

APPENDIX A: TEST DATA

Liquid Level Photo

HSL 2450MHz D=155mm



MSL 2450MHz D=151mm



Date/Time: 2006/7/4 09:57:10

Test Laboratory: Advance Data Technology

Right Head-Cheek-11b-CH1-Mode 1

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2412 MHz

Communication System: 802.11b ; Frequency: 2412 MHz ; Duty Cycle: 1:1

Phantom: SAM 12 Medium parameters used: $f = 2412 \text{ MHz}$; $\sigma = 1.83 \text{ mho/m}$; $\epsilon_r = 38.3$; $\rho = 1000 \text{ kg/m}^3$;

Liquid level: 155 mm

Phantom section: Right Section ; DUT test position : Cheek ; Modulation type: CCK

Antenna type : External Antenna ; Air temp. : 23.1 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687; ConvF(4.41, 4.41, 4.41) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Touch position - Low Channel 1/Area Scan (7x12x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.529 mW/g

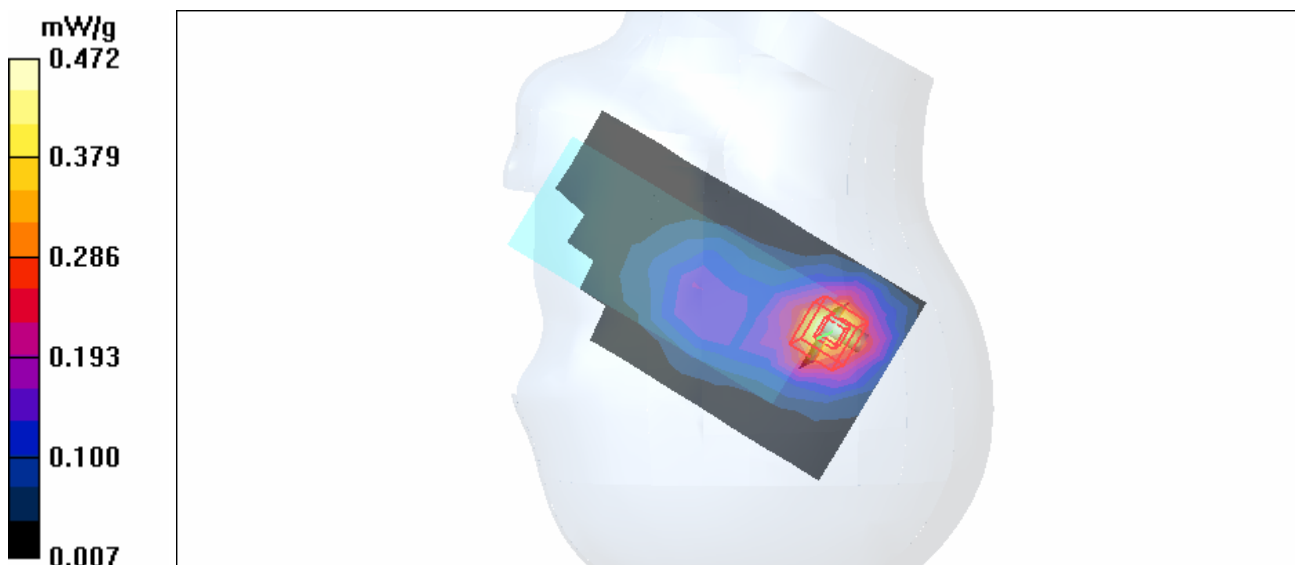
Touch position - Low Channel 1/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:
 $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 11.6 V/m

Peak SAR (extrapolated) = 0.820 W/kg

SAR(1 g) = 0.428 mW/g; SAR(10 g) = 0.223 mW/g

Maximum value of SAR (measured) = 0.472 mW/g



Date/Time: 2006/7/4 10:17:44

Test Laboratory: Advance Data Technology

Right Head-Cheek-11b-CH6-Mode 1

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2437 MHz

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

Phantom: SAM 12 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.86$ mho/m; $\epsilon_r = 38.2$; $\rho = 1000$ kg/m³ ;

Liquid level: 155 mm

Phantom section: Right Section ; DUT test position : Cheek ; Modulation type: CCK

Antenna type : External Antenna ; Air temp. : 23.1 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687; ConvF(4.41, 4.41, 4.41) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Touch position - Mid Channel 6/Area Scan (7x12x1): Measurement grid: $dx=15$ mm, $dy=15$ mm
Maximum value of SAR (measured) = 0.405 mW/g

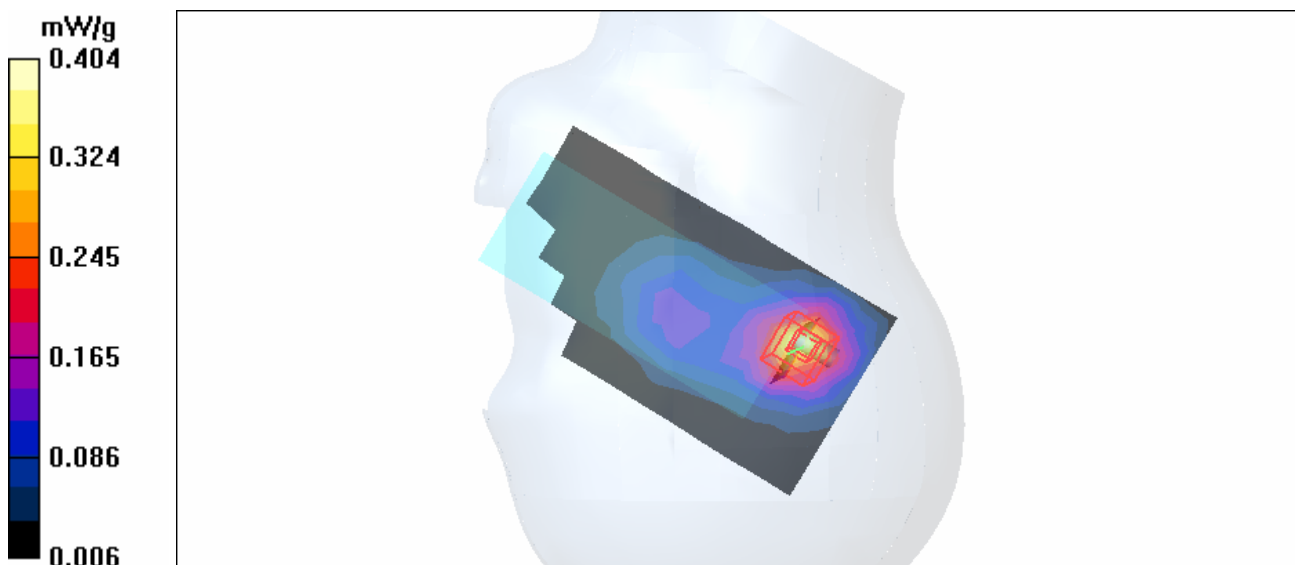
Touch position - Mid Channel 6/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:
 $dx=5$ mm, $dy=5$ mm, $dz=5$ mm

Reference Value = 9.67 V/m

Peak SAR (extrapolated) = 0.712 W/kg

SAR(1 g) = 0.367 mW/g; SAR(10 g) = 0.191 mW/g

Maximum value of SAR (measured) = 0.404 mW/g



Date/Time: 2006/7/4 10:44:55

Test Laboratory: Advance Data Technology

Right Head-Cheek-11b-CH11-Mode 1

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz ; Duty Cycle: 1:1

Phantom: SAM 12 Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.89 \text{ mho/m}$; $\epsilon_r = 38.1$; $\rho = 1000 \text{ kg/m}^3$;

Liquid level: 155 mm

Phantom section: Right Section ; DUT test position : Cheek ; Modulation type: CCK

Antenna type : External Antenna ; Air temp. : 23.1 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687; ConvF(4.41, 4.41, 4.41) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Touch position - High Channel 11/Area Scan (7x12x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.445 mW/g

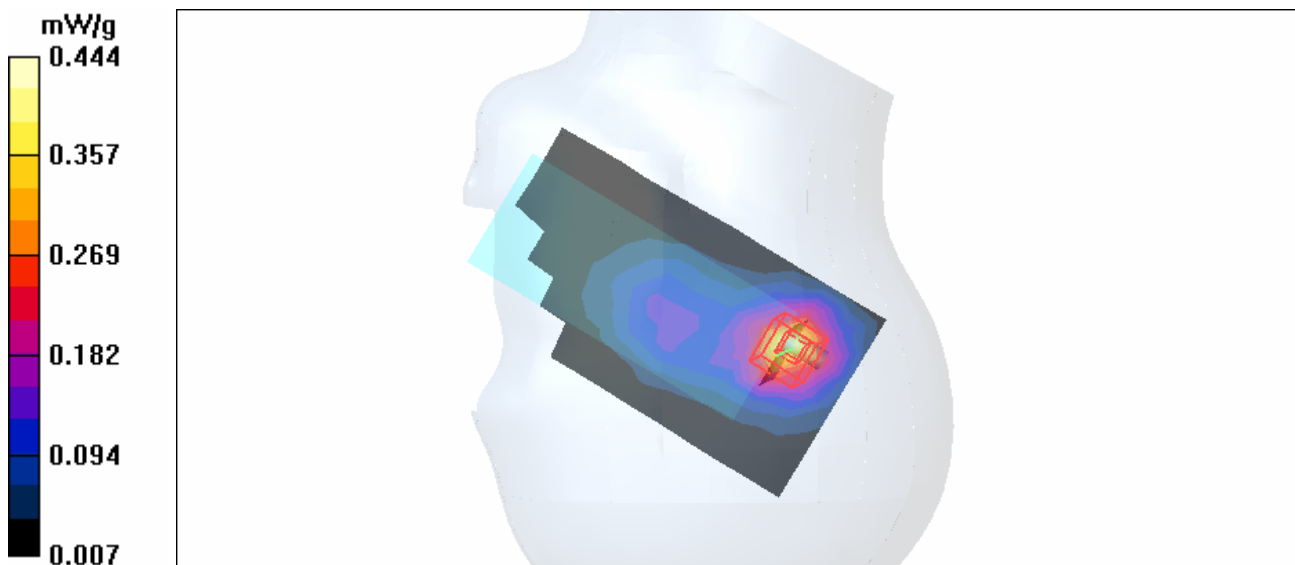
Touch position - High Channel 11/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 9.85 V/m

Peak SAR (extrapolated) = 0.784 W/kg

SAR(1 g) = 0.405 mW/g; SAR(10 g) = 0.210 mW/g

Maximum value of SAR (measured) = 0.444 mW/g



Date/Time: 2006/7/4 11:33:31

Test Laboratory: Advance Data Technology

Right Head-Tilt-11b-CH1-Mode 2

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2412 MHz

Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: HSL2450 Medium parameters used: $f = 2412 \text{ MHz}$; $\sigma = 1.83 \text{ mho/m}$; $\epsilon_r = 38.3$; $\rho = 1000 \text{ kg/m}^3$;

Liquid level: 155 mm

Phantom section: Right Section ; DUT test position : Tilt ; Modulation type: CCK

Antenna type : External Antenna ; Air temp. : 23.1 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687 ; ConvF(4.41, 4.41, 4.41) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Low Channel 1/Area Scan (7x10x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.701 mW/g

Tilt position - Low Channel 1/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

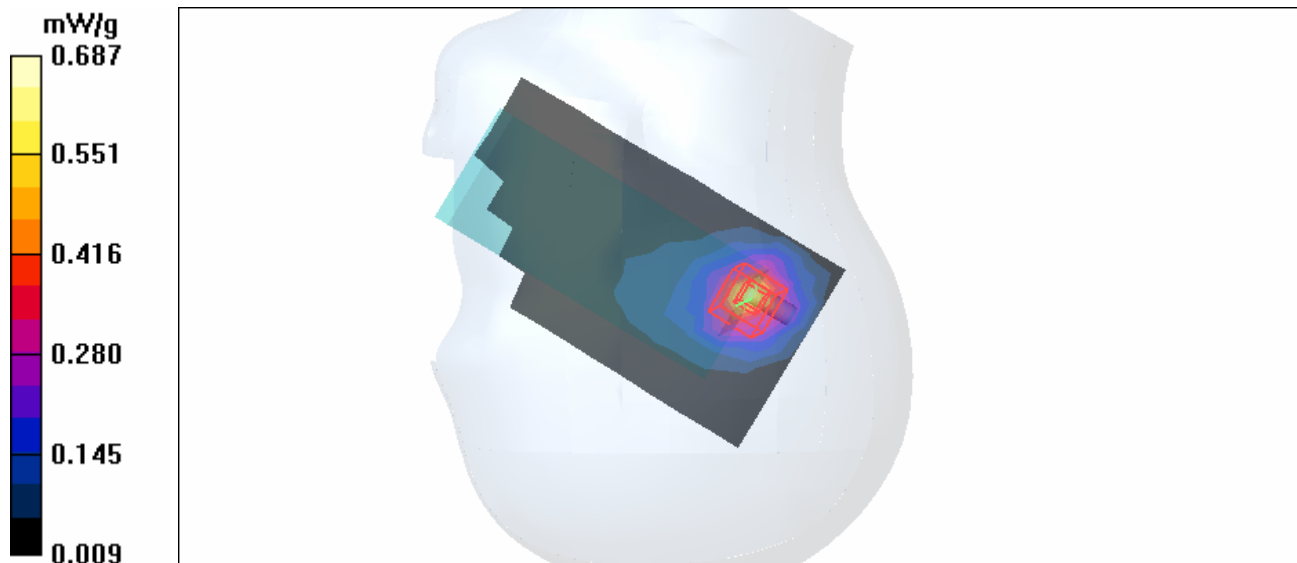
$dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 11.2 V/m

Peak SAR (extrapolated) = 1.21 W/kg

SAR(1 g) = 0.617 mW/g; SAR(10 g) = 0.307 mW/g

Maximum value of SAR (measured) = 0.687 mW/g



Date/Time: 2006/7/4 11:54:59

Test Laboratory: Advance Data Technology

Right Head-Tilt-11b-CH6-Mode 2

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2437 MHz

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

Medium: HSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.86$ mho/m; $\epsilon_r = 38.2$; $\rho = 1000$ kg/m³ ;

Liquid level: 155 mm

Phantom section: Right Section ; DUT test position : Tilt ; Modulation type: CCK

Antenna type : External Antenna ; Air temp. : 23.1 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687 ; ConvF(4.41, 4.41, 4.41) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Mid Channel 6/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.616 mW/g

Tilt position - Mid Channel 6/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

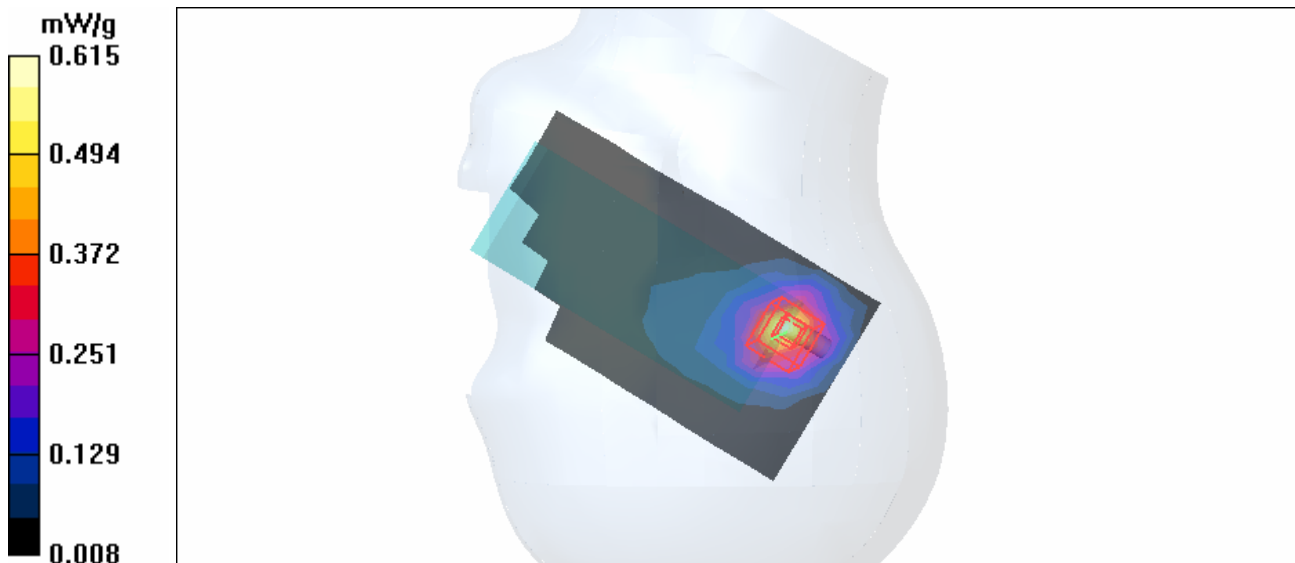
dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.3 V/m

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.556 mW/g; SAR(10 g) = 0.277 mW/g

Maximum value of SAR (measured) = 0.615 mW/g



Date/Time: 2006/7/4 12:14:39

Test Laboratory: Advance Data Technology

Right Head-Tilt-11b-CH11-Mode 2

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: HSL2450 Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.89 \text{ mho/m}$; $\epsilon_r = 38.1$; $\rho = 1000 \text{ kg/m}^3$;

Liquid level: 155 mm

Phantom section: Right Section ; DUT test position : Tilt ; Modulation type: CCK

Antenna type : External Antenna ; Air temp. : 23.1 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687 ; ConvF(4.41, 4.41, 4.41) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - High Channel 11/Area Scan (7x12x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.688 mW/g

Tilt position - High Channel 11/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

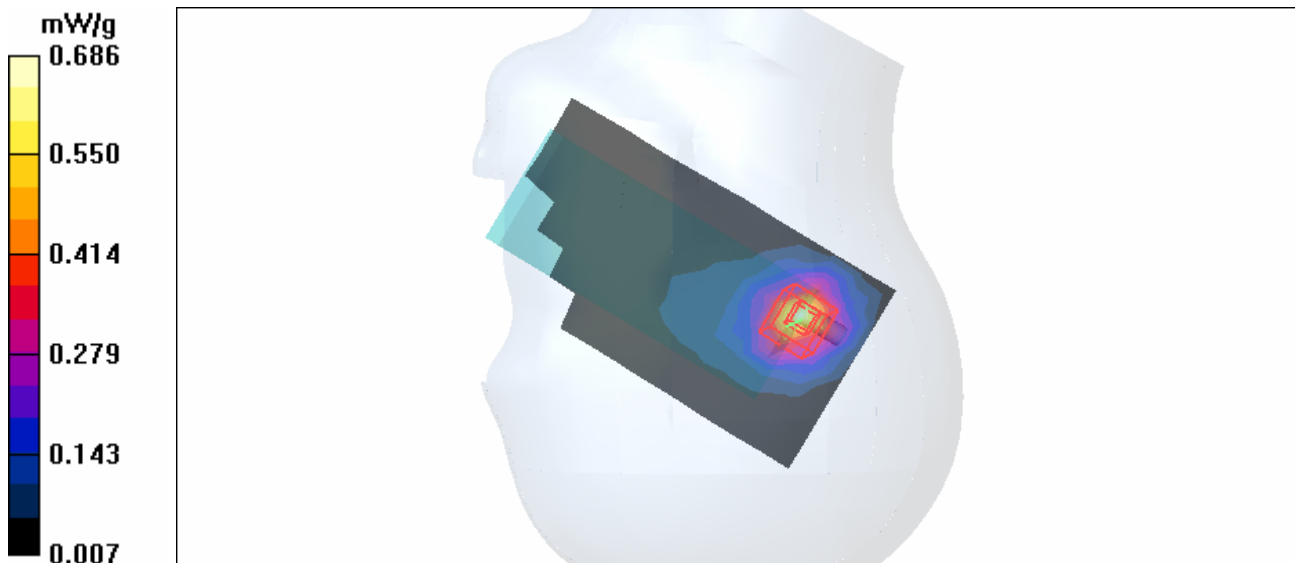
$dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.7 V/m

Peak SAR (extrapolated) = 1.23 W/kg

SAR(1 g) = 0.620 mW/g; SAR(10 g) = 0.307 mW/g

Maximum value of SAR (measured) = 0.686 mW/g



Date/Time: 2006/7/4 13:33:05

Test Laboratory: Advance Data Technology

Left Head-Cheek-11b-CH1-Mode 3

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2412 MHz

Communication System: 802.11b ; Frequency: 2412 MHz ; Duty Cycle: 1:1

Phantom: SAM 12 Medium parameters used: $f = 2412 \text{ MHz}$; $\sigma = 1.83 \text{ mho/m}$; $\epsilon_r = 38.3$; $\rho = 1000 \text{ kg/m}^3$;

Liquid level: 155 mm

Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: CCK

Antenna type : External Antenna ; Air temp. : 23.1 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687; ConvF(4.41, 4.41, 4.41) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Touch position - Low Channel 1/Area Scan (7x12x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$
Maximum value of SAR (measured) = 0.485 mW/g

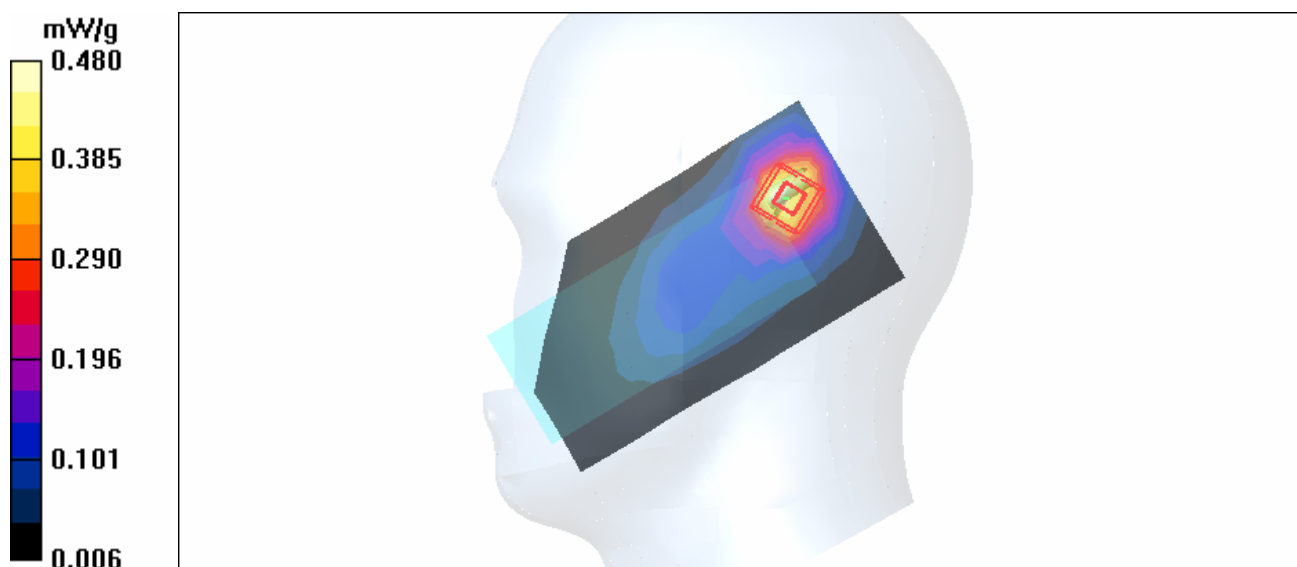
Touch position - Low Channel 1/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:
 $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 11.0 V/m

Peak SAR (extrapolated) = 0.882 W/kg

SAR(1 g) = 0.439 mW/g; SAR(10 g) = 0.223 mW/g

Maximum value of SAR (measured) = 0.480 mW/g



Date/Time: 2006/7/4 13:54:00

Test Laboratory: Advance Data Technology

Left Head-Cheek-11b-CH6-Mode 3

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2437 MHz

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

Phantom: SAM 12 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.86$ mho/m; $\epsilon_r = 38.2$; $\rho = 1000$ kg/m³ ;

Liquid level: 155 mm

Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: CCK

Antenna type : External Antenna ; Air temp. : 23.1 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687; ConvF(4.41, 4.41, 4.41) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Touch position - Mid Channel 6/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.401 mW/g

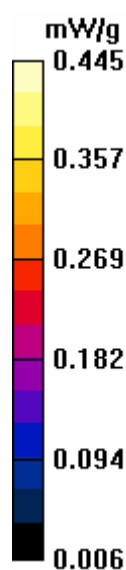
Touch position - Mid Channel 6/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:
dx=5mm, dy=5mm, dz=5mm

Reference Value = 9.46 V/m

Peak SAR (extrapolated) = 0.822 W/kg

SAR(1 g) = 0.407 mW/g; SAR(10 g) = 0.206 mW/g

Maximum value of SAR (measured) = 0.445 mW/g



Date/Time: 2006/7/4 14:16:19

Test Laboratory: Advance Data Technology

Left Head-Cheek-11b-CH11-Mode 3

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz ; Duty Cycle: 1:1

Phantom: SAM 12 Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.89 \text{ mho/m}$; $\epsilon_r = 38.1$; $\rho = 1000 \text{ kg/m}^3$;

Liquid level: 155 mm

Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: CCK

Antenna type : External Antenna ; Air temp. : 23.1 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687; ConvF(4.41, 4.41, 4.41) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Touch position - High Channel 11/Area Scan (7x12x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.430 mW/g

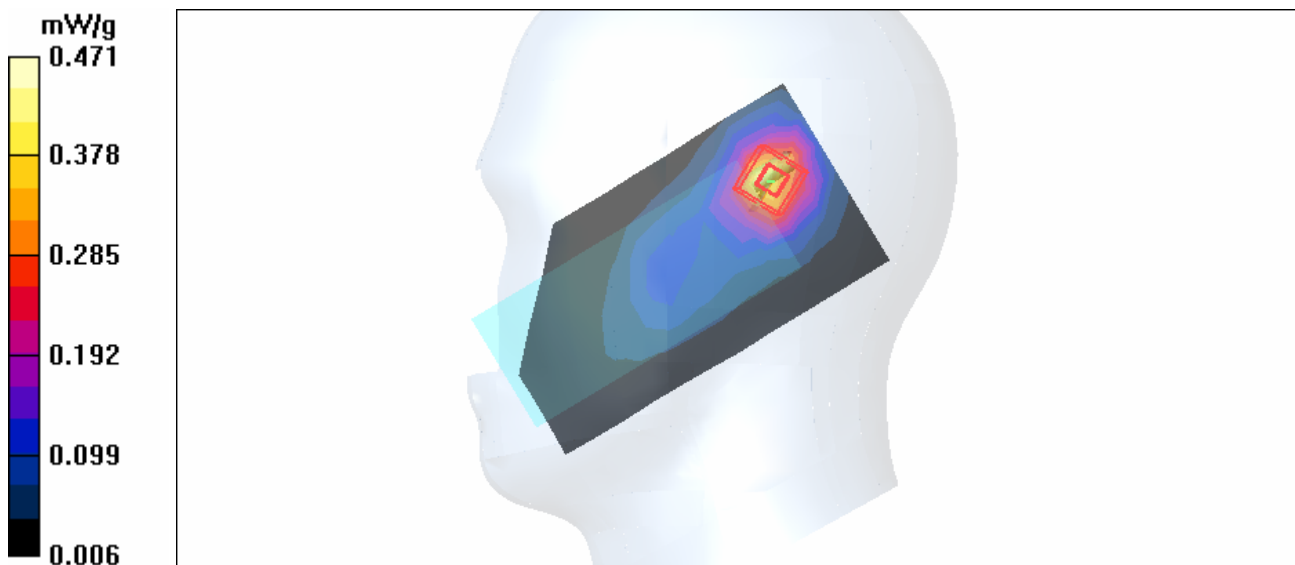
Touch position - High Channel 11/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 9.86 V/m

Peak SAR (extrapolated) = 0.882 W/kg

SAR(1 g) = 0.434 mW/g; SAR(10 g) = 0.219 mW/g

Maximum value of SAR (measured) = 0.471 mW/g



Date/Time: 2006/7/4 14:36:09

Test Laboratory: Advance Data Technology

Left Head-Tilt-11b-CH1-Mode 4

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2412 MHz

Communication System: 802.11b ; Frequency: 2412 MHz; Duty Cycle: 1:1

Medium: HSL2450 Medium parameters used: $f = 2412$ MHz; $\sigma = 1.83$ mho/m; $\epsilon_r = 38.3$; $\rho = 1000$ kg/m³ ;

Liquid level: 155 mm

Phantom section: Left Section ; DUT test position : Tilt ; Modulation type: CCK

Antenna type : External Antenna ; Air temp. : 23.1 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687 ; ConvF(4.41, 4.41, 4.41) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Low Channel 1/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.774 mW/g

Tilt position - Low Channel 1/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

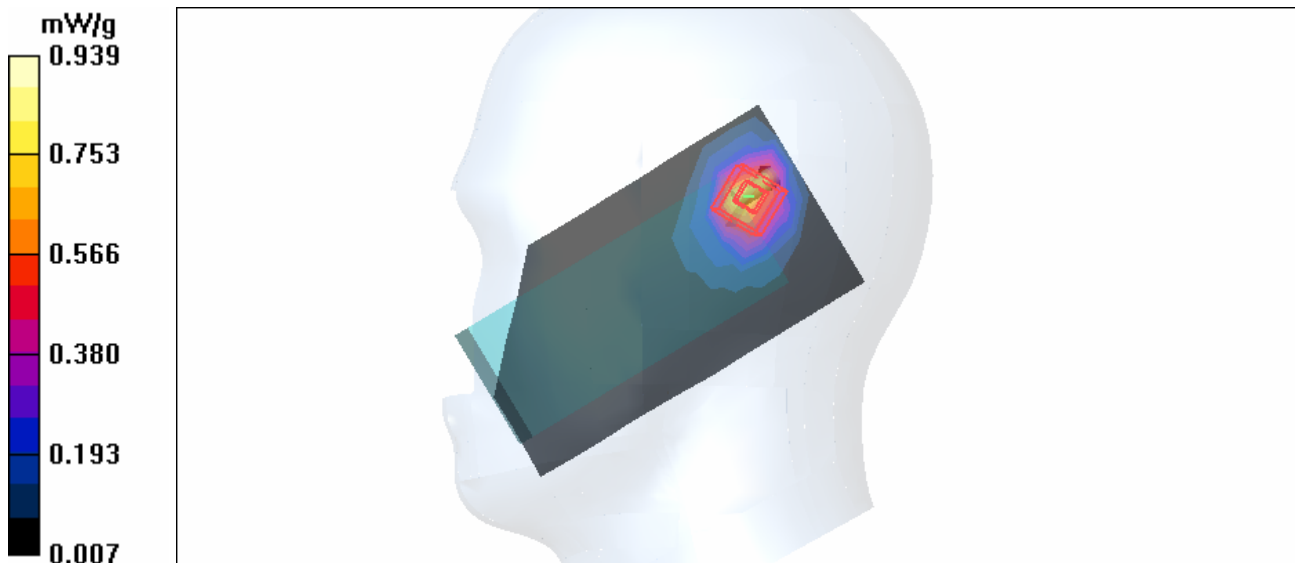
dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.8 V/m

Peak SAR (extrapolated) = 1.77 W/kg

SAR(1 g) = 0.835 mW/g; SAR(10 g) = 0.391 mW/g

Maximum value of SAR (measured) = 0.939 mW/g



Date/Time: 2006/7/4 14:58:44

Test Laboratory: Advance Data Technology

Left Head-Tilt-11b-CH6-Mode 4

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2437 MHz

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

Medium: HSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 1.86$ mho/m; $\epsilon_r = 38.2$; $\rho = 1000$ kg/m³ ;

Liquid level: 155 mm

Phantom section: Left Section ; DUT test position : Tilt ; Modulation type: CCK

Antenna type : External Antenna ; Air temp. : 23.1 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687 ; ConvF(4.41, 4.41, 4.41) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - Mid Channel 6/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.687 mW/g

Tilt position - Mid Channel 6/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

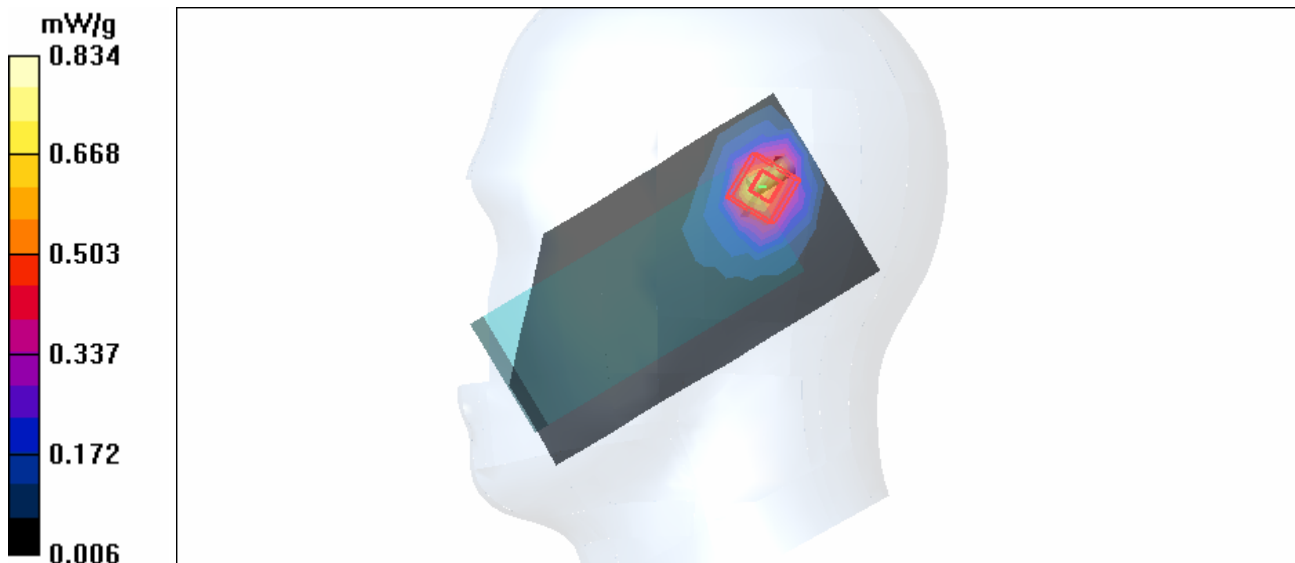
dx=5mm, dy=5mm, dz=5mm

Reference Value = 10.1 V/m

Peak SAR (extrapolated) = 1.58 W/kg

SAR(1 g) = 0.743 mW/g; SAR(10 g) = 0.349 mW/g

Maximum value of SAR (measured) = 0.834 mW/g



Date/Time: 2006/7/4 15:18:45

Test Laboratory: Advance Data Technology

Left Head-Tilt-11b-CH11-Mode 4

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz; Duty Cycle: 1:1

Medium: HSL2450 Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 1.89 \text{ mho/m}$; $\epsilon_r = 38.1$; $\rho = 1000 \text{ kg/m}^3$;

Liquid level: 155 mm

Phantom section: Left Section ; DUT test position : Tilt ; Modulation type: CCK

Antenna type : External Antenna ; Air temp. : 23.1 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687 ; ConvF(4.41, 4.41, 4.41) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

Tilt position - High Channel 11/Area Scan (7x12x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.756 mW/g

Tilt position - High Channel 11/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid:

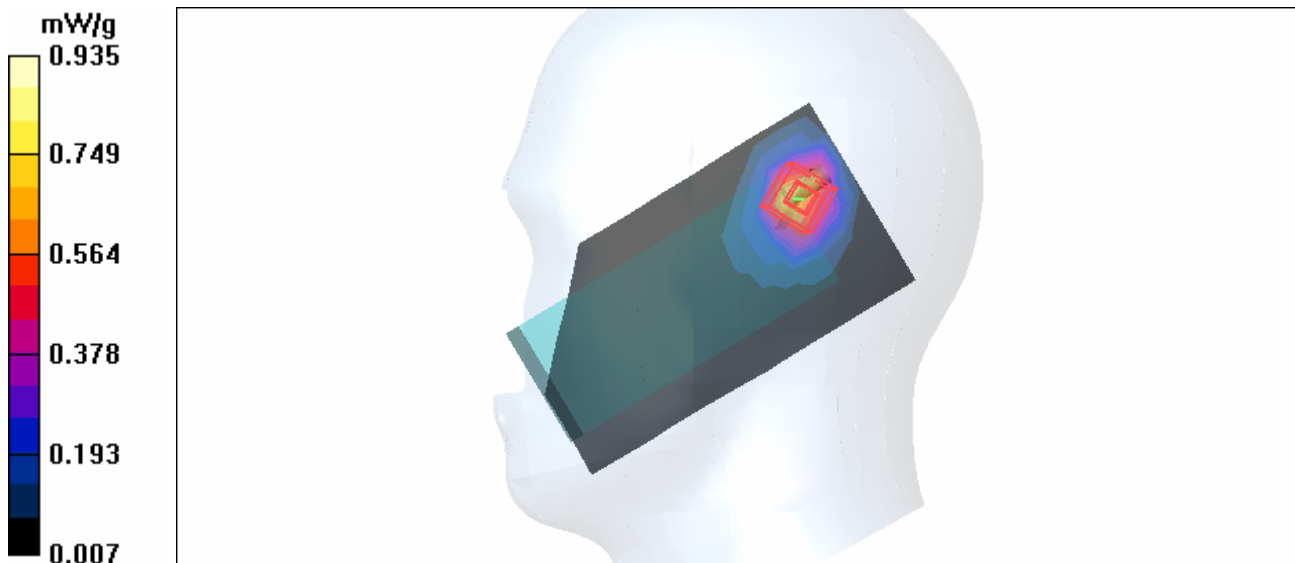
$dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.5 V/m

Peak SAR (extrapolated) = 1.80 W/kg

SAR(1 g) = 0.829 mW/g; SAR(10 g) = 0.386 mW/g

Maximum value of SAR (measured) = 0.935 mW/g



Test Laboratory: Advance Data Technology

BodyWorn-11b-CH1-Keypad Down-Mode 5(Belt Clip-1)

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2412 MHz

Communication System: 802.11b ; Frequency: 2412 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 Medium parameters used: $f = 2412 \text{ MHz}$; $\sigma = 1.99 \text{ mho/m}$; $\epsilon_r = 51.6$; $\rho = 1000 \text{ kg/m}^3$; Liquid level : 151 mm

Phantom section: Flat Section ; Separation distance : 0 mm (The bottom side of the EUT to the Phantom)

Antenna type : External Antenna ; Air temp. : 23.0 degrees ; Liquid temp. : 21.8 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687 ; ConvF(4.13, 4.13, 4.13) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510 ; Calibrated: 2005/8/17
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44 ; Postprocessing SW: SEMCAD, V1.8 Build 171

Low Channel 1/Area Scan (7x12x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.729 mW/g

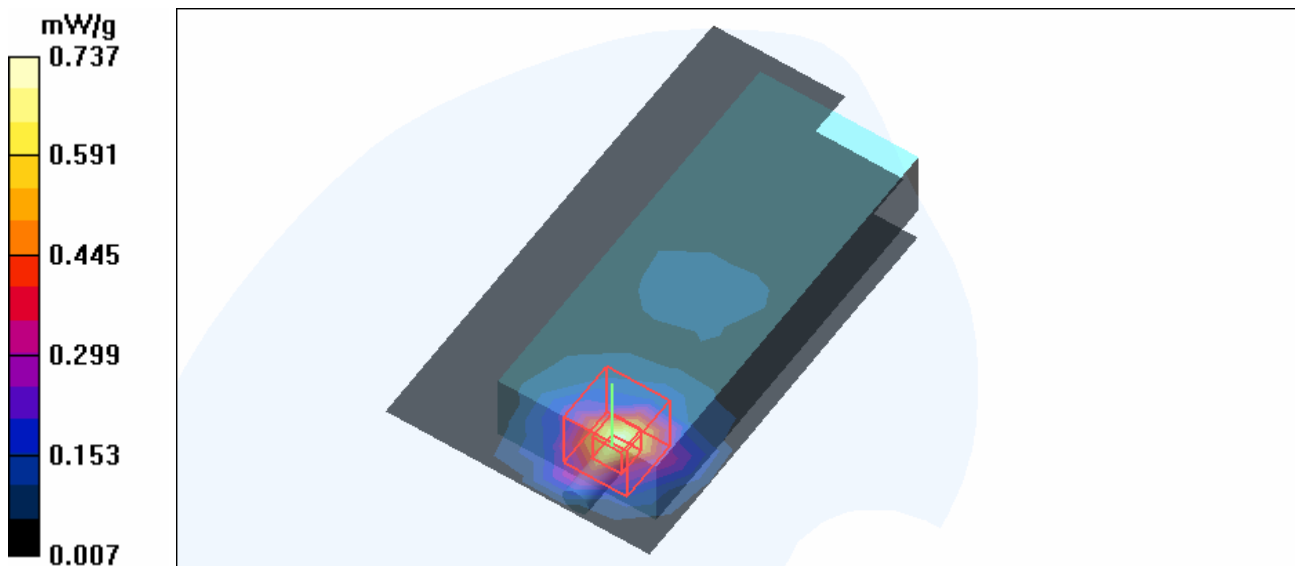
Low Channel 1/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 12.0 V/m

Peak SAR (extrapolated) = 1.55 W/kg

SAR(1 g) = 0.669 mW/g; SAR(10 g) = 0.303 mW/g

Maximum value of SAR (measured) = 0.737 mW/g



Date/Time: 2006/7/3 14:17:05

Test Laboratory: Advance Data Technology

BodyWorn-11b-CH6-Keypad Down-Mode 5(Belt Clip-1)

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2437 MHz

Communication System: 802.11b ; Frequency: 2437 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 Medium parameters used: $f = 2437$ MHz; $\sigma = 2.02$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³ ; Liquid level : 151 mm

Phantom section: Flat Section ; Separation distance : 0 mm (The bottom side of the EUT to the Phantom)

Antenna type : External Antenna ; Air temp. : 23.0 degrees ; Liquid temp. : 21.8 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687 ; ConvF(4.13, 4.13, 4.13) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510 ; Calibrated: 2005/8/17
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44 ; Postprocessing SW: SEMCAD, V1.8 Build 171

Mid Channel 6/Area Scan (7x12x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.475 mW/g

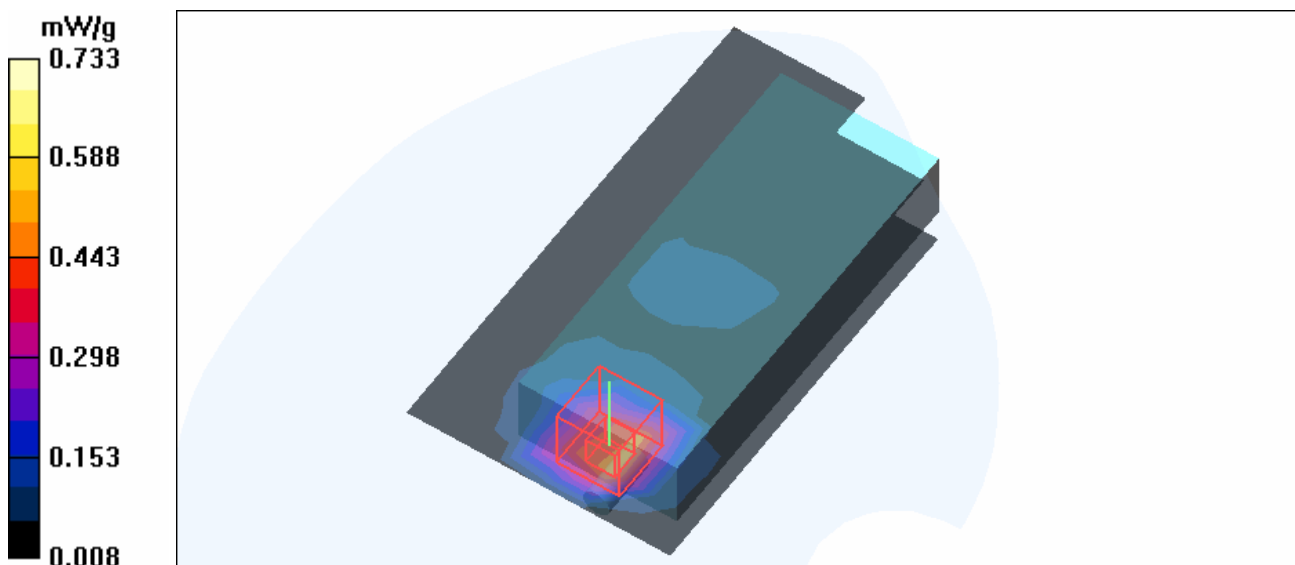
Mid Channel 6/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.9 V/m

Peak SAR (extrapolated) = 1.56 W/kg

SAR(1 g) = 0.657 mW/g; SAR(10 g) = 0.294 mW/g

Maximum value of SAR (measured) = 0.733 mW/g



Date/Time: 2006/7/3 14:46:09

Test Laboratory: Advance Data Technology

BodyWorn-11b-CH11-Keypad Down-Mode 5(Belt Clip-1)

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 2.06 \text{ mho/m}$; $\epsilon_r = 51.4$; $\rho = 1000 \text{ kg/m}^3$; Liquid level : 151 mm

Phantom section: Flat Section ; Separation distance : 0 mm (The bottom side of the EUT to the Phantom)

Antenna type : External Antenna ; Air temp. : 23.0 degrees ; Liquid temp. : 21.8 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687 ; ConvF(4.13, 4.13, 4.13) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510 ; Calibrated: 2005/8/17
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44 ; Postprocessing SW: SEMCAD, V1.8 Build 171

High Channel 11/Area Scan (7x12x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.730 mW/g

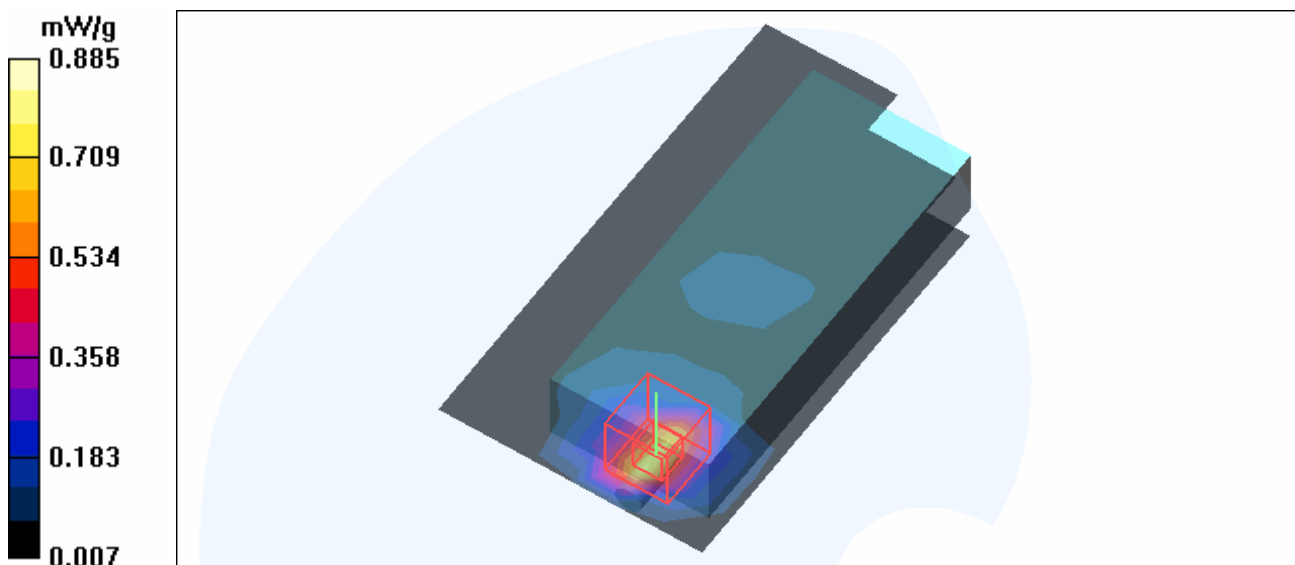
High Channel 11/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

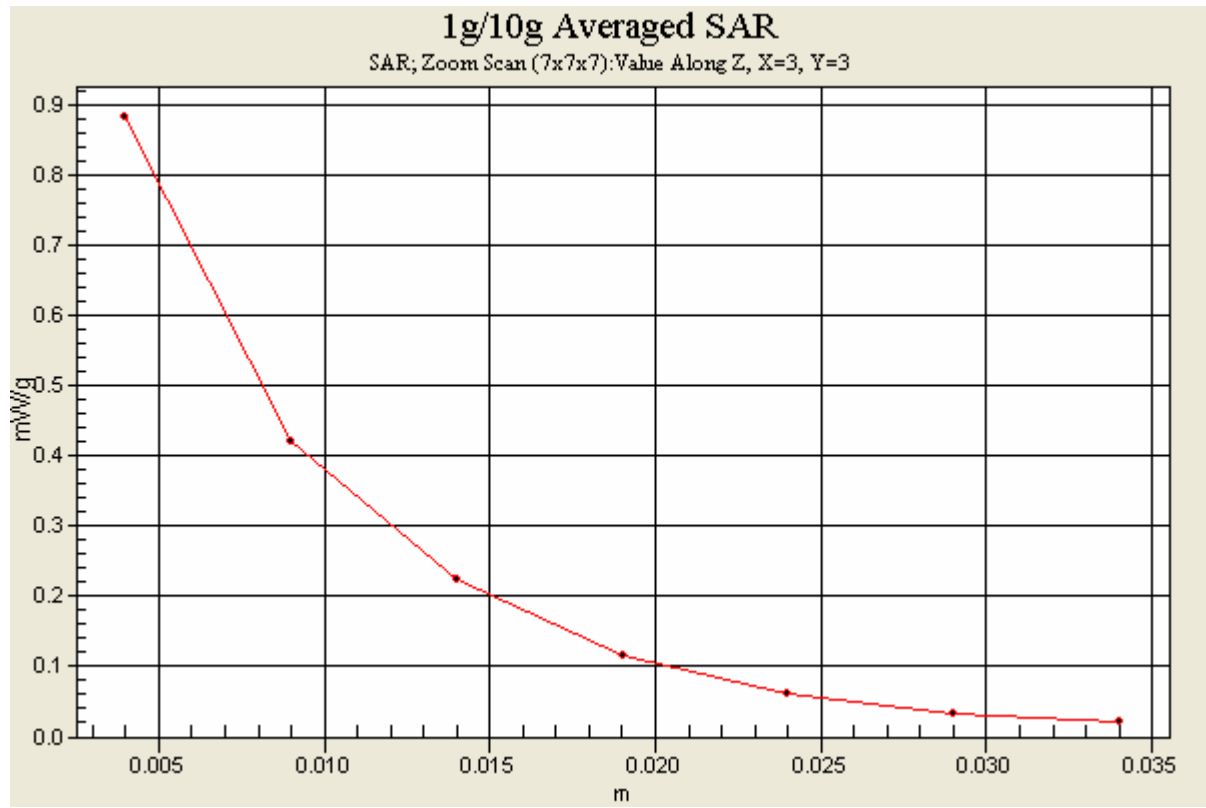
Reference Value = 12.3 V/m

Peak SAR (extrapolated) = 1.91 W/kg

SAR(1 g) = 0.796 mW/g; SAR(10 g) = 0.351 mW/g

Maximum value of SAR (measured) = 0.885 mW/g





Date/Time: 2006/7/3 15:22:28

Test Laboratory: Advance Data Technology

BodyWorn-11b-CH11-Keypad Up-Mode 6(Belt Clip-1)

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 2.06 \text{ mho/m}$; $\epsilon_r = 51.4$; $\rho = 1000 \text{ kg/m}^3$; Liquid level : 151 mm

Phantom section: Flat Section ; Separation distance : 0 mm (The front side of the EUT to the Phantom)

Antenna type : External Antenna ; Air temp. : 23.0 degrees ; Liquid temp. : 21.8 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687 ; ConvF(4.13, 4.13, 4.13) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510 ; Calibrated: 2005/8/17
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44 ; Postprocessing SW: SEMCAD, V1.8 Build 171

High Channel 11/Area Scan (7x12x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.206 mW/g

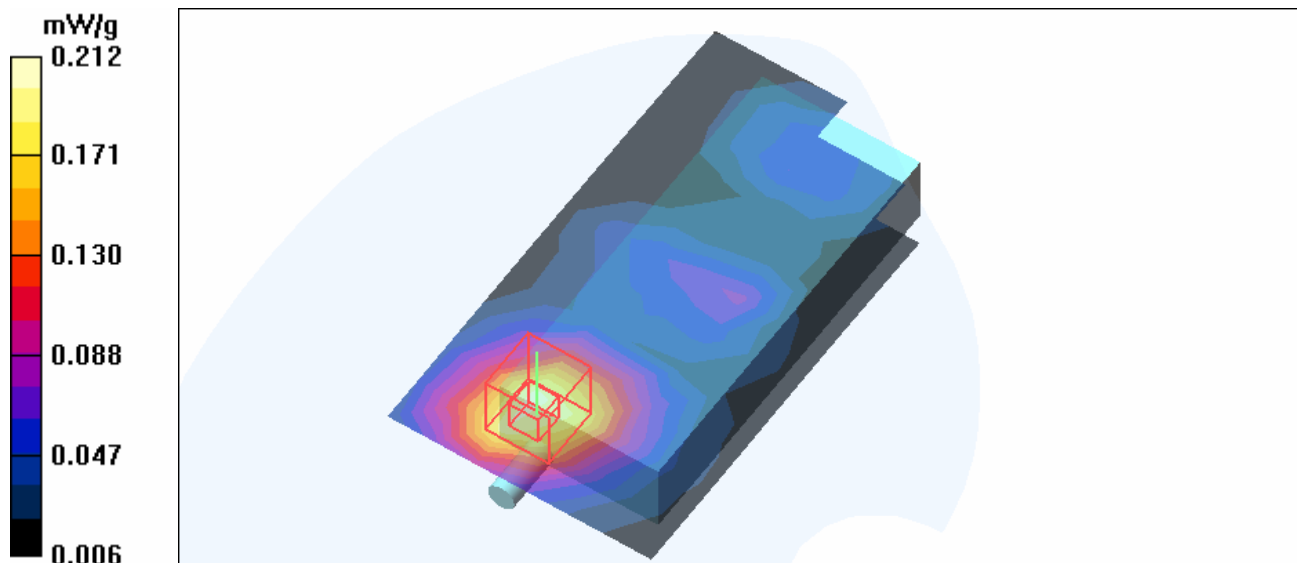
High Channel 11/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 10.1 V/m

Peak SAR (extrapolated) = 0.420 W/kg

SAR(1 g) = 0.201 mW/g; SAR(10 g) = 0.112 mW/g

Maximum value of SAR (measured) = 0.212 mW/g



Date/Time: 2006/7/3 15:45:08

Test Laboratory: Advance Data Technology

BodyWorn-11b-CH11-Keypad Down-Mode 7(Belt Clip-2)

DUT: Cisco Wireless IP Phone 7920 ; Type: CP-7920 ; Test Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz ; Duty Cycle: 1:1 ; Modulation type: CCK
Medium: MSL2450 Medium parameters used: $f = 2462 \text{ MHz}$; $\sigma = 2.06 \text{ mho/m}$; $\epsilon_r = 51.4$; $\rho = 1000 \text{ kg/m}^3$; Liquid level : 151 mm

Phantom section: Flat Section ; Separation distance : 0 mm (The bottom side of the EUT to the Phantom)

Antenna type : External Antenna ; Air temp. : 23.0 degrees ; Liquid temp. : 21.8 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687 ; ConvF(4.13, 4.13, 4.13) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510 ; Calibrated: 2005/8/17
- Phantom: SAM 12 ; Type: SAM V4.0 ; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44 ; Postprocessing SW: SEMCAD, V1.8 Build 171

High Channel 11/Area Scan (7x12x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (measured) = 0.180 mW/g

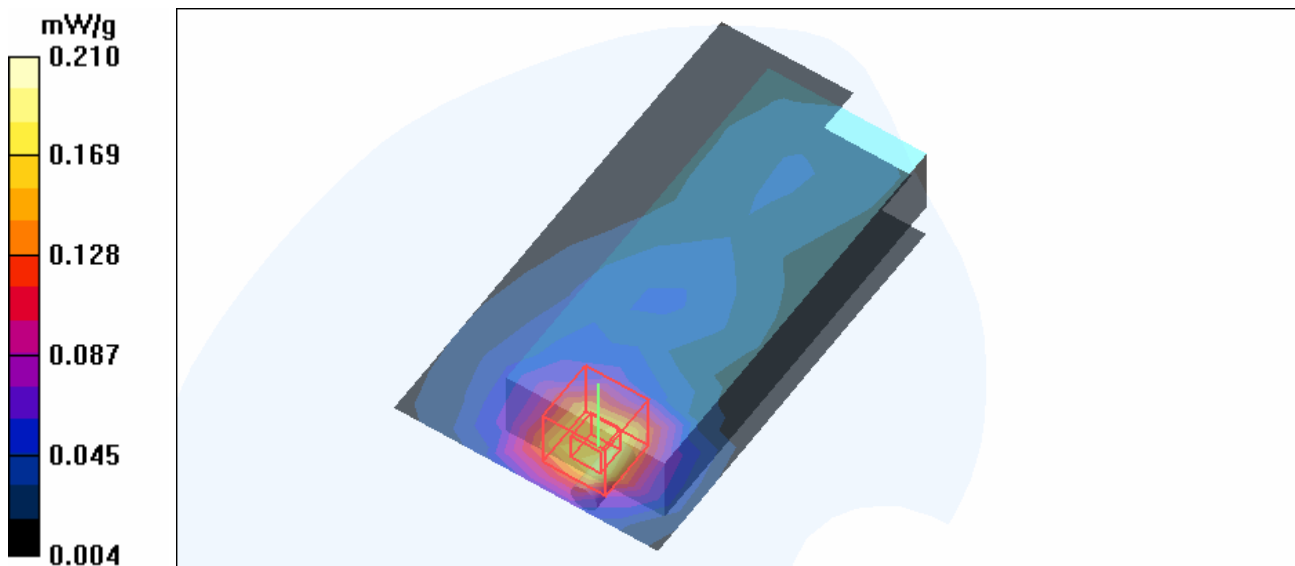
High Channel 11/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 8.80 V/m

Peak SAR (extrapolated) = 0.411 W/kg

SAR(1 g) = 0.195 mW/g; SAR(10 g) = 0.104 mW/g

Maximum value of SAR (measured) = 0.210 mW/g



Date/Time: 2006/7/4 09:14:05

Test Laboratory: Advance Data Technology

System Validation Check-HSL 2450MHz

DUT: Dipole 2450 MHz ; Type: D2450V2 ; Serial: 716 ; Test Frequency: 2450 MHz

Communication System: CW ; Frequency: 2450 MHz; Duty Cycle: 1:1; Modulation type: CW
 Medium: HSL2450; Medium parameters used: $f = 2450 \text{ MHz}$; $\sigma = 1.87 \text{ mho/m}$; $\epsilon_r = 38.1$; $\rho = 1000 \text{ kg/m}^3$;
 Liquid level : 155 mm
 Phantom section: Flat Section ; Separation distance : 10 mm (The feetpoint of the dipole to the Phantom)
 Air temp. : 23.1 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687 ; ConvF(4.41, 4.41, 4.41) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

d=10mm, Pin=250mW/Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 15.3 mW/g

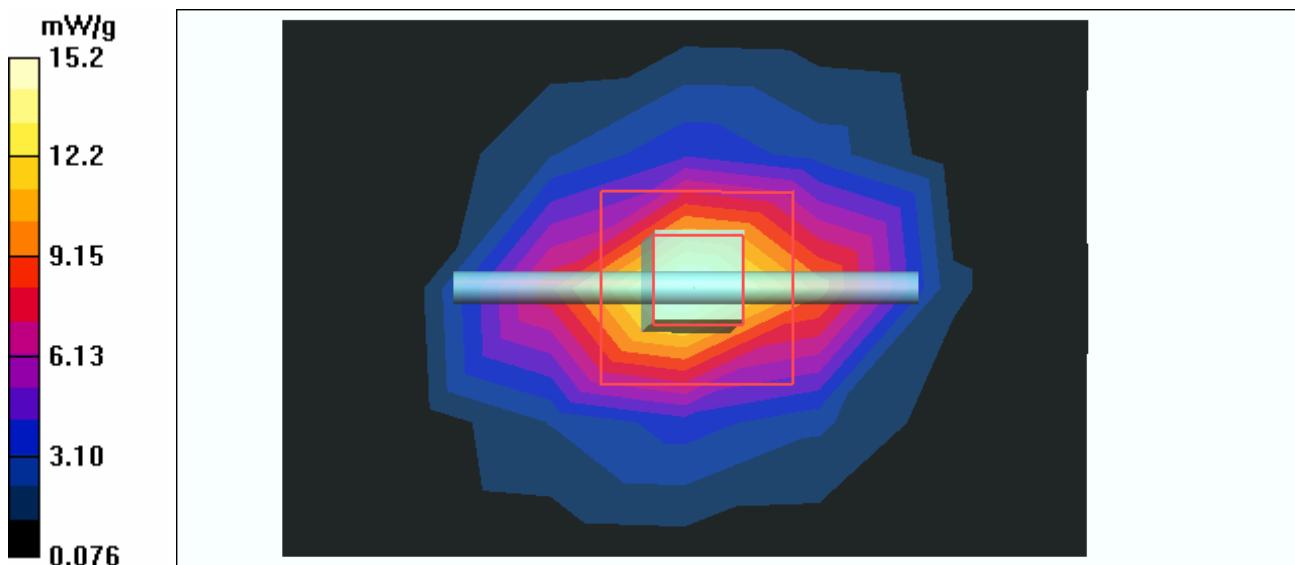
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.1 V/m; Power Drift = -0.186 dB

Peak SAR (extrapolated) = 28.4 W/kg

SAR(1 g) = 13.5 mW/g; SAR(10 g) = 6.22 mW/g

Maximum value of SAR (measured) = 15.2 mW/g



Date/Time: 2006/7/3 12:11:34

Test Laboratory: Advance Data Technology

System Validation Check-MSL 2450MHz

DUT: Dipole 2450 MHz ; Type: D2450V2 ; Serial: 716 ; Test Frequency: 2450 MHz

Communication System: CW ; Frequency: 2450 MHz; Duty Cycle: 1:1; Modulation type: CW
 Medium: MSL2450; Medium parameters used: $f = 2450$ MHz; $\sigma = 2.04$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³ ; Liquid level : 151 mm
 Phantom section: Flat Section ; Separation distance : 10 mm (The feetpoint of the dipole to the Phantom)
 Air temp. : 23.0 degrees ; Liquid temp. : 21.8 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1687 ; ConvF(4.13, 4.13, 4.13) ; Calibrated: 2005/9/15
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 2005/8/17
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.7 Build 44; Postprocessing SW: SEMCAD, V1.8 Build 171

d=10mm, Pin=250mW/Area Scan (5x7x1): Measurement grid: dx=15mm, dy=15mm
 Maximum value of SAR (measured) = 15.0 mW/g

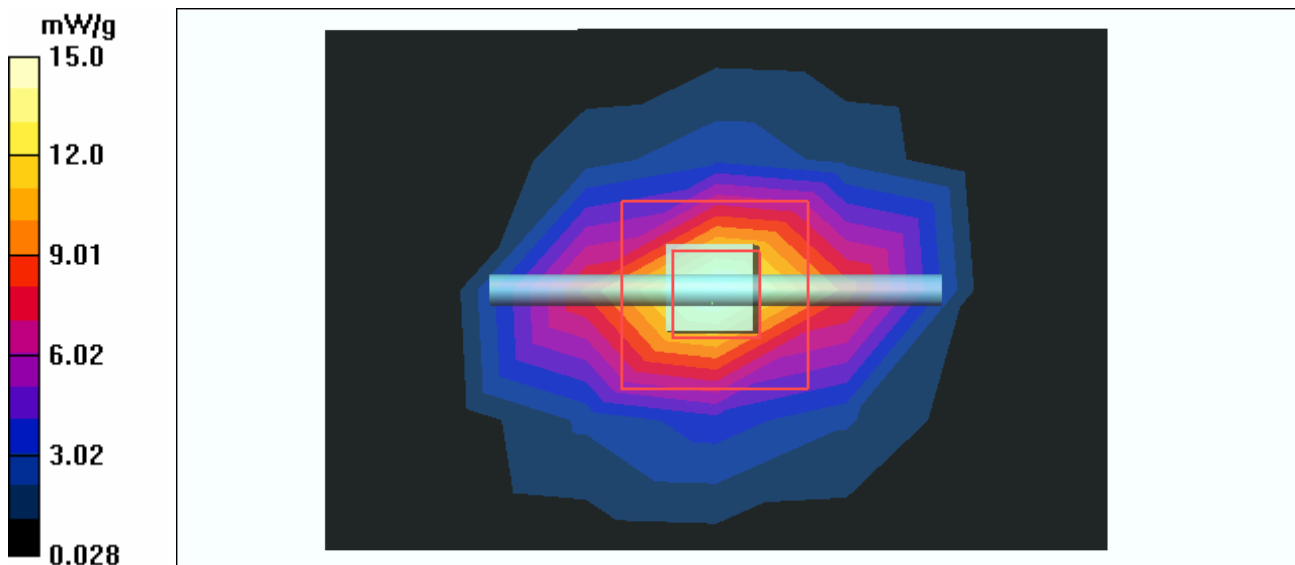
d=10mm, Pin=250mW/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 89.8 V/m; Power Drift = -0.110 dB

Peak SAR (extrapolated) = 29.5 W/kg

SAR(1 g) = 13.2 mW/g; SAR(10 g) = 6.09 mW/g

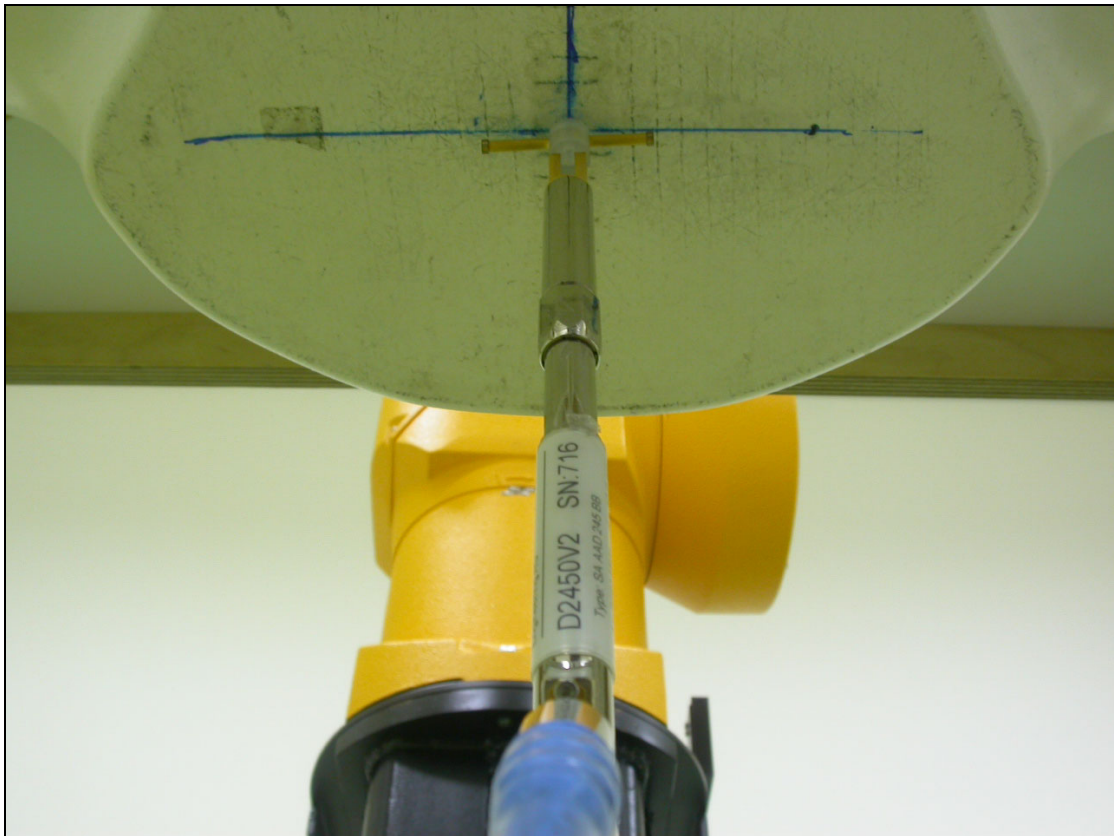
Maximum value of SAR (measured) = 14.7 mW/g



APPENDIX B: ADT SAR MEASUREMENT SYSTEM



APPENDIX C: PHOTOGRAPHS OF SYSTEM VALIDATION





APPENDIX D: SYSTEM CERTIFICATE & CALIBRATION

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

F. Bombault

**Schmid & Partner
Engineering AG**

Zeughausstrasse 43, CH-8004 Zurich
Tel. +41 1 245 97 00, Fax +41 1 245 97 79

Volker Kofe

D3: DAE

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



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

Accredited by the Swiss Federal Office of Metrology and Accreditation
 The Swiss Accreditation Service is one of the signatories to the EA
 Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Client **ADT (Auden)**

Certificate No: **DAE3-510_Aug05**

CALIBRATION CERTIFICATE

Object **DAE3 - SD 000 D03 AA - SN: 510**

Calibration procedure(s) **QA CAL-06.v12**
Calibration procedure for the data acquisition unit (DAE)

Calibration date: **August 17, 2005**

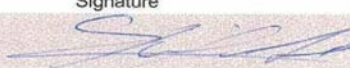
Condition of the calibrated item **In Tolerance**

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

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

Calibration Equipment used (M&TE critical for calibration)

Primary Standards	ID #	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Fluke Process Calibrator Type 702	SN: 6295803	7-Sep-04 (Sintrel, No.E-040073)	Sep-05
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Calibrator Box V1.1	SE UMS 006 AB 1002	29-Jun-05 (SPEAG, in house check)	In house check Jun-06

Calibrated by:	Name Eric Hainfeld	Function Technician	Signature 
Approved by:	Fin Bornholt	R&D Director	

Issued: August 17, 2005

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

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



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

Accredited by the Swiss Federal Office of Metrology and Accreditation
The Swiss Accreditation Service is one of the signatories to the EA
Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: **SCS 108**

Glossary

DAE digital acquisition electronics
Connector angle information used in DASY system to align probe sensor X to the robot coordinate system.

Methods Applied and Interpretation of Parameters

- **DC Voltage Measurement:** Calibration Factor assessed for use in DASY system by comparison with a calibrated instrument traceable to national standards. The figure given corresponds to the full scale range of the voltmeter in the respective range.
- **Connector angle:** The angle of the connector is assessed measuring the angle mechanically by a tool inserted. Uncertainty is not required.
- The following parameters contain technical information as a result from the performance test and require no uncertainty.
- **DC Voltage Measurement Linearity:** Verification of the Linearity at +10% and -10% of the nominal calibration voltage. Influence of offset voltage is included in this measurement.
- **Common mode sensitivity:** Influence of a positive or negative common mode voltage on the differential measurement.
- **Channel separation:** Influence of a voltage on the neighbor channels not subject to an input voltage.
- **AD Converter Values with inputs shorted:** Values on the internal AD converter corresponding to zero input voltage
- **Input Offset Measurement:** Output voltage and statistical results over a large number of zero voltage measurements.
- **Input Offset Current:** Typical value for information; Maximum channel input offset current, not considering the input resistance.
- **Input resistance:** DAE input resistance at the connector, during internal auto-zeroing and during measurement.
- **Low Battery Alarm Voltage:** Typical value for information. Below this voltage, a battery alarm signal is generated.
- **Power consumption:** Typical value for information. Supply currents in various operating modes.

DC Voltage Measurement

A/D - Converter Resolution nominal

High Range: 1LSB = 6.1 μ V , full range = -100...+300 mV

Low Range: 1LSB = 61nV , full range = -1.....+3mV

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

Calibration Factors	X	Y	Z
High Range	403.415 $\pm$ 0.1% (k=2)	403.485 $\pm$ 0.1% (k=2)	403.851 $\pm$ 0.1% (k=2)
Low Range	3.95575 $\pm$ 0.7% (k=2)	3.93409 $\pm$ 0.7% (k=2)	3.95875 $\pm$ 0.7% (k=2)

Connector Angle

Connector Angle to be used in DASY system	44 ° $\pm$ 1 °
---	----------------

Appendix

1. DC Voltage Linearity

High Range		Input (μV)	Reading (μV)	Error (%)
Channel X	+ Input	200000	200000.5	0.00
Channel X	+ Input	20000	20004.73	0.02
Channel X	- Input	20000	-19990.82	-0.05
Channel Y	+ Input	200000	200000.4	0.00
Channel Y	+ Input	20000	20002.02	0.01
Channel Y	- Input	20000	-19995.68	-0.02
Channel Z	+ Input	200000	200000.2	0.00
Channel Z	+ Input	20000	20006.25	0.03
Channel Z	- Input	20000	-19996.09	-0.02

Low Range		Input (μV)	Reading (μV)	Error (%)
Channel X	+ Input	2000	2000.1	0.00
Channel X	+ Input	200	200.36	0.18
Channel X	- Input	200	-200.01	0.00
Channel Y	+ Input	2000	1999.9	0.00
Channel Y	+ Input	200	199.23	-0.38
Channel Y	- Input	200	-200.56	0.28
Channel Z	+ Input	2000	2000	0.00
Channel Z	+ Input	200	199.08	-0.46
Channel Z	- Input	200	-200.99	0.50

2. Common mode sensitivity

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

	Common mode Input Voltage (mV)	High Range Average Reading (μV)	Low Range Average Reading (μV)
Channel X	200	17.56	16.61
	- 200	-15.84	-17.03
Channel Y	200	14.35	14.26
	- 200	-15.35	-15.86
Channel Z	200	-8.76	-8.81
	- 200	7.41	7.46

3. Channel separation

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

	Input Voltage (mV)	Channel X (μV)	Channel Y (μV)	Channel Z (μV)
Channel X	200	-	3.17	0.64
Channel Y	200	0.23	-	3.72
Channel Z	200	-0.73	-0.05	-

4. AD-Converter Values with inputs shorted

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

	High Range (LSB)	Low Range (LSB)
Channel X	15976	16467
Channel Y	16203	16387
Channel Z	16171	16268

5. Input Offset Measurement

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

Input 10M Ω

	Average (μ V)	min. Offset (μ V)	max. Offset (μ V)	Std. Deviation (μ V)
Channel X	0.21	-0.66	0.72	0.27
Channel Y	-1.17	-3.01	0.16	0.33
Channel Z	-1.42	-2.98	-0.81	0.29

6. Input Offset Current

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

7. Input Resistance

	Zeroing (MOhm)	Measuring (MOhm)
Channel X	0.2001	201.1
Channel Y	0.2001	199.6
Channel Z	0.2000	200.5

8. Low Battery Alarm Voltage (verified during pre test)

Typical values	Alarm Level (VDC)
Supply (+ Vcc)	+7.9
Supply (- Vcc)	-7.6

9. Power Consumption (verified during pre test)

Typical values	Switched off (mA)	Stand by (mA)	Transmitting (mA)
Supply (+ Vcc)	+0.0	+6	+14
Supply (- Vcc)	-0.01	-8	-9