
Appendix for the Report

Dosimetric Assessment of the Toshiba TS 921 (FCC ID: SP2-CC4-E01)

According to the FCC Requirements

SAR Distribution Plots

March 14, 2005
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1 SAR Distribution Plots, PCS 1900 head

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [494bplm_1.da4](#)

DUT: Toshiba; Type: TS 921; Serial: 355620000009494

Program Name: Cheek Left

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

Medium parameters used: $\sigma = 1.4$; mho/m, $\epsilon_r = 38.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(5.11, 5.11, 5.11); Calibrated: 13.01.2005

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

- Electronics: DAE3 Sn489; Calibrated: 03.09.2004

- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176

- Measurement SW: DASY4, V4.3 Build 16; Postprocessing SW: SEMCAD, V1.8 Build 127

Cheek Left/Area Scan (6x15x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 10.7 V/m; Power Drift = -0.105 dB

Peak SAR (extrapolated) = 0.231 W/kg

SAR(1 g) = 0.150 mW/g; SAR(10 g) = 0.099 mW/g

Maximum value of SAR (measured) = 0.165 mW/g

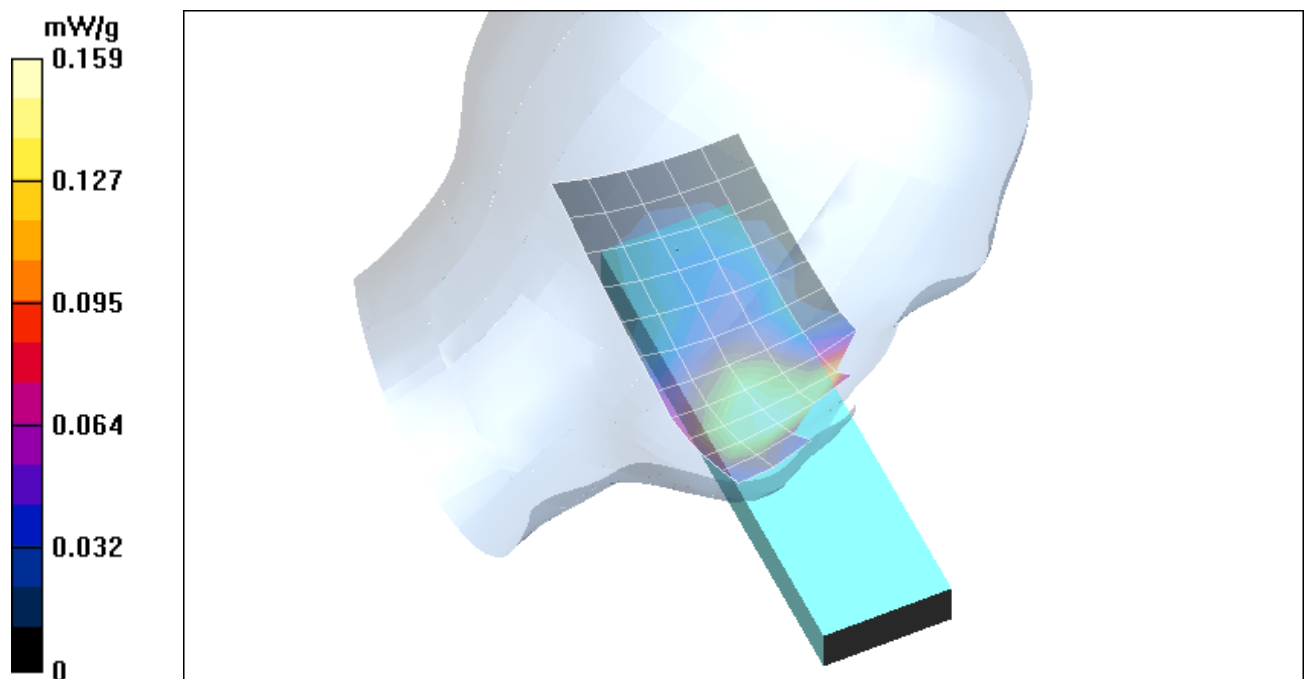


Fig. 1: SAR distribution for PCS 1900, channel 661, cheek position, left side of head (09.03.2005; Ambient Temperature: 21.7° C; Liquid Temperature: 21.2° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [494bplm 2.da4](#)

DUT: Toshiba; **Type:** TS 921; **Serial:** 355620000009494

Program Name: Tilted Left

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

Medium parameters used: $\sigma = 1.4$; mho/m, $\epsilon_r = 38.6$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(5.11, 5.11, 5.11); Calibrated: 13.01.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn489; Calibrated: 03.09.2004
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.3 Build 16; Postprocessing SW: SEMCAD, V1.8 Build 127

Tilted Left/Area Scan (6x15x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.076 mW/g

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

Reference Value = 17.8 V/m; Power Drift = -0.080 dB

Peak SAR (extrapolated) = 0.117 W/kg

SAR(1 g) = 0.078 mW/g; SAR(10 g) = 0.048 mW/g

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

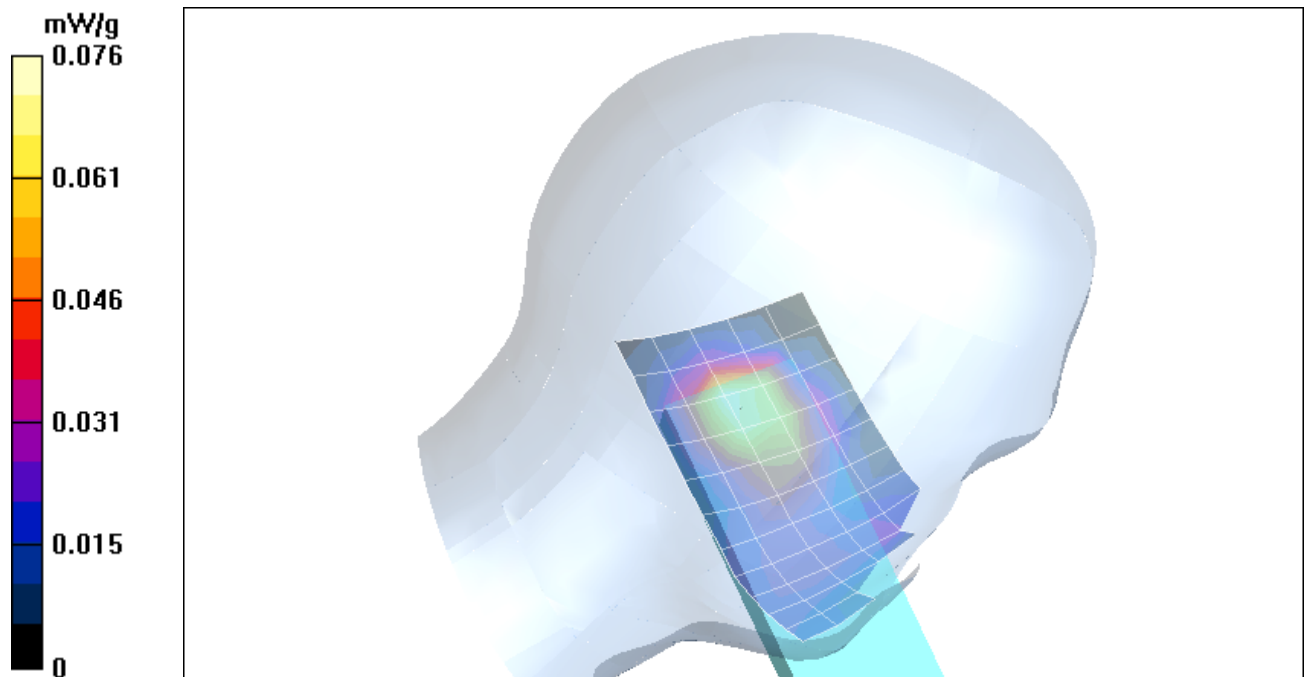


Fig. 2: SAR distribution for PCS 1900, channel 661, tilted position, left side of head (09.03.2005; Ambient Temperature: 21.8° C; Liquid Temperature : 21.1° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [494bprm_1.da4](#)

DUT: Toshiba; **Type:** TS 921; **Serial:** 355620000009494

Program Name: Cheek Right

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

Medium parameters used: $\sigma = 1.4$; mho/m, $\epsilon_r = 38.6$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(5.11, 5.11, 5.11); Calibrated: 13.01.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn489; Calibrated: 03.09.2004
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.3 Build 16; Postprocessing SW: SEMCAD, V1.8 Build 127

Cheek Right/Area Scan (6x15x1): Measurement grid: dx=15mm, dy=15mm

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

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

Reference Value = 9.49 V/m; Power Drift = -0.112 dB

Peak SAR (extrapolated) = 0.320 W/kg

SAR(1 g) = 0.197 mW/g; SAR(10 g) = 0.116 mW/g

Maximum value of SAR (measured) = 0.216 mW/g

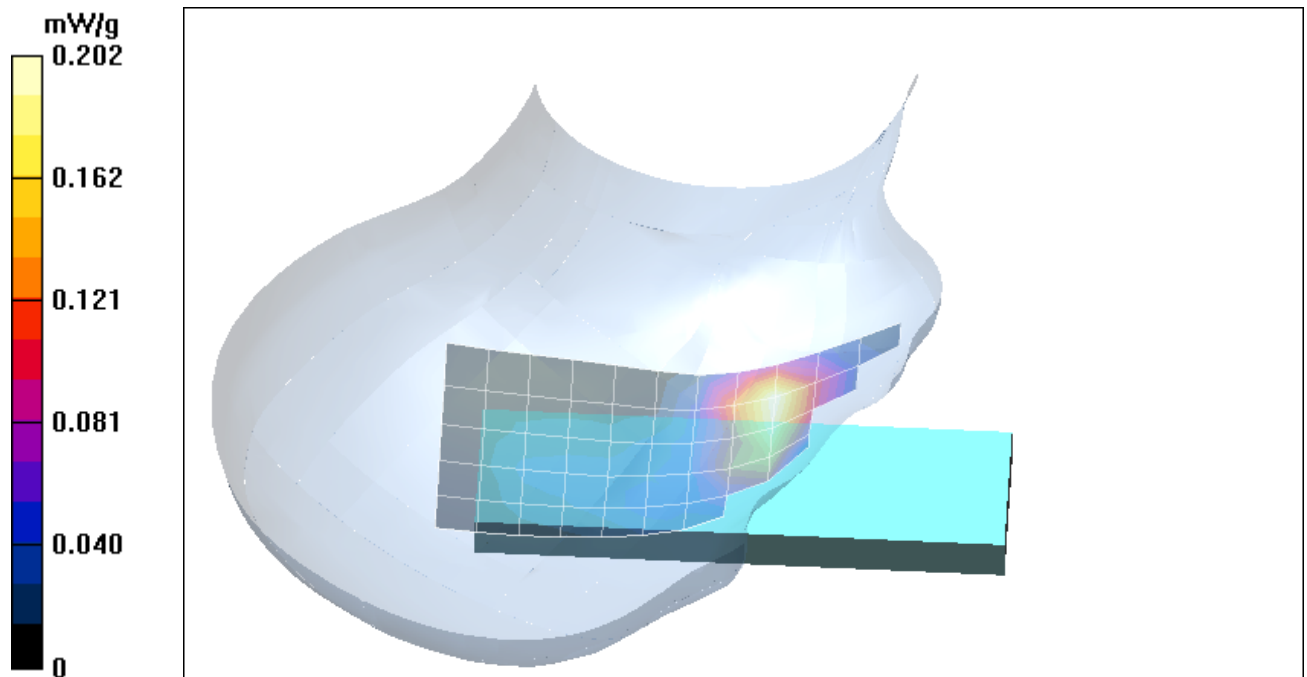


Fig. 3: SAR distribution for PCS 1900, channel 661, cheek position, right side of head (09.03.2005; Ambient Temperature: 21.8° C; Liquid Temperature : 21.1° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [494bprm 2.da4](#)

DUT: Toshiba; **Type:** TS 921; **Serial:** 355620000009494

Program Name: Tilted Right

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

Medium parameters used: $\sigma = 1.4$; mho/m, $\epsilon_r = 38.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(5.11, 5.11, 5.11); Calibrated: 13.01.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn489; Calibrated: 03.09.2004
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.3 Build 16; Postprocessing SW: SEMCAD, V1.8 Build 127

Tilted Right/Area Scan (6x15x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.106 mW/g

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

Reference Value = 19.5 V/m; Power Drift = -0.140 dB

Peak SAR (extrapolated) = 0.144 W/kg

SAR(1 g) = 0.096 mW/g; SAR(10 g) = 0.058 mW/g

Maximum value of SAR (measured) = 0.105 mW/g

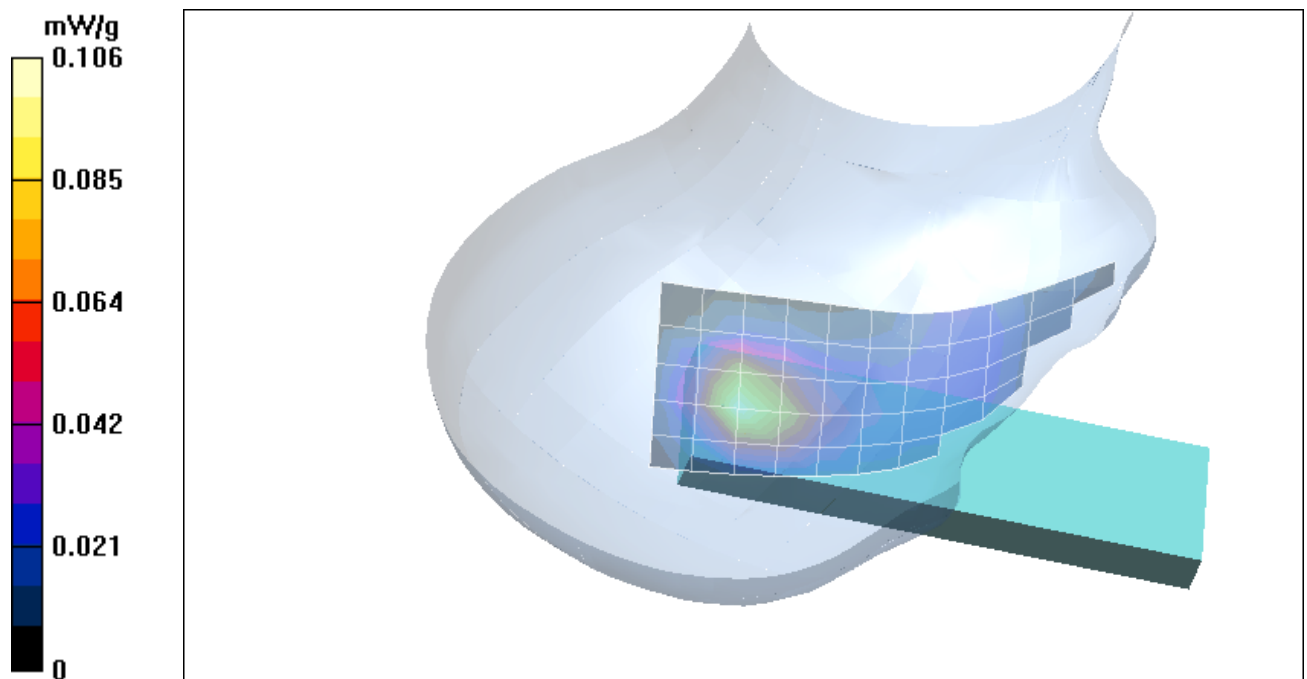


Fig. 4: SAR distribution for PCS 1900, channel 661, tilted position, right side of head (09.03.2005; Ambient Temperature: 21.7° C; Liquid Temperature : 21.1° C).

2 SAR Distribution Plots, PCS 1900 head, worst case with Bluetooth

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [494bprm_1_BT.da4](#)

DUT: Toshiba; Type: TS 921; Serial: 355620000009494

Program Name: Cheek Right

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

Medium parameters used: $\sigma = 1.4$; mho/m, $\epsilon_r = 38.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(5.11, 5.11, 5.11); Calibrated: 13.01.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn489; Calibrated: 03.09.2004
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.3 Build 16; Postprocessing SW: SEMCAD, V1.8 Build 127

Cheek Right/Area Scan (6x15x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.171 mW/g

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

Reference Value = 6.92 V/m; Power Drift = -0.091 dB

Peak SAR (extrapolated) = 0.283 W/kg

SAR(1 g) = 0.175 mW/g; SAR(10 g) = 0.103 mW/g

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

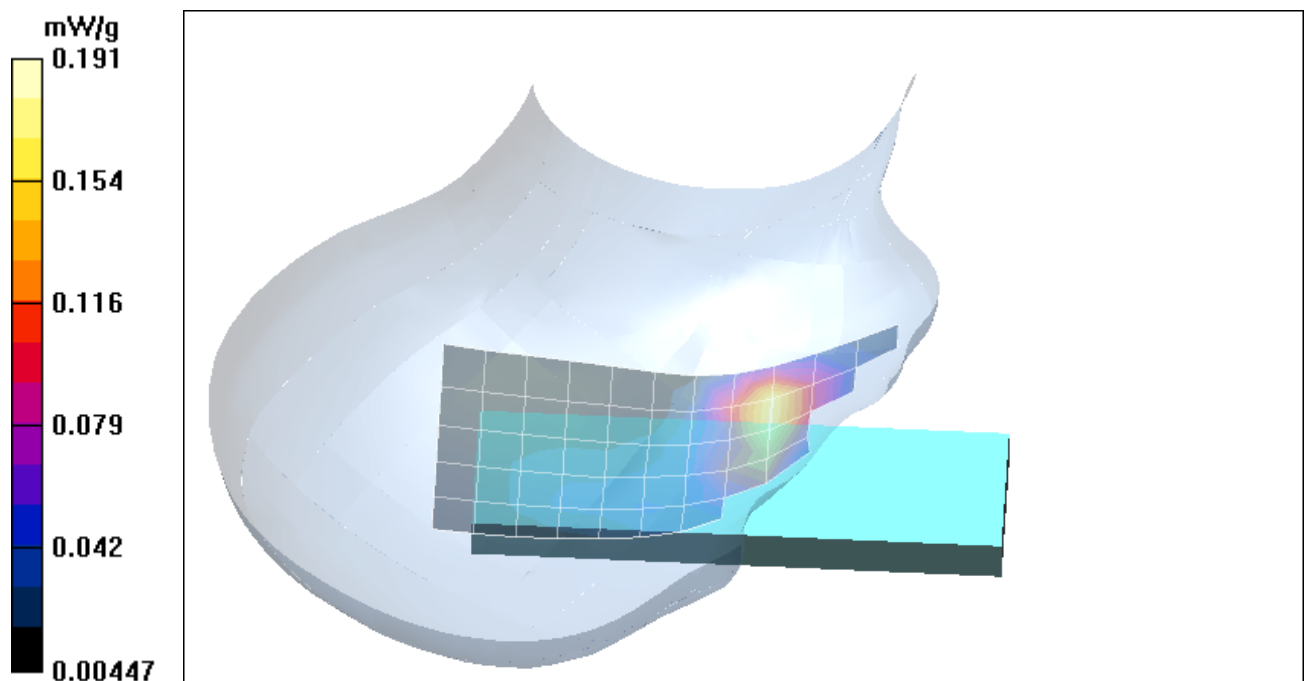


Fig. 5: SAR distribution for PCS 1900, channel 661, cheek position, right side of head with Bluetooth activated (09.03.2005; Ambient Temperature: 21.6° C; Liquid Temperature : 21.2° C).

3 SAR Distribution Plots, PCS 1900 Body worn (gap = 15 mm)

Test Laboratory: IMST GmbH, DASY Blue (I); File Name: [494bphm_5.da4](#)

DUT: Toshiba; Type: TS 921 T Body; Serial: 355620000009494

Program Name: Body Worn

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

Medium parameters used: $\sigma = 1.48$; mho/m, $\epsilon_r = 51.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.52, 4.52, 4.52); Calibrated: 13.01.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn489; Calibrated: 03.09.2004
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.3 Build 16; Postprocessing SW: SEMCAD, V1.8 Build 127

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

Maximum value of SAR (measured) = 0.252 mW/g

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

Reference Value = 21 V/m; Power Drift = -0.044 dB

Peak SAR (extrapolated) = 0.368 W/kg

SAR(1 g) = 0.246 mW/g; SAR(10 g) = 0.157 mW/g

Maximum value of SAR (measured) = 0.267 mW/g

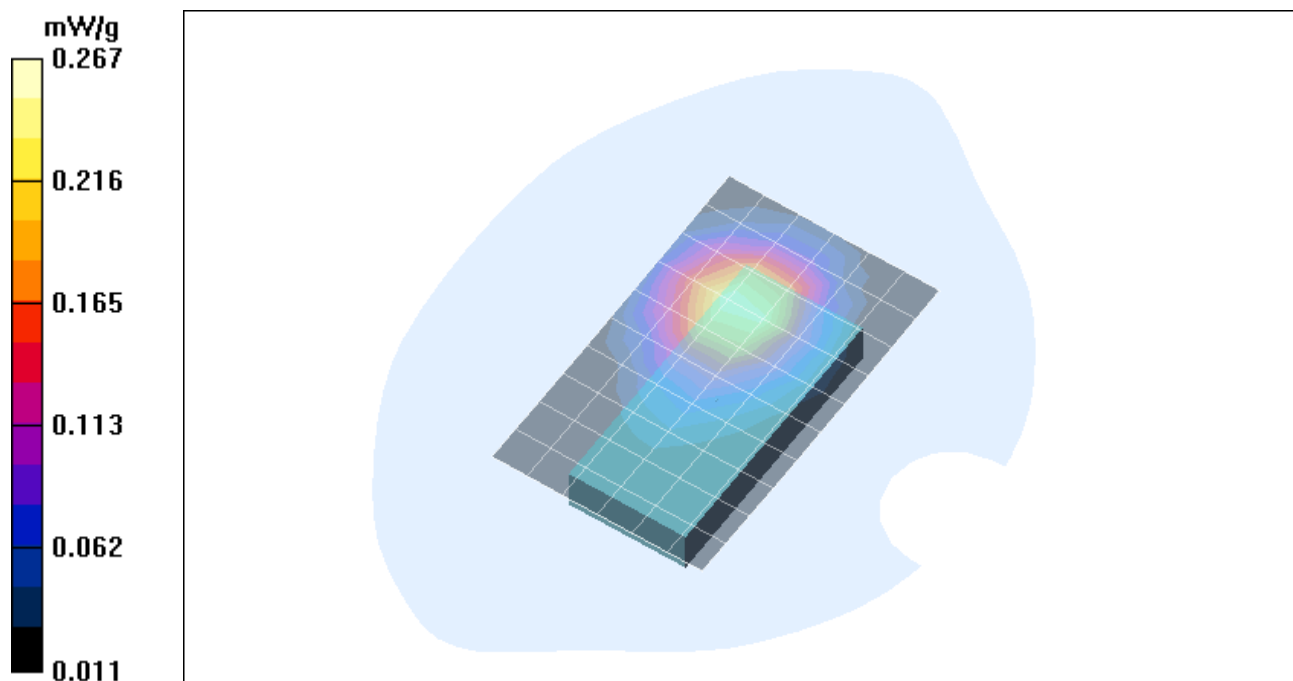


Fig. 6: SAR distribution for PCS 1900, channel 661, antenna towards the phantom, GSM with headset, (10.03.2005; Ambient Temperature: 22.1° C; Liquid Temperature : 21.3° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [494bphm_2.da4](#)

DUT: Toshiba; **Type:** TS 921 T Body; **Serial:** 35562000009494

Program Name: Body Worn

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

Medium parameters used: $\sigma = 1.48$; mho/m, $\epsilon_r = 51.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.52, 4.52, 4.52); Calibrated: 13.01.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn489; Calibrated: 03.09.2004
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.3 Build 16; Postprocessing SW: SEMCAD, V1.8 Build 127

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

Maximum value of SAR (measured) = 0.643 mW/g

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

Reference Value = 33.5 V/m; Power Drift = -0.03 dB

Peak SAR (extrapolated) = 0.917 W/kg

SAR(1 g) = 0.621 mW/g; SAR(10 g) = 0.395 mW/g

Maximum value of SAR (measured) = 0.673 mW/g

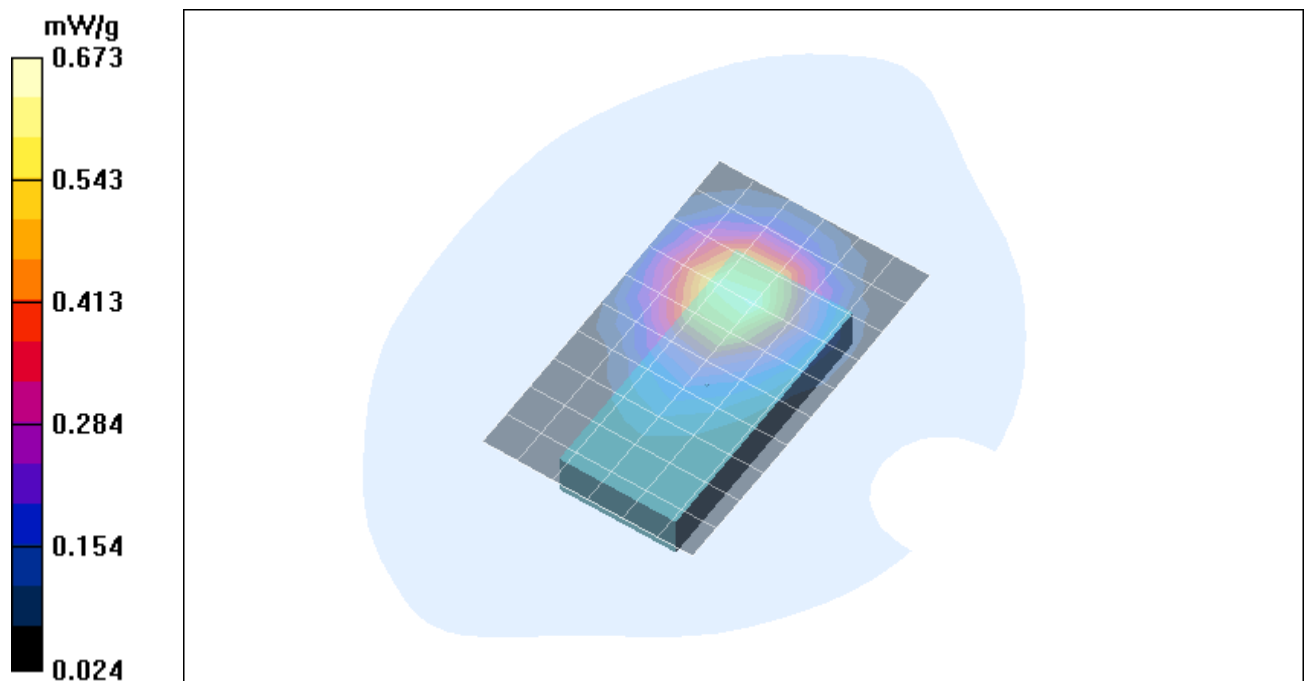


Fig. 7: SAR distribution for PCS 1900, channel 661, antenna towards the phantom, GPRS (Class 10) (10.03.2005; Ambient Temperature: 22.1° C; Liquid Temperature : 21.3° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [494bphm_3.da4](#)

DUT: Toshiba; **Type:** TS 921 T Body; **Serial:** 35562000009494

Program Name: Body Worn

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

Medium parameters used: $\sigma = 1.48$; mho/m, $\epsilon_r = 51.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.52, 4.52, 4.52); Calibrated: 13.01.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn489; Calibrated: 03.09.2004
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.3 Build 16; Postprocessing SW: SEMCAD, V1.8 Build 127

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

Maximum value of SAR (measured) = 0.610 mW/g

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

Reference Value = 33.3 V/m; Power Drift = 0.015 dB

Peak SAR (extrapolated) = 0.862 W/kg

SAR(1 g) = 0.587 mW/g; SAR(10 g) = 0.373 mW/g

Maximum value of SAR (measured) = 0.640 mW/g

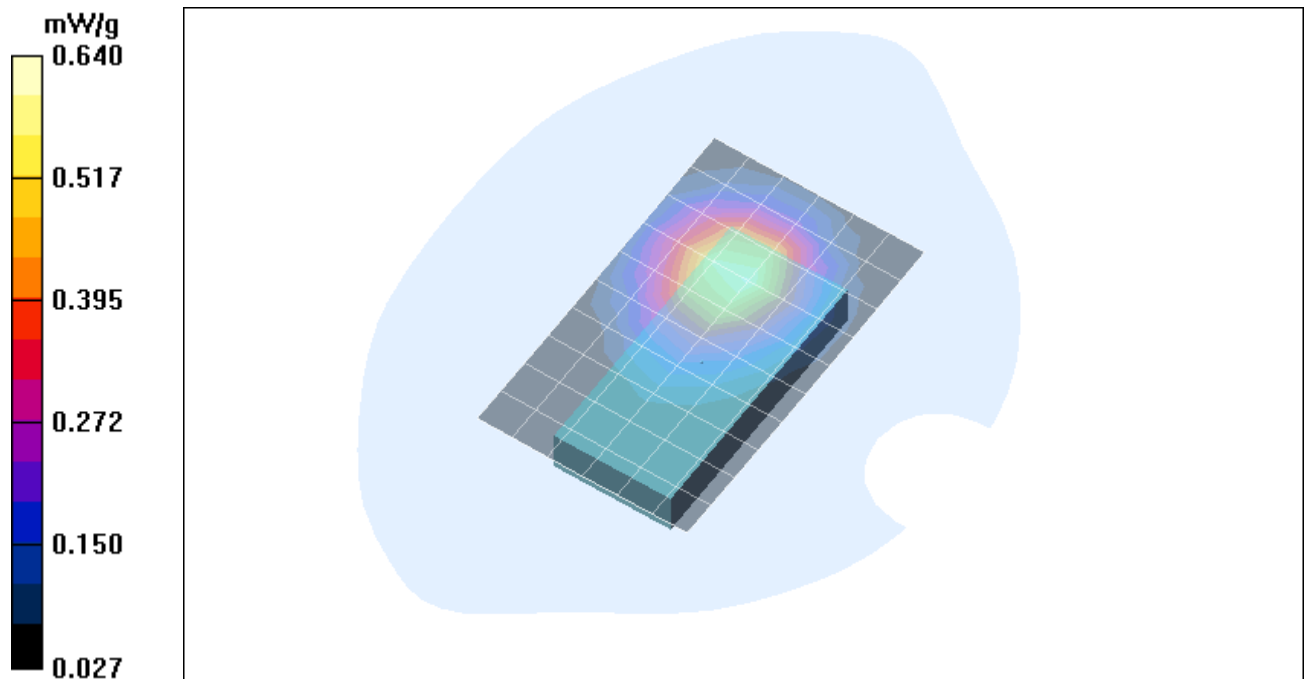


Fig. 8: SAR distribution for PCS 1900, channel 661, antenna towards the phantom, GPRS (Class 10) and data cable (10.03.2005; Ambient Temperature: 22.1° C; Liquid Temperature : 21.3° C).

Test Laboratory: IMST GmbH, DASY Blue (I); **File Name:** [494bphm_4.da4](#)

DUT: Toshiba; **Type:** TS 921 T Body; **Serial:** 355620000009494

Program Name: Body Worn

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

Medium parameters used: $\sigma = 1.48$; mho/m, $\epsilon_r = 51.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6R - SN1669; ConvF(4.52, 4.52, 4.52); Calibrated: 13.01.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn489; Calibrated: 03.09.2004
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.3 Build 16; Postprocessing SW: SEMCAD, V1.8 Build 127

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

Maximum value of SAR (measured) = 0.637 mW/g

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

Reference Value = 30.8 V/m; Power Drift = -0.135 dB

Peak SAR (extrapolated) = 0.943 W/kg

SAR(1 g) = 0.652 mW/g; SAR(10 g) = 0.418 mW/g

Maximum value of SAR (measured) = 0.715 mW/g

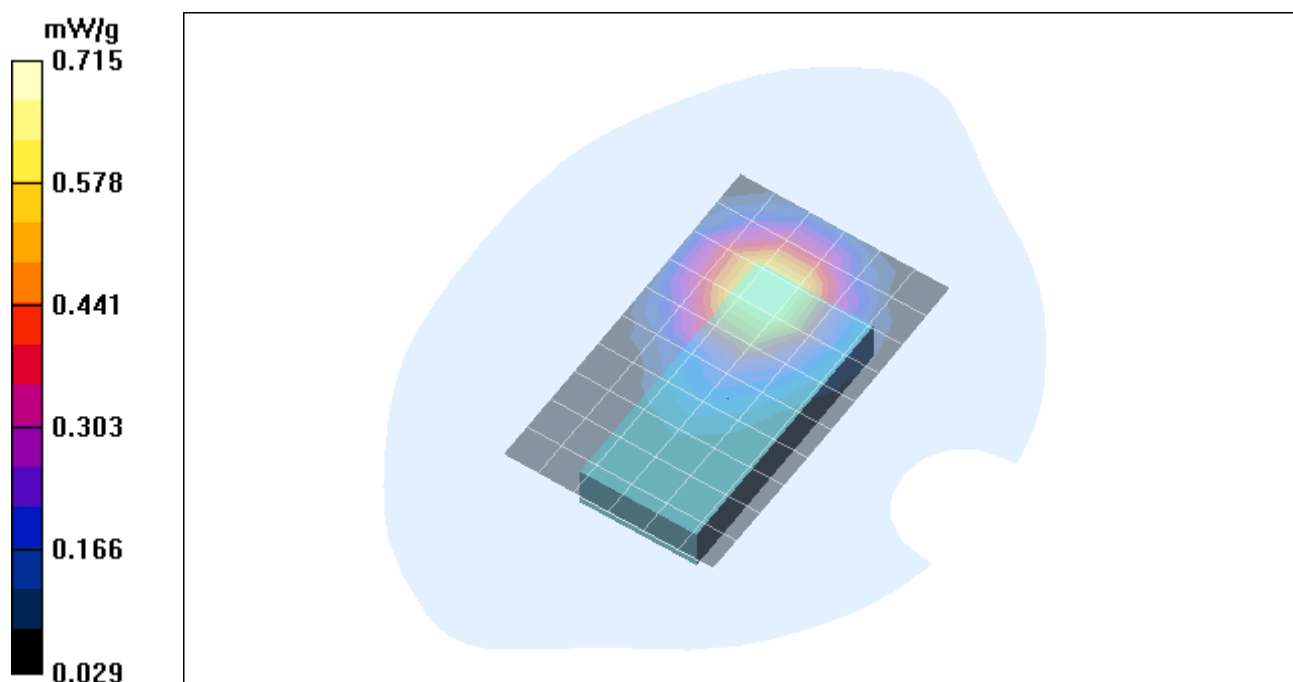


Fig. 9: SAR distribution for PCS 1900, channel 661, antenna towards the phantom, GPRS (Class 10), Bluetooth activated (10.03.2005; Ambient Temperature: 22.0° C; Liquid Temperature : 21.2° C).

4 SAR z-axis scans (Validation)

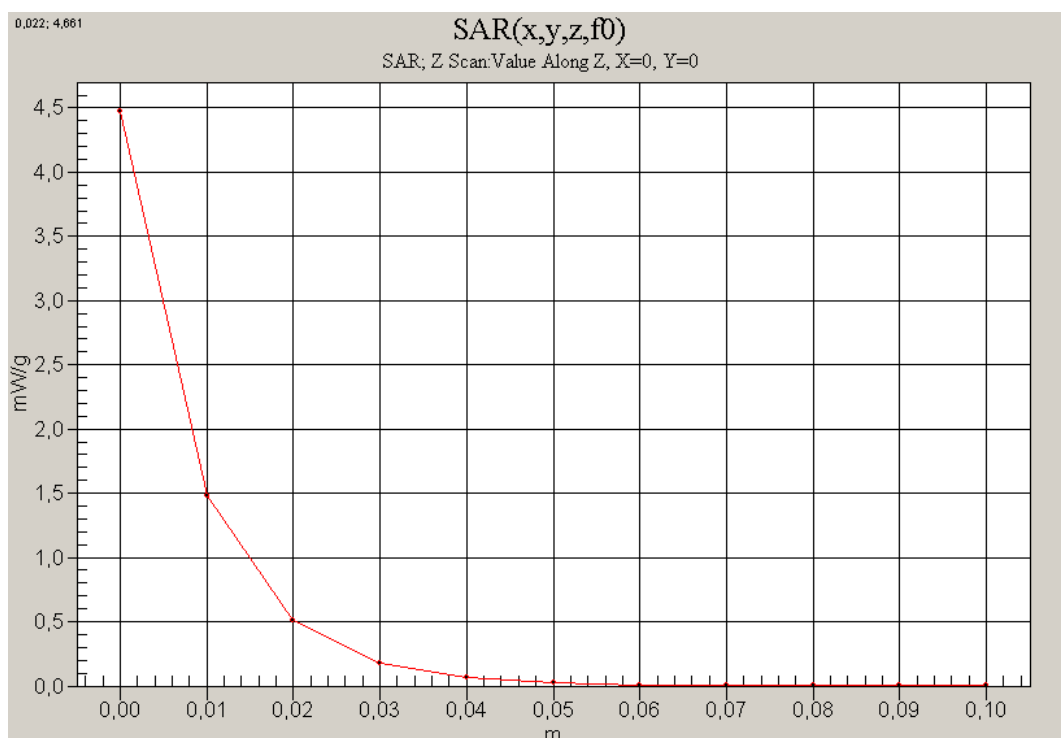


Fig. 10: SAR versus liquid depth, 1900 MHz, head (09.03.2005; Ambient Temperature: 22.0° C; Liquid Temperature : 21.0° C).

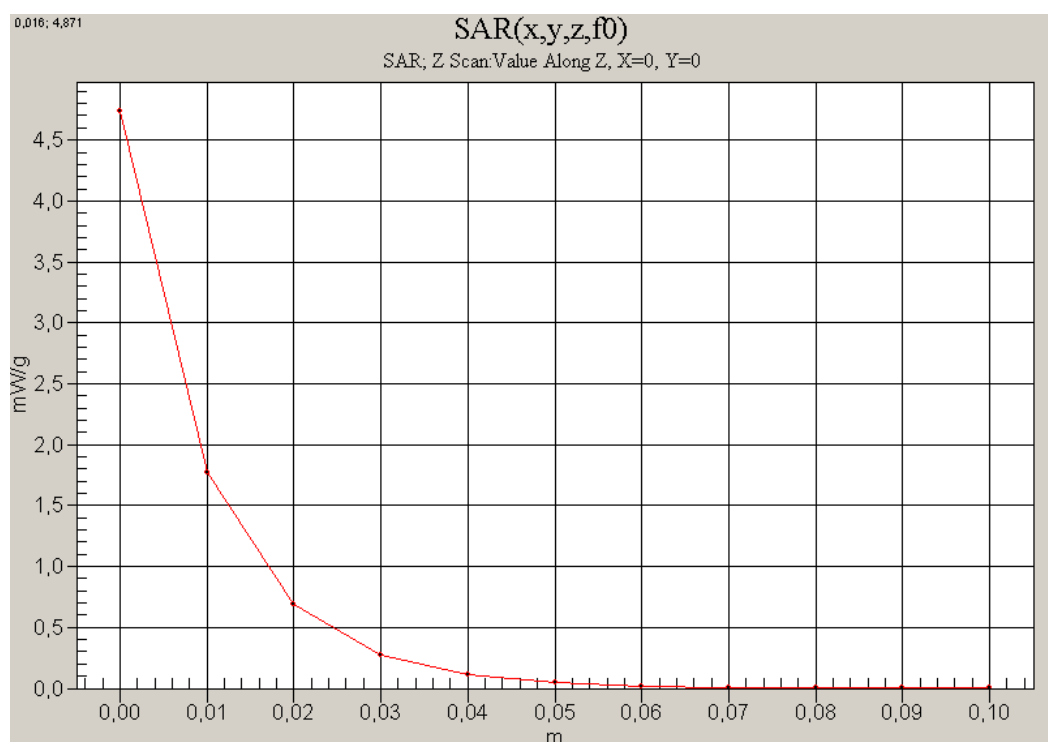


Fig. 11: SAR versus liquid depth, 1900 MHz, body (10.03.2005; Ambient Temperature: 22.0° C; Liquid Temperature : 21.0° C).

5 SAR z-axis scans (Measurements)

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

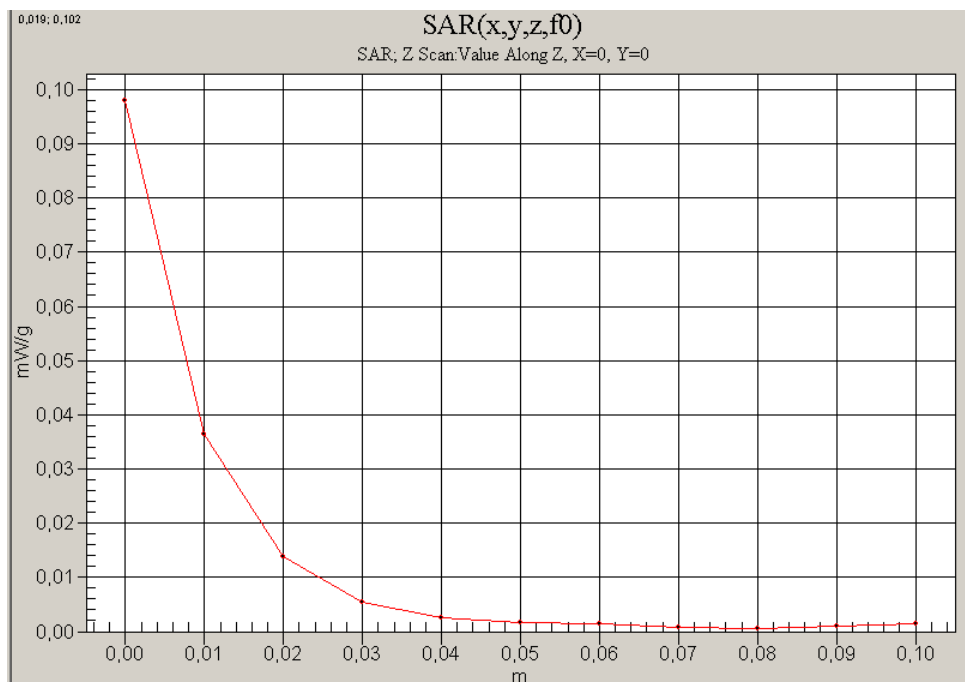


Fig. 12: SAR versus liquid depth, head: PCS 1900, channel 661, cheek position, right side of head (09.03.2005, Ambient Temperature: 21.8° C; Liquid Temperature : 21.1° C).

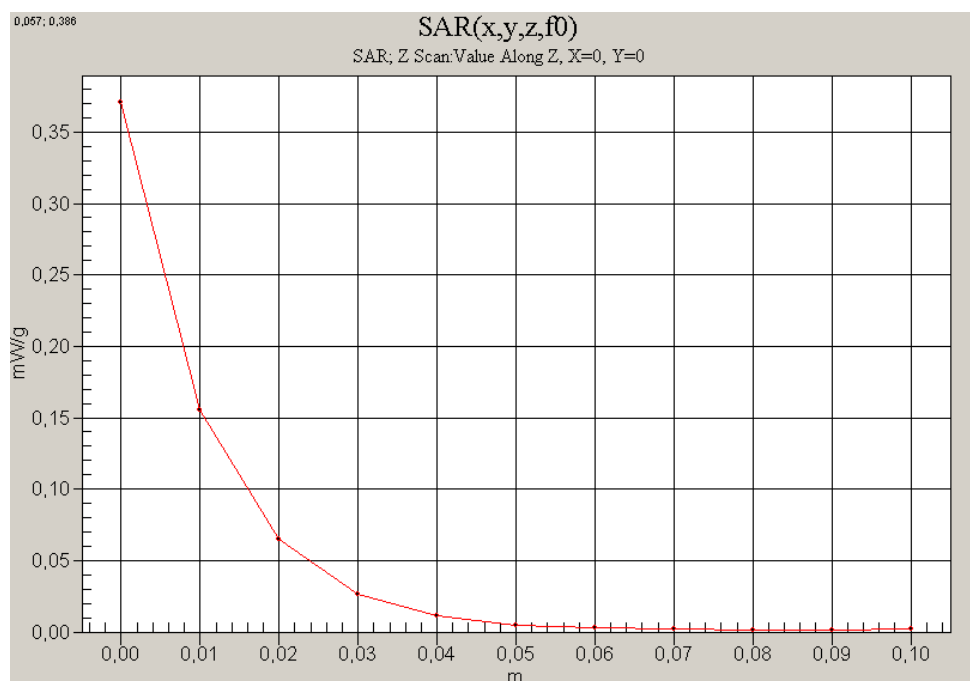


Fig. 13: SAR versus liquid depth, body: PCS 1900, channel 661, antenna towards the phantom, GPRS (Class 10) and BT (10.03.2005; Ambient Temperature: 22.0° C; Liquid Temperature : 21.2° C).