
Appendix for the Report

Dosimetric Assessment of the Siemens A56 Mobile Phone (FCC ID: PWX-A56) According to the FCC Requirements

SAR Distribution Plots

October 16, 2002
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The test results only relate to the items tested.
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1 SAR Distribution Plots, Test side ambient conditions.

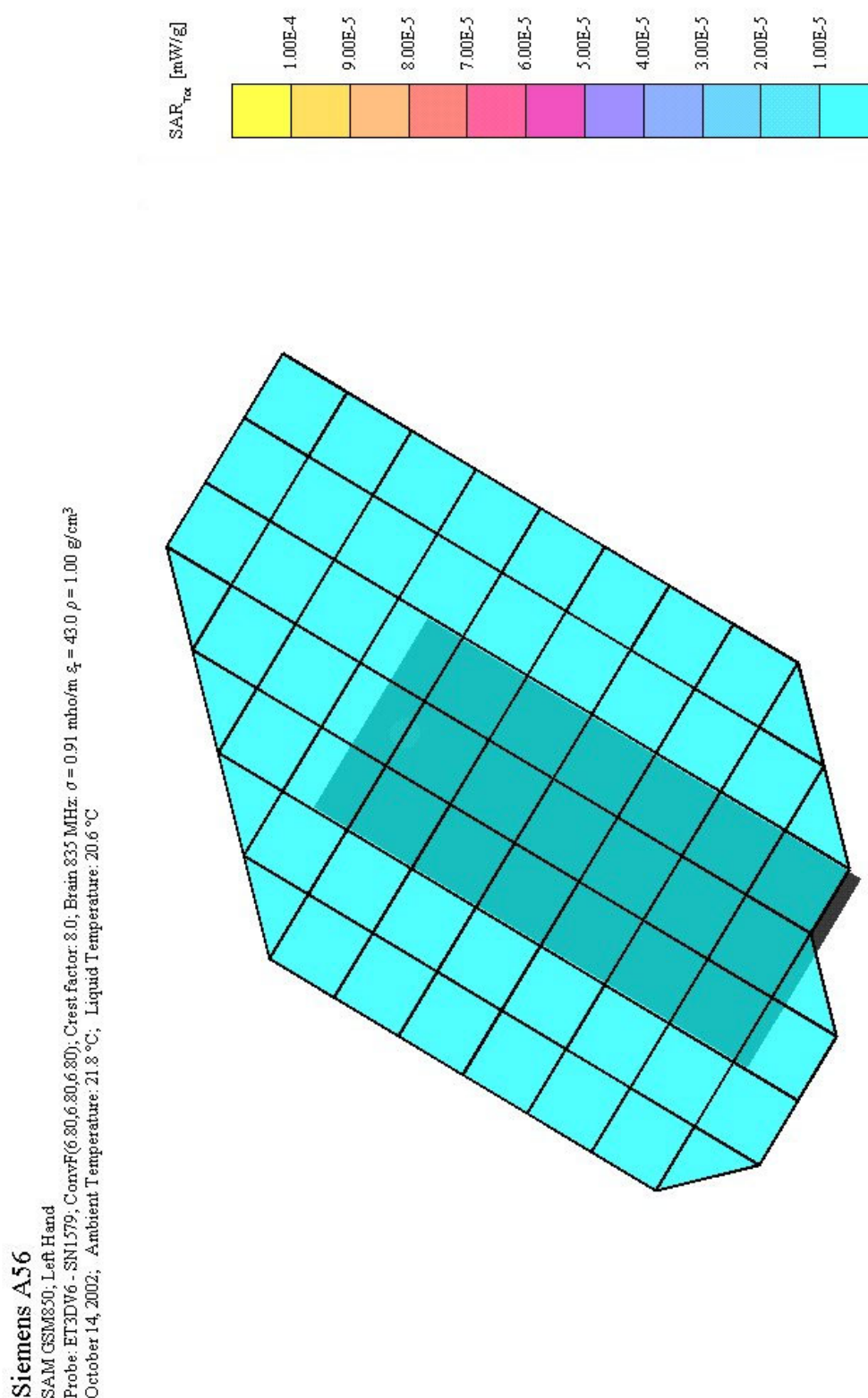


Fig. 1: Test side ambient measurements, 835 MHz, head position.

Siemens A56 Body

SAM GSM850; Flat
Probe: ET3DV6 - SN1579; ConvF(6.60,6.60); Crest factor: 8.0; body 835 MHz; $\sigma = 1.00$ mho/m $\epsilon_r = 54.4$ $\rho = 1.00$ g/cm³
October 16, 2002; Ambient Temperature: 21.8 °C; Liquid Temperature: 20.9 °C

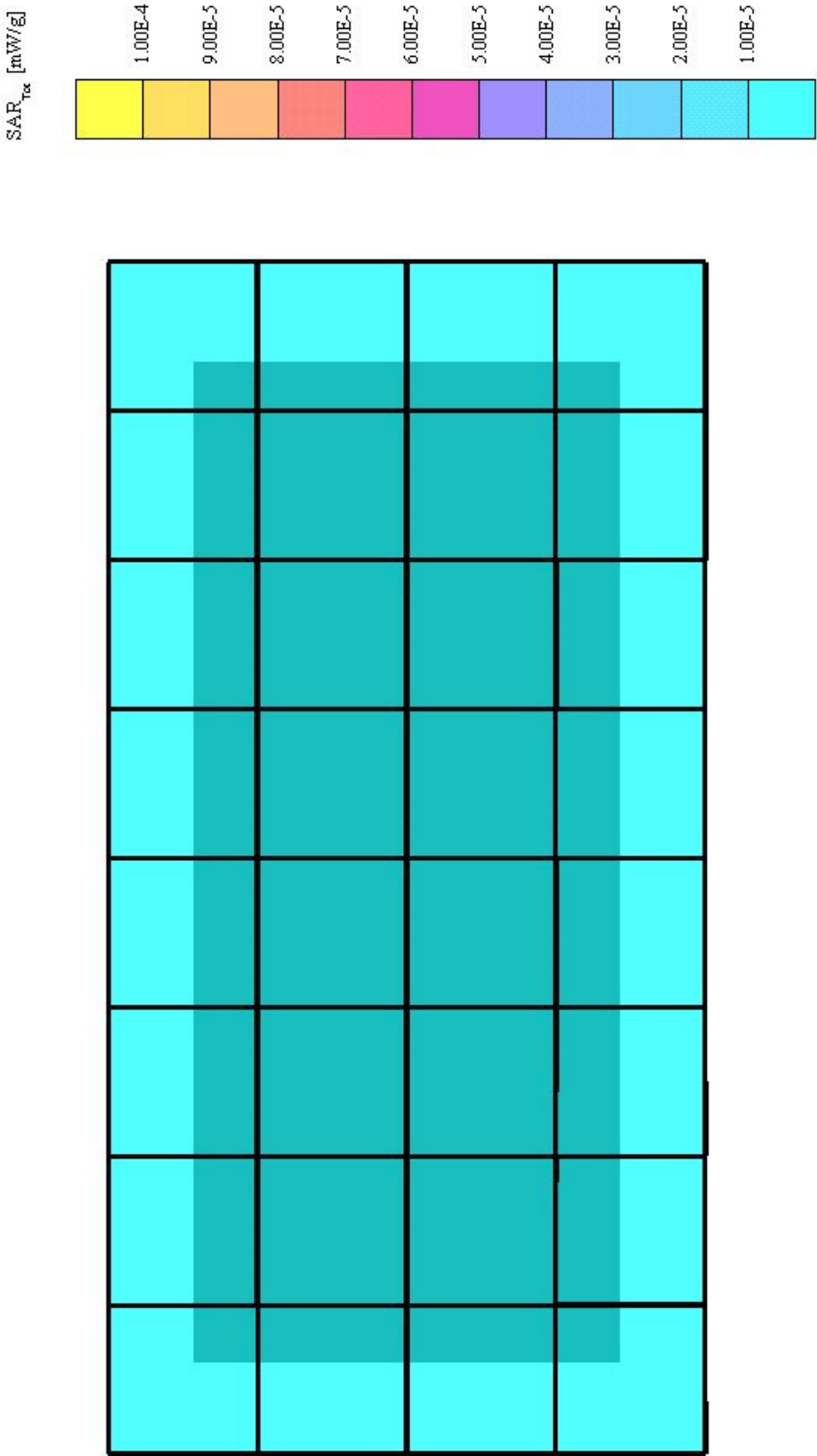


Fig. 2: Test side ambient measurements, 835 MHz, body position.

Siemens A56

SAM PCS1900; Left Hand

Probe: ET3DV6 - SN1579; ConvF(5.20,5.20,5.20); Crest factor: 8.0; Brain 1900MHz: $\sigma = 1.44$ mho/m $\epsilon_r = 39.0$ $\rho = 1.00$ g/cm³
 October 14, 2002; Ambient Temperature: 22.7 °C; Liquid Temperature: 20.7 °C

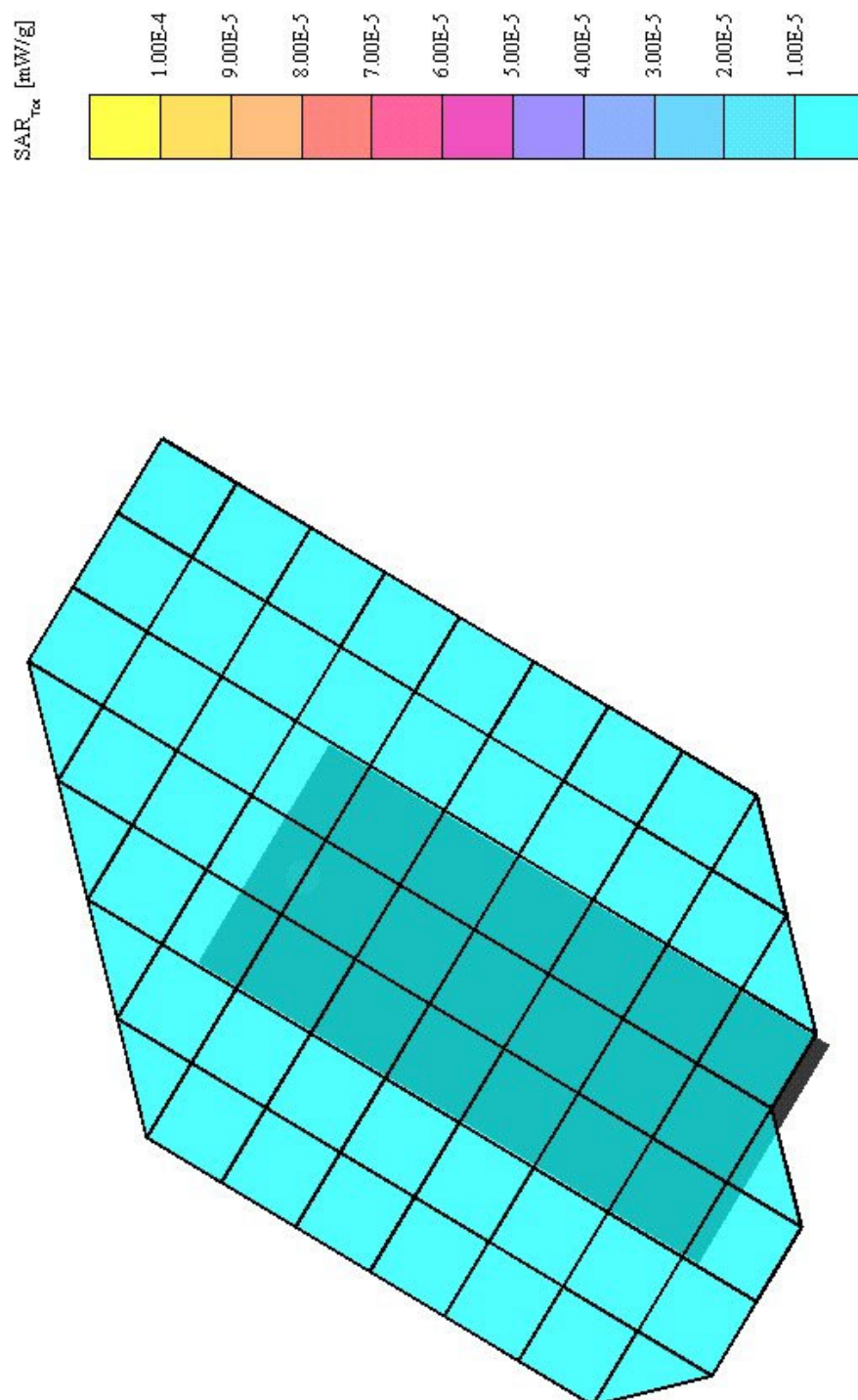


Fig. 3: Test side ambient measurements, 1900 MHz, head position.

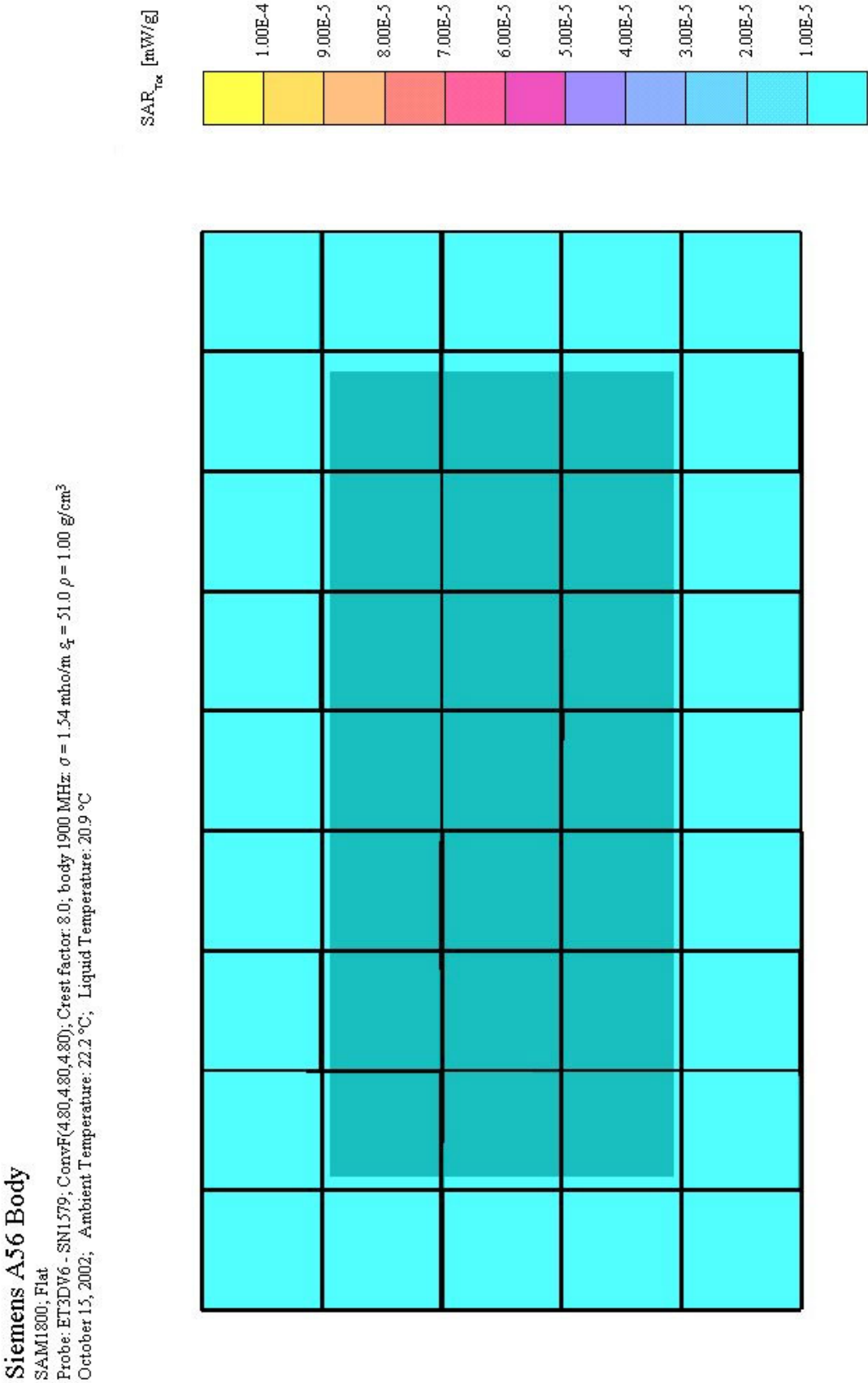


Fig. 4: Test side ambient measurements, 1900 MHz, body position.

2 SAR Distribution Plots, GSM850 (Head)

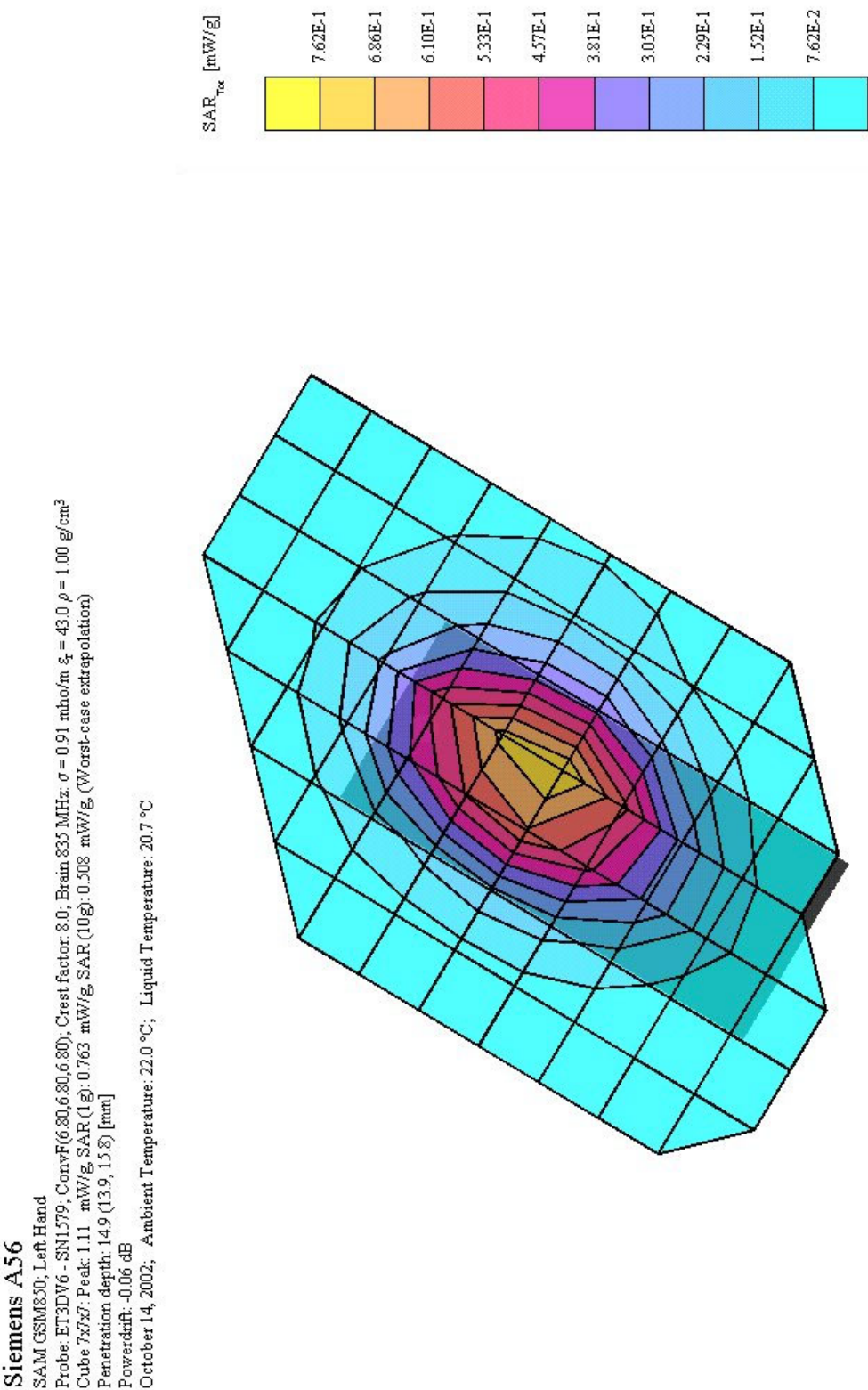


Fig. 5: SAR distribution, GSM850, channel 190, cheek position, left side of head.

Siemens A56

SAM GSM850, Left Hand
Probe: ET3DV6 - SN1579; ConvF(6.80,6.80,6.80); Crest factor: 8.0; Brain 833 MHz; $\sigma = 0.91$ mho/m $\epsilon_r = 43.0$ $\rho = 1.00$ g/cm³
Cube 7x7x7; Peak: 0.754 mW/g SAR (1 g); 0.502 mW/g SAR (10g); 0.331 mW/g (Worst-case extrapolation)
Penetration depth: 13.6 (13.1, 14.2) [mm]
Powerdft: -0.07 dB
October 14, 2002; Ambient Temperature: 22.2 °C; Liquid Temperature: 20.5 °C

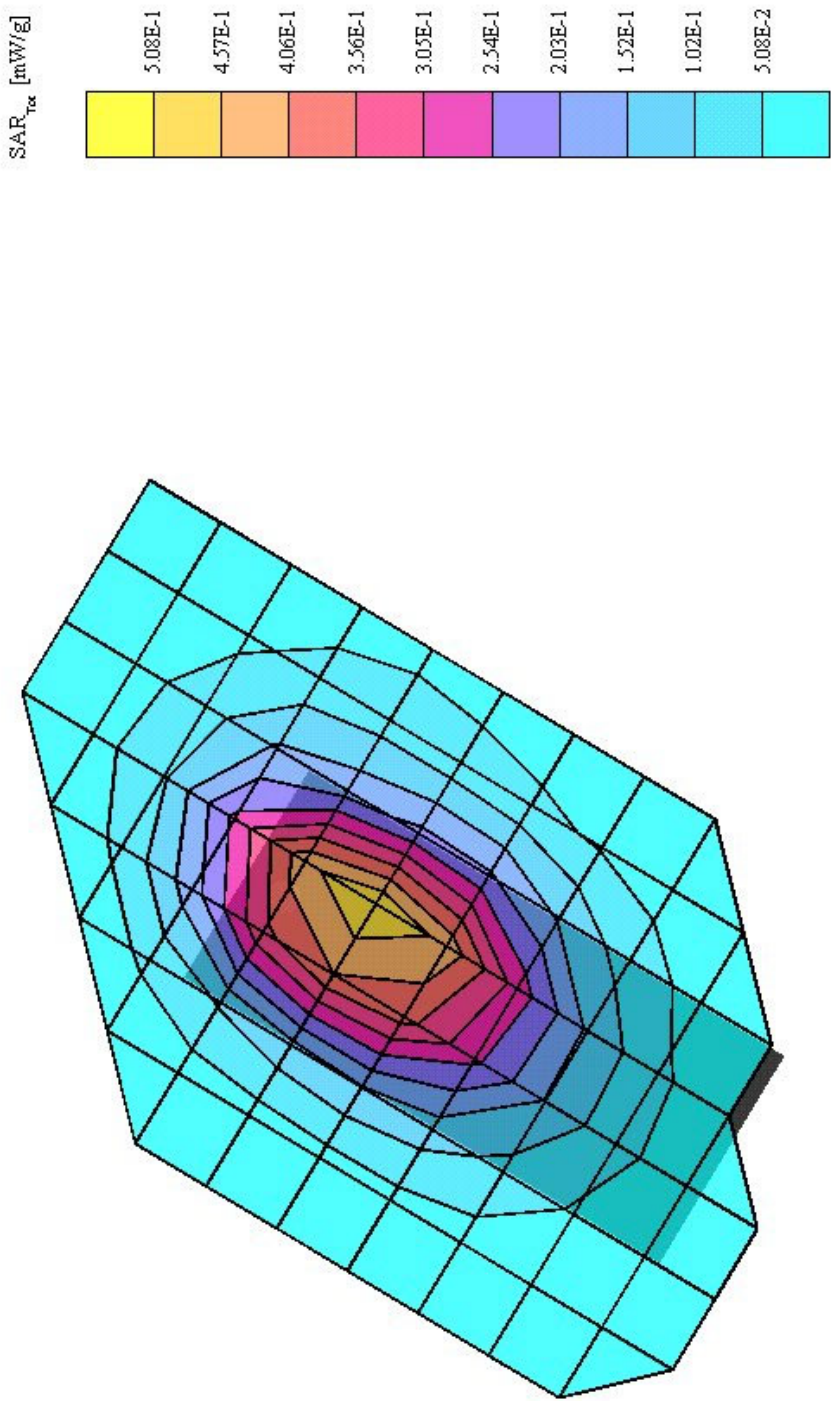


Fig. 6: SAR distribution, GSM850, channel 190, tilted position, left side of head.

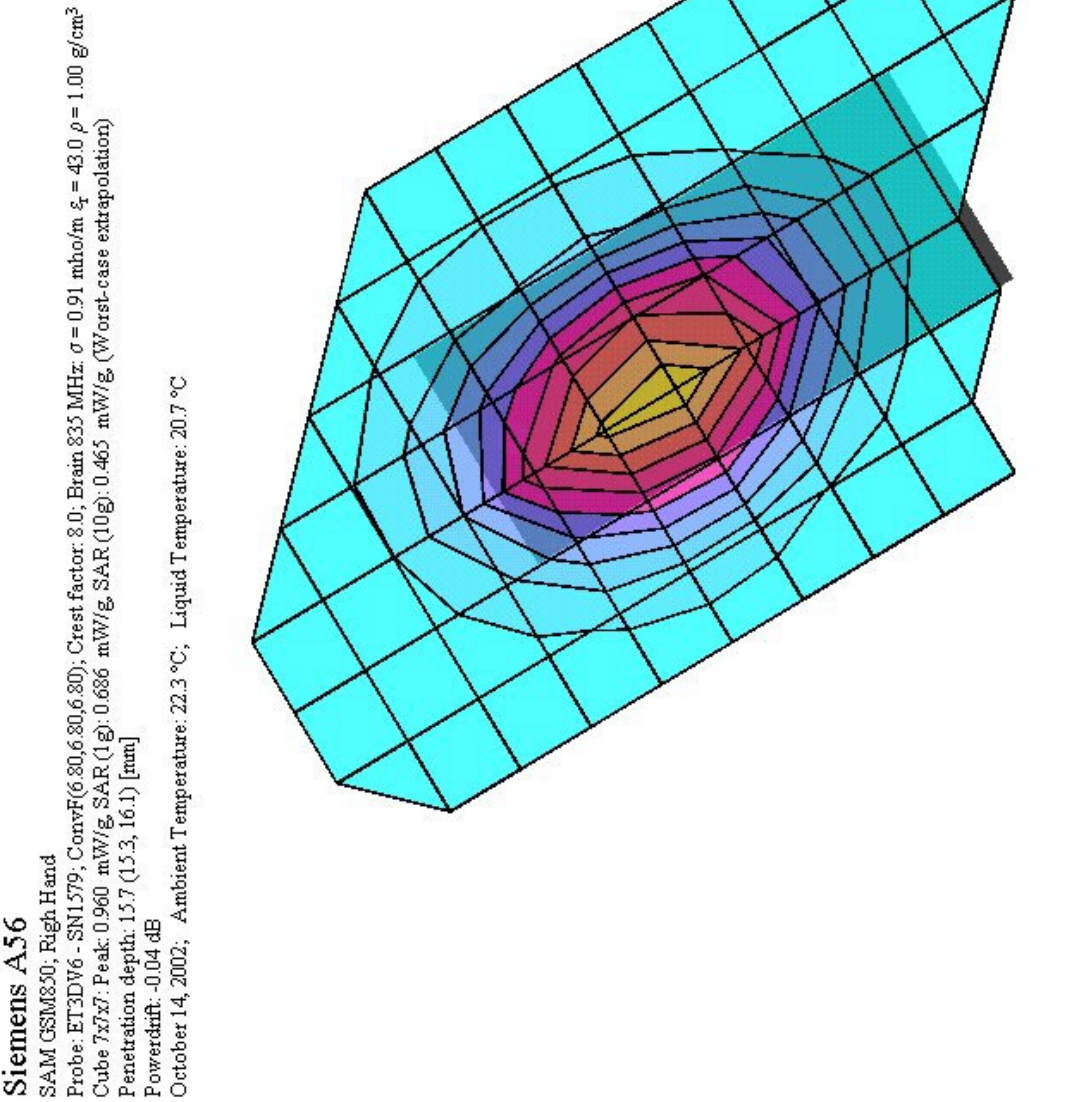


Fig. 7: SAR distribution, GSM850, channel 190, cheek position, right side of head.

Siemens A56

GSM850, Right Hand

Probe: ET3DV6 - SN1579, ConvF(6.80,6.80,6.80); Crest factor: 8.0; Brain 835 MHz: $\sigma = 0.91$ mho/m $\epsilon_r = 43.0$ $\rho = 1.00$ g/cm³

Cube 7x7x7: Peak: 0.734 mW/g, SAR(1g): 0.511 mW/g, SAR(10g): 0.342 mW/g (Worst-case extrapolation)

Penetration depth: 14.6 (14.1, 15.2) [mm]

Powerdrift: -0.04 dB

October 14, 2002; Ambient Temperature: 22.4 °C; Liquid Temperature: 20.7 °C

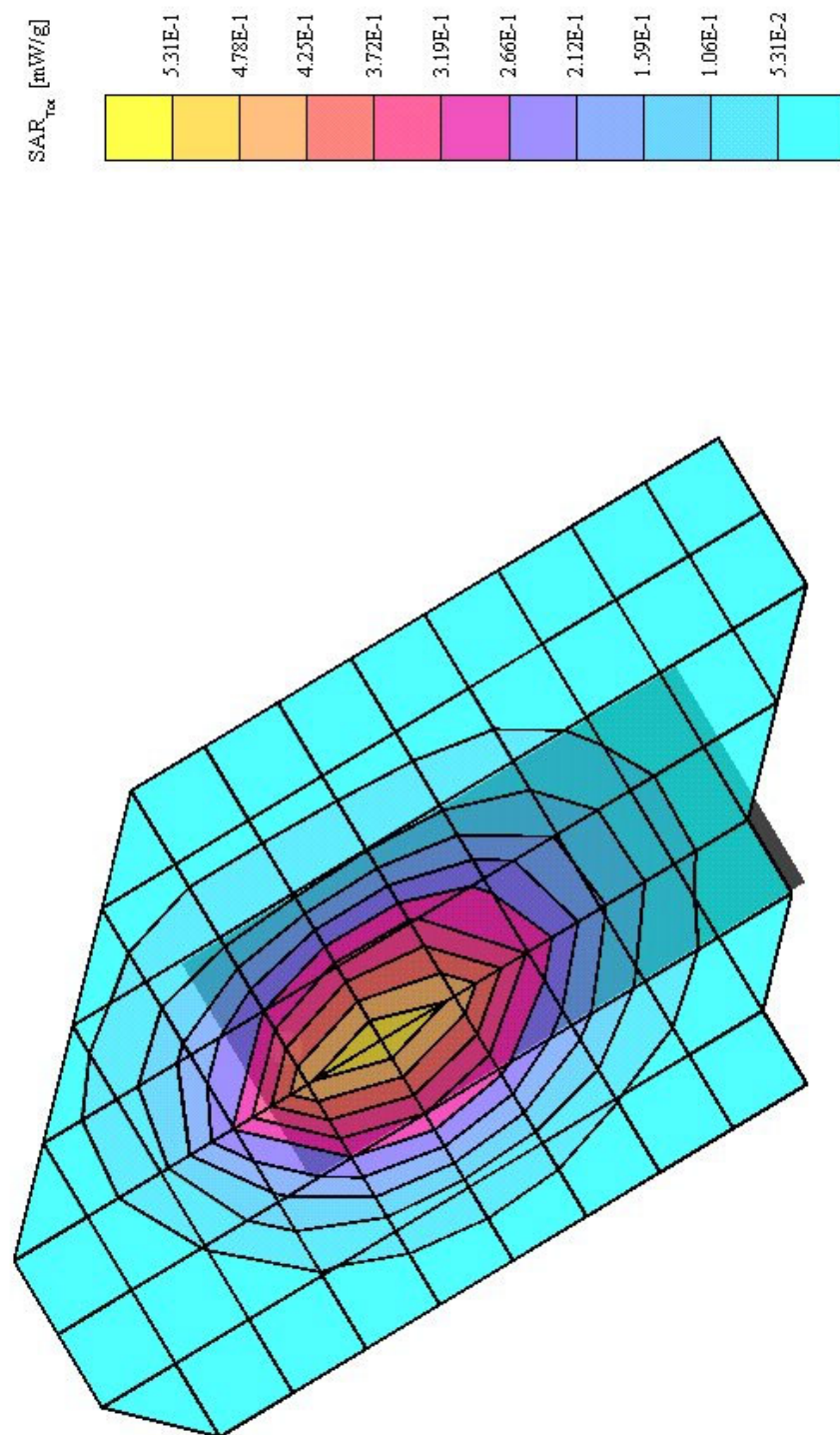


Fig. 8: SAR distribution, GSM850, channel 190, tilted position, right side of head.

3 SAR Distribution Plots, PCS1900 (Head)

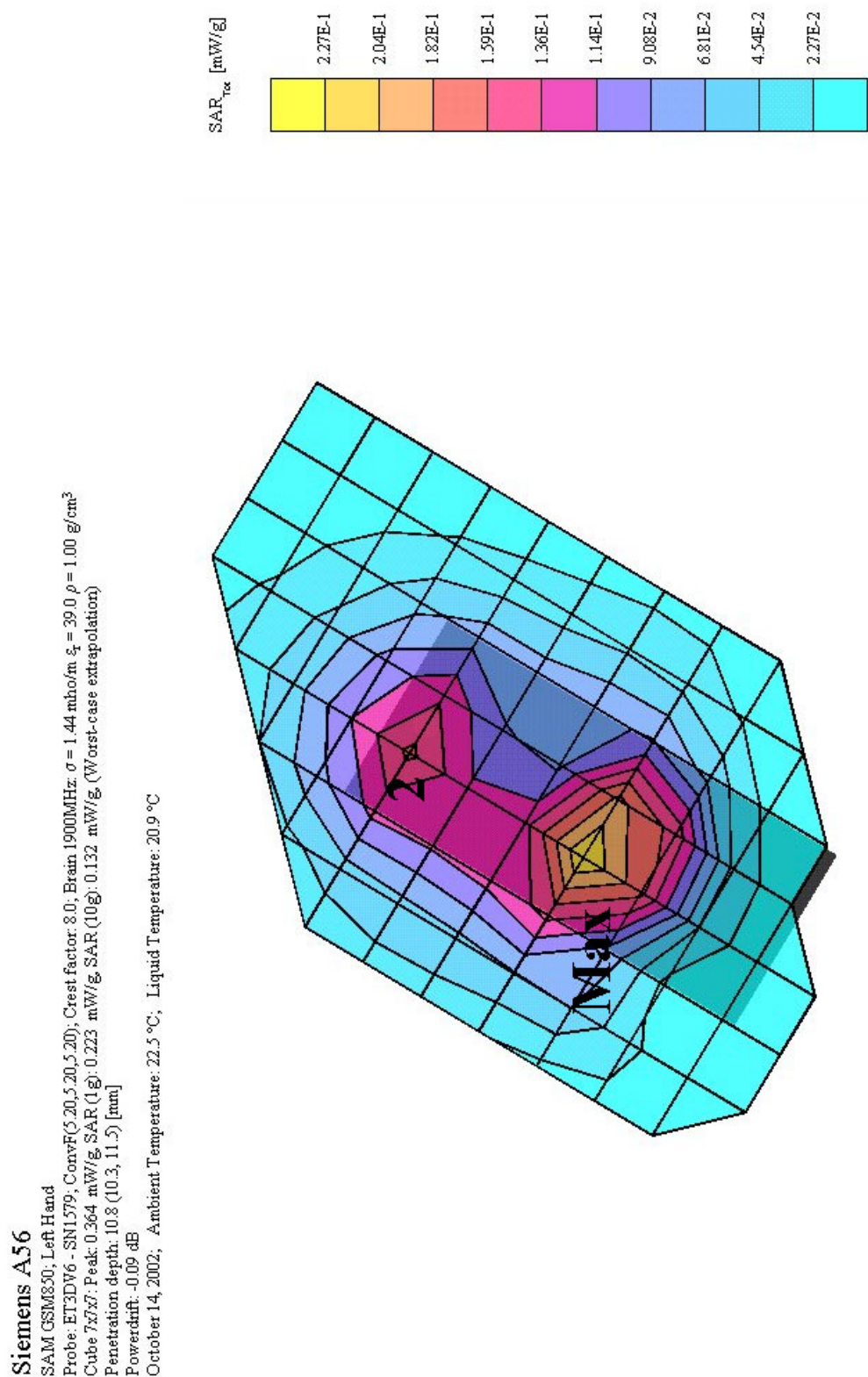


Fig. 9: SAR distribution, PCS1900, channel 661, cheek position, left side of head. Cube 2: 0.0789 W/kg.

Siemens A56

SAM PCS1900; Left Hand

Probe: ET3DV6 - SN1579; ConvF(5 20.5 20.5 20); Crest factor: 8.0; Brain 1900MHz: $\sigma = 1.44$ mho/m $\epsilon_r = 39.0$ $\rho = 1.00$ g/cm³

Cube 7x7x7: Peak: 0.291 mW/g SAR (1g): 0.166 mW/g SAR (10g): 0.0946 mW/g (Worst-case extrapolation)

Penetration depth: 9.1 (8.5, 10.2) [mm]

Powerdrift: -0.03 dB

October 14, 2002; Ambient Temperature: 22.5 °C; Liquid Temperature: 20.9 °C

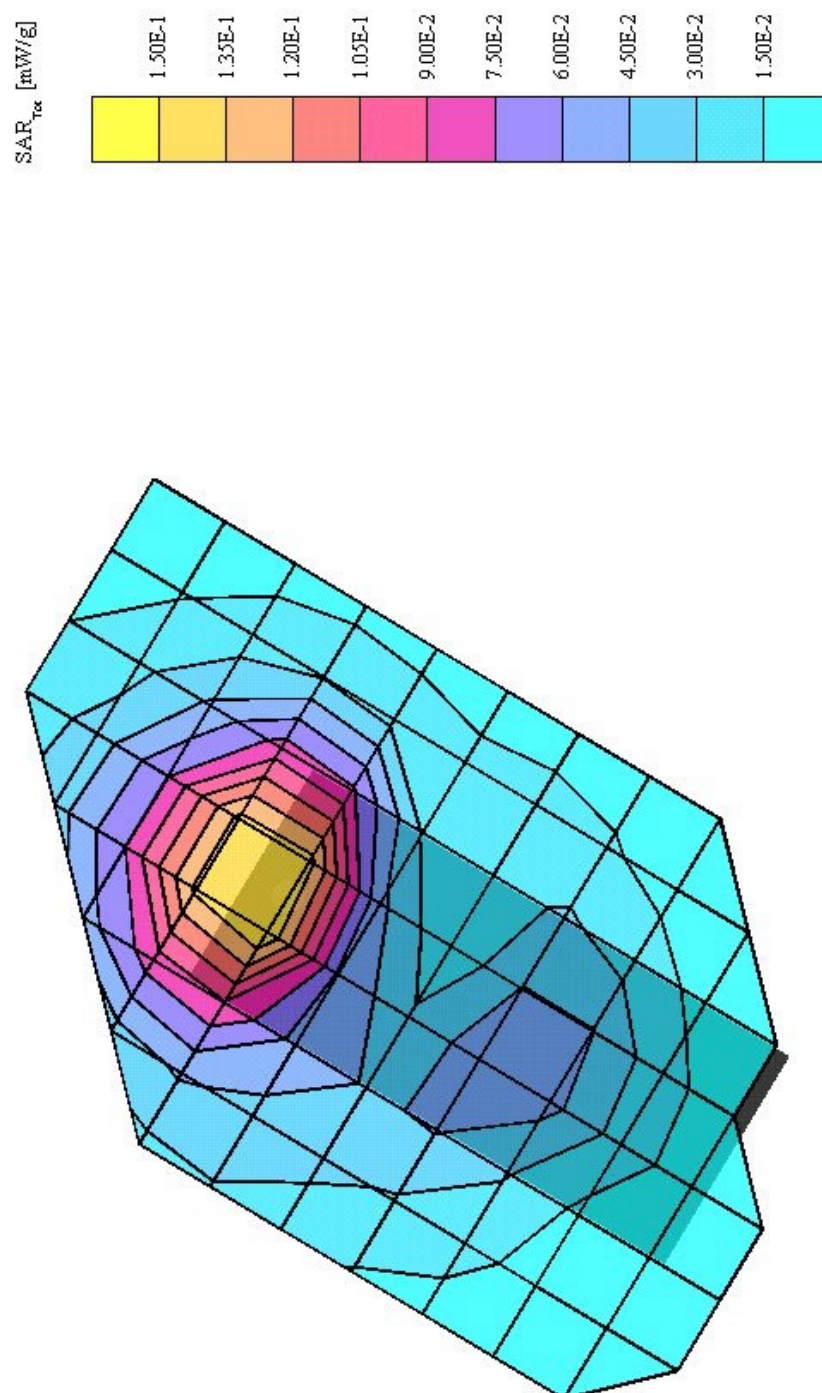


Fig. 10: SAR distribution, PCS1900, channel 661, tilted position, left side of head.

Siemens A56

SAM PCS1900; Right Hand

Probe: ET3DV6 - SN1579; ConvF(5 20,5 20,5 20); Crest factor: 8.0; Brain 1900MHz: $\sigma = 1.44$ mho/m $\epsilon_r = 39.0$ $\rho = 1.00$ g/cm³

Cube 7x7x7: Peak: 0.379 mW/g, SAR (1 g): 0.229 mW/g, SAR (10 g): 0.131 mW/g, (Worst-case extrapolation)

Penetration depth: 11.0 (10.2, 12.0) [mm]

Powerdrift: -0.05 dB

October 14, 2002; Ambient Temperature: 22.7 °C; Liquid Temperature: 20.8 °C

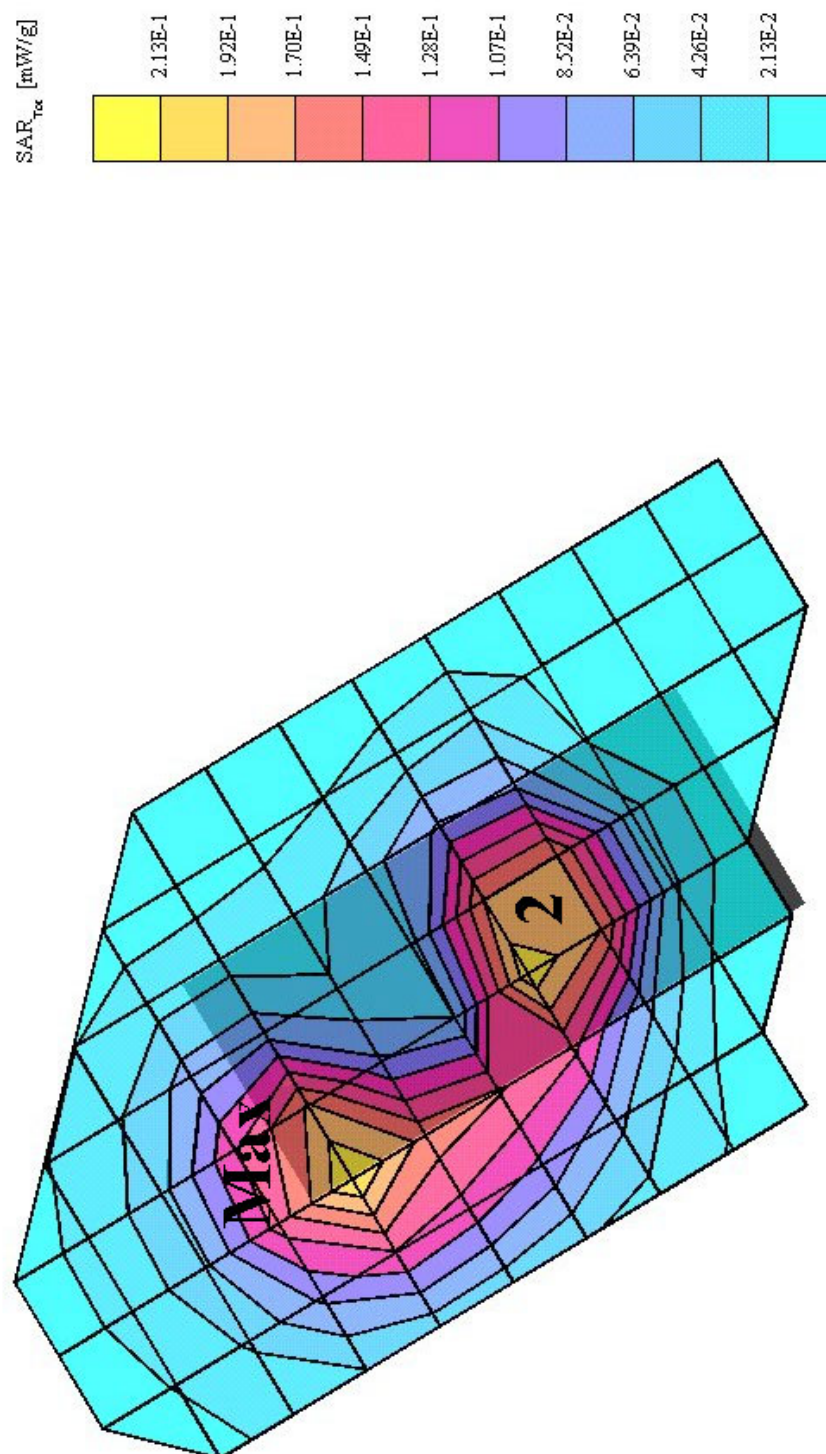


Fig. 11: SAR distribution, PCS1900, channel 661, cheek position, right side of head.
Cube 2: 0.224 W/kg.

Siemens A56

SAM PCS1900, Right Hand

Probe: ET3DV6 - SN1579; ConvF(5.20,5.20,5.20); Crest factor: 3.0; Brain 1900MHz: $\sigma = 1.44$ nho/m $\epsilon_r = 39.0$ $\rho = 1.00$ g/cm³

Cube 7x7x7: Peak: 0.373 mW/g SAR(1g): 0.208 mW/g SAR(10g): 0.114 mW/g (Worst-case extrapolation)

Penetration depth: 8.9 (8.4, 9.9) [mm]

Powerdrift: 0.04 dB

October 14, 2002; Ambient Temperature: 22.6 °C; Liquid Temperature: 20.9 °C

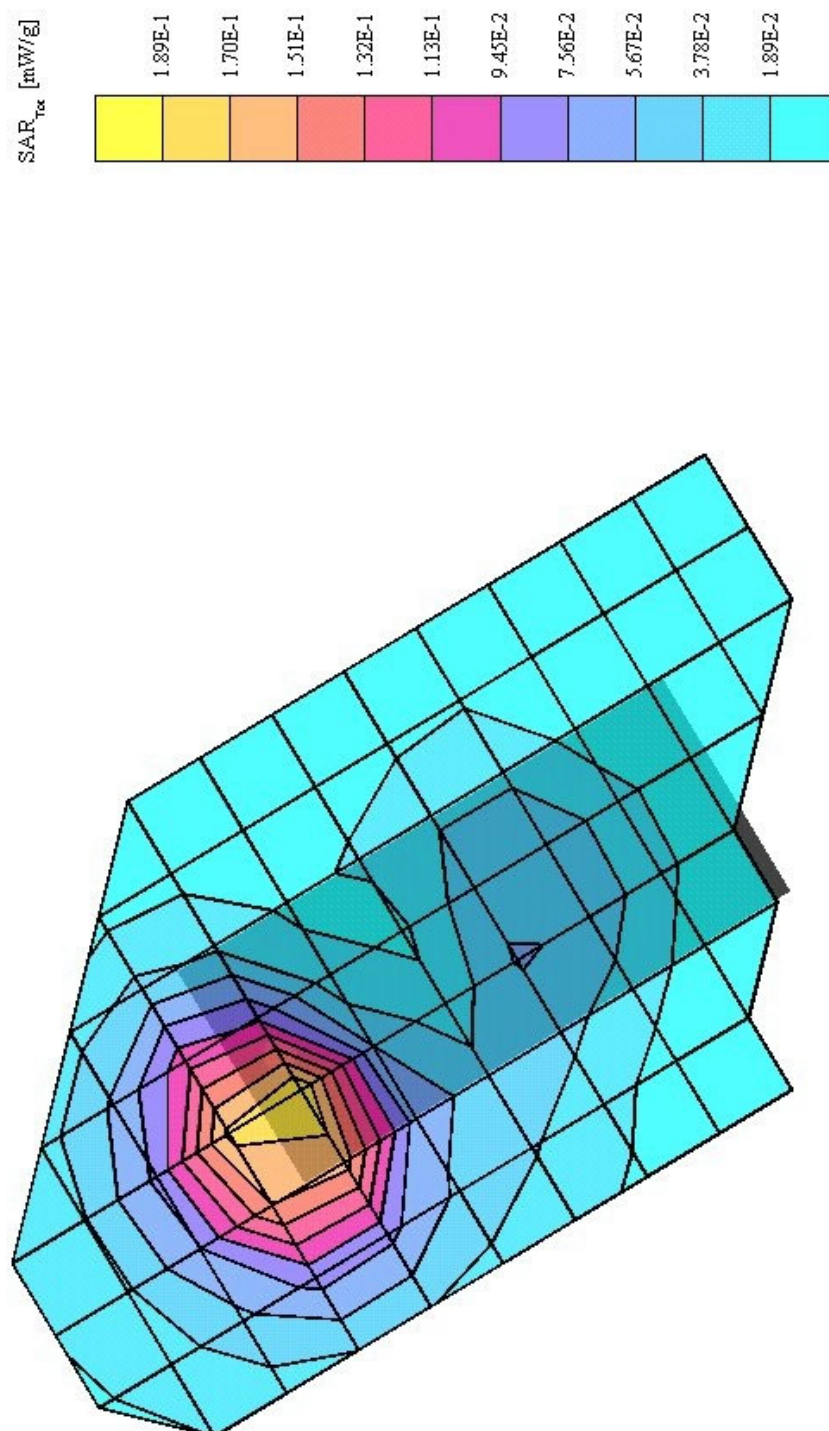


Fig. 12: SAR distribution, PCS1900, channel 661, tilted position, right side of head.

4 SAR Distribution Plots, GSM850 (Body)

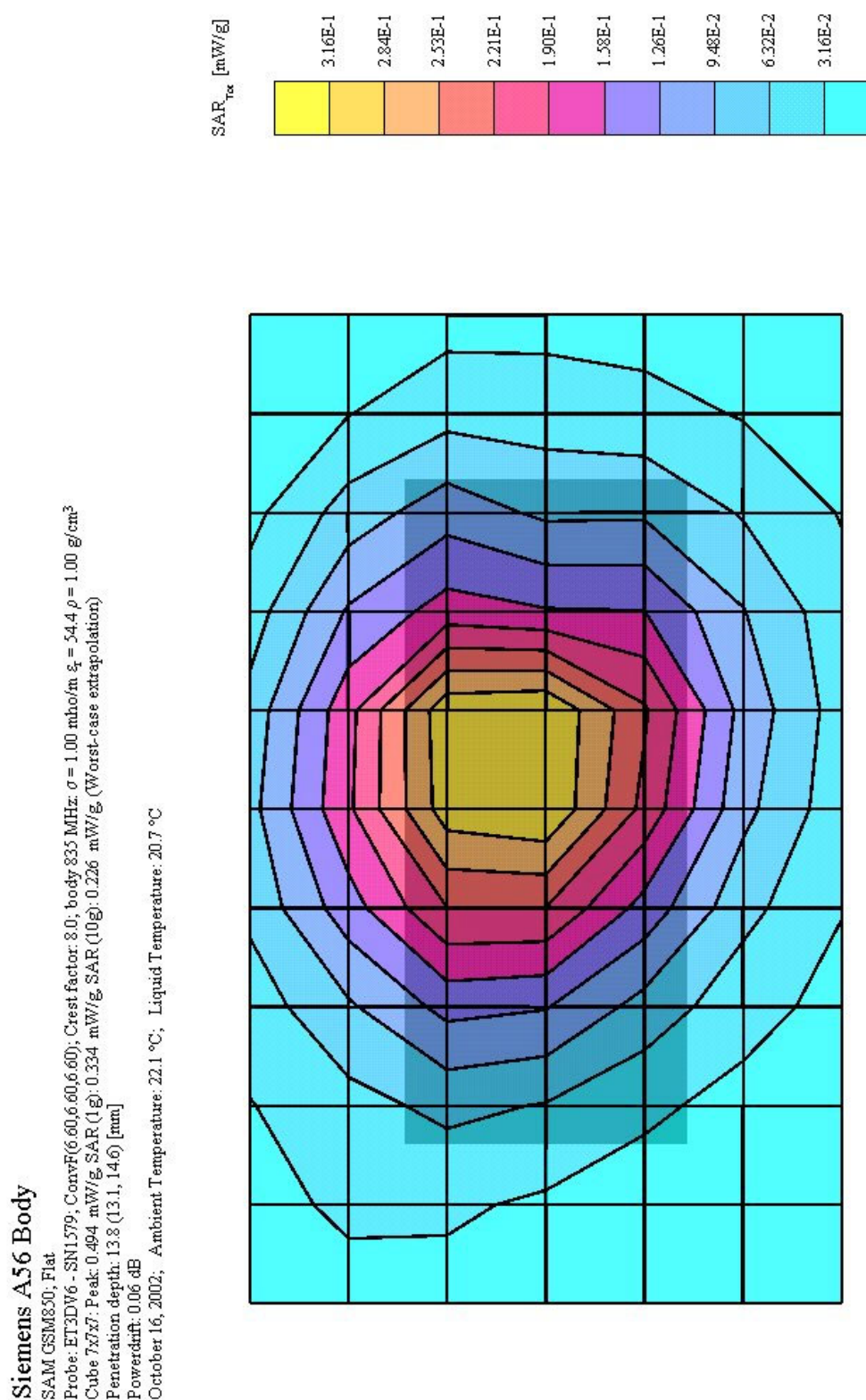


Fig. 13: SAR distribution, GSM850, channel 190, body worn configuration, Belt Clip with Headset (Talk mode, 1 TX slot).

Siemens A56 Body

SAM GSM850; Flat

Probe: ET3DV6 - SN1579; ConvF(6.60,6.60,6.60); Crest factor: 8.0; body 835 MHz; $\sigma = 1.00$ mho/m; $\epsilon_r = 54.4$; $\rho = 1.00$ g/cm³

Cube 7x7x7; Peak: 0.669 mW/g; SAR (1 g): 0.464 mW/g; SAR (10g): 0.318 mW/g; (Worst-case extrapolation)

Penetration depth: 14.6 (13.8, 15.5) [mm]

Powerdrift: 0.01 dB

October 16, 2002, Ambient Temperature: 22.2 °C; Liquid Temperature: 20.7 °C

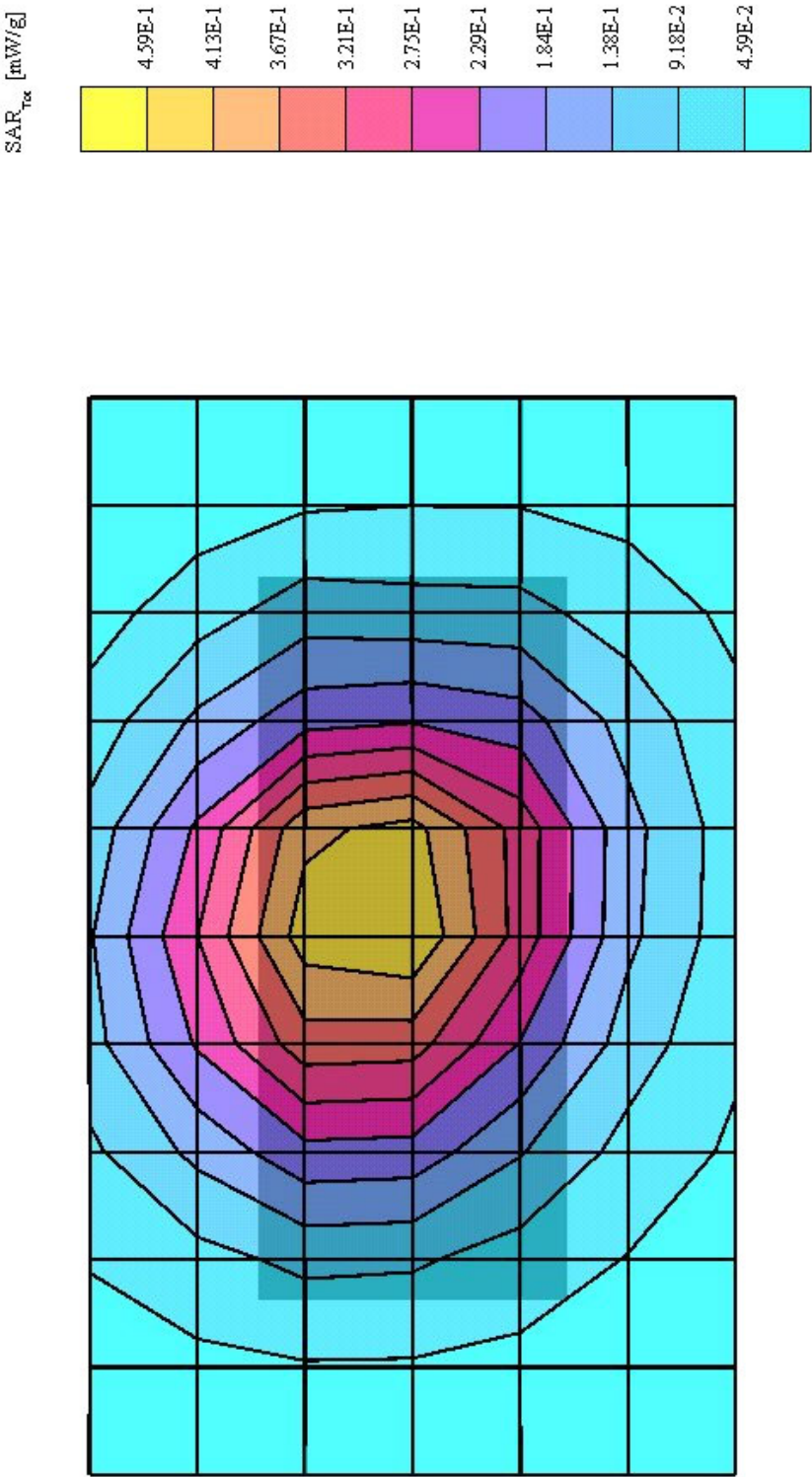


Fig. 14: SAR distribution, GSM850, channel 190, body worn configuration, Belt Clip without Headset (GPRS mode, 1 TX slot).

Siemens A56 Body

SAM GSM850; Flat

Probe: ET3DV6 - SN1579; ConvF(6.60,6.60); Crest factor: 8.0; body 835 MHz: $\sigma = 1.00$ mho/m $\epsilon_r = 54.4$ $\rho = 1.00$ g/cm³

Cube 7x7x7: Peak: 0.404 mW/g, SAR (1g): 0.284 mW/g, SAR (10g): 0.197 mW/g, (Worst-case extrapolation)

Penetration depth: 15.0 (14.0, 15.9) [mm]

Powerdrift: -0.02 dB

October 16, 2002; Ambient Temperature: 22.2 °C; Liquid Temperature: 20.5 °C

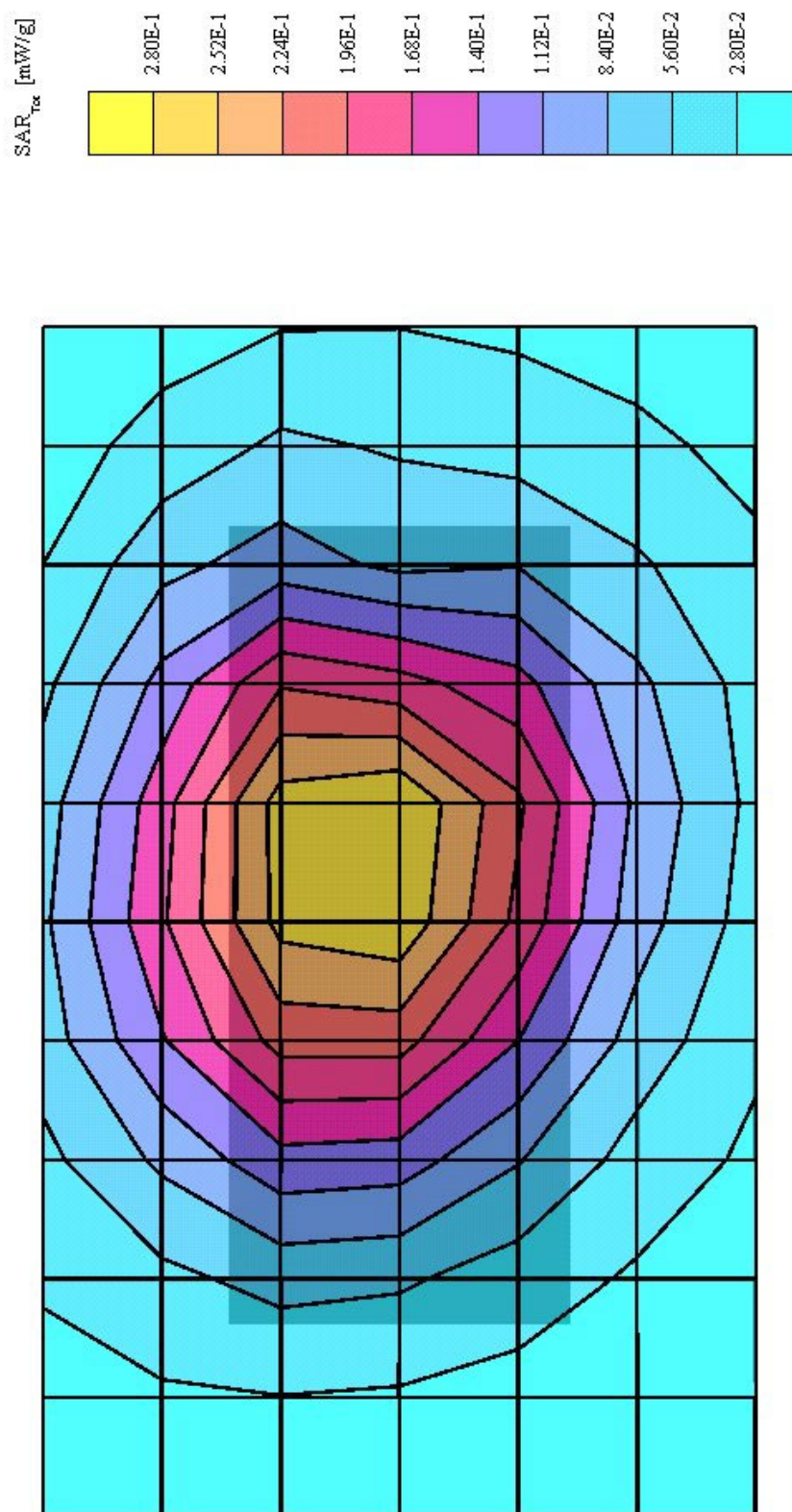


Fig. 15: SAR distribution, GSM850, channel 190, body worn configuration, Tour Case with Headset (Talk mode, 1 TX slot), display down.

Siemens A56 Body

SAM GSM850; Flat

Probe: ET3DV6 - SN1579; ConvF(6.60,6.60); Crest factor: 8.0; body 835 MHz; $\sigma = 1.00$ mho/m $\epsilon_r = 54.4$ $\rho = 1.00$ g/cm³

Cube 7x7x7; Peak: 0.201 mW/g SAR (1g): 0.137 mW/g SAR (10g): 0.0940 mW/g (Worst-case extrapolation)

Penetration depth: 14.2 (13.3, 15.2) [mm]

Powerdft: -0.09 dB

October 16, 2002; Ambient Temperature: 22.4 °C; Liquid Temperature: 20.7 °C

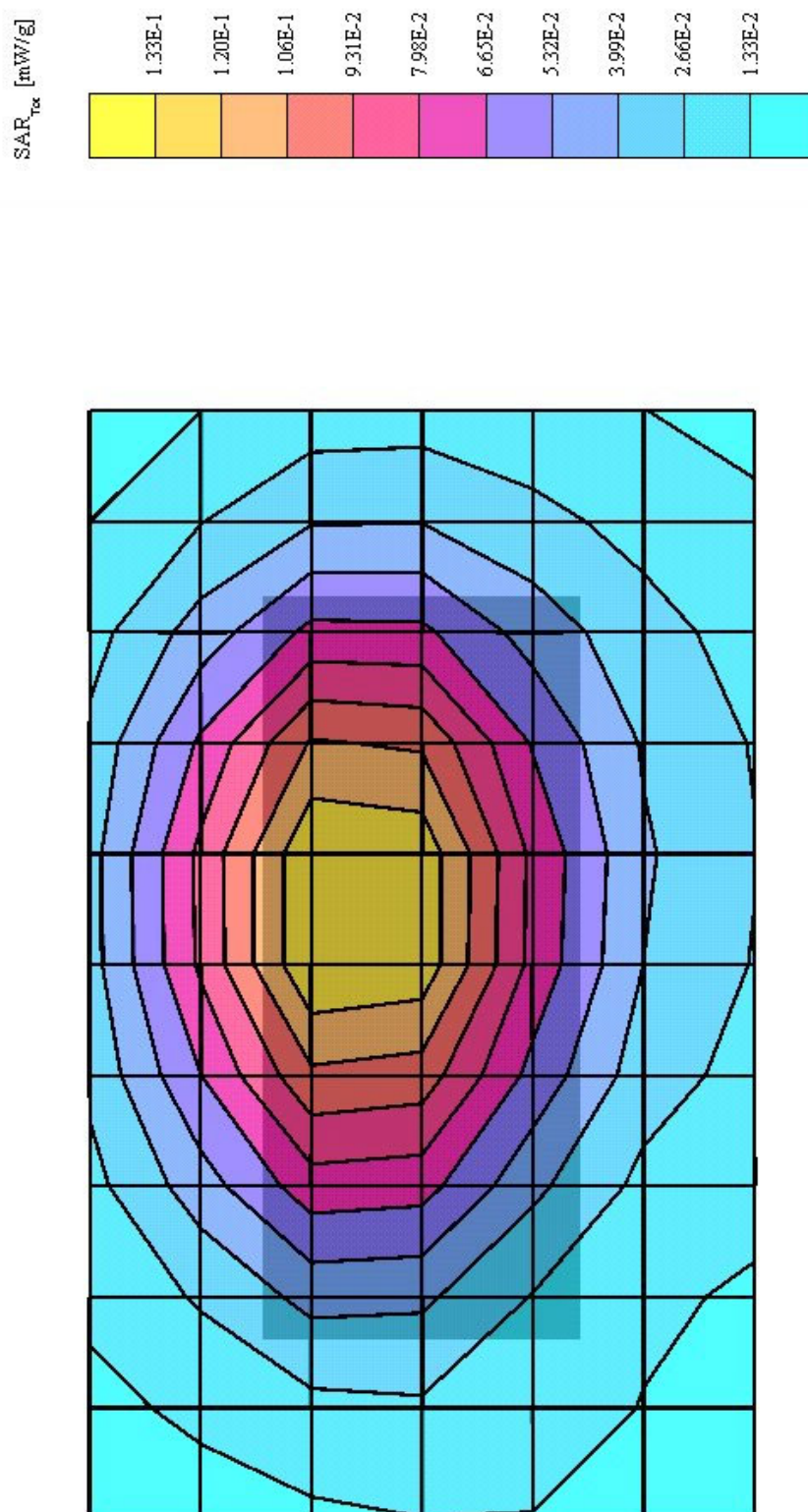


Fig. 16: SAR distribution, GSM850, channel 190, body worn configuration, Tour Case with Headset (Talk mode, 1 TX slot), display up.

Siemens A56 Body

GSM 850; Flat

Probe: ET3DV6 - SN1579; ConvF(6.60,6.60,6.60); Crest factor: 8.0; body 835 MHz; $\sigma = 1.00$ mho/m $\epsilon_r = 54.4$ $\rho = 1.00$ g/cm³

Cube 7x7x7; Peak: 0.502 mW/g; SAR (1g): 0.351 mW/g; SAR (10g): 0.242 mW/g; (Worst-case extrapolation)

Penetration depth: 14.8 (13.9, 15.9) [mm]

Powerdrift: 0.03 dB

October 16, 2002; Ambient Temperature: 22.4 °C; Liquid Temperature: 20.7 °C

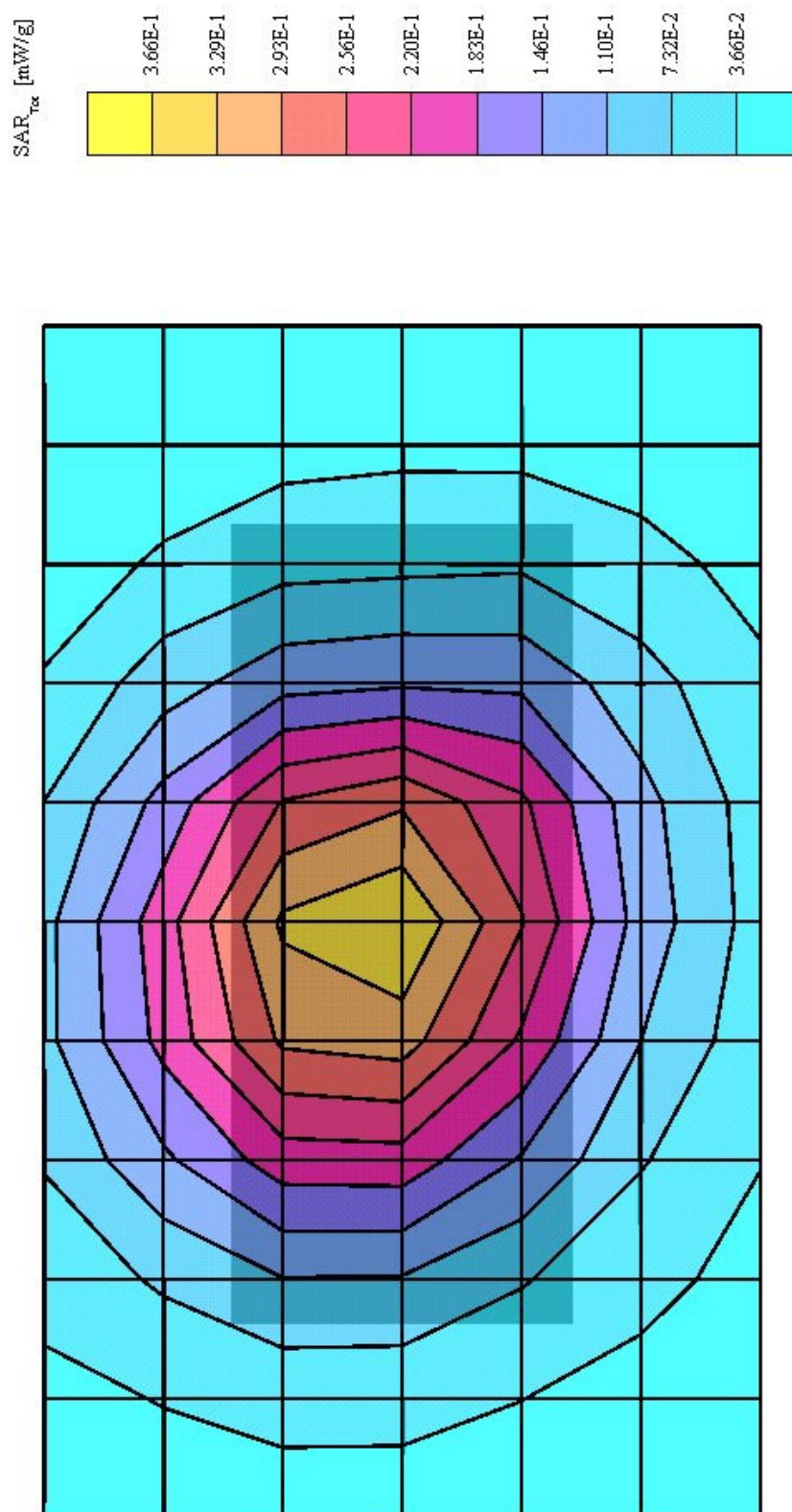


Fig. 17: SAR distribution, GSM850, channel 190, body worn configuration, Tour Case without Headset (GPRS mode, 1 TX slot), display down.

Siemens A56 Body

SAM GSM850; Flat

Probe: ET3DV6 - SN1579, ConvF(6.60,6.60); Crest factor: 8.0; body 835 MHz: $\sigma = 1.00$ mho/m $\epsilon_r = 54.4$ $\rho = 1.00$ g/cm³

Cube 7x7x7: Peak: 0.484 mW/g SAR (1g): 0.340 mW/g SAR (10g): 0.237 mW/g (Worst-case extrapolation)

Penetration depth: 15.3 (14.5, 16.1) [mm]

Powerdrift: -0.00 dB

October 16, 2002; Ambient Temperature: 22.4 °C; Liquid Temperature: 20.7 °C

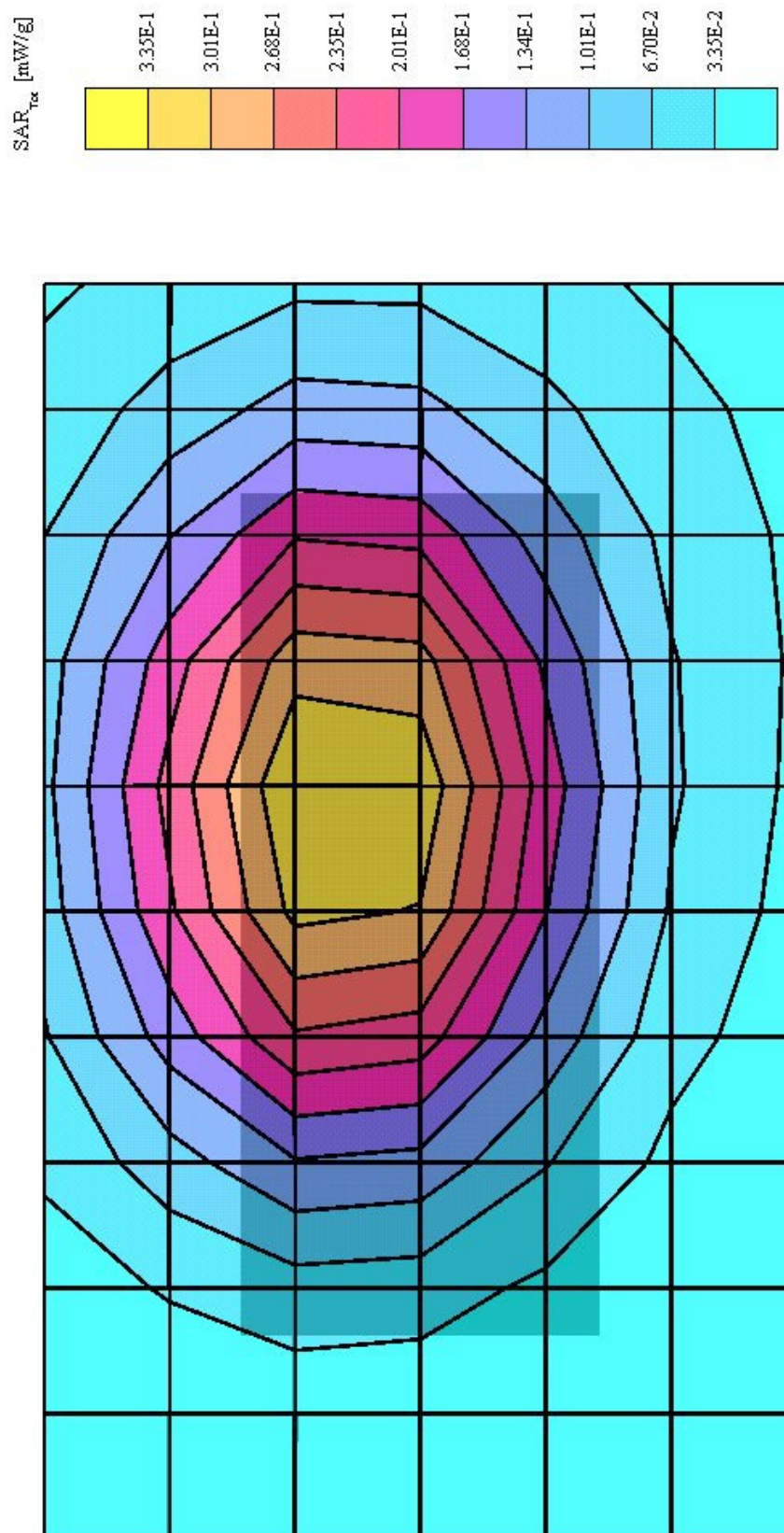


Fig. 18: SAR distribution, GSM850, channel 190, body worn configuration, Tour Case without Headset (GPRS mode, 1 TX slot), display up.

5 SAR Distribution Plots, PCS1900 (Body)

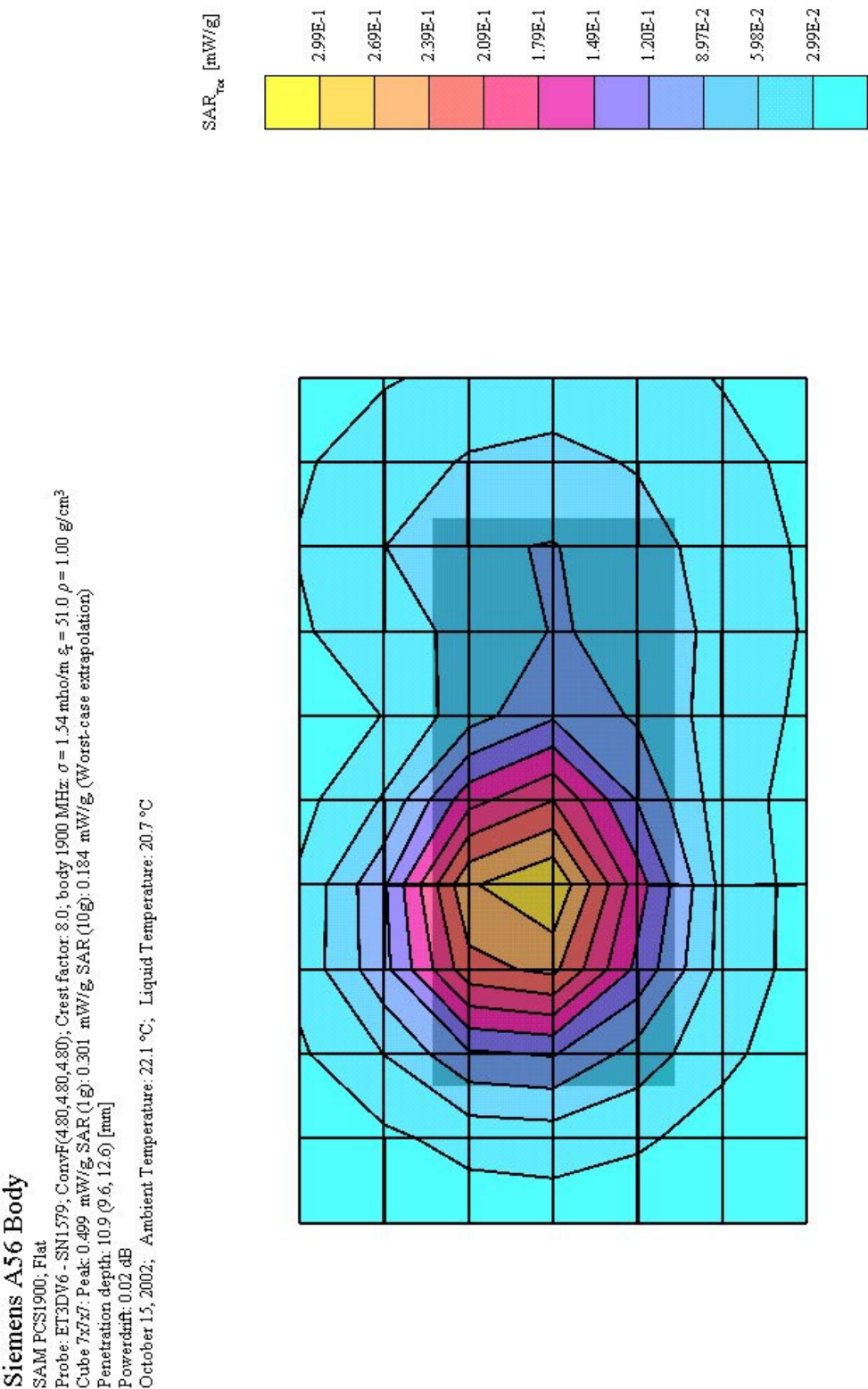


Fig. 19: SAR distribution, GSM1900, channel 661, body worn configuration, Belt Clip with Headset (Talk mode, 1 TX slot).

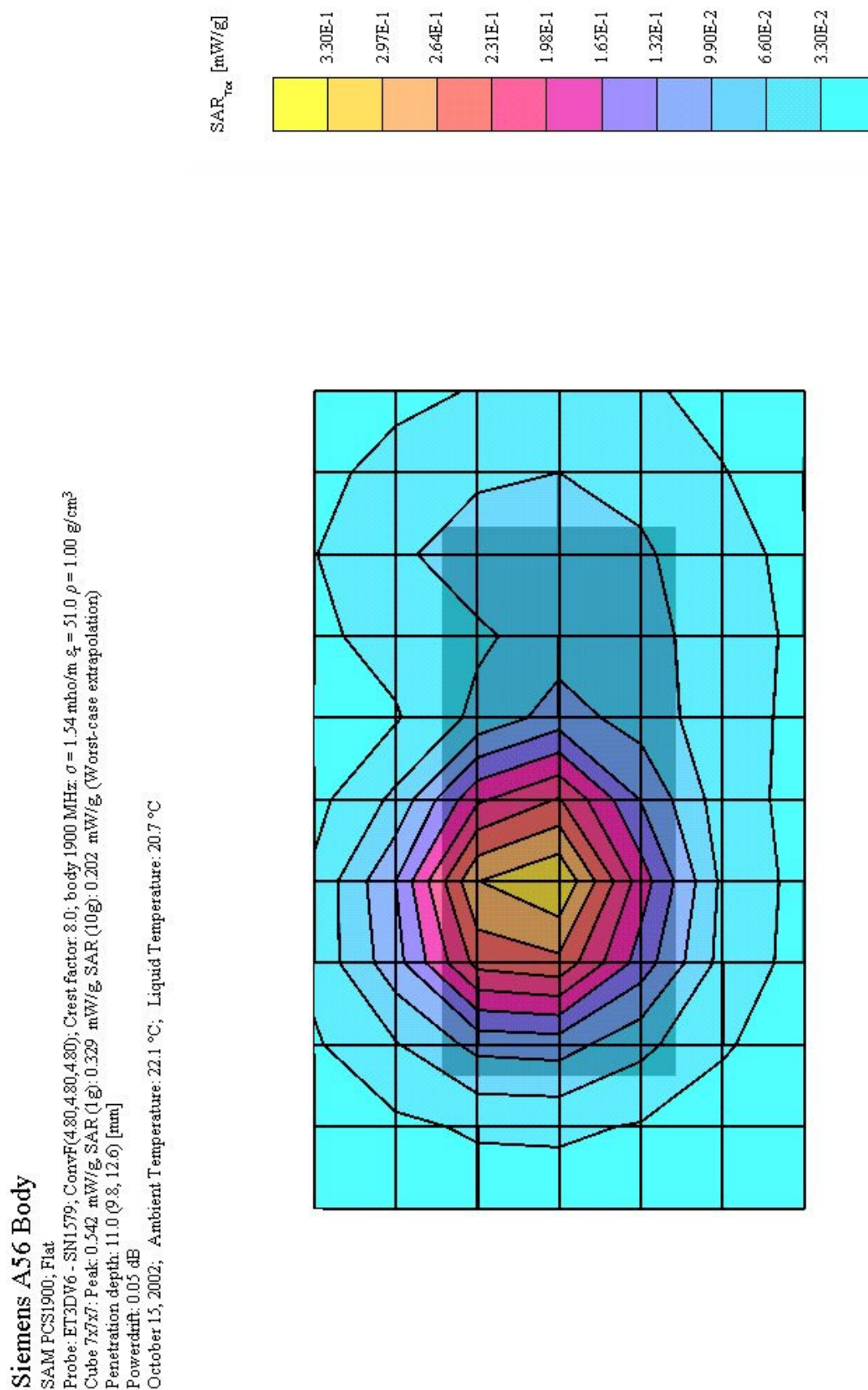


Fig. 20: SAR distribution, GSM1900, channel 661, body worn configuration, Belt Clip without Headset (GPRS mode, 1 TX slot).

Siemens A56 Body

SAM PCS1900; Flat

Probe: ET3DV6 - SN1579; ConvF(4.80,4.80,4.80); Crest factor: 8.0; body 1900 MHz: $\sigma = 1.54$ mho/m, $\epsilon_r = 51.0$, $\rho = 1.00$ g/cm³

Cube 7x7x7: Peak: 0.467 mW/g, SAR(1g): 0.281 mW/g, SAR(10g): 0.172 mW/g (Worst-case extrapolation)

Penetration depth: 11.0 (9.7, 12.6) [mm]

Powerdrift: -0.01 dB

October 15, 2002, Ambient Temperature: 22.2 °C, Liquid Temperature: 20.6 °C

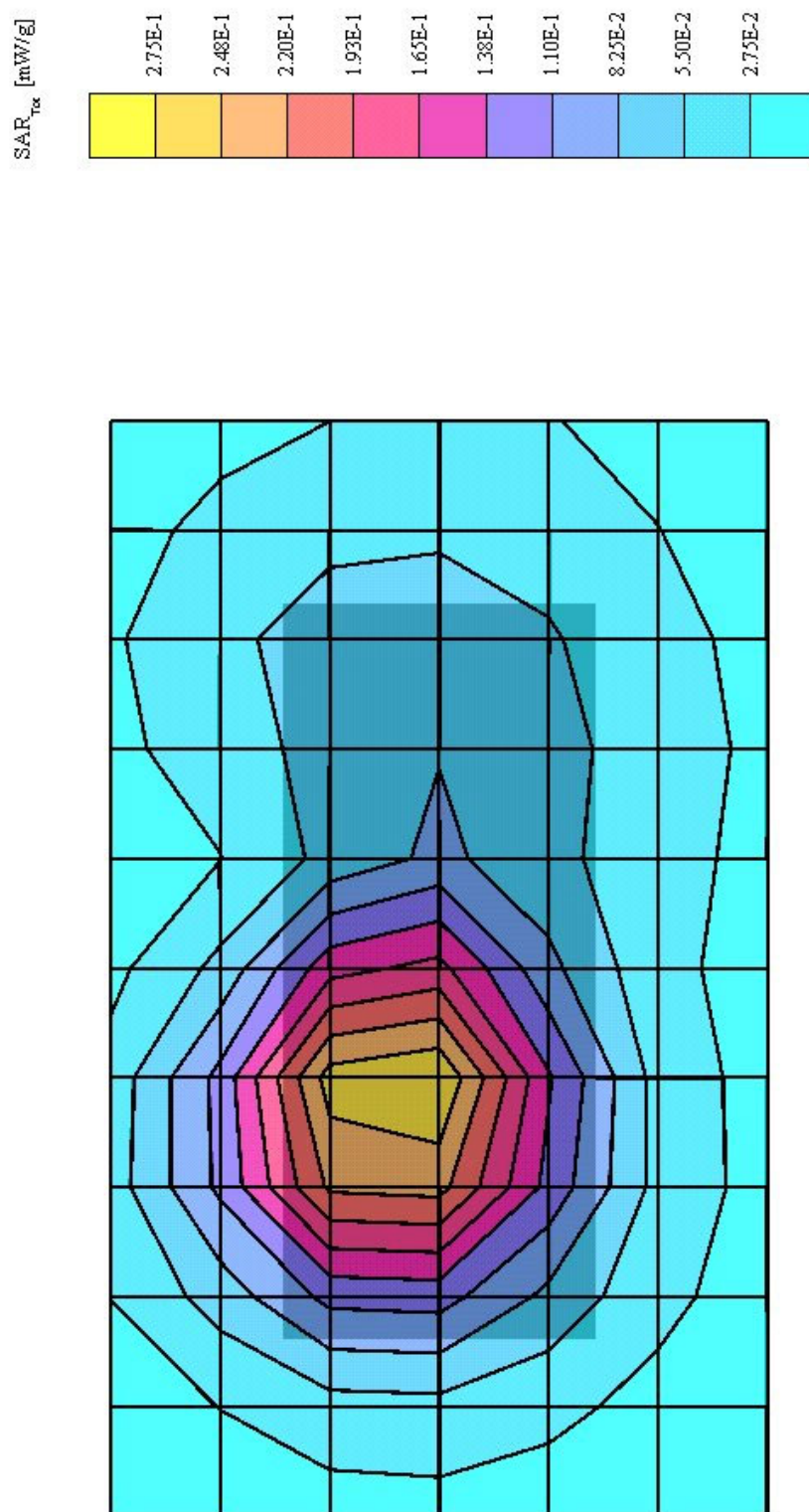


Fig. 21: SAR distribution, GSM1900, channel 661, body worn configuration, Tour Case with Headset (Talk mode, 1 TX slot), Display down.

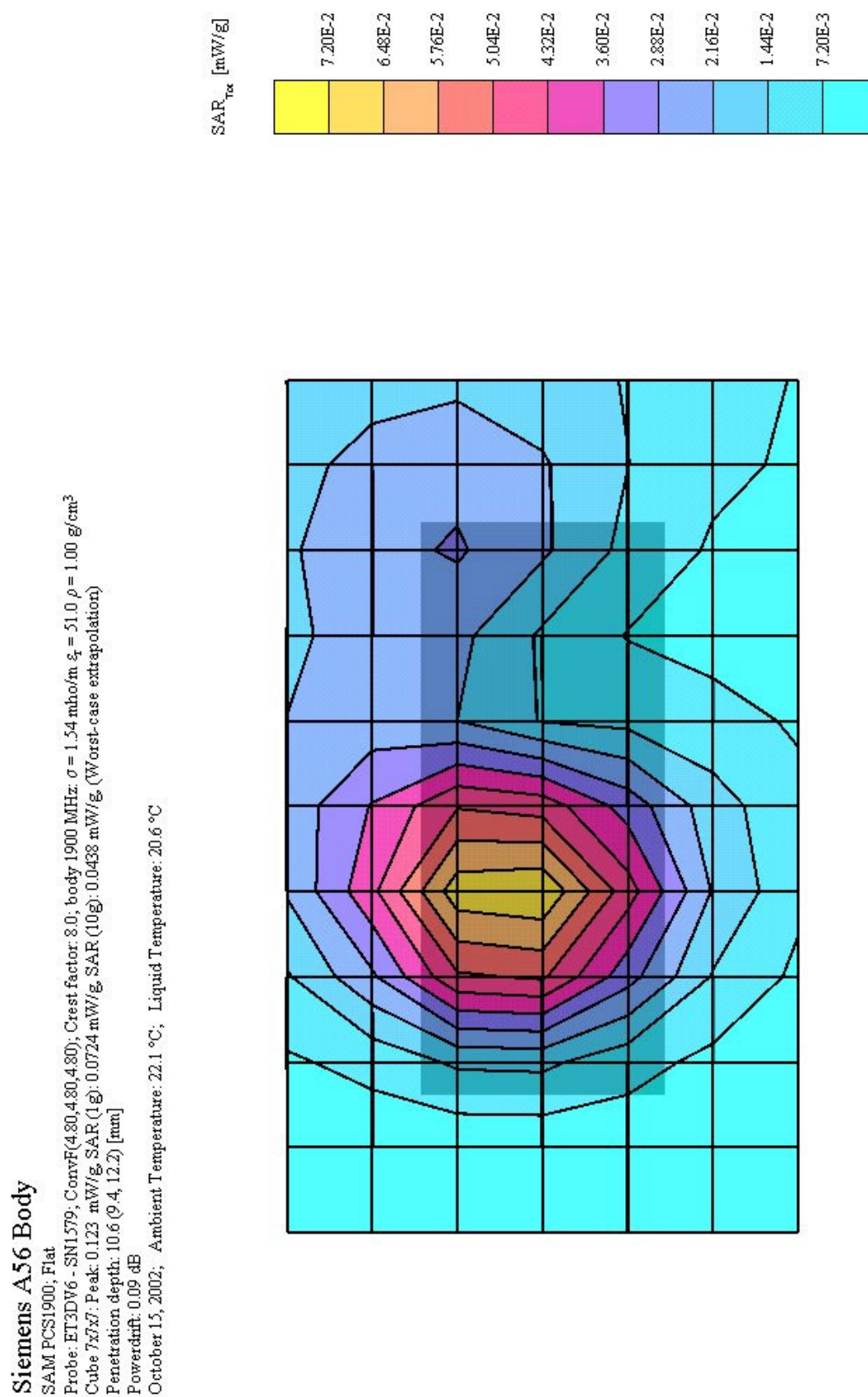


Fig. 22: SAR distribution, GSM1900, channel 661, body worn configuration, Tour Case with Headset (Talk mode, 1 TX slot), Display up.

Siemens A56 Body

SAM PCS1900; Flat

Probe: ET3DV6 - SN1579; ConvF(4.80,4.80,4.80); Crest factor: 8.0; body 1900 MHz; $\sigma = 1.54$ mho/m; $\epsilon_r = 51.0$; $\rho = 1.00$ g/cm³

Cube 7x7x7; Peak: 0.416 mW/g; SAR (1g): 0.250 mW/g; SAR (10g): 0.153 mW/g; (Worst-case extrapolation)

Penetration depth: 10.9 (9.6, 12.6) [mm]

Powerdrift: 0.02 dB

October 15, 2002; Ambient Temperature: 22.2 °C; Liquid Temperature: 20.6 °C

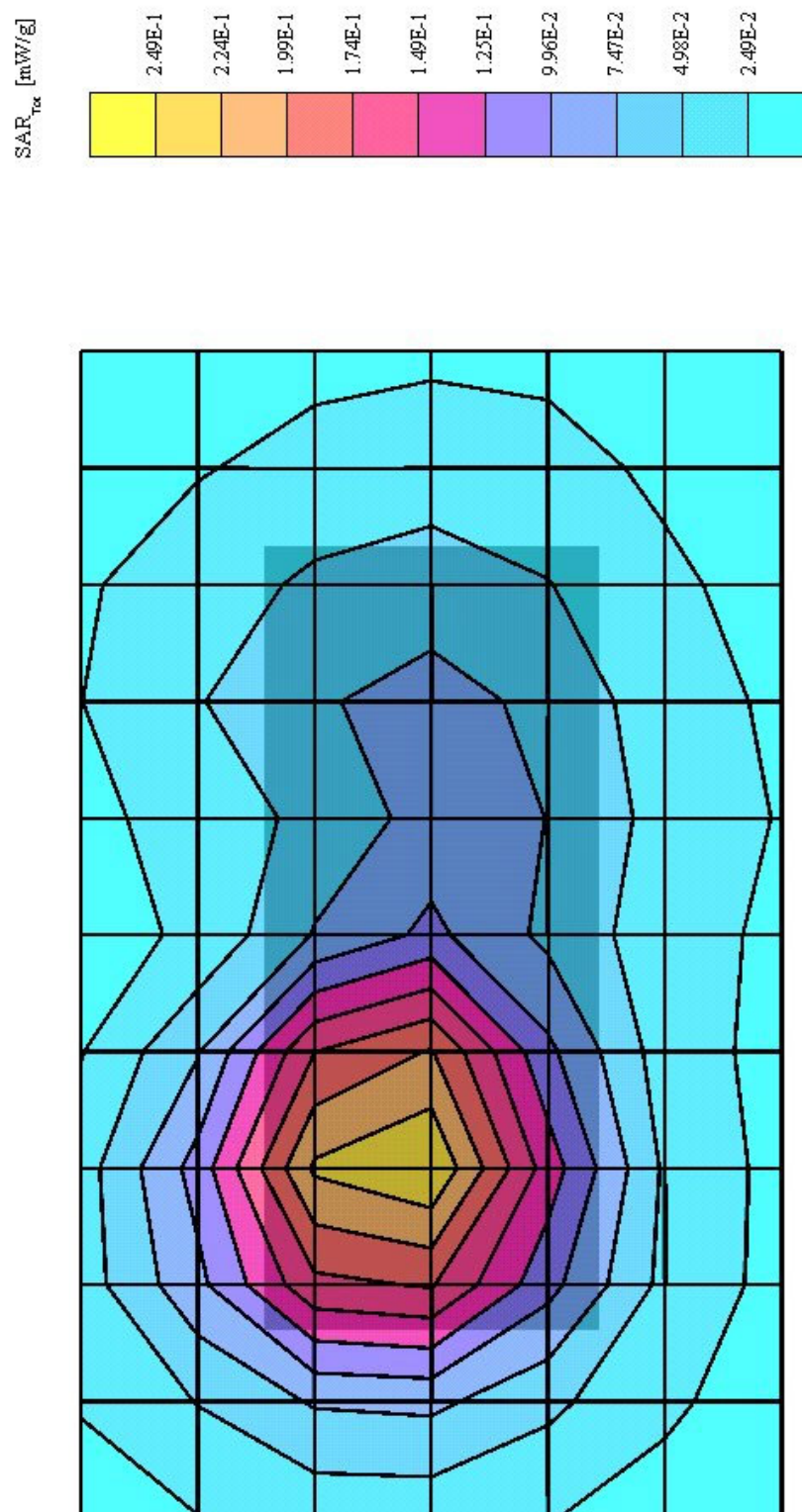


Fig. 23: SAR distribution, GSM1900, channel 661, body worn configuration, Tour Case without Headset (GPRS mode, 1 TX slot), Display down.

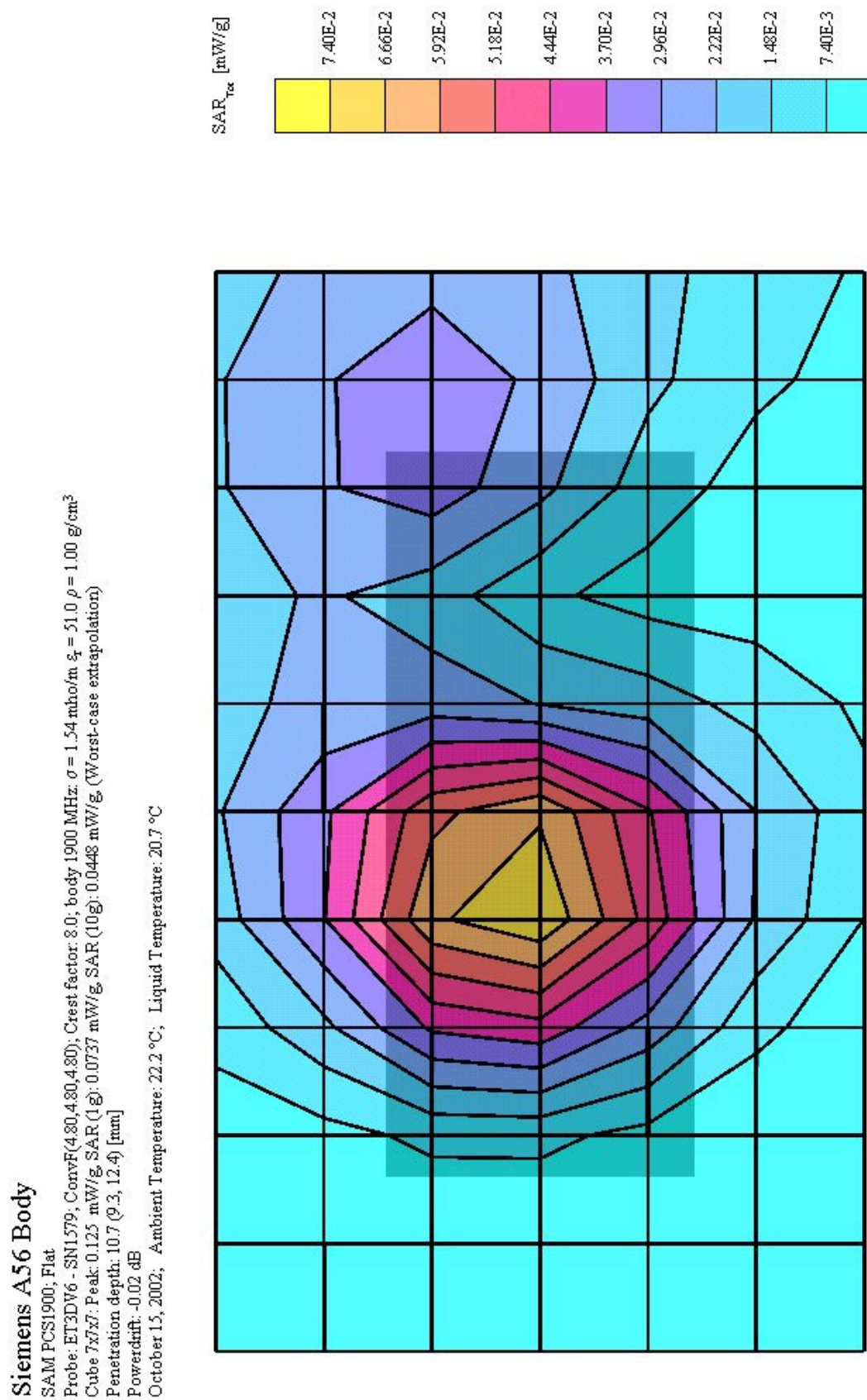


Fig. 24: SAR distribution, GSM1900, channel 661, body worn configuration, Tour Case without Headset (GPRS mode, 1 TX slot), Display up.

6 SAR z-axis scans (Validation)

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

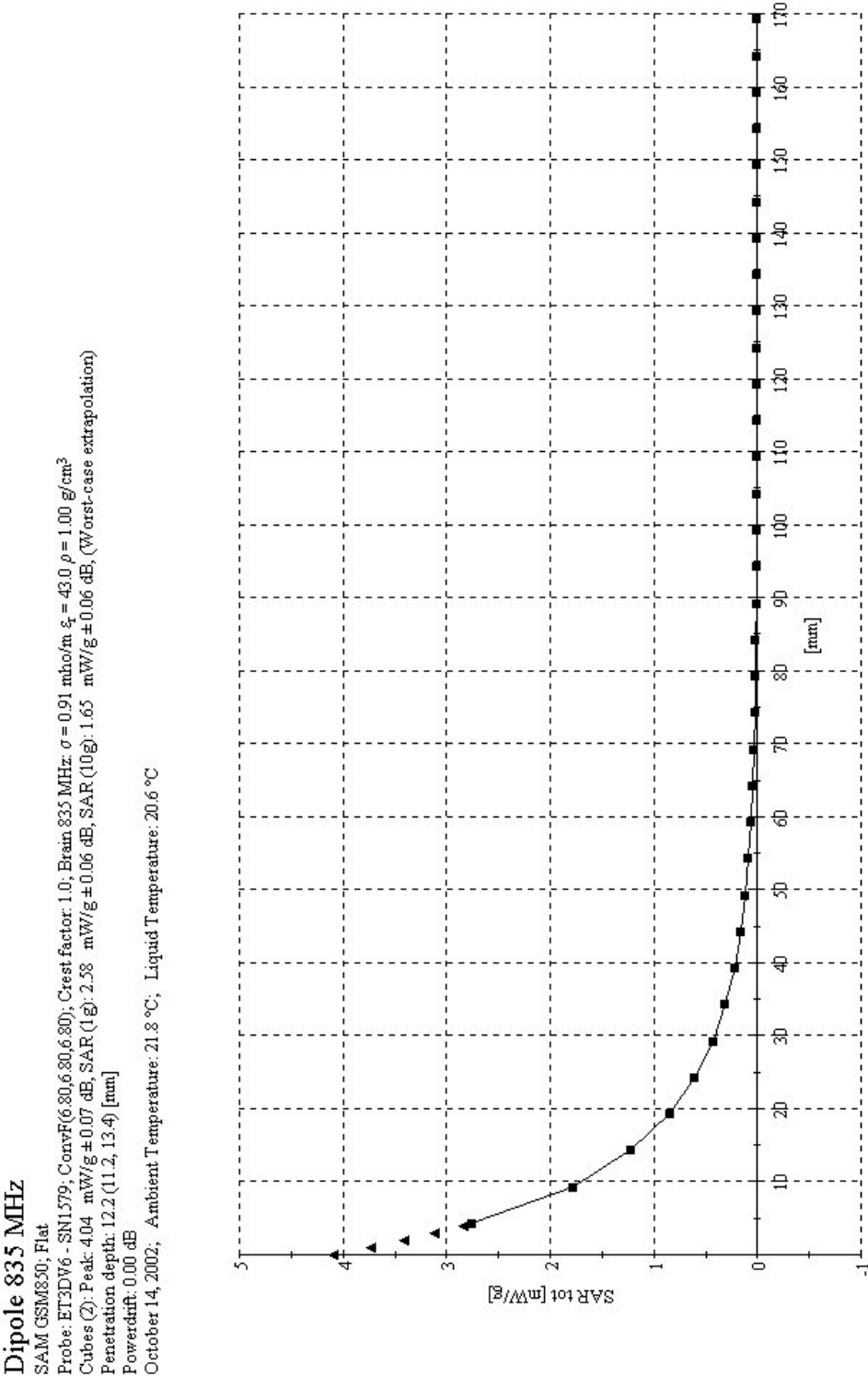


Fig. 25: SAR versus liquid depth, 835 MHz, Validation Head.

Dipole 835 MHz

SAM GSM830; Flat
Probe: ET3DW6 - SN1579; ConvF(6.60,6.60); Crest factor: 1.0; body 835 MHz; $\sigma = 1.00$ mho/m $\epsilon_r = 54.4$ $\rho = 1.00$ g/cm³
Cubes (2): Peak: 4.16 mW/g ± 0.06 dB, SAR (1g): 2.64 mW/g ± 0.06 dB, SAR (10g): 1.68 mW/g ± 0.06 dB, (Worst-case extrapolation)
Penetration depth: 12.2 (11.2, 13.4) [mm]
Powerdrift: 0.01 dB
October 16, 2002; Ambient Temperature: 21.8 °C; Liquid Temperature: 20.9 °C

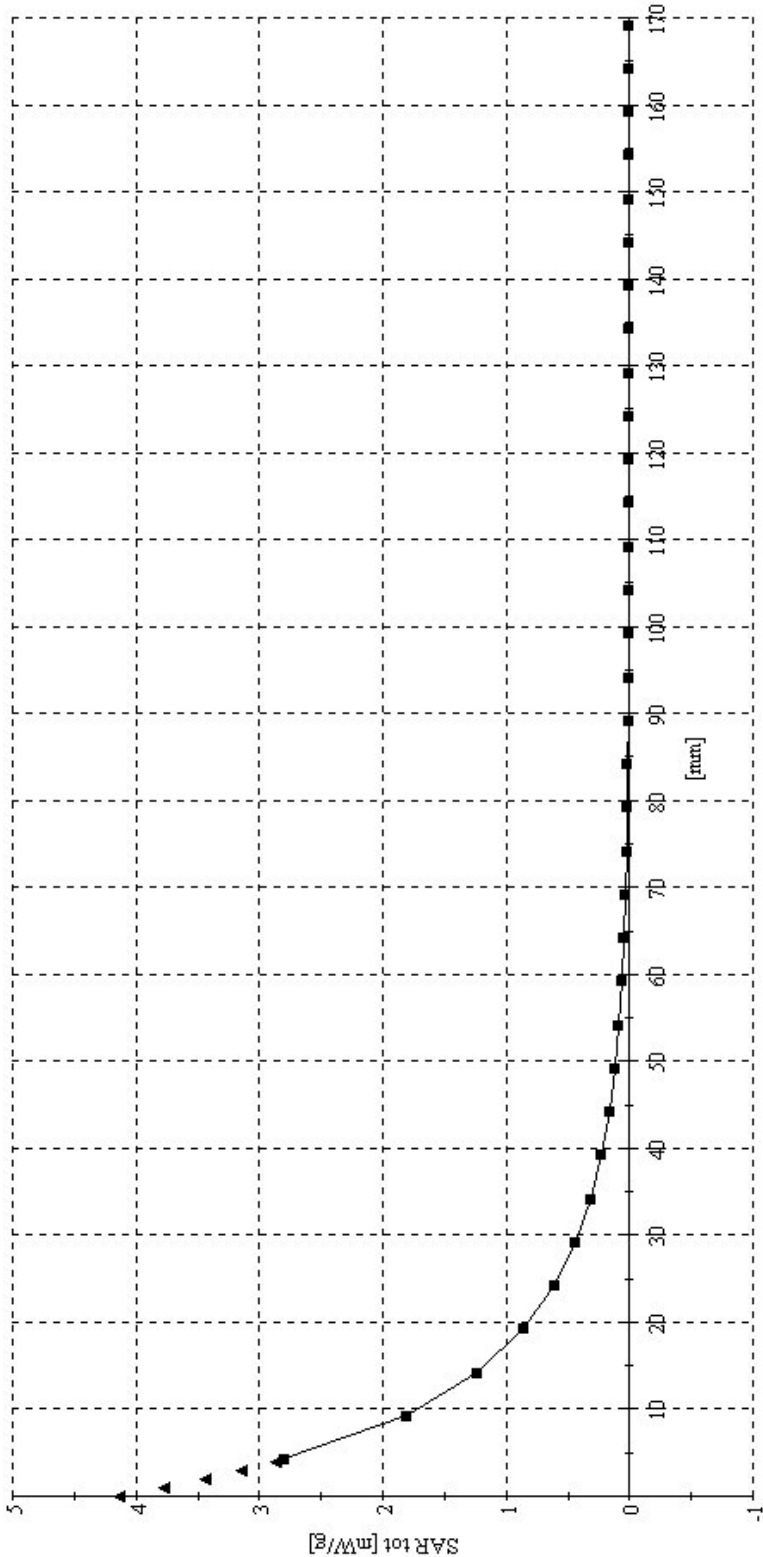


Fig. 26: SAR versus liquid depth, 835 MHz, Validation Body.

Dipole 1900 MHz

SAM PCS1900, Flat
Probe: ET3DV6 - SN1579; ConvF(5 20,5 20); Crest factor: 1.0; Brain 1900MHz: $\sigma = 1.44 \text{ mho/m}$ $\epsilon_r = 39.0$ $\rho = 1.00 \text{ g/cm}^3$
Cubes (2): Peak: $22.2 \text{ mW/g} \pm 0.11 \text{ dB}$, SAR (1g): $11.5 \text{ mW/g} \pm 0.10 \text{ dB}$, SAR (10g): $5.81 \text{ mW/g} \pm 0.09 \text{ dB}$, (Worst-case extrapolation)
Penetration depth: 7.7 ($7.4, 8.6$) [mm]
Powerdrift: 0.05 dB
October 14, 2002; Ambient Temperature: 22.7°C ; Liquid Temperature: 20.7°C

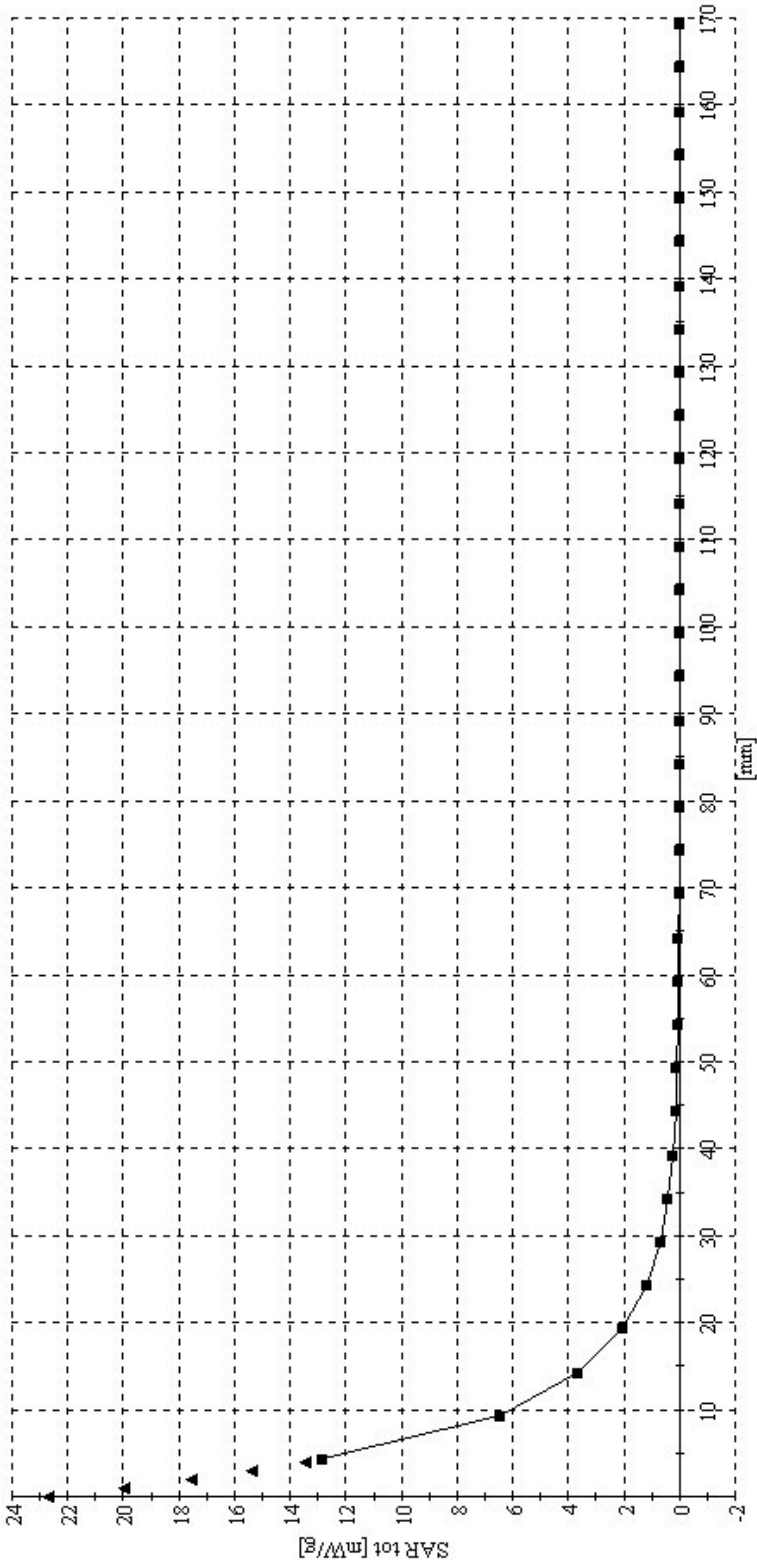


Fig. 27: SAR versus liquid depth, 1900 MHz, Validation Head.

Dipole 1900 MHz
SAM PCS1900; Flat
Probe: ET3DV6 - SN1579; ConvF(480,480,480); Crest factor: 1.0; body 1900 MHz: $\sigma = 1.54 \text{ mho/m}$ $\epsilon_r = 51.0$ $\rho = 1.00 \text{ g/cm}^3$
Cubes (2): Peak: 20.9 mW/g $\pm 0.08 \text{ dB}$, SAR (1g): 11.0 mW/g $\pm 0.07 \text{ dB}$, SAR (10g): 5.61 mW/g $\pm 0.06 \text{ dB}$, (Worst-case extrapolation)
Penetration depth: 8.4 (7.7, 9.6) [mm]
Powerdrift: 0.01 dB
October 14, 2002; Ambient Temperature: 22.2 °C; Liquid Temperature: 20.9 °C

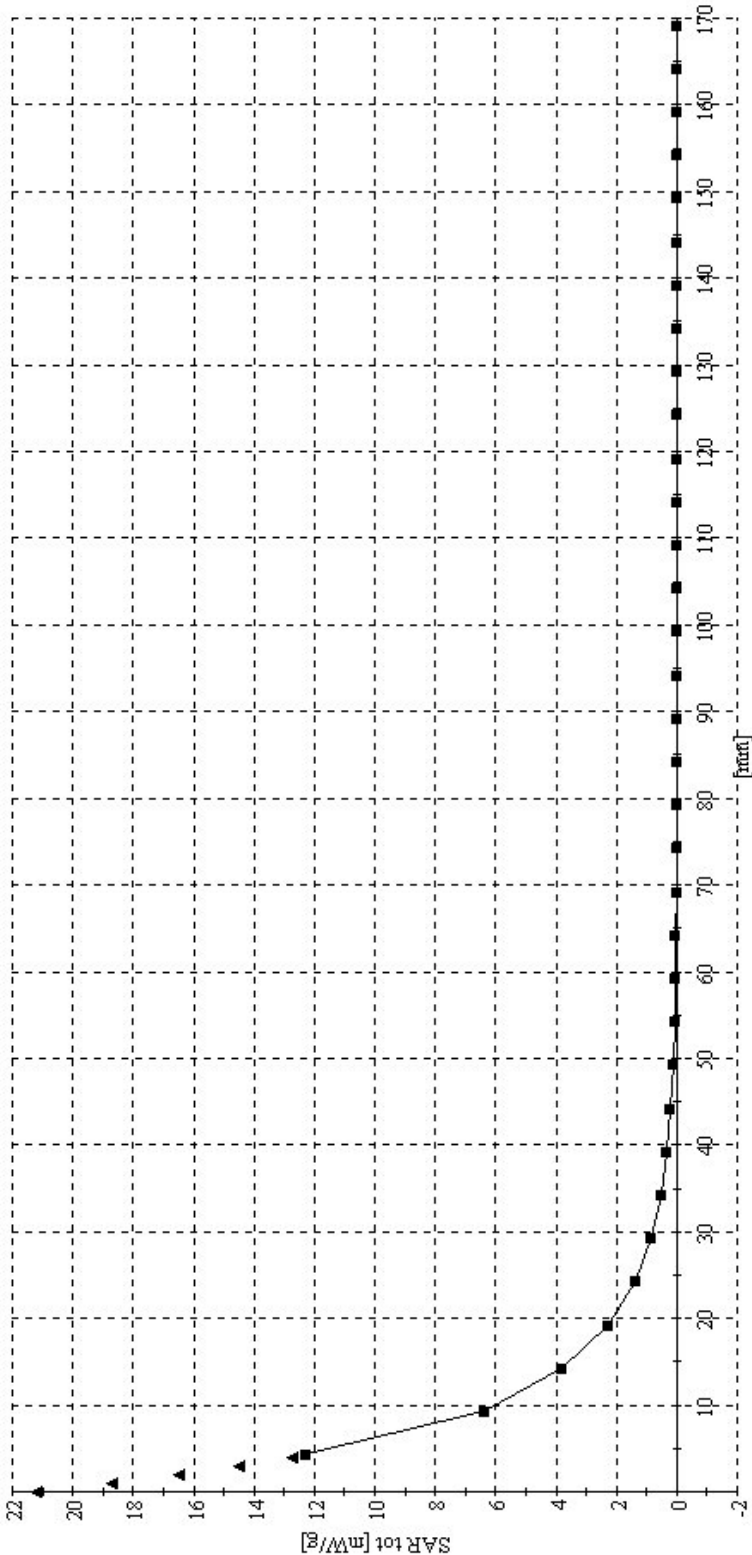


Fig. 28: SAR versus liquid depth, 1900 MHz, Validation Body.

7 SAR z-axis scans (Measurements)

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

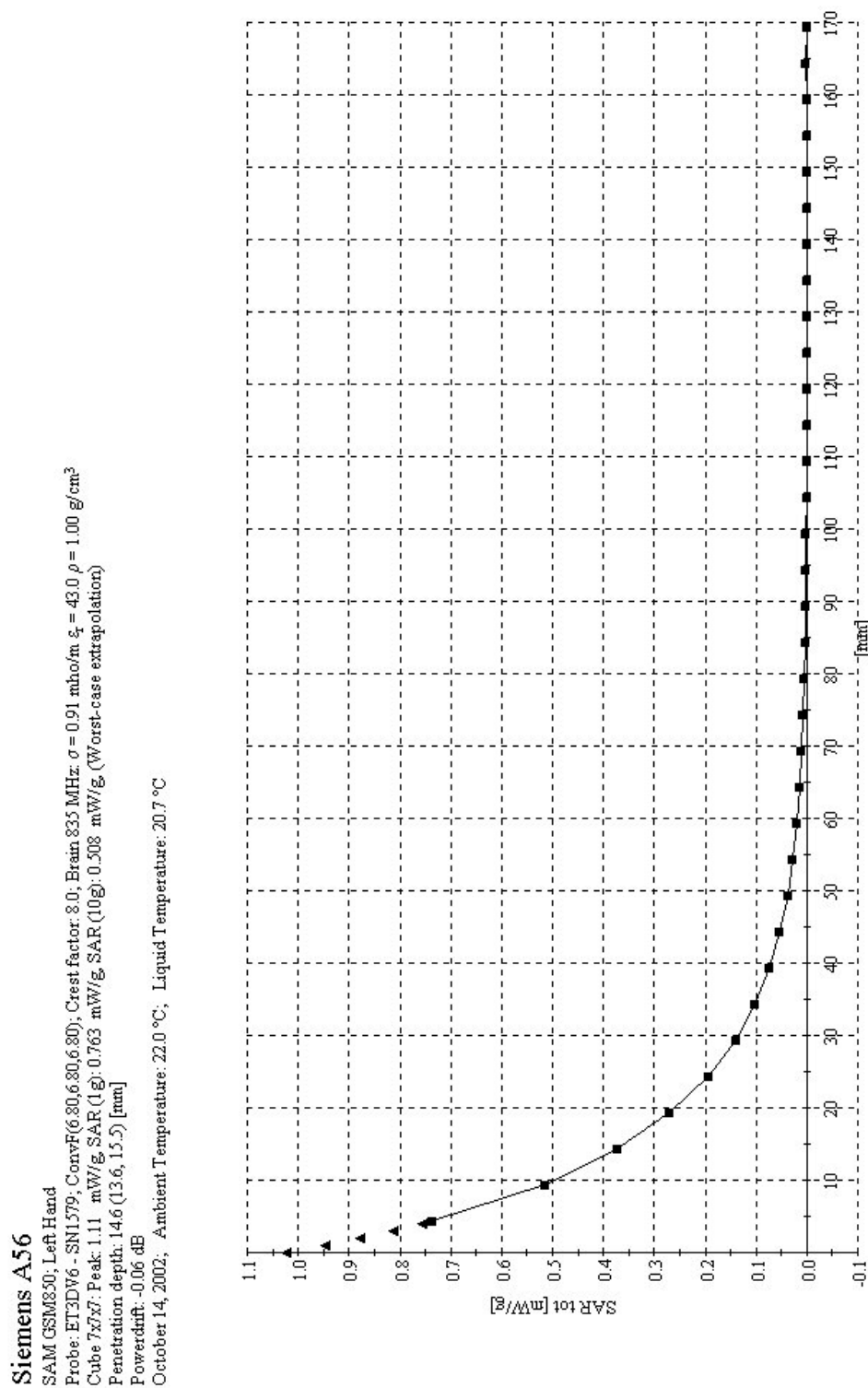


Fig. 29: SAR versus liquid depth, GSM850, channel 190, cheek position, left side of head.

Siemens A56

SAM PCS1900; Right Hand

Probe: ET3DV6 - SN1579; ConvF(5.20,5.20,5.20); Crest factor: 8.0; Brain 1900MHz: $\sigma = 1.44$ mho/m $\epsilon_r = 39.0$ $\rho = 1.00$ g/cm³

Cube 7x7x7: Peak: 0.379 mW/g SAR (1g): 0.229 mW/g SAR (10g): 0.131 mW/g * Max outside, (Worst-case extrapolation)

Penetration depth: 8.9 (8.3, 10.0) [mm]

Powerdift: -0.05 dB

October 14, 2002; Ambient Temperature: 22.7 °C; Liquid Temperature: 20.8 °C

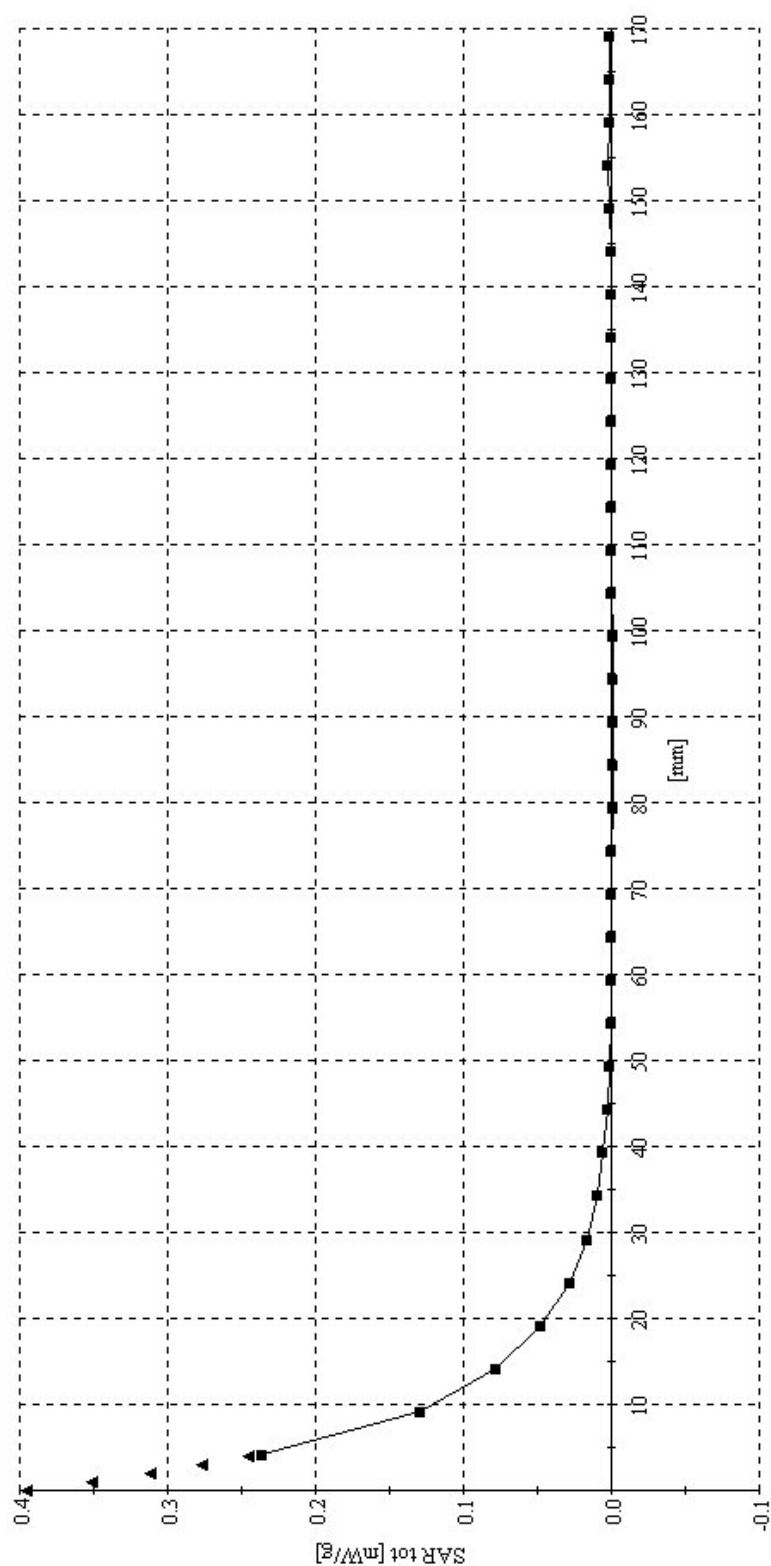


Fig. 30: SAR versus liquid depth, PCS 1900, channel 661, cheek position, right side of head.

Siemens A56 Body

SAM GSM850; Flat

Probe: ET3DV6 - SN1579; ConvF(6.60,6.60,6.60); Crest factor: 8.0; body 835 MHz; $\sigma = 1.00$ mho/m $\epsilon_r = 54.4$ $\rho = 1.00$ g/cm³

Cube 7x7x7; Peak: 0.669 mW/g SAR (1g); 0.464 mW/g SAR (10g); 0.318 mW/g SAR (Worst-case extrapolation)

Penetration depth: 15.2 (14.1, 16.3) [mm]

Powerdft: 0.01 dB

October 16, 2002; Ambient Temperature: 22.2 °C; Liquid Temperature: 20.7 °C

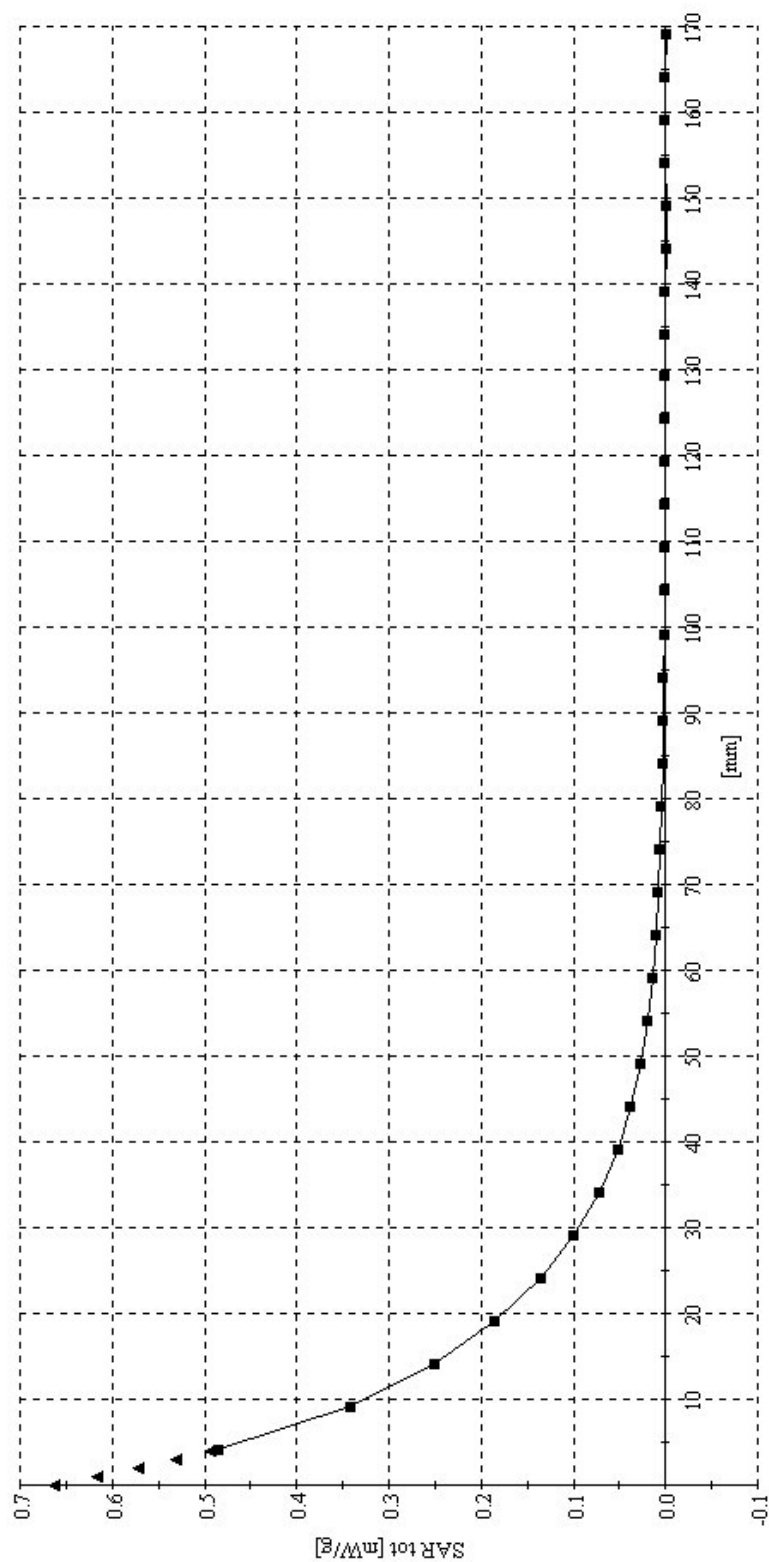


Fig. 31: SAR versus liquid depth, GSM850, channel 190, body worn configuration, Belt Clip without Headset (GPRS mode, 1 TX slot).

Siemens A56 Body

SAM PCS1900; Flat

Probe: ET3DV6 - SN1579; ConvF(480,480,480); Crest factor: 8.0; body 1900 MHz: $\sigma = 1.54 \text{ mho/m}$ $\epsilon_r = 51.0$ $\rho = 1.00 \text{ g/cm}^3$

Cube 7x7x7: Peak: 0.542 mW/g SAR (1g); 0.329 mW/g SAR (10g); 0.202 mW/g SAR (Worst-case extrapolation)

Penetration depth: 11.1 (9.8, 12.7) [mm]

Powerdift: 0.05 dB

October 15, 2002; Ambient Temperature: 22.1 °C; Liquid Temperature: 20.7 °C

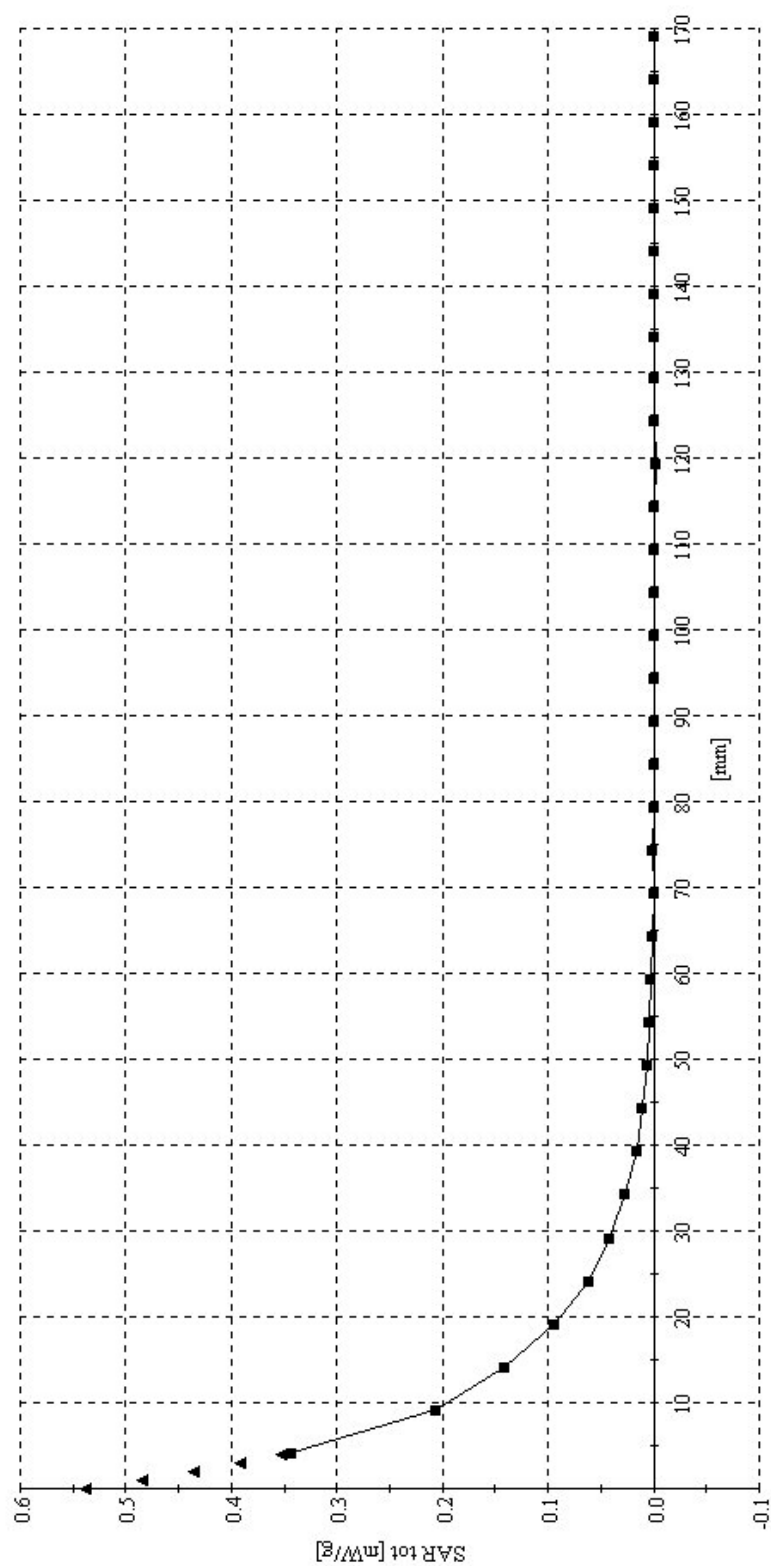


Fig. 32: SAR versus liquid depth, PCS1900, channel 661, body worn configuration, Belt Clip without Headset (GPRS mode, 1 TX slot).