APPENDIX A: SAR TEST DATA

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

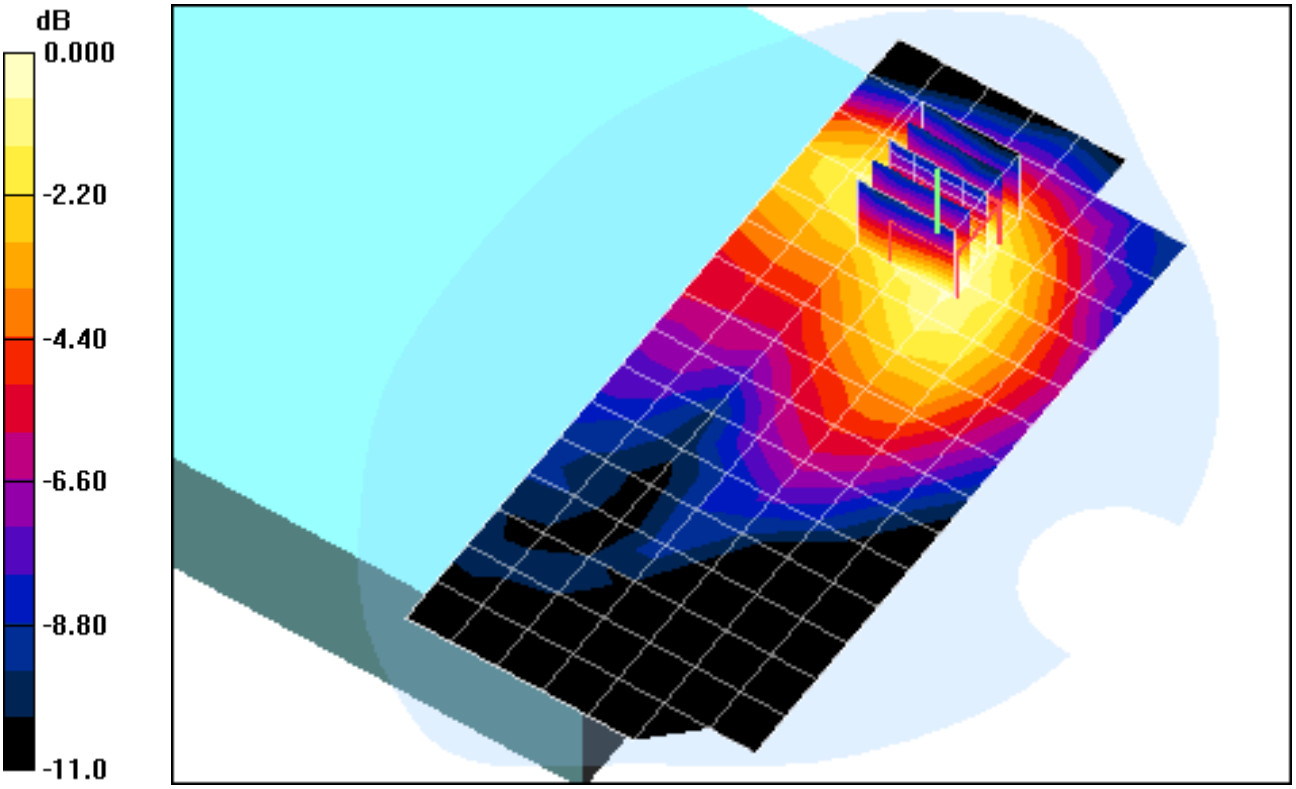
Communication System: GSM850 GPRS; 2 Tx slots; Frequency: 836.6 MHz;Duty Cycle: 1:4.15
Medium: 835 Muscle; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.991 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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: GSM-GPRS850, Lap position, LCD Flip, Mid.ch, 2x slots, Main Ant

Area Scan (8x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 9.61 V/m;
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: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

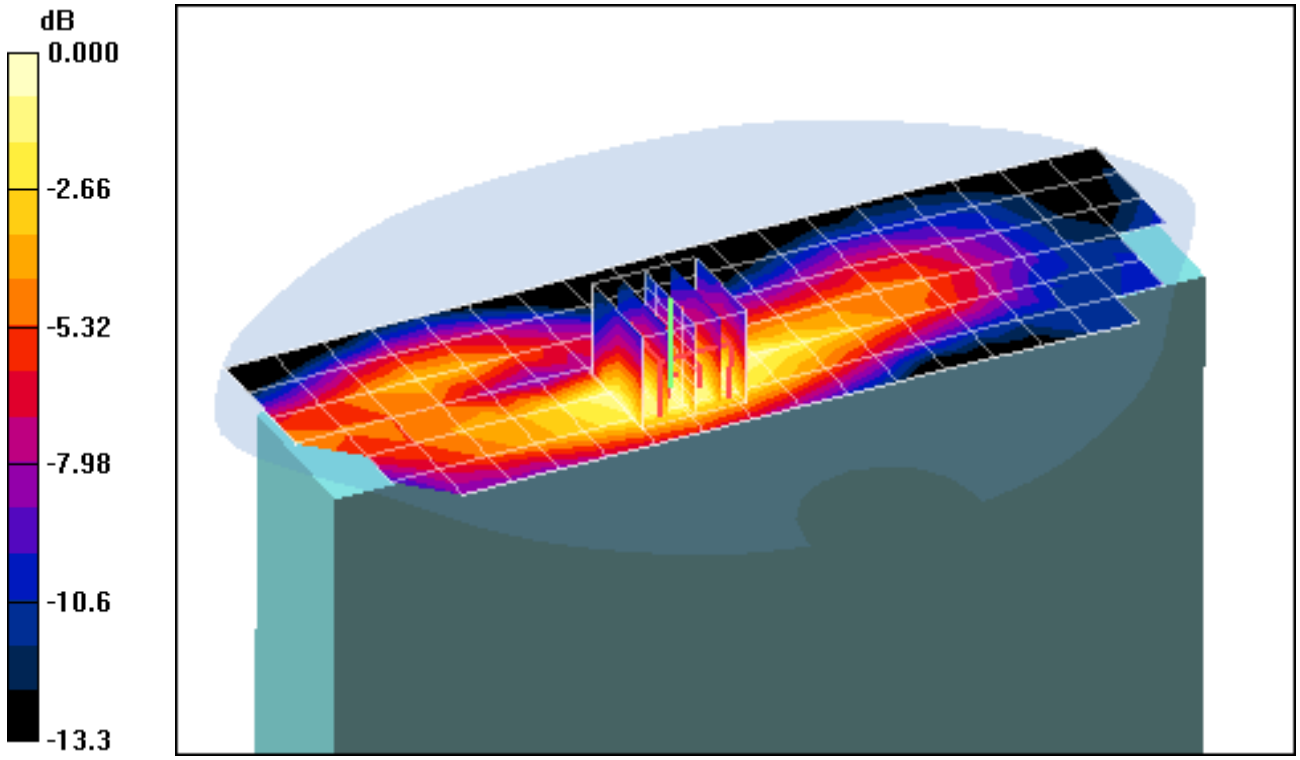
Communication System: GSM850 GPRS; 2 Tx slots; Frequency: 836.6 MHz;Duty Cycle: 1:4.15
Medium: 835 Muscle; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.991 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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: GSM-GPRS850, Edge Bottom position, LCD Flip, Mid.ch, 2x Slots, Main Ant

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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



0 dB = 0.093mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

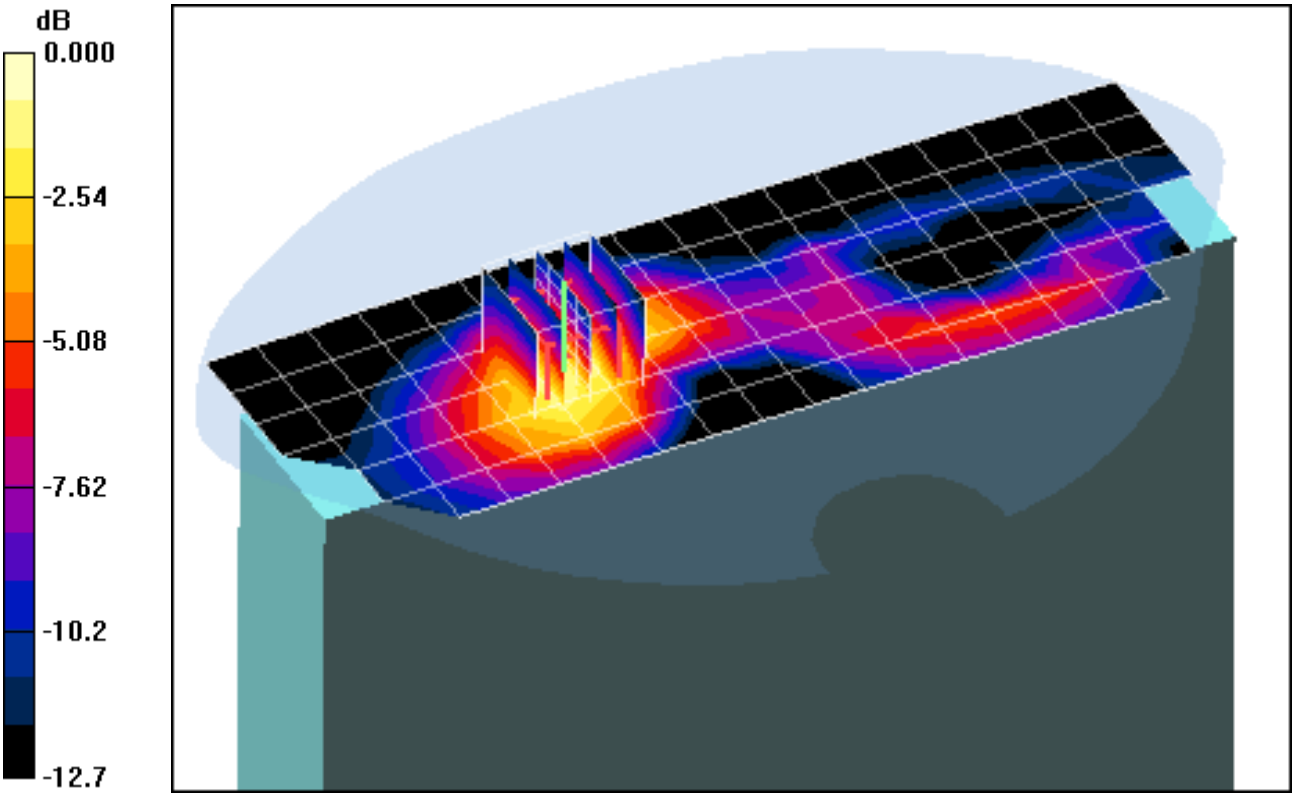
Communication System: GSM850 GPRS; 2 Tx slots; Frequency: 836.6 MHz;Duty Cycle: 1:4.15
Medium: 835 Muscle; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.991 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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: GSM-GPRS850, Edge Top position, LCD Flip, Mid.ch, 2x Slots, Main Ant

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.5 V/m
Peak SAR (extrapolated) = 0.478 W/kg
SAR(1 g) = 0.302 mW/g; SAR(10 g) = 0.185 mW/g



0 dB = 0.367mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

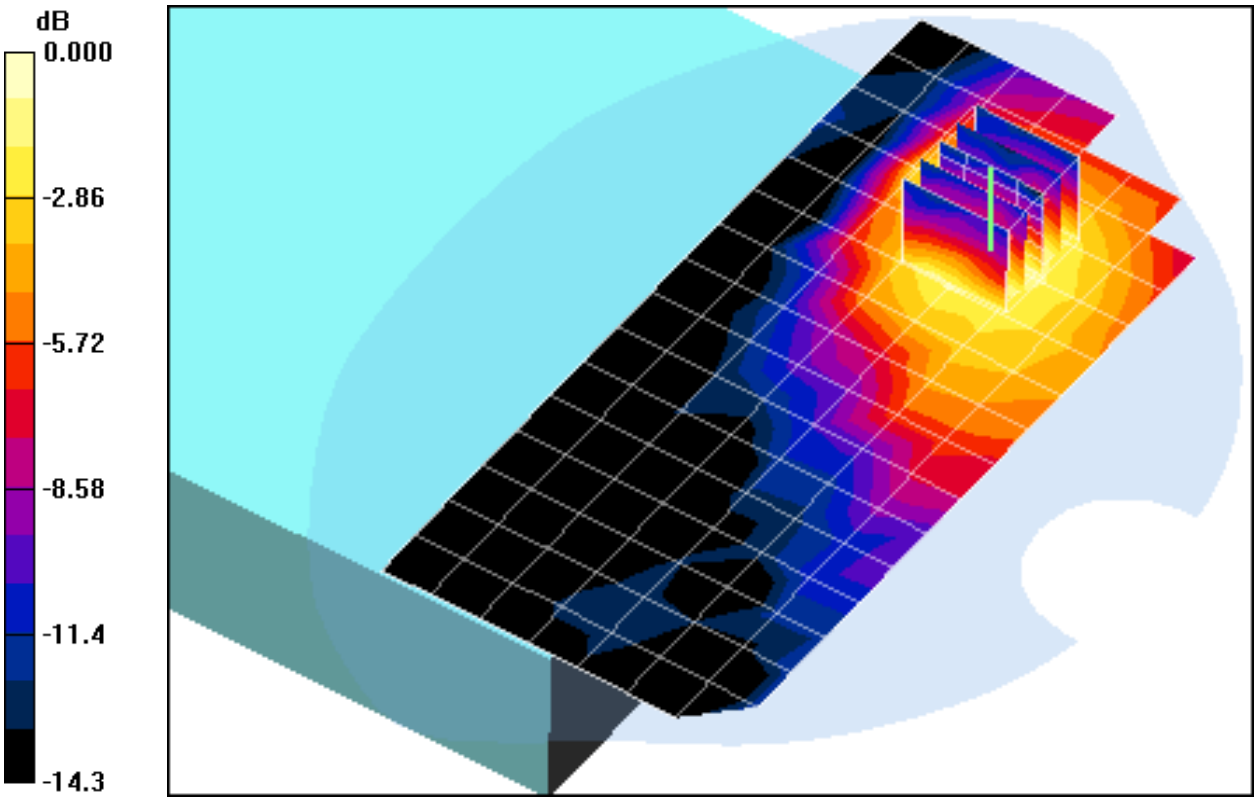
Communication System: GSM1900 GPRS; 2 Tx slots; Frequency: 1880 MHz;Duty Cycle: 1:4.15
Medium: 1900 Muscle; Medium parameters used:
f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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: GSM-GPRS1900, Lap position, LCD Flip, Mid.ch, 2x slots, Main Ant

Area Scan (8x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

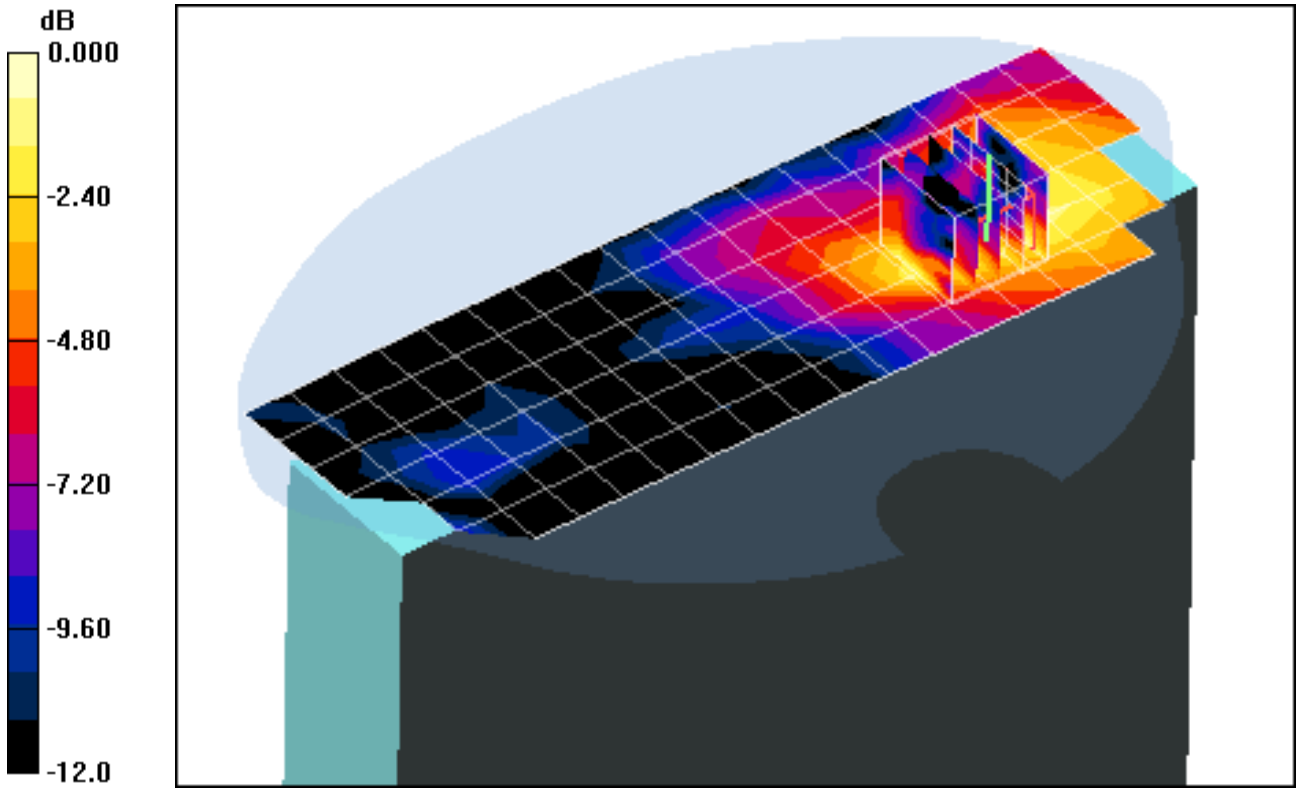
Communication System: GSM1900 GPRS; 2 Tx slots; Frequency: 1880 MHz;Duty Cycle: 1:4.15
Medium: 1900 Muscle; Medium parameters used:
f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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: GSM-GPRS1900, Edge Bottom position, LCD Flip, Mid.ch, 2x Slots, Main Ant

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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



0 dB = 0.036mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and Bluetooth
Serial: 9JKSA00026

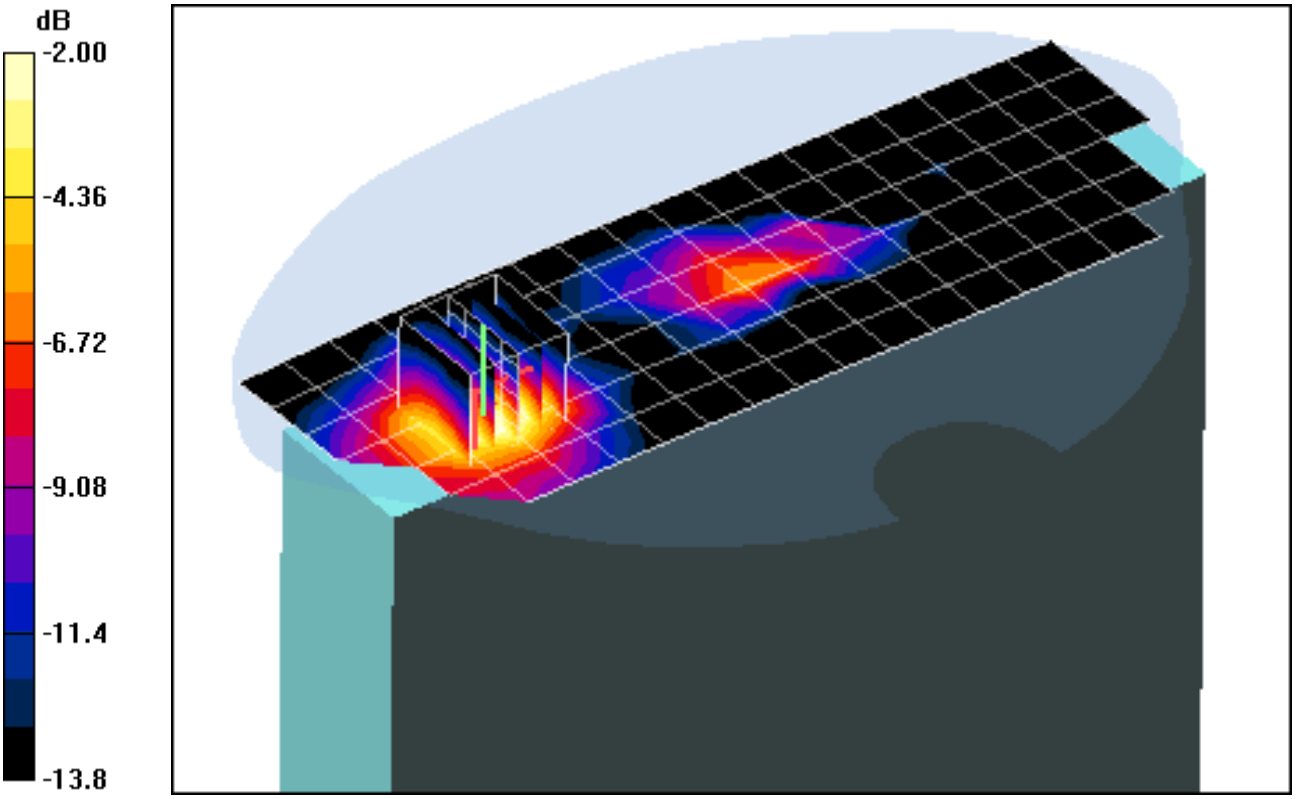
Communication System: GSM1900 GPRS; 2 Tx slots; Frequency: 1880 MHz;Duty Cycle: 1:4.15
Medium: 1900 Muscle; Medium parameters used:
f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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: GSM-GPRS1900, Edge Top position, LCD Flip, Mid.ch, 2x Slots, Main Ant

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 18.5 V/m
Peak SAR (extrapolated) = 0.962 W/kg
SAR(1 g) = 0.501 mW/g; SAR(10 g) = 0.260 mW/g



0 dB = 0.639mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

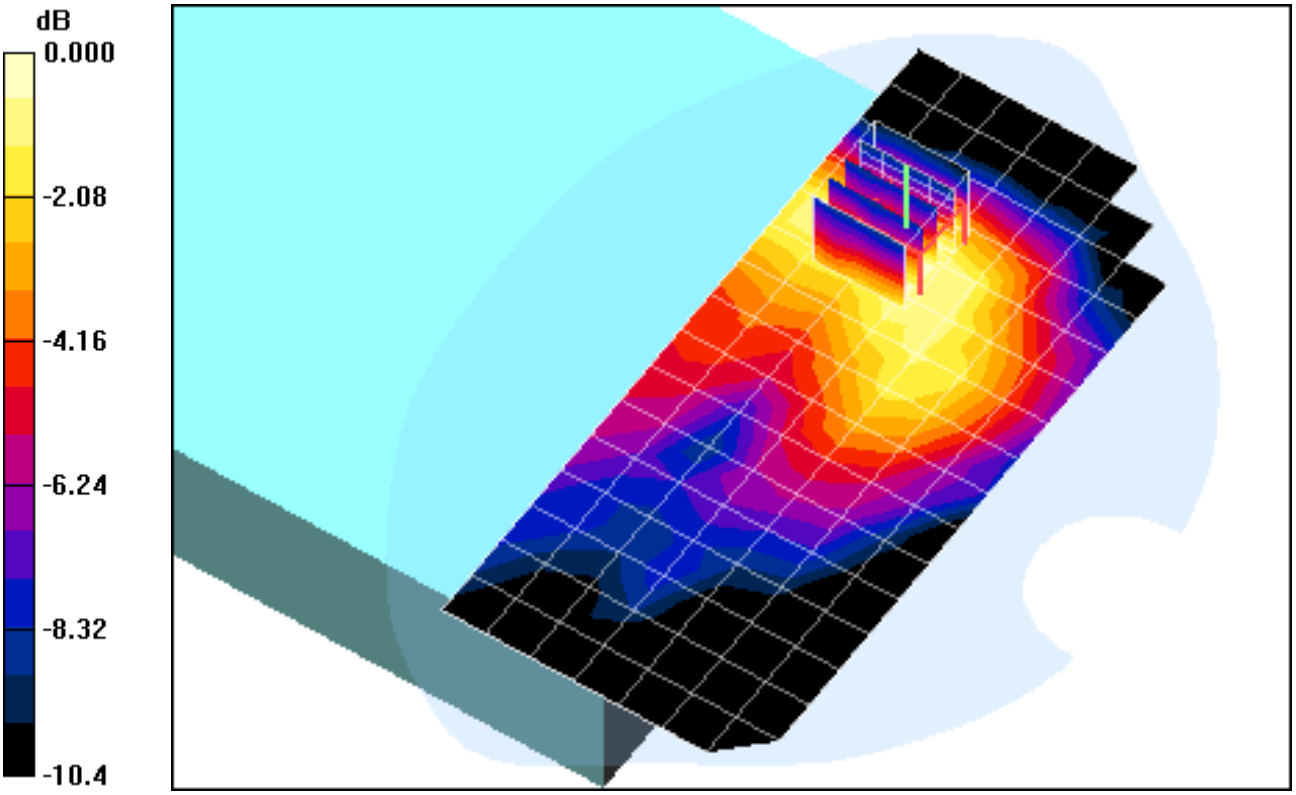
Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium: 835 Muscle; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.991 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, Main Ant

Area Scan (8x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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



0 dB = 0.094mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

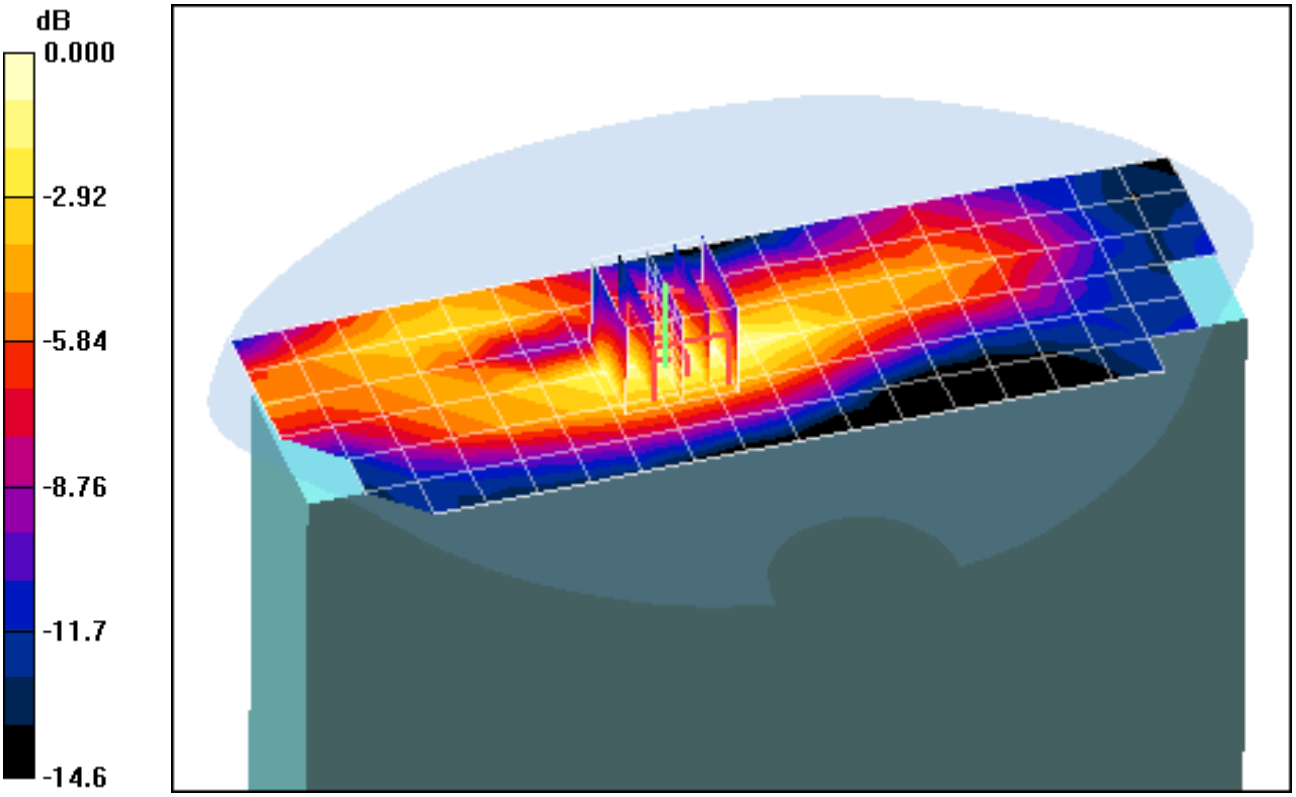
Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium: 835 Muscle; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.991 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, Edge Bottom position, LCD Flip, Mid.ch, Main Ant

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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



0 dB = 0.108mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

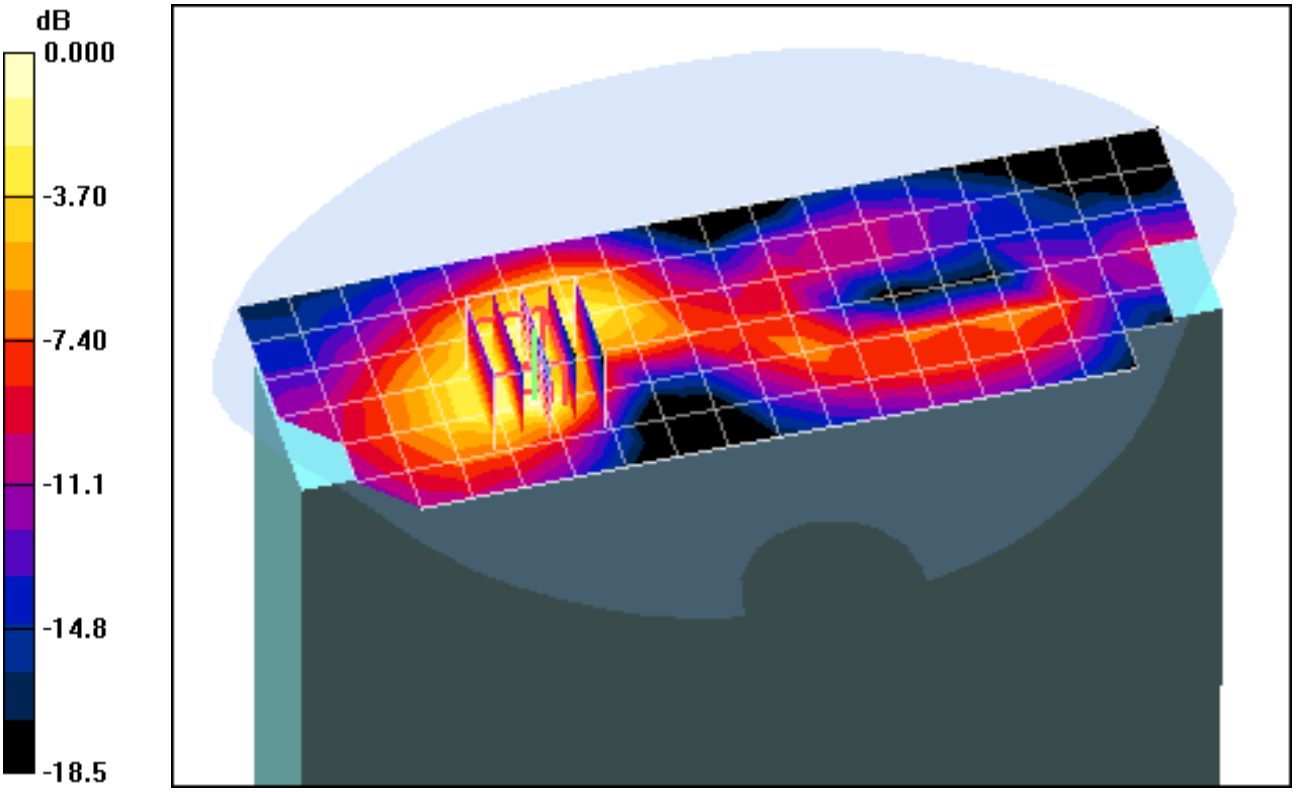
Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium: 835 Muscle; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.991 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, Edge Top position, LCD Flip, Mid.ch, Main Ant

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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



0 dB = 0.435mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

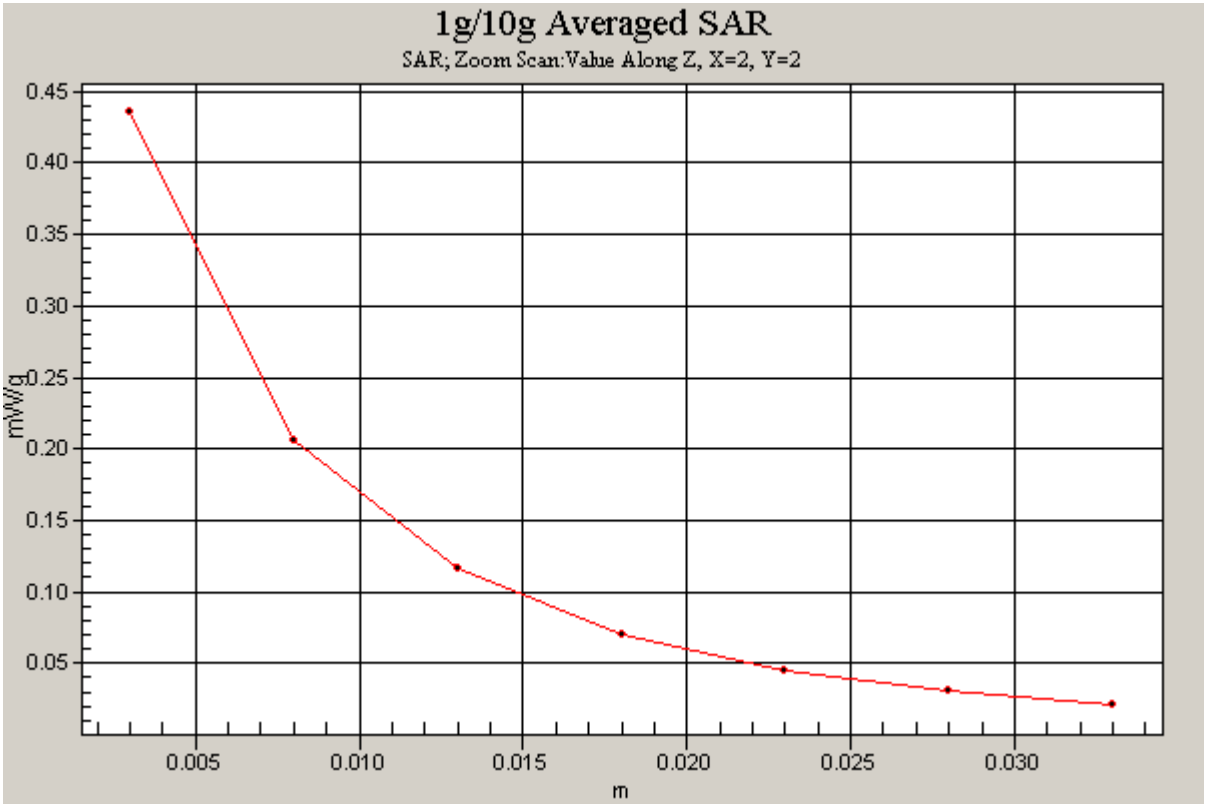
Communication System: WCDMA850; Frequency: 836.6 MHz;Duty Cycle: 1:1
Medium: 835 Muscle; Medium parameters used (interpolated):
f = 836.6 MHz; σ = 0.991 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, Edge Top position, LCD Flip, Mid.ch, Main Antenna

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

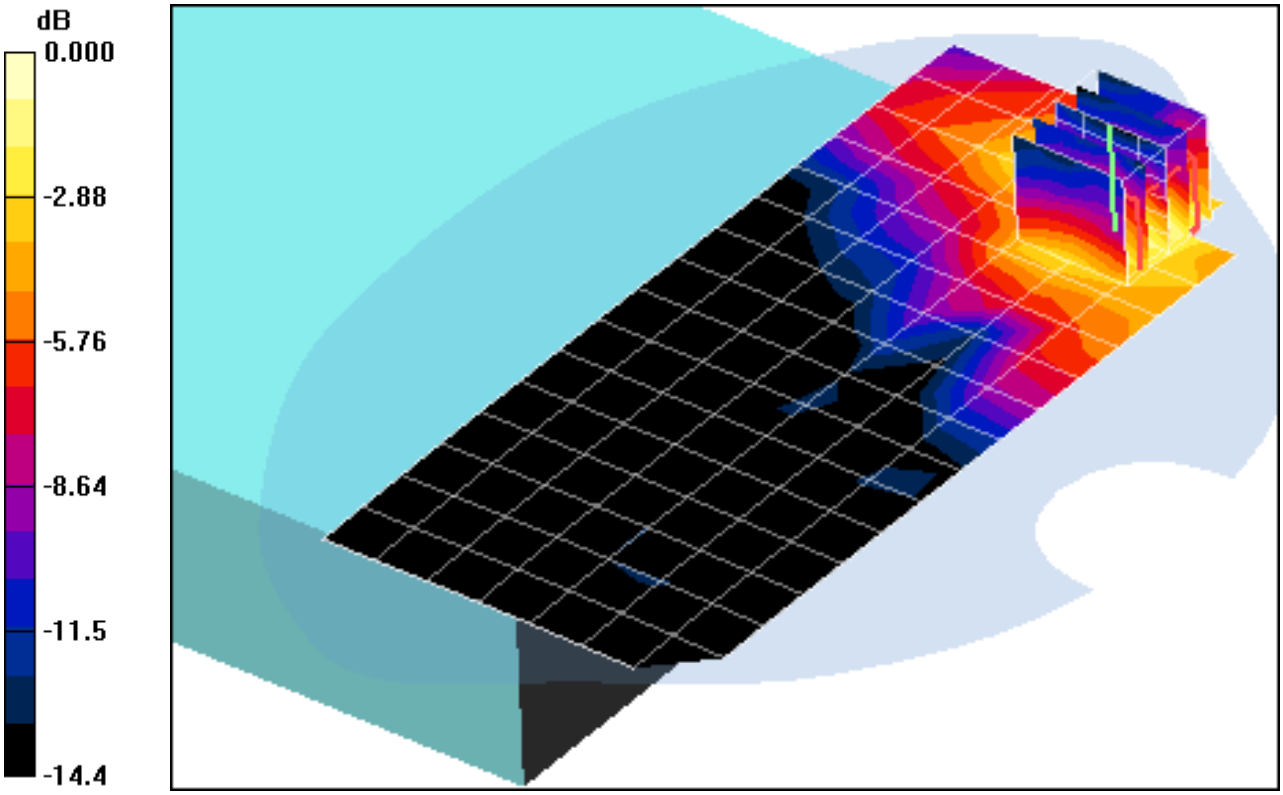
Communication System: WCDMA1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 Muscle; Medium parameters used:
f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, Main Ant

Area Scan (8x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

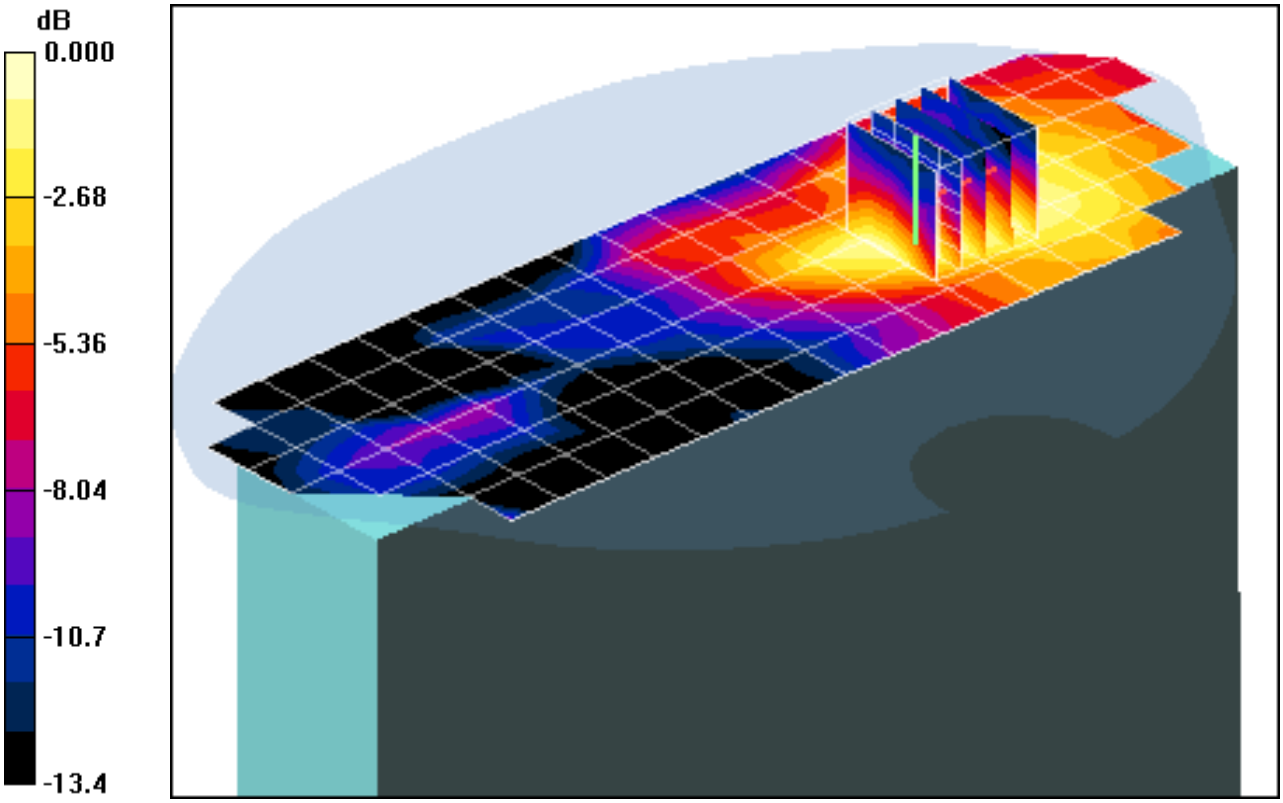
Communication System: WCDMA1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 Muscle; Medium parameters used:
f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, Edge Bottom position, LCD Flip, Mid.ch, Main Ant

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

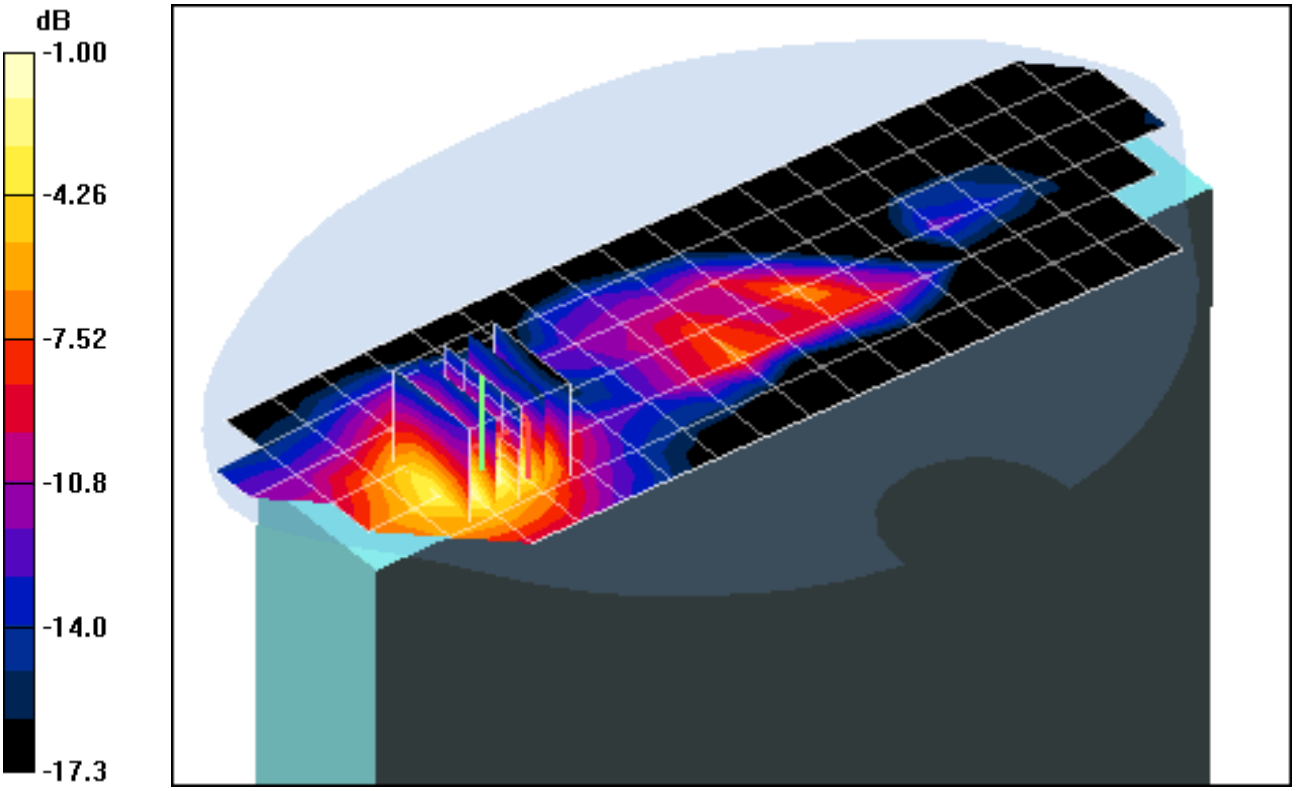
Communication System: WCDMA1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 Muscle; Medium parameters used:
f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, Edge Top position, LCD Flip, Mid.ch, Main Ant

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

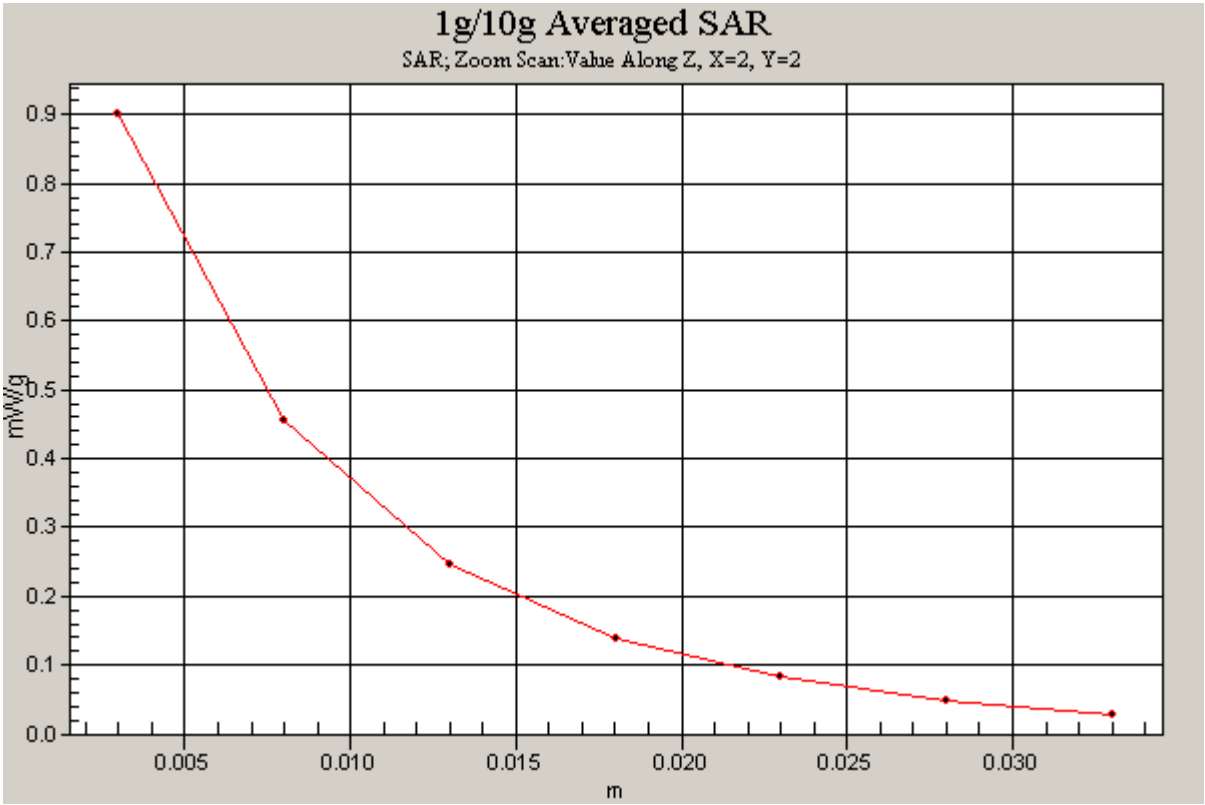
Communication System: WCDMA1900; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 Muscle; Medium parameters used:
f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, Edge Top position, LCD Flip, Mid.ch, Main Ant

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

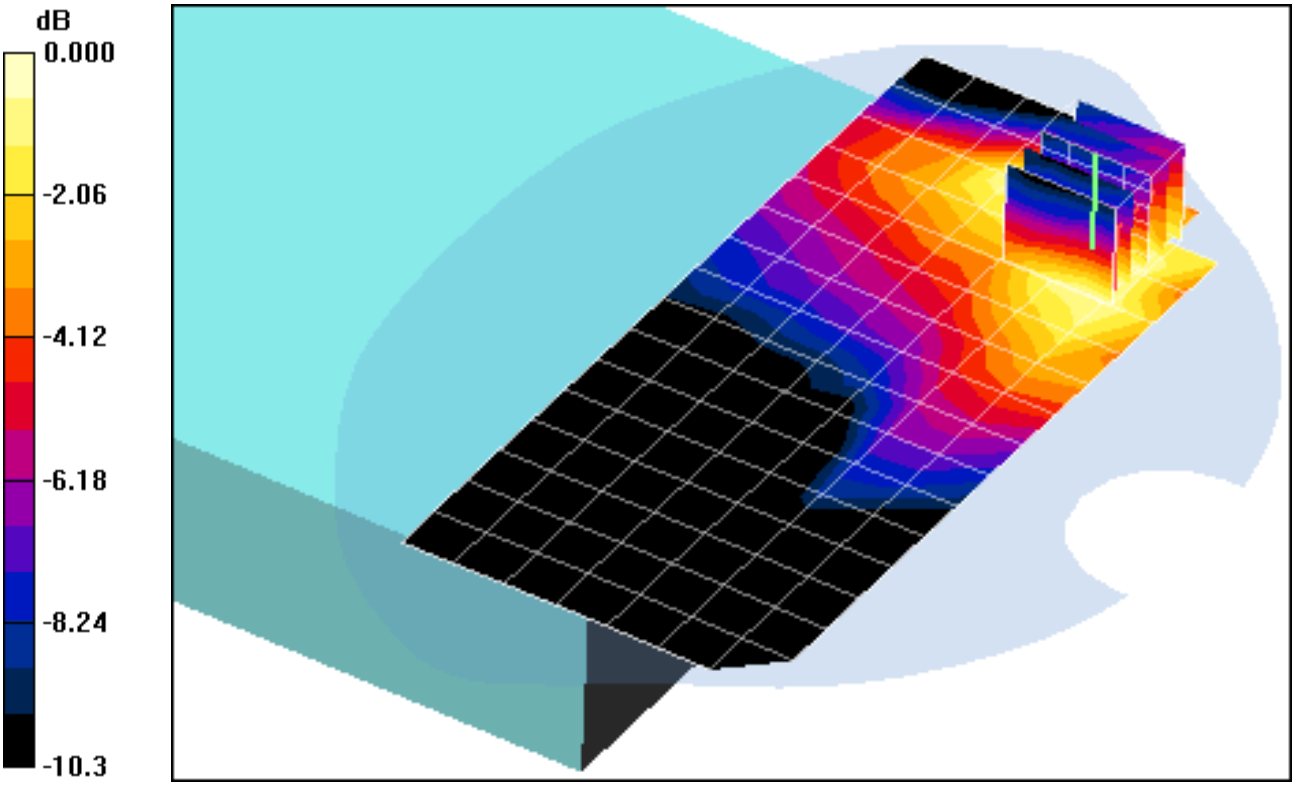
Communication System: Cellular CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: 835 Muscle; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.991 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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 850, Lap position, LCD Flip, Mid.ch, Main Ant

Area Scan (8x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

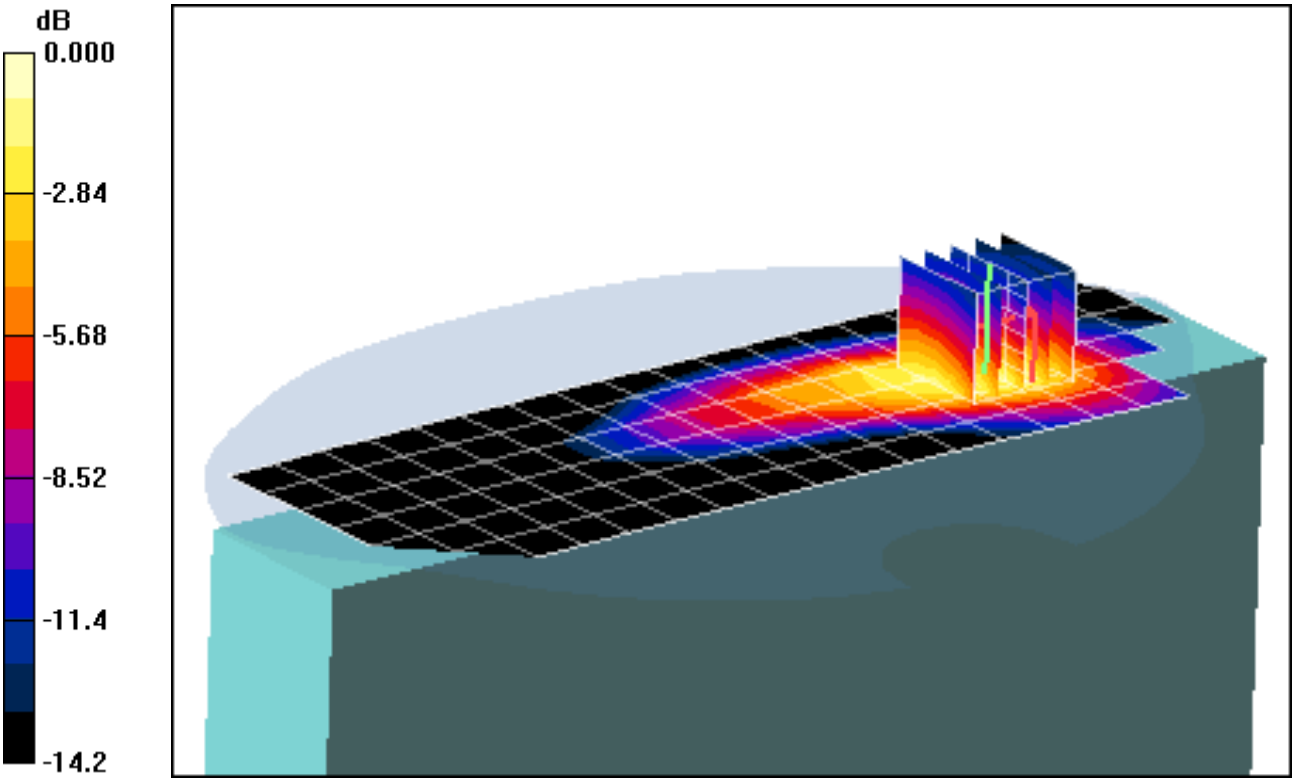
Communication System: Cellular CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: 835 Muscle Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.991 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Phantom section: Flat Section, Space: 0.0 cm

Test Date: 04-07-2003; 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, Edge Bottom Position, LCD Flip, Mid.ch, Main Ant

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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 = 0.426mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

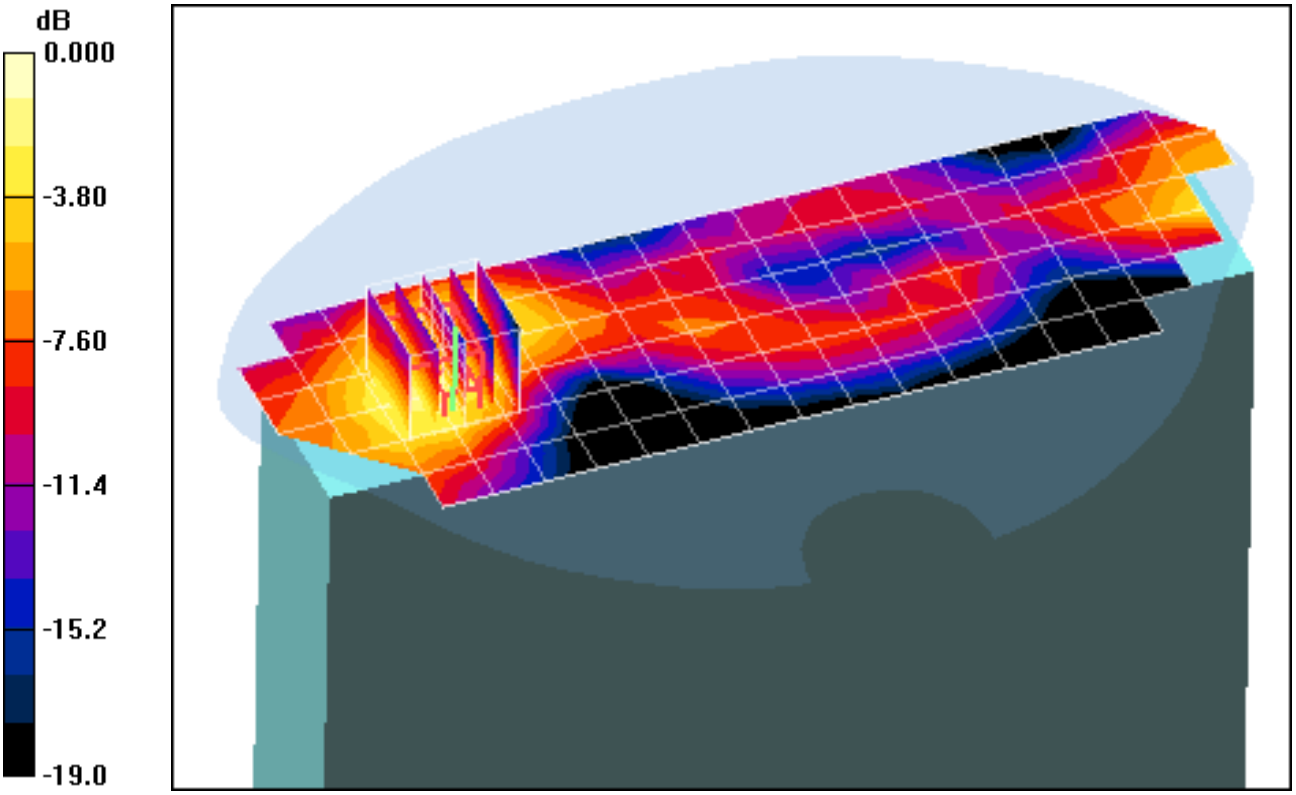
Communication System: Cellular CDMA; Frequency: 836.52 MHz;Duty Cycle: 1:1
Medium: 835 Muscle; Medium parameters used (interpolated):
f = 836.52 MHz; σ = 0.991 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, Edge Top position, LCD Flip, Mid.ch, Main Ant

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan 2 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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



0 dB = 0.317mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

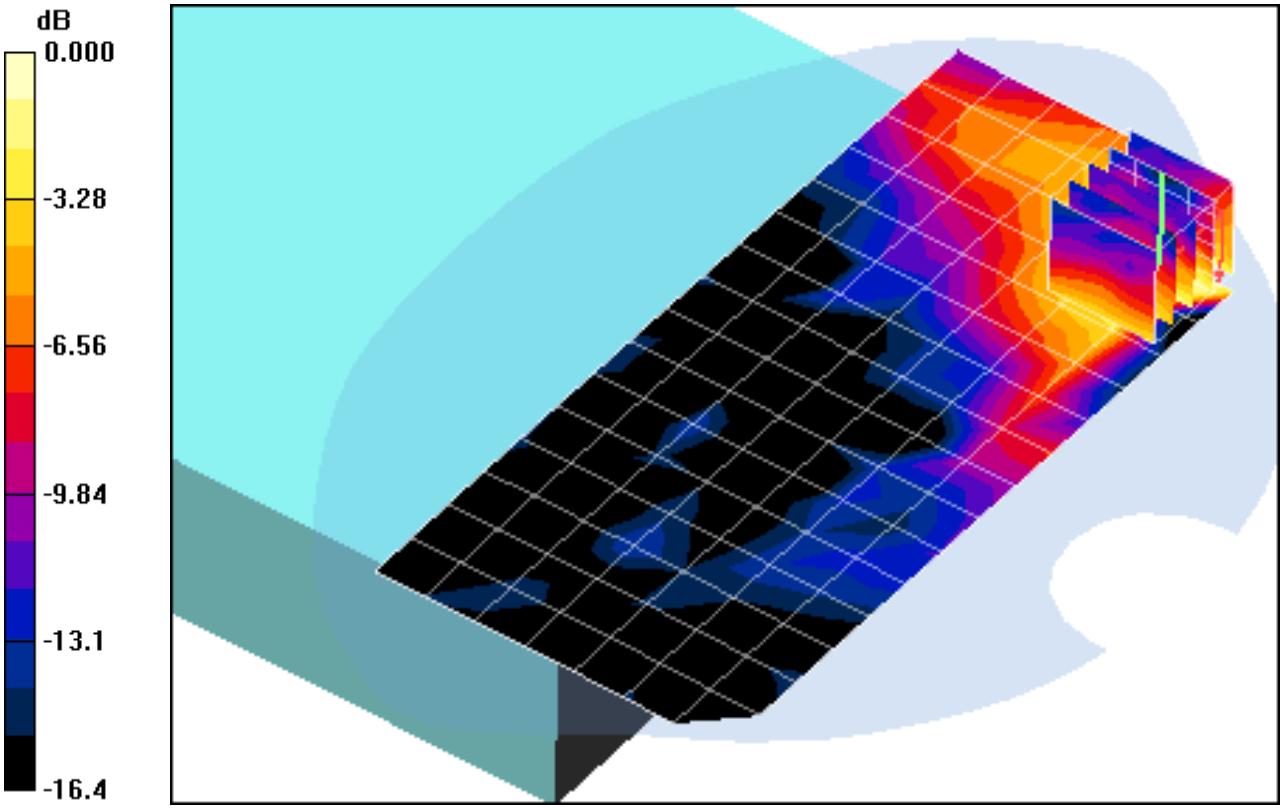
Communication System: PCS CDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 Muscle; Medium parameters used:
f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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 1900, Lap position, LCD Flip, Mid.ch, Main Ant

Area Scan (8x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

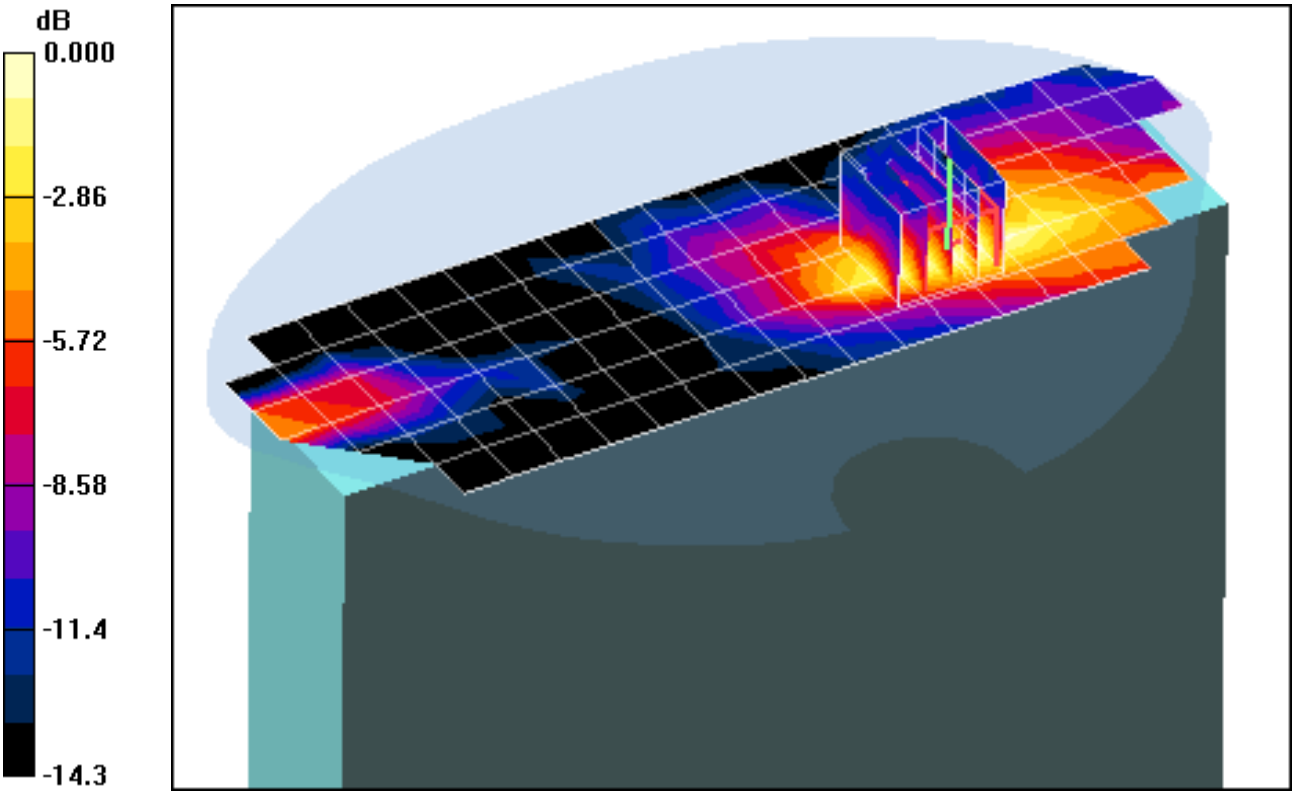
Communication System: PCS CDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 Muscle; Medium parameters used:
f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, Edge Bottom position, LCD Flip, Mid.ch, Main Ant

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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



0 dB = 0.036mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

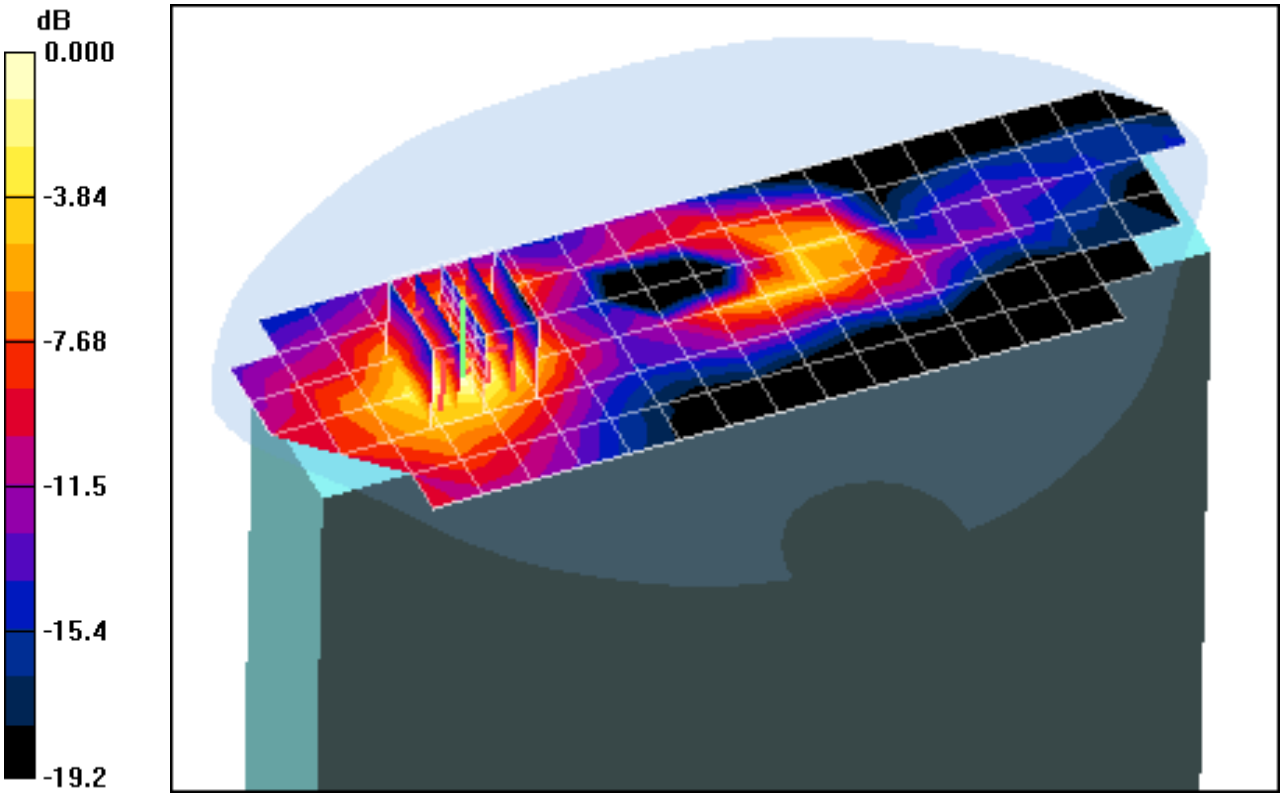
Communication System: PCS CDMA; Frequency: 1880 MHz;Duty Cycle: 1:1
Medium: 1900 Muscle; Medium parameters used:
f = 1880 MHz; σ = 1.52 mho/m; ε_r = 52.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

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, Edge Top position, LCD Flip, Mid.ch, Main Ant

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

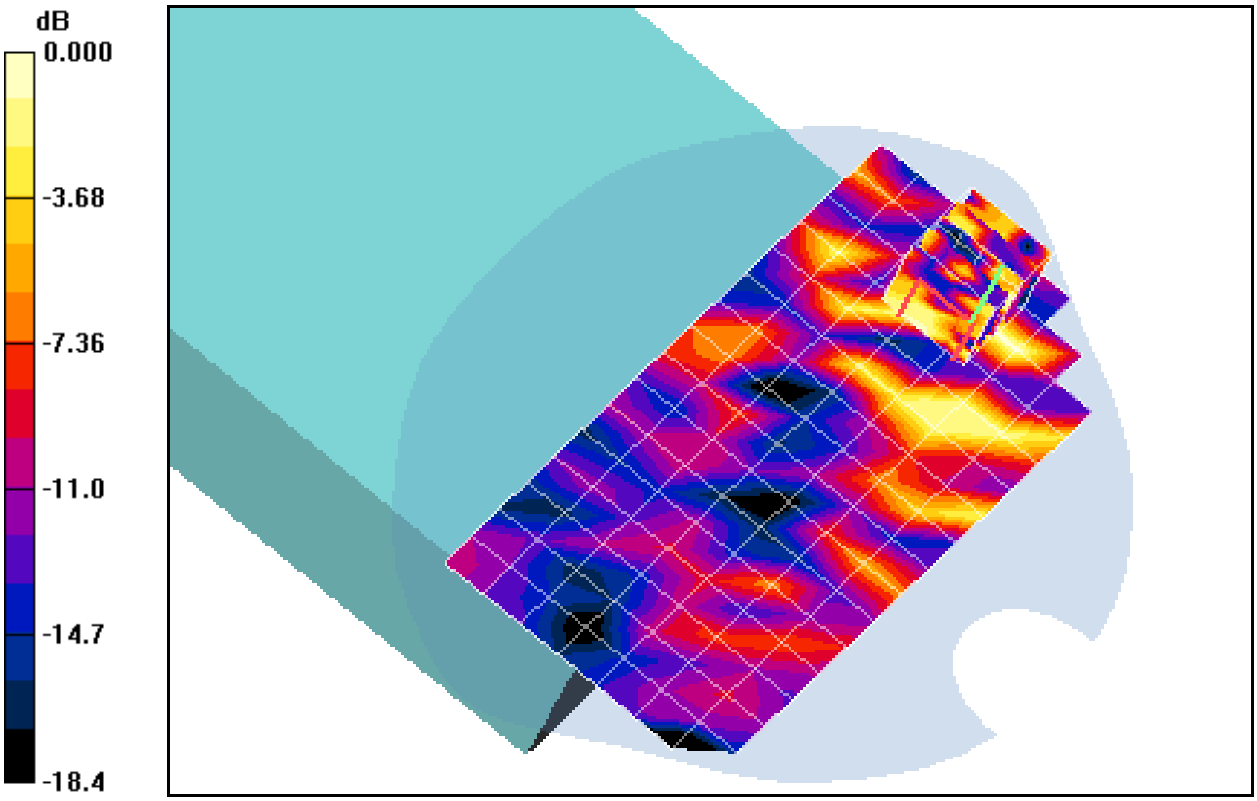
Communication System: IEEE 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.94 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-22-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°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, LCD Flip, Mid.ch, 1 Mbps, Tx Chain B

Area Scan (8x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 6.39 V/m
Peak SAR (extrapolated) = 0.317 W/kg
SAR(1 g) = 0.0615 mW/g; SAR(10 g) = 0.0250 mW/g



0 dB = 0.092mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

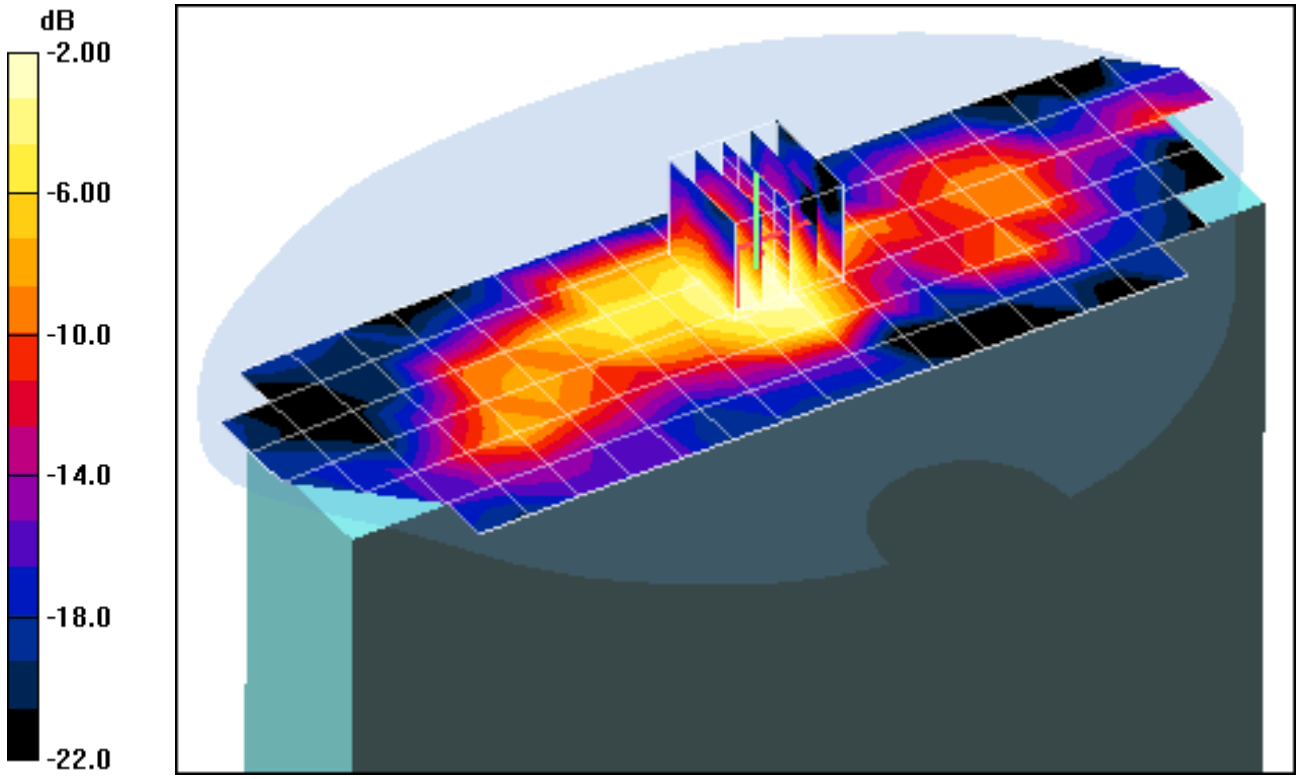
Communication System: IEEE 802.11b; Frequency:2437 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.94 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-22-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°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, Edge Bottom position, LCD Flip, Mid.ch, 1Mbps, Tx chain B

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.95 V/m
Peak SAR (extrapolated) = 0.205 W/kg
SAR(1 g) = 0.104 mW/g; SAR(10 g) = 0.050 mW/g



0 dB = 0.136mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

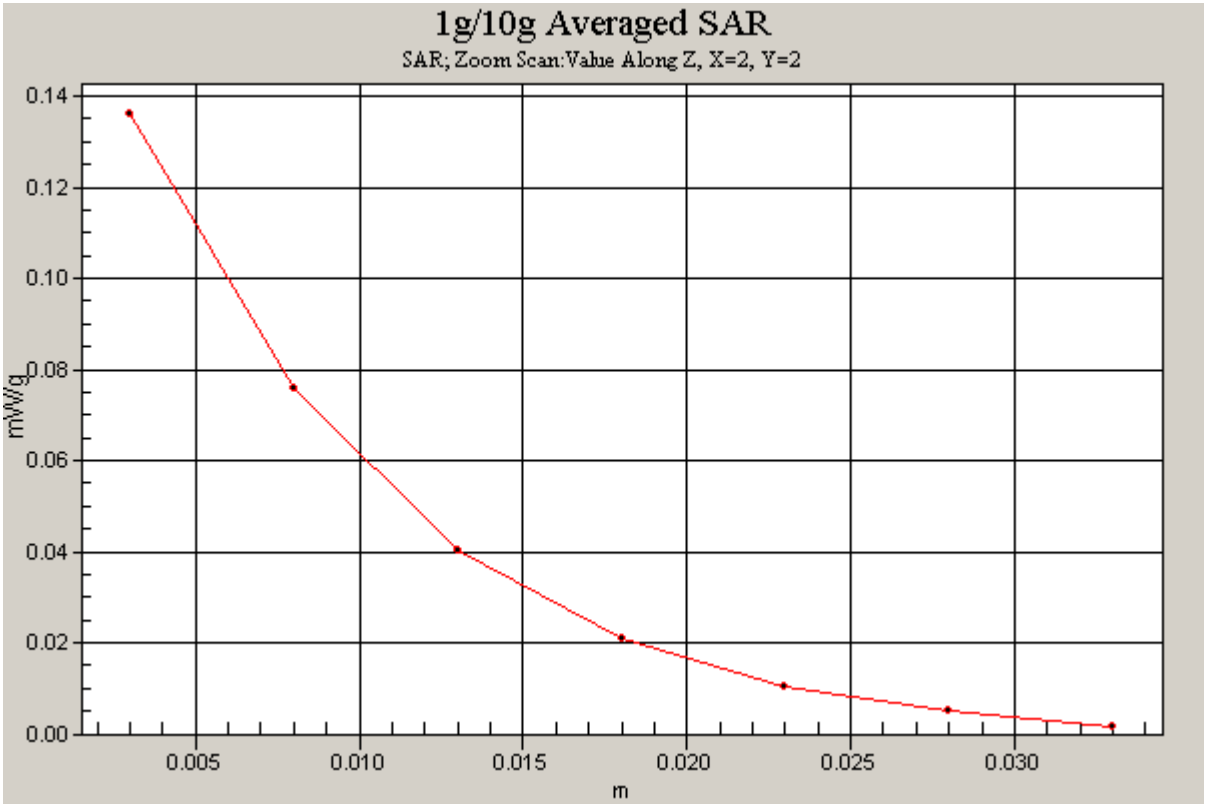
Communication System: IEEE 802.11b; Frequency : 2437 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.94 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-22-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°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, Edge Bottom position, LCD Flip, Mid.ch, 1Mbps, Tx chain B

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 8.95 V/m
Peak SAR (extrapolated) = 0.205 W/kg
SAR(1 g) = 0.104 mW/g; SAR(10 g) = 0.050 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

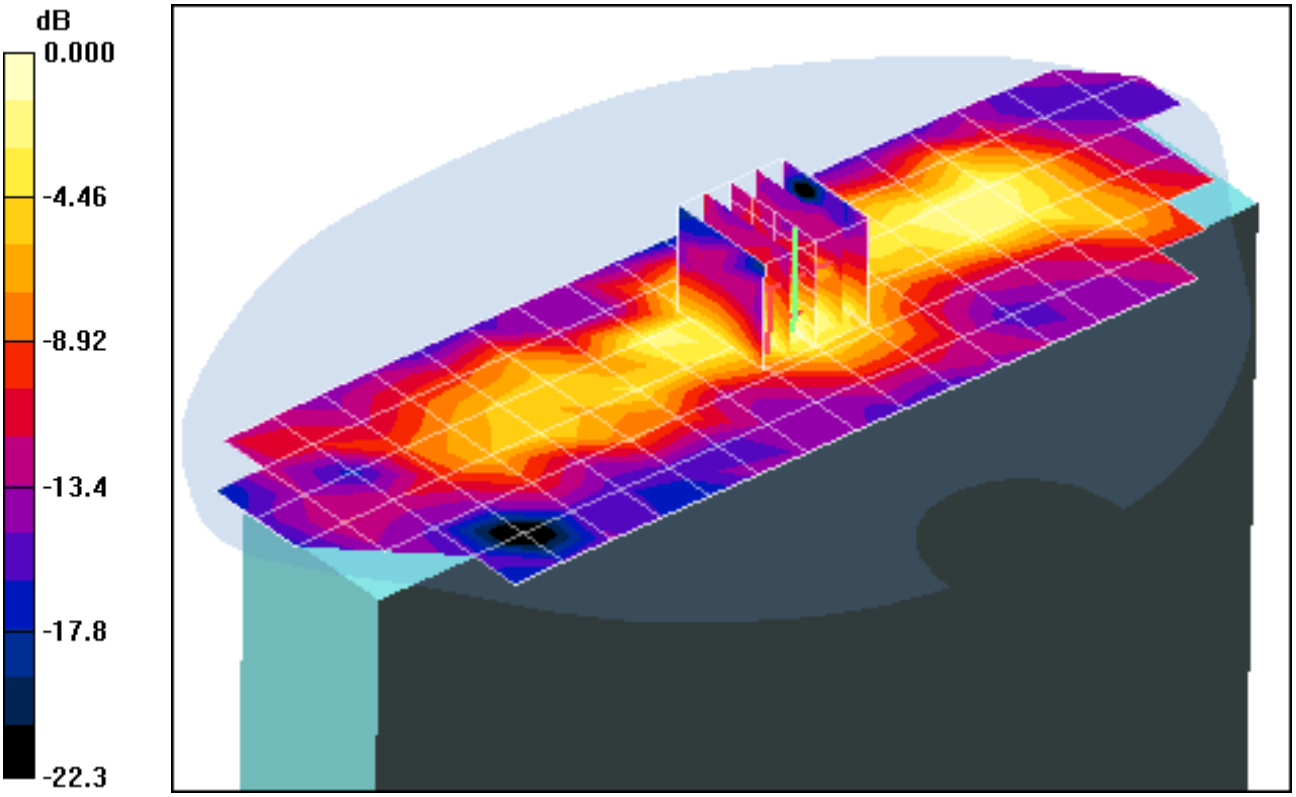
Communication System: IEEE 802.11b; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.94 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-22-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°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, Edge Top position, LCD Flip, Mid.ch, 1Mbps, Tx chain B

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.19 V/m
Peak SAR (extrapolated) = 0.070 W/kg
SAR(1 g) = 0.0375 mW/g; SAR(10 g) = 0.0200 mW/g



0 dB = 0.049mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

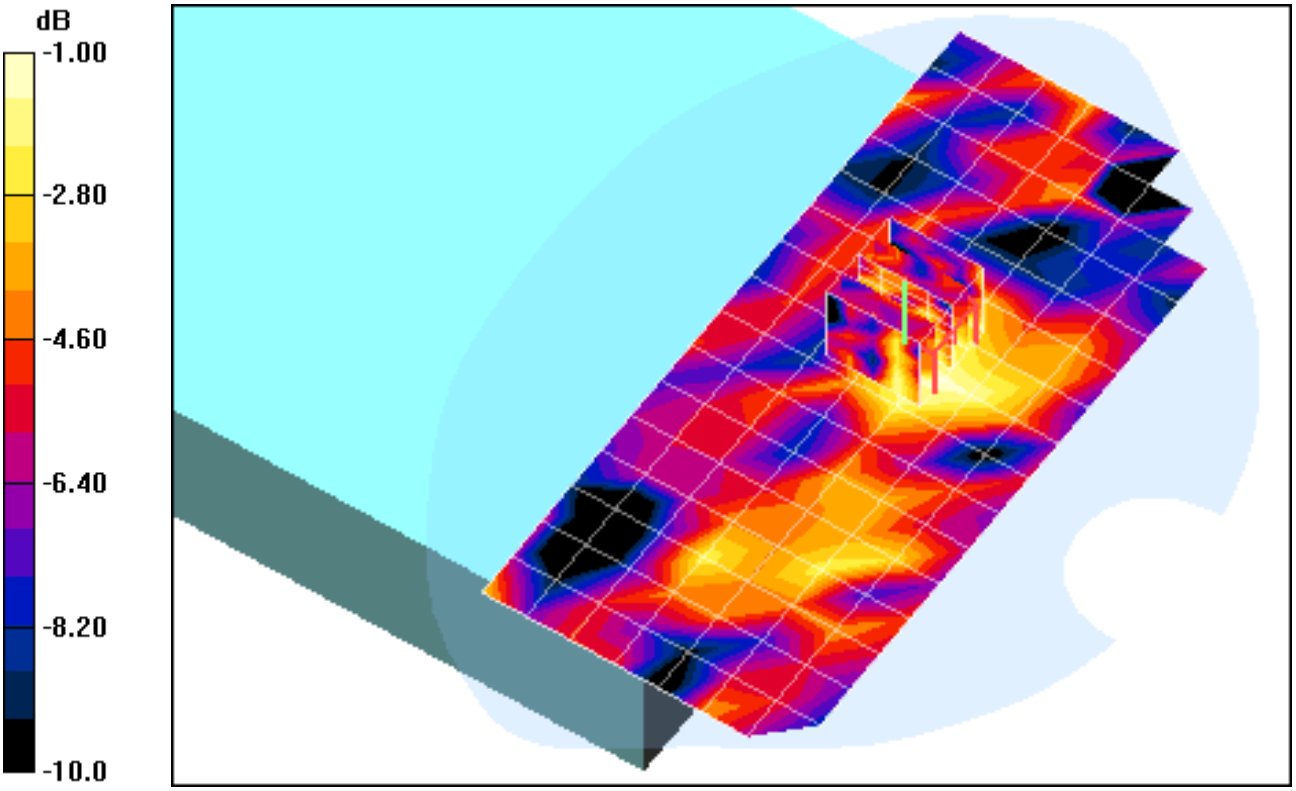
Communication System: IEEE 802.11g; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.94 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-22-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°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, LCD Flip, Mid.ch, 6 Mbps, Tx Chain B

Area Scan (8x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.11 V/m
Peak SAR (extrapolated) = 0.022 W/kg
SAR(1 g) = 0.0121 mW/g; SAR(10 g) = 0.00668 mW/g



0 dB = 0.015mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

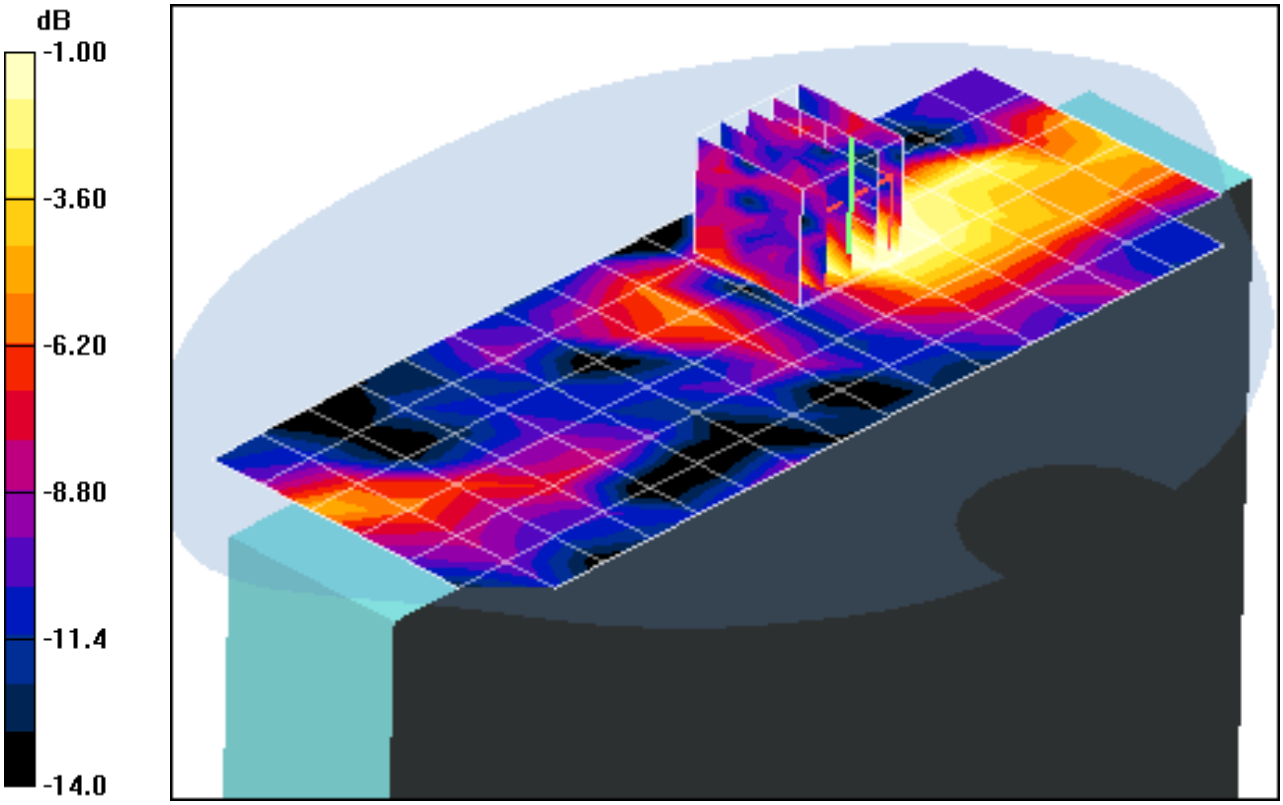
Communication System: IEEE 802.11g; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.94 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-22-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°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 802.11g, Edge Bottom position, LCD Flip, Mid.ch, 1Mbps, Tx chain B

Area Scan (7x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 2.77 V/m
Peak SAR (extrapolated) = 0.031 W/kg
SAR(1 g) = 0.0147 mW/g; SAR(10 g) = 0.00707 mW/g



0 dB = 0.018mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

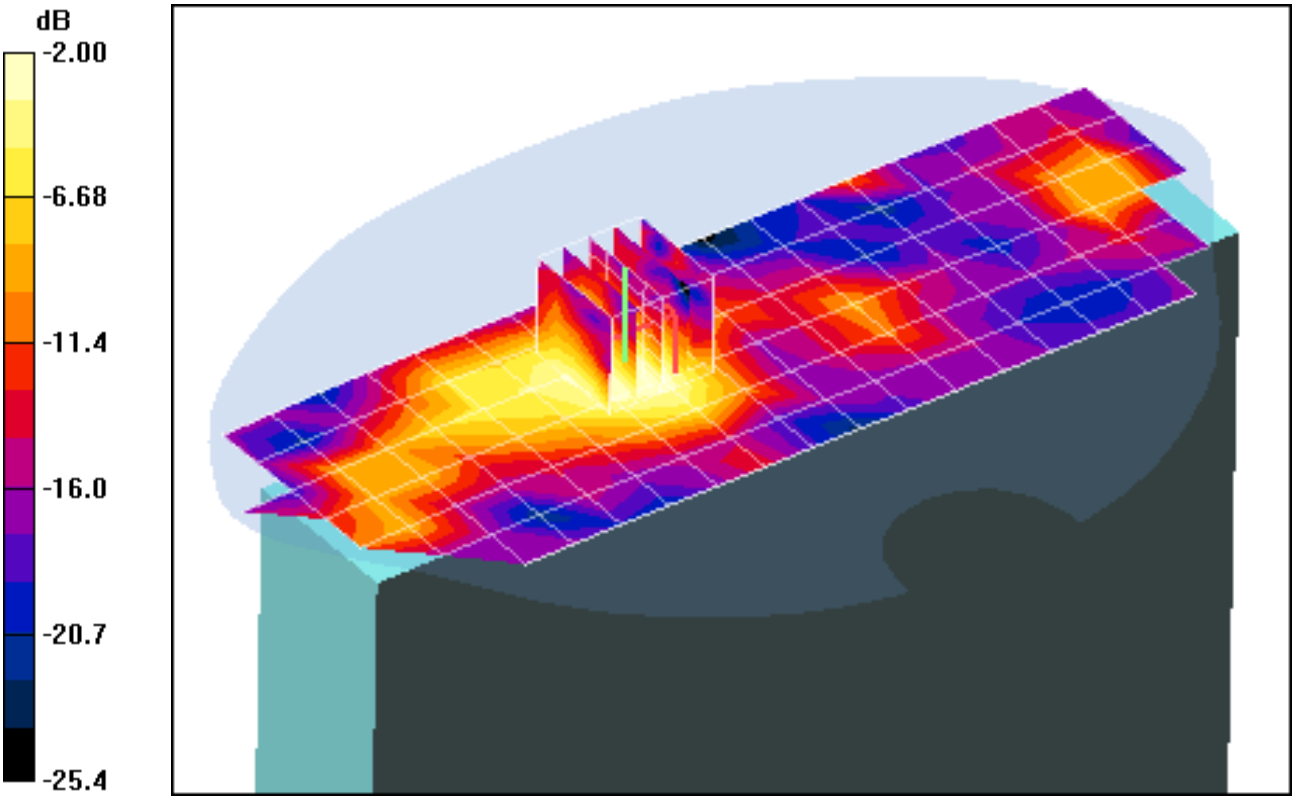
Communication System: IEEE 802.11g; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.94 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-22-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°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 802.11g, Edge Top position, LCD Flip, Mid.ch, 6 Mbps, Tx chain B

Area Scan (7x21x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 7.33 V/m
Peak SAR (extrapolated) = 0.152 W/kg
SAR(1 g) = 0.0764 mW/g; SAR(10 g) = 0.0370 mW/g



0 dB = 0.097mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

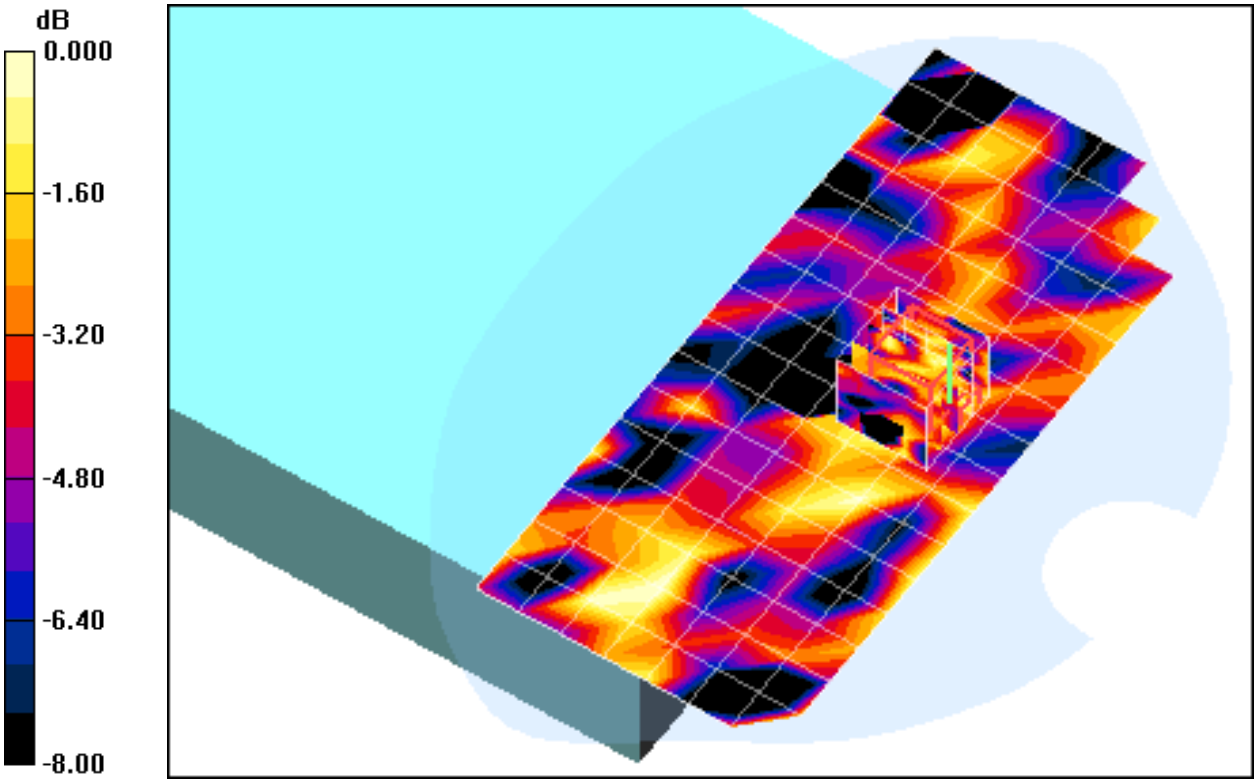
Communication System: IEEE 802.11n; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.94 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-22-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°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 802.11n, Lap position, LCD Flip, Mid.ch,
13.5 Mbps, Tx Chain B

Area Scan (8x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 1.86 V/m
Peak SAR (extrapolated) = 0.020 W/kg
SAR(1 g) = 0.0105 mW/g; SAR(10 g) = 0.0057 mW/g



0 dB = 0.007mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

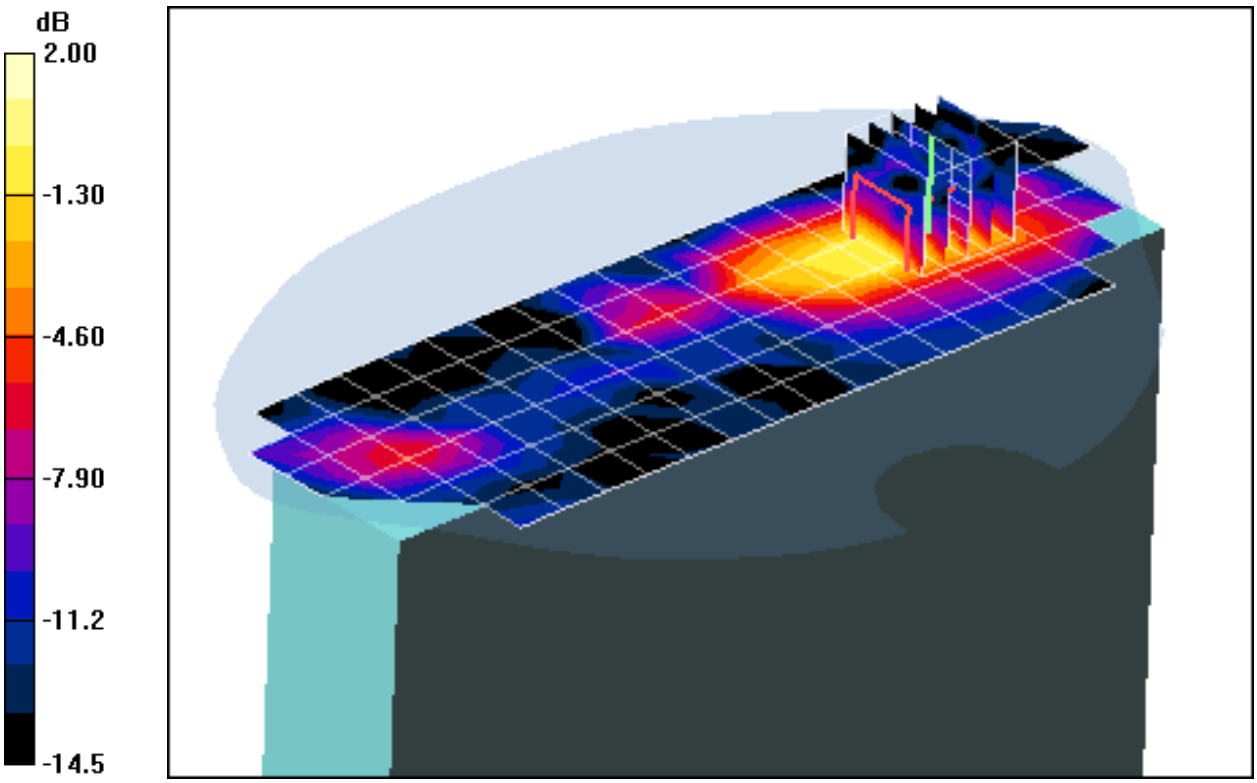
Communication System: IEEE 802.11n; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.94 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-22-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°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 802.11n, Edge Bottom position, LCD Flip, Mid.ch, 13.5 Mbps, Tx chain B

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 3.38 V/m
Peak SAR (extrapolated) = 0.081 W/kg
SAR(1 g) = 0.0211 mW/g; SAR(10 g) = 0.0110 mW/g



0 dB = 0.027mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

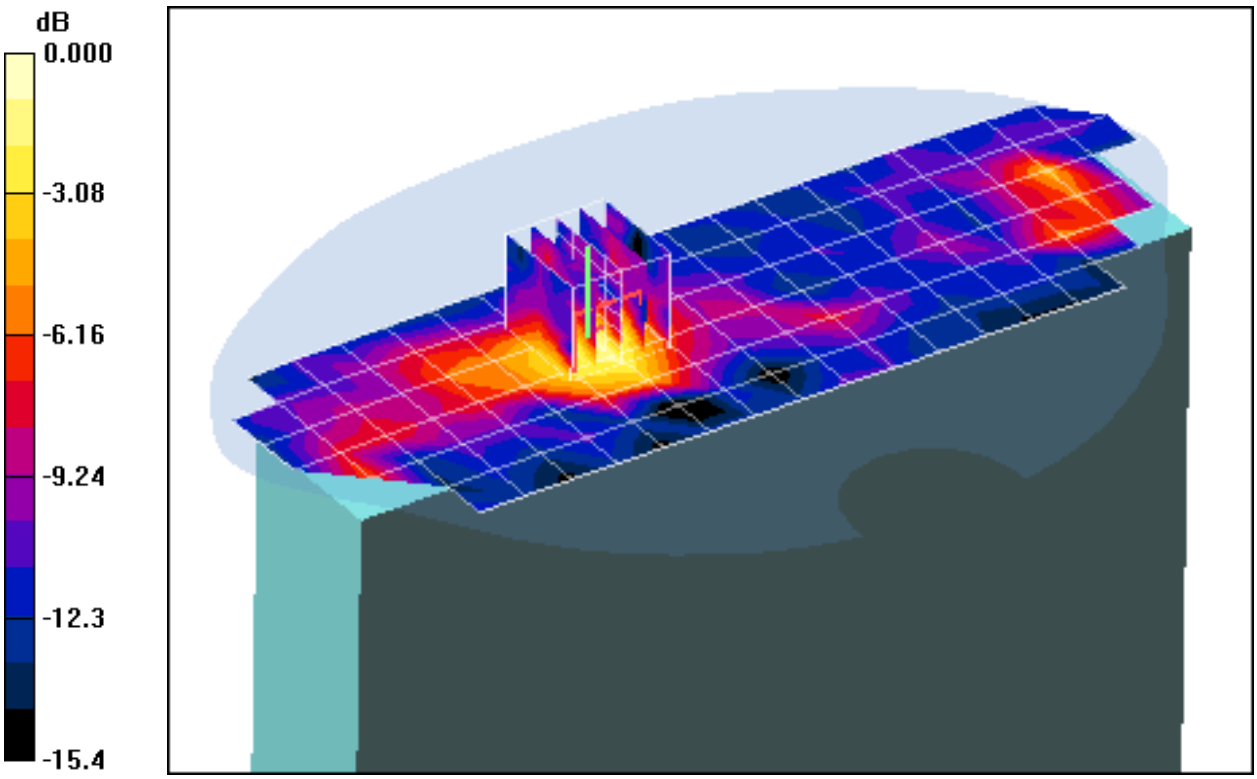
Communication System: IEEE 802.11n; Frequency: 2437 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle; Medium parameters used (interpolated):
f = 2437 MHz; σ = 1.94 mho/m; ε_r = 52.4; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-22-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°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 802.11n, Edge Top position, LCD Flip, Mid ch, 40 Mbps, Tx chain A

Area Scan (7x20x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 4.74 V/m
Peak SAR (extrapolated) = 0.073 W/kg
SAR(1 g) = 0.0352 mW/g; SAR(10 g) = 0.0180 mW/g



0 dB = 0.027mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

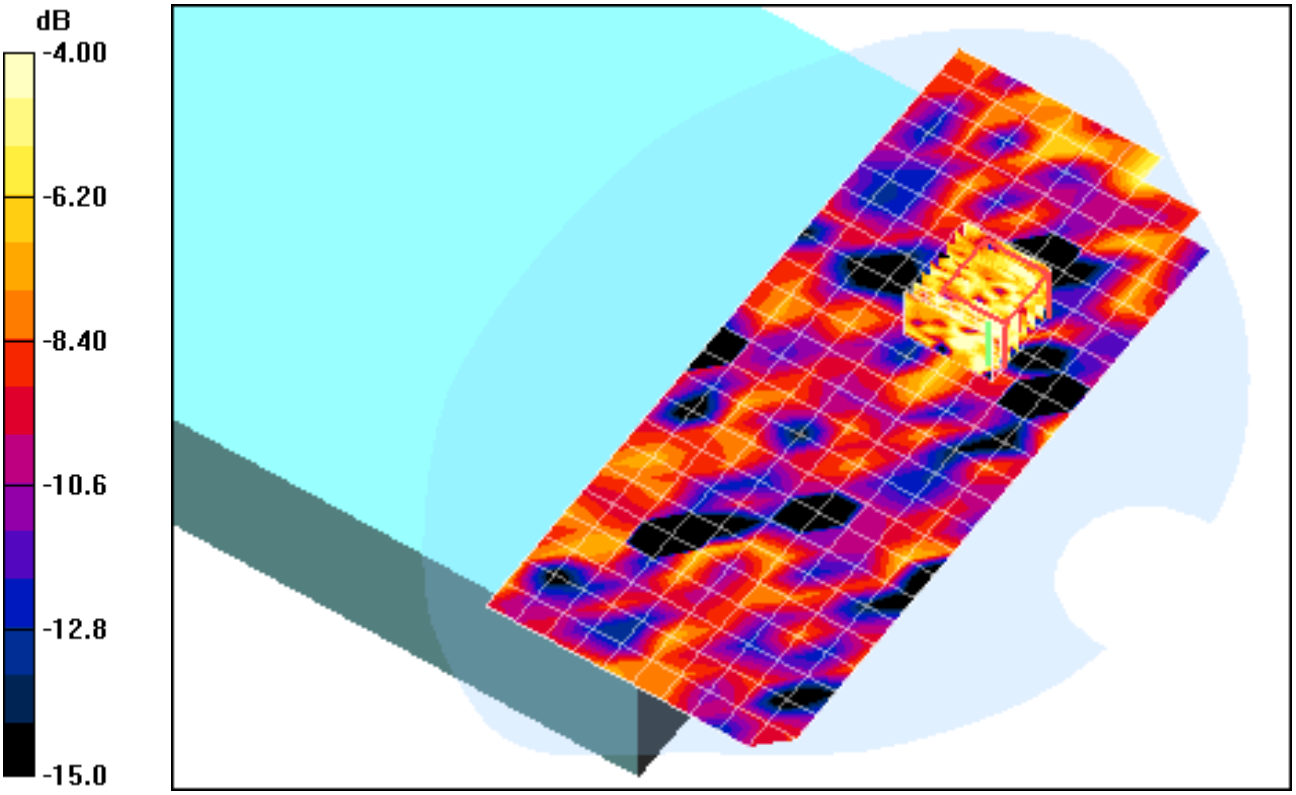
Communication System: IEEE 802.11a 5.2GHz Band; Frequency: 5220 MHz;Duty Cycle: 1:1
Medium: 5.2-5.8 GHz Muscle; Medium parameters used (interpolated):
f = 5220 MHz; σ = 5.47 mho/m; ε_r = 48.8; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-29-2010; Ambient Temp: 23.2°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN3550; ConvF(3.73, 3.73, 3.73); 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: WLAN 802.11a, Lap position, LCD Flip, Ch. 48, 9 Mbps, Tx Chain A

Area Scan (11x25x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8) Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 1.44 V/m
Peak SAR (extrapolated) = 0.047 W/kg
SAR(1 g) = 0.0268 mW/g; SAR(10 g) = 0.0110 mW/g



0 dB = 0.045mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

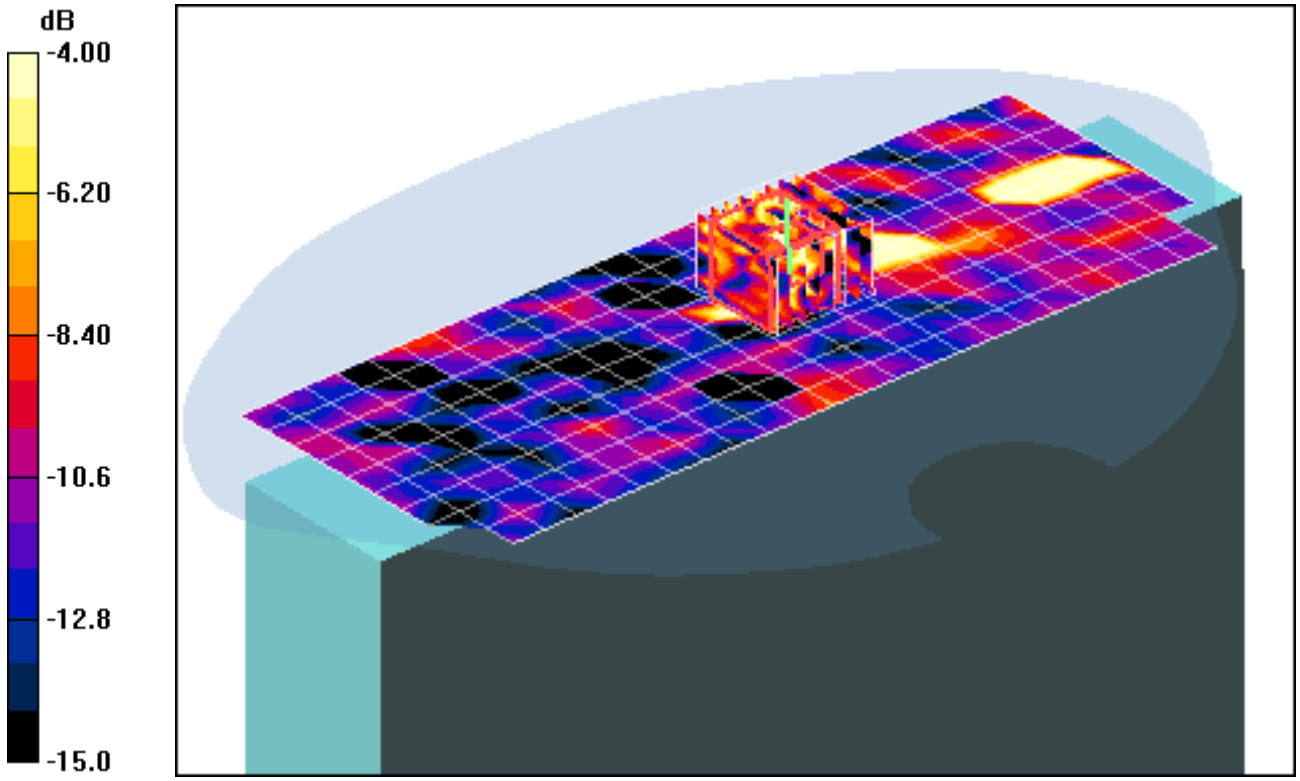
Communication System: IEEE 802.11a 5.2GHz Band; Frequency: 5220 MHz;Duty Cycle: 1:1
Medium: 5.2-5.8 GHz Muscle; Medium parameters used (interpolated):
f = 5220 MHz; σ = 5.46 mho/m; ε_r = 48.8; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-29-2010; Ambient Temp: 23.2°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN3550; ConvF(3.73, 3.73, 3.73); 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: WLAN 802.11a, Edge Bottom position, LCD Flip, Ch. 44, 24 Mbps, Tx chain B

Area Scan (10x25x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8) Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 1.309 V/m
Peak SAR (extrapolated) = 0.034 W/kg
SAR(1 g) = 0.0118 mW/g; SAR(10 g) = 0.0038 mW/g



0 dB = 0.026mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

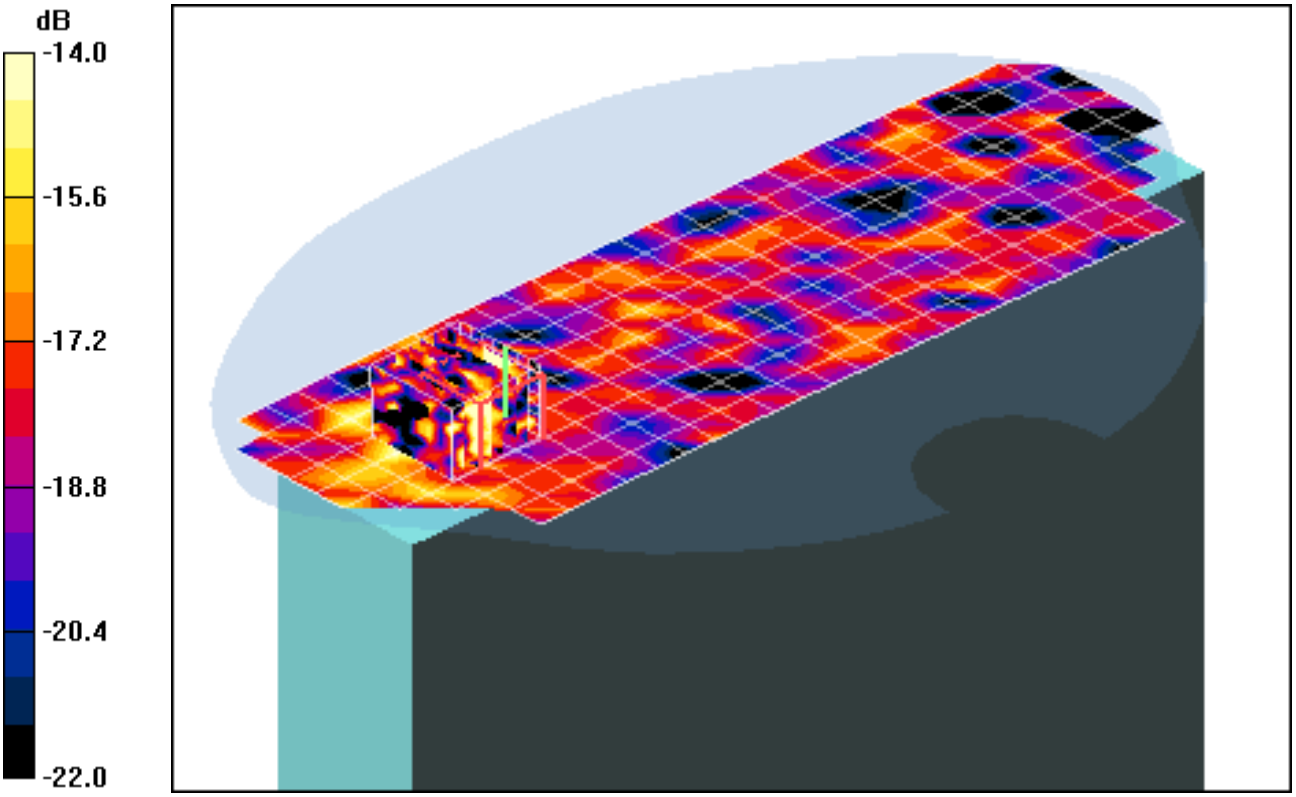
Communication System: IEEE 802.11a 5.2GHz Band; Frequency: 5220 MHz;Duty Cycle: 1:1
Medium: 5.2-5.8 GHz Muscle; Medium parameters used (interpolated):
f = 5220 MHz; σ = 5.46 mho/m; ε_r = 48.8; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-29-2010; Ambient Temp: 23.2°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN3550; ConvF(3.73, 3.73, 3.73); 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: WLAN 802.11a, Edge Top position, LCD Flip, Ch. 44, 24 Mbps, Tx chain B

Area Scan (10x29x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8) Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 2.59 V/m
Peak SAR (extrapolated) = 0.048 W/kg
SAR(1 g) = 0.0202 mW/g; SAR(10 g) = 0.0096 mW/g



0 dB = 0.043mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

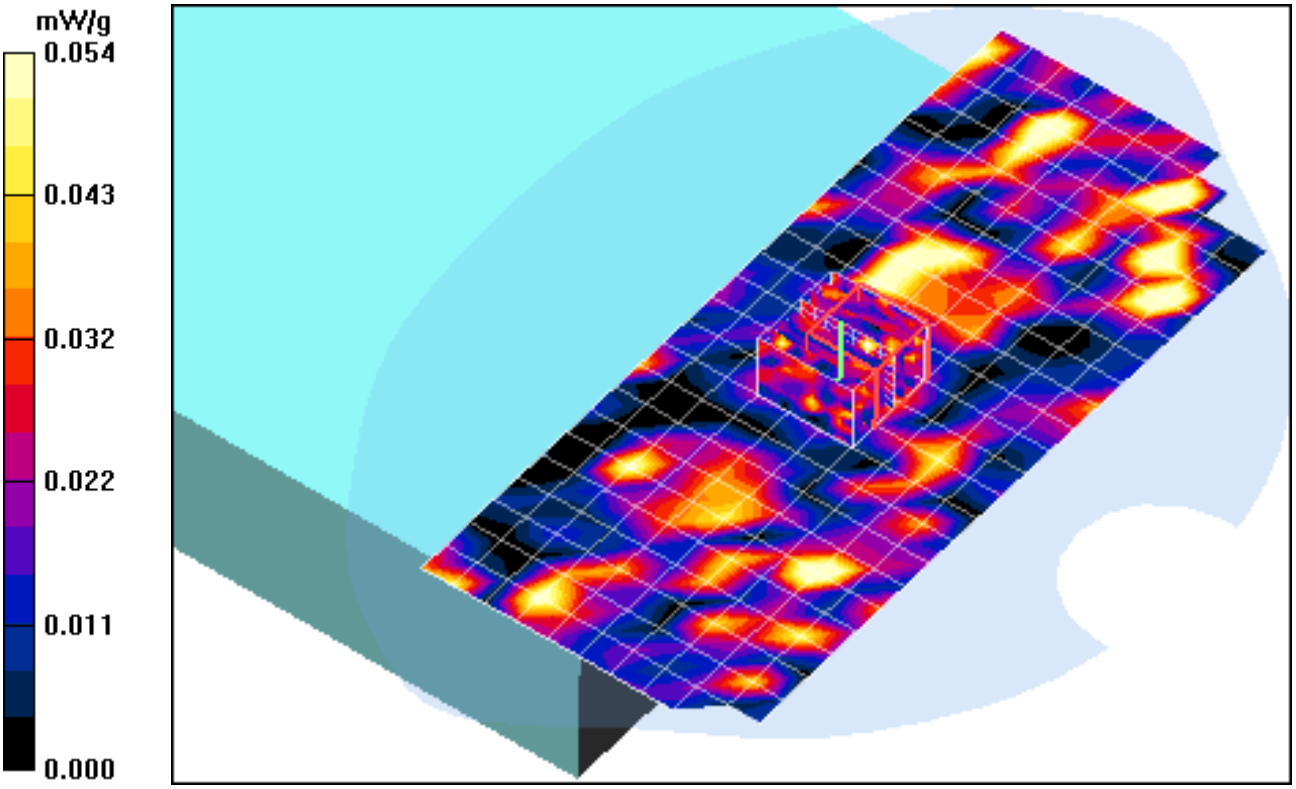
Communication System: IEEE 802.11a 5.3GHz Band; Frequency: 5300 MHz;Duty Cycle: 1:1
Medium: 5.2-5.8 GHz Muscle; Medium parameters used (interpolated):
f = 5300 MHz; σ = 5.58 mho/m; ε_r = 48.6; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-29-2010; Ambient Temp: 23.2°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN3550; ConvF(3.52, 3.52, 3.52); 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: WLAN 802.11 a, Lap Position, LCD Flip, Ch. 60, 12 Mbps, Tx Chain B

Area Scan (11x25x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8) Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 1.44 V/m
Peak SAR (extrapolated) = 0.049 W/kg
SAR(1 g) = 0.0319 mW/g; SAR(10 g) = 0.0218 mW/g



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

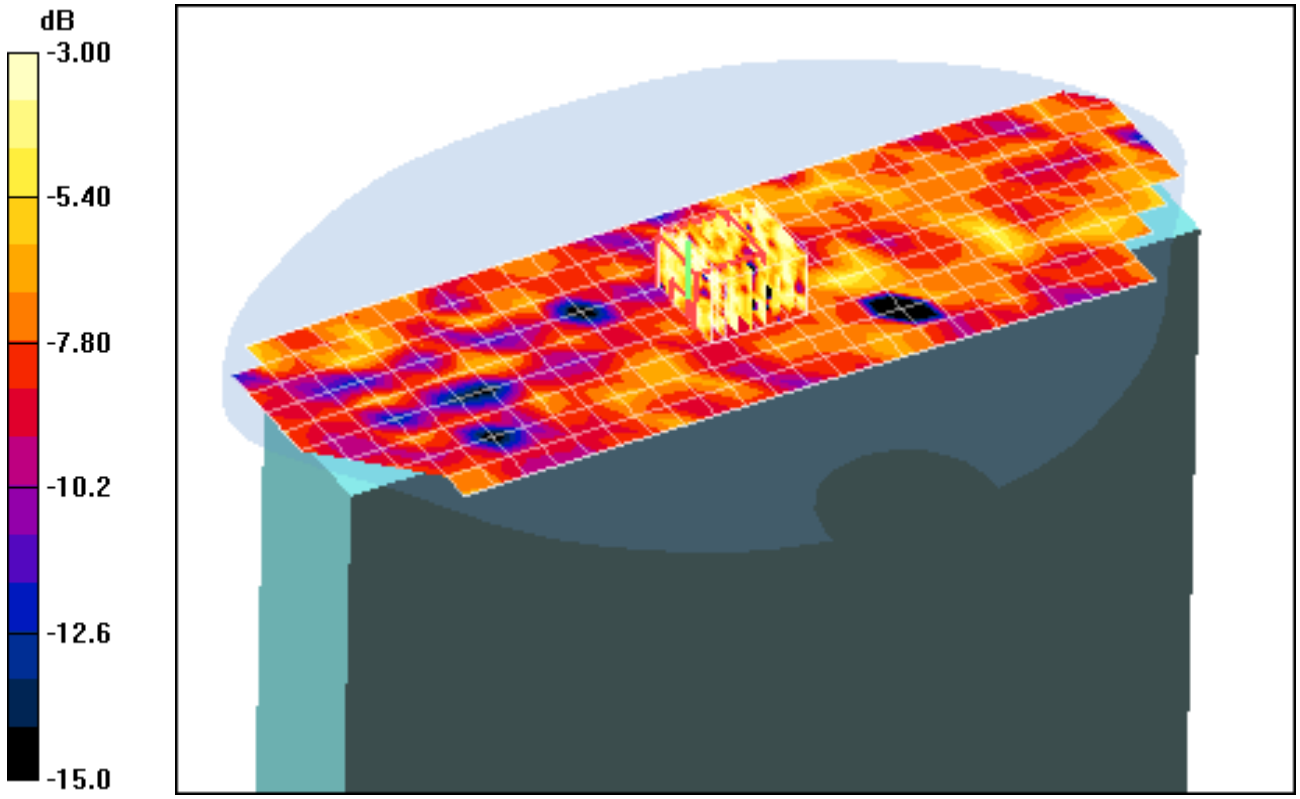
Communication System: IEEE 802.11a 5.3GHz Band; Frequency: 5300 MHz;Duty Cycle: 1:1
Medium: 5.2-5.8 GHz Muscle; Medium parameters used (interpolated):
f = 5300 MHz; σ = 5.58 mho/m; ε_r = 48.6; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-29-2010; Ambient Temp: 23.2°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN3550; ConvF(3.52, 3.52, 3.52); 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: WLAN 802.11 a, Edge Bottom Position, LCD Flip, Ch.60, 12 Mbps, Tx Chain B

Area Scan (10x29x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8) Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 1.282 V/m
Peak SAR (extrapolated) = 0.080 W/kg
SAR(1 g) = 0.0262 mW/g; SAR(10 g) = 0.0117 mW/g



0 dB = 0.043mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

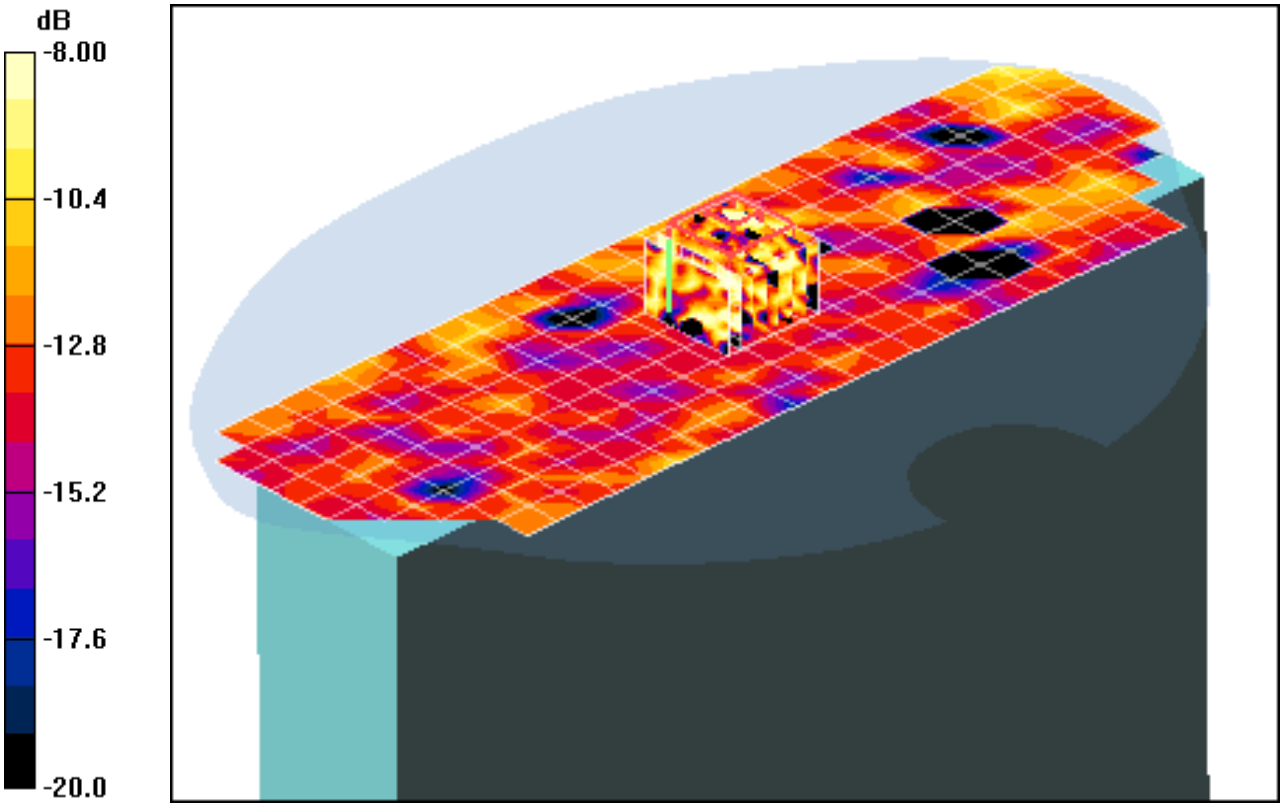
Communication System: IEEE 802.11a 5.3GHz Band; Frequency: 5300 MHz;Duty Cycle: 1:1
Medium: 5.2-5.8 GHz Muscle; Medium parameters used (interpolated):
f = 5300 MHz; σ = 5.58 mho/m; ε_r = 48.6; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-29-2010; Ambient Temp: 23.2°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN3550; ConvF(3.52, 3.52, 3.52); 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: WLAN 802.11 a, Edge Top Position, LCD Flip, Ch.60, 6Mbps, Tx Chain A

Area Scan (10x29x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8) Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 1.45 V/m
Peak SAR (extrapolated) = 0.089 W/kg
SAR(1 g) = 0.0440 mW/g; SAR(10 g) = 0.0162 mW/g



0 dB = 0.096mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

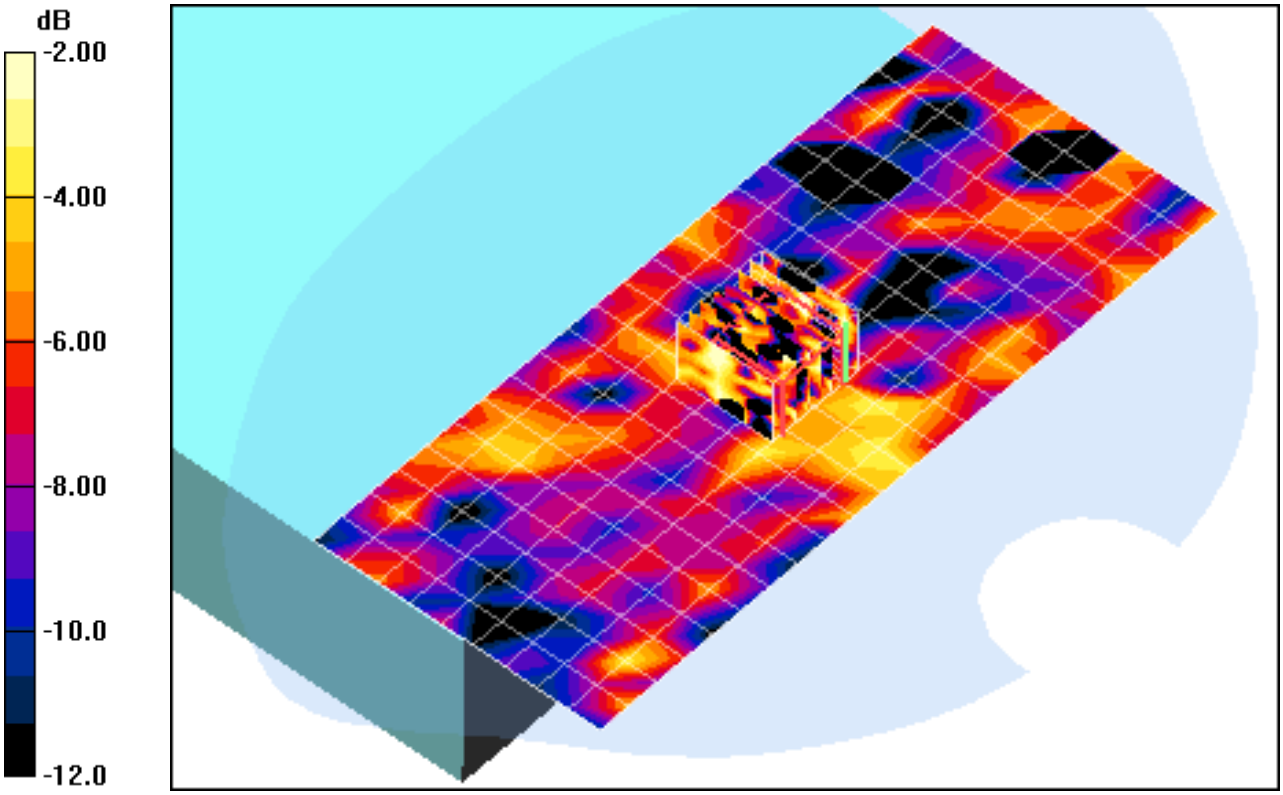
Communication System: IEEE 802.11a 5.5GHz Band; Frequency: 5540 MHz;Duty Cycle: 1:1
Medium: 5.2-5.8 GHz Muscle; Medium parameters used (interpolated):
f = 5640 MHz; σ = 6.06 mho/m; ε_r = 48.2; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-30-2010; Ambient Temp: 23.6°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN3550; ConvF(3.25, 3.25, 3.25); 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: WLAN 802.11a, Lap position, LCD Flip, Ch.128, 6 Mbps, Tx Chain A

Area Scan (10x23x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8) Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 1.72 V/m
Peak SAR (extrapolated) = 0.066 W/kg
SAR(1 g) = 0.0383 mW/g; SAR(10 g) = 0.024 mW/g



0 dB = 0.050mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

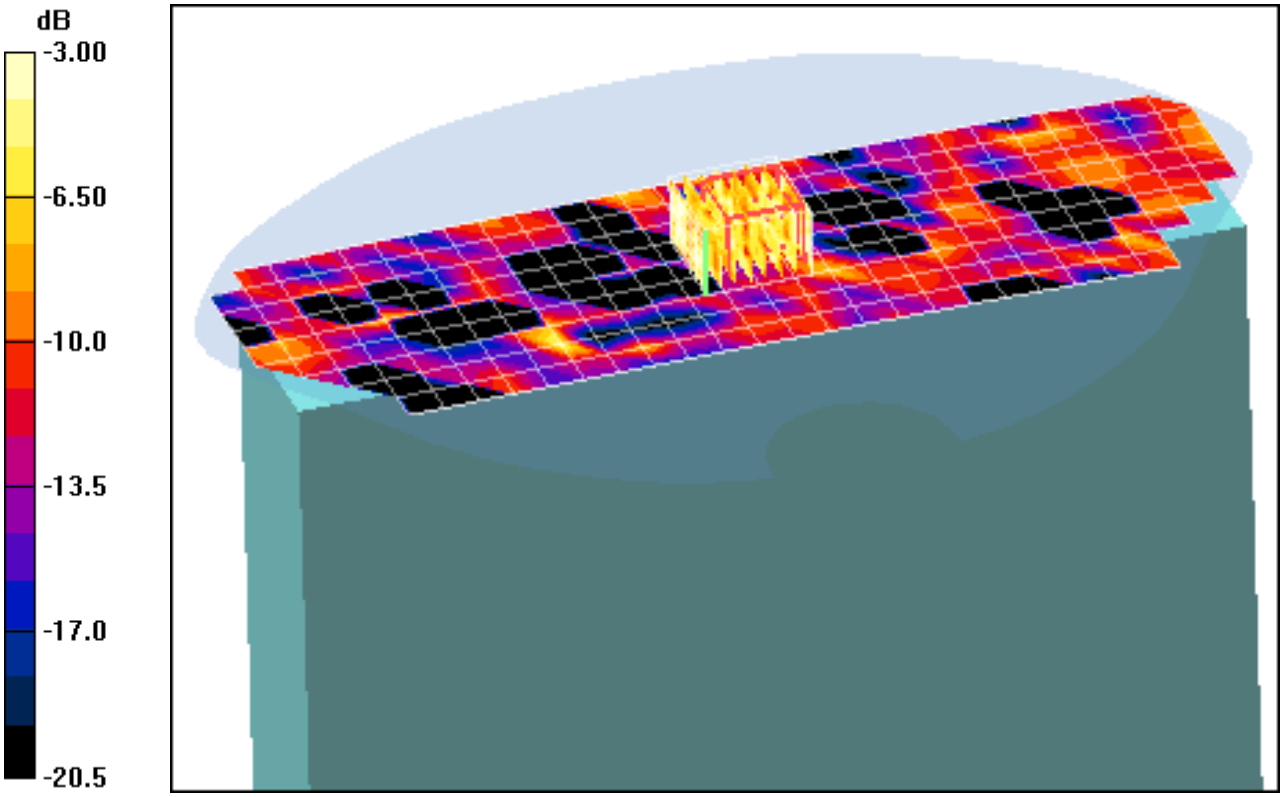
Communication System: IEEE 802.11a 5.5GHz Band; Frequency: 5540 MHz;Duty Cycle: 1:1
Medium: 5.2-5.8 GHz Muscle; Medium parameters used (interpolated):
f = 5540 MHz; σ = 5.92 mho/m; ε_r = 48.2; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-30-2010; Ambient Temp: 23.6°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN3550; ConvF(3.25, 3.25, 3.25); 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: WLAN 802.11a, Edge Bottom position, LCD Flip, Ch.108, 6 Mbps, Tx chain B

Area Scan (10x31x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8) Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 1.166 V/m
Peak SAR (extrapolated) = 0.060 W/kg
SAR(1 g) = 0.0331 mW/g; SAR(10 g) = 0.0174 mW/g



0 dB = 0.059mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

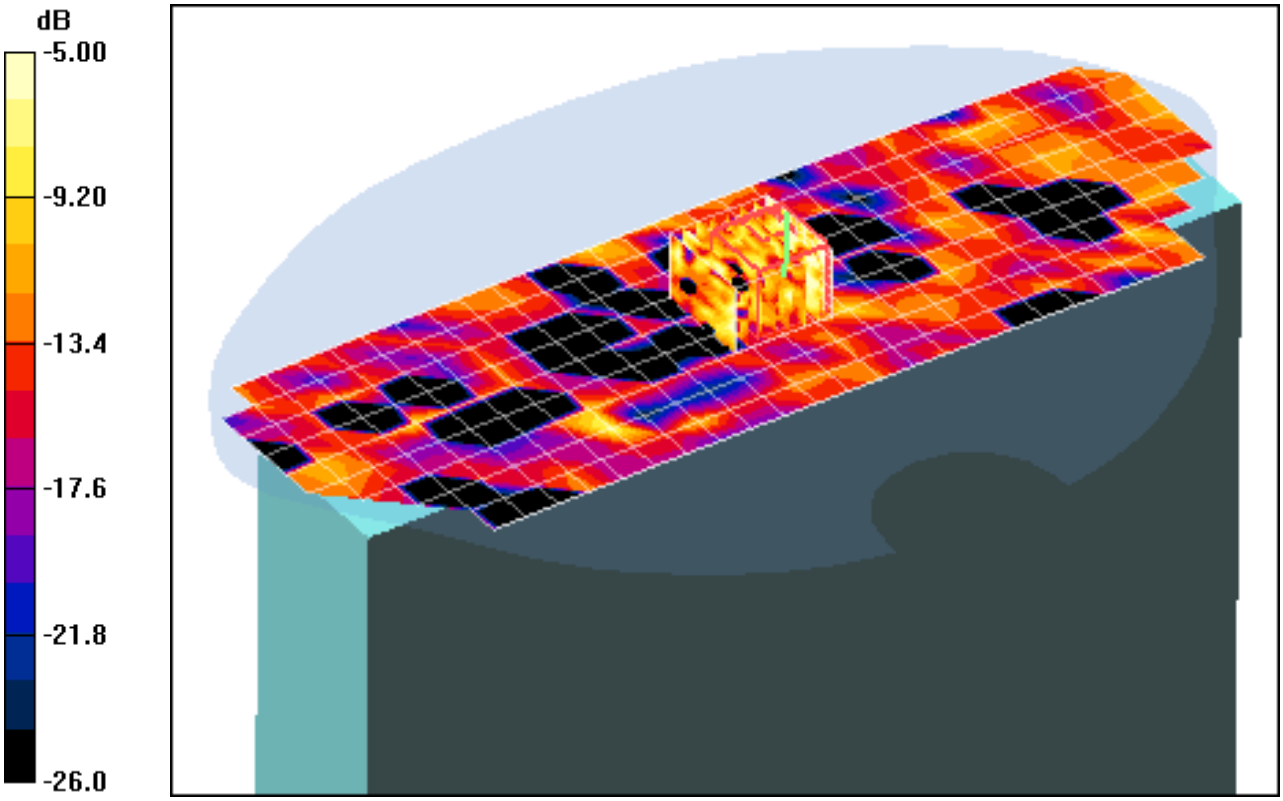
Communication System: IEEE 802.11a 5.5GHz Band; Frequency: 5540 MHz;Duty Cycle: 1:1
Medium: 5.2-5.8 GHz Muscle; Medium parameters used (interpolated):
f = 5640 MHz; σ = 6.06 mho/m; ε_r = 48.2; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-30-2010; Ambient Temp: 23.6°C; Tissue Temp: 22.1°C

Probe: EX3DV4 - SN3550; ConvF(3.25, 3.25, 3.25); 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: WLAN 802.11a, Edge Top position, LCD Flip, Ch.128, 6 Mbps, Tx chain A

Area Scan (10x31x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8) Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 1.106 V/m
Peak SAR (extrapolated) = 0.047 W/kg
SAR(1 g) = 0.0315 mW/g; SAR(10 g) = 0.0184 mW/g



0 dB = 0.047mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

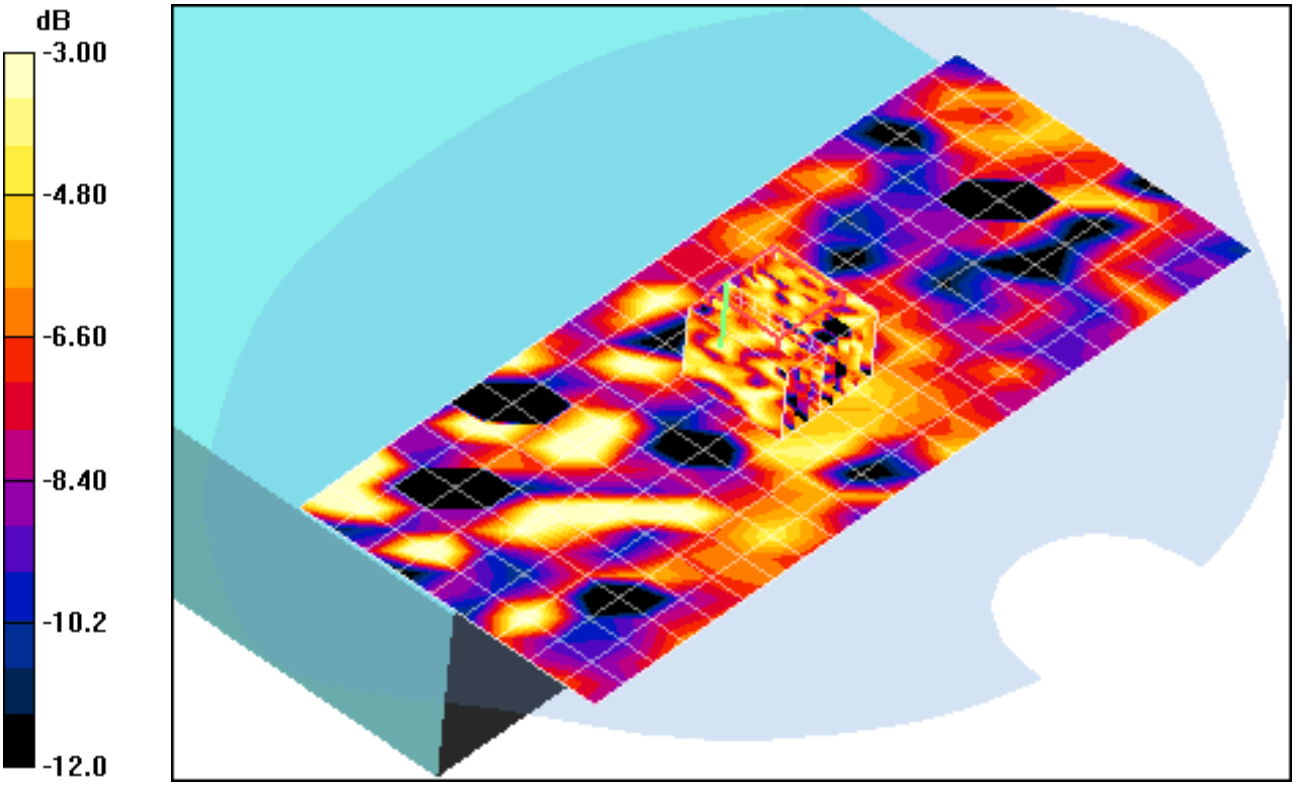
Communication System: IEEE 802.11a 5.8GHz Band; Frequency: 5825 MHz;Duty Cycle: 1:1
Medium: 5.2-5.8 GHz Muscle; Medium parameters used (interpolated):
f = 5785 MHz; σ = 6.27 mho/m; ε_r = 47.9; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-31-2010; Ambient Temp: 23.7° C; Tissue Temp: 22.3° C

Probe: EX3DV4 - SN3550; ConvF(3.25, 3.25, 3.25); 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: WLAN 802.11a, Lap position, LCD Flip, Ch.157, 9 Mbps, Tx Chain A

Area Scan (10x23x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 3.26 V/m
Peak SAR (extrapolated) = 0.084 W/kg
SAR(1 g) = 0.0406 mW/g; SAR(10 g) = 0.0220 mW/g



0 dB = 0.068mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

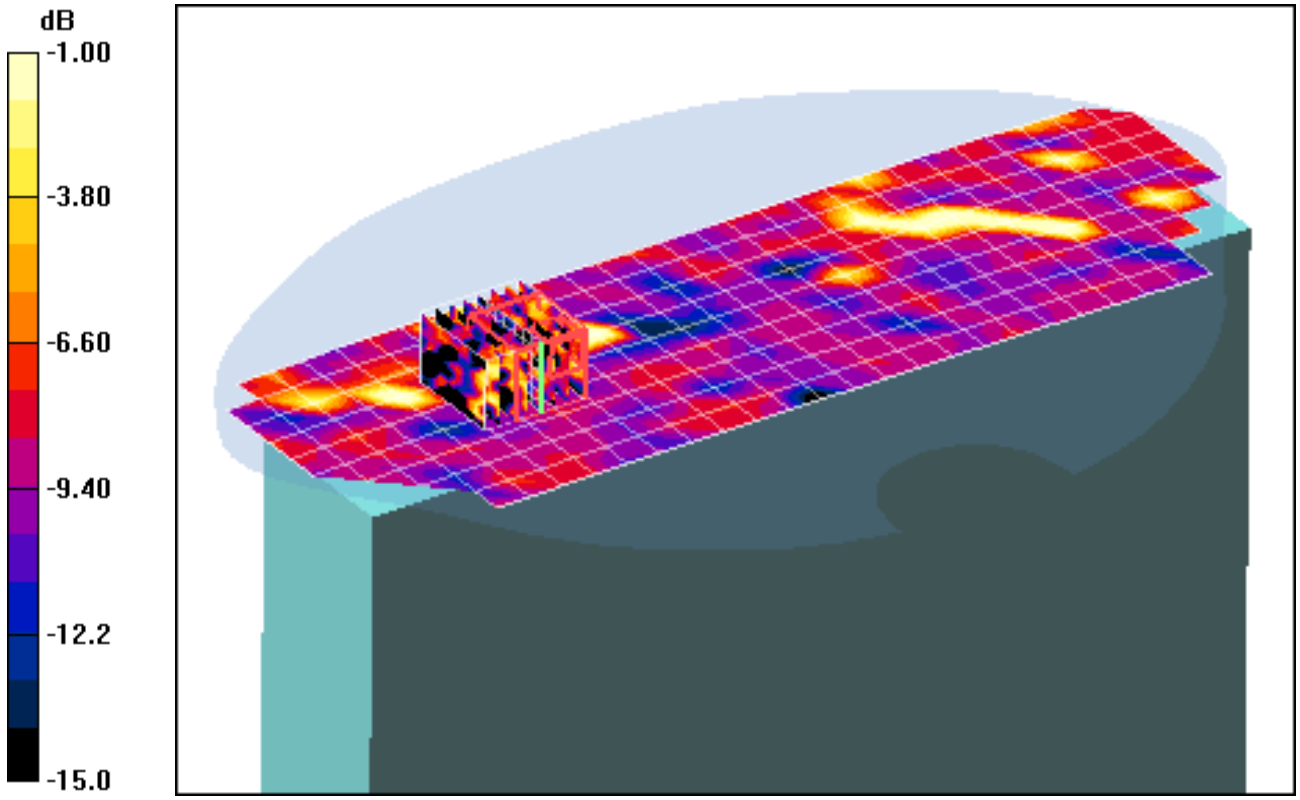
Communication System: IEEE 802.11a 5.8GHz Band; Frequency: 5825 MHz;Duty Cycle: 1:1
Medium: 5.2-5.8 GHz Muscle; Medium parameters used (interpolated):
f = 5785 MHz; σ = 6.27 mho/m; ε_r = 47.9; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-31-2010; Ambient Temp: 23.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(3.3, 3.3, 3.3); 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: WLAN 802.11a, Edge Bottom position, LCD Flip, Ch. 157, 9 Mbps, Tx chain A

Area Scan (10x29x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8) Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 1.69 V/m
Peak SAR (extrapolated) = 0.121 W/kg
SAR(1 g) = 0.0965 mW/g; SAR(10 g) = 0.0322 mW/g



0 dB = 0.103mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth and WWAN
Serial: 9JKSA00026

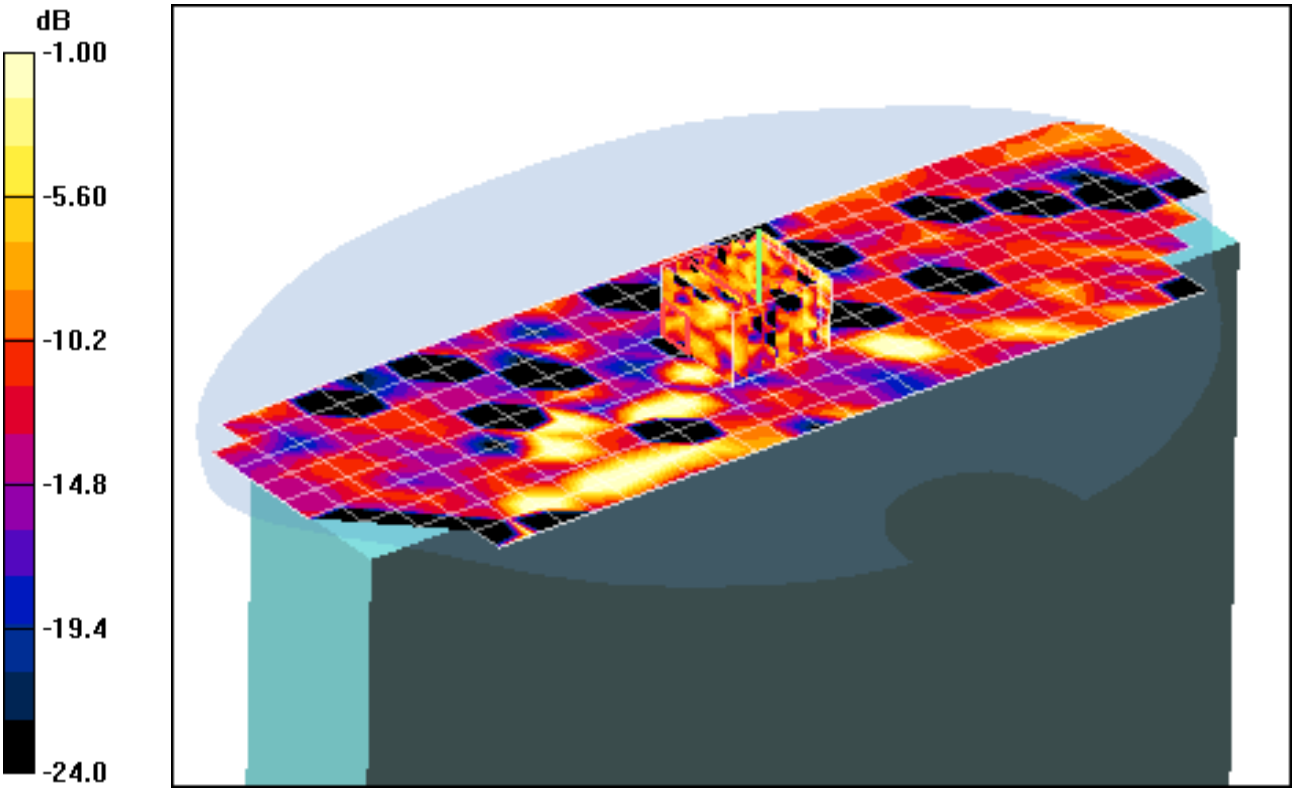
Communication System: IEEE 802.11a 5.8GHz Band; Frequency: 5825 MHz;Duty Cycle: 1:1
Medium: 5.2-5.8 GHz Muscle; Medium parameters used (interpolated):
f = 5825 MHz; σ = 6.27 mho/m; ε_r = 47.7; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 03-31-2010; Ambient Temp: 23.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(3.3, 3.3, 3.3); 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: WLAN 802.11a, Tablet Top position, LCD Flip, Ch. 157, 9 Mbps, Tx chain A

Area Scan (10x29x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 1.73 V/m
Peak SAR (extrapolated) = 0.056 W/kg
SAR(1 g) = 0.0196 mW/g; SAR(10 g) = 0.0102 mW/g



0 dB = 0.036mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5500 MHz; Type: D5GHzV2; Serial: 1057

Communication System: CW; Frequency: 5500 MHz;Duty Cycle: 1:1
Medium: 5500 Muscle; Medium parameters used (interpolated):
f = 5500 MHz; σ = 5.87 mho/m; ε_r = 46.8; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-31-2010; Ambient Temp: 23.6°C; Tissue Temp: 22.1°C

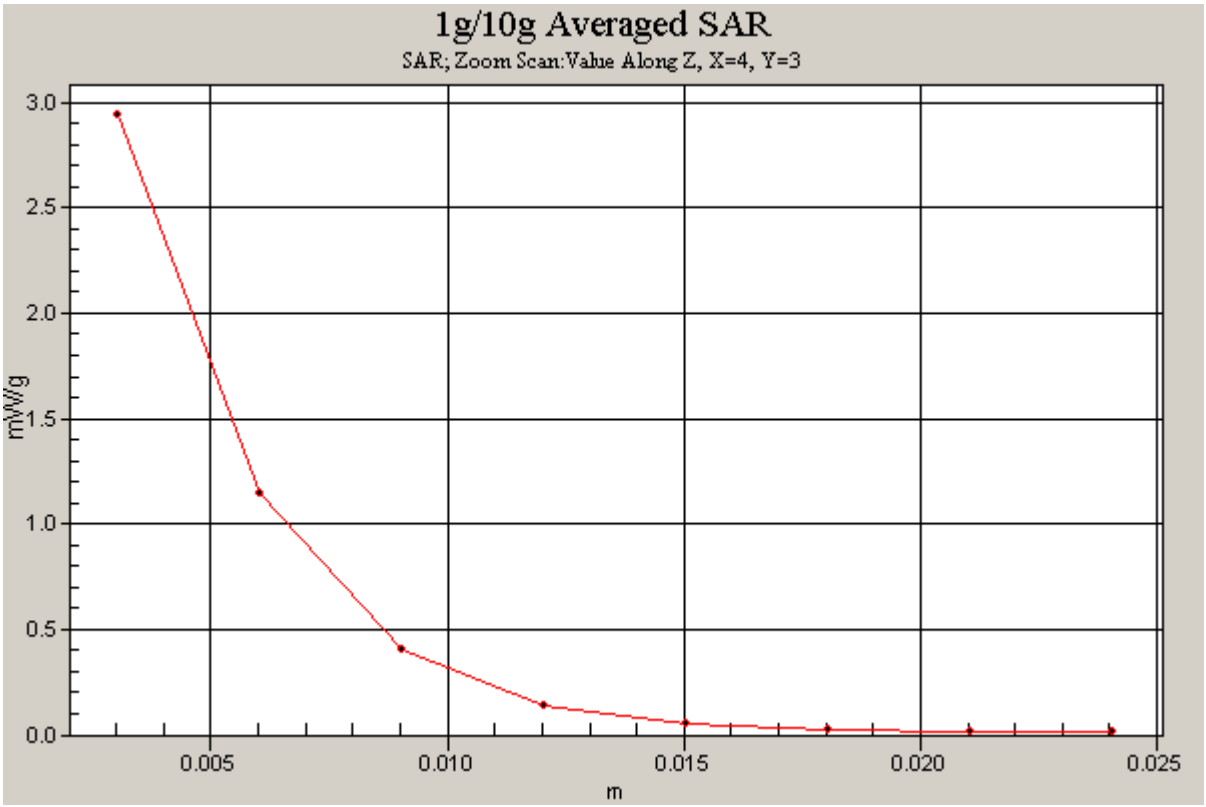
Probe: EX3DV4 - SN3550; ConvF(3.25, 3.25, 3.25); Calibrated: 1/26/2010
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 1/22/2010
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

5500MHz Dipole Validation

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Input Power = 14 dBm (25mW)

SAR(1 g) = 1.91 mW/g; SAR(10 g) = 0.530 mW/g

Deviation = -6.37 %



PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth, and WWAN; Serial: 9JKSA00026

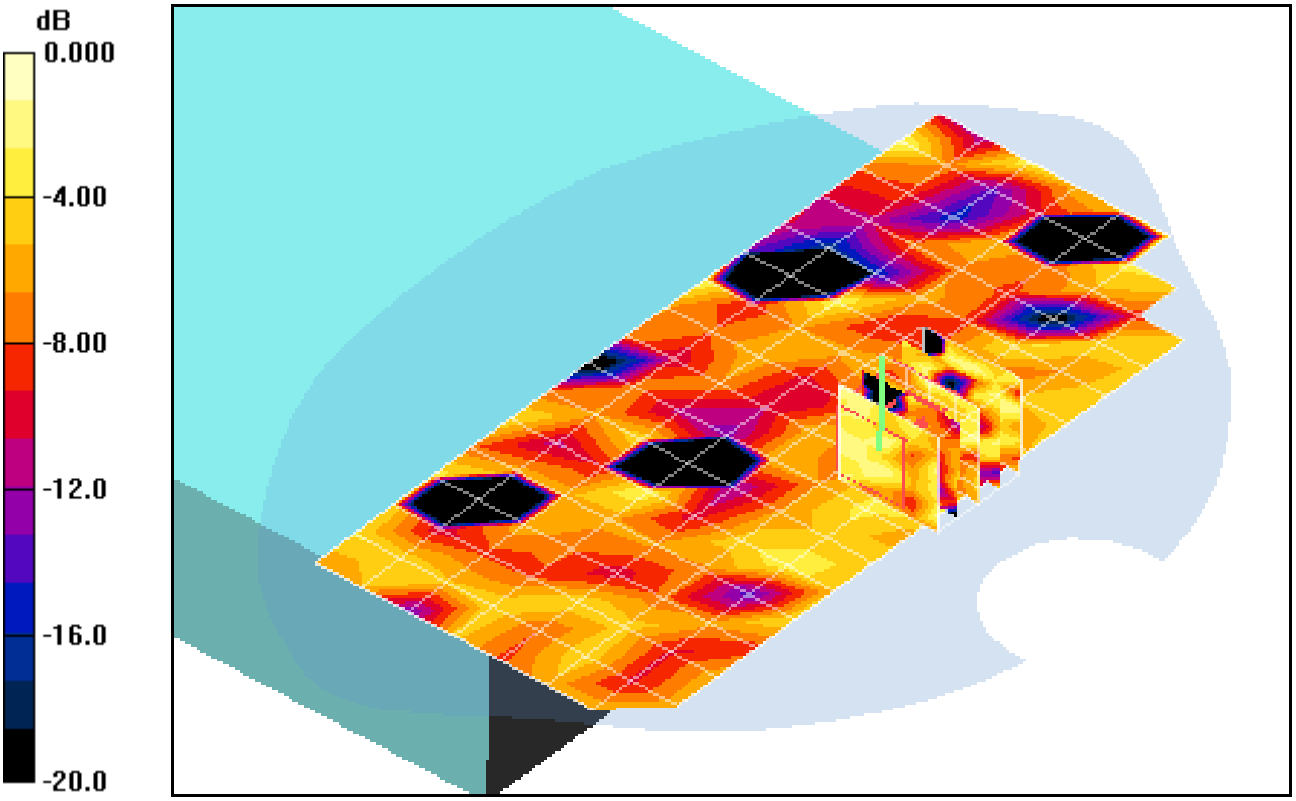
Communication System: Bluetooth; Frequency: 2441 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle Medium parameters used (interpolated):
f = 2441 MHz; σ = 1.91 mho/m; ε_r = 50.5; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-12-2010; Ambient Temp: 23.9°C; Tissue Temp: 23.0°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: Bluetooth, Lap position, LCD Flip, Mid.ch, Tx

Area Scan (8x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.652 V/m
Peak SAR (extrapolated) = 0.009 W/kg
SAR(1 g) = 0.000161 mW/g; SAR(10 g) = 3.14e-005 mW/g



0 dB = 0.009mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth, and WWAN; Serial: 9JKSA00026

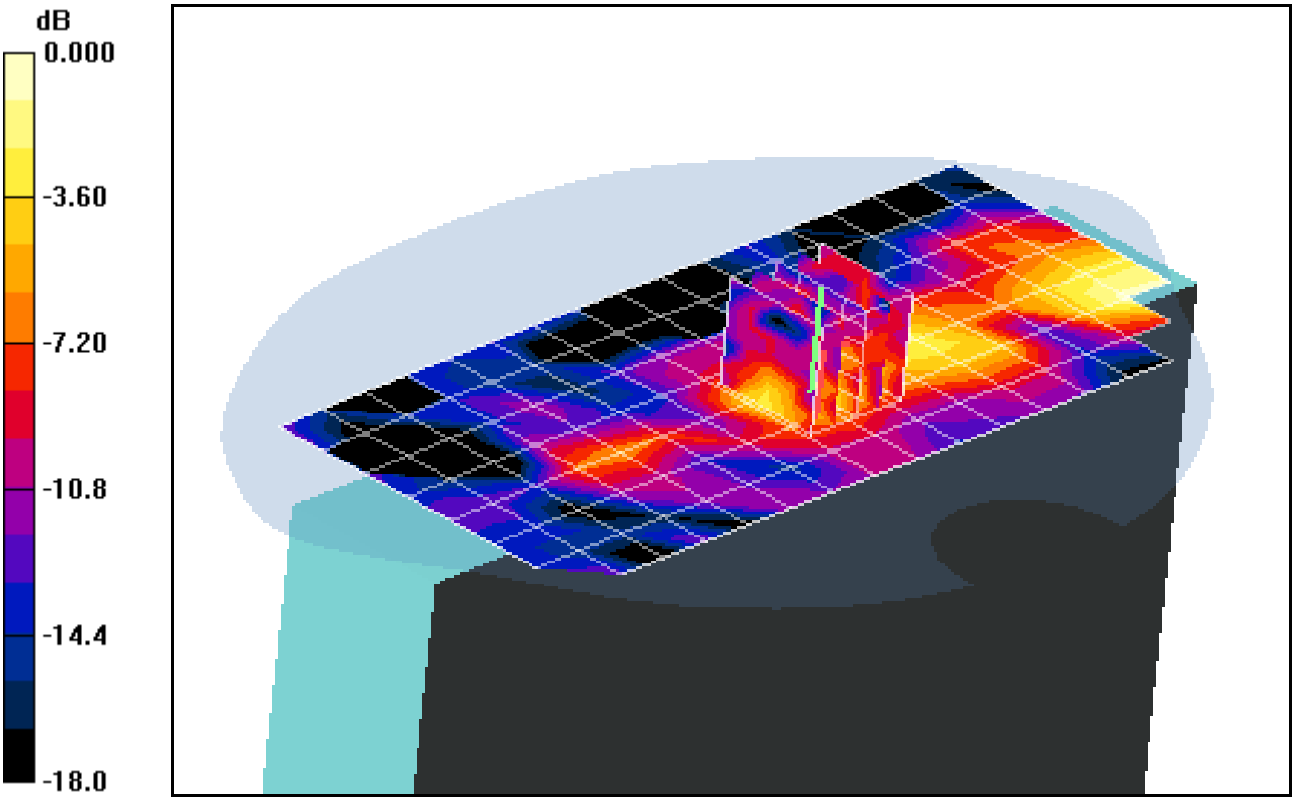
Communication System: Bluetooth; Frequency: 2441 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle Medium parameters used (interpolated):
f = 2441 MHz; σ = 1.91 mho/m; ε_r = 50.5; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-12-2010; Ambient Temp: 23.9°C; Tissue Temp: 23.0°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: Bluetooth, Tablet Bottom position, LCD Flip, Mid.ch, Tx

Area Scan (8x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 5.04 V/m;
Peak SAR (extrapolated) = 0.105 W/kg
SAR(1 g) = 0.050 mW/g; SAR(10 g) = 0.021 mW/g



0 dB = 0.058mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: CF-19; Type: Convertible Tablet PC with WLAN, Bluetooth, and WWAN; Serial: 9JKSA00026

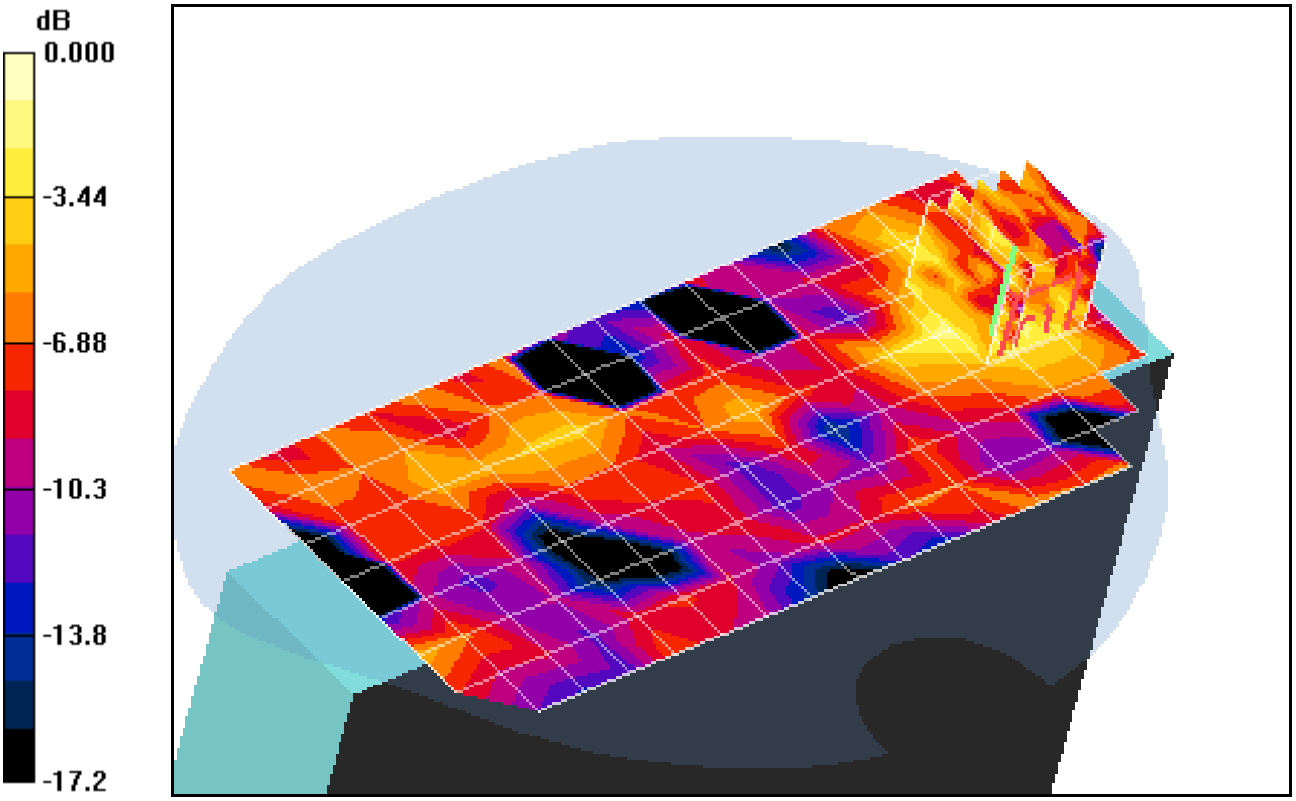
Communication System: Bluetooth; Frequency: 2441 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle Medium parameters used (interpolated):
f = 2441 MHz; σ = 1.91 mho/m; ε_r = 50.5; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 0.0 cm

Test Date: 04-12-2010; Ambient Temp: 23.9°C; Tissue Temp: 23.0°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: Bluetooth, Tablet Top position, LCD Flip, Mid.ch, Tx

Area Scan (8x17x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan 2 (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Reference Value = 0.973 V/m;
Peak SAR (extrapolated) = 0.044 W/kg
SAR(1 g) = 0.00977 mW/g; SAR(10 g) = 0.00433 mW/g



0 dB = 0.020mW/g

PCTEST ENGINEERING LABORATORY, INC.

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

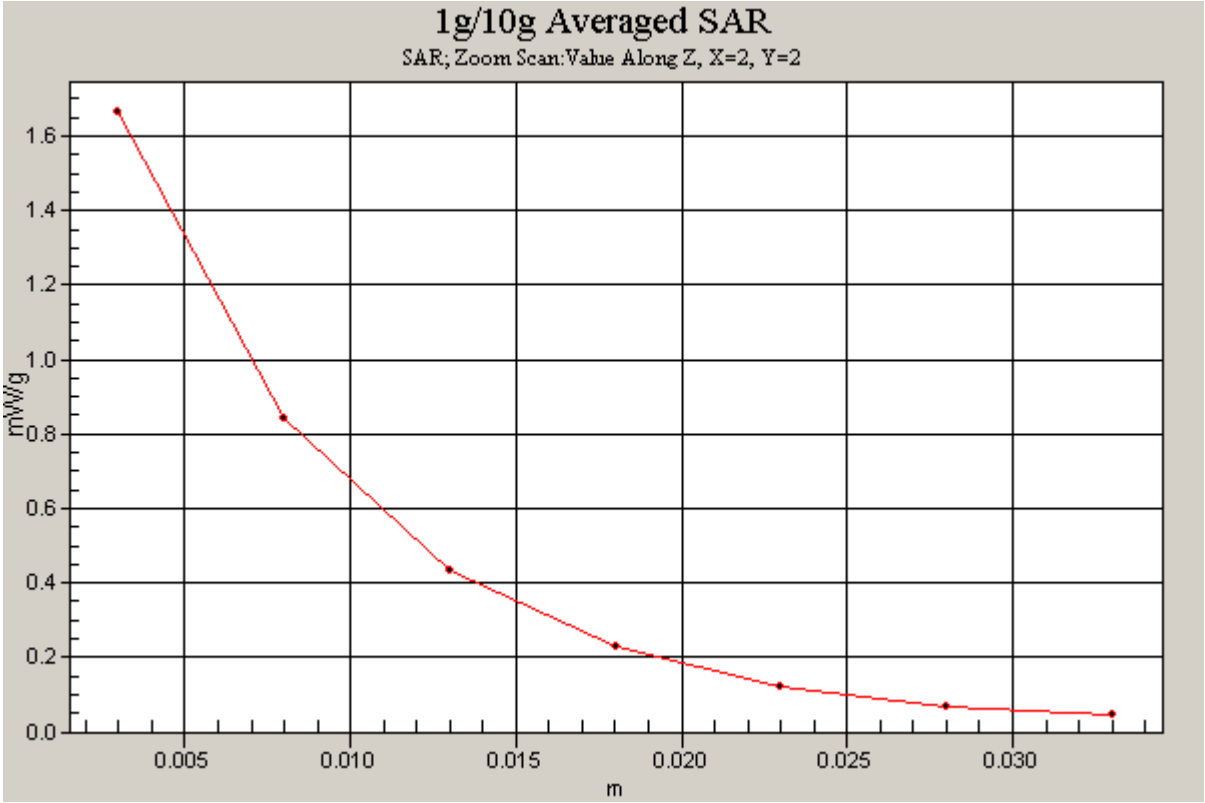
Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle Medium parameters used:
f = 2450 MHz; σ = 1.92 mho/m; ε_r = 50.6; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-12-2010; Ambient Temp: 23.9°C; Tissue Temp: 23.0°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=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power = 14 dBm (25mW)
SAR(1 g) = 1.29 mW/g; SAR(10 g) = 0.594 mW/g
Maximum value of SAR (measured) = 1.67 mW/g
Deviation = 0.39%



APPENDIX B: DIPOLE VALIDATION

PCTEST ENGINEERING LABORATORY, INC.

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

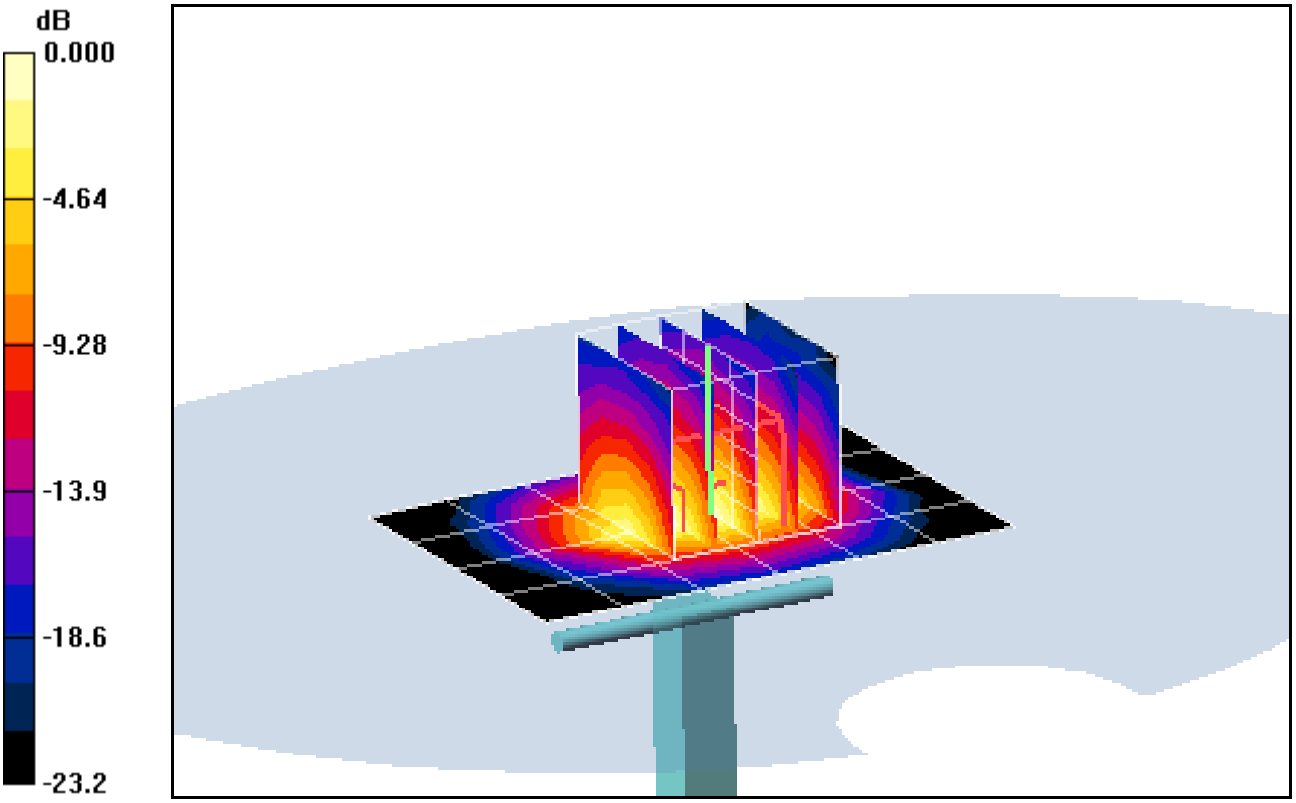
Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle Medium parameters used:
f = 2450 MHz; σ = 1.92 mho/m; ε_r = 50.6; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 04-12-2010; Ambient Temp: 23.9°C; Tissue Temp: 23.0°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=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power = 14 dBm (25mW)
SAR(1 g) = 1.29 mW/g; SAR(10 g) = 0.594 mW/g
Maximum value of SAR (measured) = 1.67 mW/g
Deviation = 0.39%



0 dB = 1.67mW/g

PCTEST ENGINEERING LABORATORY, INC.

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

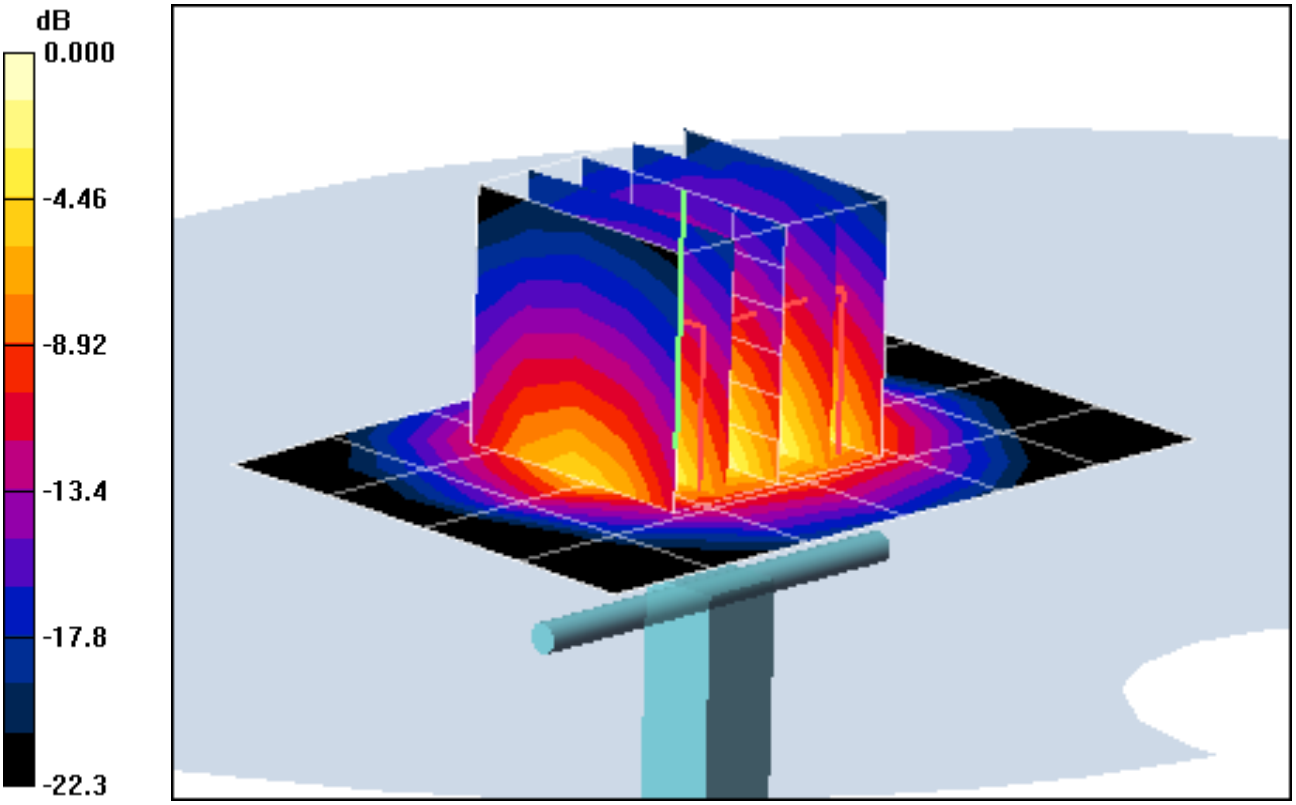
Communication System: CW; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: 2450 Muscle; Medium parameters used:
f = 2450 MHz; σ = 1.96 mho/m; ε_r = 52.3; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-22-2010; Ambient Temp: 23.9°C; Tissue Temp: 22.5°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=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
Input Power = 14 dBm (25mW)
SAR(1 g) = 1.34 mW/g; SAR(10 g) = 0.621 mW/g
Deviation = 4.28%



0 dB = 1.71mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5200 MHz; Type: D5GHzV2; Serial: 1057

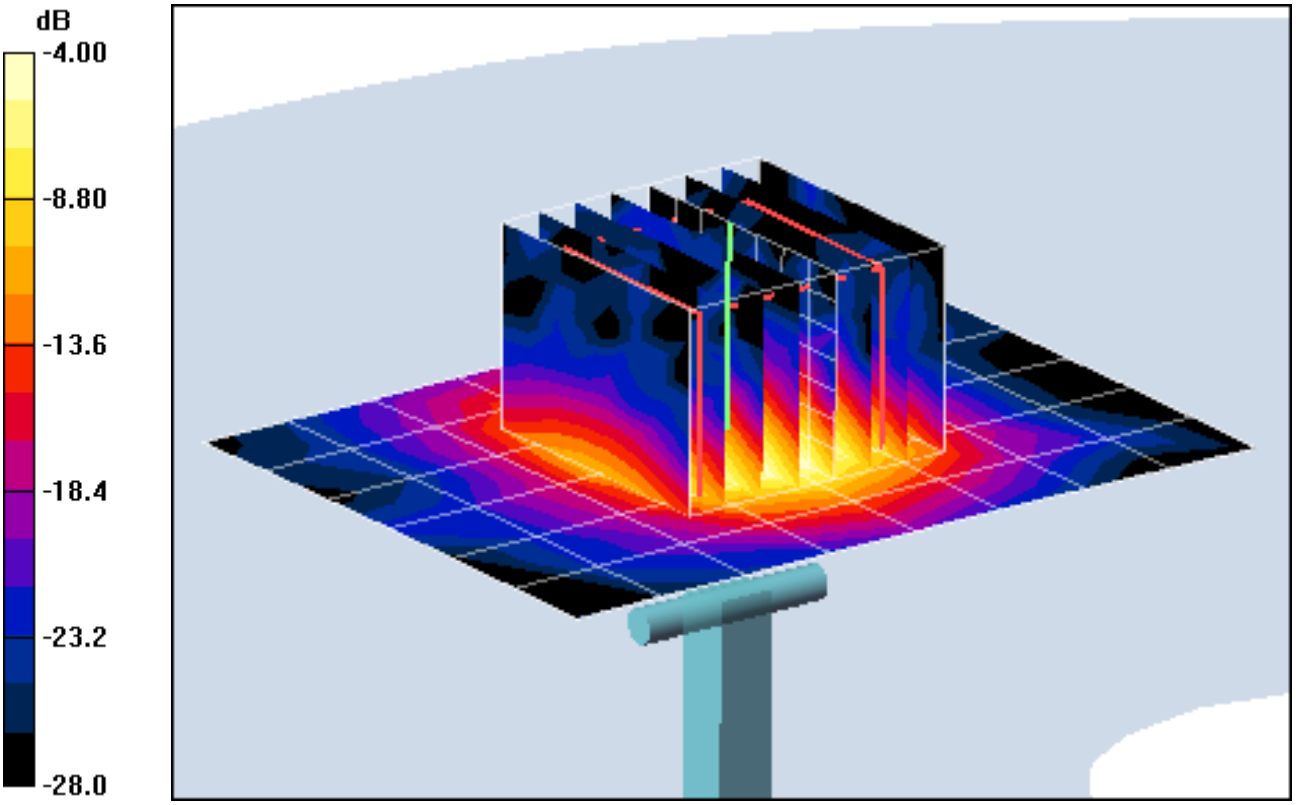
Communication System: CW; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium: 5200 Muscle; Medium parameters used (interpolated):
f = 5200 MHz; σ = 5.44 mho/m; ε_r = 48.8; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-29-2010; Ambient Temp: 23.2°C; Tissue Temp: 21.8°C

Probe: EX3DV4 - SN3550; ConvF(3.73, 3.73, 3.73); 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

5200MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Input Power = 14 dBm (25mW)
SAR(1 g) = 1.91 mW/g; SAR(10 g) = 0.529 mW/g
Deviation = -3.41 %



0 dB = 2.75mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5500 MHz; Type: D5GHzV2; Serial: 1057

Communication System: CW; Frequency: 5500 MHz;Duty Cycle: 1:1
Medium: 5500 Muscle; Medium parameters used (interpolated):
f = 5500 MHz; σ = 5.87 mho/m; ε_r = 46.8; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-30-2010; Ambient Temp: 23.6°C; Tissue Temp: 22.1°C

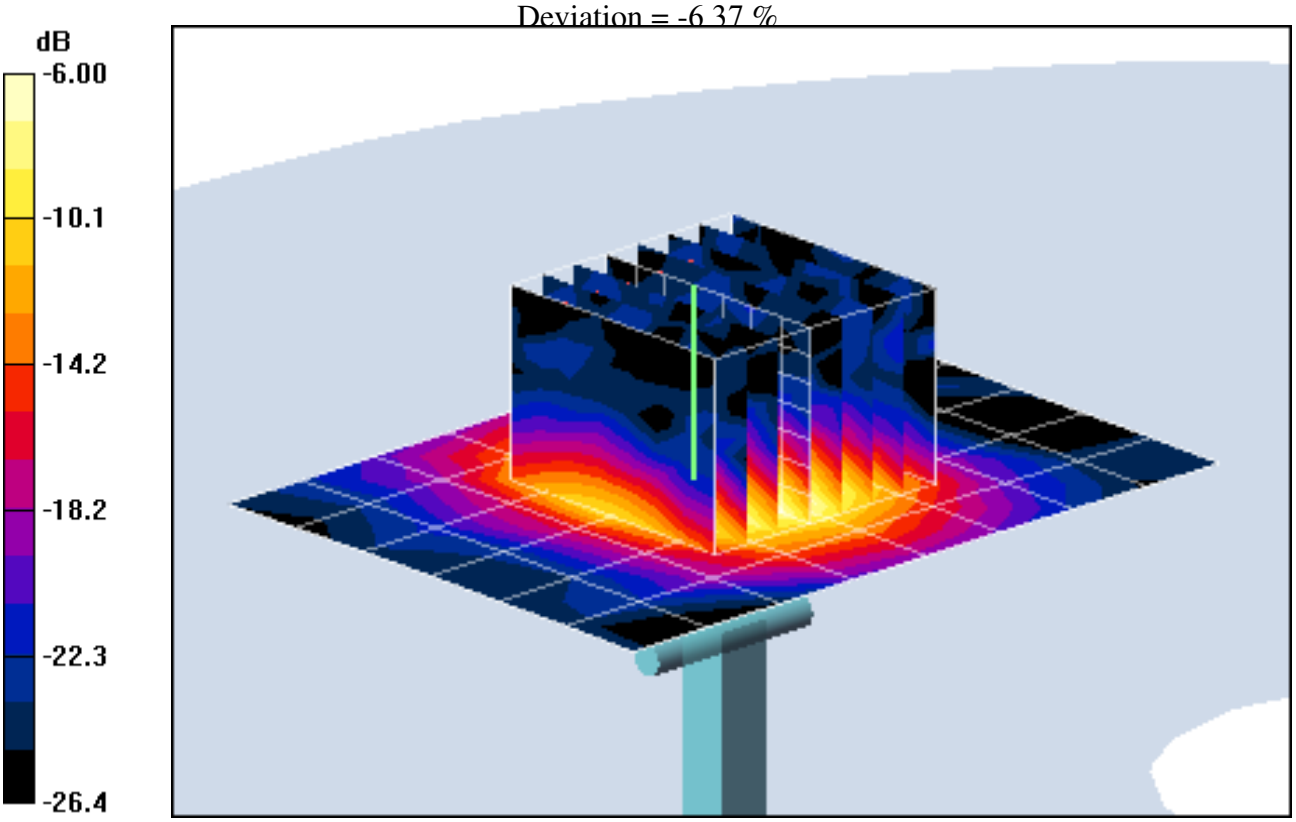
Probe: EX3DV4 - SN3550; ConvF(3.25, 3.25, 3.25); Calibrated: 1/26/2010
Sensor-Surface: 3mm (Mechanical Surface Detection)
Electronics: DAE4 Sn649; Calibrated: 1/22/2010
Phantom: SAM Sub; Type: SAM 4.0; Serial: TP-1357
Measurement SW: DASY4, V4.7 Build 80; Postprocessing SW: SEMCAD, V1.8 Build 186

5500MHz System Verification

Area Scan (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Input Power = 14 dBm (25mW)

SAR(1 g) = 1.91 mW/g; SAR(10 g) = 0.530 mW/g

Deviation = -6.37 %



0 dB = 2.94mW/g

PCTEST ENGINEERING LABORATORY, INC.

DUT: Dipole 5800 MHz; Type: D5GHzV2; Serial: 1057

Communication System: CW; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium: 5800 Muscle; Medium parameters used (interpolated):
f = 5800 MHz; σ = 6.28 mho/m; ε_r = 47.7; ρ = 1000 kg/m^3

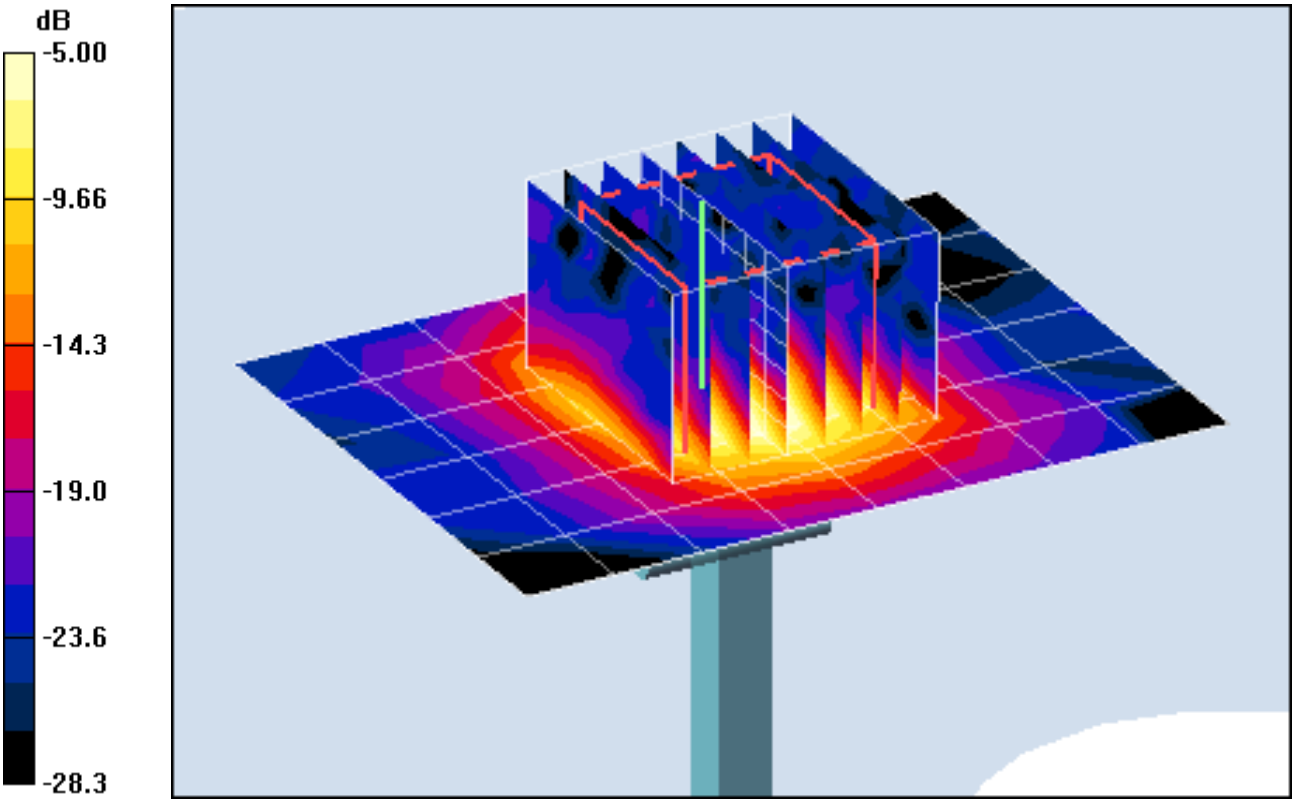
Phantom section: Flat Section; Space: 1.0 cm

Test Date: 03-31-2010; Ambient Temp: 23.7°C; Tissue Temp: 22.3°C

Probe: EX3DV4 - SN3550; ConvF(3.3, 3.3, 3.3); 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

5800MHz System Verification

Area Scan 2 (7x9x1): Measurement grid: dx=10mm, dy=10mm
Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Input Power = 14 dBm (25mW)
SAR(1 g) = 1.67 mW/g; SAR(10 g) = 0.455 mW/g
Deviation = -6.70 %



0 dB = 2.47mW/g

PCTEST ENGINEERING LABORATORY, INC.

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

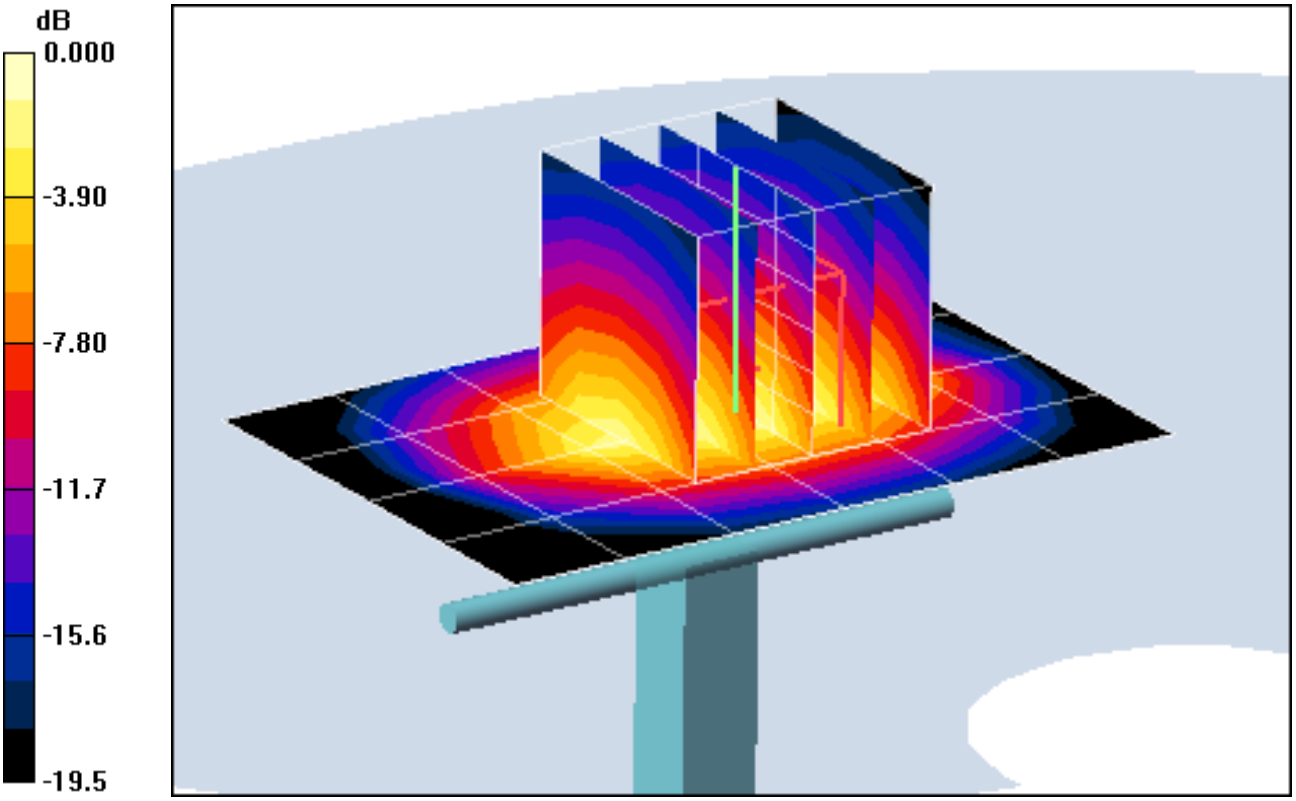
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1
Medium: 1900 Muscle; Medium parameters used (interpolated):
f = 1900 MHz; σ = 1.54 mho/m; ε_r = 51.9; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.0 cm

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 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) = 1.73 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

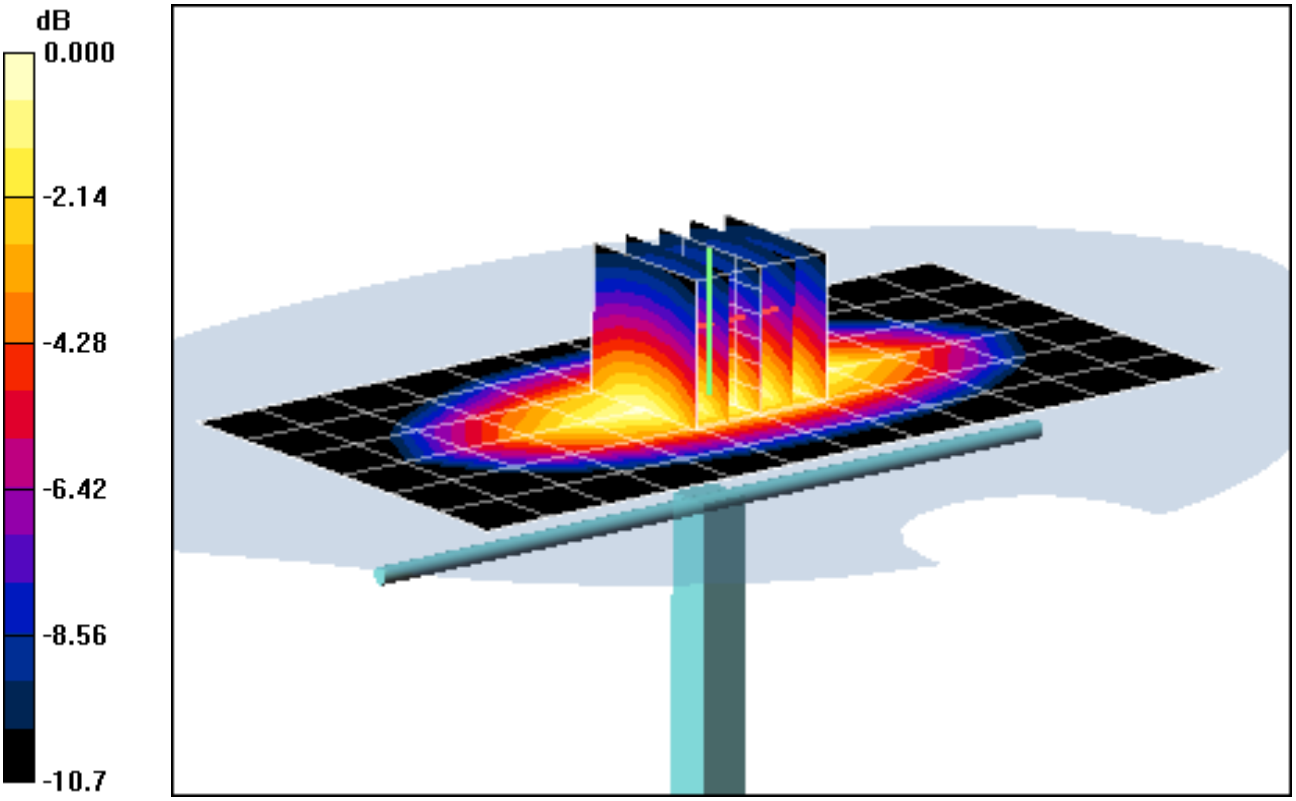
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1
Medium: 835 Muscle; Medium parameters used:
f = 835 MHz; σ = 0.99 mho/m; ε_r = 54.1; ρ = 1000 kg/m^3
Phantom section: Flat Section; Space: 1.5 cm

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 System Verification

Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm
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

APPENDIX C: PROBE CALIBRATION

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
Servizio svizzero di taratura
S Swiss Calibration Service

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

1/20/10

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 Bomholt	R&D Director	

Issued: January 26, 2010

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

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConvF	sensitivity in TSL / NORMx,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., ϑ = 0 is normal to probe axis

Calibration is Performed According to the Following Standards:

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

Methods Applied and Interpretation of Parameters:

- *NORMx,y,z:* Assessed for E-field polarization ϑ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E^2-field uncertainty inside TSL (see below *ConvF*).
- *NORM(f)x,y,z = NORMx,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*.
- *DCPx,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.
- *Ax,y,z; Bx,y,z; Cx,y,z, VRx,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 ≤ 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 *NORMx,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 ($\mu V/(V/m)^2$)[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 E^2-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

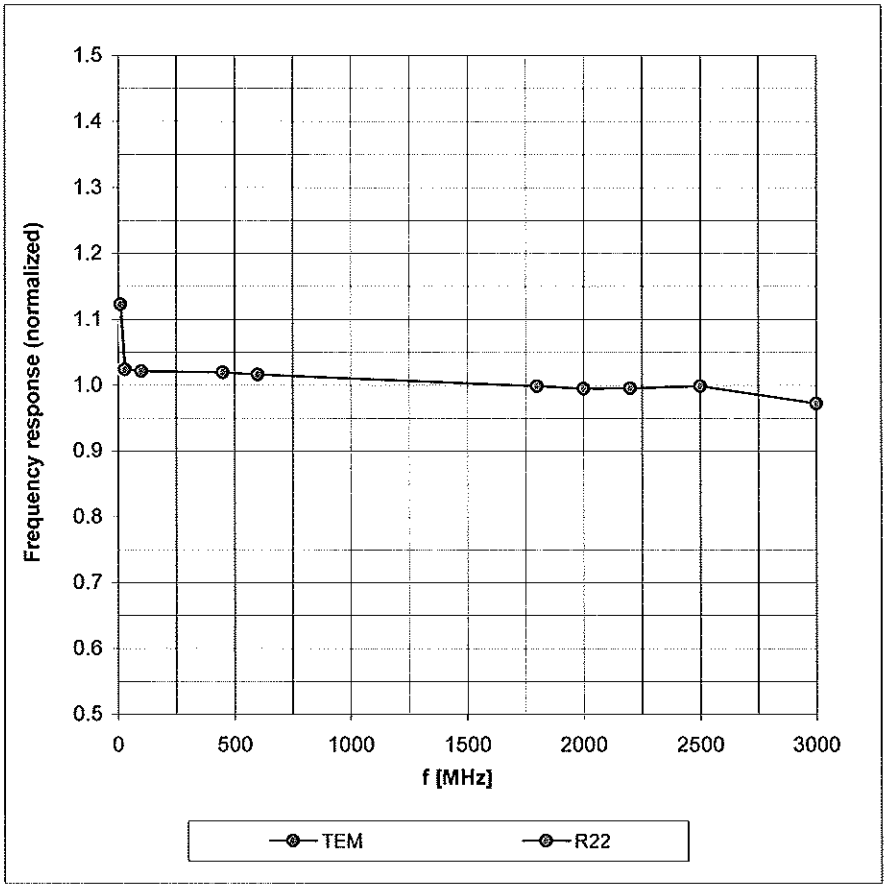
Calibration Parameter Determined in Body Tissue Simulating Media

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.

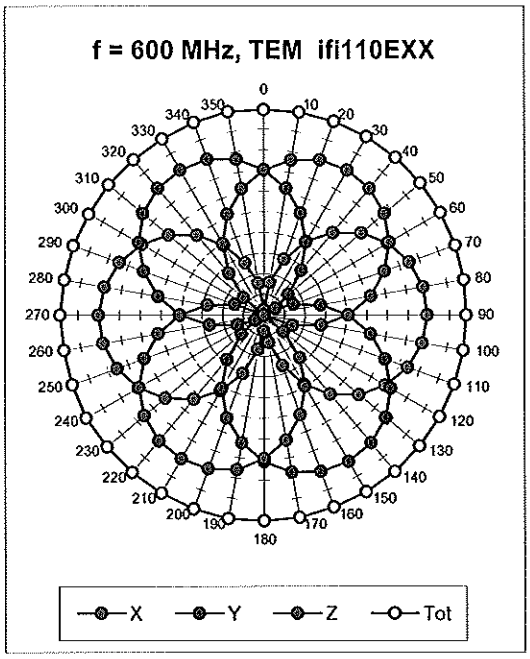
Frequency Response of E-Field

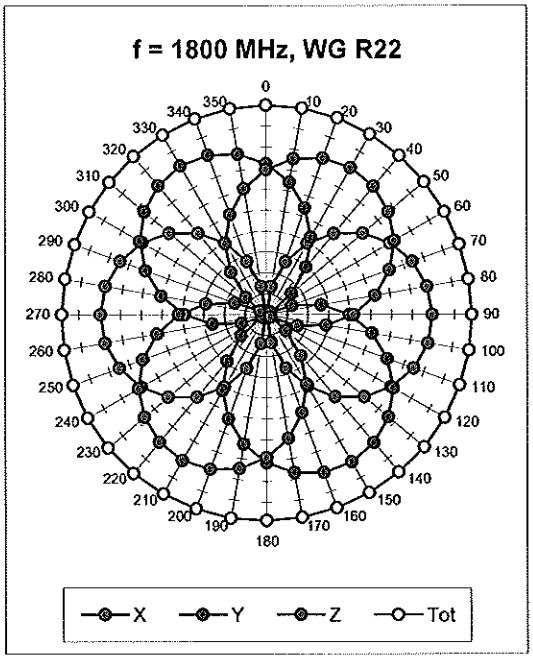
(TEM-Cell:ifi110 EXX, Waveguide: R22)

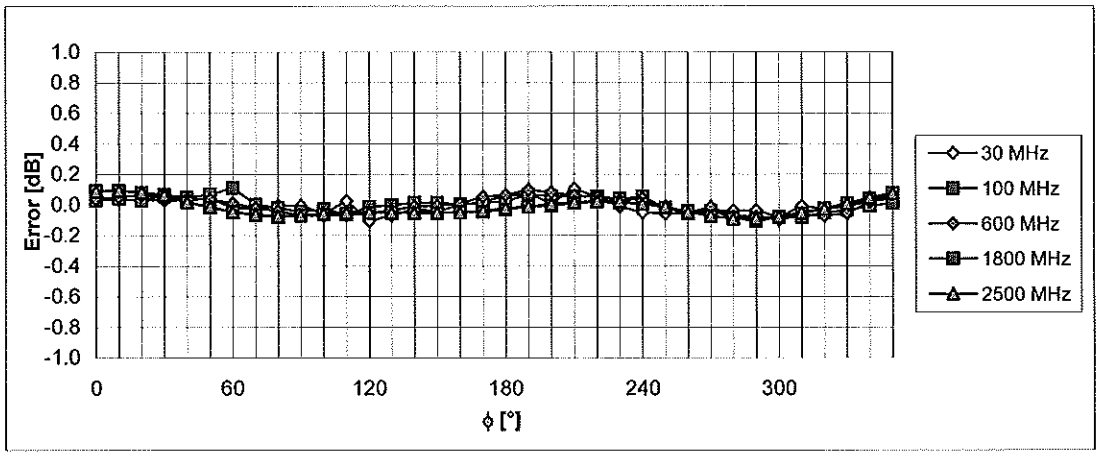


Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Receiving Pattern (ϕ), ϑ = 0°



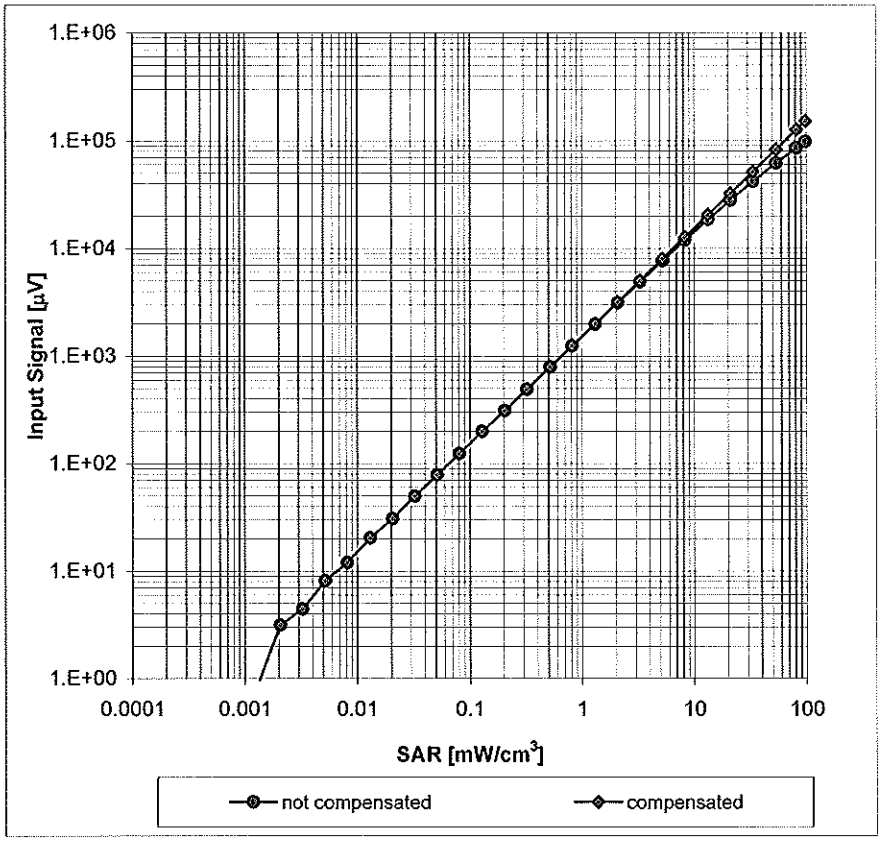


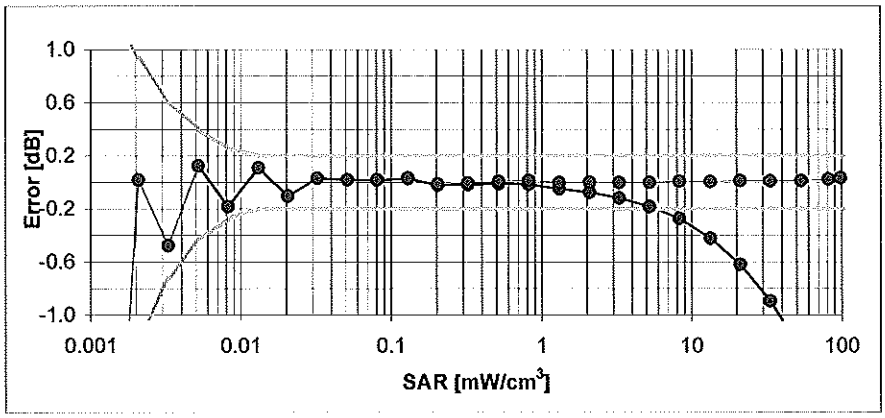


Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

Dynamic Range f(SAR_{head})

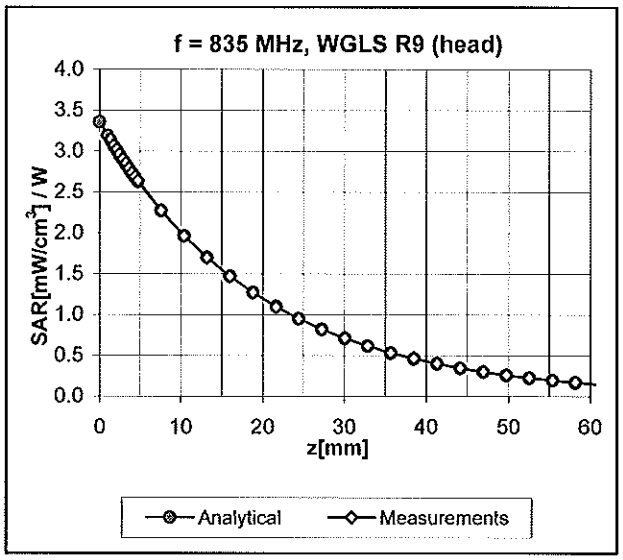
(Waveguide R22, f = 1800 MHz)

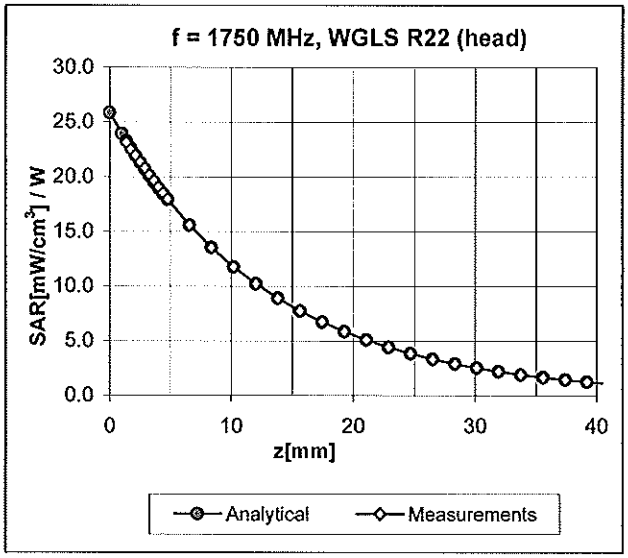




Uncertainty of Linearity Assessment: ± 0.6% (k=2)

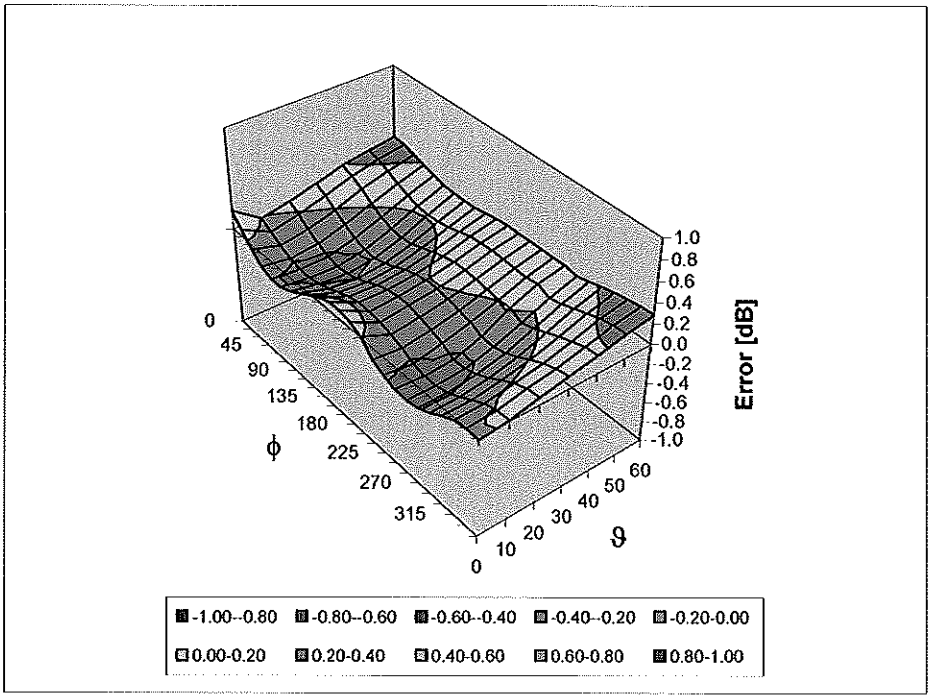
Conversion Factor Assessment





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

Calibration Laboratory of
Schmid & Partner
Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland

S Schweizerischer Kalibrierdienst
C Service suisse d'étalonnage
Servizio svizzero di taratura
S Swiss Calibration Service

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: 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 ± 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)	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

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

Issued: January 20, 2009

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

Glossary:

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

Calibration is Performed According to the Following Standards:

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

Additional Documentation:

d) DASY4/5 System Handbook

Methods Applied and Interpretation of Parameters:

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

Measurement Conditions

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

DASY Version	DASY5	V5.0
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 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 ± 0.2) °C	41.3 ± 6 %	0.91 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 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	2.45 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 ± 17.0 % (k=2)**

SAR averaged over 10 cm^3 (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 ± 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 jΩ
Return Loss	- 28.4 dB

Antenna Parameters with Body TSL

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

General Antenna Parameters and Design

Electrical Delay (one direction)	1.386 ns

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

The dipole is made of standard semirigid coaxial cable. The center conductor of the feeding line is directly connected to the second arm of the dipole. The antenna is therefore short-circuited for DC-signals.
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

Additional EUT Data

Manufactured by	SPEAG
Manufactured on	August 16, 2006

Body TSL parameters

The following parameters and calculations were applied.

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

SAR result with Body TSL

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

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

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

DASY5 Validation Report for Head TSL

Date/Time: 19.01.2009 11:45:19

Test Laboratory: SPEAG, Zurich, Switzerland

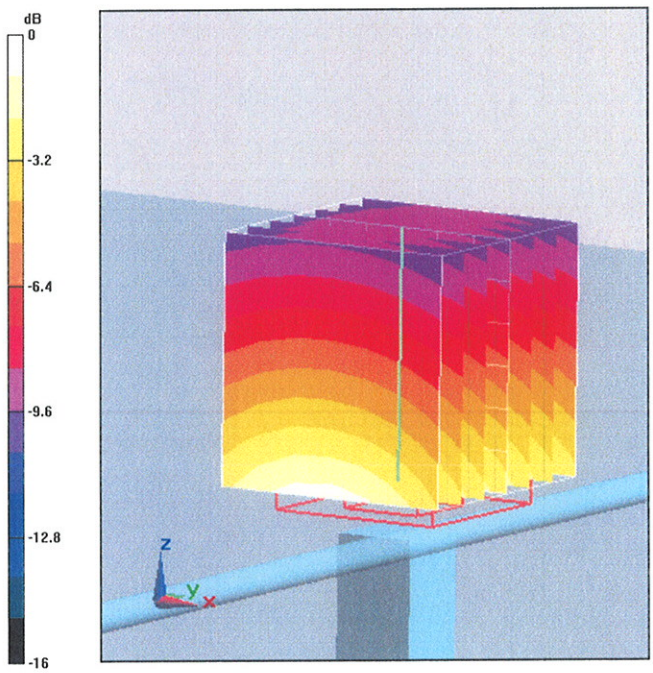
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d047

Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: HSL 900 MHz
Medium parameters used: f = 835 MHz; σ = 0.91 mho/m; ε_r = 41.1; ρ = 1000 kg/m^3
Phantom section: Flat Section
Measurement Standard: DASY5 (IEEE/IEC)

DASY5 Configuration:

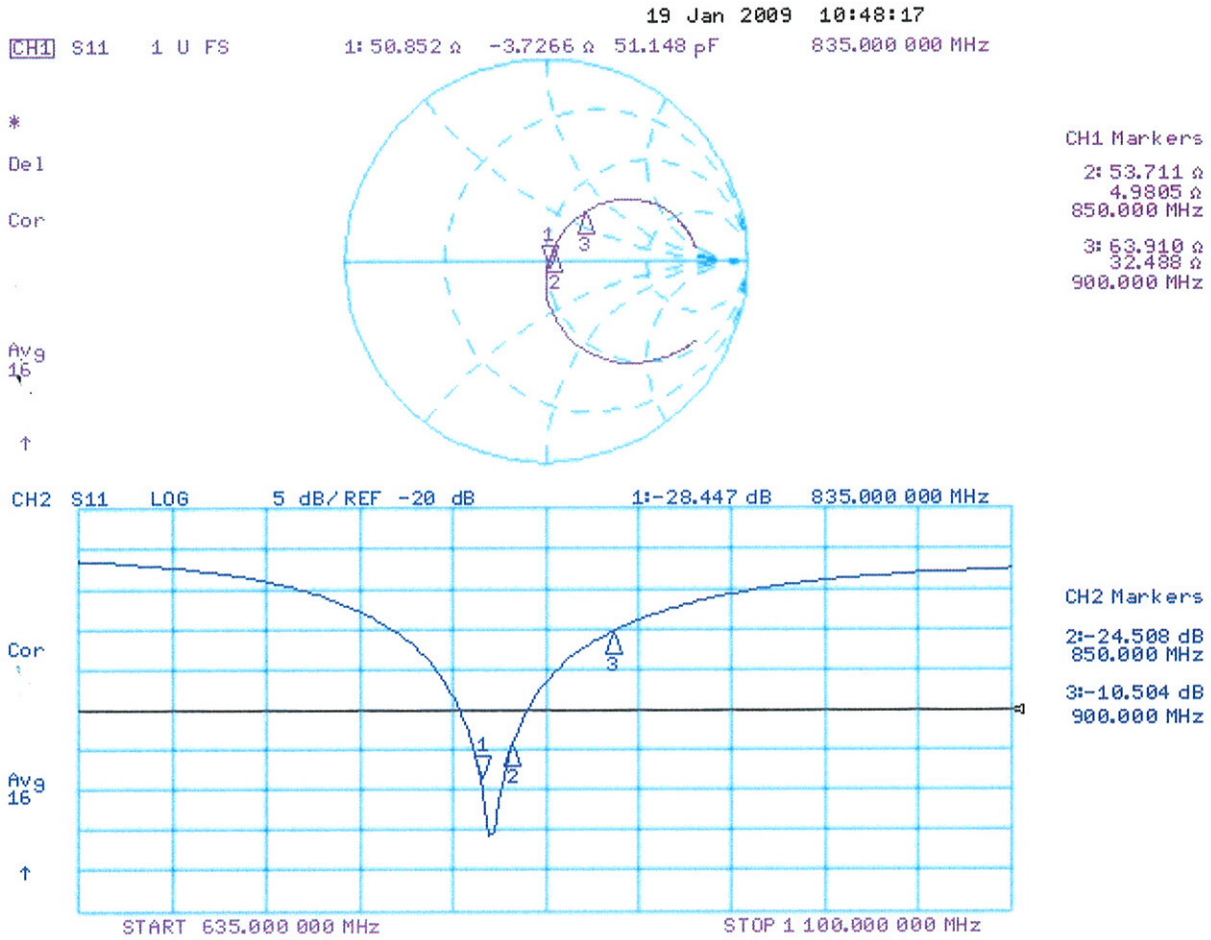
- Probe: ES3DV2 - SN3025; ConvF(5.97, 5.97, 5.97); Calibrated: 28.04.2008
- Sensor-Surface: 3.4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 14.03.2008
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; Serial: 1001
- Measurement SW: DASY5, V5.0 Build 120; SEMCAD X Version 13.4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

Pin=250mW; dip=15mm; dist=3.4mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 56.4 V/m; Power Drift = -0.00691 dB
Peak SAR (extrapolated) = 3.61 W/kg
SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.61 mW/g
Maximum value of SAR (measured) = 2.77 mW/g



0 dB = 2.77mW/g

Impedance Measurement Plot for Head TSL



DASY5 Validation Report for Body TSL

Date/Time: 12.01.2009 12:18:12

Test Laboratory: SPEAG, Zurich, Switzerland

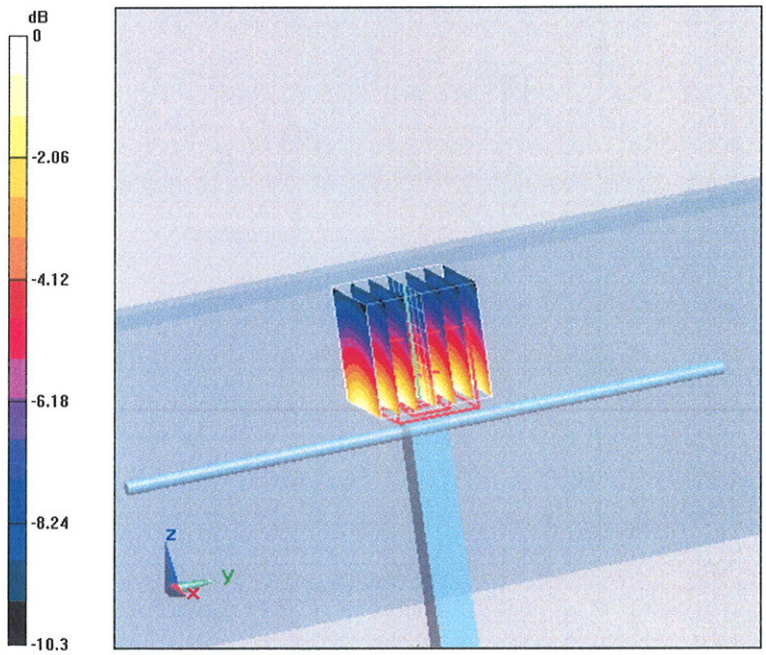
DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:4d047

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1
Medium: MSL900
Medium parameters used: f = 835 MHz; σ = 1 mho/m; ε_r = 53.5; ρ = 1000 kg/m^3
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



0 dB = 2.82mW/g