Deutscher Akkreditierungs Rat

DAT-P-152/98-01

# Appendix for the Report

# Dosimetric Assessment of the Panasonic KX-TD7696 (FCC ID: ACJ96NKX-TD7696)

# According to the FCC Requirements

# SAR Distribution Plots

July 03, 2008

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# Table of Contents

# 1 SAR Distribution Plots, Head Measurements

**Test Laboratory: IMST GmbH, DASY Blue (I); File Name: TD7696_bplm_1.da4**

**DUT: Panasonic; Type: KX-TD7696;**
**Program Name: Cheek Left**

Communication System: DECT US; Frequency: 1924.99 MHz;Duty Cycle: 1:24
Medium parameters used: f = 1924.99 MHz; $\sigma$ = 1.44 mho/m; $\varepsilon_r$ = 40.3; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.85, 7.85, 7.85); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 17.09.2007
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Cheek Left/Area Scan (7x14x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.009 mW/g
**Cheek Left/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.17 V/m; Power Drift = -0.088 dB
Peak SAR (extrapolated) = 0.012 W/kg
**SAR(1 g) = 0.008 mW/g; SAR(10 g) = 0.00476 mW/g**

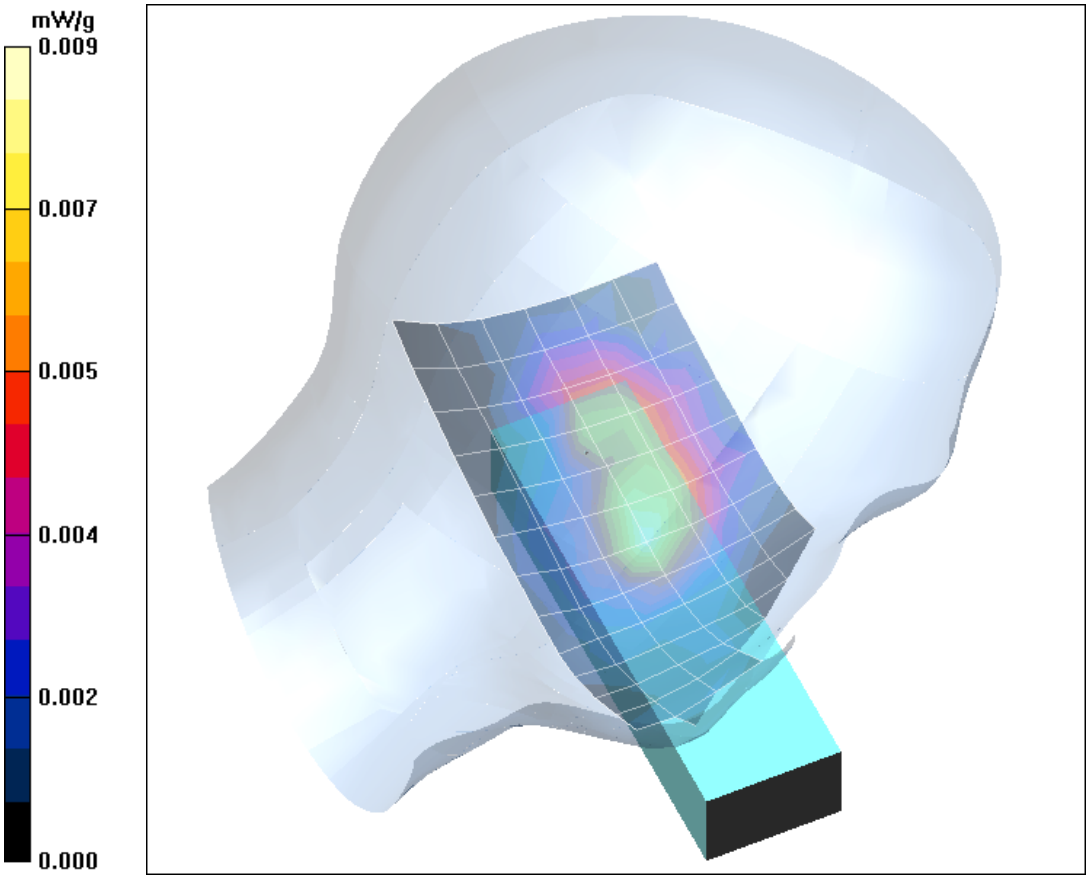


Fig. 1: SAR distribution for DECT US, channel 2, cheek position, left side of head (July 02, 2008; Ambient Temperature: 23.4°C; Liquid Temperature: 22.0°C).

**Test Laboratory: IMST GmbH, DASY Blue (I); File Name: TD7696_bplm_2.da4**

**DUT: Panasonic; Type: KX-TD7696;**
**Program Name: Tilted Left**

Communication System: DECT US; Frequency: 1924.99 MHz;Duty Cycle: 1:24
Medium parameters used: f = 1924.99 MHz; $\sigma$ = 1.44 mho/m; $\varepsilon_r$ = 40.3; $\rho$ = 1000 kg/m$^3$
Phantom section: Left Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.85, 7.85, 7.85); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 17.09.2007
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Tilted Left/Area Scan (8x14x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.005 mW/g
**Tilted Left/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.68 V/m; Power Drift = -0.058 dB
Peak SAR (extrapolated) = 0.019 W/kg
**SAR(1 g) = 0.00558 mW/g; SAR(10 g) = 0.00229 mW/g**
Maximum value of SAR (measured) = 0.007 mW/g

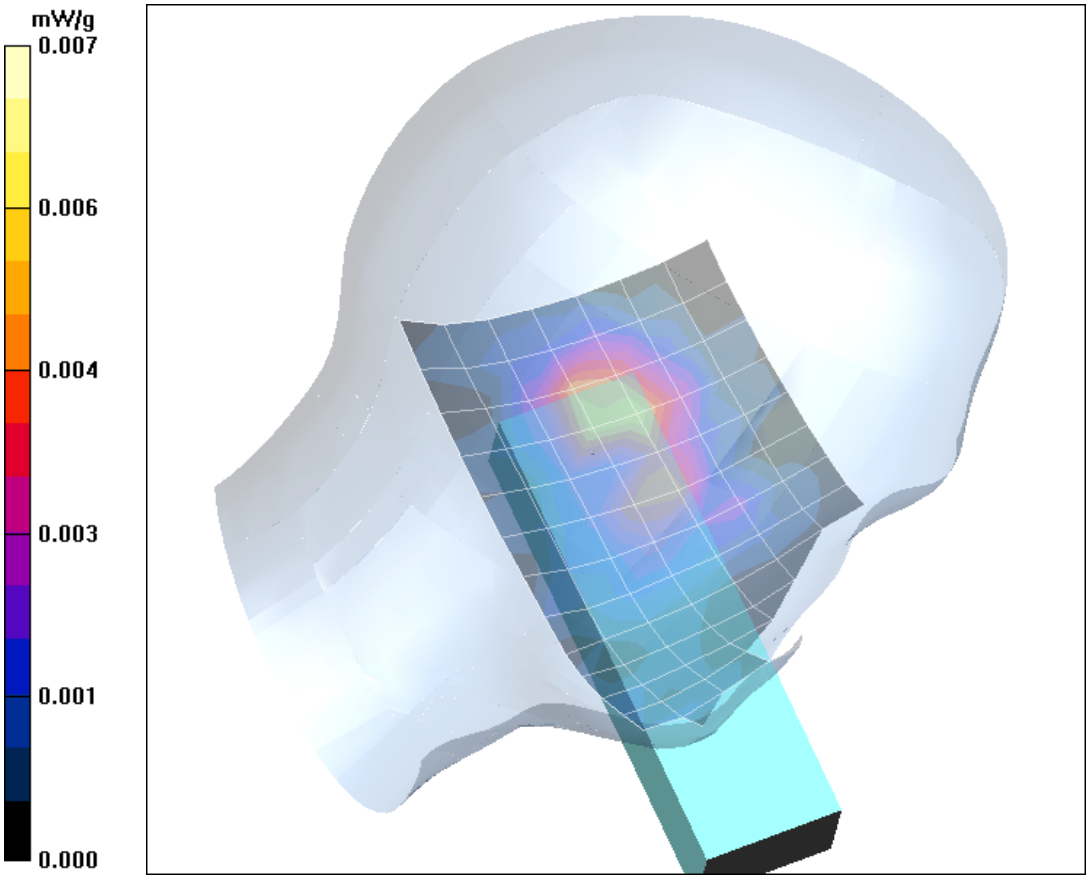


Fig. 2: SAR distribution for DECT US, channel 2, tilted position, left side of head (July 02, 2008; Ambient Temperature: 23.4°C; Liquid Temperature: 22.0°C).

**Test Laboratory: IMST GmbH, DASY Blue (I); File Name: TD7696_bprm_1.da4**

**DUT: Panasonic; Type: KX-TD7696;**
**Program Name: Cheek Right**

Communication System: DECT US; Frequency: 1924.99 MHz;Duty Cycle: 1:24
Medium parameters used: f = 1924.99 MHz; $\sigma$ = 1.44 mho/m; $\varepsilon_r$ = 40.3; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.85, 7.85, 7.85); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 17.09.2007
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Cheek Right/Area Scan (7x14x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.009 mW/g
**Cheek Right/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 2.38 V/m; Power Drift = 0.026 dB
Peak SAR (extrapolated) = 0.015 W/kg
**SAR(1 g) = 0.00794 mW/g; SAR(10 g) = 0.00476 mW/g**

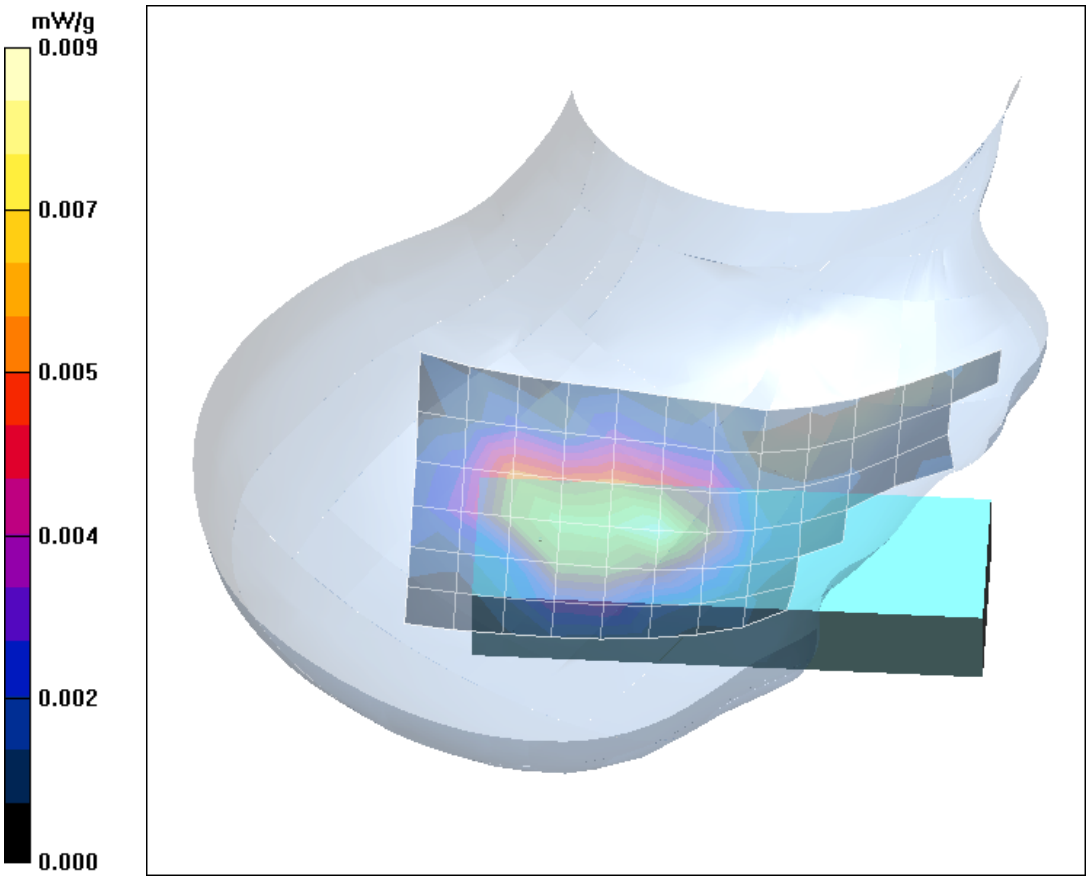


Fig. 3: SAR distribution for DECT US, channel 2, cheek position, right side of head (July 02, 2008; Ambient Temperature: 23.4°C; Liquid Temperature: 22.0°C).

**Test Laboratory: IMST GmbH, DASY Blue (I); File Name: TD7696_bprm_2.da4**

**DUT: Panasonic; Type: KX-TD7696;**
**Program Name: Tilted Right**

Communication System: DECT US; Frequency: 1924.99 MHz;Duty Cycle: 1:24
Medium parameters used: f = 1924.99 MHz; $\sigma$ = 1.44 mho/m; $\varepsilon_r$ = 40.3; $\rho$ = 1000 kg/m$^3$
Phantom section: Right Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.85, 7.85, 7.85); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 17.09.2007
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Tilted Right/Area Scan (7x14x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.005 mW/g
**Tilted Right/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.85 V/m; Power Drift = -0.161 dB
Peak SAR (extrapolated) = 0.021 W/kg
**SAR(1 g) = 0.00534 mW/g; SAR(10 g) = 0.00295 mW/g**
Maximum value of SAR (measured) = 0.006 mW/g

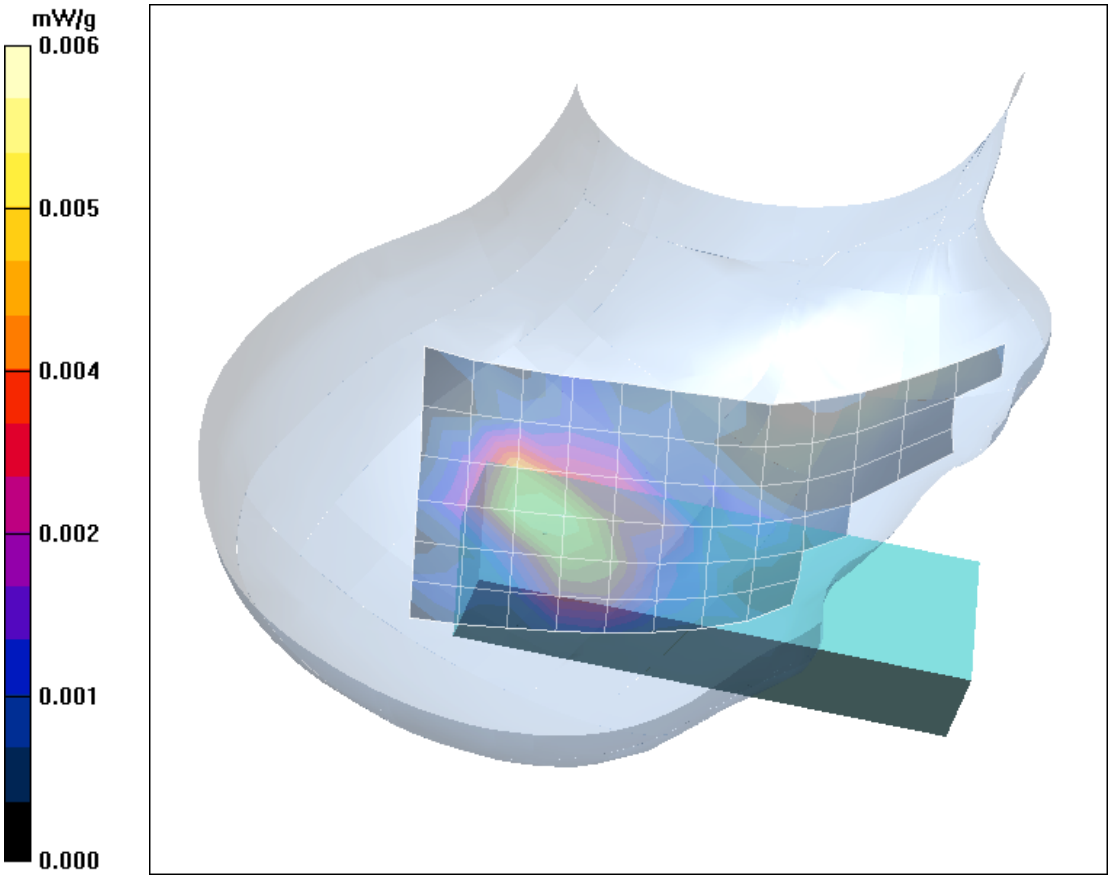


Fig. 4: SAR distribution for DECT US, channel 2, tilted position, right side of head (July 02, 2008; Ambient Temperature: 23.4°C; Liquid Temperature: 22.0°C)

# 2 SAR Distribution Plots, Body Measurements

**Test Laboratory: IMST GmbH, DASY Blue (I); File Name:**
**TD7696_bphm_1_headset_dspl_down.da4**

**DUT: Panasonic; Type: KX-TD7696;**
**Program Name: Body Worn**

Communication System: DECT US; Frequency: 1924.99 MHz;Duty Cycle: 1:24
Medium parameters used: f = 1924.99 MHz; $\sigma$ = 1.56 mho/m; $\varepsilon_r$ = 53.8; $\rho$ = 1000 kg/m$^3$
Phantom section: Flat Section

DASY4 Configuration:
- Probe: EX3DV4 - SN3536; ConvF(7.67, 7.67, 7.67); Calibrated: 18.09.2007
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn631; Calibrated: 17.09.2007
- Phantom: SAM Glycol 1176; Type: Speag; Serial: 1176
- Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

**Body Worn/Area Scan (8x13x1):** Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.015 mW/g
**Body Worn/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 1.80 V/m; Power Drift = 0.049 dB
Peak SAR (extrapolated) = 0.029 W/kg
**SAR(1 g) = 0.016 mW/g; SAR(10 g) = 0.00787 mW/g**
Maximum value of SAR (measured) = 0.019 mW/g

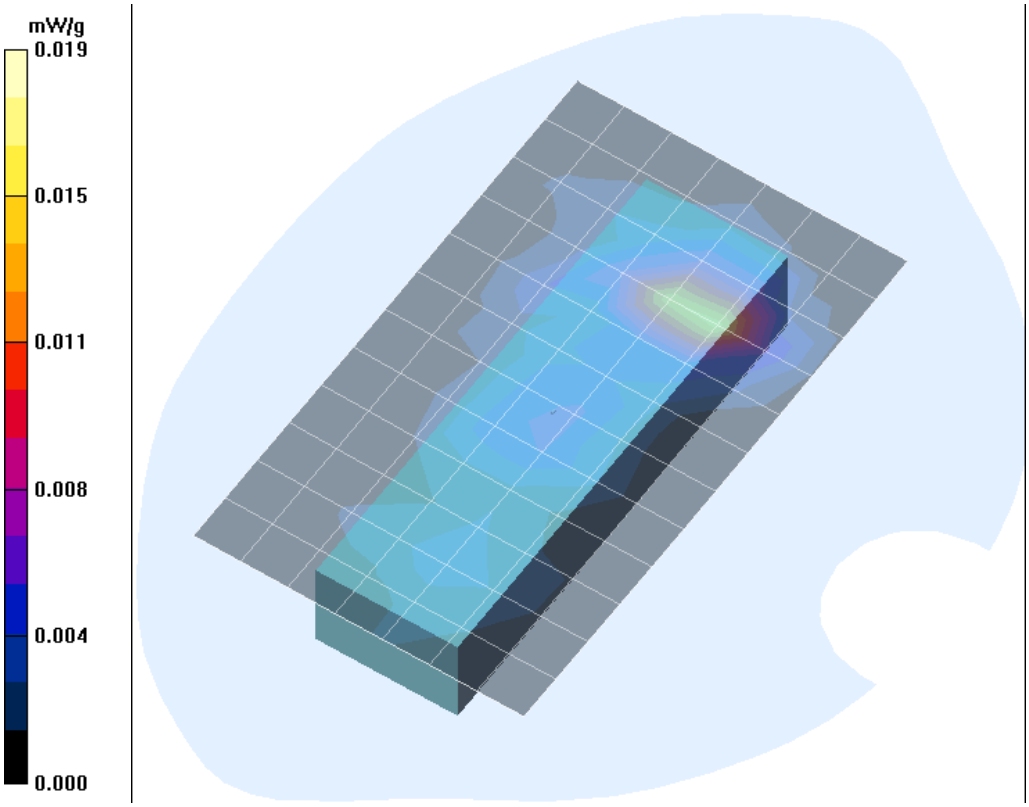


Fig. 5: SAR distribution for DECT US, body worn, channel 2, antenna towards the phantom, with belt clip and headset, 0 mm distance (July 02, 2008; Ambient Temperature: 23.4°C; Liquid Temperature: 21.9°C).

# 3 SAR z-axis scans (Validation)

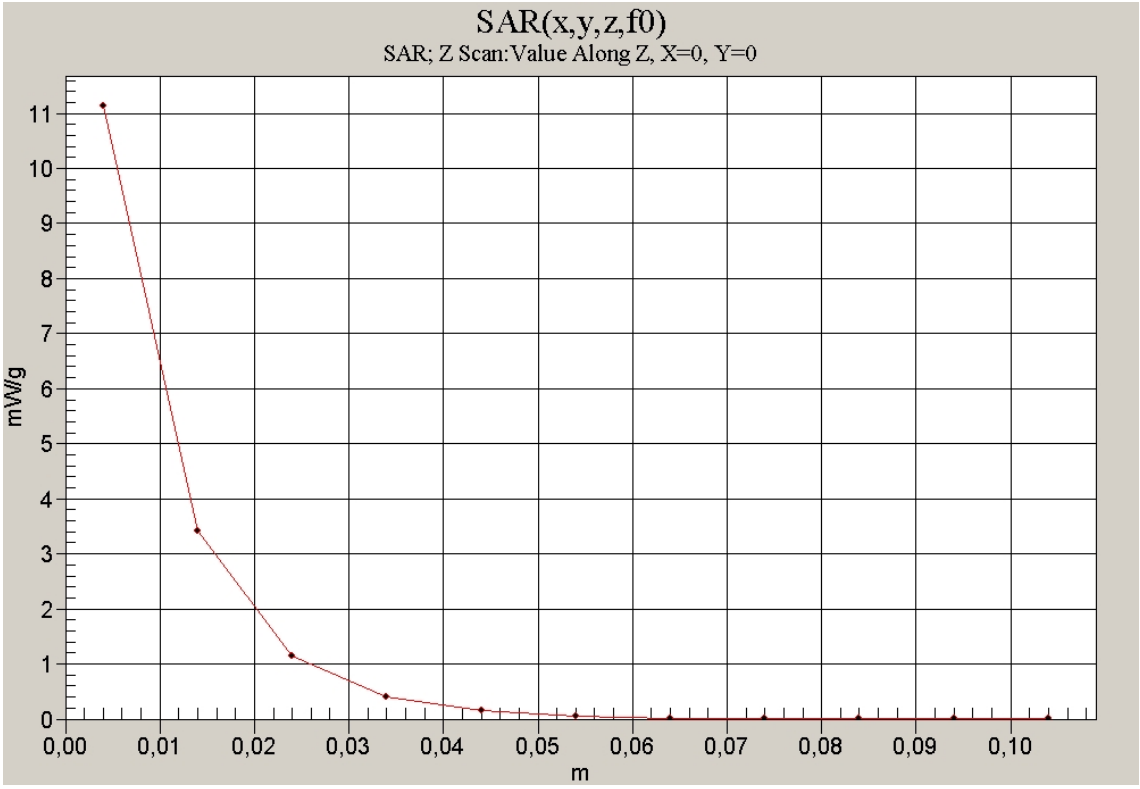


Fig. 6: SAR versus liquid depth, 1900 MHz, head (July 02, 2008; Ambient Temperature: 23.4° C; Liquid Temperature : 22.0° C).

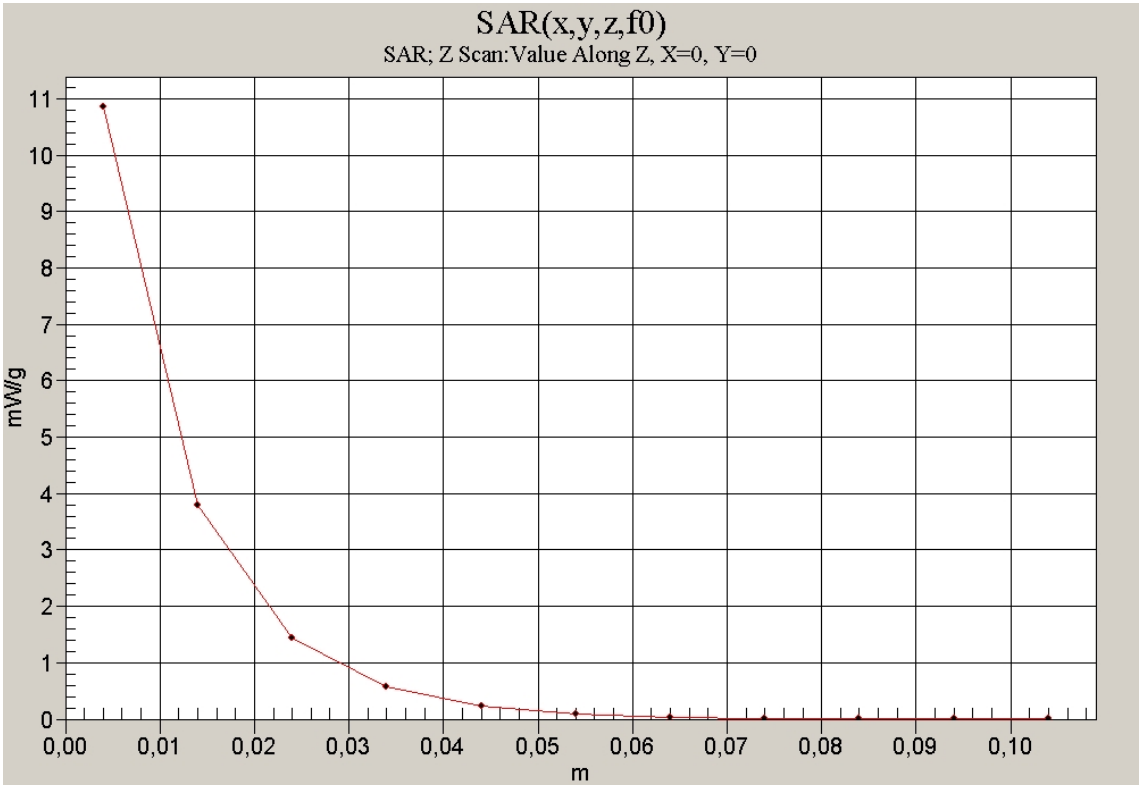


Fig. 7: SAR versus liquid depth, 1900 MHz, body (July 02, 2008; Ambient Temperature: 23.4° C; Liquid Temperature : 21.9° C).

# 4 SAR z-axis scans (Measurements)

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

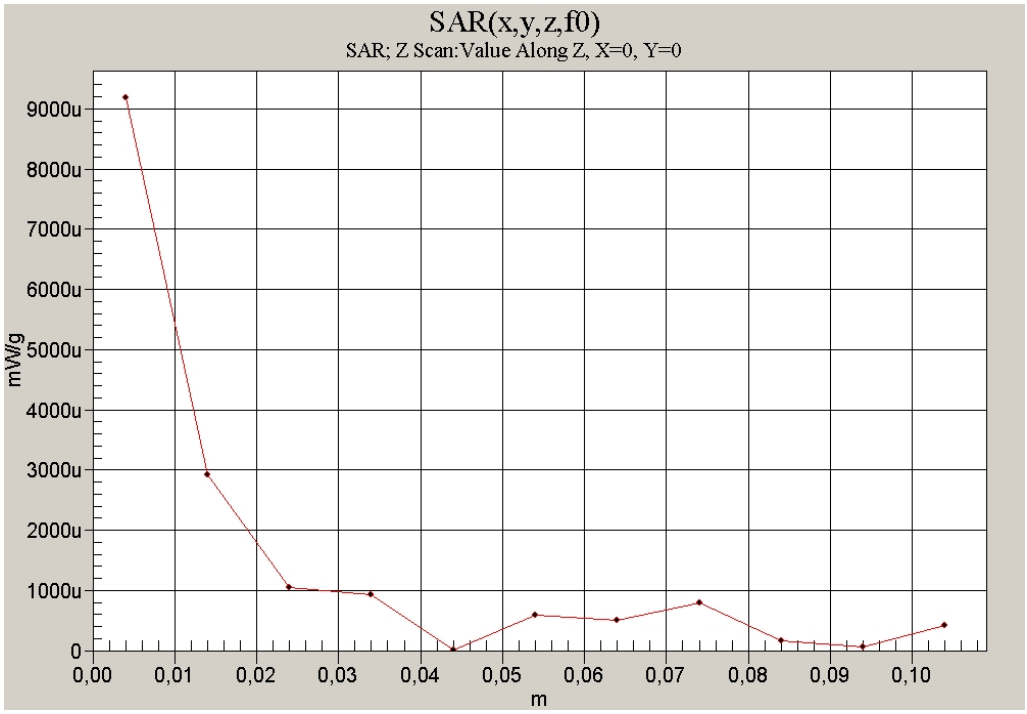


Fig. 8: SAR versus liquid depth, head: DECT US, channel 2, cheek position, left side of head, antenna 1 (July 02, 2008; Ambient Temperature: 23.4° C; Liquid Temperature : 22.0° C).

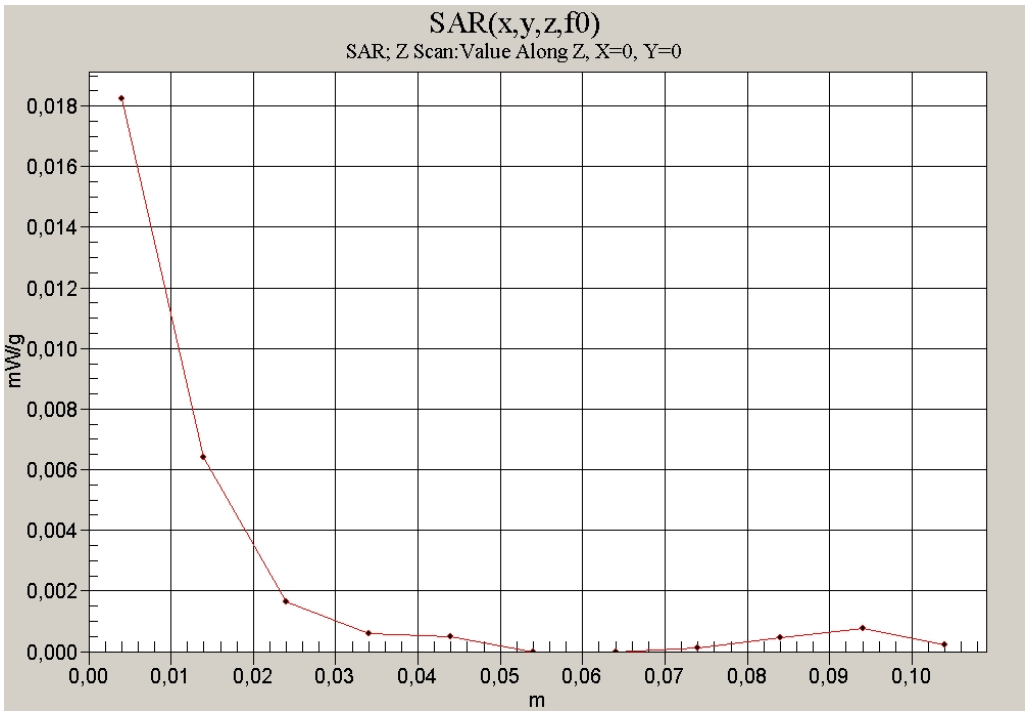


Fig. 9: SAR versus liquid depth, body: DECT US 1900, channel 2, beld clip and headset, 0 mm distance, antenna towards the phantom (July 02, 2008; Ambient Temperature: 23.4° C; Liquid Temperature: 21.9° C).