APPENDIX A1: TEST CONFIGURATIONS AND TEST DATA

A1: TEST CONFIGURATION

Mode 1 Dell C600 Bottom Position

The bottom of the EUT to the flat phantom distance 12 mm

Mode 2 Dell C600 Tip Position

The tip of the EUT to the flat phantom distance 0 mm

Mode 3 Dell C600 Bottom Position

The bottom of the EUT to the flat phantom distance 12 mm

Mode 4 Dell C600 Tip Position

The tip of the EUT to the flat phantom distance 0 mm

Mode 5 Dell D600 Bottom Position

The bottom of the EUT to the flat phantom distance 15 mm

Mode 6 Dell D600 Tip Position

The tip of the EUT to the flat phantom distance 0 mm

Mode 7 Dell D600 Bottom Position

The bottom of the EUT to the flat phantom distance 15 mm

Mode 8 Dell D600 Tip Position

The tip of the EUT to the flat phantom distance 0 mm

Mode 9 Compaq N800C Bottom Position

The bottom of the EUT to the flat phantom distance 11 mm

Mode 10 Compaq N800C Tip Position

The tip of the EUT to the flat phantom distance 0 mm

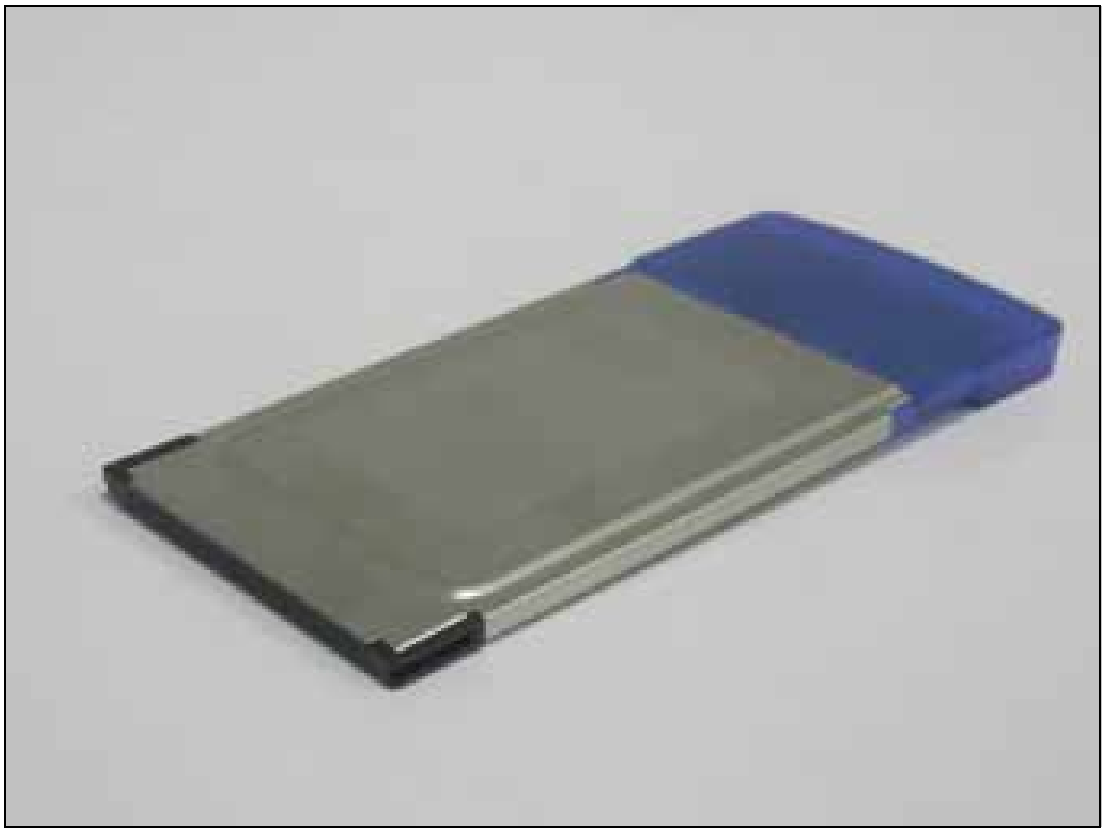
Mode 11 Compaq N800C Bottom Position

The bottom of the EUT to the flat phantom distance 11 mm

Mode 12 Compaq N800C Tip Position

The tip of the EUT to the flat phantom distance 0 mm

EUT Photo



Liquid Level Photo

MSL2450MHz D=155mm

Date/Time: 08/04/04 15:50:56

Test Laboratory: Advance Data Technology

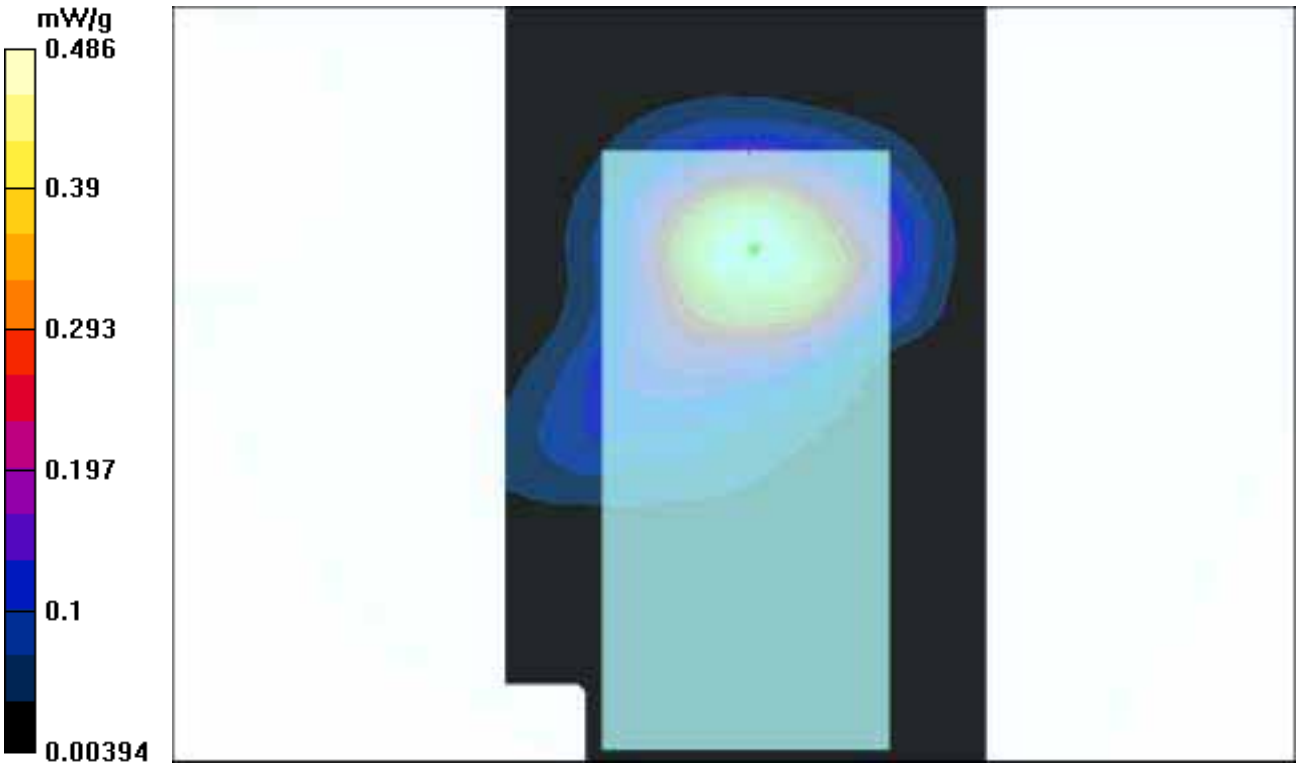
WLAN-Mobile Adapter 2202 Dell C600 11b Bottom - Mode 1 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11b ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 (σ = 1.9352 mho/m, ε_r = 53.1265, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 12 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 9.45 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.522 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.461 mW/g; SAR(10 g) = 0.235 mW/g
Reference Value = 9.45 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.486 mW/g



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Test Laboratory: Advance Data Technology

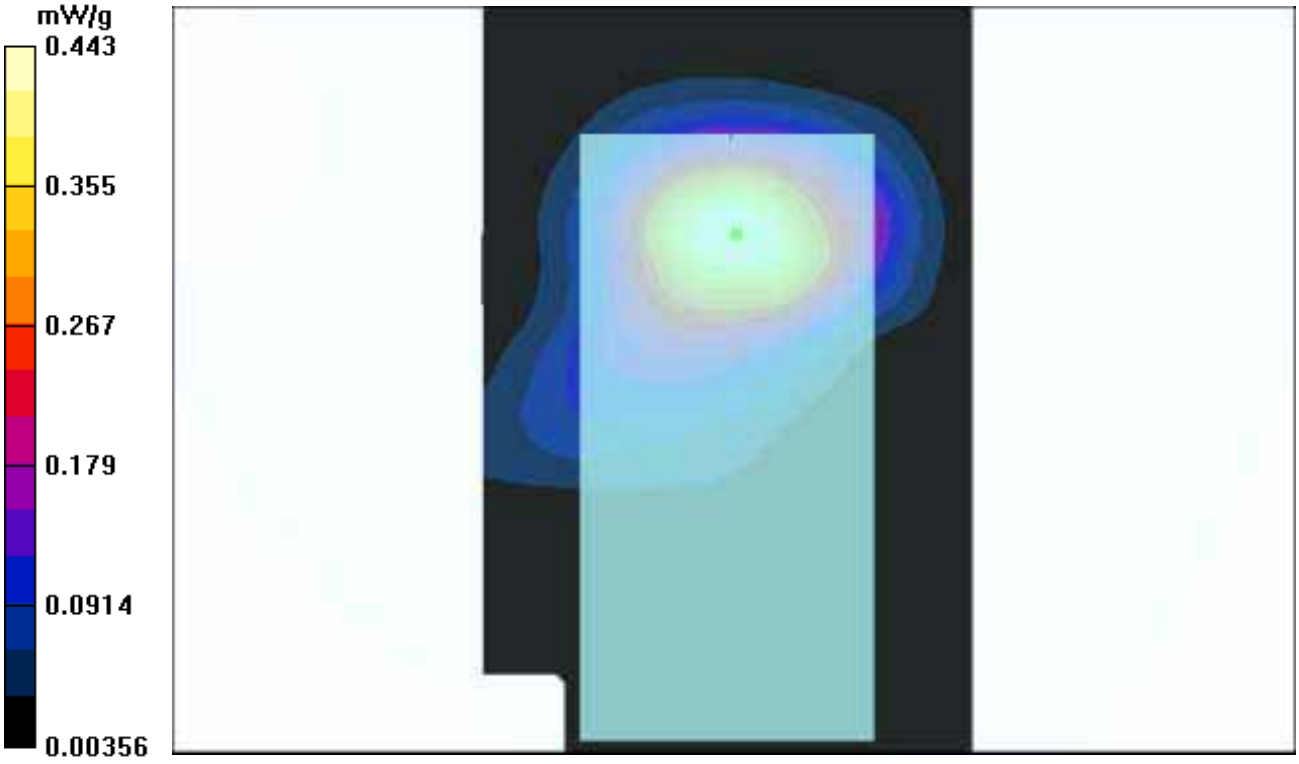
WLAN-Mobile Adapter 2202 Dell C600 11b Bottom - Mode 1 Ch 6

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11b ; Frequency: 2437 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 (σ = 1.9677 mho/m, ε_r = 53.0061, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 12 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

Middle Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 9.02 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.467 mW/g

Middle Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.943 W/kg
SAR(1 g) = 0.425 mW/g; SAR(10 g) = 0.217 mW/g
Reference Value = 9.02 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.443 mW/g



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Test Laboratory: Advance Data Technology

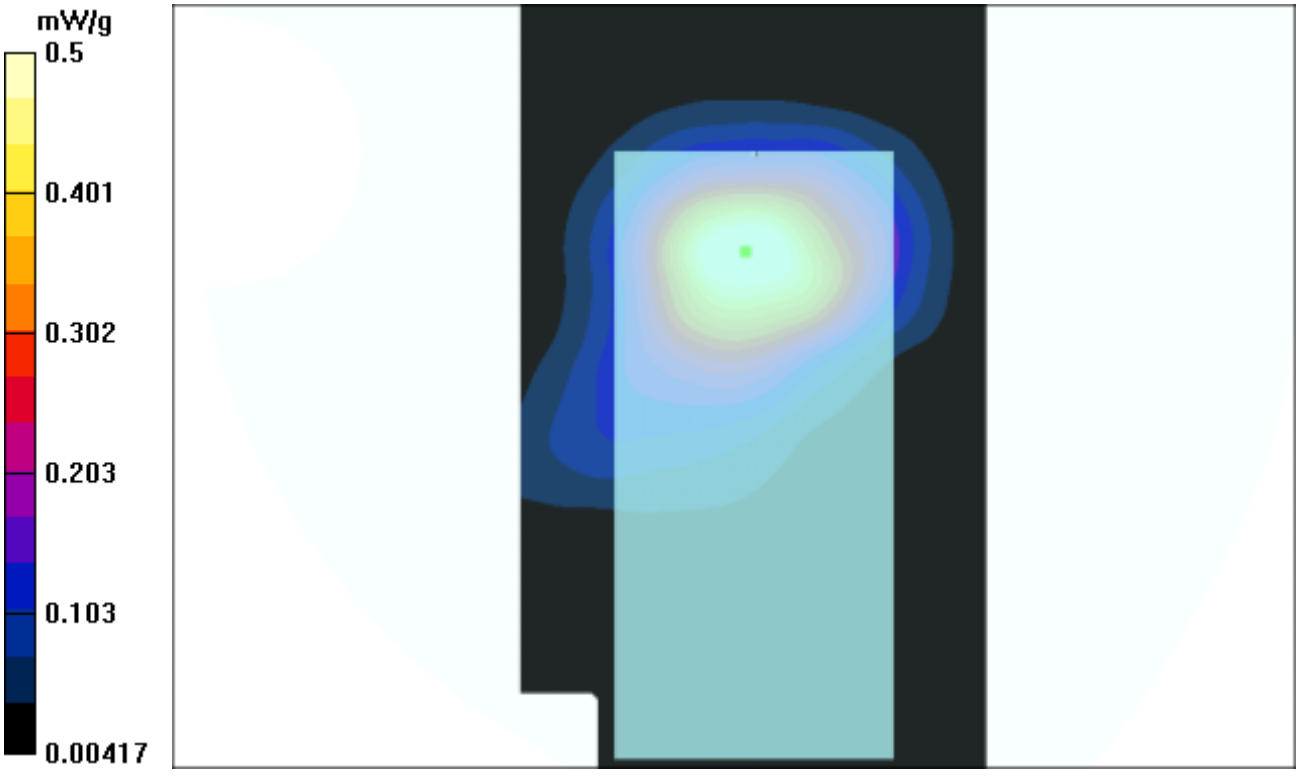
WLAN-Mobile Adapter 2202 Dell C600 11b Bottom - Mode 1 Ch 11

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 (σ = 2.0037 mho/m, ε_r = 52.8612, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 12 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

High Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 8.88 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.547 mW/g

High Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.15 W/kg
SAR(1 g) = 0.466 mW/g; SAR(10 g) = 0.236 mW/g
Reference Value = 8.88 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.5 mW/g



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Test Laboratory: Advance Data Technology

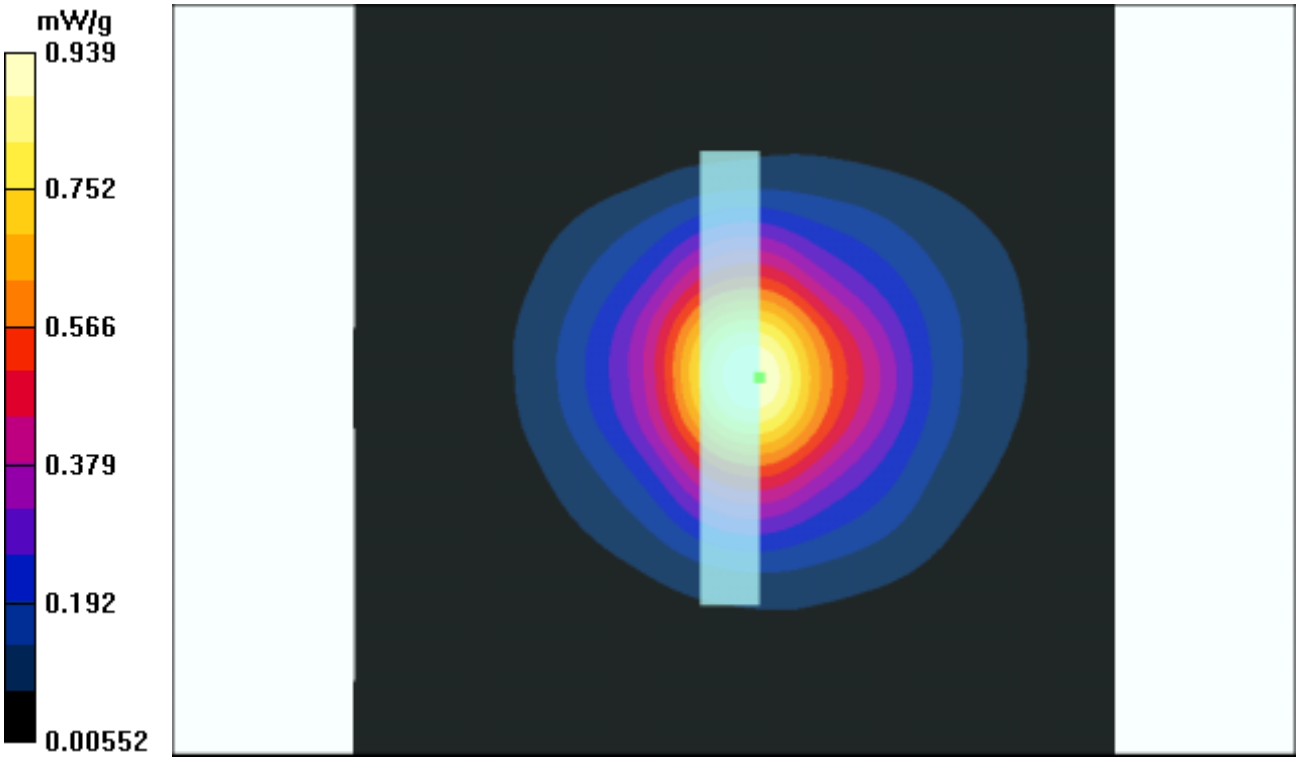
WLAN-Mobile Adapter 2202 Dell C600 11b Tip - Mode 2 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: CCK
Medium: MSL2450 (σ = 1.9352 mho/m, ε_r = 53.1265, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 23.1 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.937 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.98 W/kg
SAR(1 g) = 0.859 mW/g; SAR(10 g) = 0.389 mW/g
Reference Value = 23.1 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.939 mW/g



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Test Laboratory: Advance Data Technology

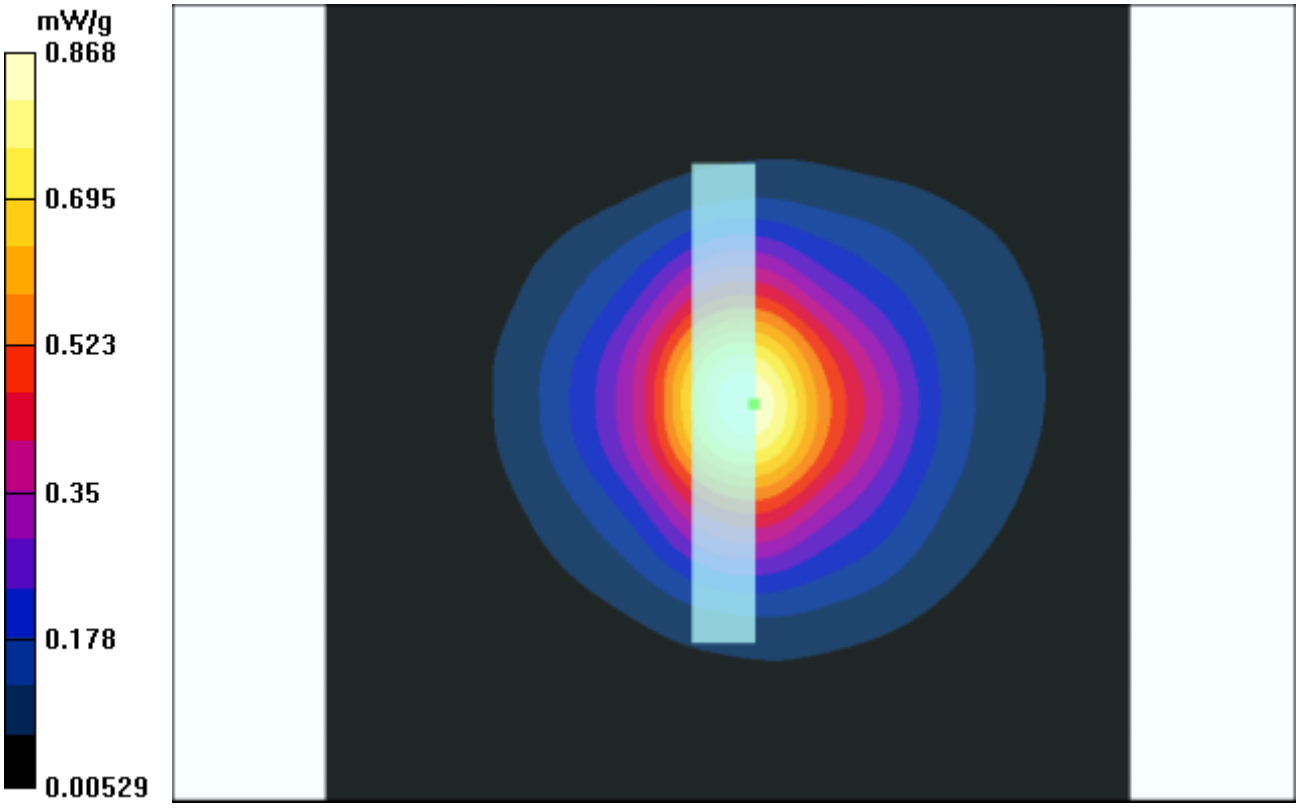
WLAN-Mobile Adapter 2202 Dell C600 11b Tip - Mode 2 Ch 6

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11b ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: CCK
Medium: MSL2450 (σ = 1.9677 mho/m, ε_r = 53.0061, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Middle Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 21.7 V/m
Power Drift = -0.02 dB
Maximum value of SAR = 0.859 mW/g

Middle Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.85 W/kg
SAR(1 g) = 0.799 mW/g; SAR(10 g) = 0.363 mW/g
Reference Value = 21.7 V/m
Power Drift = -0.02 dB
Maximum value of SAR = 0.868 mW/g



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Test Laboratory: Advance Data Technology

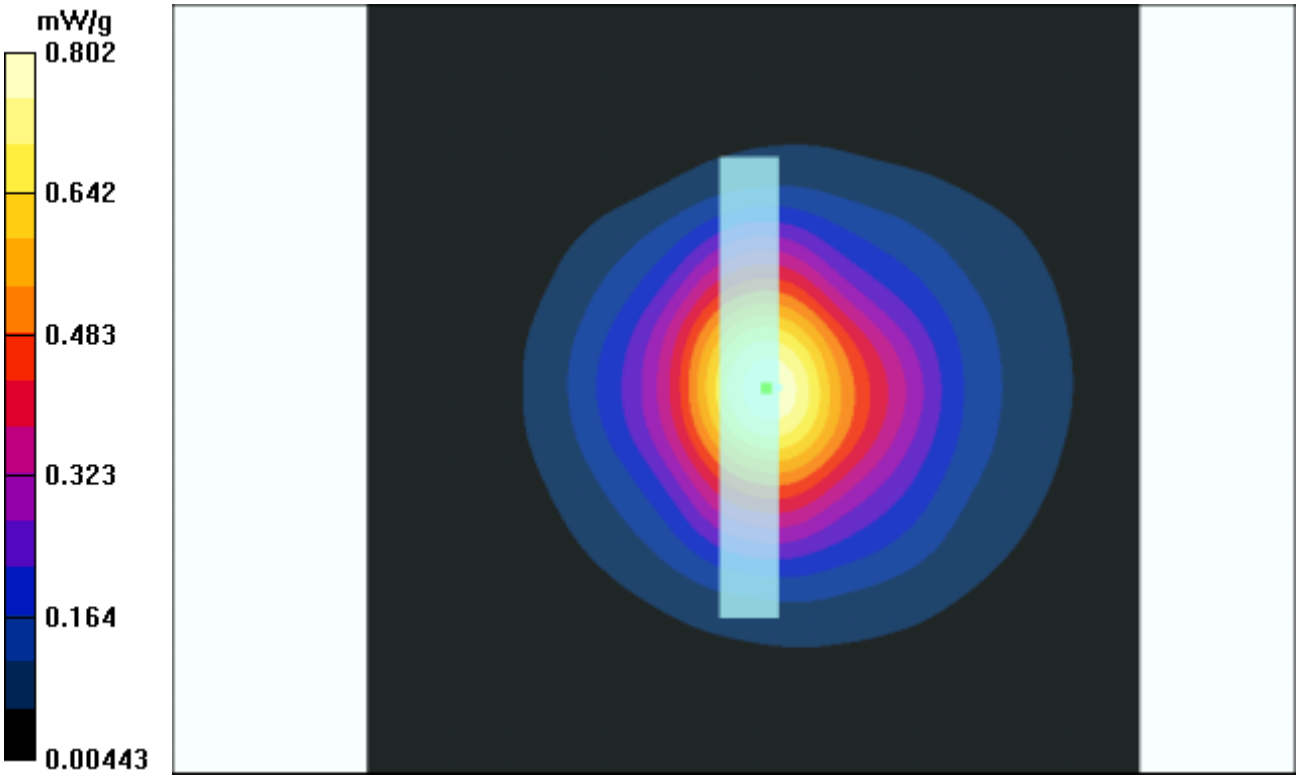
WLAN-Mobile Adapter 2202 Dell C600 11b Tip - Mode 2 Ch 11

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: CCK
Medium: MSL2450 (σ = 2.0037 mho/m, ε_r = 52.8612, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

High Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 20.7 V/m
Power Drift = -0.007 dB
Maximum value of SAR = 0.789 mW/g

High Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.75 W/kg
SAR(1 g) = 0.744 mW/g; SAR(10 g) = 0.341 mW/g
Reference Value = 20.7 V/m
Power Drift = -0.007 dB
Maximum value of SAR = 0.802 mW/g



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Test Laboratory: Advance Data Technology

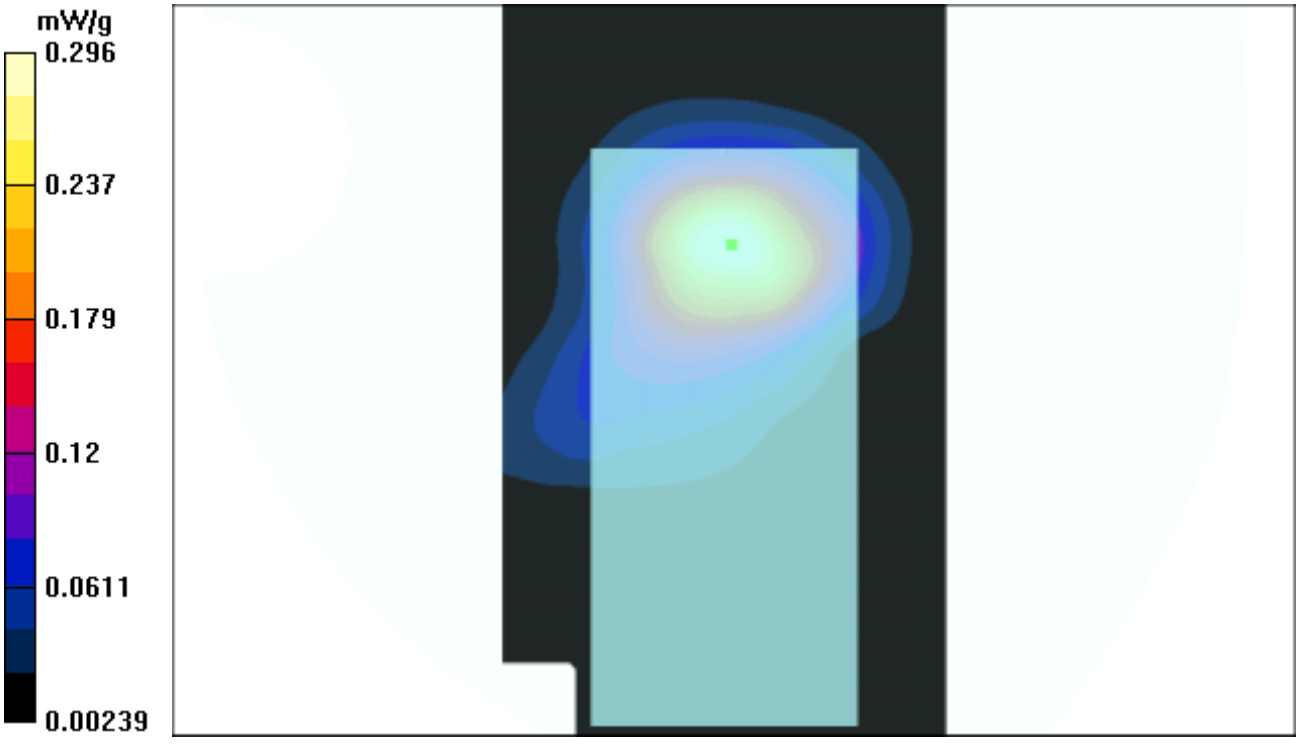
WLAN-Mobile Adapter 2202 Dell C600 11g Bottom - Mode 3 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: OFDM
Medium: MSL2450 (σ = 1.9352 mho/m, ε_r = 53.1265, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 12 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 6.88 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.307 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.627 W/kg
SAR(1 g) = 0.283 mW/g; SAR(10 g) = 0.144 mW/g
Reference Value = 6.88 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.296 mW/g



Date/Time: 08/04/04 17:33:30

Test Laboratory: Advance Data Technology

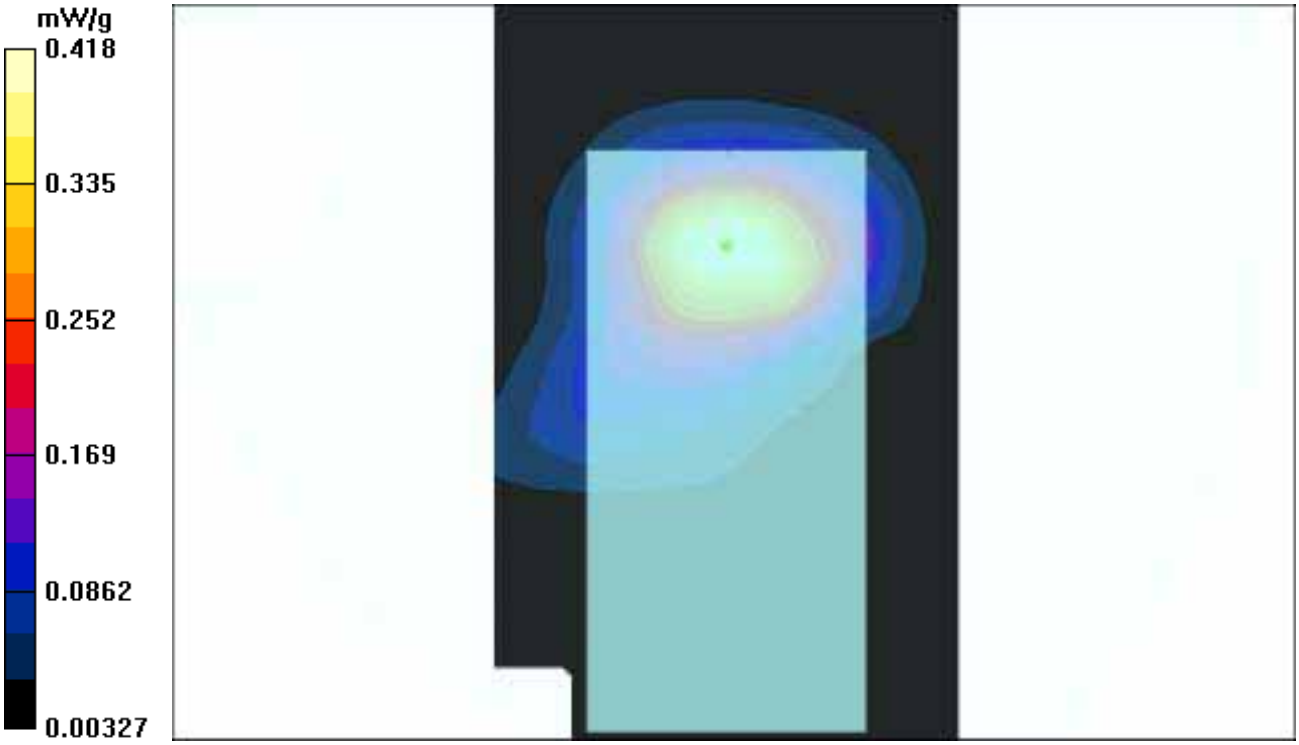
WLAN-Mobile Adapter 2202 Dell C600 11g Bottom - Mode 3 Ch 6

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz ; Duty Cycle: 1:1 ; Modulation type: OFDM
Medium: MSL2450 (σ = 1.9677 mho/m, ε_r = 53.0061, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 12 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

Middle Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 7.85 V/m
Power Drift = 0.2 dB
Maximum value of SAR = 0.431 mW/g

Middle Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.88 W/kg
SAR(1 g) = 0.394 mW/g; SAR(10 g) = 0.202 mW/g
Reference Value = 7.85 V/m
Power Drift = 0.2 dB
Maximum value of SAR = 0.418 mW/g



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Test Laboratory: Advance Data Technology

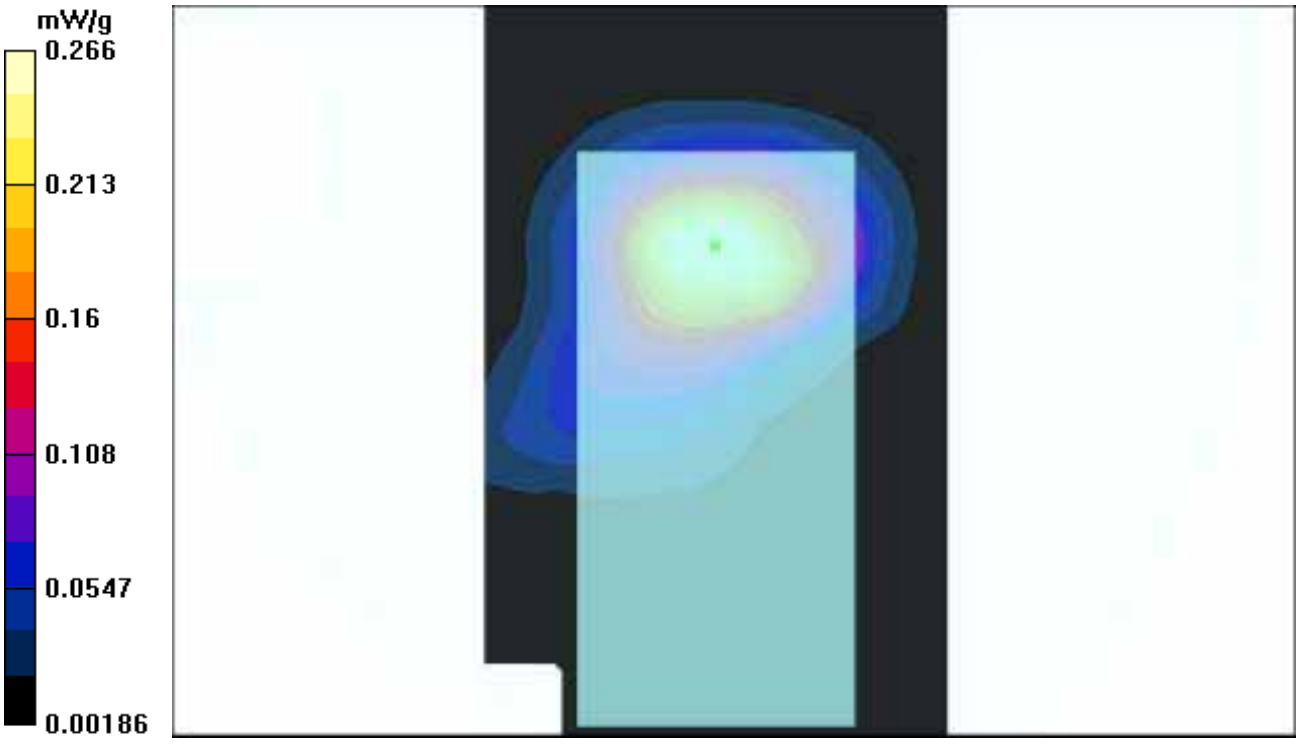
WLAN-Mobile Adapter 2202 Dell C600 11g Bottom - Mode 3 Ch 11

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2462 MHz ; Duty Cycle: 1:1 ; Modulation type: OFDM
Medium: MSL2450 (σ = 2.0037 mho/m, ε_r = 52.8612, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 12 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

High Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 6.55 V/m
Power Drift = 0.03 dB
Maximum value of SAR = 0.279 mW/g

High Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.576 W/kg
SAR(1 g) = 0.257 mW/g; SAR(10 g) = 0.131 mW/g
Reference Value = 6.55 V/m
Power Drift = 0.03 dB
Maximum value of SAR = 0.266 mW/g



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Test Laboratory: Advance Data Technology

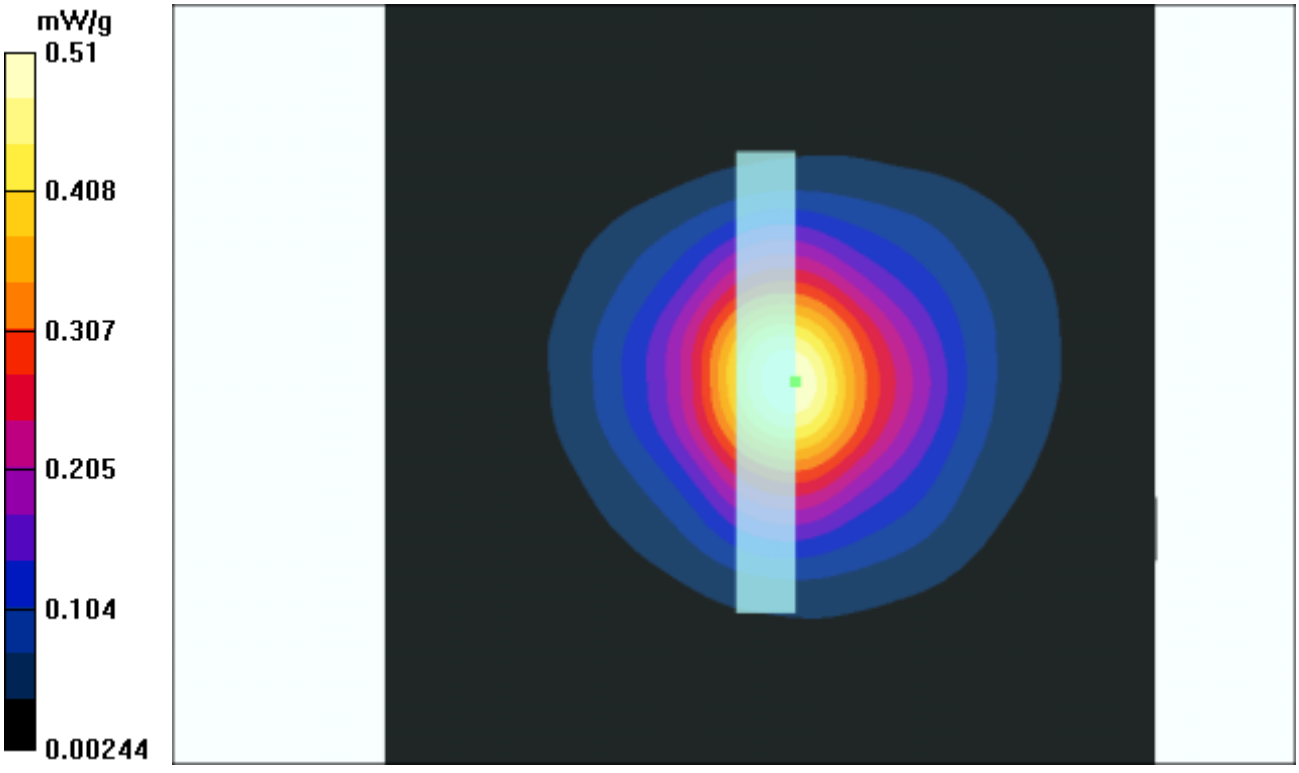
WLAN-Mobile Adapter 2202 Dell C600 11g Tip - Mode 4 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: OFDM
Medium: MSL2450 (σ = 1.9352 mho/m, ε_r = 53.1265, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 16.7 V/m
Power Drift = 0.08 dB
Maximum value of SAR = 0.51 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.14 W/kg
SAR(1 g) = 0.476 mW/g; SAR(10 g) = 0.214 mW/g
Reference Value = 16.7 V/m
Power Drift = 0.08 dB
Maximum value of SAR = 0.51 mW/g



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Test Laboratory: Advance Data Technology

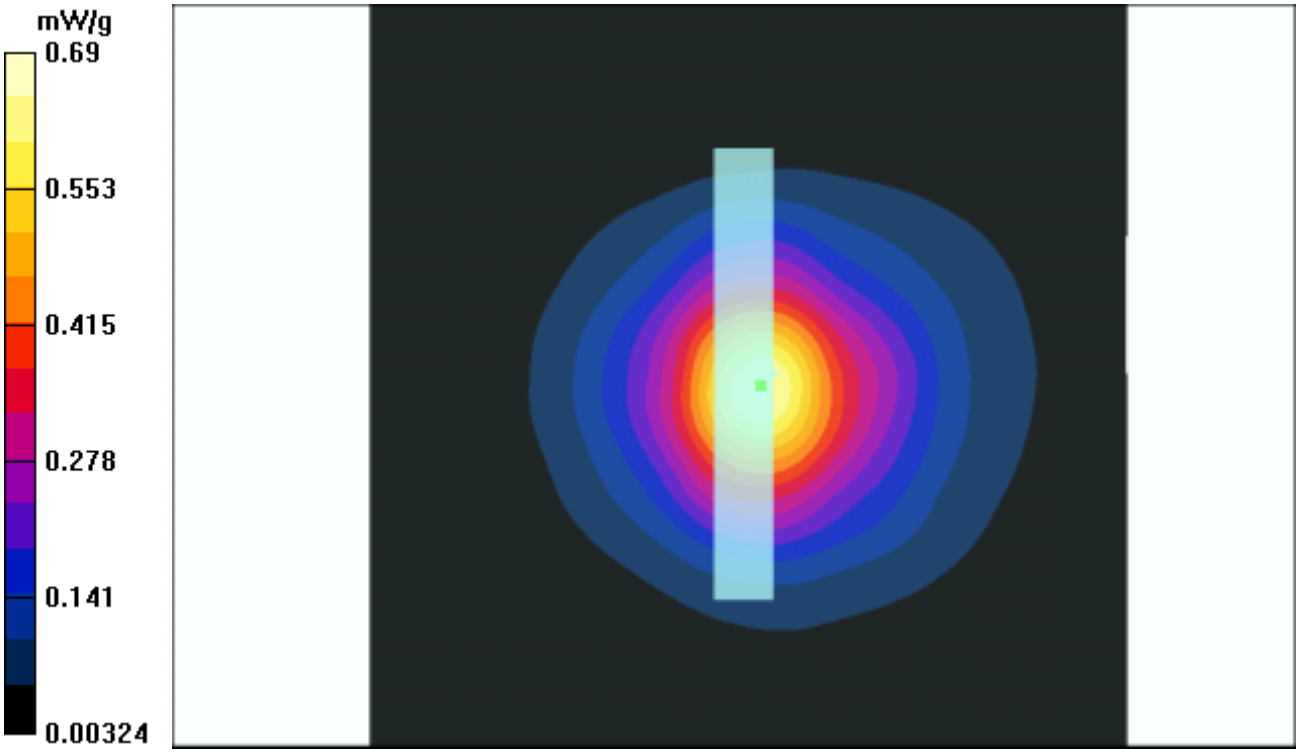
WLAN-Mobile Adapter 2202 Dell C600 11g Tip - Mode 4 Ch 6

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: OFDM
Medium: MSL2450 (σ = 1.9677 mho/m, ε_r = 53.0061, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Middle Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 18.5 V/m
Power Drift = 0.2 dB
Maximum value of SAR = 0.648 mW/g

Middle Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.47 W/kg
SAR(1 g) = 0.629 mW/g; SAR(10 g) = 0.283 mW/g
Reference Value = 18.5 V/m
Power Drift = 0.2 dB
Maximum value of SAR = 0.69 mW/g



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Test Laboratory: Advance Data Technology

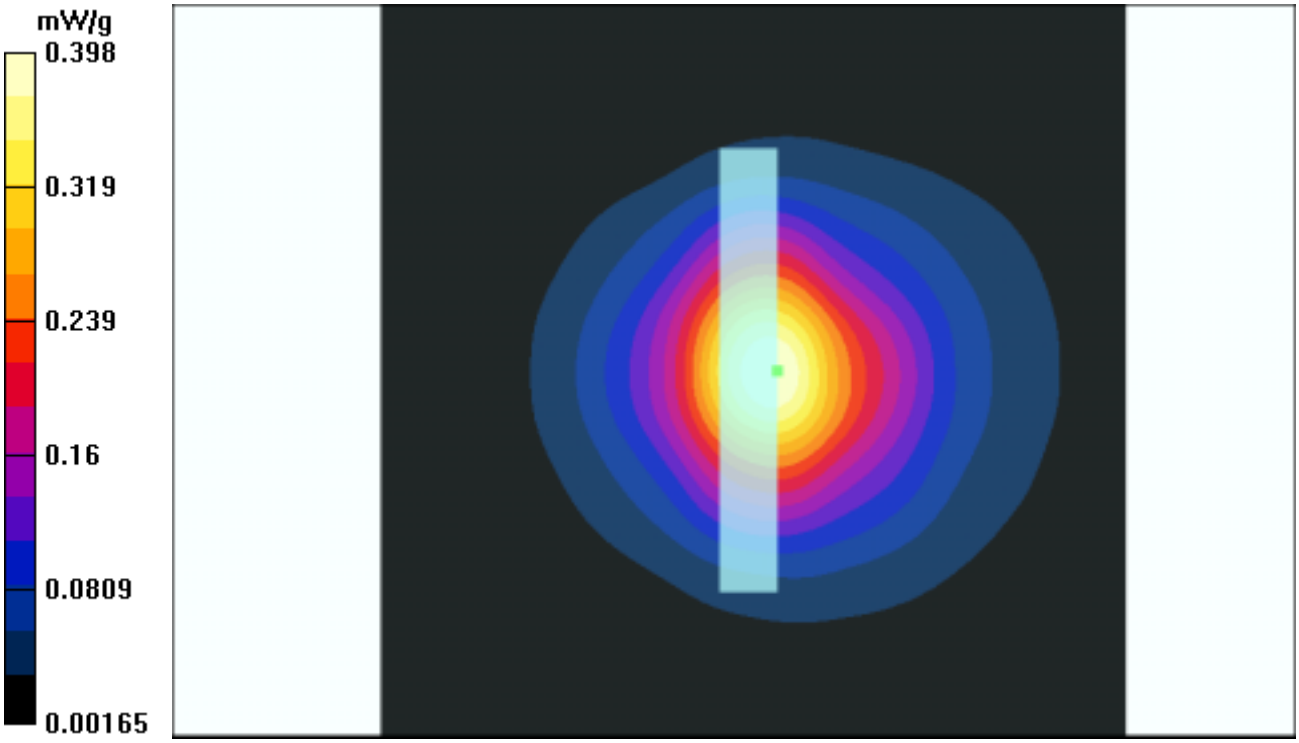
WLAN-Mobile Adapter 2202 Dell C600 11g Tip - Mode 4 Ch 11

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: OFDM
Medium: MSL2450 (σ = 2.0037 mho/m, ε_r = 52.8612, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

High Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 14.8 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.4 mW/g

High Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.871 W/kg
SAR(1 g) = 0.369 mW/g; SAR(10 g) = 0.168 mW/g
Reference Value = 14.8 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.398 mW/g



Date/Time: 08/04/04 22:22:38

Test Laboratory: Advance Data Technology

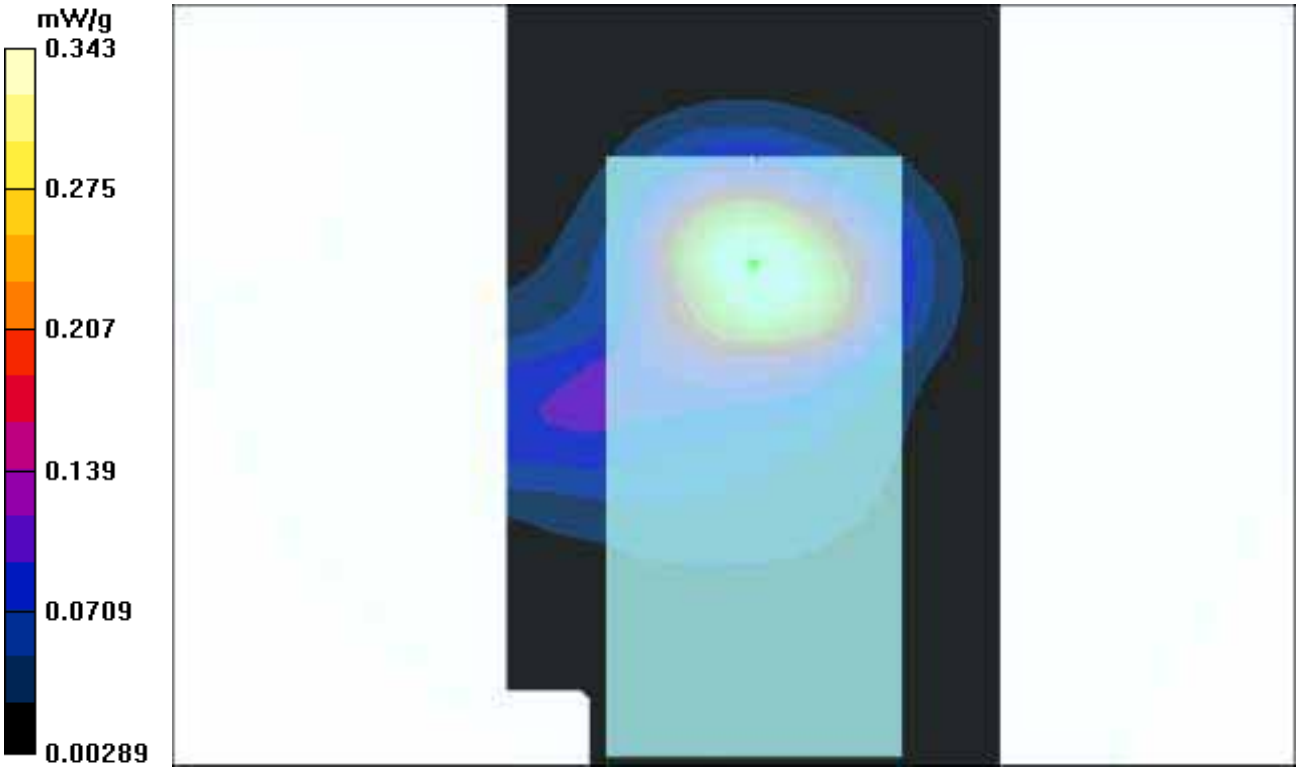
WLAN-Mobile Adapter 2202 Dell D600 11b Bottom - Mode 5 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11b ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 (σ = 1.9352 mho/m, ε_r = 53.1265, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 15 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 7.57 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.368 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.711 W/kg
SAR(1 g) = 0.332 mW/g; SAR(10 g) = 0.171 mW/g
Reference Value = 7.57 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.343 mW/g



Date/Time: 08/04/04 22:47:54

Test Laboratory: Advance Data Technology

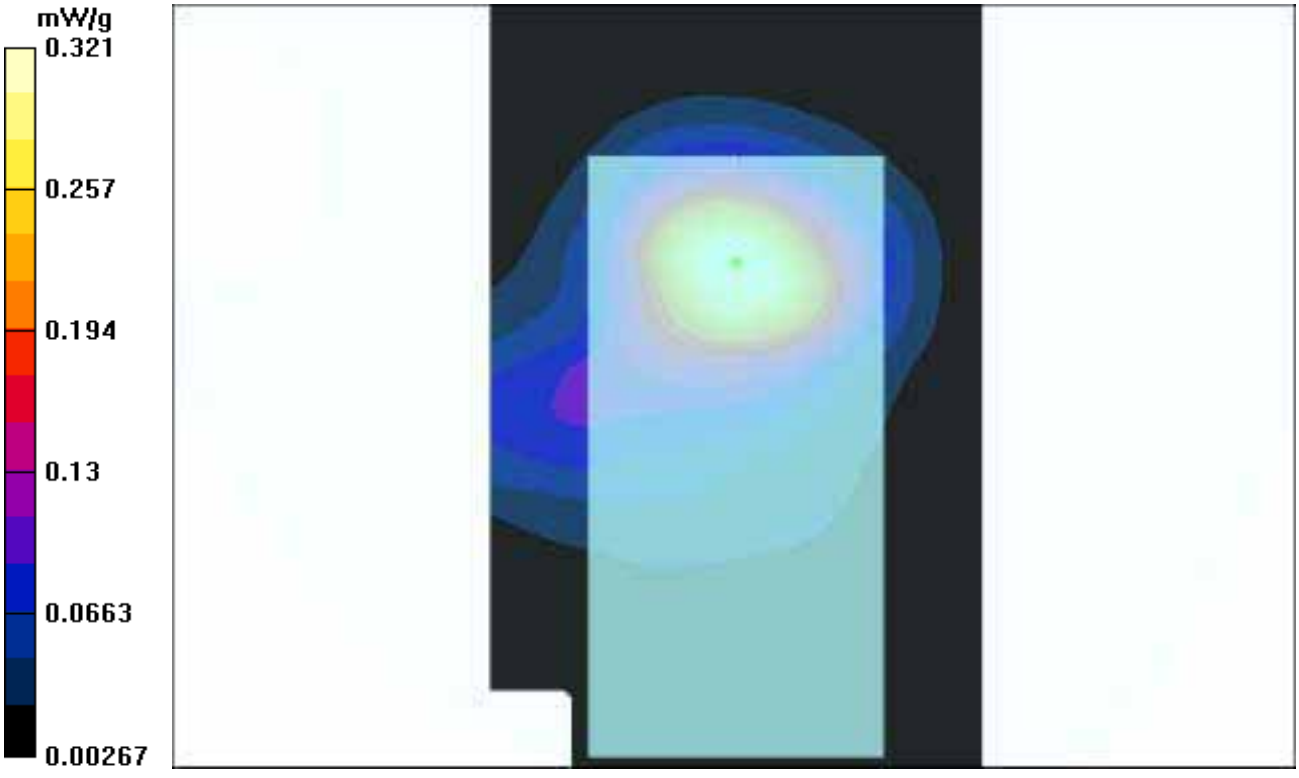
WLAN-Mobile Adapter 2202 Dell D600 11b Bottom - Mode 5 Ch 6

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11b ; Frequency: 2437 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 (σ = 1.9677 mho/m, ε_r = 53.0061, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 15 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

Middle Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 6.99 V/m
Power Drift = 0.02 dB
Maximum value of SAR = 0.333 mW/g

Middle Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.679 W/kg
SAR(1 g) = 0.311 mW/g; SAR(10 g) = 0.159 mW/g
Reference Value = 6.99 V/m
Power Drift = 0.02 dB
Maximum value of SAR = 0.321 mW/g



Date/Time: 08/04/04 23:14:20

Test Laboratory: Advance Data Technology

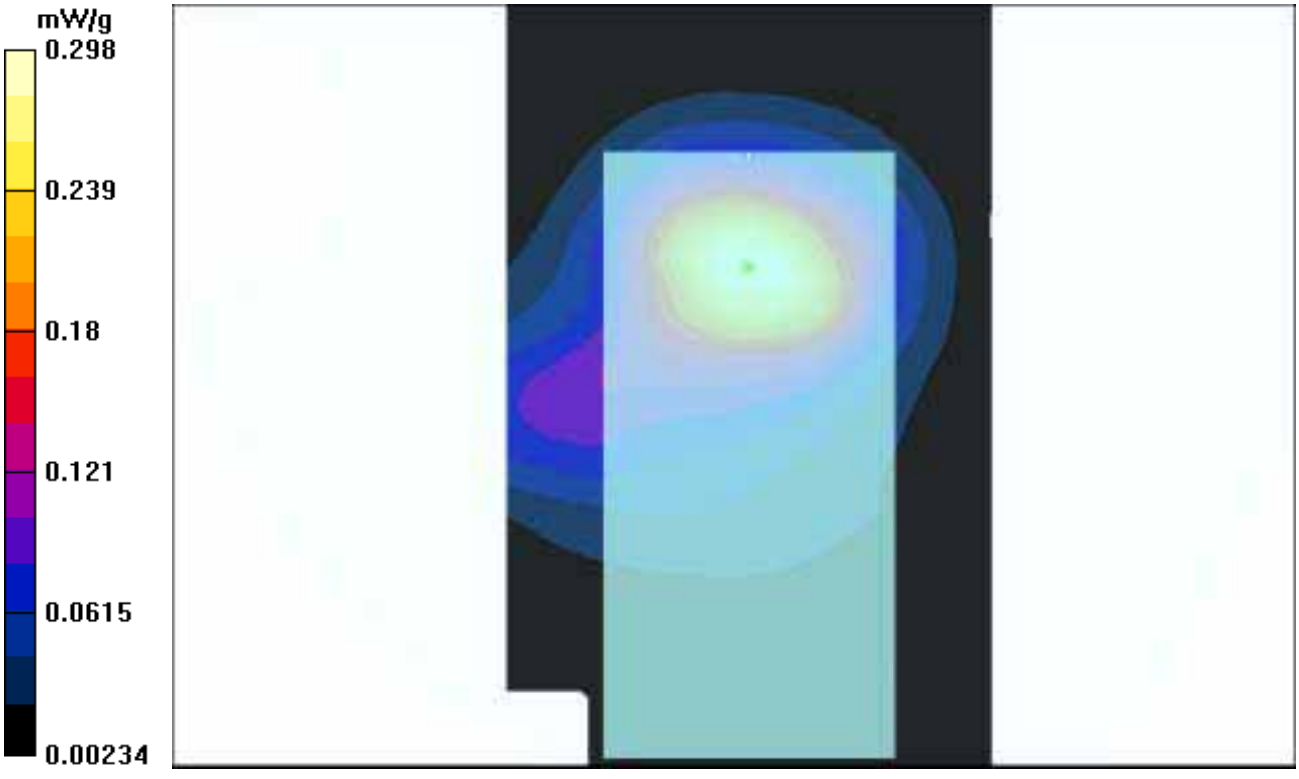
WLAN-Mobile Adapter 2202 Dell D600 11b Bottom - Mode 5 Ch 11

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 (σ = 2.0037 mho/m, ε_r = 52.8612, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 15 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

High Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 6.72 V/m
Power Drift = 0.1 dB
Maximum value of SAR = 0.296 mW/g

High Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.638 W/kg
SAR(1 g) = 0.288 mW/g; SAR(10 g) = 0.147 mW/g
Reference Value = 6.72 V/m
Power Drift = 0.1 dB
Maximum value of SAR = 0.298 mW/g



Date/Time: 08/04/04 20:28:44

Test Laboratory: Advance Data Technology

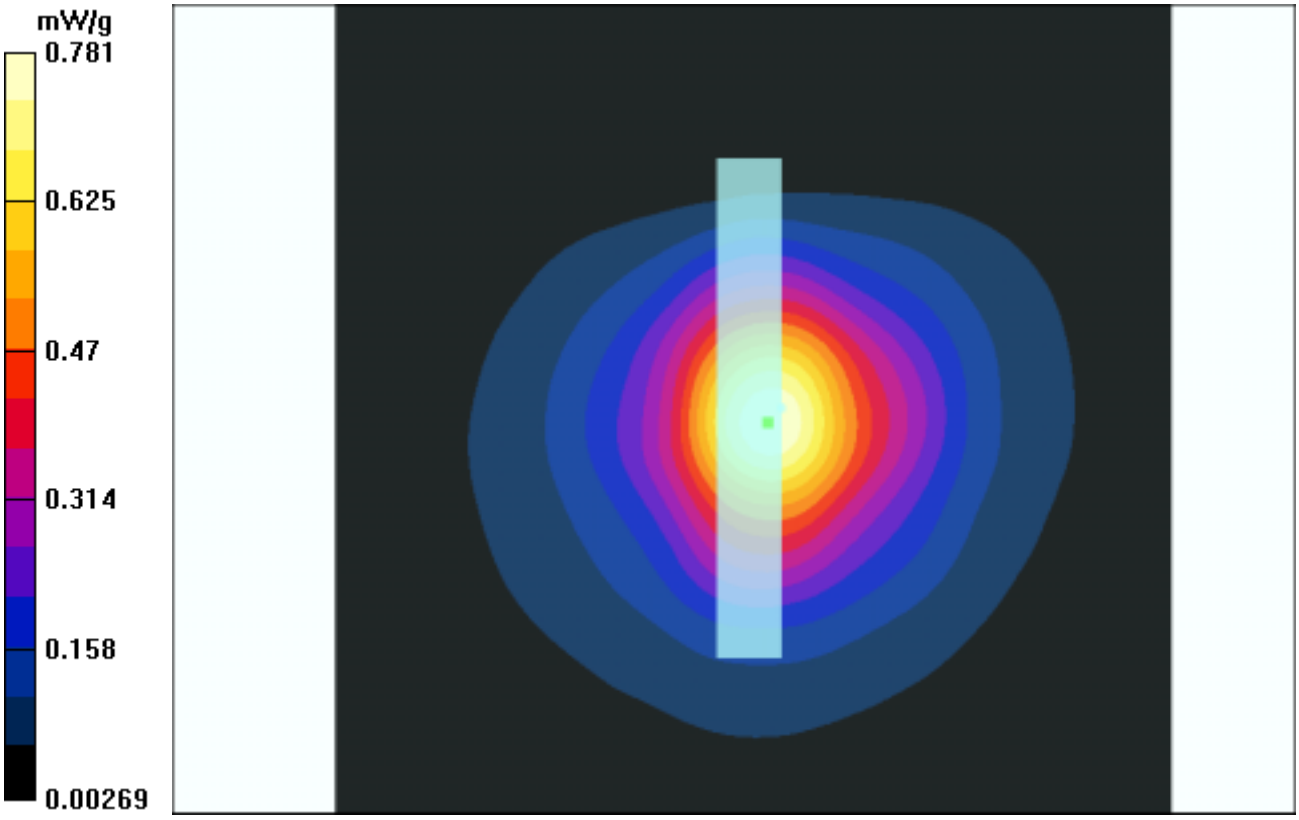
WLAN-Mobile Adapter 2202 Dell D600 11b Tip - Mode 6 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: CCK
Medium: MSL2450 (σ = 1.9352 mho/m, ε_r = 53.1265, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 20.4 V/m
Power Drift = -0.009 dB
Maximum value of SAR = 0.781 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 0.685 mW/g; SAR(10 g) = 0.31 mW/g
Reference Value = 20.4 V/m
Power Drift = -0.009 dB
Maximum value of SAR = 0.745 mW/g



Date/Time: 08/04/04 20:49:38

Test Laboratory: Advance Data Technology

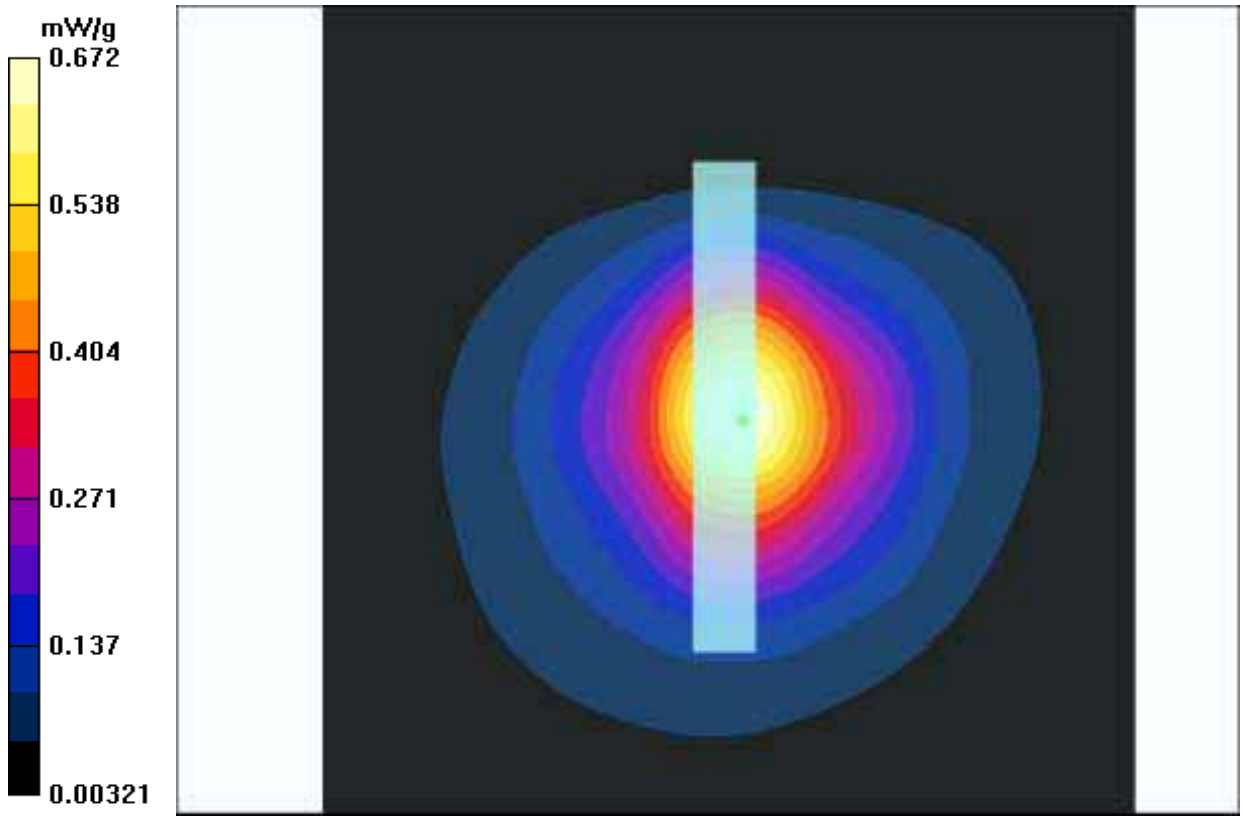
WLAN-Mobile Adapter 2202 Dell D600 11b Tip - Mode 6 Ch 6

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11b ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: CCK
Medium: MSL2450 (σ = 1.9677 mho/m, ε_r = 53.0061, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Middle Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 19.6 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.676 mW/g

Middle Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.49 W/kg
SAR(1 g) = 0.628 mW/g; SAR(10 g) = 0.283 mW/g
Reference Value = 19.6 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.672 mW/g



Date/Time: 08/04/04 20:01:42

Test Laboratory: Advance Data Technology

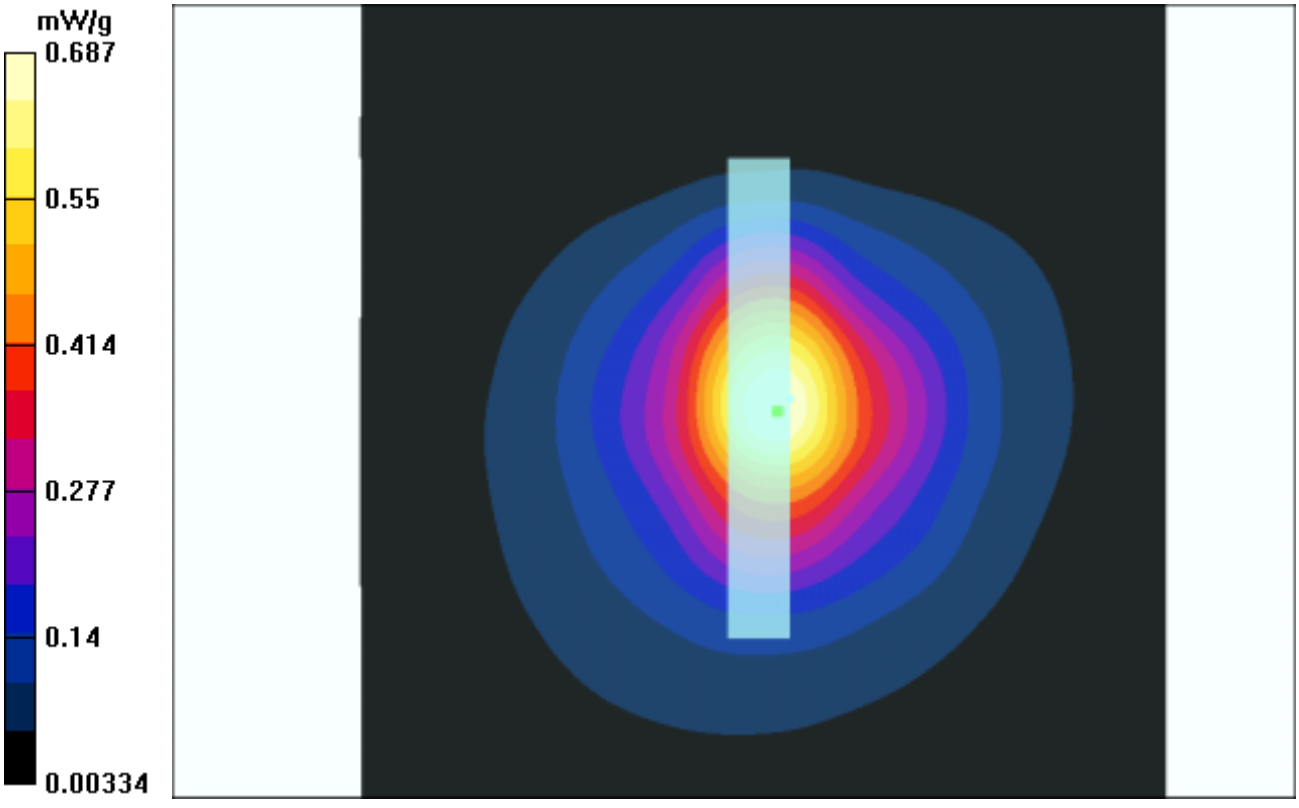
WLAN-Mobile Adapter 2202 Dell D600 11b Tip - Mode 6 Ch 11

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: CCK
Medium: MSL2450 (σ = 2.0037 mho/m, ε_r = 52.8612, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

High Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 19.4 V/m
Power Drift = 0.006 dB
Maximum value of SAR = 0.692 mW/g

High Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.55 W/kg
SAR(1 g) = 0.639 mW/g; SAR(10 g) = 0.285 mW/g
Reference Value = 19.4 V/m
Power Drift = 0.006 dB
Maximum value of SAR = 0.687 mW/g



Date/Time: 08/04/04 23:37:52

Test Laboratory: Advance Data Technology

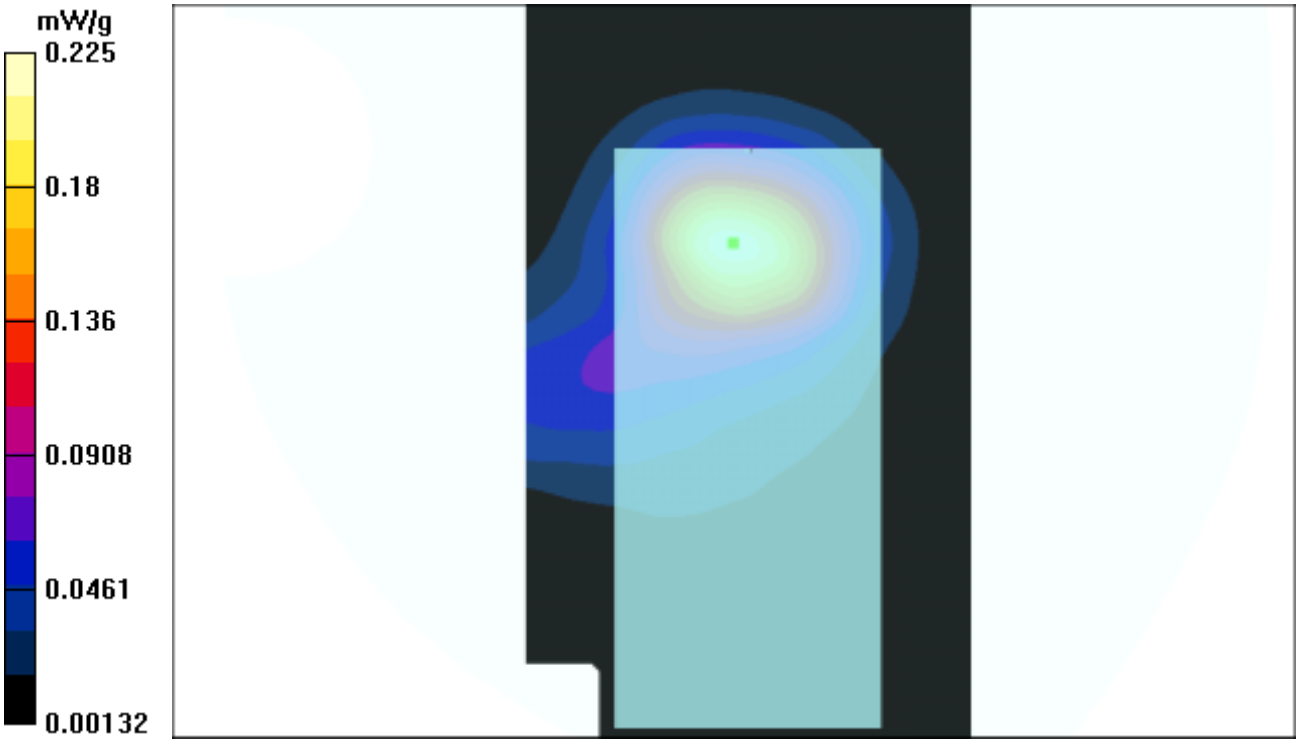
WLAN-Mobile Adapter 2202 Dell D600 11g Bottom - Mode 7 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: OFDM
Medium: MSL2450 (σ = 1.9352 mho/m, ε_r = 53.1265, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 15 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 6.14 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.22 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.472 W/kg
SAR(1 g) = 0.218 mW/g; SAR(10 g) = 0.112 mW/g
Reference Value = 6.14 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.225 mW/g



Date/Time: 08/04/04 23:59:42

Test Laboratory: Advance Data Technology

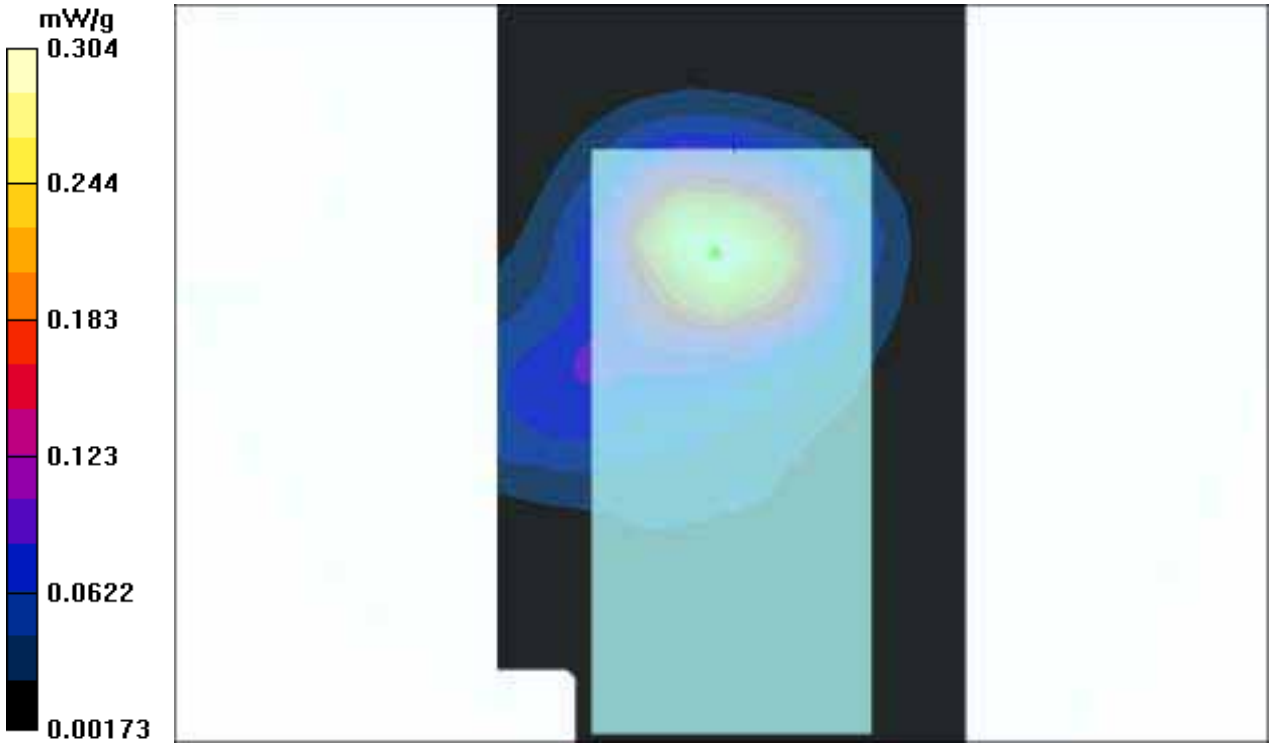
WLAN-Mobile Adapter 2202 Dell D600 11g Bottom - Mode 7 Ch 6

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz ; Duty Cycle: 1:1 ; Modulation type: OFDM
Medium: MSL2450 (σ = 1.9677 mho/m, ε_r = 53.0061, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 15 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

Middle Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 6.68 V/m
Power Drift = 0.2 dB
Maximum value of SAR = 0.278 mW/g

Middle Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.645 W/kg
SAR(1 g) = 0.29 mW/g; SAR(10 g) = 0.145 mW/g
Reference Value = 6.68 V/m
Power Drift = 0.2 dB
Maximum value of SAR = 0.304 mW/g



Date/Time: 08/05/04 00:32:34

Test Laboratory: Advance Data Technology

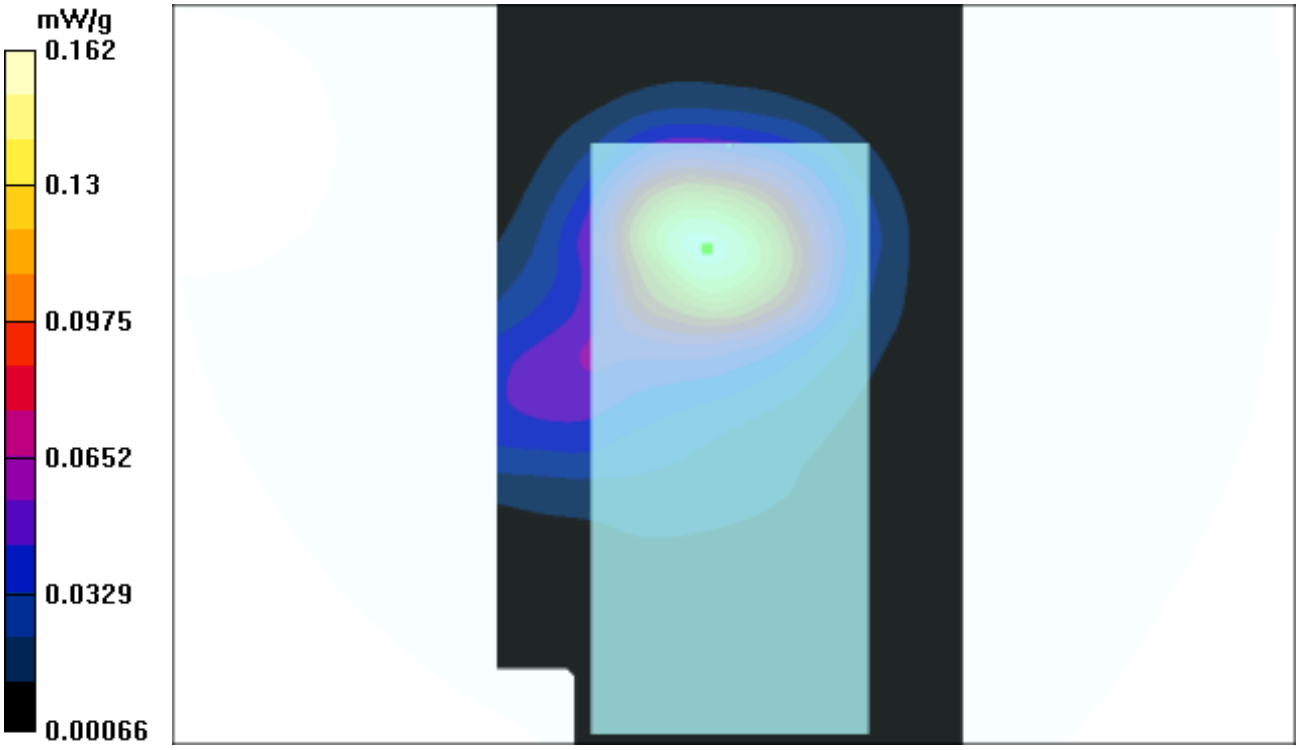
WLAN-Mobile Adapter 2202 Dell D600 11g Bottom - Mode 7 Ch 11

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2462 MHz ; Duty Cycle: 1:1 ; Modulation type: OFDM
Medium: MSL2450 (σ = 2.0037 mho/m, ε_r = 52.8612, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 15 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

High Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 5.15 V/m
Power Drift = 0.1 dB
Maximum value of SAR = 0.156 mW/g

High Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.349 W/kg
SAR(1 g) = 0.157 mW/g; SAR(10 g) = 0.0795 mW/g
Reference Value = 5.15 V/m
Power Drift = 0.1 dB
Maximum value of SAR = 0.162 mW/g



Date/Time: 08/04/04 21:10:30

Test Laboratory: Advance Data Technology

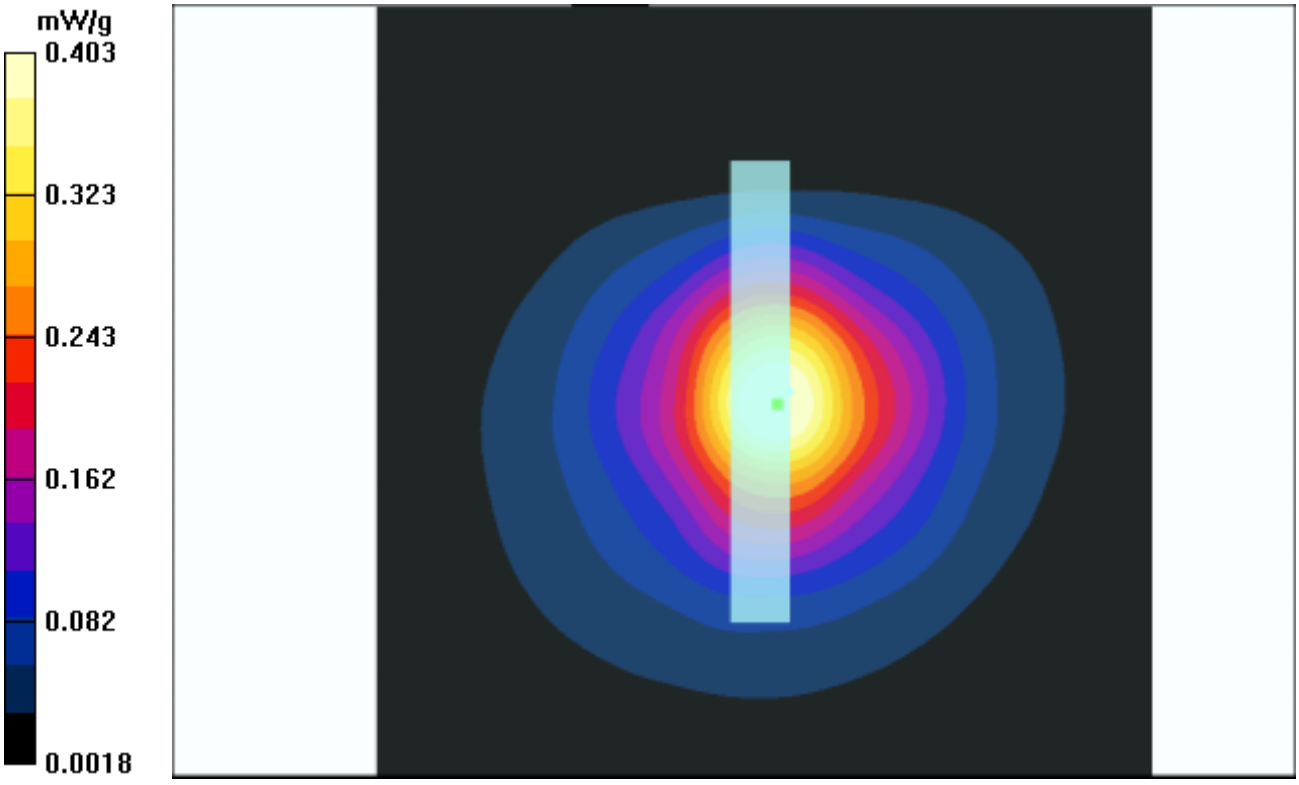
WLAN-Mobile Adapter 2202 Dell D600 11g Tip - Mode 8 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: OFDM
Medium: MSL2450 (σ = 1.9352 mho/m, ε_r = 53.1265, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 15.4 V/m
Power Drift = -0.08 dB
Maximum value of SAR = 0.42 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.882 W/kg
SAR(1 g) = 0.375 mW/g; SAR(10 g) = 0.169 mW/g
Reference Value = 15.4 V/m
Power Drift = -0.08 dB
Maximum value of SAR = 0.403 mW/g



Date/Time: 08/04/04 21:31:24

Test Laboratory: Advance Data Technology

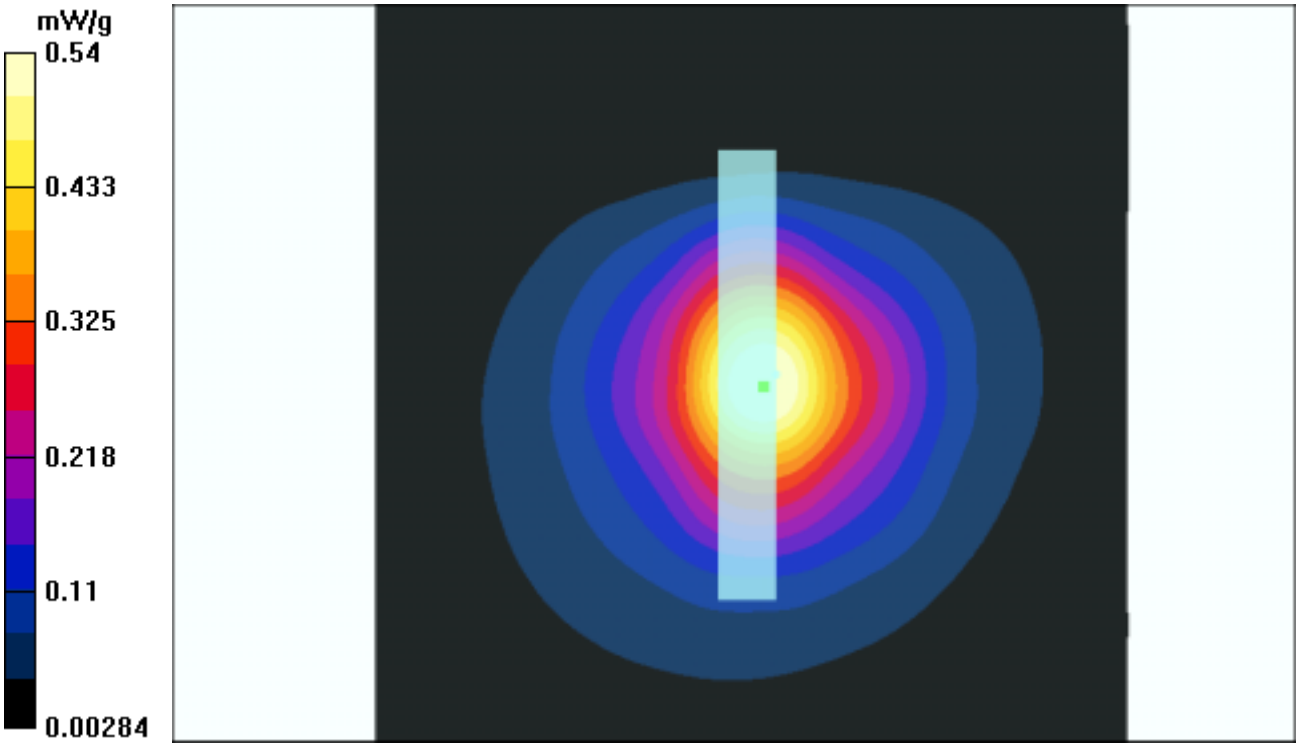
WLAN-Mobile Adapter 2202 Dell D600 11g Tip - Mode 8 Ch 6

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: OFDM
Medium: MSL2450 (σ = 1.9677 mho/m, ε_r = 53.0061, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Middle Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 16.8 V/m
Power Drift = 0.2 dB
Maximum value of SAR = 0.56 mW/g

Middle Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.22 W/kg
SAR(1 g) = 0.504 mW/g; SAR(10 g) = 0.226 mW/g
Reference Value = 16.8 V/m
Power Drift = 0.2 dB
Maximum value of SAR = 0.54 mW/g



Date/Time: 08/04/04 21:51:18

Test Laboratory: Advance Data Technology

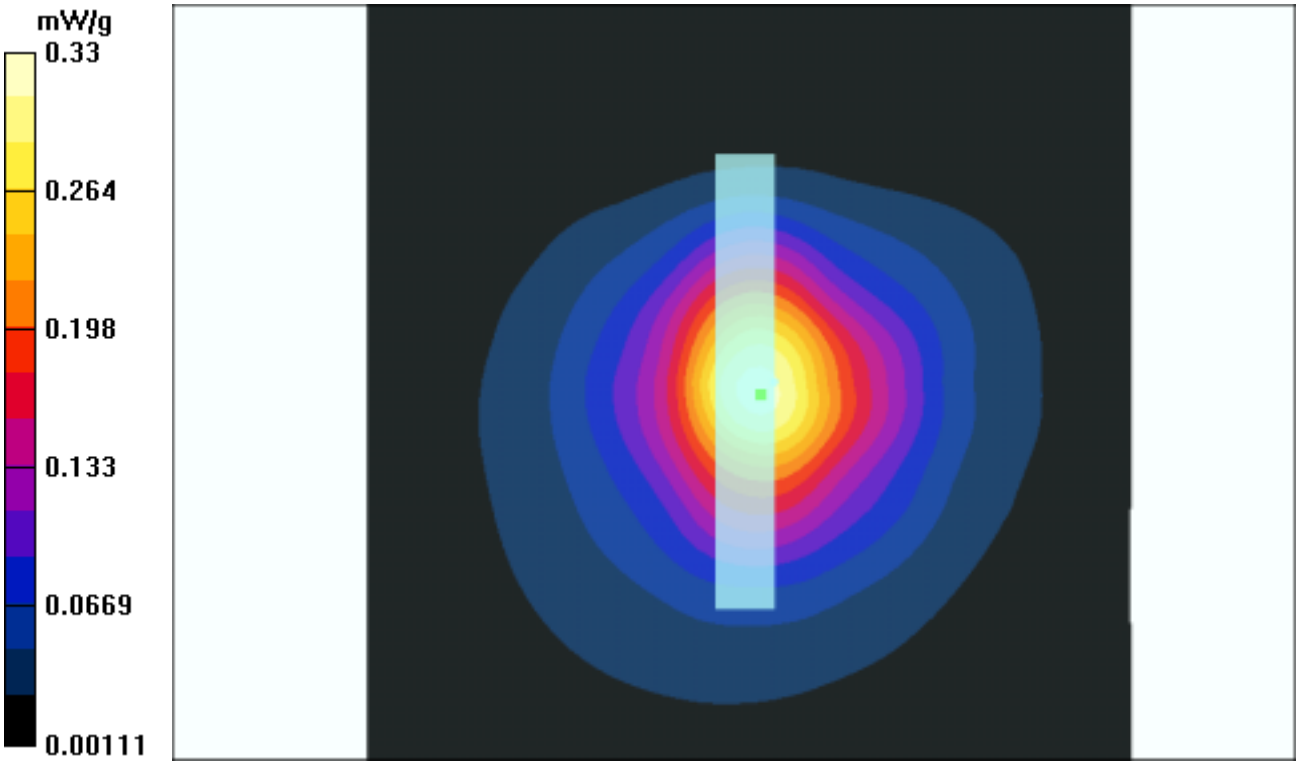
WLAN-Mobile Adapter 2202 Dell D600 11g Tip - Mode 8 Ch 11

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: OFDM
Medium: MSL2450 (σ = 2.0037 mho/m, ε_r = 52.8612, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

High Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 13.6 V/m
Power Drift = 0.02 dB
Maximum value of SAR = 0.319 mW/g

High Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.751 W/kg
SAR(1 g) = 0.309 mW/g; SAR(10 g) = 0.138 mW/g
Reference Value = 13.6 V/m
Power Drift = 0.02 dB
Maximum value of SAR = 0.33 mW/g



Date/Time: 08/05/04 14:09:50

Test Laboratory: Advance Data Technology

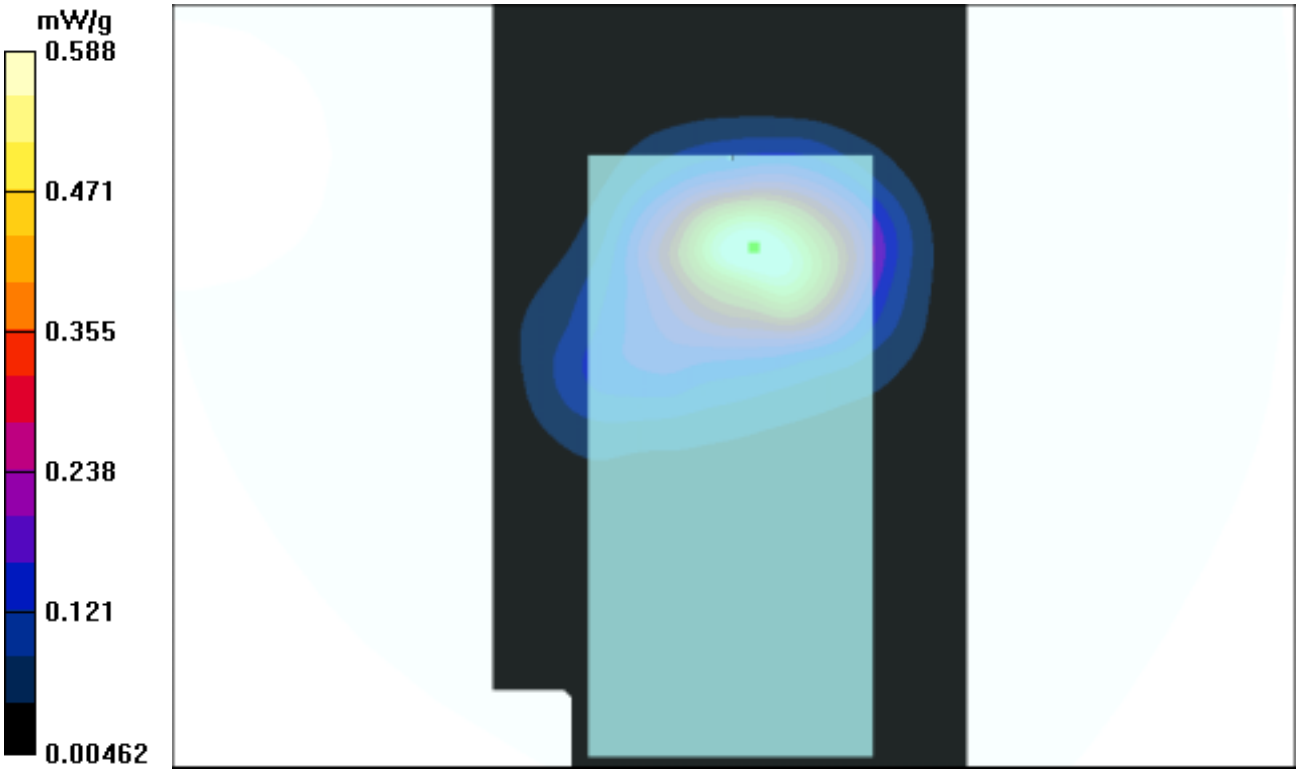
WLAN-Mobile Adapter 2202 Compaq N800C 11b Bottom - Mode 9 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11b ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 (σ = 1.8565 mho/m, ε_r = 54.5435, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 11 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 8.14 V/m
Power Drift = 0.02 dB
Maximum value of SAR = 0.612 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.556 mW/g; SAR(10 g) = 0.273 mW/g
Reference Value = 8.14 V/m
Power Drift = 0.02 dB
Maximum value of SAR = 0.588 mW/g



Date/Time: 08/05/04 14:41:36

Test Laboratory: Advance Data Technology

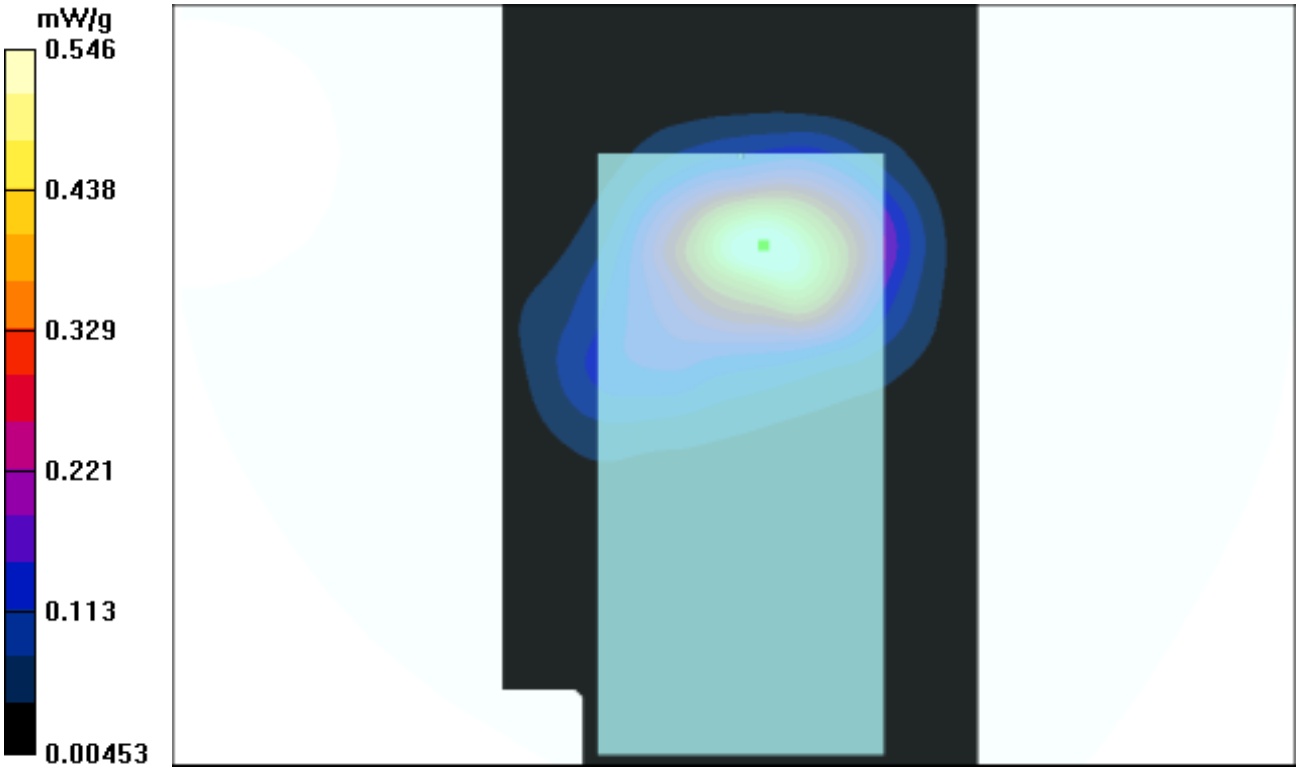
WLAN-Mobile Adapter 2202 Compaq N800C 11b Bottom - Mode 9 Ch 6

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11b ; Frequency: 2437 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 (σ = 1.8938 mho/m, ε_r = 54.5485, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 11 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

Middle Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 8.28 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.561 mW/g

Middle Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.19 W/kg
SAR(1 g) = 0.525 mW/g; SAR(10 g) = 0.258 mW/g
Reference Value = 8.28 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.546 mW/g



Date/Time: 08/05/04 15:12:36

Test Laboratory: Advance Data Technology

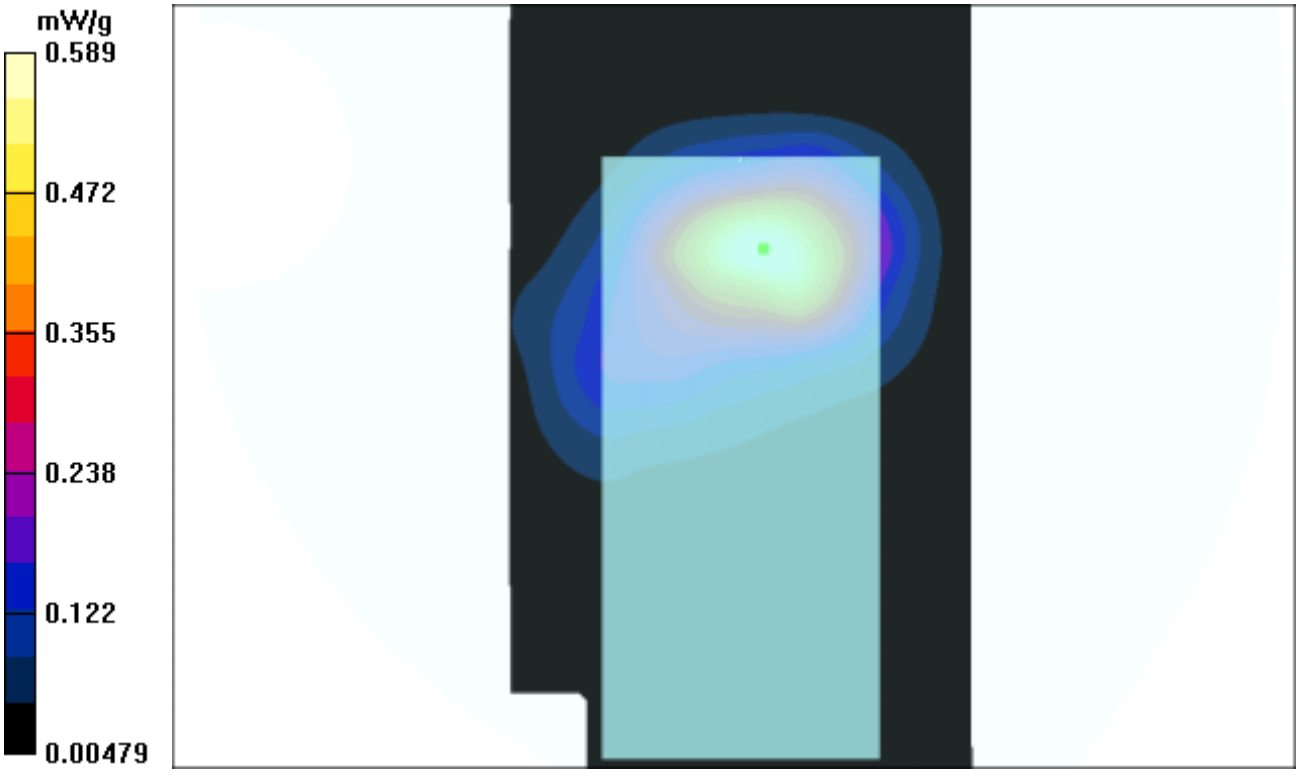
WLAN-Mobile Adapter 2202 Compaq N800C 11b Bottom - Mode 9 Ch 11

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 (σ = 1.9284 mho/m, ε_r = 54.5474, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 11 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

High Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 8.84 V/m
Power Drift = -0.05 dB
Maximum value of SAR = 0.6 mW/g

High Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.3 W/kg
SAR(1 g) = 0.569 mW/g; SAR(10 g) = 0.281 mW/g
Reference Value = 8.84 V/m
Power Drift = -0.05 dB
Maximum value of SAR = 0.589 mW/g



Date/Time: 08/05/04 11:03:48

Test Laboratory: Advance Data Technology

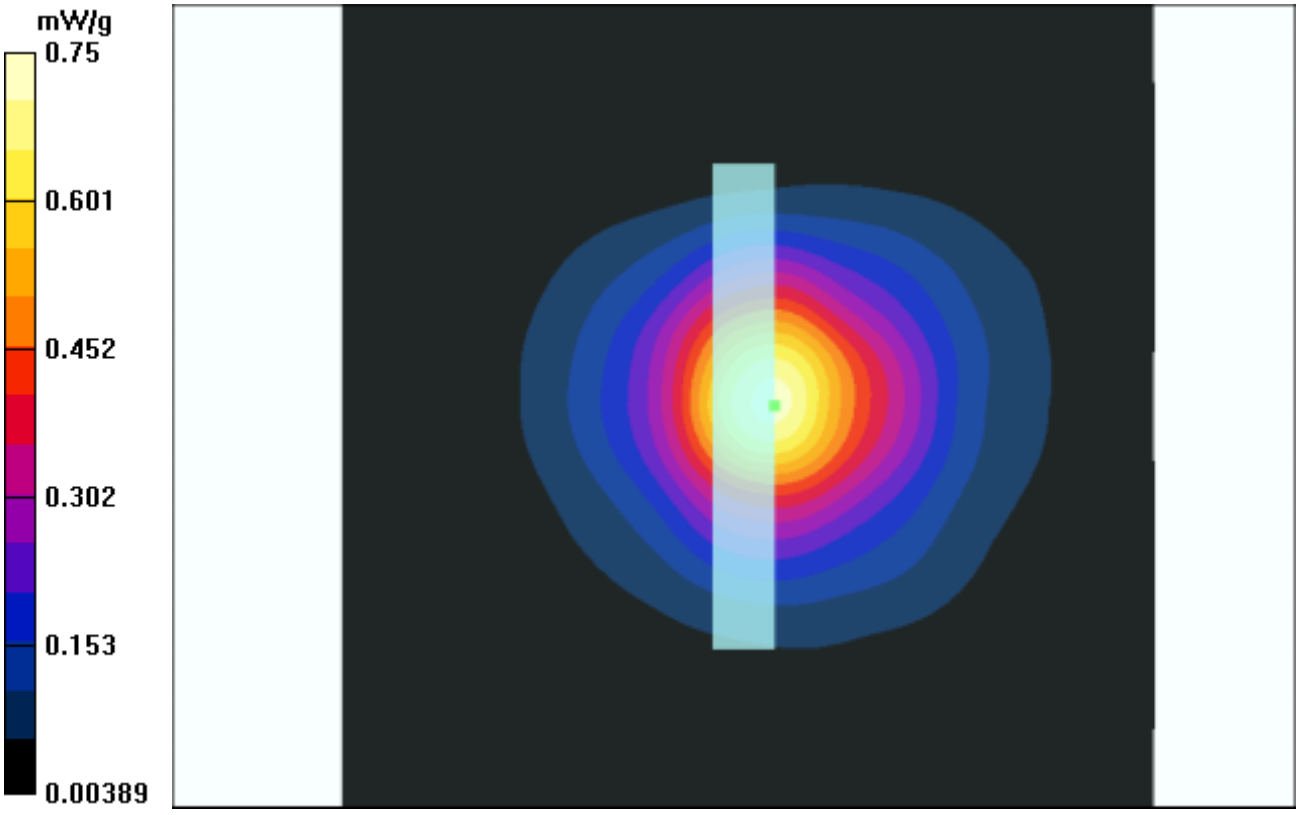
WLAN-Mobile Adapter 2202 Compaq N800C 11b Tip - Mode 10 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: CCK
Medium: MSL2450 (σ = 1.8565 mho/m, ε_r = 54.5435, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 21.1 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.723 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 0.695 mW/g; SAR(10 g) = 0.308 mW/g
Reference Value = 21.1 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.75 mW/g



Date/Time: 08/05/04 11:24:14

Test Laboratory: Advance Data Technology

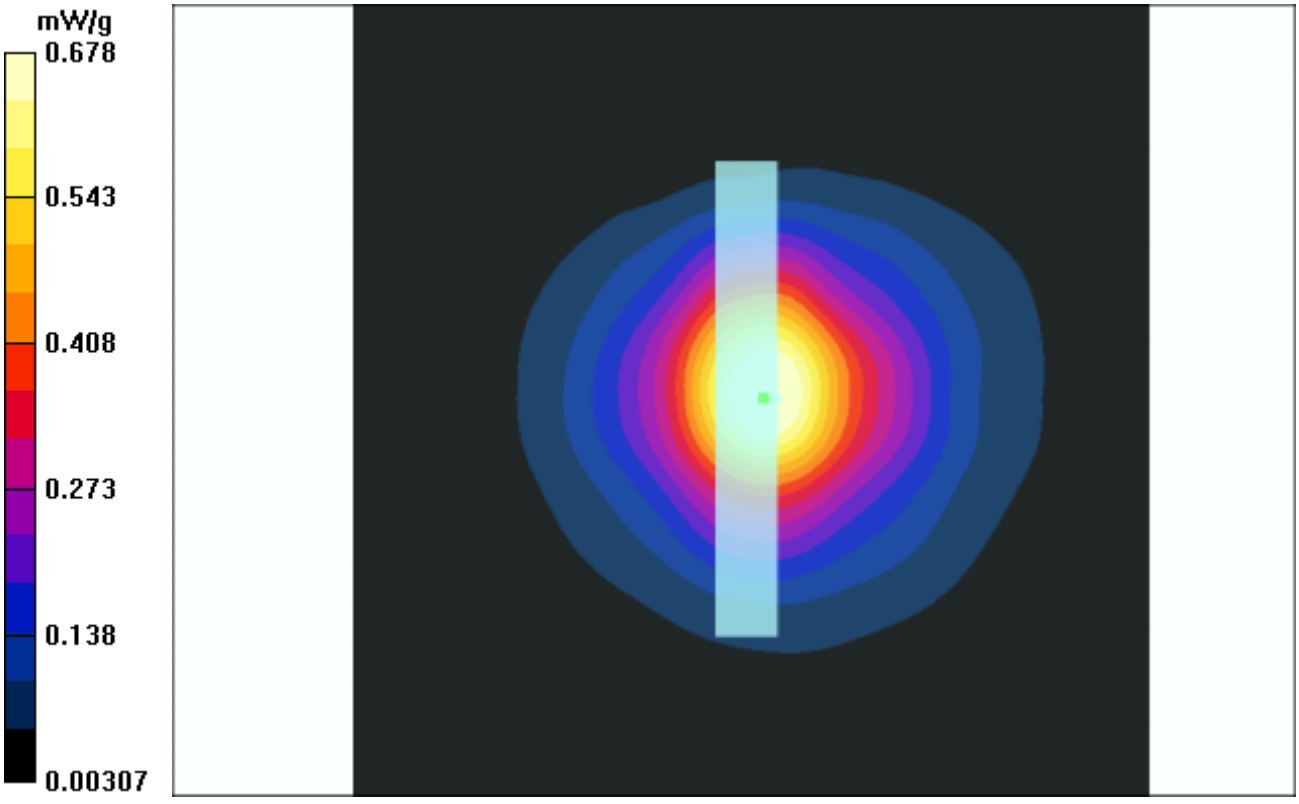
WLAN-Mobile Adapter 2202 Compaq N800C 11b Tip - Mode 10 Ch 6

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11b ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: CCK
Medium: MSL2450 (σ = 1.8938 mho/m, ε_r = 54.5485, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Middle Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 20.3 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.702 mW/g

Middle Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.46 W/kg
SAR(1 g) = 0.624 mW/g; SAR(10 g) = 0.277 mW/g
Reference Value = 20.3 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.678 mW/g



Date/Time: 08/05/04 11:44:44

Test Laboratory: Advance Data Technology

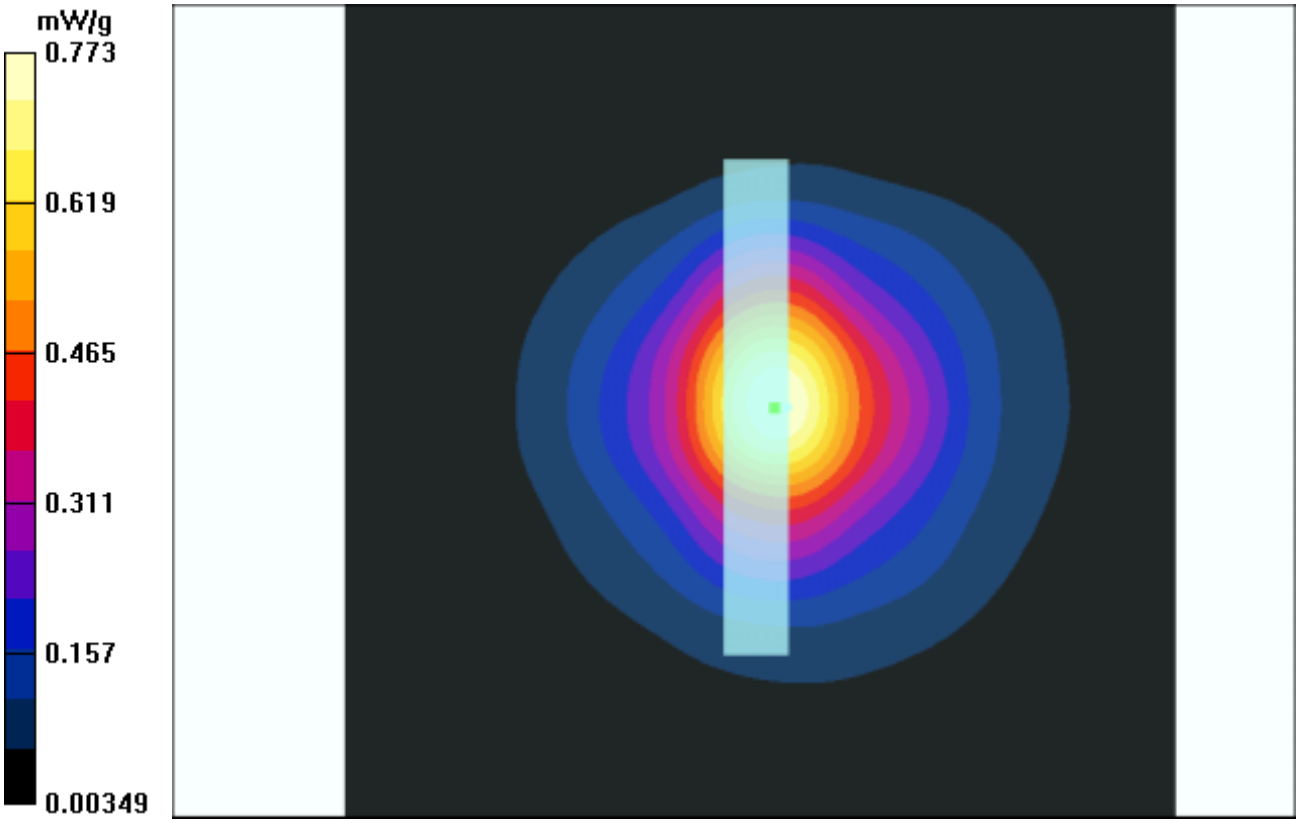
WLAN-Mobile Adapter 2202 Compaq N800C 11b Tip - Mode 10 Ch 11

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: CCK
Medium: MSL2450 (σ = 1.9284 mho/m, ε_r = 54.5474, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

High Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 21 V/m
Power Drift = -0.08 dB
Maximum value of SAR = 0.774 mW/g

High Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.69 W/kg
SAR(1 g) = 0.712 mW/g; SAR(10 g) = 0.316 mW/g
Reference Value = 21 V/m
Power Drift = -0.08 dB
Maximum value of SAR = 0.773 mW/g



Date/Time: 08/05/04 15:36:00

Test Laboratory: Advance Data Technology

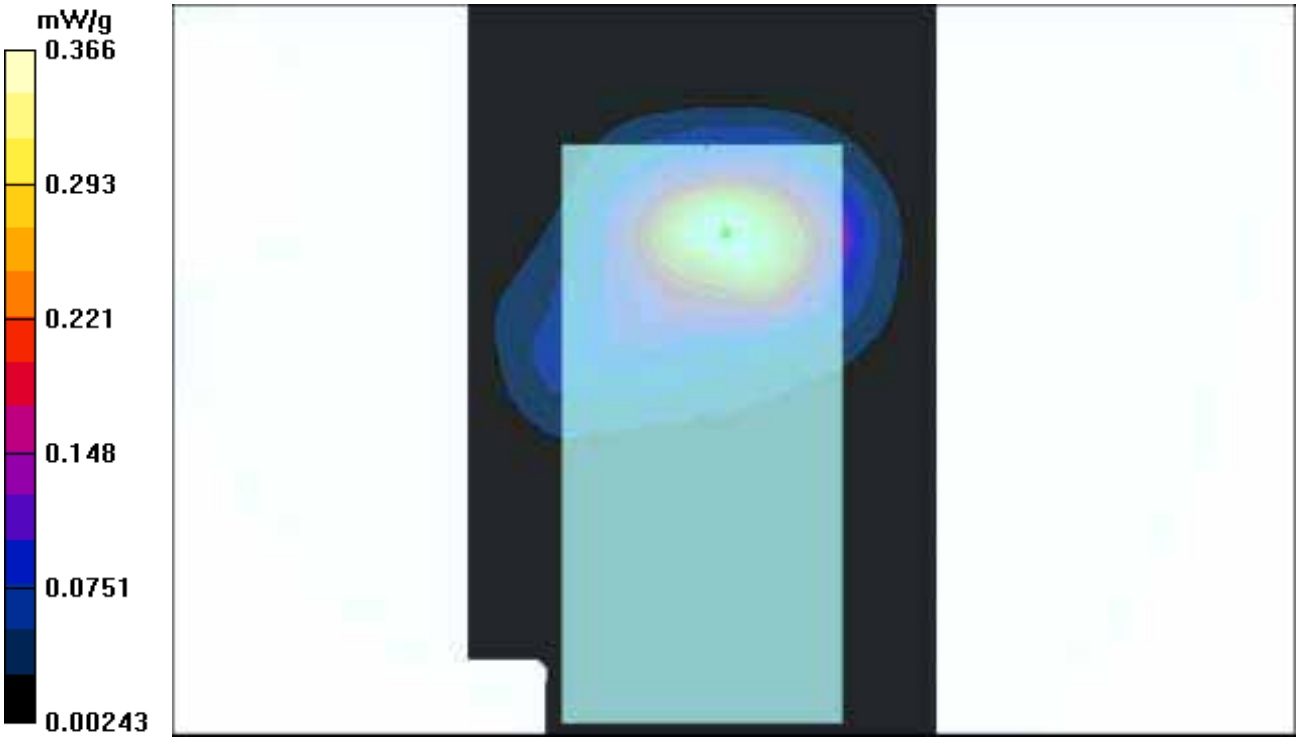
WLAN-Mobile Adapter 2202 Compaq N800C 11g Bottom - Mode 11 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: OFDM
Medium: MSL2450 (σ = 1.8565 mho/m, ε_r = 54.5435, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 11 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (6x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 6.46 V/m
Power Drift = 0.2 dB
Maximum value of SAR = 0.375 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.801 W/kg
SAR(1 g) = 0.354 mW/g; SAR(10 g) = 0.173 mW/g
Reference Value = 6.46 V/m
Power Drift = 0.2 dB
Maximum value of SAR = 0.366 mW/g



Date/Time: 08/05/04 15:58:32

Test Laboratory: Advance Data Technology

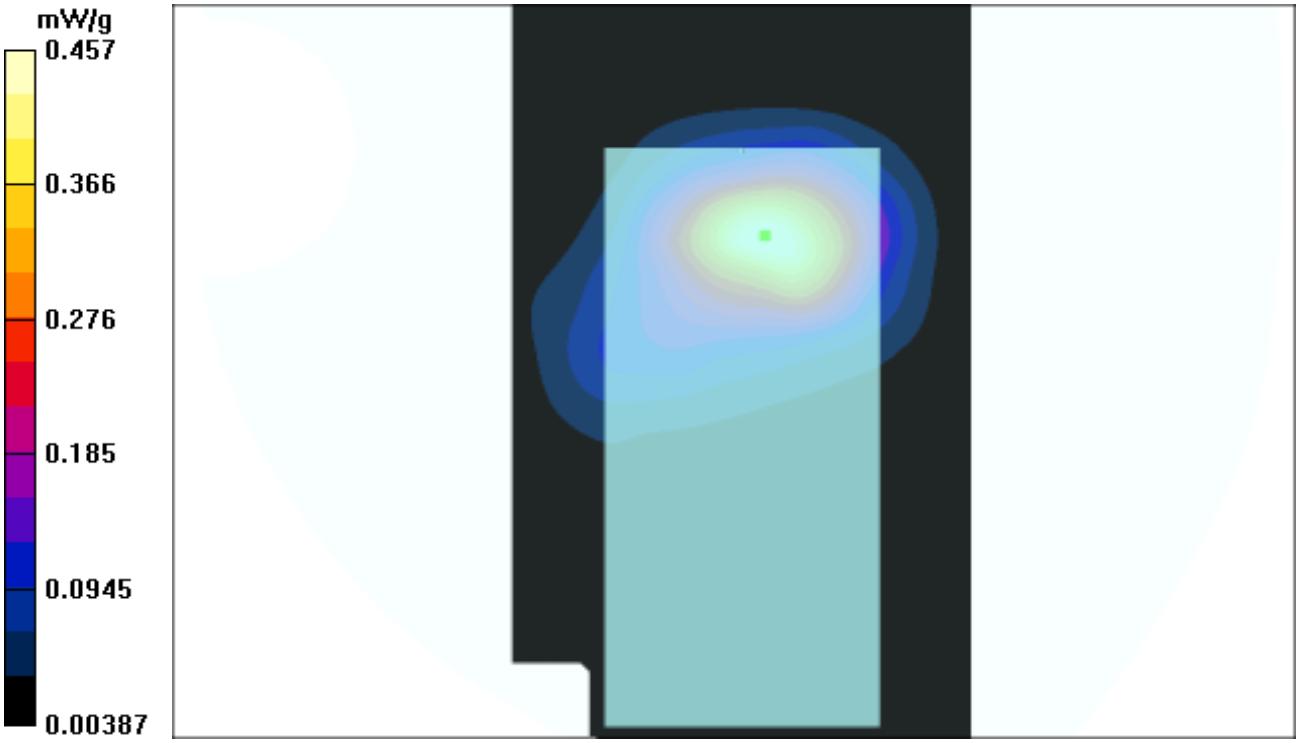
WLAN-Mobile Adapter 2202 Compaq N800C 11g Bottom - Mode 11 Ch 6

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz ; Duty Cycle: 1:1 ; Modulation type: OFDM
Medium: MSL2450 (σ = 1.8938 mho/m, ε_r = 54.5485, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 11 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

Middle Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 7.61 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.46 mW/g

Middle Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.03 W/kg
SAR(1 g) = 0.437 mW/g; SAR(10 g) = 0.215 mW/g
Reference Value = 7.61 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.457 mW/g



Date/Time: 08/05/04 16:45:30

Test Laboratory: Advance Data Technology

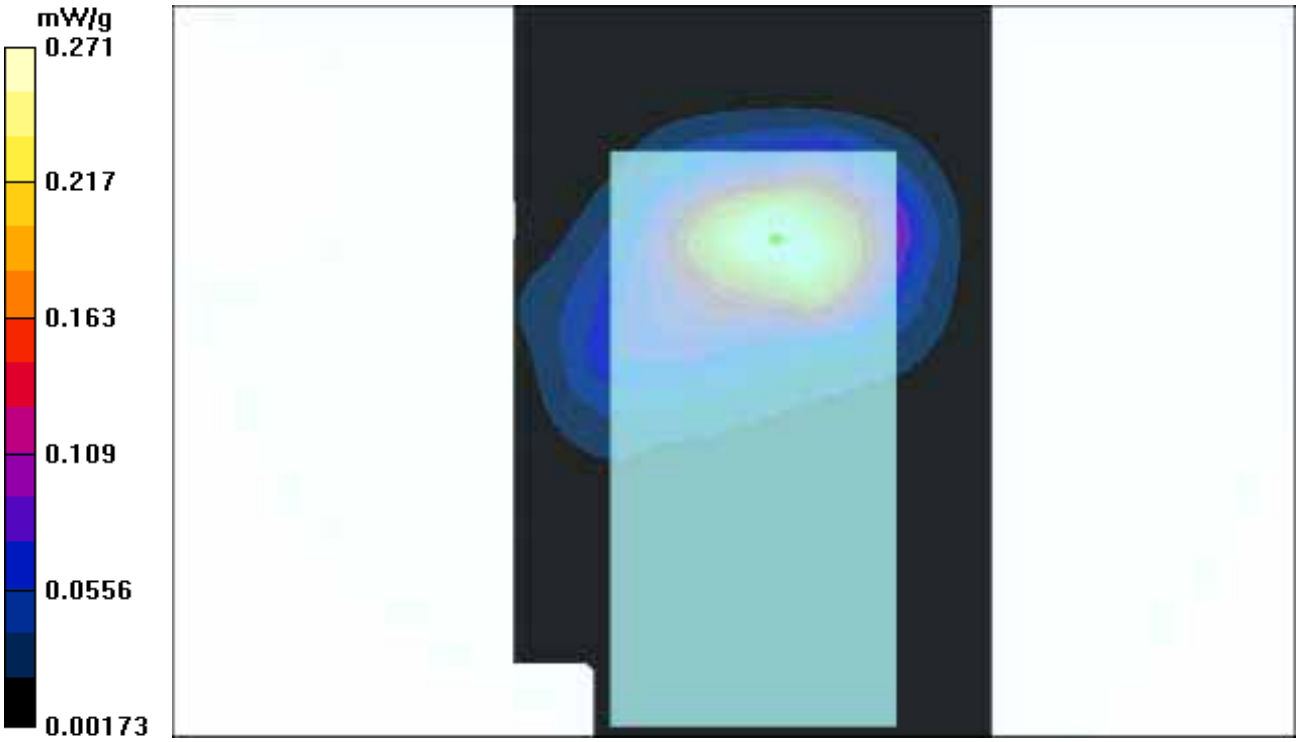
WLAN-Mobile Adapter 2202 Compaq N800C 11g Bottom - Mode 11 Ch 11

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2462 MHz ; Duty Cycle: 1:1 ; Modulation type: OFDM
Medium: MSL2450 (σ = 1.9284 mho/m, ε_r = 54.5474, ρ = 1000 kg/m^3) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 11 mm (The bottom side of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579 ; Calibrated: 2003/8/15
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47 ; Postprocessing SW: SEMCAD, V1.6 Build 115

High Channel/Area Scan (7x11x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 6.02 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.278 mW/g

High Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.604 W/kg
SAR(1 g) = 0.263 mW/g; SAR(10 g) = 0.129 mW/g
Reference Value = 6.02 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.271 mW/g



Date/Time: 08/05/04 13:30:12

Test Laboratory: Advance Data Technology

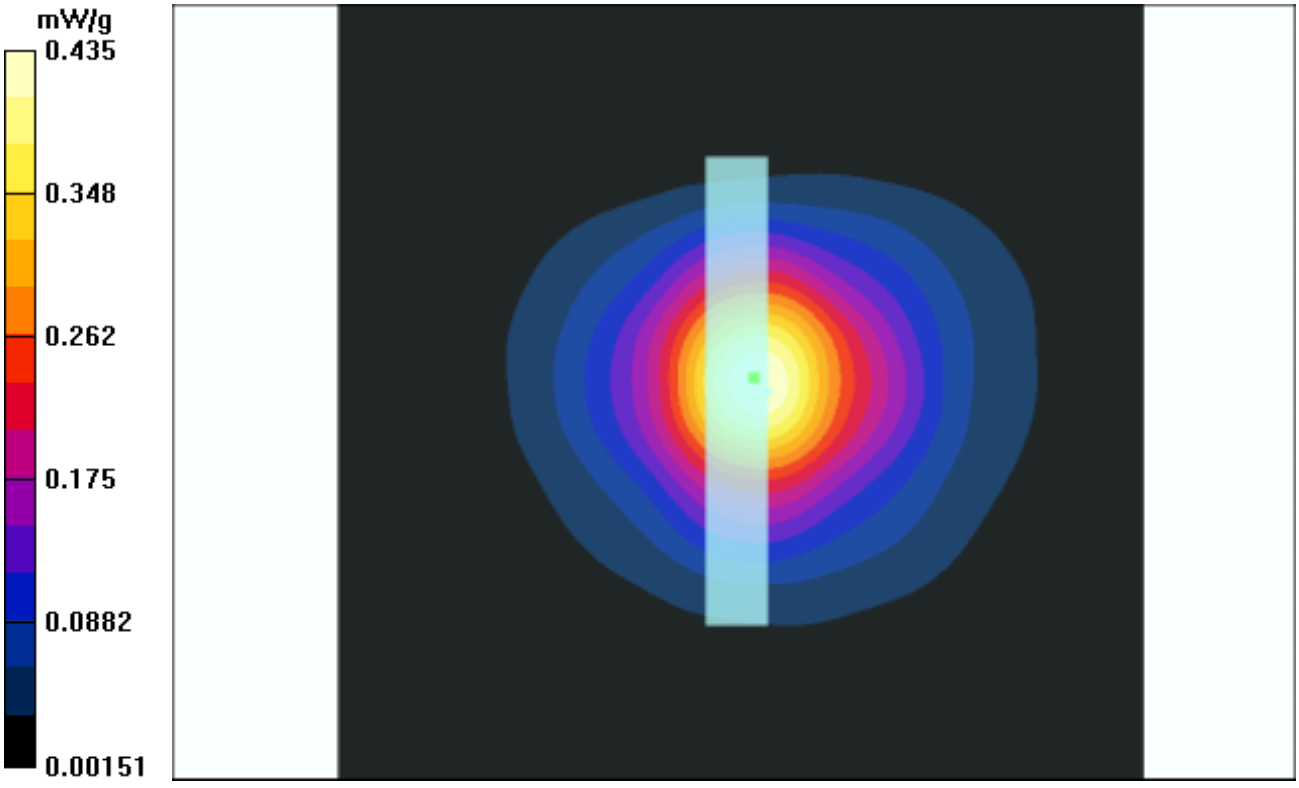
WLAN-Mobile Adapter 2202 Compaq N800C 11g Tip - Mode 12 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: OFDM
Medium: MSL2450 (σ = 1.8565 mho/m, ε_r = 54.5435, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 16.1 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.434 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.923 W/kg
SAR(1 g) = 0.4 mW/g; SAR(10 g) = 0.178 mW/g
Reference Value = 16.1 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.435 mW/g



Date/Time: 08/05/04 13:30:12

Test Laboratory: Advance Data Technology

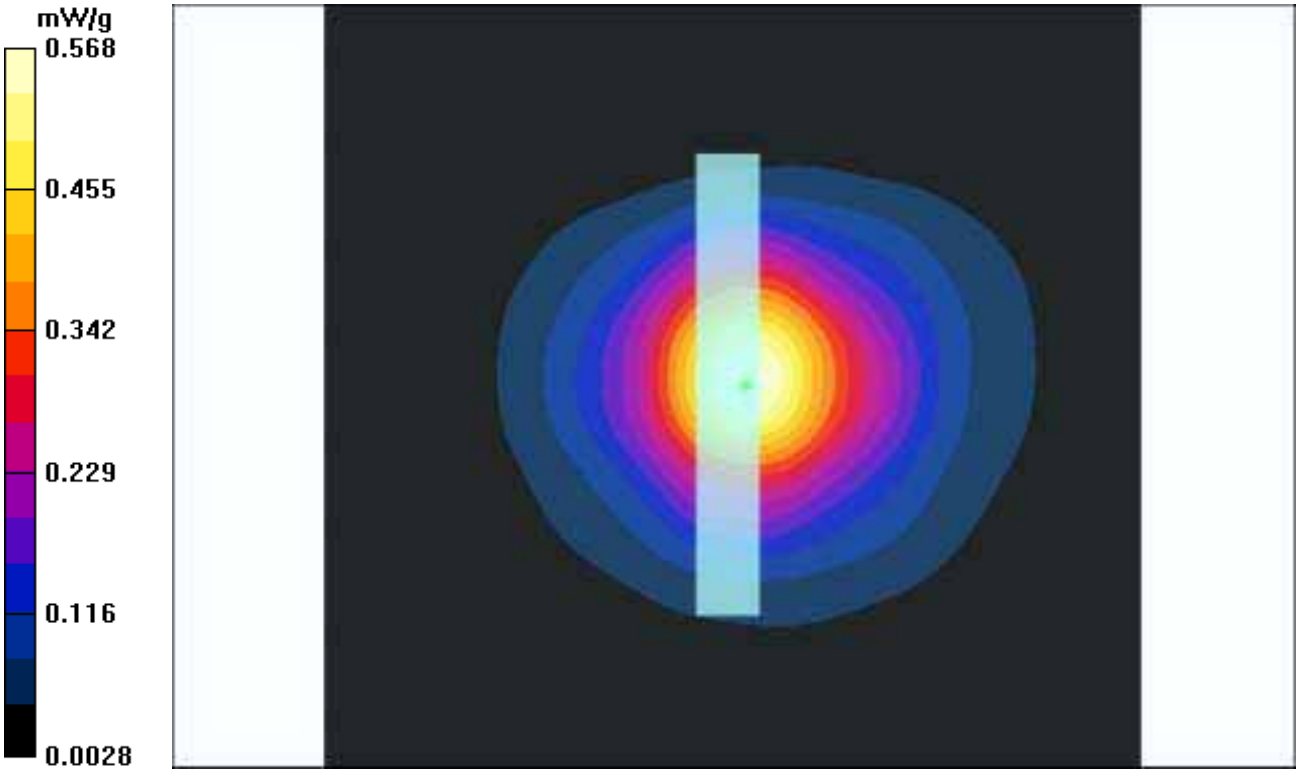
WLAN-Mobile Adapter 2202 Compaq N800C 11g Tip - Mode 12 Ch 6

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: OFDM
Medium: MSL2450 (σ = 1.8938 mho/m, ε_r = 54.5485, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Middle Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 18.4 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.568 mW/g

Middle Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.528 mW/g; SAR(10 g) = 0.236 mW/g
Reference Value = 18.4 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.568 mW/g



Date/Time: 08/05/04 13:30:12

Test Laboratory: Advance Data Technology

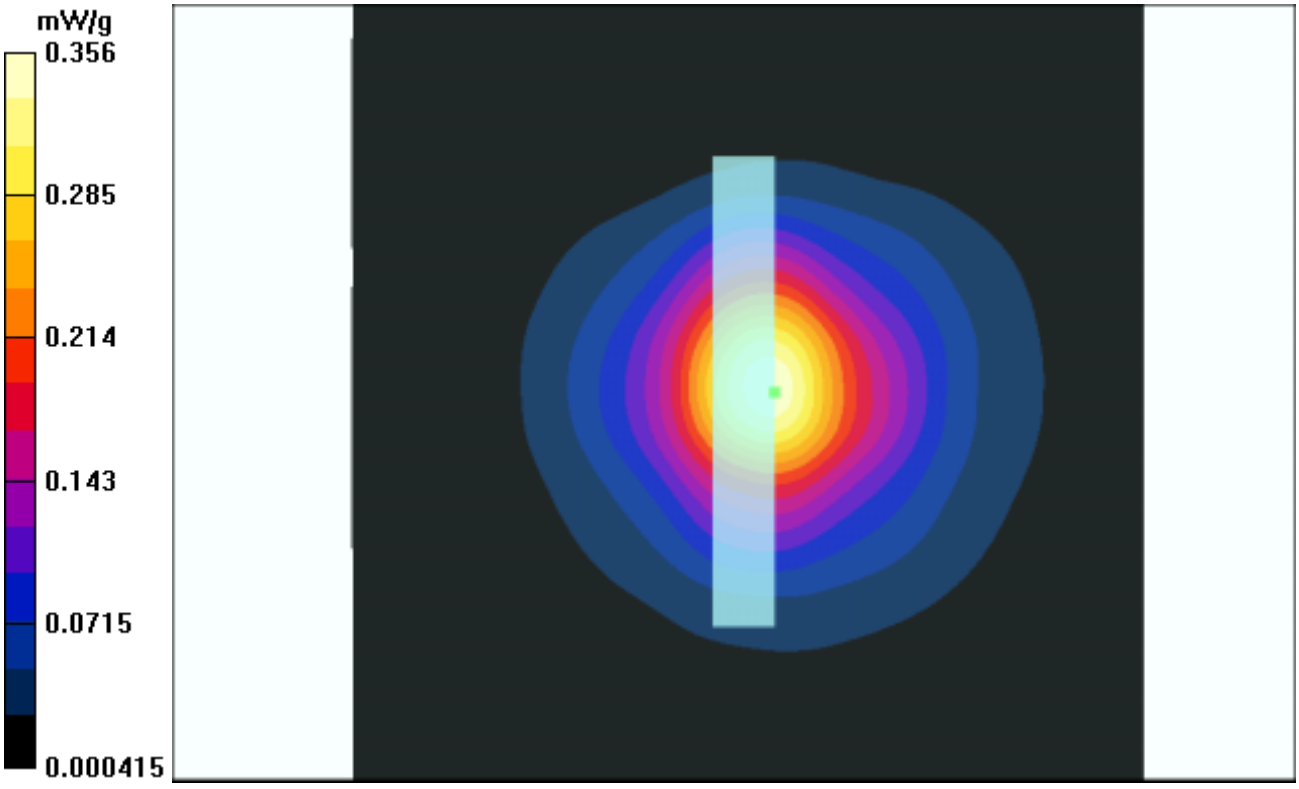
WLAN-Mobile Adapter 2202 Compaq N800C 11g Tip - Mode 12 Ch 11

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: OFDM
Medium: MSL2450 (σ = 1.9284 mho/m, ε_r = 54.5474, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

High Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 14.2 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.351 mW/g

High Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 0.791 W/kg
SAR(1 g) = 0.326 mW/g; SAR(10 g) = 0.143 mW/g
Reference Value = 14.2 V/m
Power Drift = -0.1 dB
Maximum value of SAR = 0.356 mW/g



Date/Time: 08/04/04 14:04:12

Test Laboratory: Advance Data Technology

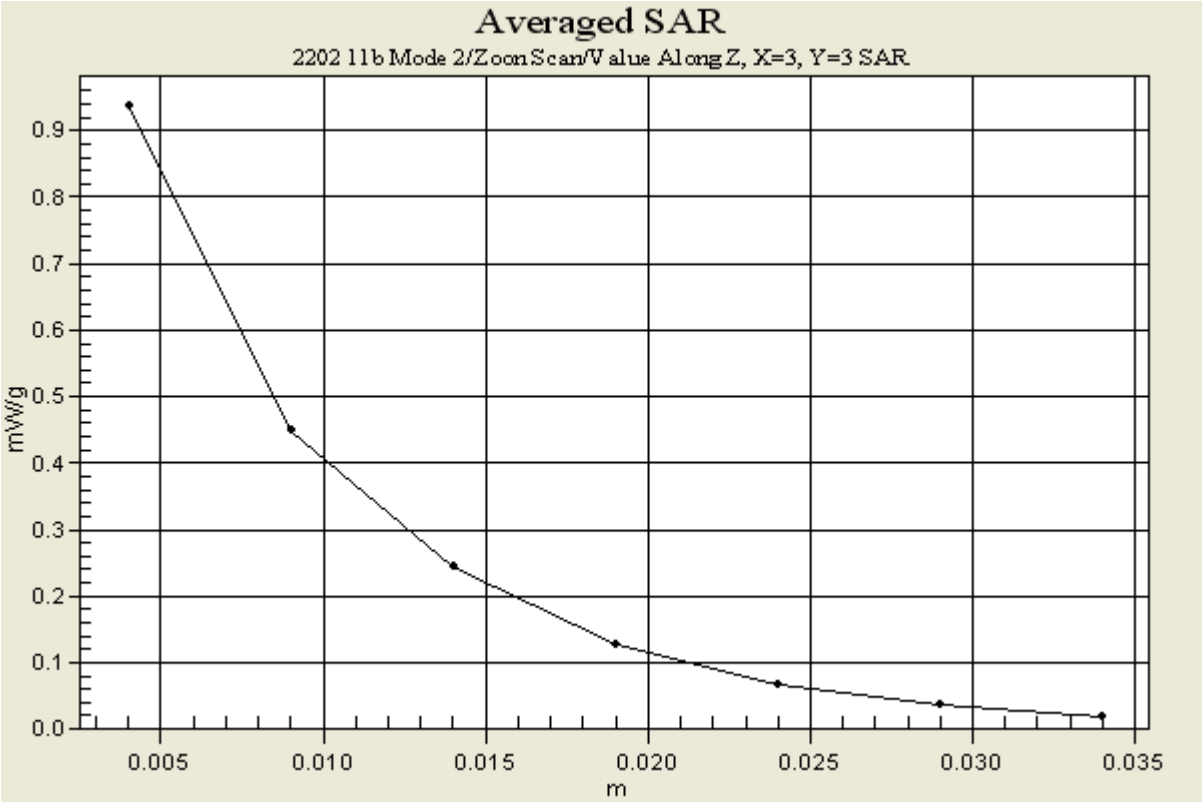
WLAN-Mobile Adapter 2202 Dell C600 11b Tip - Mode 2 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: CCK
Medium: MSL2450 (σ = 1.9352 mho/m, ε_r = 53.1265, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 23.1 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.937 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.98 W/kg
SAR(1 g) = 0.859 mW/g; SAR(10 g) = 0.389 mW/g
Reference Value = 23.1 V/m
Power Drift = -0.2 dB
Maximum value of SAR = 0.939 mW/g



Date/Time: 08/04/04 20:49:38

Test Laboratory: Advance Data Technology

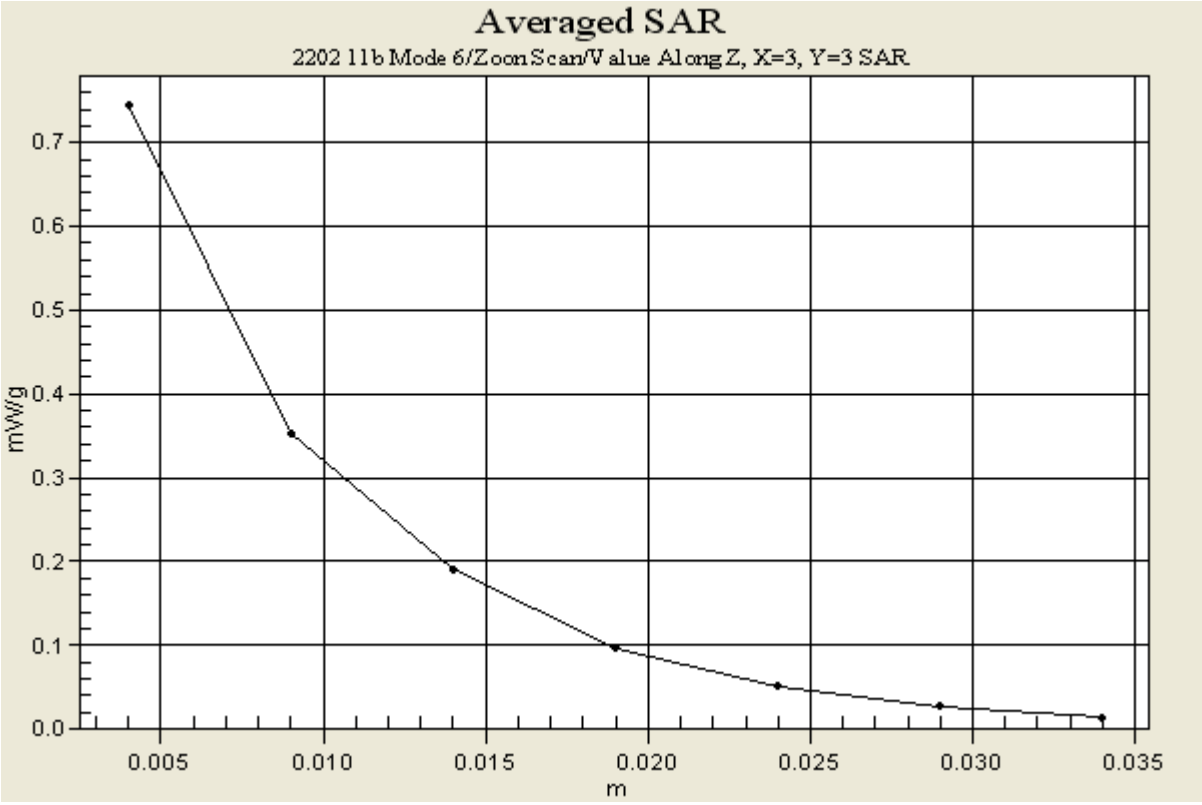
WLAN-Mobile Adapter 2202 Dell D600 11b Tip - Mode 6 Ch 1

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: CCK
Medium: MSL2450 (σ = 1.9352 mho/m, ε_r = 53.1265, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Low Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 20.4 V/m
Power Drift = -0.009 dB
Maximum value of SAR = 0.781 mW/g

Low Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.61 W/kg
SAR(1 g) = 0.685 mW/g; SAR(10 g) = 0.31 mW/g
Reference Value = 20.4 V/m
Power Drift = -0.009 dB
Maximum value of SAR = 0.745 mW/g



Date/Time: 08/05/04 11:44:44

Test Laboratory: Advance Data Technology

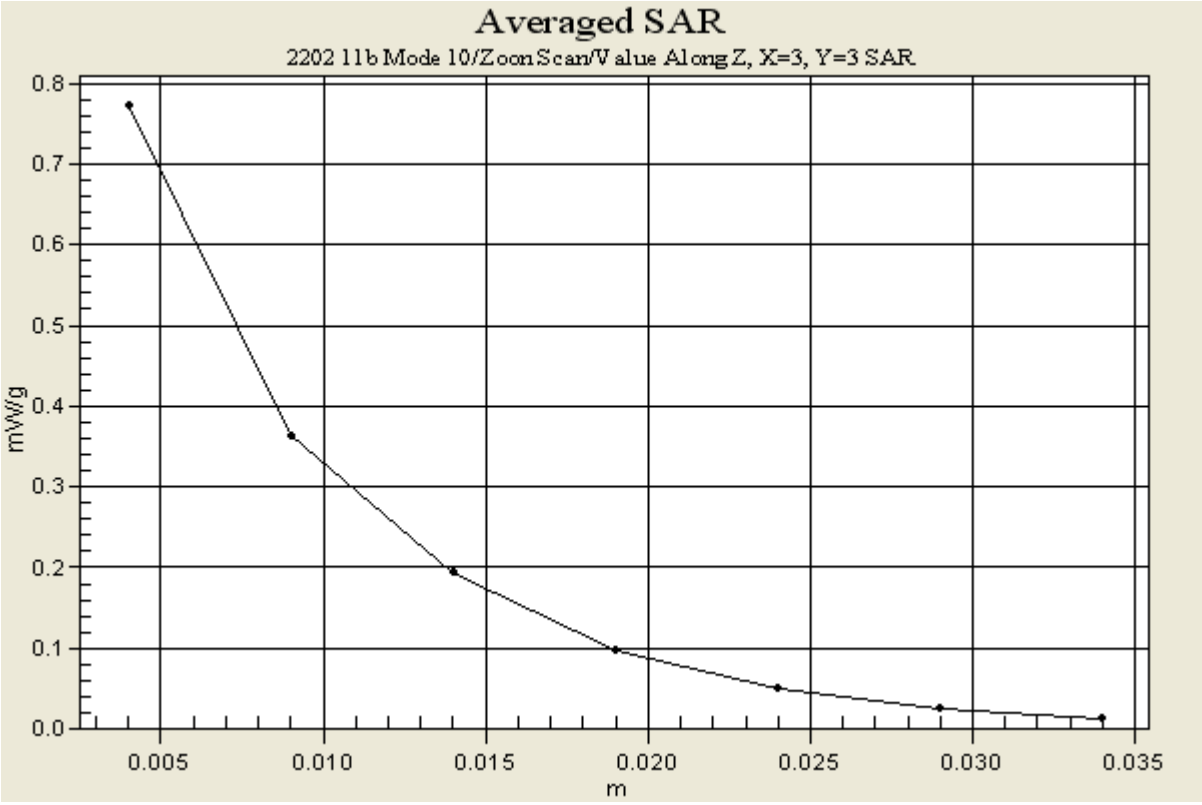
WLAN-Mobile Adapter 2202 Compaq N800C 11b Tip - Mode 10 Ch 11

DUT: Nortel Networks WLAN-Mobile Adapter 2202 ; Type: WLAN-Mobile Adapter 2202 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: CCK
Medium: MSL2450 (σ = 1.9284 mho/m, ε_r = 54.5474, ρ = 1000 kg/m^3) ; Liquid level : 155 mm
Phantom section: Flat Section ; Separation distance : 0 mm (The tip of the EUT to the Phantom)
Antenna type : Internal Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

High Channel/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 21 V/m
Power Drift = -0.08 dB
Maximum value of SAR = 0.774 mW/g

High Channel/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 1.69 W/kg
SAR(1 g) = 0.712 mW/g; SAR(10 g) = 0.316 mW/g
Reference Value = 21 V/m
Power Drift = -0.08 dB
Maximum value of SAR = 0.773 mW/g



A3 : SYSTEM VALIDATION

Date/Time: 08/04/04 10:24:20

Test Laboratory: Advance Data Technology

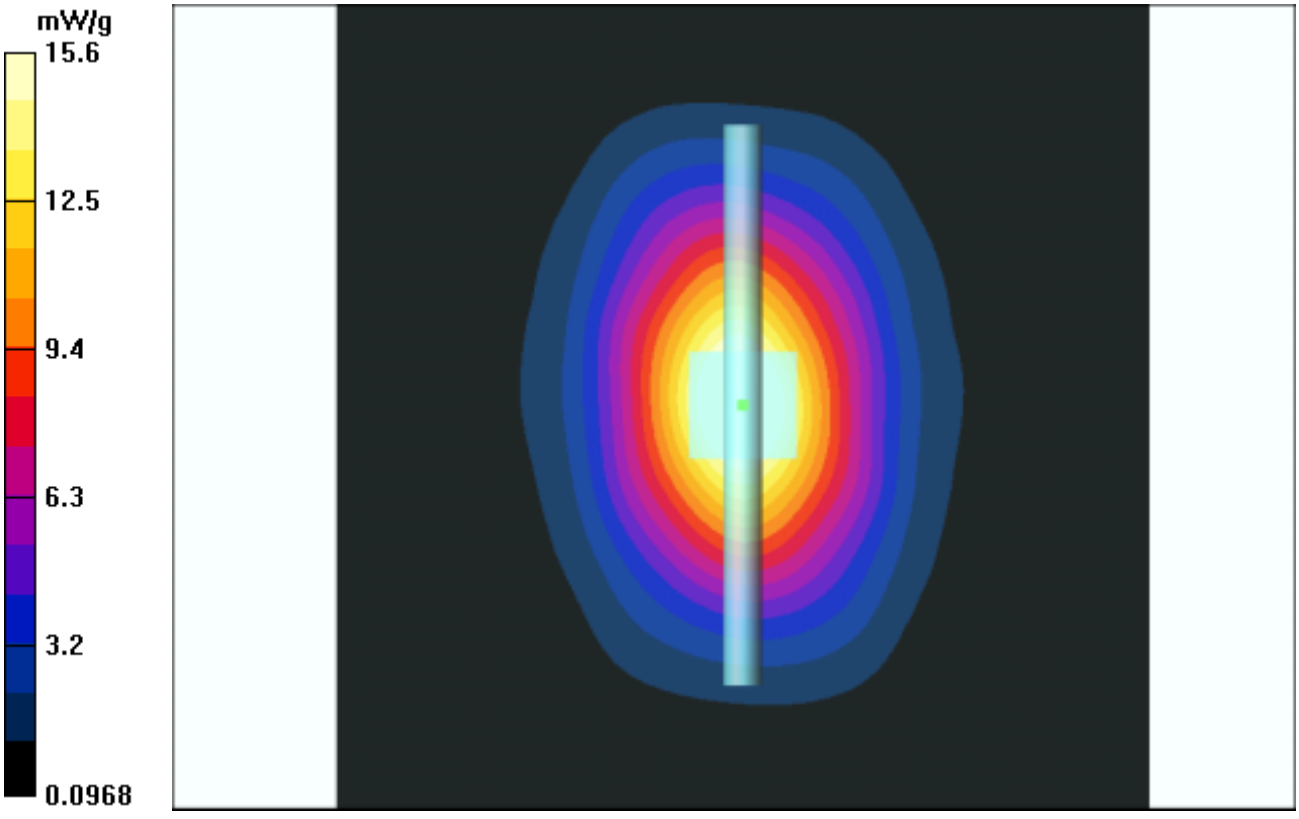
System Validation Check-MSL 2450MHz

DUT: Dipole 2450 MHz ; Type: D2450V2 ; Test Channel Frequency: 2450 MHz

Communication System: CW ; Frequency: 2450 MHz; Duty Cycle: 1:1; Modulation type: CW
Medium: MSL2450 (σ = 1.9859 mho/m, ε_r = 52.9211, ρ = 1000 kg/m^3) ; Liquid level : 152mm
Phantom section: Flat Section ; Separation distance : 10 mm (The feetpoint of the dipole to the Phantom)Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

d=10mm, Pin=250mW/Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 93.7 V/m
Power Drift = -0.04 dB
Maximum value of SAR = 17.5 mW/g

d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 31.8 W/kg
SAR(1 g) = 14.1 mW/g; SAR(10 g) = 6.28 mW/g
Reference Value = 93.7 V/m
Power Drift = -0.04 dB
Maximum value of SAR = 15.6 mW/g



Date/Time: 08/05/04 08:45:18

Test Laboratory: Advance Data Technology

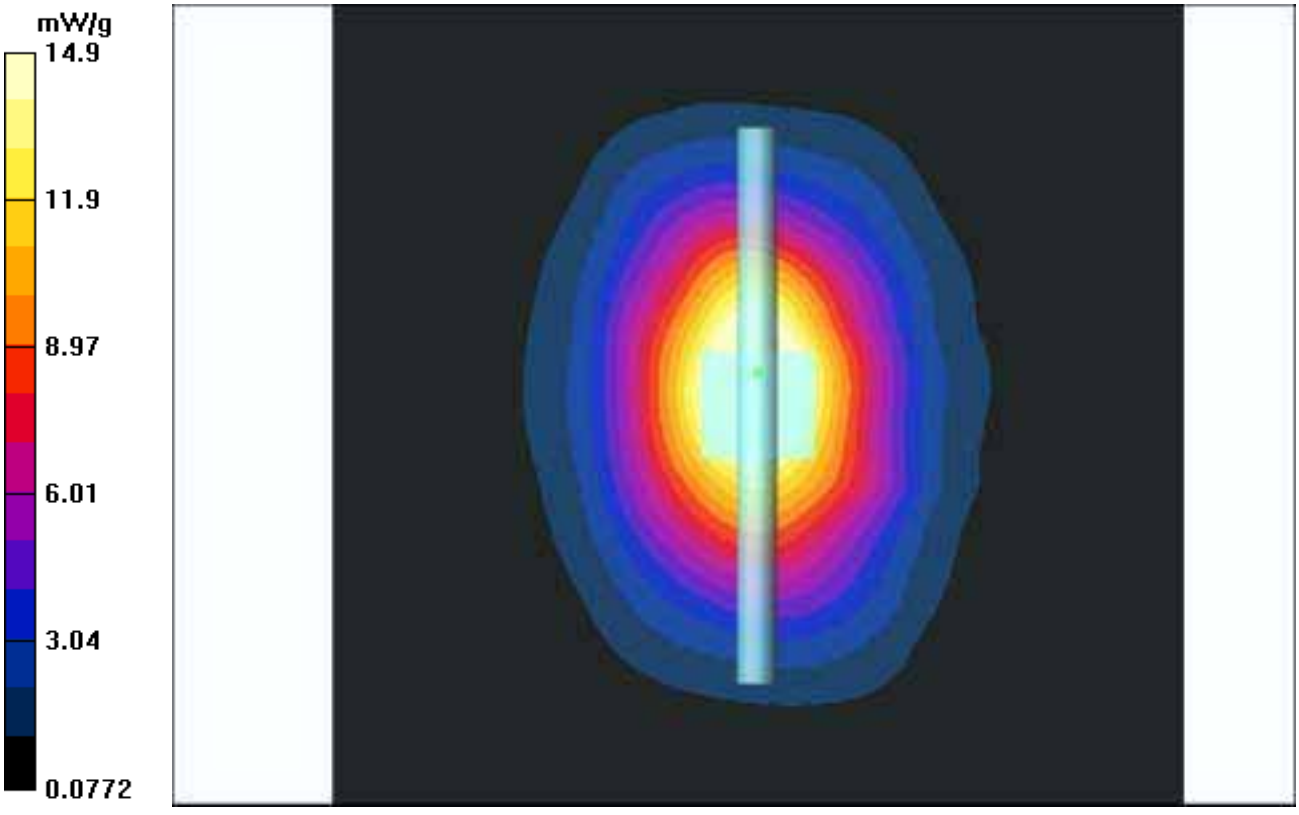
System Validation Check-MSL 2450MHz

DUT: Dipole 2450 MHz ; Type: D2450V2 ; Test Channel Frequency: 2450 MHz

Communication System: CW ; Frequency: 2450 MHz; Duty Cycle: 1:1; Modulation type: CW
Medium: MSL2450 (σ = 1.9118 mho/m, ε_r = 54.5568, ρ = 1000 kg/m^3) ; Liquid level : 152mm
Phantom section: Flat Section ; Separation distance : 10 mm (The feetpoint of the dipole to the Phantom)Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1790 ; ConvF(4.4, 4.4, 4.4) ; Calibrated: 2003/8/29
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2003/8/15
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

d=10mm, Pin=250mW/Area Scan (6x6x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 93.4 V/m
Power Drift = -0.03 dB
Maximum value of SAR = 18.5 mW/g

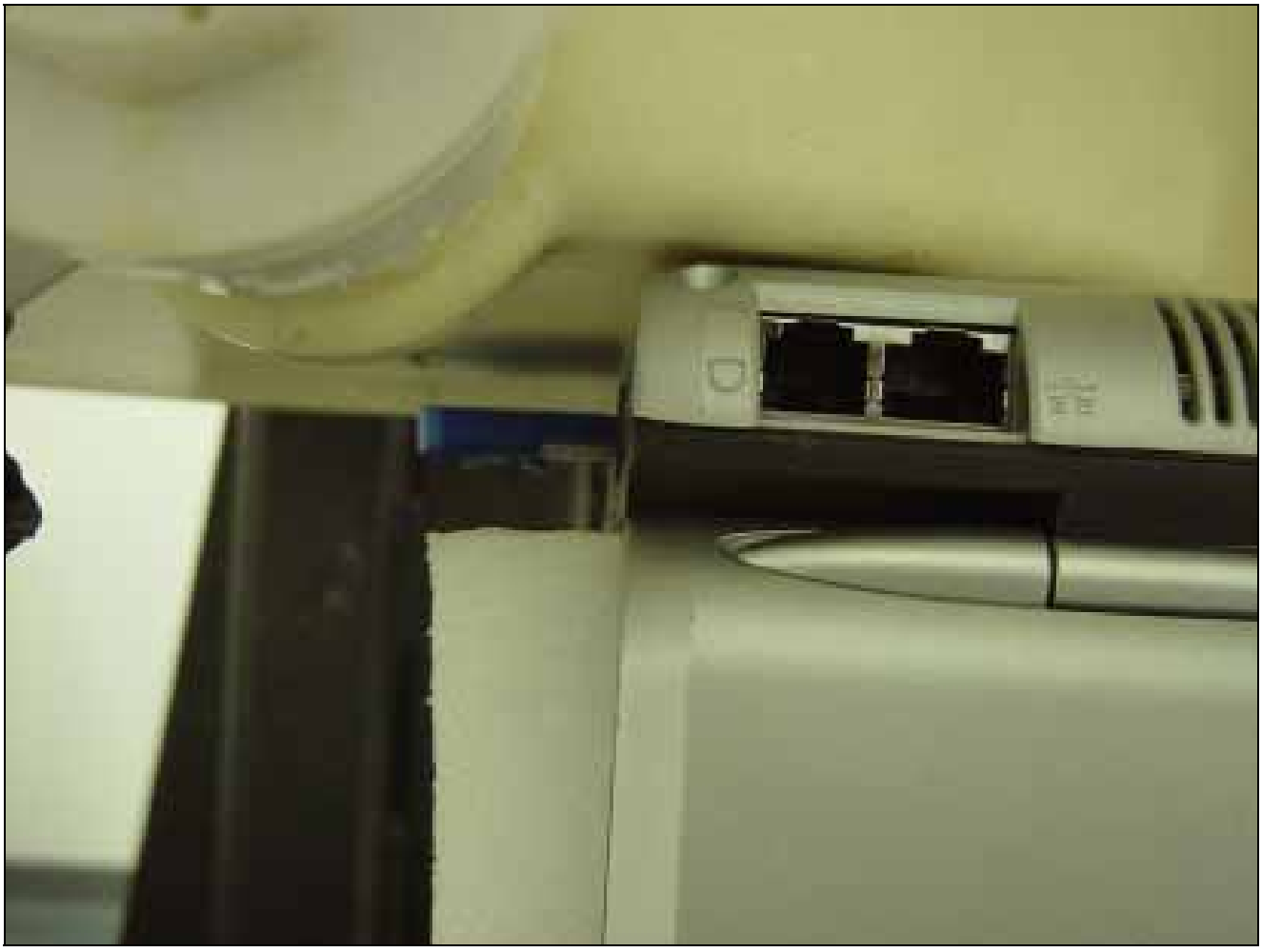
d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 30.6 W/kg
SAR(1 g) = 13.6 mW/g; SAR(10 g) = 6.03 mW/g
Reference Value = 93.4 V/m
Power Drift = -0.03 dB
Maximum value of SAR = 14.9 mW/g



APPENDIX A2: TEST CONFIGURATIONS AND TEST DATA

A1: TEST CONFIGURATION

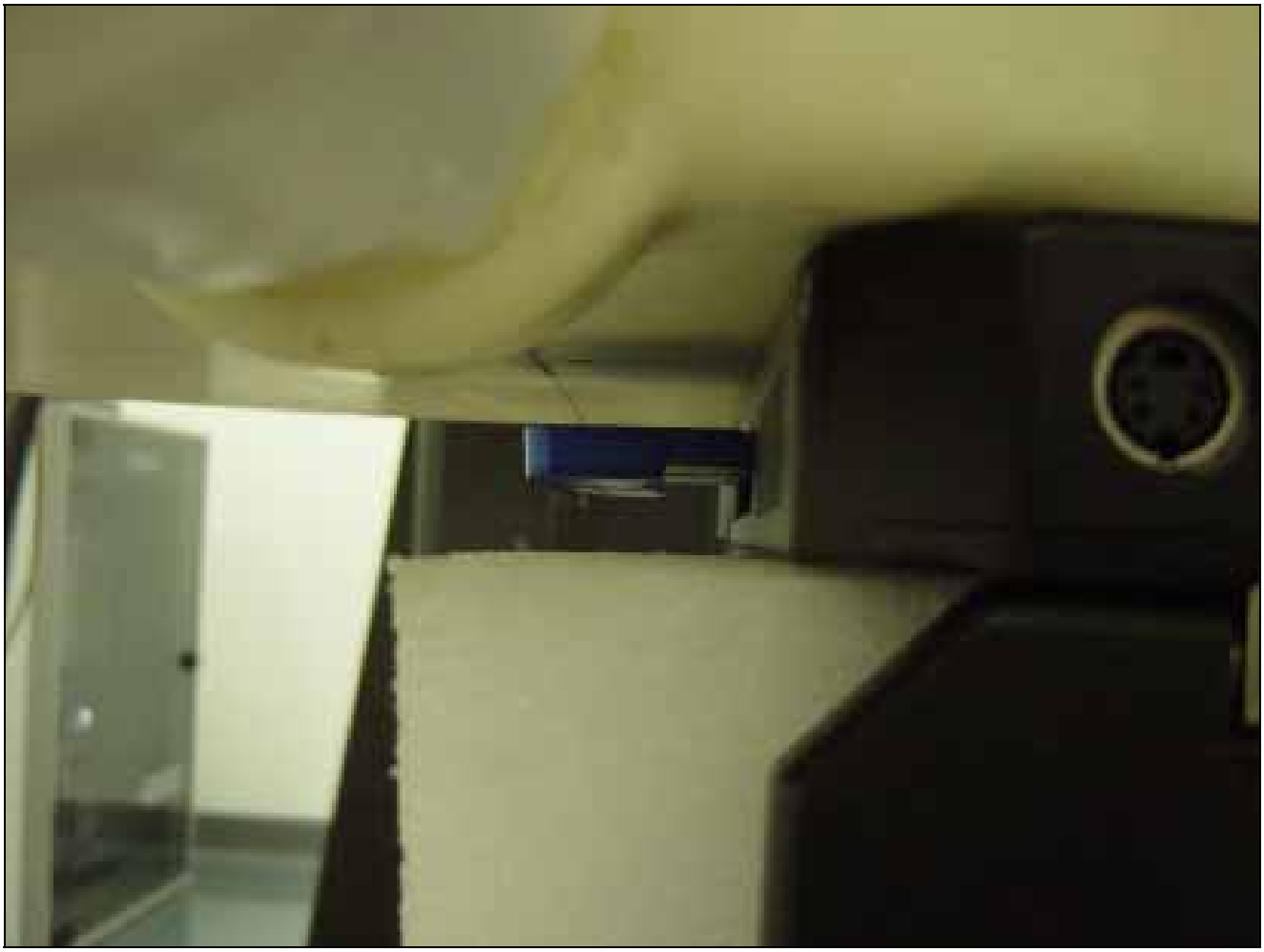
Mode 1 Compaq EVO N1020v Bottom Position



Mode 2 Compaq EVO N1020v Tip Position

The tip of the EUT to the flat phantom distance 15 mm

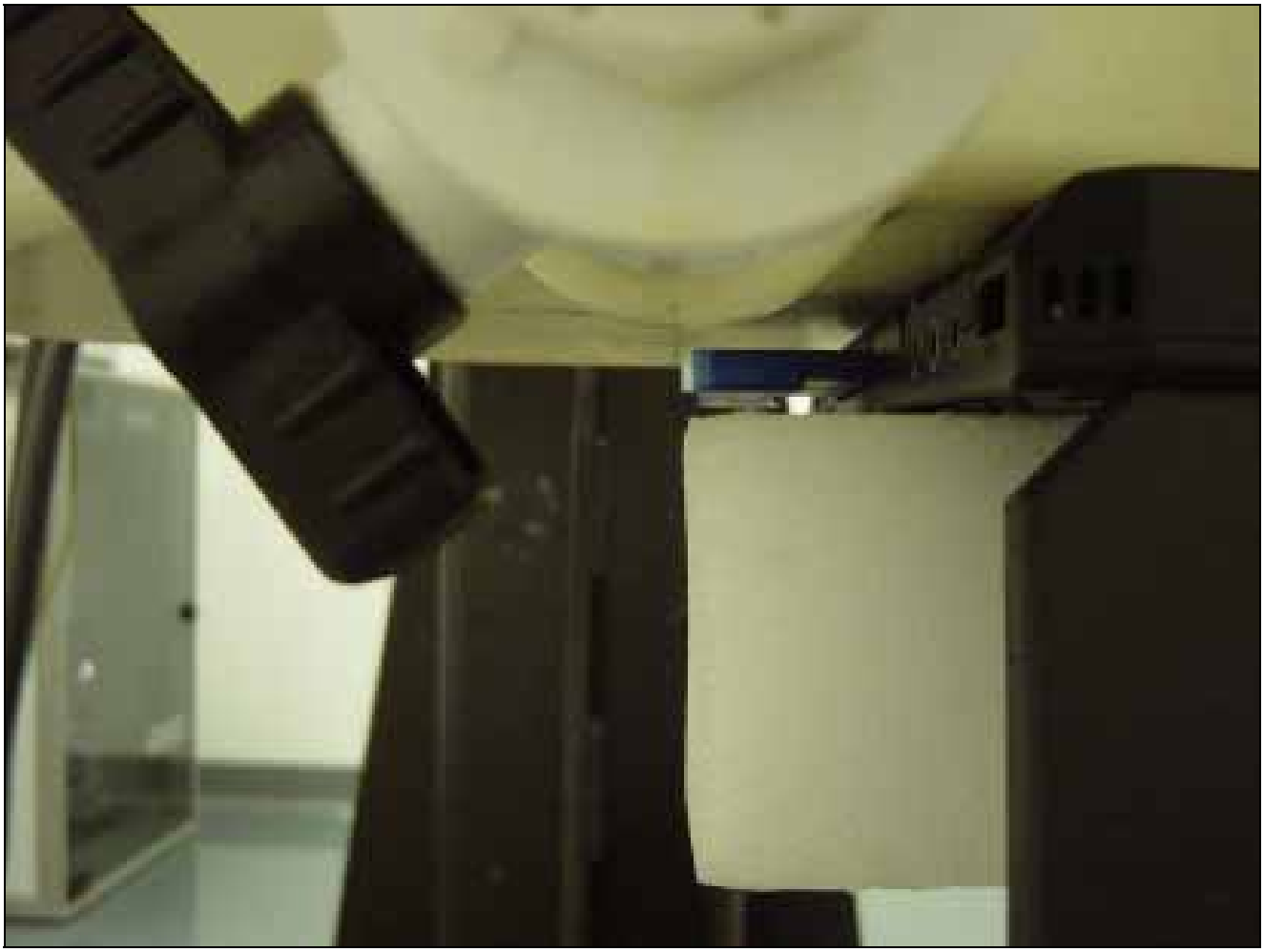
Mode 3 IBM R32 Bottom Position



Mode 4 IBM R32 Tip Position

The tip of the EUT to the flat phantom distance 15 mm

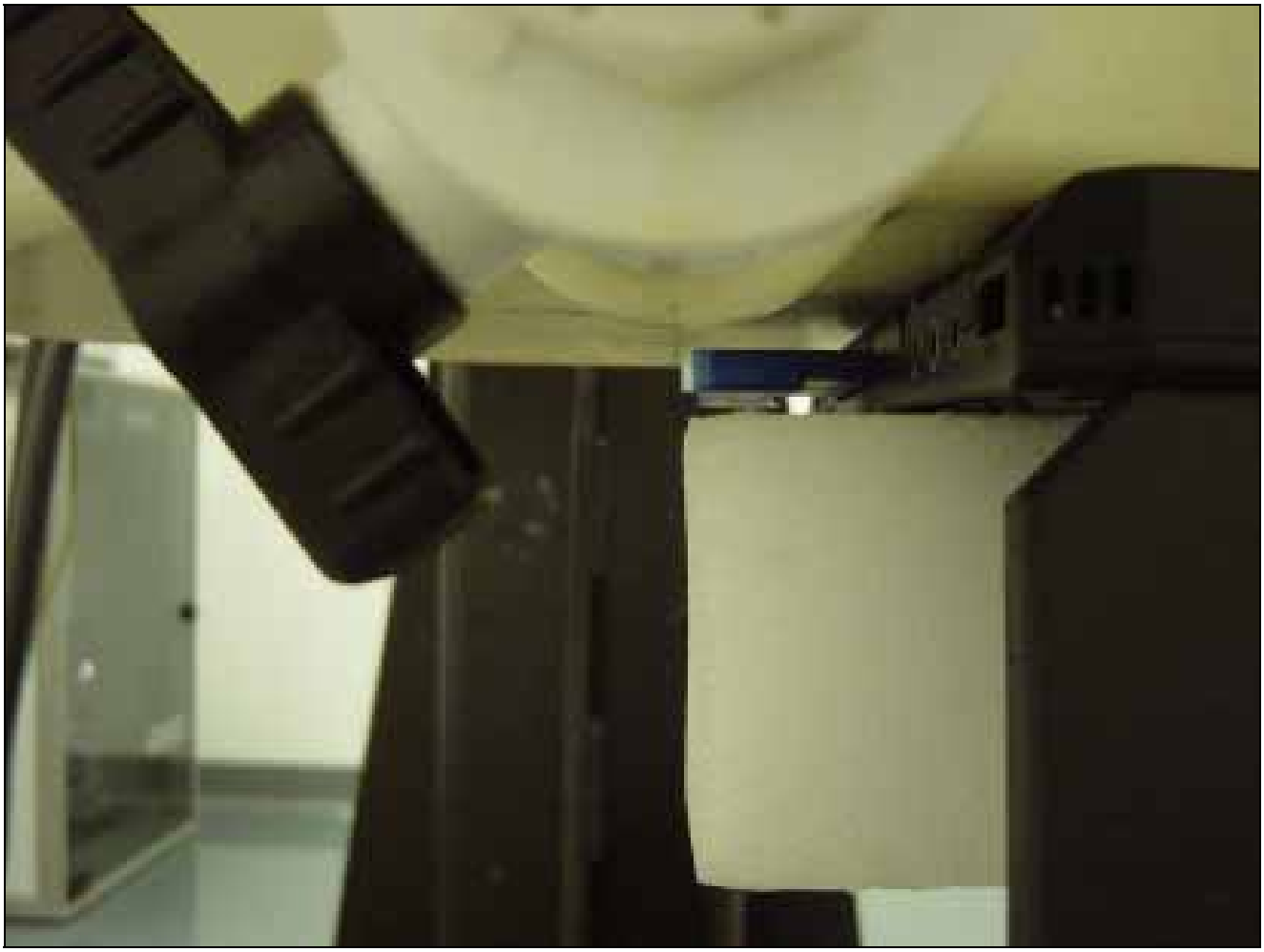
Mode 5 IBM X31Bottom Position



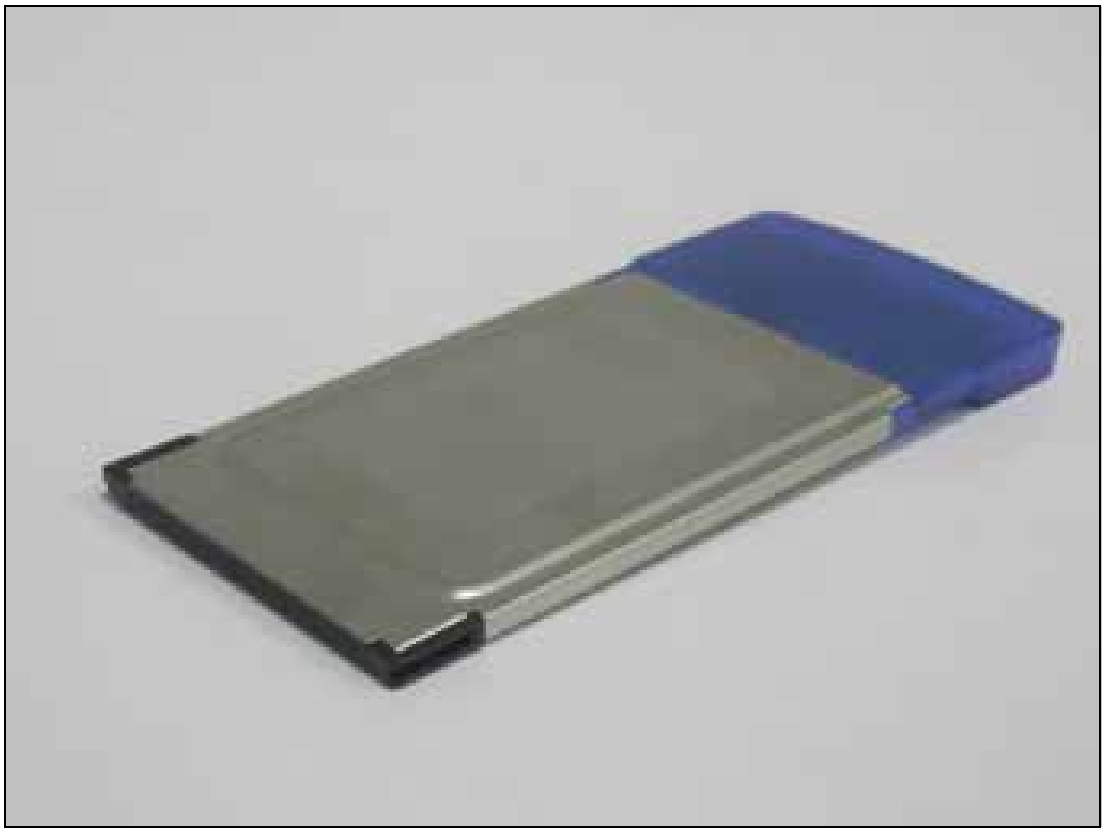
Mode 6 IBM X31 Tip Position

The tip of the EUT to the flat phantom distance 15 mm

Mode 7 IBM X31 Bottom Position



EUT Photo



A2 : TEST DATA

Date/Time: 08/11/04 23:16:34

Test Laboratory: Advance Data Technology

802.11a Compaq N1020v Bottom Mode 1 Ch 5260

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202

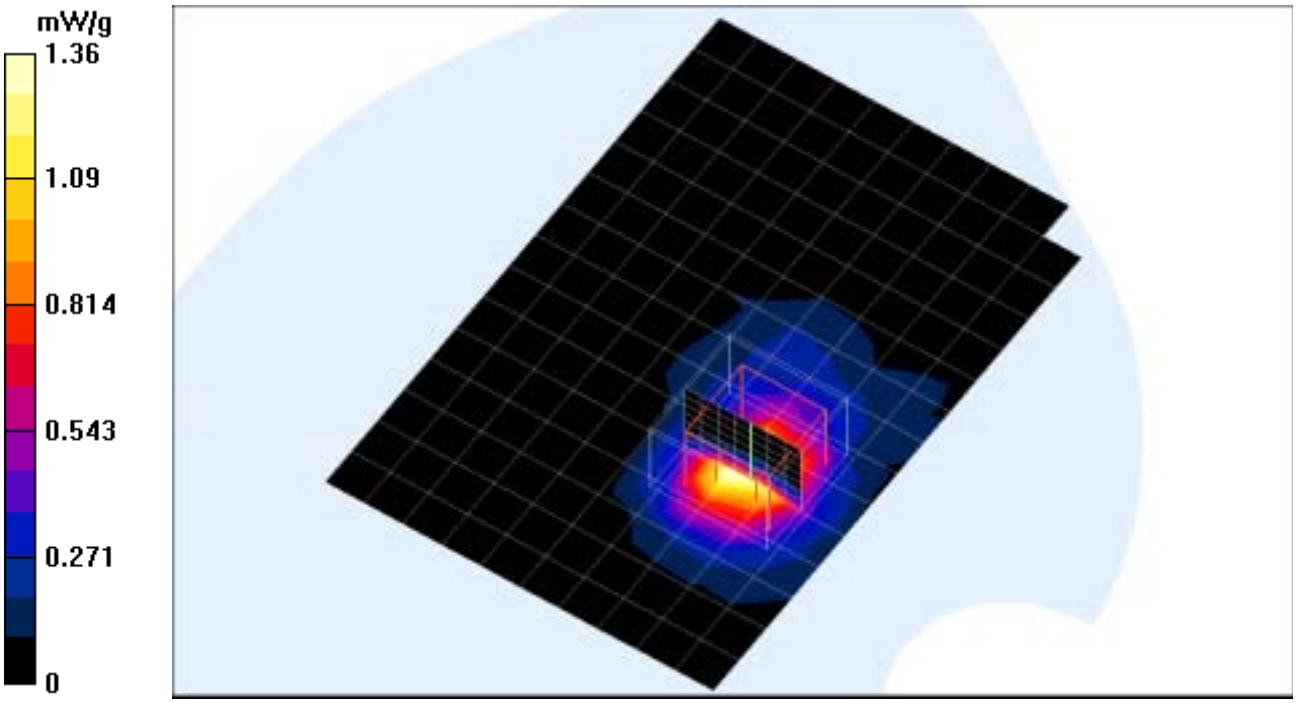
Communication System: IEEE 802.11 A; Frequency: 5260 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5260 MHz; σ = 5.49 mho/m; ε_r = 48.1; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.29, 4.29, 4.29); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

UNII CH=5260 Rate=6Mbps/Area Scan (11x16x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 3.79 V/m; Power Drift = -0.2 dB
Maximum value of SAR (measured) = 1.36 mW/g

UNII CH=5260 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 3.79 V/m; Power Drift = -0.2 dB
Maximum value of SAR (measured) = 1.4 mW/g
Peak SAR (extrapolated) = 2.52 W/kg
SAR(1 g) = 0.872 mW/g; SAR(10 g) = 0.312 mW/g


mW/g
1.36
1.09
0.814
0.543
0.271
0

Date/Time: 08/11/04 23:16:34

Test Laboratory: Advance Data Technology

802.11a Compaq N1020v Bottom Mode 1 Ch 5745

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202

Communication System: IEEE 802.11 A; Frequency: 5745 MHz;Duty Cycle: 1:1
Medium parameters used : f = 5745 MHz; σ = 6.2 mho/m; ε_r = 47.1; ρ =1000 kg/m3

Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C

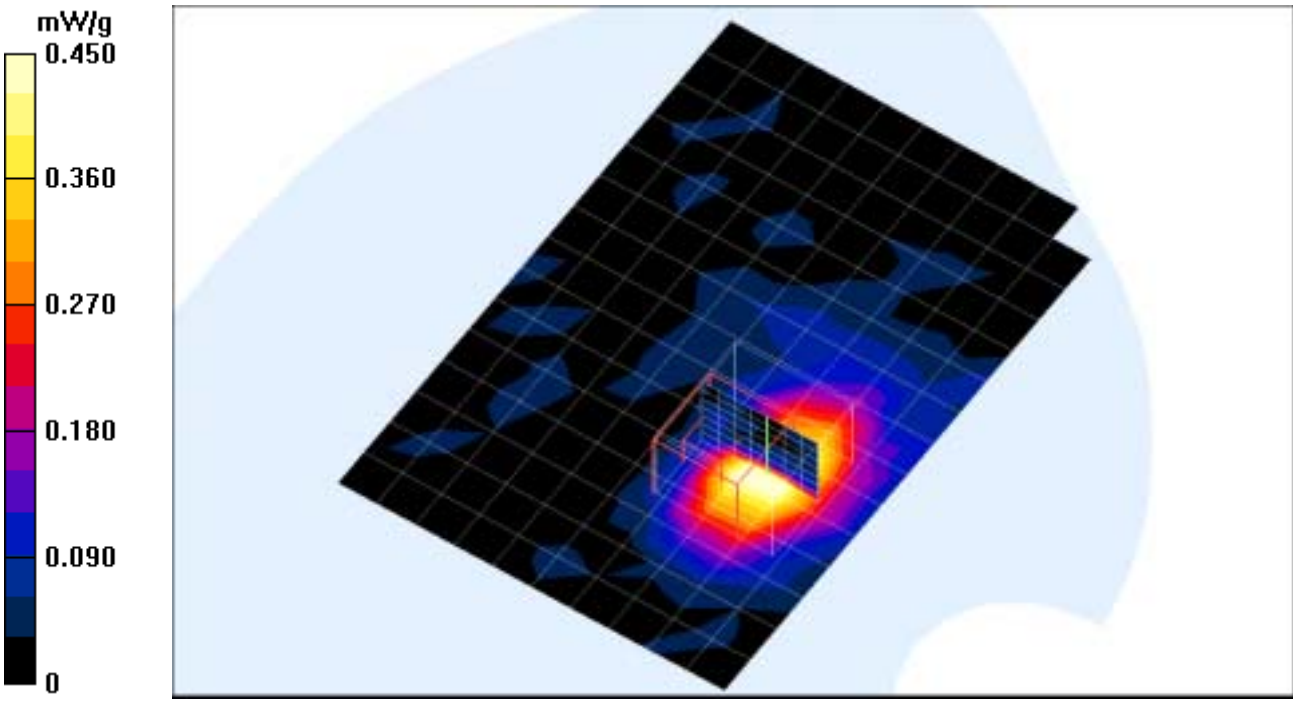
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(3.96, 3.96, 3.96); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

DTS CH=5745 Rate=6Mbps/Area Scan (11x16x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 1.02 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.450 mW/g

DTS CH=5745 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 1.02 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.489 mW/g
Peak SAR (extrapolated) = 1.014 W/kg
SAR(1 g) = 0.296 mW/g; SAR(10 g) = 0.116 mW/g


mW/g
0.450
0.360
0.270
0.180
0.090
0

Date/Time: 08/11/04 14:33:13

Test Laboratory: Advance Data Technology

802.11a Compaq N1020v Tip 15mm Mode 2 Ch 5260

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202

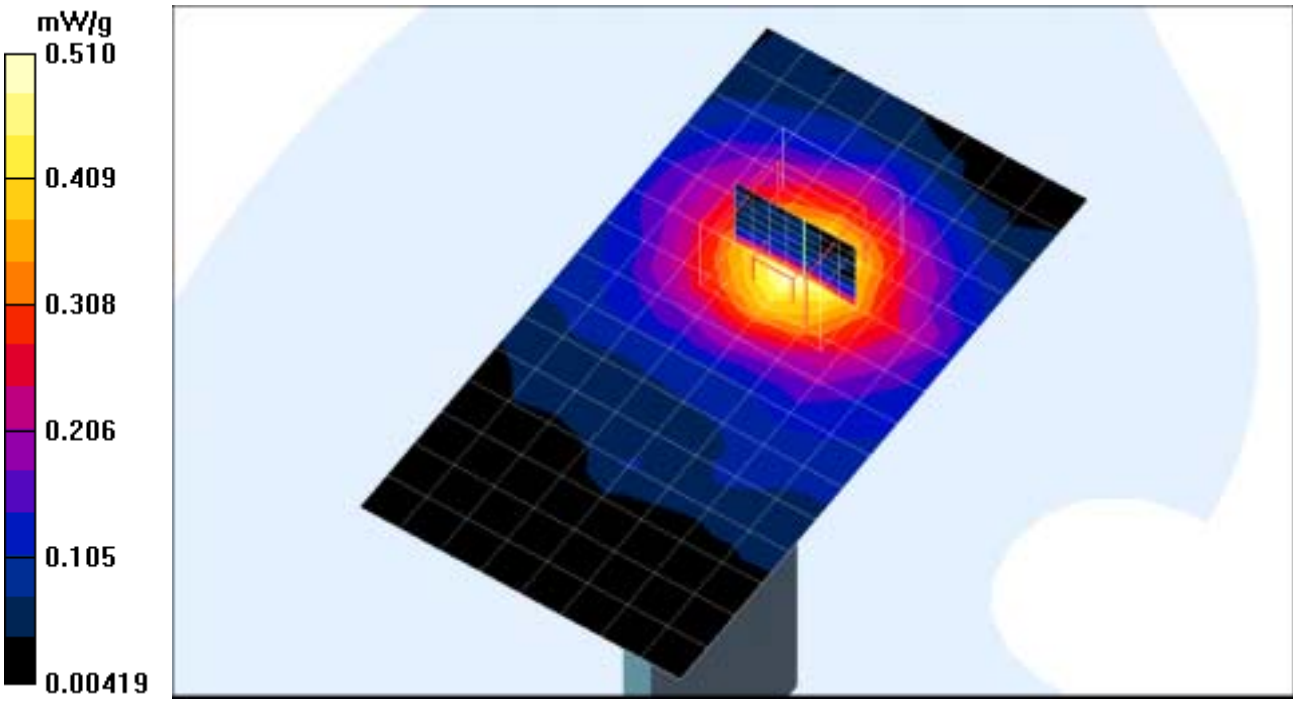
Communication System: IEEE 802.11 A; Frequency: 5260 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5260 MHz; σ = 5.49 mho/m; ε_r = 48.1; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.29, 4.29, 4.29); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

UNII CH=5260 Rate=6Mbps/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 4.47 V/m; Power Drift = -0.2 dB
Maximum value of SAR (measured) = 0.510 mW/g

UNII CH=5260 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 4.47 V/m; Power Drift = -0.2 dB
Maximum value of SAR (measured) = 0.509 mW/g
Peak SAR (extrapolated) = 0.613 W/kg
SAR(1 g) = 0.312 mW/g; SAR(10 g) = 0.122 mW/g


mW/g
0.510
0.409
0.308
0.206
0.105
0.00419

Date/Time: 08/11/04 16:18:35

Test Laboratory: Advance Data Technology

802.11a IBM R32 Bottom Mode 3 Ch 5260

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202; Serial: N/A

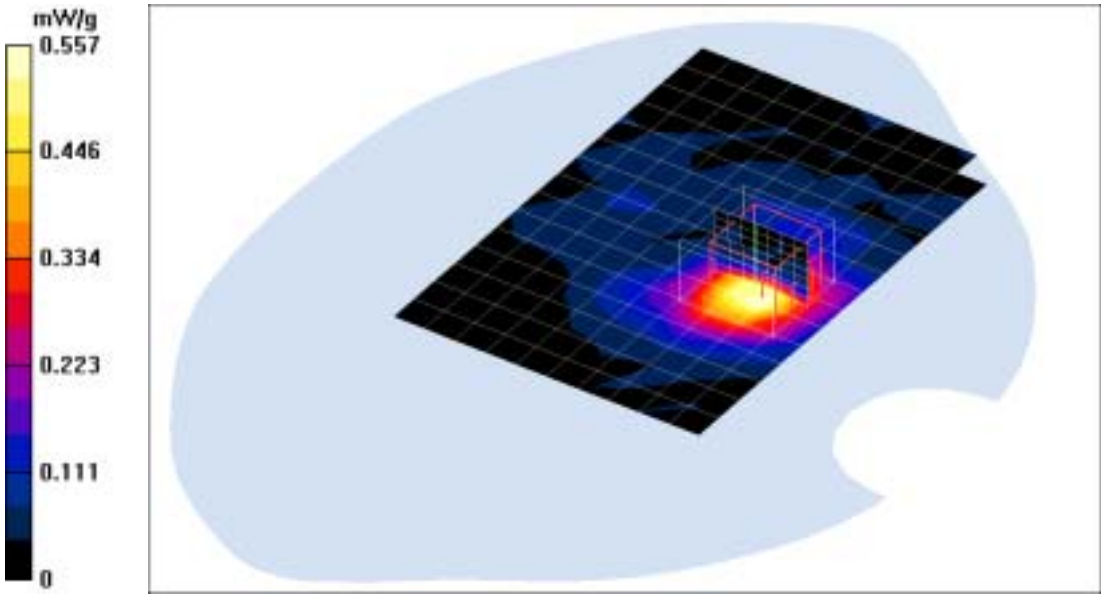
Communication System: IEEE 802.11 A; Frequency: 5260 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5260 MHz; σ = 5.49 mho/m; ε_r = 48.1; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.29, 4.29, 4.29); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

UNII CH=5260 Rate=6Mbps/Area Scan (11x16x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 4.83 V/m; Power Drift = -0.1 dB
Maximum value of SAR (measured) = 0.557 mW/g

UNII CH=5260 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 4.83 V/m; Power Drift = -0.1 dB
Maximum value of SAR (measured) = 0.589 mW/g
Peak SAR (extrapolated) =2.199 W/kg
SAR(1 g) = 0.540 mW/g; SAR(10 g) = 0.170 mW/g



Date/Time: 08/11/04 16:18:35

Test Laboratory: Advance Data Technology

802.11a IBM R32 Bottom Mode 3 Ch 5745

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202

Communication System: IEEE 802.11 A; Frequency: 5745 MHz;Duty Cycle: 1:1
Medium parameters used : f = 5745 MHz; σ = 6.2 mho/m; ε_r = 47.1; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

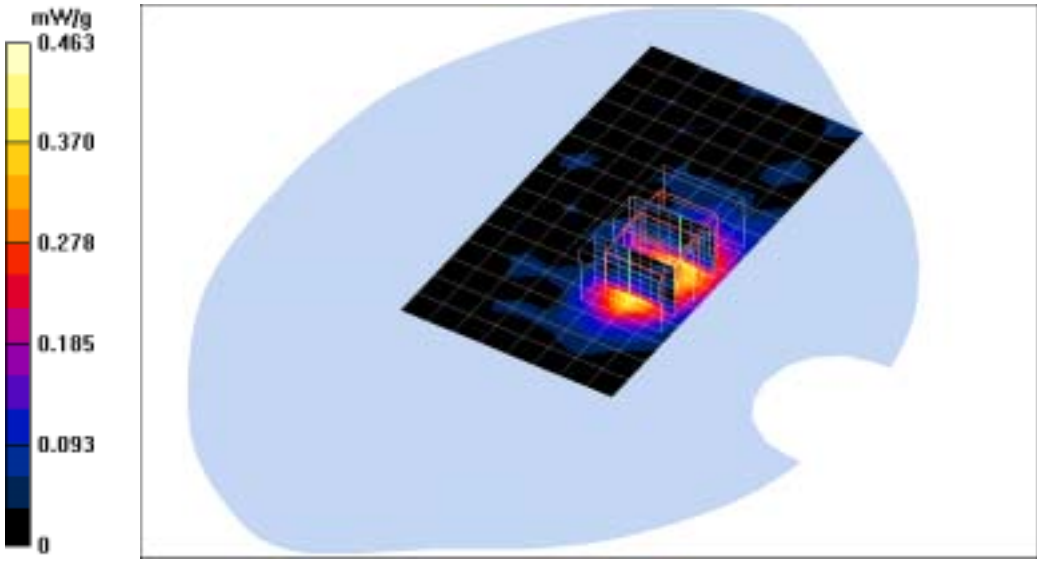
DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(3.96, 3.96, 3.96); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

DTS CH=5745 Rate=6Mbps /Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 2.65 V/m; Power Drift = -0.4 dB
Maximum value of SAR (measured) = 0.463 mW/g

DTS CH=5745 Rate=6Mbps /Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 2.65 V/m; Power Drift = -0.2 dB
Maximum value of SAR (measured) = 0.469 mW/g
Peak SAR (extrapolated) = 0.8281 W/kg
SAR(1 g) = 0.210 mW/g; SAR(10 g) = 0.086 mW/g

DTS CH=5745 Rate=6Mbps /Zoom Scan (8x8x8)/Cube 1: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 2.65 V/m; Power Drift = -0.2 dB
Maximum value of SAR (measured) = 0.474 mW/g
Peak SAR (extrapolated) = 0.8352 W/kg
SAR(1 g) = 0.220 mW/g; SAR(10 g) = 0.091 mW/g



Date/Time: 08/11/04 14:58:16

Test Laboratory: Advance Data Technology

802.11a IBM R32 Tip 15mm Mode 4 Ch 5260

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202

Communication System: IEEE 802.11 A; Frequency: 5260 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5260 MHz; σ = 5.49 mho/m; ε_r = 48.1; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

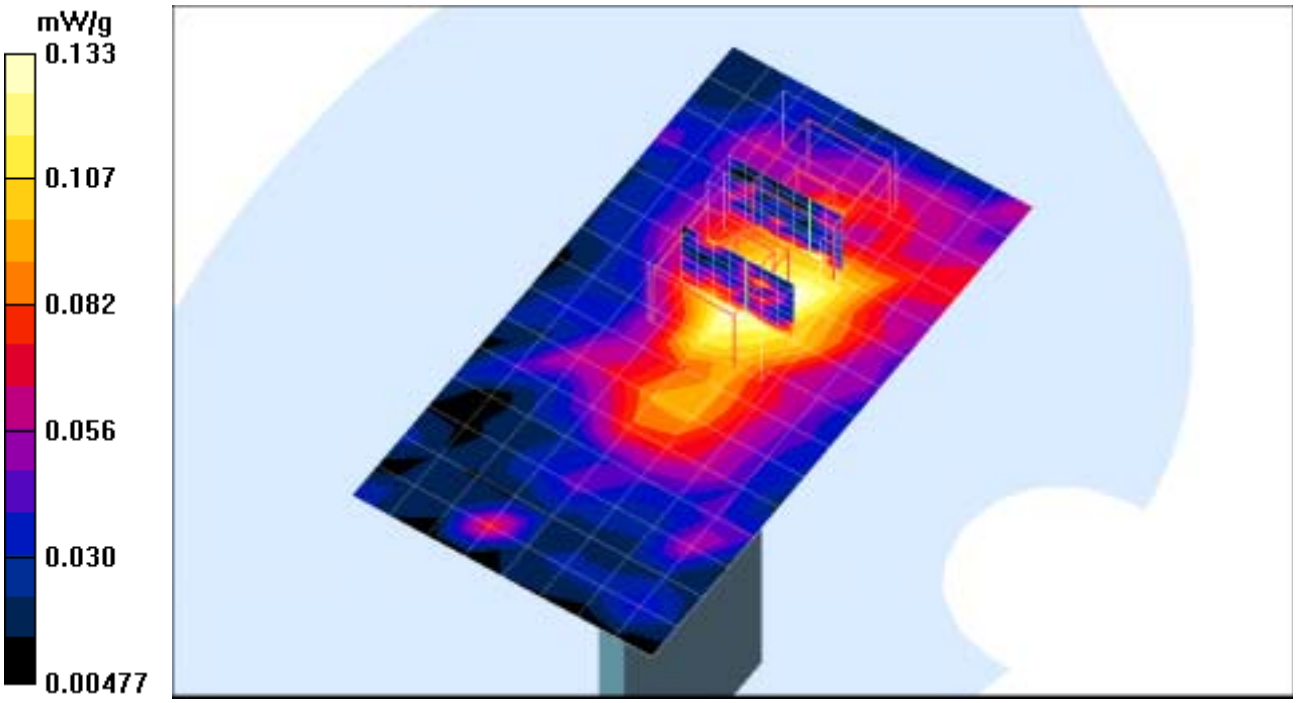
DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.29, 4.29, 4.29); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

UNII CH=5260 Rate=6Mbps/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 4.38 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.133 mW/g

UNII CH=5260 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 4.38 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.158 mW/g
Peak SAR (extrapolated) = 0.96 W/kg
SAR(1 g) = 0.248 mW/g; SAR(10 g) = 0.068 mW/g

UNII CH=5260 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 1: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 4.38 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.150 mW/g
Peak SAR (extrapolated) = 0.632 W/kg
SAR(1 g) = 0.200 mW/g; SAR(10 g) = 0.047 mW/g


mW/g
0.133
0.107
0.082
0.056
0.030
0.00477

Date/Time: 08/11/04 15:55:19

Test Laboratory: Advance Data Technology

802.11a IBM X31 Bottom Mode 5 Ch 5260

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202

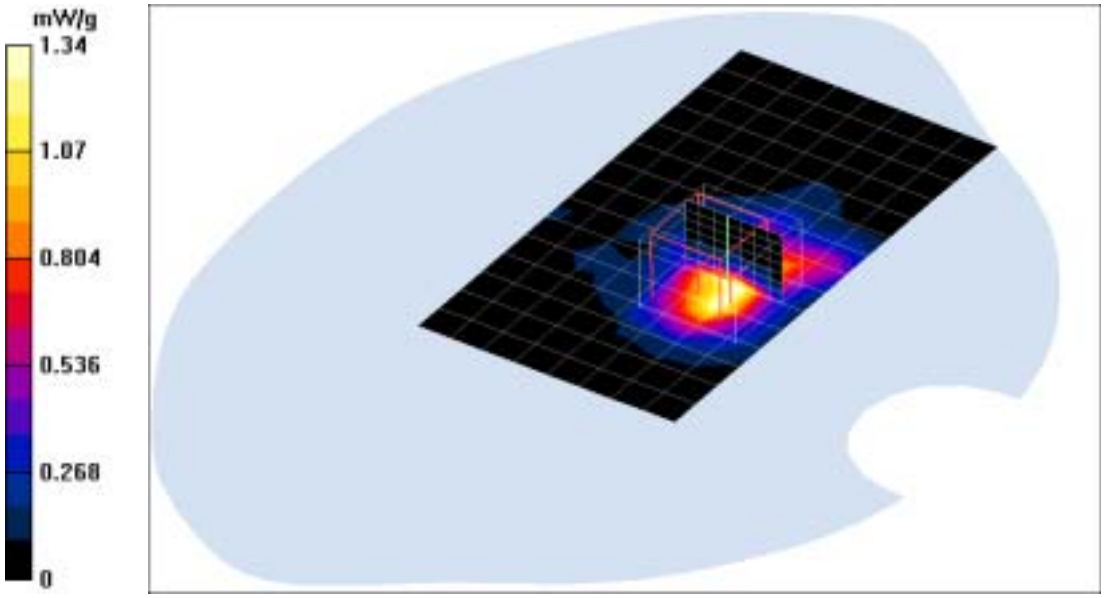
Communication System: IEEE 802.11 A; Frequency: 5260 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5260 MHz; σ = 5.49 mho/m; ε_r = 48.1; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.29, 4.29, 4.29); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

UNII CH=5260 Rate=6Mbps/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 4.96 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 1.34 mW/g

UNII CH=5260 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 4.96 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 1.44 mW/g
Peak SAR (extrapolated) = 3.658 W/kg
SAR(1 g) = 0.901 mW/g; SAR(10 g) = 0.354 mW/g



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Test Laboratory: Advance Data Technology

802.11a IBM X31 Bottom Mode 5 Ch 5745

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202

Communication System: IEEE 802.11 A; Frequency: 5745 MHz;Duty Cycle: 1:1
Medium parameters used (interpolated): f = 5745 MHz; σ = 6.2 mho/m; ε_r = 47.1; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

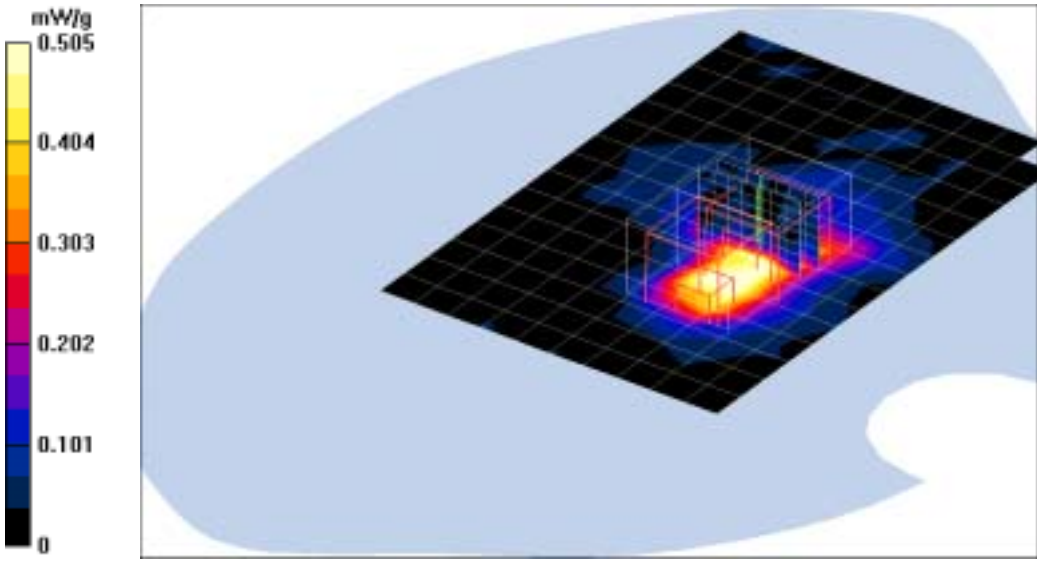
DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(3.96, 3.96, 3.96); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

DTS CH=5745 Rate=6Mbps/Area Scan (11x16x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 2.94 V/m; Power Drift = -0.2 dB
Maximum value of SAR (measured) = 0.505 mW/g

DTS CH=5745 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 2.94 V/m; Power Drift = -0.2 dB
Maximum value of SAR (measured) = 0.581 mW/g
Peak SAR (extrapolated) = 3.586 W/kg
SAR(1 g) = 0.952 mW/g; SAR(10 g) = 0.177 mW/g

DTS CH=5745 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 1: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 2.94 V/m; Power Drift = -0.2 dB
Maximum value of SAR (measured) = 0.562 mW/g
Peak SAR (extrapolated) = 1.205 W/kg
SAR(1 g) = 0.310 mW/g; SAR(10 g) = 0.132 mW/g



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Test Laboratory: Advance Data Technology

802.11a IBM X31 Tip 15mm Mode 6 Ch 5260

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202

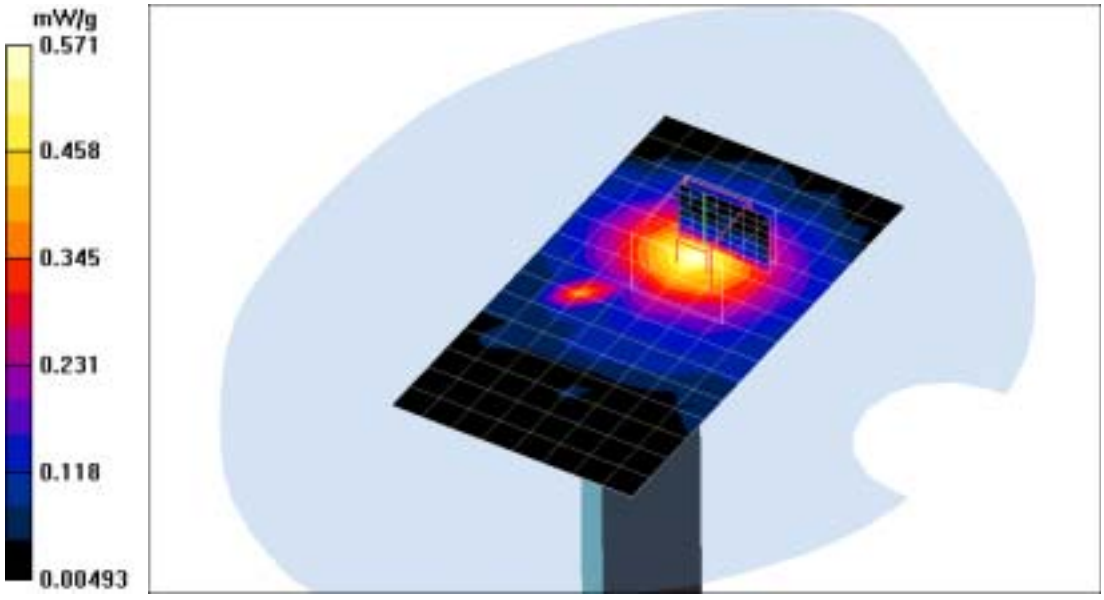
Communication System: IEEE 802.11 A; Frequency: 5260 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5260 MHz; σ = 5.49 mho/m; ε_r = 48.1; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.29, 4.29, 4.29); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

UNII CH=5260 Rate=6Mbps/Area Scan (9x16x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 5.25 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.571 mW/g

UNII CH=5260 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 5.25 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.555 mW/g
Peak SAR (extrapolated) = 3.69 W/kg
SAR(1 g) = 0.356 mW/g; SAR(10 g) = 0.137 mW/g



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Test Laboratory: Advance Data Technology

802.11a IBM X31 Bottom Mode 5 Ch 5180

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202

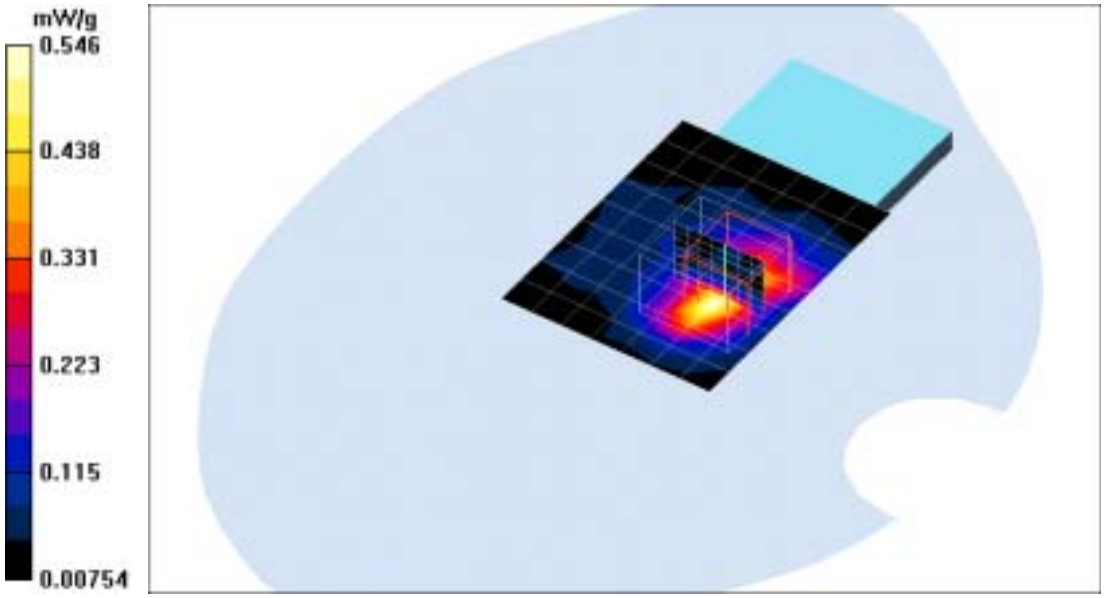
Communication System: IEEE 802.11 A; Frequency: 5180 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5180 MHz; σ = 5.37 mho/m; ε_r = 48.3; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.29, 4.29, 4.29); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

UNII CH=5180 Rate=6Mbps/Area Scan (8x10x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 4.34 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.546 mW/g

UNII CH=5180 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 4.34 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.543 mW/g
Peak SAR (extrapolated) = 1.308 W/kg
SAR(1 g) = 0.324 mW/g; SAR(10 g) = 0.119 mW/g



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Test Laboratory: Advance Data Technology

802.11a IBM X31 Bottom Mode 5 Ch 5240

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202

Communication System: IEEE 802.11 A; Frequency: 5240 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5240 MHz; σ = 5.46 mho/m; ε_r = 48.2; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

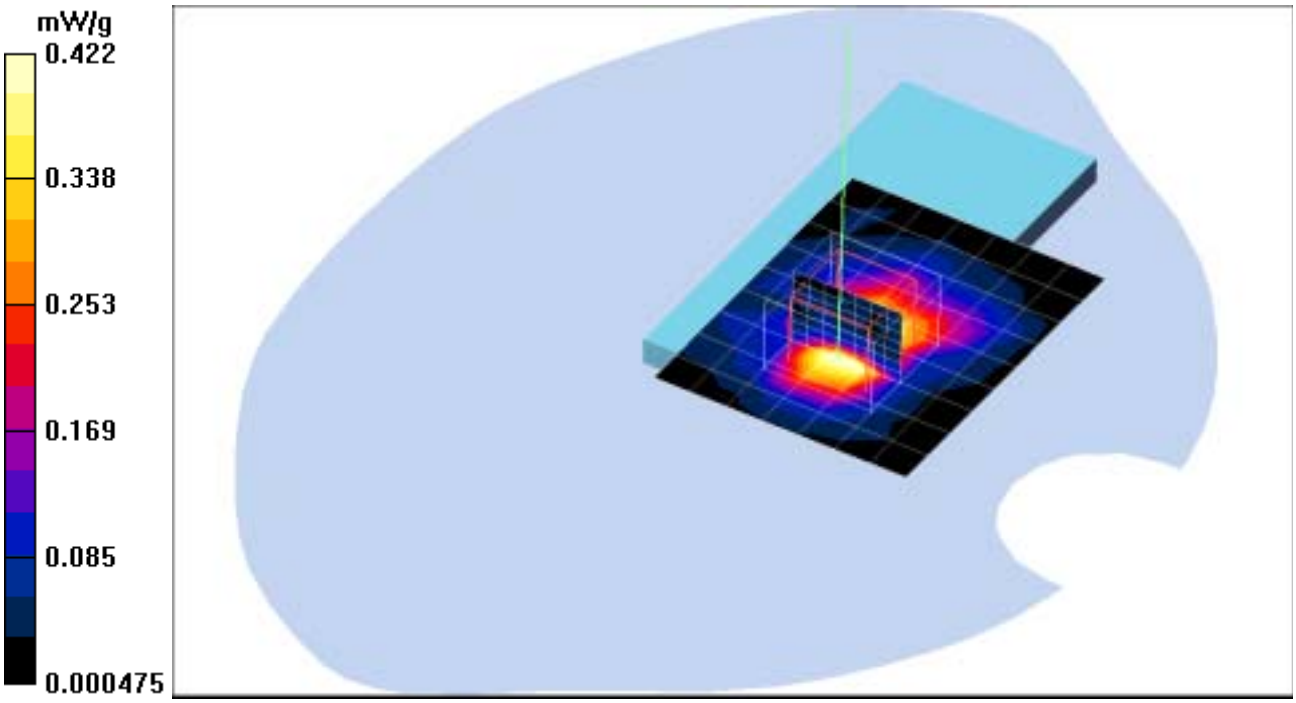
DASY4 Configuration:

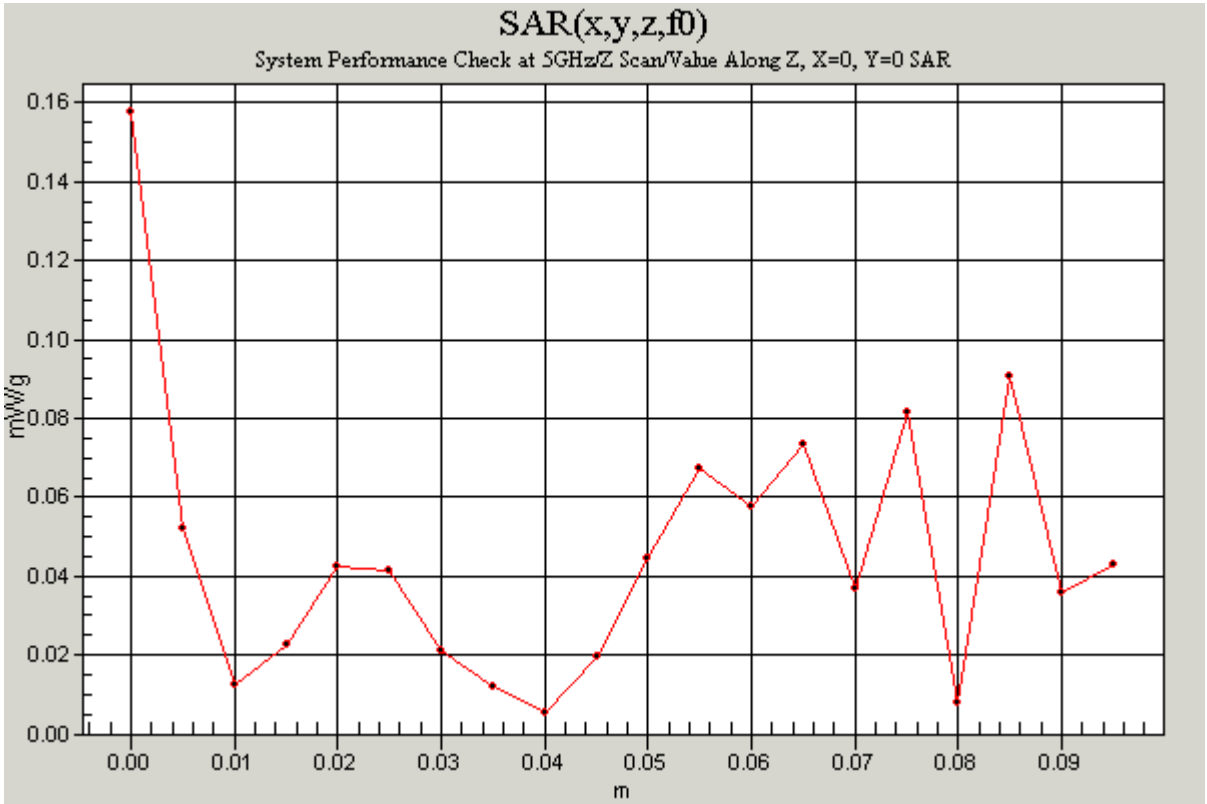
- Probe: EX3DV3 - SN3504; ConvF(4.29, 4.29, 4.29); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
  Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

UNII CH=5240 Rate=6Mbps/Area Scan (8x10x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 3.19 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.422 mW/g

UNII CH=5240 Rate=6Mbps/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Reference Value = 3.19 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.157 mW/g

UNII CH=5240 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 3.19 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.490 mW/g
Peak SAR (extrapolated) = 4.34 W/kg
SAR(1 g) = 1.17 mW/g; SAR(10 g) = 0.169 mW/g


mW/g
0.422
0.338
0.253
0.169
0.085
0.000475


SAR(x,y,z,f0)
System Performance Check at 5GHz/Z Scan/Value Along Z, X=0, Y=0 SAR
mW/g
0.16
0.14
0.12
0.10
0.08
0.06
0.04
0.02
0.00
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
m

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Test Laboratory: Advance Data Technology

802.11a IBM X31 Bottom Mode 5 Ch 5320

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202; Serial: N/A

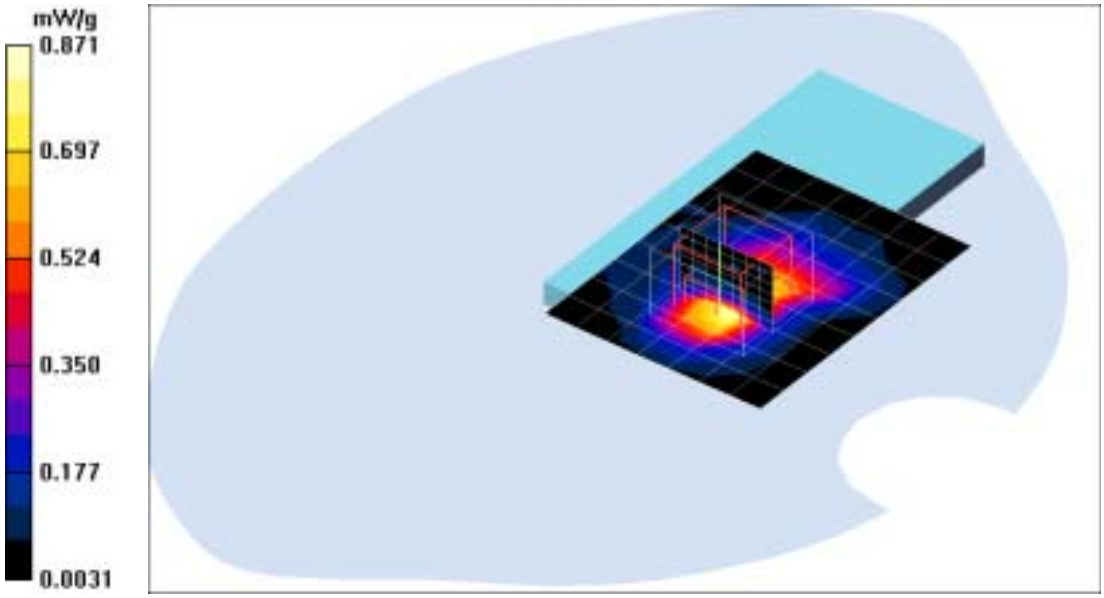
Communication System: IEEE 802.11 A; Frequency: 5320 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5320 MHz; σ = 5.57 mho/m; ε_r = 48; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.29, 4.29, 4.29); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

UNII CH=5320 Rate=6Mbps 2/Area Scan (8x10x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 3.89 V/m; Power Drift = -0.1 dB
Maximum value of SAR (measured) = 0.871 mW/g

UNII CH=5320 Rate=6Mbps 2/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 3.89 V/m; Power Drift = -0.1 dB
Maximum value of SAR (measured) = 0.926 mW/g
Peak SAR (extrapolated) = 3.05 W/kg
SAR(1 g) = 0.709 mW/g; SAR(10 g) = 0.238 mW/g



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Test Laboratory: Advance Data Technology

802.11a IBM X31 Bottom Mode 5 Ch 5825

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202; Serial: N/A

Communication System: IEEE 802.11 A; Frequency: 5825 MHz;Duty Cycle: 1:1
Medium parameters used f = 5825 MHz; σ = 6.31 mho/m; ε_r = 47; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

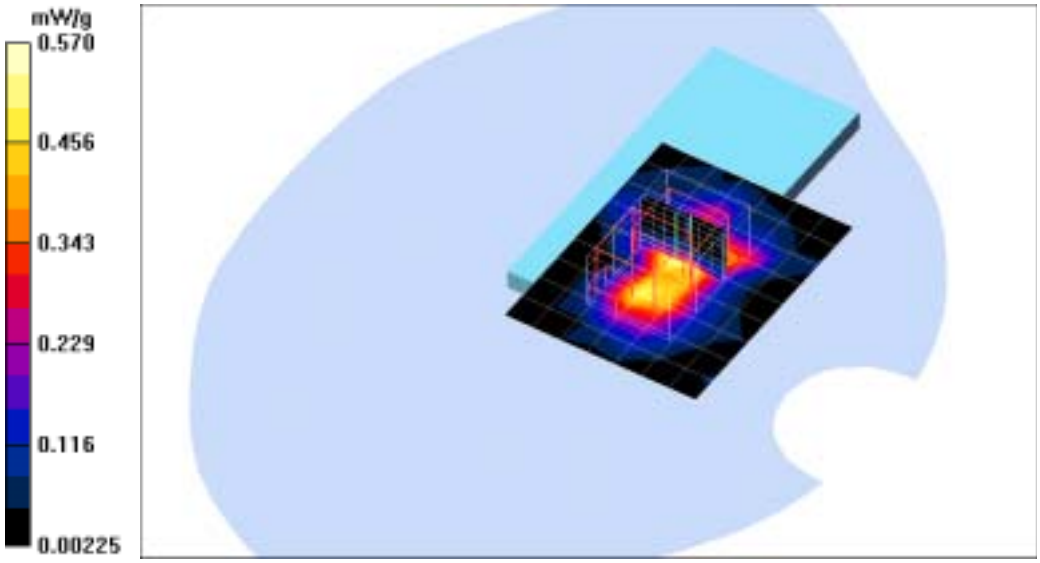
DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(3.96, 3.96, 3.96); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

DTS CH=5825 Rate=6Mbps/Area Scan (8x10x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 2.79 V/m; Power Drift = 0.0 dB
Maximum value of SAR (measured) = 0.570 mW/g

DTS CH=5825 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 2.79 V/m; Power Drift = 0.0 dB
Maximum value of SAR (measured) = 0.613 mW/g
Peak SAR (extrapolated) = 1.11 W/kg
SAR(1 g) = 0.304 mW/g; SAR(10 g) = 0.110 mW/g

DTS CH=5825 Rate=6Mbps/Zoom Scan (8x8x8)/Cube 1: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 2.79 V/m; Power Drift = 0.0 dB
Maximum value of SAR (measured) = 0.576 mW/g
Peak SAR (extrapolated) = 1.050W/kg
SAR(1 g) = 0.298 mW/g; SAR(10 g) =0.106 mW/g



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Test Laboratory: Advance Data Technology

802.11a Turbo Mode IBM X31 Bottom Mode 7 Ch 5210

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202; Serial: N/A

Communication System: IEEE 802.11 A; Frequency: 5210 MHz;Duty Cycle: 1:1

Medium parameters used : f = 5210 MHz; σ = 5.42 mho/m; ε_r = 48.2; ρ = 1000 kg/m^3

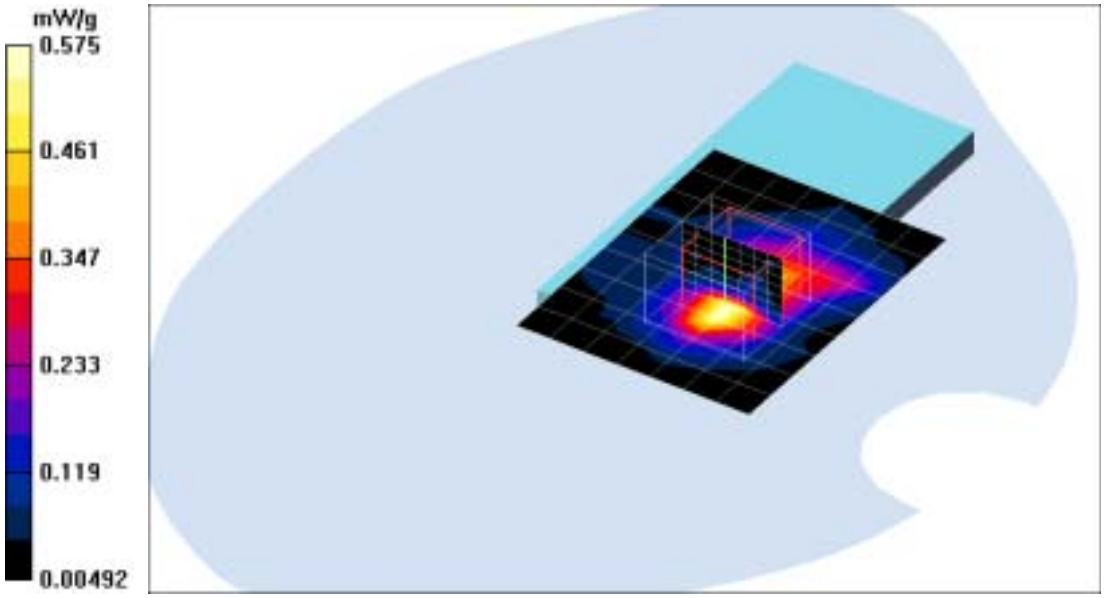
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.29, 4.29, 4.29); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

UNII CH=5210 Rate=12Mbps/Area Scan (8x10x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 3.73 V/m; Power Drift = -0.2 dB
Maximum value of SAR (measured) = 0.575 mW/g

UNII CH=5210 Rate=12Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 3.73 V/m; Power Drift = -0.2 dB
Maximum value of SAR (measured) = 0.581 mW/g
Peak SAR (extrapolated) = 1.209 W/kg
SAR(1 g) = 0.301 mW/g; SAR(10 g) = 0.116 mW/g



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Test Laboratory: Advance Data Technology

802.11a Turbo Mode IBM X31 Bottom Mode 7 Ch 5250

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202; Serial: N/A

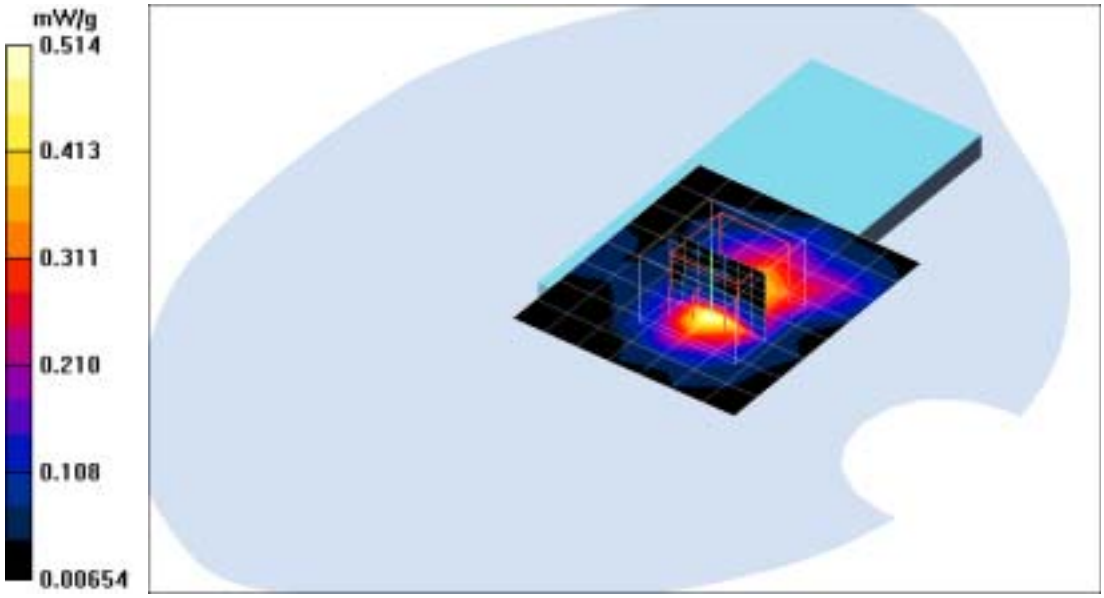
Communication System: IEEE 802.11 A; Frequency: 5250 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5250 MHz; σ = 5.46 mho/m; ε_r = 48.2; ρ = 1000 kg/m^3
Air Temperature:25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.29, 4.29, 4.29); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

UNII CH=5250 Rate=12Mbps/Area Scan (8x9x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 3.15 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.514 mW/g

UNII CH=5250 Rate=12Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 3.15 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.537 mW/g
Peak SAR (extrapolated) = 3.33 W/kg
SAR(1 g) = 0.315 mW/g; SAR(10 g) = 0.111 mW/g



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Test Laboratory: Advance Data Technology

802.11a Turbo Mode IBM X31 Bottom Mode 7 Ch 5290

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202; Serial: N/A

Communication System: IEEE 802.11 A; Frequency: 5290 MHz;Duty Cycle: 1:1

Medium parameters used : f = 5290 MHz; σ = 5.53 mho/m; ε_r = 48.1; ρ = 1000 kg/m^3

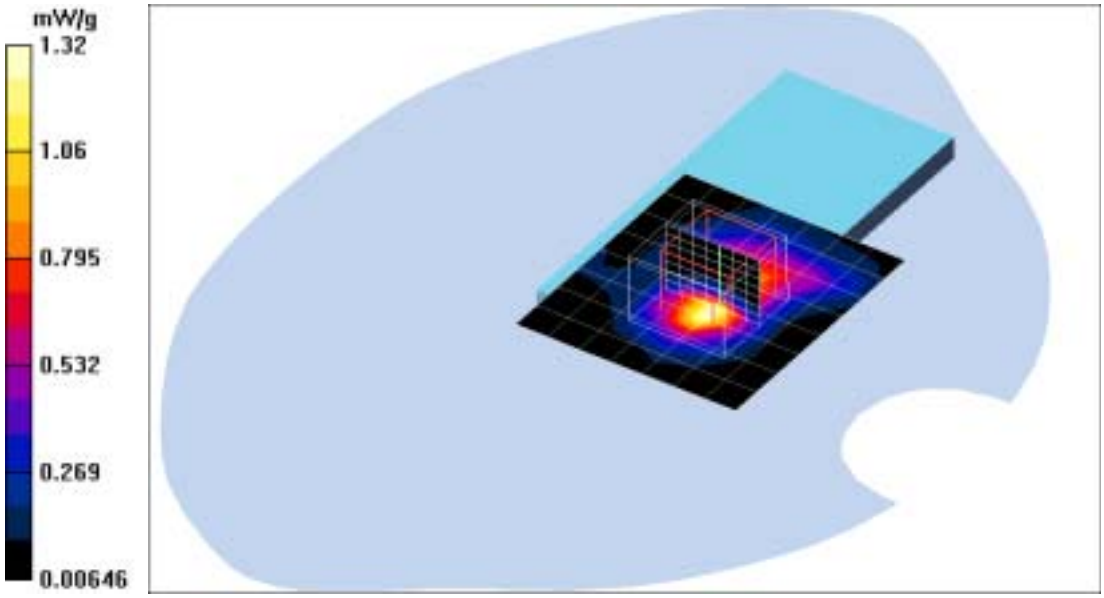
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(4.29, 4.29, 4.29); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

UNII CH=5290 Rate=12Mbps/Area Scan (8x9x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 5.02 V/m; Power Drift = -0.1 dB
Maximum value of SAR (measured) = 1.32 mW/g

UNII CH=5290 Rate=12Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 5.02 V/m; Power Drift = -0.1 dB
Maximum value of SAR (measured) = 1.37 mW/g
Peak SAR (extrapolated) = 2.66 W/kg
SAR(1 g) = 0.842 mW/g; SAR(10 g) = 0.296 mW/g



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Test Laboratory: Advance Data Technology

802.11a Turbo Mode IBM X31 Bottom Mode 7 Ch 5760

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202; Serial: N/A

Communication System: IEEE 802.11 A; Frequency: 5760 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5760 MHz; σ = 6.21 mho/m; ε_r = 47.1; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

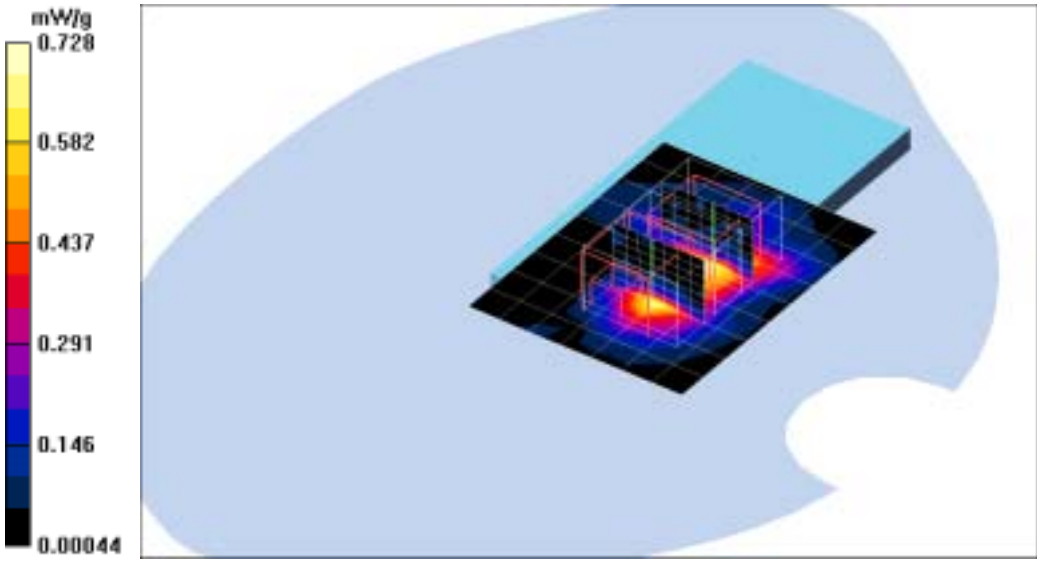
DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(3.96, 3.96, 3.96); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

DTS CH=5760 Rate=12Mbps/Area Scan (8x10x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 2 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.728 mW/g

DTS CH=5760 Rate=12Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 2 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.718 mW/g
Peak SAR (extrapolated) = 3.258 W/kg
SAR(1 g) = 0.392 mW/g; SAR(10 g) = 0.141 mW/g

DTS CH=5760 Rate=12Mbps/Zoom Scan (8x8x8)/Cube 1: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 2 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.701 mW/g
Peak SAR (extrapolated) = 3.232W/kg
SAR(1 g) = 0.384 mW/g; SAR(10 g) = 0.137 mW/g



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Test Laboratory: Advance Data Technology

802.11a Turbo Mode IBM X31 Bottom Mode 7 Ch 5800

DUT: Nortel Networks WLAN-Mobile Adapter 2202; Type: WLAN-Mobile Adapter 2202; Serial: N/A

Communication System: IEEE 802.11 A; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5800 MHz; σ = 6.27 mho/m; ε_r = 47.1; ρ = 1000 kg/m^3
Air Temperature: 25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

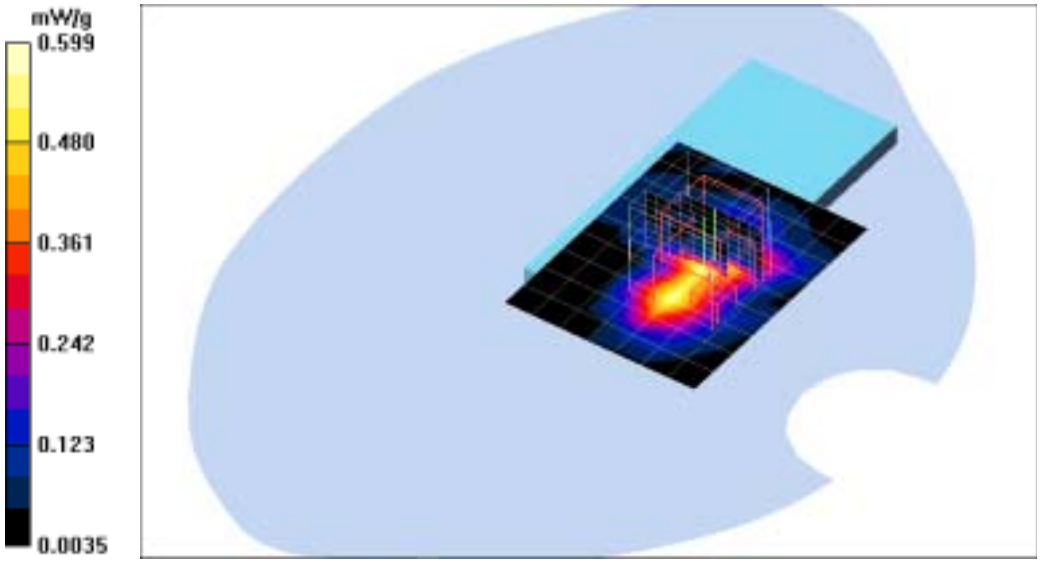
DASY4 Configuration:

- Probe: EX3DV3 - SN3504; ConvF(3.96, 3.96, 3.96); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

DTS CH=5800 Rate=12Mbps/Area Scan (8x10x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 2.45 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.599 mW/g

DTS CH=5800 Rate=12Mbps/Zoom Scan (8x8x8)/Cube 0: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 2.45 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.628 mW/g
Peak SAR (extrapolated) = 1.24 W/kg
SAR(1 g) = 0.319 mW/g; SAR(10 g) = 0.114 mW/g

DTS CH=5800 Rate=12Mbps/Zoom Scan (8x8x8)/Cube 1: Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 2.45 V/m; Power Drift = 0.2 dB
Maximum value of SAR (measured) = 0.650 mW/g
Peak SAR (extrapolated) = 1.285 W/kg
SAR(1 g) = 0.326mW/g; SAR(10 g) = 0.120 mW/g



A3 : SYSTEM VALIDATION

Date/Time: 08/11/04 08:27:44

Test Laboratory: Advance Data Technology

System Validation Check MSL 5200

DUT: Dipole 5GHz ; Type: D5GHz V2; Serial: 1018

Communication System: CW5GHz; Frequency: 5200 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5200 MHz; σ = 5.4 mho/m; ε_r = 48.2; ρ = 1000 kg/m^3
Air Temperature:25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

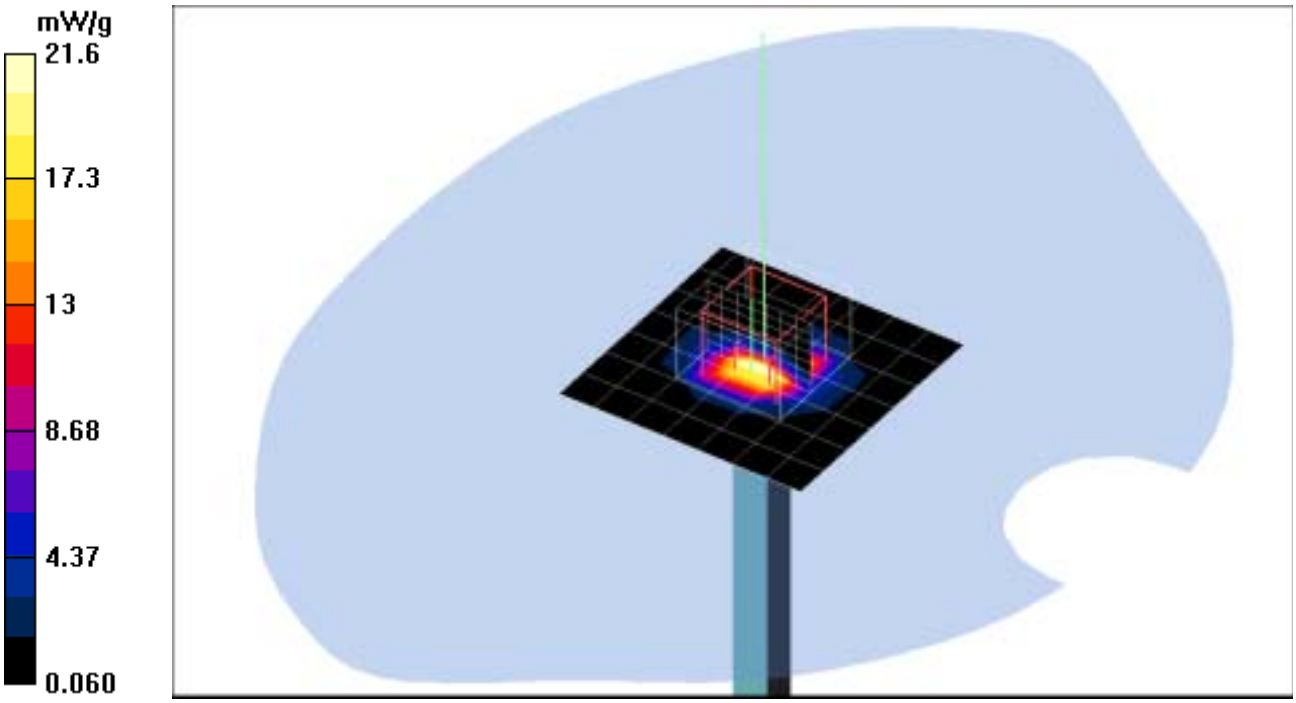
DASY4 Configuration:

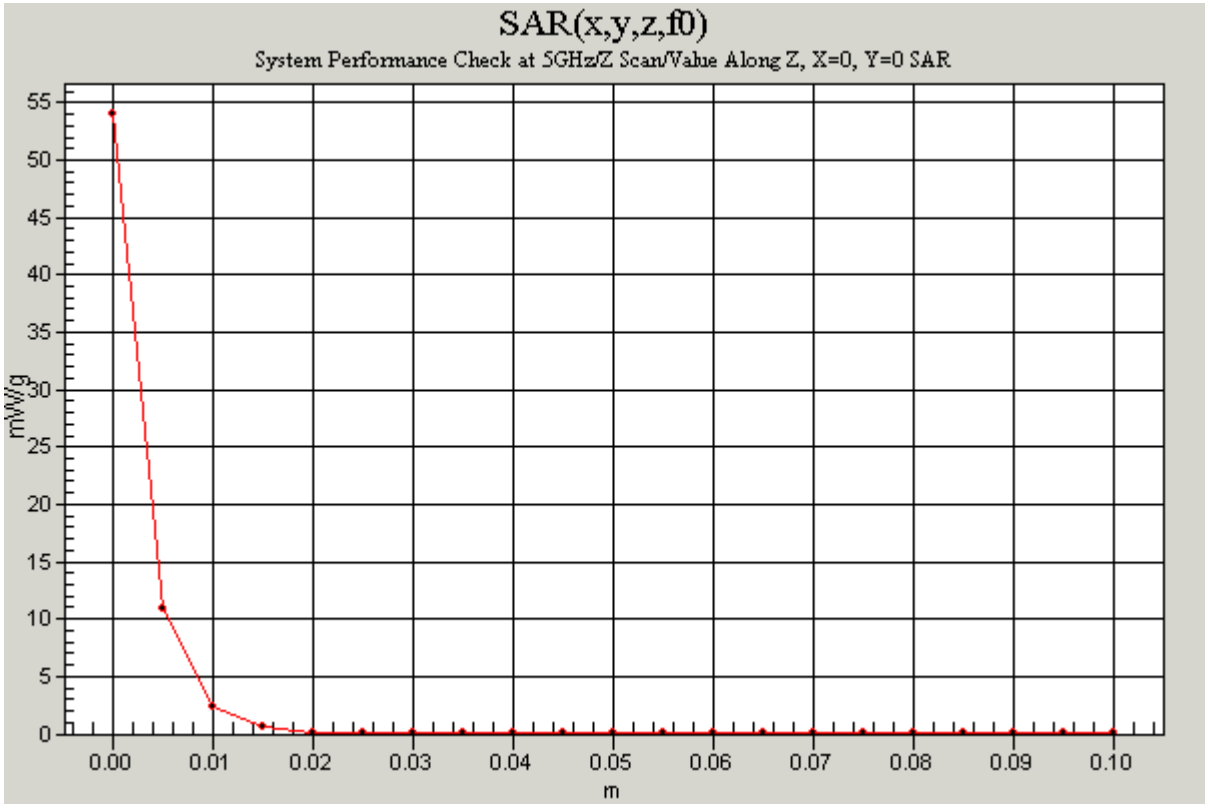
- Probe: EX3DV3 - SN3504; ConvF(4.29, 4.29, 4.29); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
  Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

Pin=250mW,d=10mm f=5200MHz 2/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 86.5 V/m; Power Drift = 0.1 dB
Maximum value of SAR (measured) = 21.6 mW/g

Pin=250mW,d=10mm f=5200MHz 2/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Reference Value = 86.5 V/m; Power Drift = 0.1 dB
Maximum value of SAR (measured) = 54 mW/g

Pin=250mW,d=10mm f=5200MHz 2/Zoom Scan (8x8x8)/Cube 0:
Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 86.5 V/m; Power Drift = 0.1 dB
Maximum value of SAR (measured) = 32.8 mW/g
Peak SAR (extrapolated) = 67.5 W/kg
SAR(1 g) = 19.7 mW/g; SAR(10 g) = 5.65 mW/g


mW/g
21.6
17.3
13
8.68
4.37
0.060


SAR(x,y,z,f0)
System Performance Check at 5GHz/Z Scan/Value Along Z, X=0, Y=0 SAR
mW/g
55
50
45
40
35
30
25
20
15
10
5
0
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09
0.10
m

Date/Time: 08/11/04 08:27:44

Test Laboratory: Advance Data Technology

System Validation Check MSL 5800

DUT: Dipole 5GHz ; Type: D5GHz V2; Serial: 1018

Communication System: CW5GHz; Frequency: 5800 MHz;Duty Cycle: 1:1
Medium parameters used: f = 5800 MHz; σ = 6.27 mho/m; ε_r = 47.1; ρ = 1000 kg/m^3
Air Temperature:25.0 deg C;Liquid Temperature: 24.0 deg C
Phantom section: Flat Section

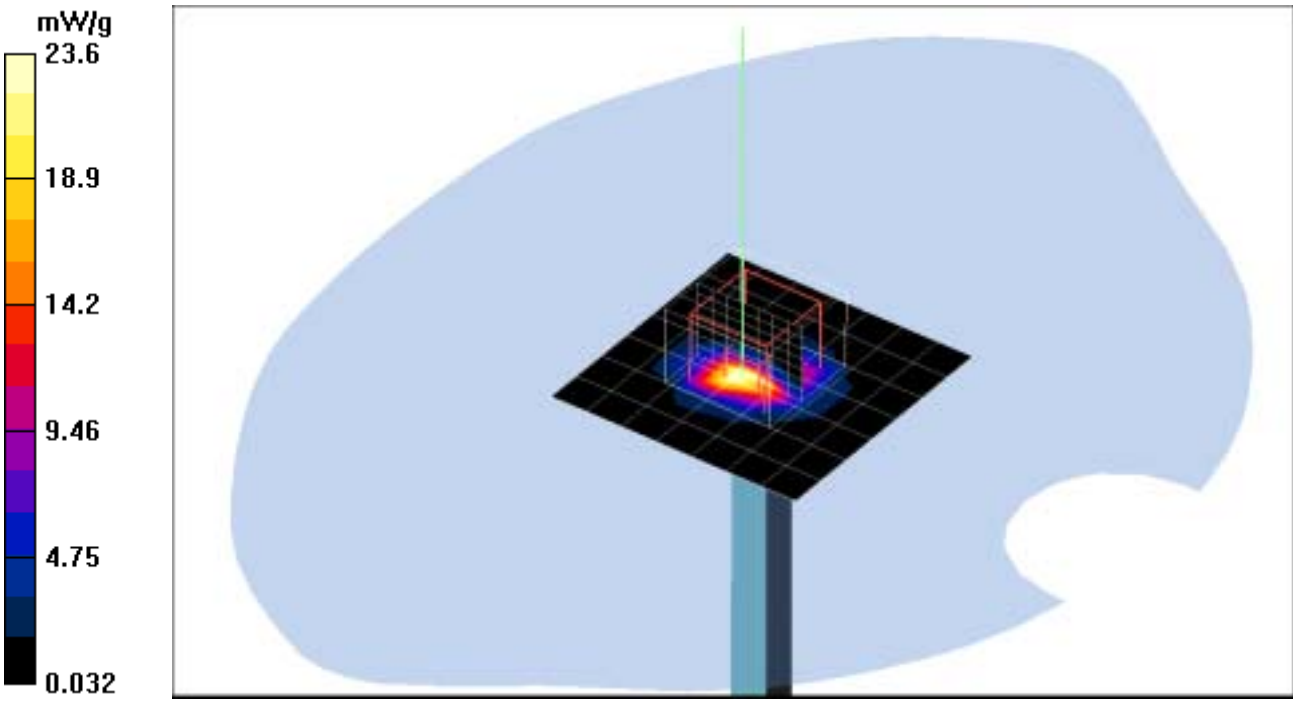
DASY4 Configuration:

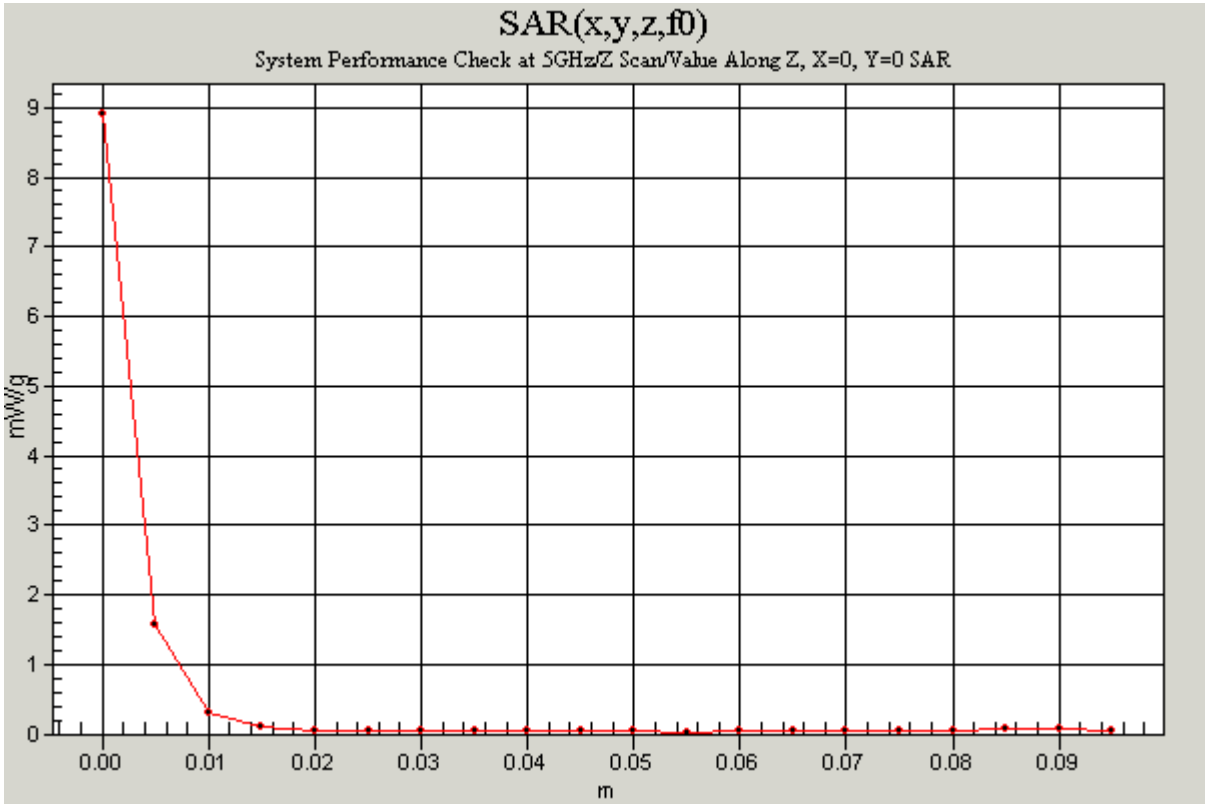
- Probe: EX3DV3 - SN3504; ConvF(3.96, 3.96, 3.96); Calibrated: 2/20/2004
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
  Sensor-Surface: 0mm (Fix Surface)
- Electronics: DAE3 Sn579; Calibrated: 8/15/2003
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP-1202
- Measurement SW: DASY4, V4.2 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 112

Pin=250mW,d=10mm f=5800MHz/Area Scan (8x8x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 74.7 V/m; Power Drift = -0.0 dB
Maximum value of SAR (measured) = 23.6 mW/g

Pin=250mW,d=10mm f=5800MHz/Z Scan (1x1x21): Measurement grid: dx=20mm, dy=20mm, dz=5mm
Reference Value = 74.7 V/m; Power Drift = -0.0 dB
Maximum value of SAR (measured) = 8.91 mW/g

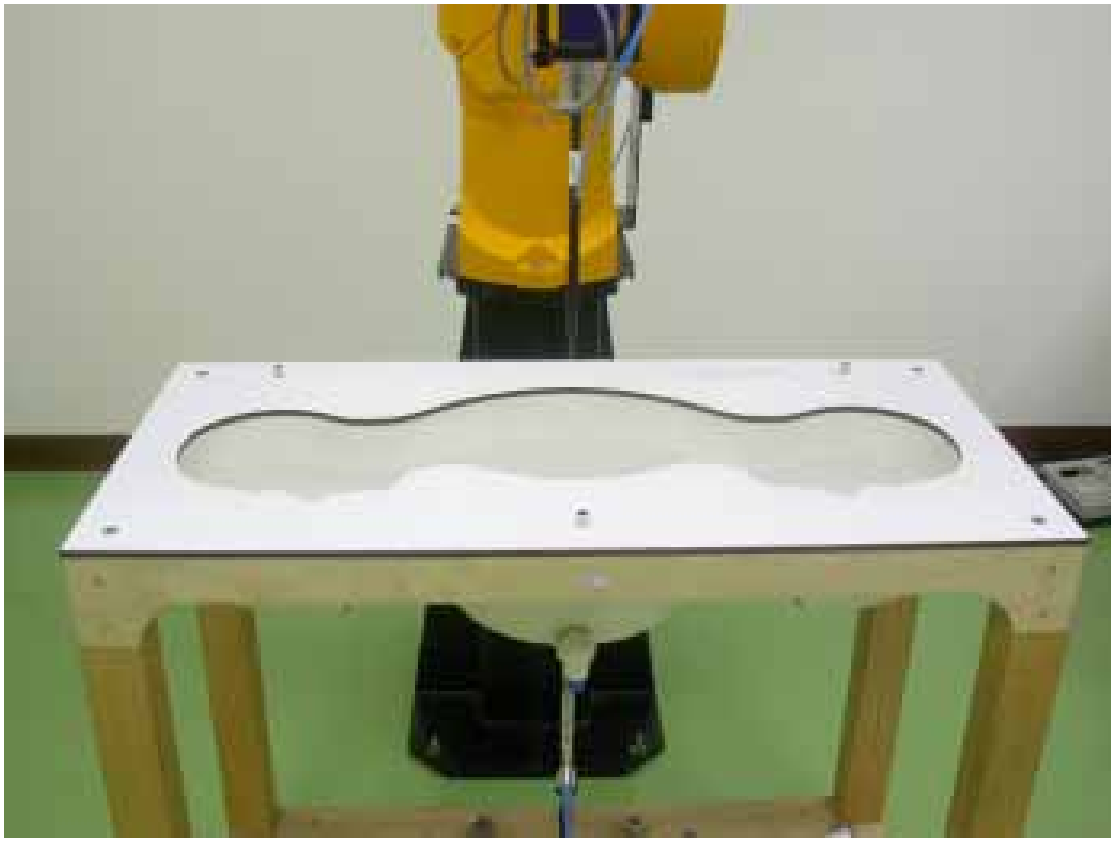
Pin=250mW,d=10mm f=5800MHz/Zoom Scan (8x8x8)/Cube 0:
Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 74.7 V/m; Power Drift = -0.0 dB
Maximum value of SAR (measured) = 31.2 mW/g
Peak SAR (extrapolated) = 70.9 W/kg
SAR(1 g) = 18.3 mW/g; SAR(10 g) = 5.15 mW/g


mW/g
23.6
18.9
14.2
9.46
4.75
0.032


SAR(x,y,z,f0)
System Performance Check at 5GHz/Z Scan/Value Along Z, X=0, Y=0 SAR
mW/g
m
0
1
2
3
4
5
6
7
8
9
0.00
0.01
0.02
0.03
0.04
0.05
0.06
0.07
0.08
0.09

APPENDIX B : ADT SAR MEASUREMENT SYSTEM

APPENDIX C: PHOTOGRAPHS OF SYSTEM VALIDATION



APPENDIX D: SYSTEM CERTIFICATE & CALIBRATION for 2.4GHz

D1: SAM PHANTOM

Schmid & Partner Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

Certificate of conformity / First Article Inspection

Item	SAM Twin Phantom V4.0
Type No	QD 000 P40 CA
Series No	TP-1150 and higher
Manufacturer / Origin	Untersee Composites Hauptstr. 69 CH-8559 Fruthwilen Switzerland

Tests

The series production process used allows the limitation to test of first articles.
Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series units (called samples).

Test	Requirement	Details	Units tested
Shape	Compliance with the geometry according to the CAD model.	IT'IS CAD File (*)	First article, Samples
Material thickness	Compliant with the requirements according to the standards	2mm +/- 0.2mm in specific areas	First article, Samples
Material parameters	Dielectric parameters for required frequencies	200 MHz – 3 GHz Relative permittivity < 5 Loss tangent < 0.05.	Material sample TP 104-5
Material resistivity	The material has been tested to be compatible with the liquids defined in the standards	Liquid type HSL 1800 and others according to the standard.	Pre-series, First article

Standards

[1] CENELEC EN 50361
[2] IEEE P1528-200x draft 6.5
[3] IEC PT 62209 draft 0.9
(*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of [1] and [3].

Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standard [1] and draft standards [2] and [3].

Date 28.02.2002

Signature / Stamp

Schmid & Partner Engineering AG
Zeughausstrasse 43, CH-8004 Zurich
Tel. +41 1 245 97 00, Fax +41 1 245 97 79

D2: DOSIMETRIC E-FIELD PROBE

Schmid & Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, http://www.speag.com

IMPORTANT NOTICE

USAGE OF PROBES IN ORGANIC SOLVENTS

Diethylene Gycol Monobuthy Ether (the basis for liquids above 1 GHz), as many other organic solvents, is a very effective softener for synthetic materials. These solvents can cause irrepairable damage to certain SPEAG products, except those which are explicitly declared as compliant with organic solvents.

Compatible Probes:

- ET3DV6
- ET3DV6R
- ES3DV2
- ER3DV6
- H3DV6

Important Note for ET3DV6 Probes:
The ET3DV6 probes shall not be exposed to solvents longer than necessary for the measurements and shall be cleaned daily after use with warm water and stored dry.

s p e a g

Schmid & Partner Engineering AG
Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, http://www.speag.com

Schmid & Partner Engineering AG

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

Client Auden > Chunghwa Telecom

CALIBRATION CERTIFICATE

Object(s)	ET3DV6 - SN:1790
Calibration procedure(s)	QA CAL-01.v2 Calibration procedure for dosimetric E-field probes
Calibration date:	August 29, 2003
Condition of the calibrated item	In Tolerance (according to the specific calibration document)

This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard.

All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
RF generator HP 8684C	US3642U01700	4-Aug-99 (SPEAG, in house check Aug-02)	In house check: Aug-03
Power sensor E4412A	MY41495277	2-Apr-03 (METAS, No 252-0250)	Apr-04
Power sensor HP 8481A	MY41092180	18-Sep-02 (Agilent, No. 20020918)	Sep-03
Power meter EPM E4419B	GB41293874	2-Apr-03 (METAS, No 252-0250)	Apr-04
Network Analyzer HP 8753E	US37390585	18-Oct-01 (Agilent, No. 24BR1033101)	In house check: Oct 03
Fluke Process Calibrator Type 702	SN: 6295803	3-Sep-01 (ELCAL, No.2368)	Sep-03

	Name	Function	Signature
Calibrated by:	Nico Vetterli	Technician	
Approved by:	Katja Pokovic	Laboratory Director	

Date issued: August 29, 2003

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

Schmid & Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, http://www.speag.com

Probe ET3DV6

SN:1790

Manufactured: May 28, 2003
Last calibration: August 29, 2003

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ET3DV6 SN:1790

Sensitivity in Free Space

Diode Compression

NormX	**1.74** $\mu V/(V/m)^2$	DCP X	**96**	mV
NormY	**1.69** $\mu V/(V/m)^2$	DCP Y	**96**	mV
NormZ	**1.76** $\mu V/(V/m)^2$	DCP Z	**96**	mV

Sensitivity in Tissue Simulating Liquid

Head 900 MHz ε_r = 41.5 ± 5% σ = 0.97 ± 5% mho/m

Valid for f=800-1000 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	**6.4** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**6.4** ± 9.5% (k=2)	Alpha	**0.48**
ConvF Z	**6.4** ± 9.5% (k=2)	Depth	**2.13**

Head 1800 MHz ε_r = 40.0 ± 5% σ = 1.40 ± 5% mho/m

Valid for f=1710-1910 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	**5.1** ± 9.5% (k=2)	Boundary effect:	
ConvF Y	**5.1** ± 9.5% (k=2)	Alpha	**0.49**
ConvF Z	**5.1** ± 9.5% (k=2)	Depth	**2.70**

Boundary Effect

Head **900 MHz** **Typical SAR gradient: 5 % per mm**

Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	9.4	5.2
SAR_{be} [%]	With Correction Algorithm	0.2	0.4

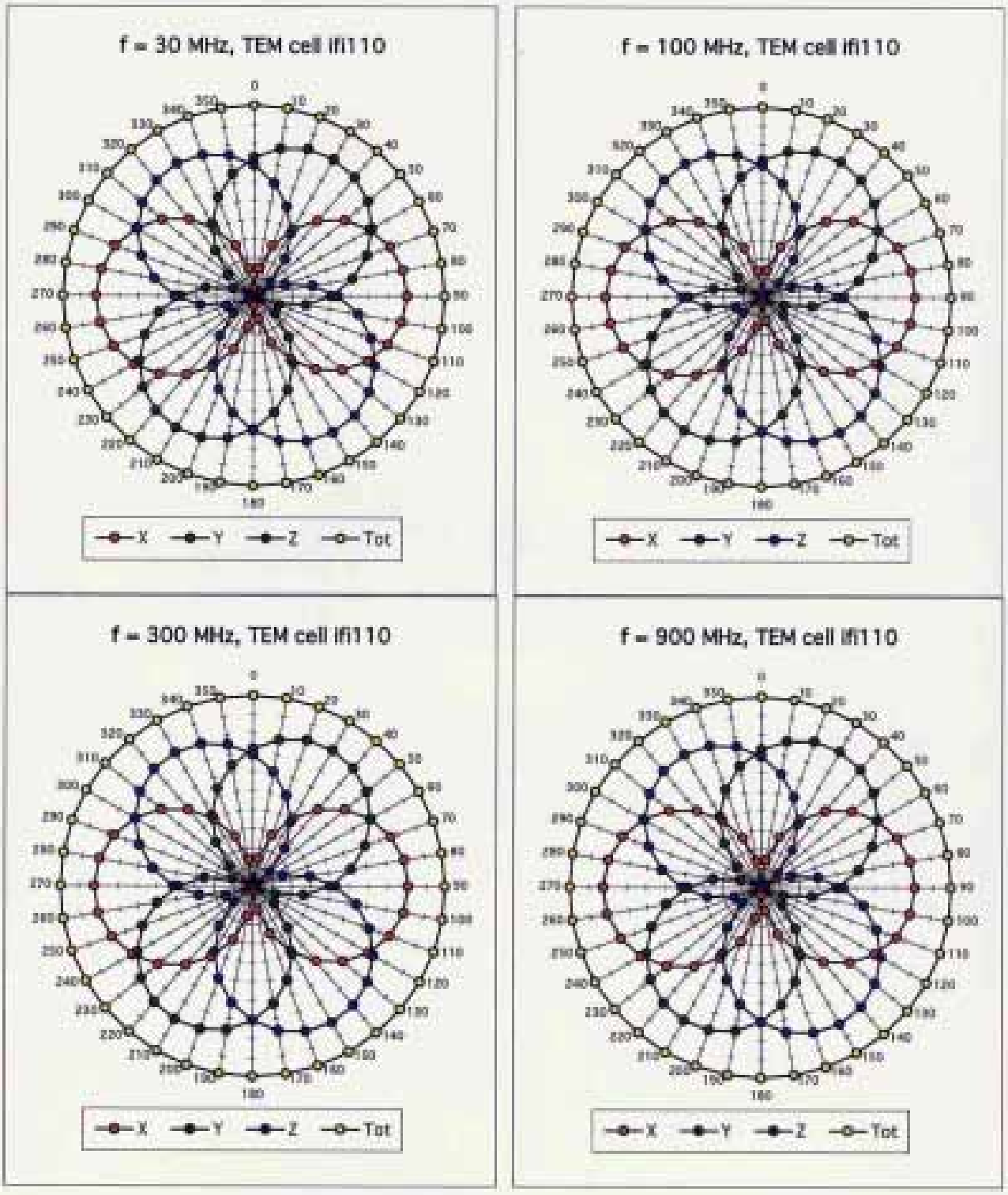
Head **1800 MHz** **Typical SAR gradient: 10 % per mm**

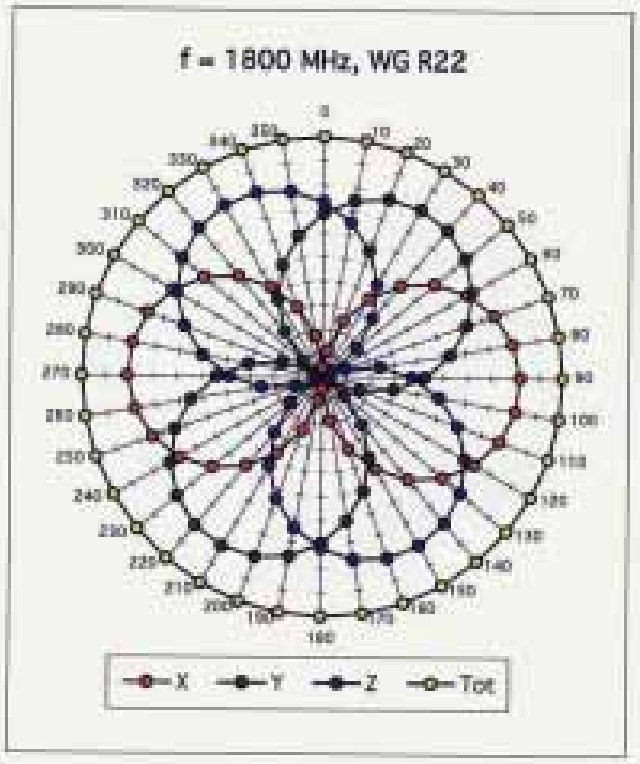
Probe Tip to Boundary		**1 mm**	**2 mm**
SAR_{be} [%]	Without Correction Algorithm	13.9	9.5
SAR_{be} [%]	With Correction Algorithm	0.2	0.1

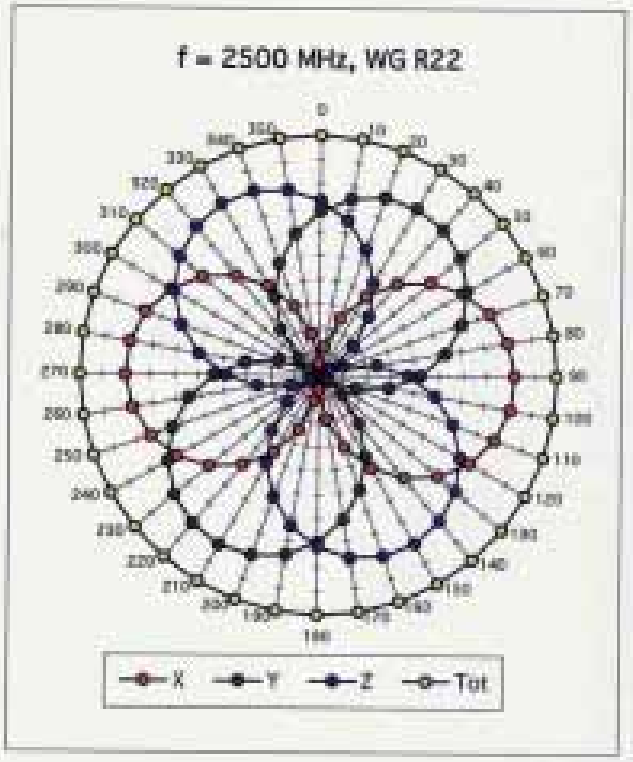
Sensor Offset

Probe Tip to Sensor Center	**2.7**	mm
Optical Surface Detection	**1.6 ± 0.2**	mm

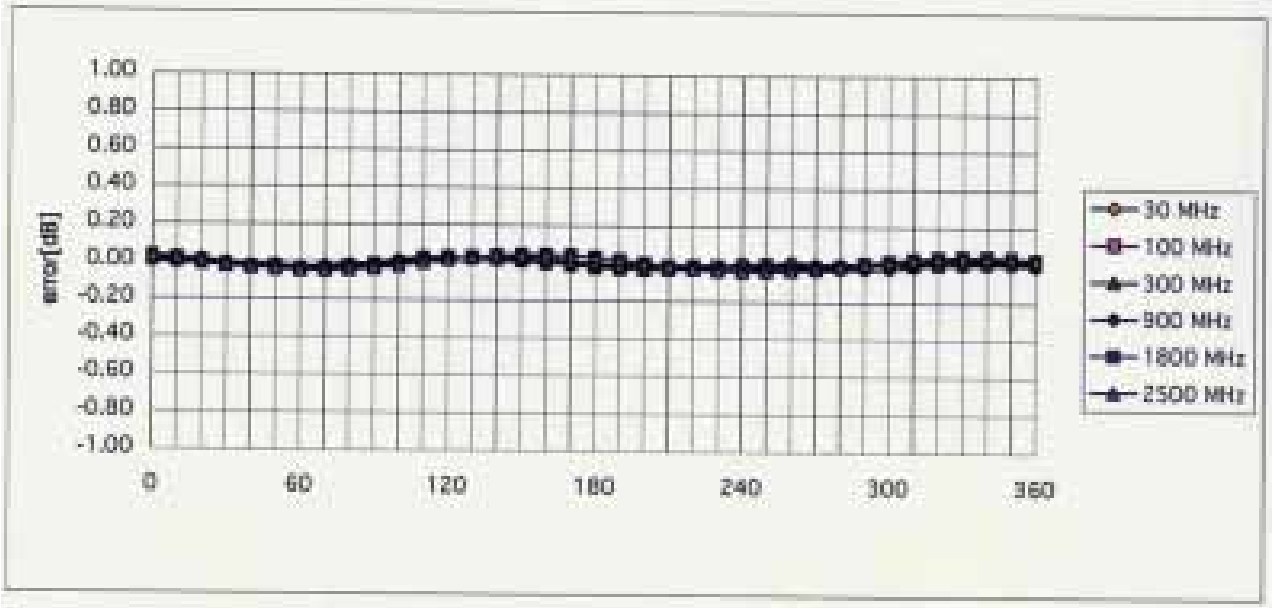
Receiving Pattern (ϕ), θ = 0°





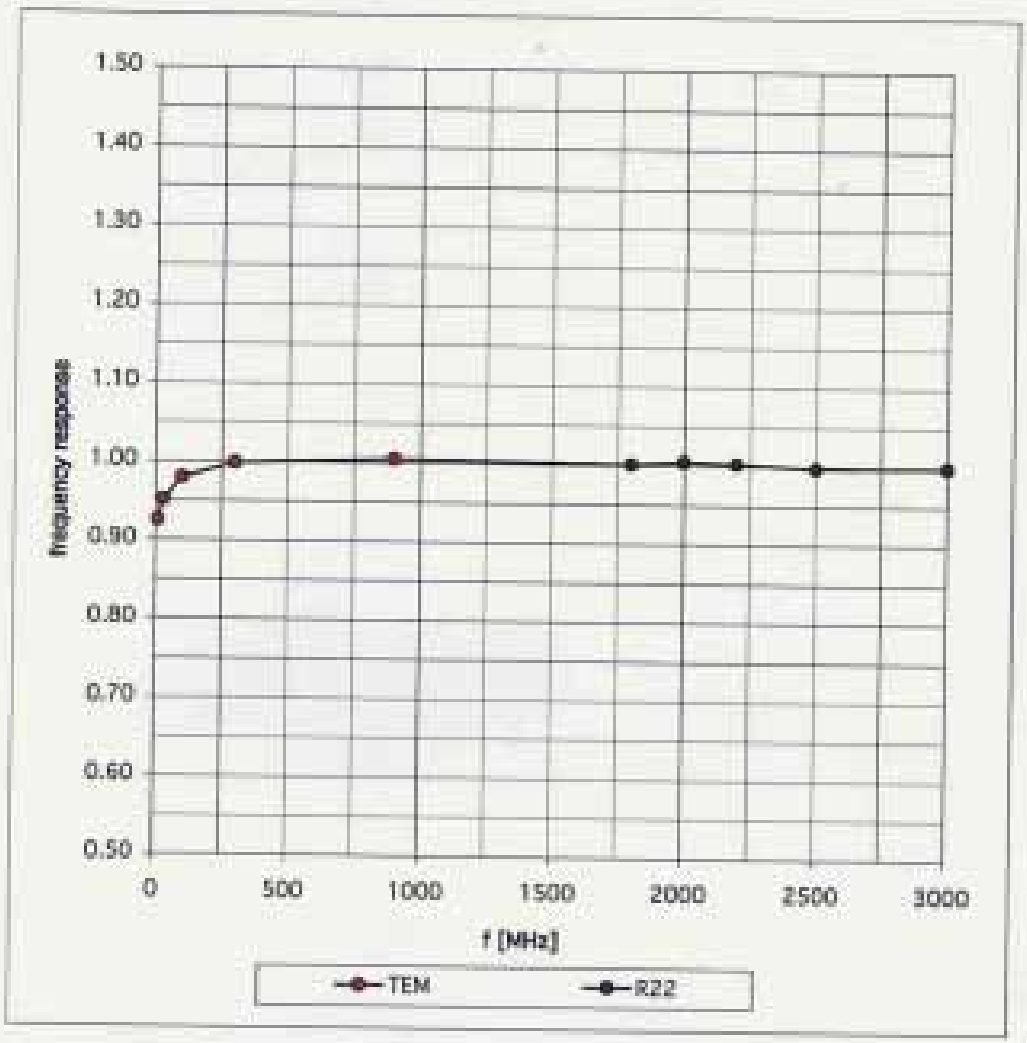


Isotropy Error (ϕ), θ = 0°



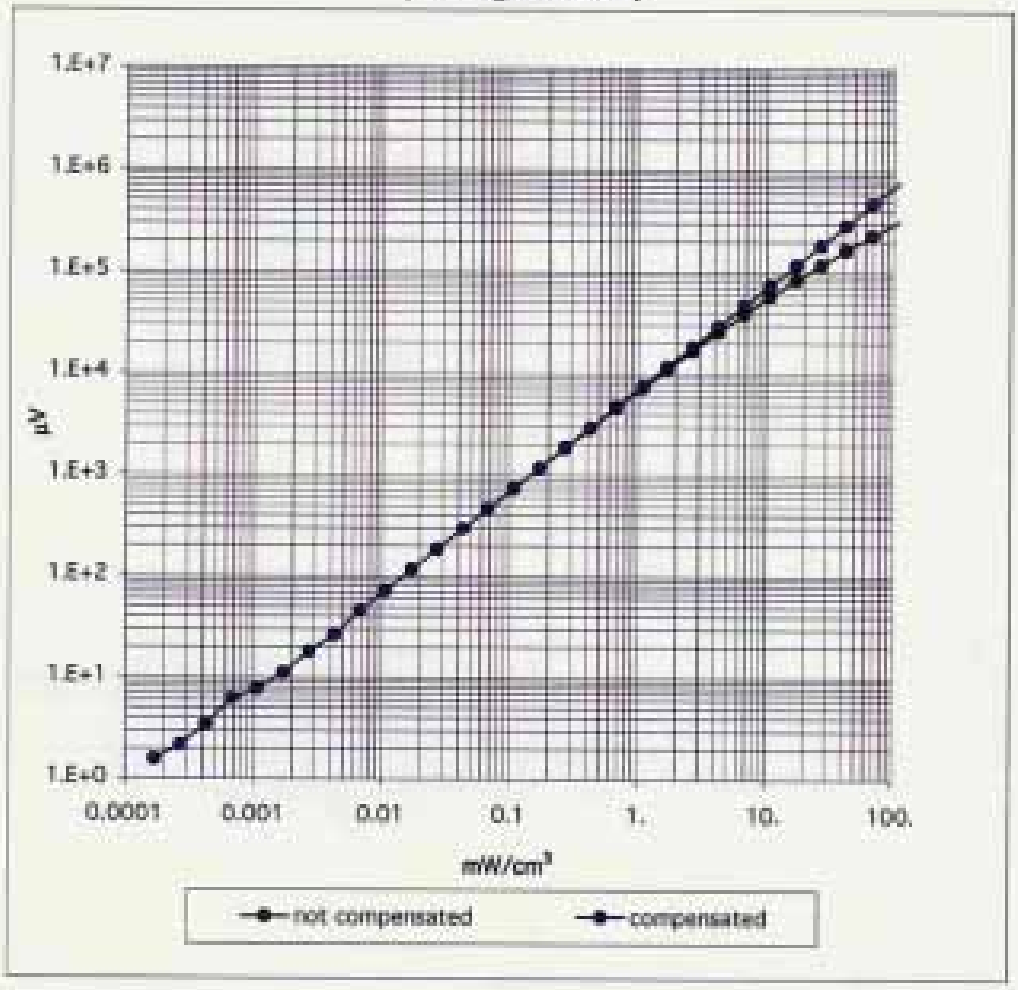
Frequency Response of E-Field

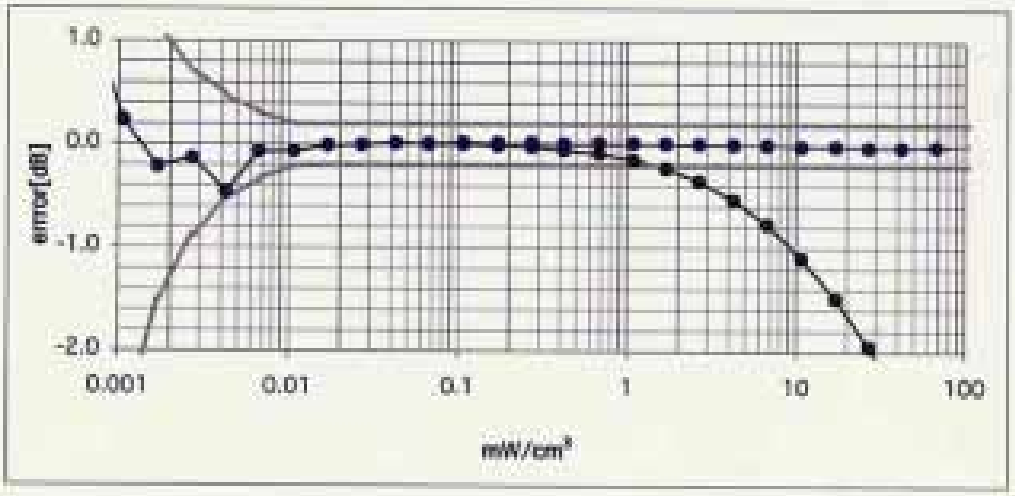
(TEM-Cell:ifi110, Waveguide R22)



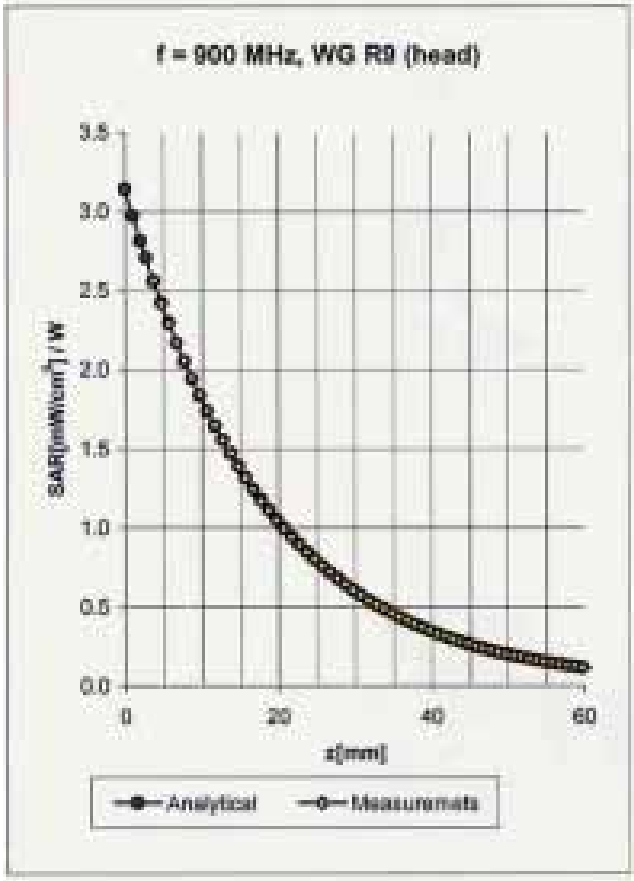
Dynamic Range f(SAR_{brain})

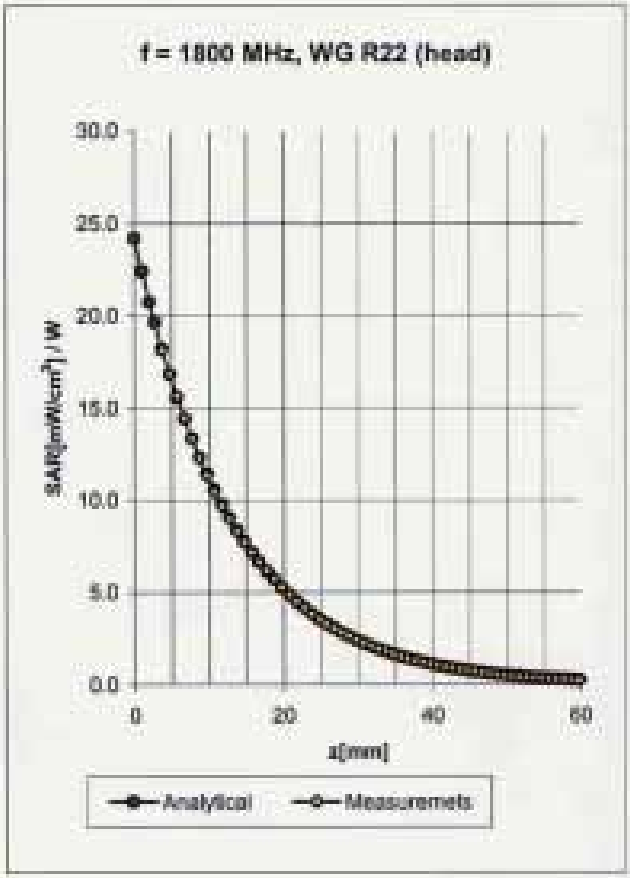
(Waveguide R22)





Conversion Factor Assessment





Head	900 MHz	ϵ_r = 41.5 ± 5%	σ = 0.97 ± 5% mho/m

Valid for f=800-1000 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

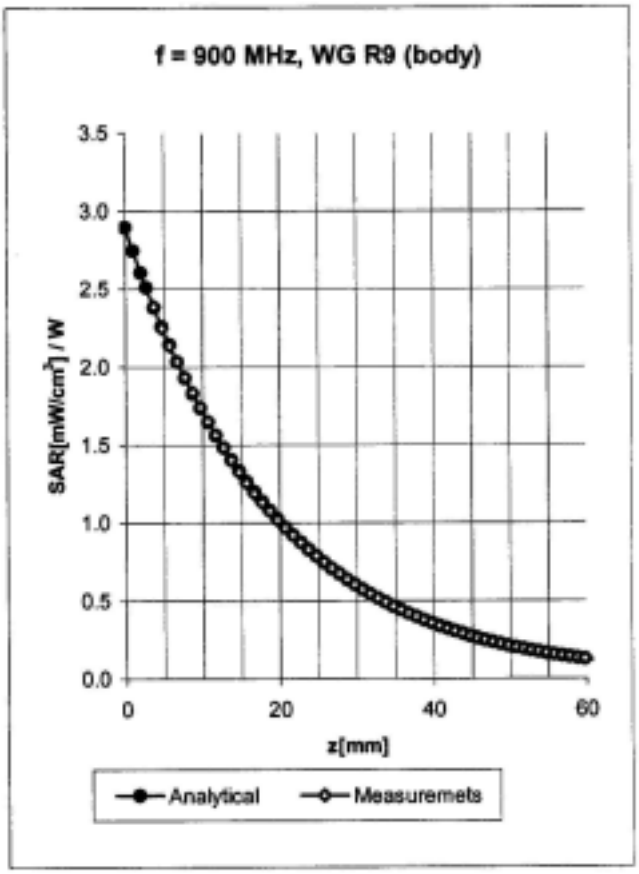
ConvF X	6.4 ± 9.5% (k=2)	Boundary effect:	
ConvF Y	6.4 ± 9.5% (k=2)	Alpha	0.48
ConvF Z	6.4 ± 9.5% (k=2)	Depth	2.13

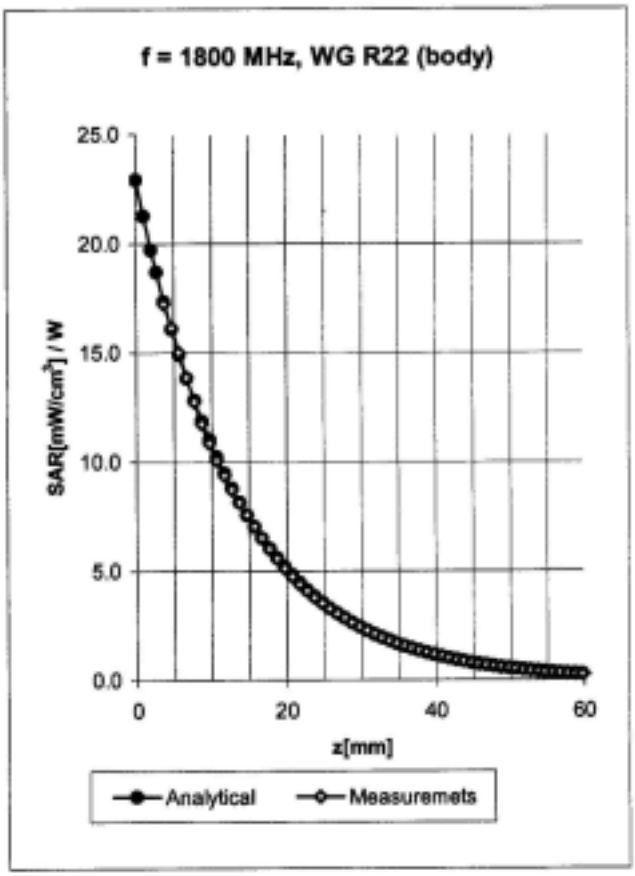
Head	1800 MHz	ϵ_r = 40.0 ± 5%	σ = 1.40 ± 5% mho/m

Valid for f=1710-1910 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	5.1 ± 9.5% (k=2)	Boundary effect:	
ConvF Y	5.1 ± 9.5% (k=2)	Alpha	0.49
ConvF Z	5.1 ± 9.5% (k=2)	Depth	2.70

Conversion Factor Assessment





Body 900 MHz ε_r = 55.0 ± 5% σ = 1.05 ± 5% mho/m

Valid for f=800-1000 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

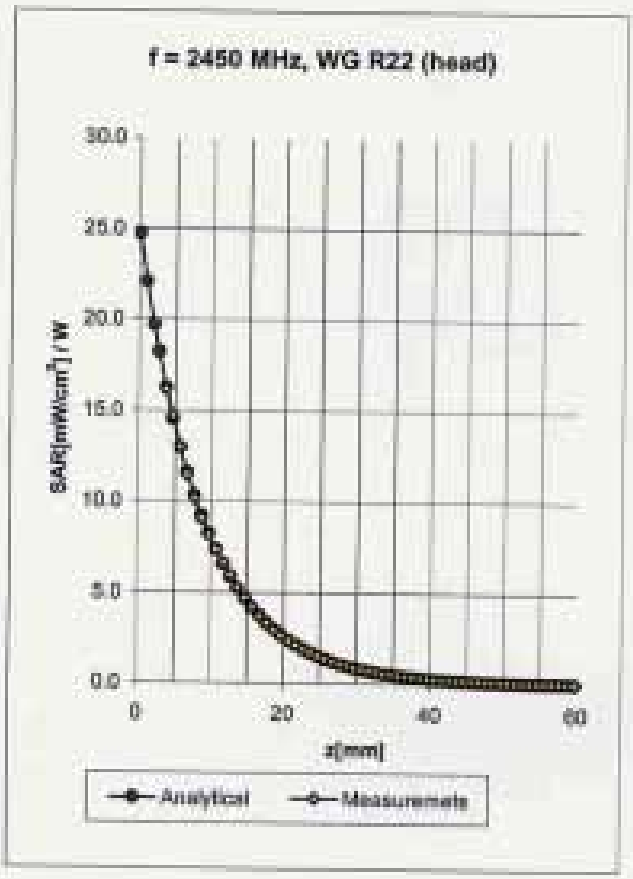
ConvF X	6.2 ± 9.5% (k=2)	Boundary effect:	
ConvF Y	6.2 ± 9.5% (k=2)	Alpha	0.40
ConvF Z	6.2 ± 9.5% (k=2)	Depth	2.57

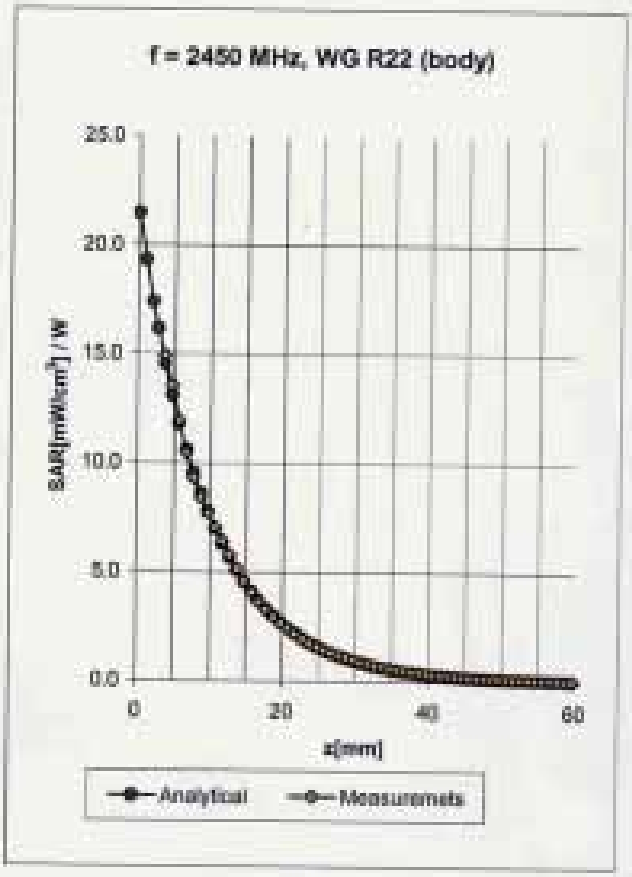
Body 1800 MHz ε_r = 53.3 ± 5% σ = 1.52 ± 5% mho/m

Valid for f=1710-1910 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

ConvF X	4.8 ± 9.5% (k=2)	Boundary effect:	
ConvF Y	4.8 ± 9.5% (k=2)	Alpha	0.54
ConvF Z	4.8 ± 9.5% (k=2)	Depth	2.76

Conversion Factor Assessment





Head	2450	MHz	ε_r = 39.2 ± 5%	σ = 1.80 ± 5% mho/m

Valid for f=2400-2500 MHz with Head Tissue Simulating Liquid according to EN 50361, P1528-200X

ConvF X	4.7 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	4.7 ± 8.9% (k=2)	Alpha	1.00
ConvF Z	4.7 ± 8.9% (k=2)	Depth	1.89

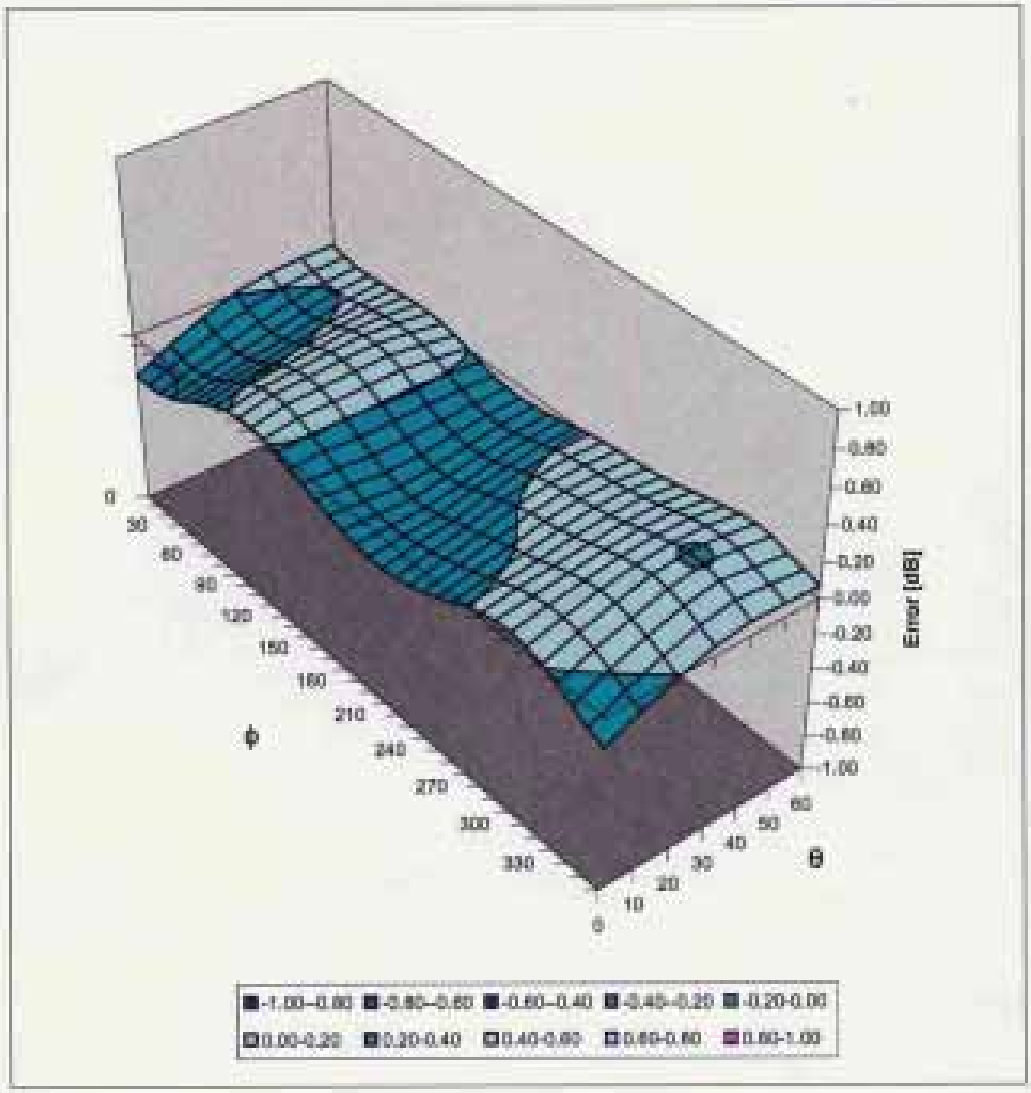
Body	2450	MHz	ε_r = 52.7 ± 5%	σ = 1.95 ± 5% mho/m

Valid for f=2400-2500 MHz with Body Tissue Simulating Liquid according to OET 65 Suppl. C

ConvF X	4.4 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	4.4 ± 8.9% (k=2)	Alpha	1.21
ConvF Z	4.4 ± 8.9% (k=2)	Depth	1.59

Deviation from Isotropy in HSL

Error (θ,φ), f = 900 MHz



D3: DAE

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

Client

CALIBRATION CERTIFICATE

Object(s)	DAE3 - SN:579
Calibration procedure(s)	QA CAL-06.v3 Calibration procedure for the data acquisition unit (DAE)
Calibration date:	August 15, 2003
Condition of the calibrated item	In Tolerance (according to the specific calibration document)

This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard.

All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date	Scheduled Calibration
Fluke Process Calibrator Type 702	SN: 6295803	3-Sep-01	Sep-03

	Name	Function	Signature
Calibrated by:	Philipp Storchenegger	Technician	
Approved by:	Fin Bomholt	R&D Director	

Date issued: August 15, 2003

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

1. Cal Lab. Incoming Inspection & Pre Test

Mocification Status	Note Stalus here → → → →	BC
Visual Inspection	Note anomalies.....	None
	.....	.....
Pre Test	**Indication**	**Yes/No**
Probe Touch	Function	Yes
Probe Collision	Function	Yes
Probe Touch&Collision	Function	Yes

2. DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1μV , full range = 400 mV
Low Range: 1LSB = 61nV , full range = 4 mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	**X**	**Y**	**Z**
High Range rounded to 7 digits	404.5370401	404.5593911	404.3923437
Low Range rounded to 6 digits	3.9686	3.9584	3.95
Connector Angle to be used	in DASY System	311 °	

High Range	**Input**	**Reading in μV**	**% Error**
Channel X + Input	200mV	199999.6	0.00
	20mV	19998.2	-0.01
Channel X - Input	20mV	-19995.3	-0.02
Channel Y + Input	200mV	199999.8	0.00
	20mV	19998.3	-0.01
Channel Y - Input	20mV	-19993.6	-0.03
Channel Z + Input	200mV	200000.6	0.00
	20mV	19997.8	-0.01
Channel Z - Input	20mV	-19994.3	-0.03

Low Range	**Input**	**Reading in μV**	**% Error**
Channel X + Input	2mV	1999.99	0.00
	0.2mV	199.66	-0.17
Channel X - Input	0.2mV	-200.21	0.11
Channel Y + Input	2mV	1999.89	-0.0[illegible]
	0.2mV	199.20	-0.40
Channel Y - Input	0.2mV	-201.14	0.57
Channel Z + Input	2mV	1999.99	0.00
	0.2mV	199.18	-0.41
Channel Z - Input	0.2mV	-202.26	1.13

3. Common mode sensitivity

DASY measurement parameters:
Auto Zero Time: 3 sec, Measuring time: 3 sec
High/Low Range

In μV	Common mode Input Voltage	High Range Reading	Low Range Reading
Channel X	200mV	5.15	5.17
	-200mV	-4.35	-4.68
Channel Y	200mV	9.00	8.70
	-200mV	-10.57	-10.21
Channel Z	200mV	8.93	8.00
	-200mV	-10.74	-10.51

4. Channel separation

DASY measurement parameters:
Auto Zero Time: 3 sec, Measuring time: 3 sec
High Range

In μV	Input Voltage	Channel X	Channel Y	Channel Z
Channel X	200mV	-	0.87	-0.39
Channel Y	200mV	0.80	-	2.23
Channel Z	200mV	-2.73	-0.30	-

5. AD-Converter Values with inputs shorted

In LSB	Low Range	High Range
Channel X	16102	16311
Channel Y	16055	16139
Channel Z	15811	15833

6. Input Offset Measurement

DASY measurement parameters:
Auto Zero Time: 3 sec, Measuring time: 3 sec
Number of measurements: 100, Low Range

Input 10MΩ

In μV	Average	min. Offset	max. Offset	Std. Deviation
Channel X	0.25	-1.75	1.20	0.43
Channel Y	-1.47	-2.17	0.46	0.35
Channel Z	-1.64	-2.78	0.28	0.45

6. Input Offset Measurement (cont'd)

Input shorted

In µV	Average	min. Offset	max. Offset	Std. Deviation
Channel X	-0.02	-0.85	0.97	0.27
Channel Y	-0.69	-2.12	0.97	0.35
Channel Z	-0.96	-2.39	0.43	0.35

7. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

8. Input Resistance

In MOhm	Calibrating	Measuring
Channel X	0.2001	199.9
Channel Y	0.1999	203.3
Channel Z	0.2000	200.4

9. Low Battery Alarm Voltage

In V	Alarm Level
Supply (+ Vcc)	7.72
Supply (- Vcc)	7.55

10. Power Consumption

In mA	Switched off	Stand by	Transmitting
Supply (+ Vcc)	0.03	8.71	14.4
Supply (- Vcc)	-0.01	-8.03	-9.20

D4: 2450MHZ SYSTEM VALIDATION DIPOLE

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

Client Auden > Chunghwa Telecom

CALIBRATION CERTIFICATE

Object(s) D2450V2 - SN:737

Calibration procedure(s) QA CAL-05.v2
Calibration procedure for dipole validation kits

Calibration date: August 27, 2003

Condition of the calibrated item In Tolerance (according to the specific calibration document)

This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard.

All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
RF generator R&S SML-03	100698	27-Mar-2002 (R&S, No. 20-92389)	In house check: Mar-05
Power sensor HP 8481A	MY41092317	18-Oct-02 (Agilent, No. 20021018)	Oct-04
Power sensor HP 8481A	US37292783	30-Oct-02 (METAS, No. 252-0236)	Oct-03
Power meter EPM-E442	GB37480704	30-Oct-02 (METAS, No. 252-0236)	Oct-03
Network Analyzer HP 8753E	US37390585	18-Oct-01 (Agilent, No. 24BR1033101)	In house check: Oct 03

	Name	Function	Signature
Calibrated by:	Judith Mueller	Technician	
Approved by:	Katja Pokovic	Laboratory Director	

Date issued: August 28, 2003

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

Schmid & Partner Engineering AG

s p e a g

Zeughausstrasse 43, 8004 Zurich, Switzerland
Phone +41 1 245 9700, Fax +41 1 245 9779
info@speag.com, http://www.speag.com

DASY

Dipole Validation Kit

Type: D2450V2

Serial: 737

Manufactured: August 26, 2003
Calibrated: August 27, 2003

1. Measurement Conditions

The measurements were performed in the flat section of the SAM twin phantom filled with **head simulating solution** of the following electrical parameters at 2450 MHz:

Relative Dielectricity	**38.2**	± 5%
Conductivity	**1.89 mho/m**	± 5%

The DASY4 System with a dosimetric E-field probe ES3DV2 (SN:3013, Conversion factor 4.8 at 2450 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10mm from dipole center to the solution surface. Lossless spacer was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 15mm was aligned with the dipole. The 7x7x7 fine cube was chosen for cube integration.
The dipole input power (forward power) was 250mW ± 3 %. The results are normalized to 1W input power.

2. SAR Measurement with DASY4 System

Standard SAR-measurements were performed according to the measurement conditions described in section 1. The results (see figure supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured with the dosimetric probe ES3DV2 SN:3013 and applying the advanced extrapolation are:

averaged over 1 cm^3 (1 g) of tissue:	**55.2 mW/g** = 16.8 % (k=2)[1]
averaged over 10 cm^3 (10 g) of tissue:	**24.8 mW/g** = 16.2 % (k=2)[1]

[1] validation uncertainty

3. Dipole Impedance and Return Loss

The impedance was measured at the SMA-connector with a network analyzer and numerically transformed to the dipole feedpoint. The transformation parameters from the SMA-connector to the dipole feedpoint are:

Electrical delay	**1.162 ns**	(one direction)
Transmission factor:	**0.983**	(voltage transmission, one direction)

The dipole was positioned at the flat phantom sections according to section 1 and the distance spacer was in place during impedance measurements.

Feedpoint impedance at 2450 MHz:	Re{Z} = **52.5 Ω**
	Im {Z} = **5.4 Ω**
Return Loss at 2450 MHz	**-24.8 dB**

4. Measurement Conditions

The measurements were performed in the flat section of the SAM twin phantom filled with **body simulating solution** of the following electrical parameters at 2450 MHz:

Relative Dielectricity	**50.8**	± 5%
Conductivity	**2.03 mho/m**	± 5%

The DASY4 System with a dosimetric E-field probe ES3DV2 (SN:3013, Conversion factor 4.2 at 2450 MHz) was used for the measurements.

The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10mm from dipole center to the solution surface. Lossless spacer was used during measurements for accurate distance positioning.

The course grid with a grid spacing of 15mm was aligned with the dipole. The 7x7x7 fine cube was chosen for cube integration.
The dipole input power (forward power) was 250mW ± 3 %. The results are normalized to 1W input power.

5. SAR Measurement with DASY4 System

Standard SAR-measurements were performed according to the measurement conditions described in section 4. The results (see figure supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured with the dosimetric probe ES3DV2 SN:3013 and applying the advanced extrapolation are:

averaged over 1 cm^3 (1 g) of tissue:	**55.2 mW/g** ± 16.8 % (k=2)[2]
averaged over 10 cm^3 (10 g) of tissue:	**25.4 mW/g** ± 16.2 % (k=2)[2]

6. Dipole Impedance and Return Loss

The dipole was positioned at the flat phantom sections according to section 4 and the distance spacer was in place during impedance measurements.

Feedpoint impedance at 2450 MHz:	Re{Z} = **48.5 Ω**
	Im {Z} = **6.1 Ω**
Return Loss at 2450 MHz	**-23.9 dB**

7. Handling

Do not apply excessive force to the dipole arms, because they might bend. Bending of the dipole arms stresses the soldered connections near the feedpoint leading to a damage of the dipole.

8. Design

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.

Small end caps have been added to the dipole arms in order to improve matching when loaded according to the position as explained in Sections 1and 4. The SAR data are not affected by this change. The overall dipole length is still according to the Standard.

9. Power Test

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

---

[2] validation uncertainty

Date/Time: 08/27/03 12:18:06

Test Laboratory: SPEAG, Zurich, Switzerland
File Name: SN737_SN3013_HSL2450_270803.da4

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN737
Program: Dipole Calibration

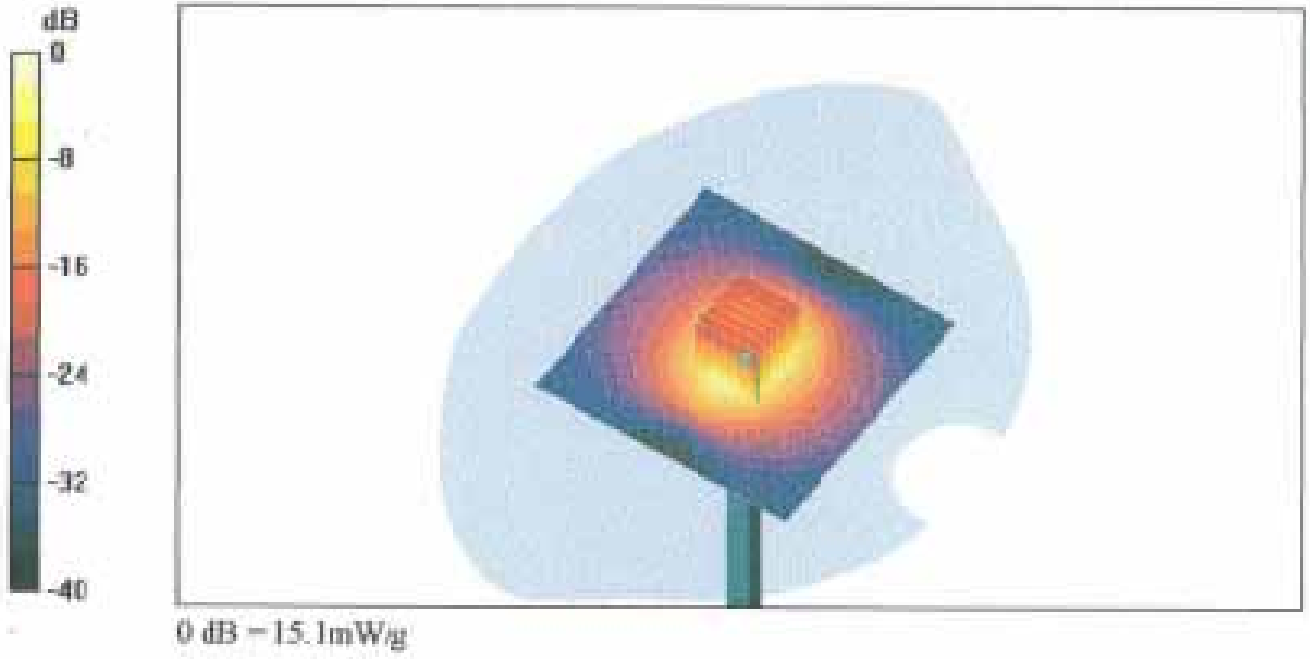
Communication System: CW-2450; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: HSL 2450 MHz (σ = 1.89 mho/m, ε_r = 38.19, ρ = 1000 kg/m^3)
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

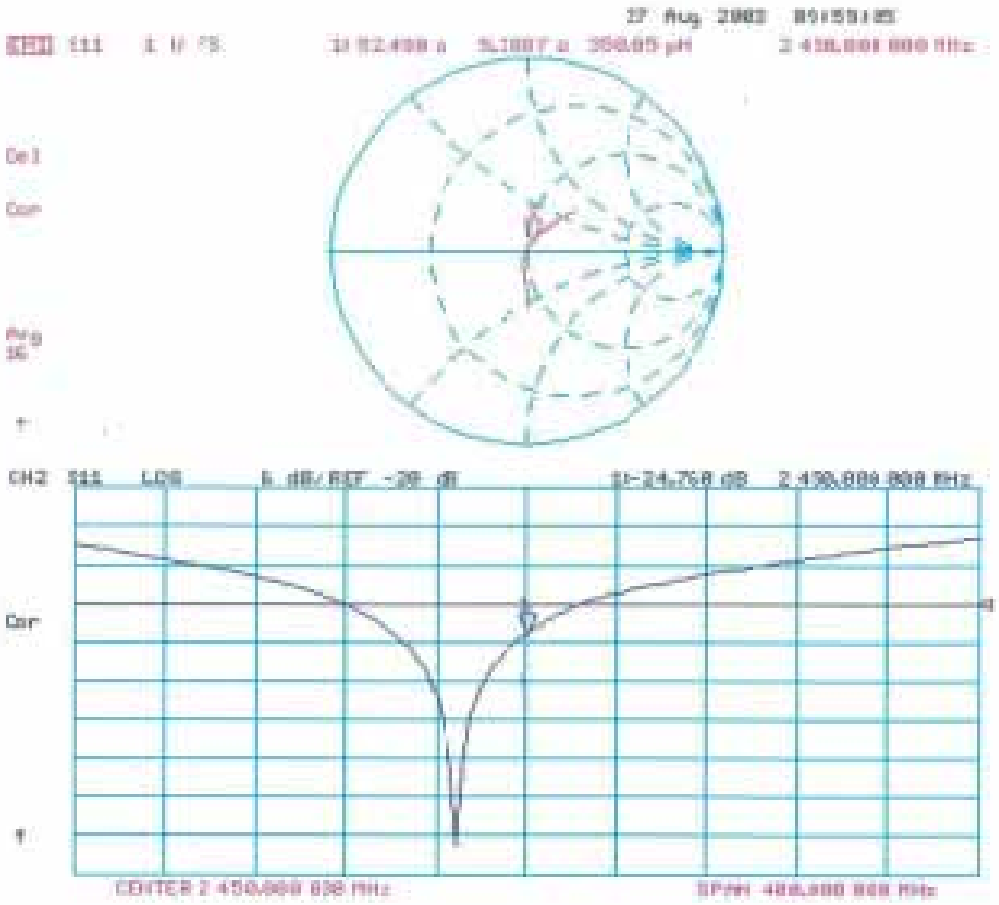
- Probe: ES3DV2 - SN3013; ConvF(4.8, 4.8, 4.8); Calibrated: 1/19/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 - SN411; Calibrated: 1/16/2003
- Phantom: SAM with CRP - TP1006; Type: SAM 4.0; Serial: TP:1006
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Pin = 250 mW; d = 10 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 90.7 V/m
Power Drift = -0.07 dB
Maximum value of SAR = 15.2 mW/g

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 29.6 W/kg
SAR(1 g) = 13.8 mW/g; SAR(10 g) = 6.2 mW/g
Reference Value = 90.7 V/m
Power Drift = -0.07 dB
Maximum value of SAR = 15.1 mW/g



0 dB = 15.1mW/g


27 Aug 2003 09:59:05
CH1 S11 1 U 75
Del
Cor
Avg
3G
CH2 S11 LOG 5 dB/ REF -20 dB 1: -24.768 dB 2.450,000,000 GHz
Cor
CENTER 2.450,000,000 GHz
SPAN 400,000,000 GHz

Date/Time: 08/27/03 15:51:01

Test Laboratory: SPEAG, Zurich, Switzerland
File Name: SN737_SN3013_M2450_270803.da4

DUT: Dipole 2450 MHz; Type: D2450V2; Serial: D2450V2 - SN737
Program: Dipole Calibration

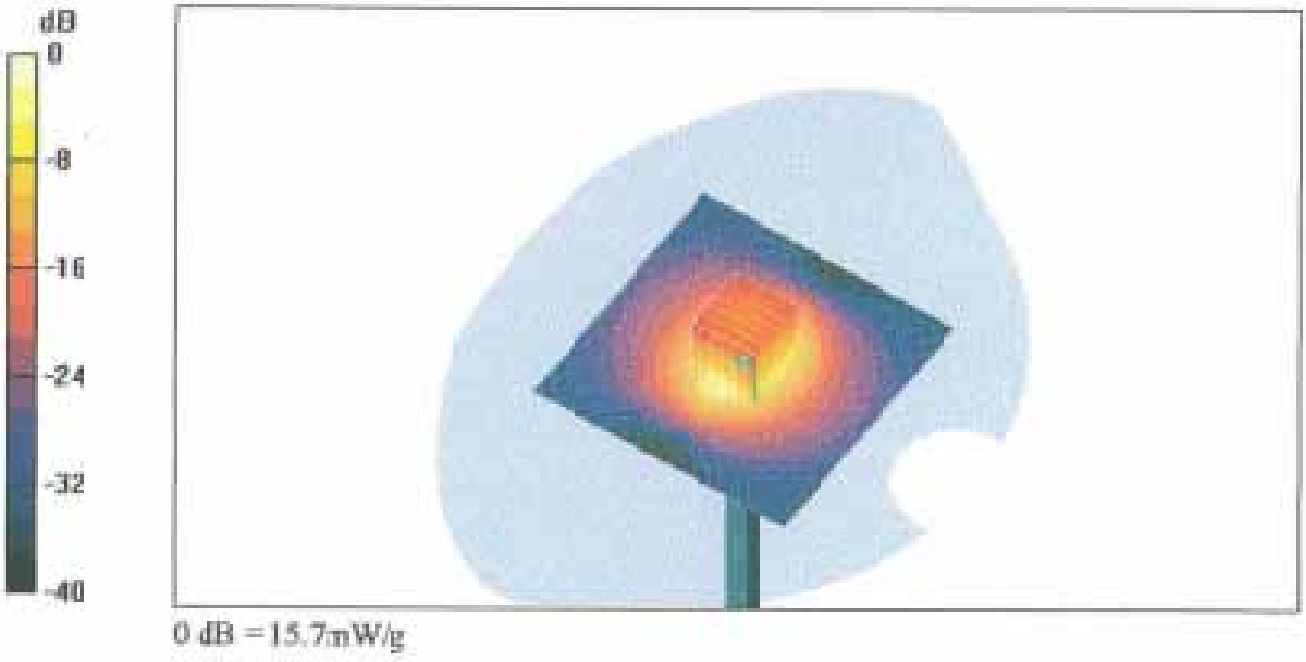
Communication System: CW-2450; Frequency: 2450 MHz;Duty Cycle: 1:1
Medium: Muscle 2450 MHz (σ = 2.03 mho/m, ε_r = 50.75, ρ = 1000 kg/m^3)
Phantom section: Flat Section
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration

- Probe: ES3DV2 - SN3013; ConvF(4.2, 4.2, 4.2); Calibrated: 1/19/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 - SN411; Calibrated: 1/16/2003
- Phantom: SAM with CRP - TP1006; Type: SAM 4.0; Serial: TP:1006
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

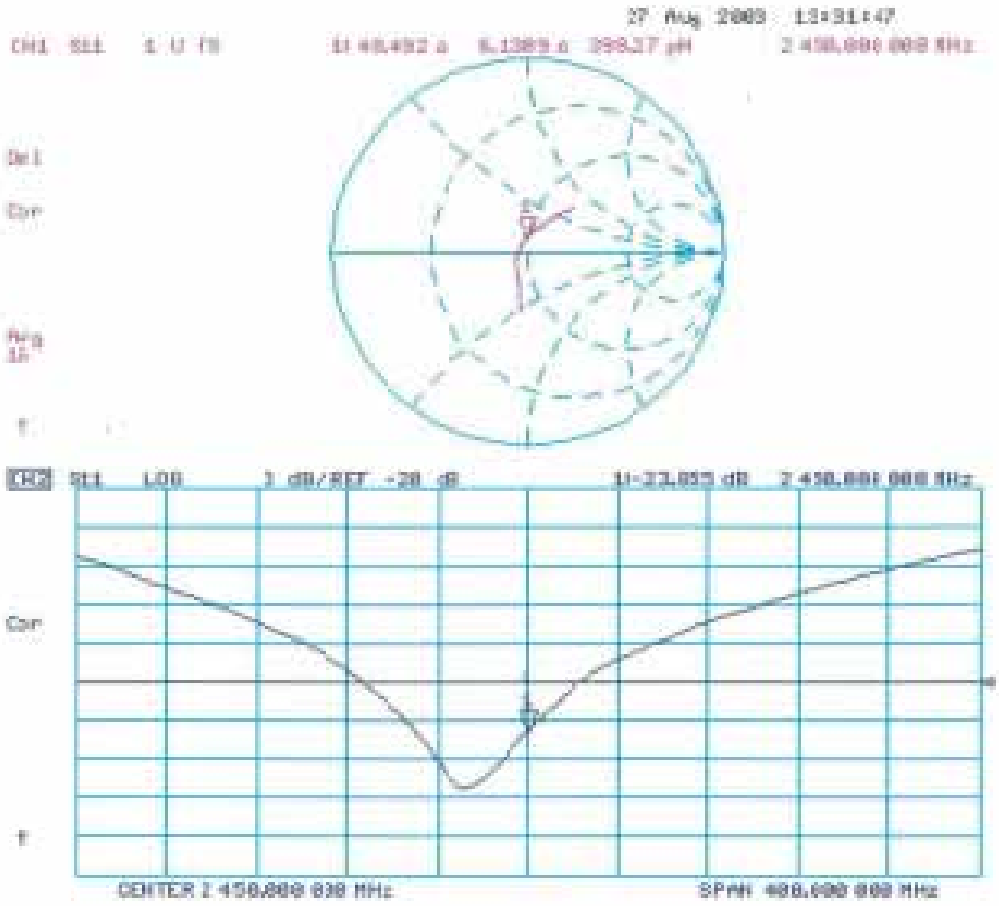
Pin = 250 mW; d = 10 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 90.4 V/m
Power Drift = -0.03 dB
Maximum value of SAR = 15.7 mW/g

Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 27.3 W/kg
SAR(1 g) = 13.8 mW/g; SAR(10 g) = 6.36 mW/g
Reference Value = 90.4 V/m
Power Drift = -0.03 dB
Maximum value of SAR = 15.7 mW/g



0 dB = 15.7mW/g

737
Body


27 Aug 2003 13:31:47
CH1 S11 1 U FS 31.48.492 Ω 6.1389 Ω 398.27 pH 2.450,000 000 MHz
Del
Cor
Avg
In
f
CH2 S11 LOG 3 dB/REF -20 dB M-23.855 dB 2.450,000 000 MHz
Cor
f
CENTER 2.450,000 000 MHz
SPAN 400.000 000 MHz

APPENDIX E: SYSTEM CERTIFICATE & CALIBRATION for 5GHz

D1: SAM PHANTOM

Schmid & Partner Engineering AG

Zeughausstrasse 43, 8004 Zurich, Switzerland, Phone +41 1 245 97 00, Fax +41 1 245 97 79

Certificate of conformity / First Article Inspection

Item	SAM Twin Phantom V4.0
Type No	QD 000 P40 CA
Series No	TP-1150 and higher
Manufacturer / Origin	Untersee Composites Hauptstr. 69 CH-8559 Fruthwilen Switzerland

Tests

The series production process used allows the limitation to test of first articles.
Complete tests were made on the pre-series Type No. QD 000 P40 AA, Serial No. TP-1001 and on the series first article Type No. QD 000 P40 BA, Serial No. TP-1006. Certain parameters have been retested using further series units (called samples).

Test	Requirement	Details	Units tested
Shape	Compliance with the geometry according to the CAD model.	IT'IS CAD File (*)	First article, Samples
Material thickness	Compliant with the requirements according to the standards	2mm +/- 0.2mm in specific areas	First article, Samples
Material parameters	Dielectric parameters for required frequencies	200 MHz – 3 GHz Relative permittivity < 5 Loss tangent < 0.05.	Material sample TP 104-5
Material resistivity	The material has been tested to be compatible with the liquids defined in the standards	Liquid type HSL 1800 and others according to the standard.	Pre-series, First article

Standards

[1] CENELEC EN 50361
[2] IEEE P1528-200x draft 6.5
[3] IEC PT 62209 draft 0.9
(*) The IT'IS CAD file is derived from [2] and is also within the tolerance requirements of the shapes of [1] and [3].

Conformity

Based on the sample tests above, we certify that this item is in compliance with the uncertainty requirements of SAR measurements specified in standard [1] and draft standards [2] and [3].

Date 28.02.2002

Signature / Stamp

Schmid & Partner Engineering AG
Zeughausstrasse 43, CH-8004 Zurich
Tel. +41 1 245 97 00, Fax +41 1 245 97 79

D2: DOSIMETRIC E-FIELD PROBE SN:3504

Schmid & Partner Engineering AG

s p e a g

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info@speag.com, http://www.speag.com

IMPORTANT NOTICE

UNCERTAINTY OF THE PROBE CONVERSION FACTOR

Important Note:

The Swiss accreditation body (METAS) has requested an additional uncertainty for narrow bandwidth probe calibration compared to the uncertainty table of IEEE/IEC defined for a single frequency. SPEAG and the IT'IS foundation are currently investigating the most appropriate method for narrow and broadband uncertainty assessment.

A preliminary uncertainty value for the indicated frequency bandwidth is included in the attached probe calibration document.

s p e a g

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info@speag.com, http://www.speag.com

Schmid & Partner Engineering AG

January 2004

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

Client **ADT (Auden)**

CALIBRATION CERTIFICATE

Object(s)	EX3DV3 - SN:3504
Calibration procedure(s)	QA CAL-01.v2 Calibration procedure for dosimetric E-field probes
Calibration date	February 20, 2004
Condition of the calibrated item	In Tolerance (according to the specific calibration document)

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 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM E4419B	GB41293874	2-Apr-03 (METAS, No 252-0250)	Apr-04
Power sensor E4412A	MY41495277	2-Apr-03 (METAS, No 252-0250)	Apr-04
Reference 20 dB Attenuator	SN: 5086 (20b)	3-Apr-03 (METAS, No. 251-0340)	Apr-04
Fluke Process Calibrator Type 702	SN: 6295803	8-Sep-03 (Sintrel SCS No. E-030020)	Sep-04
Power sensor HP 8481A	MY41092180	18-Sep-02 (SPEAG, in house check Oct-03)	In house check: Oct 05
RF generator HP 8684C	US3642U01700	4-Aug-99 (SPEAG, in house check Aug-02)	In house check: Aug-05
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Oct-03)	In house check: Oct 05

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Laboratory Director	
Approved by:	Fin Bomholt	R&D Director	

Date issued: February 26, 2004

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

Probe EX3DV3

SN:3504

Manufactured:	December 15, 2003
Last calibrated:	February 20, 2004

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: EX3DV3 SN:3504

Sensitivity in Free Space

NormX	0.59 $\mu V/(V/m)^2$
NormY	0.58 $\mu V/(V/m)^2$
NormZ	0.64 $\mu V/(V/m)^2$

Diode Compression[A]

DCP X	96	mV
DCP Y	96	mV
DCP Z	96	mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Plese see Page 7.

Boundary Effect

Head **900 MHz** **Typical SAR gradient: 5 % per mm**

Sensor Cener to Phantom Surface Distance		2.0 mm	3.0 mm
SAR_{be} [%]	Without Correction Algorithm	2.8	1.0
SAR_{be} [%]	With Correction Algorithm	0.0	0.1

Head **1800 MHz** **Typical SAR gradient: 10 % per mm**

Sensor to Surface Distance		2.0 mm	3.0 mm
SAR_{be} [%]	Without Correction Algorithm	4.6	2.8
SAR_{be} [%]	With Correction Algorithm	0.1	0.3

Sensor Offset

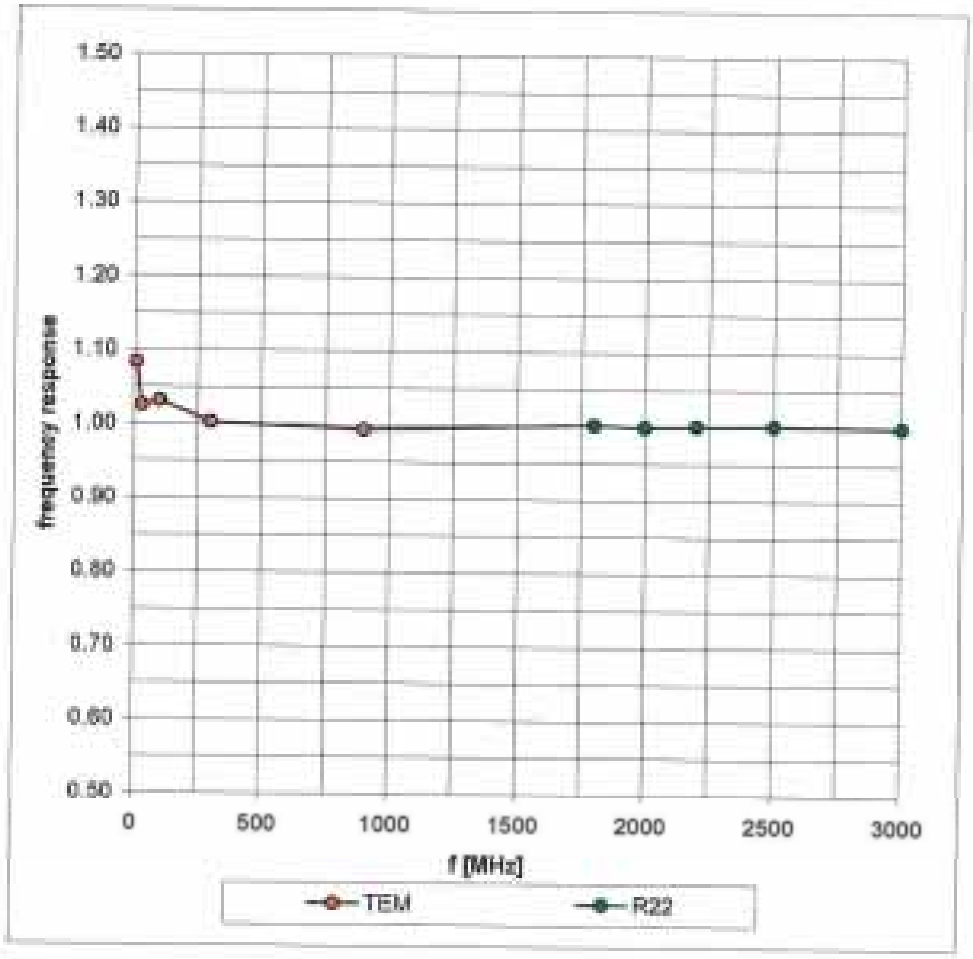
Probe Tip to Sensor Center	**1.0**	mm

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

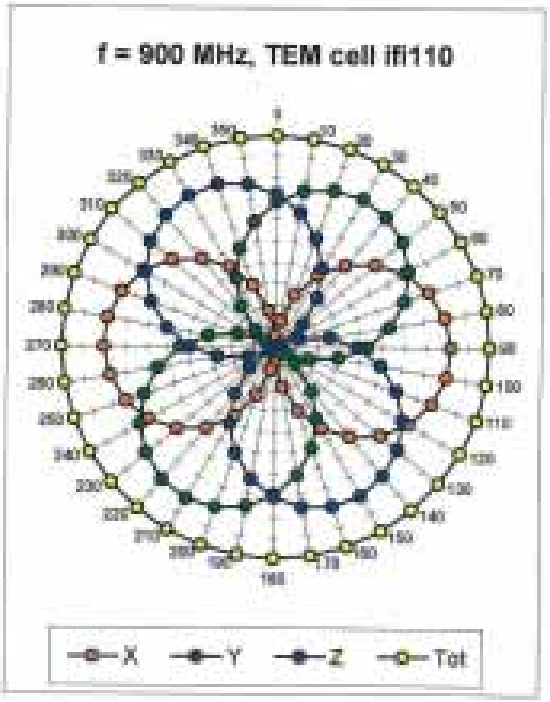
[A] numerical linearization parameter: uncertainty not required

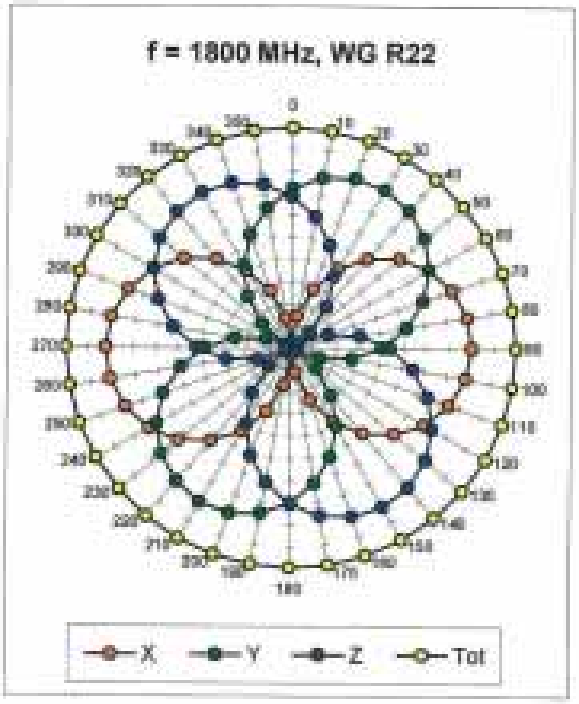
Frequency Response of E-Field

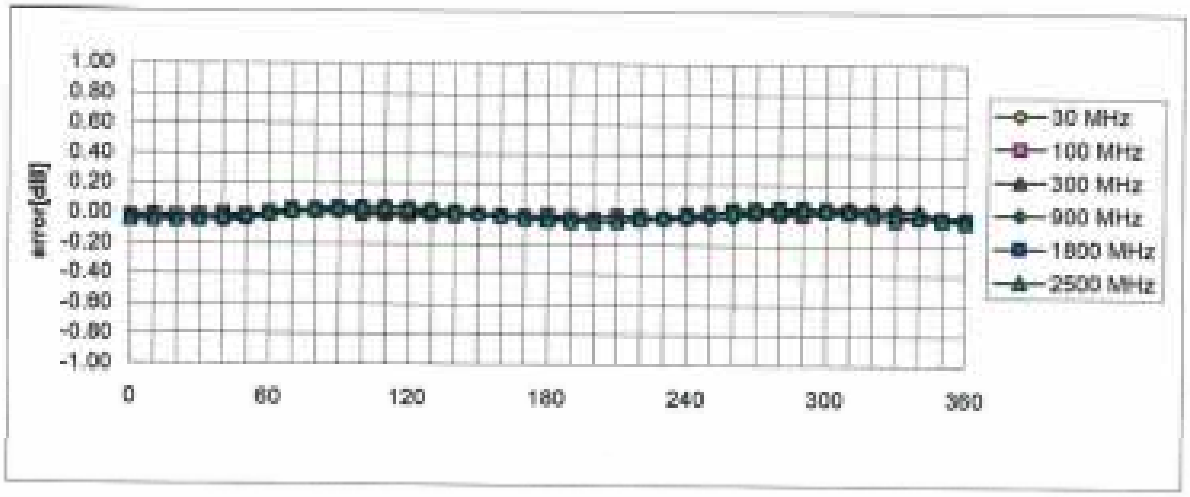
(TEM-Cell:ifi110, Waveguide R22)



Receiving Pattern (ϕ) , θ = 0°



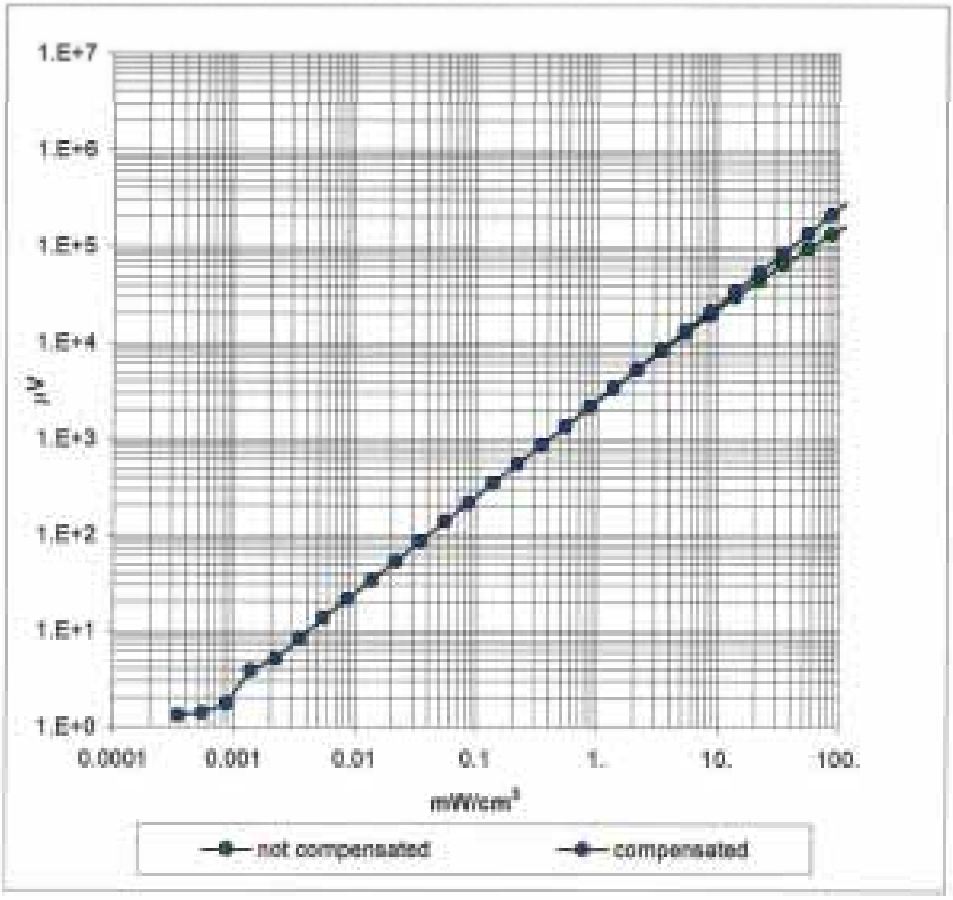


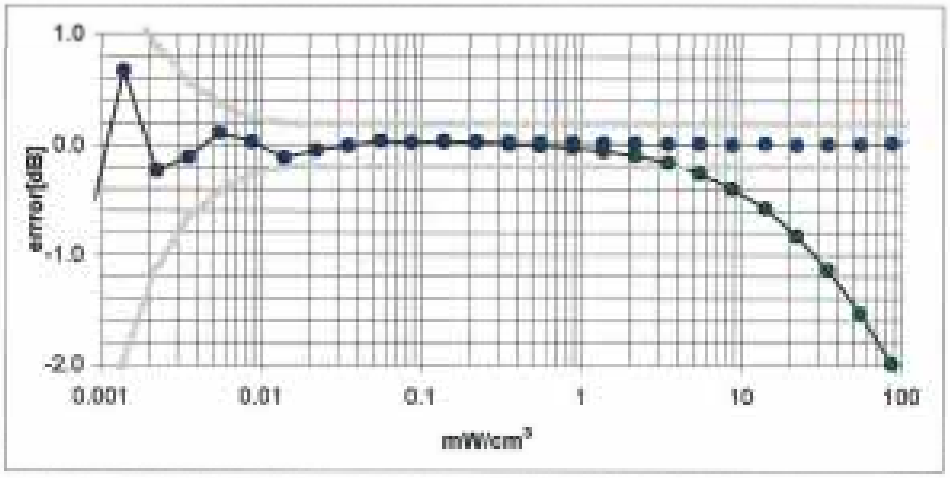


Axial Isotropy Error < ± 0.2 dB

Dynamic Range f(SAR_{head})

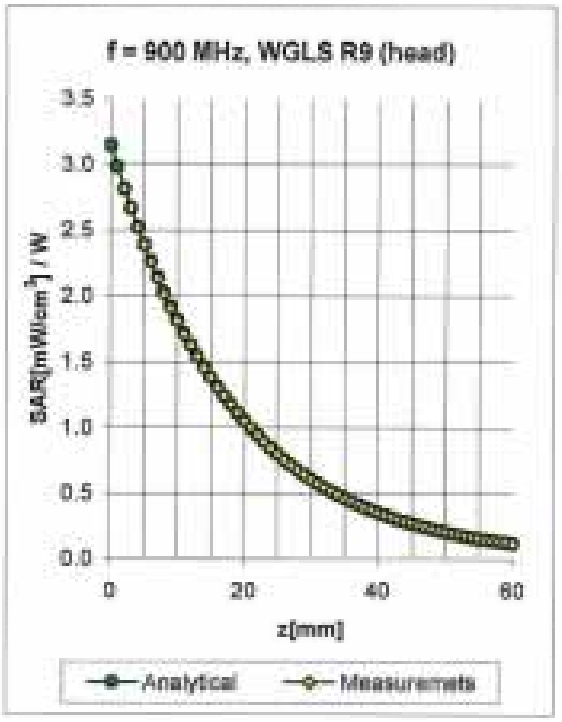
(Waveguide R22)

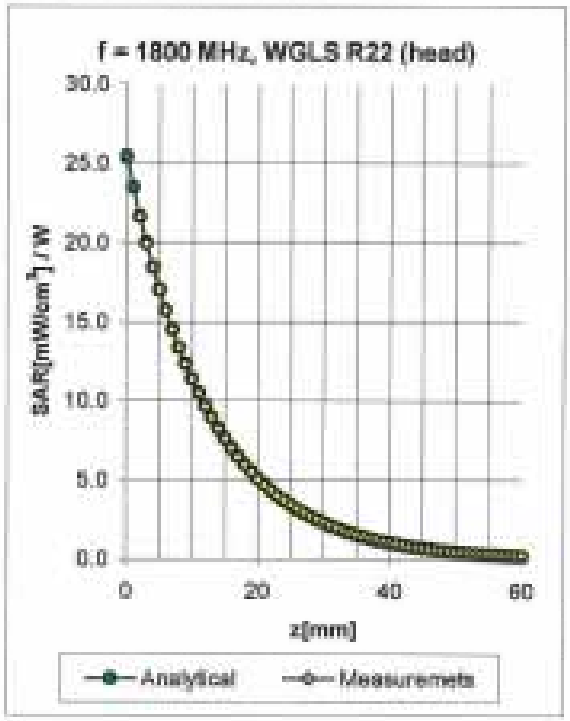




Probe Linearity < ± 0.2 dB

Conversion Factor Assessment



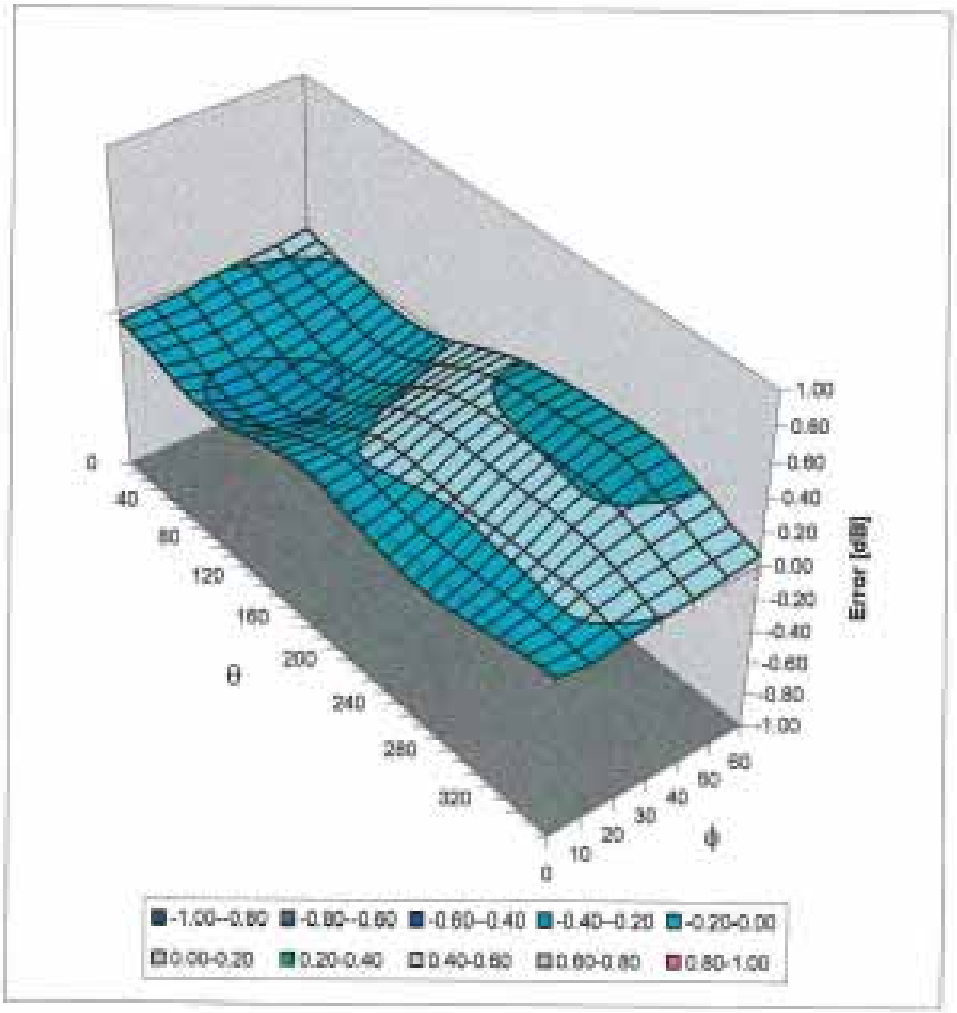


f [MHz]	Validity [MHz][a]	Tissue	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	800-1000	Head	41.5 ± 5%	0.97 ± 5%	0.24	0.93	9.88 ± 11.3% (k=2)
1800	1710-1910	Head	40.0 ± 5%	1.40 ± 5%	0.09	2.74	8.46 ± 11.7% (k=2)
5200	4940-5460	Head	36.0 ± 5%	4.66 ± 5%	0.45	1.80	4.68 ± 21.8% (k=2)
5800	5510-6090	Head	35.3 ± 5%	5.27 ± 5%	0.45	1.80	4.50 ± 23.4% (k=2)
5200	4940-5460	Body	49.0 ± 5%	5.30 ± 5%	0.45	1.90	4.29 ± 21.8% (k=2)
5800	5510-6090	Body	48.2 ± 5%	6.00 ± 5%	0.43	1.90	3.96 ± 23.4% (k=2)

[a] The total standard uncertainty is calculated as root-sum-square of standard uncertainty of the Conversion Factor at calibration frequency and the standard uncertainty for the indicated frequency band.

Deviation from Isotropy in HSL

Error (θ,ϕ), f = 900 MHz



Spherical Isotropy Error < ± 0.4 dB

D3: DAE SN:579

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

Client

CALIBRATION CERTIFICATE

Object(s)	DAE3 - SN:579
Calibration procedure(s)	QA CAL-06.v3 Calibration procedure for the data acquisition unit (DAE)
Calibration date:	August 15, 2003
Condition of the calibrated item	In Tolerance (according to the specific calibration document)

This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard.

All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date	Scheduled Calibration
Fluke Process Calibrator Type 702	SN: 6295803	3-Sep-01	Sep-03

	Name	Function	Signature
Calibrated by:	Philipp Storchenegger	Technician	
Approved by:	Fin Bomholt	R&D Director	

Date issued: August 15, 2003

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

1. Cal Lab. Incoming Inspection & Pre Test

Mocification Status	Note Stalus here → → → →	BC
Visual Inspection	Note anomalies.....	None
	.....	.....
Pre Test	**Indication**	**Yes/No**
Probe Touch	Function	Yes
Probe Collision	Function	Yes
Probe Touch&Collision	Function	Yes

2. DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1μV , full range = 400 mV
Low Range: 1LSB = 61nV , full range = 4 mV

DASY measurement parameters: Auto Zero Time: 3 sec; Measuring time: 3 sec

Calibration Factors	**X**	**Y**	**Z**
High Range rounded to 7 digits	404.5370401	404.5593911	404.3923437
Low Range rounded to 6 digits	3.9686	3.9584	3.95
Connector Angle to be used	in DASY System	311 °	

High Range	**Input**	**Reading in μV**	**% Error**
Channel X + Input	200mV	199999.6	0.00
	20mV	19998.2	-0.01
Channel X - Input	20mV	-19995.3	-0.02
Channel Y + Input	200mV	199999.8	0.00
	20mV	19998.3	-0.01
Channel Y - Input	20mV	-19993.6	-0.03
Channel Z + Input	200mV	200000.6	0.00
	20mV	19997.8	-0.01
Channel Z - Input	20mV	-19994.3	-0.03

Low Range	**Input**	**Reading in μV**	**% Error**
Channel X + Input	2mV	1999.99	0.00
	0.2mV	199.66	-0.17
Channel X - Input	0.2mV	-200.21	0.11
Channel Y + Input	2mV	1999.89	-0.0[illegible]
	0.2mV	199.20	-0.40
Channel Y - Input	0.2mV	-201.14	0.57
Channel Z + Input	2mV	1999.99	0.00
	0.2mV	199.18	-0.41
Channel Z - Input	0.2mV	-202.26	1.13

3. Common mode sensitivity

DASY measurement parameters:
Auto Zero Time: 3 sec, Measuring time: 3 sec
High/Low Range

In μV	Common mode Input Voltage	High Range Reading	Low Range Reading
Channel X	200mV	5.15	5.17
	-200mV	-4.35	-4.68
Channel Y	200mV	9.00	8.70
	-200mV	-10.57	-10.21
Channel Z	200mV	8.93	8.00
	-200mV	-10.74	-10.51

4. Channel separation

DASY measurement parameters:
Auto Zero Time: 3 sec, Measuring time: 3 sec
High Range

In μV	Input Voltage	Channel X	Channel Y	Channel Z
Channel X	200mV	-	0.87	-0.39
Channel Y	200mV	0.80	-	2.23
Channel Z	200mV	-2.73	-0.30	-

5. AD-Converter Values with inputs shorted

In LSB	Low Range	High Range
Channel X	16102	16311
Channel Y	16055	16139
Channel Z	15811	15833

6. Input Offset Measurement

DASY measurement parameters:
Auto Zero Time: 3 sec, Measuring time: 3 sec
Number of measurements: 100, Low Range

Input 10MΩ

In μV	Average	min. Offset	max. Offset	Std. Deviation
Channel X	0.25	-1.75	1.20	0.43
Channel Y	-1.47	-2.17	0.46	0.35
Channel Z	-1.64	-2.78	0.28	0.45

6. Input Offset Measurement (cont'd)

Input shorted

In µV	Average	min. Offset	max. Offset	Std. Deviation
Channel X	-0.02	-0.85	0.97	0.27
Channel Y	-0.69	-2.12	0.97	0.35
Channel Z	-0.96	-2.39	0.43	0.35

7. Input Offset Current

Nominal Input circuitry offset current on all channels: <25fA

8. Input Resistance

In MOhm	Calibrating	Measuring
Channel X	0.2001	199.9
Channel Y	0.1999	203.3
Channel Z	0.2000	200.4

9. Low Battery Alarm Voltage

In V	Alarm Level
Supply (+ Vcc)	7.72
Supply (- Vcc)	7.55

10. Power Consumption

In mA	Switched off	Stand by	Transmitting
Supply (+ Vcc)	0.03	8.71	14.4
Supply (- Vcc)	-0.01	-8.03	-9.20

D4: 5GHz SYSTEM VALIDATION DIPOLE SN:1018

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

Client ADT (Auden)

CALIBRATION CERTIFICATE

Object(s)	D5GHzV2 - SN:1018
Calibration procedure(s)	QA CAL-05 v2 Calibration procedure for dipole validation kits
Calibration date:	March 23, 2004
Condition of the calibrated item	In Tolerance (according to the specific calibration document)

This calibration statement documents traceability of M&TE used in the calibration procedures and conformity of the procedures with the ISO/IEC 17025 international standard.

All calibrations have been conducted in the closed laboratory facility: environment temperature 22 +/- 2 degrees Celsius and humidity < 75%.

Calibration Equipment used (M&TE critical for calibration)

Model Type	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM E4419B	GB41293874	2-Apr-03 (METAS, No 252-0250)	Apr-04
Power sensor E4412A	MY41495277	2-Apr-03 (METAS, No 252-0250)	Apr-04
Power sensor HP 8481A	MY41092317	18-Oct-02 (Agilent, No. 20021018)	Oct-04
RF generator R&S SMT06	100058	23-May-01 (SPEAG, in house check May-03)	In house check: May-05
Network Analyzer HP 8753E	US37390585	18-Oct-01 (SPEAG, in house check Nov-03)	In house check: Oct 05

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Laboratory Director	
Approved by:	Fin Bomholt	R&D Director	

Date issued: March 25, 2004

This calibration certificate is issued as an intermediate solution until the accreditation process (based on ISO/IEC 17025 International Standard) for Calibration Laboratory of Schmid & Partner Engineering AG is completed.

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DASY

Dipole Validation Kit

Type: D5GHzV2

Serial: 1018

Manufactured: February 5, 2004
Calibrated: March 23, 2004

1. Measurement Conditions

The measurements were performed in the flat section of the SAM twin phantom filled with **head simulating solution** of the following electrical parameters:

Frequency:	**5200 MHz**	
Relative Dielectricity	**36.3**	± 5%
Conductivity	**4.57 mho/m**	± 5%
Frequency:	**5800 MHz**	
Relative Dielectricity	**35.4**	± 5%
Conductivity	**5.20 mho/m**	± 5%

The DASY4 System with a dosimetric E-field probe EX3DV3 - SN:3503 was used for the measurements. The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10mm from dipole center to the solution surface. Lossless spacer was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 10mm was aligned with the dipole. Special 8x8x8 fine cube was chosen for cube integration (dx=dy=4.3mm, dz=3mm). Distance between probe sensors and phantom surface was set to 2.5 mm. The dipole input power (forward power) was 250 mW ± 3 %. The results are normalized to 1W input power.

2. SAR Measurement with DASY System

Standard SAR-measurements were performed according to the measurement conditions described in section 1. The results (see figures supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured at **5200 MHz (Head Tissue)** with the dosimetric probe EX3DV3 SN:3503 and applying the advanced extrapolation are:

averaged over 1 cm^3 (1 g) of tissue: **81.2 mW/g** ± 20.3 % (k=2)[1]

averaged over 10 cm^3 (10 g) of tissue: **22.9 mW/g** ± 19.8 % (k=2)[1]

The resulting averaged SAR-values measured **at 5800 MHz (Head Tissue)** with the dosimetric probe EX3DV3 SN:3503 and applying the advanced extrapolation are:

averaged over 1 cm^3 (1 g) of tissue: **82.0 mW/g** ± 20.3 % (k=2)[2]

averaged over 10 cm^3 (10 g) of tissue: **23.0 mW/g** ± 19.8 % (k=2)[2]

[1] Target dipole values determined by FDTD (feedpoint impedance set to 50 Ohm). The values are SAR_1g=76.5 mW/g, SAR_10g=21.6 mW/g and SAR_peak=310.3 mW/g.

[2] Target dipole values determined by FDTD (feedpoint impedance set to 50 Ohm). The values are SAR_1g=78.0 mW/g, SAR_10g=21.9 mW/g and SAR_peak=340.9 mW/g.

3. Dipole Transformation Parameters

The impedance was measured at the SMA-connector with a network analyzer and numerically transformed to the dipole feedpoint (please refer to the graphics attached to this document). The transformation parameters from the SMA-connector to the dipole feedpoint are:

Electrical delay:	**1. 200 ns**	(one direction)
Transmission factor:	**0.974**	(voltage transmission, one direction)

4. Measurement Conditions

The measurements were performed in the flat section of the SAM twin phantom filled with **body simulating solution** of the following electrical parameters:

Frequency:	**5200 MHz**	
Relative Dielectricity	**49.7**	± 5%
Conductivity	**5.18 mho/m**	± 5%
Frequency:	**5800 MHz**	
Relative Dielectricity	**48.5**	± 5%
Conductivity	**6.01 mho/m**	± 5%

The DASY3 System with a dosimetric E-field probe EX3DV3 - SN:3503 was used for the measurements. The dipole was mounted on the small tripod so that the dipole feedpoint was positioned below the center marking of the flat phantom section and the dipole was oriented parallel to the body axis (the long side of the phantom). The standard measuring distance was 10mm from dipole center to the solution surface. Lossless spacer was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 10mm was aligned with the dipole. The 8x8x8 fine cube was chosen for cube integration (dx=dy=4.3mm, dz=3mm). Distance between probe sensors and phantom surface was set to 2.5 mm. The dipole input power (forward power) was 250 mW ± 3 %. The results are normalized to 1W input power.

5. SAR Measurement with DASY System

Standard SAR-measurements were performed according to the measurement conditions described in section 4. The results (see figures supplied) have been normalized to a dipole input power of 1W (forward power). The resulting averaged SAR-values measured at **5200 MHz (Body Tissue)** with the dosimetric probe EX3DV3 SN:3503 and applying the advanced extrapolation are:

averaged over 1 cm^3 (1 g) of tissue:	**75.6 mW/g** ± 20.3 % (k=2)[3]
averaged over 10 cm^3 (10 g) of tissue:	**21.3 mW/g** ± 19.8 % (k=2)[3]

The resulting averaged SAR-values measured **at 5800 MHz (Body Tissue)** with the dosimetric probe EX3DV3 SN:3503 and applying the advanced extrapolation are:

averaged over 1 cm^3 (1 g) of tissue:	**71.2 mW/g** ± 20.3 % (k=2)[4]
averaged over 10 cm^3 (10 g) of tissue:	**20.0 mW/g** ± 19.8 % (k=2)[4]

6. Handling

Do not apply excessive force to the dipole arms, because they might bend. Bending of the dipole arms stresses the soldered connections near the feedpoint leading to a damage of the dipole.

7. Design

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.

Small end caps have been added to the dipole arms in order to increase frequency bandwidth at the position as explained in Sections 1and 4.

8. Power Test

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

[3] Target dipole values determined by FDTD (feedpoint impedance set to 50 Ohm). The values are SAR_1g=71.8 mW/g, SAR_10g=20.1 mW/g and SAR_peak=284.7 mW/g.

[4] Target dipole values determined by FDTD (feedpoint impedance set to 50 Ohm). The values are SAR_1g=74.1 mW/g, SAR_10g=20.5 mW/g and SAR_peak=324.7 mW/g.

Date/Time: 03/22/04 16:38:50

Test Laboratory: SPEAG, Zurich, Switzerland
DUT: Dipole 5GHz; Serial: D5GHzV2 - SN:1018

Communication System: CW-5GHz;Duty Cycle: 1:1;Medium: HSL5800
Medium parameters used: f = 5200 MHz; σ = 4.57 mho/m; ε_r = 36.3; ρ = 1000 kg/m^3
Medium parameters used: f = 5800 MHz; σ = 5.2 mho/m; ε_r = 35.4; ρ = 1000 kg/m^3

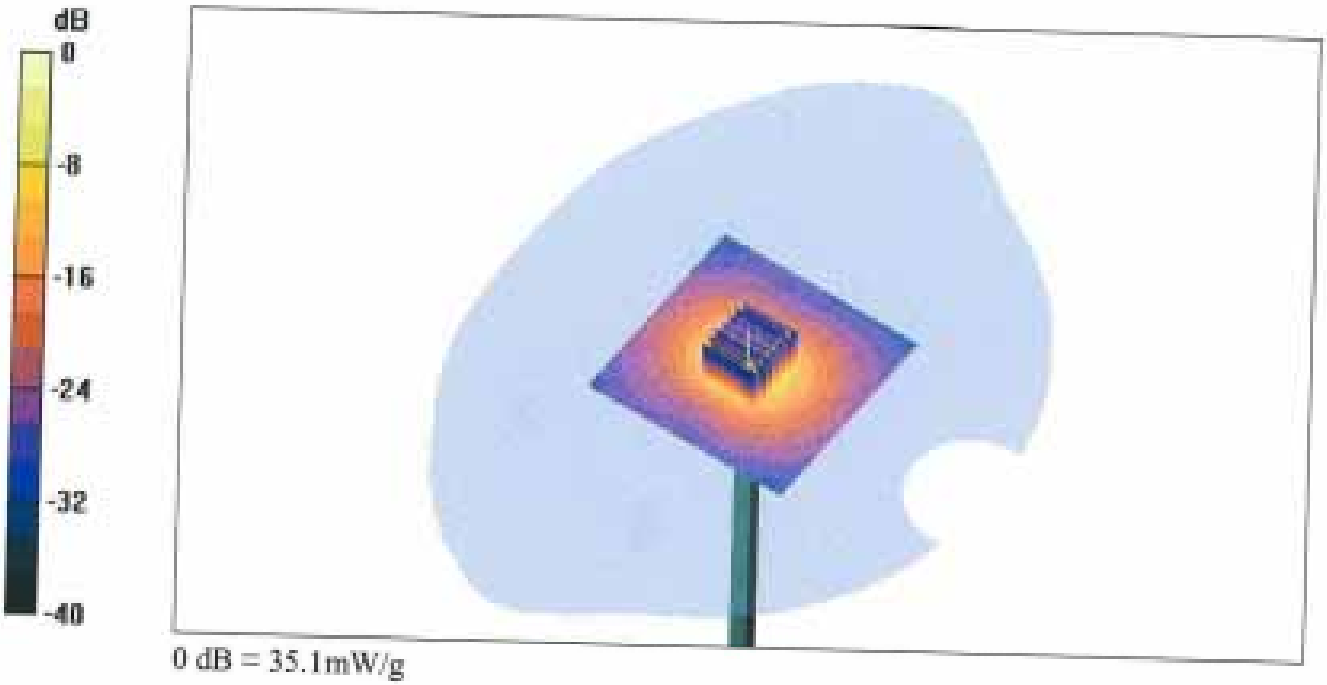
DASY4 Configuration:

- Probe: EX3DV3 - SN3503; ConvF(5.7, 5.7, 5.7), ConvF(5, 5, 5);
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE4 600; Calibrated: 9/30/2003
- Phantom: SAM with CRP - TP:1312; Phantom section: Flat Section
- Measurement SW: DASY4, V4.2 Build 44;

d=10mm, Pin=250mW, f=5200 MHz/Area Scan (91x91x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 92.2 V/m; Power Drift = -0.0 dB
Maximum value of SAR (interpolated) = 36 mW/g

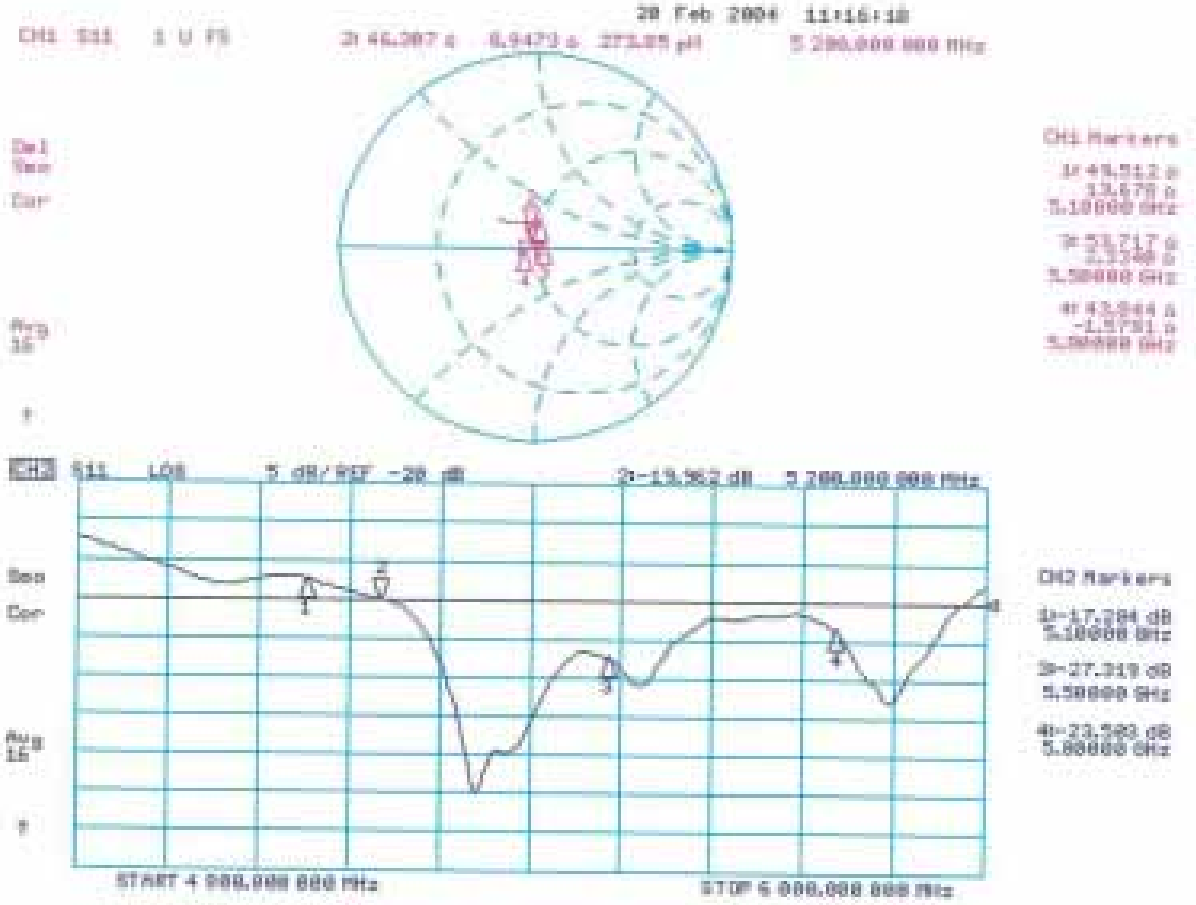
d=10mm, Pin=250mW, f=5200 MHz/Zoom Scan (8x8x8), dist=2.5mm (7x7x8)/Cube 0:
Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 92.2 V/m; Power Drift = -0.0 dB
Peak SAR (extrapolated) = 77.7 W/kg
SAR(1 g) = 20.3 mW/g; SAR(10 g) = 5.72 mW/g

d=10mm, Pin=250mW, f=5800 MHz/Zoom Scan (8x8x8), dist=2.5mm (7x7x8)/Cube 0:
Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 88.4 V/m; Power Drift = 0.003 dB
Peak SAR (extrapolated) = 85.6 W/kg
SAR(1 g) = 20.5 mW/g; SAR(10 g) = 5.74 mW/g



0 dB = 35.1mW/g

1018


20 Feb 2004 11:16:18
CH1 S11 1 U FS
3: 46.387 Ω 8.947 Ω 273.85 pH 5.200,000,000 MHz
Del
Sec
Cor
Avg
16
CH1 Markers
1: 46.512 Ω
13.670 Ω
5.10000 GHz
2: 55.717 Ω
2.3348 Ω
5.50000 GHz
4: 43.044 Ω
-1.5731 Ω
5.80000 GHz
CH2 S11 LOG 5 dB/ REF -20 dB 3: -13.362 dB 5.200,000,000 MHz
Sec
Cor
Avg
16
CH2 Markers
1: -17.294 dB
5.10000 GHz
2: -27.319 dB
5.50000 GHz
4: -23.393 dB
5.80000 GHz
START 4 000,000 000 MHz
STOP 6 000,000 000 MHz

Date/Time: 03/23/04 11:28:18

Test Laboratory: SPEAG, Zurich, Switzerland
DUT: Dipole 5GHz; Serial: D5GHzV2 - SN:1018

Communication System: CW-5GHz;Duty Cycle: 1:1;Medium: MSL5800
Medium parameters used: f = 5200 MHz; σ = 5.18 mho/m; ε_r = 49.7; ρ = 1000 kg/m^3
Medium parameters used: f = 5800 MHz; σ = 6.01 mho/m; ε_r = 48.5; ρ = 1000 kg/m^3

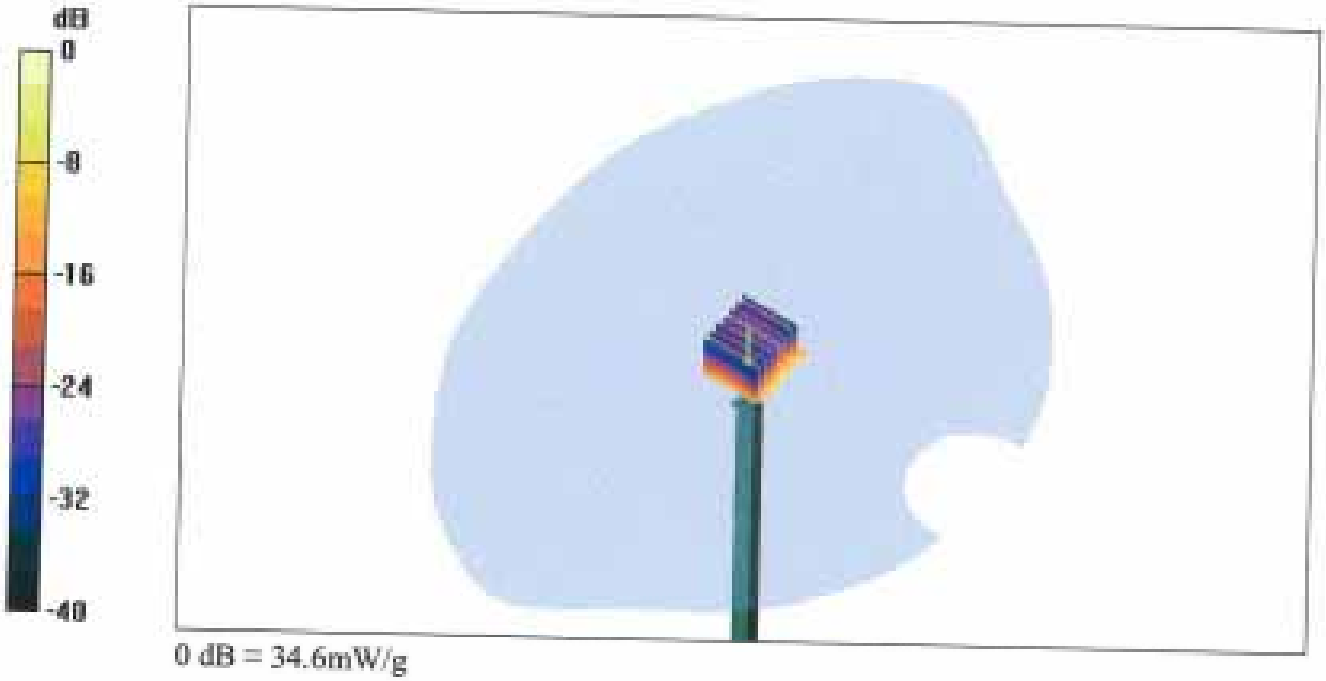
DASY4 Configuration:

- Probe: EX3DV3 - SN3503; ConvF(5, 5, 5), ConvF(4.6, 4.6, 4.6);
- Sensor-Surface: 2.5mm (Mechanical Surface Detection)
- Electronics: DAE4 600; Calibrated: 9/30/2003
- Phantom: SAM with CRP - TP:1312; Phantom section: Flat Section
- Measurement SW: DASY4, V4.2 Build 44;

d=10mm, Pin=250mW, f=5200 MHz/Area Scan (31x31x1): Measurement grid: dx=10mm, dy=10mm
Reference Value = 78 V/m; Power Drift = 0.001 dB
Maximum value of SAR (interpolated) = 35.6 mW/g

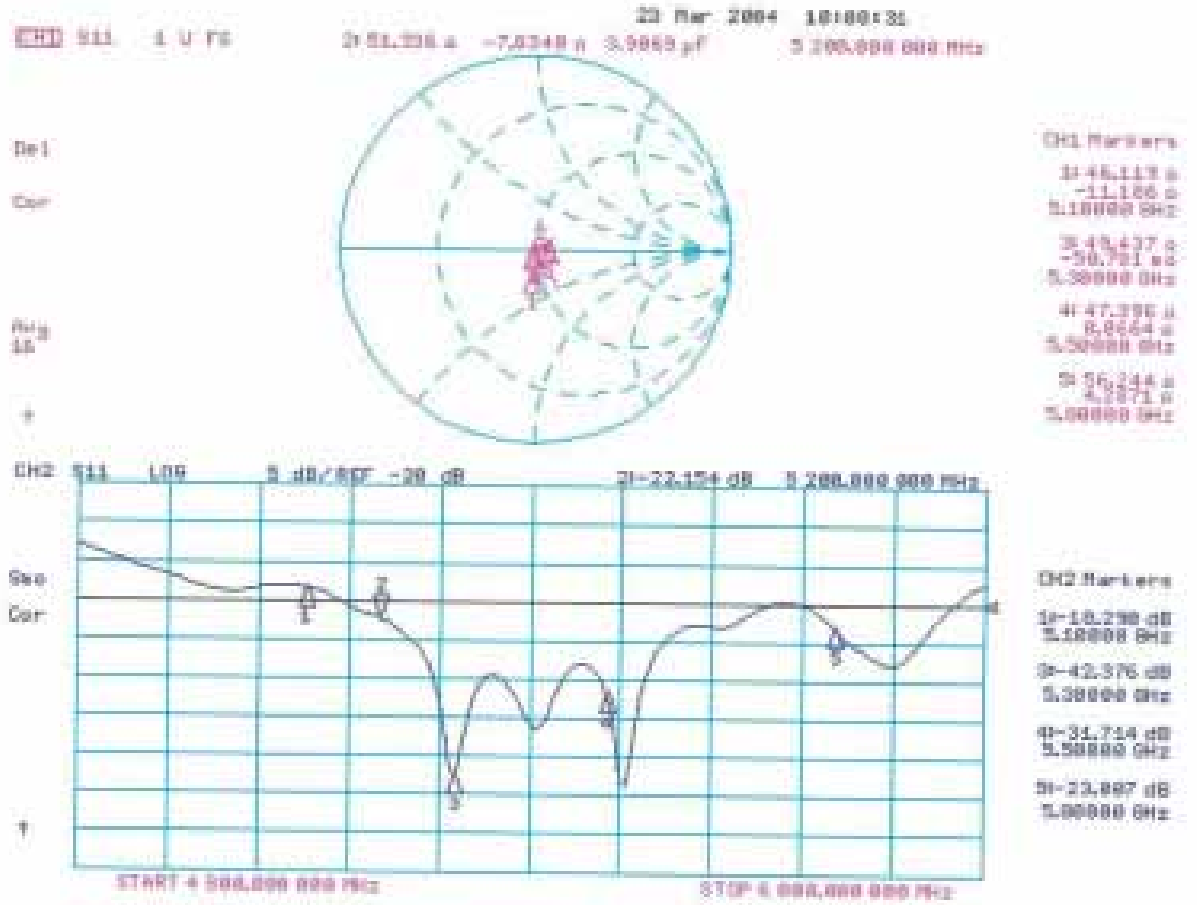
d=10mm, Pin=250mW, f=5800 MHz/Zoom Scan (8x8x8), dist=2.5mm (7x7x8)/Cube 0:
Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 69.3 V/m; Power Drift = -0.009 dB
Peak SAR (extrapolated) = 71.2 W/kg
SAR(1 g) = 17.8 mW/g; SAR(10 g) = 5.01 mW/g

d=10mm, Pin=250mW, f=5200 MHz/Zoom Scan (8x8x8), dist=2.5mm (7x7x8)/Cube 0:
Measurement grid: dx=4.3mm, dy=4.3mm, dz=3mm
Reference Value = 78 V/m; Power Drift = 0.001 dB
Peak SAR (extrapolated) = 65 W/kg
SAR(1 g) = 18.9 mW/g; SAR(10 g) = 5.33 mW/g



0 dB = 34.6mW/g

1018
Body


23 Mar 2004 10:00:31
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3: 51.336 Ω -7.8348 Ω 3.9869 pF
5 200.000 000 MHz
Del
Cor
Avg
16
CH1 Markers
1: 46.113 Ω
-11.106 Ω
5.10000 GHz
2: 45.437 Ω
-50.701 Ω
5.30000 GHz
4: 47.395 Ω
8.8664 Ω
5.50000 GHz
5: 56.244 Ω
4.2871 Ω
5.80000 GHz
CH2 S11 LOG 5 dB/REF -20 dB
3: -23.154 dB 5 200.000 000 MHz
Sms
Cor
CH2 Markers
1: -18.298 dB
5.10000 GHz
2: -42.376 dB
5.30000 GHz
4: -31.714 dB
5.50000 GHz
5: -23.887 dB
5.80000 GHz
START 4 500.000 000 MHz
STOP 6 000.000 000 MHz