

A2 : TEST DATA

Date/Time: 01/03/04 15:13:12

Test Laboratory: Advance Data Technology

M275 11.g MAIN ANTENNA Mode 1

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: OFDM

Medium: MSL2450 ($\sigma = 1.964$ mho/m, $\epsilon_r = 52.187$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 1/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 25.1 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 1.28 mW/g

Channel 1/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

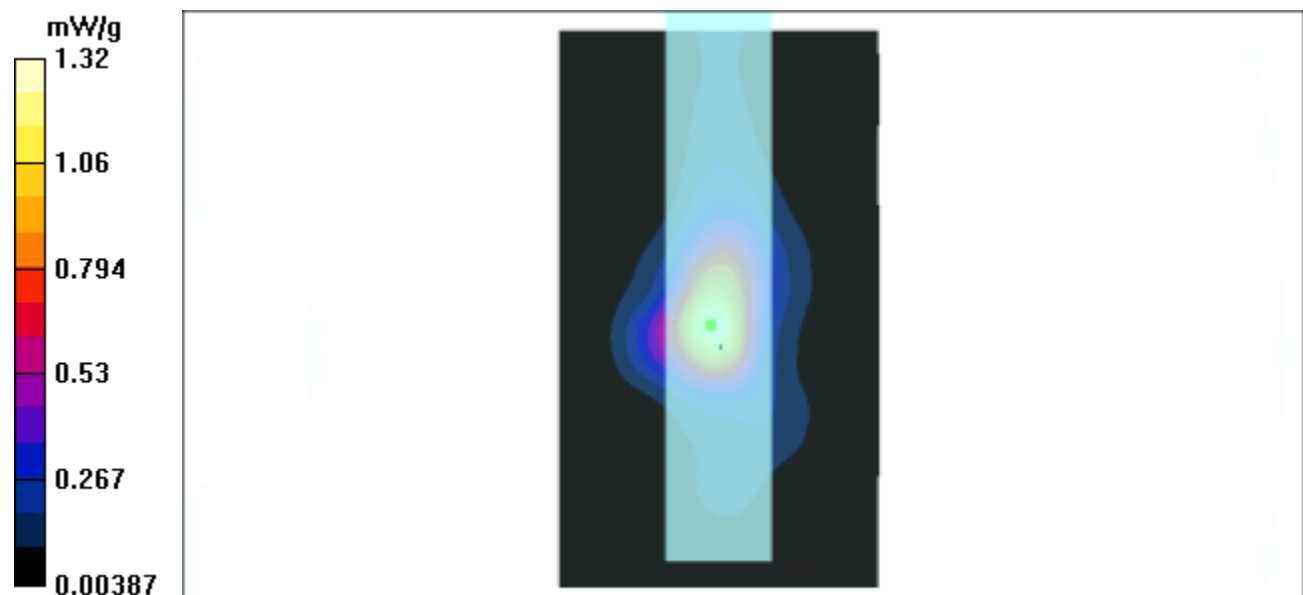
Peak SAR (extrapolated) = 3.51 W/kg

SAR(1 g) = 1.21 mW/g; SAR(10 g) = 0.43 mW/g

Reference Value = 25.1 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 1.32 mW/g



Test Laboratory: Advance Data Technology

M275 11.g MAIN ANTENNA Mode 1

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.999$ mho/m, $\epsilon_r = 52.092$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 6/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 24.9 V/m

Power Drift = -0.07 dB

Maximum value of SAR = 1.31 mW/g

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

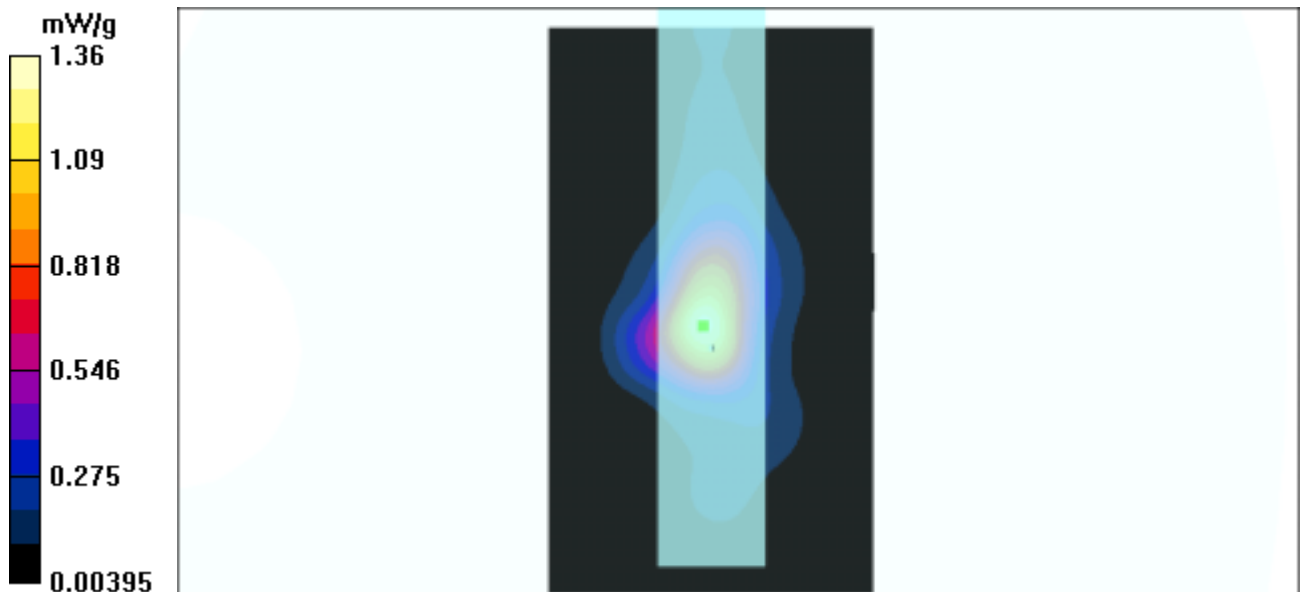
Peak SAR (extrapolated) = 3.65 W/kg

SAR(1 g) = 1.27 mW/g; SAR(10 g) = 0.457 mW/g

Reference Value = 24.9 V/m

Power Drift = -0.07 dB

Maximum value of SAR = 1.36 mW/g



Test Laboratory: Advance Data Technology

M275 11.g MAIN ANTENNA Mode 1

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 2.034$ mho/m, $\epsilon = 51.992$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 11/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 24.8 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 1.36 mW/g

Channel 11/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

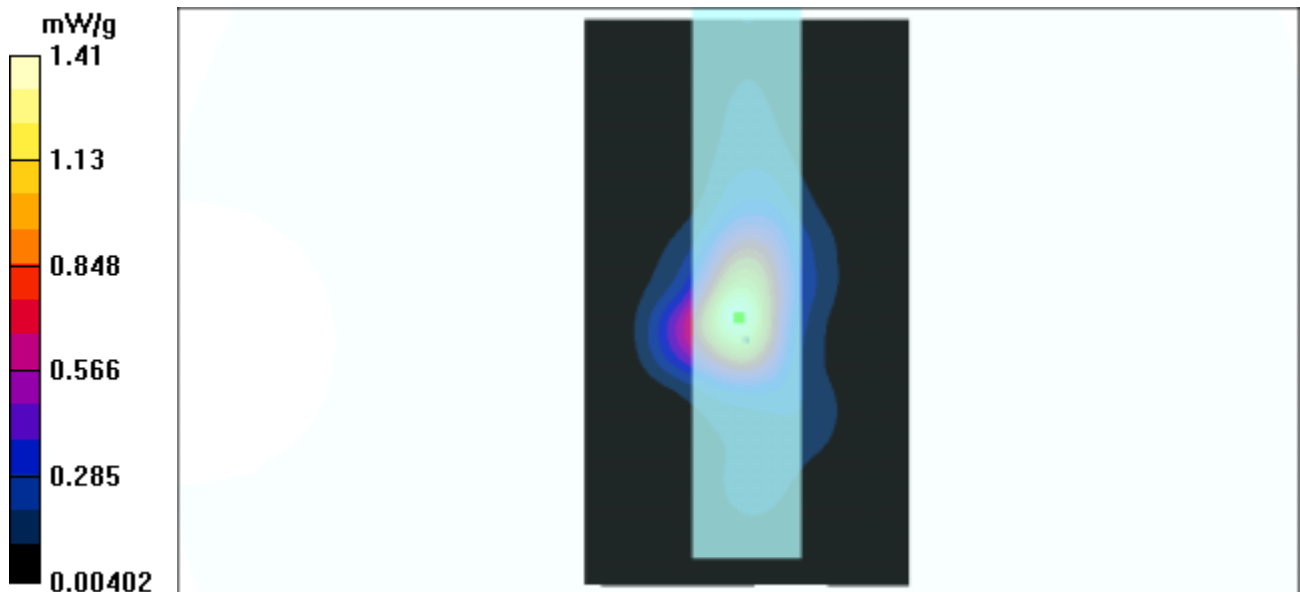
Peak SAR (extrapolated) = 3.84 W/kg

SAR(1 g) = 1.33 mW/g; SAR(10 g) = 0.48 mW/g

Reference Value = 24.8 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 1.41 mW/g



Test Laboratory: Advance Data Technology

M275 11.g MAIN ANTENNA Mode 2

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.964$ mho/m, $\epsilon_r = 52.187$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24 degrees ; Liquid temp. : 22 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510; Calibrated: 6/2/2003

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 1/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 4.28 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.0376 mW/g

Channel 1/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

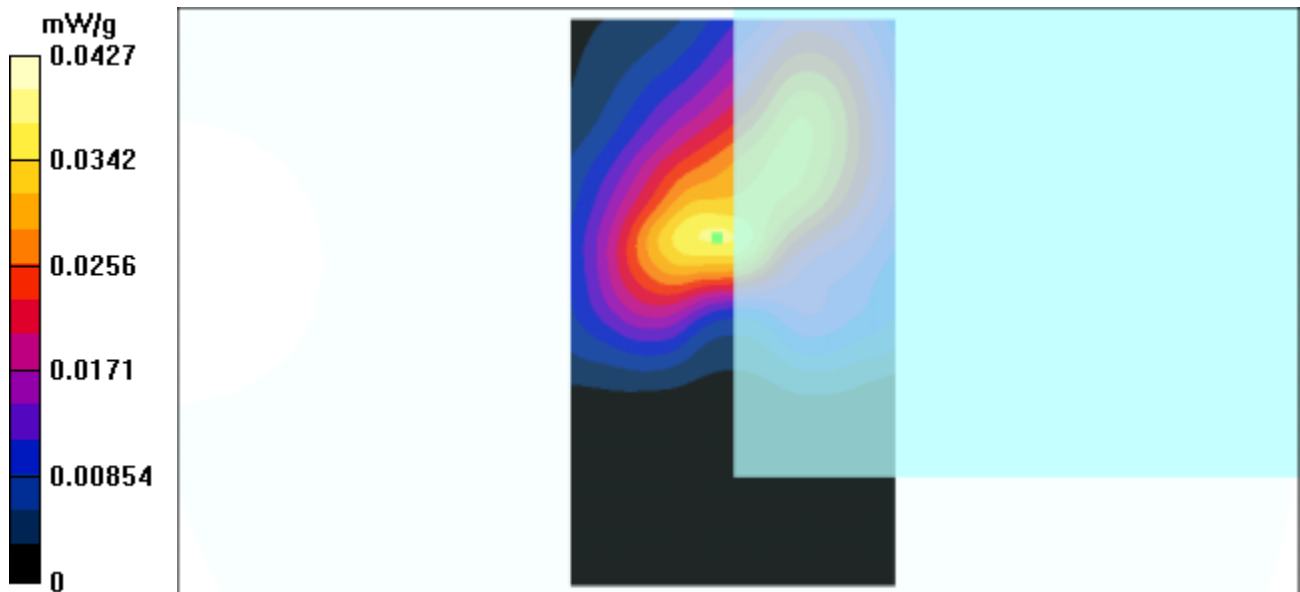
Peak SAR (extrapolated) = 0.0989 W/kg

SAR(1 g) = 0.0401 mW/g; SAR(10 g) = 0.018 mW/g

Reference Value = 4.28 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.0427 mW/g



Test Laboratory: Advance Data Technology

M275 11.g MAIN ANTENNA Mode 2

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.999$ mho/m, $\epsilon_r = 52.092$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24 degrees ; Liquid temp. : 22 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 6/2/2003
- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 6/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 5.34 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.0473 mW/g

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

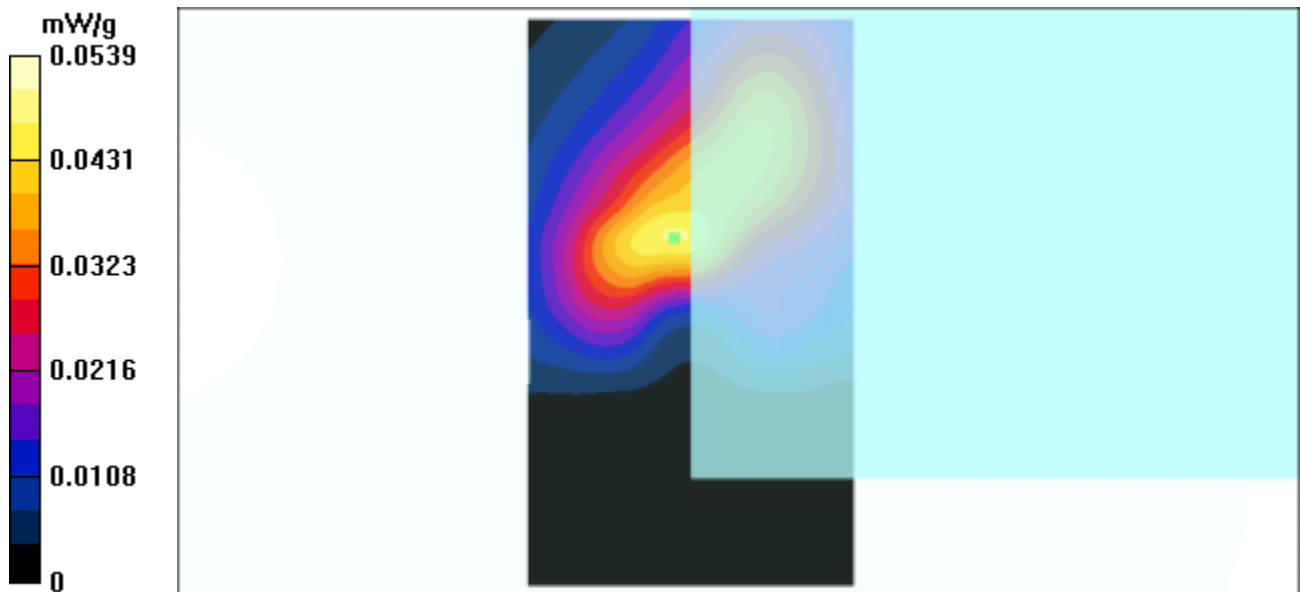
Peak SAR (extrapolated) = 0.127 W/kg

SAR(1 g) = 0.051 mW/g; SAR(10 g) = 0.0229 mW/g

Reference Value = 5.34 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.0539 mW/g



Test Laboratory: Advance Data Technology

M275 11.g MAIN ANTENNA Mode 2

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 2.034$ mho/m, $\epsilon_r = 51.992$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24 degrees ; Liquid temp. : 22 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510; Calibrated: 6/2/2003
- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 11/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 5.09 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.0572 mW/g

Channel 11/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

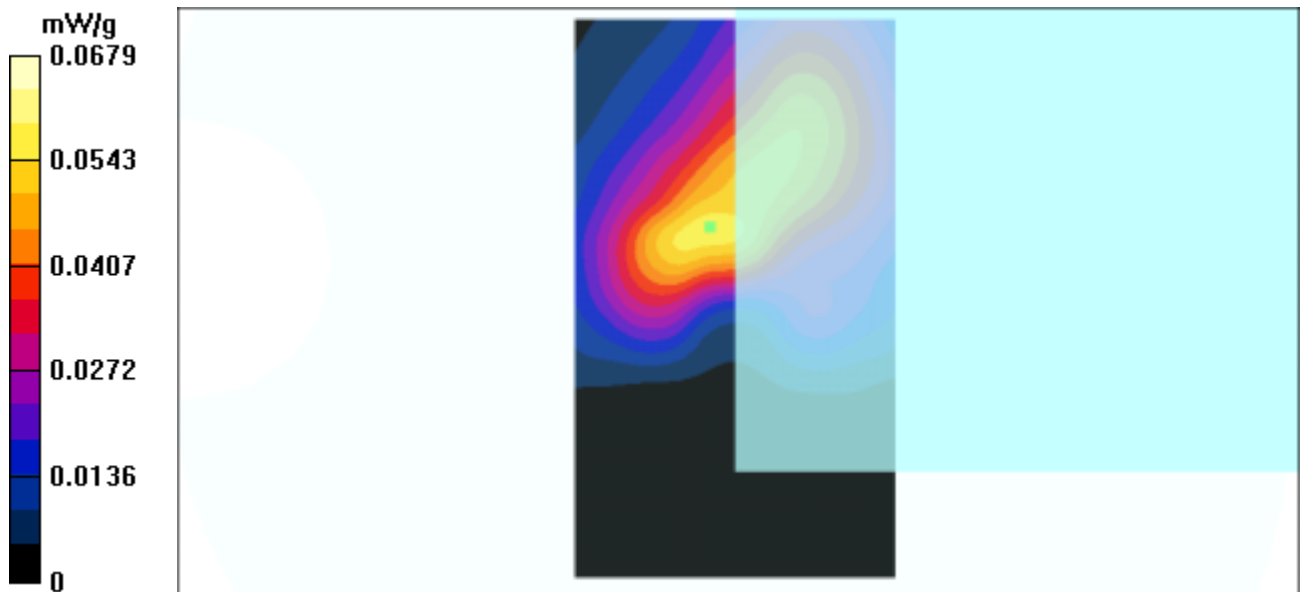
Peak SAR (extrapolated) = 0.156 W/kg

SAR(1 g) = 0.0629 mW/g; SAR(10 g) = 0.0287 mW/g

Reference Value = 5.09 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.0679 mW/g



Test Laboratory: Advance Data Technology

M275 11.g MAIN ANTENNA Mode 3

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.964$ mho/m, $\epsilon_r = 52.187$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 1/Area Scan (51x81x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 8.21 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.247 mW/g

Channel 1/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

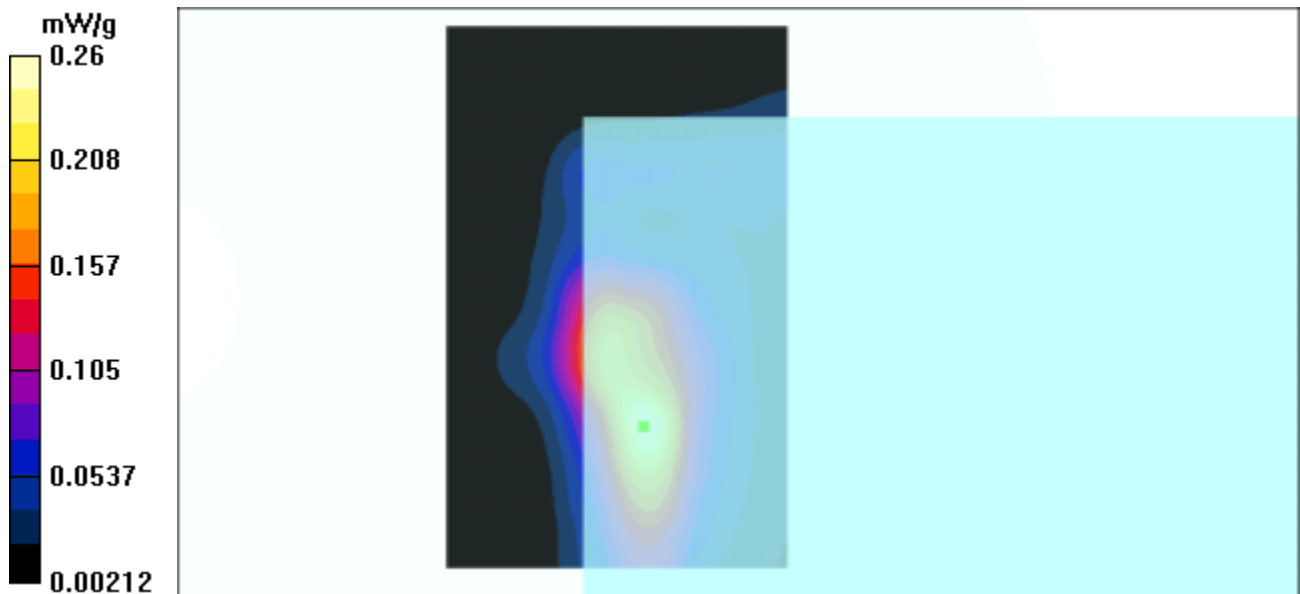
Peak SAR (extrapolated) = 0.603 W/kg

SAR(1 g) = 0.241 mW/g; SAR(10 g) = 0.108 mW/g

Reference Value = 8.21 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.26 mW/g



Test Laboratory: Advance Data Technology

M275 11.g MAIN ANTENNA Mode 3

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.999$ mho/m, $\epsilon_r = 52.092$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 6/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 8.91 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.261 mW/g

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

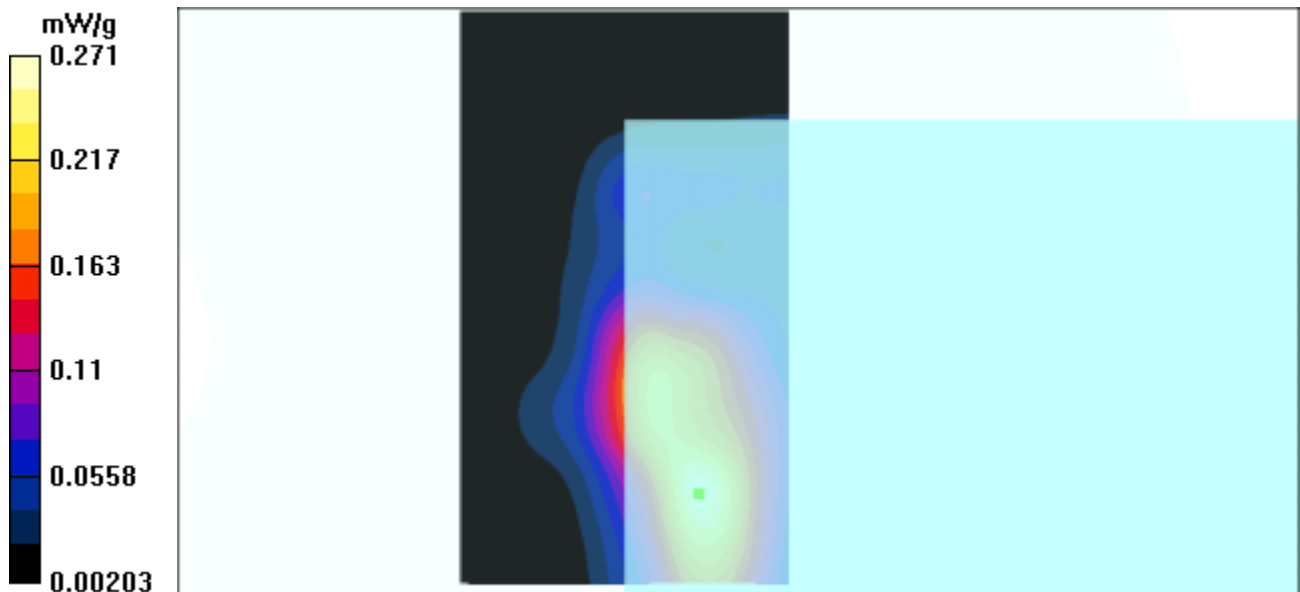
Peak SAR (extrapolated) = 0.632 W/kg

SAR(1 g) = 0.252 mW/g; SAR(10 g) = 0.112 mW/g

Reference Value = 8.91 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.271 mW/g



Test Laboratory: Advance Data Technology

M275 11.g MAIN ANTENNA Mode 3

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 2.034$ mho/m, $\epsilon_r = 51.992$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 11/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 9.91 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.286 mW/g

Channel 11/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

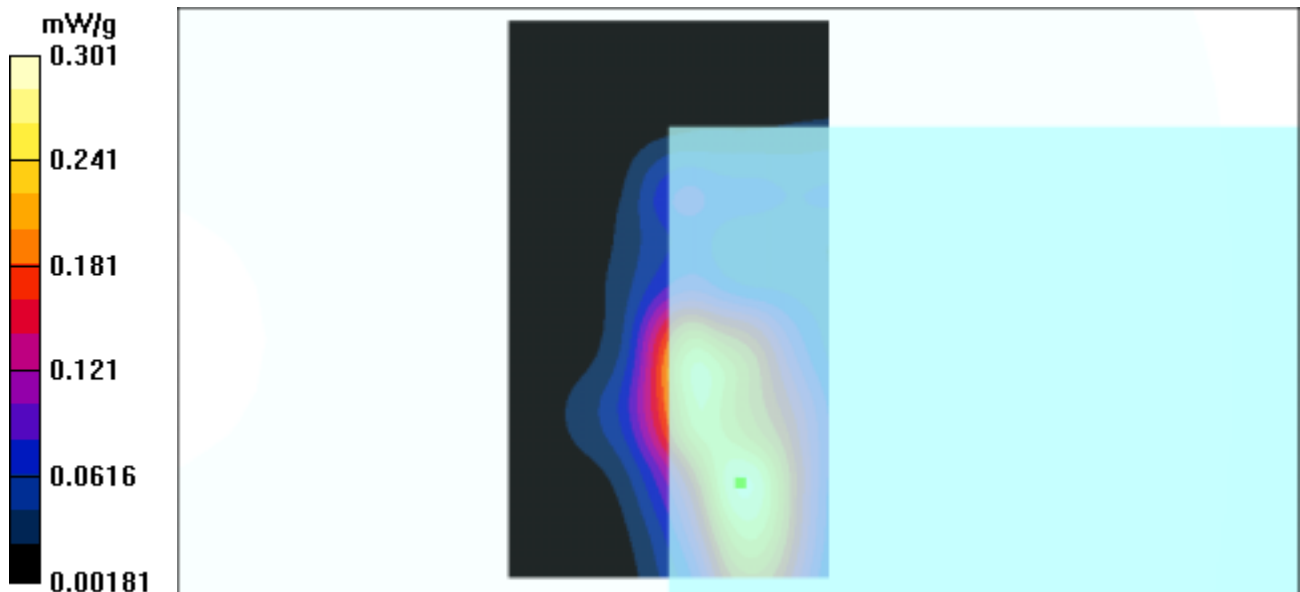
Peak SAR (extrapolated) = 0.698 W/kg

SAR(1 g) = 0.274 mW/g; SAR(10 g) = 0.121 mW/g

Reference Value = 9.91 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 0.301 mW/g



Test Laboratory: Advance Data Technology

M275 11.g MAIN ANTENNA Mode 4

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.964$ mho/m, $\epsilon_r = 52.187$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 1/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 23.9 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 1.37 mW/g

Channel 1/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

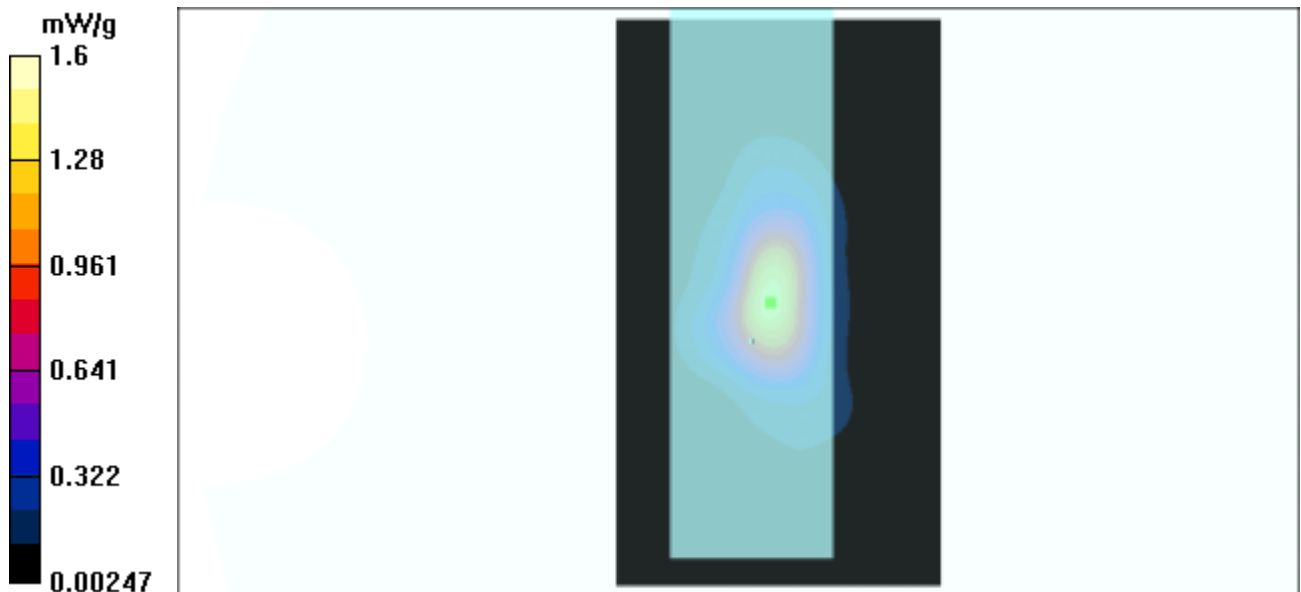
Peak SAR (extrapolated) = 4.21 W/kg

SAR(1 g) = 1.36 mW/g; SAR(10 g) = 0.462 mW/g

Reference Value = 23.9 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 1.6 mW/g



Test Laboratory: Advance Data Technology

M275 11.g MAIN ANTENNA Mode 4

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.999$ mho/m, $\epsilon_r = 52.092$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 6/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 23 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 1.33 mW/g

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

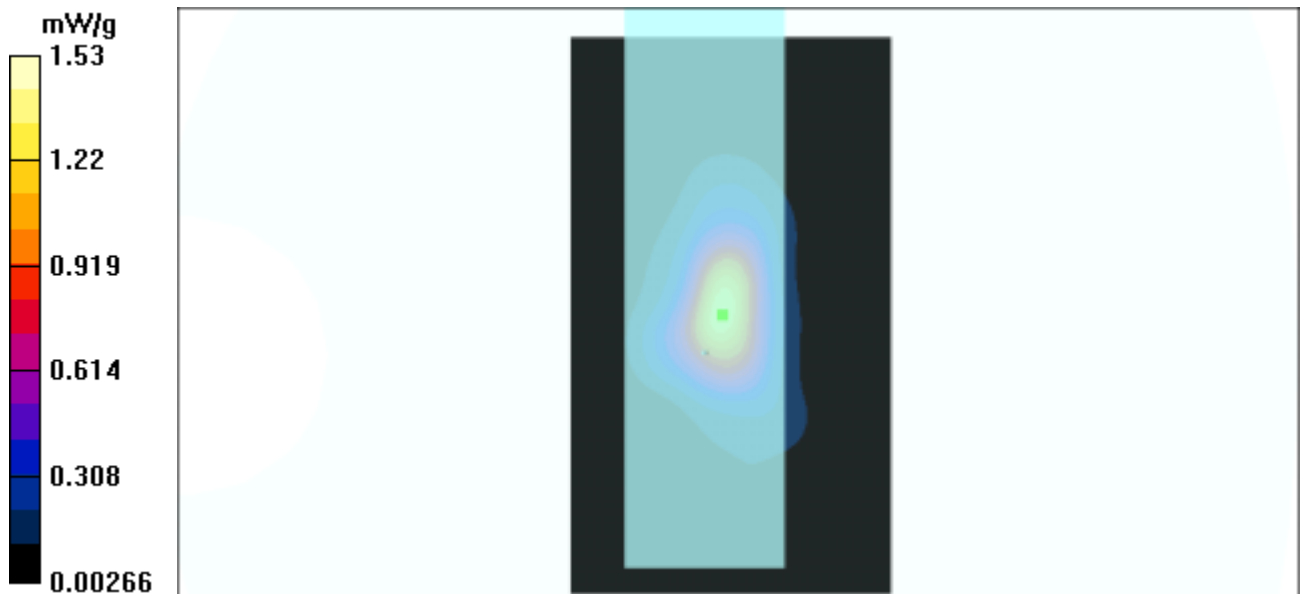
Peak SAR (extrapolated) = 4.02 W/kg

SAR(1 g) = 1.32 mW/g; SAR(10 g) = 0.452 mW/g

Reference Value = 23 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 1.53 mW/g



Test Laboratory: Advance Data Technology

M275 11.g MAIN ANTENNA Mode 4

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 2.034$ mho/m, $\epsilon_r = 51.992$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 11/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 22.8 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 1.34 mW/g

Channel 11/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

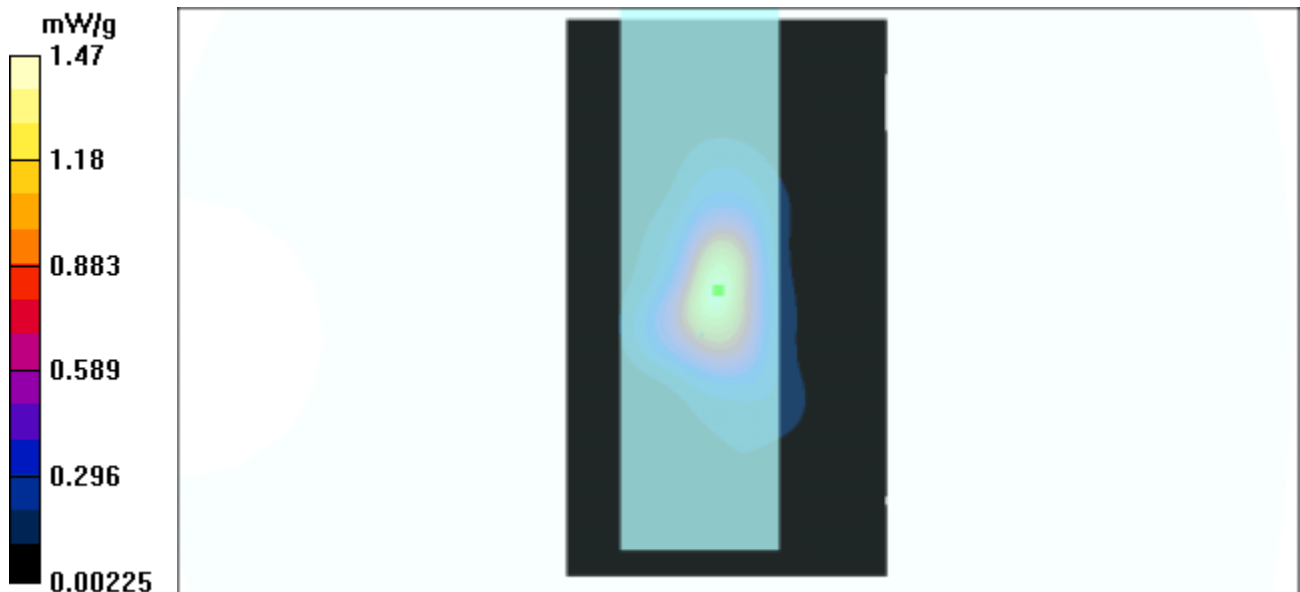
Peak SAR (extrapolated) = 4.12 W/kg

SAR(1 g) = 1.33 mW/g; SAR(10 g) = 0.462 mW/g

Reference Value = 22.8 V/m

Power Drift = -0.1 dB

Maximum value of SAR = 1.47 mW/g



Test Laboratory: Advance Data Technology

M275 11.g AUXILIARY ANTENNA Mode 5

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.964$ mho/m, $\epsilon_r = 52.187$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 1/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 7.43 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.148 mW/g

Channel 1/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

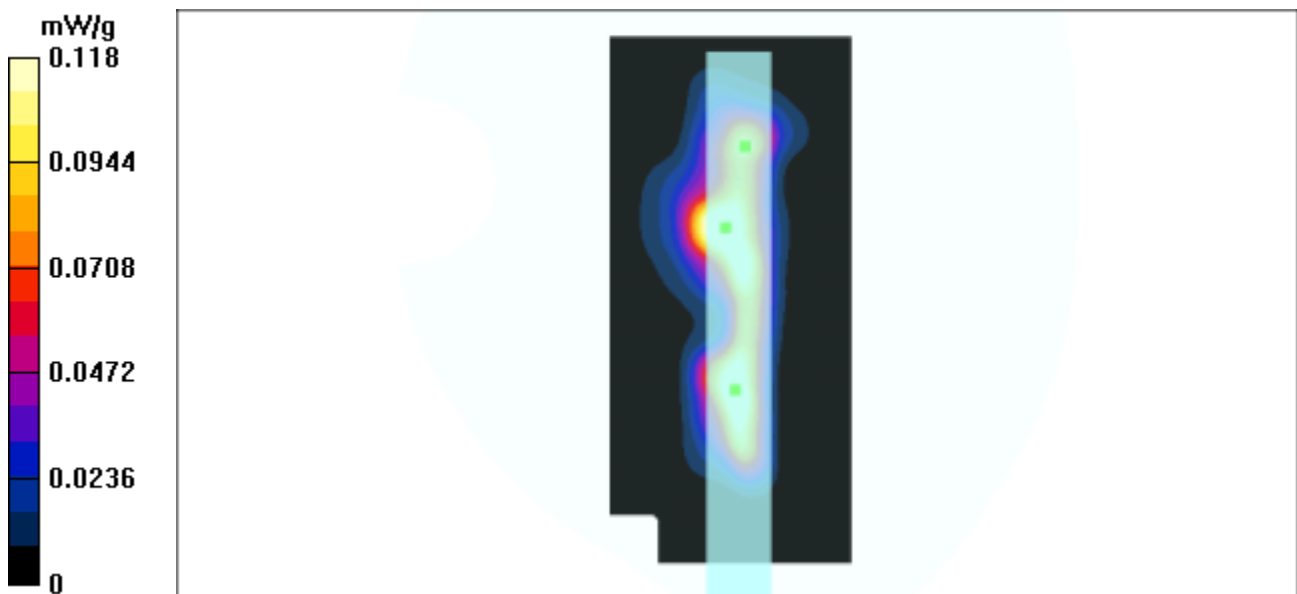
Peak SAR (extrapolated) = 0.271 W/kg

SAR(1 g) = 0.0784 mW/g; SAR(10 g) = 0.0336 mW/g

Reference Value = 7.43 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.118 mW/g



Test Laboratory: Advance Data Technology

M275 11.g Auxiliary ANTENNA Mode 5

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.999$ mho/m, $\epsilon_r = 52.092$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 6/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 5.8 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.177 mW/g

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

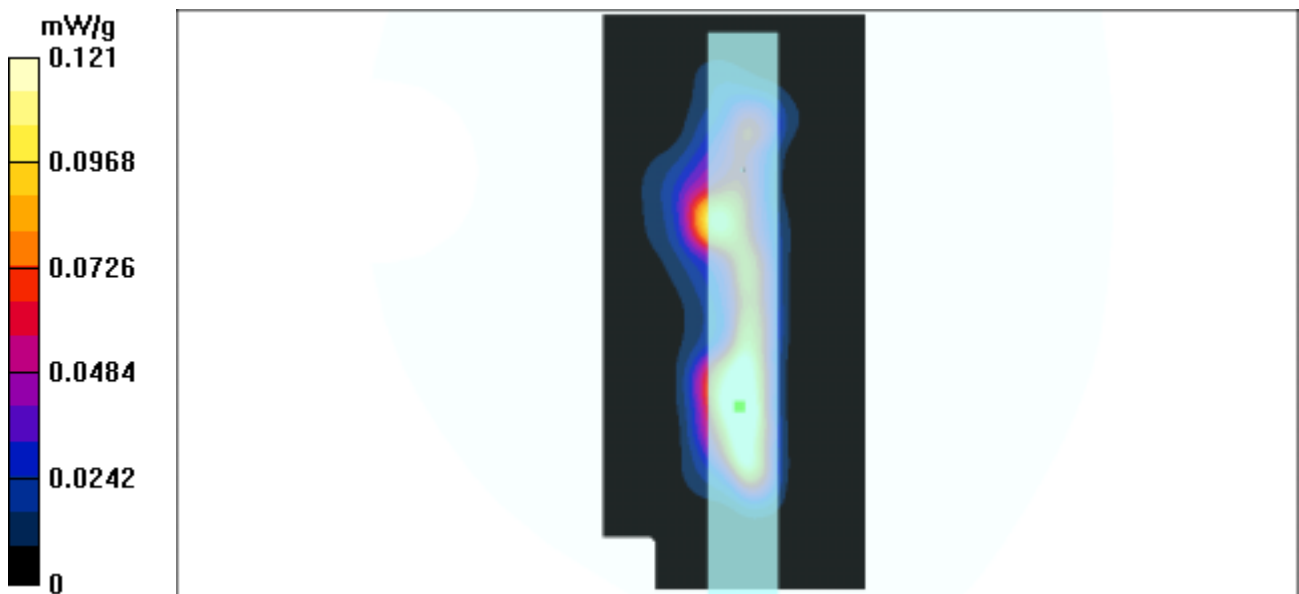
Peak SAR (extrapolated) = 0.312 W/kg

SAR(1 g) = 0.0918 mW/g; SAR(10 g) = 0.0381 mW/g

Reference Value = 5.8 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.121 mW/g



Test Laboratory: Advance Data Technology

M275 11.g Auxiliary ANTENNA Mode 5

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 2.034$ mho/m, $\epsilon_r = 51.992$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 6/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 4.81 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.0902 mW/g

Channel 11/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

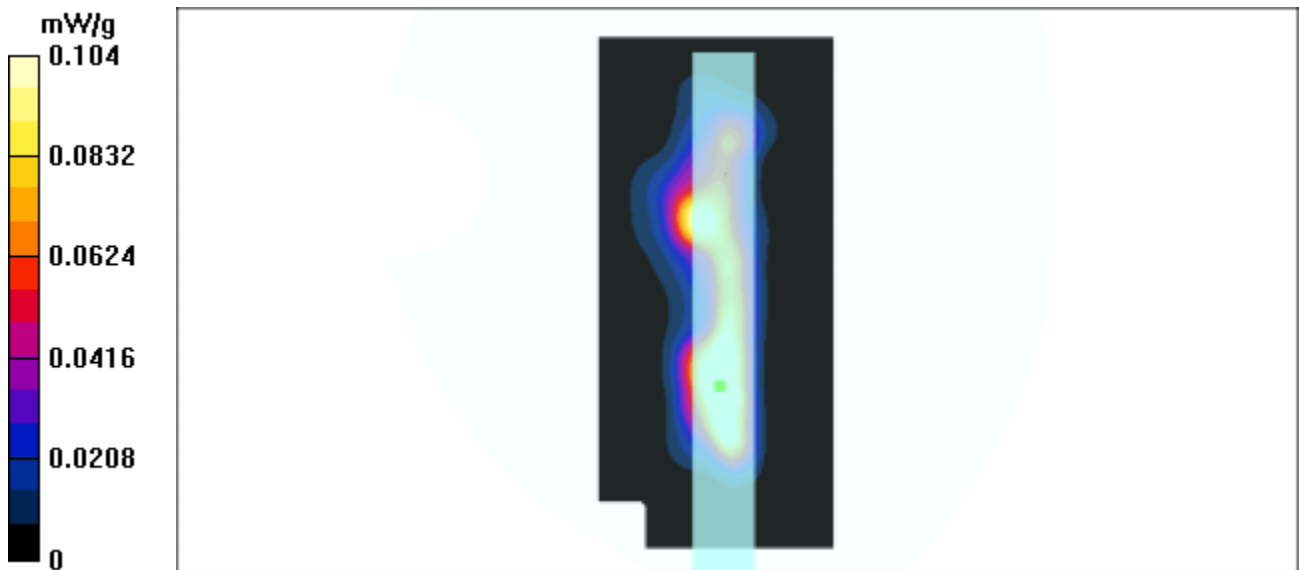
Peak SAR (extrapolated) = 0.287 W/kg

SAR(1 g) = 0.0889 mW/g; SAR(10 g) = 0.0358 mW/g

Reference Value = 4.81 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.104 mW/g



Test Laboratory: Advance Data Technology

M275 11.g Auxiliary ANTENNA Mode 6

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.964$ mho/m, $\epsilon_r = 52.187$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24 degrees ; Liquid temp. : 22 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510; Calibrated: 6/2/2003

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 1/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 3.11 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.0205 mW/g

Channel 1/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

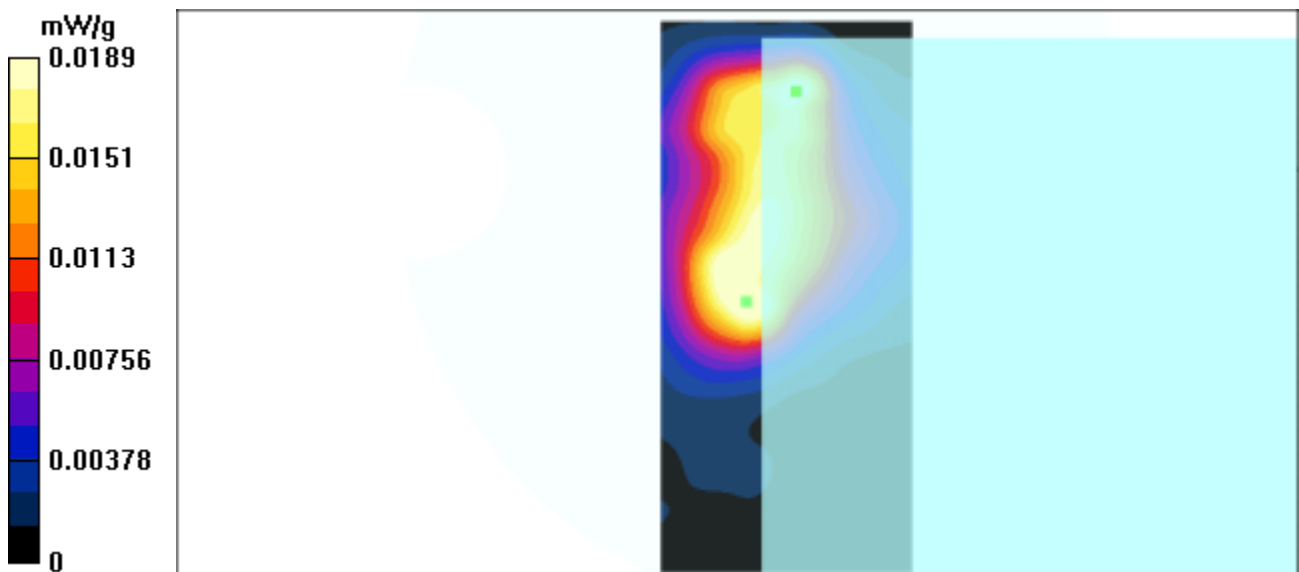
Peak SAR (extrapolated) = 0.0498 W/kg

SAR(1 g) = 0.0191 mW/g; SAR(10 g) = 0.00957 mW/g

Reference Value = 3.11 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.0189 mW/g



Test Laboratory: Advance Data Technology

M275 11.g Auxiliary ANTENNA Mode 6

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.999$ mho/m, $\epsilon_r = 52.092$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24 degrees ; Liquid temp. : 22 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510; Calibrated: 6/2/2003

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 6/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 2.65 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.0165 mW/g

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

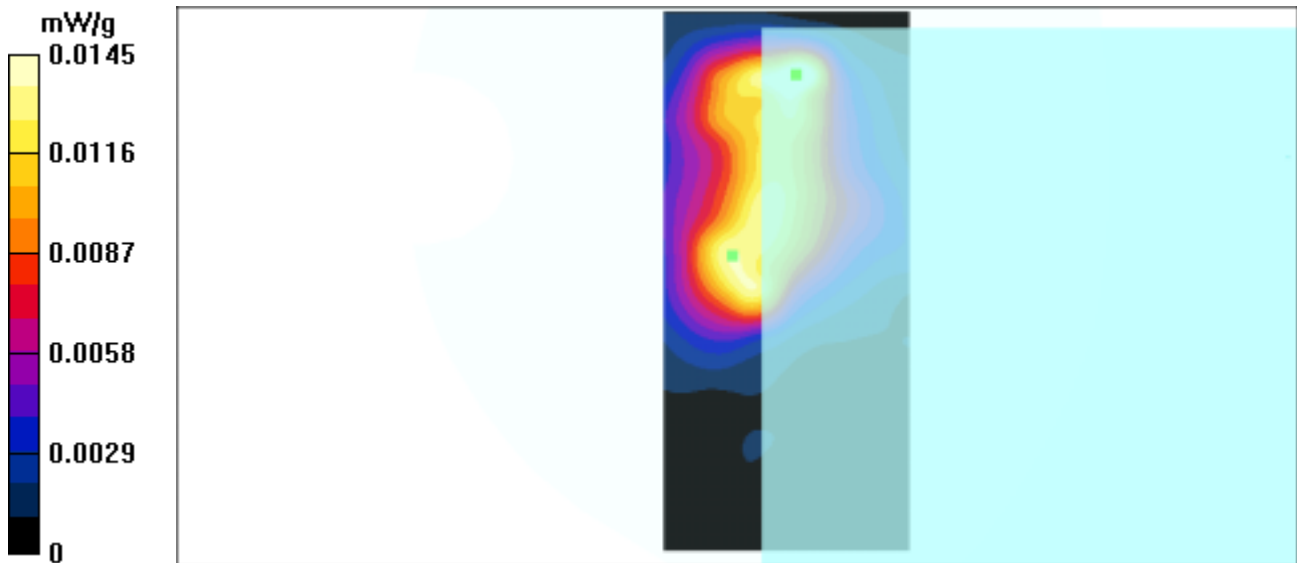
Peak SAR (extrapolated) = 0.0365 W/kg

SAR(1 g) = 0.014 mW/g; SAR(10 g) = 0.00645 mW/g

Reference Value = 2.65 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.0145 mW/g



Test Laboratory: Advance Data Technology

M275 11.g Auxiliary ANTENNA Mode 6

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 2.034$ mho/m, $\epsilon_r = 51.992$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24 degrees ; Liquid temp. : 22 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510; Calibrated: 6/2/2003

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 11/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 1.73 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.0127 mW/g

Channel 11/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

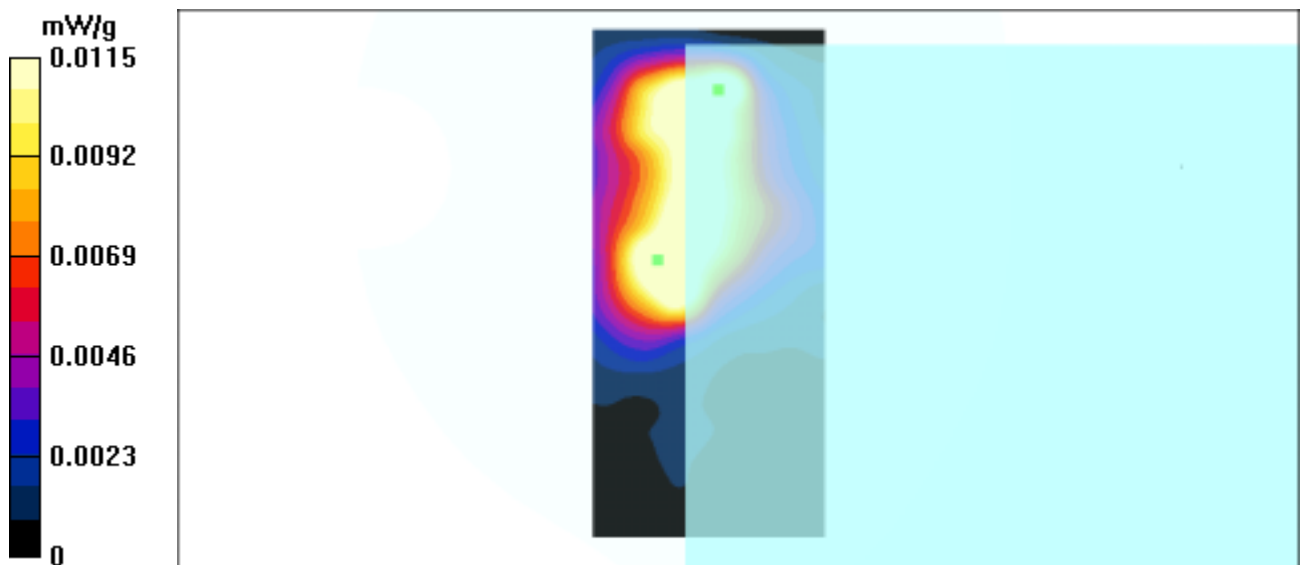
Peak SAR (extrapolated) = 0.053 W/kg

SAR(1 g) = 0.01 mW/g; SAR(10 g) = 0.00411 mW/g

Reference Value = 1.73 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.0115 mW/g



Test Laboratory: Advance Data Technology

M275 11.g Auxiliary ANTENNA Mode 7

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.964$ mho/m, $\epsilon_r = 52.187$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 1/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 12.1 V/m

Power Drift = -0.08 dB

Maximum value of SAR = 0.823 mW/g

Channel 1/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

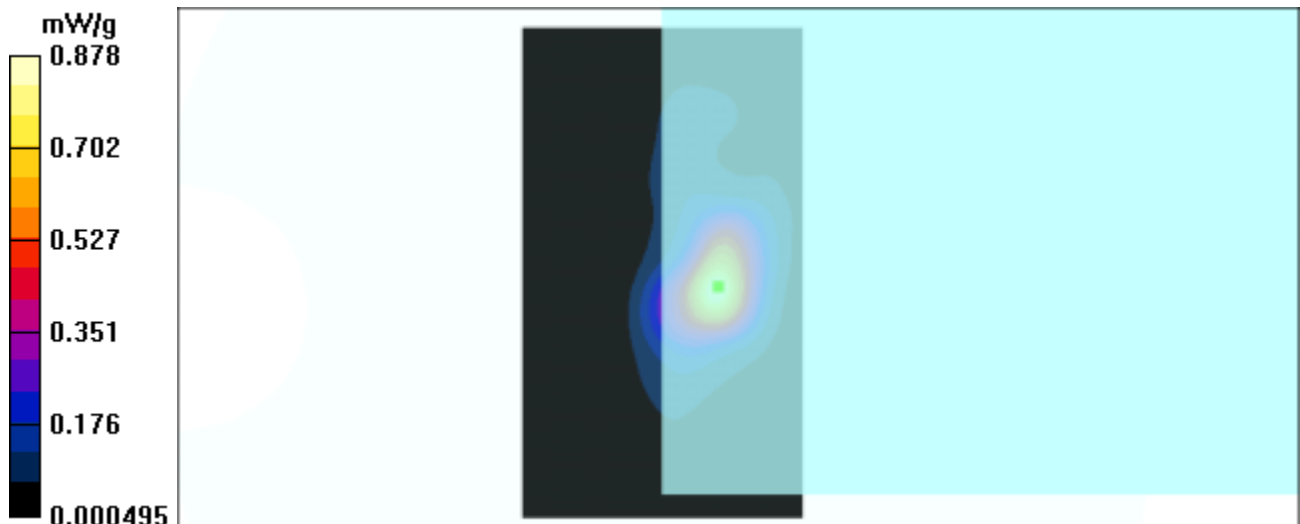
Peak SAR (extrapolated) = 3.05 W/kg

SAR(1 g) = 0.778 mW/g; SAR(10 g) = 0.245 mW/g

Reference Value = 12.1 V/m

Power Drift = -0.08 dB

Maximum value of SAR = 0.878 mW/g



Test Laboratory: Advance Data Technology

M275 11.g Auxiliary ANTENNA Mode 7

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.999$ mho/m, $\epsilon_r = 52.092$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 6/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 10.5 V/m

Power Drift = -0.09 dB

Maximum value of SAR = 0.843 mW/g

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

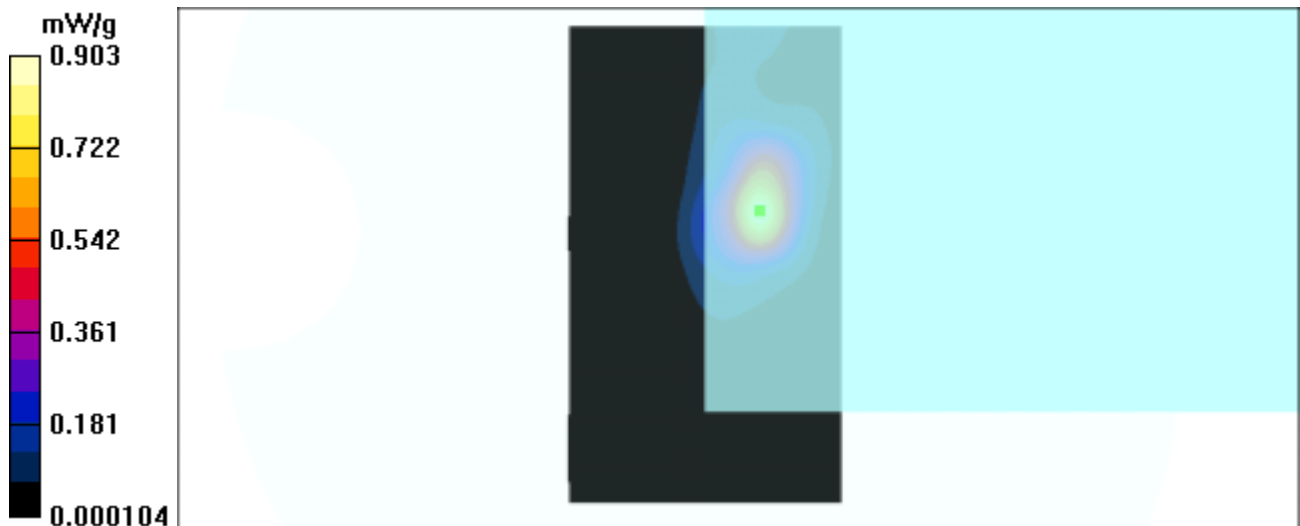
Peak SAR (extrapolated) = 2.98 W/kg

SAR(1 g) = 0.777 mW/g; SAR(10 g) = 0.247 mW/g

Reference Value = 10.5 V/m

Power Drift = -0.09 dB

Maximum value of SAR = 0.903 mW/g



Test Laboratory: Advance Data Technology

M275 11.g Auxiliary ANTENNA Mode 7

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 2.034$ mho/m, $\epsilon_r = 51.992$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 11/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 8.99 V/m

Power Drift = -0.07 dB

Maximum value of SAR = 0.829 mW/g

Channel 11/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

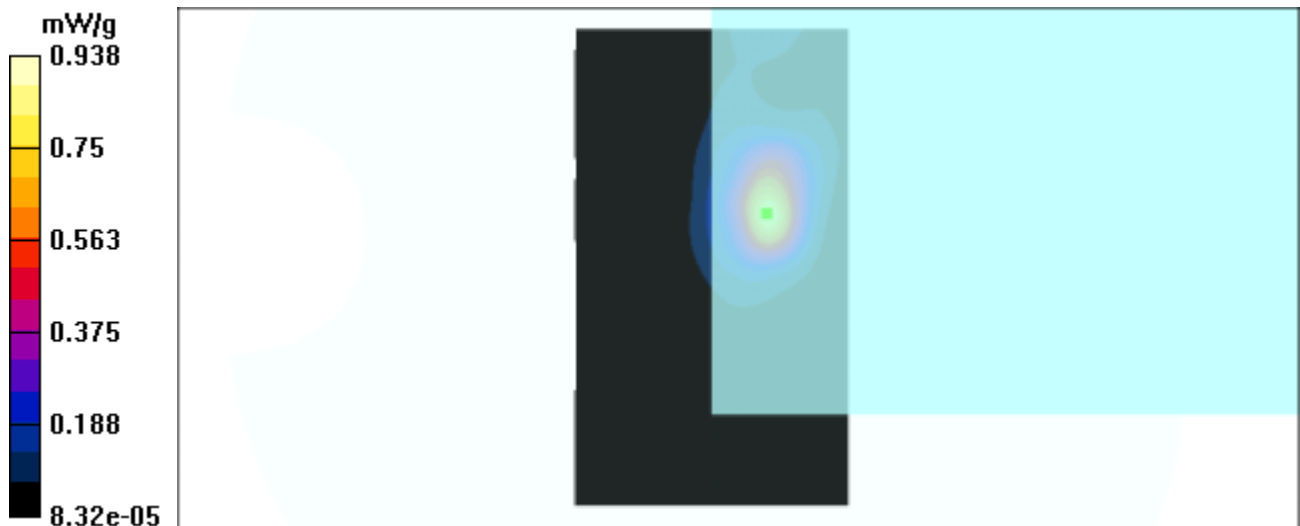
Peak SAR (extrapolated) = 3.01 W/kg

SAR(1 g) = 0.779 mW/g; SAR(10 g) = 0.24 mW/g

Reference Value = 8.99 V/m

Power Drift = -0.07 dB

Maximum value of SAR = 0.938 mW/g



Test Laboratory: Advance Data Technology

M275 11.g Auxiliary ANTENNA Mode 8

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.964$ mho/m, $\epsilon_r = 52.187$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 1/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 7.43 V/m

Power Drift = -0.4 dB

Maximum value of SAR = 0.148 mW/g

Channel 1/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

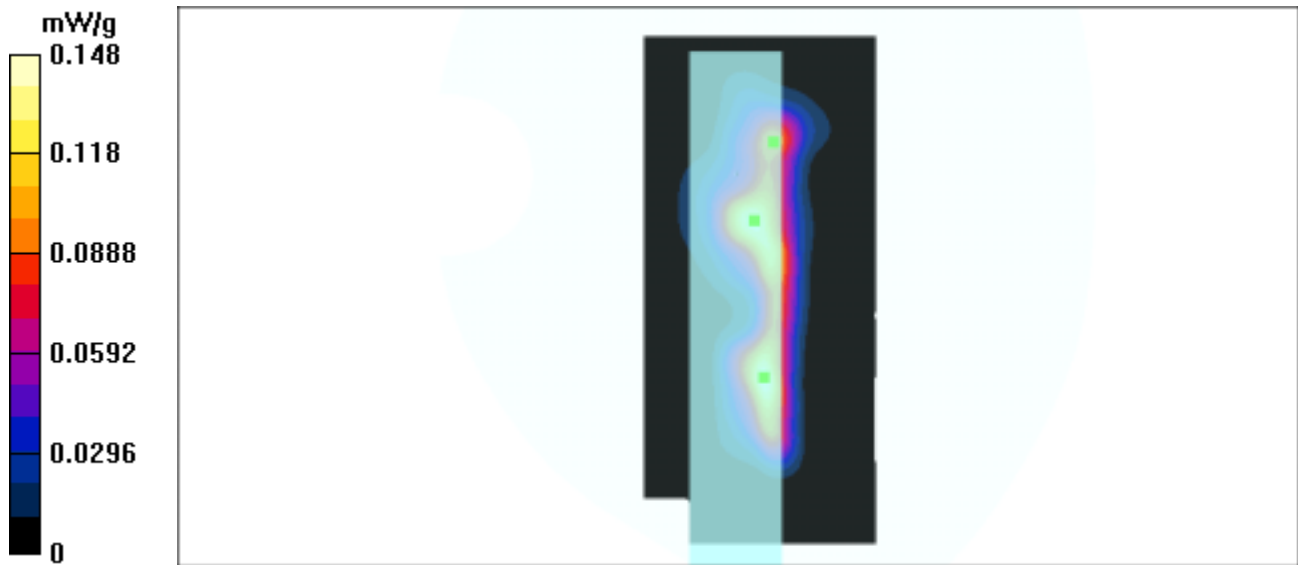
Peak SAR (extrapolated) = 0.271 W/kg

SAR(1 g) = 0.102 mW/g; SAR(10 g) = 0.0465 mW/g

Reference Value = 7.43 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.148 mW/g



Test Laboratory: Advance Data Technology

M275 11.g Auxiliary ANTENNA Mode 8

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2437 MHz

Communication System: 802.11g ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.999$ mho/m, $\epsilon_r = 52.092$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 6/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 5.8 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.177 mW/g

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

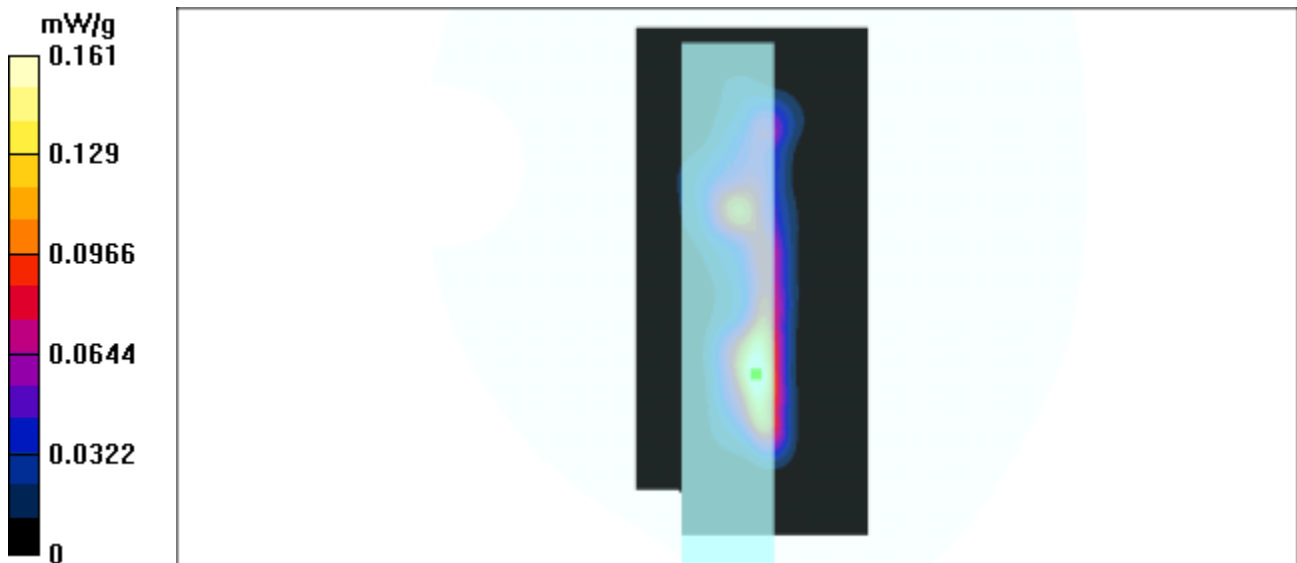
Peak SAR (extrapolated) = 0.312 W/kg

SAR(1 g) = 0.118 mW/g; SAR(10 g) = 0.0483 mW/g

Reference Value = 5.8 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.161 mW/g



Test Laboratory: Advance Data Technology

M275 11.g Auxiliary ANTENNA Mode 8

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11g ; Frequency: 2437 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 2.034$ mho/m, $\epsilon_r = 51.992$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 11/Area Scan (51x111x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 5.8 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.177 mW/g

Channel 11/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

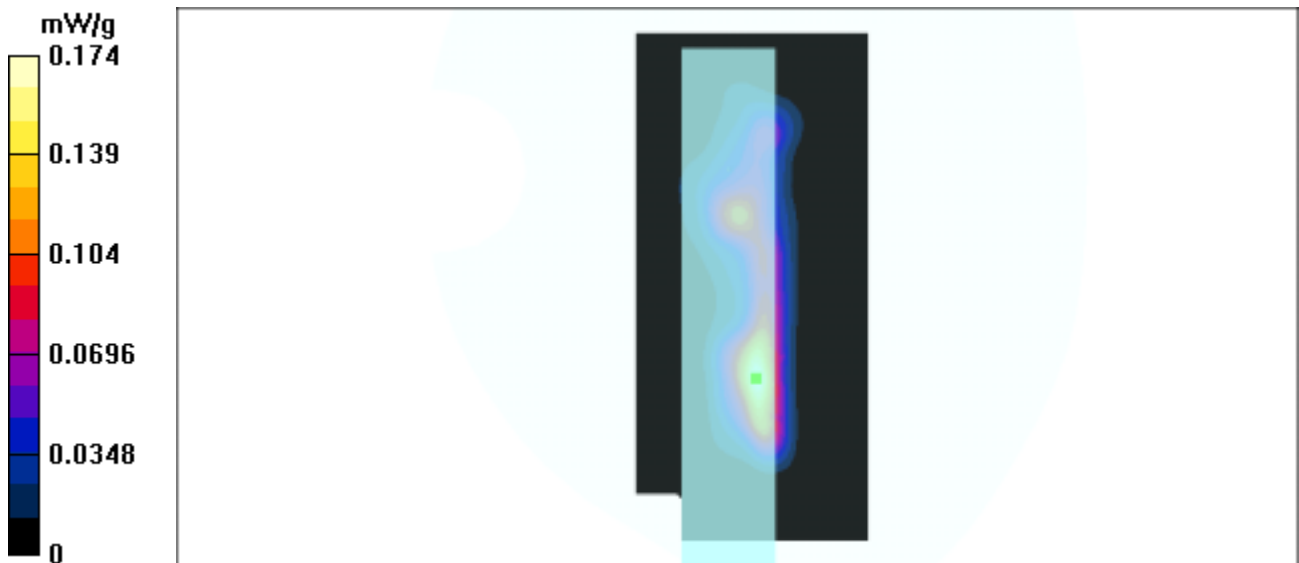
Peak SAR (extrapolated) = 0.312 W/kg

SAR(1 g) = 0.124 mW/g; SAR(10 g) = 0.0511 mW/g

Reference Value = 5.8 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.174 mW/g



Test Laboratory: Advance Data Technology

M275 11.b MAIN ANTENNA Mode 1

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2462 MHz

Communication System: 802.11b ; Frequency: 2462 MHz; Duty Cycle: 1:1; Modulation type: CCK
Medium: MSL2450 ($\sigma = 2.034$ mho/m, $\epsilon_r = 51.992$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 11/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 19.4 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.859 mW/g

Channel 11/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

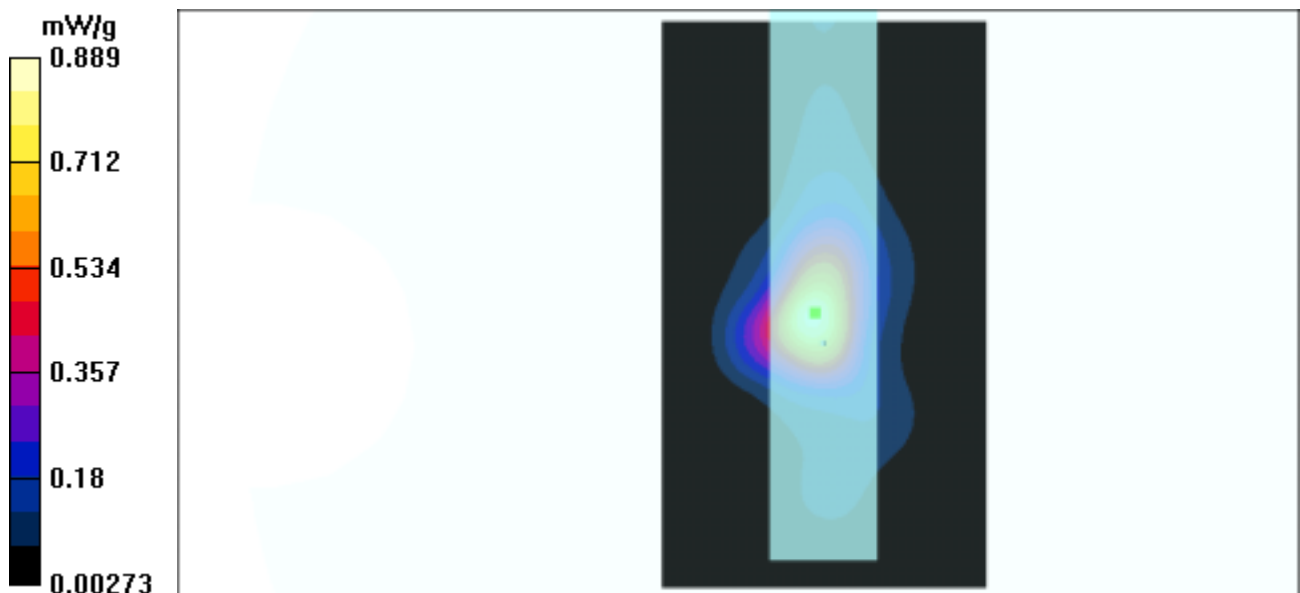
Peak SAR (extrapolated) = 2.33 W/kg

SAR(1 g) = 0.815 mW/g; SAR(10 g) = 0.299 mW/g

Reference Value = 19.4 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 0.889 mW/g



Test Laboratory: Advance Data Technology

M275 11.g MAIN ANTENNA Mode 4

DUT: Tablet ; Type: M275 ; Test Channel Frequency: 2412 MHz

Communication System: 802.11g ; Frequency: 2412 MHz; Duty Cycle: 1:1; Modulation type: CCK

Medium: MSL2450 ($\sigma = 1.964$ mho/m, $\epsilon_r = 52.187$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm

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

Antenna type : Internal Antenna ; Air temp. : 24.0 degrees ; Liquid temp. : 22.0 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003

- Sensor-Surface: 4mm (Mechanical Surface Detection)

- Electronics: DAE3 Sn510;

- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150

- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

Channel 1/Area Scan (41x71x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 23.9 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 1.37 mW/g

Channel 1/Zoon Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

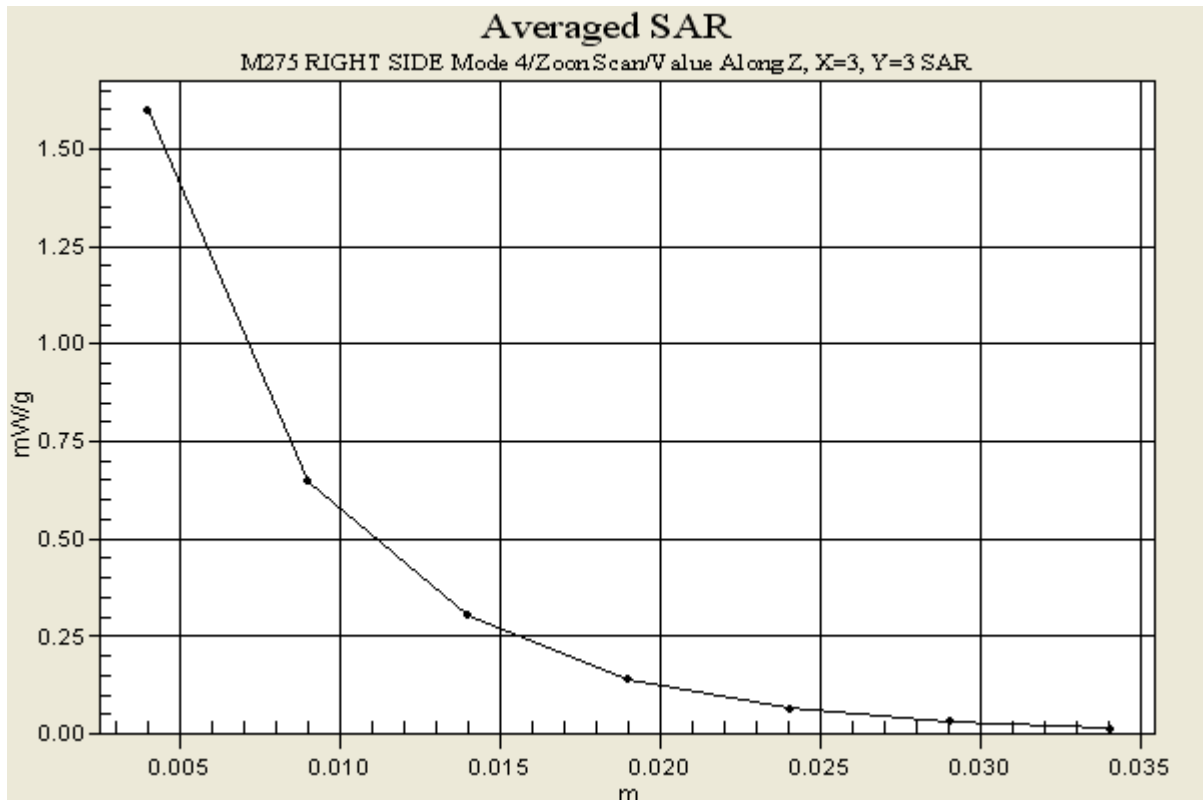
Peak SAR (extrapolated) = 4.21 W/kg

SAR(1 g) = 1.36 mW/g; SAR(10 g) = 0.462 mW/g

Reference Value = 23.9 V/m

Power Drift = -0.2 dB

Maximum value of SAR = 1.6 mW/g



A3 : SYSTEM VALIDATION

Date/Time: 01/03/04 13:41:58

Test Laboratory: Advance Data Technology

SystemPerformanceCheck-Body 2450-2004-01-03

DUT: Dipole 2450 MHz ; Type: D2450V2

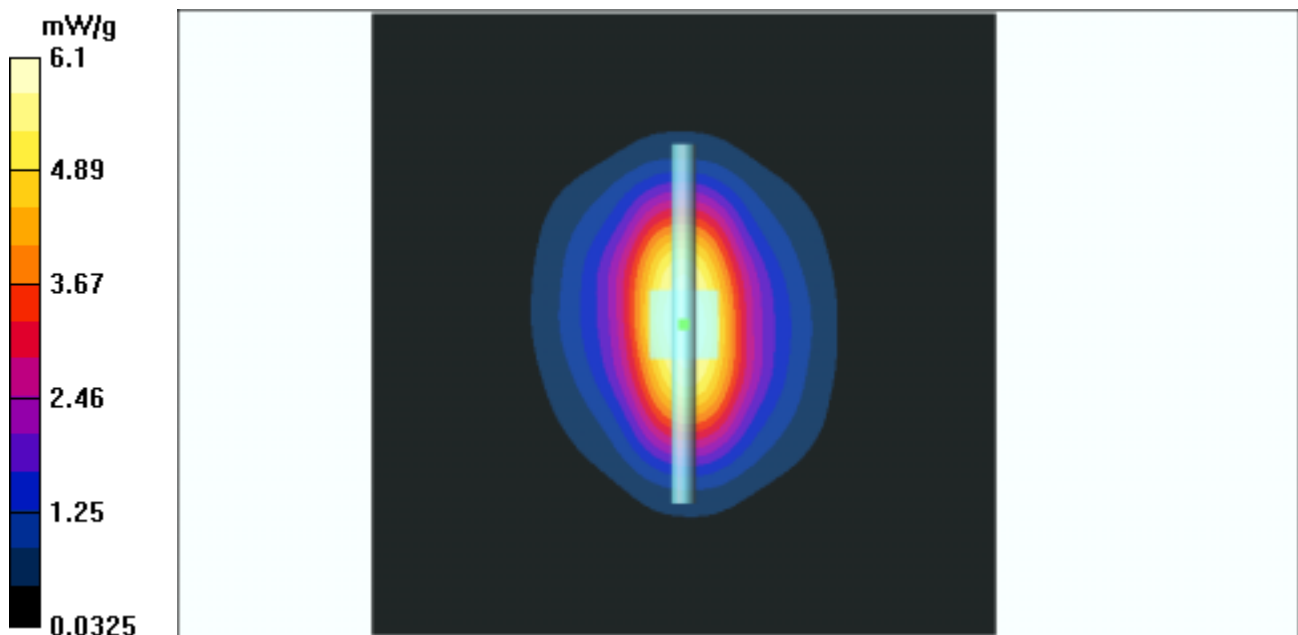
Communication System: CW ; Frequency: 2450 MHz; Duty Cycle: 1:1; Modulation type: CW
Medium: MSL2450 ($\sigma = 2.017$ mho/m, $\epsilon_r = 52.041$, $\rho = 1000$ kg/m³) ; Liquid level : 155mm
Phantom section: Flat Section ; Separation distance : 10mm(The feetpoint of the dipole to the Phantom)
Air temp. : 24.0 degrees ; Liquid temp. : 22 degrees

DASY4 Configuration:

- Probe: ET3DV6 - SN1686; ConvF(4.5, 4.5, 4.5); Calibrated: 6/18/2003
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn510;
- Phantom: SAM Twin Phantom V4.0; Type: QD 000 P40 CA; Serial: TP-1150
- Measurement SW: DASY4, V4.1 Build 47; Postprocessing SW: SEMCAD, V1.6 Build 115

d=10mm, Pin=100mW/Area Scan (61x61x1): Measurement grid: dx=15mm, dy=15mm
Reference Value = 57.7 V/m
Power Drift = -0.06 dB
Maximum value of SAR = 6.14 mW/g

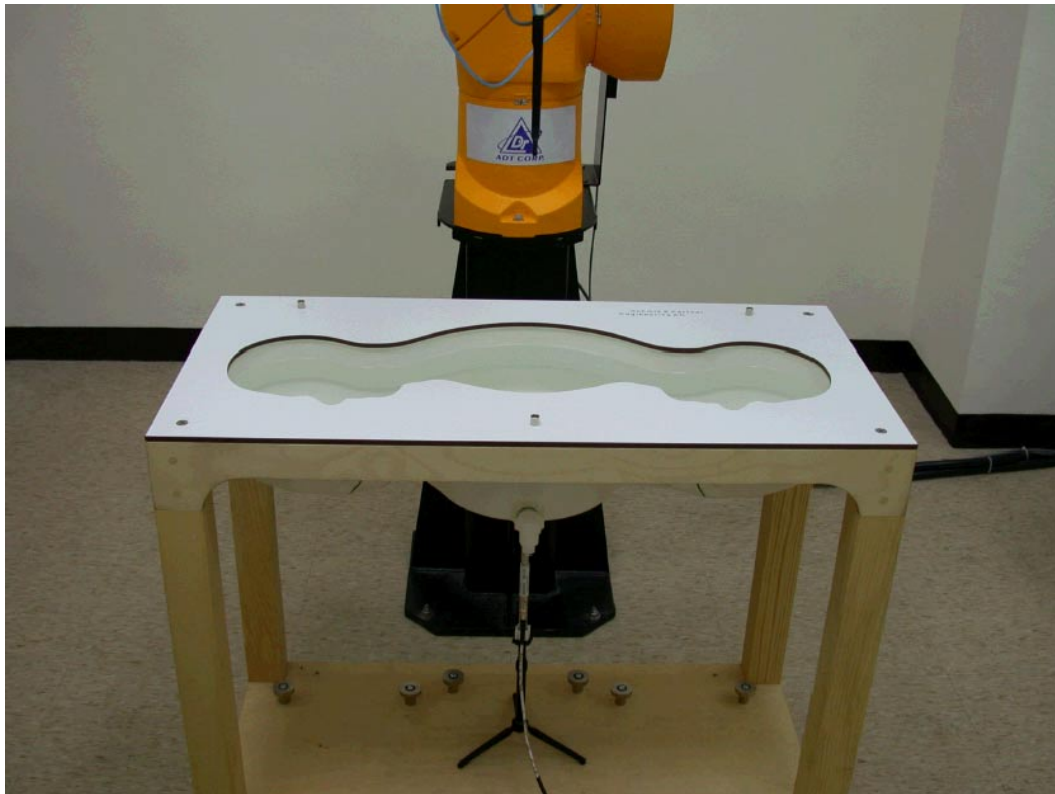
d=10mm, Pin=100mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm
Peak SAR (extrapolated) = 12.6 W/kg
SAR(1 g) = 5.61 mW/g; SAR(10 g) = 2.55 mW/g
Reference Value = 57.7 V/m
Power Drift = -0.06 dB
Maximum value of SAR = 6.1 mW/g



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**

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Johannes Kofler



D2: 2450MHZ SYSTEM VALIDATION DIPOLE

Schmid & Partner Engineering AG

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

Calibration Certificate

2450 MHz System Validation Dipole

Type:

D2450V2

Serial Number:

716

Place of Calibration:

Zurich

Date of Calibration:

September 26, 2002

Calibration Interval:

24 months

Schmid & Partner Engineering AG hereby certifies, that this device has been calibrated on the date indicated above. The calibration was performed in accordance with specifications and procedures of Schmid & Partner Engineering AG.

Wherever applicable, the standards used in the calibration process are traceable to international standards. In all other cases the standards of the Laboratory for EMF and Microwave Electronics at the Swiss Federal Institute of Technology (ETH) in Zurich, Switzerland have been applied.

Calibrated by:

N. Vella

Approved by:

Volker Kofler

**Schmid & Partner
Engineering AG**

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

DASY

Dipole Validation Kit

Type: D2450V2

Serial: 716

Manufactured: September 10, 2002

Calibrated: September 26, 2002

1. Measurement Conditions

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

Relative permittivity	37.7	$\pm 5\%$
Conductivity	1.88 mho/m	$\pm 10\%$

The DASY System with a dosimetric E-field probe ET3DV6 (SN:1507, conversion factor 5.0 at 2450 MHz) was used for the measurements.

The dipole feedpoint was positioned below the center marking and 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. The included distance holder was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 20mm was aligned with the dipole. The 5x5x7 fine cube was chosen for cube integration. Probe isotropy errors were cancelled by measuring the SAR with normal and 90° turned probe orientations and averaging.

The dipole input power (forward power) was 250mW $\pm 3\%$. The results are normalized to 1W input power.

2.1. SAR Measurement with DASY3 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 ET3DV6 SN:1507 and applying the worst-case extrapolation are:

averaged over 1 cm ³ (1 g) of tissue:	57.2 mW/g
averaged over 10 cm ³ (10 g) of tissue:	26.4 mW/g

2.2 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 ET3DV6 SN:1507 and applying the advanced extrapolation are:

averaged over 1 cm ³ (1 g) of tissue:	54.0 mW/g
averaged over 10 cm ³ (10 g) of tissue:	25.2 mW/g

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:	1.148 ns	(one direction)
Transmission factor:	0.982	(voltage transmission, one direction)

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

Feedpoint impedance at 2450 MHz:	$\text{Re}\{Z\} = 54.1 \Omega$
	$\text{Im}\{Z\} = 2.4 \Omega$
Return Loss at 2450 MHz	- 26.8 dB

4. Measurement Conditions

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

Relative permittivity	52.4	$\pm 5\%$
Conductivity	1.99 mho/m	$\pm 10\%$

The DASY System with a dosimetric E-field probe ET3DV6 (SN:1507, conversion factor 4.5 at 2450 MHz) was used for the measurements.

The dipole feedpoint was positioned below the center marking and 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. The included distance holder was used during measurements for accurate distance positioning.

The coarse grid with a grid spacing of 20mm was aligned with the dipole. The 5x5x7 fine cube was chosen for cube integration. Probe isotropy errors were cancelled by measuring the SAR with normal and 90° turned probe orientations and averaging.

The dipole input power (forward power) was 250mW $\pm 3\%$. The results are normalized to 1W input power.

5.1. SAR Measurement with DASY3 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 ET3DV6 SN:1507 and applying the worst-case extrapolation are:

averaged over 1 cm³ (1 g) of tissue: **57.2 mW/g**

averaged over 10 cm³ (10 g) of tissue: **27.0 mW/g**

5.2 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 ET3DV6 SN:1507 and applying the advanced extrapolation are:

averaged over 1 cm³ (1 g) of tissue: **51.6 mW/g**

averaged over 10 cm³ (10 g) of tissue: **25.0 mW/g**

6. Dipole impedance and return loss

The dipole was positioned at the flat phantom sections according to section 4 (with body tissue inside the phantom) and the distance holder was in place during impedance measurements.

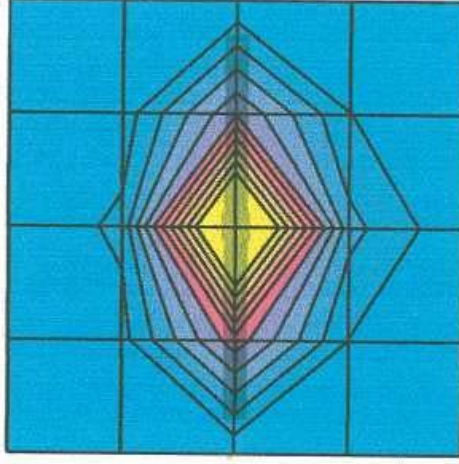
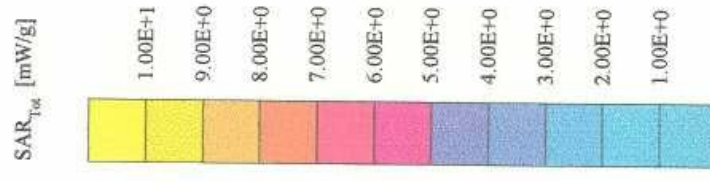
Feedpoint impedance at 2450 MHz: **Re{Z} = 49.6 Ω**

Im {Z} = 4.2 Ω

Return Loss at 2450 MHz **- 27.5 dB**

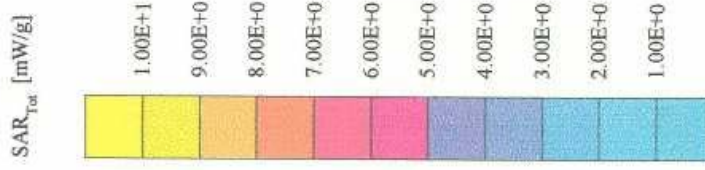
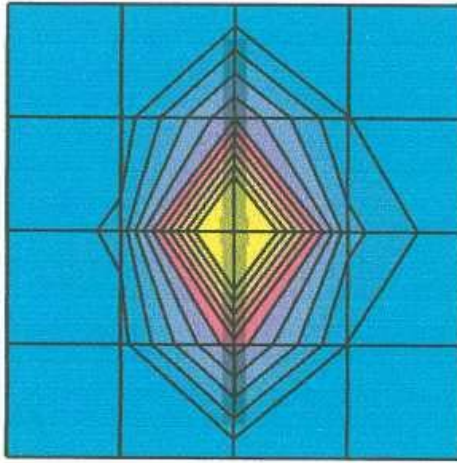
Validation Dipole D2450V2 SN716, d = 10 mm

Frequency: 2450 MHz, Antenna Input Power: 250 [mW]
 SAM Phantom, Flat Section, Grid Spacing: Dx = 20.0, Dy = 20.0, Dz = 10.0
 Probe: ET3DV6 - SN1507; ConvF(5.00,5.00,5.00) at 2450 MHz; IEEE1528 2450 MHz: $\sigma = 1.88 \text{ mho/m}$, $\epsilon_r = 37.7$, $\rho = 1.00 \text{ g/cm}^3$
 Cubes (2): Peak: $26.9 \text{ mW/g} \pm 0.00 \text{ dB}$, SAR (1g): $13.5 \text{ mW/g} \pm 0.01 \text{ dB}$, SAR (10g): $6.31 \text{ mW/g} \pm 0.02 \text{ dB}$, (Advanced extrapolation)
 Penetration depth: 6.8 (6.6, 7.0) [mm]
 Powerdrift: -0.03 dB



Validation Dipole D2450V2 SN716, d = 10 mm

Frequency: 2450 MHz; Antenna Input Power: 250 [mW]
SAM Phantom; Flat Section; Grid Spacing: Dx = 20.0, Dy = 20.0, Dz = 10.0
Probe: ET3DV6 - SN1507; ConvF(5.00,5.00,5.00) at 2450 MHz; IEEE1528 2450 MHz: $\sigma = 1.88 \text{ mho/m}$, $\epsilon_r = 37.7$, $\rho = 1.00 \text{ g/cm}^3$
Cubes (2): Peak: 29.4 mW/g ± 0.00 dB, SAR (1g): 14.3 mW/g ± 0.01 dB, SAR (10g): 6.61 mW/g ± 0.02 dB, (Worst-case extrapolation)
Penetration depth: 6.5 (6.3, 6.9) [mm]
Powerdrift: -0.03 dB



25 Sep 2002 11:22:10

CH1 S11 1 U FS

1: 54.092 Ω 2.3984 Ω 155.81 pH

2 450.000 000 MHz

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Del

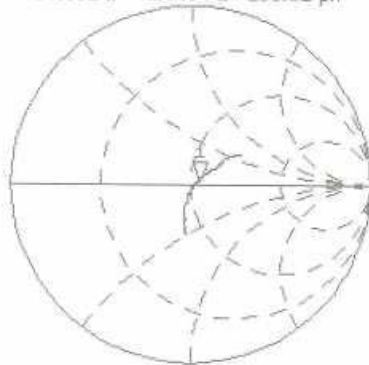
PRM

Cor

Avg

16

↑



CH2

S11

L06

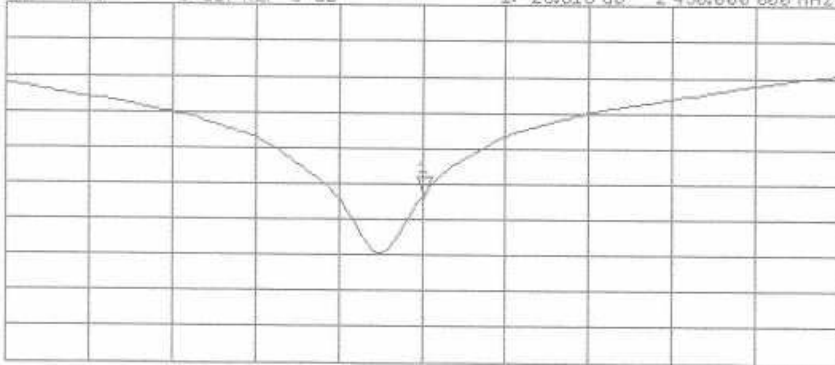
5 dB/REF 0 dB

1: -26.816 dB 2 450.000 000 MHz

PRM

Cor

↑

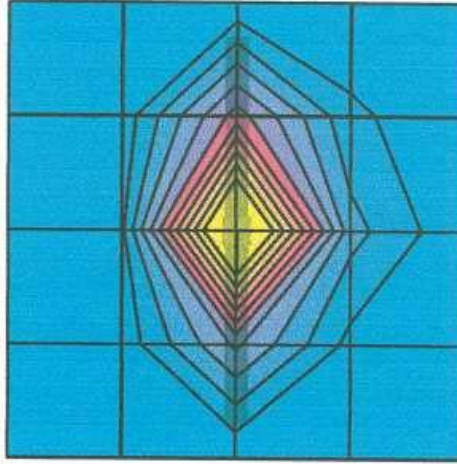
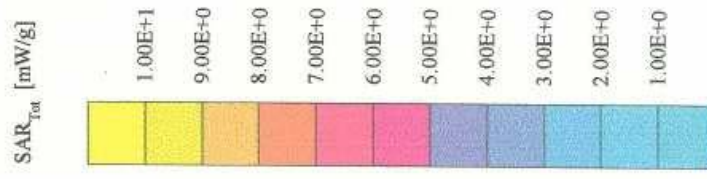


START 2 250.000 000 MHz

STOP 2 650.000 000 MHz

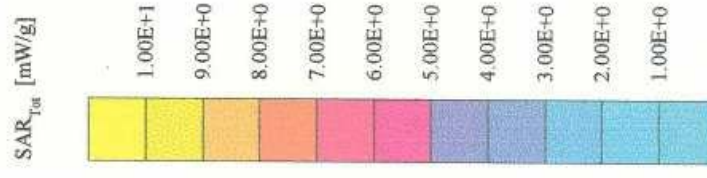
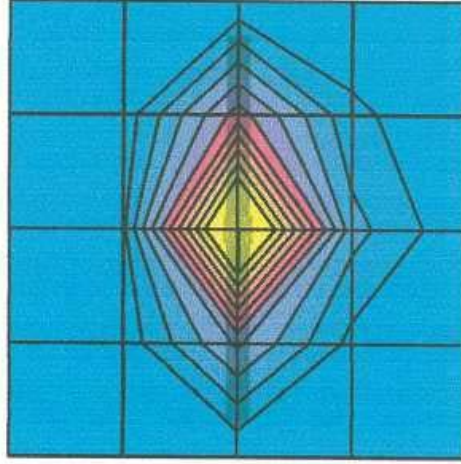
Validation Dipole D2450V2 SN716, d = 10 mm

Frequency: 2450 MHz; Antenna Input Power: 250 [mW]
SAM Phantom; Flat Section; Grid Spacing: Dx = 20.0, Dy = 20.0, Dz = 10.0
Probe: ET3DV6 - SNI507; ConvF(4.50,4.50,4.50) at 2450 MHz; IEEE1528 2450 MHz: $\sigma = 1.99$ mho/m $\epsilon_r = 52.4$ $\rho = 1.00$ g/cm³
Cubes (2); Peak: 28.3 mW/g ± 0.11 dB, SAR (1g): 14.3 mW/g ± 0.06 dB, SAR (10g): 6.74 mW/g ± 0.01 dB, (Worst-case extrapolation)
Penetration depth: 7.4 (7.1, 8.2) [mm]
Powerdrift: -0.02 dB



Validation Dipole D2450V2 SN716, d = 10 mm

Frequency: 2450 MHz; Antenna Input Power: 250 [mW]
SAM Phantom; Flat Section; Grid Spacing: Dx = 20.0, Dy = 20.0, Dz = 10.0
Probe: ET3DV6 - SN1507; ConvF(4.50,4.50,4.50) at 2450 MHz; IEEE1528 2450 MHz: $\sigma = 1.99$ mho/m $\epsilon_r = 52.4$ $\rho = 1.00$ g/cm³
Cubes (2): Peak: 24.3 mW/g ± 0.11 dB, SAR (1g): 12.9 mW/g ± 0.06 dB, SAR (10g): 6.26 mW/g ± 0.01 dB, (Advanced extrapolation)
Penetration depth: 8.0 (7.9, 8.3) [mm]
Powerdrift: -0.02 dB



25 Sep 2002 16:04:11

CH1 S11 1 U FS

1: 49.619 α 4.1934 α 272.41 ρ H

2 450.000 000 MHz

γ

Del

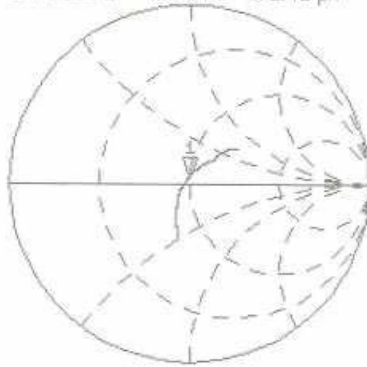
PRM

Cor

Avg

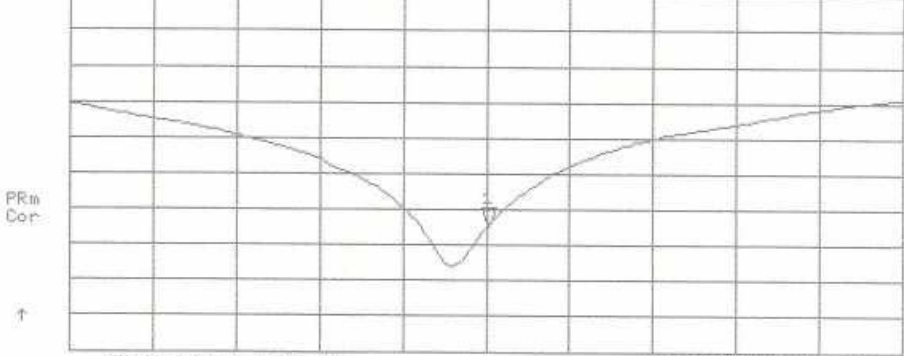
16

↑



Mosche

CH2 S11 LOG 5 dB/REF 0 dB 1: -27.517 dB 2 450.000 000 MHz



PRM

Cor

↑

START 2 250.000 000 MHz

STOP 2 650.000 000 MHz

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 Section 1. 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.



D3: DOSIMETRIC E-FIELD PROBE

Client **ADT (Auden)**

CALIBRATION CERTIFICATE			
Object(s)	ET3DV6 - SN: 1686		
Calibration procedure(s)	QA CAL-01.v2 Calibration procedure for dosimetric E-field probes		
Calibration date:	June 18, 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-05
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.2360)	Sep-03
Calibrated by:	Name Nico Vetterli	Function Technician	Signature 
Approved by:	Name Katja Pokovic	Function Laboratory Director	Signature 
Date issued: June 18, 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.			

Probe ET3DV6

SN:1686

Manufactured:	May 28, 2002
Last calibration:	June 5, 2002
Repaired:	June 12, 2003
Recalibrated:	June 18, 2003

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

DASY - Parameters of Probe: ET3DV6 SN:1686

Sensitivity in Free Space

Diode Compression

NormX	2.05 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP X	95	mV
NormY	1.80 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP Y	95	mV
NormZ	1.73 $\mu\text{V}/(\text{V}/\text{m})^2$	DCP Z	95	mV

Sensitivity in Tissue Simulating Liquid

Head 900 MHz $\epsilon_r = 41.5 \pm 5\%$ $\sigma = 0.97 \pm 5\%$ mho/m

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

ConvF X	6.7 $\pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	6.7 $\pm 9.5\%$ (k=2)	Alpha	0.40
ConvF Z	6.7 $\pm 9.5\%$ (k=2)	Depth	2.18

Head 1800 MHz $\epsilon_r = 40.0 \pm 5\%$ $\sigma = 1.40 \pm 5\%$ mho/m

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

ConvF X	5.3 $\pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	5.3 $\pm 9.5\%$ (k=2)	Alpha	0.45
ConvF Z	5.3 $\pm 9.5\%$ (k=2)	Depth	2.62

Boundary Effect

Head 900 MHz Typical SAR gradient: 5 % per mm

Probe Tip to Boundary		1 mm	2 mm
SAR _{be} [%]	Without Correction Algorithm	8.1	4.6
SAR _{be} [%]	With Correction Algorithm	0.1	0.3

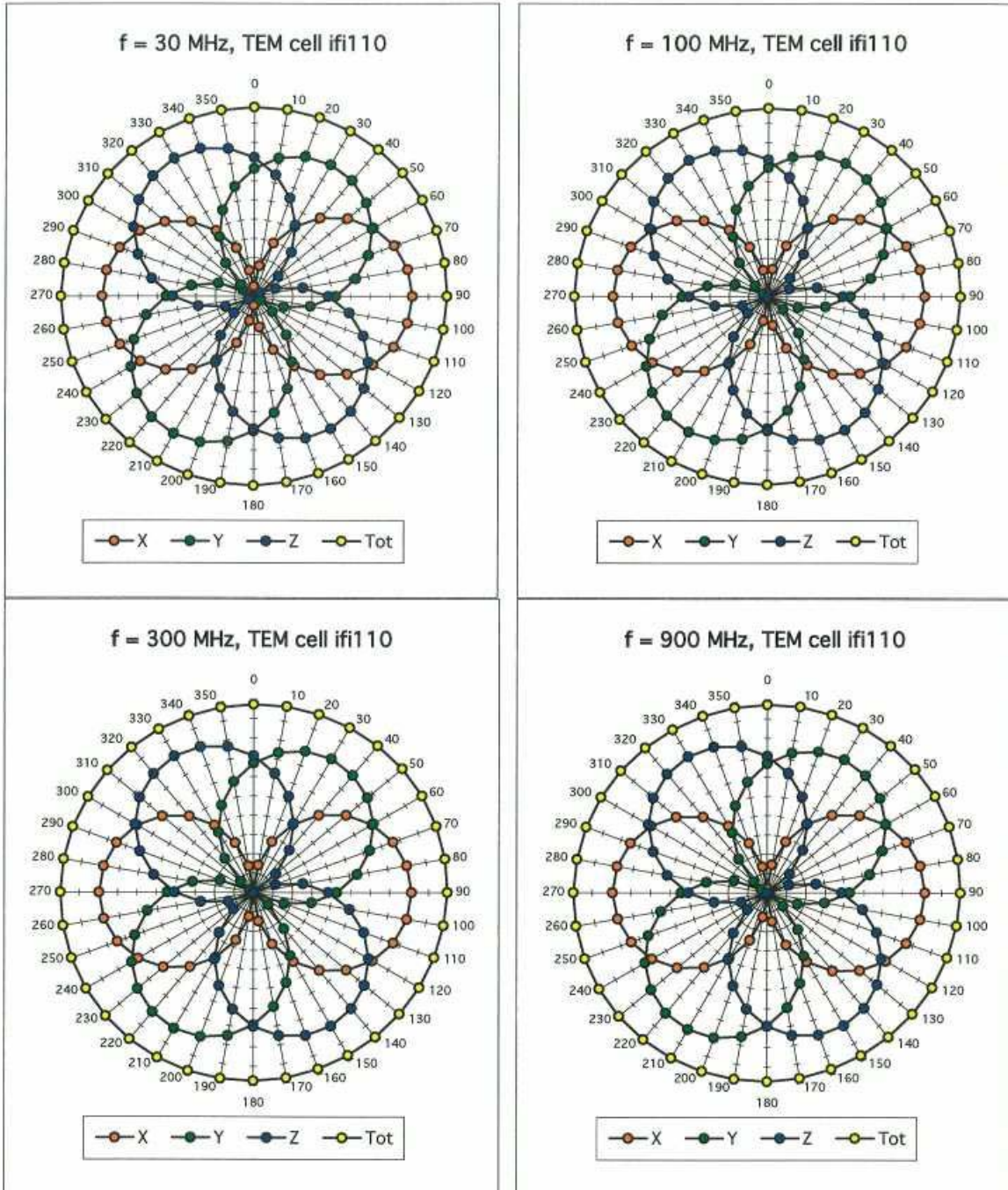
Head 1800 MHz Typical SAR gradient: 10 % per mm

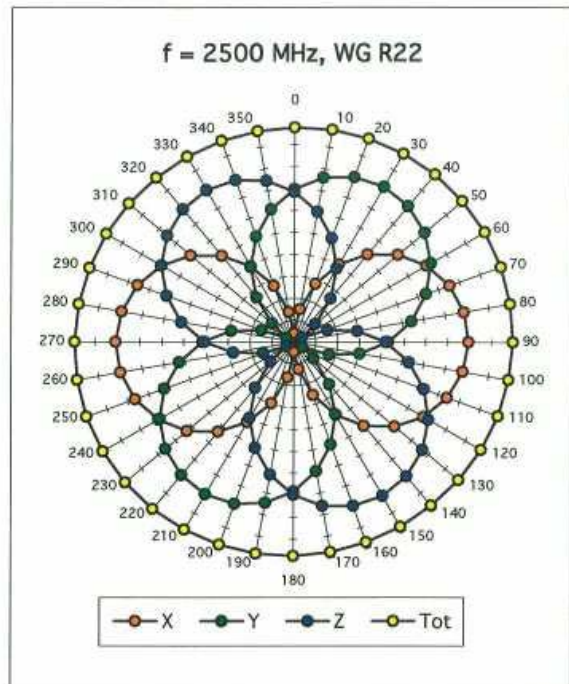
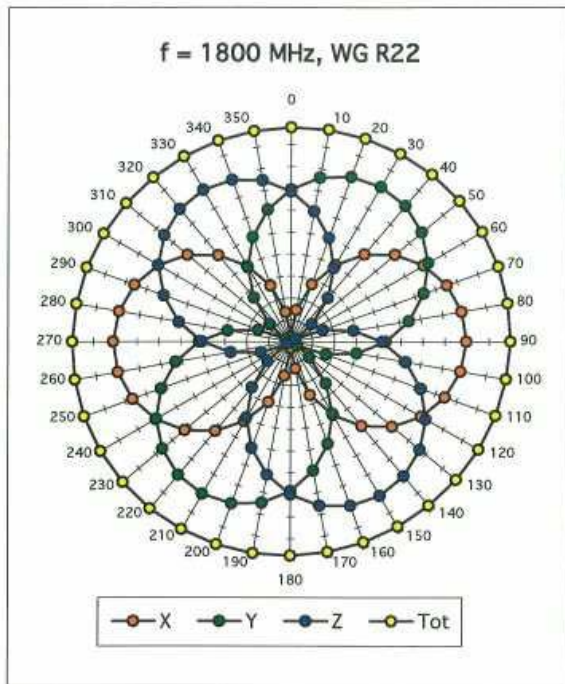
Probe Tip to Boundary		1 mm	2 mm
SAR _{be} [%]	Without Correction Algorithm	12.0	8.2
SAR _{be} [%]	With Correction Algorithm	0.2	0.2

Sensor Offset

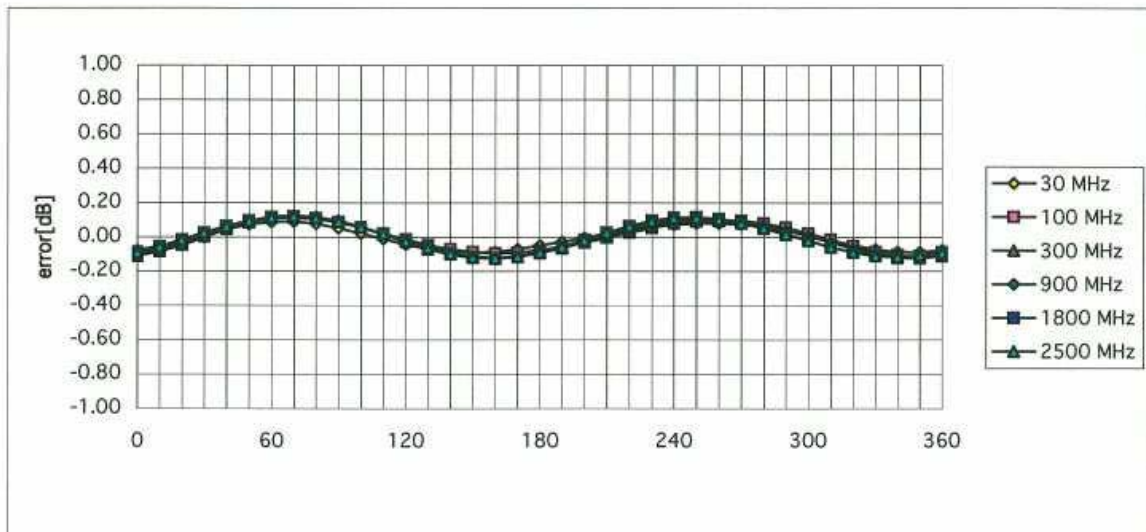
Probe Tip to Sensor Center	2.7	mm
Optical Surface Detection	1.2 \pm 0.2	mm

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



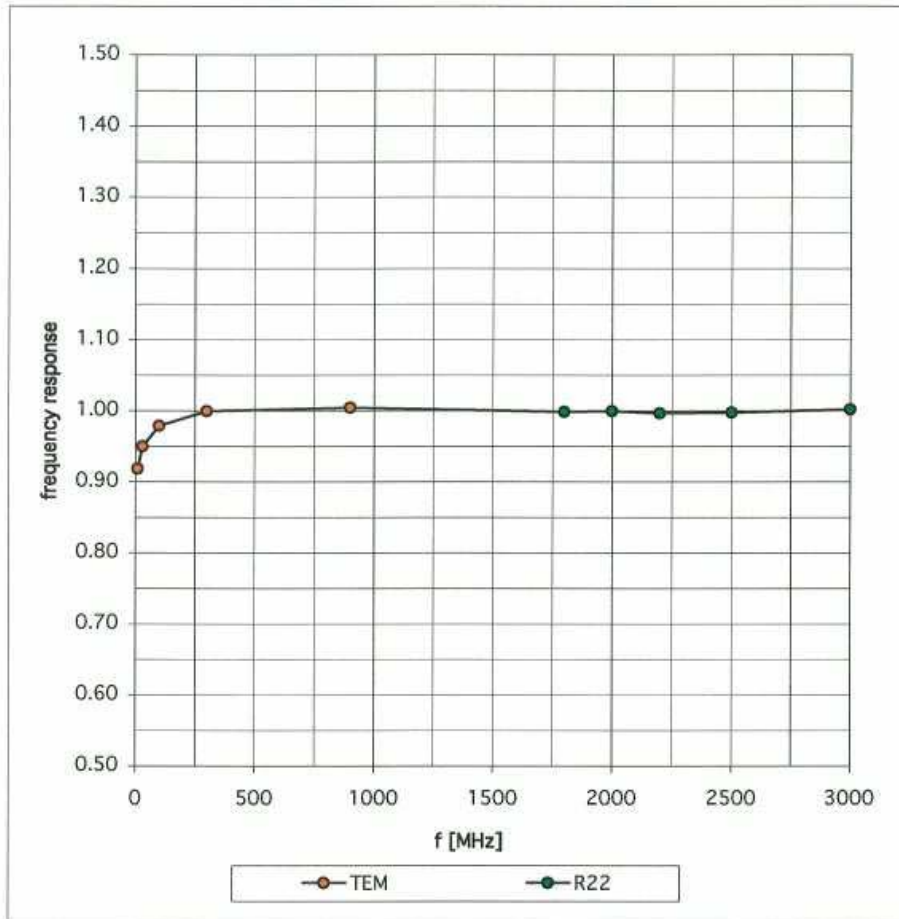


Isotropy Error (ϕ), $\theta = 0^\circ$



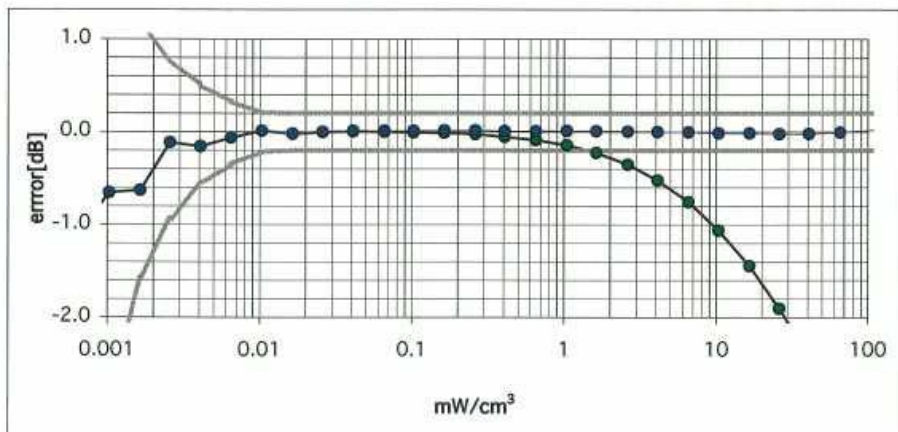
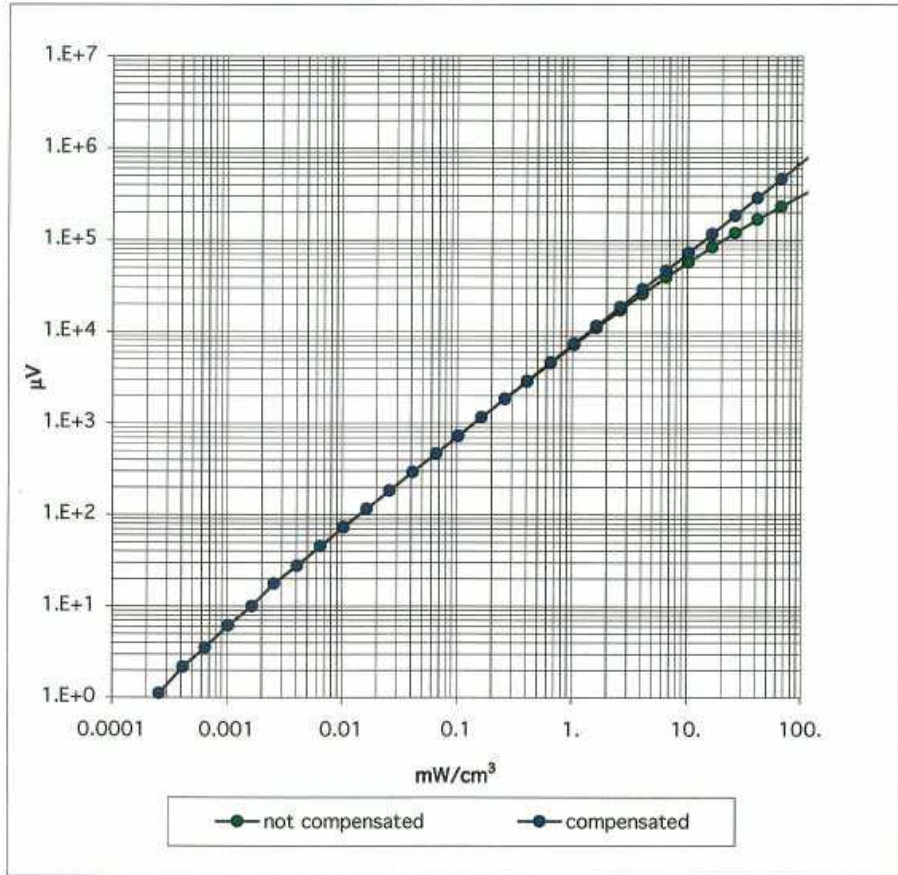
Frequency Response of E-Field

(TEM-Cell:ifi110, Waveguide R22)

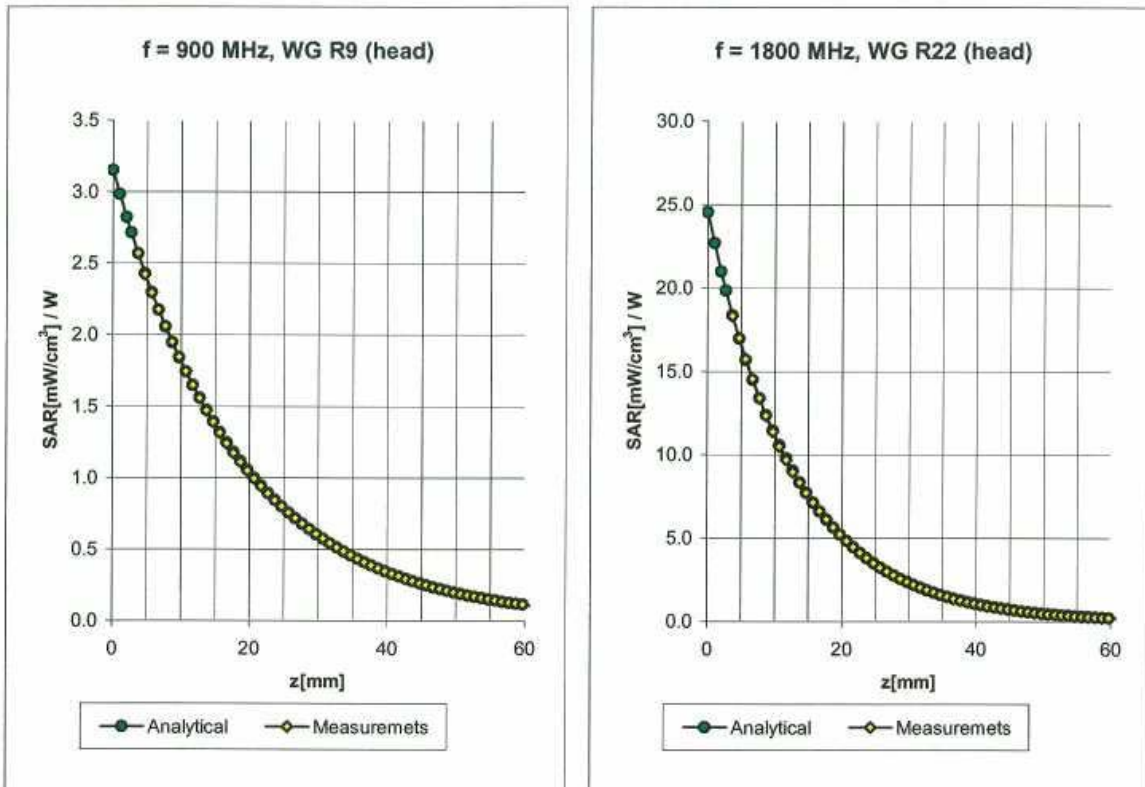


Dynamic Range f(SAR_{brain})

(Waveguide R22)



Conversion Factor Assessment



Head 900 MHz $\epsilon_r = 41.5 \pm 5\%$ $\sigma = 0.97 \pm 5\%$ mho/m

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

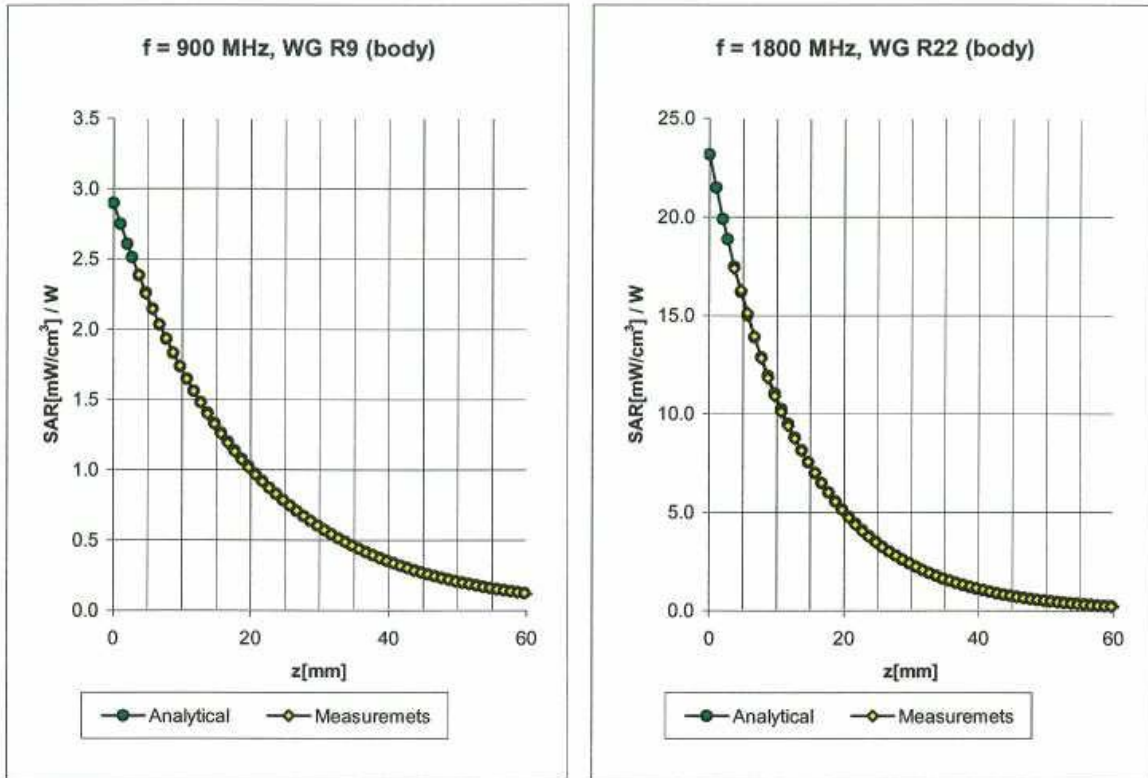
ConvF X	6.7 ± 9.5% (k=2)	Boundary effect:	
ConvF Y	6.7 ± 9.5% (k=2)	Alpha	0.40
ConvF Z	6.7 ± 9.5% (k=2)	Depth	2.18

Head 1800 MHz $\epsilon_r = 40.0 \pm 5\%$ $\sigma = 1.40 \pm 5\%$ mho/m

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

ConvF X	5.3 ± 9.5% (k=2)	Boundary effect:	
ConvF Y	5.3 ± 9.5% (k=2)	Alpha	0.45
ConvF Z	5.3 ± 9.5% (k=2)	Depth	2.62

Conversion Factor Assessment



Body 900 MHz $\epsilon_r = 55.0 \pm 5\%$ $\sigma = 1.05 \pm 5\%$ mho/m

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

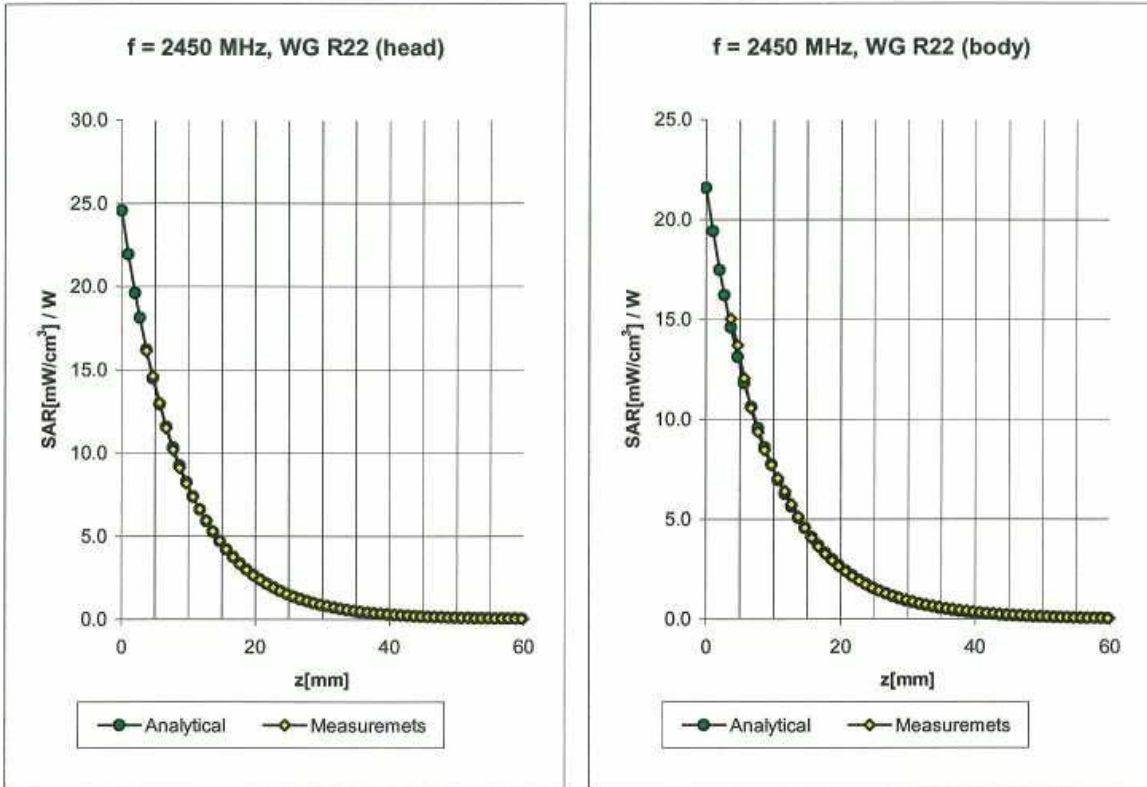
ConvF X	6.6 $\pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	6.6 $\pm 9.5\%$ (k=2)	Alpha	0.35
ConvF Z	6.6 $\pm 9.5\%$ (k=2)	Depth	2.51

Body 1800 MHz $\epsilon_r = 53.3 \pm 5\%$ $\sigma = 1.52 \pm 5\%$ mho/m

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

ConvF X	5.0 $\pm 9.5\%$ (k=2)	Boundary effect:	
ConvF Y	5.0 $\pm 9.5\%$ (k=2)	Alpha	0.51
ConvF Z	5.0 $\pm 9.5\%$ (k=2)	Depth	2.80

Conversion Factor Assessment



Head 2450 MHz $\epsilon_r = 39.2 \pm 5\%$ $\sigma = 1.80 \pm 5\%$ mho/m

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

ConvF X	4.9 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	4.9 ± 8.9% (k=2)	Alpha	0.86
ConvF Z	4.9 ± 8.9% (k=2)	Depth	1.98

Body 2450 MHz $\epsilon_r = 52.7 \pm 5\%$ $\sigma = 1.95 \pm 5\%$ mho/m

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

ConvF X	4.5 ± 8.9% (k=2)	Boundary effect:	
ConvF Y	4.5 ± 8.9% (k=2)	Alpha	1.40
ConvF Z	4.5 ± 8.9% (k=2)	Depth	1.45

Deviation from Isotropy in HSL

Error (θ, ϕ), $f = 900$ MHz

