
Appendix for the Report

Dosimetric Assessment of the Portable Device Panasonic KX-TGA659 (FCC ID: ACJ96NKX-TGA659)

According to the FCC Requirements

SAR Distribution Plots

November 30, 2010
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The test results only relate to the items tested. This report shall not be reproduced except in full without the written approval of the testing laboratory.

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1 SAR Distribution Plots, Head Measurements

Test Laboratory: Imst GmbH, DASY Yellow (II); File Name: [TGA659_yplm_1.da4](#)

DUT: Panasonic; Type: KX-TGA659;

Program Name: DECT

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used: $f = 1924.99$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 41.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.77, 7.77, 7.77); Calibrated: 16.09.2010

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

- Electronics: DAE3 Sn335; Calibrated: 10.02.2010

- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Left/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.032 mW/g

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

Reference Value = 2.72 V/m; Power Drift = -0.148 dB

Peak SAR (extrapolated) = 0.065 W/kg

SAR(1 g) = 0.035 mW/g; SAR(10 g) = 0.018 mW/g

Maximum value of SAR (measured) = 0.038 mW/g

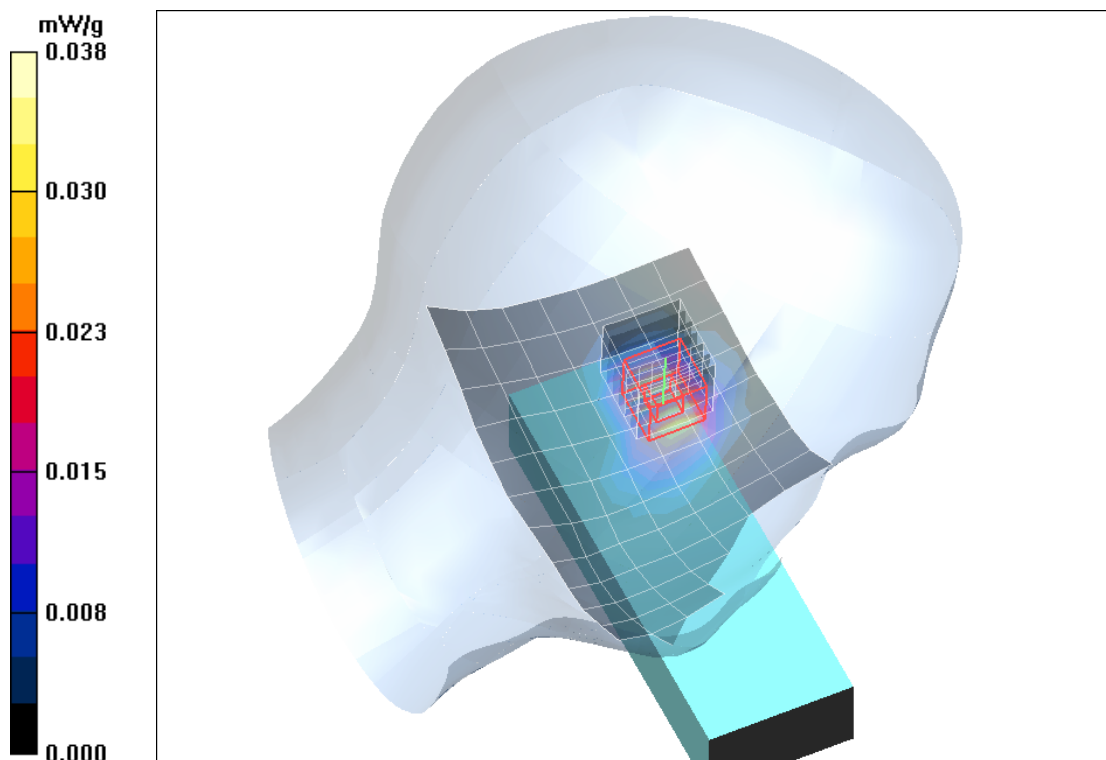


Fig. 1: SAR distribution for DECT US, channel 2, cheek position, left side of head (November 24, 2010; Ambient Temperature: 20.9°C; Liquid Temperature: 20.7°C).

Test Laboratory: Imst GmbH, DASY Yellow (II); **File Name:** [TGA659_yplm_2.da4](#)

DUT: Panasonic; **Type:** KX-TGA659;

Program Name: DECT

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used: $f = 1924.99$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 41.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.77, 7.77, 7.77); Calibrated: 16.09.2010

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

- Electronics: DAE3 Sn335; Calibrated: 10.02.2010

- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilted Left/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.018 mW/g

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

Reference Value = 2.17 V/m; Power Drift = 0.048 dB

Peak SAR (extrapolated) = 0.051 W/kg

SAR(1 g) = 0.017 mW/g; SAR(10 g) = 0.00855 mW/g

Maximum value of SAR (measured) = 0.020 mW/g

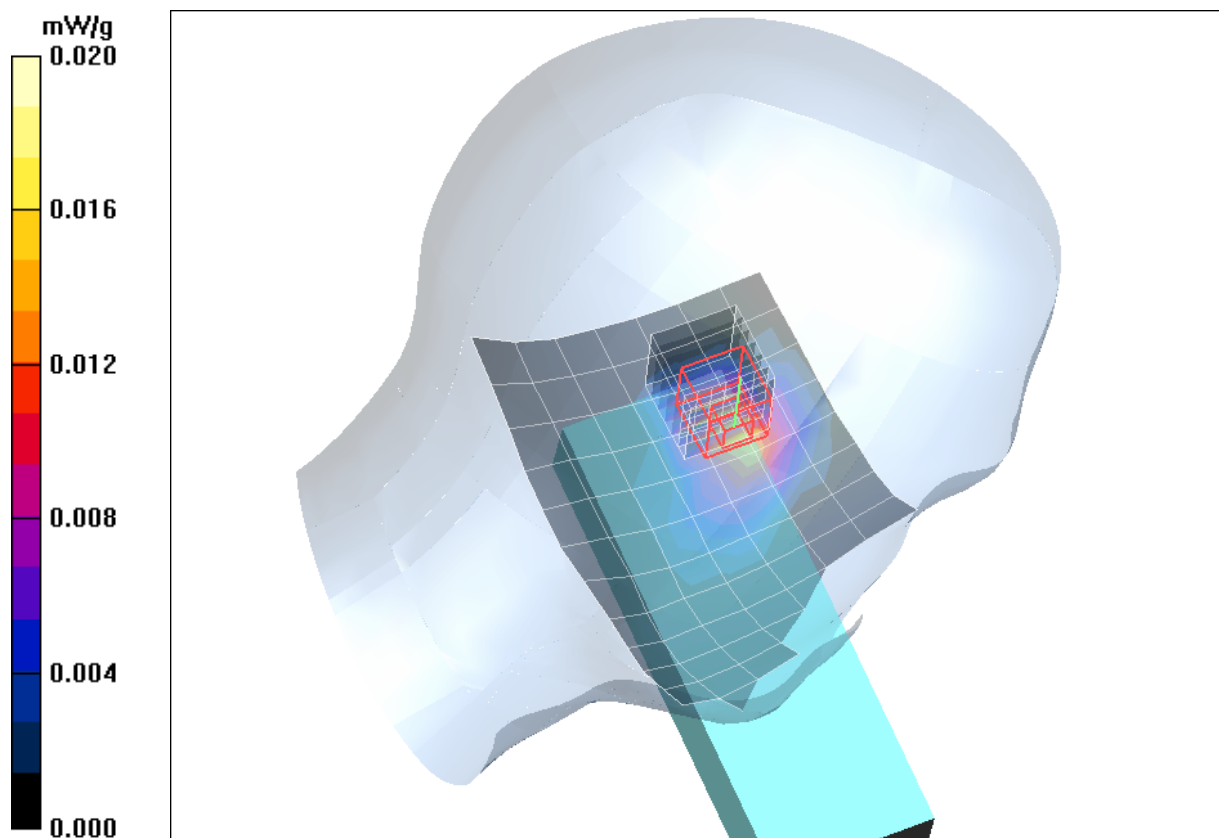


Fig. 2: SAR distribution for DECT US, channel 2, tilted position, left side of head (November 24, 2010; Ambient Temperature: 20.9°C; Liquid Temperature: 20.7°C).

Test Laboratory: Imst GmbH, DASY Yellow (II); **File Name:** [TGA659_yprm_1.da4](#)

DUT: Panasonic; **Type:** KX-TGA659;

Program Name: DECT

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used: $f = 1924.99$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 41.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.77, 7.77, 7.77); Calibrated: 16.09.2010

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

- Electronics: DAE3 Sn335; Calibrated: 10.02.2010

- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Cheek Right/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.026 mW/g

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

Reference Value = 2.44 V/m; Power Drift = -0.181 dB

Peak SAR (extrapolated) = 0.047 W/kg

SAR(1 g) = 0.025 mW/g; SAR(10 g) = 0.013 mW/g

Maximum value of SAR (measured) = 0.028 mW/g

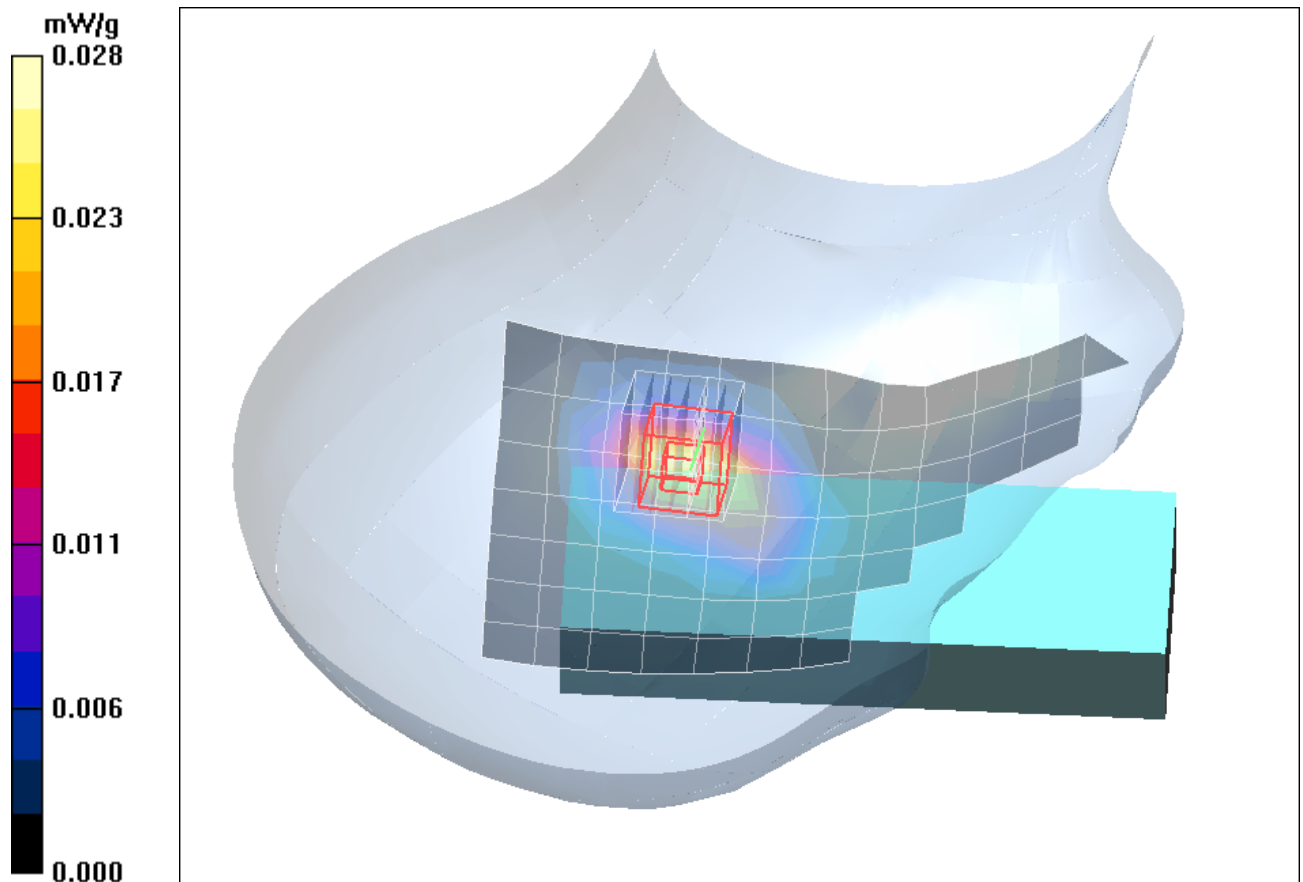


Fig. 3: SAR distribution for DECT US, channel 2, cheek position, right side of head (November 24, 2010; Ambient Temperature: 20.9°C; Liquid Temperature: 20.7°C).

Test Laboratory: Imst GmbH, DASY Yellow (II); File Name: [TGA659_yprm_2.da4](#)

DUT: Panasonic; Type: KX-TGA659;

Program Name: DECT

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used: $f = 1924.99$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 41.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.77, 7.77, 7.77); Calibrated: 16.09.2010

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

- Electronics: DAE3 Sn335; Calibrated: 10.02.2010

- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Tilted Right/Area Scan (8x14x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.015 mW/g

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

Reference Value = 2.33 V/m; Power Drift = 0.122 dB

Peak SAR (extrapolated) = 0.025 W/kg

SAR(1 g) = 0.015 mW/g; SAR(10 g) = 0.00712 mW/g

Maximum value of SAR (measured) = 0.017 mW/g

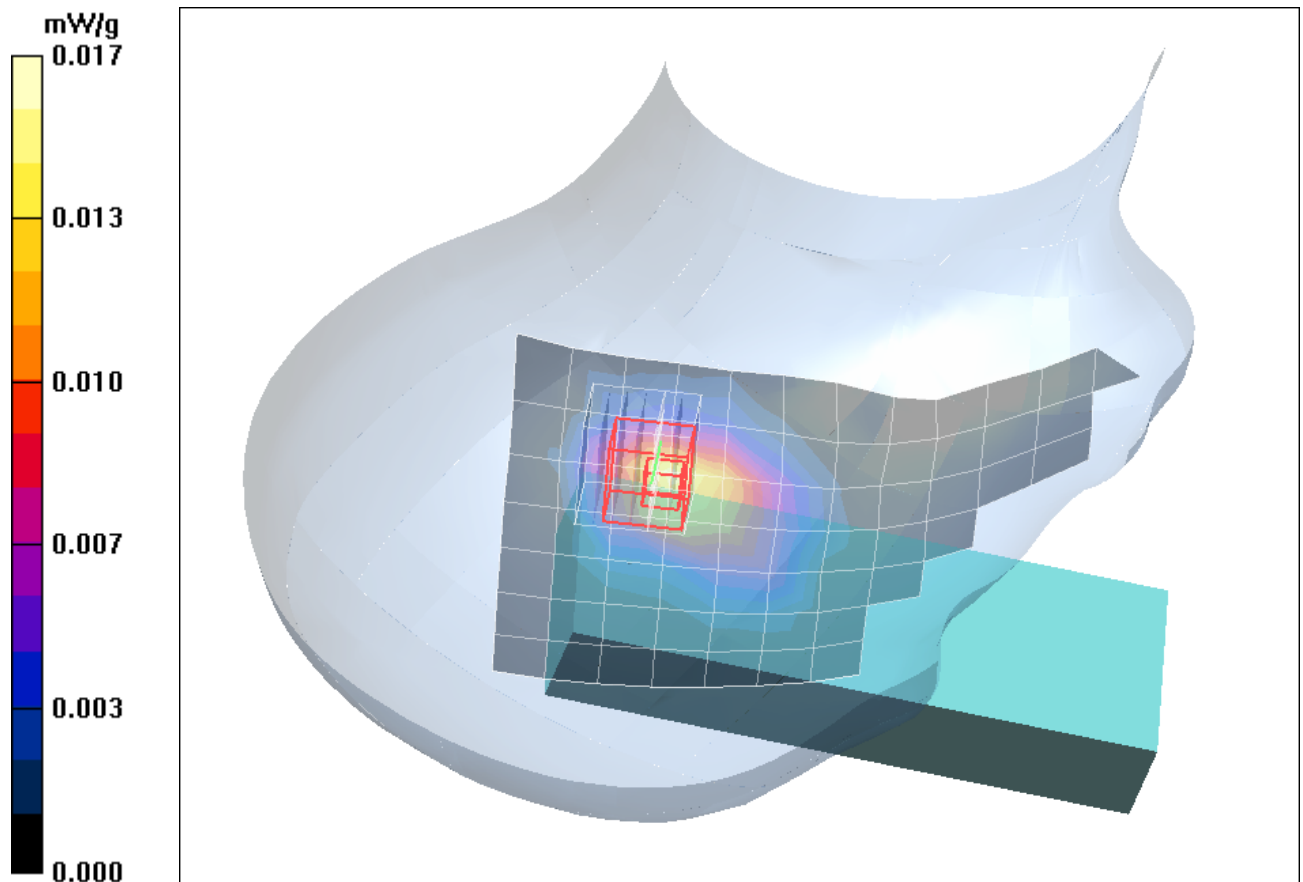


Fig. 4: SAR distribution for DECT US, channel 2, tilted position, right side of head (November 24, 2010; Ambient Temperature: 20.9°C; Liquid Temperature: 20.7°C)

2 SAR Distribution Plots, Body Measurements

Test Laboratory: Imst GmbH, DASY Yellow (II); File Name: [TGA659_yphm_1_hs_up.da4](#)

DUT: Panasonic; Type: KX-TGA659;

Program Name: DECT

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used: $f = 1924.99$ MHz; $\sigma = 1.56$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.89, 7.89, 7.89); Calibrated: 16.09.2010

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

- Electronics: DAE3 Sn335; Calibrated: 10.02.2010

- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn/Area Scan (8x15x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.026 mW/g

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

Reference Value = 4.13 V/m; Power Drift = 0.094 dB

Peak SAR (extrapolated) = 0.043 W/kg

SAR(1 g) = 0.024 mW/g; SAR(10 g) = 0.013 mW/g

Maximum value of SAR (measured) = 0.027 mW/g

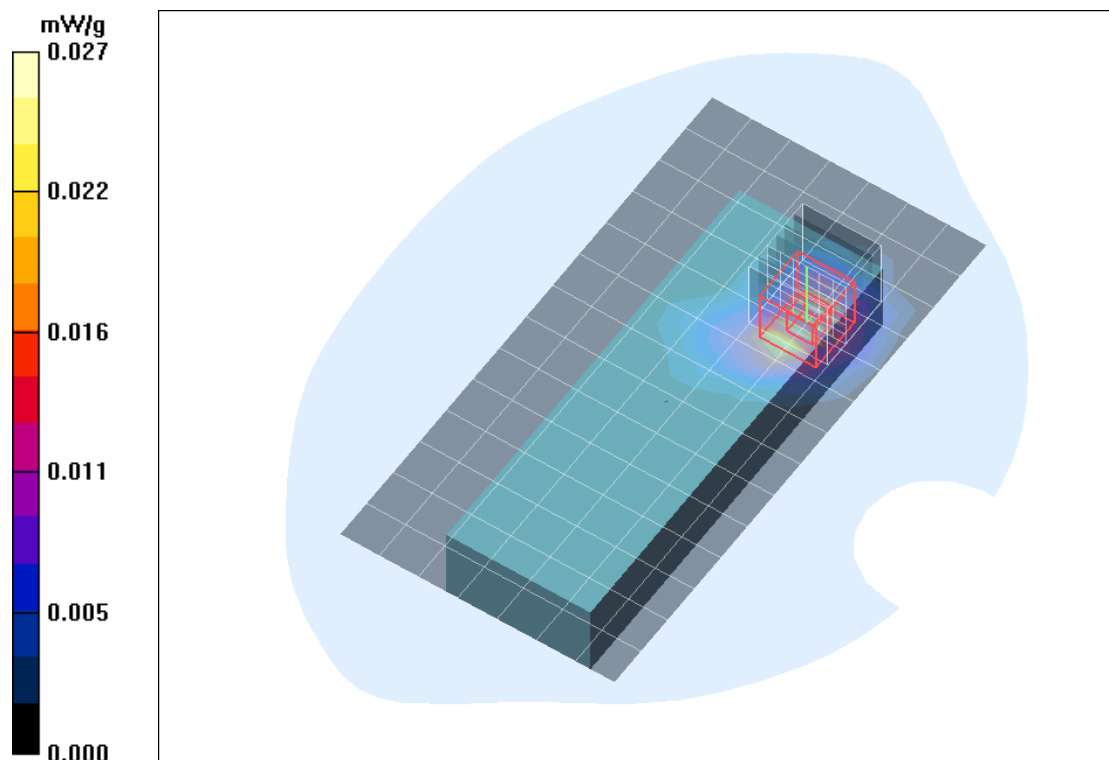


Fig. 5: SAR distribution for DECT US, channel 2, body worn configuration, display towards the phantom, belt clip and headset attached, 0 mm distance (November 29, 2010; Ambient Temperature: 21.4° C; Liquid Temperature: 21.1° C).

Test Laboratory: Imst GmbH, DASY Yellow (II); **File Name:** [TGA659_yphm_2_hs_down.da4](#)

DUT: Panasonic; **Type:** KX-TGA659;

Program Name: DECT

Communication System: DECT US; Frequency: 1924.99 MHz; Duty Cycle: 1:24

Medium parameters used: $f = 1924.99$ MHz; $\sigma = 1.56$ mho/m; $\epsilon_r = 52.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV4 - SN3536; ConvF(7.89, 7.89, 7.89); Calibrated: 16.09.2010

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

- Electronics: DAE3 Sn335; Calibrated: 10.02.2010

- Phantom: SAM Glycol 1340; Type: QD 000 P40 CB; Serial: TP-1340

- Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Body Worn/Area Scan (8x15x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.014 mW/g

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

Reference Value = 3.04 V/m; Power Drift = -0.126 dB

Peak SAR (extrapolated) = 0.023 W/kg

SAR(1 g) = 0.013 mW/g; SAR(10 g) = 0.00664 mW/g

Maximum value of SAR (measured) = 0.015 mW/g

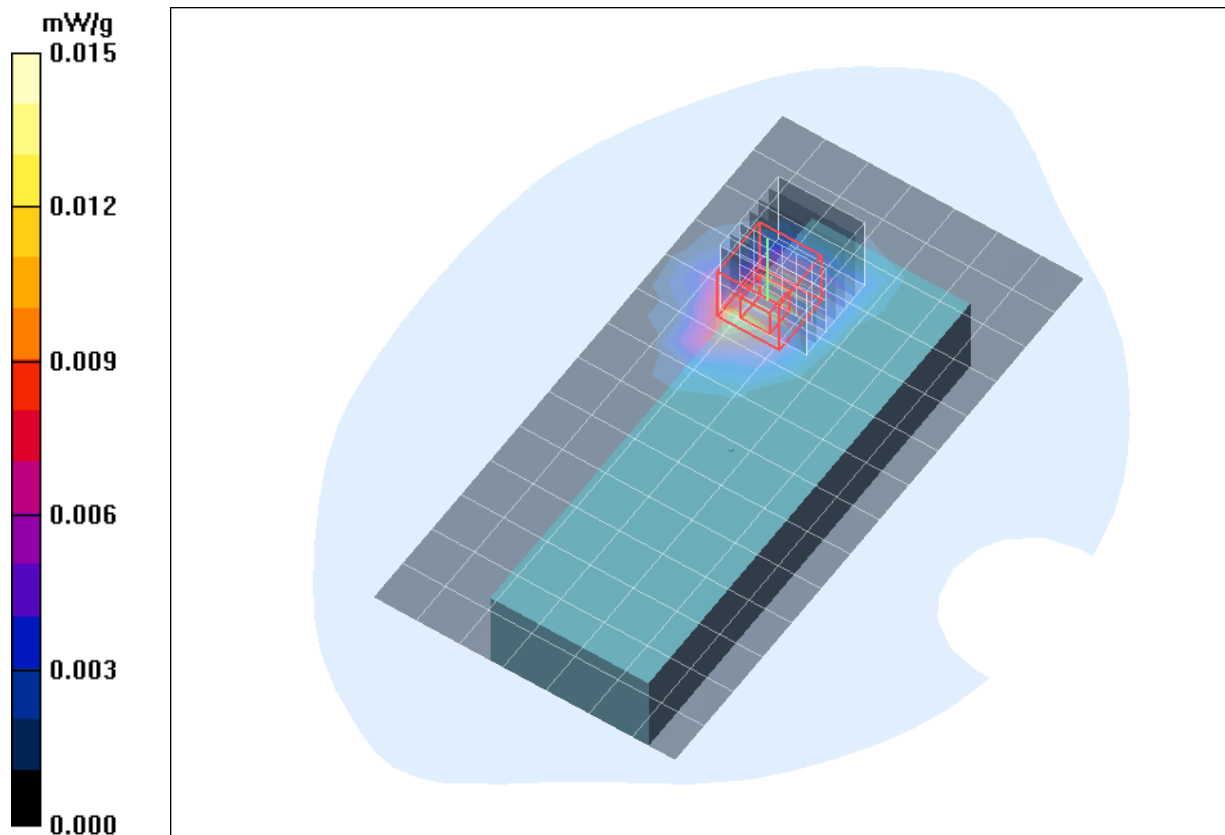


Fig. 6: SAR distribution for DECT US, channel 2, body worn configuration, display towards the ground, belt clip and headset attached, 0 mm distance (November 29, 2010; Ambient Temperature: 21.4° C; Liquid Temperature: 21.1° C).

3 SAR z-axis scans (Validation)

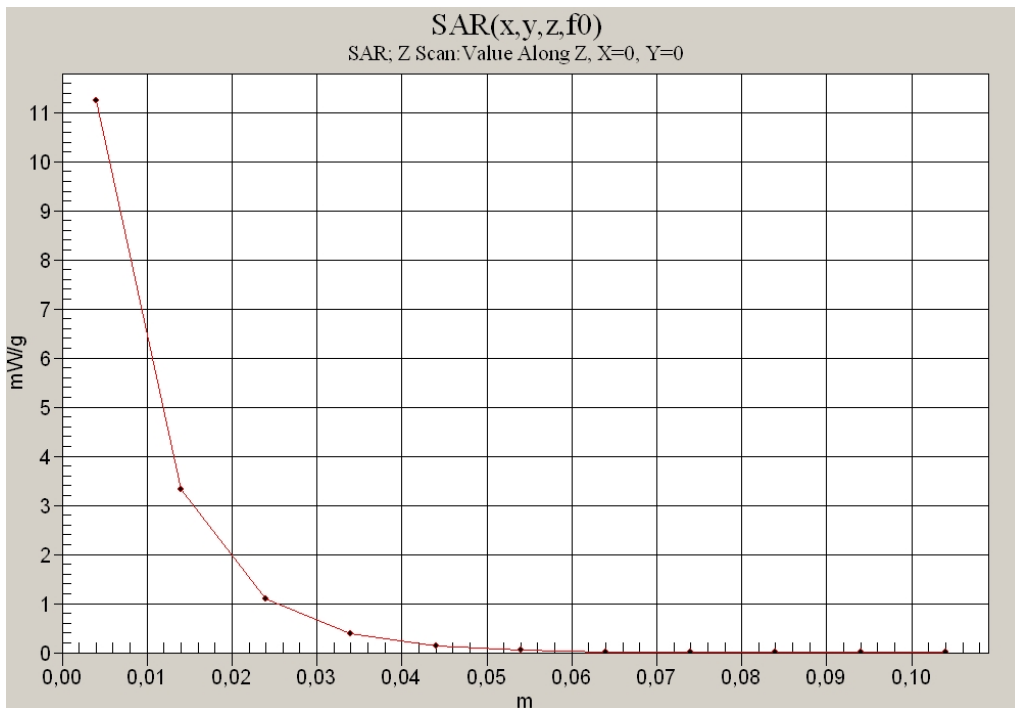


Fig. 7: SAR versus liquid depth, 1900 MHz, head (November 24, 2010; Ambient Temperature: 20.9° C; Liquid Temperature : 20.6° C).

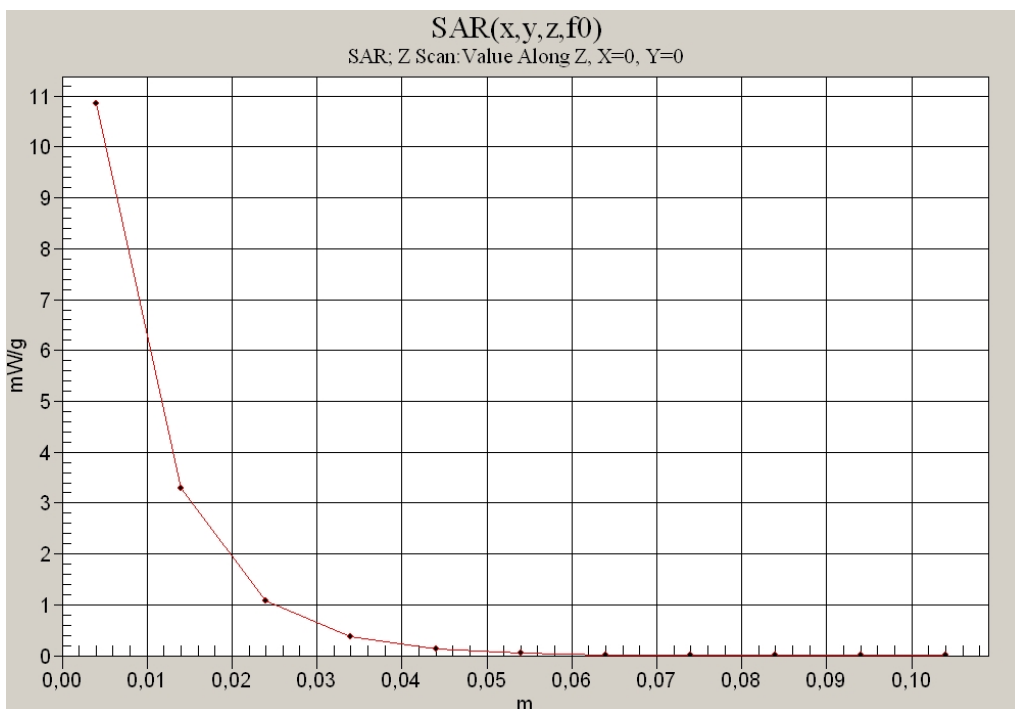


Fig. 8: SAR versus liquid depth, 1900 MHz, body (November 29, 2010; Ambient Temperature: 21.4° C; Liquid Temperature : 21.2° C).

4 SAR z-axis scans (Measurements)

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

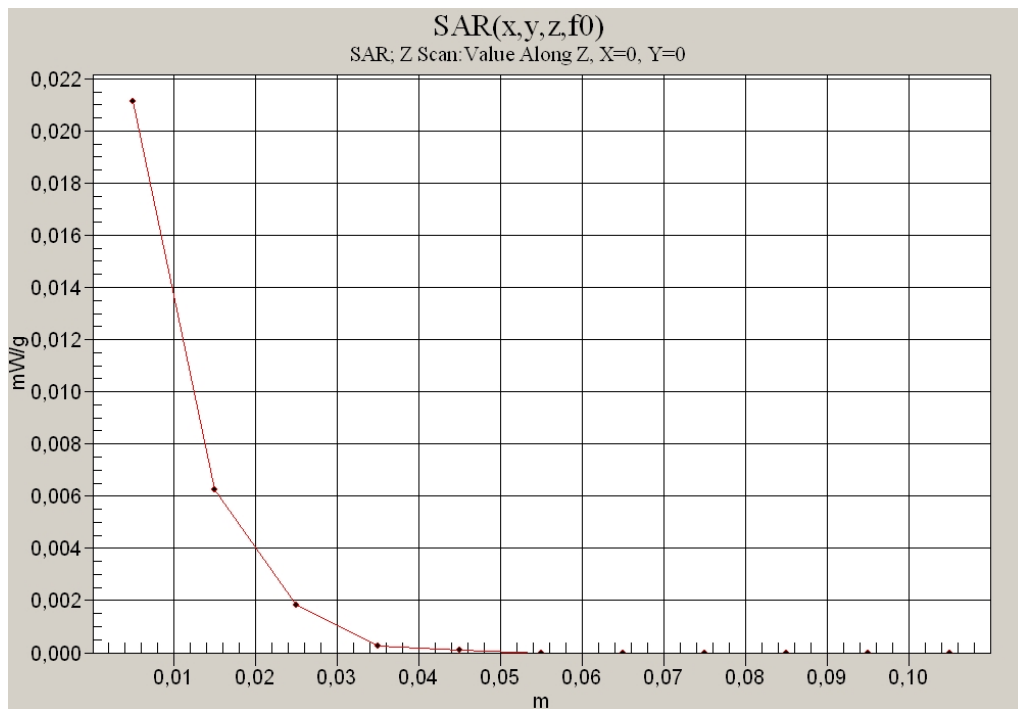


Fig. 9: SAR versus liquid depth, head: DECT US, channel 2, cheek position, left side of head (November 24, 2010; Ambient Temperature: 20.9° C; Liquid Temperature: 20.7° C).

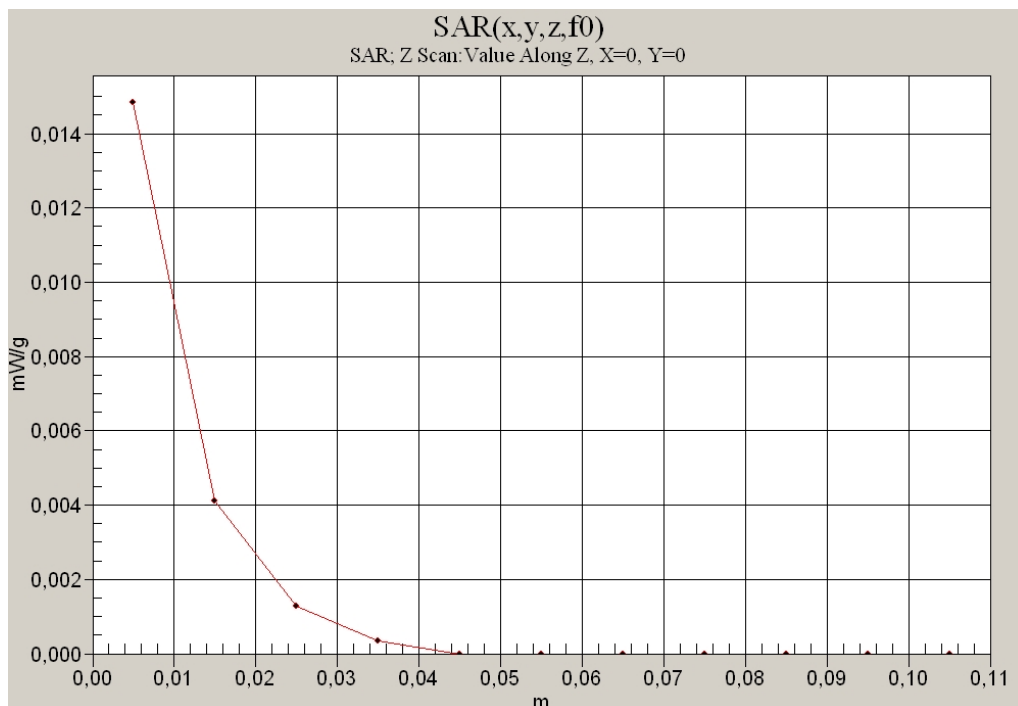


Fig. 10: SAR versus liquid depth, body: DECT US, channel 2, belt clip and headset attached, display towards the phantom (November 29, 2010; Ambient Temperature: 21.4° C; Liquid Temperature: 21.1° C).