
Appendix for the Report

Dosimetric Assessment of the Siemens SX1 (FCC ID: PWX-SX1) According to the FCC Requirements

SAR Distribution Plots

July 25, 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

Test Laboratory: IMST

File Name: [sx1plm_1.da4](#)

DUT: Siemens; Type: SX1; Serial: 004400532665955

Program: Measurement

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

Medium: Head 1900 MHz ($\sigma = 1.37$ mho/m, $\epsilon_r = 40.2$, $\rho = 1000$ kg/m³)

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1669; ConvF(5.2, 5.2, 5.2); Calibrated: 21.03.2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 05.05.2003
- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

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

Reference Value = 15.5 V/m

Power Drift = 0.02 dB

Maximum value of SAR = 0.346 mW/g

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

Peak SAR (extrapolated) = 0.51 W/kg

SAR(1 g) = 0.344 mW/g; SAR(10 g) = 0.208 mW/g

Reference Value = 15.5 V/m

Power Drift = 0.02 dB

Maximum value of SAR = 0.376 mW/g

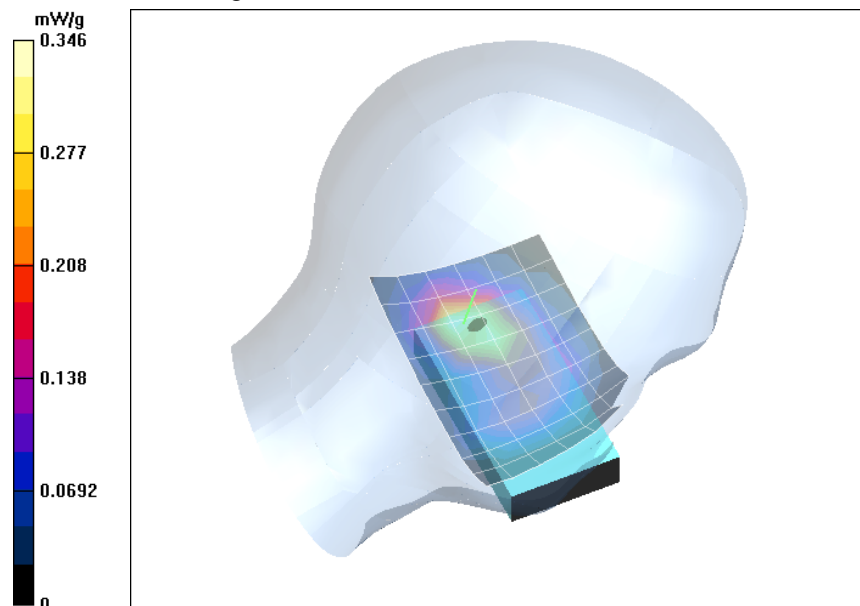


Fig. 1: SAR distribution for PCS 1900, channel 661, cheek position, left side of head. (22.07.2003; Liquid Temperature: 19.7° C; Ambient Temperature : 22.4° C).

Test Laboratory: IMST; File Name: [sx1plm_2.da4](#); DUT: Siemens; Type: SX1; Serial: 004400532665955

Program: Measurement

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

Medium: Head 1900 MHz ($\sigma = 1.37$ mho/m, $\epsilon_r = 40.2$, $\rho = 1000$ kg/m³)

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1669; ConvF(5.2, 5.2, 5.2); Calibrated: 21.03.2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 05.05.2003
- Phantom: SAM TP:1176; Type: SAM 4.0; Serial: 1176
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

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

Reference Value = 17.1 V/m

Power Drift = -0.02 dB

Maximum value of SAR = 0.343 mW/g

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

Peak SAR (extrapolated) = 0.591 W/kg

SAR(1 g) = 0.381 mW/g; SAR(10 g) = 0.221 mW/g

Reference Value = 17.1 V/m

Power Drift = -0.02 dB

Maximum value of SAR = 0.412 mW/g

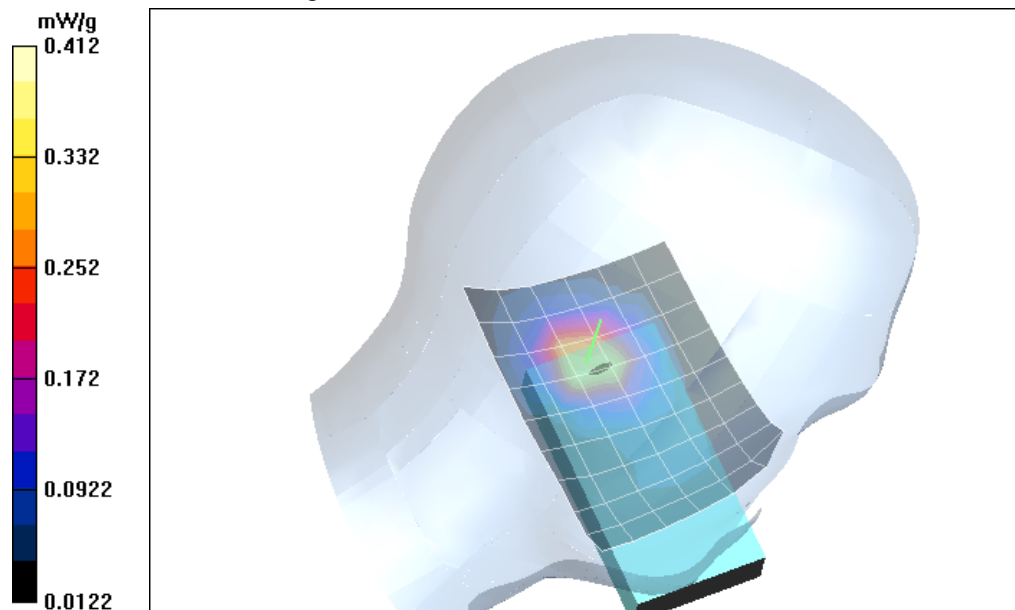


Fig. 2: SAR distribution for PCS 1900, channel 661, tilted position, left side of head. (17.07.2003; Liquid Temperature: 19.7° C; Ambient Temperature : 22.4°C).

Test Laboratory: IMST

File Name: [sxlprm_1.da4](#)

DUT: Siemens; Type: SX1; Serial: 004400532665955

Program: Measurement

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

Medium: Head 1900 MHz ($\sigma = 1.37$ mho/m, $\epsilon_r = 40.2$, $\rho = 1000$ kg/m³)

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1669; ConvF(5.2, 5.2, 5.2); Calibrated: 21.03.2003

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

- Electronics: DAE3 Sn335; Calibrated: 05.05.2003

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

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

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

Reference Value = 14.1 V/m

Power Drift = 0.005 dB

Maximum value of SAR = 0.577 mW/g

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

Peak SAR (extrapolated) = 1.13 W/kg

SAR(1 g) = 0.594 mW/g; SAR(10 g) = 0.317 mW/g

Reference Value = 14.1 V/m

Power Drift = 0.005 dB

Maximum value of SAR = 0.621 mW/g

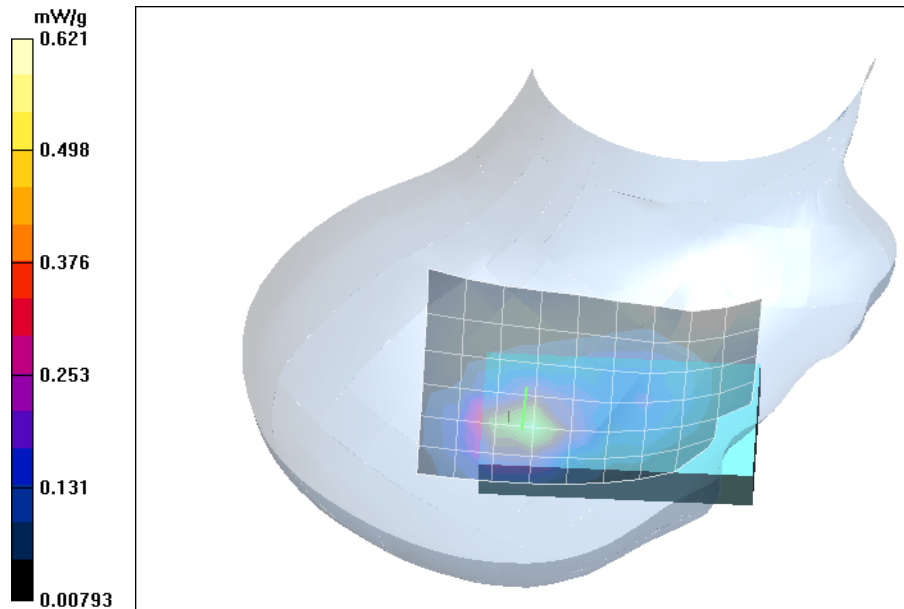


Fig. 3: SAR distribution for PCS 1900, channel 661, cheek position, right side of head. (22.07.2003; Liquid Temperature: 19.7° C; Ambient Temperature : 22.8 C).

Test Laboratory: IMST

File Name: [sx1prm_2.da4](#)

DUT: Siemens; Type: SX1; Serial: 004400532665955

Program: Measurement

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

Medium: Head 1900 MHz ($\sigma = 1.37$ mho/m, $\epsilon_r = 40.2$, $\rho = 1000$ kg/m³)

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1669; ConvF(5.2, 5.2, 5.2); Calibrated: 21.03.2003

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

- Electronics: DAE3 Sn335; Calibrated: 05.05.2003

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

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

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

Reference Value = 16 V/m

Power Drift = -0.005 dB

Maximum value of SAR = 0.515 mW/g

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

Peak SAR (extrapolated) = 0.861 W/kg

SAR(1 g) = 0.533 mW/g; SAR(10 g) = 0.294 mW/g

Reference Value = 16 V/m

Power Drift = -0.005 dB

Maximum value of SAR = 0.594 mW/g

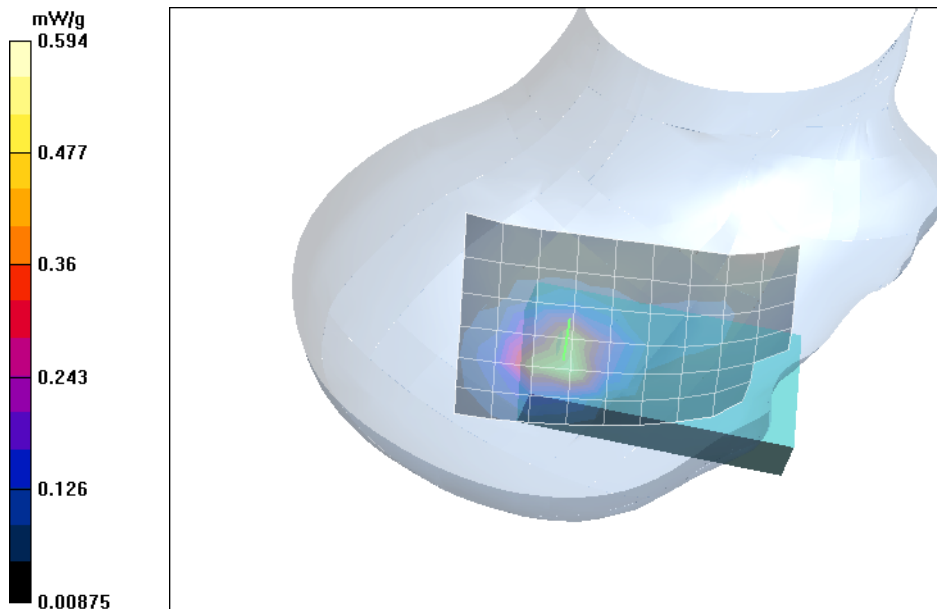


Fig. 4: SAR distribution for PCS 1900, channel 661, tilted position, right side of head. (22.07.2003; Liquid Temperature: 19.7° C; Ambient Temperature : 22.8 C).

2 SAR Distribution Plots, PCS 1900 Body, GSM mode

Test Laboratory: IMST; File Name: [sx1phm_2.da4](#); DUT: Siemens; Type: SX1; Serial: 004400532665955

Program: Unnamed Program

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

Medium: Body1900 MHz ($\sigma = 1.5 \text{ mho/m}$, $\epsilon_r = 53$, $\rho = 1000 \text{ kg/m}^3$)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1669; ConvF(4.8, 4.8, 4.8); Calibrated: 21.03.2003

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

- Electronics: DAE3 Sn335; Calibrated: 05.05.2003

- Phantom: SAM TP:1176;

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

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

Reference Value = 9.53 V/m

Power Drift = -0.04 dB

Maximum value of SAR = 0.253 mW/g

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

Peak SAR (extrapolated) = 0.4 W/kg

SAR(1 g) = 0.25 mW/g; SAR(10 g) = 0.158 mW/g

Reference Value = 9.53 V/m

Power Drift = -0.04 dB

Maximum value of SAR = 0.267 mW/g

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

Peak SAR (extrapolated) = 0.319 W/kg

SAR(1 g) = 0.22 mW/g; SAR(10 g) = 0.144 mW/g

Reference Value = 9.53 V/m

Power Drift = -0.04 dB

Maximum value of SAR = 0.236 mW/g

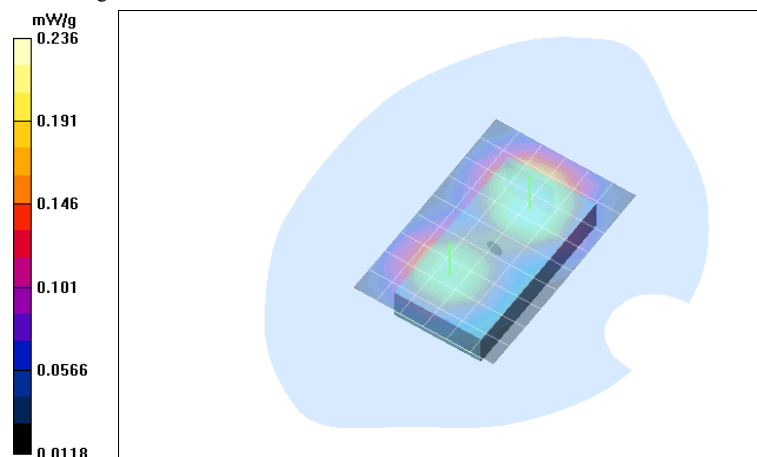


Fig. 5: SAR distribution for PCS 1900, channel 661, body worn configuration, display away from phantom, with headset (23.07.2003; Liquid Temperature: 20.3° C; Ambient Temperature : 21.5° C).

3 SAR Distribution Plots, PCS 1900 Body , GPRS mode 2TX slots

Test Laboratory: IMST; File Name: [sx1phm_3.da4](#); DUT: Siemens; Type: SX1; Serial: 004400532666573

Program: Unnamed Program

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

Medium: Body1900 MHz ($\sigma = 1.5 \text{ mho/m}$, $\epsilon_r = 53$, $\rho = 1000 \text{ kg/m}^3$)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1669; ConvF(4.8, 4.8, 4.8); Calibrated: 21.03.2003

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

- Electronics: DAE3 Sn335; Calibrated: 05.05.2003

- Phantom: SAM TP:1176;

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

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

Reference Value = 13.2 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.474 mW/g

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

Peak SAR (extrapolated) = 0.727 W/kg

SAR(1 g) = 0.462 mW/g; SAR(10 g) = 0.29 mW/g

Reference Value = 13.2 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.495 mW/g

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

Peak SAR (extrapolated) = 0.541 W/kg

SAR(1 g) = 0.388 mW/g; SAR(10 g) = 0.254 mW/g

Reference Value = 13.2 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.416 mW/g

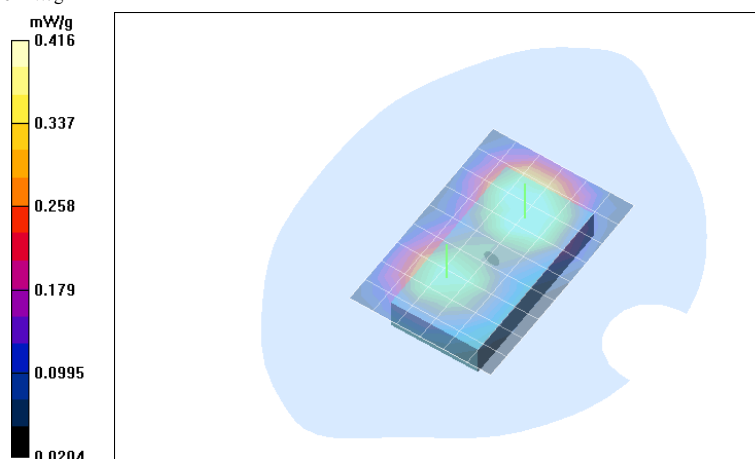


Fig. 6: SAR distribution for PCS 1900, channel 661, body worn configuration, display away from phantom with Bluetooth, (23.07.2003; Liquid Temperature: 20.3° C; Ambient Temperature : 22.0° C).

Test Laboratory: IMST; File Name: [sx1phm_4_wdh2.da4](#); DUT: Siemens; Type: SX1; Serial: 004400532666573

Program: Unnamed Program

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

Medium: Body1900 MHz ($\sigma = 1.5$ mho/m, $\epsilon_r = 53$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1669; ConvF(4.8, 4.8, 4.8); Calibrated: 21.03.2003
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn335; Calibrated: 05.05.2003
- Phantom: SAM TP:1176;
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

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

Reference Value = 18.2 V/m

Power Drift = -0.3 dB

Maximum value of SAR = 0.462 mW/g

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

Peak SAR (extrapolated) = 0.81 W/kg

SAR(1 g) = 0.428 mW/g; SAR(10 g) = 0.272 mW/g

Reference Value = 18.2 V/m

Power Drift = -0.3 dB

Maximum value of SAR = 0.458 mW/g

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

Peak SAR (extrapolated) = 0.675 W/kg

SAR(1 g) = 0.41 mW/g; SAR(10 g) = 0.235 mW/g

Reference Value = 18.2 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.478 mW/g

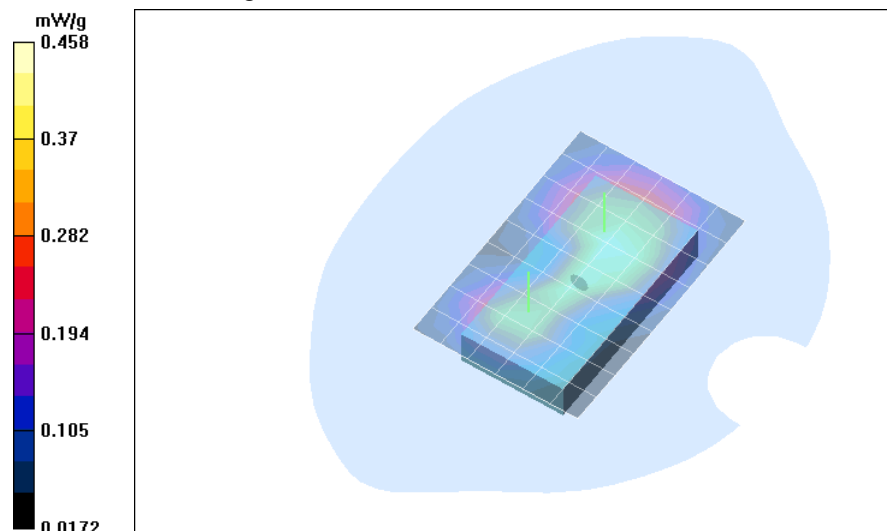


Fig. 7: SAR distribution for PCS 1900, channel 661, body worn configuration, display away from phantom with Bluetooth and beltcase (23.07.2003; Liquid Temperature: 20.3° C; Ambient Temperature : 22.0° C).

Test Laboratory: IMST; File Name: [sx1phm_5_without](#)

DUT: Siemens; Type: SX1; Serial: 004400532665955

Program: Unnamed Program

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

Medium: Body1900 MHz ($\sigma = 1.5 \text{ mho/m}$, $\epsilon_r = 53$, $\rho = 1000 \text{ kg/m}^3$)

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1669; ConvF(4.8, 4.8, 4.8); Calibrated: 21.03.2003

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

- Electronics: DAE3 Sn335; Calibrated: 05.05.2003

- Phantom: SAM TP:1176;

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

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

Reference Value = 13.7 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.481 mW/g

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

Peak SAR (extrapolated) = 0.717 W/kg

SAR(1 g) = 0.462 mW/g; SAR(10 g) = 0.289 mW/g

Reference Value = 13.7 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.49 mW/g

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

Peak SAR (extrapolated) = 0.613 W/kg

SAR(1 g) = 0.43 mW/g; SAR(10 g) = 0.278 mW/g

Reference Value = 13.7 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.458 mW/g

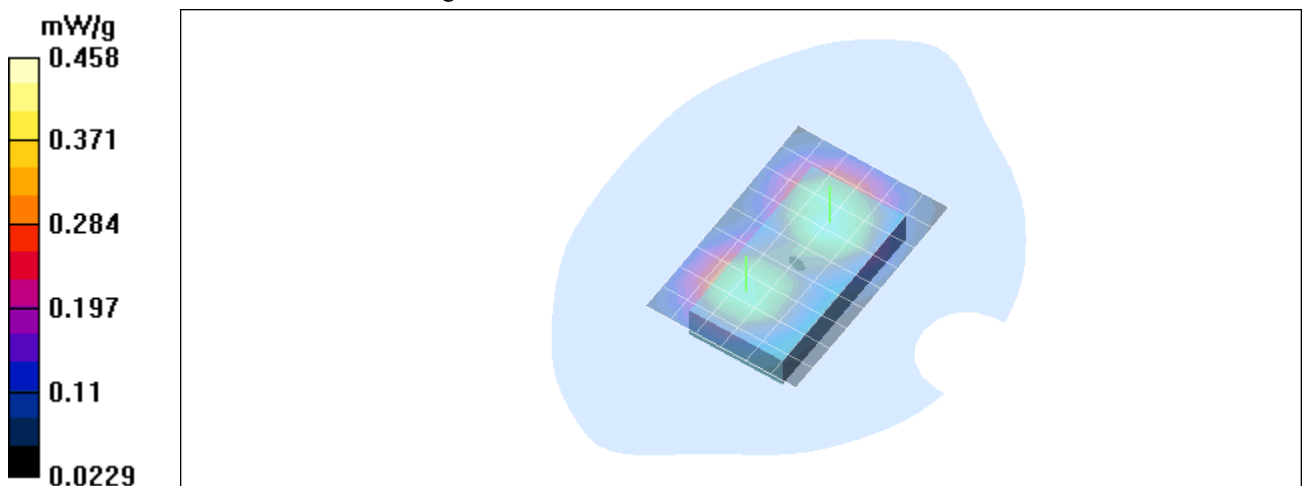


Fig. 8: SAR distribution for PCS 1900, channel 661, body worn configuration, display away from phantom, without Bluetooth (23.07.2003; Liquid Temperature: 20.4° C; Ambient Temperature : 22.2° C).

4 SAR z-axis scans (Validation)

The following pictures show the plots of SAR versus liquid depth.

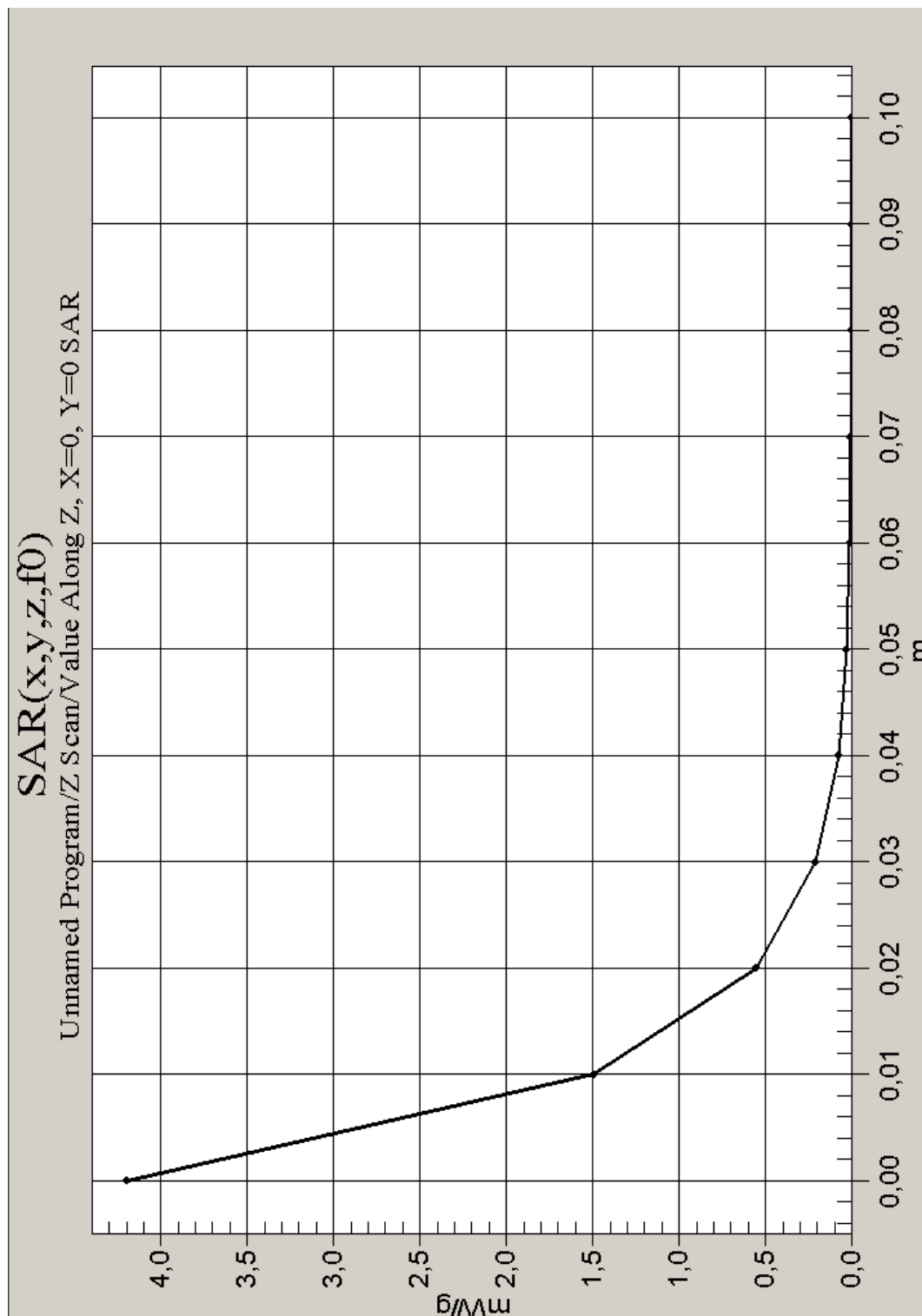


Fig. 9: SAR versus liquid depth, 1900 MHz, head (22.07.2003, Liquid Temperature: 19.7° C; Ambient Temperature : 22.0° C).

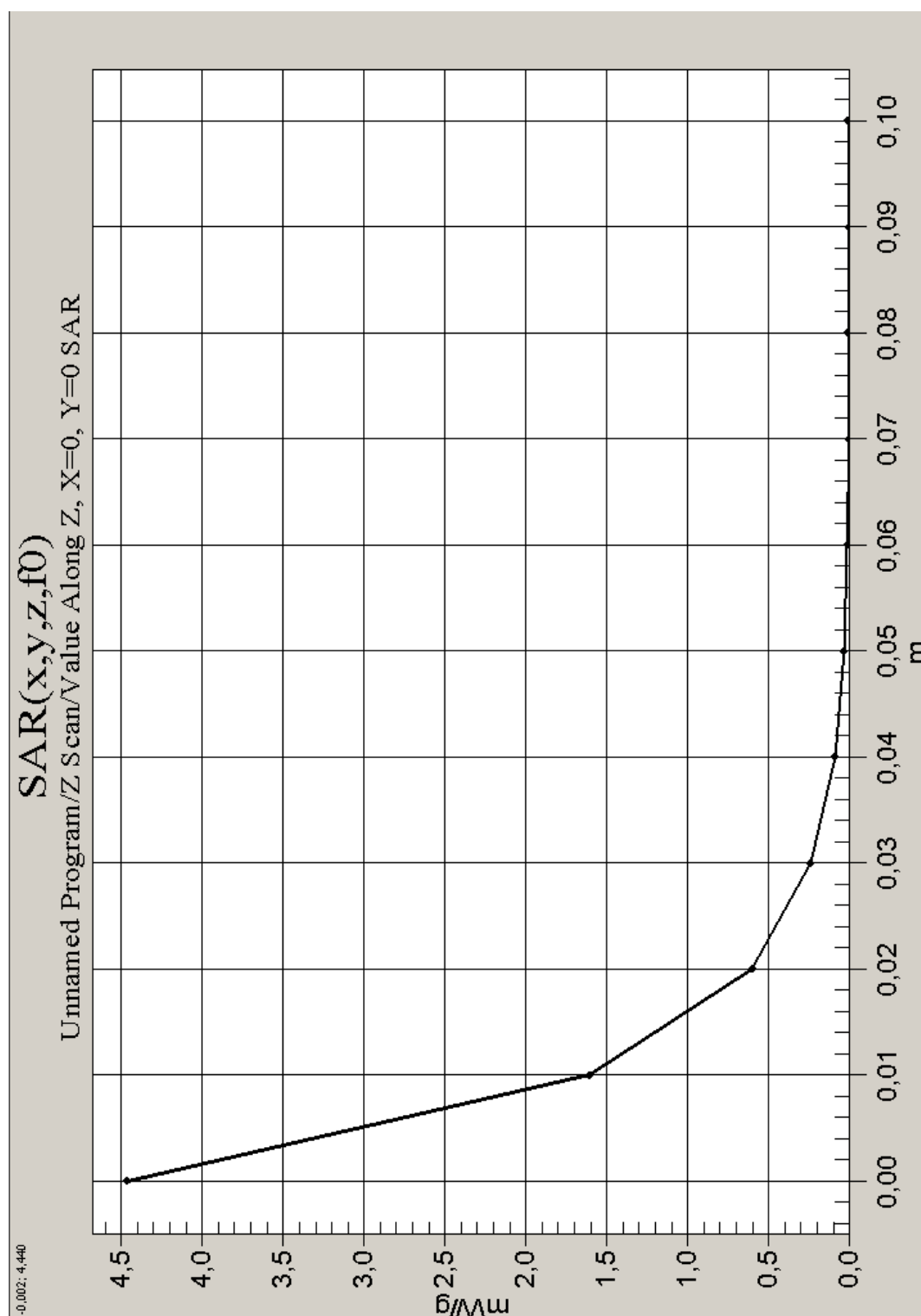


Fig. 10: SAR versus liquid depth, 1900 MHz, body (23.07.2003; Liquid Temperature: 20.3° C; Ambient Temperature : 21.3° C).

5 SAR z-axis scans (Measurements)

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

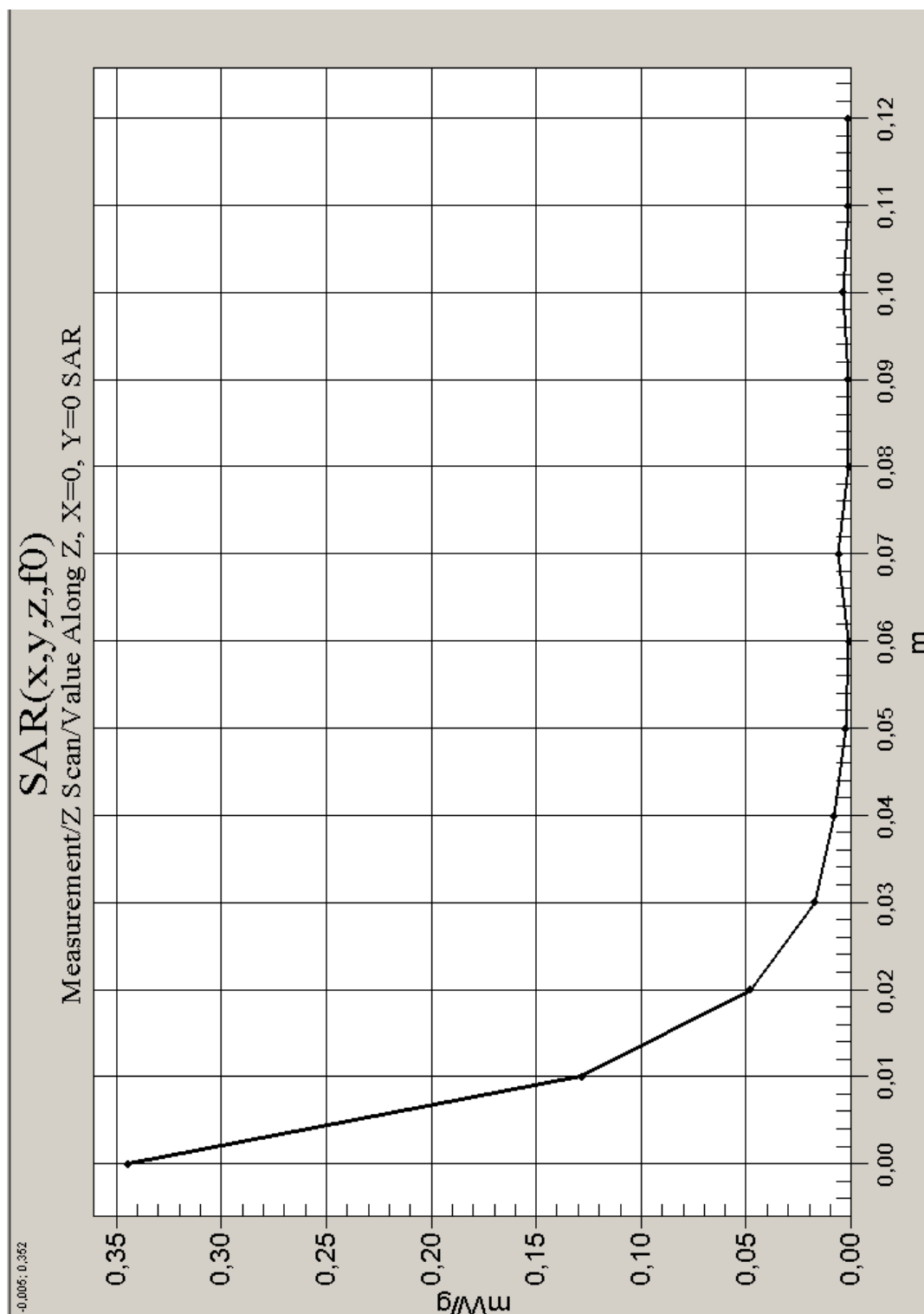


Fig. 11: SAR versus liquid depth, head: PCS 1900, channel 661, cheek position, right side of head. (22.07.2003, Liquid Temperature: 19.7° C; Ambient Temperature : 22.8° C).

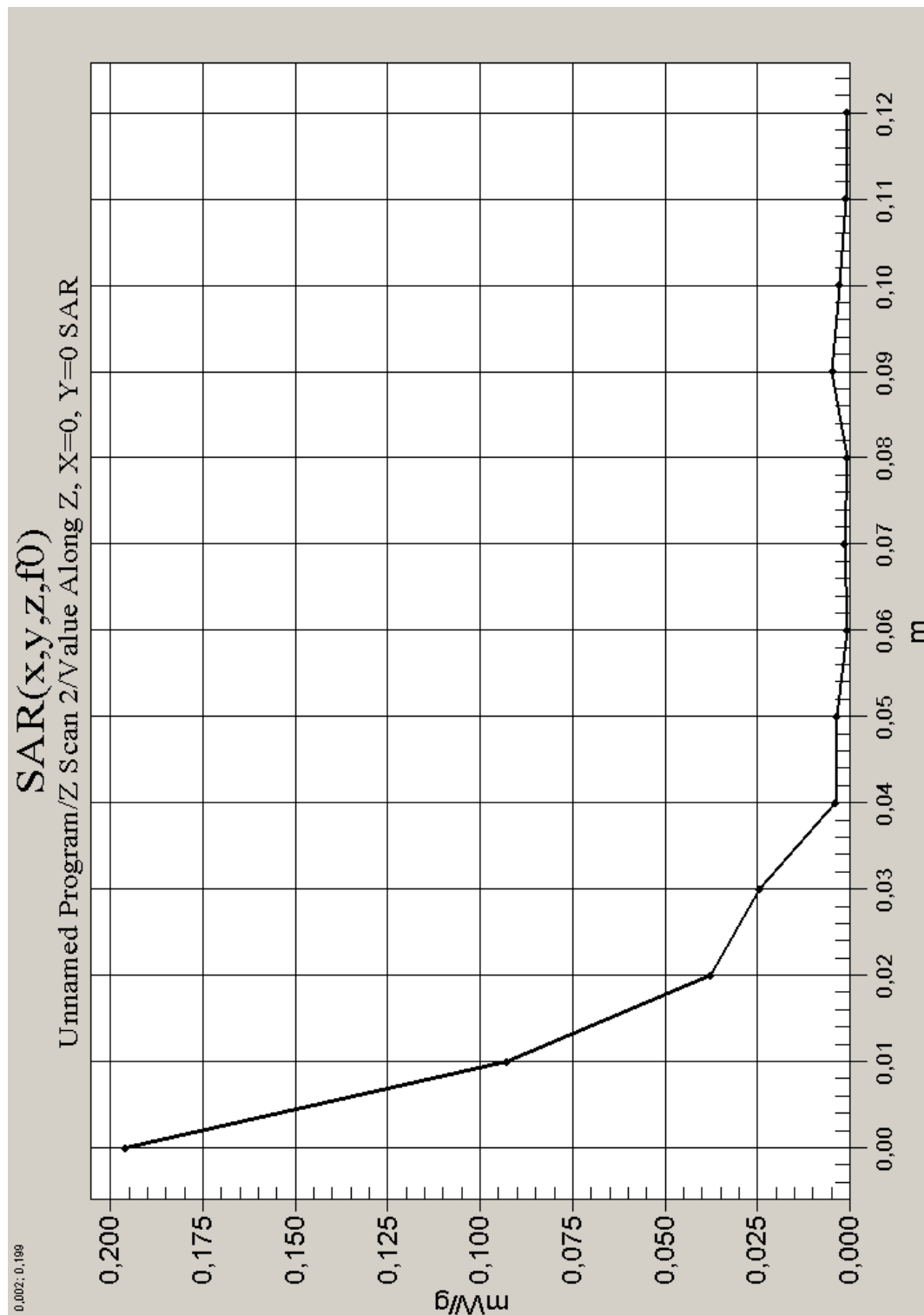


Fig. 12: SAR versus liquid depth: PCS 1900, channel 661, body worn configuration, display away from phantom, GPRS mode (2TX) and Bluetooth (23.07.2003, Liquid Temperature: 20.3° C; Ambient Temperature : 22.0° C).