APPENDIX A: TEST CONFIGURATIONS AND TEST DATA
A1: TEST CONFIGURATION

Left Head Cheek Position

ADT CORP.

Left Head Tilt Position

ADT CORP.

Right Head Cheek Position

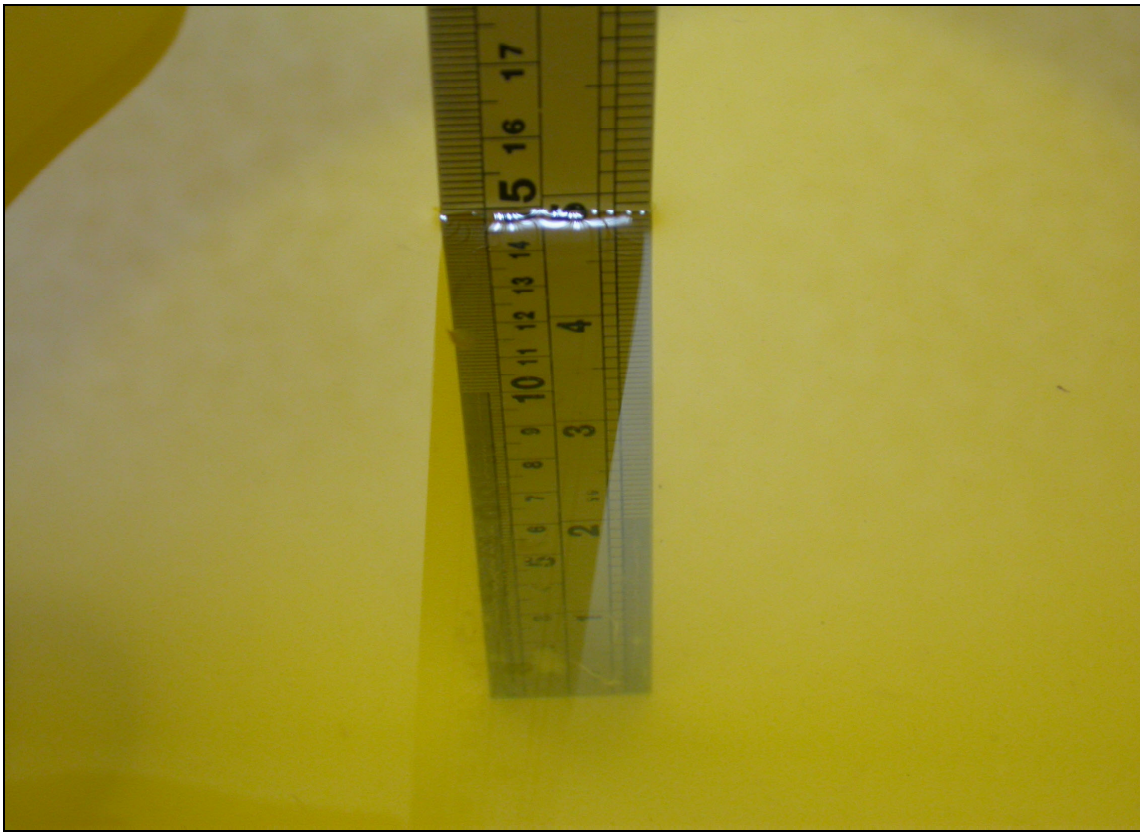
Right Head Tilt Position

EUT Photo

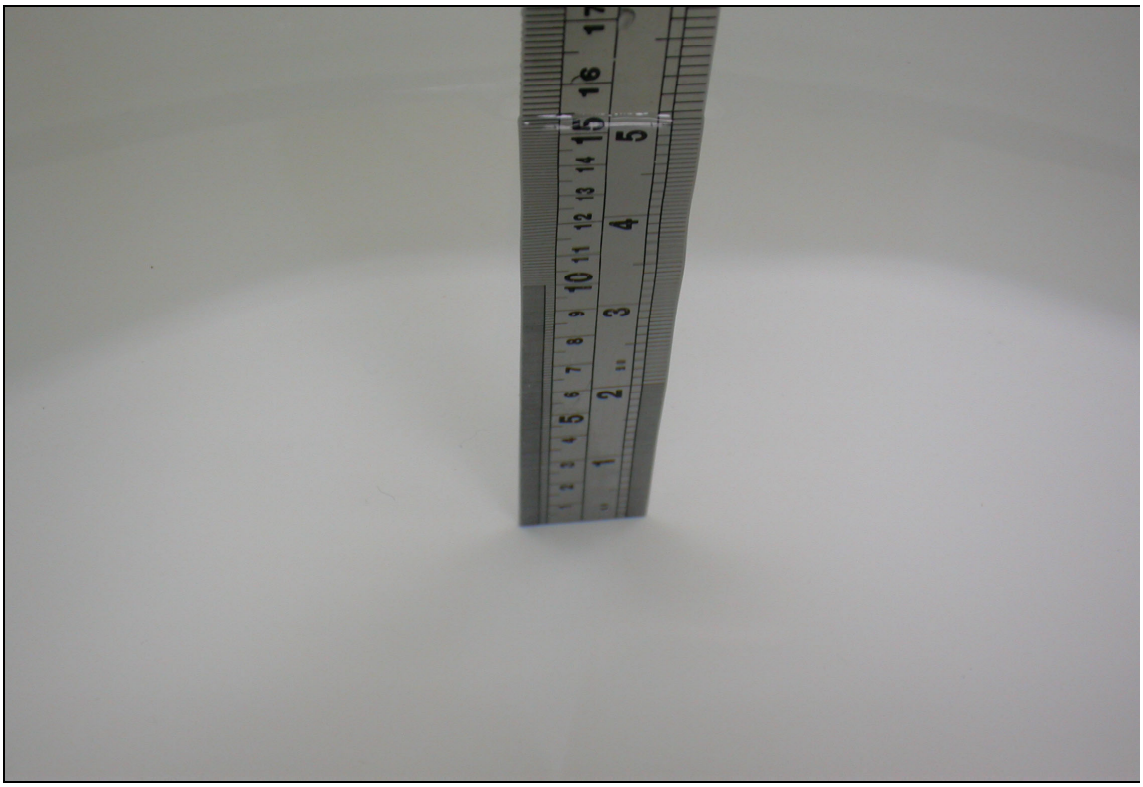
ADT CORP.

Liquid Level Photo

Tissue 850MHz D=150mm



Tissue 1900MHz D=150mm



Date/Time: 2005/5/13 14:02:11

Test Laboratory: Advance Data Technology

V5510 PCS850 Right Head

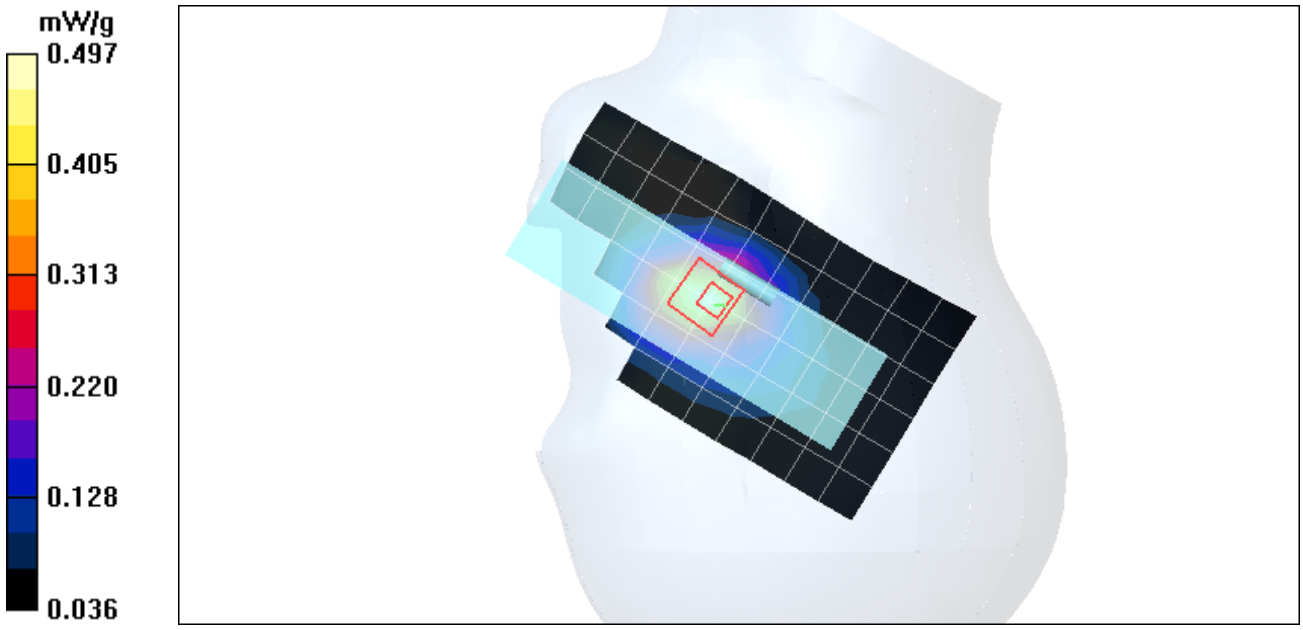
DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Frequency: 824.2 MHz

Communication System: PCS 850 ; Frequency: 824.2 MHz ; Duty Cycle: 1:8.3
Phantom: SAM 12 Medium parameters used: f = 824.2 MHz; σ = 0.88 mho/m; ε_r = 42.6; ρ = 1000 kg/m^3 ; Liquid level: 150mm
Phantom section: Right Section ; DUT test position : Cheek ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531; ConvF(6.19, 6.19, 6.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch position - Low Channel 128/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.508 mW/g

Touch position - Low Channel 128/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.20 V/m
Peak SAR (extrapolated) = 0.731 W/kg

SAR(1 g) = 0.466 mW/g; SAR(10 g) = 0.303 mW/g
Maximum value of SAR (measured) = 0.497 mW/g



Date/Time: 2005/5/13 14:27:13

Test Laboratory: Advance Data Technology

V5510 PCS850 Right Head

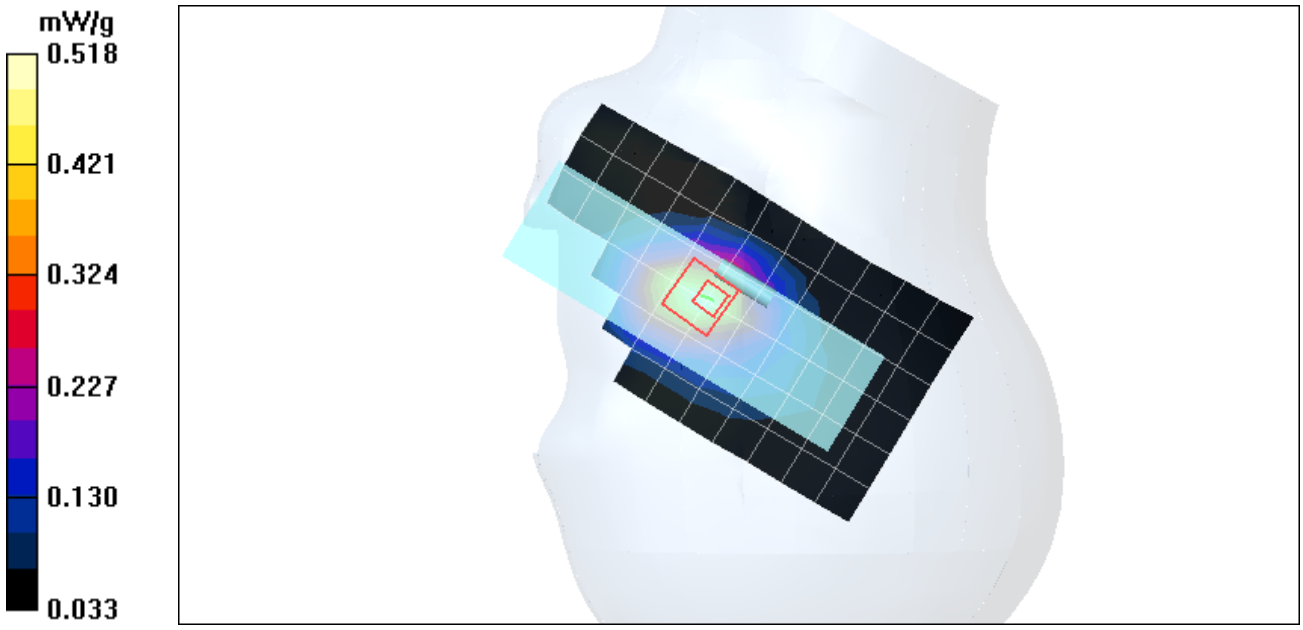
DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Frequency: 836.6 MHz

Communication System: PCS 850 ; Frequency: 836.6 MHz ; Duty Cycle: 1:8.3
Phantom: SAM 12 Medium parameters used: f = 836.6 MHz; σ = 0.891 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3 ; Liquid level: 150mm
Phantom section: Right Section ; DUT test position : Cheek ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531; ConvF(6.19, 6.19, 6.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch position - Middle Channel 190/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.535 mW/g

Touch position - Middle Channel 190/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.28 V/m
Peak SAR (extrapolated) = 0.772 W/kg

SAR(1 g) = 0.482 mW/g; SAR(10 g) = 0.309 mW/g
Maximum value of SAR (measured) = 0.518 mW/g



Date/Time: 2005/5/13 14:55:56

Test Laboratory: Advance Data Technology

V5510 PCS850 Right Head

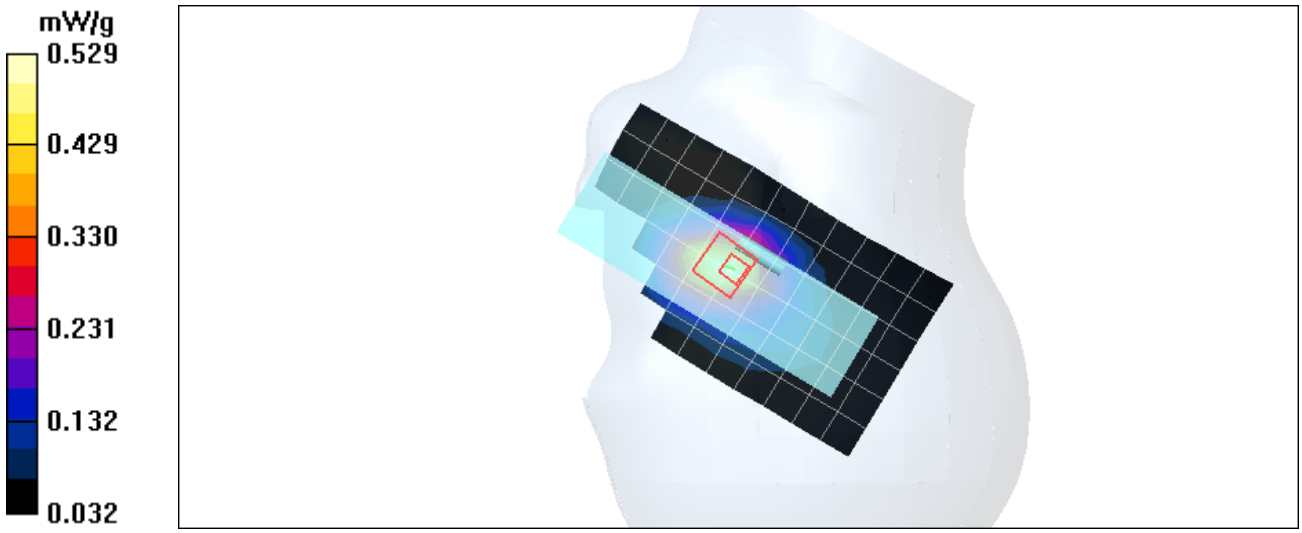
DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Frequency: 848.8 MHz

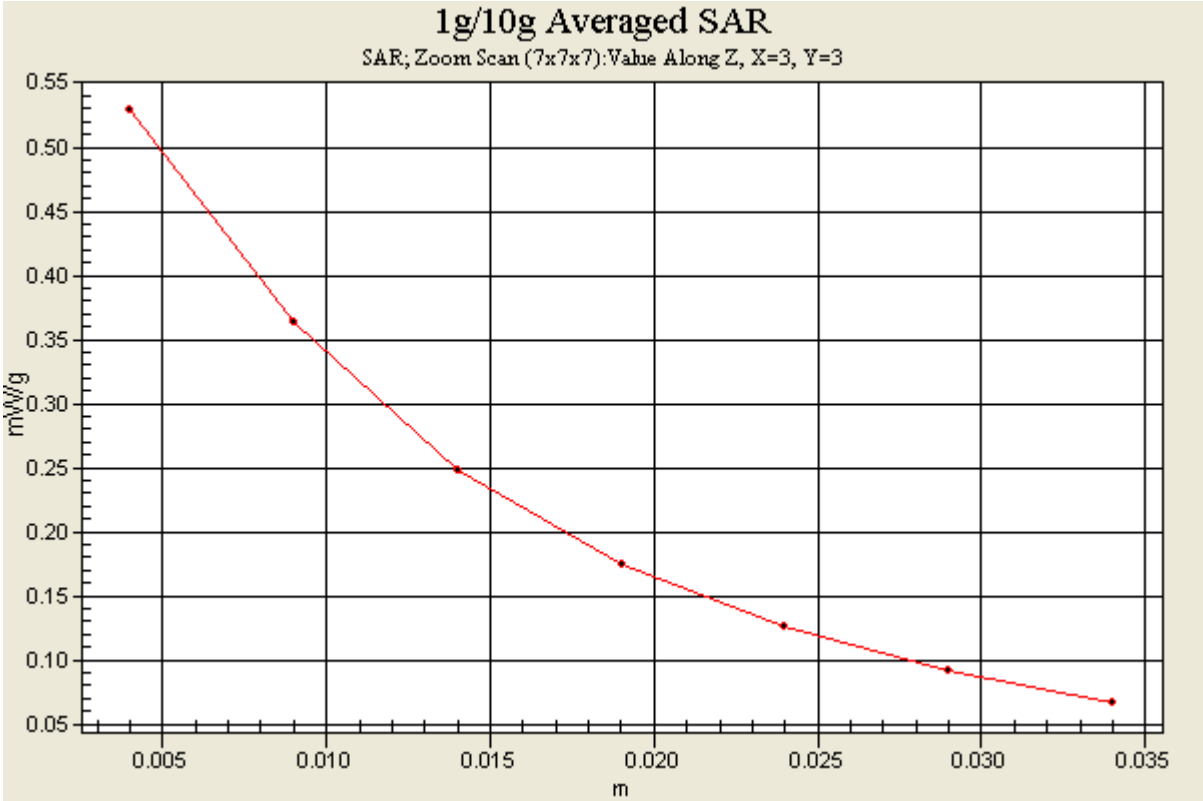
Communication System: PCS 850 ; Frequency: 848.8 MHz ; Duty Cycle: 1:8.3
Phantom: SAM 12 Medium parameters used: f = 848.8 MHz; σ = 0.901 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3 ; Liquid level: 150mm
Phantom section: Right Section ; DUT test position : Cheek ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531; ConvF(6.19, 6.19, 6.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch position - High Channel 251/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.537 mW/g

Touch position - High Channel 251/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 8.40 V/m
Peak SAR (extrapolated) = 0.817 W/kg

SAR(1 g) = 0.490 mW/g; SAR(10 g) = 0.309 mW/g
Maximum value of SAR (measured) = 0.529 mW/g




1g/10g Averaged SAR
SAR; Zoom Scan (7x7x7):Value Along Z, X=3, Y=3
mW/g
0.55
0.50
0.45
0.40
0.35
0.30
0.25
0.20
0.15
0.10
0.05
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Date/Time: 2005/5/13 15:18:32

Test Laboratory: Advance Data Technology

V5510 PCS850 Right Head

DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Channel Frequency: 824.2 MHz

Communication System: PCS 850 ; Frequency: 824.2 MHz; Duty Cycle: 1:8.3

Medium: HSL850 Medium parameters used: f = 824.2 MHz; σ = 0.88 mho/m; ε_r = 42.6; ρ = 1000 kg/m^3 ; Liquid level: 150 mm

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

Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1531 ; ConvF(6.19, 6.19, 6.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt position - Low Channel 128/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.116 mW/g

Tilt position - Low Channel 128/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.99 V/m

Peak SAR (extrapolated) = 0.142 W/kg

SAR(1 g) = 0.111 mW/g; SAR(10 g) = 0.082 mW/g

Maximum value of SAR (measured) = 0.117 mW/g

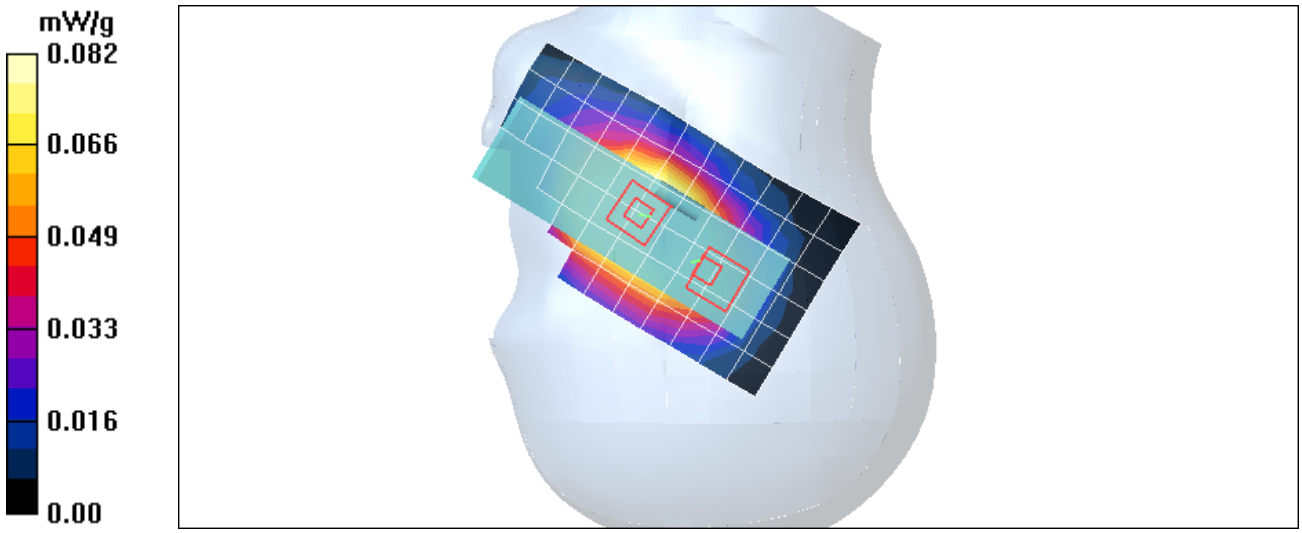
Tilt position - Low Channel 128/Zoom Scan (7x7x7) (7x7x7)/Cube 1: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.99 V/m

Peak SAR (extrapolated) = 0.098 W/kg

SAR(1 g) = 0.071 mW/g; SAR(10 g) = 0.046 mW/g

Maximum value of SAR (measured) = 0.082 mW/g



Date/Time: 2005/5/13 15:54:30

Test Laboratory: Advance Data Technology

V5510 PCS850 Right Head

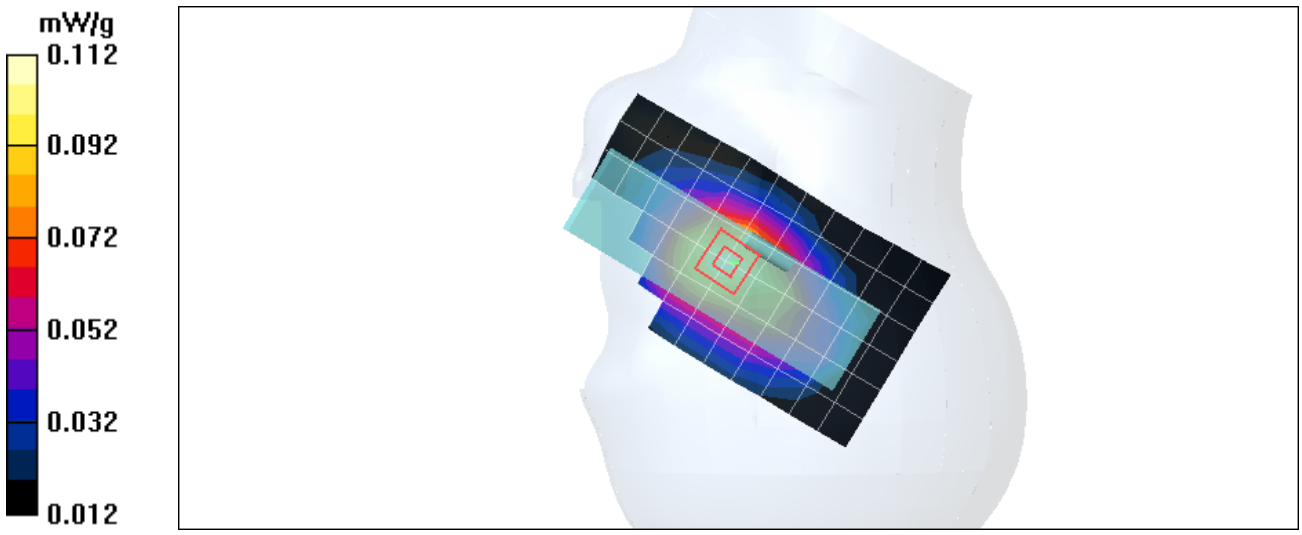
DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Channel Frequency: 836.6 MHz

Communication System: PCS 850 ; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: HSL850 Medium parameters used: f = 836.6 MHz; σ = 0.891 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3 ; Liquid level: 150 mm
Phantom section: Right Section ; DUT test position : Tilt ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531 ; ConvF(6.19, 6.19, 6.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt position - Middle Channel 190/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.112 mW/g

Tilt position - Middle Channel 190/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.60 V/m

Peak SAR (extrapolated) = 0.138 W/kg
SAR(1 g) = 0.106 mW/g; SAR(10 g) = 0.078 mW/g



Date/Time: 2005/5/13 16:16:53

Test Laboratory: Advance Data Technology

V5510 PCS850 Right Head

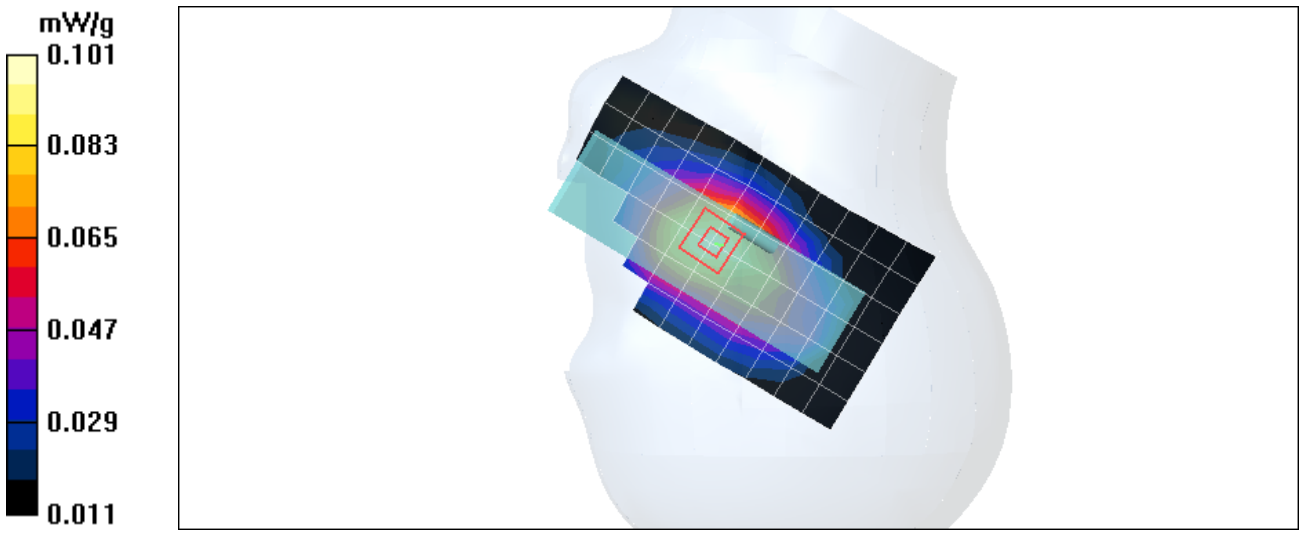
DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Channel Frequency: 848.8 MHz

Communication System: PCS 850 ; Frequency: 848.8 MHz; Duty Cycle: 1:8.3
Medium: HSL850 Medium parameters used: f = 848.8 MHz; σ = 0.901 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3 ; Liquid level: 150 mm
Phantom section: Right Section ; DUT test position : Tilt ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531 ; ConvF(6.19, 6.19, 6.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt position - High Channel 251/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.102 mW/g

Tilt position - High Channel 251/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.15 V/m
Peak SAR (extrapolated) = 0.125 W/kg

SAR(1 g) = 0.096 mW/g; SAR(10 g) = 0.070 mW/g
Maximum value of SAR (measured) = 0.101 mW/g



Date/Time: 2005/5/13 10:50:37

Test Laboratory: Advance Data Technology

V5510 PCS850 Left Head

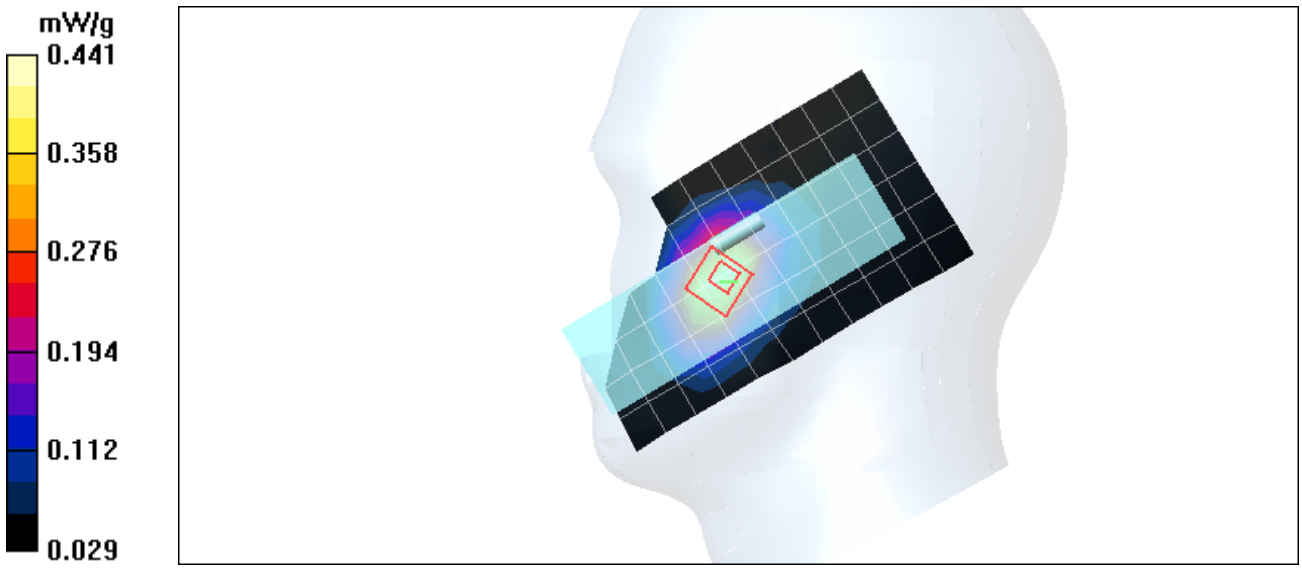
DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Frequency: 824.2 MHz

Communication System: PCS 850 ; Frequency: 824.2 MHz ; Duty Cycle: 1:8.3
Phantom: SAM 12 Medium parameters used: f = 824.2 MHz; σ = 0.88 mho/m; ε_r = 42.6; ρ = 1000 kg/m^3 ; Liquid level: 150mm
Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531; ConvF(6.19, 6.19, 6.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch position - Low Channel 128/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.428 mW/g

Touch position - Low Channel 128/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.40 V/m
Peak SAR (extrapolated) = 0.617 W/kg

SAR(1 g) = 0.411 mW/g; SAR(10 g) = 0.268 mW/g
Maximum value of SAR (measured) = 0.441 mW/g



Date/Time: 2005/5/13 11:12:54

Test Laboratory: Advance Data Technology

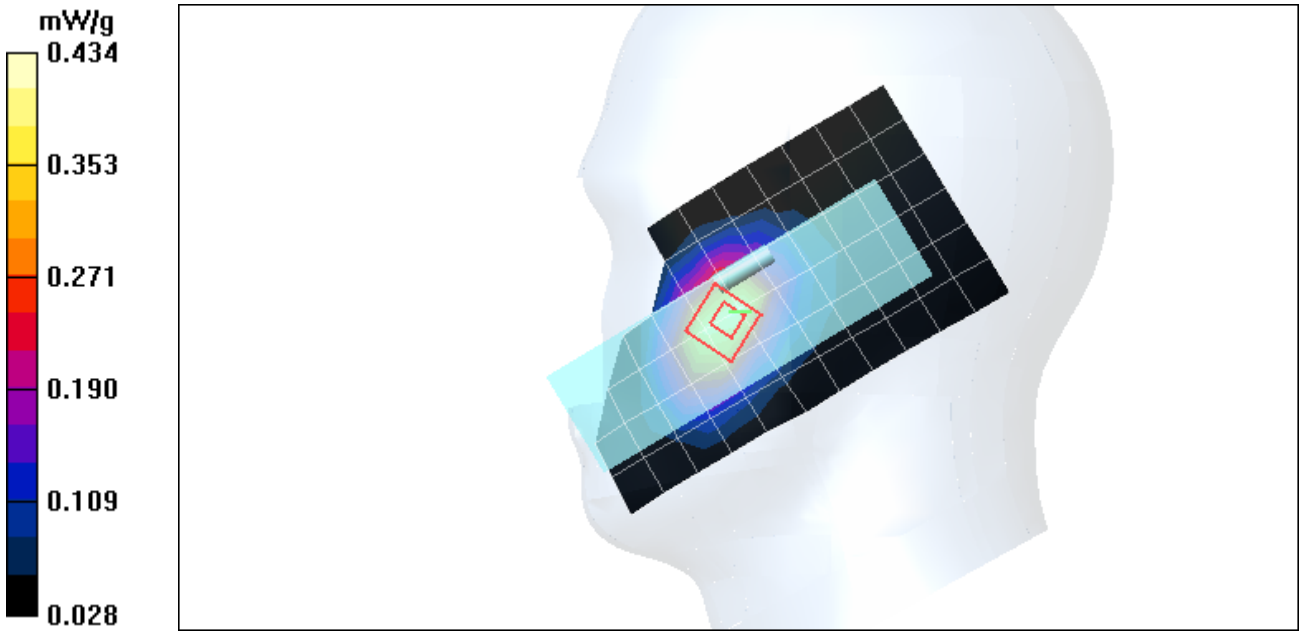
V5510 PCS850 Left Head

DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Frequency: 836.6 MHz

Communication System: PCS 850 ; Frequency: 836.6 MHz ; Duty Cycle: 1:8.3
Phantom: SAM 12 Medium parameters used: f = 836.6 MHz; σ = 0.891 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3 ; Liquid level: 150mm
Phantom section: Left Section ; DUT test position : Cheek ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531; ConvF(6.19, 6.19, 6.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch position - Middle Channel 190/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.420 mW/g

Touch position - Middle Channel 190/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 5.28 V/m
Peak SAR (extrapolated) = 0.607 W/kg
SAR(1 g) = 0.403 mW/g; SAR(10 g) = 0.263 mW/g
Maximum value of SAR (measured) = 0.434 mW/g



Date/Time: 2005/5/13 11:37:08

Test Laboratory: Advance Data Technology

V5510 PCS850 Left Head

DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Frequency: 848.8 MHz

Communication System: PCS 850 ; Frequency: 848.8 MHz ; Duty Cycle: 1:8.3

Phantom: SAM 12 Medium parameters used: f = 848.8 MHz; σ = 0.901 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3 ; Liquid level: 150mm

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

Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1531; ConvF(6.19, 6.19, 6.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch position - High Channel 251/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.395 mW/g

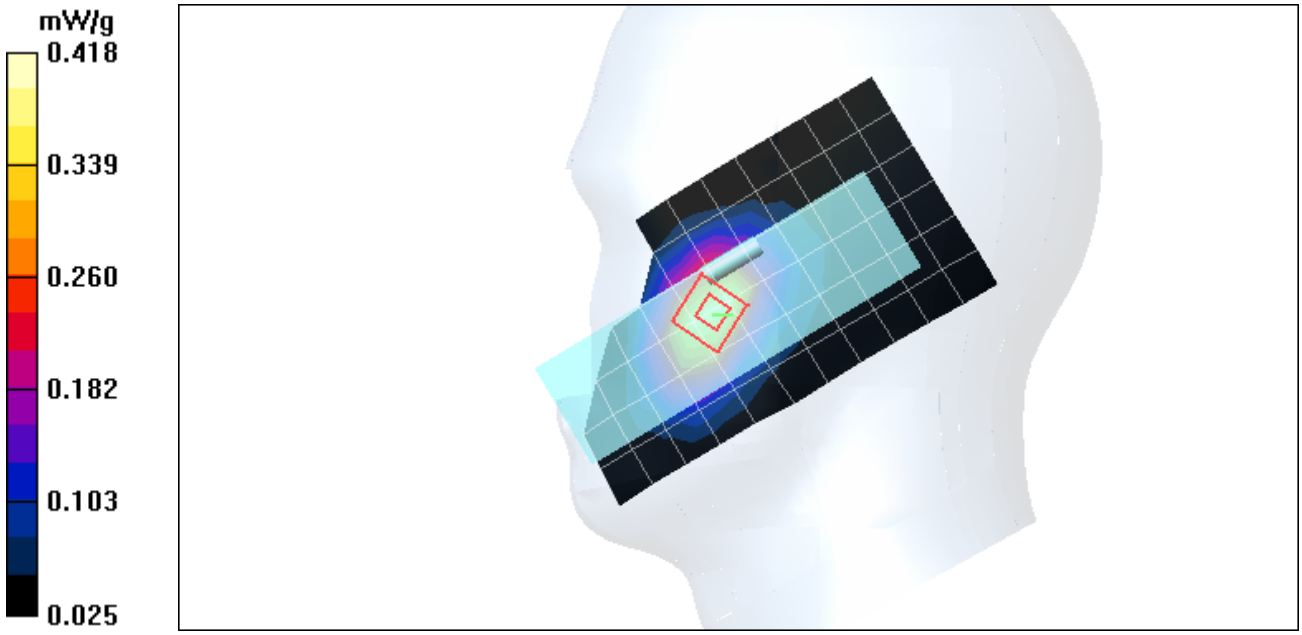
Touch position - High Channel 251/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.04 V/m

Peak SAR (extrapolated) = 0.572 W/kg

SAR(1 g) = 0.385 mW/g; SAR(10 g) = 0.250 mW/g

Maximum value of SAR (measured) = 0.418 mW/g



Date/Time: 2005/5/13 11:59:17

Test Laboratory: Advance Data Technology

V5510 PCS850 Left Head

DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Frequency: 824.2 MHz

Communication System: PCS 850 ; Frequency: 824.2 MHz ; Duty Cycle: 1:8.3

Phantom: SAM 12 Medium parameters used: f = 824.2 MHz; σ = 0.88 mho/m; ε_r = 42.6; ρ = 1000 kg/m^3 ; Liquid level: 150mm

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

Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1531; ConvF(6.19, 6.19, 6.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt position - Low Channel 128/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.132 mW/g

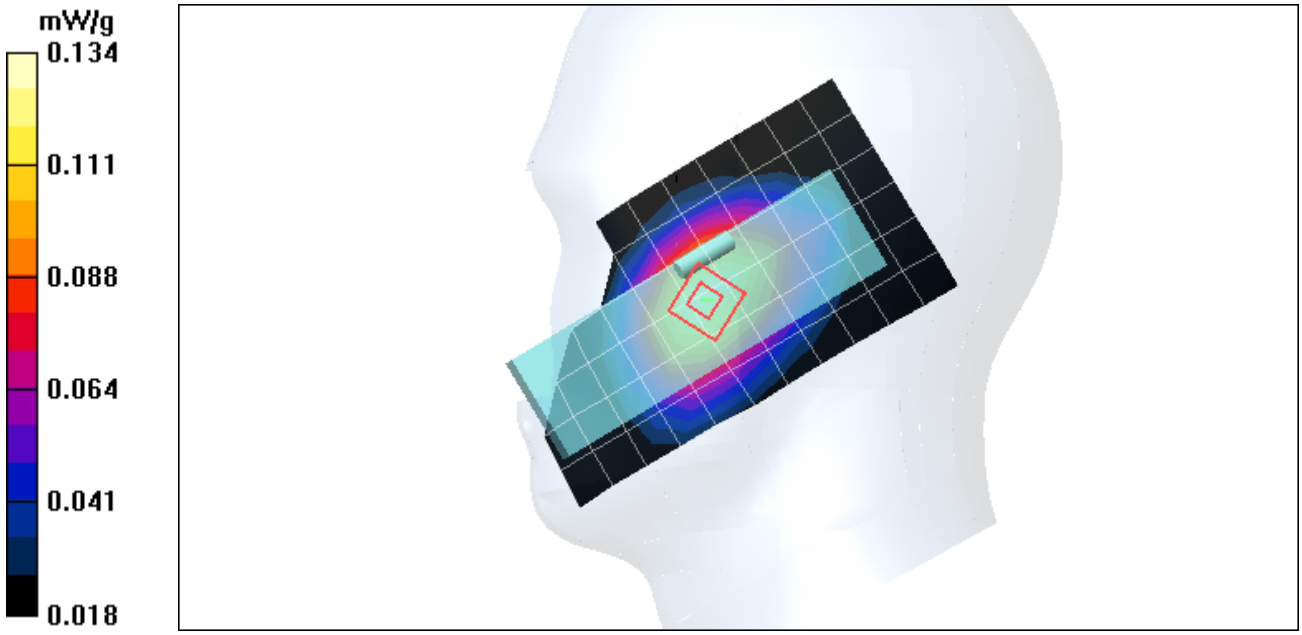
Tilt position - Low Channel 128/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 7.75 V/m

Peak SAR (extrapolated) = 0.164 W/kg

SAR(1 g) = 0.127 mW/g; SAR(10 g) = 0.093 mW/g

Maximum value of SAR (measured) = 0.134 mW/g



Date/Time: 2005/5/13 12:22:02

Test Laboratory: Advance Data Technology

V5510 PCS850 Left Head

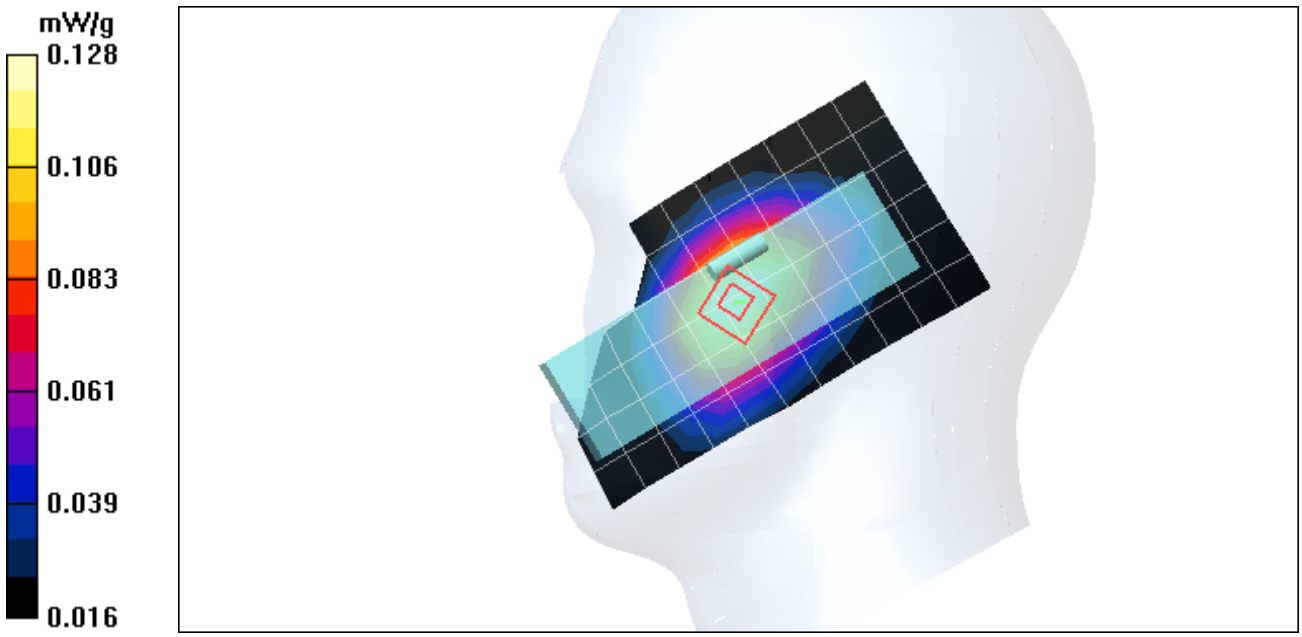
DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Channel Frequency: 836.6 MHz

Communication System: PCS 850 ; Frequency: 836.6 MHz; Duty Cycle: 1:8.3
Medium: HSL850 Medium parameters used: f = 836.6 MHz; σ = 0.891 mho/m; ε_r = 42.4; ρ = 1000 kg/m^3 ; Liquid level: 150 mm
Phantom section: Left Section ; DUT test position : Tilt ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531 ; ConvF(6.19, 6.19, 6.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt position - Middle Channel 190/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.134 mW/g

Tilt position - Middle Channel 190/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 7.40 V/m
Peak SAR (extrapolated) = 0.158 W/kg

SAR(1 g) = 0.121 mW/g; SAR(10 g) = 0.087 mW/g
Maximum value of SAR (measured) = 0.128 mW/g



Date/Time: 2005/5/13 12:44:48

Test Laboratory: Advance Data Technology

V5510 PCS850 Left Head

DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Channel Frequency: 848.8 MHz

Communication System: PCS 850 ; Frequency: 848.8 MHz; Duty Cycle: 1:8.3

Medium: HSL850 Medium parameters used: f = 848.8 MHz; σ = 0.901 mho/m; ε_r = 42.3; ρ = 1000 kg/m^3 ; Liquid level: 150 mm

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

Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1531 ; ConvF(6.19, 6.19, 6.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt position - High Channel 251/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.126 mW/g

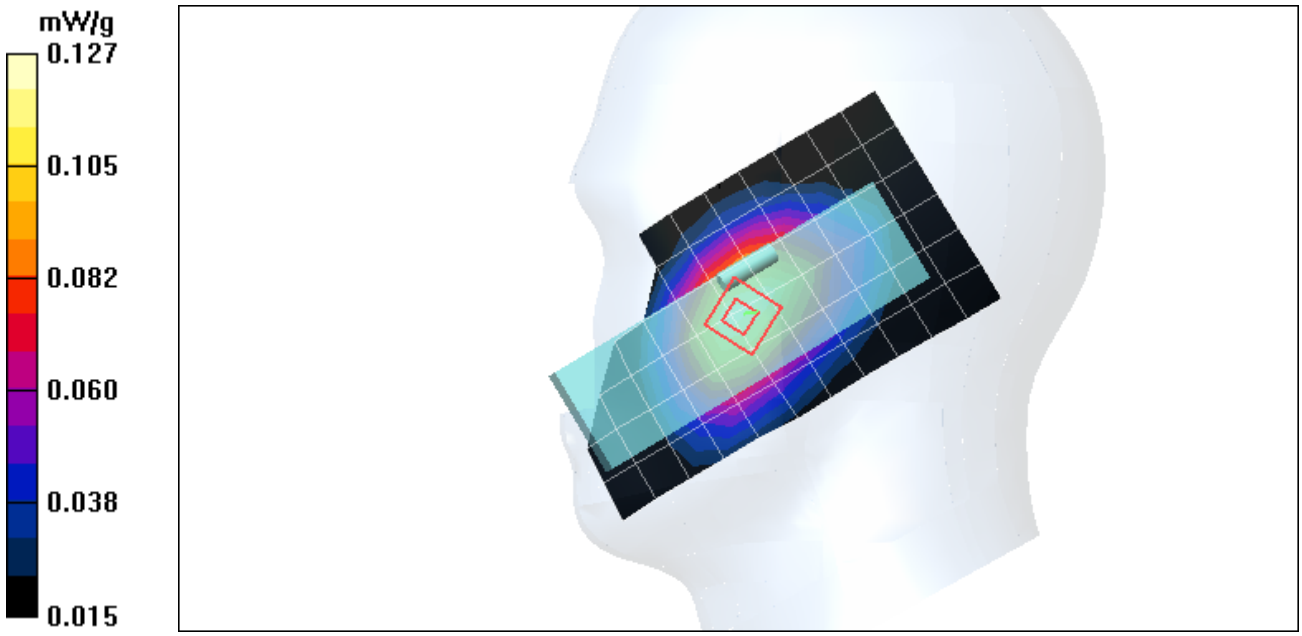
Tilt position - High Channel 251/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 6.97 V/m

Peak SAR (extrapolated) = 0.157 W/kg

SAR(1 g) = 0.120 mW/g; SAR(10 g) = 0.087 mW/g

Maximum value of SAR (measured) = 0.127 mW/g



Date/Time: 2005/5/12 13:45:47

Test Laboratory: Advance Data Technology

V5510 PCS1900 Right Head

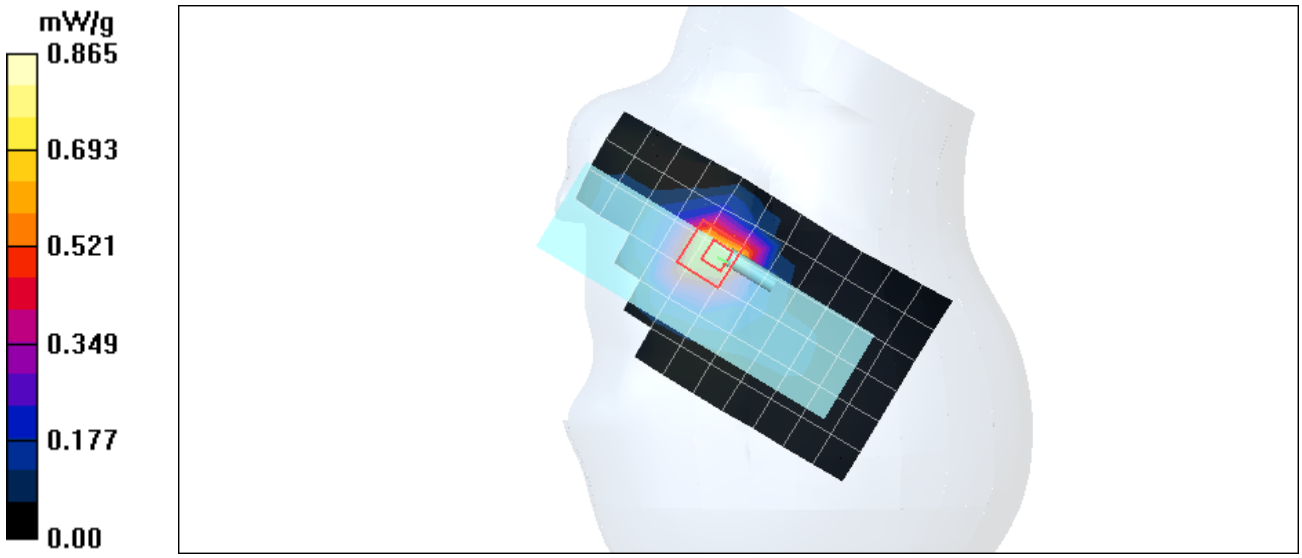
DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Frequency: 1850.2 MHz

Communication System: PCS 1900 ; Frequency: 1850.2 MHz ; Duty Cycle: 1:8.3
Phantom: SAM 12 Medium parameters used: f = 1850.2 MHz; σ = 1.37 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3 ; Liquid level: 150mm
Phantom section: Right Section ; DUT test position : Cheek ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531; ConvF(5.19, 5.19, 5.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch position - Low Channel 512/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.709 mW/g

Touch position - Low Channel 512/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.42 V/m
Peak SAR (extrapolated) = 1.24 W/kg

SAR(1 g) = 0.780 mW/g; SAR(10 g) = 0.449 mW/g
Maximum value of SAR (measured) = 0.865 mW/g



Date/Time: 2005/5/12 14:16:50

Test Laboratory: Advance Data Technology

V5510 PCS1900 Right Head

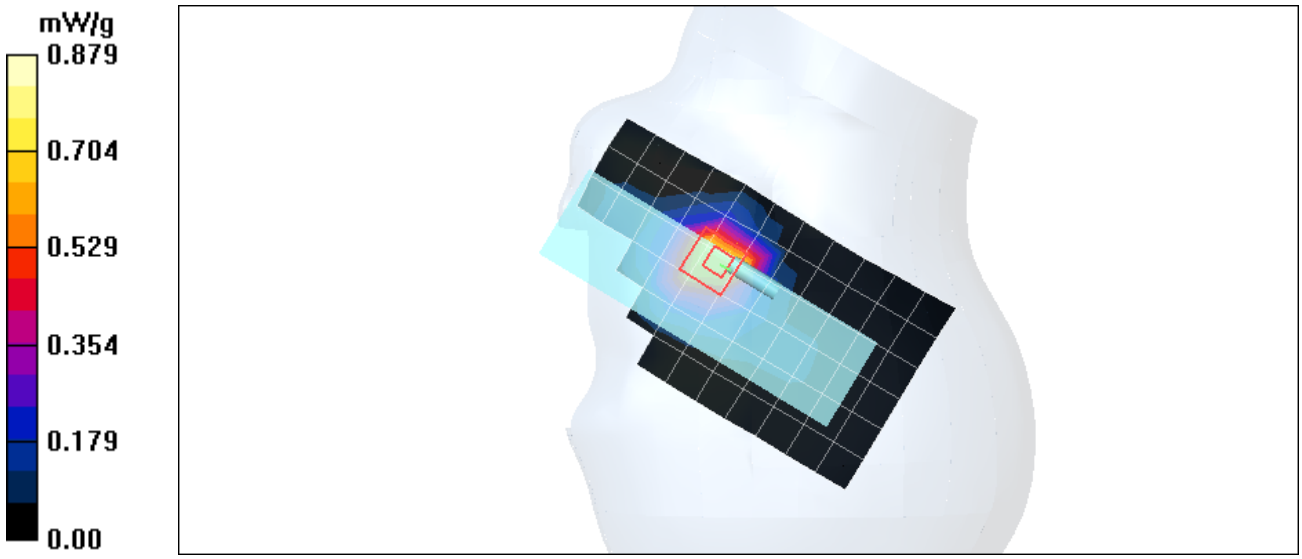
DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Frequency: 1880 MHz

Communication System: PCS 1900 ; Frequency: 1880 MHz ; Duty Cycle: 1:8.3
Phantom: SAM 12 Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3 ;
Liquid level: 150mm
Phantom section: Right Section ; DUT test position : Cheek ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531; ConvF(5.19, 5.19, 5.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch position - Middle Channel 661/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.723 mW/g

Touch position - Middle Channel 661/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.14 V/m
Peak SAR (extrapolated) = 1.29 W/kg

SAR(1 g) = 0.799 mW/g; SAR(10 g) = 0.460 mW/g
Maximum value of SAR (measured) = 0.879 mW/g



Date/Time: 2005/5/12 14:40:54

Test Laboratory: Advance Data Technology

V5510 PCS1900 Right Head

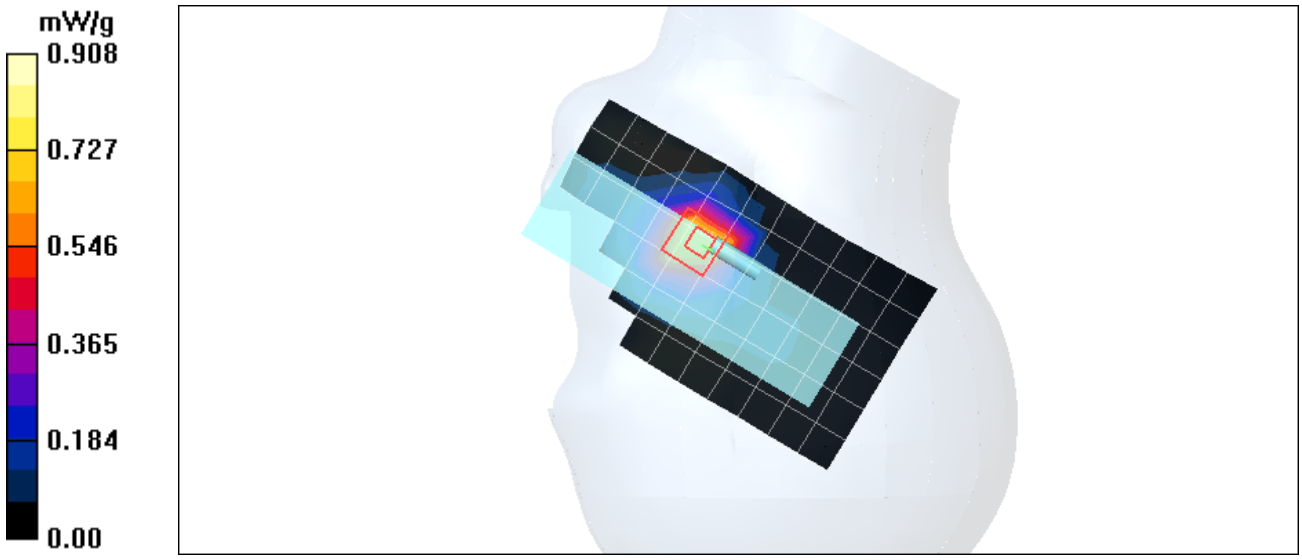
DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Frequency: 1909.8 MHz

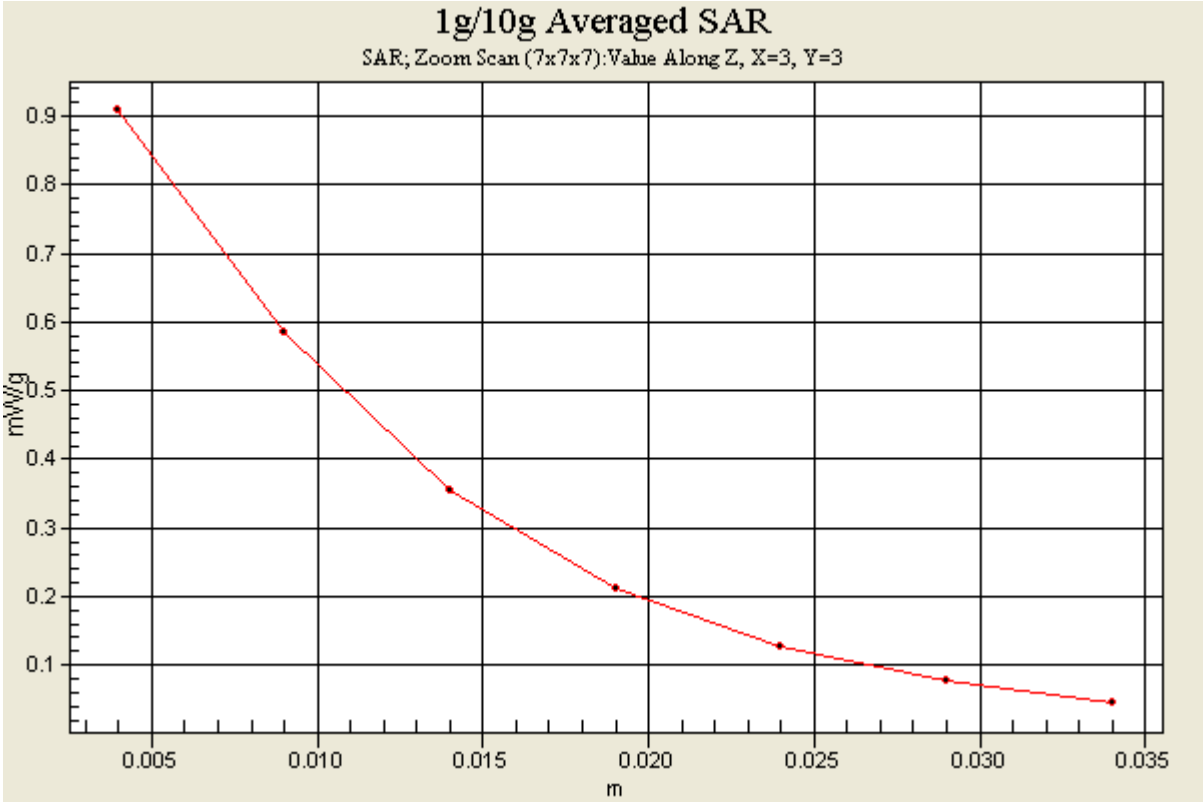
Communication System: PCS 1900 ; Frequency: 1909.8 MHz ; Duty Cycle: 1:8.3
Phantom: SAM 12 Medium parameters used: f = 1909.8 MHz; σ = 1.43 mho/m; ε_r = 38.2; ρ = 1000 kg/m^3 ; Liquid level: 150mm
Phantom section: Right Section ; DUT test position : Cheek ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531; ConvF(5.19, 5.19, 5.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch position - High Channel 810/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.736 mW/g

Touch position - High Channel 810/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 6.17 V/m
Peak SAR (extrapolated) = 1.32 W/kg

SAR(1 g) = 0.816 mW/g; SAR(10 g) = 0.466 mW/g
Maximum value of SAR (measured) = 0.908 mW/g




1g/10g Averaged SAR
SAR; Zoom Scan (7x7x7):Value Along Z, X=3, Y=3
mW/g
0.9
0.8
0.7
0.6
0.5
0.4
0.3
0.2
0.1
0.005
0.010
0.015
0.020
0.025
0.030
0.035
m

Date/Time: 2005/5/12 15:05:43

Test Laboratory: Advance Data Technology

V5510 PCS1900 Right Head

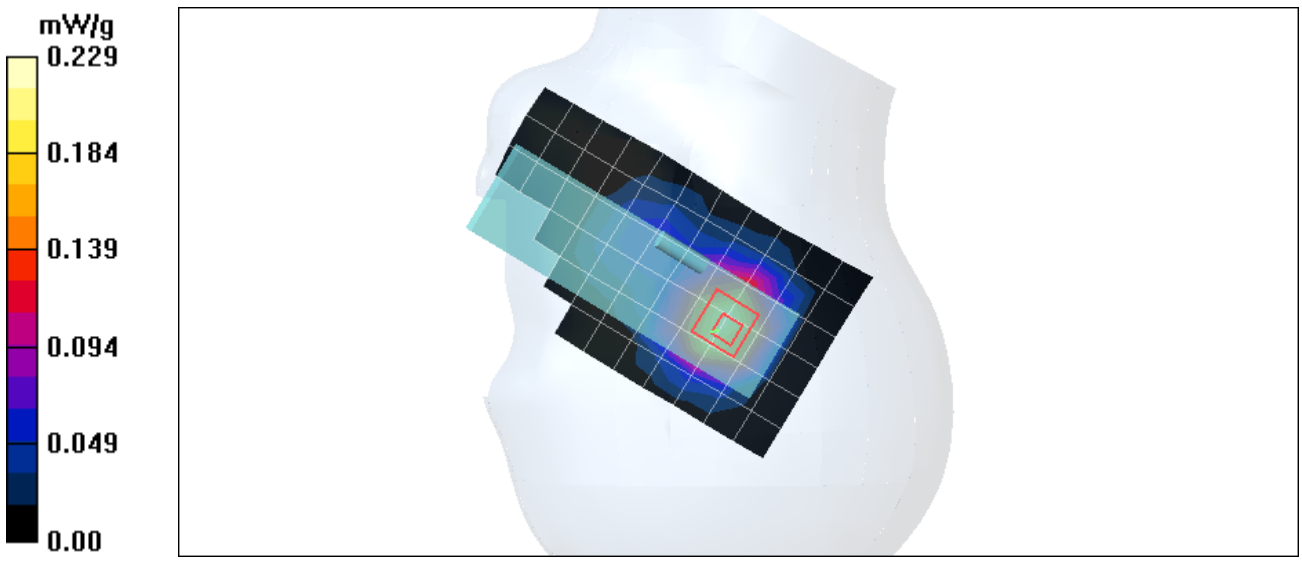
DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Channel Frequency: 1850.2 MHz

Communication System: PCS 1900 ; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3
Medium: HSL1900 Medium parameters used: f = 1850.2 MHz; σ = 1.37 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3 ; Liquid level: 150 mm
Phantom section: Right Section ; DUT test position : Tilt ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531 ; ConvF(5.19, 5.19, 5.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt position - Low Channel 512/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.215 mW/g

Tilt position - Low Channel 512/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 11.4 V/m
Peak SAR (extrapolated) = 0.301 W/kg

SAR(1 g) = 0.211 mW/g; SAR(10 g) = 0.133 mW/g
Maximum value of SAR (measured) = 0.229 mW/g



Date/Time: 2005/5/12 15:31:55

Test Laboratory: Advance Data Technology

V5510 PCS1900 Right Head

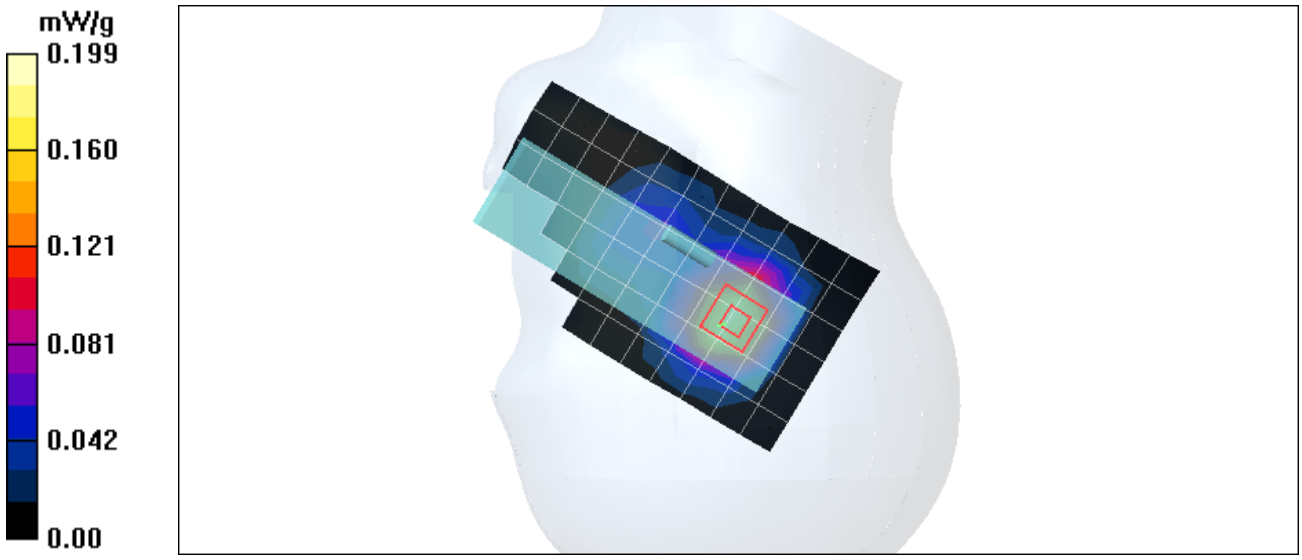
DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Channel Frequency: 1880 MHz

Communication System: PCS 1900 ; Frequency: 1880 MHz; Duty Cycle: 1:8.3
Medium: HSL1900 Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3 ;
Liquid level: 150 mm
Phantom section: Right Section ; DUT test position : Tilt ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531 ; ConvF(5.19, 5.19, 5.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt position - Middle Channel 661/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.182 mW/g

Tilt position - Middle Channel 661/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.9 V/m
Peak SAR (extrapolated) = 0.268 W/kg

SAR(1 g) = 0.185 mW/g; SAR(10 g) = 0.115 mW/g
Maximum value of SAR (measured) = 0.199 mW/g



Date/Time: 2005/5/12 15:54:26

Test Laboratory: Advance Data Technology

V5510 PCS1900 Right Head

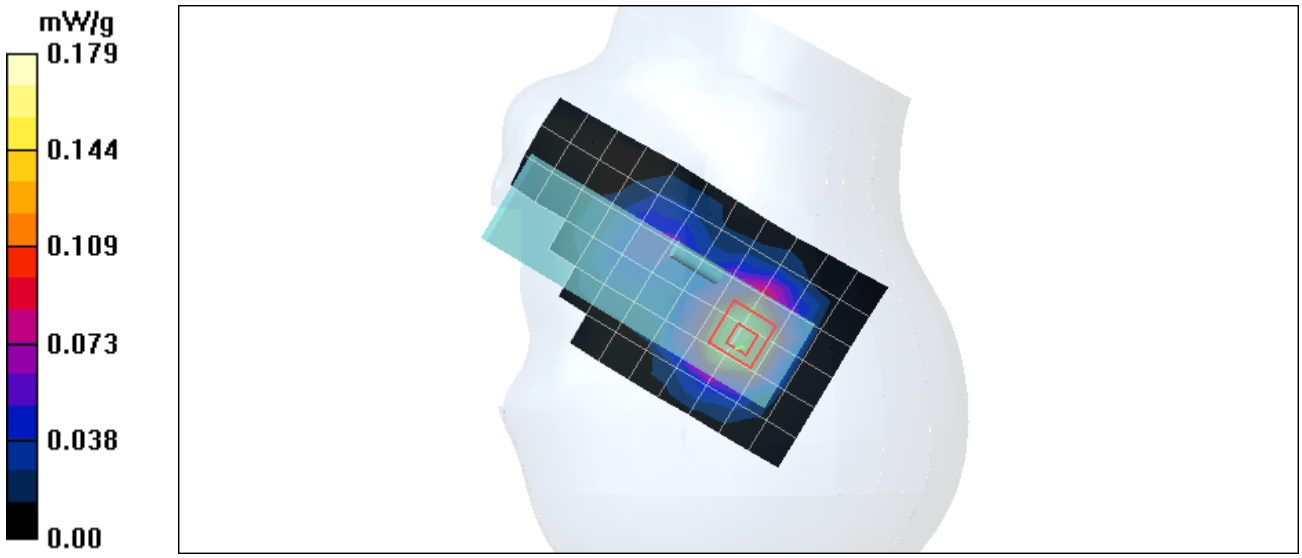
DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Channel Frequency: 1909.8 MHz

Communication System: PCS 1900 ; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3
Medium: HSL1900 Medium parameters used: f = 1909.8 MHz; σ = 1.43 mho/m; ε_r = 38.2; ρ = 1000 kg/m^3 ; Liquid level: 150 mm
Phantom section: Right Section ; DUT test position : Tilt ; Modulation type: GMSK
Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531 ; ConvF(5.19, 5.19, 5.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt position - High Channel 810/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 0.162 mW/g

Tilt position - High Channel 810/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 10.2 V/m
Peak SAR (extrapolated) = 0.243 W/kg

SAR(1 g) = 0.166 mW/g; SAR(10 g) = 0.102 mW/g
Maximum value of SAR (measured) = 0.179 mW/g



Date/Time: 2005/5/12 16:25:47

Test Laboratory: Advance Data Technology

V5510 PCS1900 Left Head

DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Frequency: 1850.2 MHz

Communication System: PCS 1900 ; Frequency: 1850.2 MHz ; Duty Cycle: 1:8.3

Phantom: SAM 12 Medium parameters used: f = 1850.2 MHz; σ = 1.37 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3 ; Liquid level: 150mm

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

Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1531; ConvF(5.19, 5.19, 5.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch position - Low Channel 512/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.637 mW/g

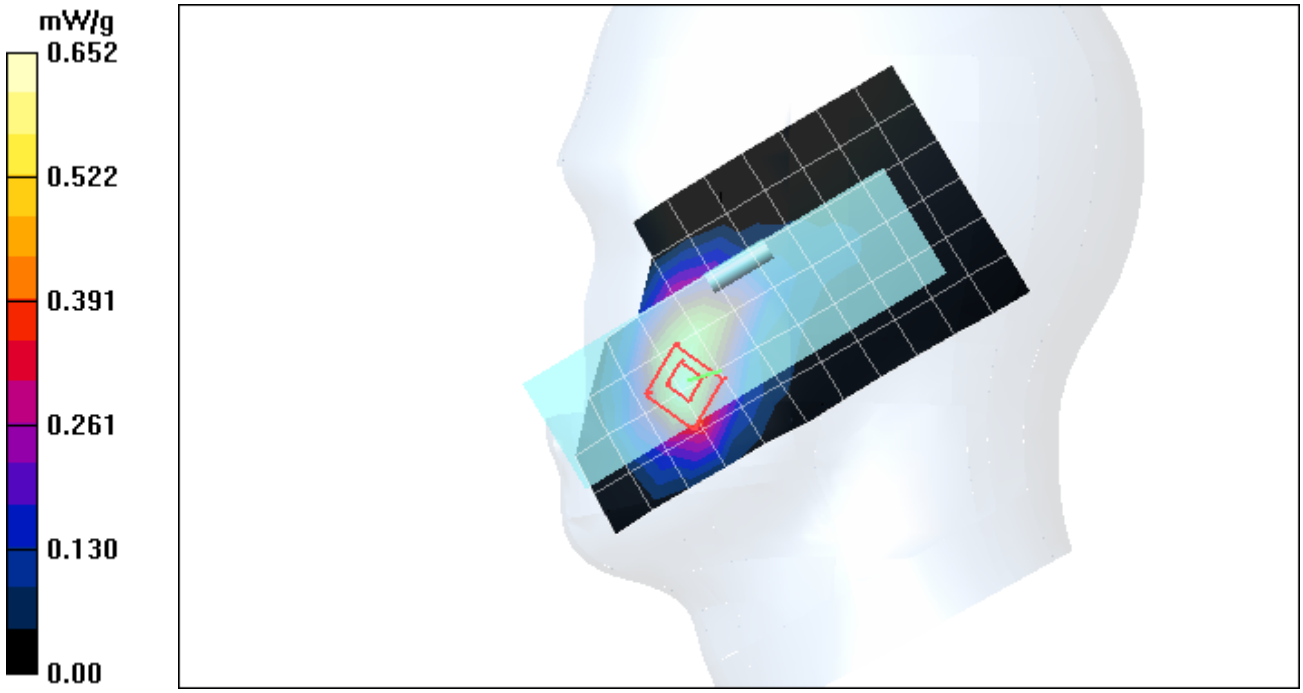
Touch position - Low Channel 512/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 4.26 V/m

Peak SAR (extrapolated) = 0.855 W/kg

SAR(1 g) = 0.610 mW/g; SAR(10 g) = 0.370 mW/g

Maximum value of SAR (measured) = 0.652 mW/g



Date/Time: 2005/5/12 16:52:33

Test Laboratory: Advance Data Technology

V5510 PCS1900 Left Head

DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Frequency: 1880 MHz

Communication System: PCS 1900 ; Frequency: 1880 MHz ; Duty Cycle: 1:8.3

Phantom: SAM 12 Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3 ;

Liquid level: 150mm

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

Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1531; ConvF(5.19, 5.19, 5.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch position - Middle Channel 661/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.648 mW/g

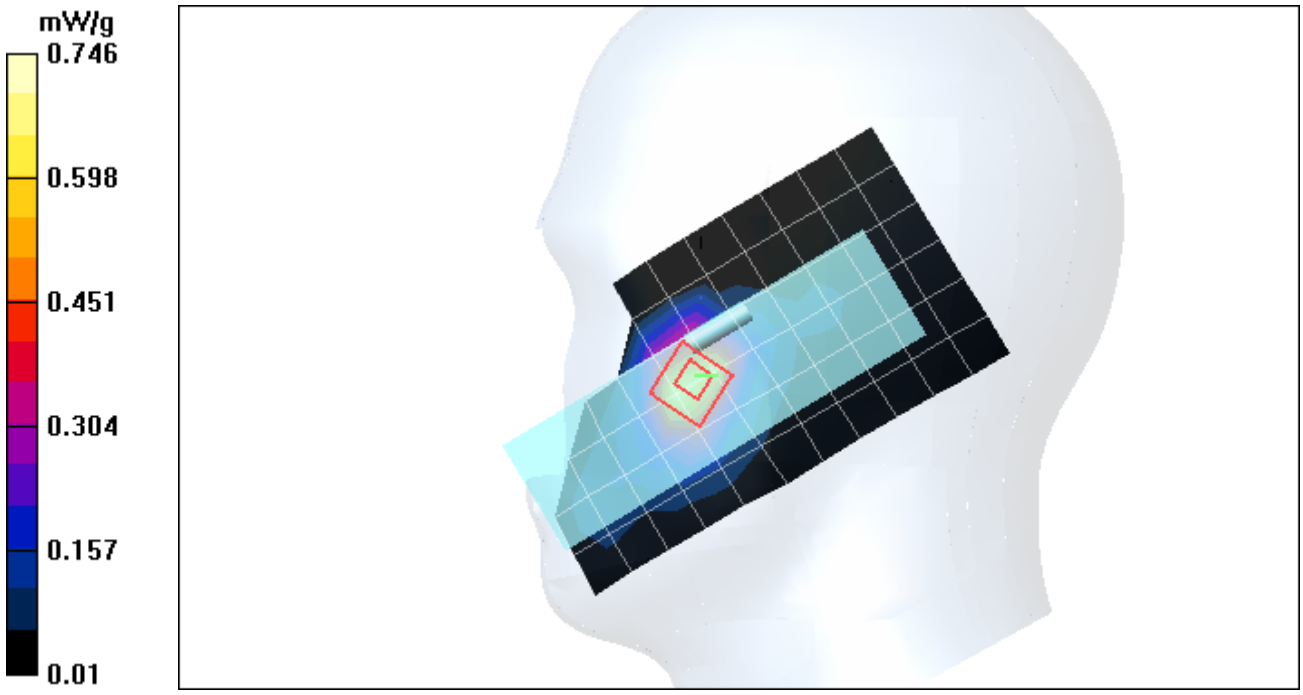
Touch position - Middle Channel 661/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.25 V/m

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.664 mW/g; SAR(10 g) = 0.370 mW/g

Maximum value of SAR (measured) = 0.746 mW/g



Date/Time: 2005/5/12 17:14:59

Test Laboratory: Advance Data Technology

V5510 PCS1900 Left Head

DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Frequency: 1909.8 MHz

Communication System: PCS 1900 ; Frequency: 1909.8 MHz ; Duty Cycle: 1:8.3

Phantom: SAM 12 Medium parameters used: f = 1909.8 MHz; σ = 1.43 mho/m; ε_r = 38.2; ρ = 1000 kg/m^3 ; Liquid level: 150mm

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

Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1531; ConvF(5.19, 5.19, 5.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Touch position - High Channel 810/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.691 mW/g

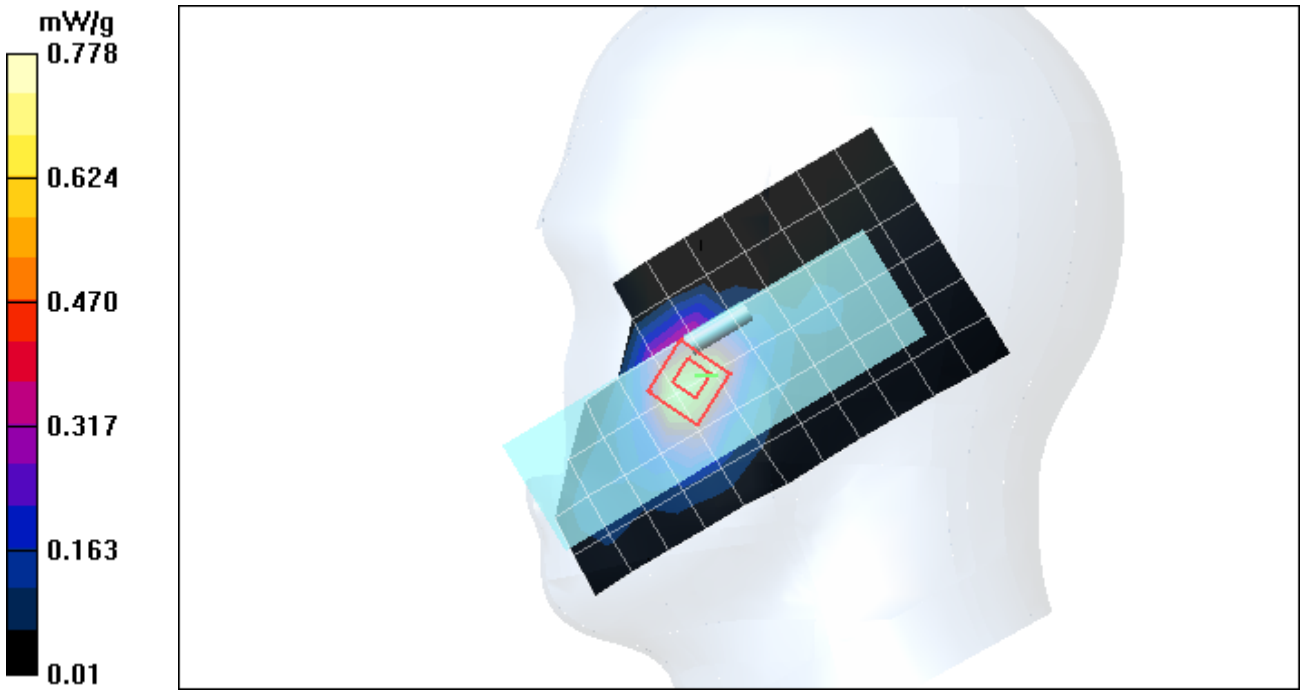
Touch position - High Channel 810/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 5.32 V/m

Peak SAR (extrapolated) = 1.15 W/kg

SAR(1 g) = 0.692 mW/g; SAR(10 g) = 0.384 mW/g

Maximum value of SAR (measured) = 0.778 mW/g



Date/Time: 2005/5/12 17:45:18

Test Laboratory: Advance Data Technology

V5510 PCS1900 Left Head

DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Channel Frequency: 1850.2 MHz

Communication System: PCS 1900 ; Frequency: 1850.2 MHz; Duty Cycle: 1:8.3

Medium: HSL1900 Medium parameters used: f = 1850.2 MHz; σ = 1.37 mho/m; ε_r = 38.5; ρ = 1000 kg/m^3 ; Liquid level: 150 mm

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

Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1531 ; ConvF(5.19, 5.19, 5.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt position - Low Channel 512/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.158 mW/g

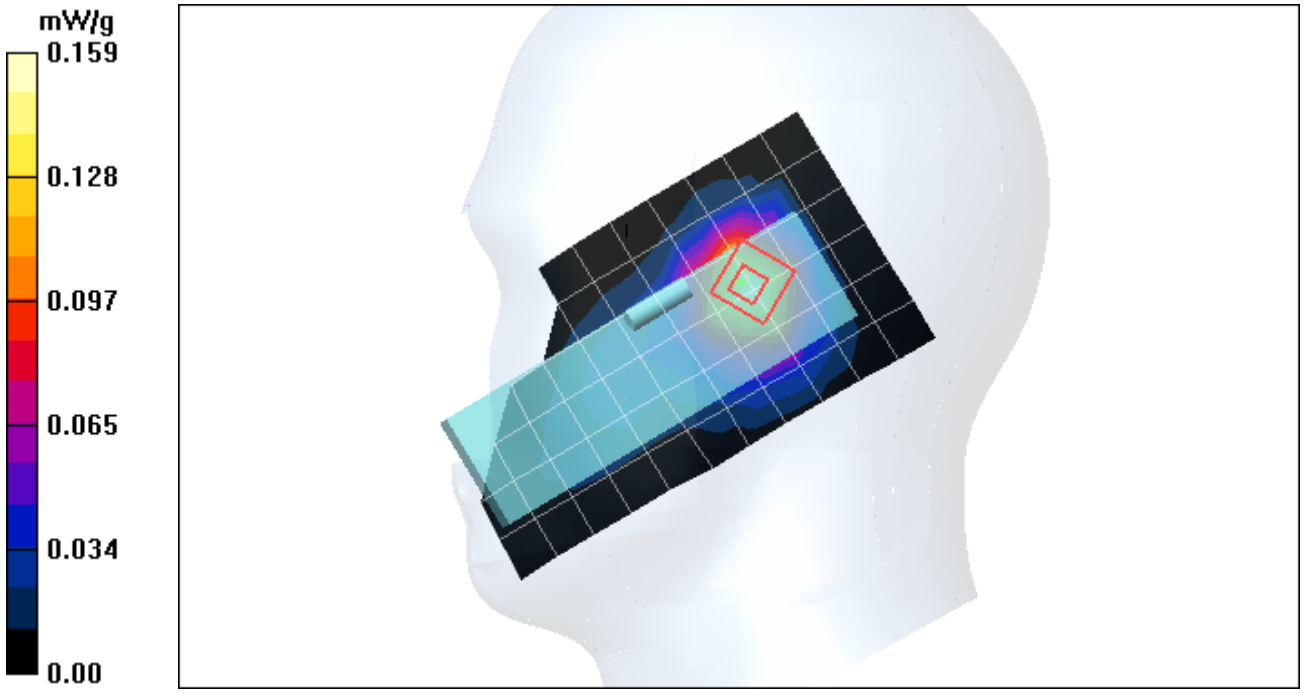
Tilt position - Low Channel 512/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.72 V/m

Peak SAR (extrapolated) = 0.214 W/kg

SAR(1 g) = 0.148 mW/g; SAR(10 g) = 0.091 mW/g

Maximum value of SAR (measured) = 0.159 mW/g



Date/Time: 2005/5/12 18:08:08

Test Laboratory: Advance Data Technology

V5510 PCS1900 Left Head

DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Channel Frequency: 1880 MHz

Communication System: PCS 1900 ; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: HSL1900 Medium parameters used: f = 1880 MHz; σ = 1.4 mho/m; ε_r = 38.4; ρ = 1000 kg/m^3 ;

Liquid level: 150 mm

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

Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1531 ; ConvF(5.19, 5.19, 5.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt position - Middle Channel 661/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.151 mW/g

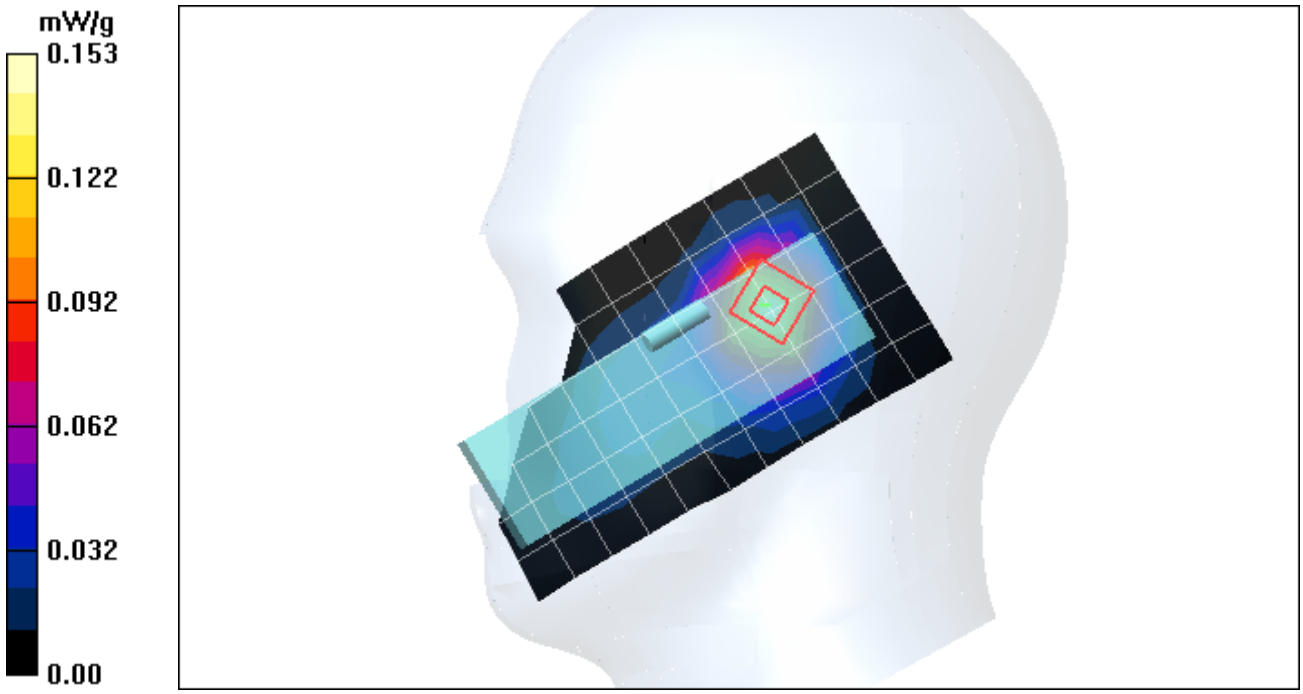
Tilt position - Middle Channel 661/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.41 V/m

Peak SAR (extrapolated) = 0.204 W/kg

SAR(1 g) = 0.140 mW/g; SAR(10 g) = 0.085 mW/g

Maximum value of SAR (measured) = 0.153 mW/g



Date/Time: 2005/5/12 18:31:35

Test Laboratory: Advance Data Technology

V5510 PCS1900 Left Head

DUT: Dual Band GSM Mobile Phone ; Type: V5510 ; Test Channel Frequency: 1909.8 MHz

Communication System: PCS 1900 ; Frequency: 1909.8 MHz; Duty Cycle: 1:8.3

Medium: HSL1900 Medium parameters used: f = 1909.8 MHz; σ = 1.43 mho/m; ε_r = 38.2; ρ = 1000 kg/m^3 ; Liquid level: 150 mm

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

Antenna type : External Antenna ; Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1531 ; ConvF(5.19, 5.19, 5.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

Tilt position - High Channel 810/Area Scan (7x13x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (measured) = 0.151 mW/g

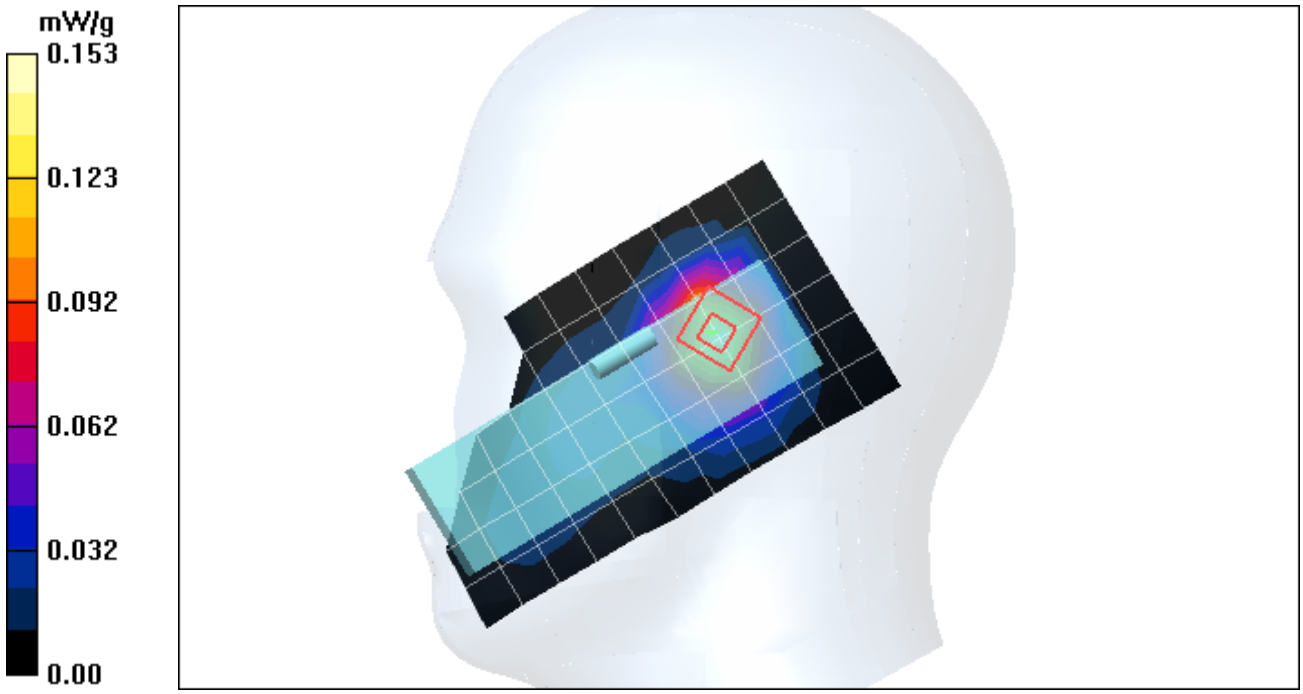
Tilt position - High Channel 810/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 8.29 V/m

Peak SAR (extrapolated) = 0.208 W/kg

SAR(1 g) = 0.142 mW/g; SAR(10 g) = 0.085 mW/g

Maximum value of SAR (measured) = 0.153 mW/g



Date/Time: 2005/5/13 10:05:44

Test Laboratory: Advance Data Technology

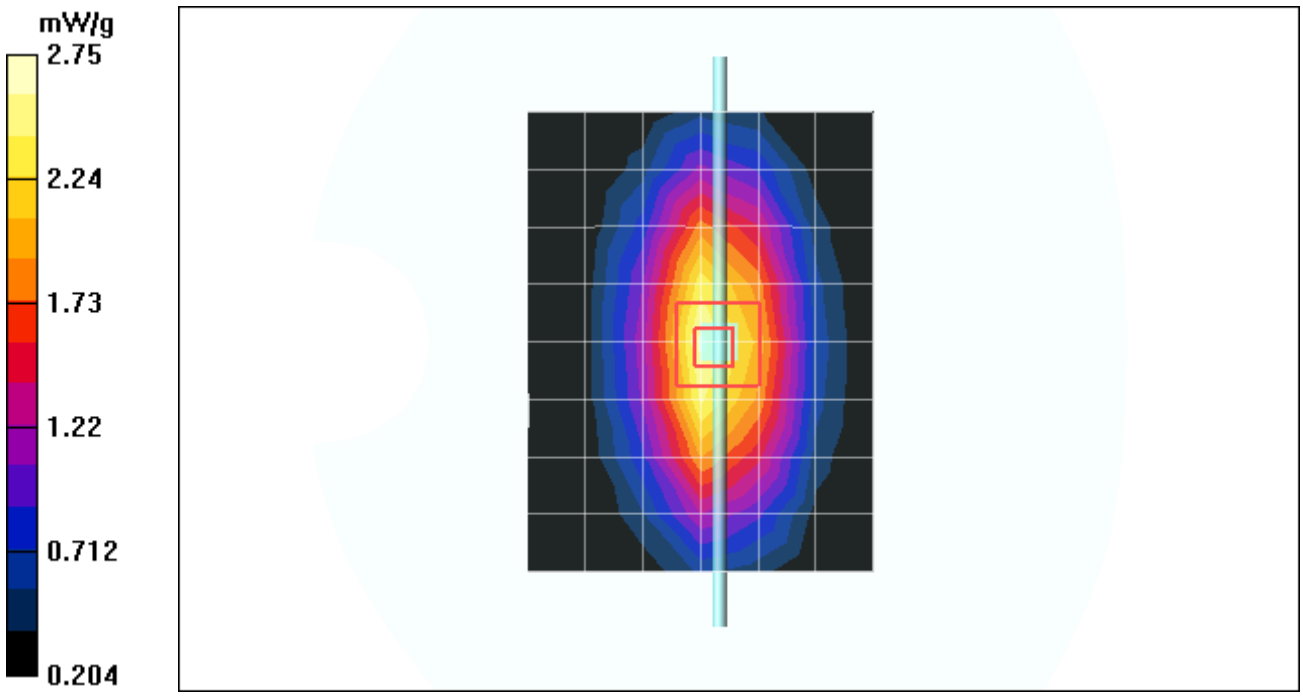
System Validation Check-HSL 850MHz 2005-05-13

DUT: Dipole 900 MHz ; Type: D900V2 ; Serial: 191 ; Test Frequency: 900 MHz

Communication System: CW ; Frequency: 900 MHz; Duty Cycle: 1:1; Modulation type: CW
Medium: HSL850;Medium parameters used: f = 900 MHz; σ = 0.968 mho/m; ε_r = 42.8; ρ = 1000 kg/m^3 ;
Liquid level : 150 mm
Phantom section: Flat Section ; Separation distance : 15 mm (The feetpoint of the dipole to the Phantom)Air temp. : 22.0 degrees ; Liquid temp. : 21.0 degrees
DASY4 Configuration:
- Probe: ET3DV6 - SN1531 ; ConvF(6.19, 6.19, 6.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

d=15mm, Pin=250mW/Area Scan (7x9x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 2.65 mW/g

d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 55.3 V/m; Power Drift = -0.016 dB
Peak SAR (extrapolated) = 3.80 W/kg
SAR(1 g) = 2.53 mW/g; SAR(10 g) = 1.62 mW/g
Maximum value of SAR (measured) = 2.75 mW/g



Date/Time: 2005/5/12 12:19:20

Test Laboratory: Advance Data Technology

System Validation Check HSL 1900MHz 2005-05-12

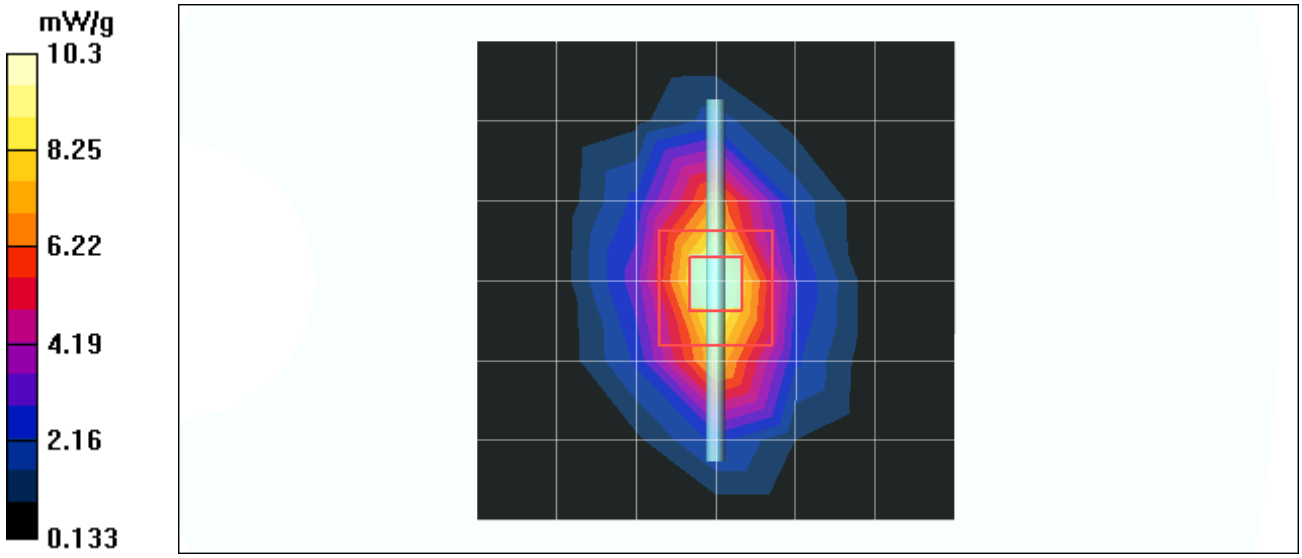
DUT: Dipole 1900 MHz ; Type: D1900V2 ; Serial: D1900V2 - SN:5d036 ; Test Frequency: 1900 MHz

Communication System: CW ; Frequency: 1900 MHz; Duty Cycle: 1:1; Modulation type: CW
Medium: HSL1900;Medium parameters used: f = 1900 MHz; σ = 1.42 mho/m; ε_r = 38.3; ρ = 1000 kg/m^3 ; Liquid level : 150 mm
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 - SN1531 ; ConvF(5.19, 5.19, 5.19) ; Calibrated: 2004/11/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn579; Calibrated: 2005/3/23
- Phantom: SAM 12; Type: SAM V4.0; Serial: TP 1202
- Measurement SW: DASY4, V4.5 Build 19; Postprocessing SW: SEMCAD, V1.8 Build 146

d=10mm, Pin=250mW/Area Scan (7x7x1): Measurement grid: dx=15mm, dy=15mm
Maximum value of SAR (measured) = 10.3 mW/g

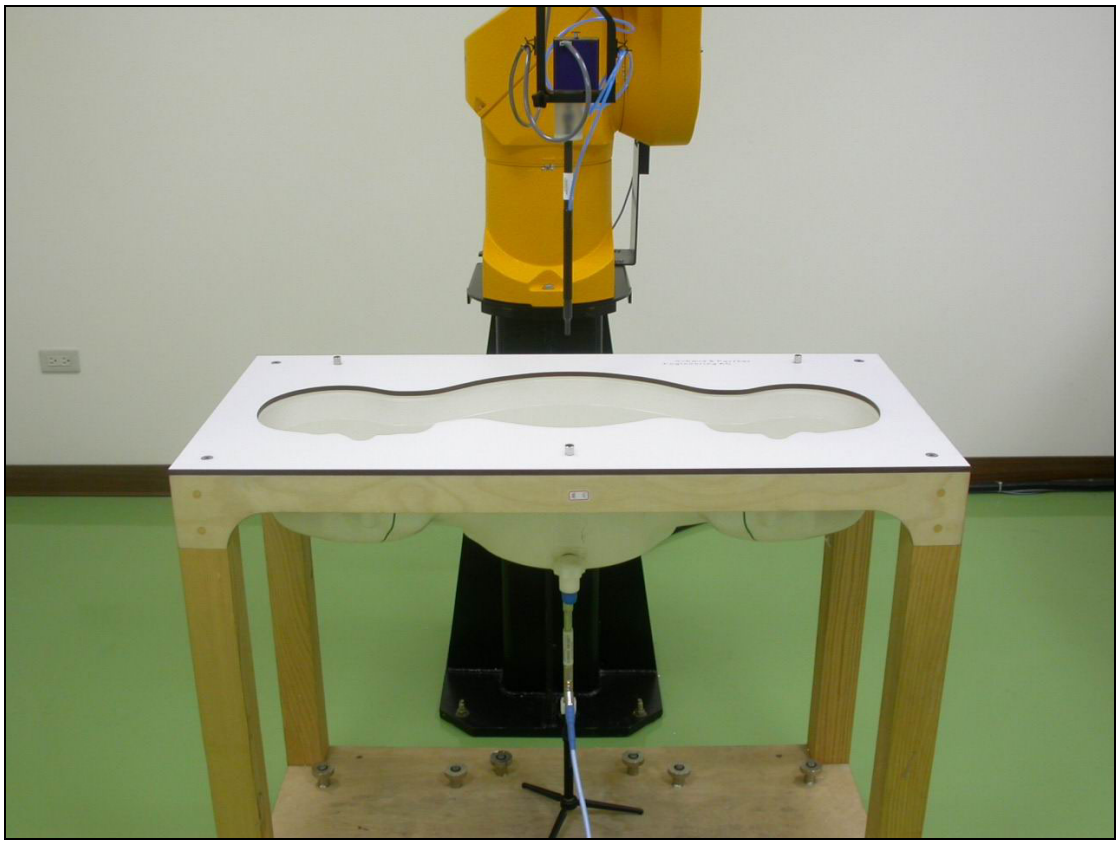
d=10mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Reference Value = 90.3 V/m; Power Drift = -0.015 dB

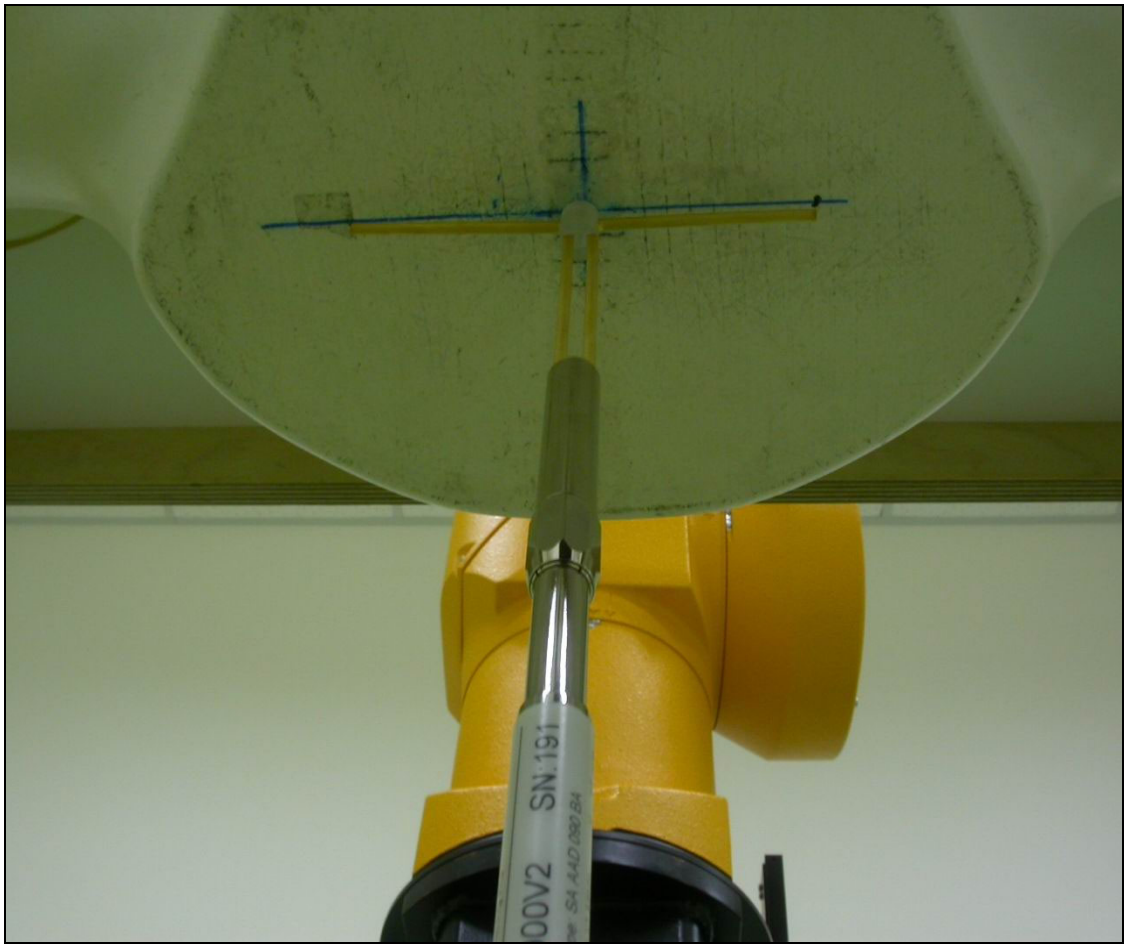
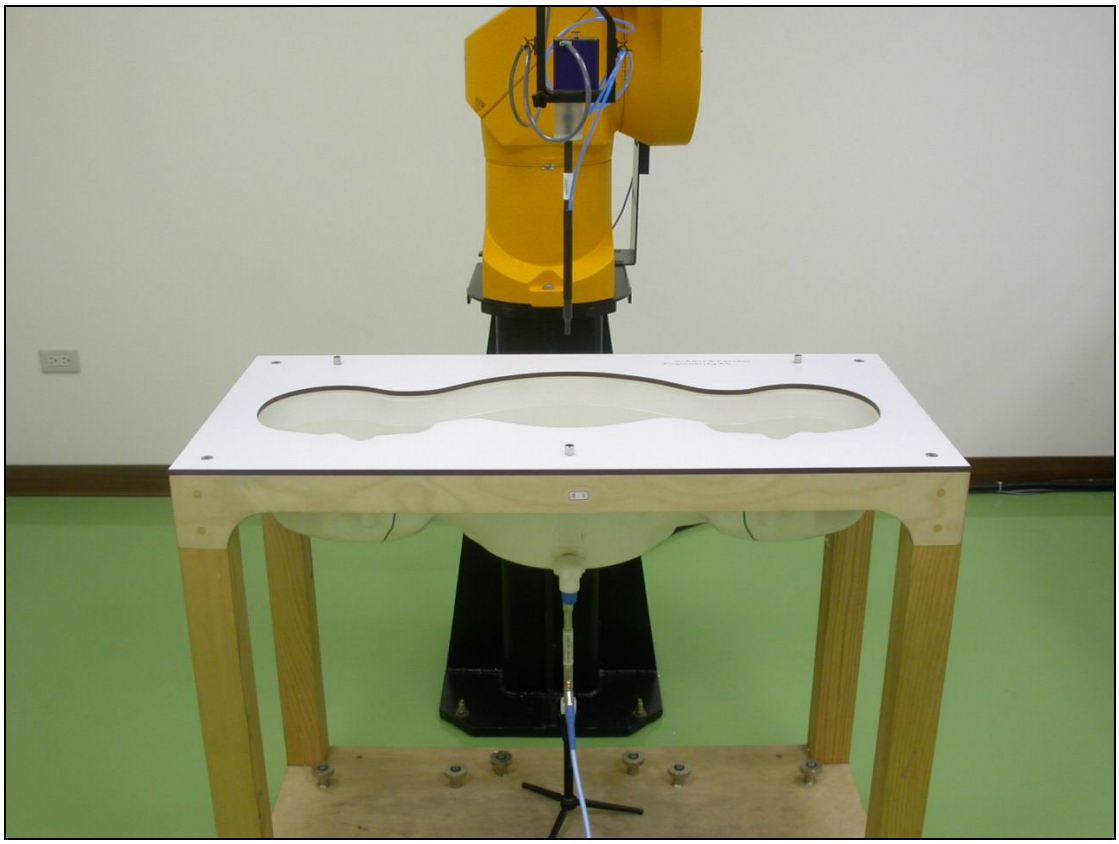
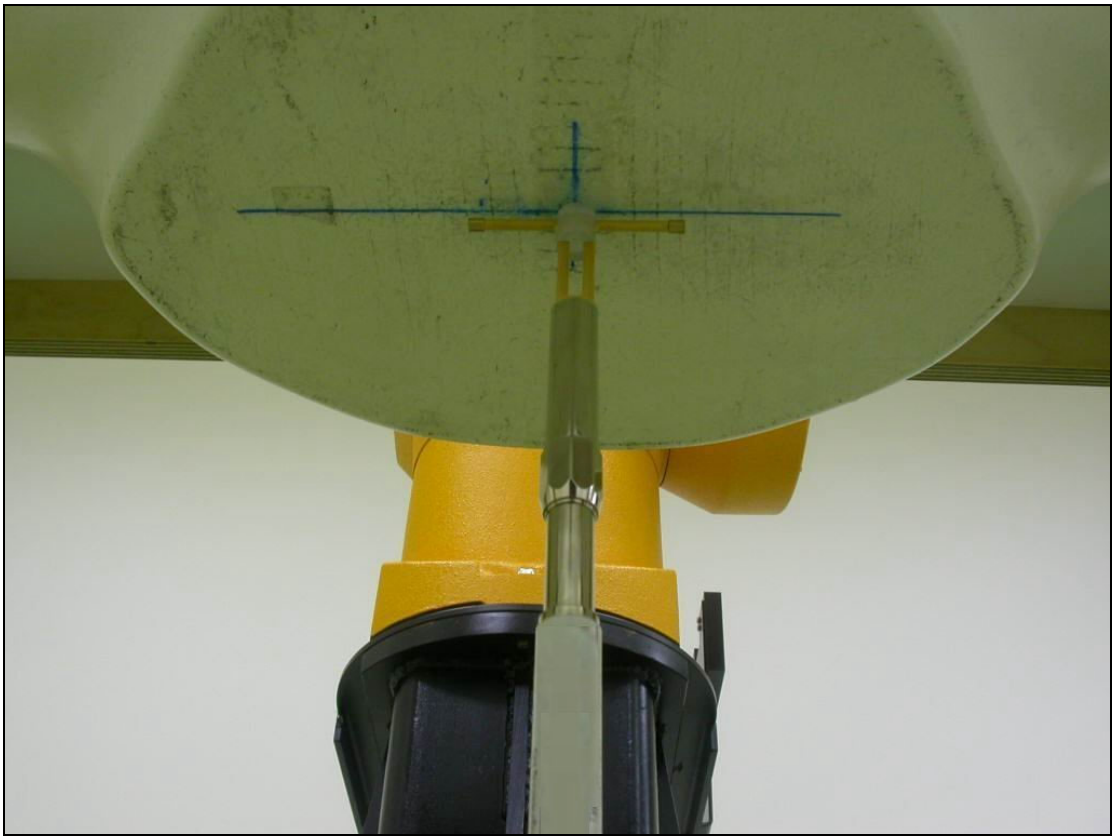
Peak SAR (extrapolated) = 16.2 W/kg
SAR(1 g) = 9.09 mW/g; SAR(10 g) = 4.73 mW/g



APPENDIX B: ADT SAR MEASUREMENT SYSTEM

APPENDIX C: PHOTOGRAPHS OF SYSTEM VALIDATION





APPENDIX C: PHOTOGRAPHS OF SYSTEM VALIDATION