
Appendix for the Report

Dosimetric Assessment of the Siemens M55 (FCC ID: PWX-M55) According to the FCC Requirements

SAR Distribution Plots

April 10, 2003
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The test results only relate to the items tested.
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1 SAR Distribution Plots, PCS 1900 Head without QuickPic Camera

Test Laboratory: IMST

File Name: [55opl_m_1.da4](#)

DUT: Siemens M55;

Program: Measurement

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium: Head 1900 MHz ($\sigma = 1.46$ mho/m, $\epsilon_r = 38.8$, $\rho = 1000$ kg/m³)

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(5.2, 5.2, 5.2); Calibrated: 03.05.2002
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 15.05.2002
- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176
- Measurement SW: DASY4, V4.1 Build 33; Postprocessing SW: SEMCAD, V1.6 Build 109

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

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

Reference Value = 14 V/m

Peak SAR = 0.51 W/kg

SAR(1 g) = 0.296 mW/g; SAR(10 g) = 0.167 mW/g

Power Drift = -0.04 dB

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

Reference Value = 14 V/m

Peak SAR = 0.416 W/kg

SAR(1 g) = 0.275 mW/g; SAR(10 g) = 0.169 mW/g

Power Drift = -0.04 dB

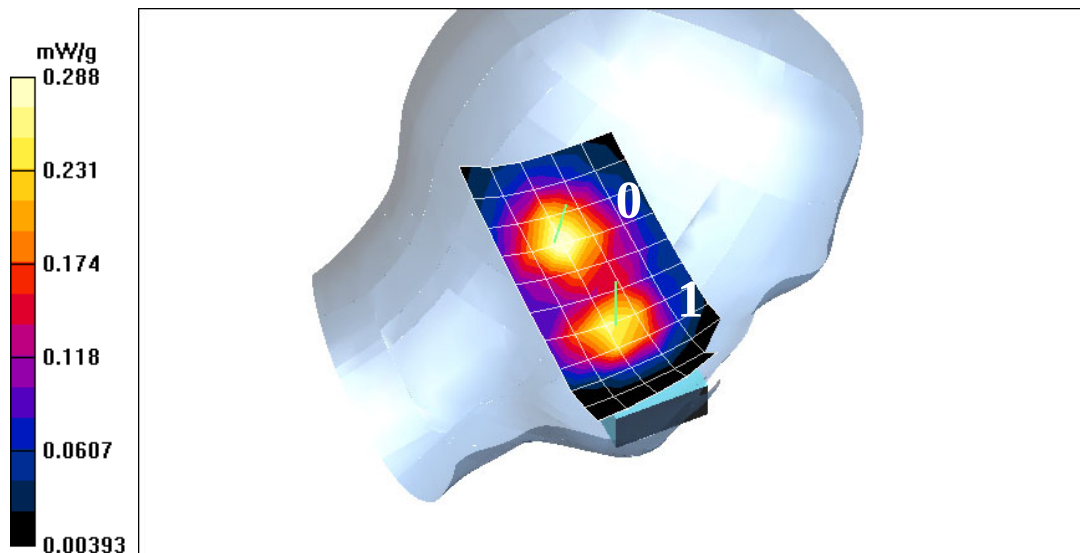


Fig. 1: SAR distribution for PCS 1900, channel 661, cheek position, left side of head. (09.04.2003; Liquid Temperature: 19.8° C; Ambient Temperature : 21.5° C).

Test Laboratory: IMST

File Name: [55opl_m_2.da4](#)

DUT: Siemens M55;

Program: Measurement

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium: Head 1900 MHz ($\sigma = 1.46$ mho/m, $\epsilon_r = 38.8$, $\rho = 1000$ kg/m³)

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(5.2, 5.2, 5.2); Calibrated: 03.05.2002
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 15.05.2002
- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176
- Measurement SW: DASY4, V4.1 Build 33; Postprocessing SW: SEMCAD, V1.6 Build 109

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

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

Reference Value = 13.8 V/m

Peak SAR = 0.583 W/kg

SAR(1 g) = 0.342 mW/g; SAR(10 g) = 0.191 mW/g

Power Drift = 0.001 dB

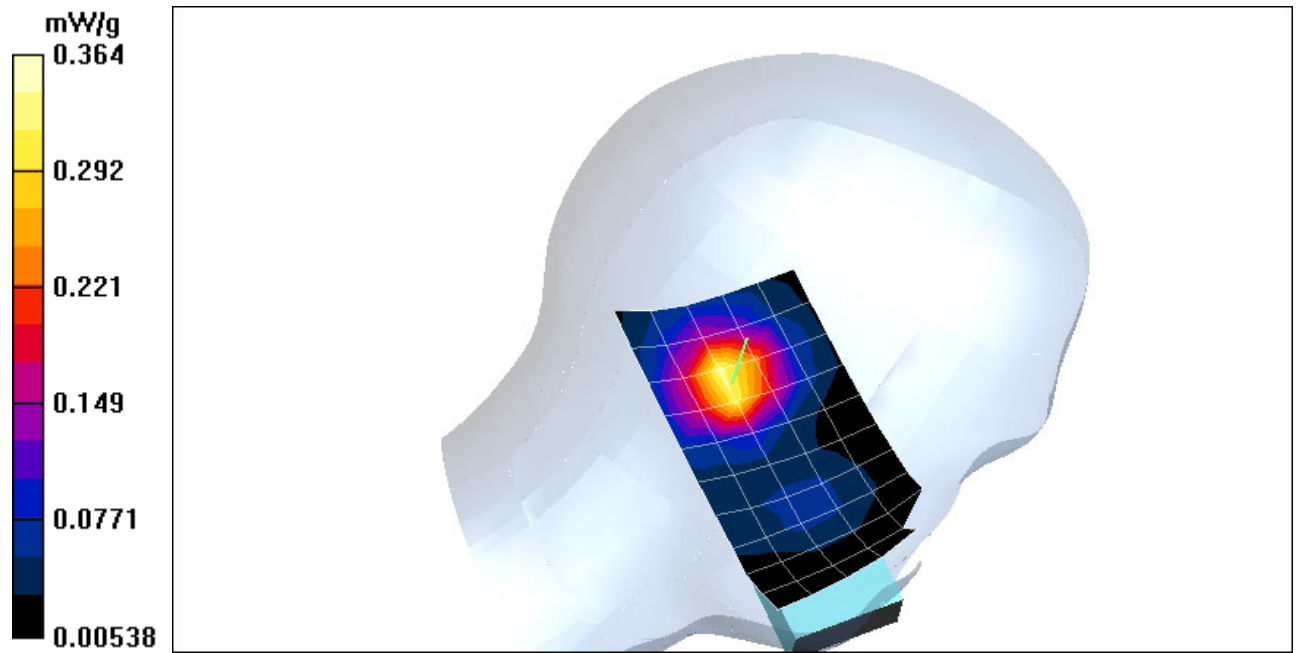


Fig. 2: SAR distribution for PCS 1900, channel 661, tilted position, left side of head. (09.04.2003; Liquid Temperature: 19.9° C; Ambient Temperature : 21.5° C).

Test Laboratory: IMST

File Name: [m5oprm_1_wdh.da4](#)

DUT: Siemens M55;

Program: Measurement

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium: Head 1900 MHz ($\sigma = 1.46$ mho/m, $\epsilon_r = 38.8$, $\rho = 1000$ kg/m³)

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(5.2, 5.2, 5.2); Calibrated: 03.05.2002

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

- Electronics: DAE3 Sn335; Calibrated: 15.05.2002

- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176

- Measurement SW: DASY4, V4.1 Build 33; Postprocessing SW: SEMCAD, V1.6 Build 109

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

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

Reference Value = 11.8 V/m

Peak SAR = 1.13 W/kg

SAR(1 g) = 0.556 mW/g; SAR(10 g) = 0.284 mW/g

Power Drift = -0.006 dB

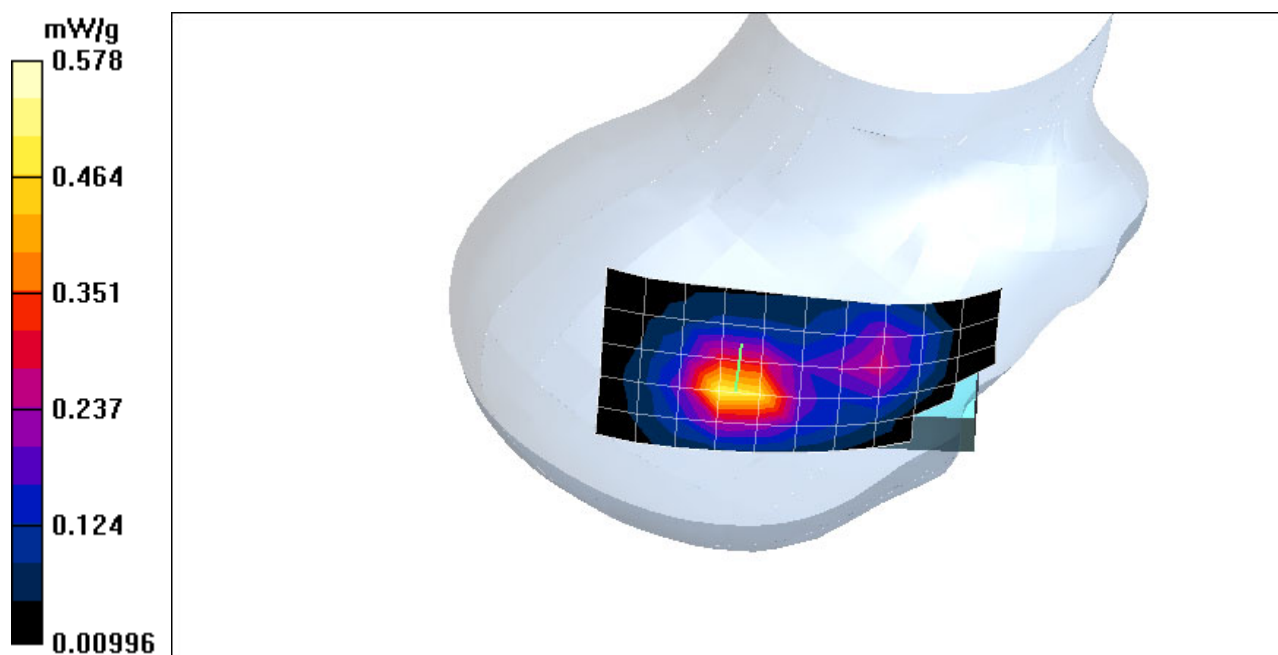


Fig. 3: SAR distribution for PCS 1900, channel 661, cheek position, right side of head. (09.04.2003; Liquid Temperature: 19.7° C; Ambient Temperature : 21.5° C).

Test Laboratory: IMST

File Name: [m5oprml_2_wdh.da4](#)

DUT: Siemens M55;

Program: Measurement

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium: Head 1900 MHz ($\sigma = 1.46$ mho/m, $\epsilon_r = 38.8$, $\rho = 1000$ kg/m³)

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(5.2, 5.2, 5.2); Calibrated: 03.05.2002

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

- Electronics: DAE3 Sn335; Calibrated: 15.05.2002

- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176

- Measurement SW: DASY4, V4.1 Build 33; Postprocessing SW: SEMCAD, V1.6 Build 109

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

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

Reference Value = 12 V/m

Peak SAR = 1.1 W/kg

SAR(1 g) = 0.541 mW/g; SAR(10 g) = 0.275 mW/g

Power Drift = -0.04 dB

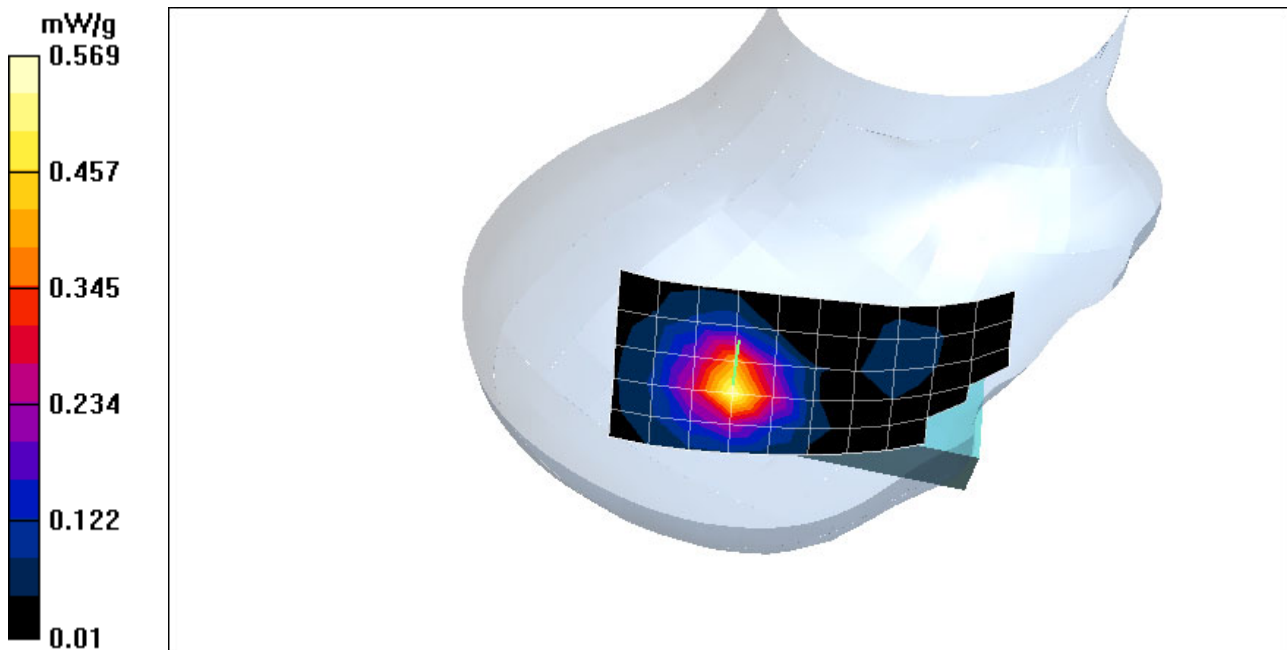


Fig. 4: SAR distribution for PCS 1900, channel 661, tilted position, right side of head. (09.04.2003; Liquid Temperature: 19.8° C; Ambient Temperature : 21.4° C).

2 SAR Distribution Plots, PCS 1900 Head with QuickPic Camera

Test Laboratory: IMST

File Name: [55mplm_1.da4](#)

DUT: Siemens M55 with QuickPic;

Program: Measurement

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium: Head 1900 MHz ($\sigma = 1.46$ mho/m, $\epsilon_r = 38.8$, $\rho = 1000$ kg/m³)

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(5.2, 5.2, 5.2); Calibrated: 03.05.2002
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 15.05.2002
- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176
- Measurement SW: DASY4, V4.1 Build 33; Postprocessing SW: SEMCAD, V1.6 Build 109

cheek left/Area Scan (6x13x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 12.1 V/m

Peak SAR = 0.469 W/kg

SAR(1 g) = 0.279 mW/g; SAR(10 g) = 0.16 mW/g

Power Drift = -0.01 dB

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

Reference Value = 12.1 V/m

Peak SAR = 0.433 W/kg

SAR(1 g) = 0.246 mW/g; SAR(10 g) = 0.14 mW/g

Power Drift = -0.01 dB

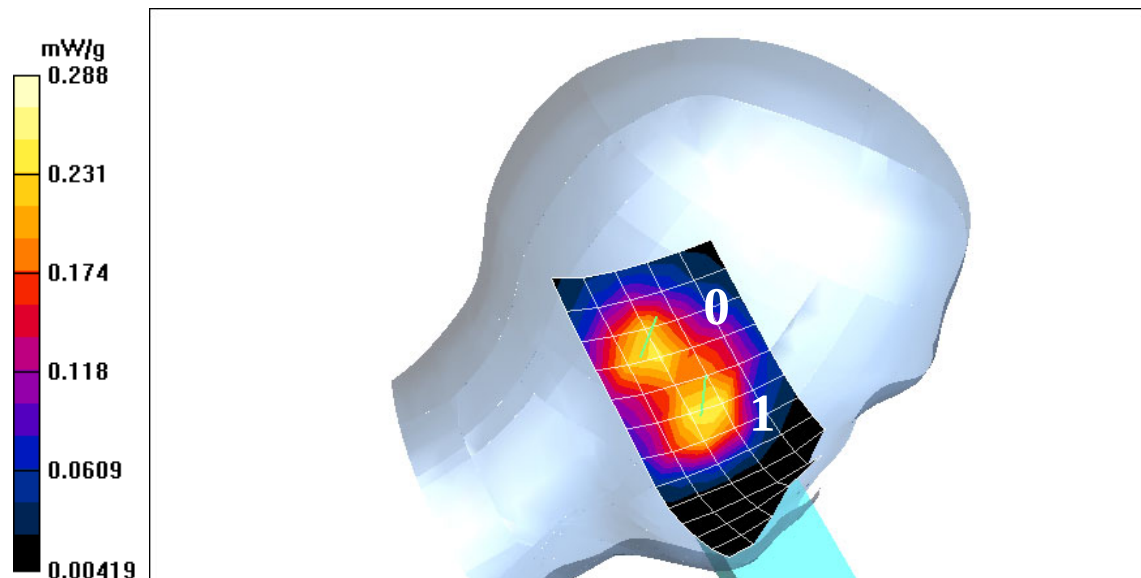


Fig. 5: SAR distribution for PCS 1900, channel 661, cheek position, left side of head. (09.04.2003; Liquid Temperature: 19.9° C; Ambient Temperature : 21.5° C).

Test Laboratory: IMST

File Name: [55mplm_2_wdh.da4](#)

DUT: Siemens M55 with QuickPic;

Program: Measurement

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium: Head 1900 MHz ($\sigma = 1.46$ mho/m, $\epsilon_r = 38.8$, $\rho = 1000$ kg/m³)

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(5.2, 5.2, 5.2); Calibrated: 03.05.2002

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

- Electronics: DAE3 Sn335; Calibrated: 15.05.2002

- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176

- Measurement SW: DASY4, V4.1 Build 33; Postprocessing SW: SEMCAD, V1.6 Build 109

tilted left/Area Scan (6x13x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 11.9 V/m

Peak SAR = 0.45 W/kg

SAR(1 g) = 0.257 mW/g; SAR(10 g) = 0.145 mW/g

Power Drift = -0.02 dB

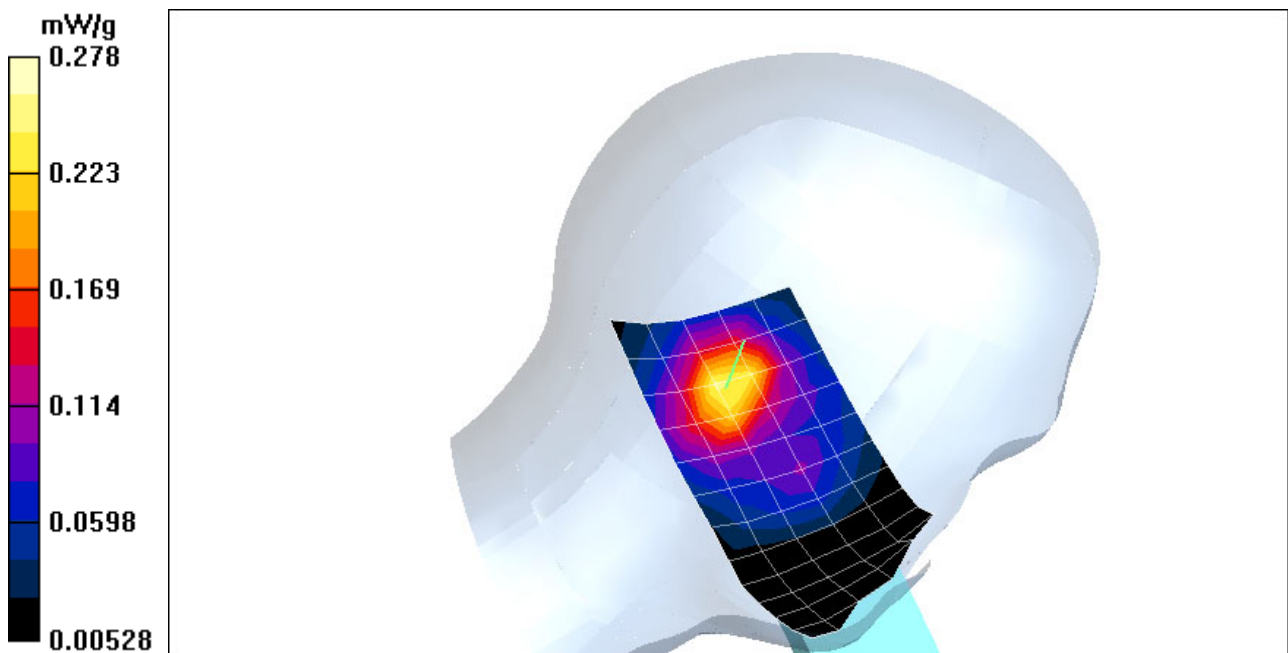


Fig. 6: SAR distribution for PCS 1900, channel 661, tilted position, left side of head. (09.04.2003; Liquid Temperature: 19.9° C; Ambient Temperature : 21.5° C).

Test Laboratory: IMST

File Name: [55mprm_1.da4](#)

DUT: Siemens M55 with QuickPic;

Program: Measurement

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium: Head 1900 MHz ($\sigma = 1.46$ mho/m, $\epsilon_r = 38.8$, $\rho = 1000$ kg/m³)

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(5.2, 5.2, 5.2); Calibrated: 03.05.2002

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

- Electronics: DAE3 Sn335; Calibrated: 15.05.2002

- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176

- Measurement SW: DASY4, V4.1 Build 33; Postprocessing SW: SEMCAD, V1.6 Build 109

cheek right/Area Scan (6x13x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 11.3 V/m

Peak SAR = 0.943 W/kg

SAR(1 g) = 0.472 mW/g; SAR(10 g) = 0.245 mW/g

Power Drift = 0.02 dB

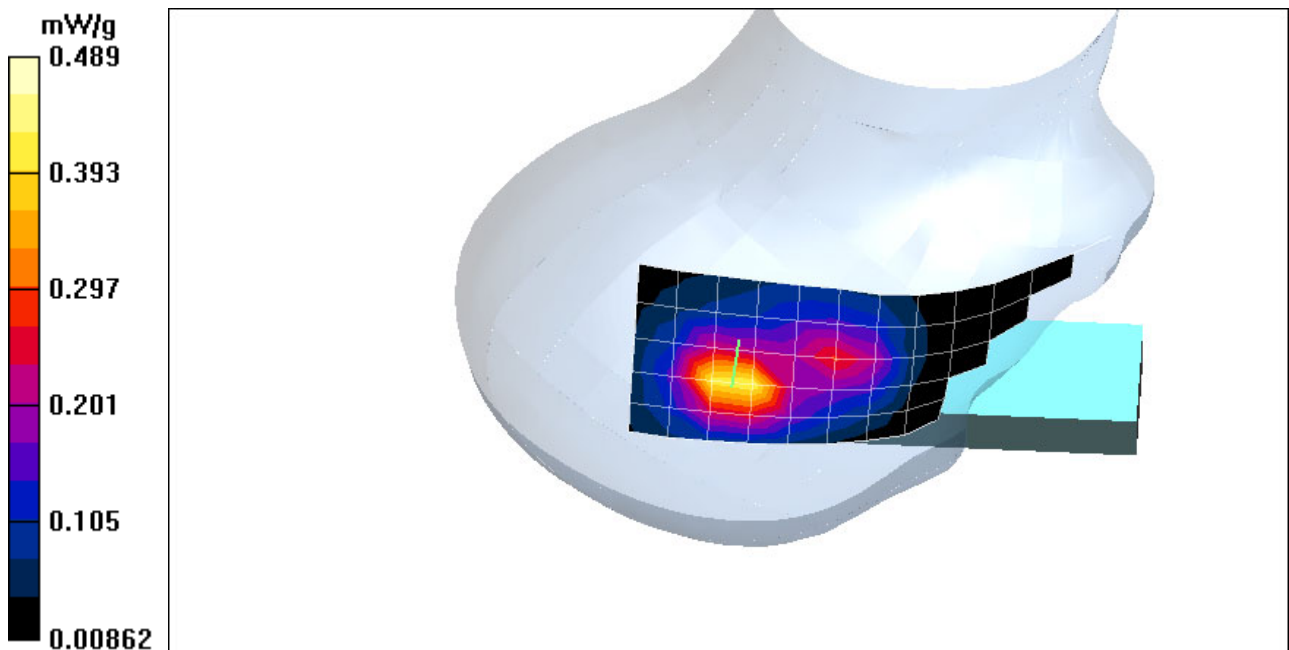


Fig. 7: SAR distribution for PCS 1900, channel 661, cheek position, right side of head. (09.04.2003; Liquid Temperature: 19.8° C; Ambient Temperature : 21.6° C).

Test Laboratory: IMST

File Name: [55mprm_2.da4](#)

DUT: Siemens M55 with QuickPic;

Program: Measurement

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium: Head 1900 MHz ($\sigma = 1.46$ mho/m, $\epsilon_r = 38.8$, $\rho = 1000$ kg/m³)

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(5.2, 5.2, 5.2); Calibrated: 03.05.2002

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

- Electronics: DAE3 Sn335; Calibrated: 15.05.2002

- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176

- Measurement SW: DASY4, V4.1 Build 33; Postprocessing SW: SEMCAD, V1.6 Build 109

tilted right/Area Scan (6x13x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 11 V/m

Peak SAR = 0.985 W/kg

SAR(1 g) = 0.489 mW/g; SAR(10 g) = 0.25 mW/g

Power Drift = -0.03 dB

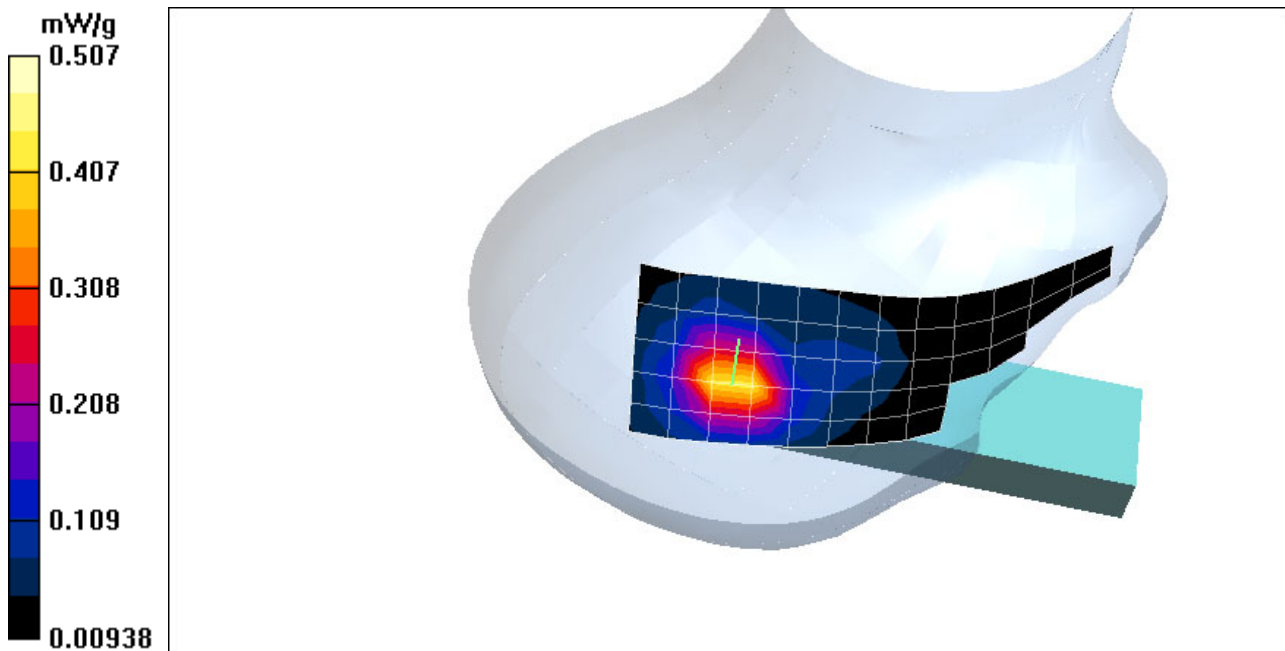


Fig. 8: SAR distribution for PCS 1900, channel 661, tilted position, right side of head. (09.04.2003; Liquid Temperature: 19.8° C; Ambient Temperature : 21.6° C).

3 SAR Distribution Plots, PCS 1900 Body with Headset

Attached are only the plots for the worst case measurements since the SAR plots are similar.

Test Laboratory: IMST

File Name: [body_1900_11.da4](#)

DUT: Siemens M55 Body;

Program: Unnamed Program

Communication System: GSM 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8

Medium: Body1900 MHz ($\sigma = 1.52$ mho/m, $\epsilon_r = 51$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(4.8, 4.8, 4.8); Calibrated: 03.05.2002

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

- Electronics: DAE3 Sn335; Calibrated: 15.05.2002

- Phantom: SAM TP:1176; ;

- Measurement SW: DASY4, V4.1 Build 33; Postprocessing SW: SEMCAD, V1.6 Build 109

Unnamed procedure/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 12.6 V/m

Peak SAR = 0.718 W/kg

SAR(1 g) = 0.497 mW/g; SAR(10 g) = 0.307 mW/g

Power Drift = 0.01 dB

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

Reference Value = 12.6 V/m

Peak SAR = 0.662 W/kg

SAR(1 g) = 0.427 mW/g; SAR(10 g) = 0.27 mW/g

Power Drift = 0.01 dB

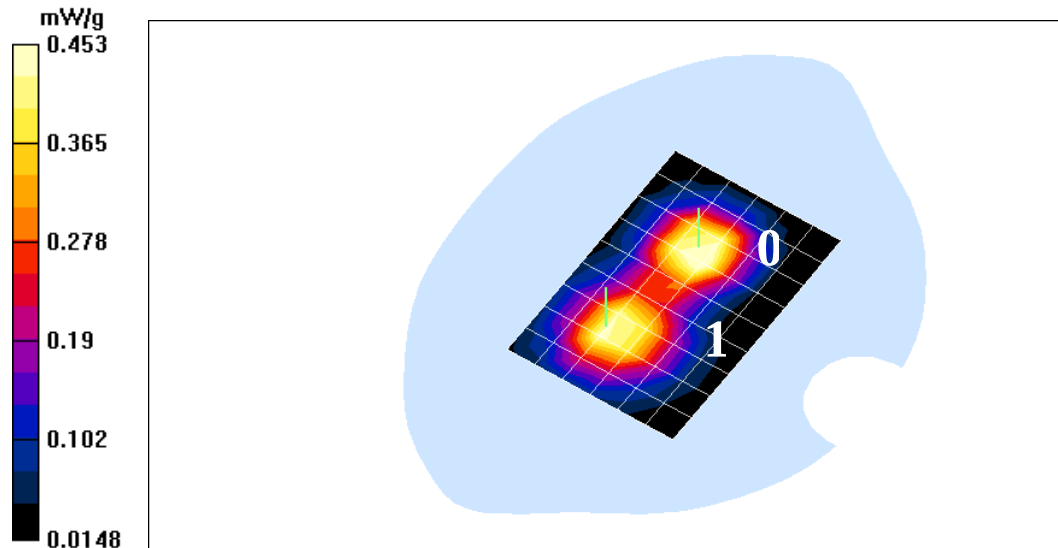


Fig. 9: SAR distribution for PCS 1900, channel 512, body worn configuration, display towards the ground, with headset (03.04.2003; Liquid Temperature: 19.9° C; Ambient Temperature : 21.5° C).

Test Laboratory: IMST

File Name: [body_1900_3.da4](#)

DUT: Siemens M55 Body;

Program: Unnamed Program

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium: Body1900 MHz ($\sigma = 1.52$ mho/m, $\epsilon_r = 51$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(4.8, 4.8, 4.8); Calibrated: 03.05.2002

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

- Electronics: DAE3 Sn335; Calibrated: 15.05.2002

- Phantom: SAM TP:1176; ;

- Measurement SW: DASY4, V4.1 Build 33; Postprocessing SW: SEMCAD, V1.6 Build 109

Unnamed procedure/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 7.5 V/m

Peak SAR = 0.318 W/kg

SAR(1 g) = 0.208 mW/g; SAR(10 g) = 0.127 mW/g

Power Drift = -0.01 dB

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

Reference Value = 7.5 V/m

Peak SAR = 0.315 W/kg

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

Power Drift = -0.01 dB

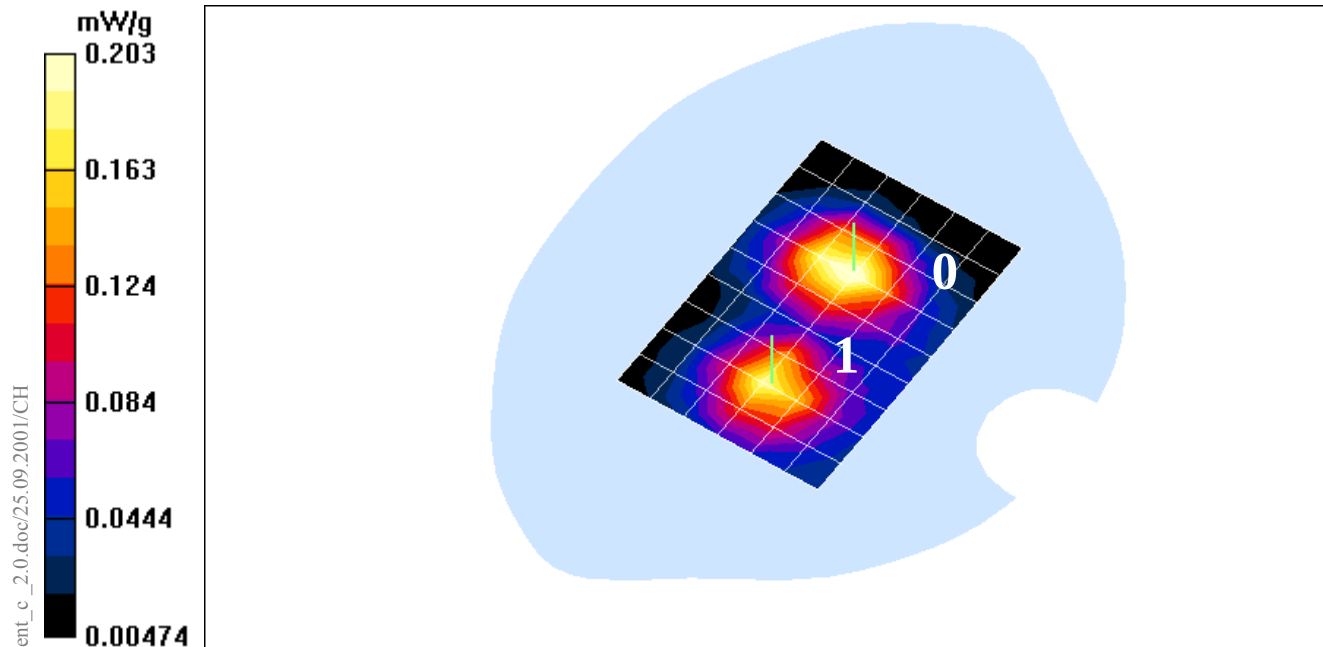


Fig. 10: SAR distribution for PCS 1900, channel 661, body worn configuration, display towards the phantom, with headset (03.04.2003; Liquid Temperature: 19.9° C; Ambient Temperature : 21.4° C).

4 SAR Distribution Plots, PCS 1900 Body with Data cable

Attached are only the plots for the worst case measurements since the SAR plots are similar.

Test Laboratory: IMST

File Name: [body_1900_2l.da4](#)

DUT: Siemens M55 Body;

Program: Unnamed Program

Communication System: GSM 1900; Frequency: 1850.2 MHz; Duty Cycle: 1:8

Medium: Body1900 MHz ($\sigma = 1.52$ mho/m, $\epsilon_r = 51$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(4.8, 4.8, 4.8); Calibrated: 03.05.2002

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

- Electronics: DAE3 Sn335; Calibrated: 15.05.2002

- Phantom: SAM TP:1176; ;

- Measurement SW: DASY4, V4.1 Build 33; Postprocessing SW: SEMCAD, V1.6 Build 109

Unnamed procedure/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 14.1 V/m

Peak SAR = 0.632 W/kg

SAR(1 g) = 0.404 mW/g; SAR(10 g) = 0.249 mW/g

Power Drift = -0.02 dB

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

Reference Value = 14.1 V/m

Peak SAR = 0.605 W/kg

SAR(1 g) = 0.413 mW/g; SAR(10 g) = 0.257 mW/g

Power Drift = -0.02 dB

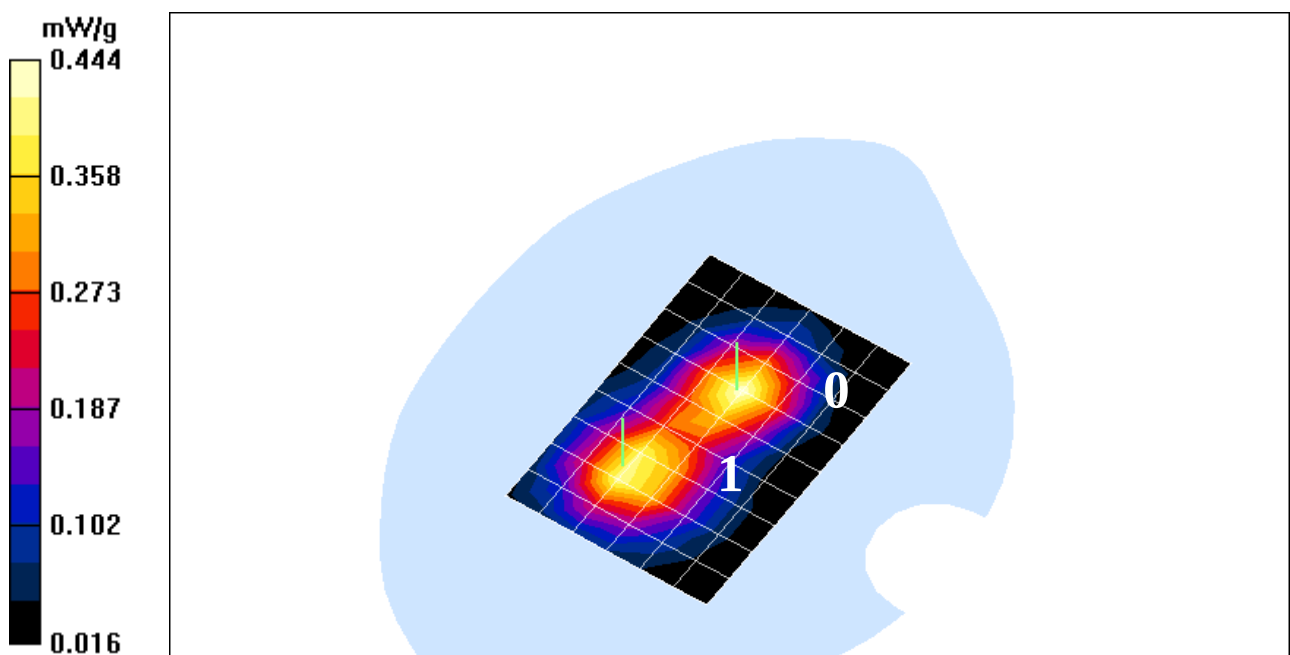


Fig. 11: SAR distribution for PCS 1900, channel 512, body worn configuration, display towards the ground, with data cable (03.04.2003; Liquid Temperature: 19.9° C; Ambient Temperature : 21.5° C).

Test Laboratory: IMST

File Name: [body_1900_4.da4](#)

DUT: Siemens M55 Body;

Program: Unnamed Program

Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8

Medium: Body1900 MHz ($\sigma = 1.52 \text{ mho/m}$, $\epsilon_r = 51$, $\rho = 1000 \text{ kg/m}^3$)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1579; ConvF(4.8, 4.8, 4.8); Calibrated: 03.05.2002

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

- Electronics: DAE3 Sn335; Calibrated: 15.05.2002

- Phantom: SAM TP:1176; ;

- Measurement SW: DASY4, V4.1 Build 33; Postprocessing SW: SEMCAD, V1.6 Build 109

Unnamed procedure/Area Scan (7x10x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 7.95 V/m

Peak SAR = 0.282 W/kg

SAR(1 g) = 0.167 mW/g; SAR(10 g) = 0.0964 mW/g

Power Drift = -0.003 dB

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

Reference Value = 7.95 V/m

Peak SAR = 0.236 W/kg

SAR(1 g) = 0.155 mW/g; SAR(10 g) = 0.0956 mW/g

Power Drift = -0.003 dB

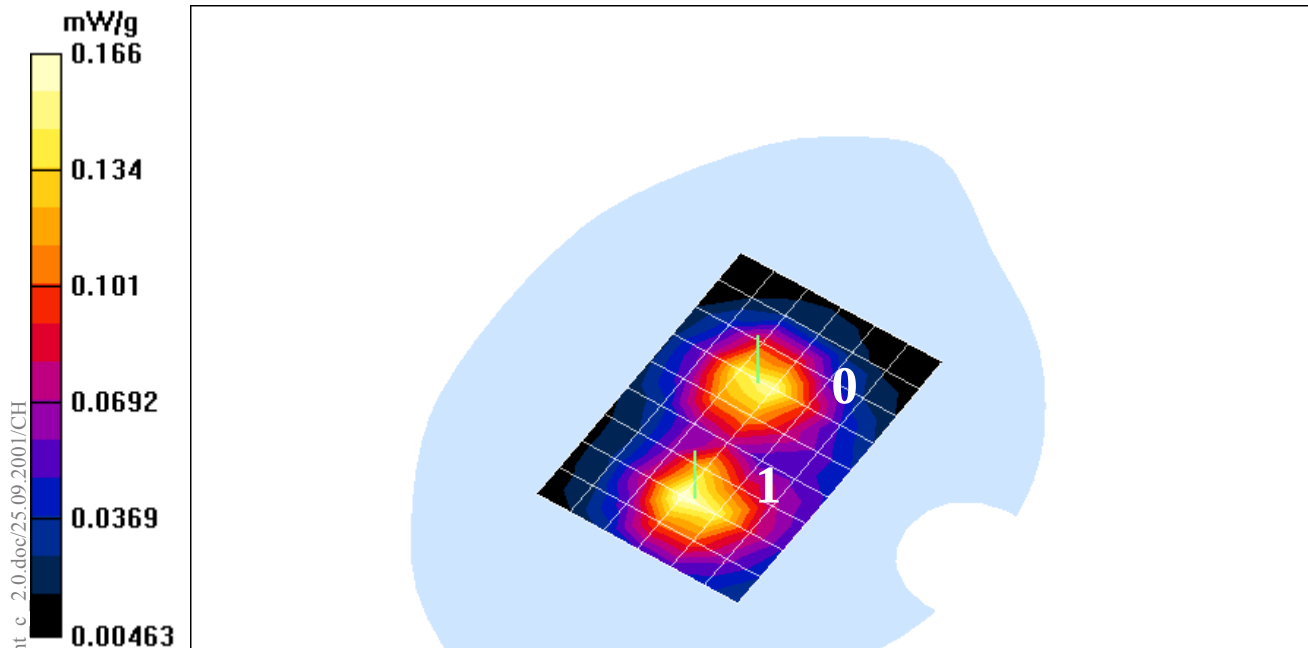


Fig. 12: SAR distribution for PCS 1900, channel 661, body worn configuration, display towards the phantom, with data cable (03.04.2003; Liquid Temperature: 19.9° C; Ambient Temperature : 21.4° C).

5 SAR z-axis scans (Validation)

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

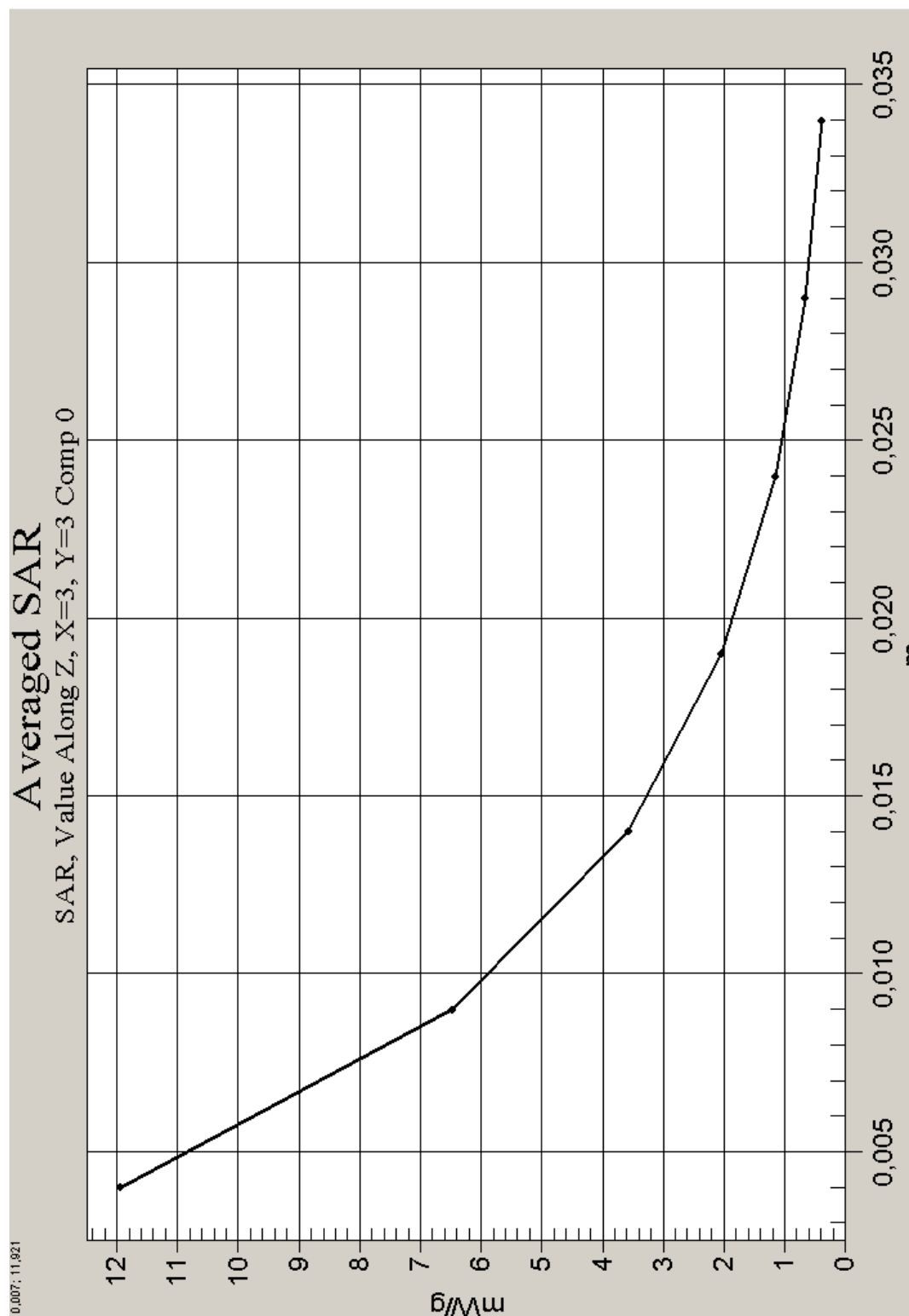


Fig. 13: SAR versus liquid depth, 1900 MHz, head (09.04.2003, Liquid Temperature: 19.7° C; Ambient Temperature : 21.2° C).

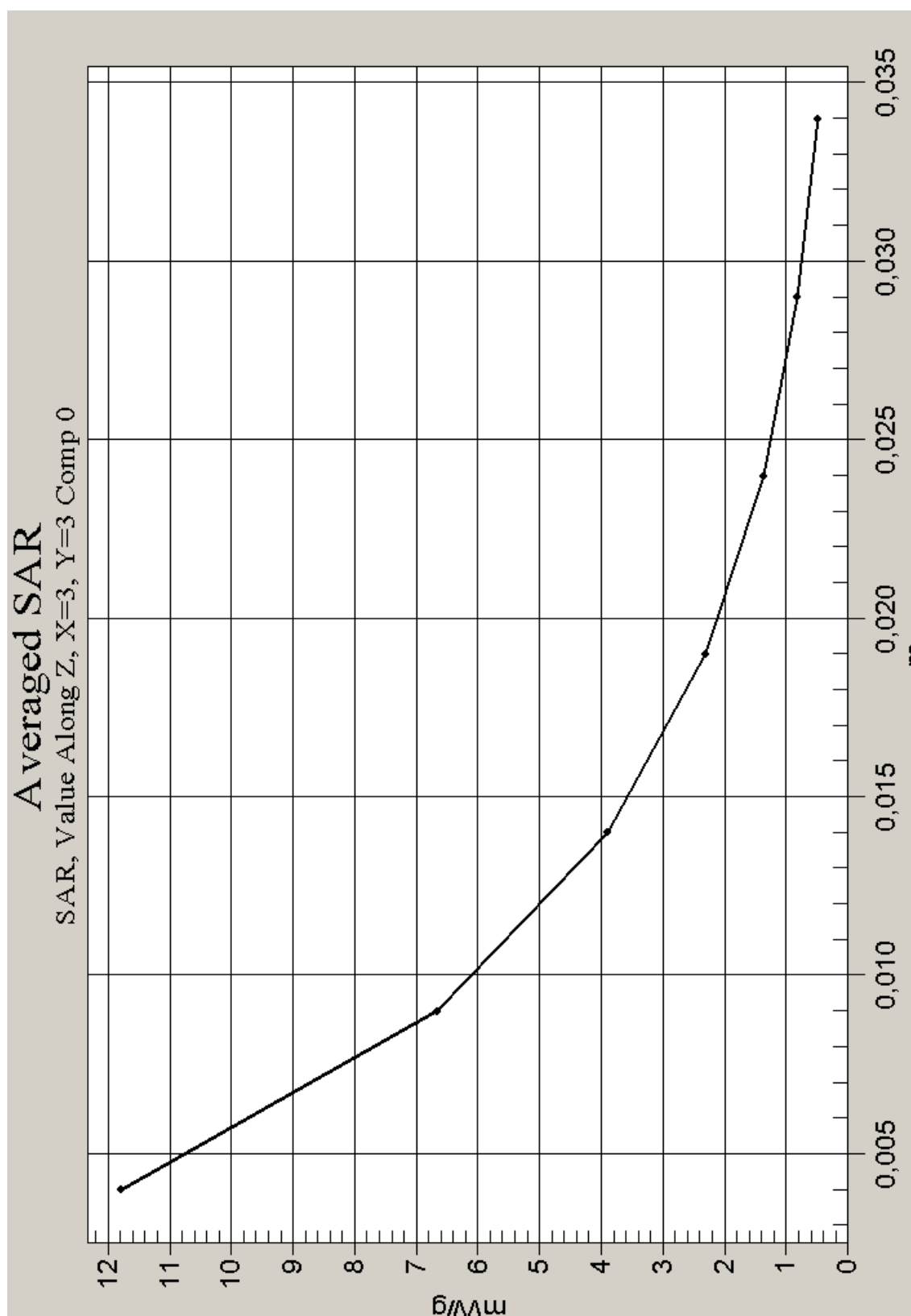


Fig. 14: SAR versus liquid depth, 1900 MHz, body (03.04.2003; Liquid Temperature: 20.0° C; Ambient Temperature : 21.0° C).

6 SAR z-axis scans (Measurements)

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

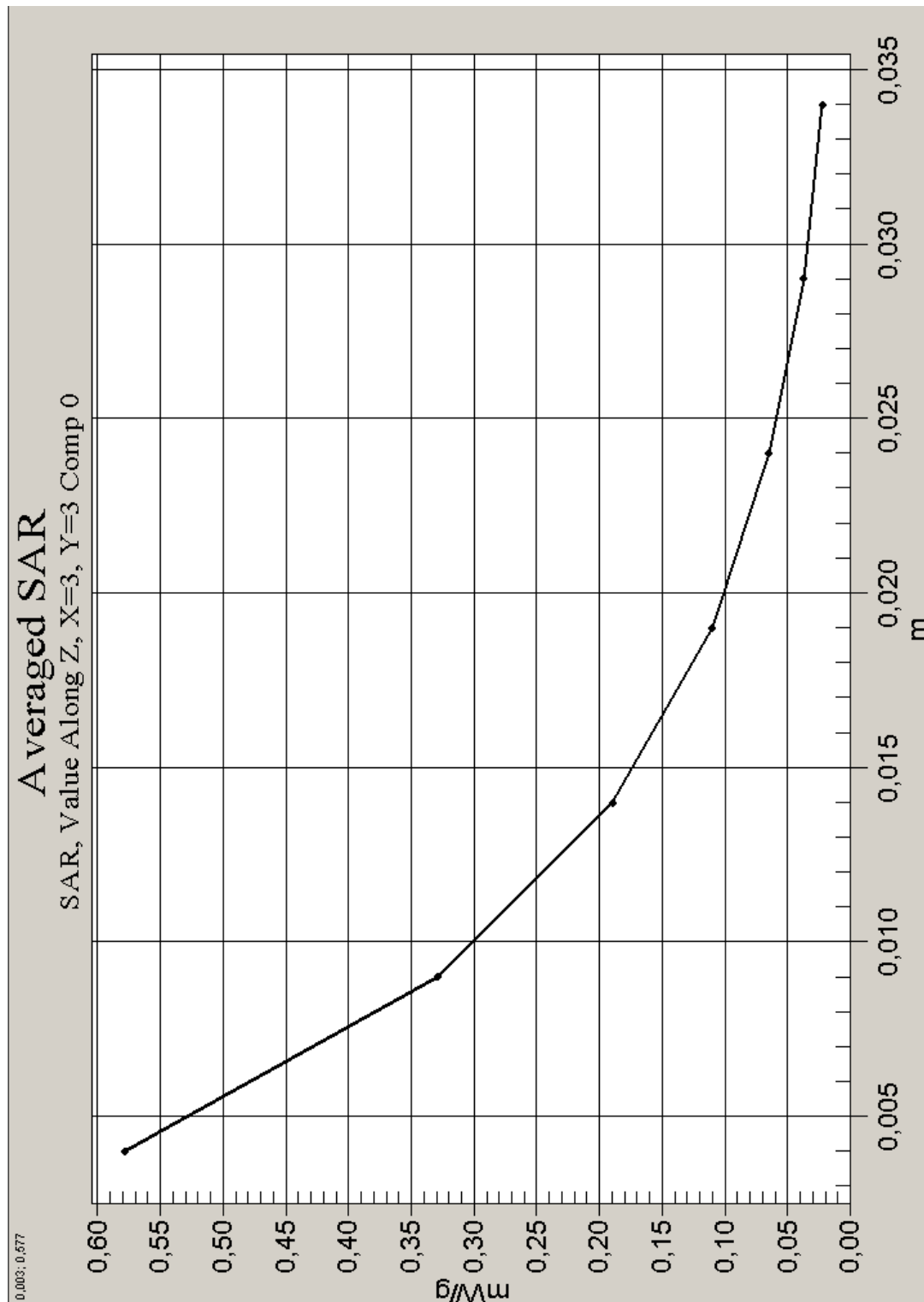


Fig. 15: SAR versus liquid depth, head: without QuickPic camera , PCS 1900, channel 661, cheek position, right side of head. (09.04.2003, Liquid Temperature: 19.7° C; Ambient Temperature : 21.5° C).

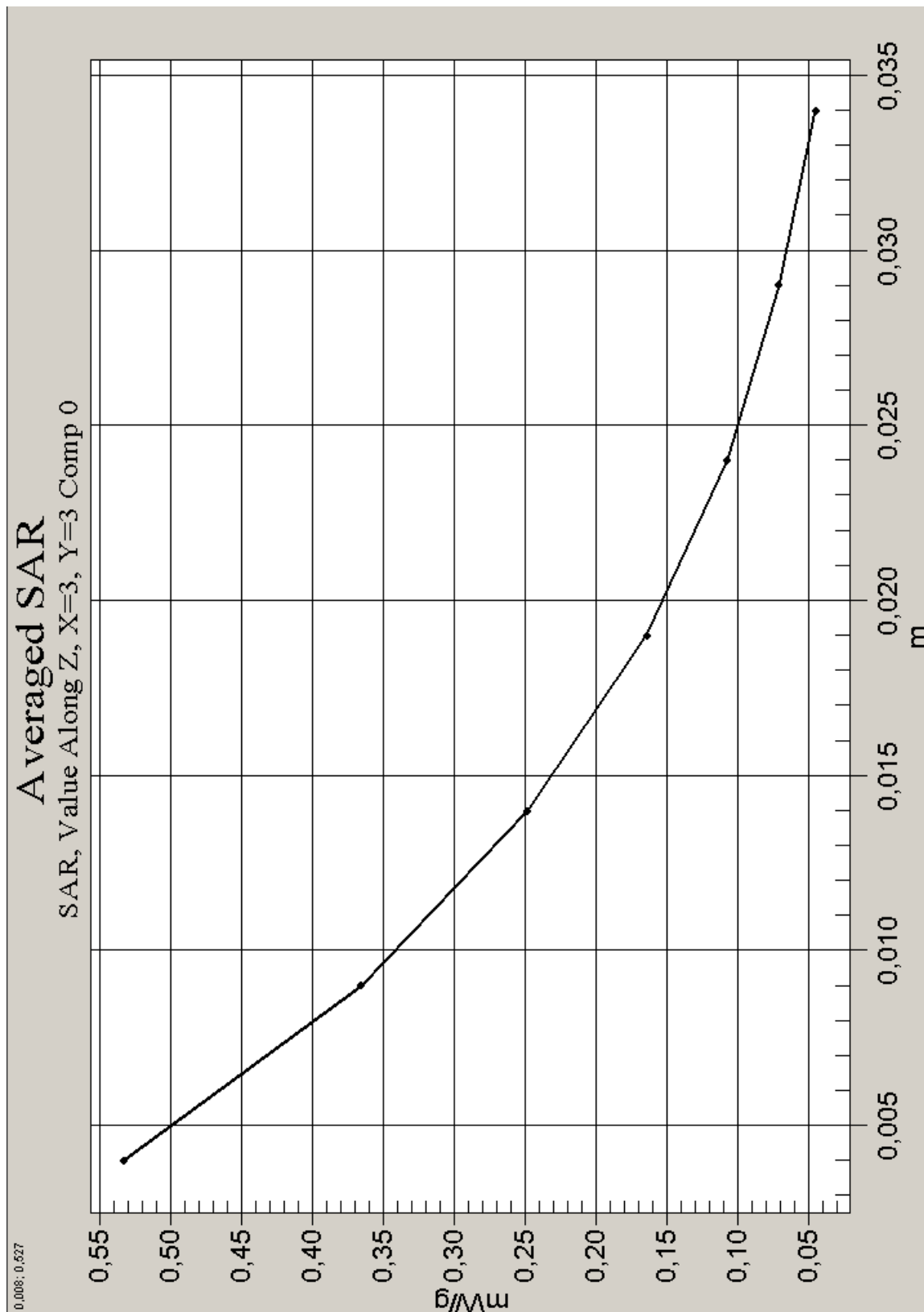


Fig. 16: SAR versus liquid depth: headset, PCS 1900, channel 512, body worn configuration, display towards the ground (03.04.2003, Liquid Temperature: 19.9° C; Ambient Temperature : 21.5° C).