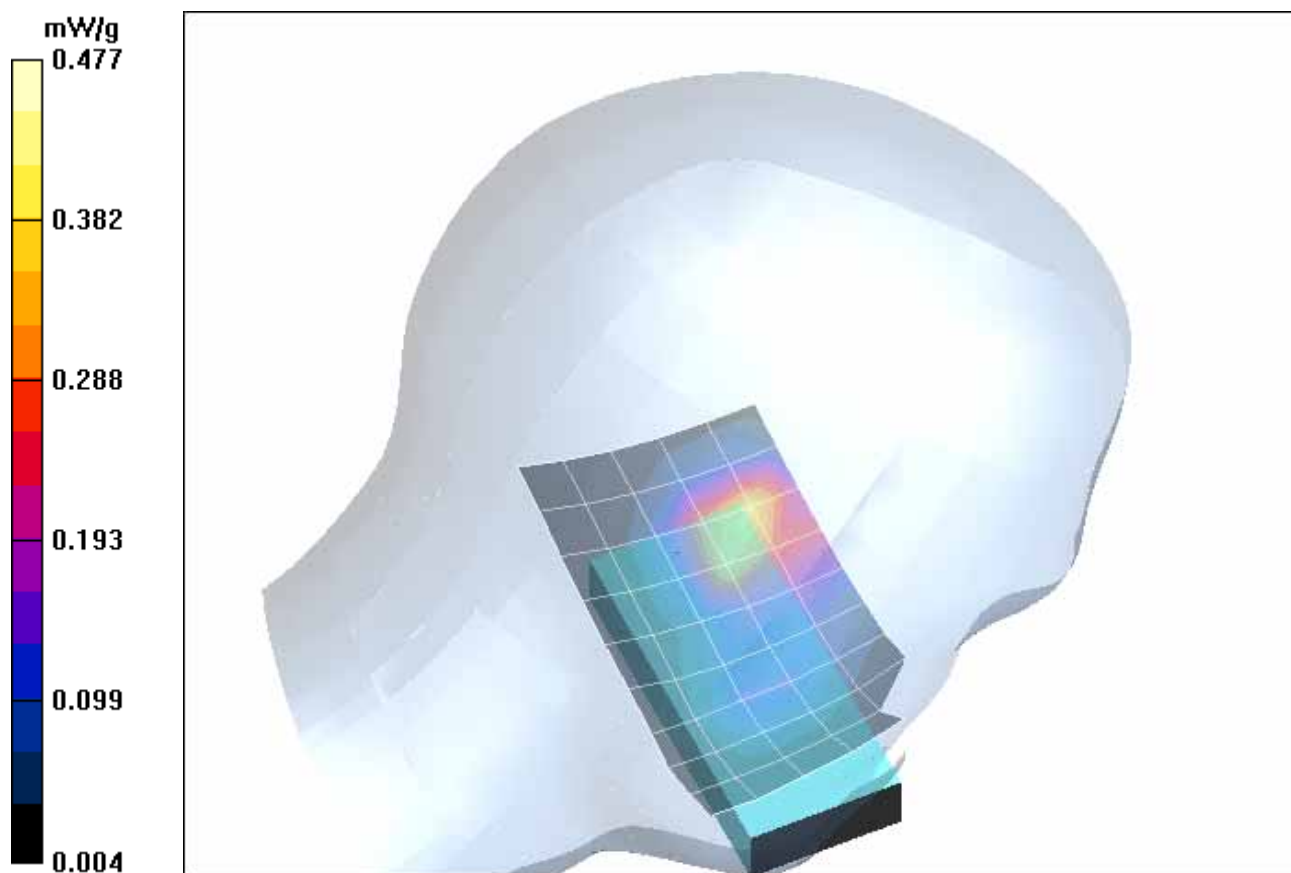


Fig. 5: SAR distribution for PCS 1900, channel 661, cheek position, left side of head (June 12, 2006; Ambient Temperature: 22.1° C; Liquid Temperature : 21.4° C).

3 SAR Distribution Plots, PCS 1900 Body, GSM mode

Test Laboratory: The name of your organization; File Name: [724yphm_5.da4](#)

DUT: BenQ; Type: M81; Serial: 004401490103724

Program Name: Body Worn

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.55$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ 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 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Body Worn/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.159 mW/g

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

Reference Value = 6.87 V/m; Power Drift = -0.043 dB

Peak SAR (extrapolated) = 0.249 W/kg

SAR(1 g) = 0.154 mW/g; SAR(10 g) = 0.092 mW/g

Maximum value of SAR (measured) = 0.166 mW/g

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

Reference Value = 6.87 V/m; Power Drift = -0.043 dB

Peak SAR (extrapolated) = 0.118 W/kg

SAR(1 g) = 0.081 mW/g; SAR(10 g) = 0.052 mW/g

Maximum value of SAR (measured) = 0.086 mW/g

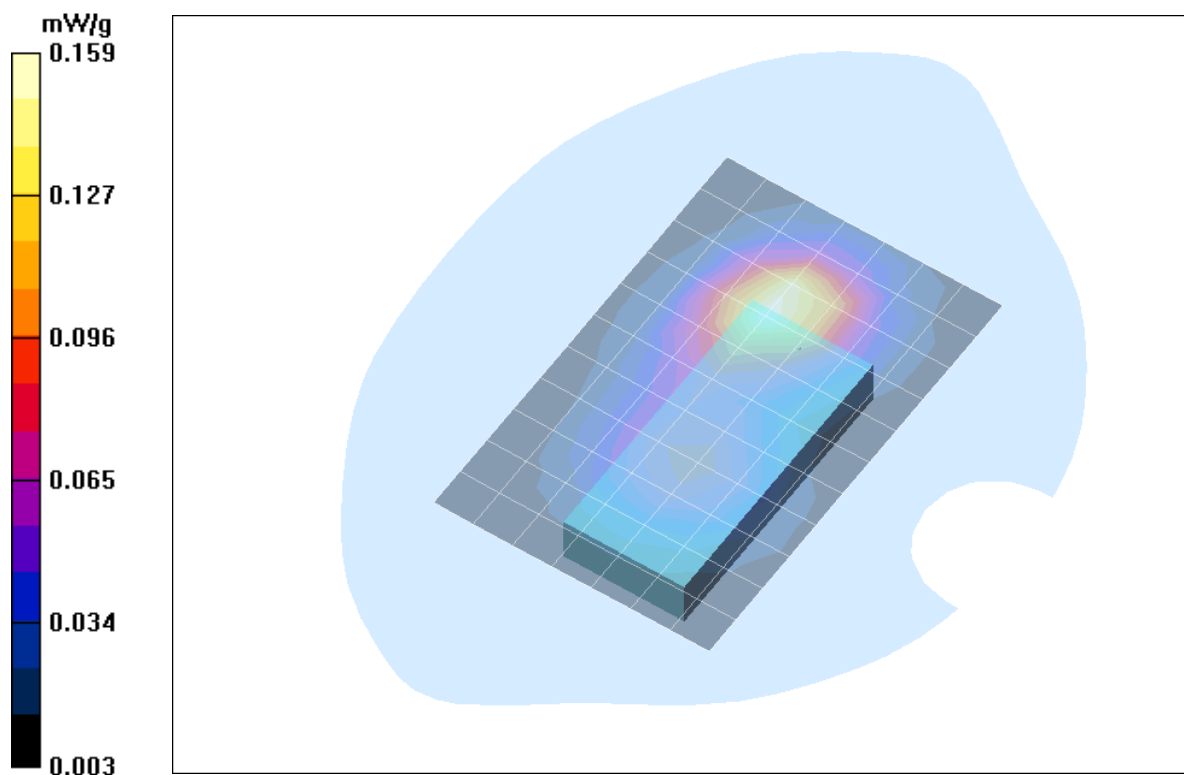


Fig. 6: SAR distribution for PCS 1900, channel 661, body worn configuration, antenna towards the phantom, without accessory with 15 mm distance (June 12, 2006; Ambient Temperature: 22.2° C; Liquid Temperature: 21.4° C).

Test Laboratory: The name of your organization; **File Name:** [724yphm_7.da4](#)

DUT: BenQ; **Type:** M81; **Serial:** 004401490103724

Program Name: Body Worn

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.55$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ 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 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Body Worn/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.161 mW/g

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

Reference Value = 6.95 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 0.262 W/kg

SAR(1 g) = 0.162 mW/g; SAR(10 g) = 0.096 mW/g

Maximum value of SAR (measured) = 0.177 mW/g

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

Reference Value = 6.95 V/m; Power Drift = 0.031 dB

Peak SAR (extrapolated) = 0.124 W/kg

SAR(1 g) = 0.085 mW/g; SAR(10 g) = 0.055 mW/g

Maximum value of SAR (measured) = 0.091 mW/g

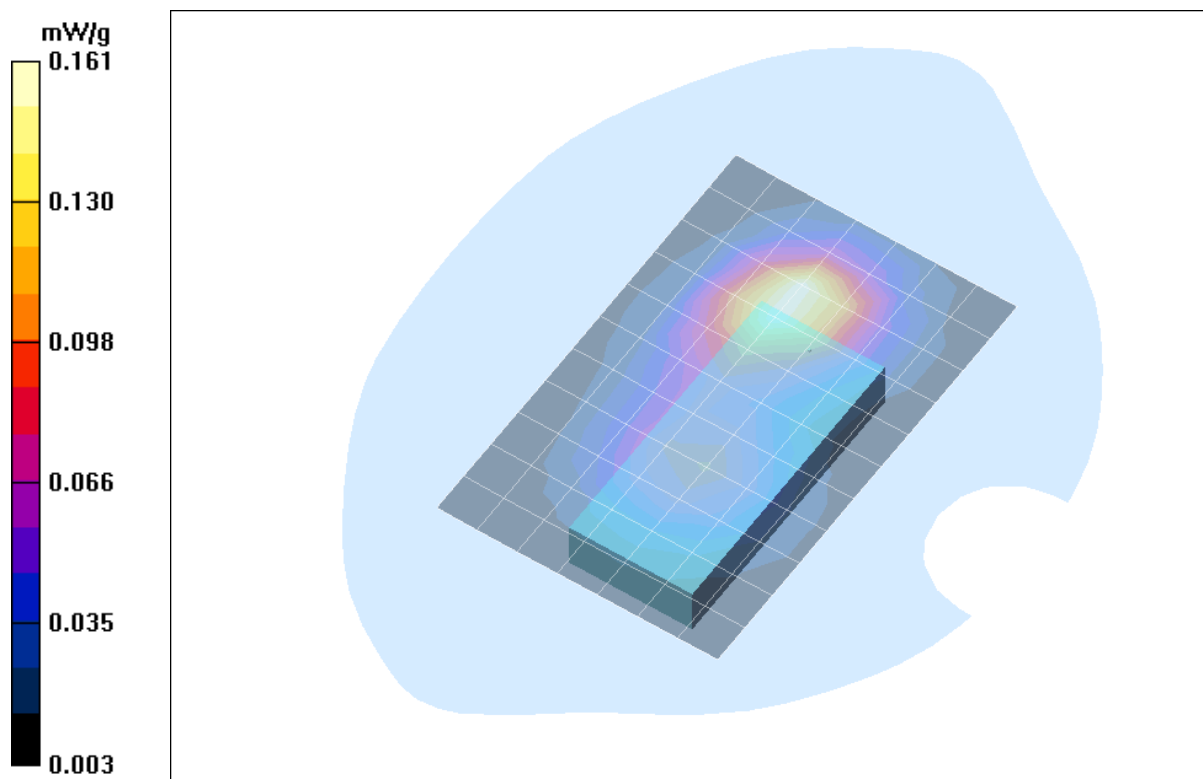


Fig. 7: SAR distribution for PCS 1900, channel 661, body worn configuration, antenna towards the phantom, without accessory and BT activated (June 12, 2006; Ambient Temperature: 22.2° C; Liquid Temperature: 21.4° C).

Test Laboratory: The name of your organization; File Name: [724yphm_6.da4](#)

DUT: BenQ; Type: M81; Serial: 004401490103724

Program Name: Body Worn

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.55$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ 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 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Body Worn/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.191 mW/g

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

Reference Value = 7.48 V/m; Power Drift = -0.180 dB

Peak SAR (extrapolated) = 0.280 W/kg

SAR(1 g) = 0.173 mW/g; SAR(10 g) = 0.103 mW/g

Maximum value of SAR (measured) = 0.188 mW/g

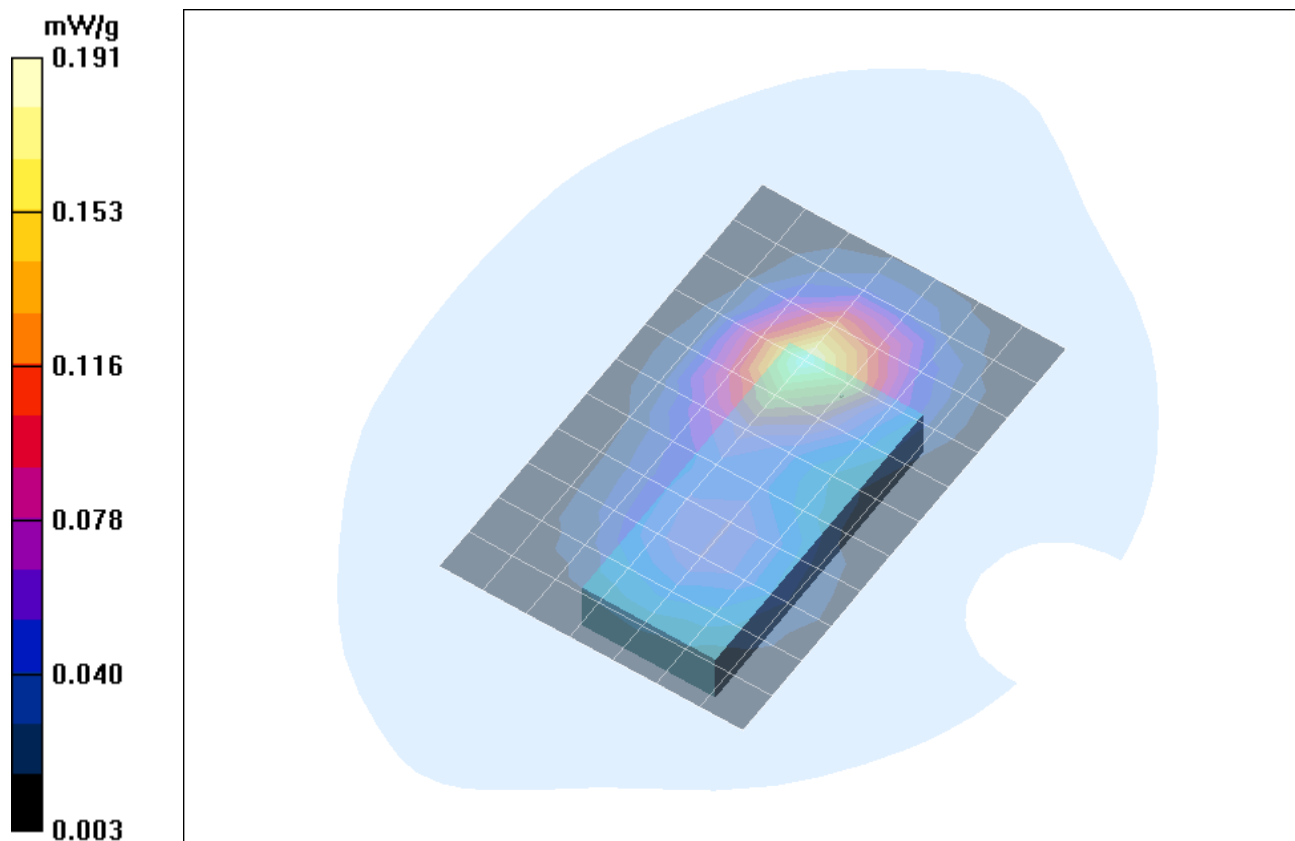


Fig. 8: SAR distribution for PCS 1900, channel 661, body worn configuration, antenna towards the phantom, with headset (June 12, 2006; Ambient Temperature: 22.2° C; Liquid Temperature: 21.4° C).

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

Test Laboratory: The name of your organization; File Name: [724yphm_9.da4](#)

DUT: BenQ; Type: M81; Serial: 004401490103724

Program Name: Body Worn

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

Medium parameters used: $f = 1880$ MHz; $\sigma = 1.55$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ 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 1340; Type: QD 000 P40 CB; Serial: TP-1340
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 161

Body Worn/Area Scan (8x12x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 9.40 V/m; Power Drift = 0.085 dB

Peak SAR (extrapolated) = 0.372 W/kg

SAR(1 g) = 0.236 mW/g; SAR(10 g) = 0.143 mW/g

Maximum value of SAR (measured) = 0.254 mW/g

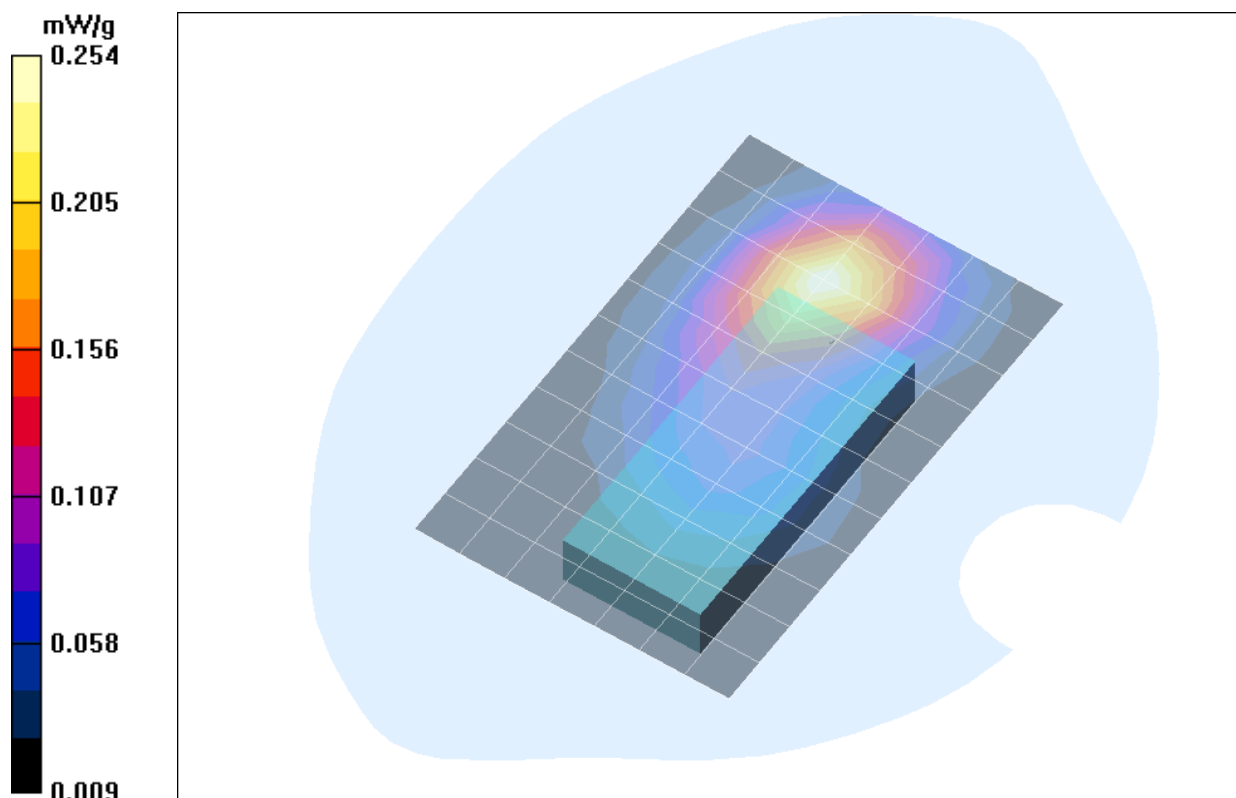


Fig. 9: SAR distribution for GPRS 1900 (Class 10), channel 661, body worn configuration, antenna towards the phantom, with data and 20 mm distance (June 12, 2006; Ambient Temperature: 22.2° C; Liquid Temperature: 21.5°C).

5 SAR z-axis scans (Validation)

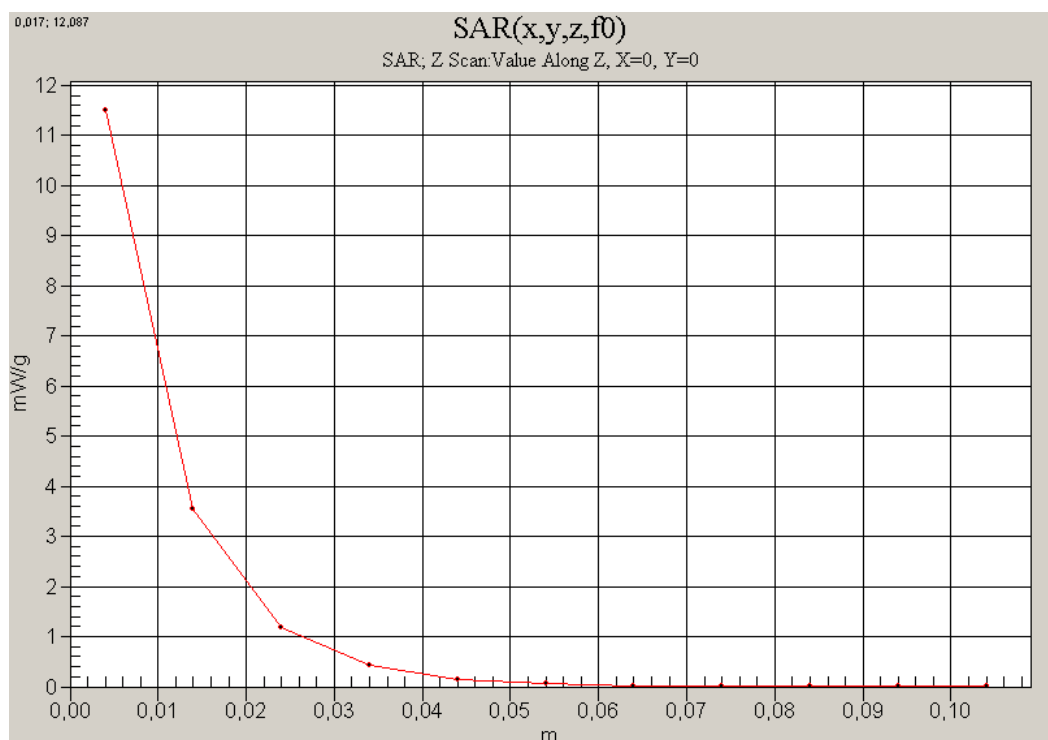


Fig. 10: SAR versus liquid depth, 1900 MHz, head (June 12, 2006; Ambient Temperature: 22.0° C; Liquid Temperature : 21.3° C).

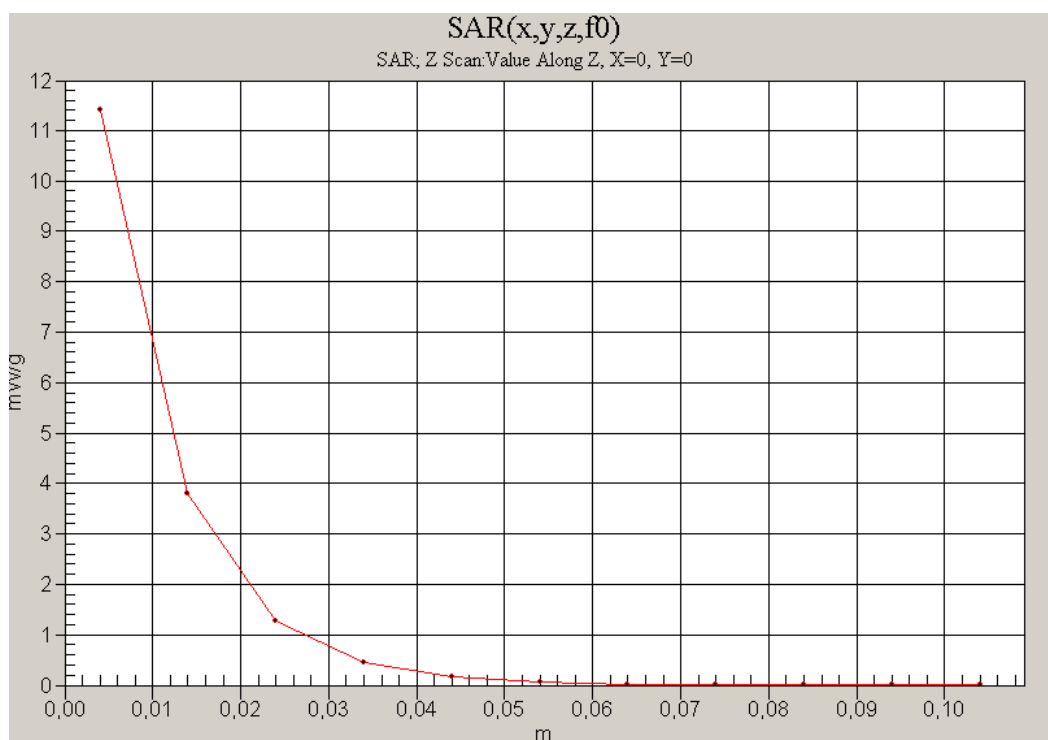


Fig. 11: SAR versus liquid depth, 1900 MHz, body (June 12, 2006; Ambient Temperature: 22.2° C; Liquid Temperature : 21.4° C).

6 SAR z-axis scans (Measurements)

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

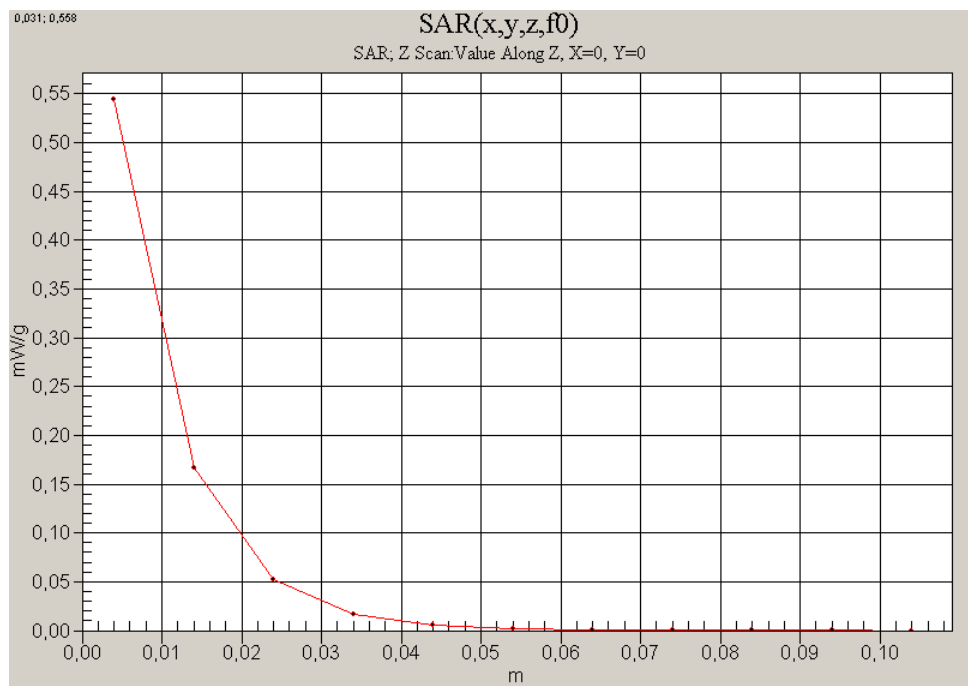


Fig. 12: SAR versus liquid depth, head: PCS 1900, channel 661, cheek position, left side of head (June 12, 2006; Ambient Temperature: 22.1° C; Liquid Temperature : 21.4° C).

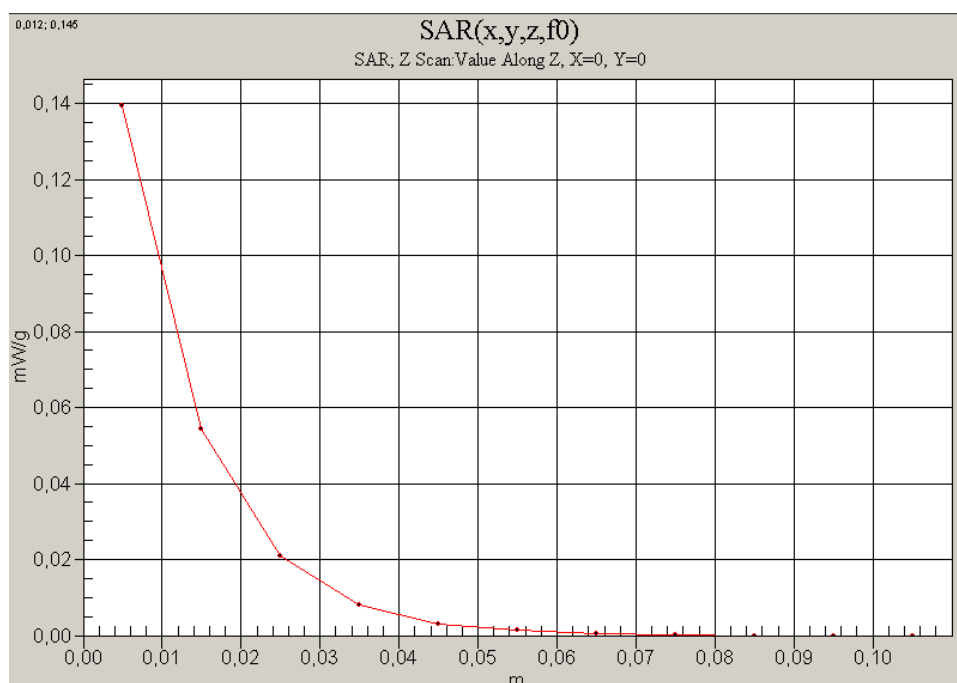


Fig. 13: SAR versus liquid depth, body: GPRS 1900 (Class 10), channel 661, data cable and 20 mm distance (June 12, 2006; Ambient Temperature: 22.2° C; Liquid Temperature: 21.5° C).