

APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

Communication System: GSM850 GPRS; 2 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:4.15
Medium: 835 Muscle; Medium parameters used (interpolated):
 $f = 836.6 \text{ MHz}$; $\sigma = 0.991 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-07-2010; Ambient Temp: 23.8°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 1/22/2010
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

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

Mode: GPRS850, Lap position, LCD Flip, Mid.ch, 2x slots

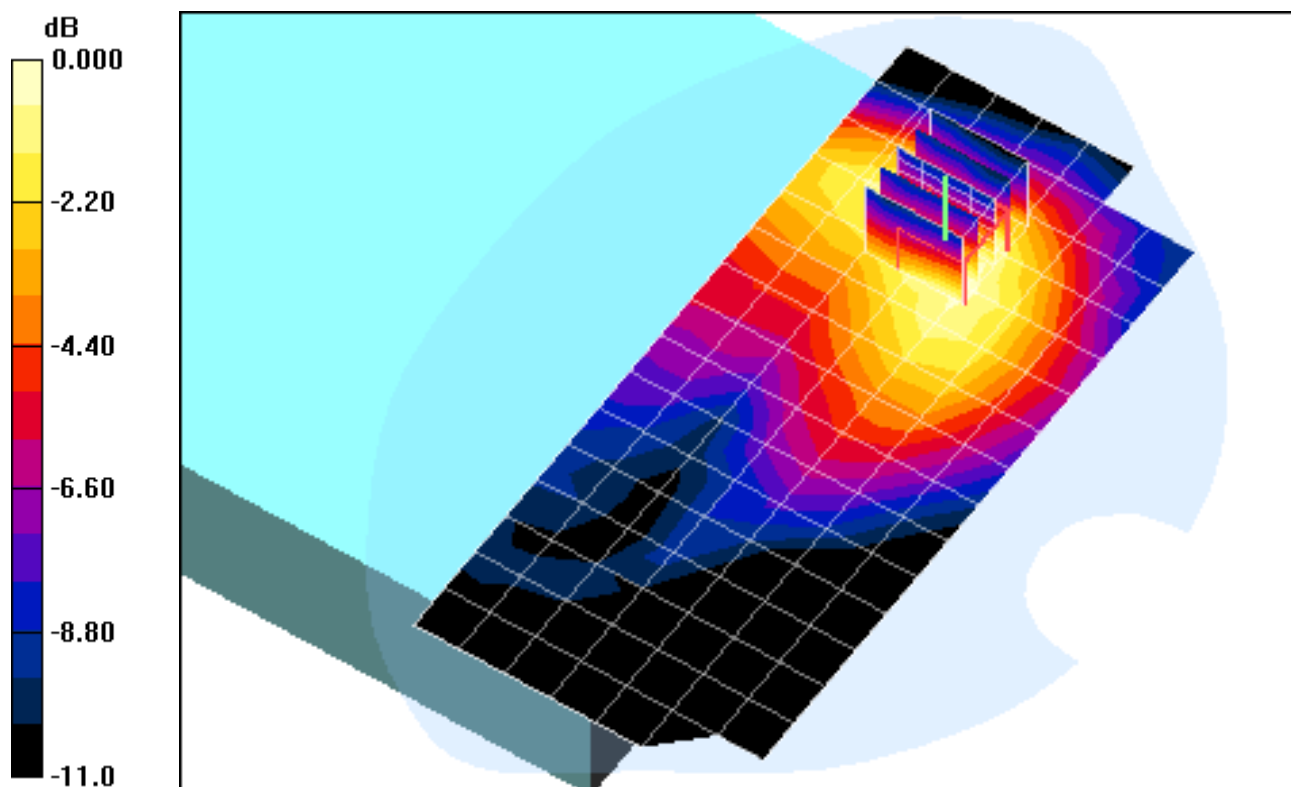
Area Scan (8x17x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 9.61 V/m; Power Drift = -0.222 dB

Peak SAR (extrapolated) = 0.123 W/kg

SAR(1 g) = 0.082 mW/g; SAR(10 g) = 0.055 mW/g



0 dB = 0.095mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

$$f = 836.6 \text{ MHz}; \sigma = 0.973 \text{ mho/m}; \epsilon_r = 53.8; \rho = 1000 \text{ kg/m}^3$$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-05-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

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

Mode: GPRS 850, Tablet, Edge Left position, LCD Flip, Mid.ch, 2x Slots

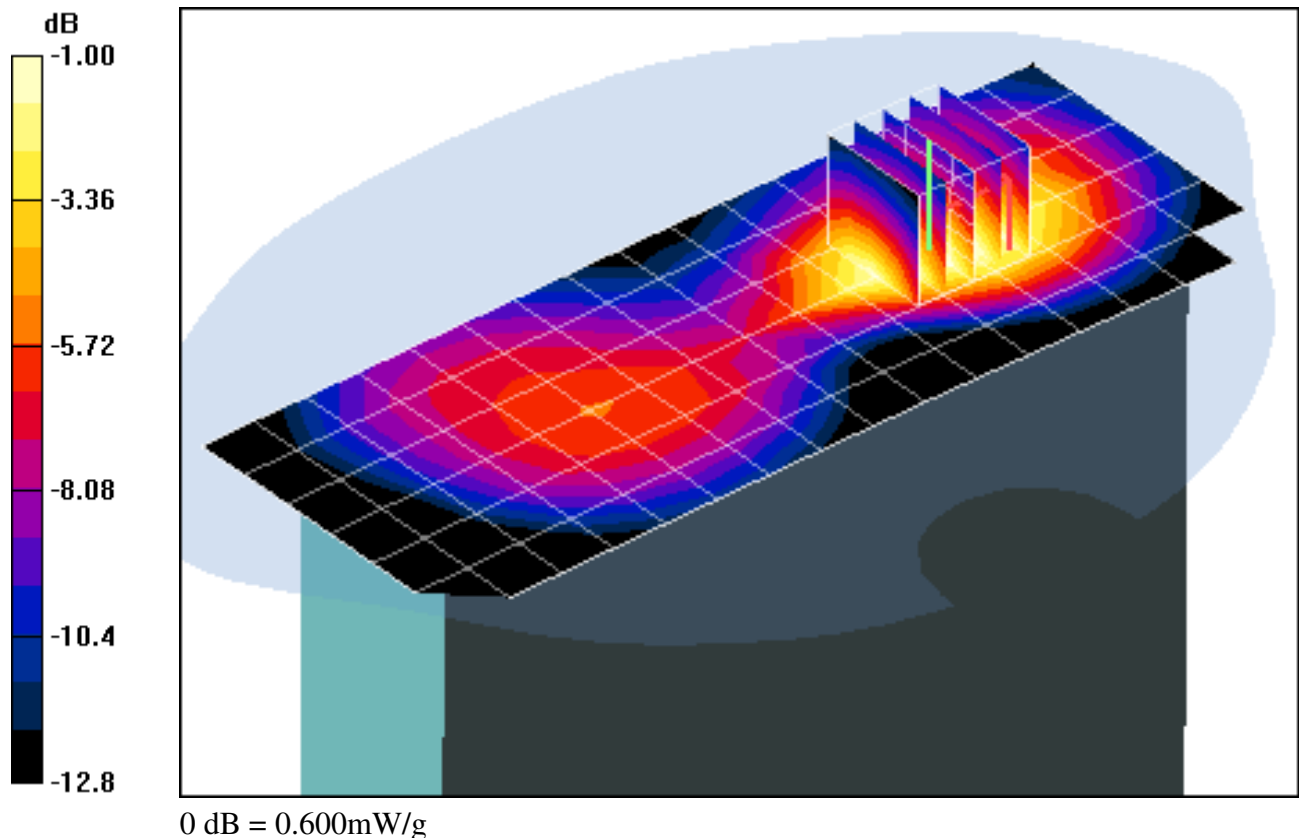
Area Scan (7x17x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 24.7 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 0.765 W/kg

SAR(1 g) = 0.507 mW/g; SAR(10 g) = 0.321 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

$$f = 836.6 \text{ MHz}; \sigma = 0.973 \text{ mho/m}; \epsilon_r = 53.8; \rho = 1000 \text{ kg/m}^3$$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-05-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

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

Mode: GPRS850, Tablet, Edge Left Side position, LCD Flip, Mid.ch, 2x Slots

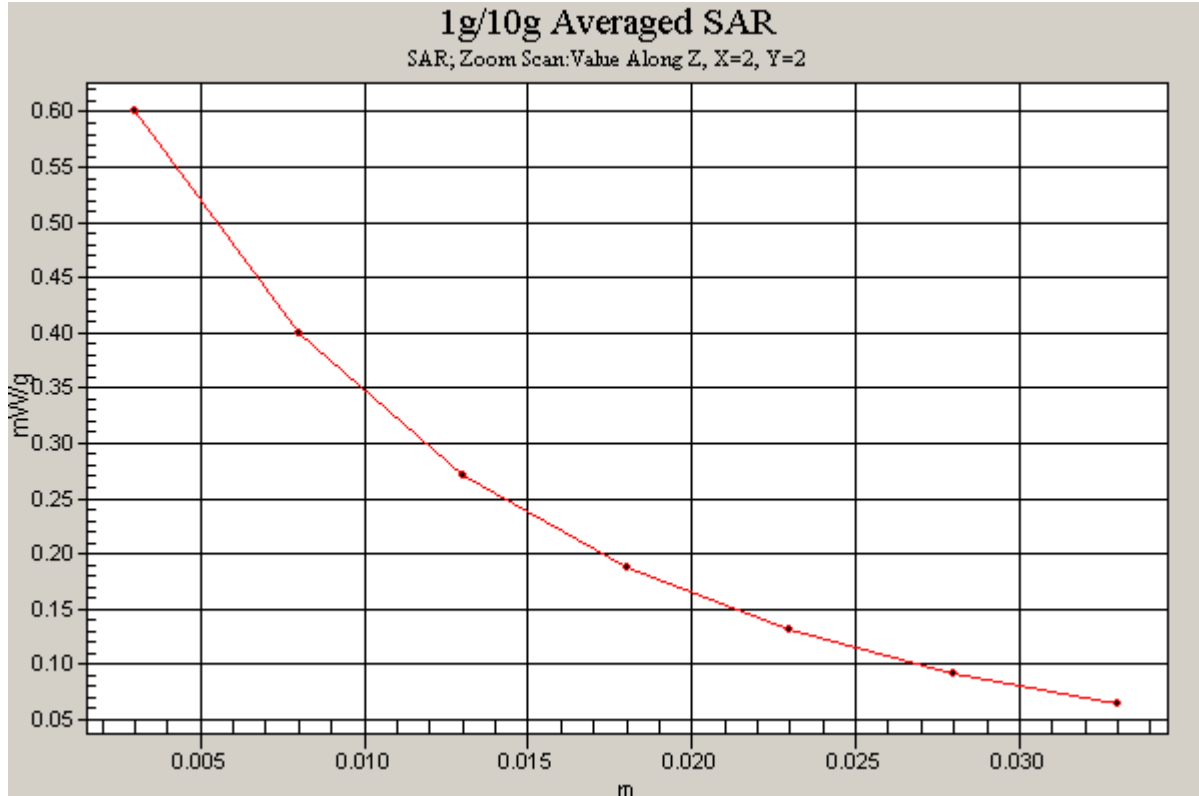
Area Scan (7x17x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 24.7 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 0.765 W/kg

SAR(1 g) = 0.507 mW/g; SAR(10 g) = 0.321 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

Communication System: GSM850 GPRS; 2 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:4.15
Medium: 835 Muscle; Medium parameters used (interpolated):
 $f = 836.6 \text{ MHz}$; $\sigma = 0.991 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-07-2010; Ambient Temp: 23.8°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 1/22/2010
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

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

Mode: GPRS850, Tablet, Edge Bottom position, LCD Flip, Mid.ch, 2x Slots

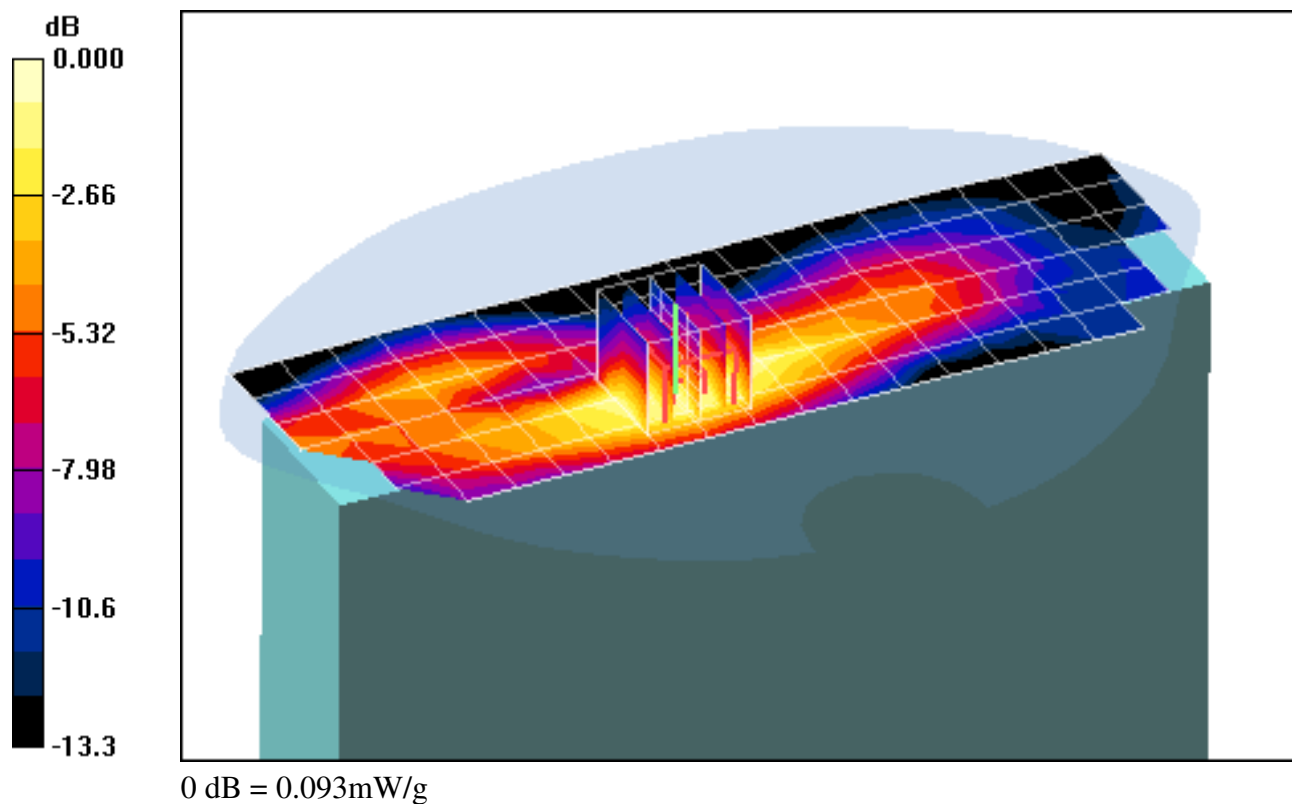
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 9.53 V/m

Peak SAR (extrapolated) = 0.128 W/kg

SAR(1 g) = 0.079 mW/g; SAR(10 g) = 0.049 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

Communication System: GSM850 GPRS; 2 Tx slots; Frequency: 836.6 MHz; Duty Cycle: 1:4.15
Medium: 835 Muscle; Medium parameters used (interpolated):
 $f = 836.6 \text{ MHz}$; $\sigma = 0.991 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-07-2010; Ambient Temp: 23.8°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 1/22/2010
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

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

Mode: GPRS850, Tablet, Edge Top position, LCD Flip, Mid.ch, 2x Slots

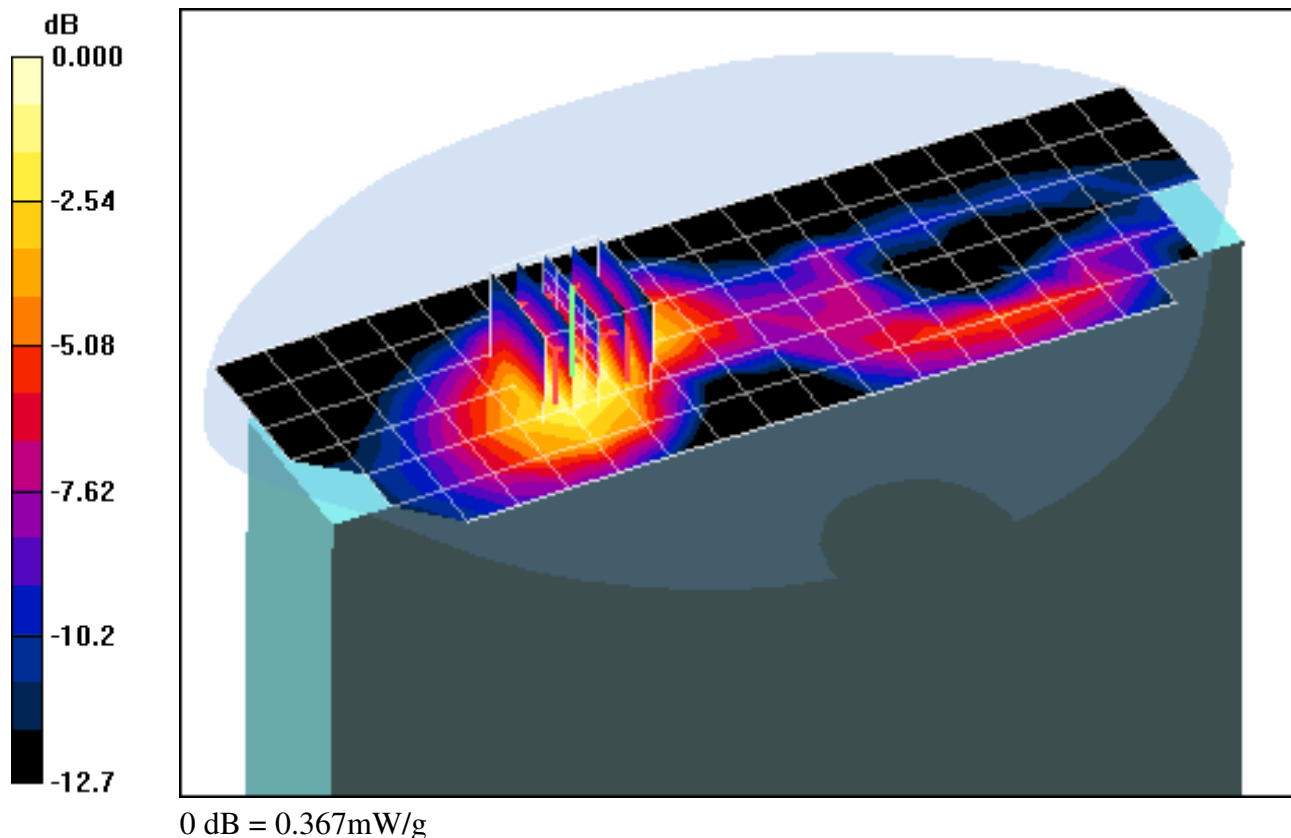
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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) = 0.478 W/kg

SAR(1 g) = 0.302 mW/g; SAR(10 g) = 0.185 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

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

Medium: 1900 Muscle; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-05-2010; Ambient Temp: 23.5°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: GPRS1900, Lap position, LCD Flip, Mid.ch, 2x slots

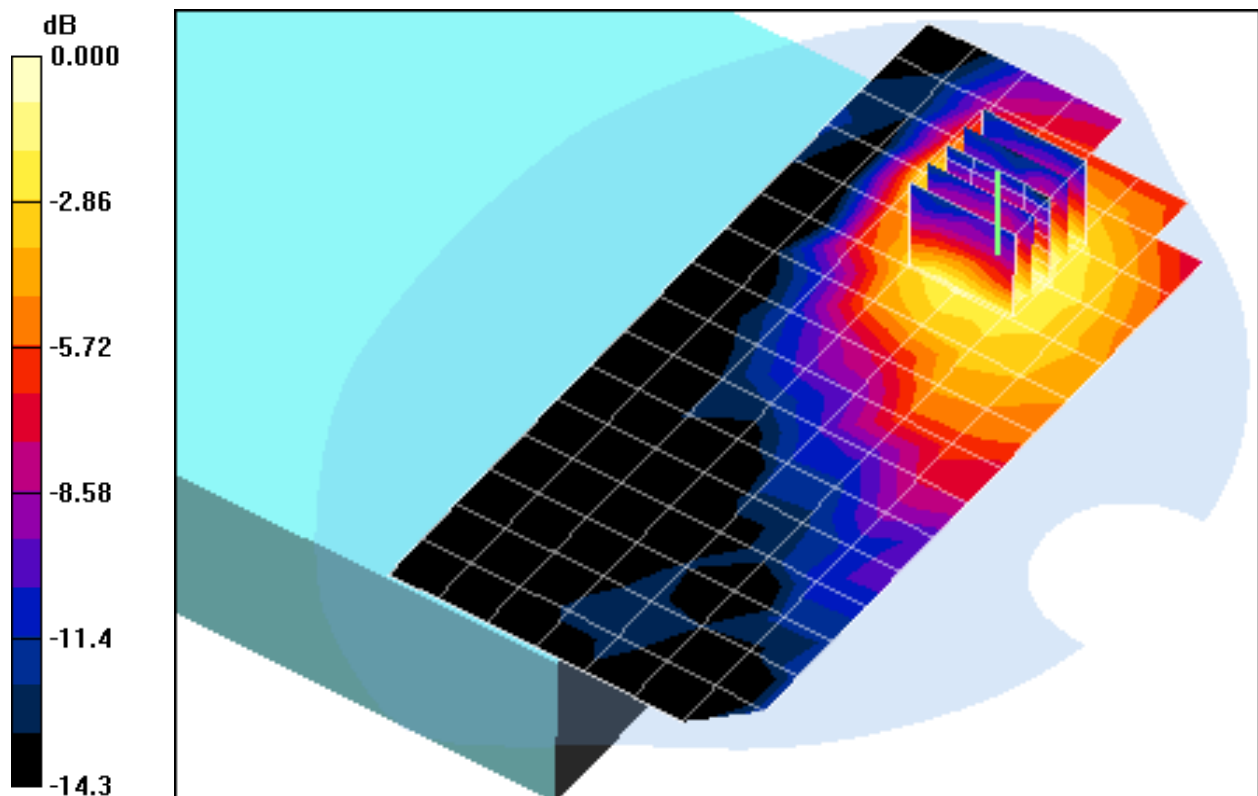
Area Scan (8x17x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 7.92 V/m

Peak SAR (extrapolated) = 0.145 W/kg

SAR(1 g) = 0.084 mW/g; SAR(10 g) = 0.050 mW/g



0 dB = 0.097mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

Medium: 1900 Muscle; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 51.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-06-2010; Ambient Temp: 24.1°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

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

Mode: GPRS 1900, Tablet, Edge Left position, LCD Flip, Mid.ch

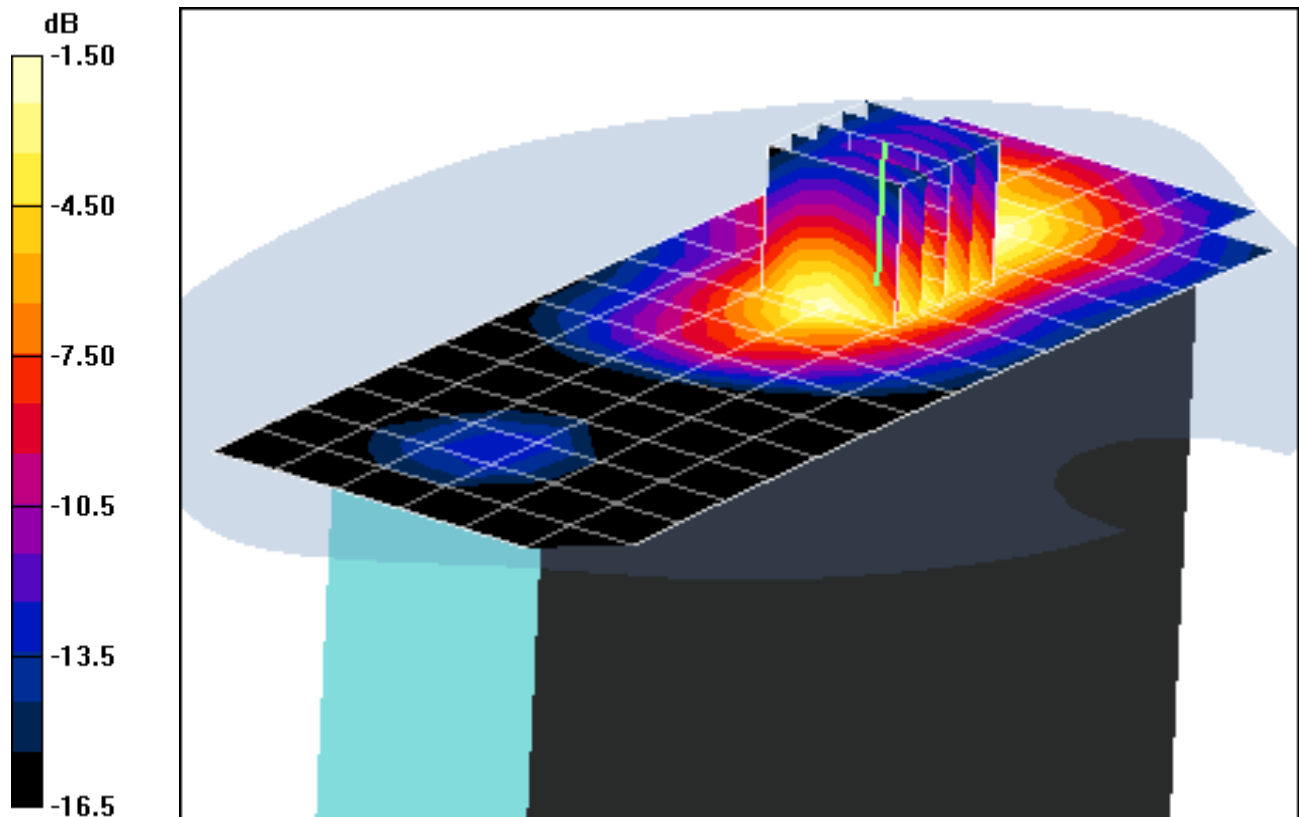
Area Scan (7x17x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 21.3 V/m; Power Drift = -0.166 dB

Peak SAR (extrapolated) = 1.01 W/kg

SAR(1 g) = 0.591 mW/g; SAR(10 g) = 0.339 mW/g



0 dB = 0.660mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

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

Medium: 1900 Muscle; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-05-2010; Ambient Temp: 23.5°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: GPRS1900, Tablet, Edge Bottom position, LCD Flip, Mid.ch, 2x Slots

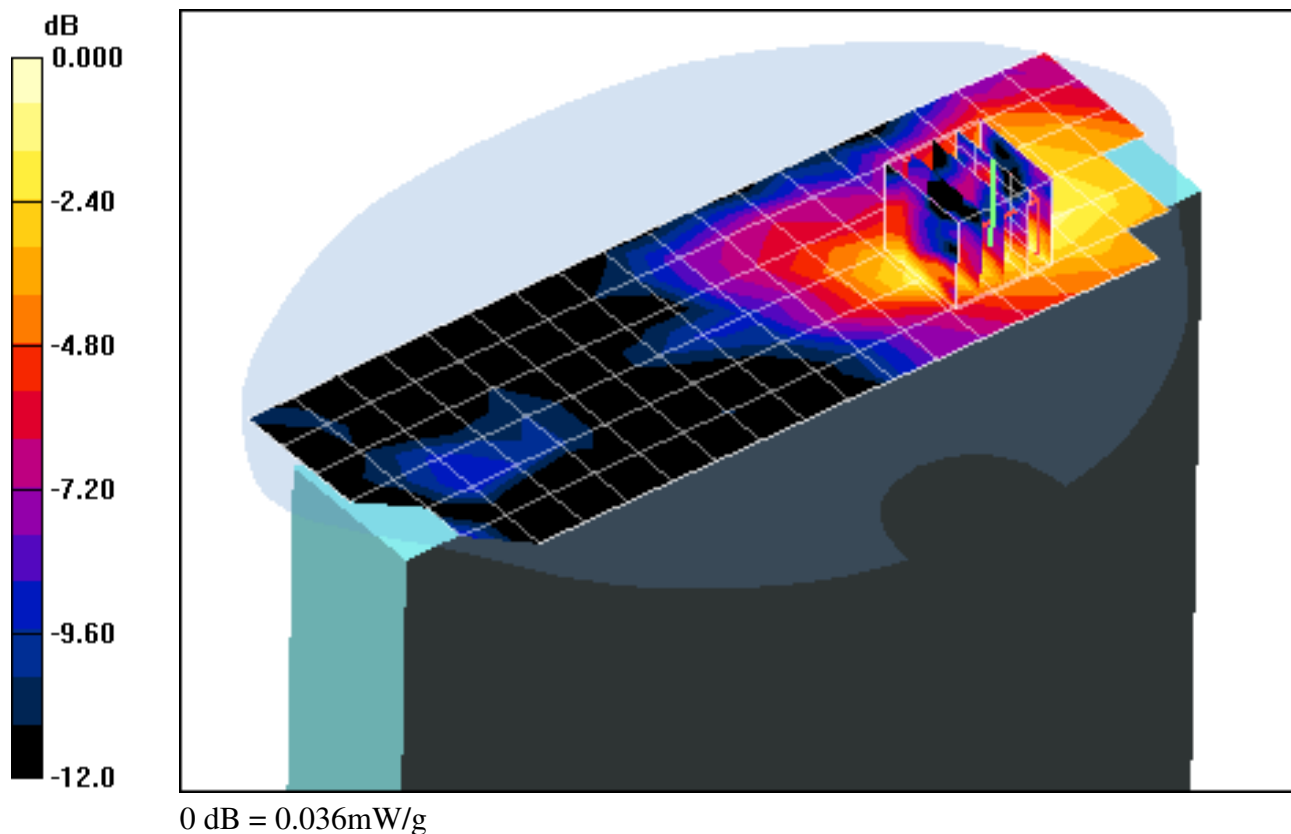
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 4.23 V/m

Peak SAR (extrapolated) = 0.047 W/kg

SAR(1 g) = 0.028 mW/g; SAR(10 g) = 0.016 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and Bluetooth
Serial: ODKSA00505**

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

Medium: 1900 Muscle; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-05-2010; Ambient Temp: 23.5°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: GPRS1900, Tablet, Edge Top position, LCD Flip, Mid.ch, 2x Slots

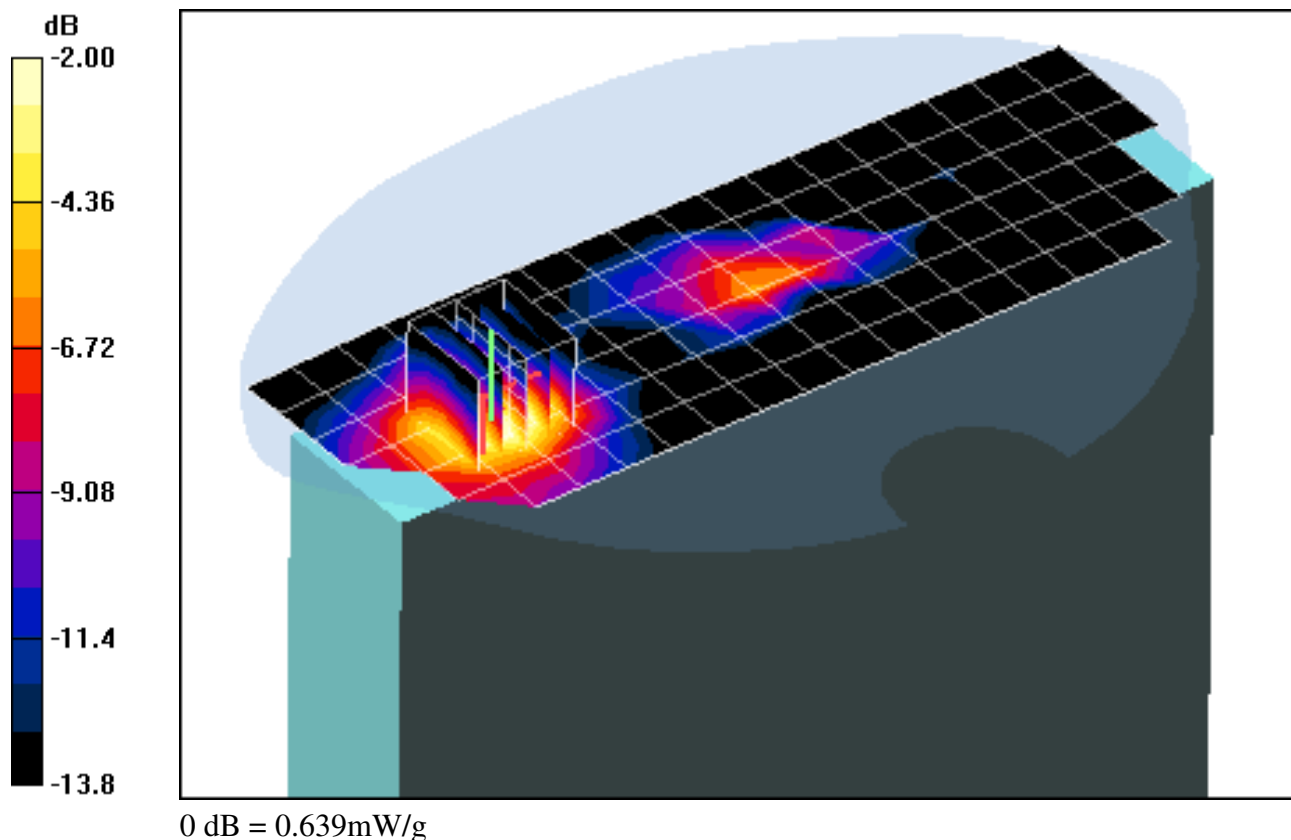
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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) = 0.962 W/kg

SAR(1 g) = 0.501 mW/g; SAR(10 g) = 0.260 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

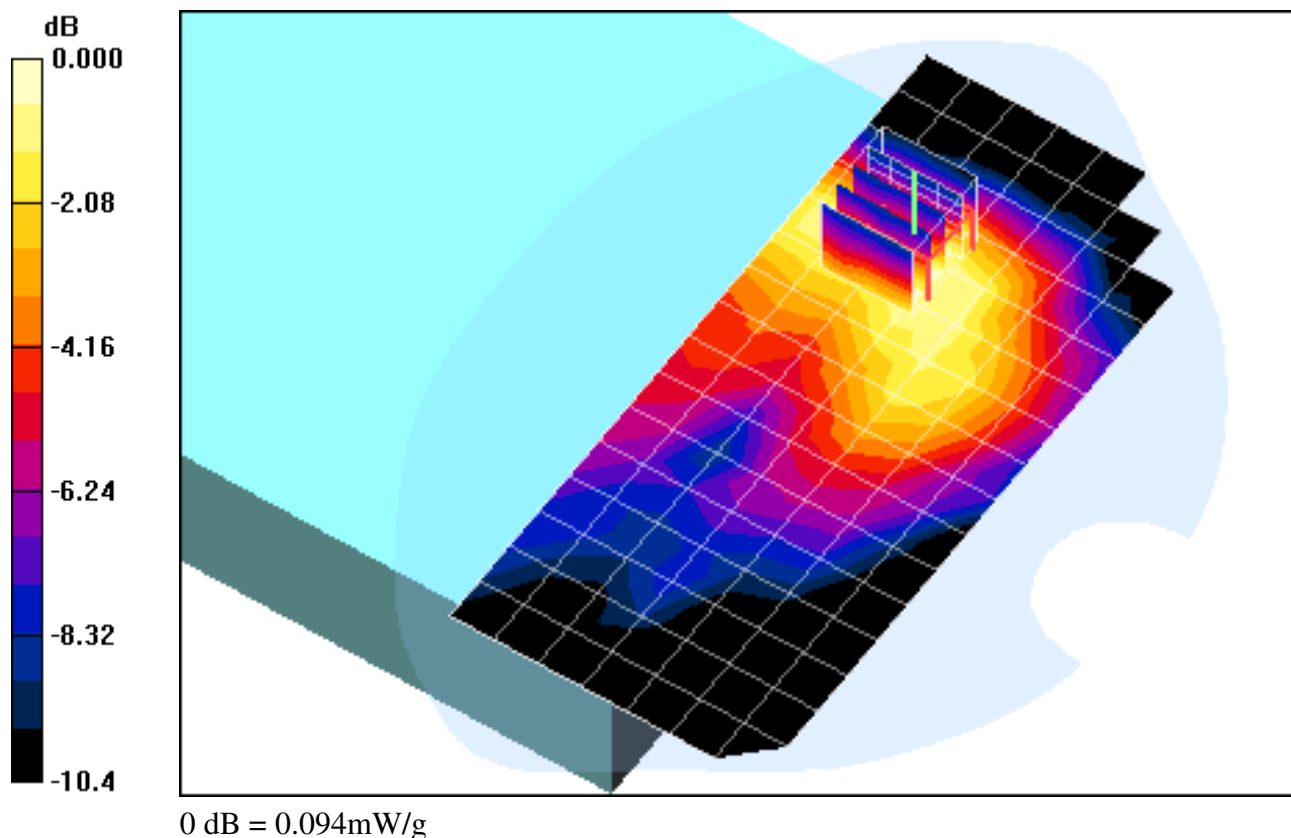
Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Muscle; Medium parameters used (interpolated):
 $f = 836.6 \text{ MHz}$; $\sigma = 0.991 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-07-2010; Ambient Temp: 23.8°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 1/22/2010
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: WCDMA 850, Lap position, LCD Flip, Mid.ch

Area Scan (8x17x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$
Reference Value = 9.24 V/m
Peak SAR (extrapolated) = 0.123 W/kg
SAR(1 g) = 0.080 mW/g; SAR(10 g) = 0.053 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

Medium: 835 Muscle; Medium parameters used (interpolated):

$f = 836.6 \text{ MHz}$; $\sigma = 0.973 \text{ mho/m}$; $\epsilon_r = 53.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-05-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

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

Mode: WCDMA 850, Tablet, Edge Left position, LCD Flip, Mid.ch

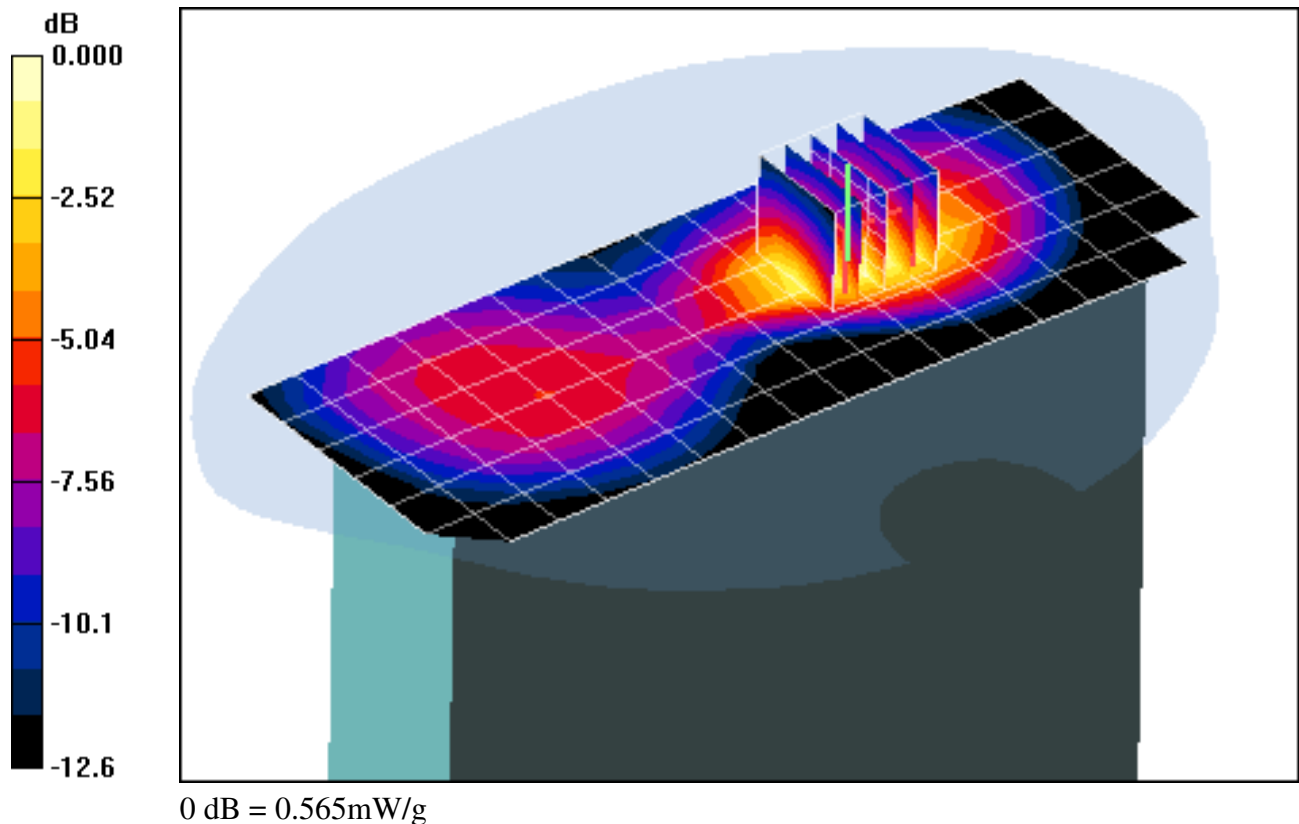
Area Scan (7x17x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 22.6 V/m; Power Drift = 0.179 dB

Peak SAR (extrapolated) = 0.724 W/kg

SAR(1 g) = 0.476 mW/g; SAR(10 g) = 0.301 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Muscle; Medium parameters used (interpolated):
 $f = 836.6 \text{ MHz}$; $\sigma = 0.991 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-07-2010; Ambient Temp: 23.8°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 1/22/2010
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: WCDMA 850, Tablet, Edge Bottom position, LCD Flip, Mid.ch

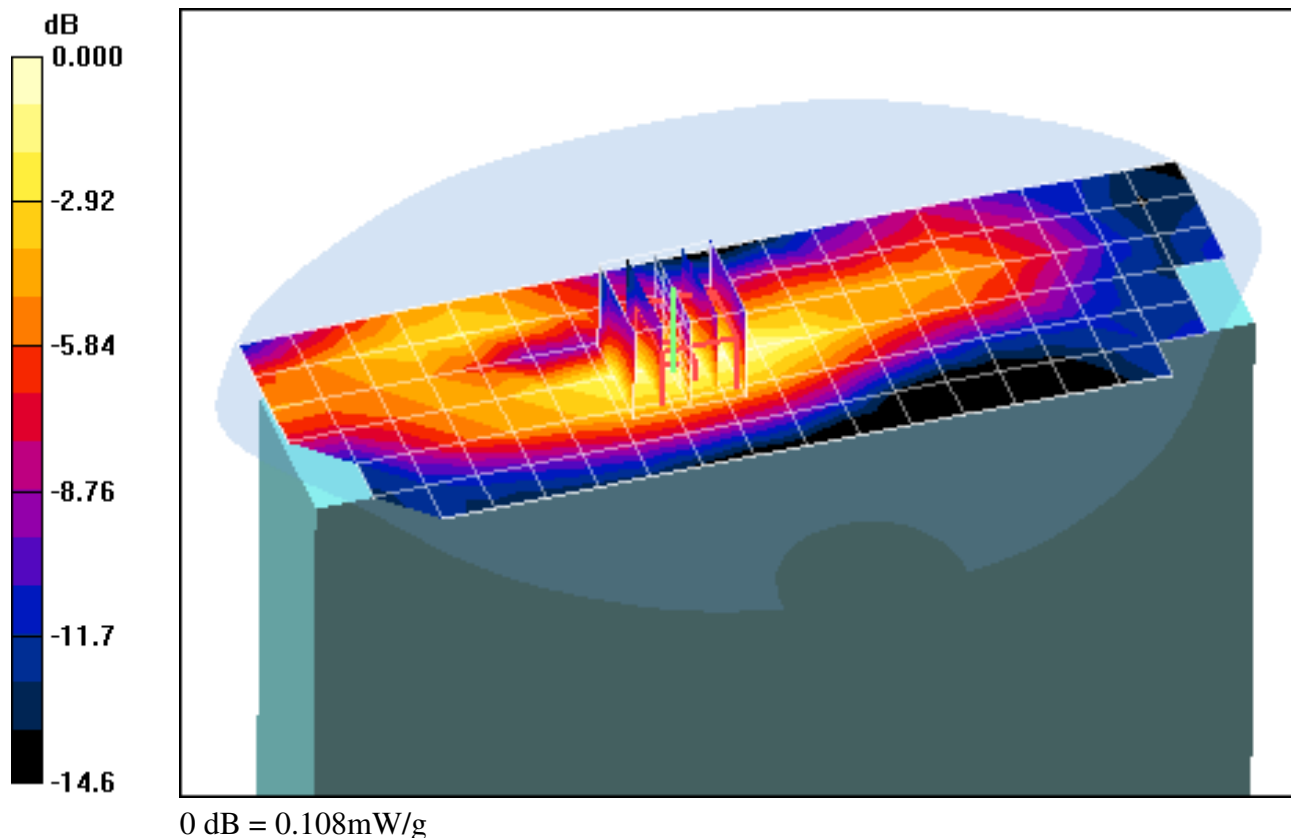
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 10.2 V/m

Peak SAR (extrapolated) = 0.143 W/kg

SAR(1 g) = 0.086 mW/g; SAR(10 g) = 0.052 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

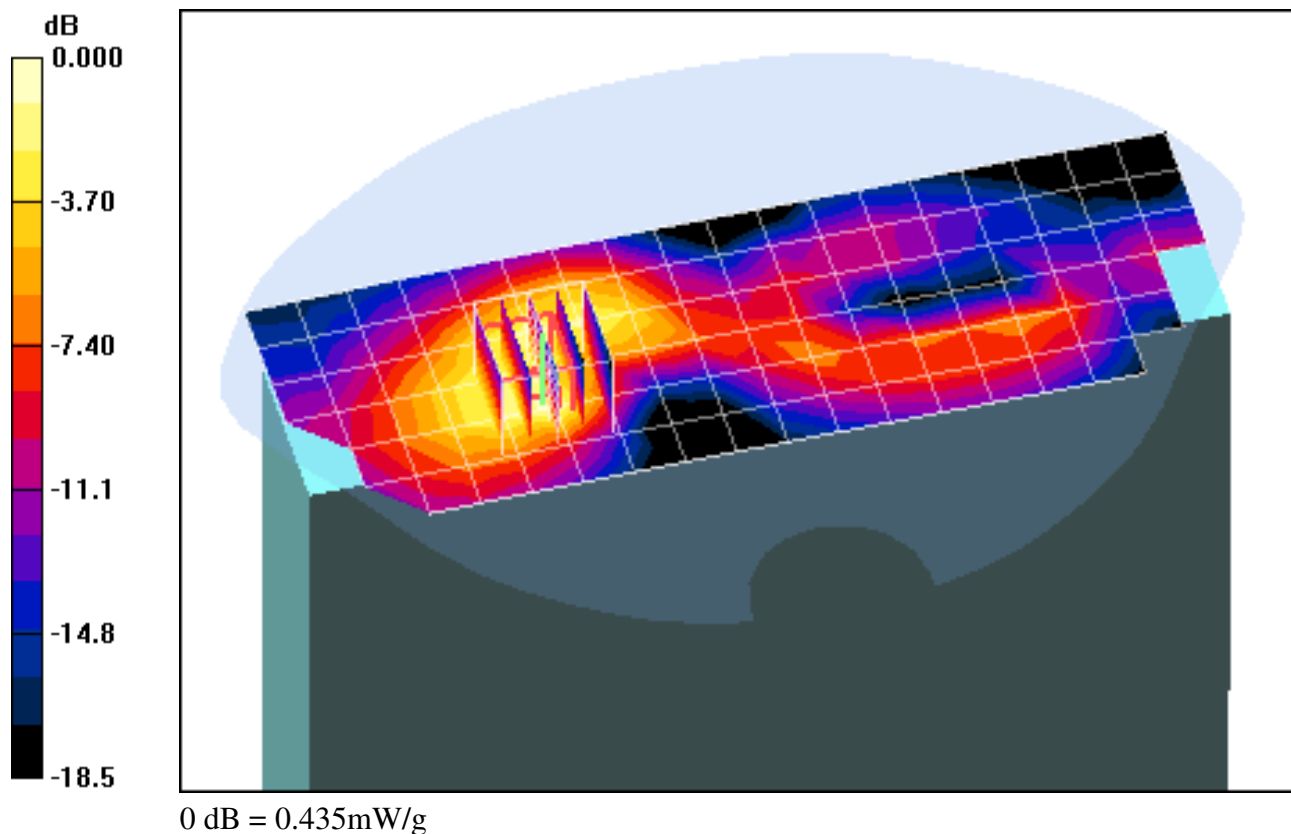
Communication System: WCDMA850; Frequency: 836.6 MHz; Duty Cycle: 1:1
Medium: 835 Muscle; Medium parameters used (interpolated):
 $f = 836.6 \text{ MHz}$; $\sigma = 0.991 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-07-2010; Ambient Temp: 23.8°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 1/22/2010
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: WCDMA 850, Tablet, Edge Top position, LCD Flip, Mid.ch

Area Scan (7x20x1): 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 = 19.4 V/m
Peak SAR (extrapolated) = 0.669 W/kg
SAR(1 g) = 0.318 mW/g; SAR(10 g) = 0.180 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

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

Medium: 1900 Muscle; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-05-2010; Ambient Temp: 23.5°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: WCDMA 1900, Lap position, LCD Flip, Mid.ch

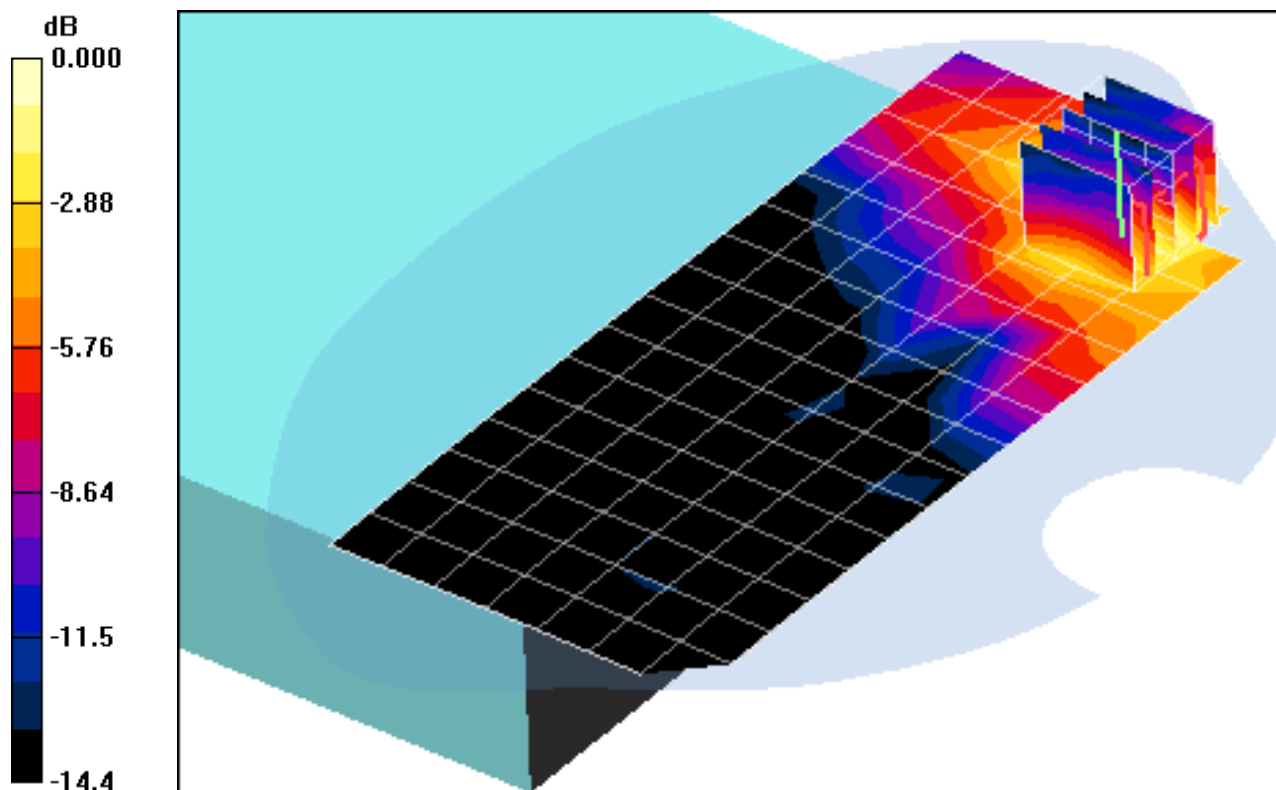
Area Scan (8x17x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 9.54 V/m

Peak SAR (extrapolated) = 0.204 W/kg

SAR(1 g) = 0.123 mW/g; SAR(10 g) = 0.072 mW/g



0 dB = 0.148mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

Medium: 1900 Muscle; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 51.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-06-2010; Ambient Temp: 24.1°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

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

Mode: WCDMA1900, Tablet, Edge Left position, LCD Flip, Mid.ch

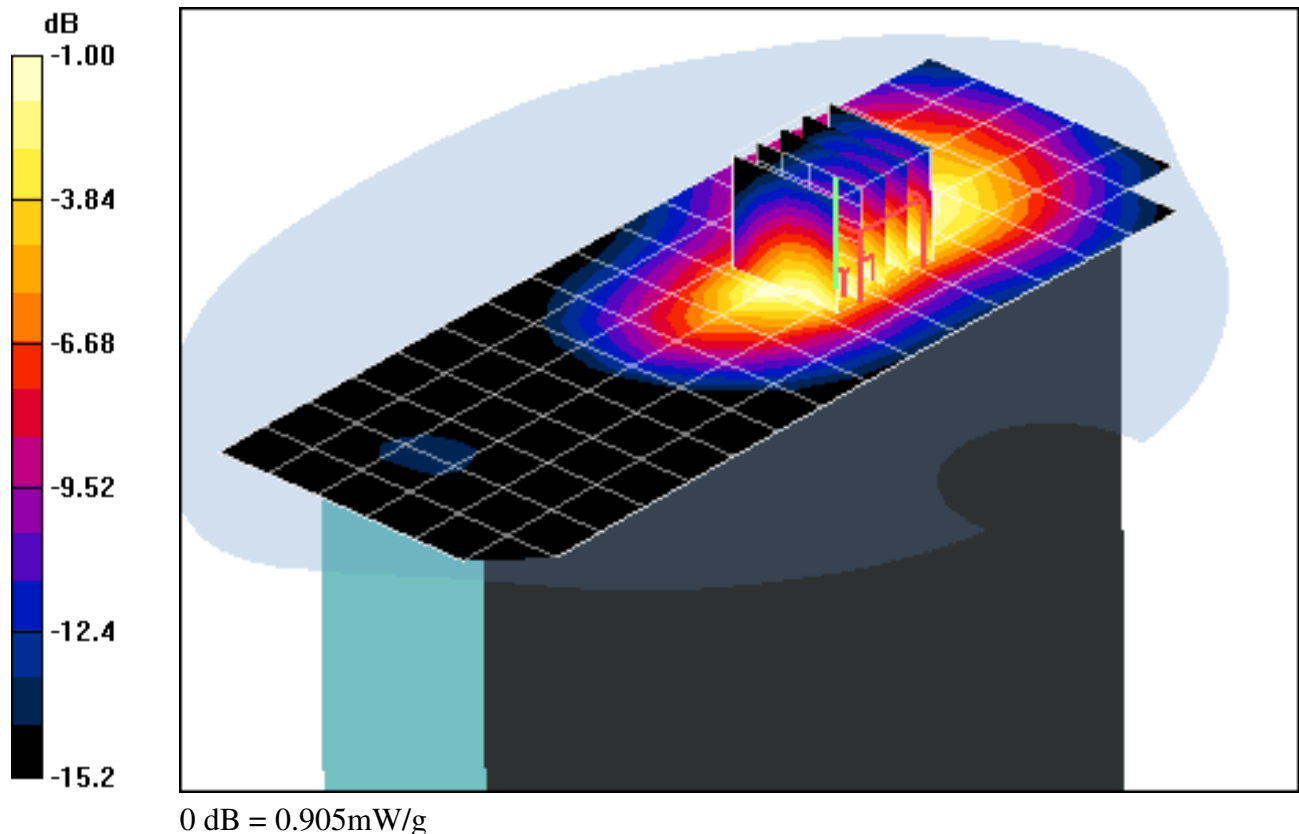
Area Scan (7x17x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.0 V/m; Power Drift = 0.256 dB

Peak SAR (extrapolated) = 1.26 W/kg

SAR(1 g) = 0.745 mW/g; SAR(10 g) = 0.426 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

Medium: 1900 Muscle; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 51.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-06-2010; Ambient Temp: 24.1°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

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

Mode: WCDMA1900, Tablet, Edge Left position, LCD Flip, Mid.ch

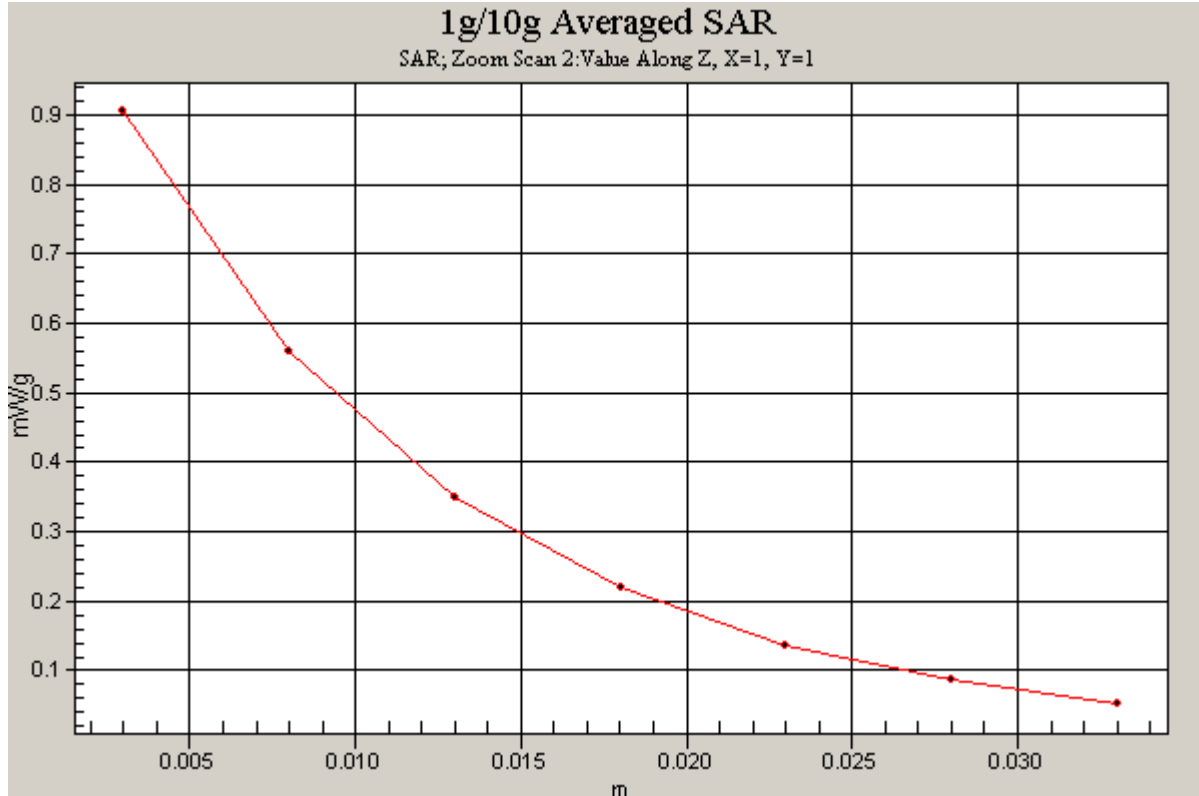
Area Scan (7x17x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 24.0 V/m; Power Drift = 0.256 dB

Peak SAR (extrapolated) = 1.26 W/kg

SAR(1 g) = 0.745 mW/g; SAR(10 g) = 0.426 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

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

Medium: 1900 Muscle; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-05-2010; Ambient Temp: 23.5°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: WCDMA 1900, Tablet, Edge Bottom position, LCD Flip, Mid.ch

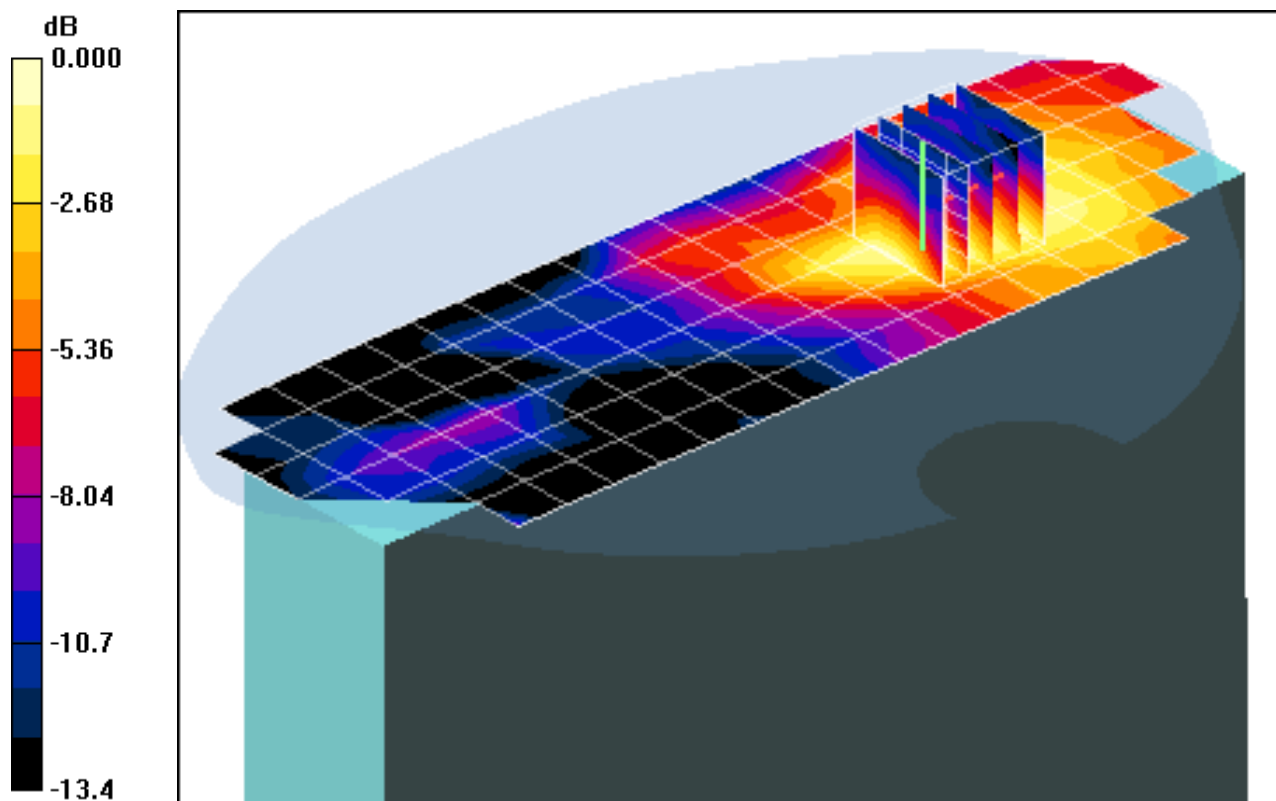
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 5.66 V/m

Peak SAR (extrapolated) = 0.079 W/kg

SAR(1 g) = 0.049 mW/g; SAR(10 g) = 0.029 mW/g



0 dB = 0.058mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

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

Medium: 1900 Muscle; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-05-2010; Ambient Temp: 23.5°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: WCDMA 1900, Tablet, Edge Top position, LCD Flip, Mid.ch

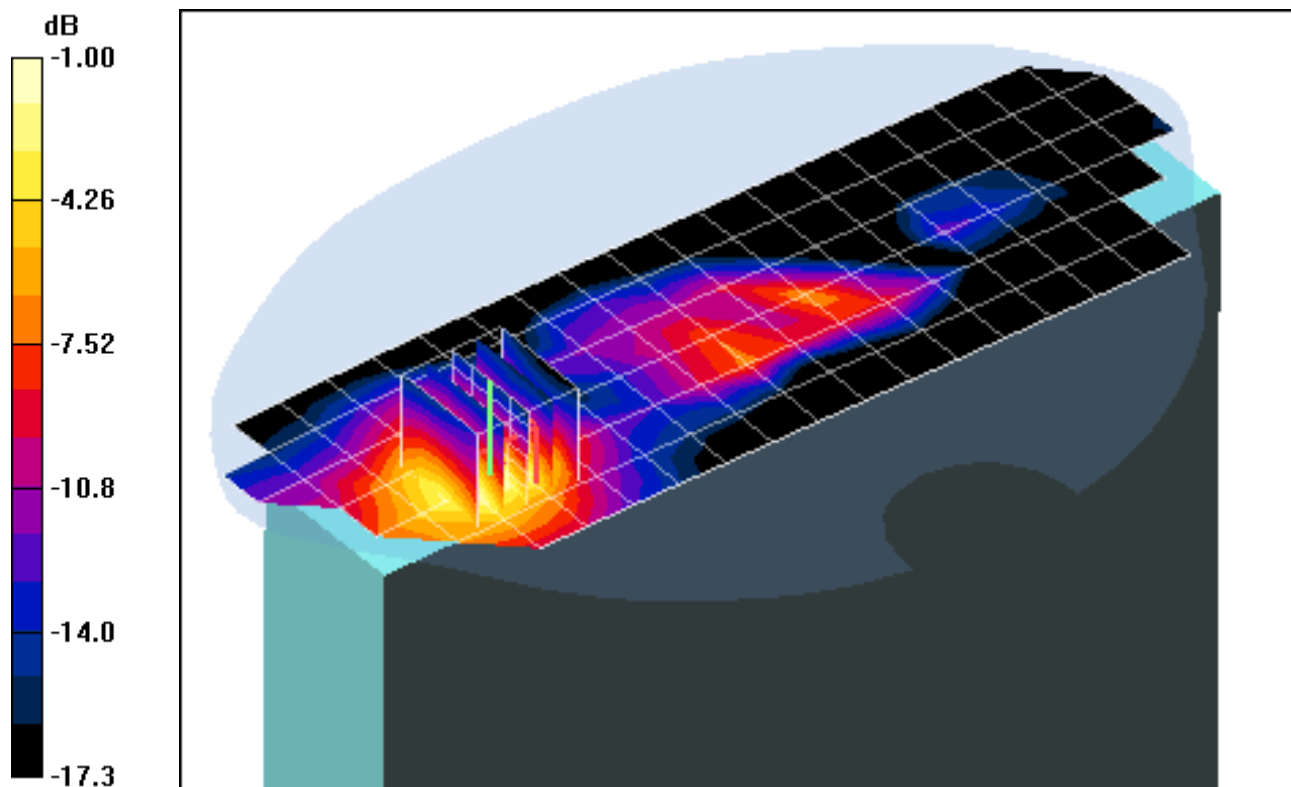
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 21.9 V/m

Peak SAR (extrapolated) = 1.35 W/kg

SAR(1 g) = 0.689 mW/g; SAR(10 g) = 0.357 mW/g



0 dB = 0.902mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

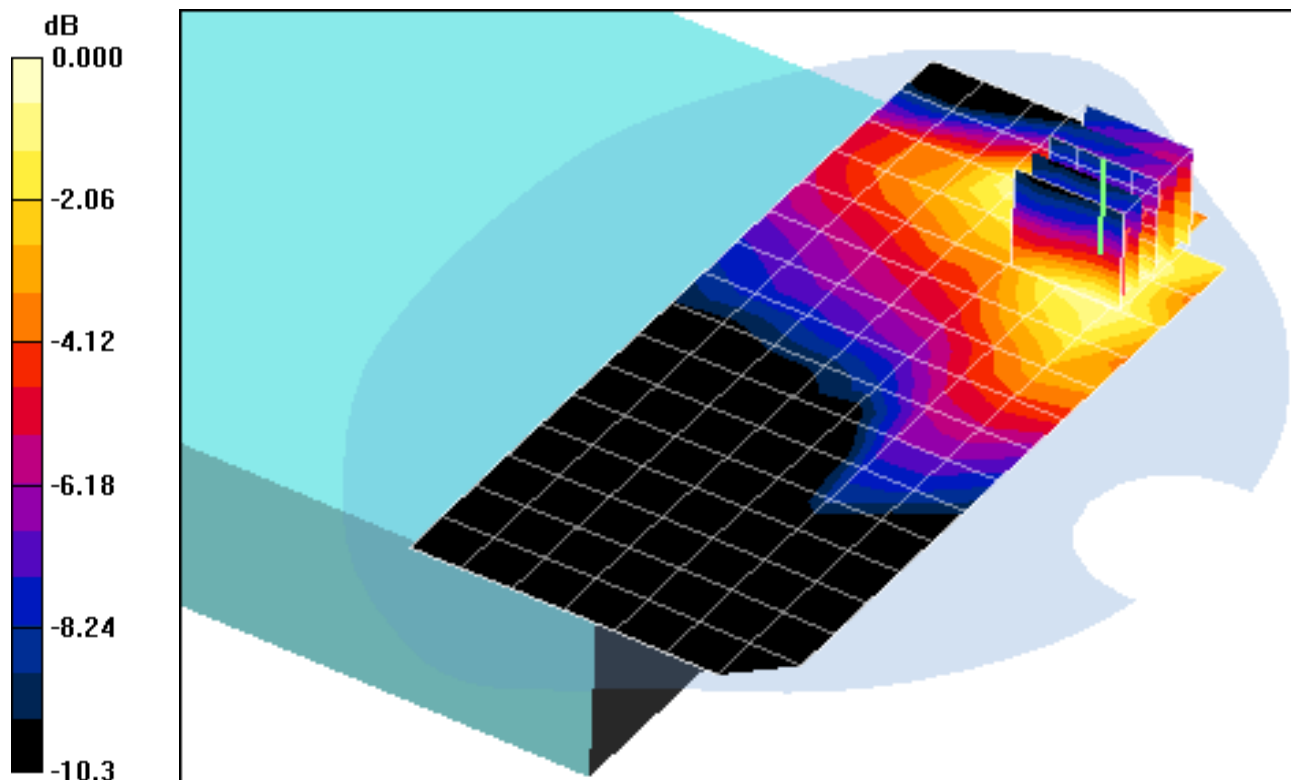
Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Muscle; Medium parameters used (interpolated):
 $f = 836.52 \text{ MHz}$; $\sigma = 0.991 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-07-2010; Ambient Temp: 23.8°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 1/22/2010
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular CDMA EvDO, Lap position, LCD Flip, Mid.ch

Area Scan (8x17x1): 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 = 9.28 V/m
Peak SAR (extrapolated) = 0.111 W/kg
SAR(1 g) = 0.073 mW/g; SAR(10 g) = 0.049 mW/g



0 dB = 0.085mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

Medium: 835 Muscle; Medium parameters used (interpolated):

$f = 836.52 \text{ MHz}$; $\sigma = 0.973 \text{ mho/m}$; $\epsilon_r = 53.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-05-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

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

Mode: Cellular CDMA EvDO, Tablet, Edge Left position, LCD Flip, Mid.ch

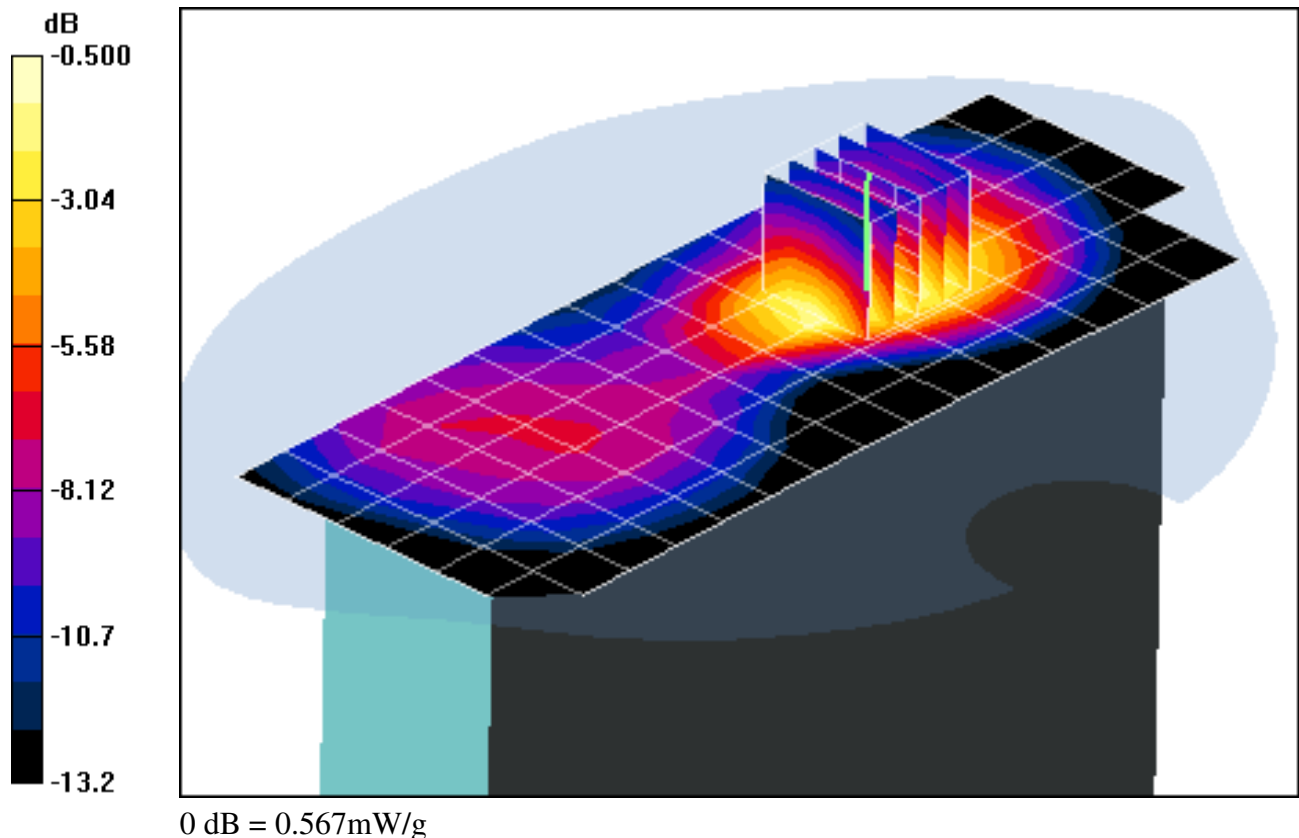
Area Scan (7x17x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 23.2 V/m; Power Drift = 0.244 dB

Peak SAR (extrapolated) = 0.737 W/kg

SAR(1 g) = 0.479 mW/g; SAR(10 g) = 0.299 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

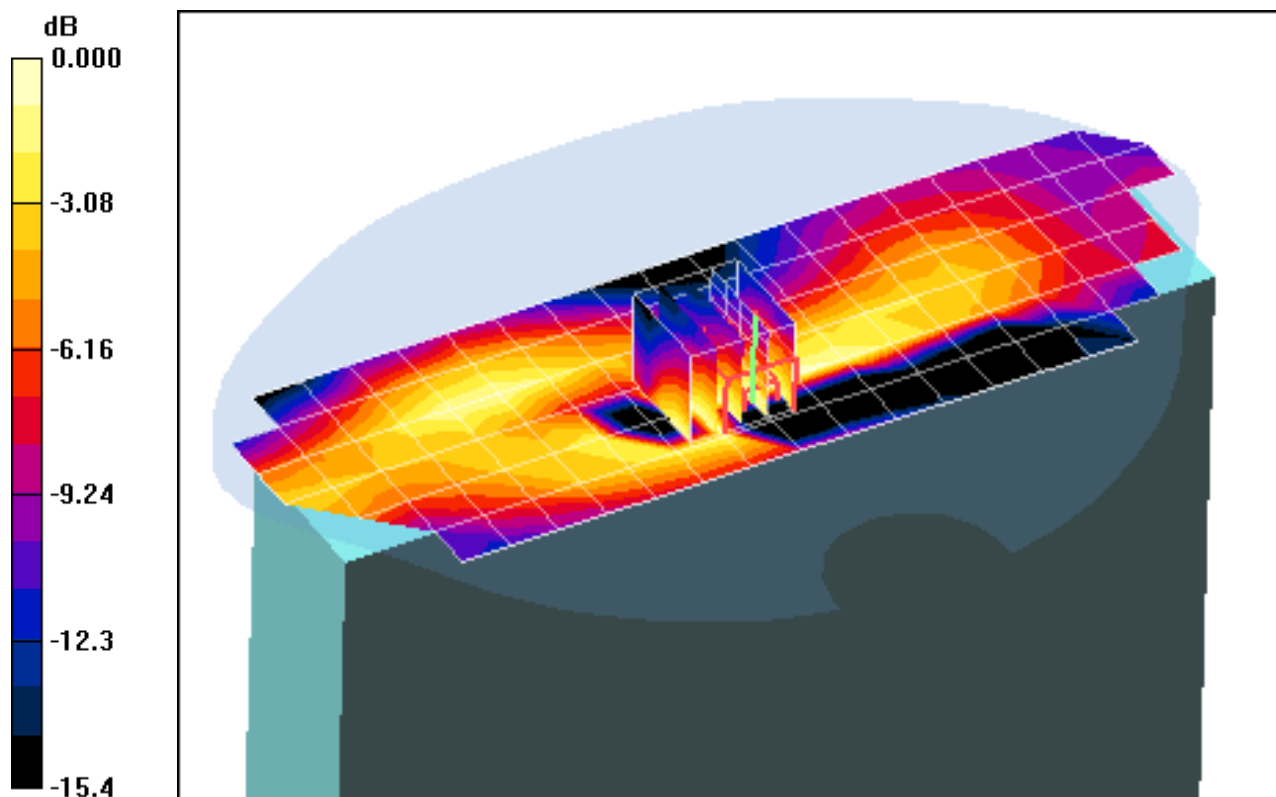
Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Muscle; Medium parameters used (interpolated):
 $f = 836.52 \text{ MHz}$; $\sigma = 0.991 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-07-2010; Ambient Temp: 23.8°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 1/22/2010
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular CDMA EvDO, Tablet, Edge Bottom position, LCD Flip, Mid.ch

Area Scan (7x20x1): 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 = 10.3 V/m
Peak SAR (extrapolated) = 0.143 W/kg
SAR(1 g) = 0.086 mW/g; SAR(10 g) = 0.051 mW/g



0 dB = 0.103mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

Communication System: Cellular CDMA; Frequency: 836.52 MHz; Duty Cycle: 1:1
Medium: 835 Muscle; Medium parameters used (interpolated):
 $f = 836.52 \text{ MHz}$; $\sigma = 0.991 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-07-2010; Ambient Temp: 23.8°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 1/22/2010
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

Mode: Cellular CDMA EvDO, Tablet, Edge Top position, LCD Flip, Mid.ch

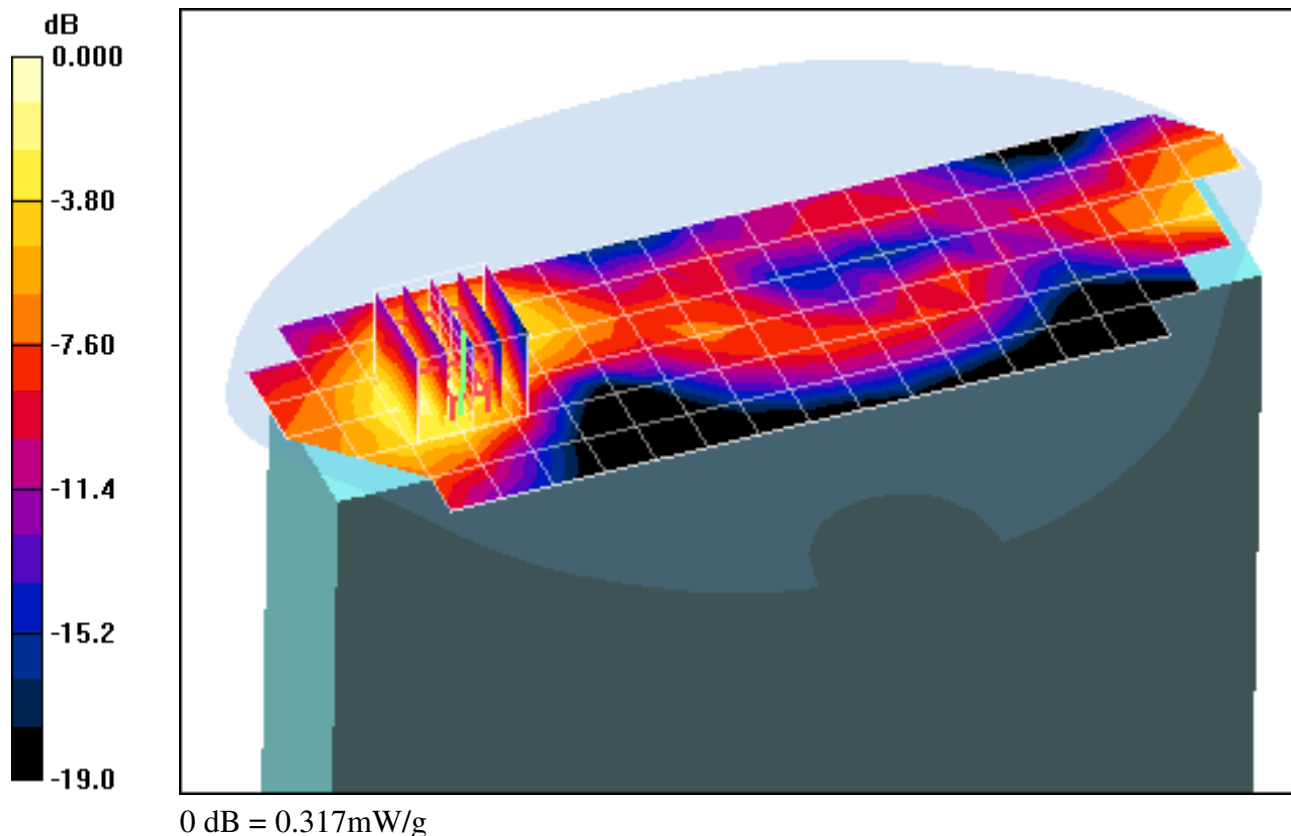
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Zoom Scan 2 2 (5x5x7)/Cube 0: Measurement grid: $dx=8\text{mm}$, $dy=8\text{mm}$, $dz=5\text{mm}$

Reference Value = 16.2 V/m

Peak SAR (extrapolated) = 0.532 W/kg

SAR(1 g) = 0.240 mW/g; SAR(10 g) = 0.134 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

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

Medium: 1900 Muscle; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-05-2010; Ambient Temp: 23.5°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: PCS CDMA EvDO, Lap position, LCD Flip, Mid.ch

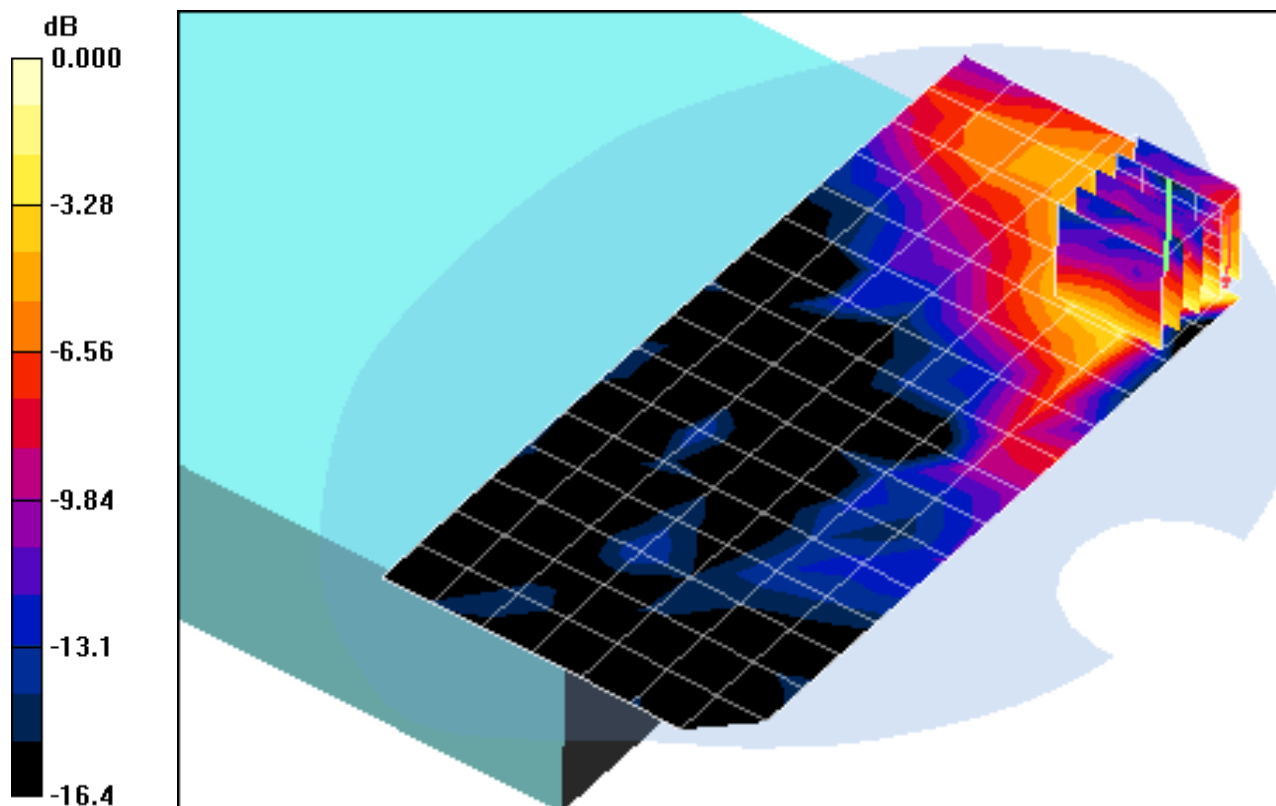
Area Scan (8x17x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 8.31 V/m

Peak SAR (extrapolated) = 0.165 W/kg

SAR(1 g) = 0.089 mW/g; SAR(10 g) = 0.050 mW/g



0 dB = 0.110mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

Medium: 1900 Muscle; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 51.3$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-06-2010; Ambient Temp: 24.1°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357

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

Mode: PCS CDMA EvDO, Tablet, Edge Left Position, LCD Flip, Mid.ch

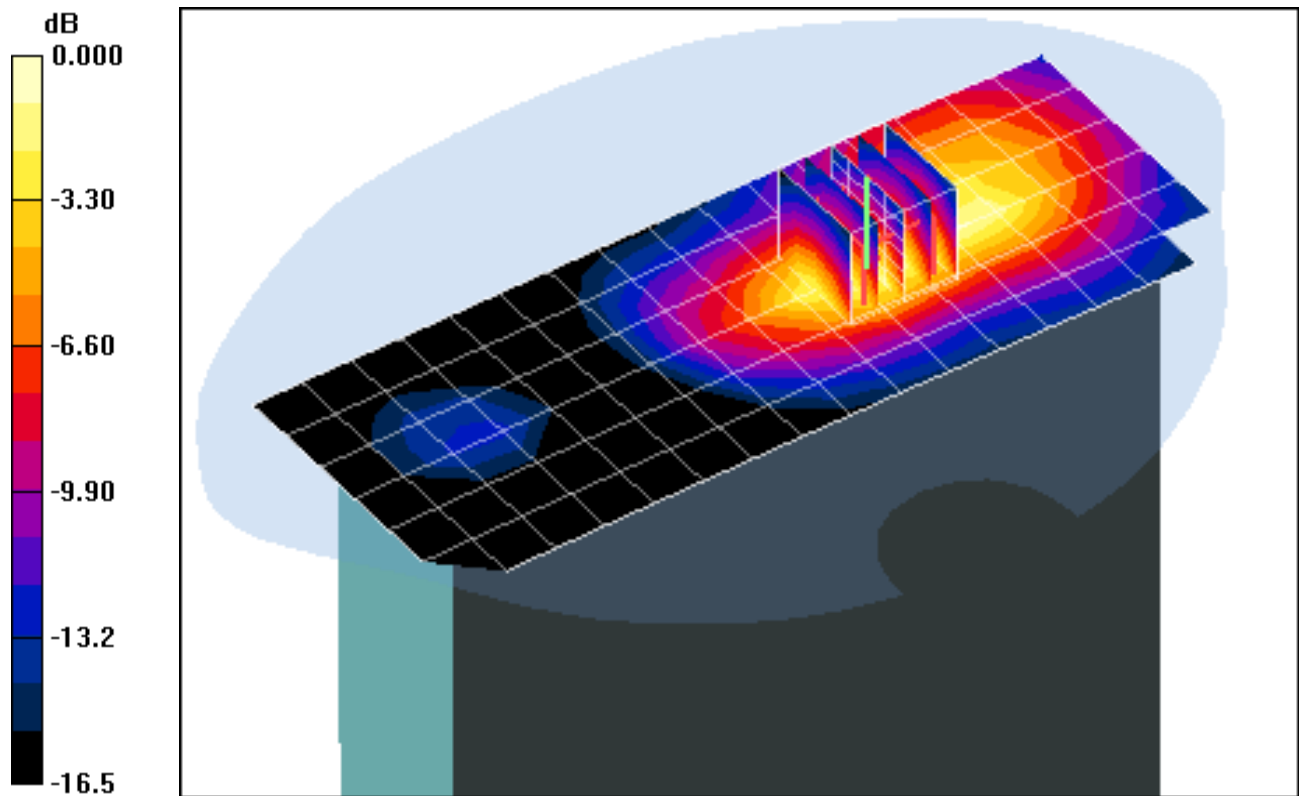
Area Scan (7x17x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 22.9 V/m; Power Drift = -0.127 dB

Peak SAR (extrapolated) = 1.21 W/kg

SAR(1 g) = 0.687 mW/g; SAR(10 g) = 0.386 mW/g



0 dB = 0.860mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

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

Medium: 1900 Muscle; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-05-2010; Ambient Temp: 23.5°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: PCS CDMA EvDO, Tablet, Edge Bottom position, LCD Flip, Mid.ch

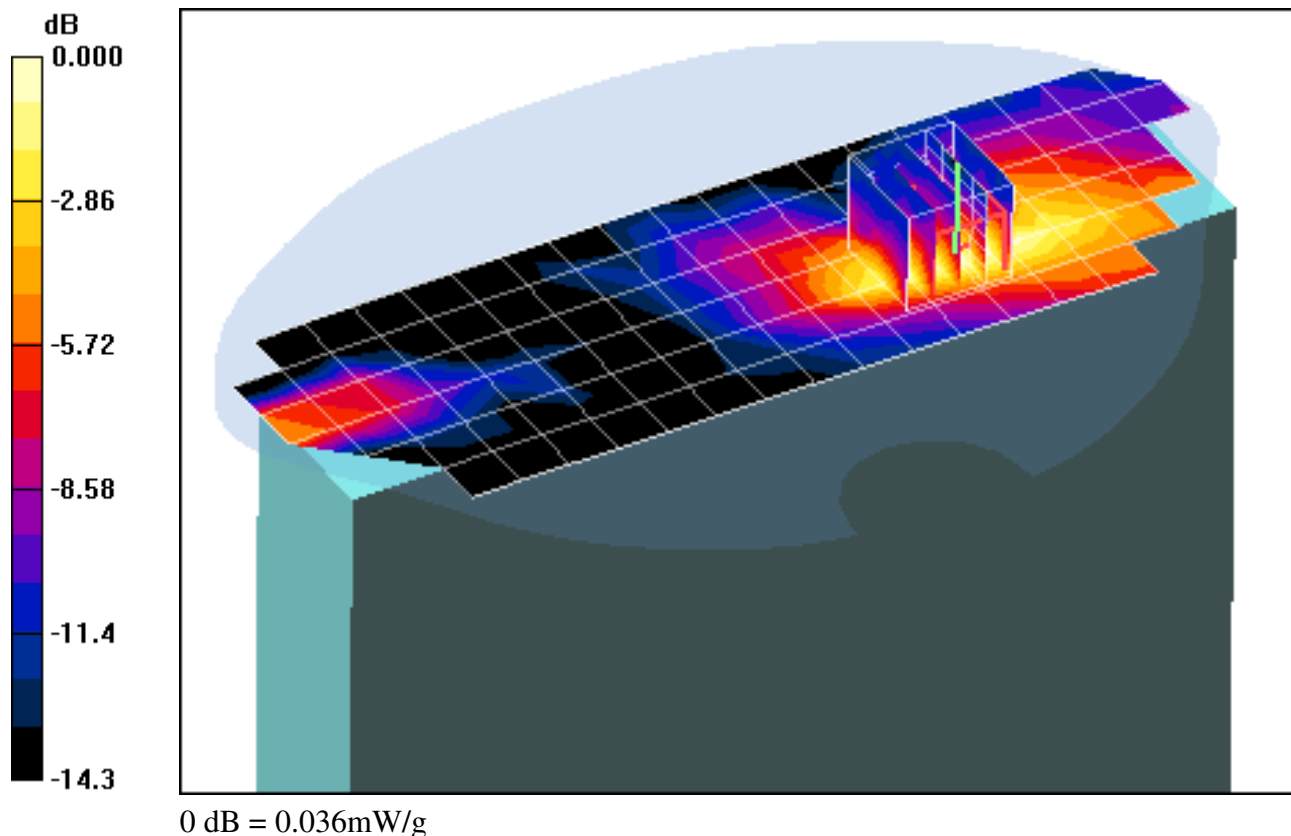
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 4.88 V/m

Peak SAR (extrapolated) = 0.053 W/kg

SAR(1 g) = 0.029 mW/g; SAR(10 g) = 0.016 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: ODKSA00505**

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

Medium: 1900 Muscle; Medium parameters used:

$f = 1880 \text{ MHz}$; $\sigma = 1.52 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-05-2010; Ambient Temp: 23.5°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: PCS CDMA EvDO, Tablet, Edge Top position, LCD Flip, Mid.ch

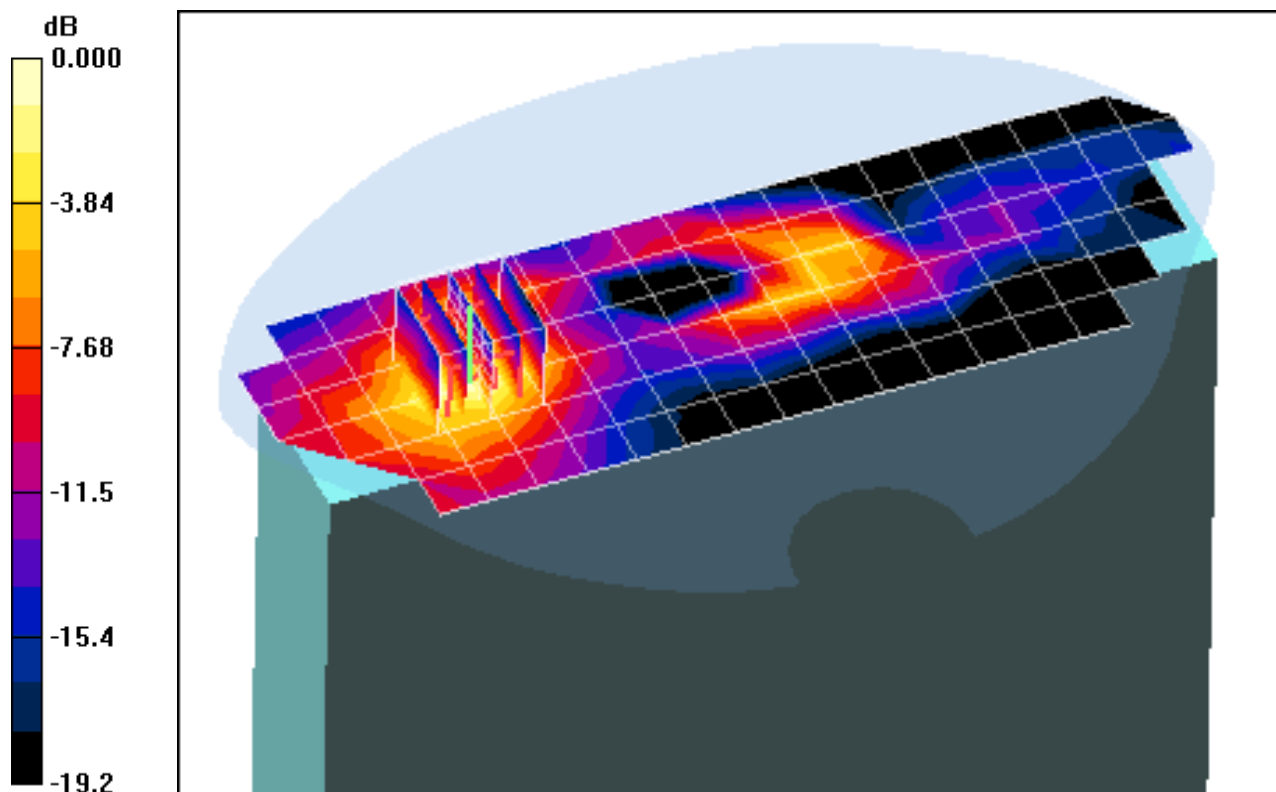
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 19.4 V/m

Peak SAR (extrapolated) = 0.915 W/kg

SAR(1 g) = 0.443 mW/g; SAR(10 g) = 0.226 mW/g



0 dB = 0.572mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

Medium: 2450 Muscle; Medium parameters used (interpolated):

$f = 2437 \text{ MHz}$; $\sigma = 1.95 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-03-2010; Ambient Temp: 24.2°C; Tissue Temp: 22.9°C

Probe: EX3DV4 - SN3550; ConvF(6.4, 6.4, 6.4); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: WLAN 802.11b, Tablet, Edge Top position, LCD Flip, Mid.ch, 1Mbps

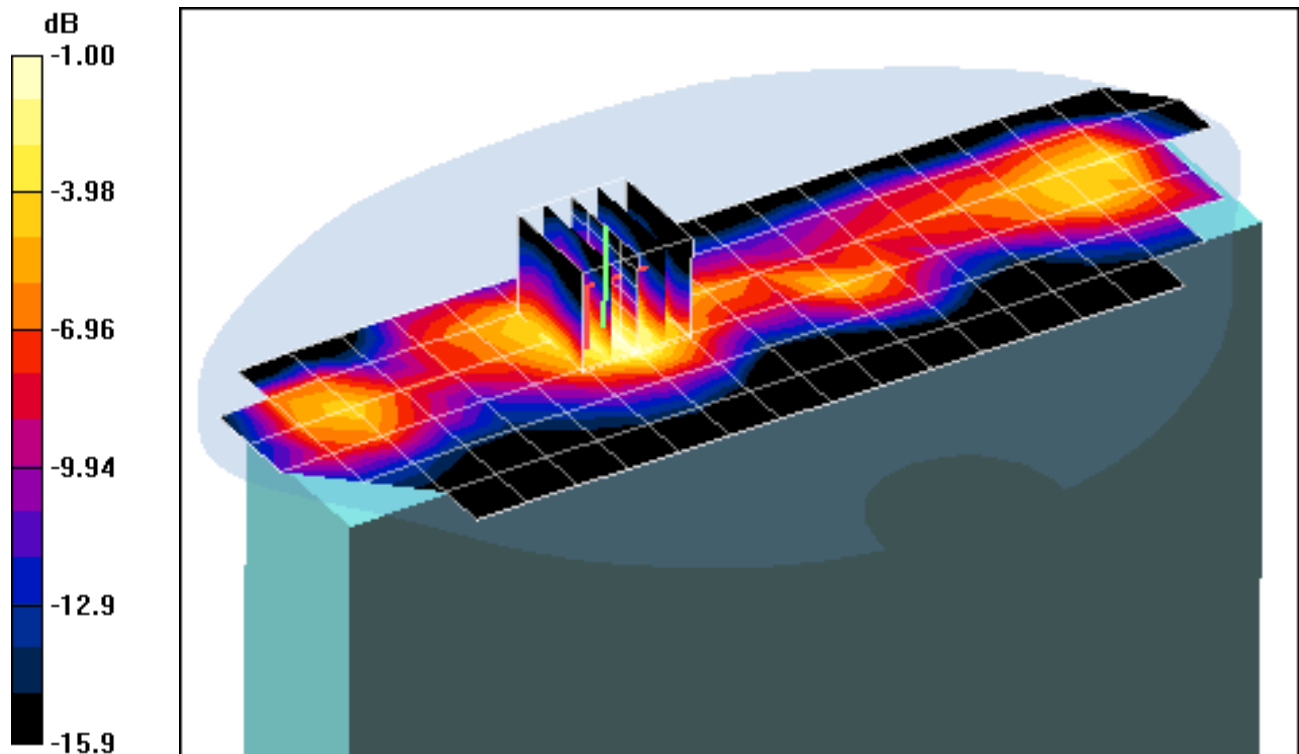
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 18.2 V/m; Power Drift = -0.071 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.560 mW/g; SAR(10 g) = 0.274 mW/g



0 dB = 0.693mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

Medium: 2450 Muscle; Medium parameters used (interpolated):

$f = 2437 \text{ MHz}$; $\sigma = 1.95 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-03-2010; Ambient Temp: 24.2°C; Tissue Temp: 22.9°C

Probe: EX3DV4 - SN3550; ConvF(6.4, 6.4, 6.4); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: WLAN 802.11b, Tablet, Edge Top position, LCD Flip, Mid.ch, 1Mbps

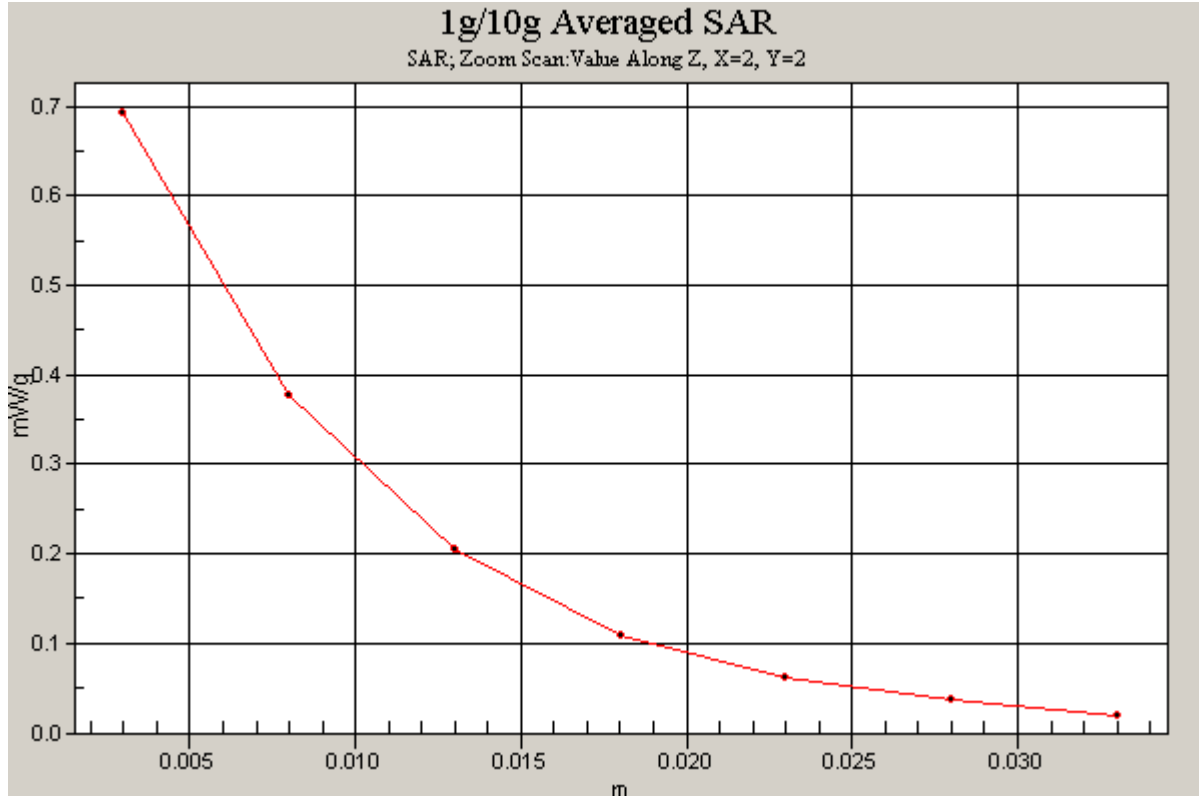
Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm

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

Reference Value = 18.2 V/m; Power Drift = -0.071 dB

Peak SAR (extrapolated) = 1.08 W/kg

SAR(1 g) = 0.560 mW/g; SAR(10 g) = 0.274 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

Medium: 2450 Muscle; Medium parameters used (interpolated):

$f = 2437 \text{ MHz}$; $\sigma = 1.95 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-03-2010; Ambient Temp: 24.2°C; Tissue Temp: 22.9°C

Probe: EX3DV4 - SN3550; ConvF(6.4, 6.4, 6.4); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: WLAN 802.11b, Tablet, Edge Right position, LCD Flip, Mid.ch, 1Mbps

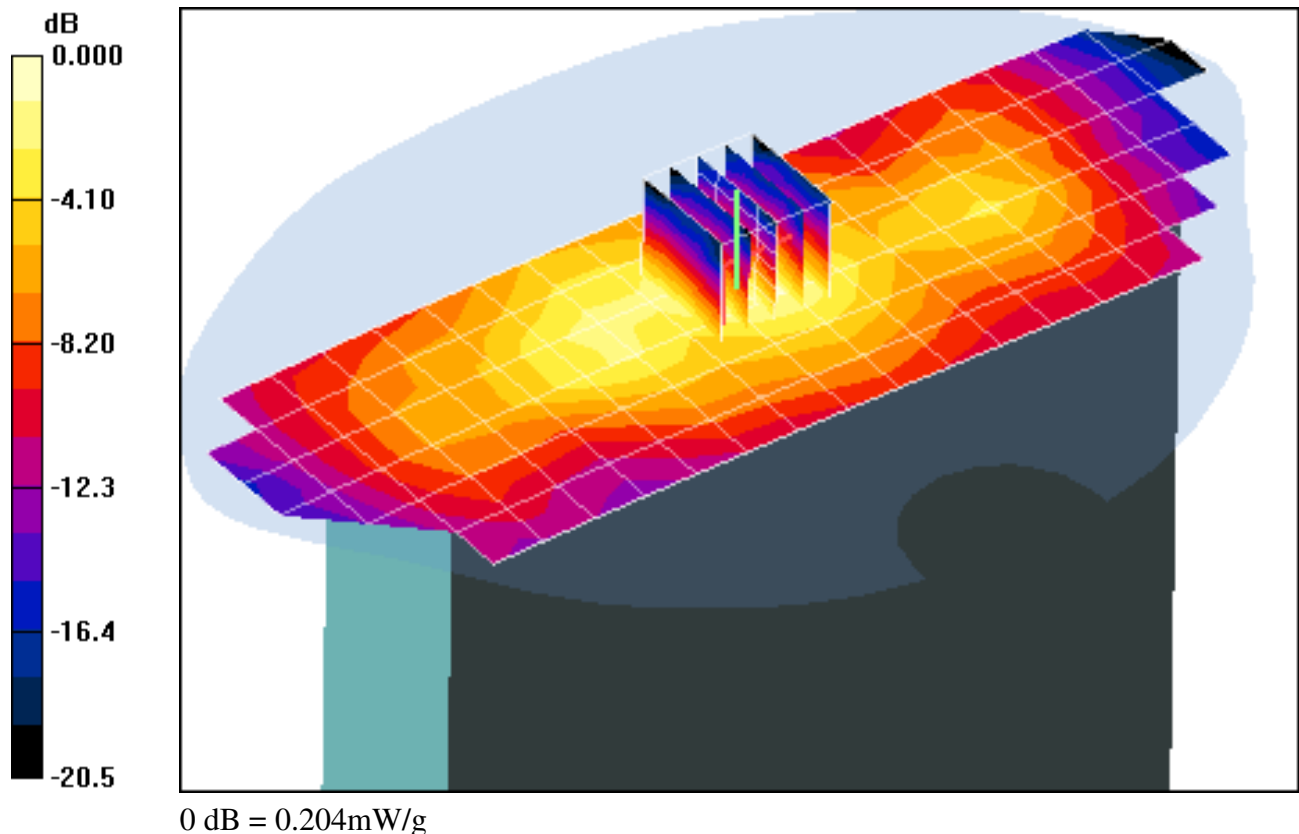
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 6.65 V/m; Power Drift = 0.410 dB

Peak SAR (extrapolated) = 0.307 W/kg

SAR(1 g) = 0.163 mW/g; SAR(10 g) = 0.086 mW/g



PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

Medium: 2450 Muscle; Medium parameters used (interpolated):

$f = 2437 \text{ MHz}$; $\sigma = 1.95 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-03-2010; Ambient Temp: 24.2°C; Tissue Temp: 22.9°C

Probe: EX3DV4 - SN3550; ConvF(6.4, 6.4, 6.4); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: WLAN 802.11b, Tablet, Edge Bottom position, LCD Flip, Mid.ch, 1Mbps

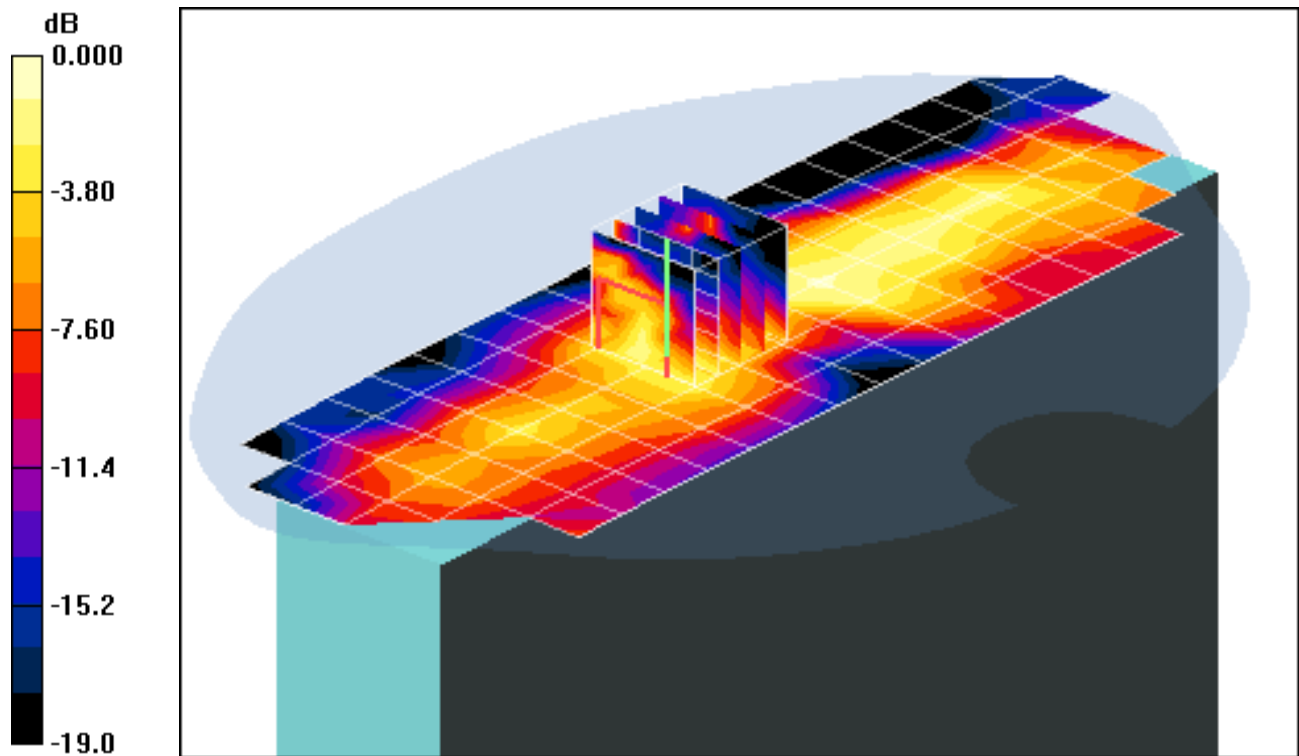
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 7.96 V/m; Power Drift = -0.237 dB

Peak SAR (extrapolated) = 0.174 W/kg

SAR(1 g) = 0.097 mW/g; SAR(10 g) = 0.053 mW/g



0 dB = 0.135mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

Medium: 2450 Muscle; Medium parameters used (interpolated):

$f = 2437 \text{ MHz}$; $\sigma = 1.95 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-03-2010; Ambient Temp: 24.2°C; Tissue Temp: 22.9°C

Probe: EX3DV4 - SN3550; ConvF(6.4, 6.4, 6.4); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: WLAN 802.11b, Tablet, Edge Left position, LCD Flip, Mid.ch, 1Mbps

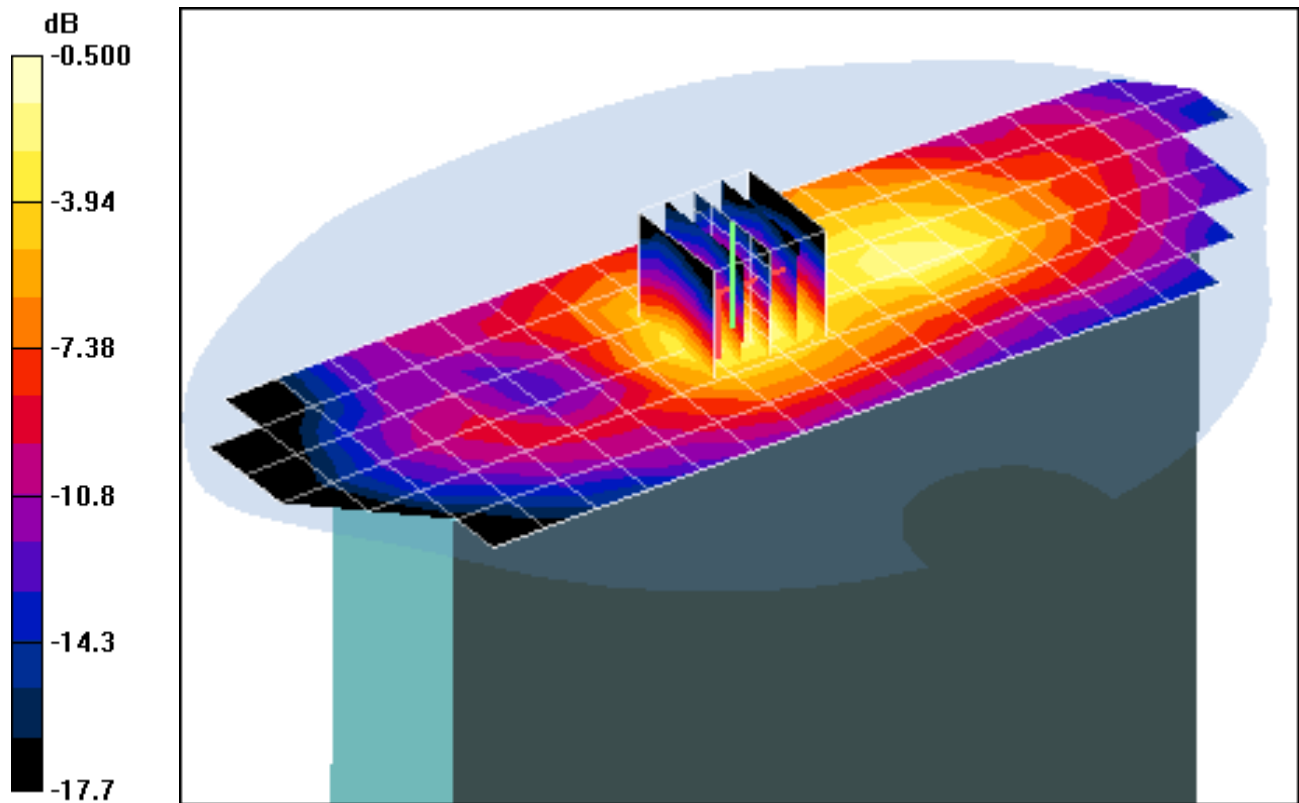
Area Scan (7x20x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 10.9 V/m; Power Drift = -0.122 dB

Peak SAR (extrapolated) = 0.376 W/kg

SAR(1 g) = 0.205 mW/g; SAR(10 g) = 0.105 mW/g



0 dB = 0.256mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

Medium: 2450 Muscle; Medium parameters used (interpolated):

$f = 2437 \text{ MHz}$; $\sigma = 1.95 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-03-2010; Ambient Temp: 24.2°C; Tissue Temp: 22.9°C

Probe: EX3DV4 - SN3550; ConvF(6.4, 6.4, 6.4); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: WLAN 802.11b, Lap position, Left Side, LCD Flip, Mid.ch, 1 Mbps

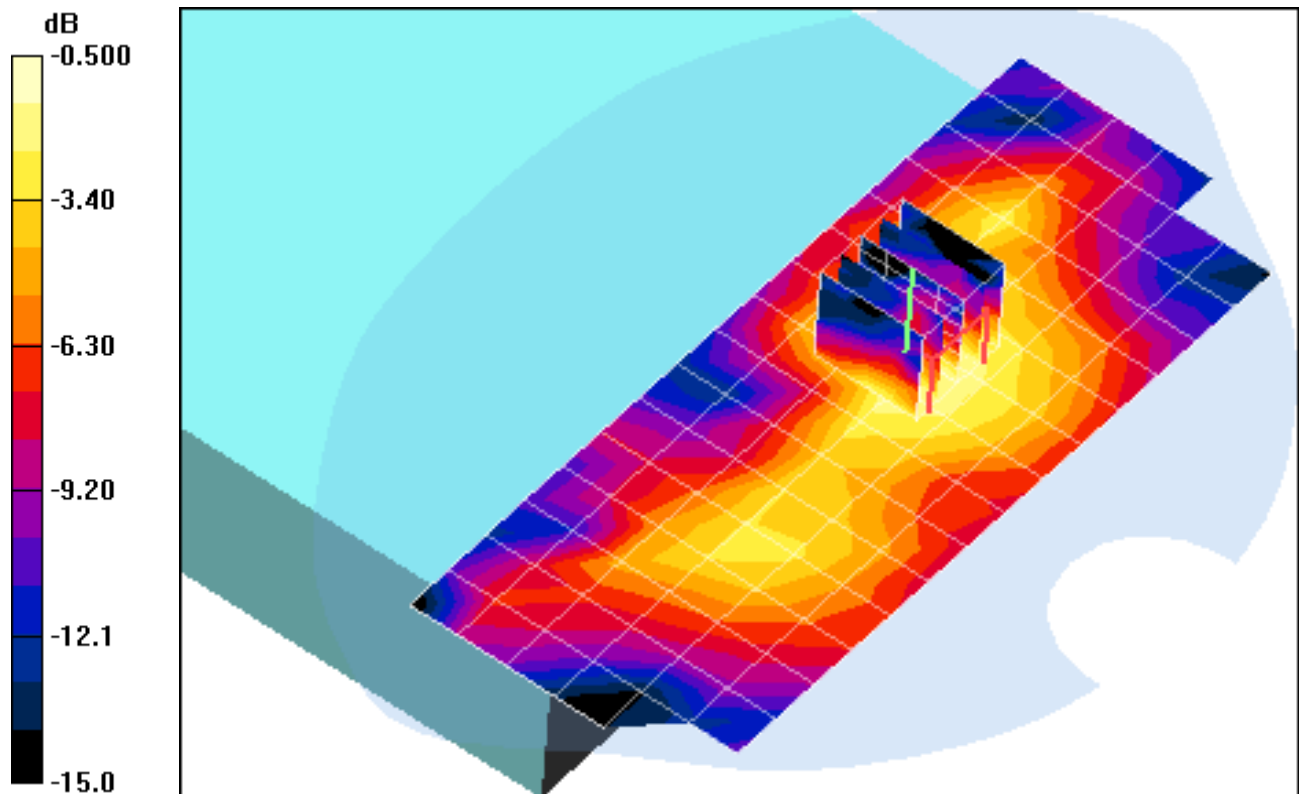
Area Scan (7x17x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 5.72 V/m; Power Drift = 0.418 dB

Peak SAR (extrapolated) = 0.113 W/kg

SAR(1 g) = 0.067 mW/g; SAR(10 g) = 0.037 mW/g



0 dB = 0.083mW/g

PCTEST ENGINEERING LABORATORY, INC.

**DUT: ACJ9TGCF-19F; Type: Convertible Tablet PC with WLAN, WWAN and Bluetooth;
Serial: ODKSA00505**

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

Medium: 2450 Muscle; Medium parameters used (interpolated):

$f = 2437 \text{ MHz}$; $\sigma = 1.95 \text{ mho/m}$; $\epsilon_r = 52.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 0.0 cm

Test Date: 08-03-2010; Ambient Temp: 24.2°C; Tissue Temp: 22.9°C

Probe: EX3DV4 - SN3550; ConvF(6.4, 6.4, 6.4); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

Mode: WLAN 802.11b, Lap position, Right Side, LCD Flip, Mid.ch, 1 Mbps

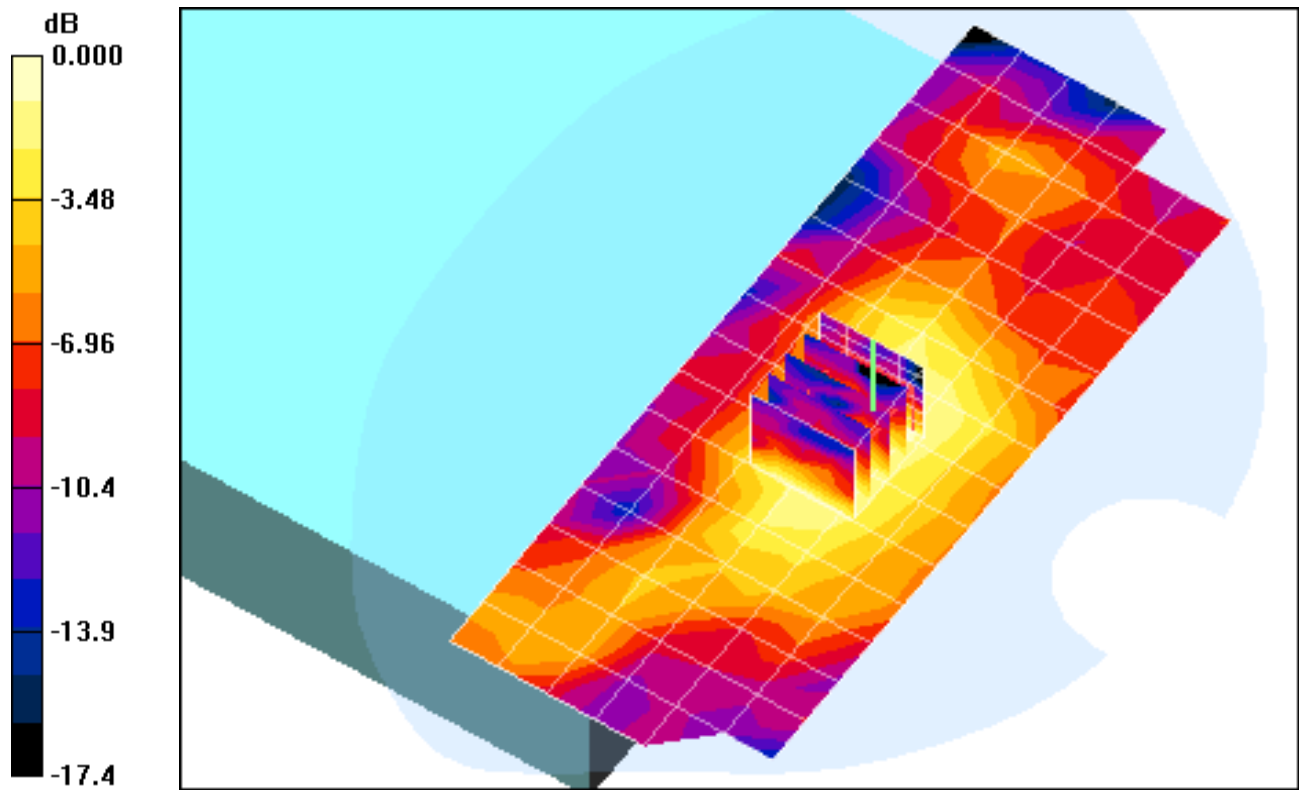
Area Scan (7x17x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Reference Value = 5.00 V/m; Power Drift = -0.272 dB

Peak SAR (extrapolated) = 0.107 W/kg

SAR(1 g) = 0.045 mW/g; SAR(10 g) = 0.025 mW/g



0 dB = 0.059mW/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):

$f = 1900 \text{ MHz}$; $\sigma = 1.54 \text{ mho/m}$; $\epsilon_r = 51.9$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-05-2010; Ambient Temp: 23.5°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

1900MHz SAR Verification

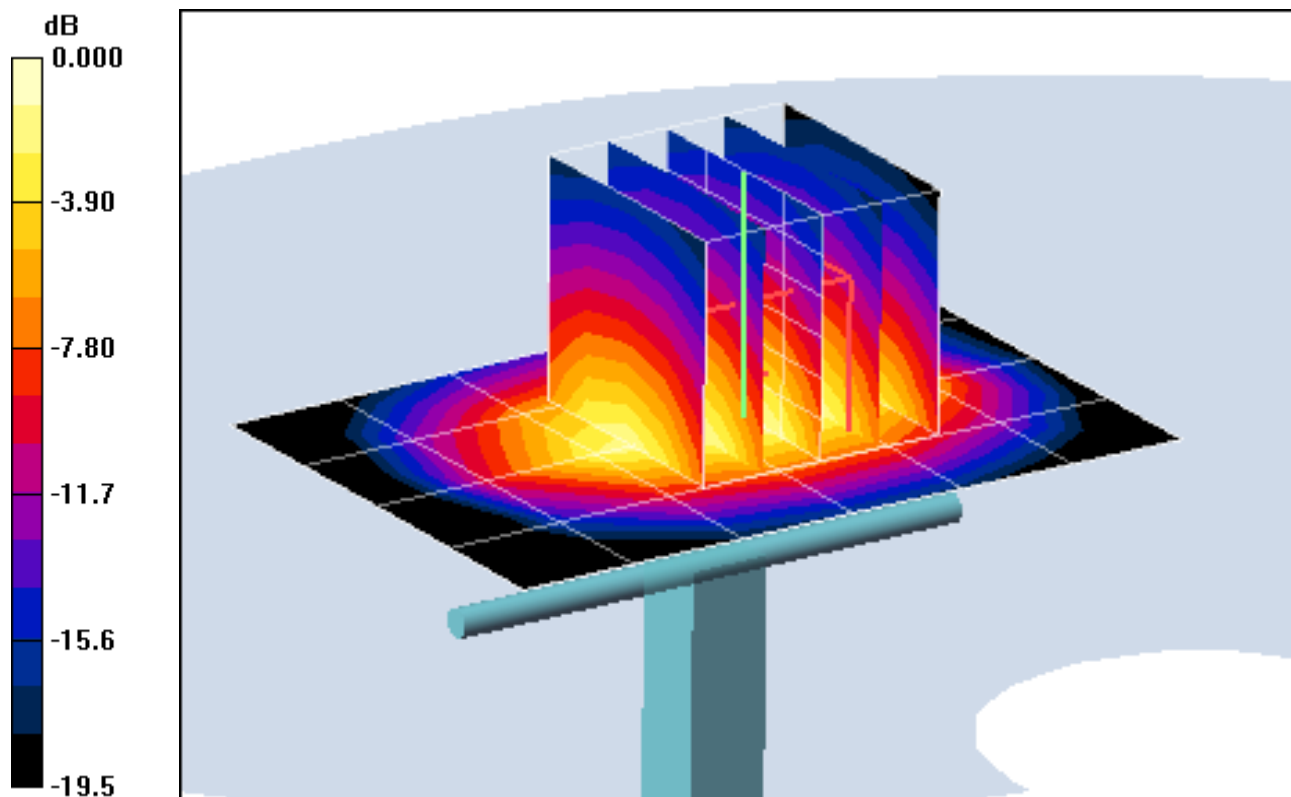
Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm

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

Input Power = 16.0 dBm (40mW)

SAR(1 g) = 1.73 mW/g; SAR(10 g) = 0.874 mW/g

Deviation = 6.79 %



0 dB = 2.22mW/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:

$f = 835 \text{ MHz}$; $\sigma = 0.99 \text{ mho/m}$; $\epsilon_r = 54.1$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 04-07-2010; Ambient Temp: 23.8°C; Tissue Temp: 22.6°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

835MHz SAR Verification

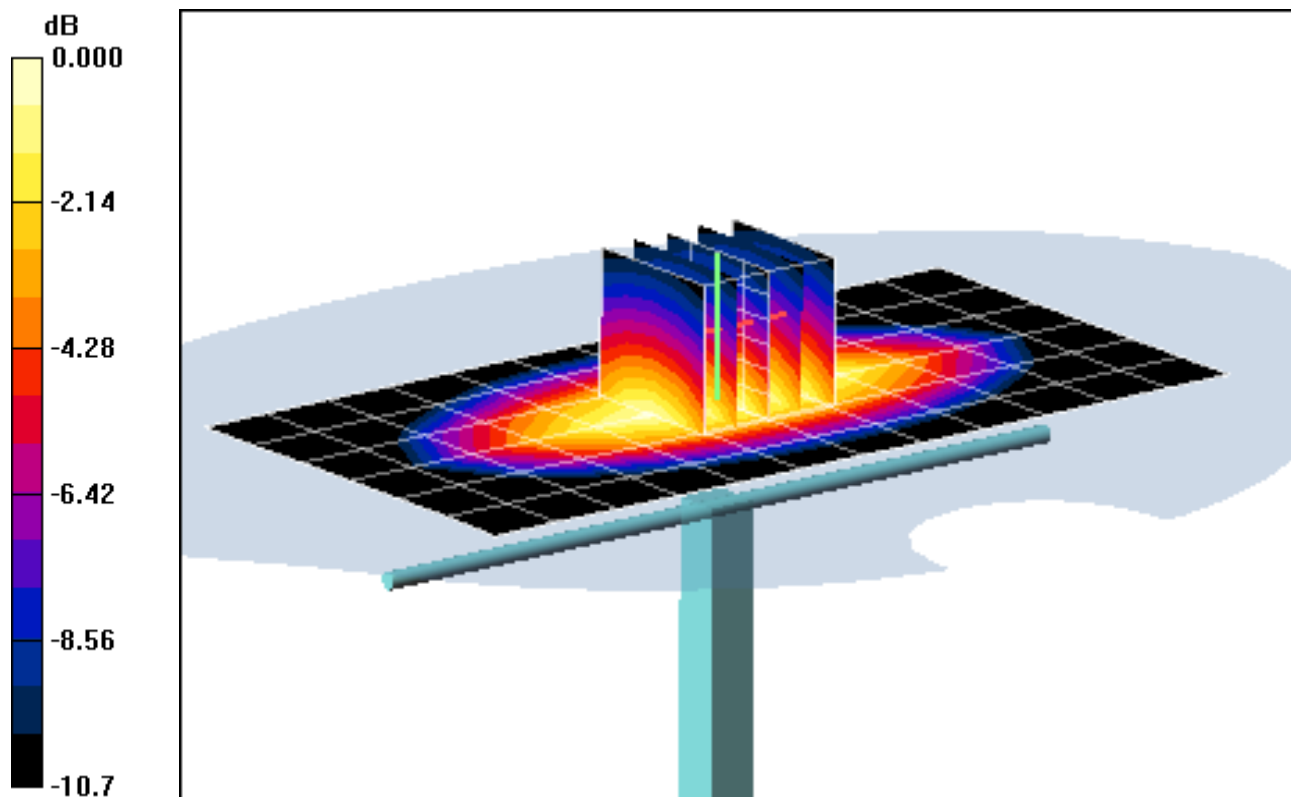
Area Scan (7x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Input Power = 20 dBm (100mW)

SAR(1 g) = 0.962 mW/g; SAR(10 g) = 0.627 mW/g

Deviation = -2.04 %



0 dB = 1.13mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: SAR Dipole 2450 MHz; Type: D2450V2; Serial: 719

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

Medium: 2450 Muscle; Medium parameters used:

$f = 2450 \text{ MHz}$; $\sigma = 1.97 \text{ mho/m}$; $\epsilon_r = 52$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.0 cm

Test Date: 08-03-2010; Ambient Temp: 24.2°C; Tissue Temp: 22.9°C

Probe: EX3DV4 - SN3550; ConvF(6.4, 6.4, 6.4); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

2450MHz System Verification

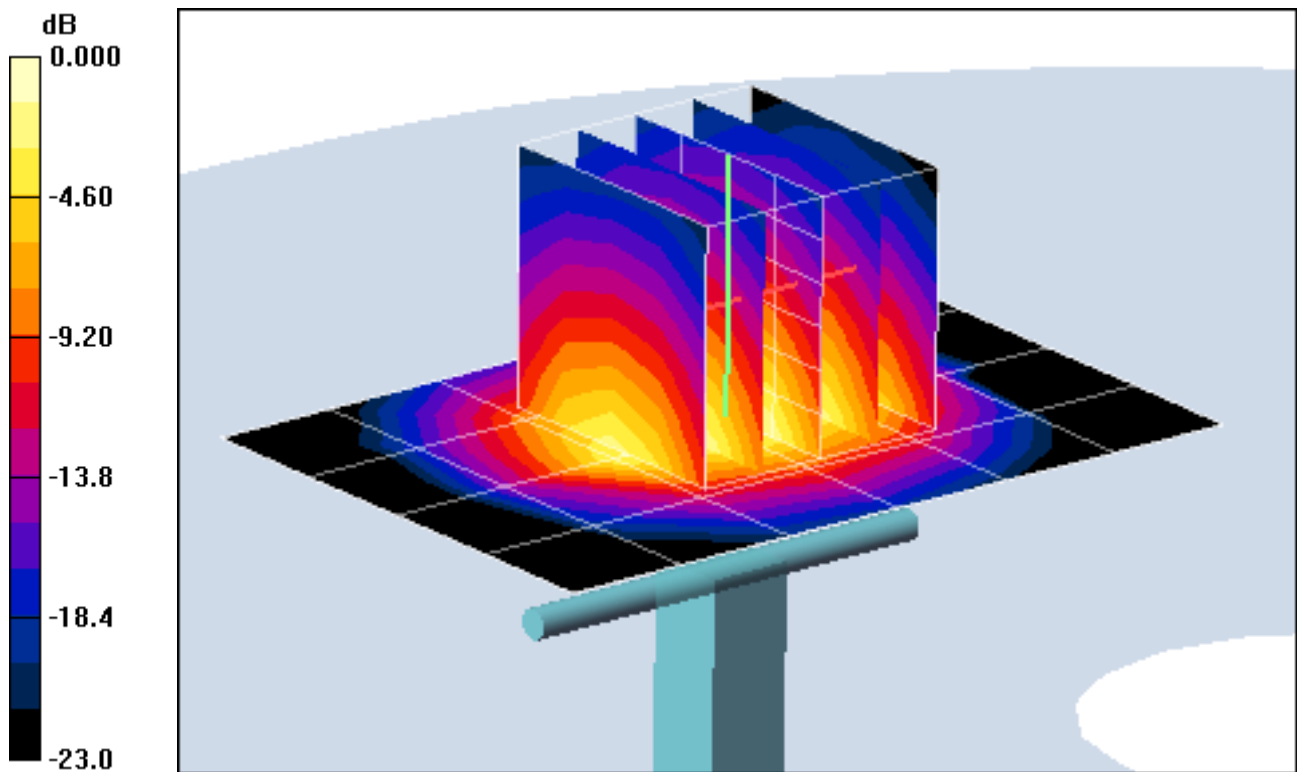
Area Scan (5x7x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Input Power = 14 dBm (25mW)

SAR(1 g) = 1.33 mW/g; SAR(10 g) = 0.607 mW/g

Deviation = 3.50%



0 dB = 1.73mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 835 MHz; Type: D835V2; Serial: 4d026

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

Medium: 835 Muscle; Medium parameters used:

$f = 835 \text{ MHz}$; $\sigma = 0.971 \text{ mho/m}$; $\epsilon_r = 53.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 08-05-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°C

Probe: EX3DV4 - SN3550; ConvF(8.3, 8.3, 8.3); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

835MHz System Verification

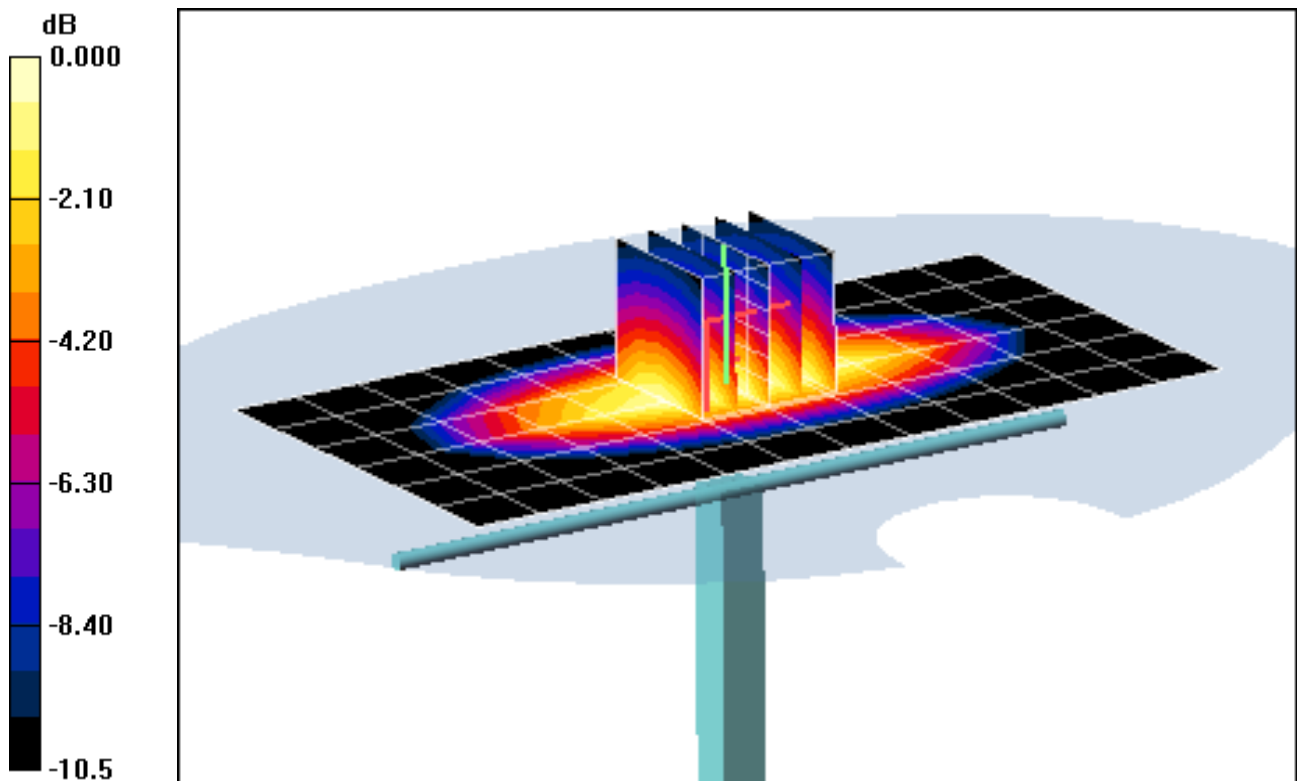
Area Scan (7x13x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

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

Input Power = 20.0 dBm (100mW)

SAR(1 g) = 0.986 mW/g; SAR(10 g) = 0.644 mW/g

Deviation = 0.82%



0 dB = 1.16mW/g

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):

$f = 1900 \text{ MHz}$; $\sigma = 1.56 \text{ mho/m}$; $\epsilon_r = 51.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section; Space: 1.5 cm

Test Date: 08-06-2010; Ambient Temp: 24.1°C; Tissue Temp: 22.7°C

Probe: EX3DV4 - SN3550; ConvF(6.63, 6.63, 6.63); Calibrated: 1/26/2010

Sensor-Surface: 3mm (Mechanical Surface Detection)

Electronics: DAE4 Sn649; Calibrated: 1/22/2010

Phantom: SAM Main; Type: SAM 4.0; Serial: TP-1114

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

1900MHz System Verification

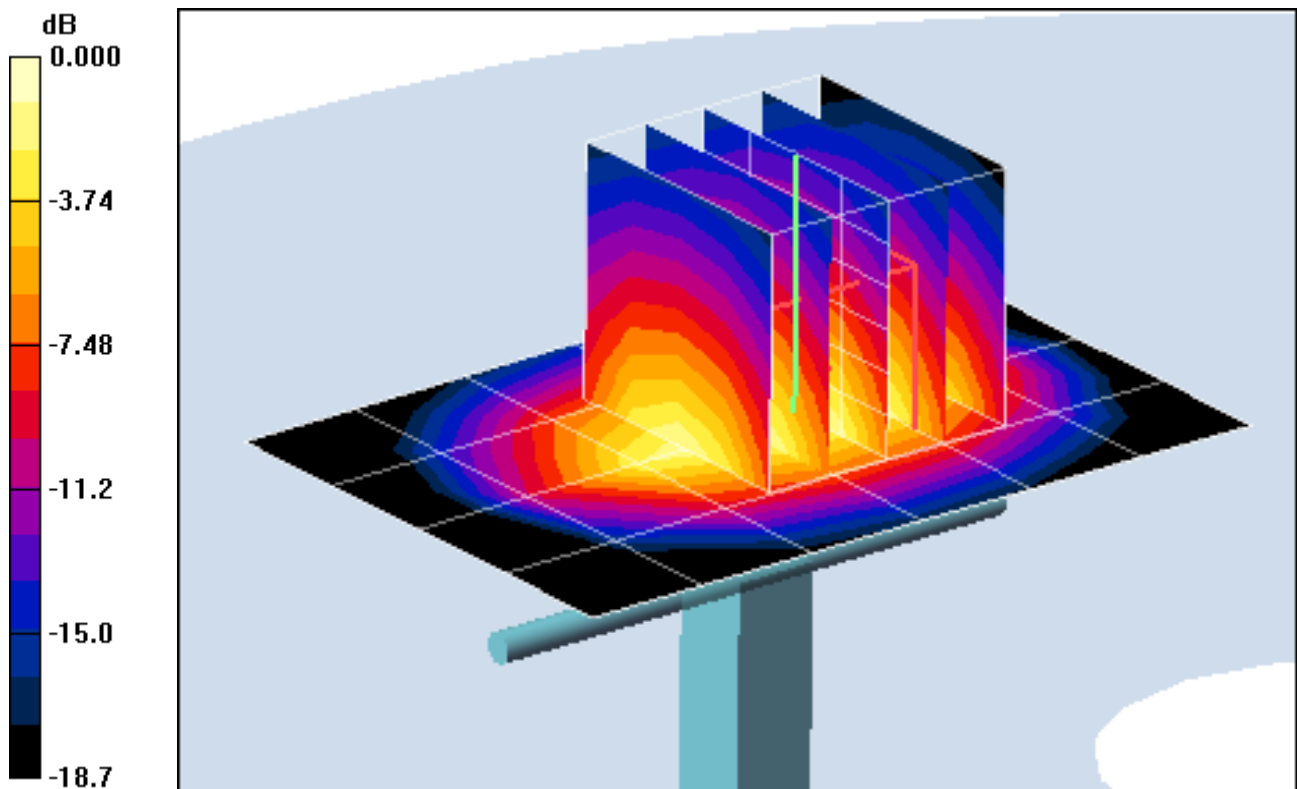
Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm

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

Input Power = 16.0 dBm (40mW)

SAR(1 g) = 1.7 mW/g; SAR(10 g) = 0.875 mW/g

Deviation = 4.94%



0 dB = 2.15mW/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: **EX3-3550_Jan10**

CALIBRATION CERTIFICATE

Object **EX3DV4 - SN:3550**

Calibration procedure(s) **QA CAL-01.v6, QA CAL-14.v3, QA CAL-23.v3 and QA CAL-25.v2
Calibration procedure for dosimetric E-field probes**

Calibration date: **January 26, 2010**

✓
1/26/10

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	30-Dec-09 (No. ES3-3013_Dec09)	Dec-10
DAE4	SN: 660	29-Sep-09 (No. DAE4-660_Sep09)	Sep-10

Secondary Standards	ID #	Check Date (in house)	Scheduled Check
RF generator HP 8648C	US3642U01700	4-Aug-99 (in house check Oct-09)	In house check: Oct-11
Network Analyzer HP 8753E	US37390585	18-Oct-01 (in house check Oct-09)	In house check: Oct10

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Technical Manager	
Approved by:	Fin Bornholt	R&D Director	

Issued: January 26, 2010

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
CF	crest factor (1/duty_cycle) of the RF signal
A, B, C	modulation dependent linearization parameters
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 with CW signal (no uncertainty required). DCP does not depend on frequency nor media.
- A_{x,y,z}; B_{x,y,z}; C_{x,y,z}; VR_{x,y,z}**: A, B, C are numerical linearization parameters assessed based on the data of power sweep for specific modulation signal. The parameters do not depend on frequency nor media. VR is the maximum calibration range expressed in RMS voltage across the diode.
- 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 EX3DV4

SN:3550

Manufactured:	May 19, 2004
Last calibrated:	January 21, 2009
Recalibrated:	January 26, 2010

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: EX3DV4 SN:3550**Basic Calibration Parameters**

	Sensor X	Sensor Y	Sensor Z	Unc (k=2)
Norm ($\mu\text{V}/(\text{V}/\text{m})^2$) ^A	0.48	0.47	0.48	± 10.1%
DCP (mV) ^B	92.9	88.4	91.4	

Modulation Calibration Parameters

UID	Communication System Name	PAR		A dB	B dBuV	C	VR mV	Unc ^E (k=2)
10000	CW	0.00	X	0.00	0.00	1.00	300	± 1.5%
			Y	0.00	0.00	1.00	300	
			Z	0.00	0.00	1.00	300	

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 Pages 5 and 6).

^B Numerical linearization parameter: uncertainty not required.

^E Uncertainty is determined using the maximum deviation from linear response applying recatangular distribution and is expressed for the square of the field value.

DASY - Parameters of Probe: EX3DV4 SN:3550

Calibration Parameter Determined in Head Tissue Simulating Media

f [MHz]	Validity [MHz] ^c	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	41.5 ± 5%	0.90 ± 5%	8.28	8.28	8.28	0.45	0.70 ± 11.0%
1750	± 50 / ± 100	40.1 ± 5%	1.37 ± 5%	7.03	7.03	7.03	0.39	0.75 ± 11.0%
1900	± 50 / ± 100	40.0 ± 5%	1.40 ± 5%	6.81	6.81	6.81	0.32	0.81 ± 11.0%
2450	± 50 / ± 100	39.2 ± 5%	1.80 ± 5%	6.21	6.21	6.21	0.22	1.07 ± 11.0%

^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.

DASY - Parameters of Probe: EX3DV4 SN:3550

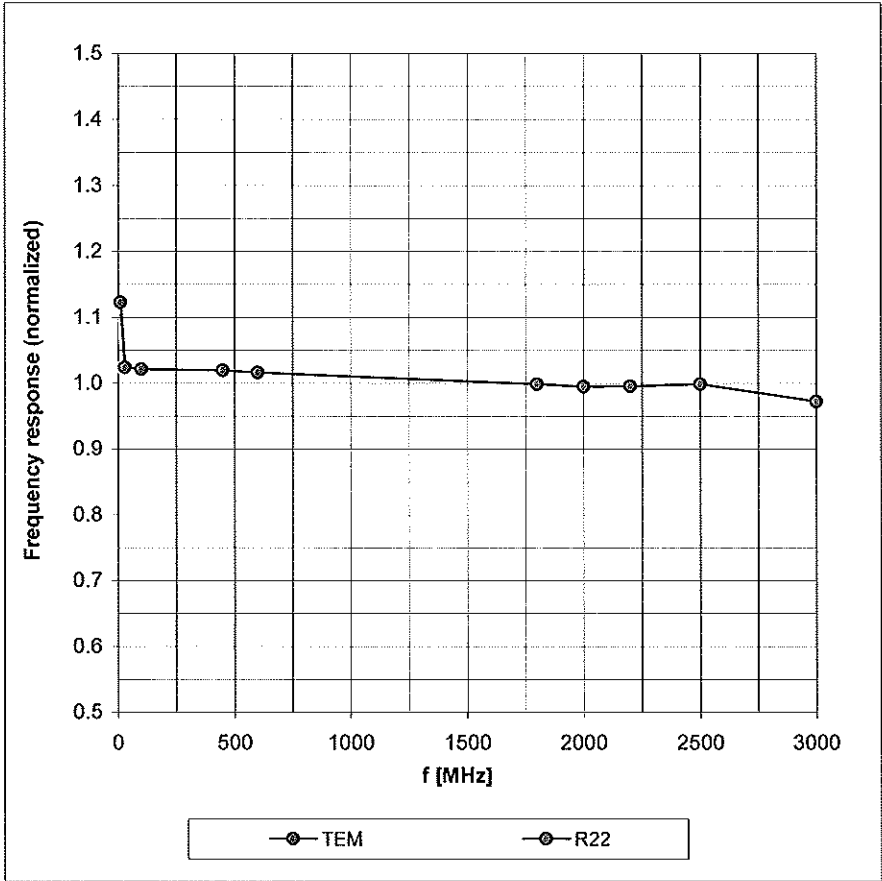
Calibration Parameter Determined in Body Tissue Simulating Media

f [MHz]	Validity [MHz] ^c	Permittivity	Conductivity	ConvF X	ConvF Y	ConvF Z	Alpha	Depth Unc (k=2)
835	± 50 / ± 100	55.2 ± 5%	0.97 ± 5%	8.30	8.30	8.30	0.47	0.76 ± 11.0%
1750	± 50 / ± 100	53.4 ± 5%	1.49 ± 5%	6.90	6.90	6.90	0.49	0.69 ± 11.0%
1900	± 50 / ± 100	53.3 ± 5%	1.52 ± 5%	6.63	6.63	6.63	0.76	0.54 ± 11.0%
2450	± 50 / ± 100	52.7 ± 5%	1.95 ± 5%	6.40	6.40	6.40	0.22	1.09 ± 11.0%
2600	± 50 / ± 100	52.5 ± 5%	2.16 ± 5%	6.26	6.26	6.26	0.19	1.42 ± 11.0%
4950	± 50 / ± 100	49.4 ± 5%	5.01 ± 5%	3.64	3.64	3.64	0.50	1.75 ± 13.1%
5200	± 50 / ± 100	49.0 ± 5%	5.30 ± 5%	3.73	3.73	3.73	0.50	1.75 ± 13.1%
5300	± 50 / ± 100	48.5 ± 5%	5.42 ± 5%	3.52	3.52	3.52	0.52	1.75 ± 13.1%
5500	± 50 / ± 100	48.6 ± 5%	5.65 ± 5%	3.26	3.26	3.26	0.55	1.80 ± 13.1%
5600	± 50 / ± 100	48.5 ± 5%	5.77 ± 5%	3.16	3.16	3.16	0.65	1.80 ± 13.1%
5800	± 50 / ± 100	48.2 ± 5%	6.00 ± 5%	3.30	3.30	3.30	0.60	1.75 ± 13.1%

^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.

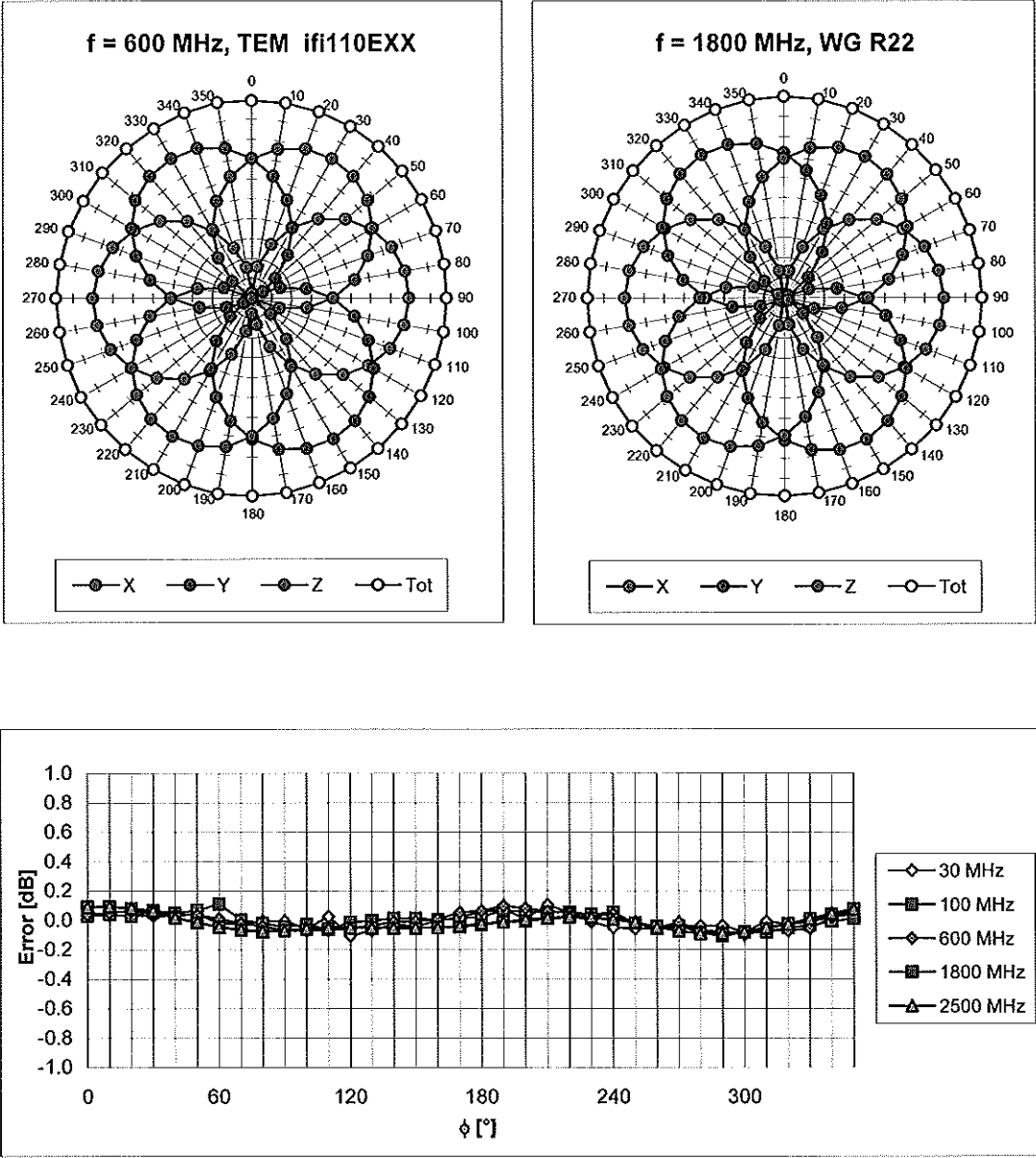
Frequency Response of E-Field

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



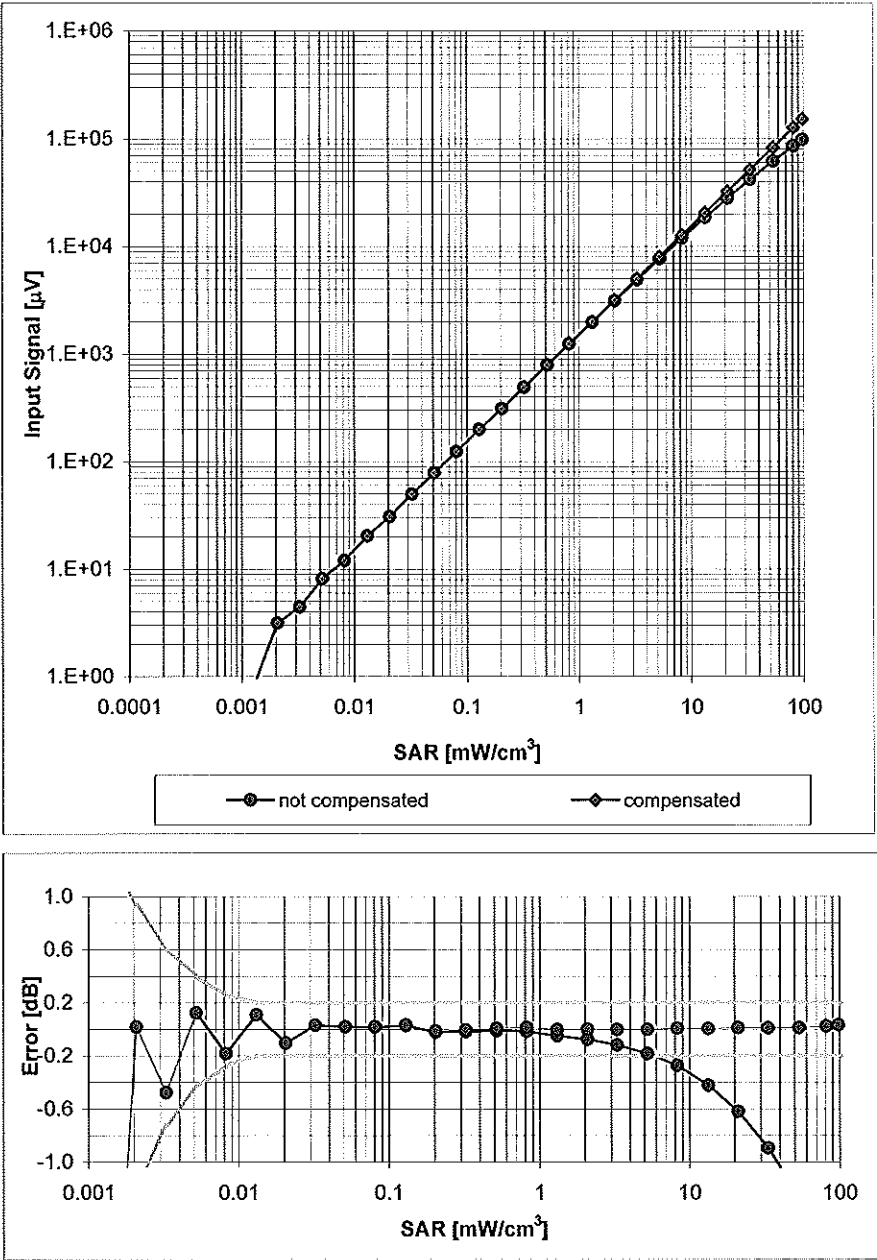
Uncertainty of Frequency Response of E-field: $\pm 6.3\%$ (k=2)

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



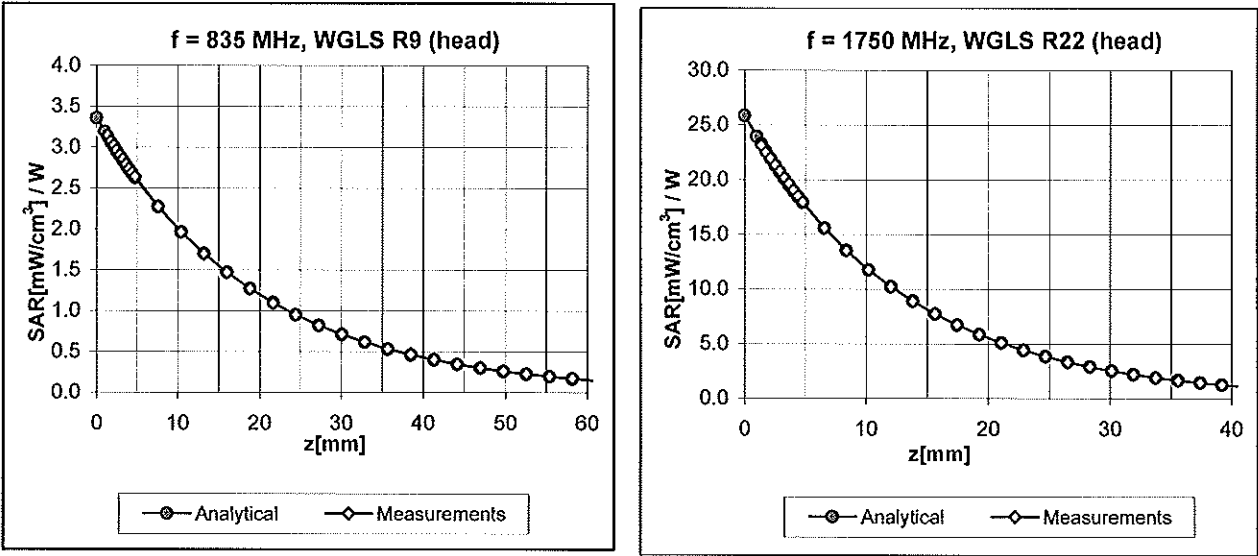
Uncertainty of Axial Isotropy Assessment: $\pm 0.5\%$ ($k=2$)

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



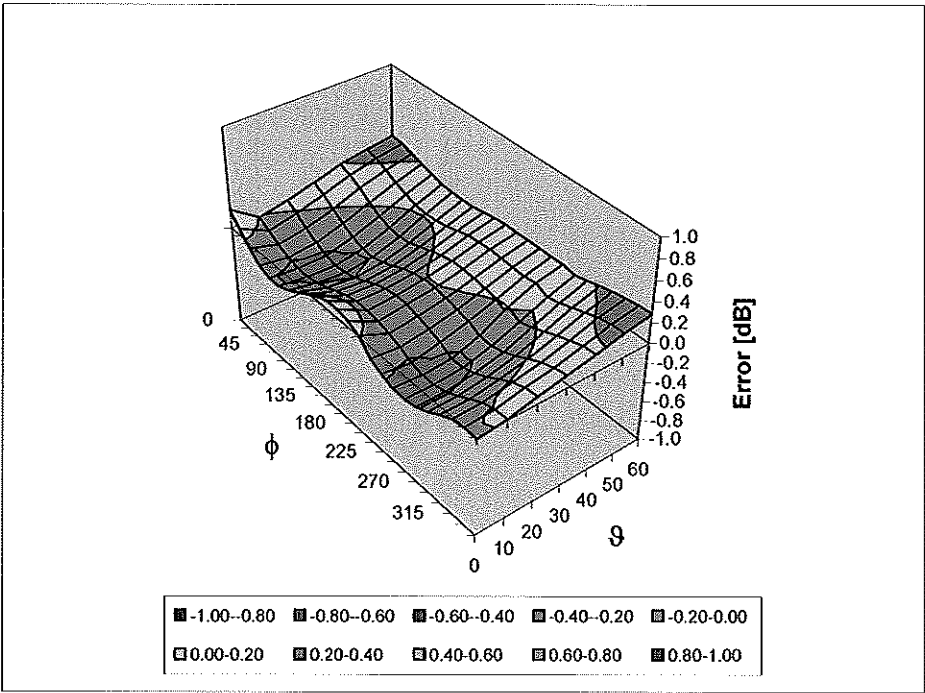
Uncertainty of Linearity Assessment: $\pm 0.6\%$ ($k=2$)

Conversion Factor Assessment



Deviation from Isotropy in HSL

Error (ϕ, θ), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: ± 2.6% (k=2)

Other Probe Parameters

Sensor Arrangement	Triangular
Connector Angle (°)	Not applicable
Mechanical Surface Detection Mode	enabled
Optical Surface Detection Mode	disabled
Probe Overall Length	337 mm
Probe Body Diameter	10 mm
Tip Length	9 mm
Tip Diameter	2.5 mm
Probe Tip to Sensor X Calibration Point	1 mm
Probe Tip to Sensor Y Calibration Point	1 mm
Probe Tip to Sensor Z Calibration Point	1 mm
Recommended Measurement Distance from Surface	2 mm



Accredited by the Swiss Accreditation Service (SAS)
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 Multilateral Agreement for the recognition of calibration certificates

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:

- 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
- 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:

- 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"

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: $f = 835$ MHz; $\sigma = 0.91$ mho/m; $\epsilon_r = 41.1$; $\rho = 1000$ kg/m³

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

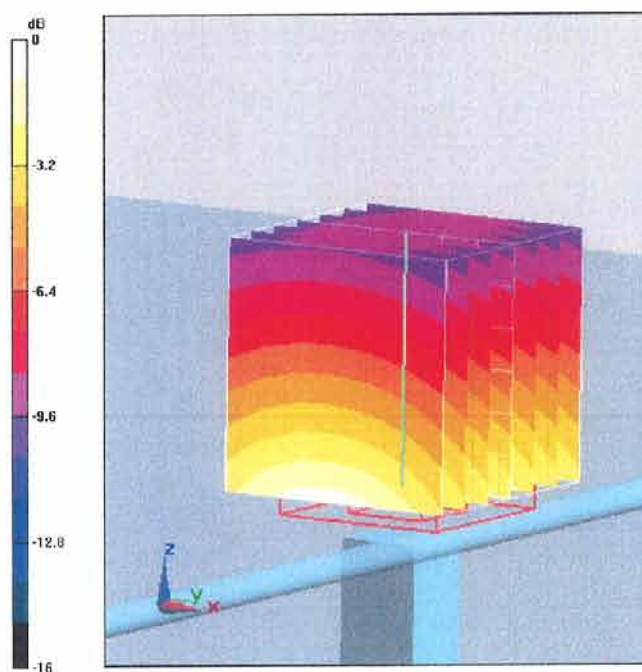
Pin=250mW; dip=15mm; dist=3.4mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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

Peak SAR (extrapolated) = 3.61 W/kg

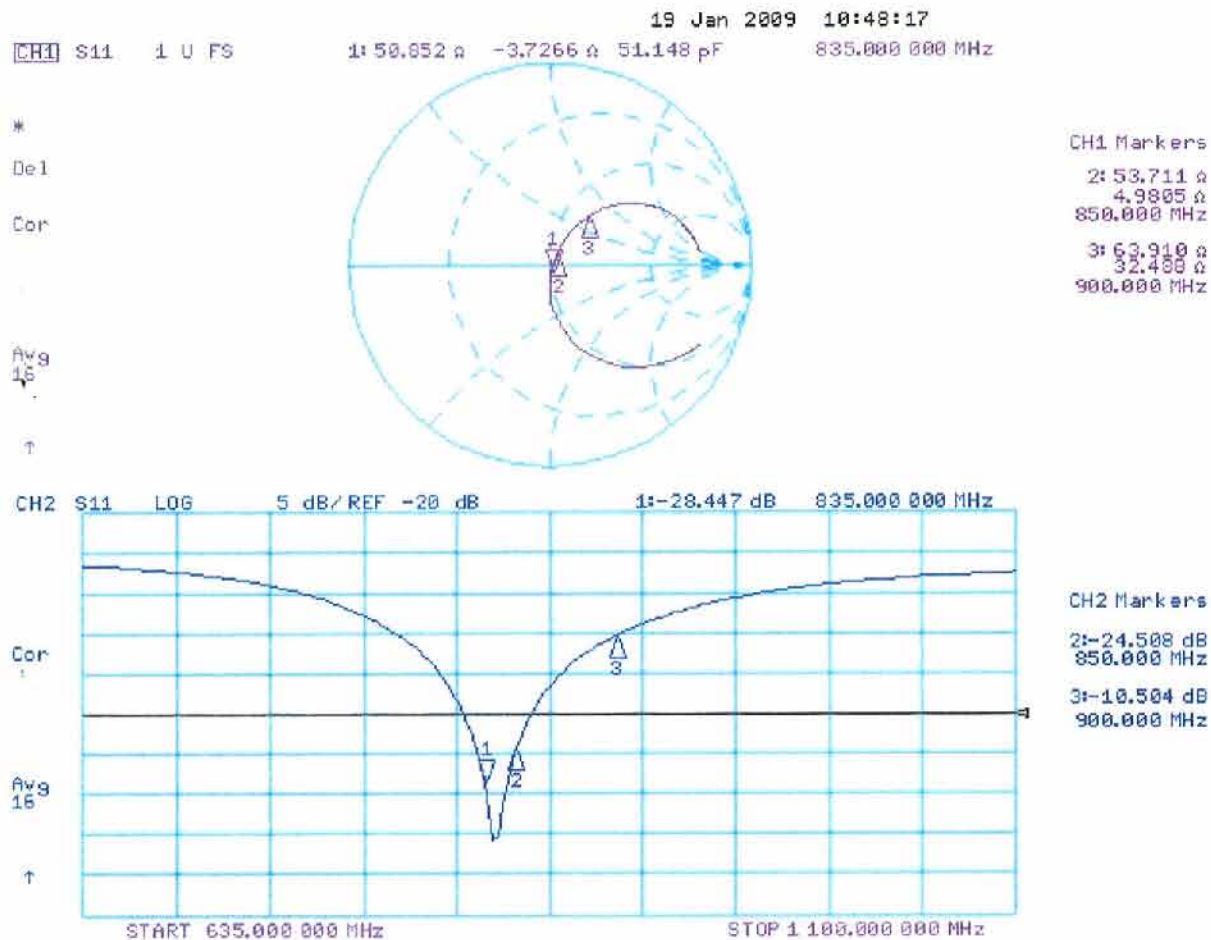
SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.61 mW/g

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

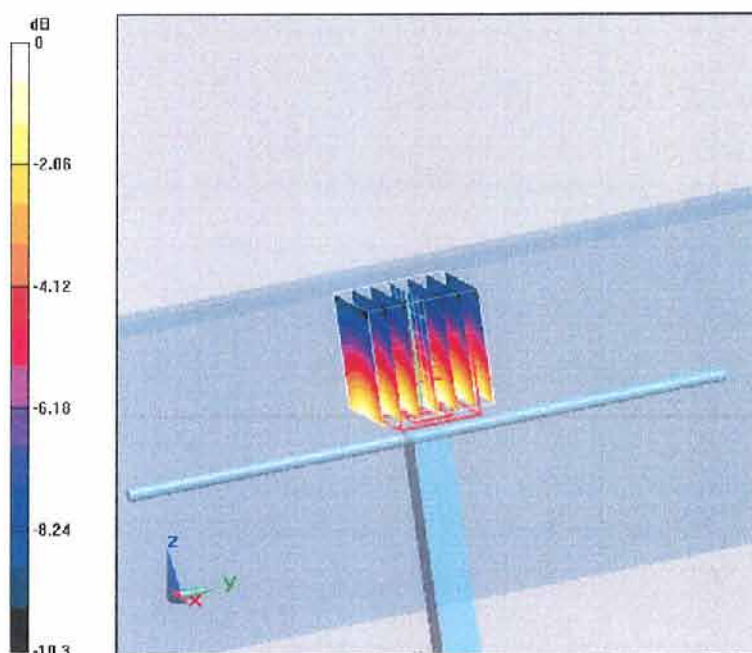
Pin = 250mW, d = 15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

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

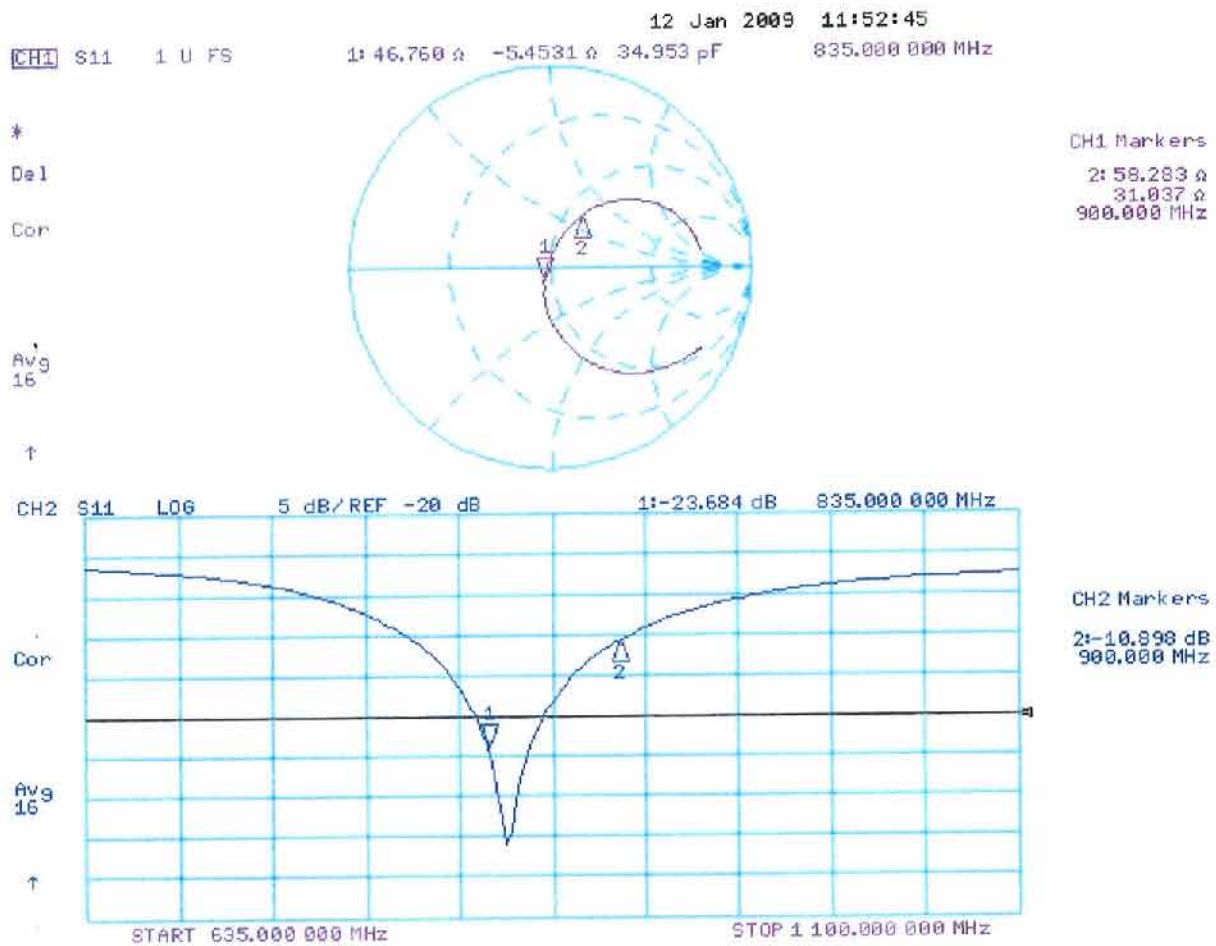
Peak SAR (extrapolated) = 3.65 W/kg

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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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **PC Test**

Certificate No: **D835V2-4d026_Aug09**

CALIBRATION CERTIFICATE

Object **D835V2 - SN: 4d026**

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

Calibration date: **August 24, 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 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)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

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

	Name	Function	Signature
Calibrated by:	Jeton Kastrati	Laboratory Technician	

Approved by:	Katja Pokovic	Technical Manager
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Issued: August 25, 2009

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Accreditation No.: **SCS 108**

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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:

- 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
- 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:

- 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	41.2 $\pm$ 6 %	0.90 mho/m $\pm$ 6 %
Head TSL temperature during test	(22.0 $\pm$ 0.2) °C	----	----

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	Condition	
SAR measured	250 mW input power	2.37 mW / g
SAR normalized	normalized to 1W	9.48 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	9.46 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.55 mW / g
SAR normalized	normalized to 1W	6.20 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	6.19 mW / g $\pm$ 16.5 % (k=2)

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

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	53.4 ± 6 %	0.99 mho/m ± 6 %
Body TSL temperature during test	(22.5 ± 0.2) °C	----	----

SAR result with Body TSL

SAR averaged over 1 cm³ (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	2.50 mW / g
SAR normalized	normalized to 1W	10.0 mW / g
SAR for nominal Body TSL parameters ²	normalized to 1W	9.78 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.63 mW / g
SAR normalized	normalized to 1W	6.52 mW / g
SAR for nominal Body TSL parameters ²	normalized to 1W	6.42 mW / g ± 16.5 % (k=2)

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

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.0 Ω - 7.5 j Ω
Return Loss	- 22.5 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	46.9 Ω - 8.6 j Ω
Return Loss	- 20.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.388 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	December 17, 2004

DASY5 Validation Report for Head TSL

Date/Time: 24.08.2009 13:11:23

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d026

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

Medium: HSL 900 MHz

Medium parameters used: $f = 835$ MHz; $\sigma = 0.9$ mho/m; $\epsilon_r = 41.2$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(6.04, 6.04, 6.04); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

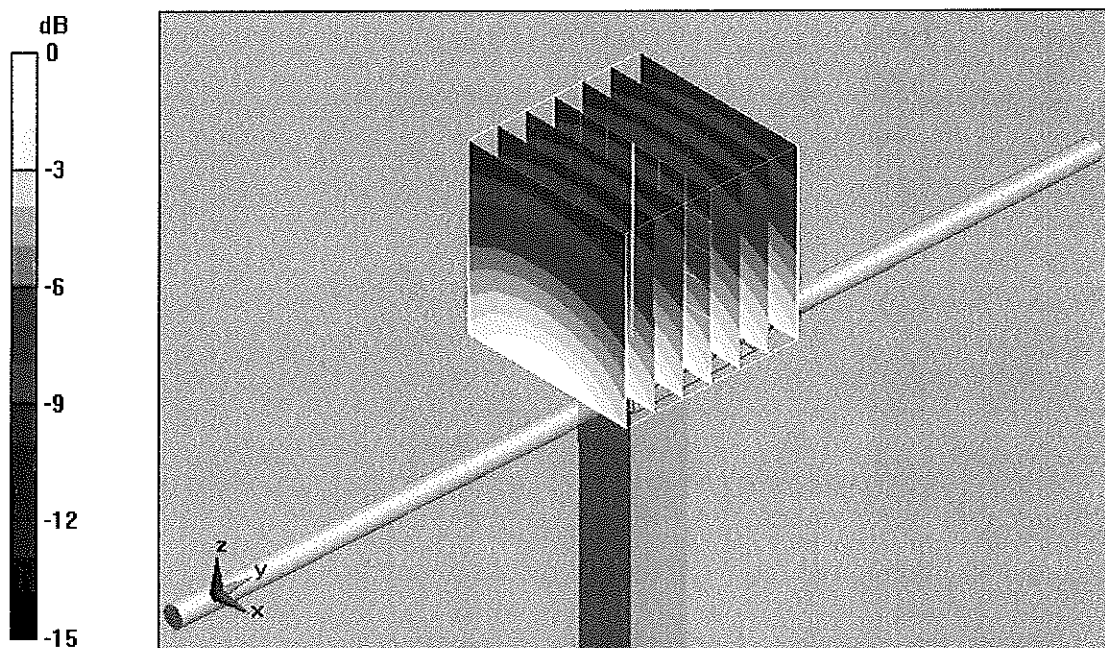
Pin=250mW; dip=15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57.1 V/m; Power Drift = 0.016 dB

Peak SAR (extrapolated) = 3.55 W/kg

SAR(1 g) = 2.37 mW/g; SAR(10 g) = 1.55 mW/g

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

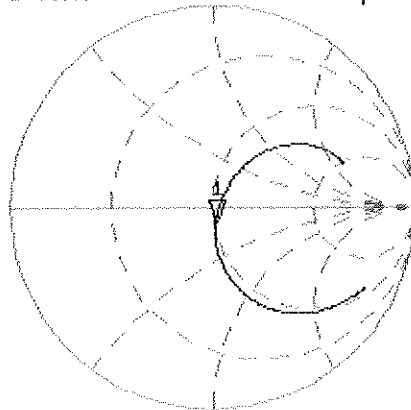


0 dB = 2.77mW/g

Impedance Measurement Plot for Head TSL

24 Aug 2009 11:32:41
 [CH1] S11 1 U FS 1: 50.971 Ω -7.4922 Ω 25.440 pF 835.000 000 MHz

*
 Del
 CA



Avg
 16

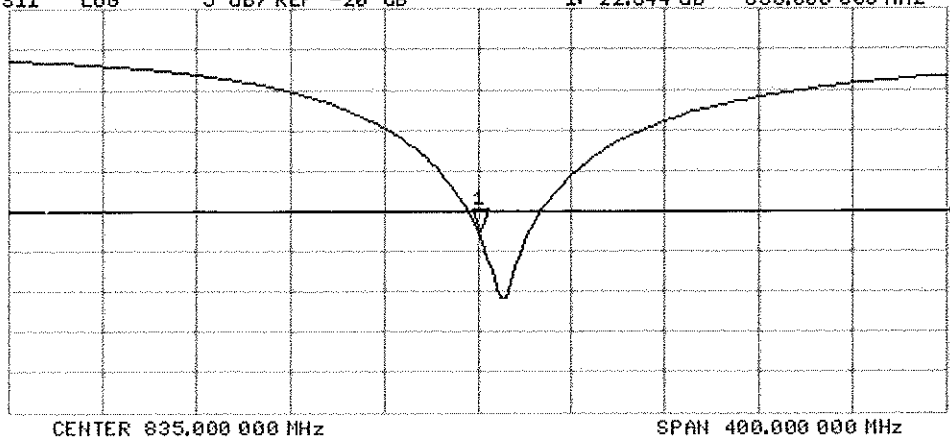
↑

CH2 S11 LOG 5 dB/REF -20 dB 1:-22.544 dB 835.000 000 MHz

CA

Avg
 16

↑



DASY5 Validation Report for Body TSL

Date/Time: 17.08.2009 09:50:53

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d026

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

Medium: MSL900

Medium parameters used: $f = 835$ MHz; $\sigma = 0.99$ mho/m; $\epsilon_r = 53.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.97, 5.97, 5.97); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

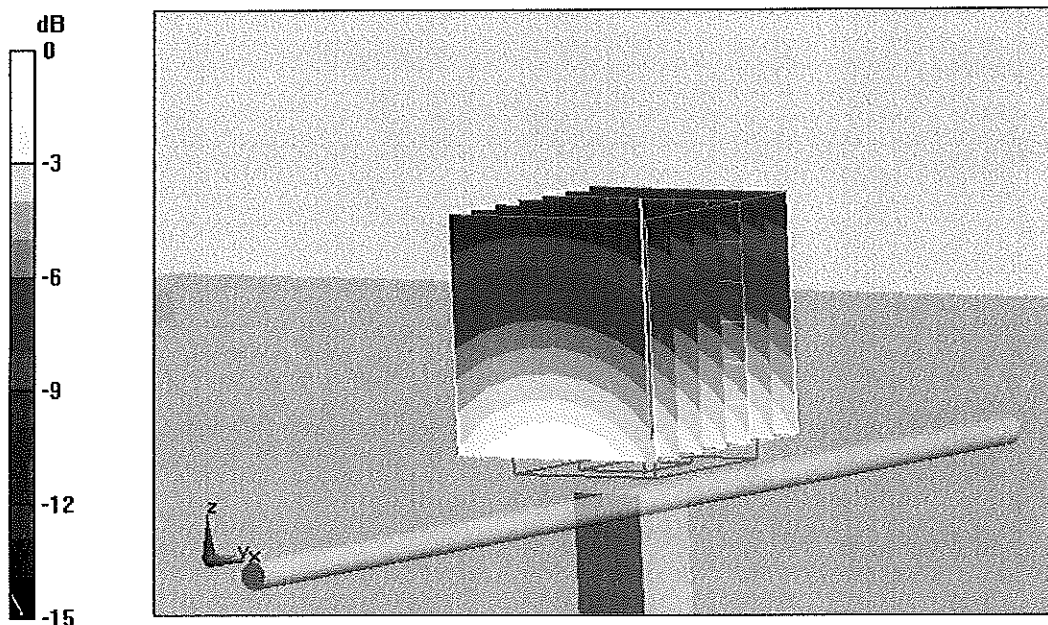
Pin = 250mW, d = 15mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 55.8 V/m; Power Drift = 0.014 dB

Peak SAR (extrapolated) = 3.71 W/kg

SAR(1 g) = 2.5 mW/g; SAR(10 g) = 1.63 mW/g

Maximum value of SAR (measured) = 2.92 mW/g



0 dB = 2.92mW/g

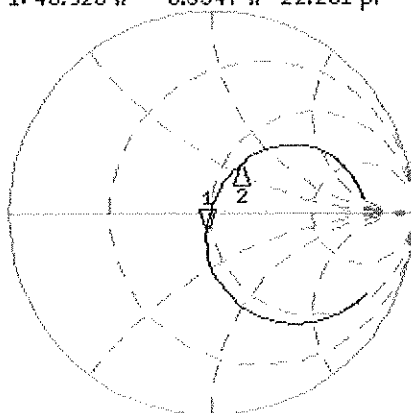
Impedance Measurement Plot for Body TSL

17 Aug 2009 08:48:23
 [CH1] S11 1 U FS 1: 46.928 Ω -8.5547 Ω 22.281 pF 835.000 000 MHz

*
 Del
 Cor

Avg
 16

↑



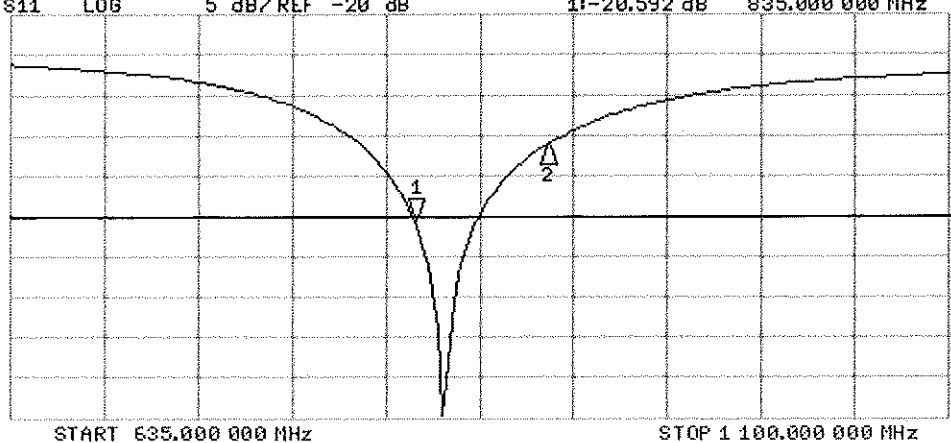
CH1 Markers
 2: 58.551 Ω
 30.164 Ω
 900.000 MHz

CH2 S11 LOG 5 dB/REF -20 dB 1:-20.592 dB 835.000 000 MHz

Cor

Avg
 16

↑



CH2 Markers
 2:-11.110 dB
 900.000 MHz



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Accreditation No.: **SCS 108**

Client **PC Test**

Certificate No: **D1900V2-5d080-Aug09**

CALIBRATION CERTIFICATE

Object **D1900V2 - SN: 5d080**

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

Calibration date: **August 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 $(22 \pm 3)^\circ\text{C}$ 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)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10
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** **Laboratory Technician** **Signature**

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

Issued: August 19, 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:

- 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
- CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001
- 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:

- 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 V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	40.8 $\pm$ 6 %	1.45 mho/m $\pm$ 6 %
Head TSL temperature during test	(22.0 $\pm$ 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	10.2 mW / g
SAR normalized	normalized to 1W	40.8 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	40.1 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	5.30 mW / g
SAR normalized	normalized to 1W	21.2 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	21.0 mW / g $\pm$ 16.5 % (k=2)

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

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.9 ± 6 %	1.57 mho/m ± 6 %
Body TSL temperature during test	(22.0 ± 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	10.3 mW / g
SAR normalized	normalized to 1W	41.2 mW / g
SAR for nominal Body TSL parameters ²	normalized to 1W	40.5 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.41 mW / g
SAR normalized	normalized to 1W	21.6 mW / g
SAR for nominal Body TSL parameters ²	normalized to 1W	21.5 mW / g ± 16.5 % (k=2)

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

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.0 Ω + 6.1 j Ω
Return Loss	- 24.3 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	47.1 Ω + 5.7 j Ω
Return Loss	- 23.6 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.193 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	June 28, 2006

DASY5 Validation Report for Head TSL

Date/Time: 05.08.2009 14:25:51

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d080

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

Medium: HSL U11 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 40.8$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(5.09, 5.09, 5.09); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250 mW; dip = 10 mm, scan at 3.0 mm/Zoom Scan (dist=3.0 mm, probe 0deg)

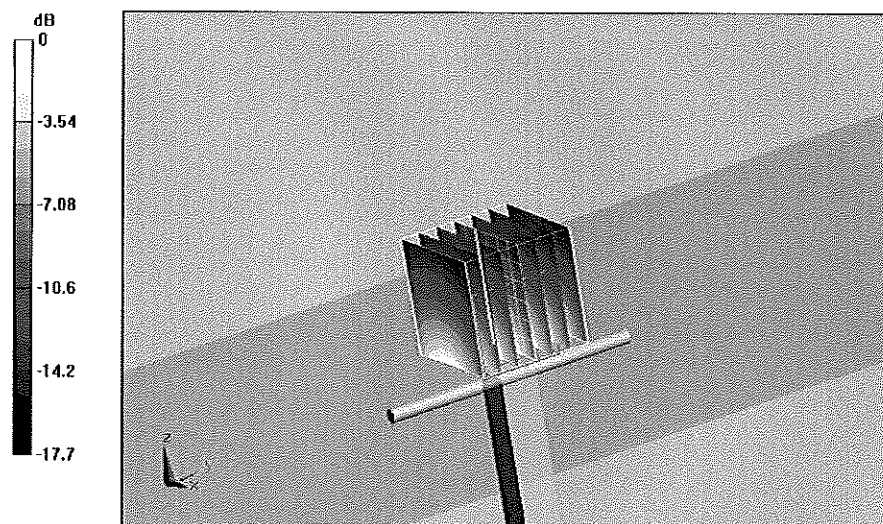
(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.9 V/m; Power Drift = 0.040 dB

Peak SAR (extrapolated) = 18.7 W/kg

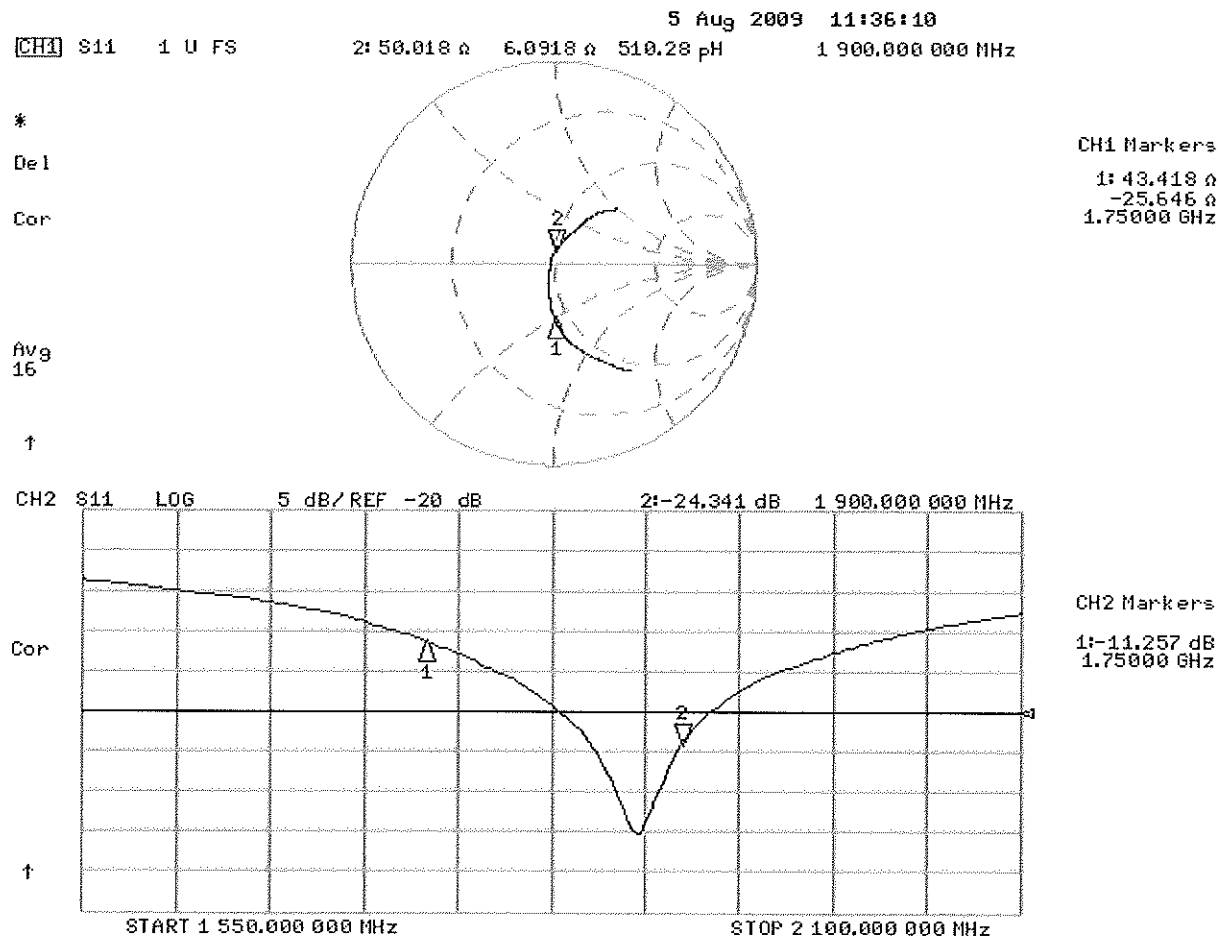
SAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.3 mW/g

Maximum value of SAR (measured) = 12.6 mW/g



0 dB = 12.6mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date/Time: 18.08.2009 14:14:25

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d080

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

Medium: MSL U10 BB

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.57$ mho/m; $\epsilon_r = 53.9$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.59, 4.59, 4.59); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

Pin = 250 mW; dip = 10 mm, scan at 3.0mm/Zoom Scan (dist=3.0mm, probe 0deg)

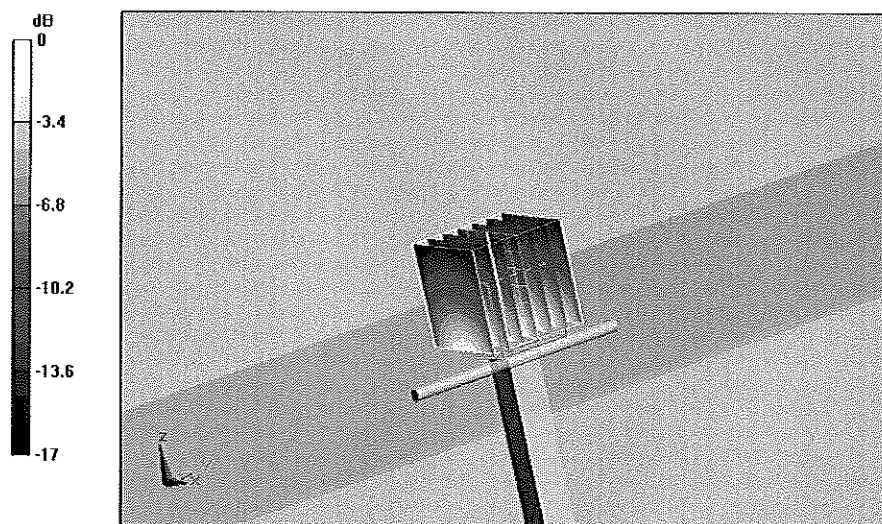
(7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 96.7 V/m; Power Drift = -0.00545 dB

Peak SAR (extrapolated) = 17.7 W/kg

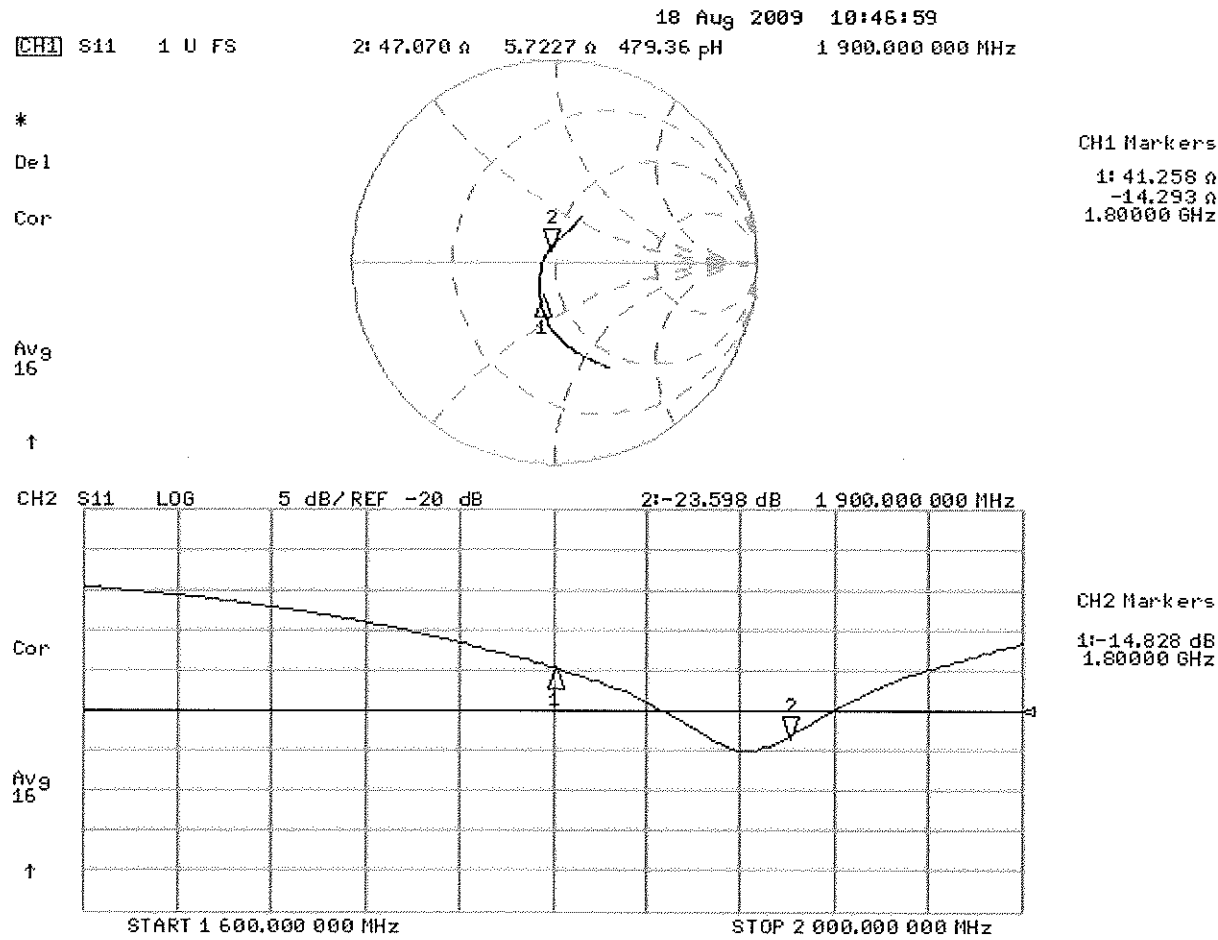
SAR(1 g) = 10.3 mW/g; SAR(10 g) = 5.41 mW/g

Maximum value of SAR (measured) = 13.1 mW/g



0 dB = 13.1mW/g

Impedance Measurement Plot for Body TSL





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Accreditation No.: **SCS 108**

Client **PC Test**

Certificate No: **D2450V2-719_Aug09**

CALIBRATION CERTIFICATE

Object **D2450V2 - SN: 719**

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

Calibration date: **August 27, 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)	31-Mar-09 (No. 217-01025)	Mar-10
Type-N mismatch combination	SN: 5047.2 / 06327	31-Mar-09 (No. 217-01029)	Mar-10
Reference Probe ES3DV3	SN: 3205	26-Jun-09 (No. ES3-3205_Jun09)	Jun-10
DAE4	SN: 601	07-Mar-09 (No. DAE4-601_Mar09)	Mar-10

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

	Name	Function	Signature
Calibrated by:	Jeton Kastrali	Laboratory Technician	
Approved by:	Katja Pokovic	Technical Manager	

Issued: August 27, 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:

- 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
- 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:

- 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 V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	2450 MHz $\pm$ 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	39.2	1.80 mho/m
Measured Head TSL parameters	(22.0 $\pm$ 0.2) °C	40.1 $\pm$ 6 %	1.80 mho/m $\pm$ 6 %
Head TSL temperature during test	(22.3 $\pm$ 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	13.3 mW / g
SAR normalized	normalized to 1W	53.2 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	53.5 mW / g $\pm$ 17.0 % (k=2)

SAR averaged over 10 cm³ (10 g) of Head TSL	condition	
SAR measured	250 mW input power	6.23 mW / g
SAR normalized	normalized to 1W	24.9 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	25.0 mW / g $\pm$ 16.5 % (k=2)

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

Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	52.7	1.95 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	53.2 ± 6 %	2.01 mho/m ± 6 %
Body TSL temperature during test	(22.5 ± 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	13.0 mW / g
SAR normalized	normalized to 1W	52.0 mW / g
SAR for nominal Body TSL parameters ²	normalized to 1W	51.4 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm ³ (10 g) of Body TSL	condition	
SAR measured	250 mW input power	6.00 mW / g
SAR normalized	normalized to 1W	24.0 mW / g
SAR for nominal Body TSL parameters ²	normalized to 1W	23.9 mW / g ± 16.5 % (k=2)

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

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	$53.4 \Omega + 1.8 j\Omega$
Return Loss	- 28.6 dB

Antenna Parameters with Body TSL

Impedance, transformed to feed point	$48.2 \Omega + 3.9 j\Omega$
Return Loss	- 27.2 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.150 ns
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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	September 10, 2002

DASY5 Validation Report for Head TSL

Date/Time: 27.08.2009 11:14:47

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN719

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

Medium: HSL U11 BB

Medium parameters used: $f = 2450$ MHz; $\sigma = 1.8$ mho/m; $\epsilon_r = 40.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.53, 4.53, 4.53); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (front); Type: QD000P50AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

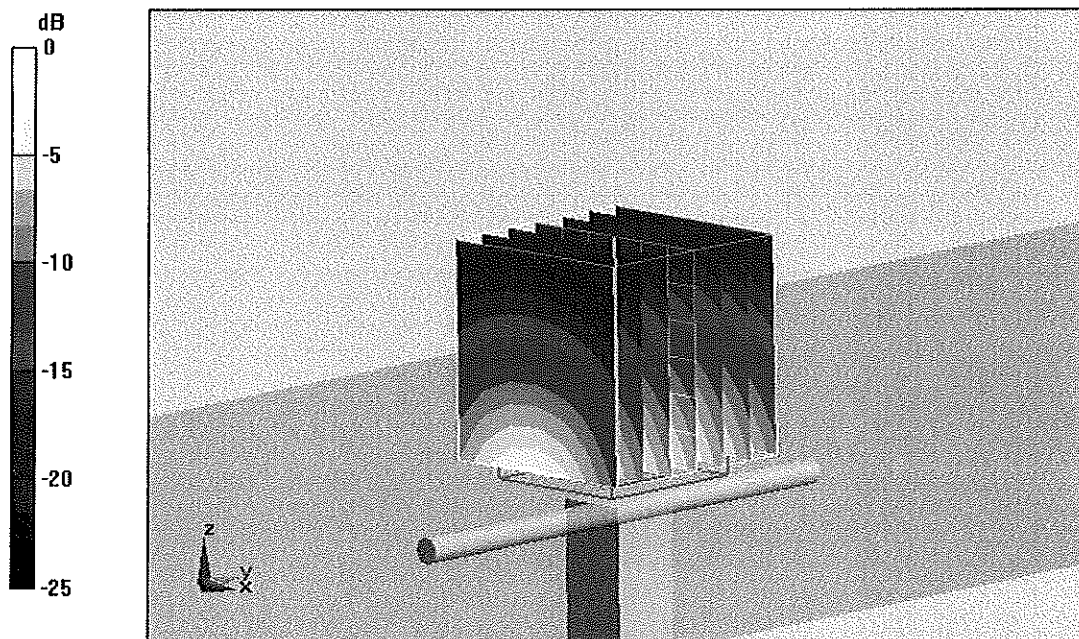
Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 101.4 V/m; Power Drift = 0.025 dB

Peak SAR (extrapolated) = 27 W/kg

SAR(1 g) = 13.3 mW/g; SAR(10 g) = 6.23 mW/g

Maximum value of SAR (measured) = 17.2 mW/g

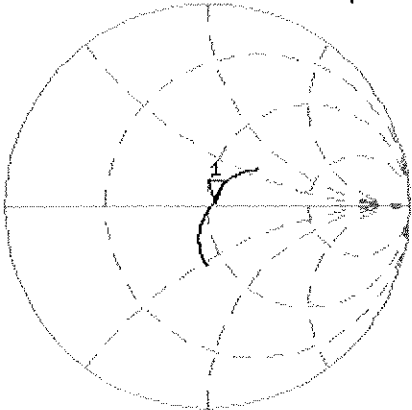


0 dB = 17.2mW/g

Impedance Measurement Plot for Head TSL

27 Aug 2009 09:14:09
[CH1] S11 1 U FS 1: 53.385 Ω 1.7910 Ω 116.35 pF 2 450.000 000 MHz

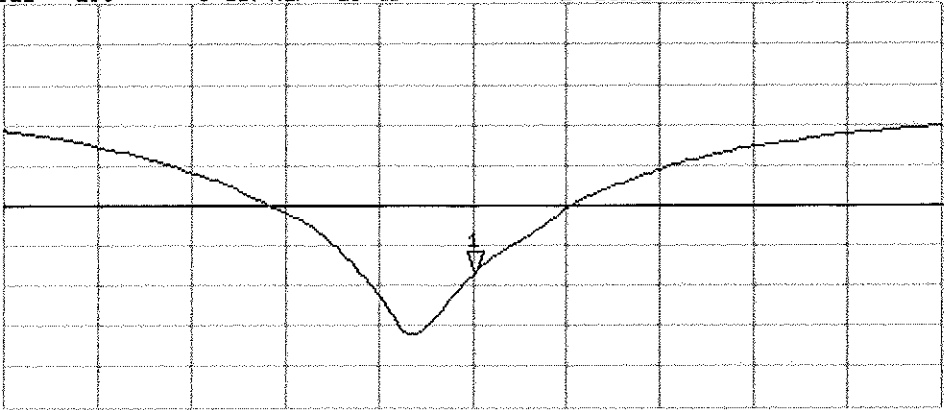
*
De1
Cor



↑

CH2 S11 LOG 5 dB/REF -20 dB 1:-28.624 dB 2 450.000 000 MHz

Cor



↑

START 2 250.000 000 MHz STOP 2 650.000 000 MHz

DASY5 Validation Report for Body TSL

Date/Time: 17.08.2009 15:35:28

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN:719

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

Medium: MSL U10 BB

Medium parameters used: $f = 2450$ MHz; $\sigma = 2.01$ mho/m; $\epsilon_r = 53.1$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

- Probe: ES3DV3 - SN3205; ConvF(4.31, 4.31, 4.31); Calibrated: 26.06.2009
- Sensor-Surface: 3mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 07.03.2009
- Phantom: Flat Phantom 5.0 (back); Type: QD000P50AA; Serial: 1002
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4 Build 45

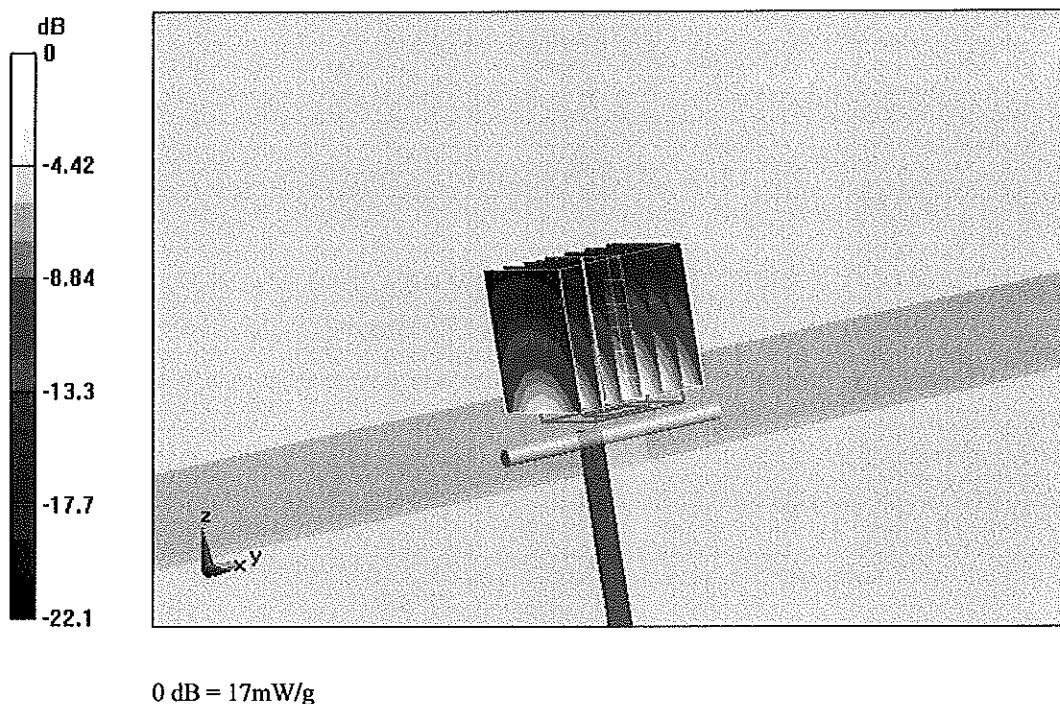
Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 94.8 V/m; Power Drift = -0.00649 dB

Peak SAR (extrapolated) = 27.2 W/kg

SAR(1 g) = 13 mW/g; SAR(10 g) = 6 mW/g

Maximum value of SAR (measured) = 17 mW/g



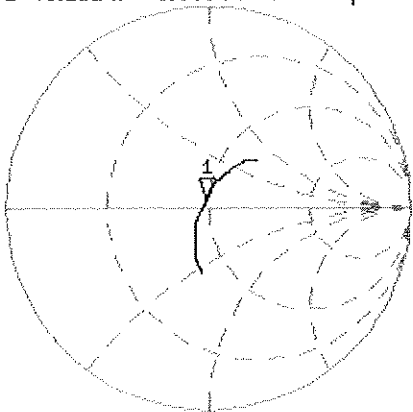
Impedance Measurement Plot for Body TSL

17 Aug 2009 15:56:32
[CH1] S11 1 U FS 1: 48.221 Ω 3.9004 Ω 253.37 pF 2 450.000 000 MHz

*
De1
Cor

Avg
16

↑



CH2 S11 LOG 5 dB/REF -20 dB 1:-27.205 dB 2 450.000 000 MHz

Cor

Avg
16

↑

