

APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC with WLAN and Bluetooth; Serial: 9HKSA00095

Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: 835 Muscle Medium parameters used (interpolated):

$f = 836.52 \text{ MHz}$; $\sigma = 0.987 \text{ mho/m}$; $\epsilon_r = 53.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-26-2009; Ambient Temp: 23.9°C; Tissue Temp: 22.0 °C

Probe: ES3DV2 - SN3022; ConvF(5.85, 5.85, 5.85); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: Cellular CDMA EvDO Rev 0, Body SAR, Left Edge, Mid.ch

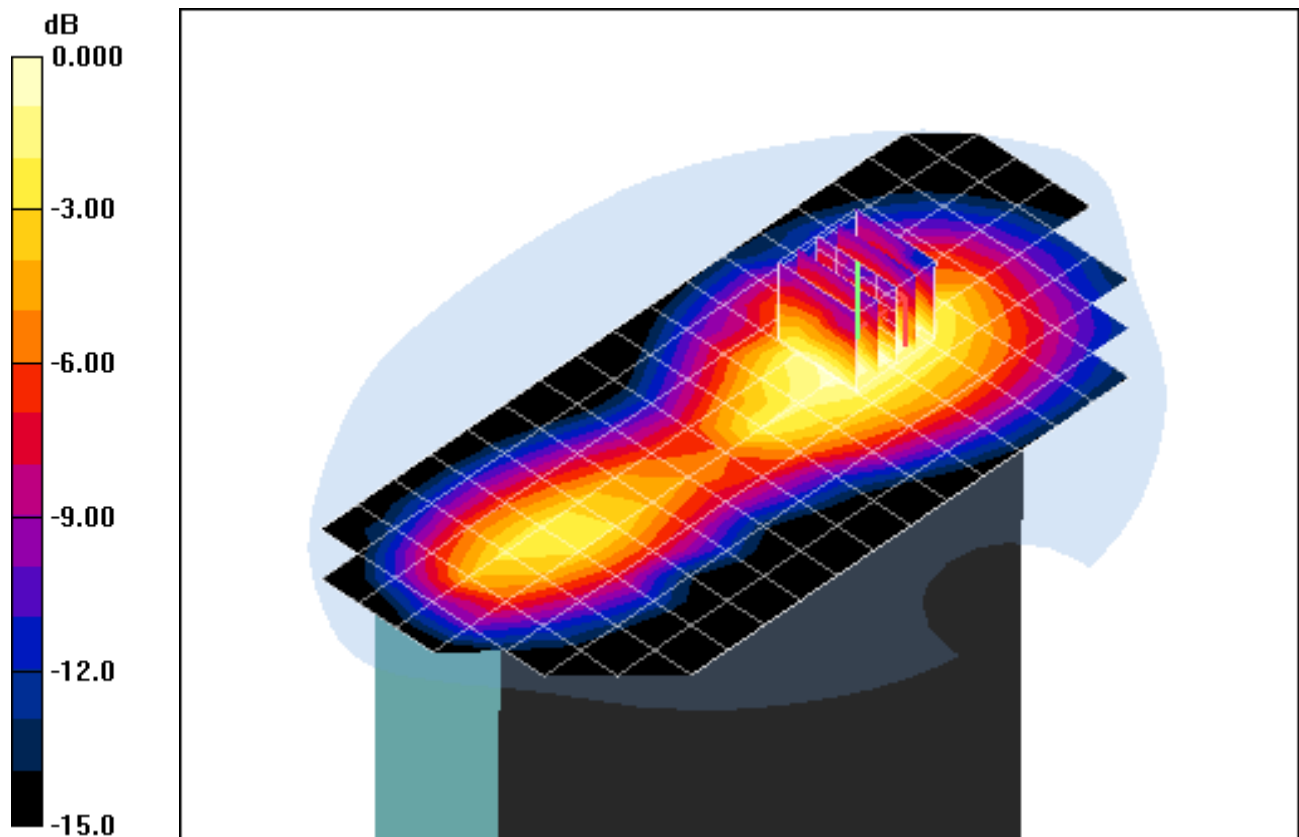
Area Scan (9x21x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 18.5 V/m

Peak SAR (extrapolated) = 0.702 W/kg

SAR(1 g) = 0.427 mW/g; SAR(10 g) = 0.279 mW/g



0 dB = 0.503mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC with WLAN and Bluetooth; Serial: 9HKSA00095

Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1

Medium: 835 Muscle Medium parameters used (interpolated):

$f = 836.52 \text{ MHz}$; $\sigma = 0.98 \text{ mho/m}$; $\epsilon_r = 53.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-06-2009; Ambient Temp: 23.7°C; Tissue Temp: 22.1 °C

Probe: ES3DV2 - SN3022; ConvF(5.85, 5.85, 5.85); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: Cellular CDMA EvDO Rev 0, Body SAR, Laptop position, Mid.ch

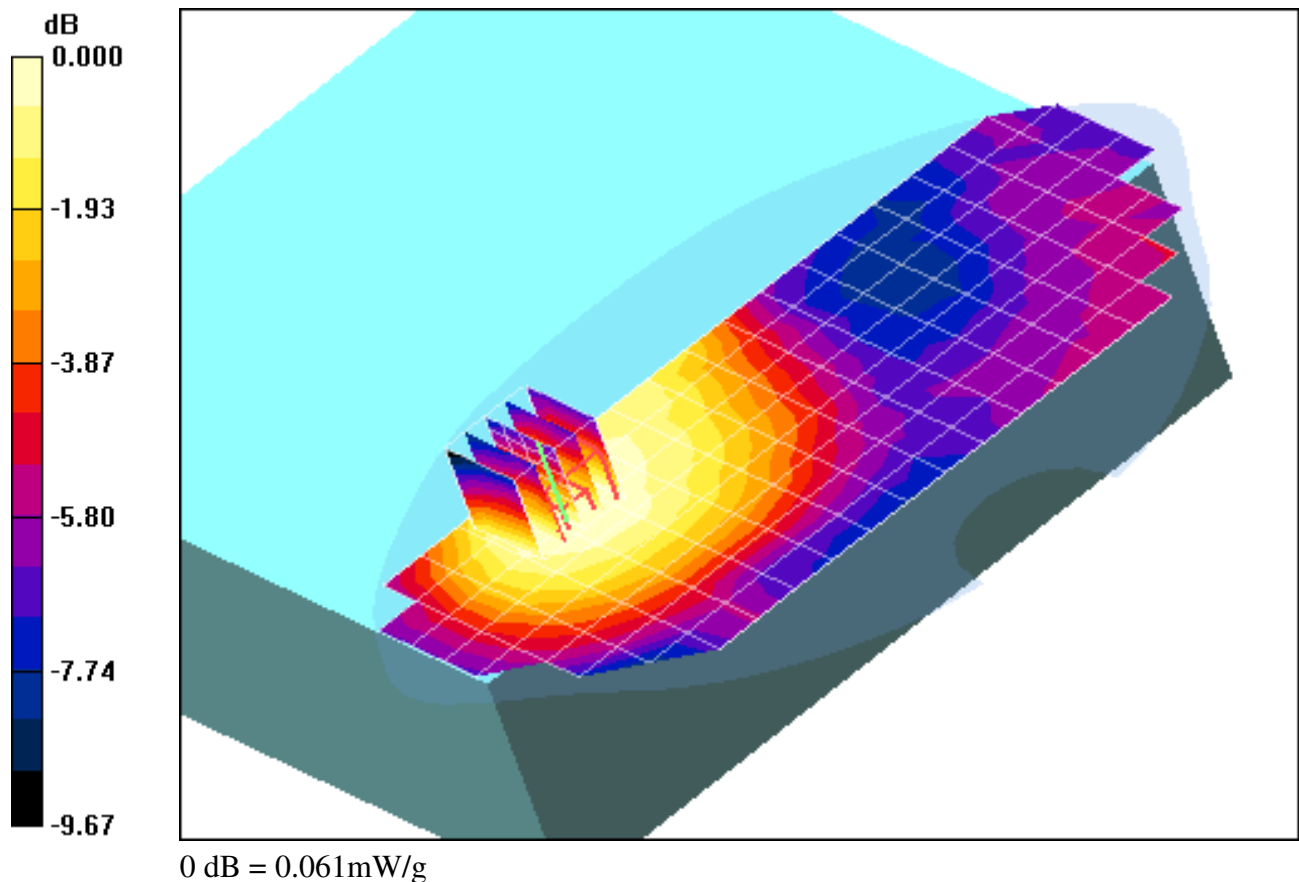
Area Scan (9x21x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.85 V/m

Peak SAR (extrapolated) = 0.075 W/kg

SAR(1 g) = 0.055 mW/g; SAR(10 g) = 0.042 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC with WLAN and Bluetooth; Serial: 9HKSA00095

Communication System: GSM850 GPRS; 2 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:4.15
Medium: 835 Muscle Medium parameters used (interpolated):

$$f = 836.6 \text{ MHz}; \sigma = 0.987 \text{ mho/m}; \epsilon_r = 53.4; \rho = 1000 \text{ kg/m}^3$$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-26-2009; Ambient Temp: 23.9 C Tissue Temp: 22.0 C

Probe: ES3DV2 - SN3022; ConvF(5.85, 5.85, 5.85); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: GPRS850, Body SAR, Left Edge, Mid.ch, 2 Tx. Slots

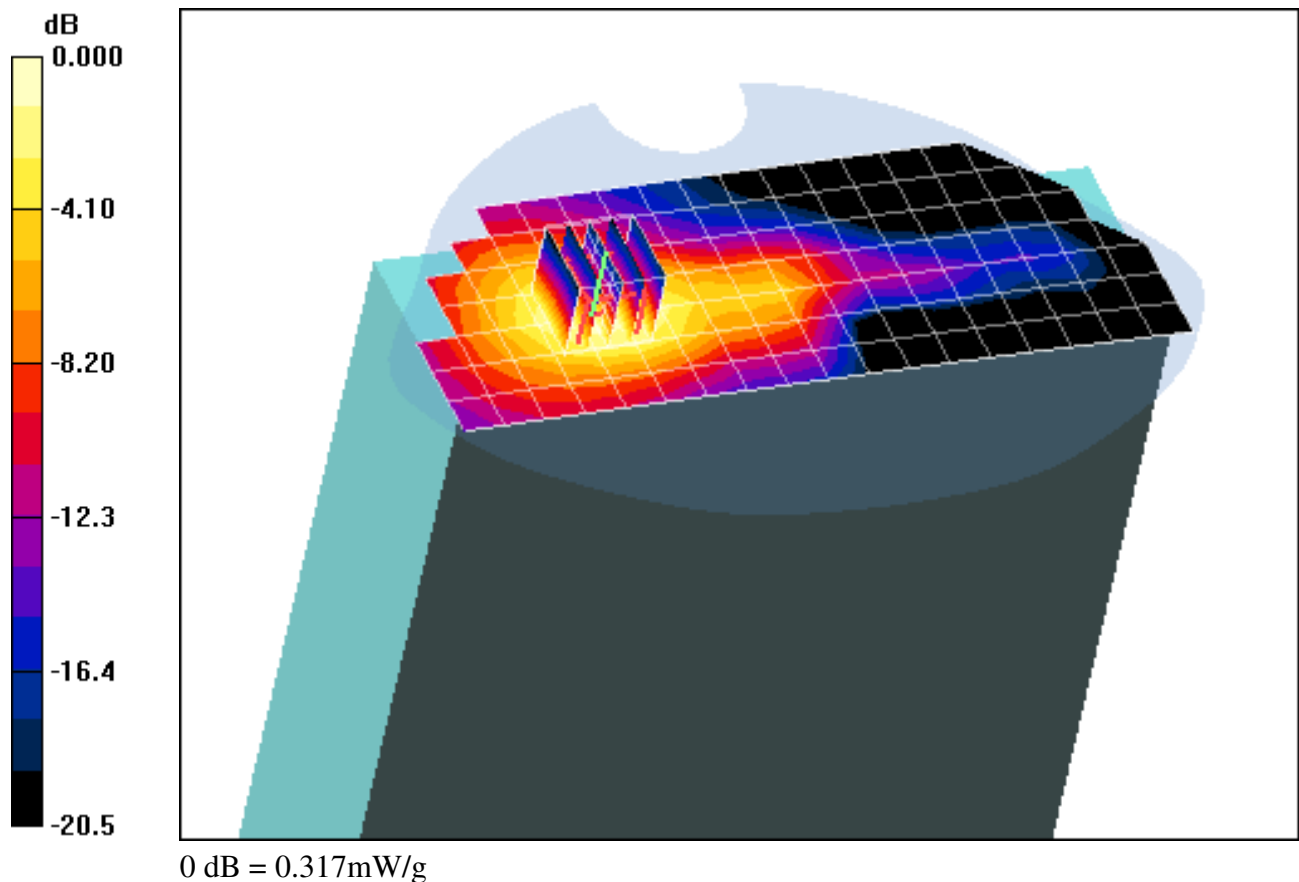
Area Scan (8x21x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 11.3 V/m

Peak SAR (extrapolated) = 0.510 W/kg

SAR(1 g) = 0.251 mW/g; SAR(10 g) = 0.134 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC with WLAN and Bluetooth; Serial: 9HKSA00095

Communication System: GSM850 GPRS; 2 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:4.15
Medium: 835 Muscle Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.98 \text{ mho/m}$; $\epsilon_r = 53.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-07-2009; Ambient Temp: 23.7 C Tissue Temp: 22.1 C

Probe: ES3DV2 - SN3022; ConvF(5.85, 5.85, 5.85); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: GPRS850, Body SAR, Laptop position, Mid.ch, 2 Tx. Slots

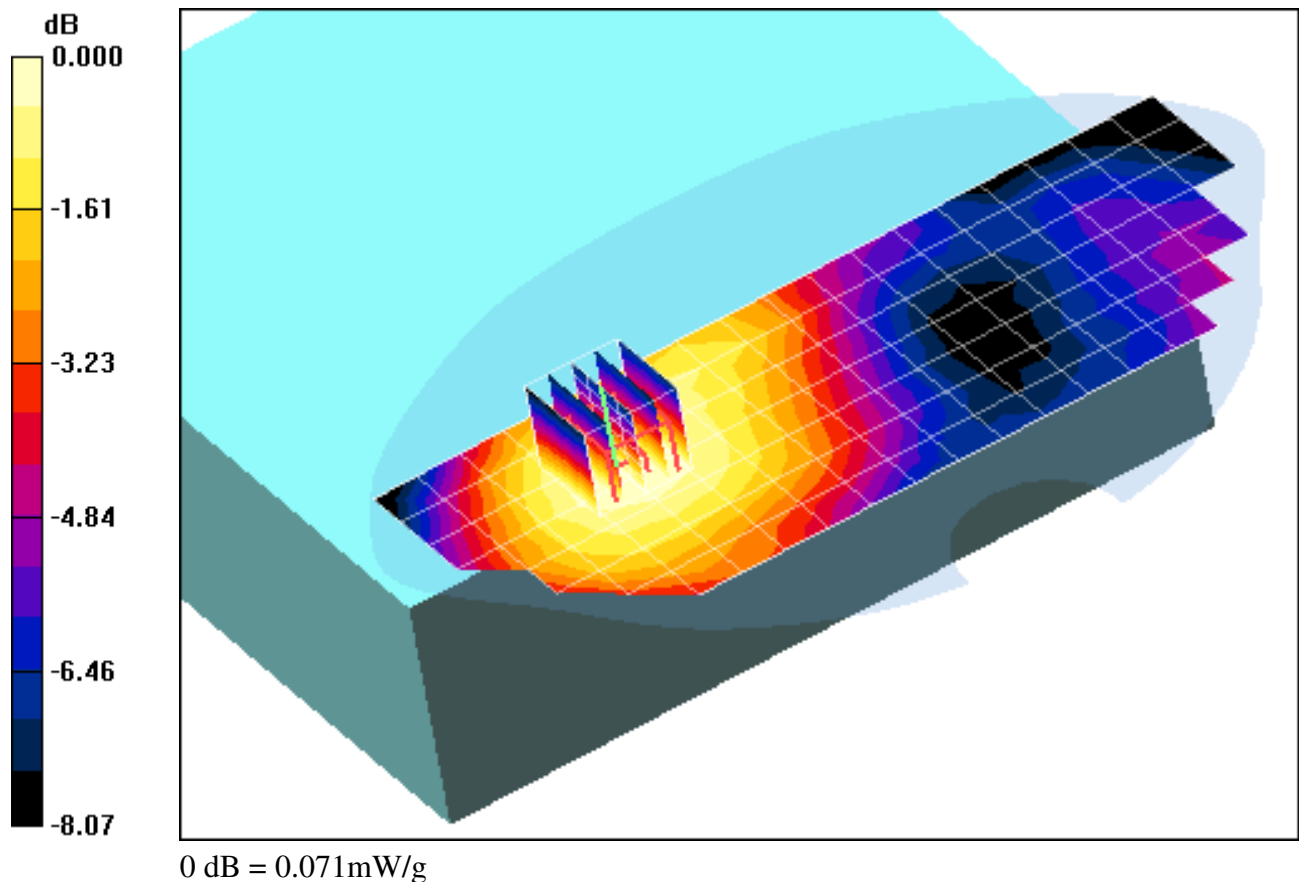
Area Scan (8x21x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.78 V/m

Peak SAR (extrapolated) = 0.083 W/kg

SAR(1 g) = 0.064 mW/g; SAR(10 g) = 0.048 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC with WLAN and Bluetooth; Serial: 9HKSA00095

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 835 Muscle Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.987 \text{ mho/m}$; $\epsilon_r = 53.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-26-2009; Ambient Temp: 23.9 C Tissue Temp: 22.0 C

Probe: ES3DV2 - SN3022; ConvF(5.85, 5.85, 5.85); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: WCDMA850, Body SAR, Left Edge, Mid.ch

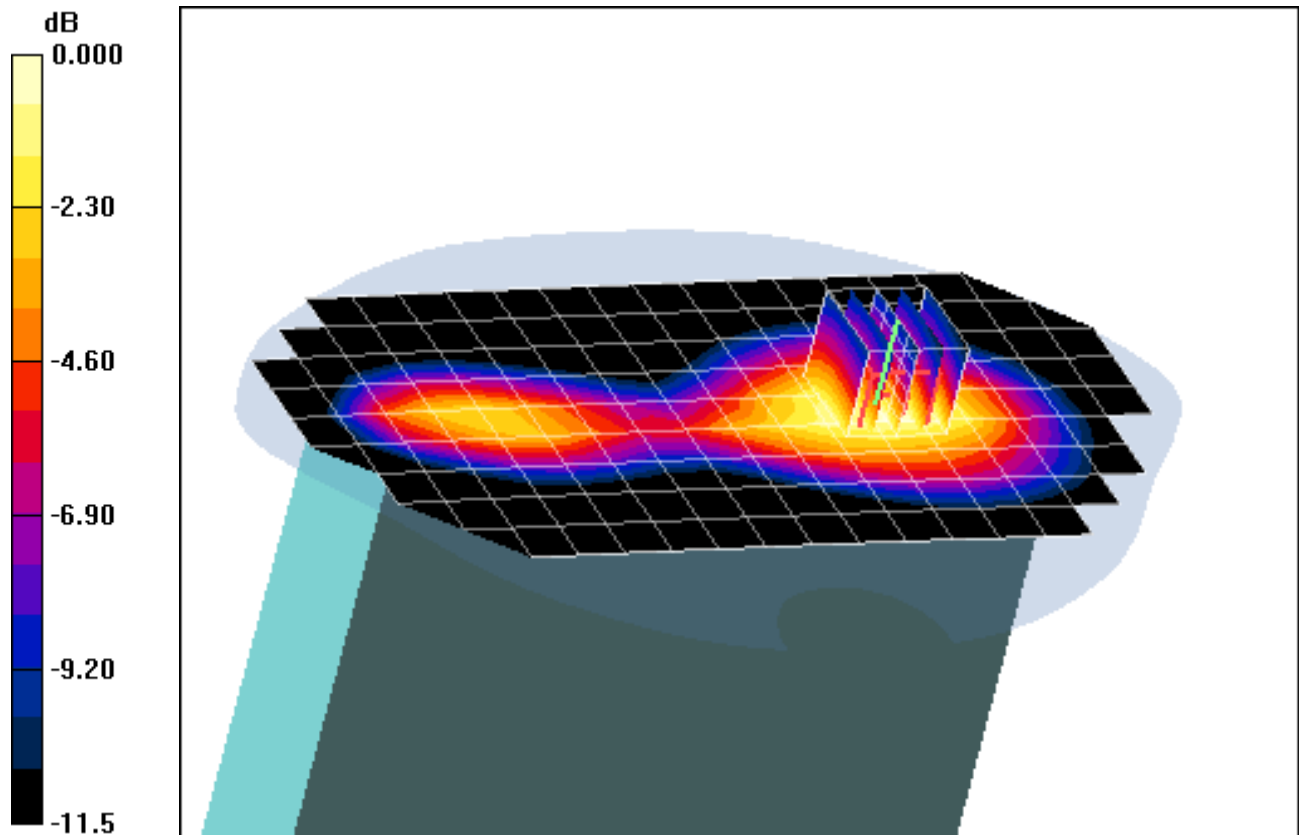
Area Scan (10x21x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.6 V/m

Peak SAR (extrapolated) = 0.724 W/kg

SAR(1 g) = 0.487 mW/g; SAR(10 g) = 0.317 mW/g



0 dB = 0.571mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC with WLAN and Bluetooth; Serial: 9HKSA00095

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 835 Muscle Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.98 \text{ mho/m}$; $\epsilon_r = 53.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-07-2009; Ambient Temp: 23.7 C Tissue Temp: 22.1 C

Probe: ES3DV2 - SN3022; ConvF(5.85, 5.85, 5.85); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: WCDMA850, Body SAR, Laptop position, Mid.ch

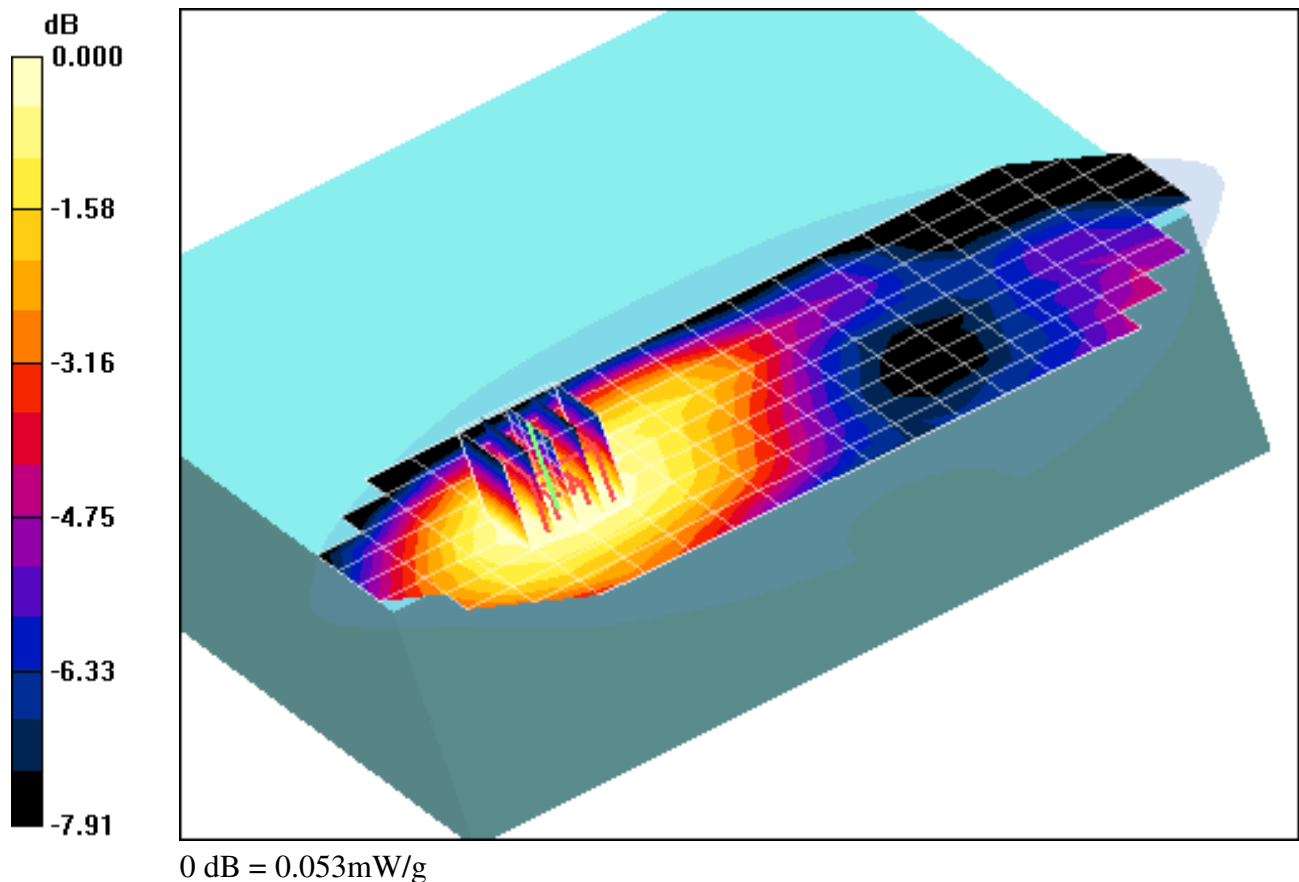
Area Scan (10x21x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.66 V/m

Peak SAR (extrapolated) = 0.063 W/kg

SAR(1 g) = 0.048 mW/g; SAR(10 g) = 0.036 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC with WLAN and Bluetooth; Serial: 9HKSA00095

Communication System: PCS CDMA; Frequency: 1851.25 MHz; Duty Cycle: 1:1

Medium: 1900 Muscle Medium parameters used (interpolated):

$f = 1851.25 \text{ MHz}$; $\sigma = 1.48 \text{ mho/m}$; $\epsilon_r = 51$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-06-2009; Ambient Temp: 23.6°C; Tissue Temp: 22.2 °C

Probe: ES3DV2 - SN3022; ConvF(4.42, 4.42, 4.42); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: PCS CDMA EvDO Rev 0, Body SAR, Left Edge, Mid.ch

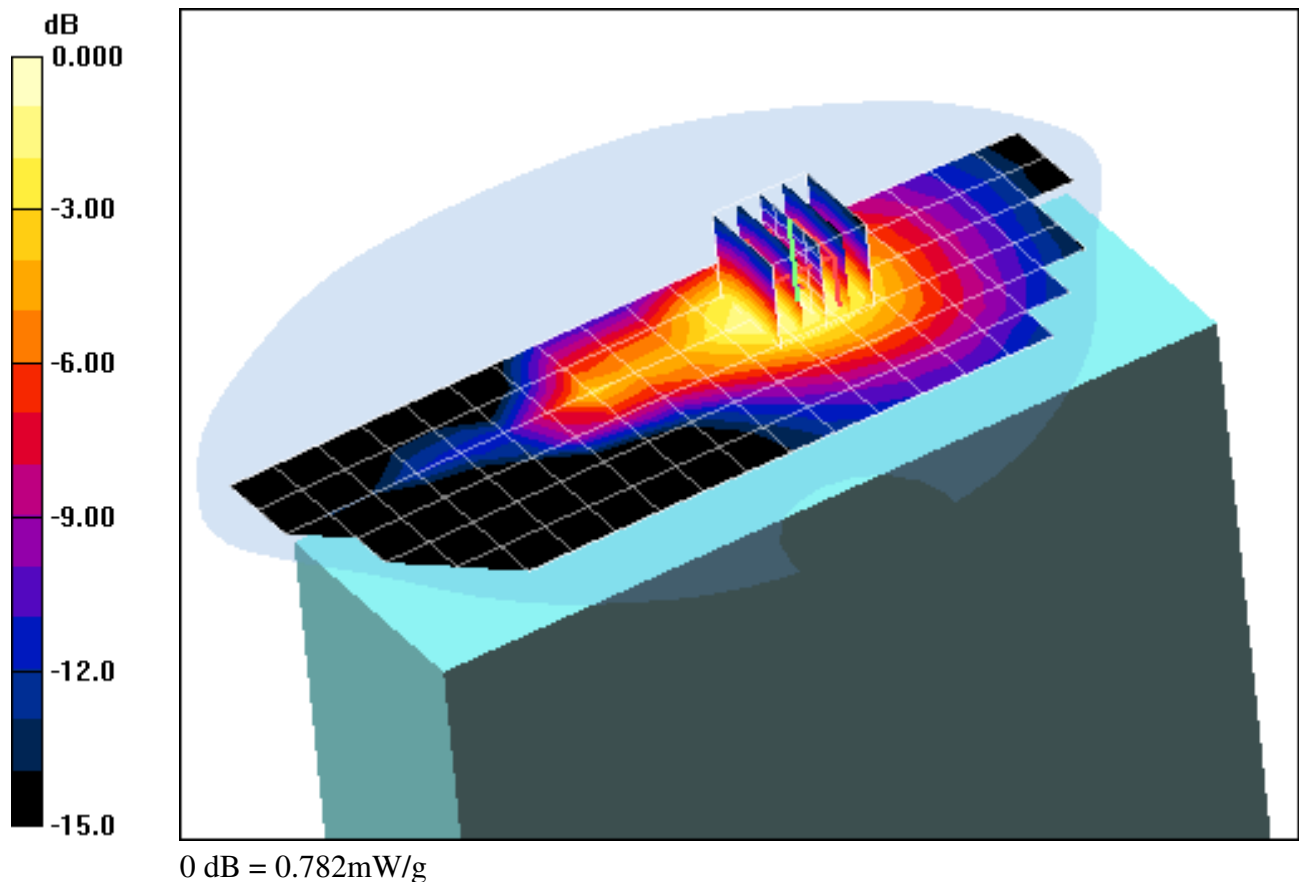
Area Scan (7x21x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 14.7 V/m

Peak SAR (extrapolated) = 1.02 W/kg

SAR(1 g) = 0.650 mW/g; SAR(10 g) = 0.389 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC with WLAN and Bluetooth; Serial: 9HKSA00095

Communication System: PCS CDMA; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 Muscle Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.5 \text{ mho/m}$; $\epsilon_r = 50.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 11-06-2009; Ambient Temp: 23.6°C; Tissue Temp: 22.2 °C

Probe: ES3DV2 - SN3022; ConvF(4.42, 4.42, 4.42); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: PCS CDMA EvDO Rev 0, Body SAR, Laptop position, Mid.ch

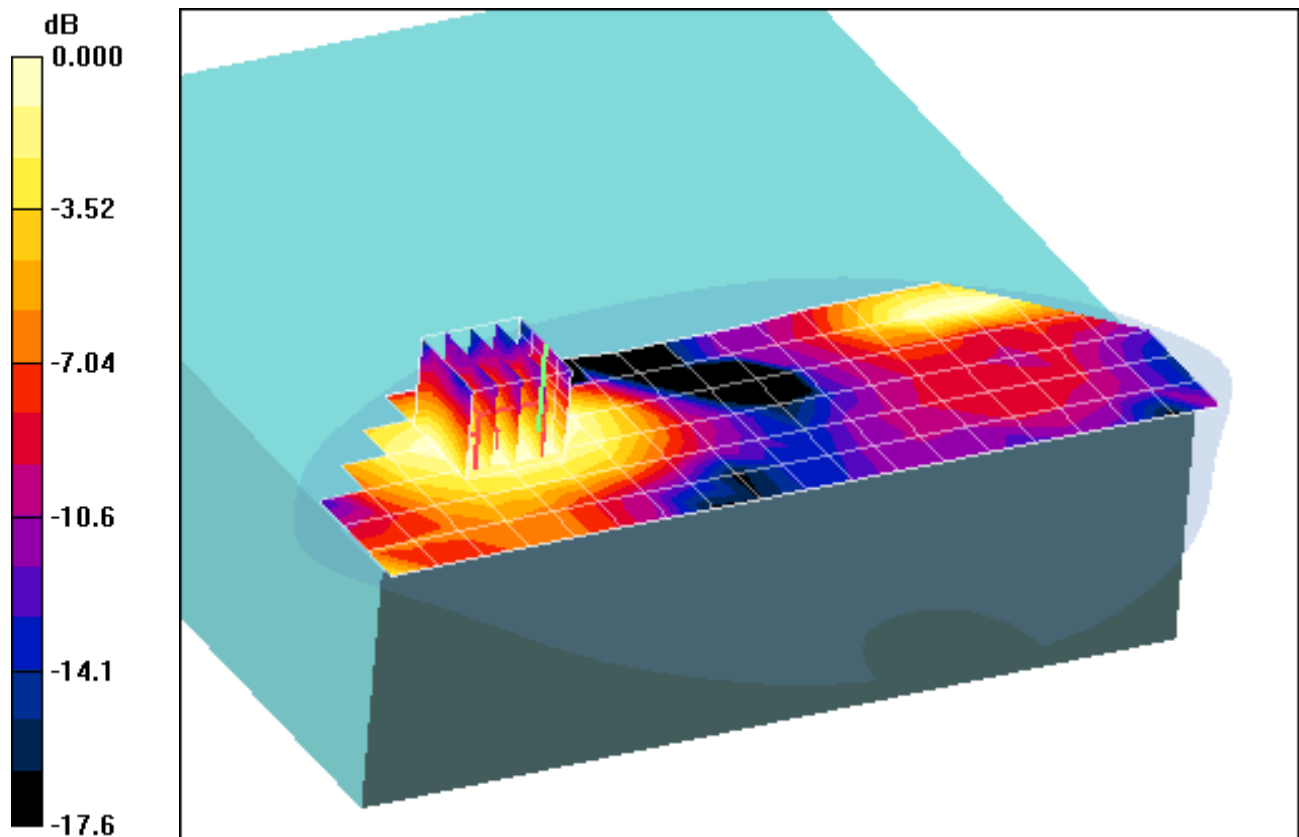
Area Scan (7x21x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 0.889 V/m

Peak SAR (extrapolated) = 0.042 W/kg

SAR(1 g) = 0.029 mW/g; SAR(10 g) = 0.019 mW/g



0 dB = 0.034mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC with WLAN and Bluetooth; Serial: 9HKSA00095

Communication System: GSM1900 GPRS; 2 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:4.15

Medium: 1900 Muscle Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 51.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-26-2009; Ambient Temp: 23.2 C Tissue Temp: 22.8 C

Probe: ES3DV2 - SN3022; ConvF(4.42, 4.42, 4.42); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: GPRS1900, Body SAR, Left Edge, Mid.ch, 2 Tx. Slots

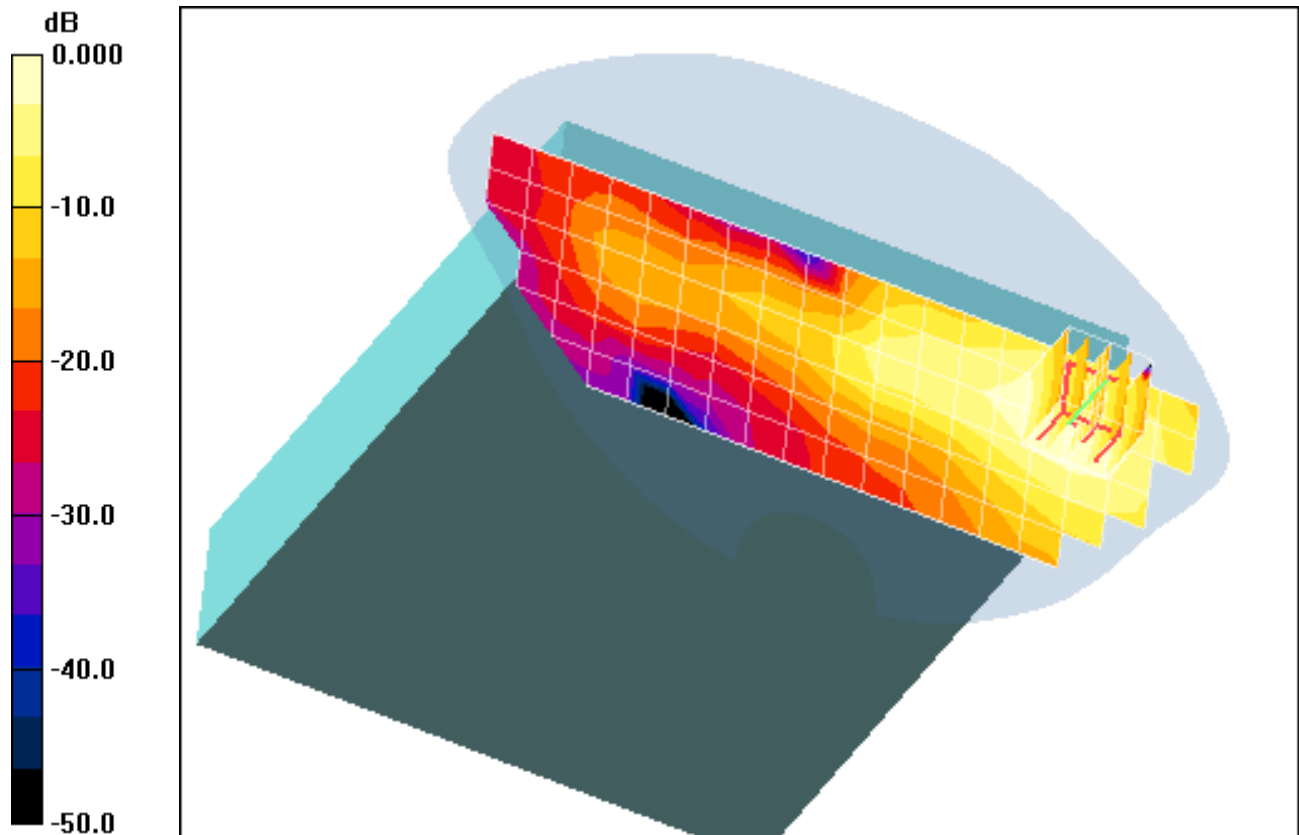
Area Scan (7x21x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 7.43 V/m

Peak SAR (extrapolated) = 0.905 W/kg

SAR(1 g) = 0.555 mW/g; SAR(10 g) = 0.323 mW/g



0 dB = 0.666mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC with WLAN and Bluetooth; Serial: 9HKS A00095

Communication System: GSM1900 GPRS; 2 Tx slots; Frequency: 1880 MHz; Duty Cycle: 1:4.15

Medium: 1900 Muscle Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.47 \text{ mho/m}$; $\epsilon_r = 51.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-05-2009; Ambient Temp: 23.6°C; Tissue Temp: 22.6 °C

Probe: ES3DV3 - SN3209; ConvF(4.55, 4.55, 4.55); Calibrated: 4/15/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 5/25/2009

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: GPRS1900, Body SAR, Laptop position, Mid.ch, 2 Tx Slots

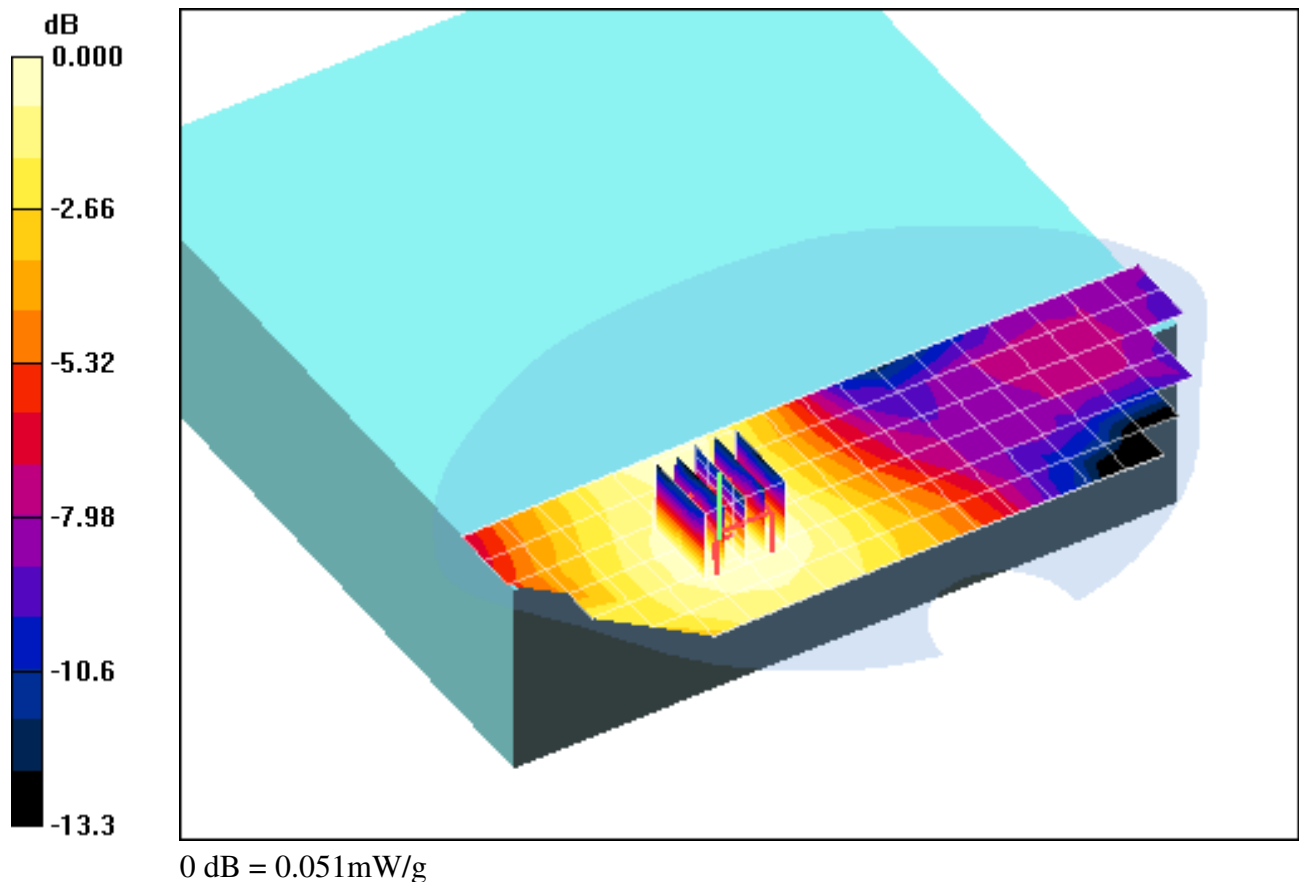
Area Scan (7x21x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 6.17 V/m

Peak SAR (extrapolated) = 0.065 W/kg

SAR(1 g) = 0.044 mW/g; SAR(10 g) = 0.029 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC with WLAN and Bluetooth; Serial: 9HKSA00095

Communication System: WCDMA1900; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: 1900 Muscle Medium parameters used (interpolated):

$f = 1852.4 \text{ MHz}$; $\sigma = 1.51 \text{ mho/m}$; $\epsilon_r = 51.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-26-2009; Ambient Temp: 23.2°C; Tissue Temp: 22.8 °C

Probe: ES3DV2 - SN3022; ConvF(4.42, 4.42, 4.42); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: WCDMA1900, Body SAR, Left Edge, Low.ch

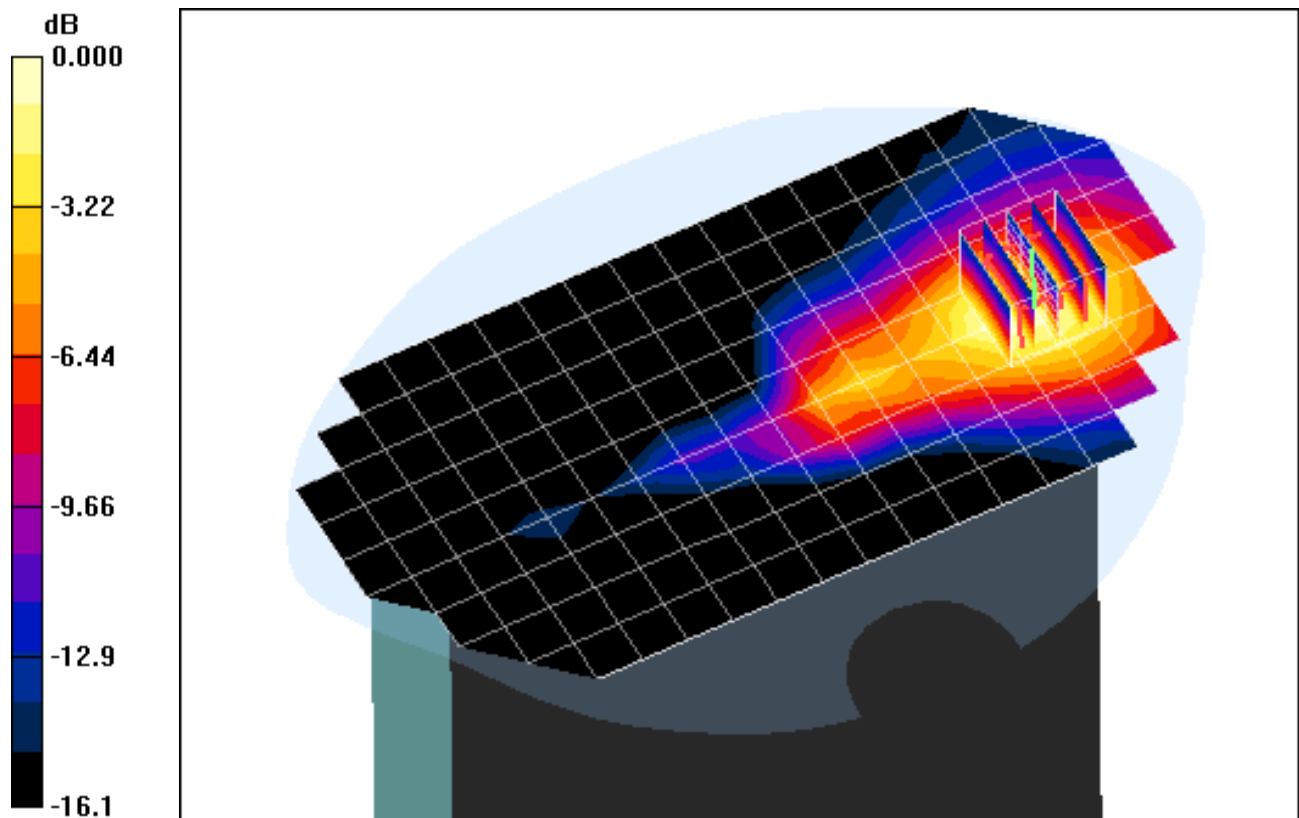
Area Scan (10x11x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.34 V/m

Peak SAR (extrapolated) = 1.58 W/kg

SAR(1 g) = 0.985 mW/g; SAR(10 g) = 0.573 mW/g



0 dB = 1.19mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC with WLAN and Bluetooth; Serial: 9HKSA00095

Communication System: WCDMA1900; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: 1900 Muscle Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.47 \text{ mho/m}$; $\epsilon_r = 51.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-05-2009; Ambient Temp: 23.6°C; Tissue Temp: 22.6 °C

Probe: ES3DV3 - SN3209; ConvF(4.55, 4.55, 4.55); Calibrated: 4/15/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 5/25/2009

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: WCDMA1900, Body SAR, Laptop position, Mid.ch

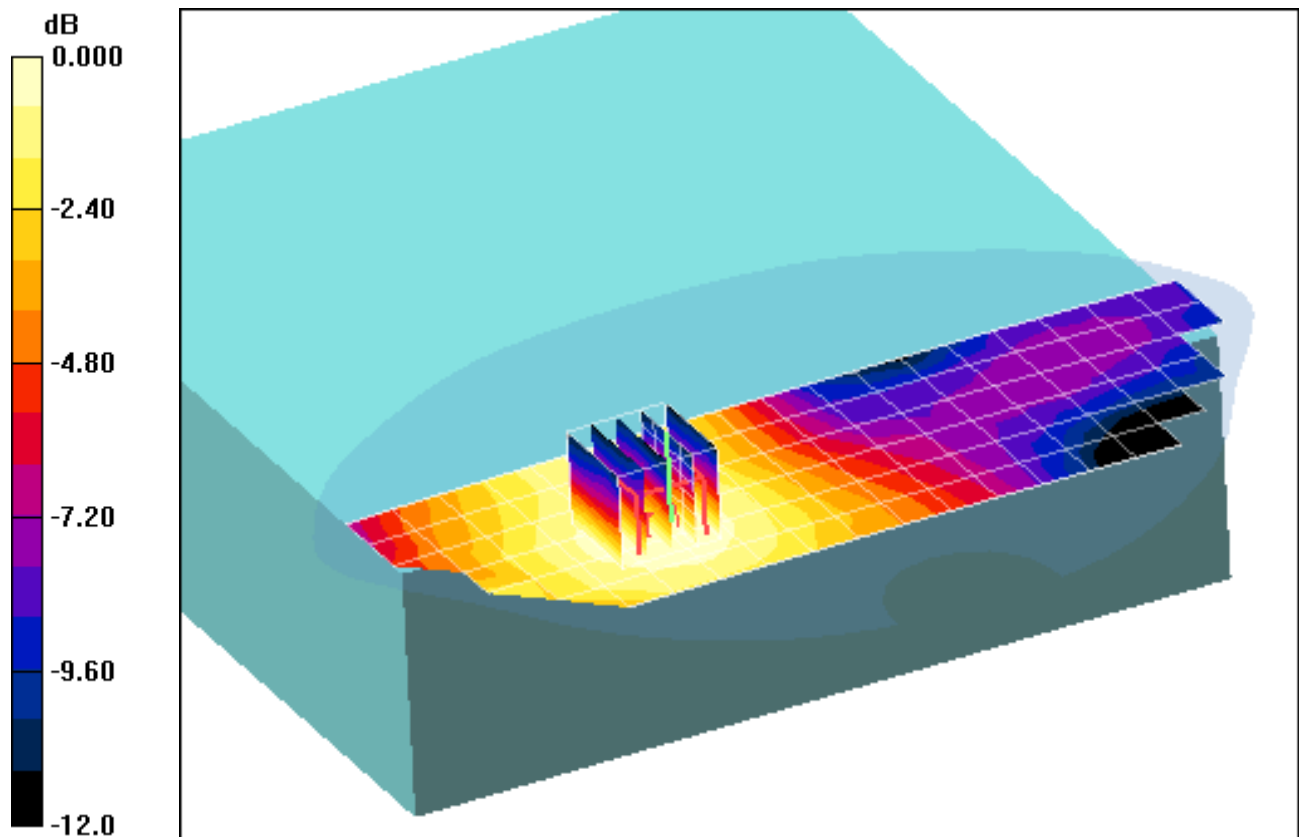
Area Scan (7x21x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.51 V/m

Peak SAR (extrapolated) = 0.122 W/kg

SAR(1 g) = 0.083 mW/g; SAR(10 g) = 0.056 mW/g



0 dB = 0.096mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC
with WLAN and Bluetooth; Serial: 9HKSA00095**

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1

Medium: 835 Muscle Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.987 \text{ mho/m}$; $\epsilon_r = 53.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-26-2009; Ambient Temp: 23.9°C; Tissue Temp: 22.0 °C

Probe: ES3DV2 - SN3022; ConvF(5.85, 5.85, 5.85); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: WCDMA850, Body SAR, Left Edge, Mid.ch

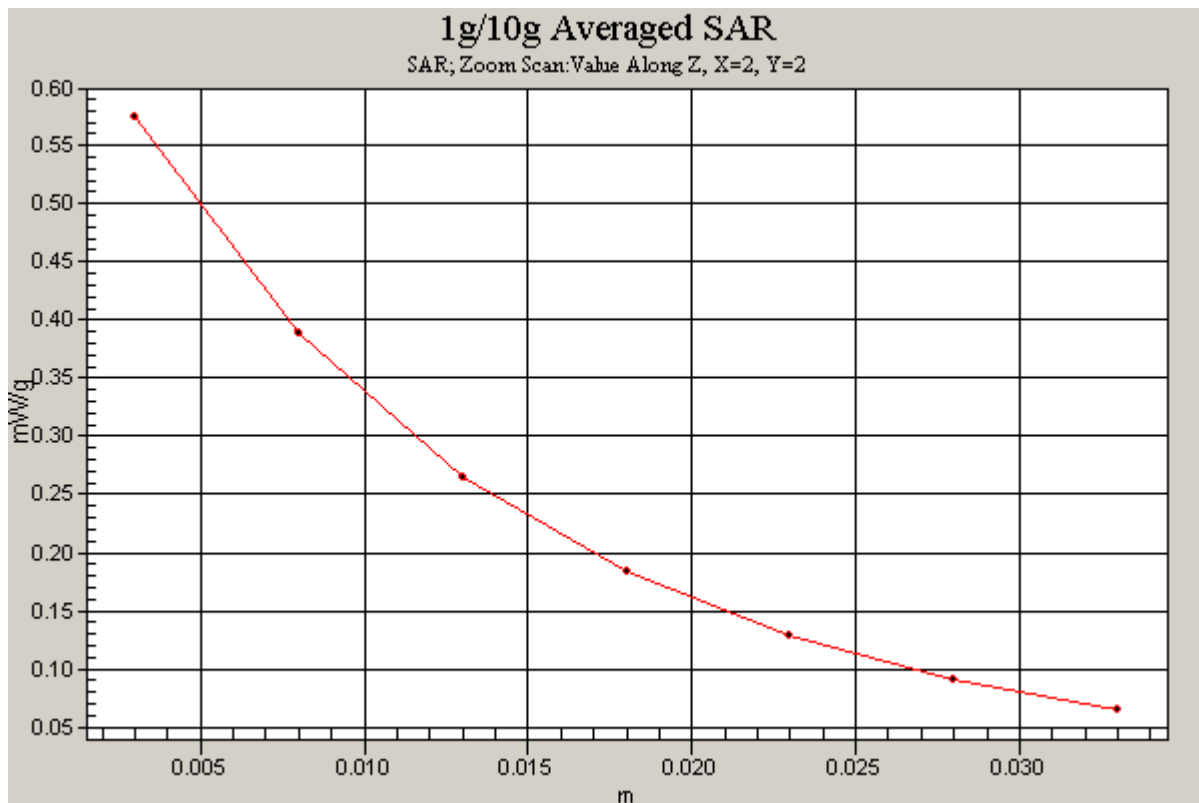
Area Scan (10x21x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 16.6 V/m

Peak SAR (extrapolated) = 0.724 W/kg

SAR(1 g) = 0.487 mW/g; SAR(10 g) = 0.317 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: CF-H1; Type: 850/1900 CDMA/GSM/WCDMA/GPRS/EDGE/HSPA/EVDO Tablet PC
with WLAN and Bluetooth; Serial: 9HKSA00095**

Communication System: WCDMA1900; Frequency: 1852.4 MHz; Duty Cycle: 1:1

Medium: 1900 Muscle Medium parameters used (interpolated):

$f = 1852.4 \text{ MHz}$; $\sigma = 1.51 \text{ mho/m}$; $\epsilon_r = 51.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 10-26-2009; Ambient Temp: 23.2°C; Tissue Temp: 22.8 °C

Probe: ES3DV2 - SN3022; ConvF(4.42, 4.42, 4.42); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: WCDMA1900, Body SAR, Left Edge, Low.ch

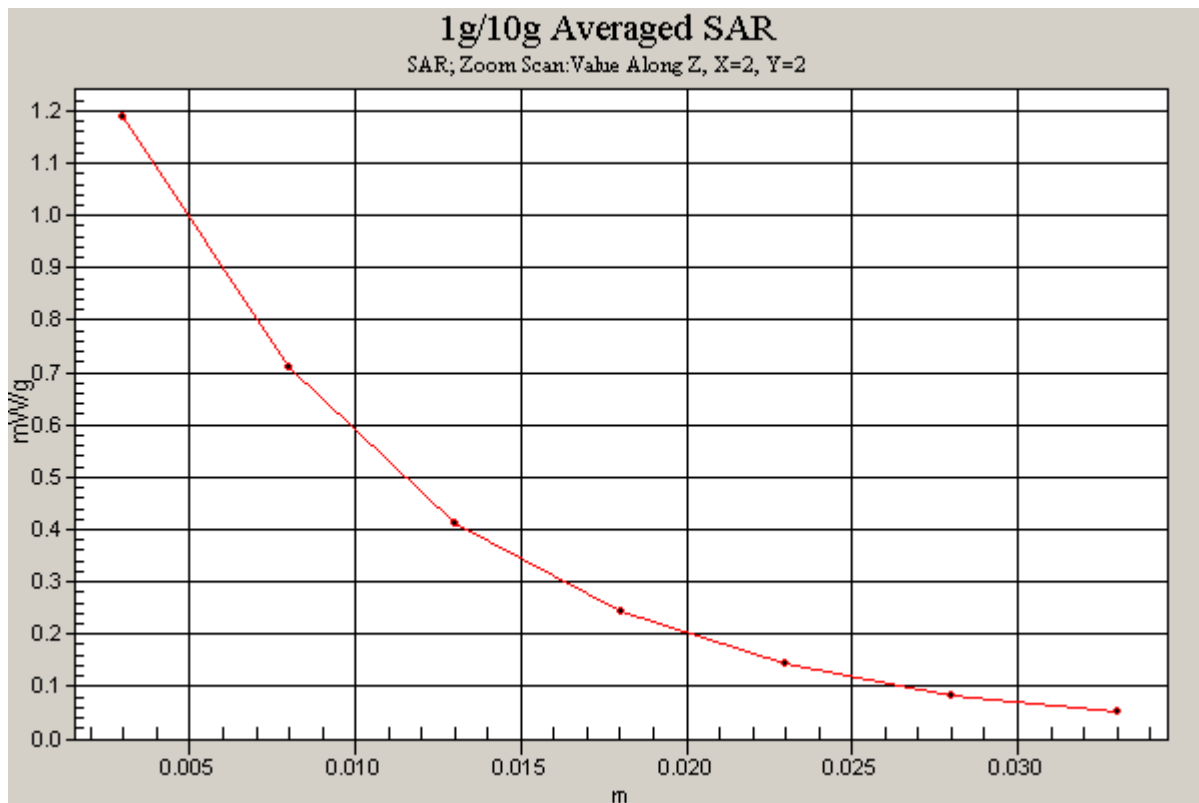
Area Scan (10x11x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.34 V/m

Peak SAR (extrapolated) = 1.58 W/kg

SAR(1 g) = 0.985 mW/g; SAR(10 g) = 0.573 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11b; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 Muscle ($\sigma = 1.89$ mho/m, $\epsilon_r = 51.29$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-14-2009; Ambient Temp: 22.5°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(6.01, 6.01, 6.01); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11b, Tablet Right side position, Mid.ch, 1Mbps, Main Ant

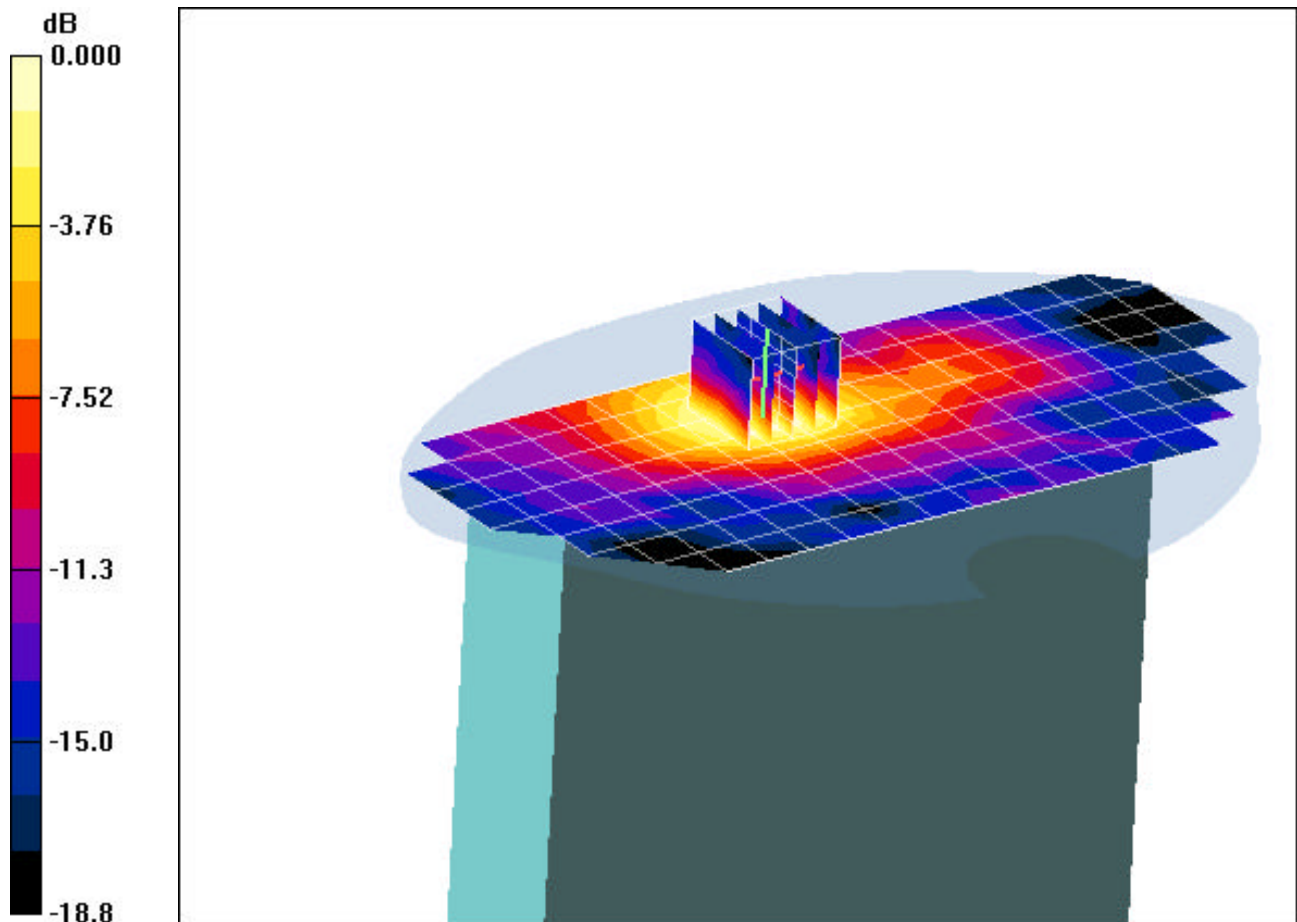
Area Scan (9x21x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.60 V/m;

Peak SAR (extrapolated) = 0.294 W/kg

SAR(1 g) = 0.136 mW/g; SAR(10 g) = 0.071 mW/g



0 dB = 0.169mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11g; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 Muscle ($\sigma = 1.89$ mho/m, $\epsilon_r = 51.29$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-14-2009; Ambient Temp: 22.5°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(6.01, 6.01, 6.01); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11g, Tablet Right side position, Mid.ch, 6Mbps, Main Ant

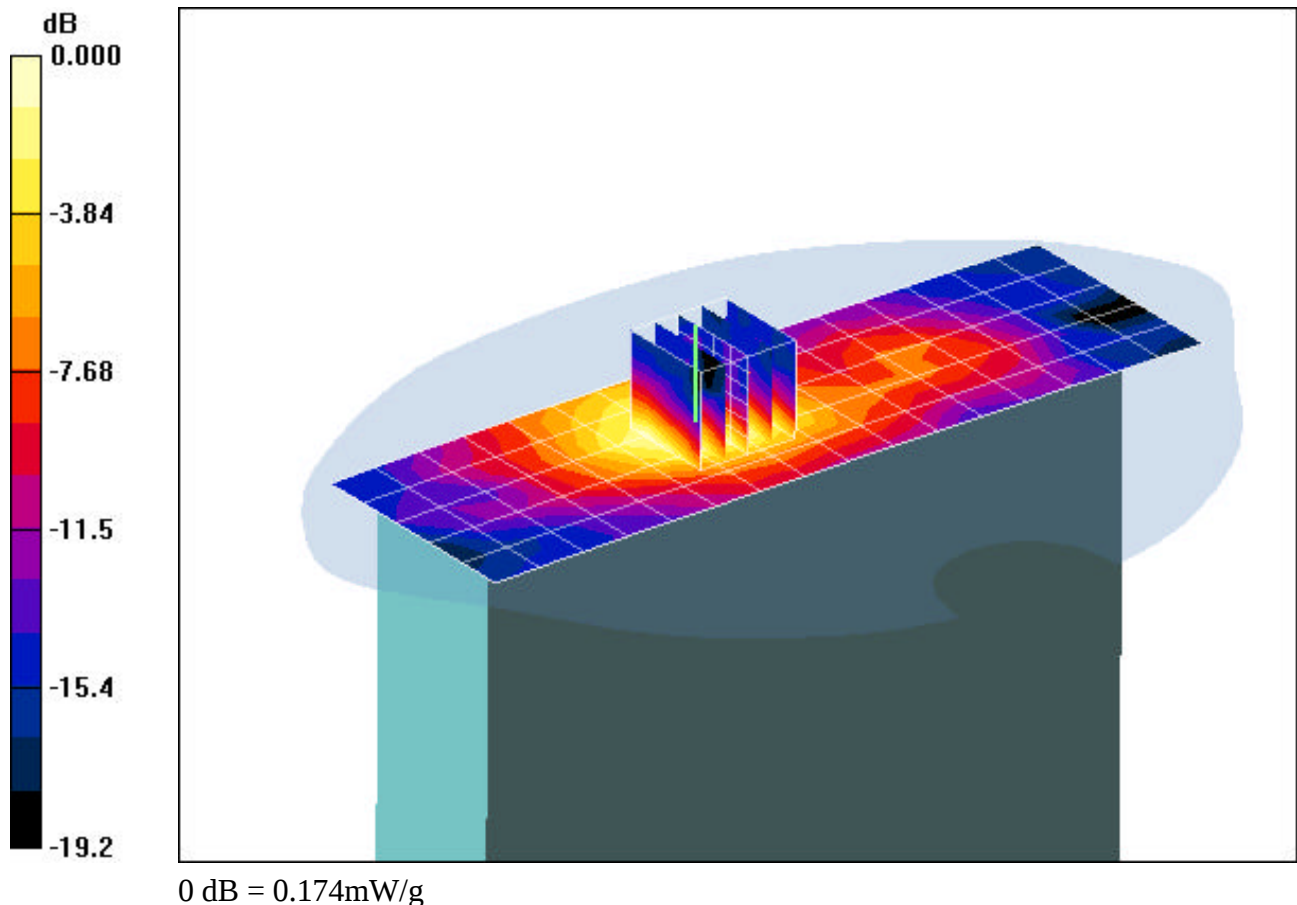
Area Scan (6x17x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.58 V/m;

Peak SAR (extrapolated) = 0.309 W/kg

SAR(1 g) = 0.139 mW/g; SAR(10 g) = 0.073 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11n; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 Muscle ($\sigma = 1.89$ mho/m, $\epsilon_r = 51.29$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-14-2009; Ambient Temp: 22.5°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(6.01, 6.01, 6.01); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11n, Tablet Right side position, Mid.ch, 13.5Mbps, Main Ant

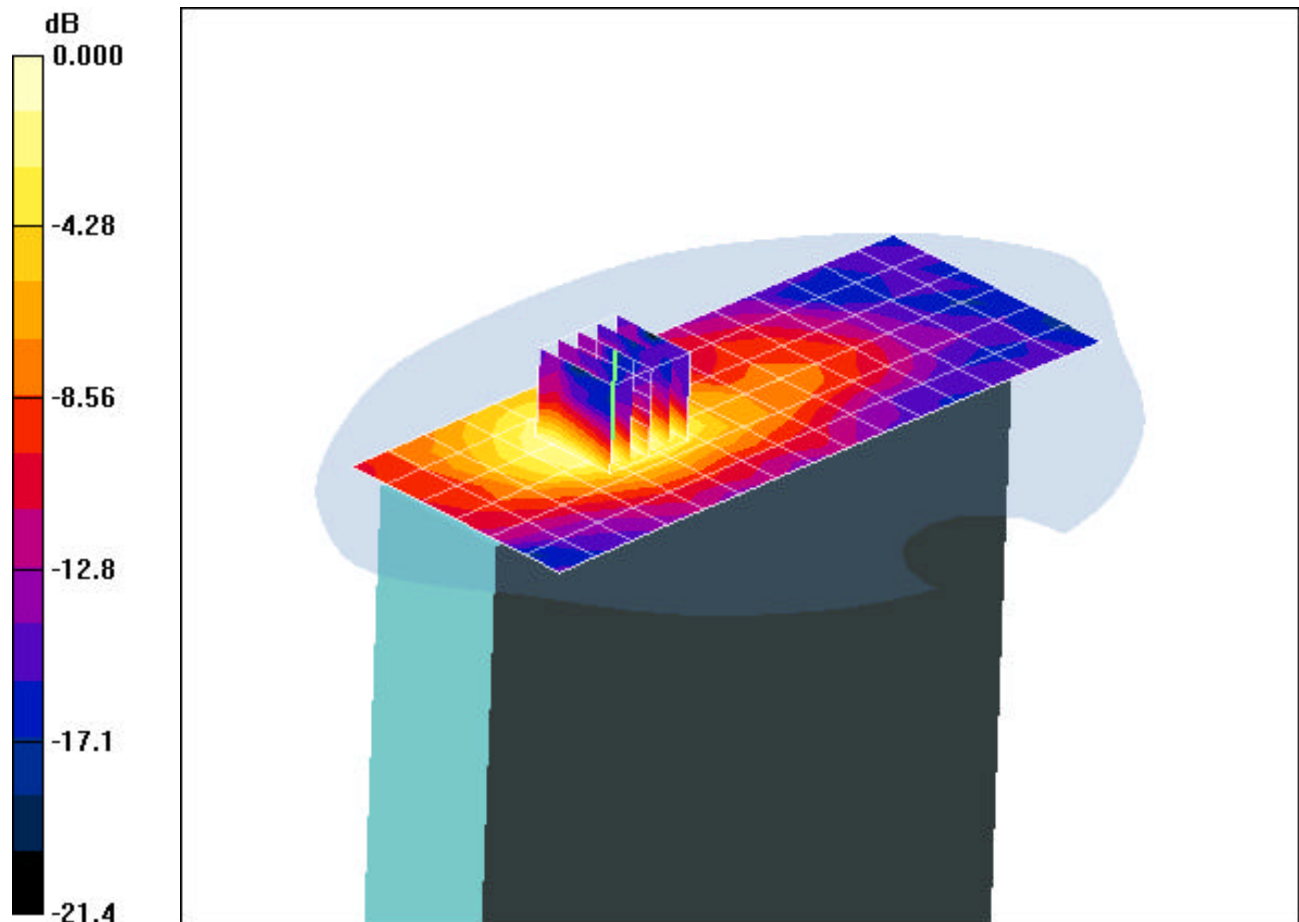
Area Scan (7x16x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.11 V/m;

Peak SAR (extrapolated) = 0.289 W/kg

SAR(1 g) = 0.126 mW/g; SAR(10 g) = 0.065 mW/g



0 dB = 0.156mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11a 5.3GHz Band; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: 5300 Muscle ($\sigma = 5.66$ mho/m, $\epsilon_r = 47.31$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.68, 3.68, 3.68); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11a, 5.2GHz, Tablet Right side position, 6Mbps, Ch.40, Main Ant

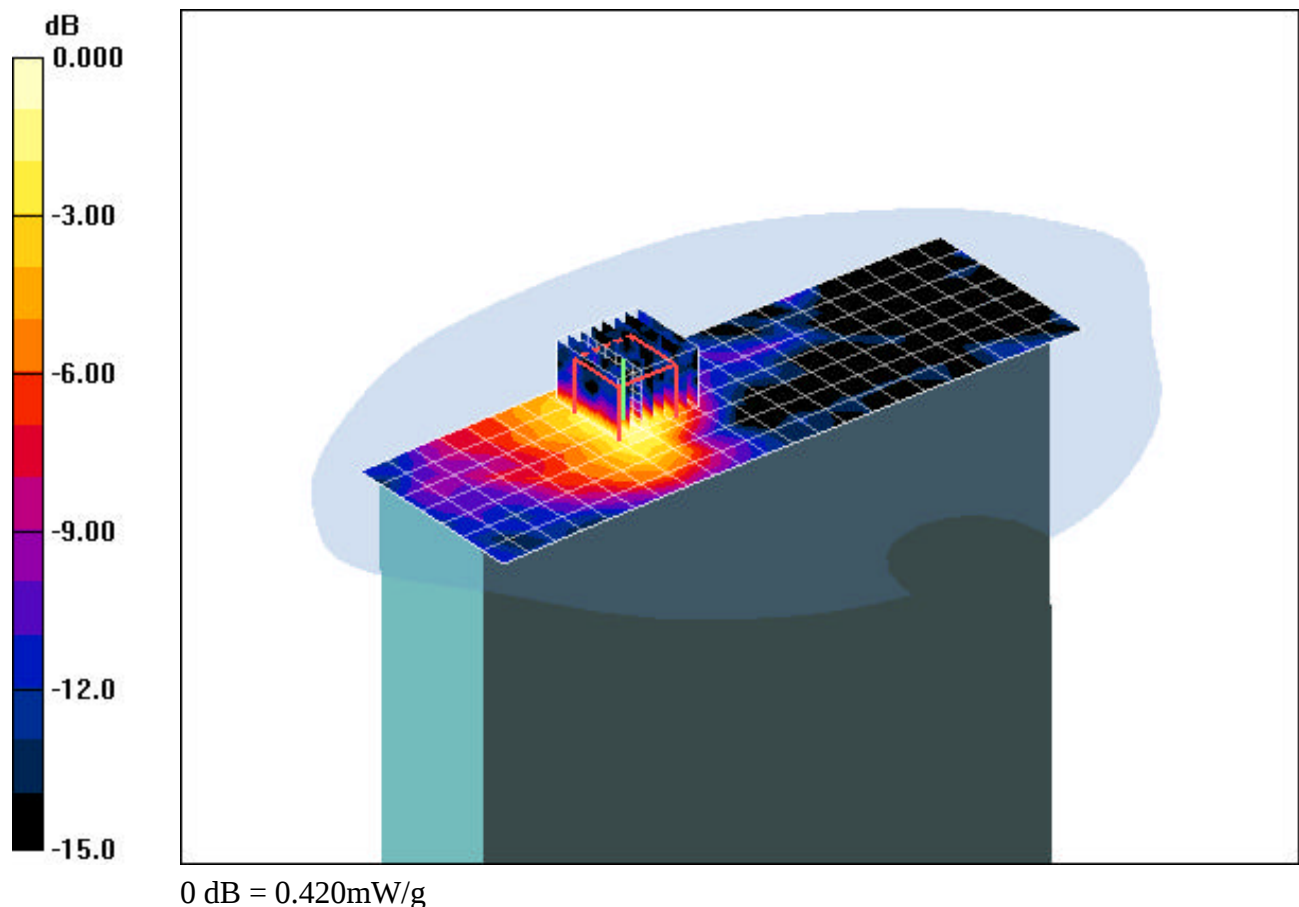
Area Scan (8x23x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 8.20 V/m;

Peak SAR (extrapolated) = 0.973 W/kg

SAR(1 g) = 0.293 mW/g; SAR(10 g) = 0.135 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11n; Frequency: 5190 MHz; Duty Cycle: 1:1

Medium: 5300 Muscle ($\sigma = 5.66$ mho/m, $\epsilon_r = 47.31$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.68, 3.68, 3.68); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11n, 5.2GHz, Tablet Right side position, Ch. 38, Main Ant

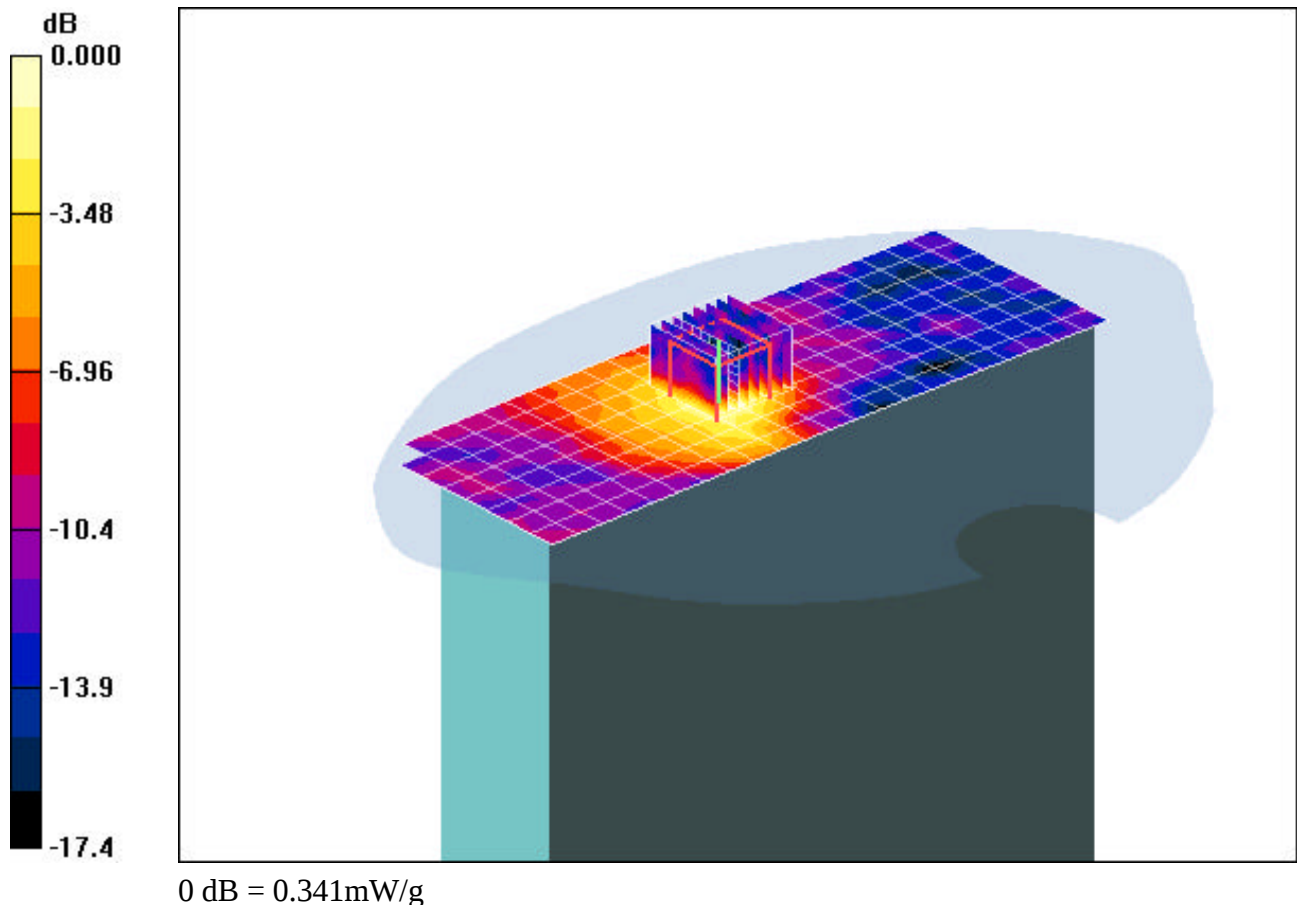
Area Scan (9x23x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 7.94 V/m;

Peak SAR (extrapolated) = 0.916 W/kg

SAR(1 g) = 0.253 mW/g; SAR(10 g) = 0.111 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11a 5.3GHz Band; Frequency: 5260 MHz; Duty Cycle: 1:1

Medium: 5300 Muscle ($\sigma = 5.66$ mho/m, $\epsilon_r = 47.31$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.68, 3.68, 3.68); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11a, 5.3GHz, Tablet Right side position, 6Mbps, Ch.40, Main Ant

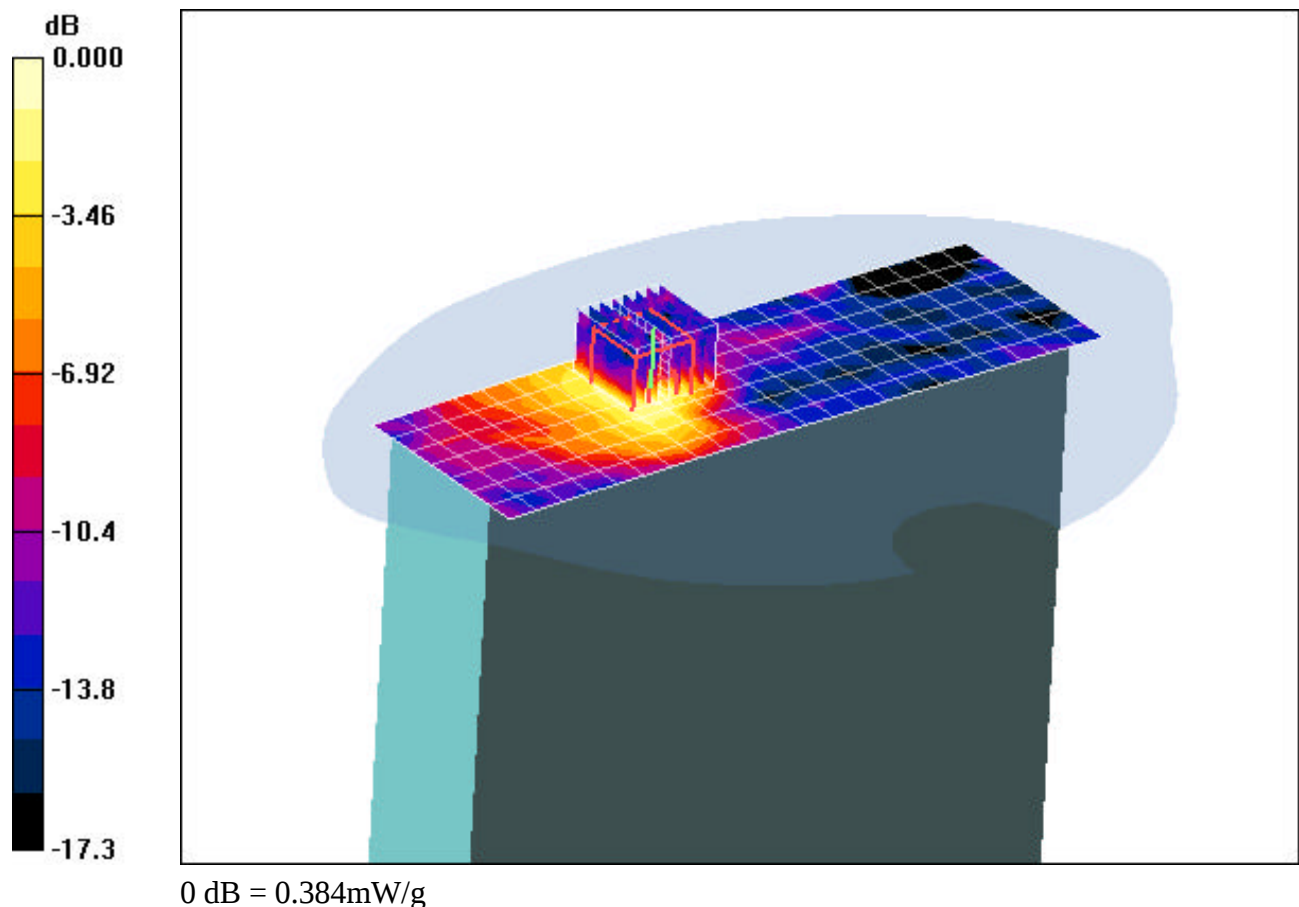
Area Scan (8x23x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 7.92 V/m;

Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.286 mW/g; SAR(10 g) = 0.127 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11n; Frequency: 5270 MHz; Duty Cycle: 1:1

Medium: 5300 Muscle ($\sigma = 5.66$ mho/m, $\epsilon_r = 47.31$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.68, 3.68, 3.68); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11n, 5.3GHz, Tablet Right side position, Ch. 54, Main Ant

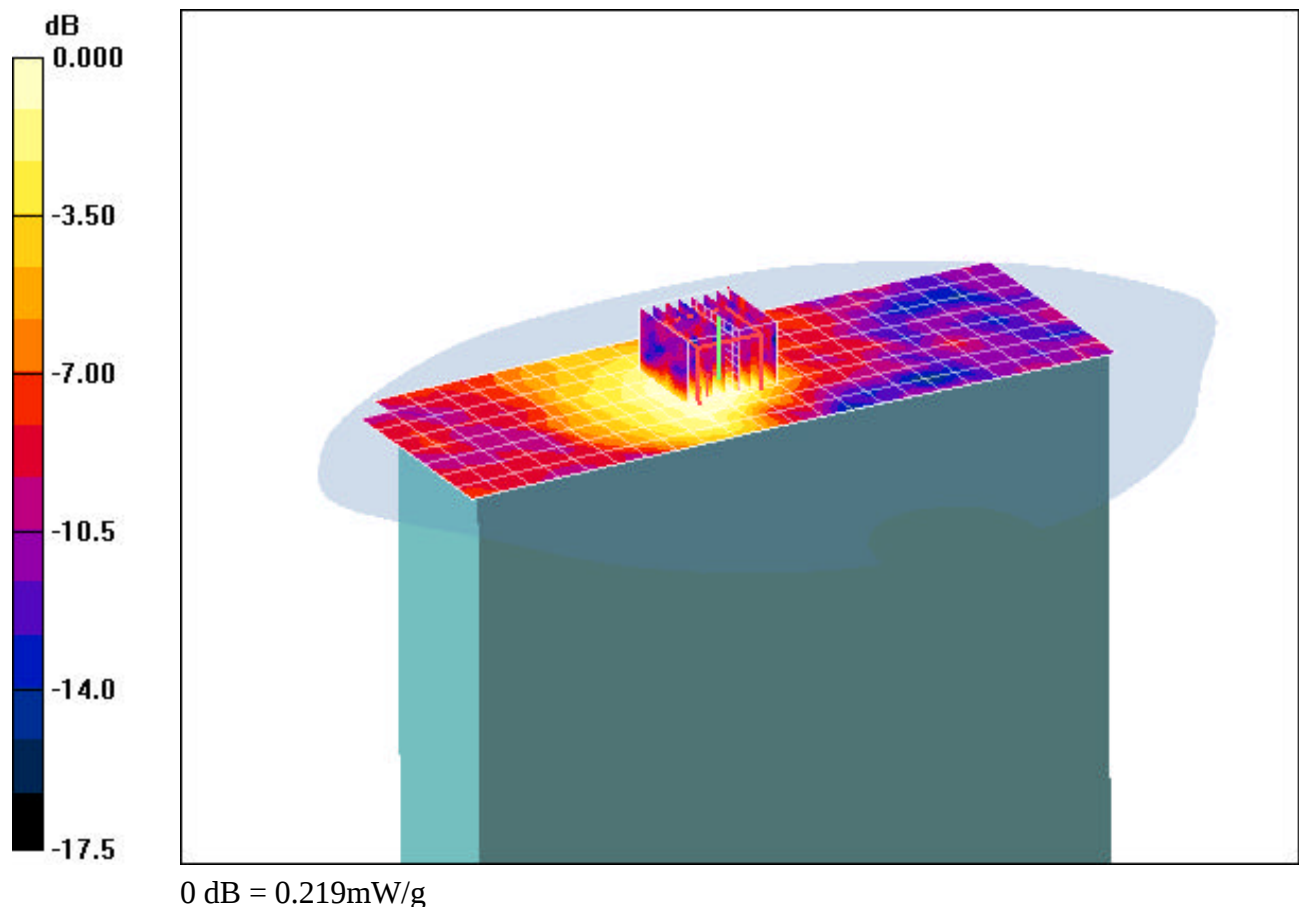
Area Scan (9x23x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 6.15 V/m;

Peak SAR (extrapolated) = 0.747 W/kg

SAR(1 g) = 0.170 mW/g; SAR(10 g) = 0.081 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11a 5.5GHz Band; Frequency: 5580 MHz; Duty Cycle: 1:1

Medium: 5500 Muscle ($\sigma = 5.68$ mho/m, $\epsilon_r = 46.77$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.38, 3.38, 3.38); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11a, 5.5GHz, Tablet Right side position, Ch.116, Main Ant

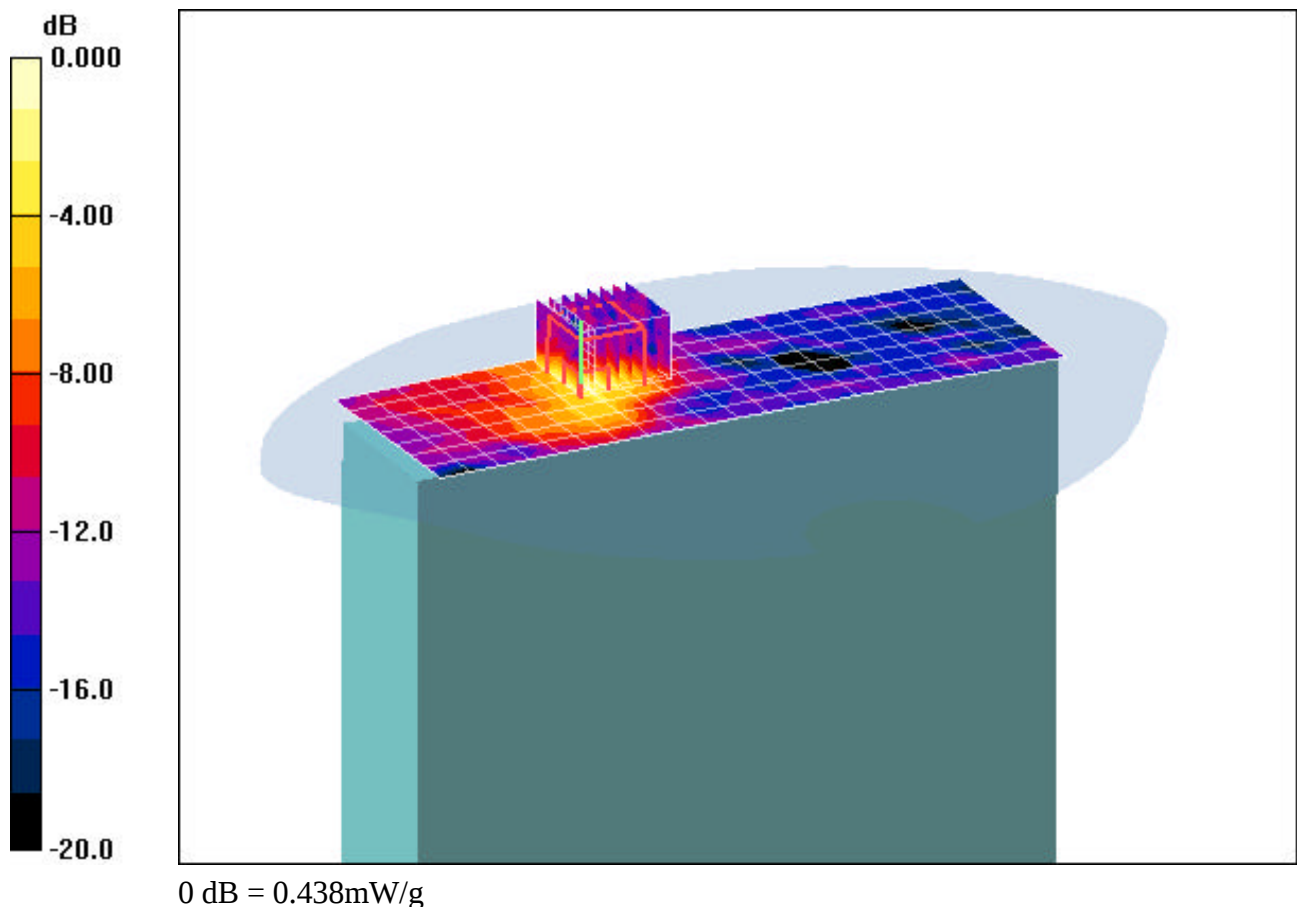
Area Scan (8x22x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 8.45 V/m

Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 0.331 mW/g; SAR(10 g) = 0.134 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11a 5.5GHz Band; Frequency: 5590 MHz; Duty Cycle: 1:1

Medium: 5500 Muscle ($\sigma = 5.68$ mho/m, $\epsilon_r = 46.77$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.38, 3.38, 3.38); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11n, 5.5GHz, Tablet Right side position, Ch.118., Main Ant

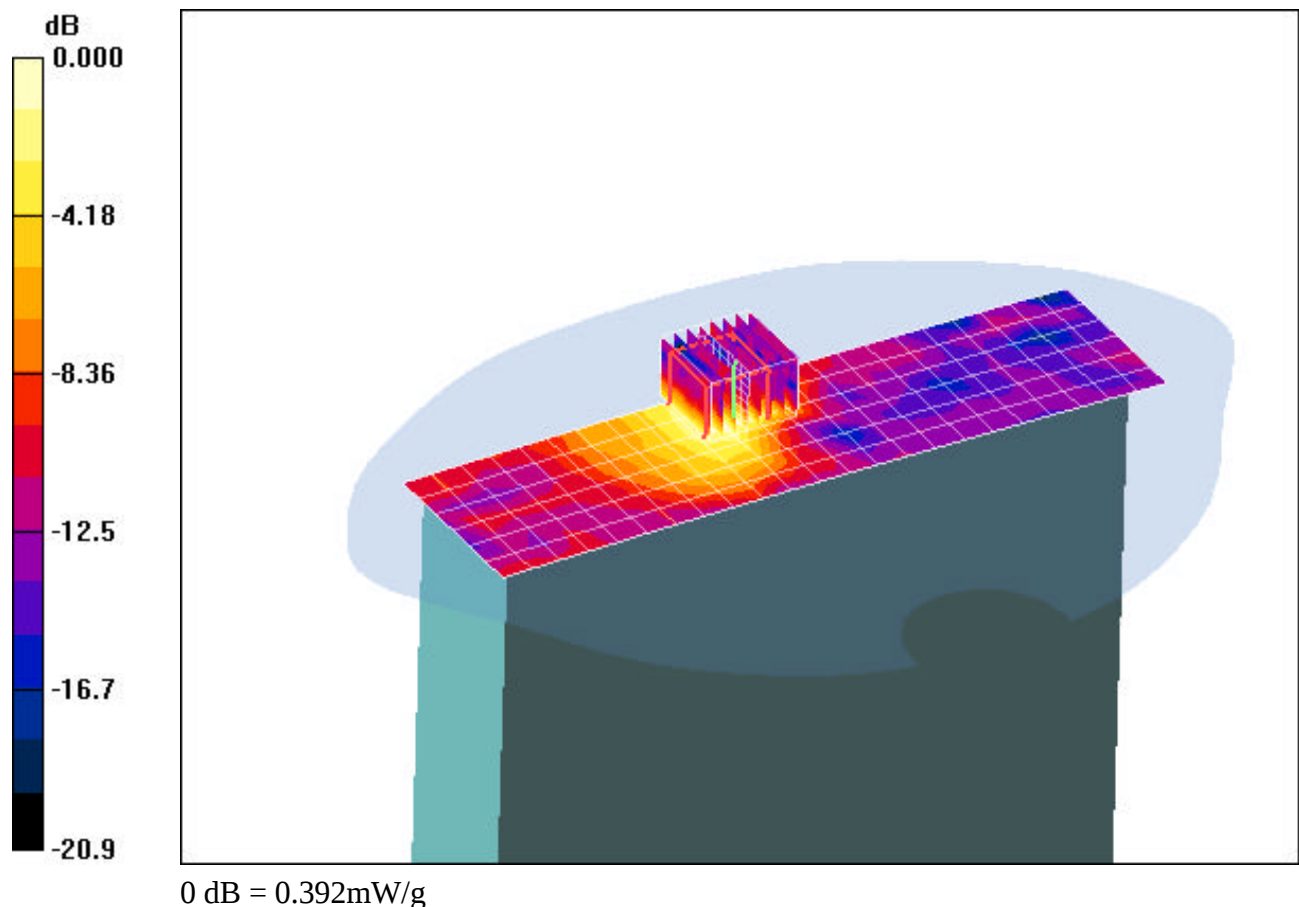
Area Scan (7x24x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 8.50 V/m;

Peak SAR (extrapolated) = 0.943 W/kg

SAR(1 g) = 0.286 mW/g; SAR(10 g) = 0.126 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11a 5.8GHz Band; Frequency: 5745 MHz; Duty Cycle: 1:1

Medium: 5800 Muscle ($\sigma = 6.17$ mho/m, $\epsilon_r = 48.49$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.68, 3.68, 3.68); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11a, 5.8GHz, Tablet Right side position, Ch. 149, Main Ant

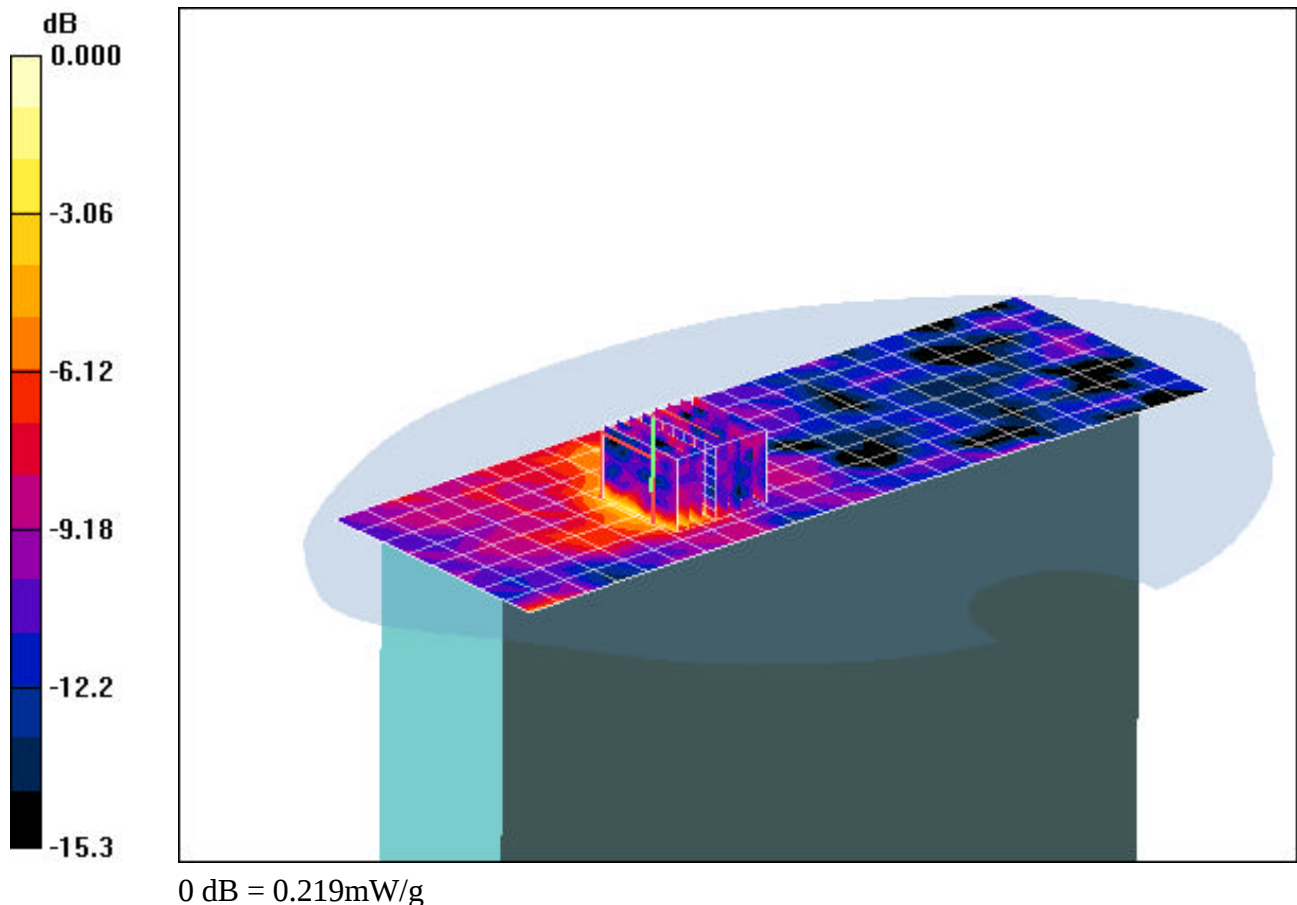
Area Scan (9x24x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 4.65 V/m;

Peak SAR (extrapolated) = 0.594 W/kg

SAR(1 g) = 0.152 mW/g; SAR(10 g) = 0.065 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11n; Frequency: 5755 MHz; Duty Cycle: 1:1

Medium: 5800 Muscle ($\sigma = 6.17$ mho/m, $\epsilon_r = 48.49$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.68, 3.68, 3.68); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11n, 5.8GHz, Tablet Right side position, Ch. 151, Main Ant

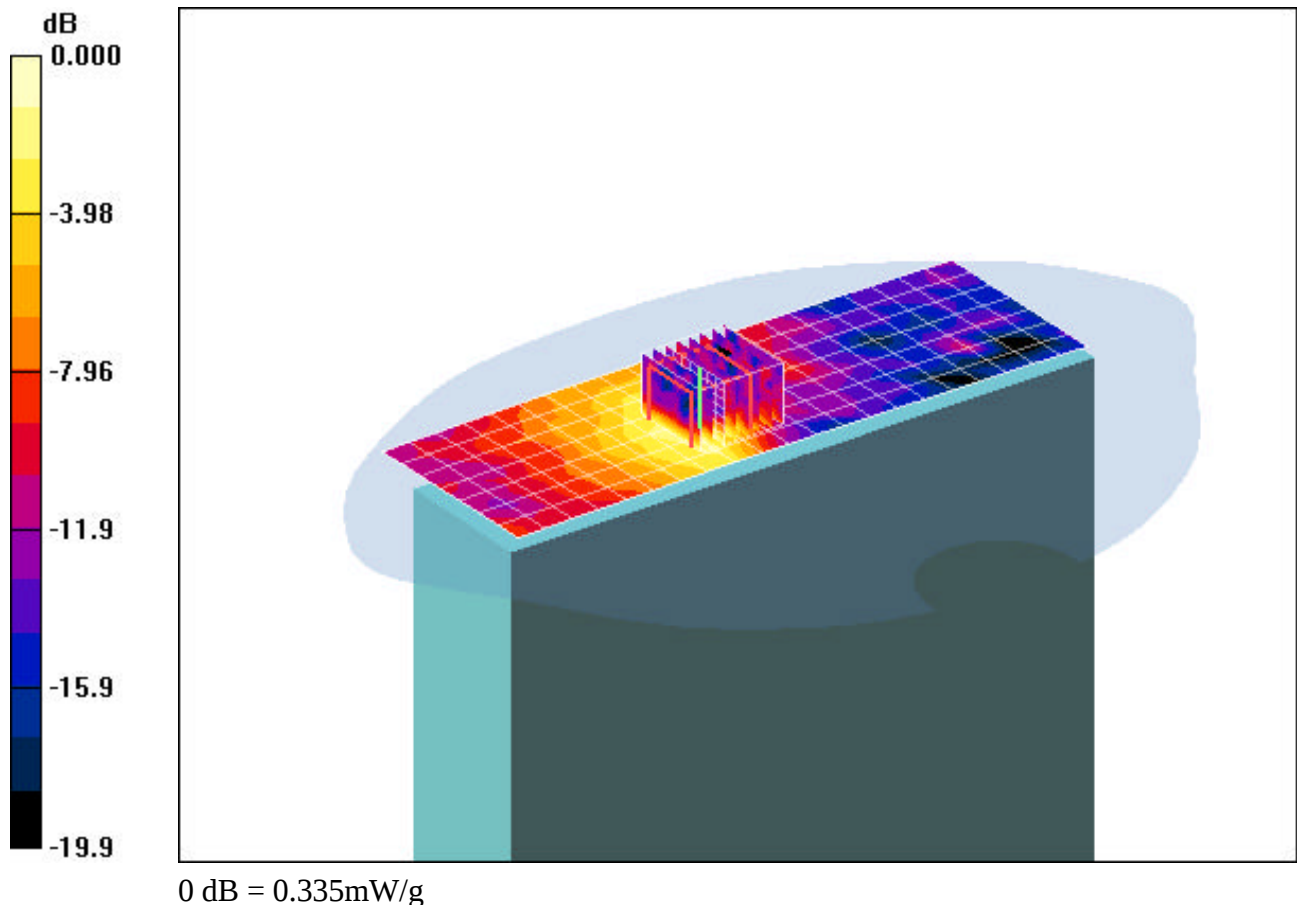
Area Scan (8x22x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 7.38 V/m;

Peak SAR (extrapolated) = 1.16 W/kg

SAR(1 g) = 0.266 mW/g; SAR(10 g) = 0.113 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11g; Frequency: 2437 MHz; Duty Cycle: 1:1

Medium: 2450 Muscle ($\sigma = 1.89$ mho/m, $\epsilon_r = 51.29$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-14-2009; Ambient Temp: 22.5°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(6.01, 6.01, 6.01); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11g, Tablet Right side position, Mid.ch, 6Mbps, Main Ant

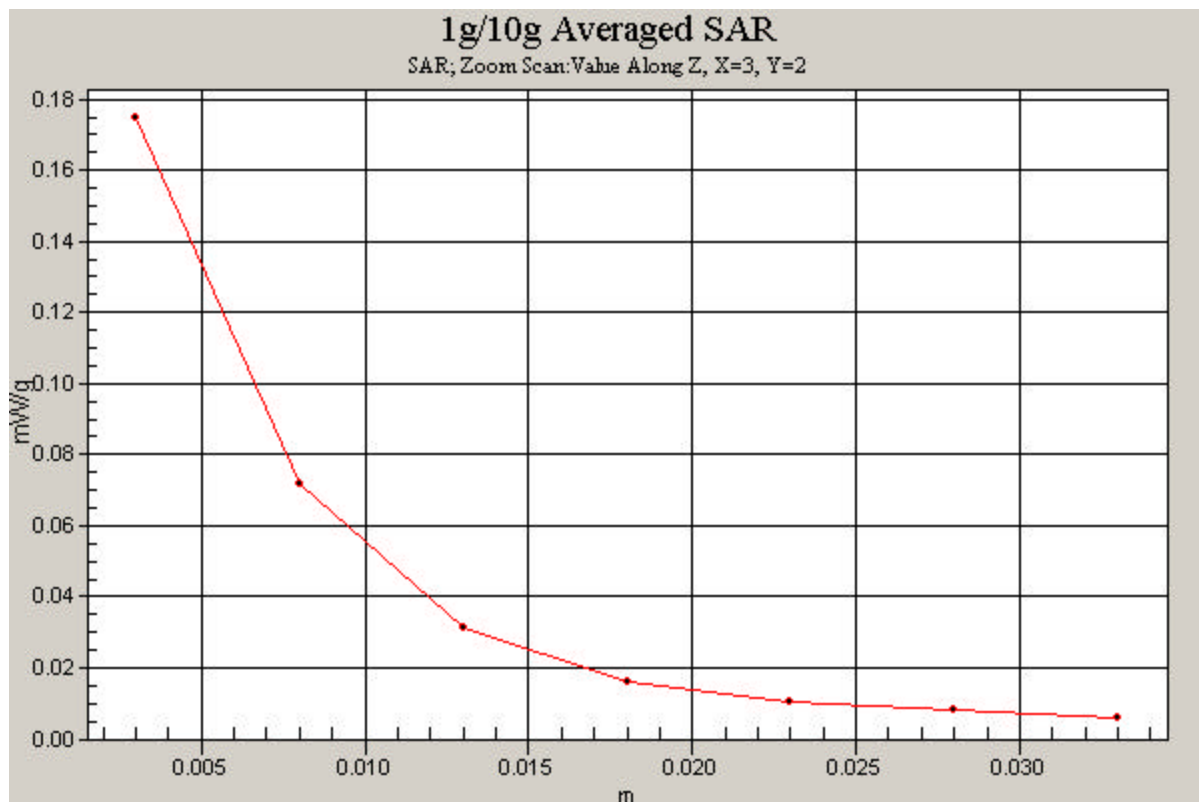
Area Scan (6x17x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 9.58 V/m;

Peak SAR (extrapolated) = 0.309 W/kg

SAR(1 g) = 0.139 mW/g; SAR(10 g) = 0.073 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11a 5.3GHz Band; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: 5300 Muscle ($\sigma = 5.66$ mho/m, $\epsilon_r = 47.31$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.68, 3.68, 3.68)ConvF(3.42, 3.42, 3.42); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11a, 5.2GHz, Tablet Right side position, 6Mbps, Ch.40, Main Ant

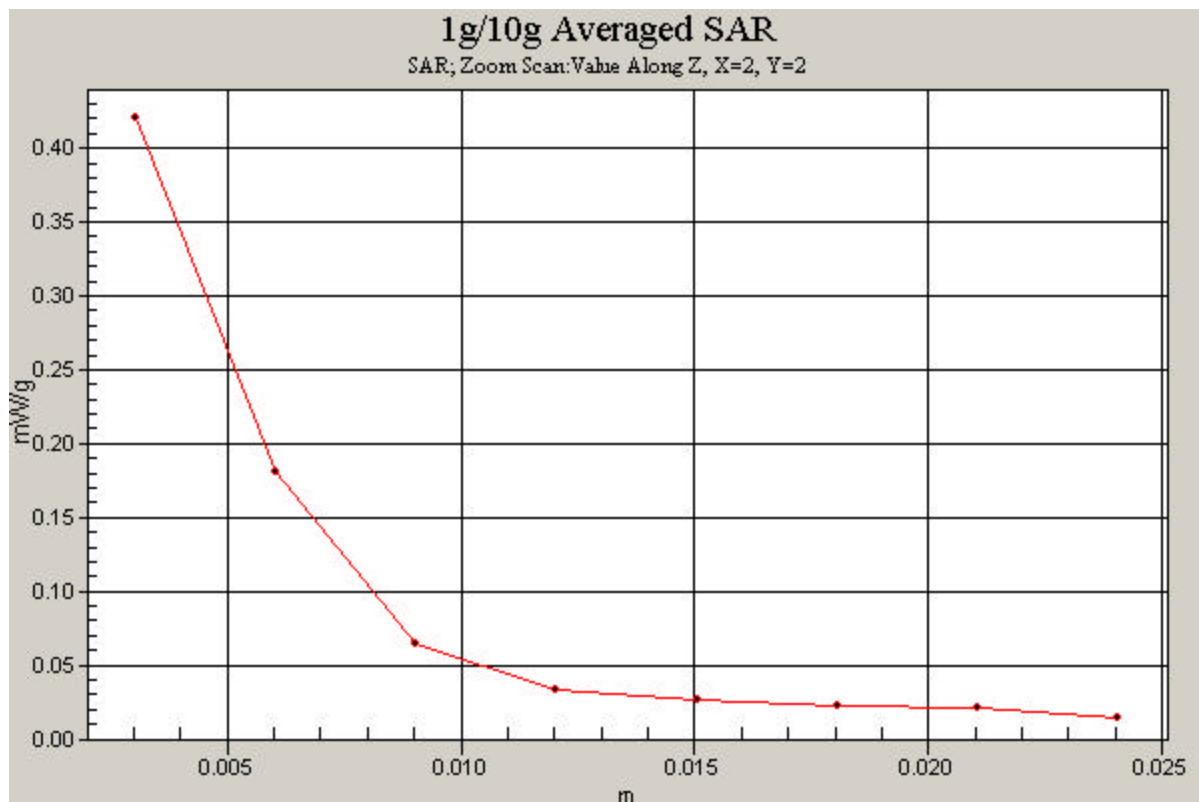
Area Scan (8x23x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 8.20 V/m;

Peak SAR (extrapolated) = 0.973 W/kg

SAR(1 g) = 0.293 mW/g; SAR(10 g) = 0.135 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11a 5.3GHz Band; Frequency: 5260 MHz; Duty Cycle: 1:1

Medium: 5300 Muscle ($\sigma = 5.66$ mho/m, $\epsilon_r = 47.31$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.68, 3.68, 3.68)ConvF(3.42, 3.42, 3.42); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11a, 5.3GHz, Tablet Right side position, 6Mbps, Ch.40, Main Ant

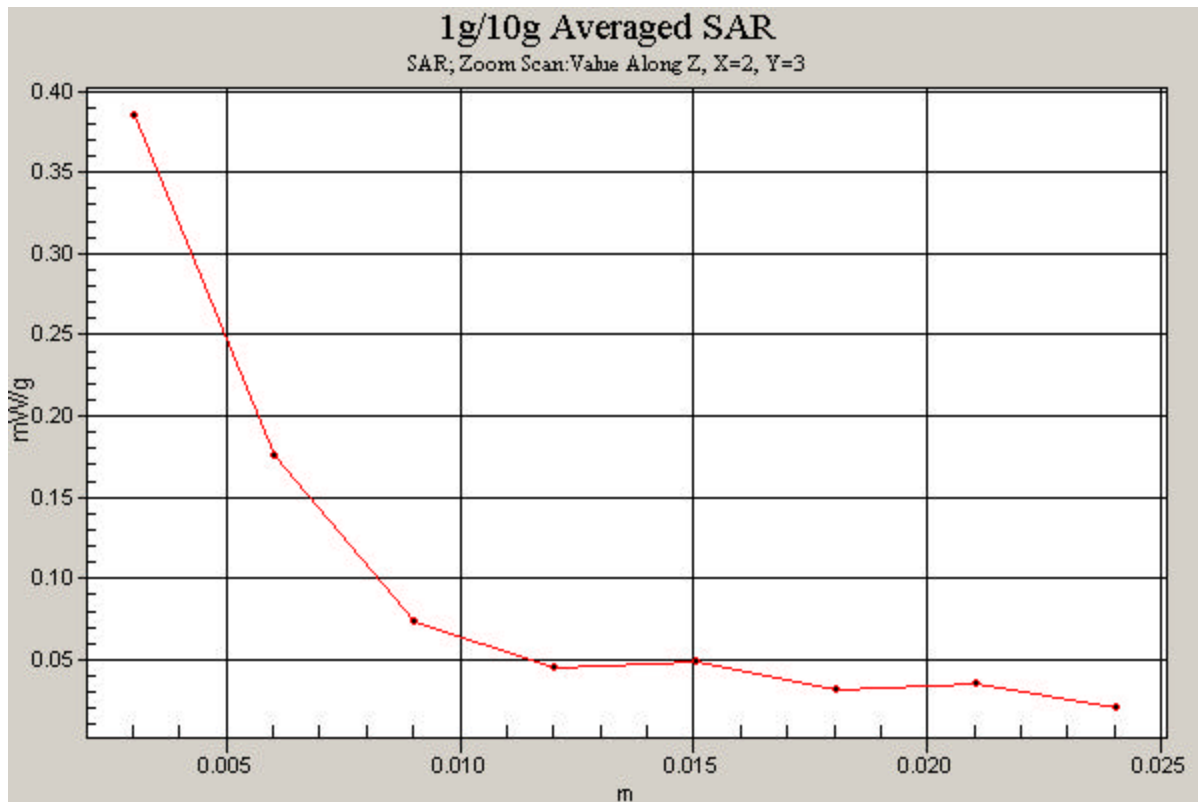
Area Scan (8x23x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 7.92 V/m;

Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.286 mW/g; SAR(10 g) = 0.127 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11a 5.5GHz Band; Frequency: 5580 MHz; Duty Cycle: 1:1

Medium: 5500 Muscle ($\sigma = 5.68$ mho/m, $\epsilon_r = 46.77$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.38, 3.38, 3.38); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11a, 5.5GHz, Tablet Right side position, Ch.116, Main Ant

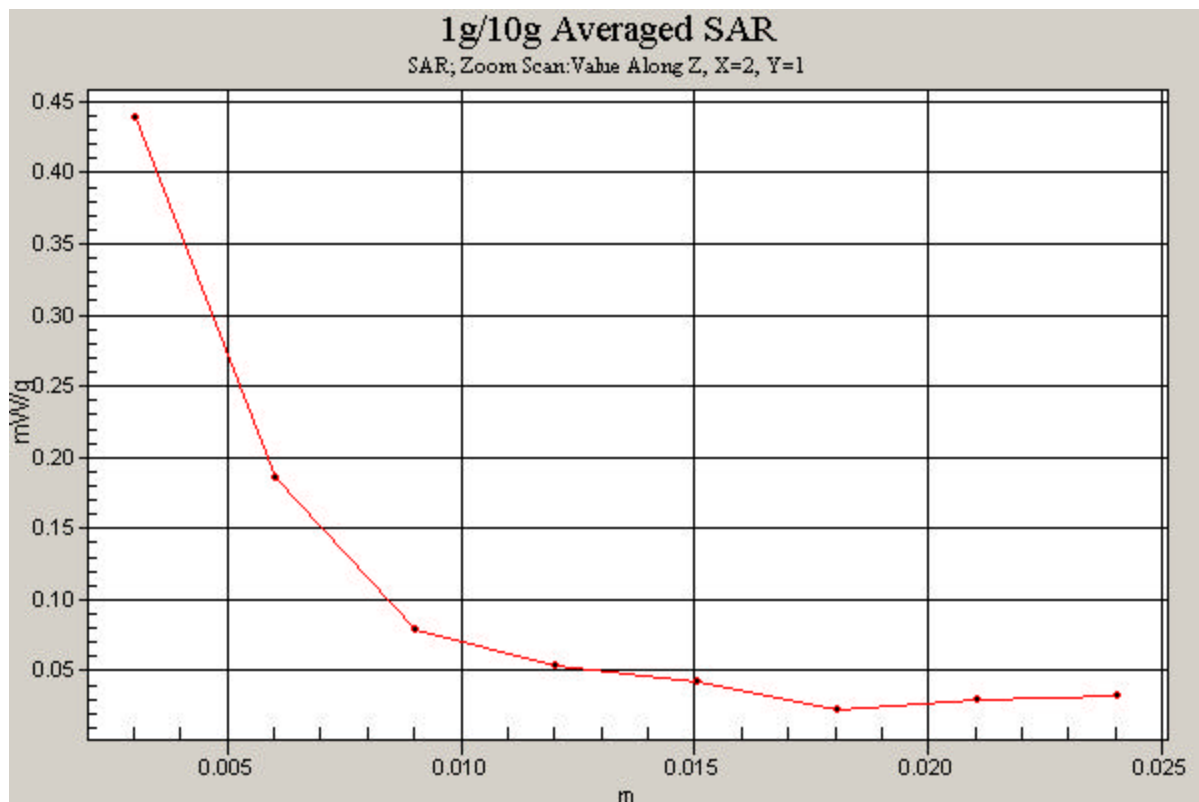
Area Scan (8x22x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 8.45 V/m;

Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 0.331 mW/g; SAR(10 g) = 0.134 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-H1mk1; Type: Tablet PC with WLAN, Bluetooth and EVDO/GPRS/HSPA; Serial: 8HKSA00136

Communication System: IEEE 802.11n; Frequency: 5755 MHz; Duty Cycle: 1:1

Medium: 5800 Muscle ($\sigma = 6.17$ mho/m, $\epsilon_r = 48.49$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Tablet Position; Space: 0.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.68, 3.68, 3.68); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

Mode: 802.11n, 5.8GHz, Tablet Right side position, Ch. 151, Main Ant

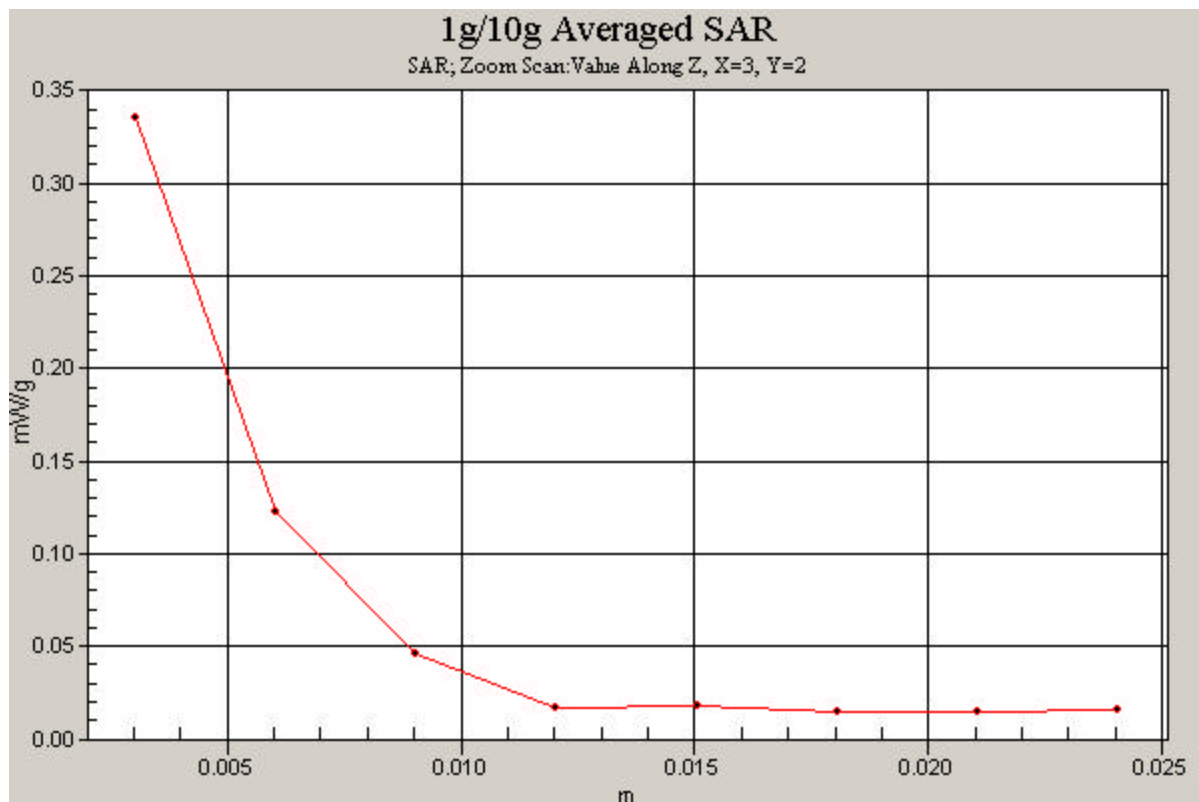
Area Scan (8x22x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Reference Value = 7.38 V/m;

Peak SAR (extrapolated) = 1.16 W/kg

SAR(1 g) = 0.266 mW/g; SAR(10 g) = 0.113 mW/g



APPENDIX B: DIPOLE VALIDATION

PCTEST ENGINEERING LABORATORY, INC.

DUT: SAR Dipole 1900 MHz; Type: D1900V2; Serial: 5d080

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Muscle Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.55 \text{ mho/m}$; $\epsilon_r = 51$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-05-2009; Ambient Temp: 23.6°C; Tissue Temp: 22.6 °C

Probe: ES3DV3 - SN3209; ConvF(4.55, 4.55, 4.55); Calibrated: 4/15/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 5/25/2009

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

1900MHz Dipole Validation

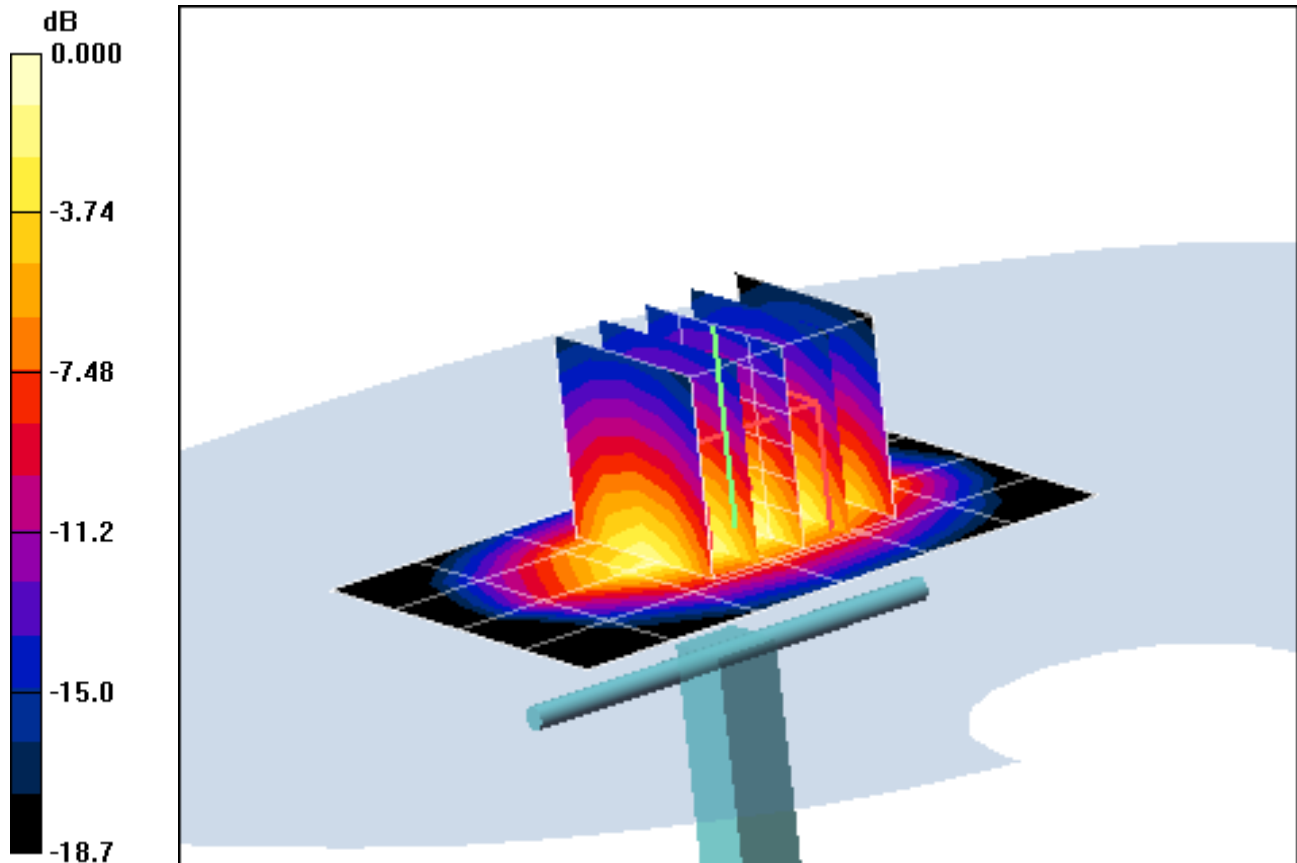
Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Input Power = 20.0 dBm (100 mW)

SAR(1 g) = 3.98 mW/g; SAR(10 g) = 2.06 mW/g

Deviation = -1.73 %



0 dB = 4.99mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: SAR Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d047

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Muscle Medium parameters used:

$f = 835 \text{ MHz}$; $\sigma = 0.978 \text{ mho/m}$; $\epsilon_r = 53.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 10-07-2009; Ambient Temp: 23.7°C; Tissue Temp: 22.1°C

Probe: ES3DV2 - SN3022; ConvF(5.85, 5.85, 5.85); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

835 MHz Dipole Validation

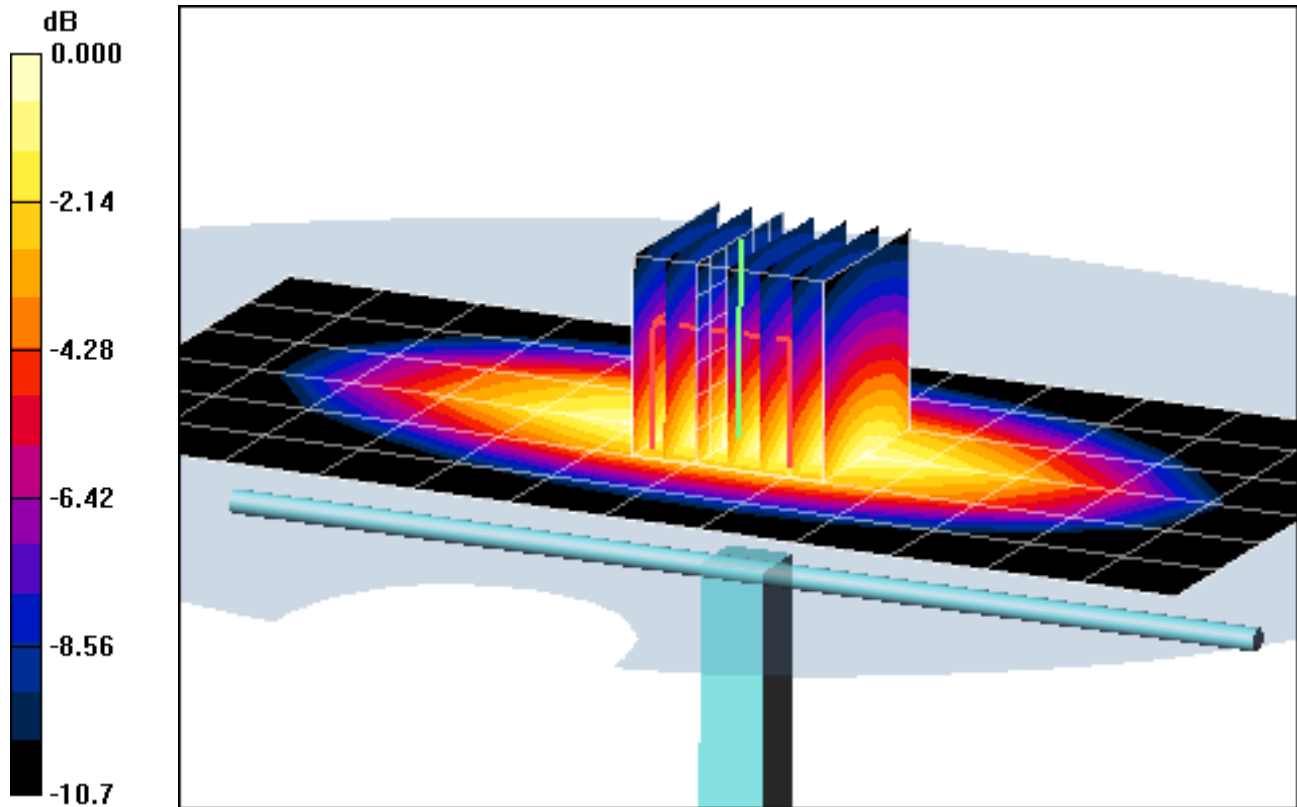
Area Scan (7x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Input Power = 17.78 dBm (60 mW)

SAR(1 g) = 0.631 mW/g; SAR(10 g) = 0.414 mW/g

Deviation = 7.09%



0 dB = 0.731mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d047

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Muscle Medium parameters used:

$f = 835 \text{ MHz}$; $\sigma = 0.986 \text{ mho/m}$; $\epsilon_r = 53.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 10-26-2009; Ambient Temp: 23.9°C; Tissue Temp: 22.0 °C

Probe: ES3DV2 - SN3022; ConvF(5.85, 5.85, 5.85); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

835 MHz SAR Verification

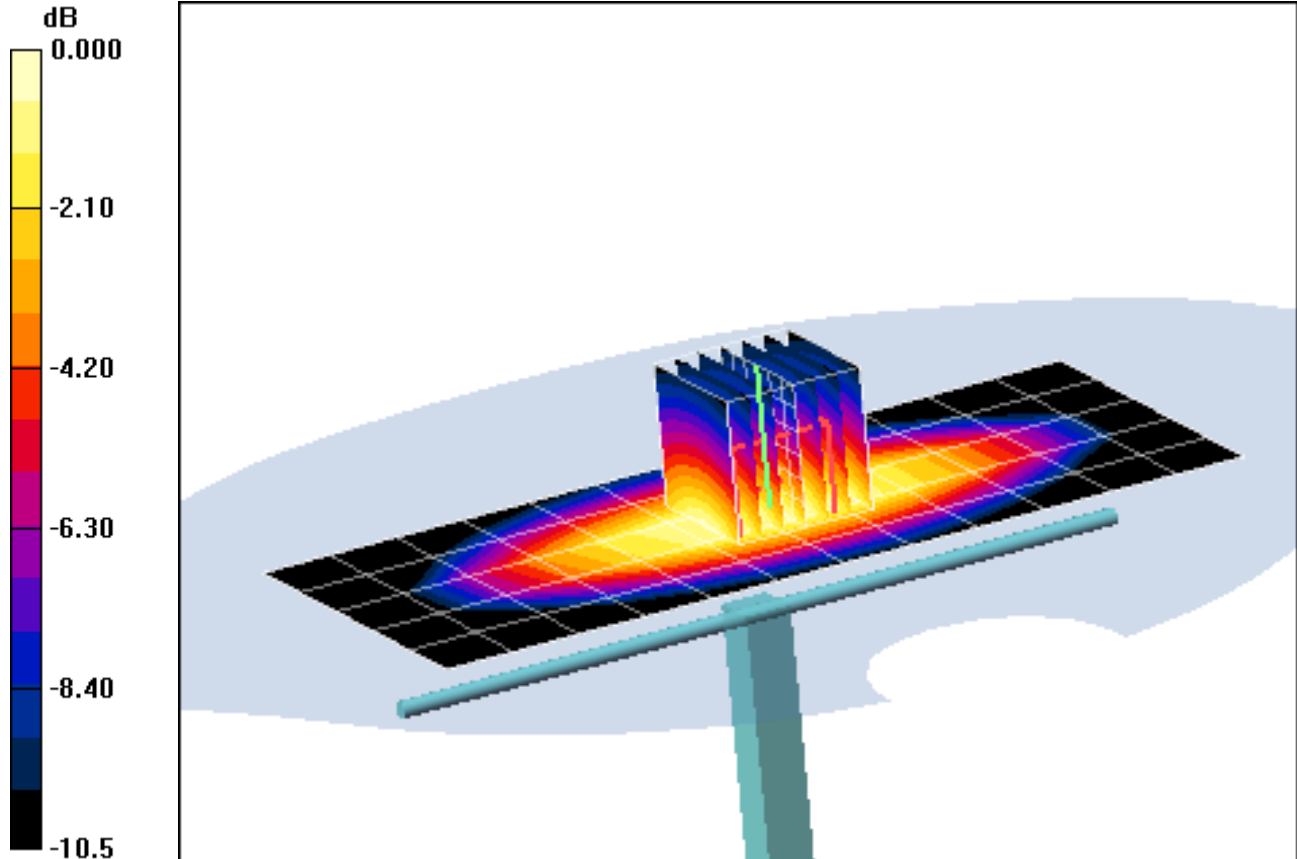
Area Scan (6x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Input Power = 29.03 dBm (80 mW)

SAR(1 g) = 0.847 mW/g; SAR(10 g) = 0.555 mW/g

Deviation = 7.82 %



0 dB = 0.987mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 502

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Muscle Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.56 \text{ mho/m}$; $\epsilon_r = 51.6$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 10-26-2009; Ambient Temp: 23.2°C; Tissue Temp: 22.8 °C

Probe: ES3DV2 - SN3022; ConvF(4.42, 4.42, 4.42); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

1900MHz Dipole Validation

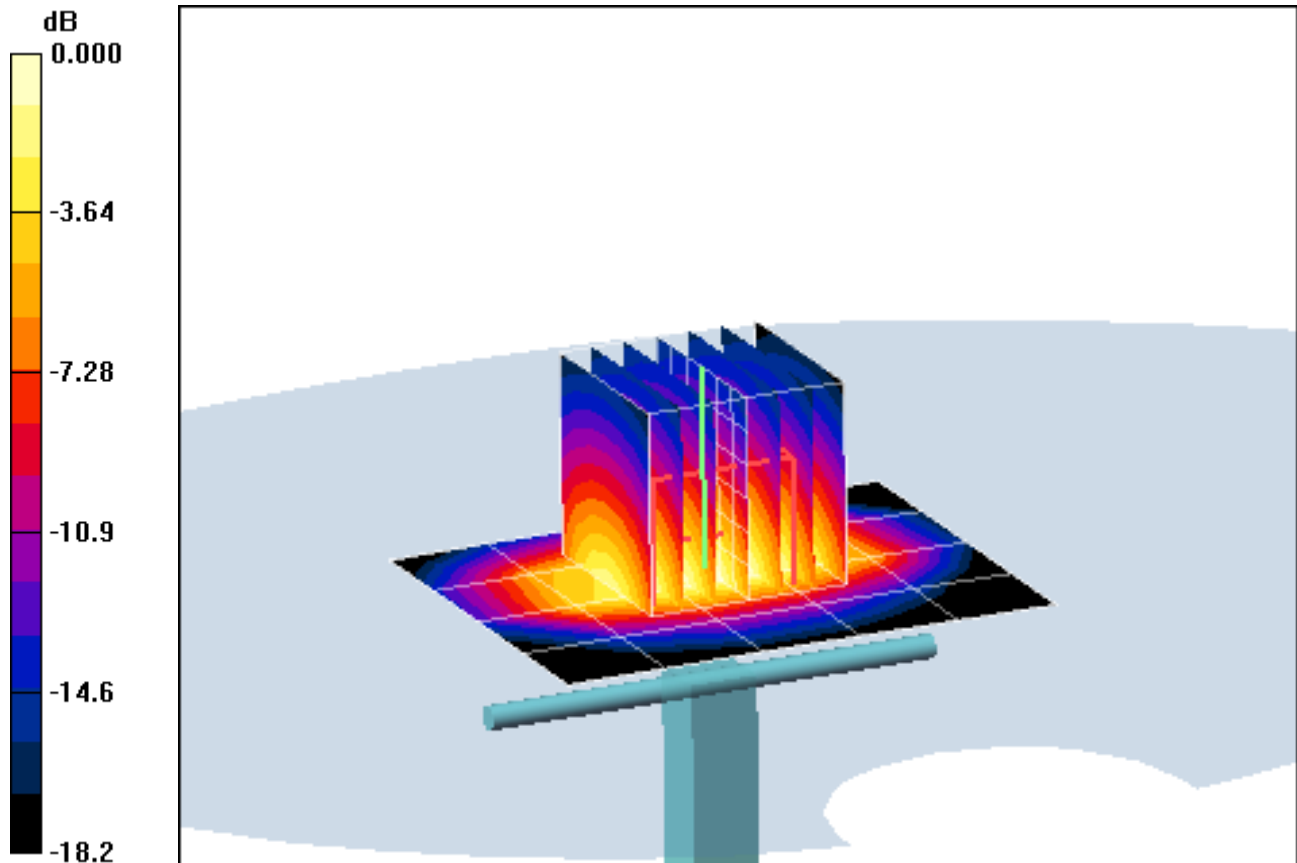
Area Scan (5x6x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

SAR(1 g) = 4.35 mW/g; SAR(10 g) = 2.24 mW/g

Deviation = 4.82 %



0 dB = 5.53mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: SAR Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d047

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: 835 Muscle Medium parameters used:

$f = 835 \text{ MHz}$; $\sigma = 0.965 \text{ mho/m}$; $\epsilon_r = 52.67$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 11-06-2009; Ambient Temp: 23.7 °C ; Tissue Temp: 22.1 °C

Probe: ES3DV2 - SN3022; ConvF(5.85, 5.85, 5.85); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1406

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

835 MHz Dipole Validation

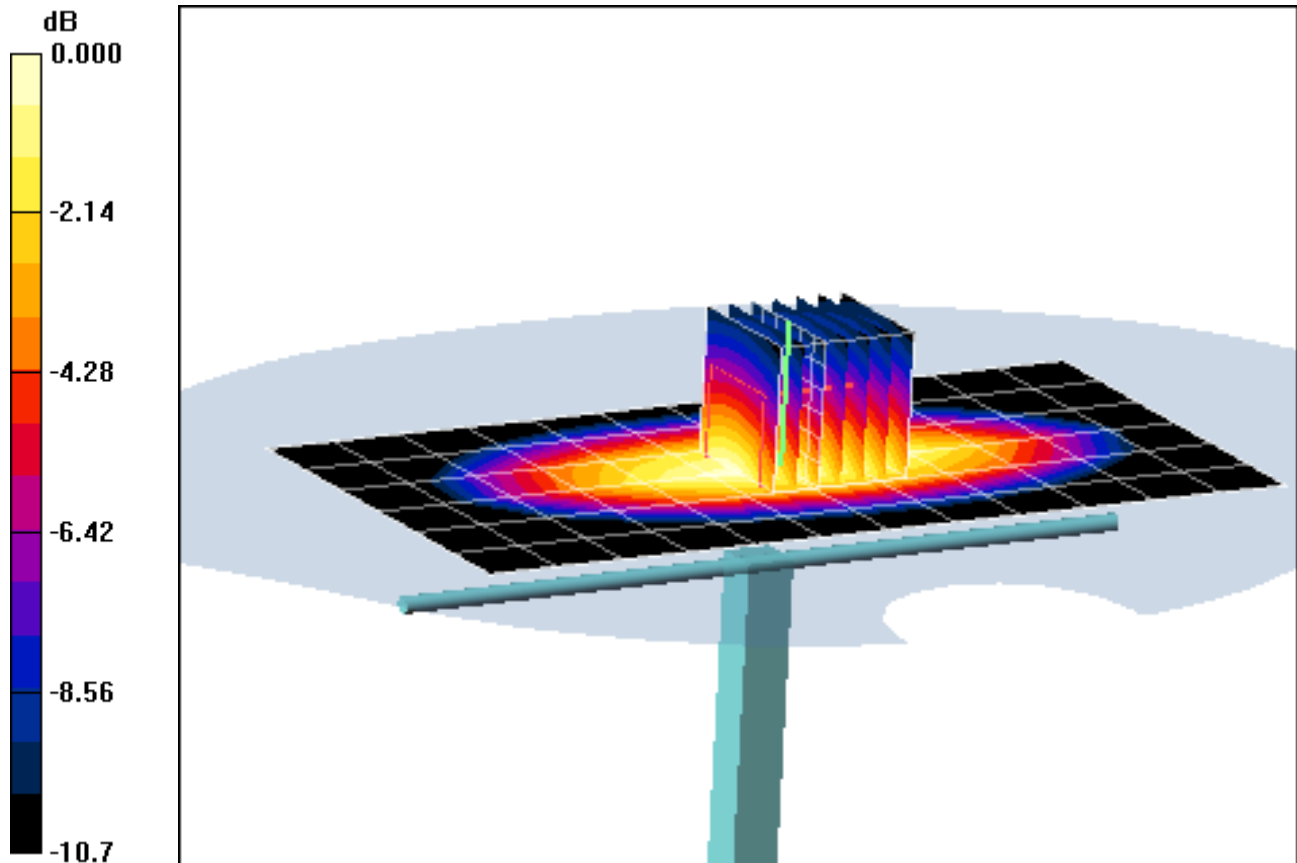
Area Scan (7x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Input Power = 17.78 dBm (60mW)

SAR(1 g) = 0.622 mW/g; SAR(10 g) = 0.409 mW/g

Deviation = 5.57 %



0 dB = 0.722mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: 502

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: 1900 Muscle Medium parameters used (interpolated):

$f = 1900 \text{ MHz}$; $\sigma = 1.53 \text{ mho/m}$; $\epsilon_r = 50.7$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 11-06-2009; Ambient Temp: 23.6°C; Tissue Temp: 22.2 °C

Probe: ES3DV2 - SN3022; ConvF(4.42, 4.42, 4.42); Calibrated: 9/18/2009

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn704; Calibrated: 5/14/2009

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1403

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 184

1900MHz Dipole Validation

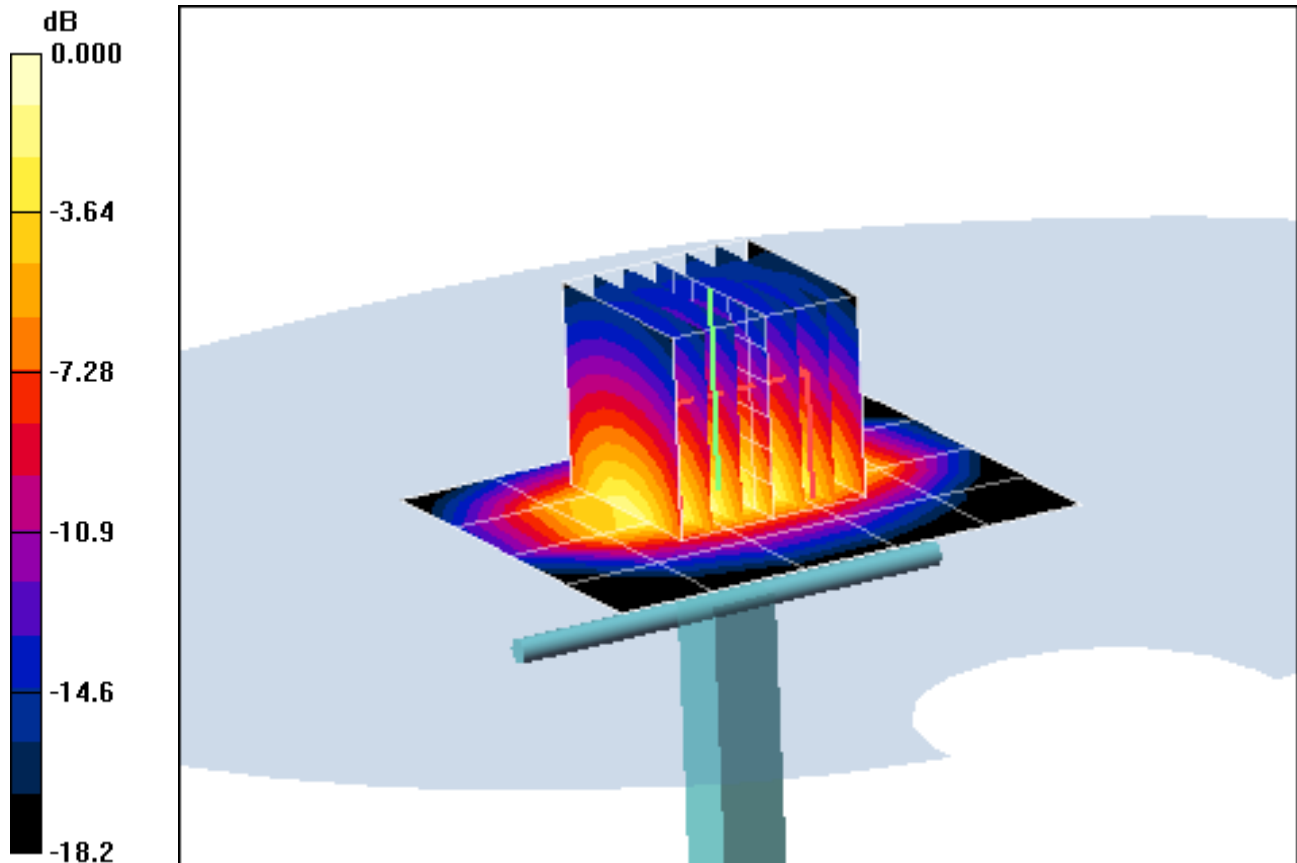
Area Scan (5x6x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Input Power = 20.0 dBm (100 mW)

SAR(1 g) = 4.27 mW/g; SAR(10 g) = 2.2 mW/g

Deviation = 2.89%



0 dB = 5.43mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: SAR Dipole 2450 MHz; Type: D2450V2; Serial: 797

Communication System: CW; Frequency: 2450 MHz; Duty Cycle: 1:1

Medium: 2450 Brain ($\sigma = 1.80$ mho/m, $\epsilon_r = 39.71$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-14-2009; Ambient Temp: 22.5°C; Tissue Temp: 21.3°C

Probe: EX3DV4 - SN3550; ConvF(6.17, 6.17, 6.17); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

2450MHz Dipole Validation

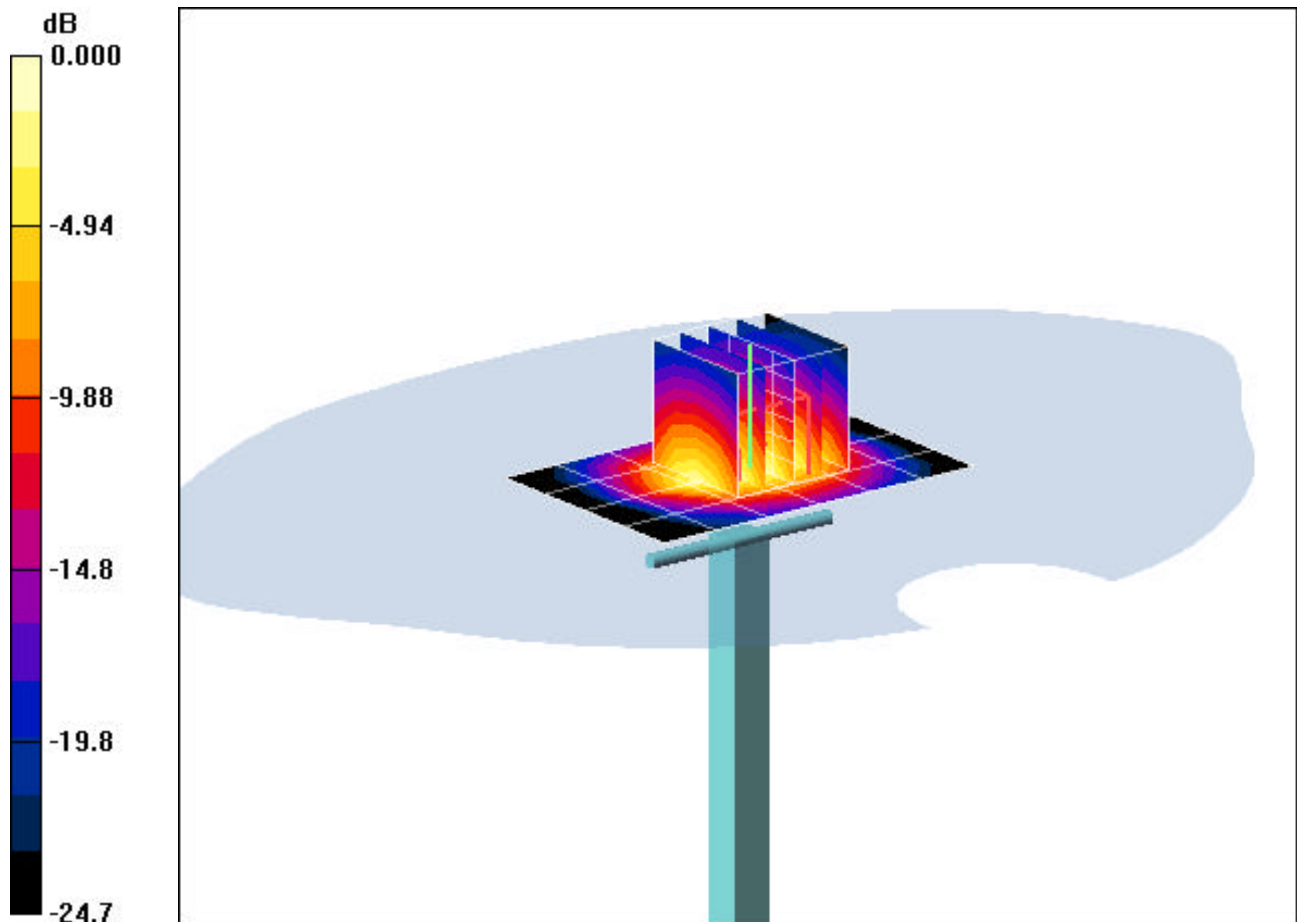
Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm

Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Input Power = 20.0 dBm (100 mW)

SAR(1 g) = 5.27 mW/g; SAR(10 g) = 2.4 mW/g

Deviation = -2.59 %



0 dB = 6.87mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5800 MHz; Type: D5GHzV2; Serial: 1007

Communication System: CW; Frequency: 5200 MHz; Duty Cycle: 1:1

Medium: 5300 Muscle ($\sigma = 5.66$ mho/m, $\epsilon_r = 47.31$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.68, 3.68, 3.68); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

5200MHz Dipole Validation

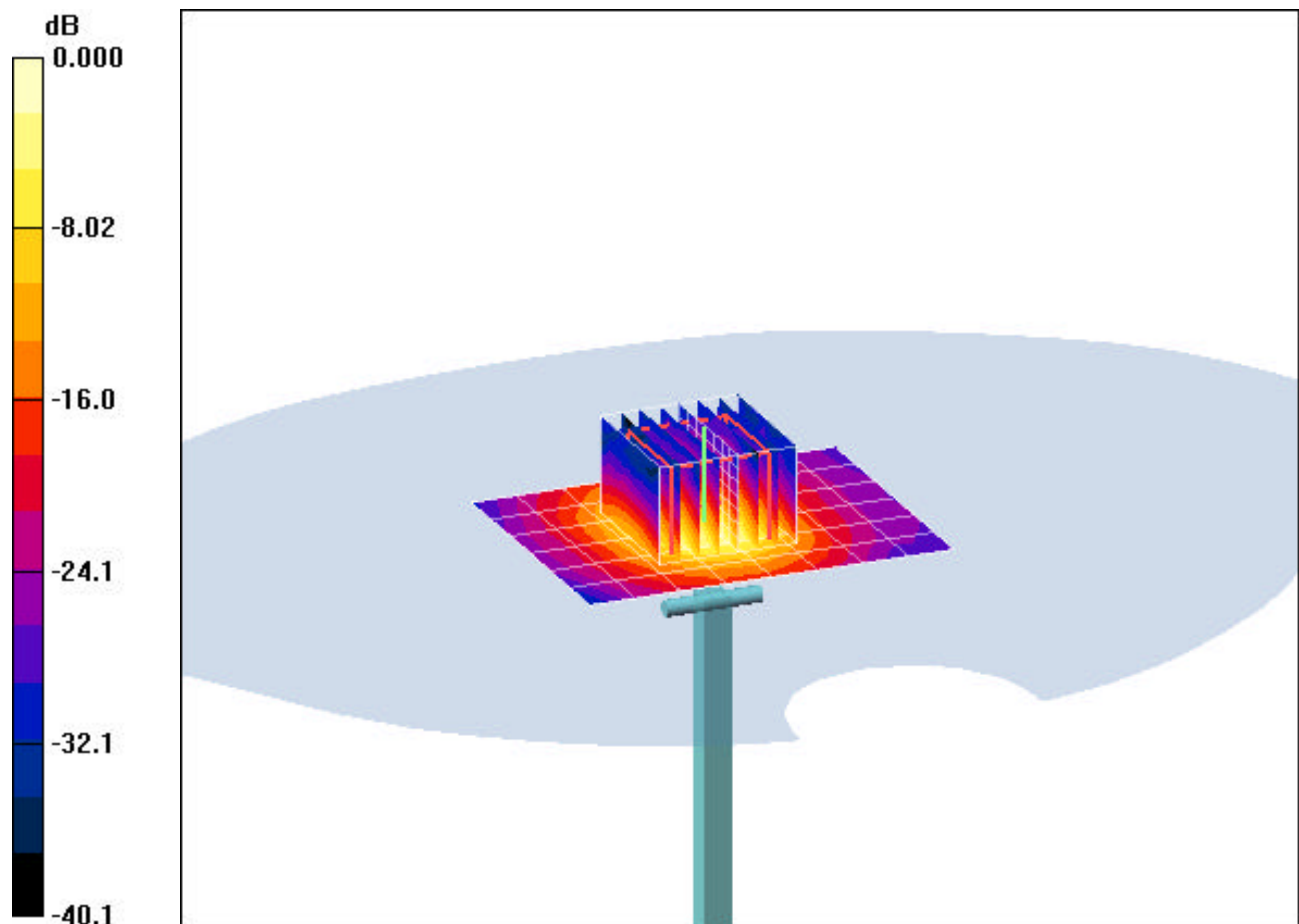
Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Input Power = 20.0 dBm (100 mW)

SAR(1 g) = 7.14 mW/g; SAR(10 g) = 2 mW/g

Deviation = - 1.24%



0 dB = 10.2mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5800 MHz; Type: D5GHzV2; Serial: 1007

Communication System: CW; Frequency: 5500 MHz; Duty Cycle: 1:1

Medium: 5500 Muscle ($\sigma = 5.68$ mho/m, $\epsilon_r = 46.77$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.52, 3.52, 3.52); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

5500MHz Dipole Validation

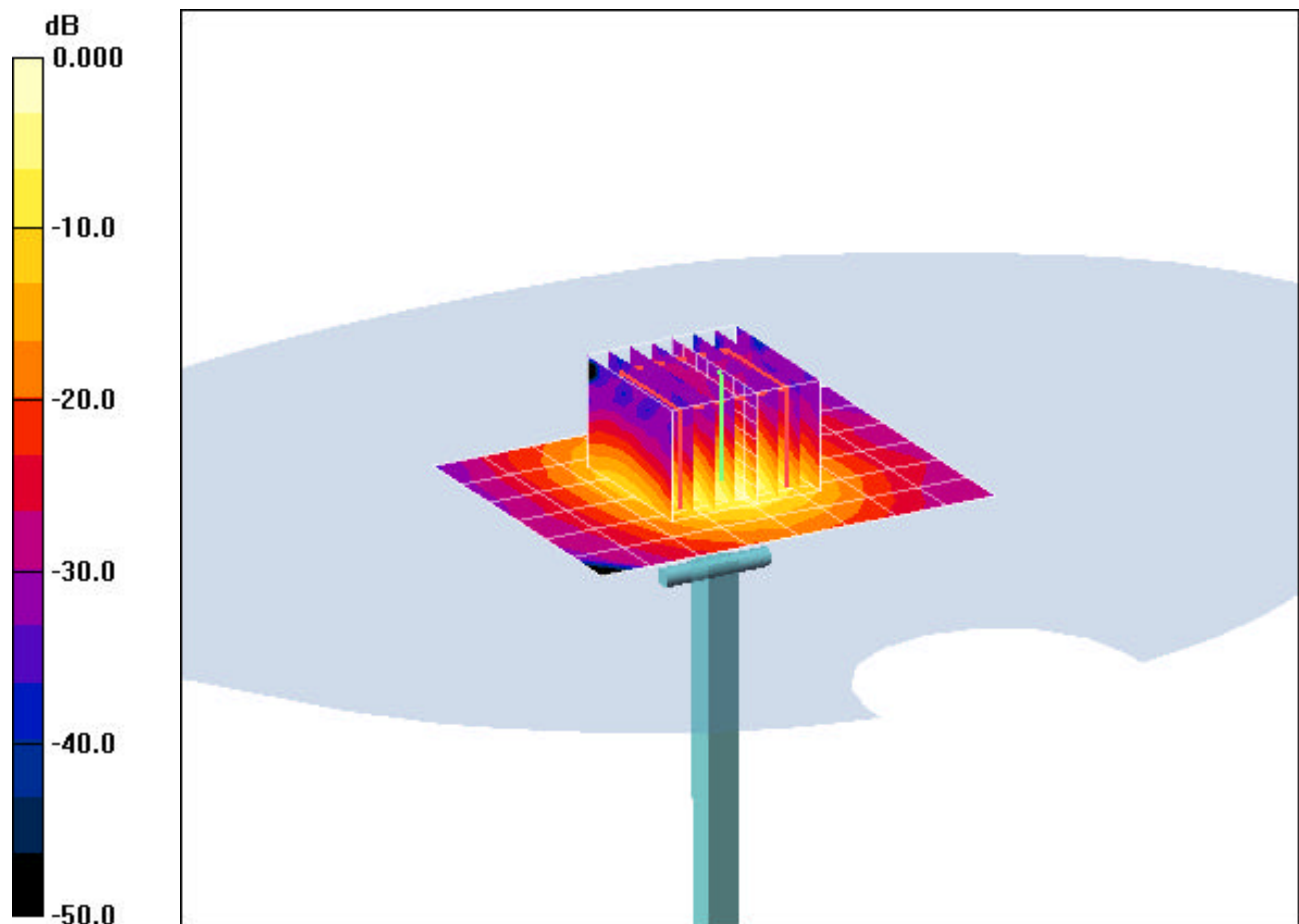
Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Input Power = 20.0 dBm (100 mW)

SAR(1 g) = 7.81 mW/g; SAR(10 g) = 2.17 mW/g

Deviation = 1.69 %



0 dB = 11.0mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5800 MHz; Type: D5GHzV2; Serial: 1007

Communication System: CW; Frequency: 5800 MHz; Duty Cycle: 1:1

Medium: 5800 Muscle ($\sigma = 6.17$ mho/m, $\epsilon_r = 48.49$, $\rho = 1000$ kg/m³)

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 01-15-2009; Ambient Temp: 22.4°C; Tissue Temp: 21.2°C

Probe: EX3DV4 - SN3550; ConvF(3.68, 3.68, 3.68); Calibrated: 1/31/2008

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn665; Calibrated: 8/25/2008

Phantom: SAM with CRP; Type: SAM; Serial: TP1375

Measurement SW: DASY4, V4.7 Build 71; Postprocessing SW: SEMCAD, V1.8 Build 172

5800MHz Dipole Validation

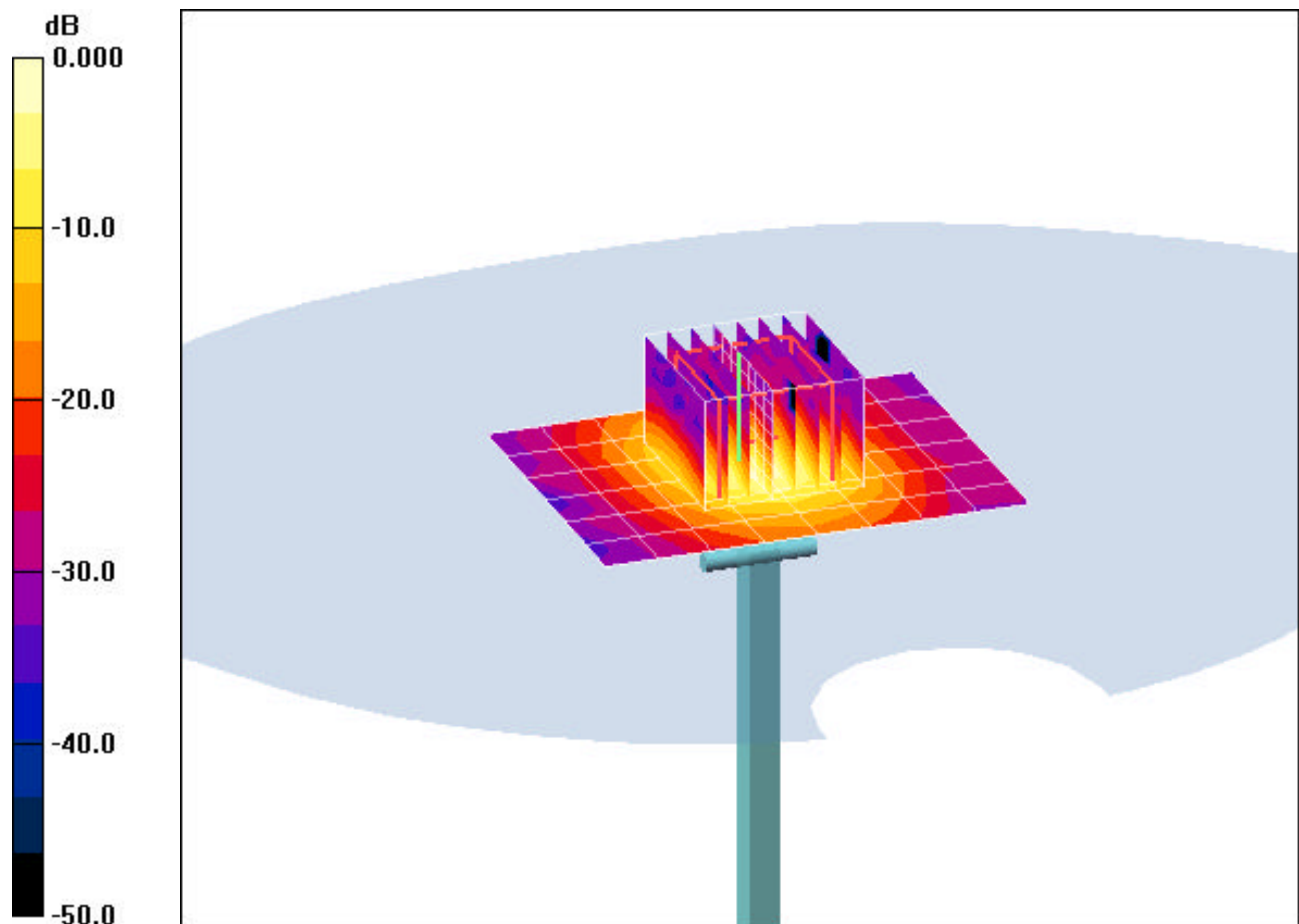
Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm

Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm

Input Power = 20.0 dBm (100 mW)

SAR(1 g) = 6.98 mW/g; SAR(10 g) = 1.92 mW/g

Deviation = 3.71 %



0 dB = 9.41mW/g

APPENDIX C: PROBE CALIBRATION



Accredited by the Swiss Accreditation Service (SAS)
 The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **PC Test**

Certificate No: **ES3-3022_Sep09**

CALIBRATION CERTIFICATE

Object **ES3DV2 - SN:3022**

Calibration procedure(s) **QA CAL-01.v6, QA CAL-23.v3 and QA CAL-25.v2
 Calibration procedure for dosimetric E-field probes**

Calibration date: **September 18, 2009**

Condition of the calibrated item **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41495277	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41498087	1-Apr-09 (No. 217-01030)	Apr-10
Reference 3 dB Attenuator	SN: S5054 (3c)	31-Mar-09 (No. 217-01026)	Mar-10
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-09 (No. 217-01028)	Mar-10
Reference 30 dB Attenuator	SN: S5129 (30b)	31-Mar-09 (No. 217-01027)	Mar-10
Reference Probe ES3DV2	SN: 3013	2-Jan-09 (No. ES3-3013_Jan09)	Jan-10
DAE4	SN: 660	9-Sep-08 (No. DAE4-660_Sep08)	Sep-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	
Approved by:	Kalja Pokovic	Technical Manager	

Issued: September 21, 2009

This calibration certificate shall not be reproduced except in full without written approval of the laboratory.



Accredited by the Swiss Accreditation Service (SAS)
 The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
Polarization φ	φ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}:** Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not effect the E²-field uncertainty inside TSL (see below *ConvF*).
- NORM(*f*)_{x,y,z} = NORM_{x,y,z} * frequency_response** (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- DCP_{x,y,z}:** DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- ConvF and Boundary Effect Parameters:** Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy):** in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset:** The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ES3DV2

SN:3022

Manufactured:	April 15, 2003
Last calibrated:	October 21, 2008
Recalibrated:	September 18, 2009

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ES3DV2 SN:3022

Sensitivity in Free Space^A

Diode Compression^B

NormX	1.01 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP X	92 mV
NormY	1.05 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP Y	92 mV
NormZ	1.01 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP Z	92 mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL **835 MHz** **Typical SAR gradient: 5 % per mm**

Sensor Center to Phantom Surface Distance		3.0 mm	4.0 mm
SAR _{be} [%]	Without Correction Algorithm	8.8	5.3
SAR _{be} [%]	With Correction Algorithm	0.9	0.6

TSL **1750 MHz** **Typical SAR gradient: 10 % per mm**

Sensor Center to Phantom Surface Distance		3.0 mm	4.0 mm
SAR _{be} [%]	Without Correction Algorithm	8.7	5.7
SAR _{be} [%]	With Correction Algorithm	0.6	0.3

Sensor Offset

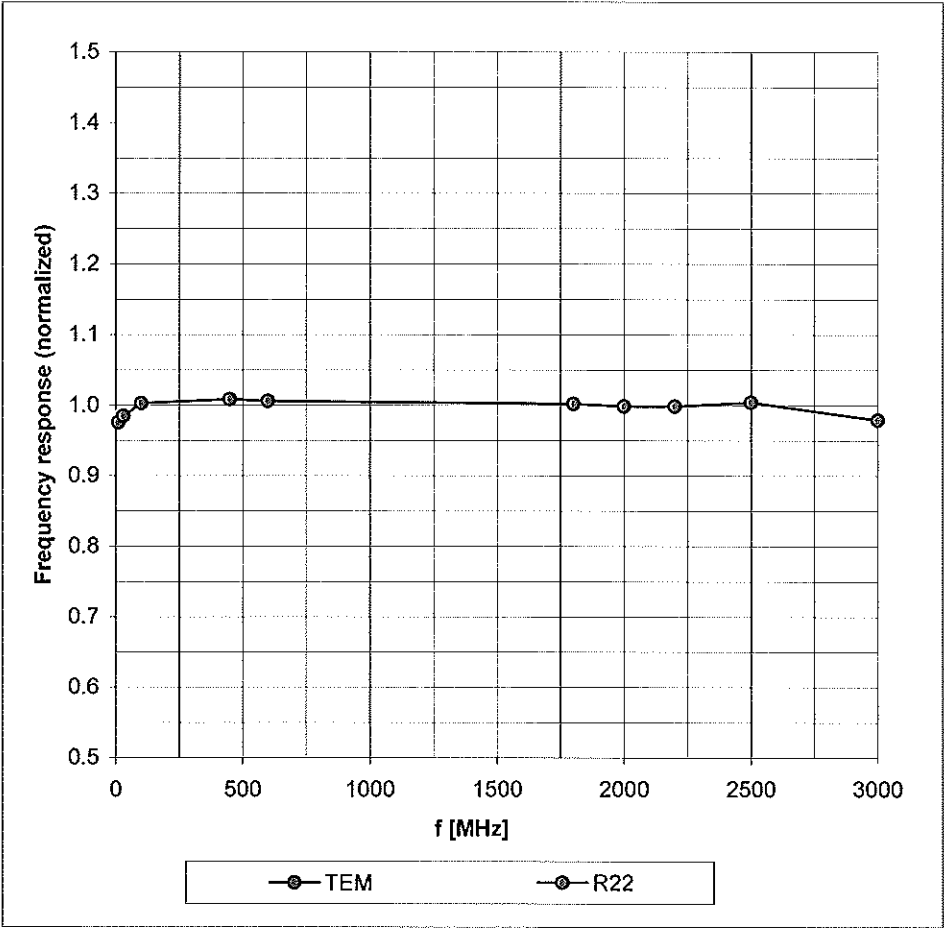
Probe Tip to Sensor Center **2.0 mm**

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Page 8).

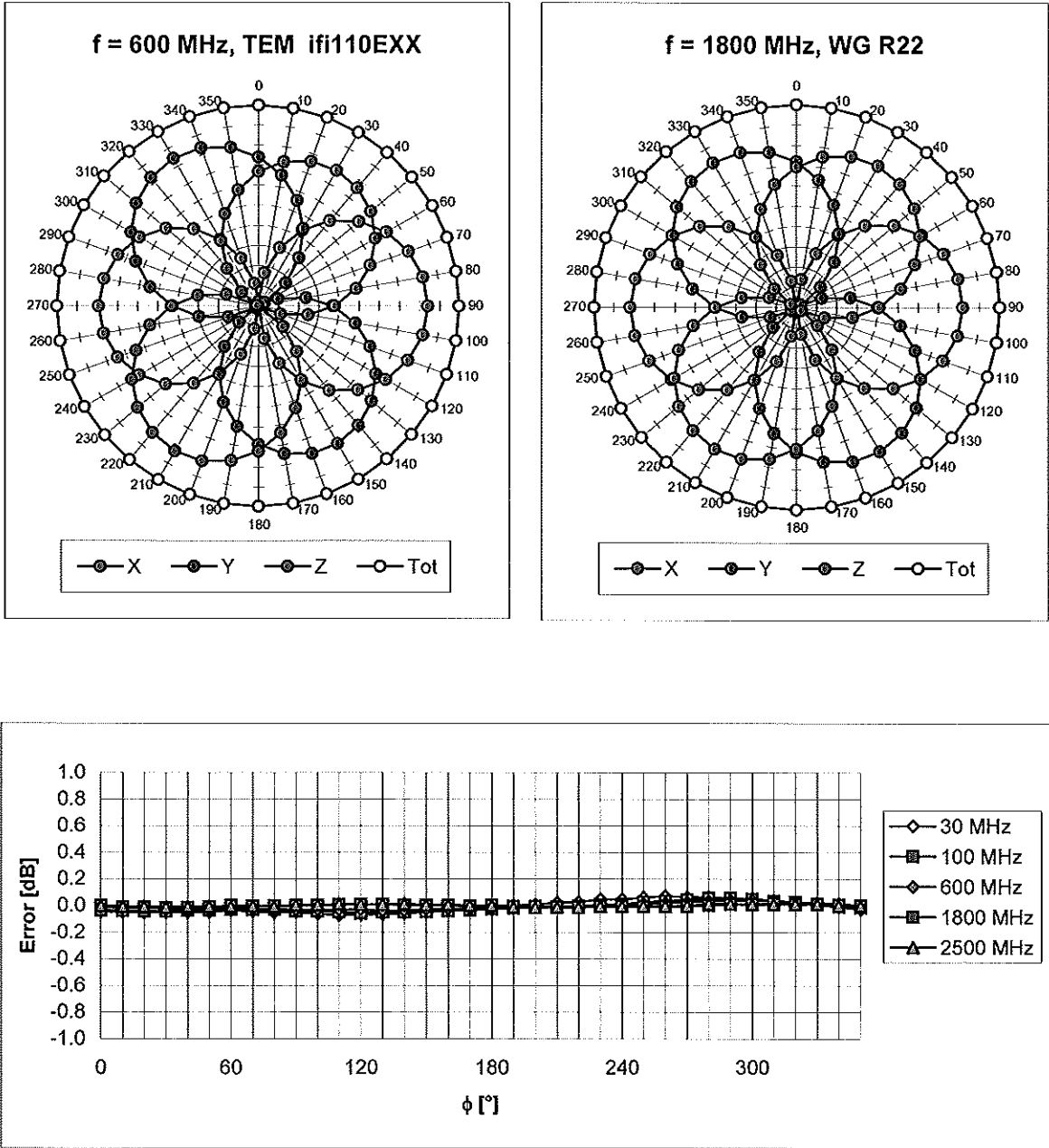
^B Numerical linearization parameter: uncertainty not required.

Frequency Response of E-Field
(TEM-Cell:Ifi110 EXX, Waveguide: R22)



Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

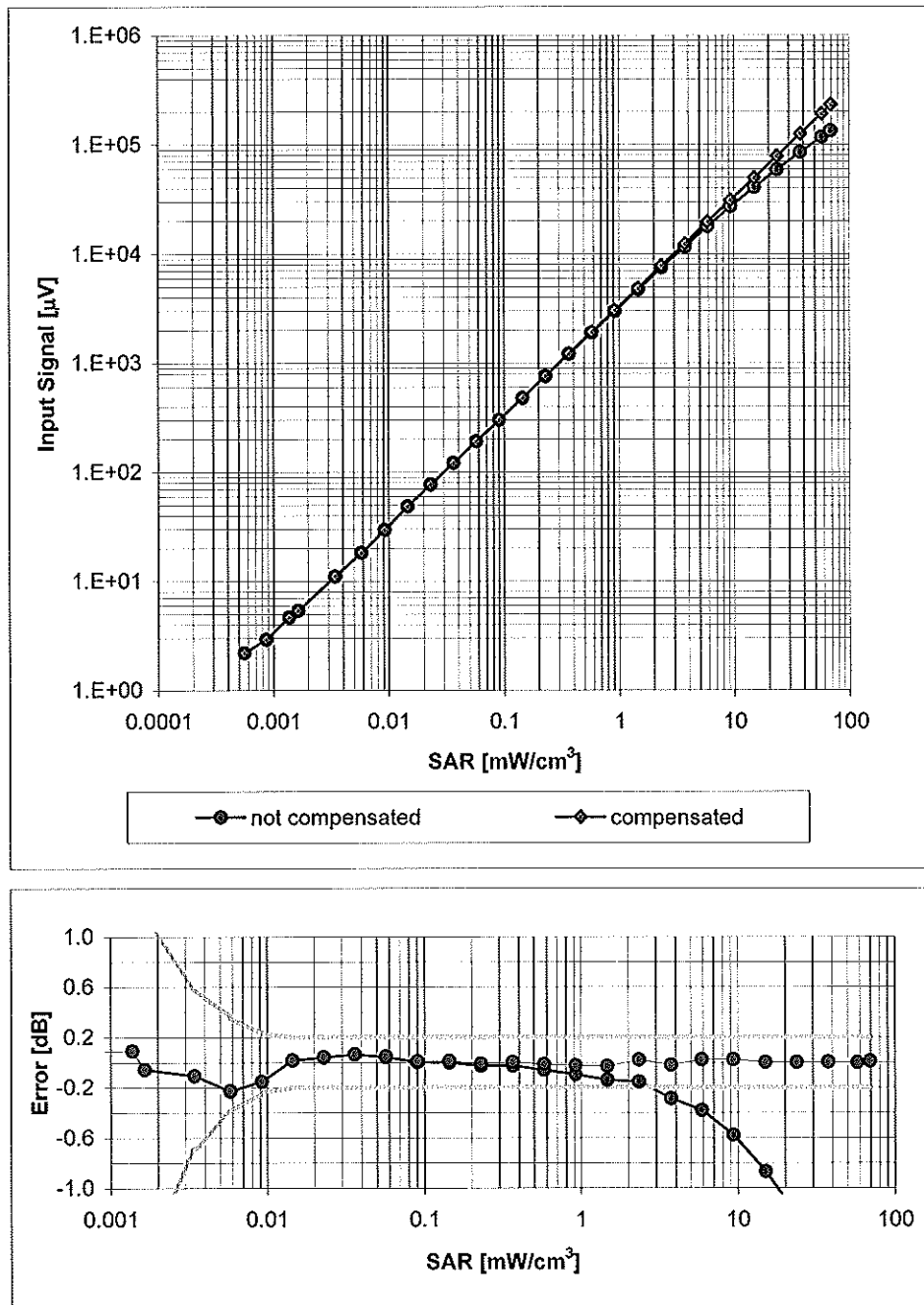
Receiving Pattern (ϕ), $\vartheta = 0^\circ$



Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

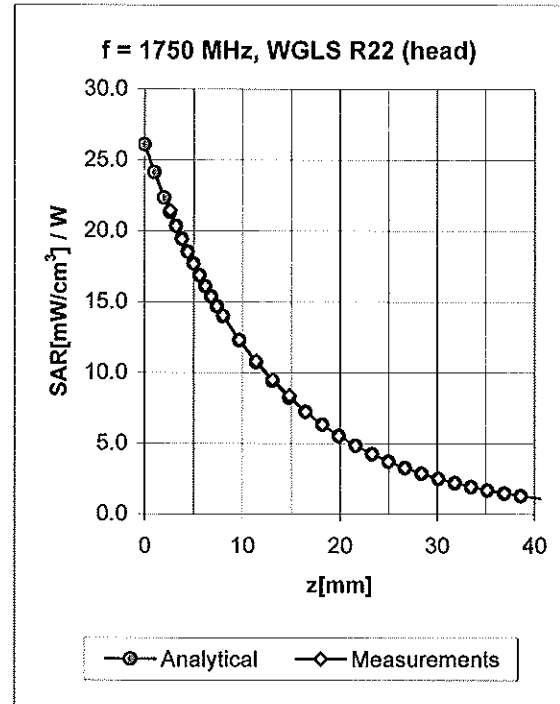
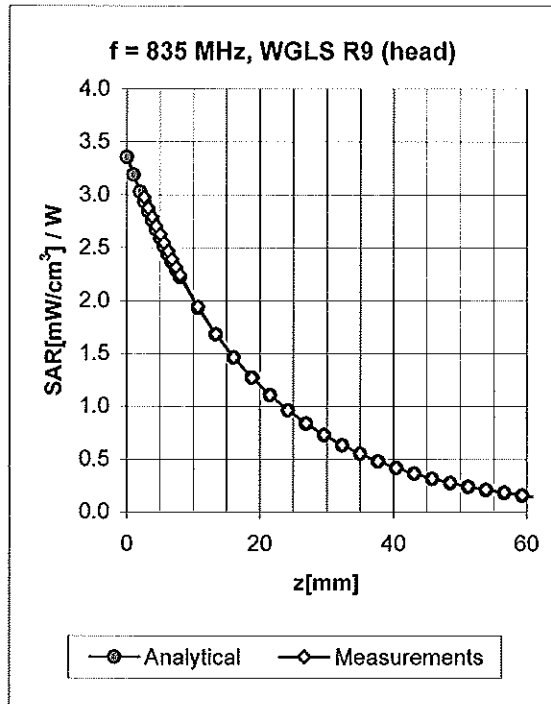
Dynamic Range $f(\text{SAR}_{\text{head}})$

(Waveguide R22, $f = 1800$ MHz)



Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment

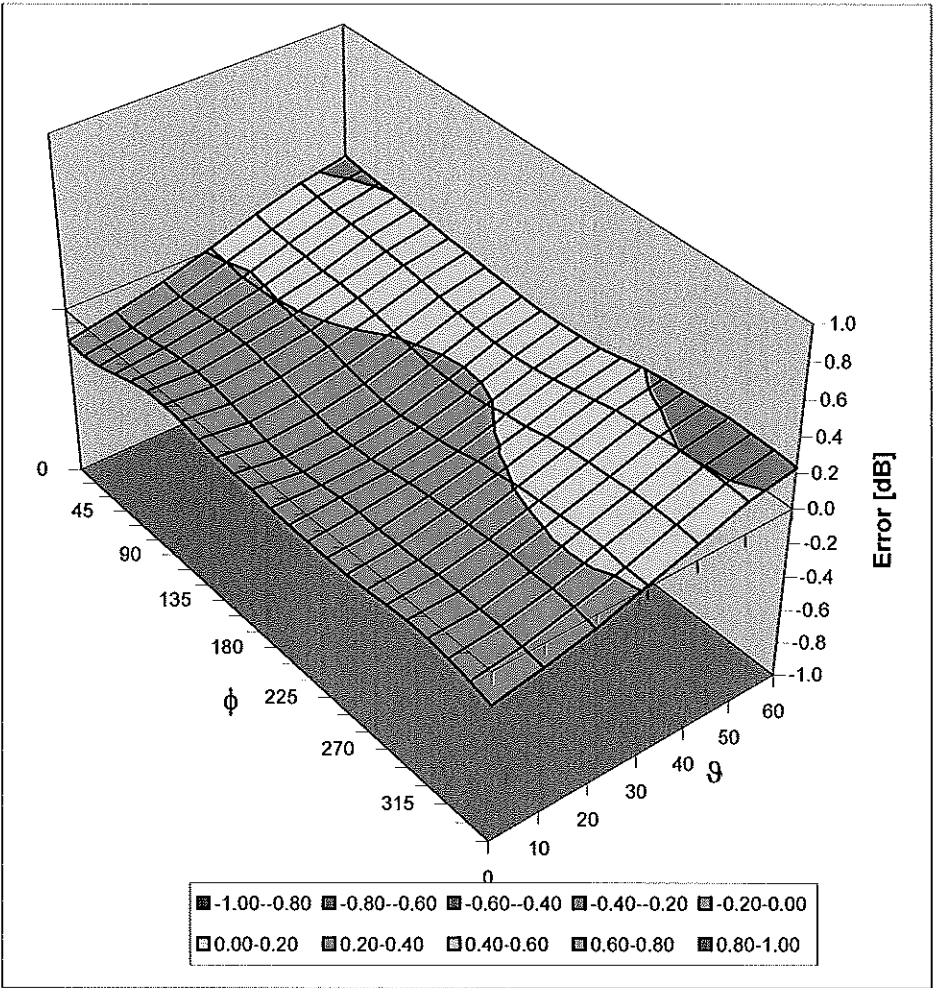


f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.60	1.19	6.04 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.32	1.84	5.11 ± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.39	1.67	4.86 ± 11.0% (k=2)
2450	± 50 / ± 100	Head	39.2 ± 5%	1.80 ± 5%	0.33	1.91	4.25 ± 11.0% (k=2)
750	± 50 / ± 100	Body	55.5 ± 5%	0.96 ± 5%	0.63	1.20	5.83 ± 11.0% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.51	1.35	5.85 ± 11.0% (k=2)
1640	± 50 / ± 100	Body	53.8 ± 5%	1.40 ± 5%	0.27	2.64	4.93 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.28	2.76	4.66 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.26	3.47	4.42 ± 11.0% (k=2)
2450	± 50 / ± 100	Body	52.7 ± 5%	1.95 ± 5%	0.48	1.45	4.05 ± 11.0% (k=2)
2600	± 50 / ± 100	Body	52.5 ± 5%	2.16 ± 5%	0.68	1.21	3.95 ± 11.0% (k=2)

^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

Deviation from Isotropy in HSL

Error (ϕ , θ), $f = 900 \text{ MHz}$



Uncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ ($k=2$)



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Accreditation No.: **SCS 108**

Client **PC Test**

Certificate No: **ES3-3209_Apr09**

CALIBRATION CERTIFICATE

Object **ES3DV3 - SN:3209**

Calibration procedure(s) **QA CAL-01.v6 and QA CAL-23.v3
 Calibration procedure for dosimetric E-field probes**

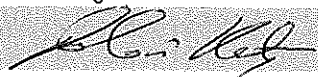
Calibration date: **April 15, 2009**

Condition of the calibrated item **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter E4419B	GB41293874	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41495277	1-Apr-09 (No. 217-01030)	Apr-10
Power sensor E4412A	MY41498087	1-Apr-09 (No. 217-01030)	Apr-10
Reference 3 dB Attenuator	SN: S5054 (3c)	31-Mar-09 (No. 217-01026)	Mar-10
Reference 20 dB Attenuator	SN: S5086 (20b)	31-Mar-09 (No. 217-01028)	Mar-10
Reference 30 dB Attenuator	SN: S5129 (30b)	31-Mar-09 (No. 217-01027)	Mar-10
Reference Probe ES3DV2	SN: 3013	2-Jan-09 (No. ES3-3013_Jan09)	Jan-10
DAE4	SN: 660	9-Sep-08 (No. DAE4-660_Sep08)	Sep-09
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-08)	In house check: Oct-09
Calibrated by:	Name Katja Pokovic	Function Technical Manager	Signature 
Approved by:	Name Fin Bomholt	Function R&D Director	Signature 

Issued: April 15, 2009

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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
NORM _{x,y,z}	sensitivity in free space
ConvF	sensitivity in TSL / NORM _{x,y,z}
DCP	diode compression point
Polarization ϕ	ϕ rotation around probe axis
Polarization ϑ	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

Calibration is Performed According to the Following Standards:

- IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005

Methods Applied and Interpretation of Parameters:

- NORM_{x,y,z}**: Assessed for E-field polarization $\vartheta = 0$ ($f \leq 900$ MHz in TEM-cell; $f > 1800$ MHz: R22 waveguide). NORM_{x,y,z} are only intermediate values, i.e., the uncertainties of NORM_{x,y,z} does not effect the E^2 -field uncertainty inside TSL (see below *ConvF*).
- NORM(f)_{x,y,z}** = NORM_{x,y,z} * *frequency_response* (see Frequency Response Chart). This linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of the frequency response is included in the stated uncertainty of *ConvF*.
- DCP_{x,y,z}**: DCP are numerical linearization parameters assessed based on the data of power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- ConvF and Boundary Effect Parameters**: Assessed in flat phantom using E-field (or Temperature Transfer Standard for $f \leq 800$ MHz) and inside waveguide using analytical field distributions based on power measurements for $f > 800$ MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORM_{x,y,z} * *ConvF* whereby the uncertainty corresponds to that given for *ConvF*. A frequency dependent *ConvF* is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy)**: in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset**: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Probe ES3DV3

SN:3209

Manufactured:	October 14, 2008
Calibrated:	April 15, 2009

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ES3DV3 SN:3209

Sensitivity in Free Space^A

Diode Compression^B

NormX	1.33 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP X	91 mV
NormY	1.34 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP Y	93 mV
NormZ	1.14 ± 10.1%	$\mu\text{V}/(\text{V}/\text{m})^2$	DCP Z	92 mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL **835 MHz** Typical SAR gradient: 5 % per mm

Sensor Center to Phantom Surface Distance		3.0 mm	4.0 mm
SAR _{be} [%]	Without Correction Algorithm	9.5	5.5
SAR _{be} [%]	With Correction Algorithm	0.8	0.5

TSL **1750 MHz** Typical SAR gradient: 10 % per mm

Sensor Center to Phantom Surface Distance		3.0 mm	4.0 mm
SAR _{be} [%]	Without Correction Algorithm	8.6	5.1
SAR _{be} [%]	With Correction Algorithm	0.8	0.3

Sensor Offset

Probe Tip to Sensor Center **2.0 mm**

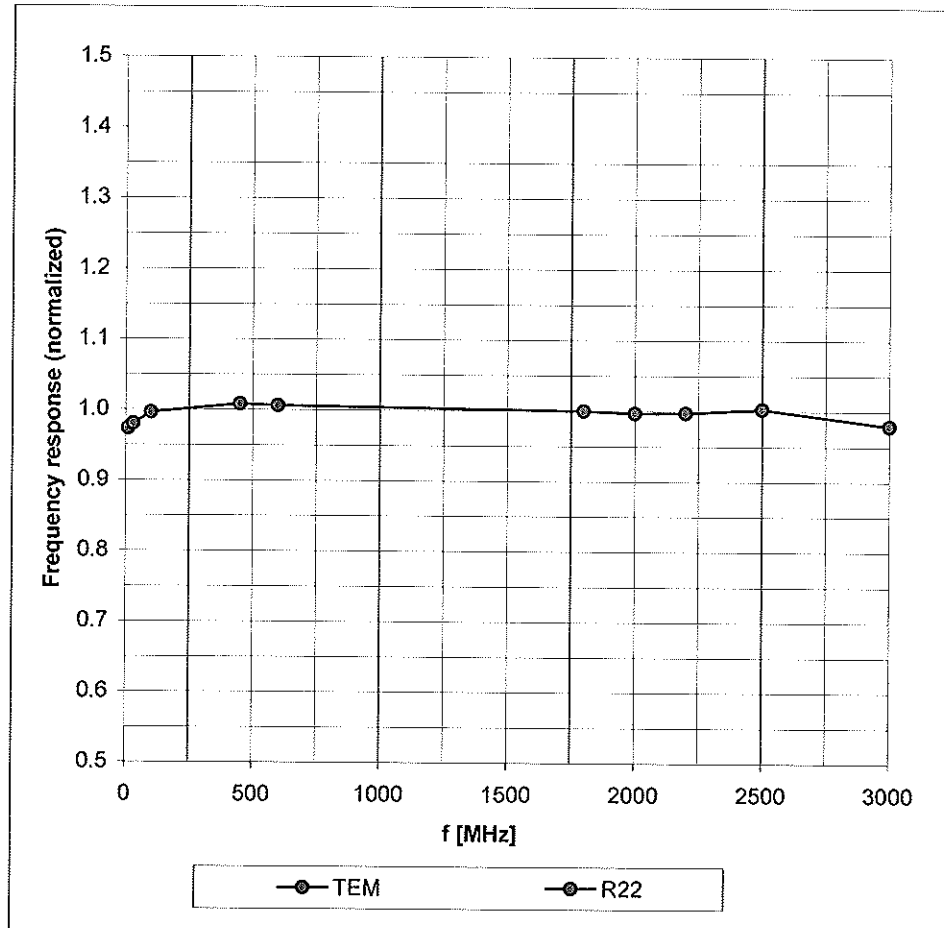
The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NormX,Y,Z do not affect the E²-field uncertainty inside TSL (see Page 8).

^B Numerical linearization parameter: uncertainty not required.

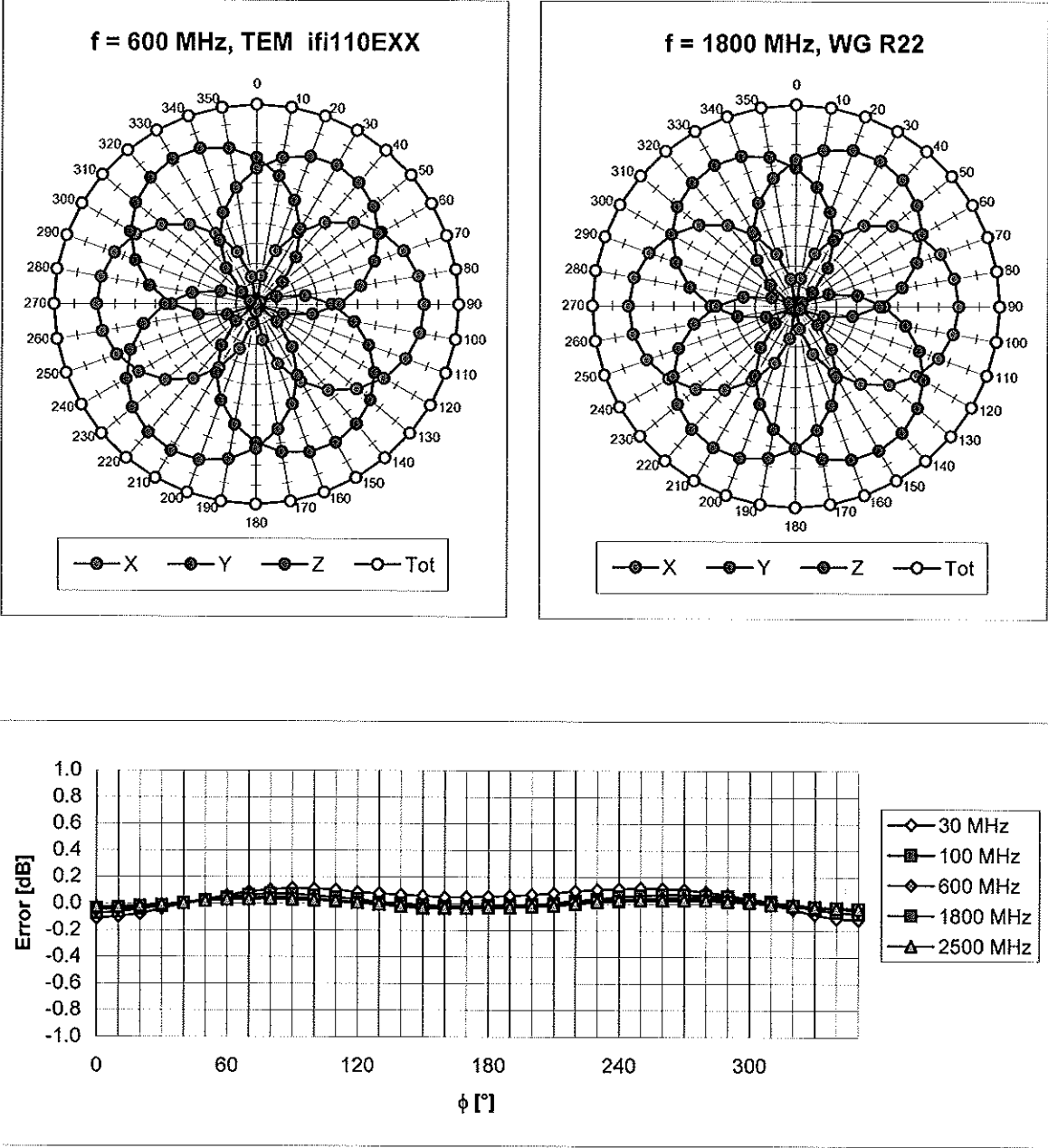
Frequency Response of E-Field

(TEM-Cell:ifi110 EXX, Waveguide: R22)



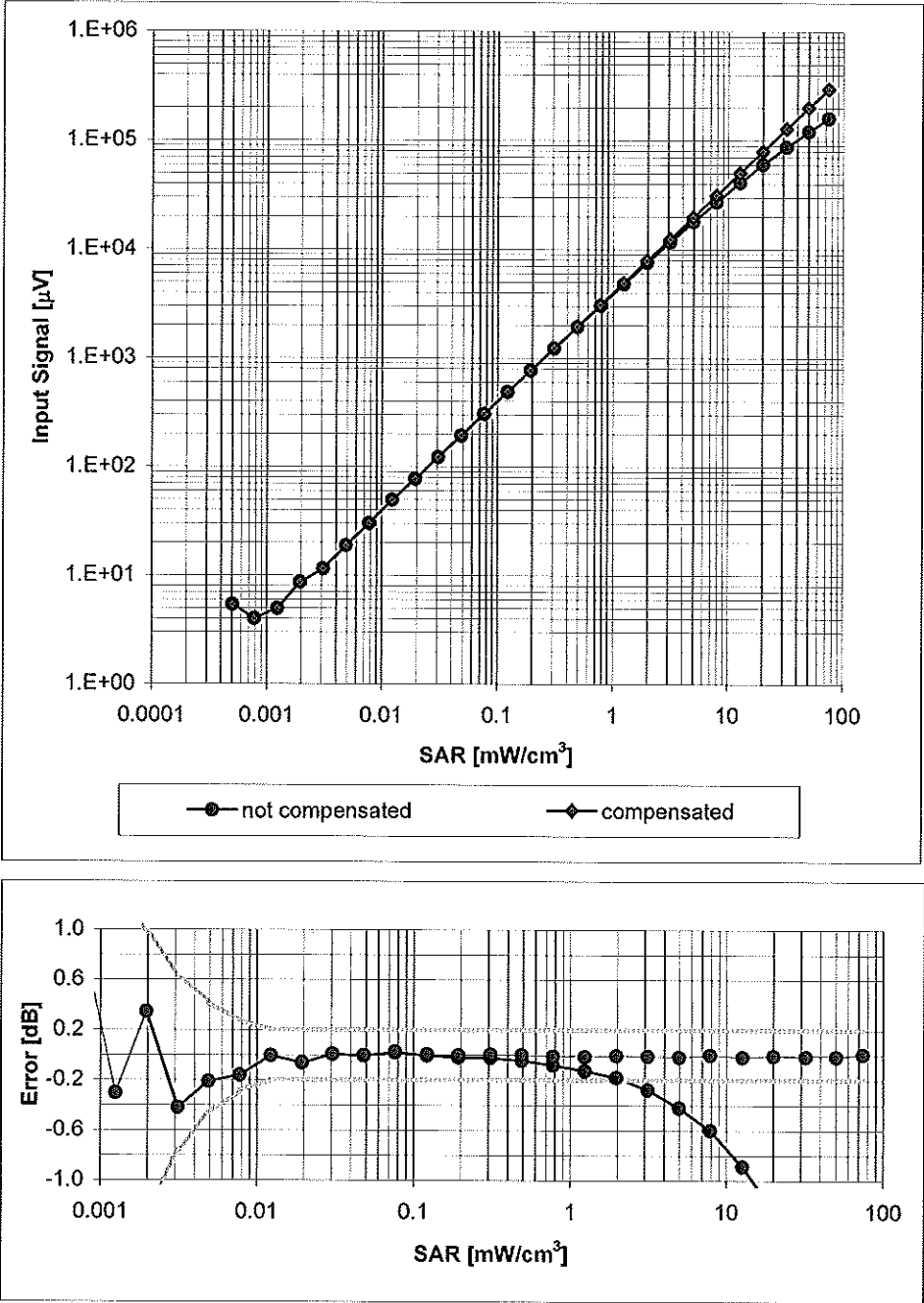
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ ($k=2$)

Receiving Pattern (ϕ), $\vartheta = 0^\circ$



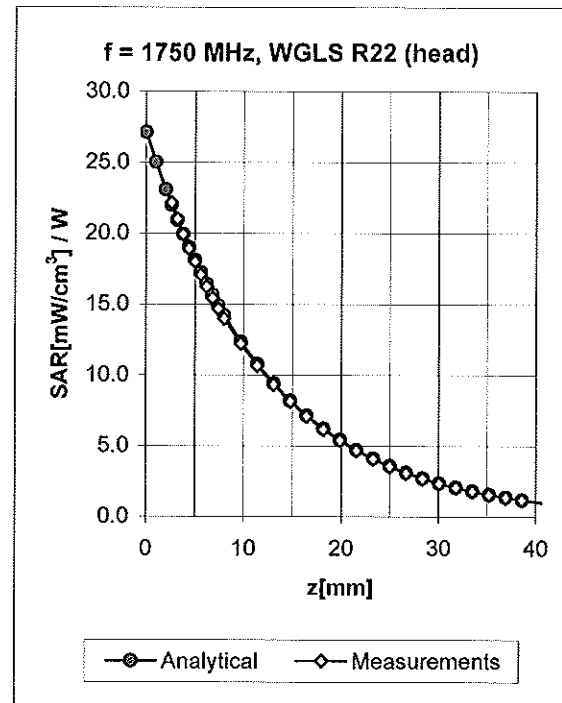
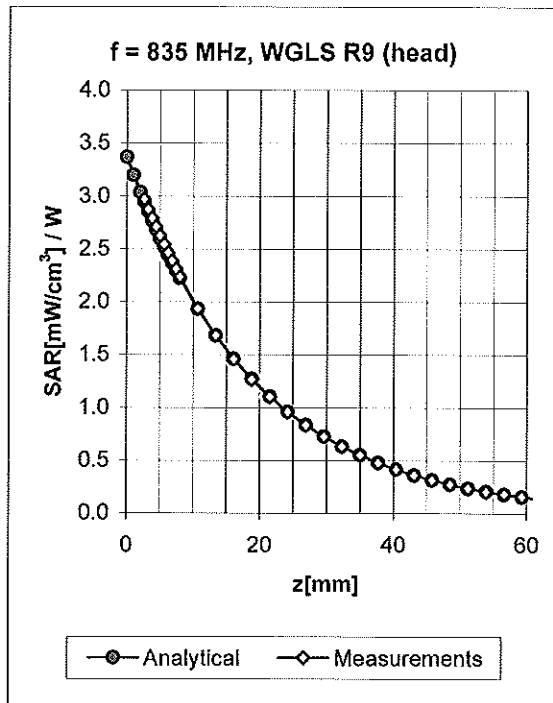
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

Dynamic Range f(SAR_{head})
(Waveguide R22, f = 1800 MHz)



Uncertainty of Linearity Assessment: ± 0.6% (k=2)

Conversion Factor Assessment

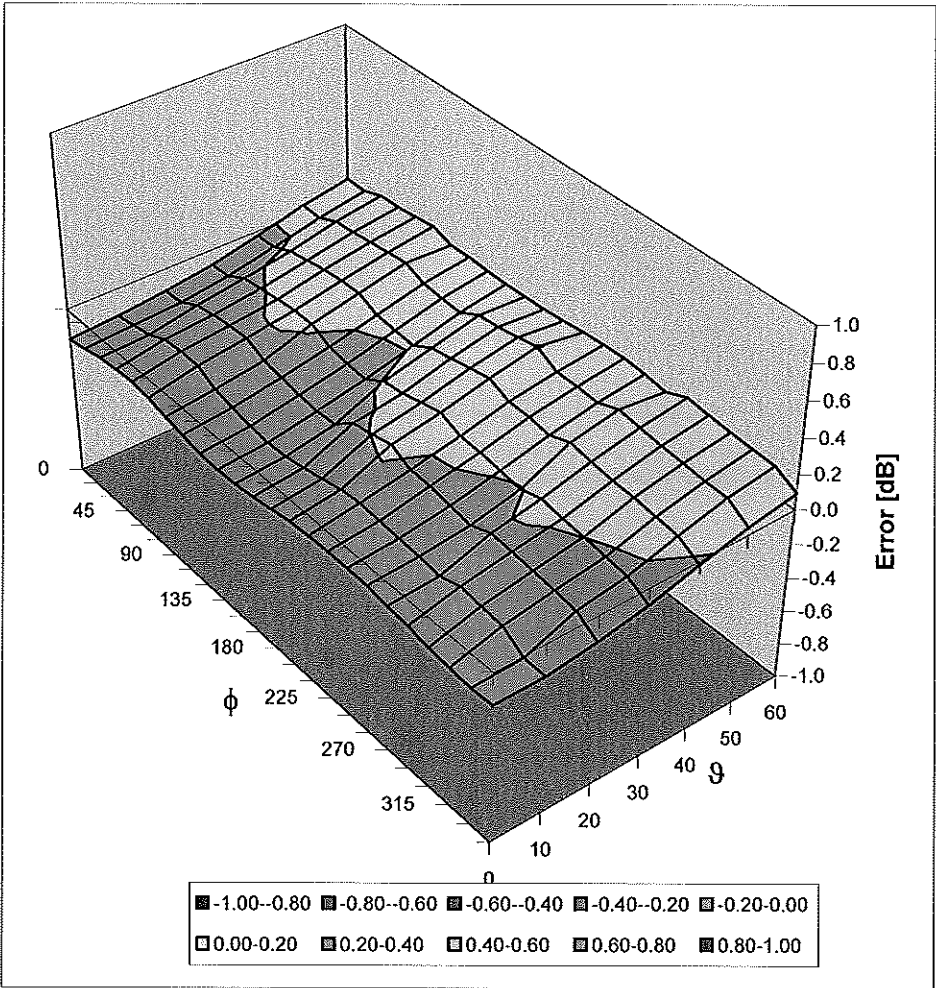


f [MHz]	Validity [MHz] ^c	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
835	± 50 / ± 100	Head	41.5 ± 5%	0.90 ± 5%	0.84	1.10	6.10 ± 11.0% (k=2)
1750	± 50 / ± 100	Head	40.1 ± 5%	1.37 ± 5%	0.40	1.74	5.29 ± 11.0% (k=2)
1900	± 50 / ± 100	Head	40.0 ± 5%	1.40 ± 5%	0.36	1.83	5.10 ± 11.0% (k=2)
835	± 50 / ± 100	Body	55.2 ± 5%	0.97 ± 5%	0.78	1.17	6.07 ± 11.0% (k=2)
1750	± 50 / ± 100	Body	53.4 ± 5%	1.49 ± 5%	0.33	2.21	4.83 ± 11.0% (k=2)
1900	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.31	2.41	4.55 ± 11.0% (k=2)

^c The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

Deviation from Isotropy in HSL

Error (ϕ , ϑ), $f = 900 \text{ MHz}$



Uncertainty of Spherical Isotropy Assessment: $\pm 2.6\%$ ($k=2$)

Additional Conversion Factors

for Dosimetric E-Field Probe

Type:

ES3DV3

Serial Number:

3209

Place of Assessment:

Zurich

Date of Assessment:

September 17, 2009

Probe Calibration Date:

April 15, 2009

Schmid & Partner Engineering AG hereby certifies that conversion factor(s) of this probe have been evaluated on the date indicated above. The assessment was performed using the FDTD numerical code SEMCAD of Schmid & Partner Engineering AG. The evaluation is coupled with measured conversion factors (probe calibration date indicated above). The uncertainty of the numerical assessment is based on the extrapolation from measured value at 835 MHz or at 1750 MHz.

Assessed by:

Dosimetric E-Field Probe ES3DV3 SN:3209

Conversion factor ($\pm$ standard deviation)

750 $\pm$ 50 MHz

ConvF

6.17 $\pm$ 7%

$\epsilon_r = 55.5 \pm 5\%$

$\sigma = 0.96 \pm 5\%$ mho/m

(body tissue)

Important Note:

For numerically assessed probe conversion factors, parameters Alpha and Delta in the DASY software must have the following entries: Alpha = 0 and Delta = 1.

Please see also Section 4.7 of the DASY4 Manual.



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Accreditation No.: **SCS 108**

Client **PC Test**

Certificate No: **D835V2-4d047_Jan09**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 4d047**

Calibration procedure(s) **QA CAL-05.v7**
Calibration procedure for dipole validation kits

Calibration date: **January 19, 2009**

Condition of the calibrated item **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	08-Oct-08 (No. 217-00898)	Oct-09
Power sensor HP 8481A	US37292783	08-Oct-08 (No. 217-00898)	Oct-09
Reference 20 dB Attenuator	SN: 5086 (20g)	01-Jul-08 (No. 217-00864)	Jul-09
Type-N mismatch combination	SN: 5047.2 / 06327	01-Jul-08 (No. 217-00867)	Jul-09
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

Calibrated by: **Jeton Kastrati** **Laboratory Technician**

Approved by: **Katja Pokovic** **Technical Manager**

Issued: January 20, 2009

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Accreditation No.: **SCS 108**

Glossary:

TSL	tissue simulating liquid
ConvF	sensitivity in TSL / NORM x,y,z
N/A	not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- b) IEC 62209-1, "Procedure to measure the Specific Absorption Rate (SAR) for hand-held devices used in close proximity to the ear (frequency range of 300 MHz to 3 GHz)", February 2005
- c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.

Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY5	V5.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	41.3 $\pm$ 6 %	0.91 mho/m $\pm$ 6 %
Head TSL temperature during test	(21.5 $\pm$ 0.2) °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.45 mW / g
SAR normalized	normalized to 1W	9.80 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	9.70 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.61 mW / g
SAR normalized	normalized to 1W	6.44 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	6.39 mW / g $\pm$ 16.5 % (k=2)

¹ Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.9 Ω -3.7 j Ω
Return Loss	- 28.4 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.8 Ω -5.5 j Ω
Return Loss	- 23.7 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.386 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	August 16, 2006

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.5 ± 6 %	1.00 mho/m ± 6 %
Body TSL temperature during test	(21.5 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm ³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.53 mW / g
SAR normalized	normalized to 1W	10.1 mW / g
SAR for nominal Body TSL parameters ²	normalized to 1W	9.82 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.67 mW / g
SAR normalized	normalized to 1W	6.68 mW / g
SAR for nominal Body TSL parameters ²	normalized to 1W	6.54 mW / g ± 16.5 % (k=2)

² Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

DASY5 Validation Report for Head TSL

Date/Time: 19.01.2009 11:45:19

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d047

Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL 900 MHz

Medium parameters used: $f = 835 \text{ MHz}$; $\sigma = 0.91 \text{ mho/m}$; $\epsilon_r = 41.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(5.97, 5.97, 5.97); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

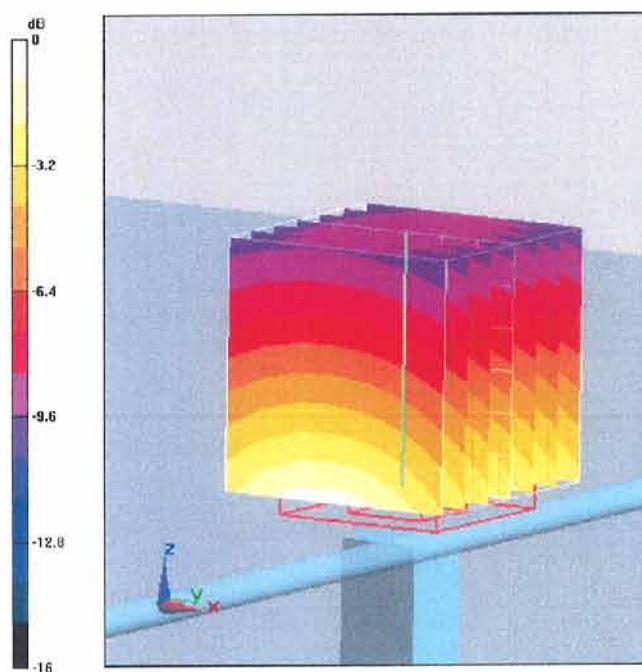
Pin=250mW; dip=15mm; dist=3.4mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 56.4 V/m; Power Drift = -0.00691 dB

Peak SAR (extrapolated) = 3.61 W/kg

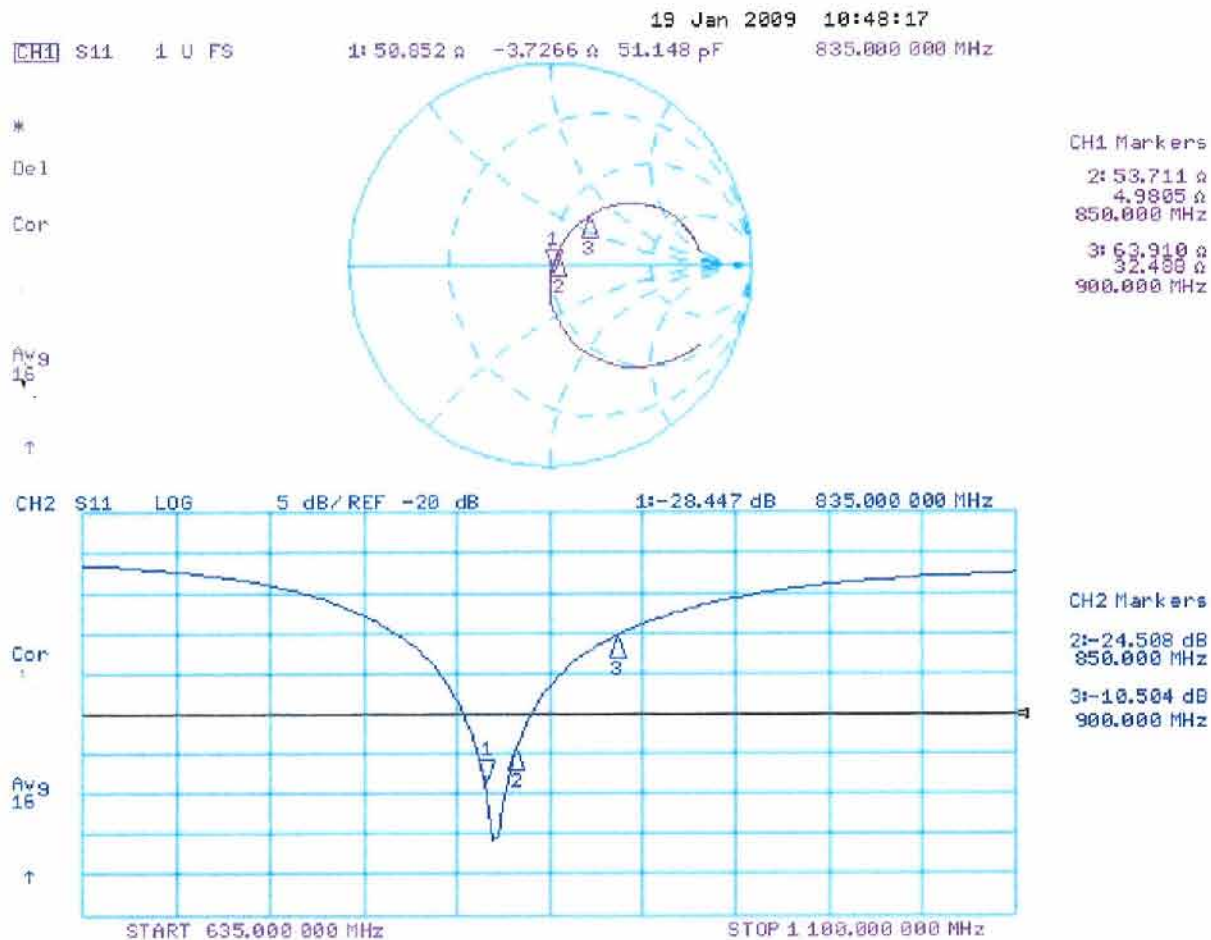
SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.61 mW/g

Maximum value of SAR (measured) = 2.77 mW/g



0 dB = 2.77mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date/Time: 12.01.2009 12:18:12

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d047

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: MSL900

Medium parameters used: $f = 835$ MHz; $\sigma = 1$ mho/m; $\epsilon_r = 53.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV2 - SN3025; ConvF(5.9, 5.9, 5.9); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

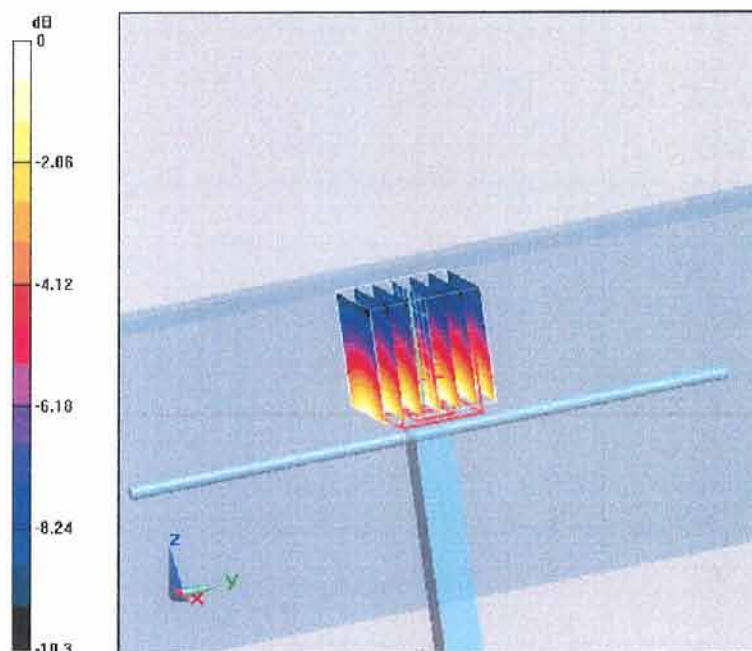
Pin = 250mW, d = 15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 54.5 V/m; Power Drift = 0.010 dB

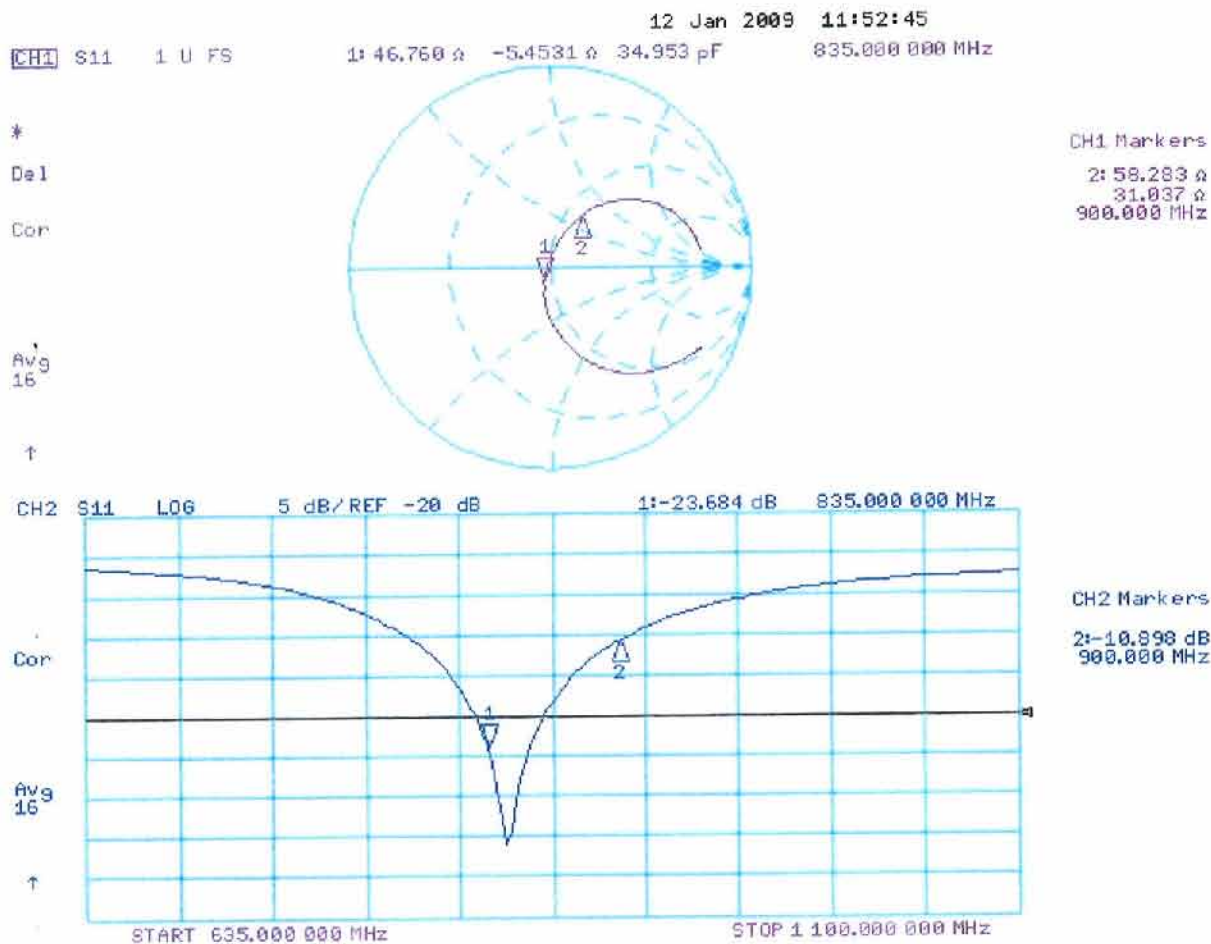
Peak SAR (extrapolated) = 3.65 W/kg

SAR(1 g) = 2.53 mW/g; SAR(10 g) = 1.67 mW/g

Maximum value of SAR (measured) = 2.82 mW/g



Impedance Measurement Plot for Body TSL





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Accreditation No.: **SCS 108**

Client **PC Test**

Certificate No: **D1900V2-502-Jan09**

CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 502**

Calibration procedure(s) **QA CAL-05.v7**
Calibration procedure for dipole validation kits

Calibration date: **January 20, 2009**

Condition of the calibrated item **In Tolerance**

This calibration certificate documents the traceability to national standards, which realize the physical units of measurements (SI).
 The measurements and the uncertainties with confidence probability are given on the following pages and are part of the certificate.

All calibrations have been conducted in the closed laboratory facility: environment temperature $(22 \pm 3)^{\circ}\text{C}$ and humidity $< 70\%$.

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM-442A	GB37480704	08-Oct-08 (No. 217-00898)	Oct-09
Power sensor HP 8481A	US37292783	08-Oct-08 (No. 217-00898)	Oct-09
Reference 20 dB Attenuator	SN: 5086 (20g)	01-Jul-08 (No. 217-00864)	Jul-09
Type-N mismatch combination	SN: 5047.2 / 06327	01-Jul-08 (No. 217-00867)	Jul-09
Reference Probe ES3DV2	SN: 3025	28-Apr-08 (No. ES3-3025_Apr08)	Apr-09
DAE4	SN: 601	14-Mar-08 (No. DAE4-601_Mar08)	Mar-09

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (in house check Oct-07)	In house check: Oct-09
RF generator R&S SMT-06	100005	4-Aug-99 (in house check Oct-07)	In house check: Oct-09
Network Analyzer HP 8753E	US37390585 S4206	18-Oct-01 (in house check Oct-08)	In house check: Oct-09

Calibrated by: **Claudio Leubler** Function: **Laboratory Technician**

Signature

Approved by: **Katja Pokovic** Technical Manager

Issued: January 21, 2009

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