

Left-Head Cheek CH512

DUT: GSM MOBILE PHONE; Type: Flip; IMEI: 3539910006132201

Program: GSM 1900MHZ

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

Medium: Head 1900MHz Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.37$ mho/m; $\epsilon_r = 39.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(5.13, 5.13, 5.13); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Left-Cheek/Area Scan (41x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.848 mW/g

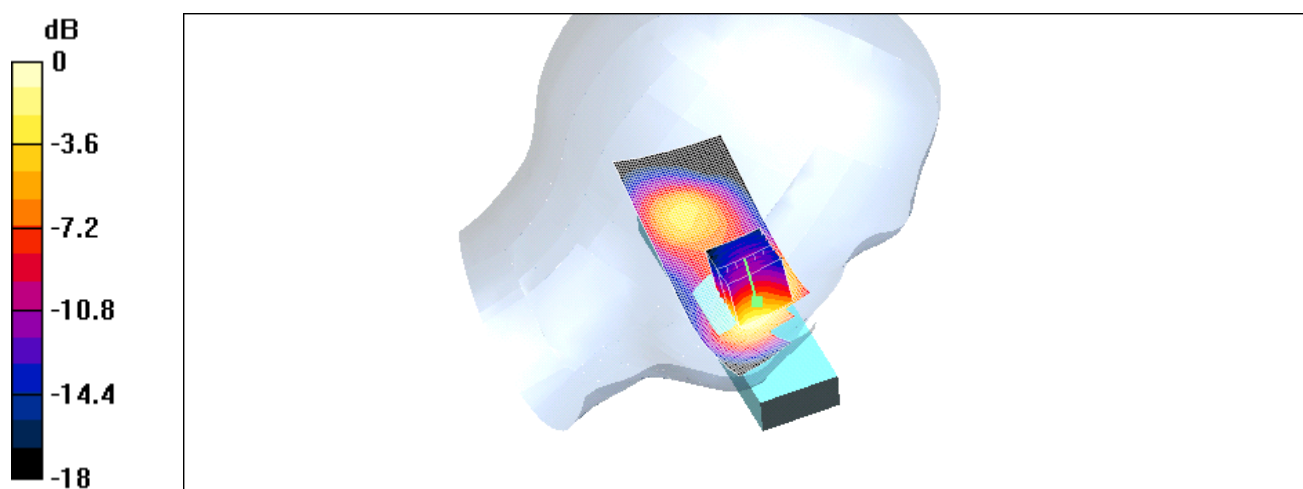
Left-Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.9 V/m; Power Drift = -0.2 dB

Peak SAR (extrapolated) = 1.16 W/kg

SAR(1 g) = 0.759 mW/g; SAR(10 g) = 0.443 mW/g

Maximum value of SAR (measured) = 0.832 mW/g



0 dB = 0.832mW/g

Left-Head Cheek CH661

DUT: GSM MOBILE PHONE; Type: Flip; IMEI: 3539910006132201

Program: GSM 1900MHZ

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

Medium: Head 1900MHz Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(5.13, 5.13, 5.13); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Left-Cheek/Area Scan (41x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.807 mW/g

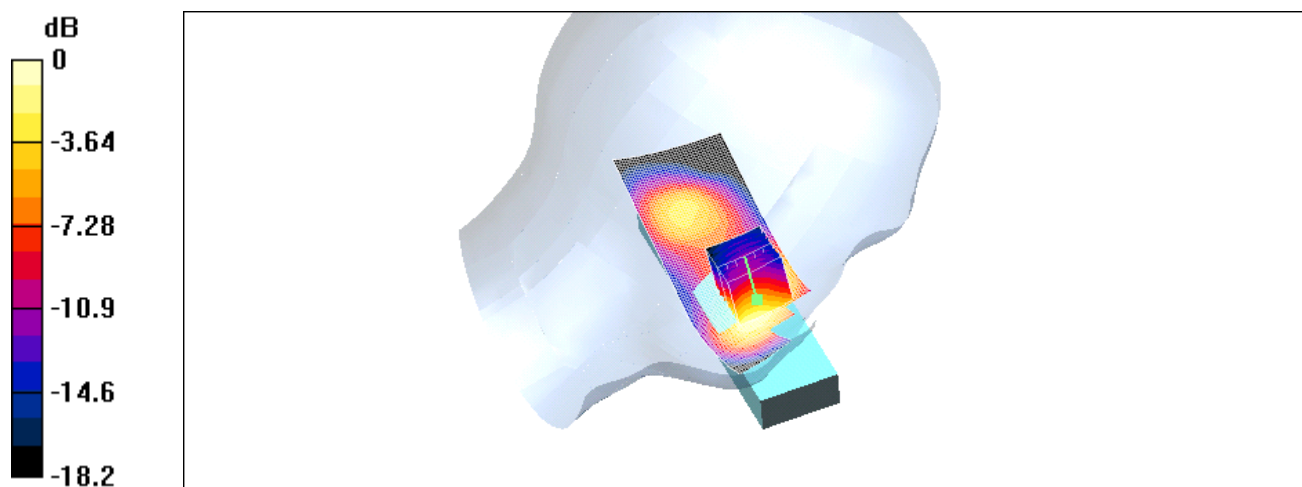
Left-Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.2 V/m; Power Drift = 0.0 dB

Peak SAR (extrapolated) = 1.09 W/kg

SAR(1 g) = 0.693 mW/g; SAR(10 g) = 0.410 mW/g

Maximum value of SAR (measured) = 0.754 mW/g



0 dB = 0.754mW/g

Left-Head Cheek CH810

DUT: GSM MOBILE PHONE; Type: Flip; IMEI: 3539910006132201

Program: GSM 1900MHZ

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

Medium: Head 1900MHz Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(5.1, 5.1, 5.1); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Left-Cheek/Area Scan (41x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.731 mW/g

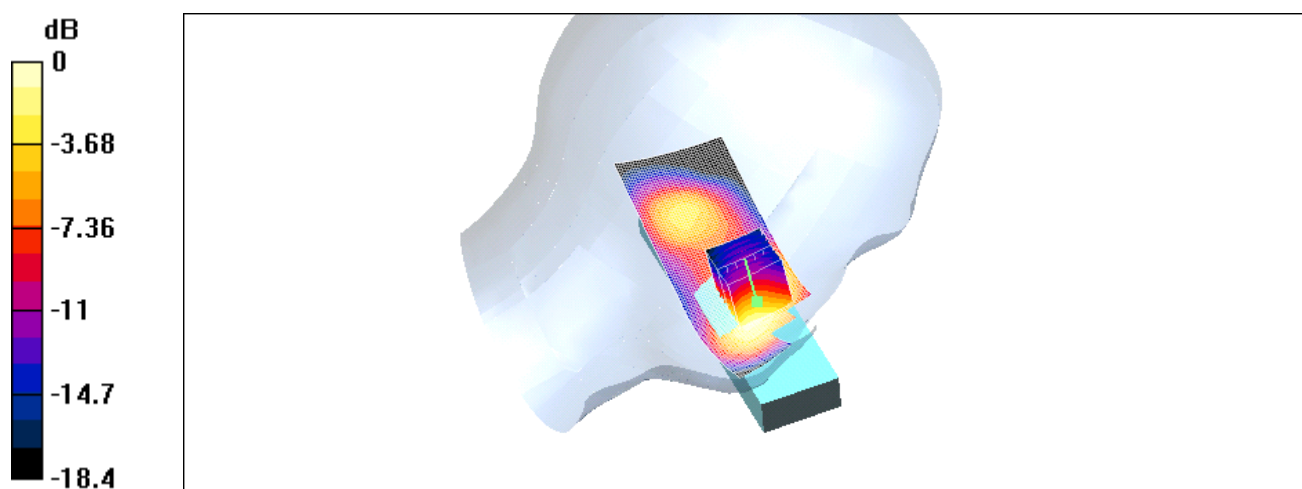
Left-Cheek/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.4 V/m; Power Drift = -0.007 dB

Peak SAR (extrapolated) = 1.05 W/kg

SAR(1 g) = 0.651 mW/g; SAR(10 g) = 0.382 mW/g

Maximum value of SAR (measured) = 0.702 mW/g



0 dB = 0.702mW/g

Right-Head Tilt CH512

DUT: GSM MOBILE PHONE; Type: Flip; IMEI: 3539910006132201

Program: GSM 1900MHZ

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

Medium: Head 1900MHz Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.37$ mho/m; $\epsilon_r = 39.1$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(5.13, 5.13, 5.13); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Right-Tile/Area Scan (41x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.601 mW/g

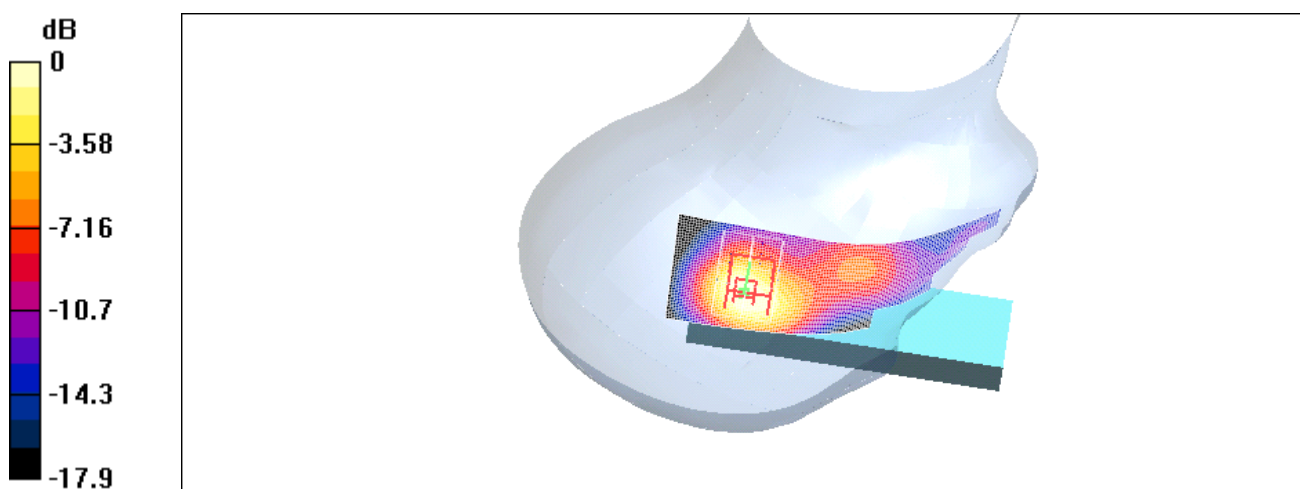
Right-Tile/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 18.3 V/m; Power Drift = 0.003 dB

Peak SAR (extrapolated) = 0.846 W/kg

SAR(1 g) = 0.478 mW/g; SAR(10 g) = 0.260 mW/g

Maximum value of SAR (measured) = 0.527 mW/g



0 dB = 0.527mW/g

Right-Head Tilt CH661

DUT: GSM MOBILE PHONE; Type: Flip; IMEI: 3539910006132201

Program: GSM 1900MHZ

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

Medium: Head 1900MHz Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(5.13, 5.13, 5.13); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Right-Tile/Area Scan (41x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.523 mW/g

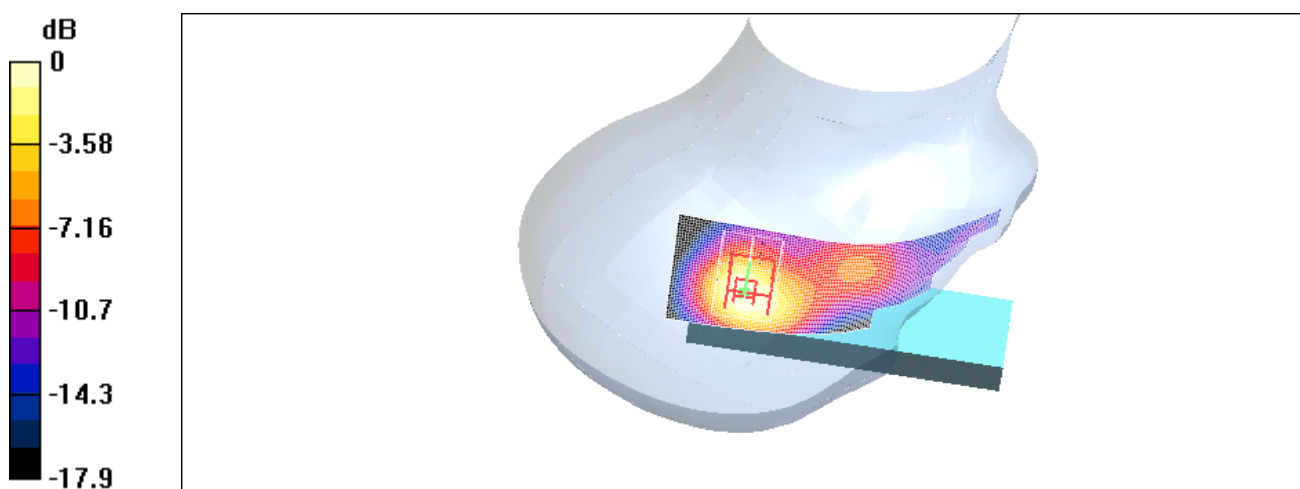
Right-Tile/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 17.1 V/m; Power Drift = -0.0 dB

Peak SAR (extrapolated) = 0.728 W/kg

SAR(1 g) = 0.414 mW/g; SAR(10 g) = 0.226 mW/g

Maximum value of SAR (measured) = 0.457 mW/g



0 dB = 0.457mW/g

Right-Head Tilt CH810

DUT: GSM MOBILE PHONE; Type: Flip; IMEI: 3539910006132201

Program: GSM 1900MHZ

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

Medium: Head 1900MHz Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.45$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Right Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(5.1, 5.1, 5.1); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Right-Tile/Area Scan (41x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.426 mW/g

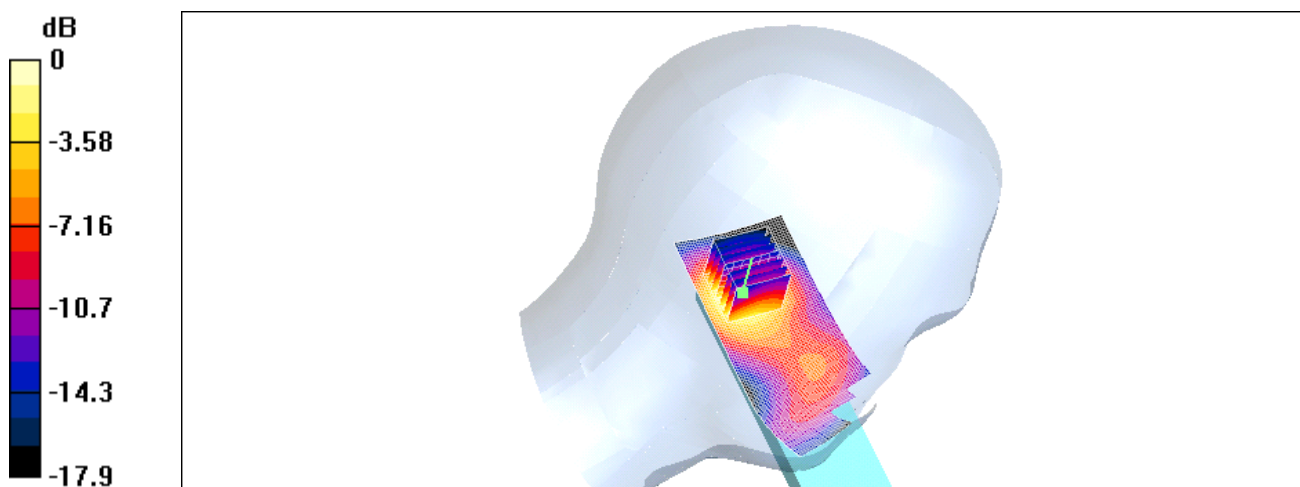
Right-Tile/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.5 V/m; Power Drift = -0.006 dB

Peak SAR (extrapolated) = 0.595 W/kg

SAR(1 g) = 0.340 mW/g; SAR(10 g) = 0.185 mW/g

Maximum value of SAR (measured) = 0.376 mW/g



0 dB = 0.376mW/g

Left-Head Tilt CH512

DUT: GSM MOBILE PHONE; Type: Flip; IMEI: 3539910006132201

Program: GSM 1900MHZ

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

Medium: Head 1900MHz Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.37$ mho/m; $\epsilon_r = 39.1$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(5.13, 5.13, 5.13); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Left-Tilt/Area Scan (41x121x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.478 mW/g

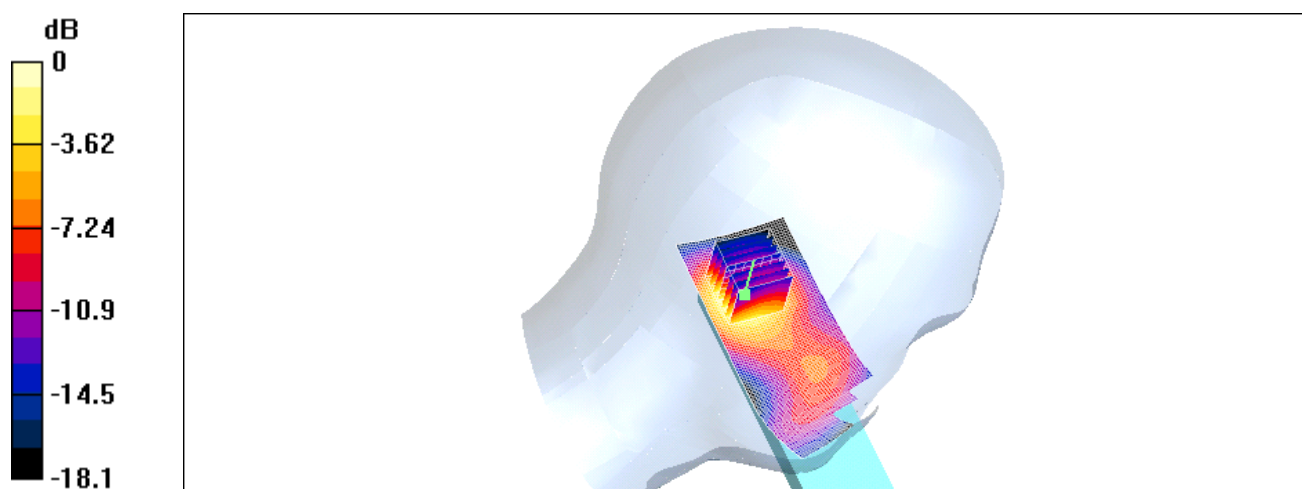
Left-Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 15.8 V/m; Power Drift = 0.0 dB

Peak SAR (extrapolated) = 0.653 W/kg

SAR(1 g) = 0.381 mW/g; SAR(10 g) = 0.206 mW/g

Maximum value of SAR (measured) = 0.423 mW/g



0 dB = 0.423mW/g

Left -Head Tilt CH661

DUT: GSM MOBILE PHONE; Type: Flip; IMEI: 3539910006132201

Program: GSM 1900MHZ

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

Medium: Head 1900MHz Medium parameters used (interpolated): $f = 1880$ MHz; $\sigma = 1.42$ mho/m; $\epsilon_r = 39.2$; $\rho = 1000$ kg/m³

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(5.13, 5.13, 5.13); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Left-Tilt/Area Scan (41x121x1): Measurement grid: dx=15mm, dy=15mm

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

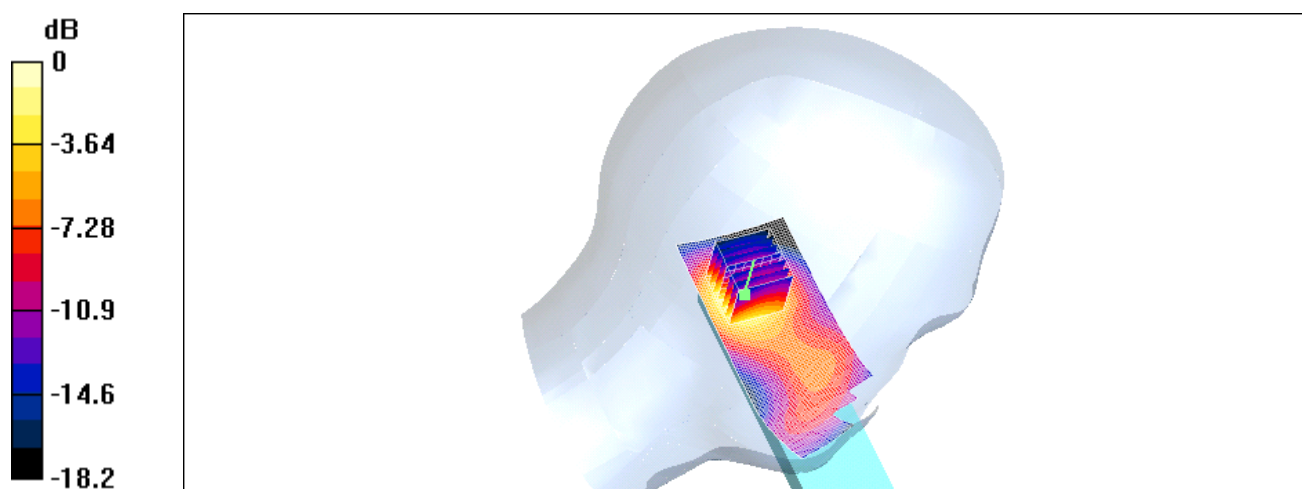
Left-Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 14.9 V/m; Power Drift = -0.1 dB

Peak SAR (extrapolated) = 0.596 W/kg

SAR(1 g) = 0.342 mW/g; SAR(10 g) = 0.184 mW/g

Maximum value of SAR (measured) = 0.379 mW/g



0 dB = 0.379mW/g

Left -Head Tilt CH810

DUT: GSM MOBILE PHONE; Type: Flip; IMEI: 3539910006132201

Program: GSM 1900MHZ

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

Medium: Head 1900MHz Medium parameters used (interpolated): $f = 1909.8 \text{ MHz}$; $\sigma = 1.45 \text{ mho/m}$; $\epsilon_r = 39.5$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Left Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(5.1, 5.1, 5.1); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Left-Tilt/Area Scan (41x121x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Maximum value of SAR (interpolated) = 0.382 mW/g

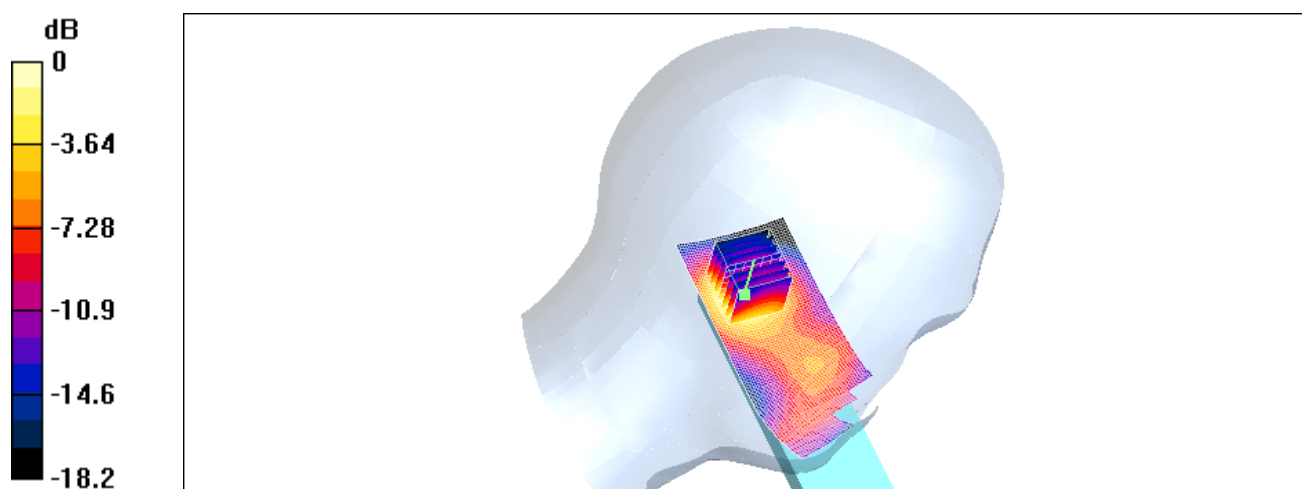
Left-Tilt/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 14.2 V/m; Power Drift = -0.1 dB

Peak SAR (extrapolated) = 0.532 W/kg

SAR(1 g) = 0.307 mW/g; SAR(10 g) = 0.164 mW/g

Maximum value of SAR (measured) = 0.343 mW/g



0 dB = 0.343mW/g

Body-Worn CH512

DUT: GSM MOBILE PHONE; Type: Flip; IMEI: 3539910006132201

Program: GSM 1900MHZ

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

Medium: M1800 & 1900 Medium parameters used (interpolated): $f = 1850.2$ MHz; $\sigma = 1.51$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(4.56, 4.56, 4.56); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Body/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.369 mW/g

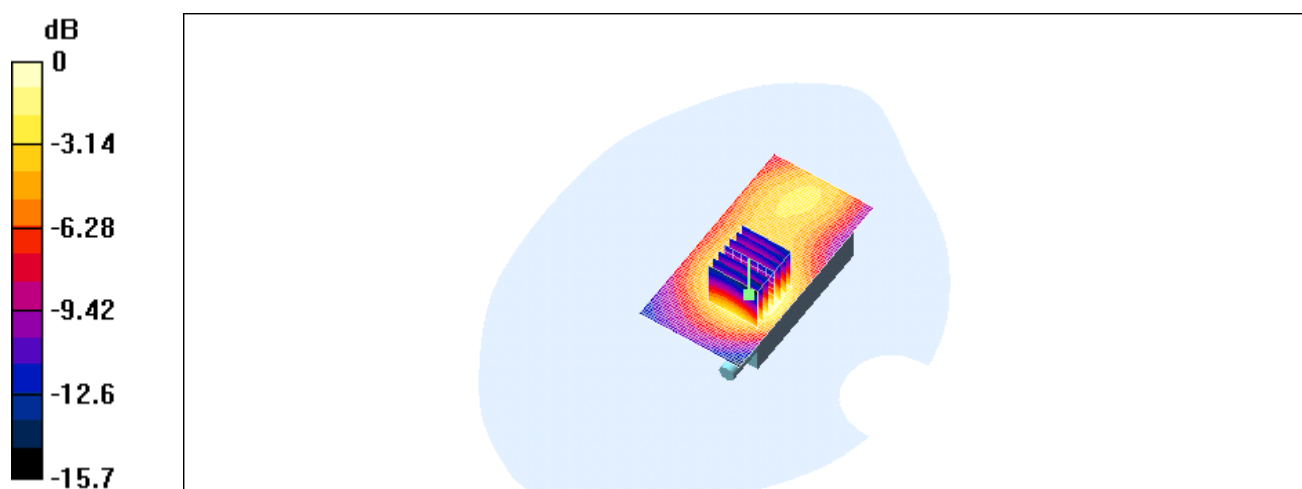
Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 13.3 V/m; Power Drift = 0.1 dB

Peak SAR (extrapolated) = 0.504 W/kg

SAR(1 g) = 0.326 mW/g; SAR(10 g) = 0.200 mW/g

Maximum value of SAR (measured) = 0.353 mW/g



0 dB = 0.353mW/g

Body-Worn CH661

DUT: GSM MOBILE PHONE; Type: Flip; IMEI: 3539910006132201

Program: GSM 1900MHZ

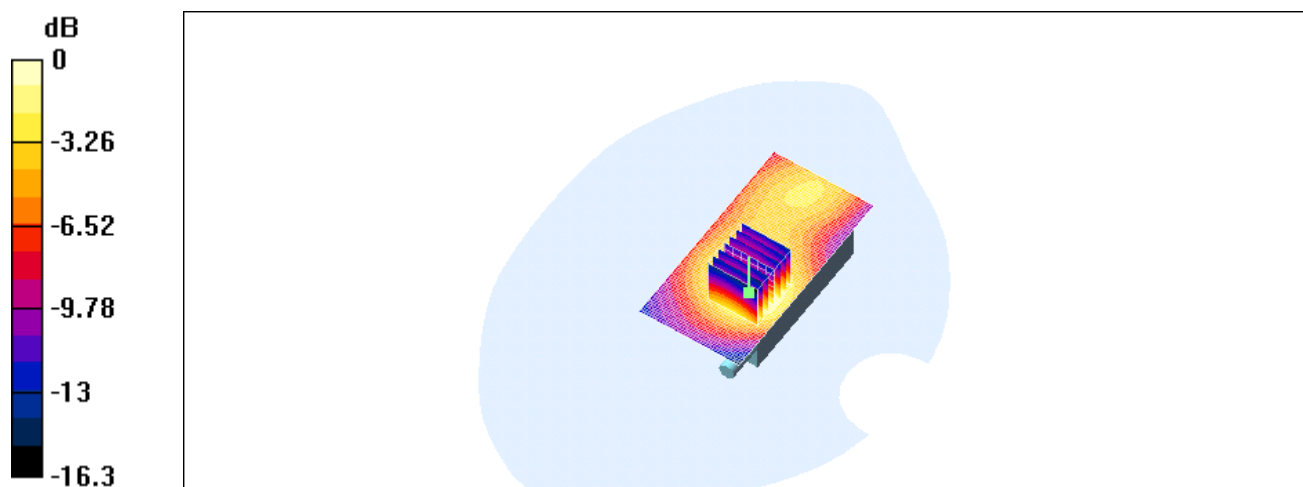
Communication System: GSM 1900; Frequency: 1880 MHz; Duty Cycle: 1:8.3

Medium: M1800 & 1900 Medium parameters used (interpolated): $f = 1880 \text{ MHz}$; $\sigma = 1.53 \text{ mho/m}$; $\epsilon_r = 51.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(4.56, 4.56, 4.56); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Body/Area Scan (41x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$ Maximum value of SAR (interpolated) = 0.364 mW/g **Body/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$ Reference Value = 13.3 V/m ; Power Drift = -0.0 dB Peak SAR (extrapolated) = 0.523 W/kg **SAR(1 g) = 0.326 mW/g ; SAR(10 g) = 0.199 mW/g** Maximum value of SAR (measured) = 0.352 mW/g 0 dB = 0.352 mW/g

Body-Worn CH810

DUT: GSM MOBILE PHONE; Type: Flip; IMEI: 3539910006132201

Program: GSM 1900MHZ

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

Medium: M1800 & 1900 Medium parameters used (interpolated): $f = 1909.8$ MHz; $\sigma = 1.56$ mho/m; $\epsilon_r = 51.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(4.43, 4.43, 4.43); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Body/Area Scan (41x81x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.340 mW/g

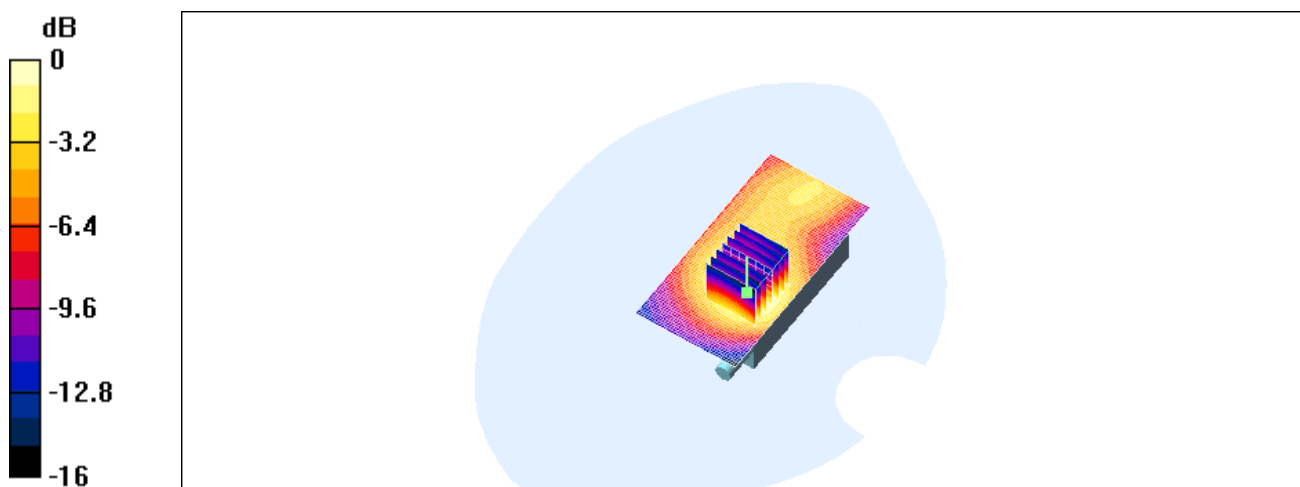
Body/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 12.6 V/m; Power Drift = 0.0 dB

Peak SAR (extrapolated) = 0.485 W/kg

SAR(1 g) = 0.304 mW/g; SAR(10 g) = 0.186 mW/g

Maximum value of SAR (measured) = 0.327 mW/g



0 dB = 0.327mW/g

SAR System Performance Verification

DUT: Dipole 900 MHz; Type: D900V2; Serial: SN:178

Program: 20041126

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:8.3

Medium: Head 900 MHz Medium parameters used (interpolated): $f = 900$ MHz; $\sigma = 0.924$ mho/m; $\epsilon_r = 40.3$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(6.34, 6.34, 6.34); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 130

Pin=250mw/Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 2.82 mW/g

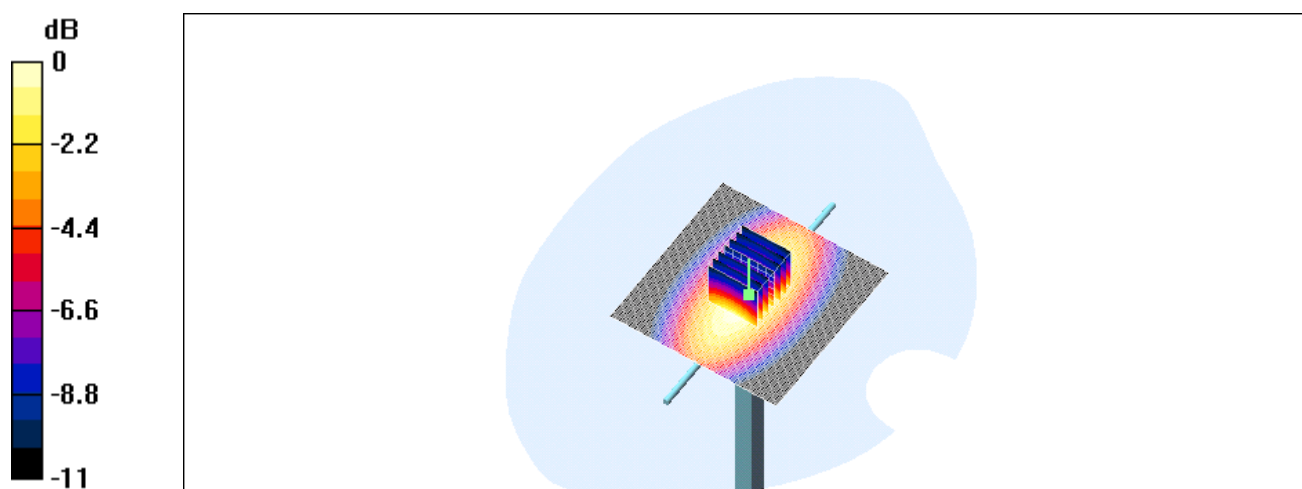
Pin=250mw/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 57 V/m; Power Drift = 0.001 dB

Peak SAR (extrapolated) = 3.94 W/kg

SAR(1 g) = 2.58 mW/g; SAR(10 g) = 1.66 mW/g

Maximum value of SAR (measured) = 2.82 mW/g



0 dB = 2.82mW/g

SAR System Performance Verification

DUT: Dipole 900 MHz; Type: D900V2; Serial: SN:178

Program: 20041125

Communication System: CW; Frequency: 900 MHz; Duty Cycle: 1:8.3

Medium: Muscle 900 MHz Medium parameters used (interpolated): $f = 900 \text{ MHz}$; $\sigma = 0.994 \text{ mho/m}$; $\epsilon_r = 53.2$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(6.04, 6.04, 6.04); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Pin=250mw/Area Scan (101x101x1): Measurement grid: $dx=10\text{mm}$, $dy=10\text{mm}$

Maximum value of SAR (interpolated) = 2.85 mW/g

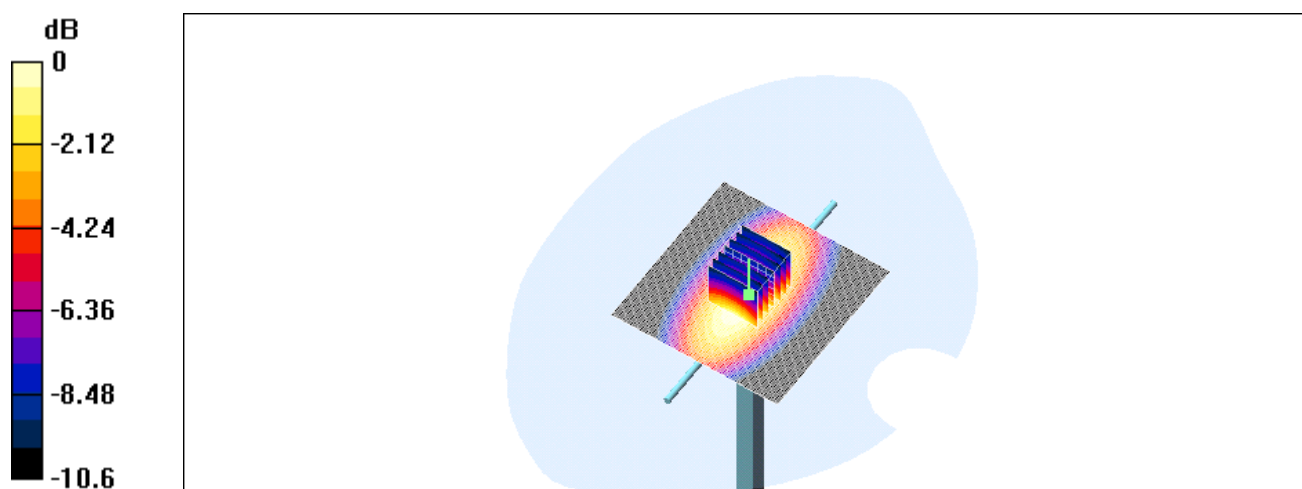
Pin=250mw/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Reference Value = 55.7 V/m; Power Drift = -0.1 dB

Peak SAR (extrapolated) = 3.73 W/kg

SAR(1 g) = 2.57 mW/g; SAR(10 g) = 1.68 mW/g

Maximum value of SAR (measured) = 2.78 mW/g



0 dB = 2.78mW/g

SAR System Performance Verification

Date/Time: 11/23/04 12:00:12

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d027

Program: 20041123

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:8.3

Medium: Head 1900MHz Medium parameters used (interpolated): $f = 1900$ MHz; $\sigma = 1.44$ mho/m; $\epsilon_r = 39.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(5.1, 5.1, 5.1); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.4 Build 3; Postprocessing SW: SEMCAD, V1.8 Build 130

Pin=250mw/Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 11.5 mW/g

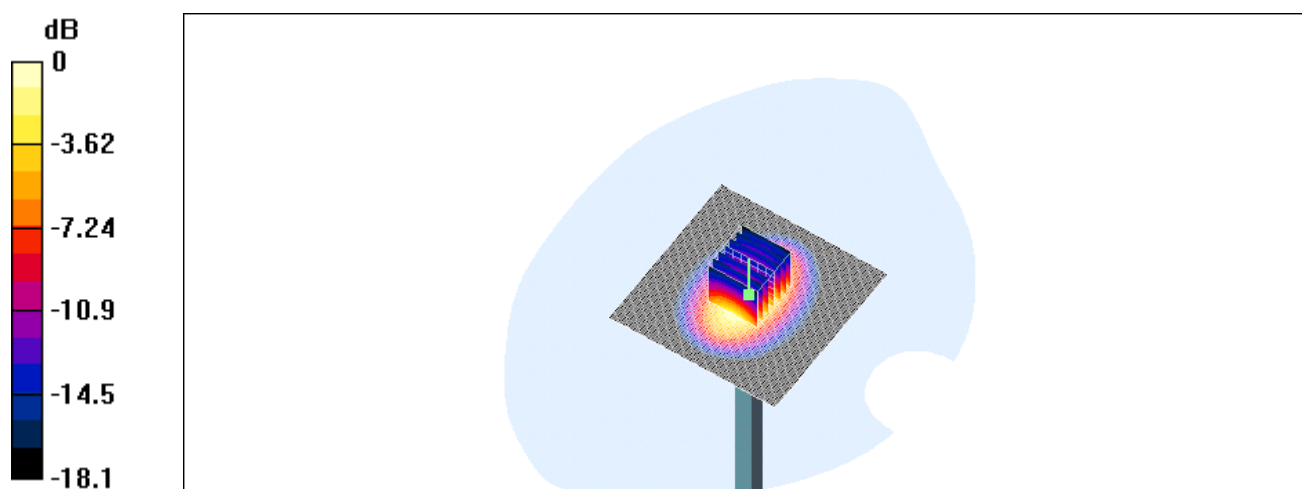
Pin=250mw/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93.8 V/m; Power Drift = -0.001 dB

Peak SAR (extrapolated) = 18.5 W/kg

SAR(1 g) = 10.1 mW/g; SAR(10 g) = 5.21 mW/g

Maximum value of SAR (measured) = 11.6 mW/g



0 dB = 11.6mW/g

SAR System Performance Verification

Date/Time: 11/24/04 10:23:11

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:5d027

Program: 20041124

Communication System: CW; Frequency: 1900 MHz; Duty Cycle: 1:8.3

Medium: M1800 & 1900 Medium parameters used (interpolated): $f = 1900$ MHz; $\sigma = 1.55$ mho/m; $\epsilon_r = 51.4$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 - SN1760; ConvF(4.43, 4.43, 4.43); Calibrated: 2004/2/17
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn547; Calibrated: 2004/2/10
- Phantom: SAM 12; Type: SAM 4.0; Serial: TP:1150
- Measurement SW: DASY4, V4.3 Build 22; Postprocessing SW: SEMCAD, V1.8 Build 130

Pin=250mw/Area Scan (101x101x1): Measurement grid: dx=10mm, dy=10mm

Maximum value of SAR (interpolated) = 11.4 mW/g

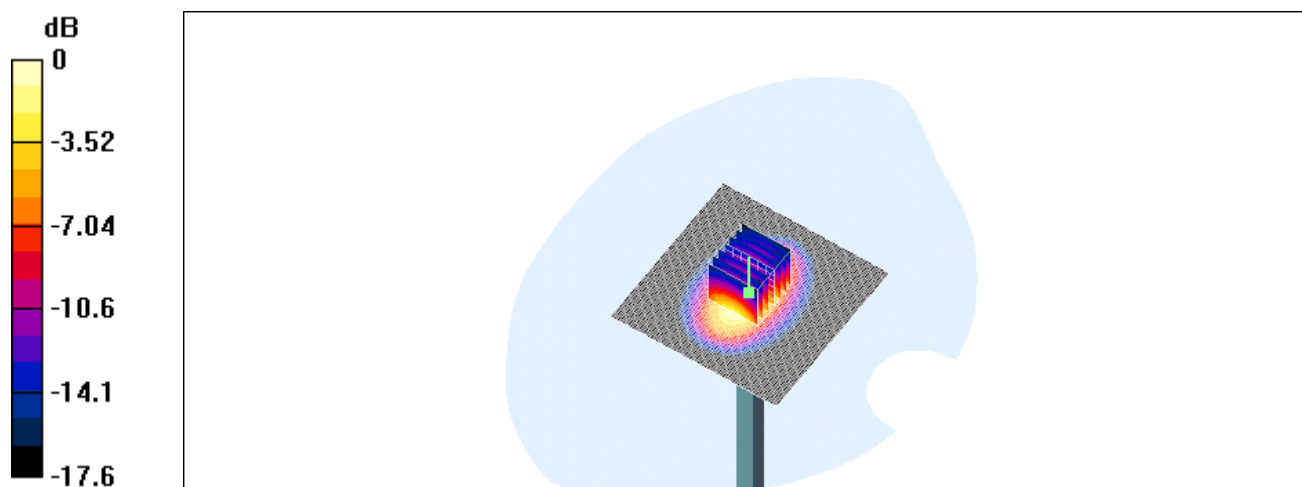
Pin=250mw/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 92.4 V/m; Power Drift = -0.0 dB

Peak SAR (extrapolated) = 17.1 W/kg

SAR(1 g) = 10 mW/g; SAR(10 g) = 5.23 mW/g

Maximum value of SAR (measured) = 11.4 mW/g



0 dB = 11.4mW/g

Appendix

Photographs of Test Setup



Fig.1 Photograph of the SAR measurement System

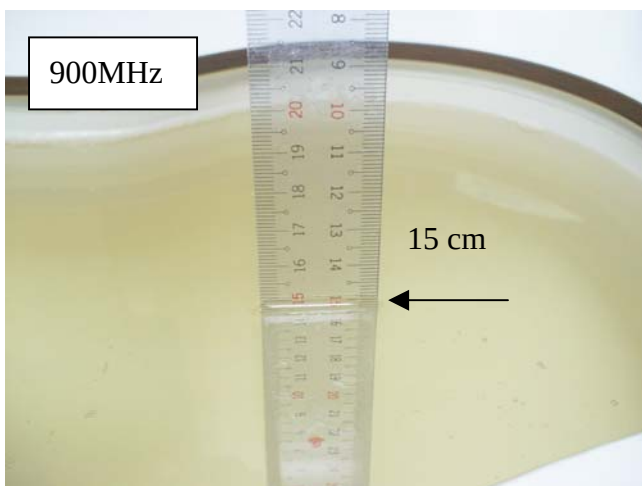


Fig.2 Photograph of the Tissue Simulant Fluid liquid depth 15cm for Left-head Side

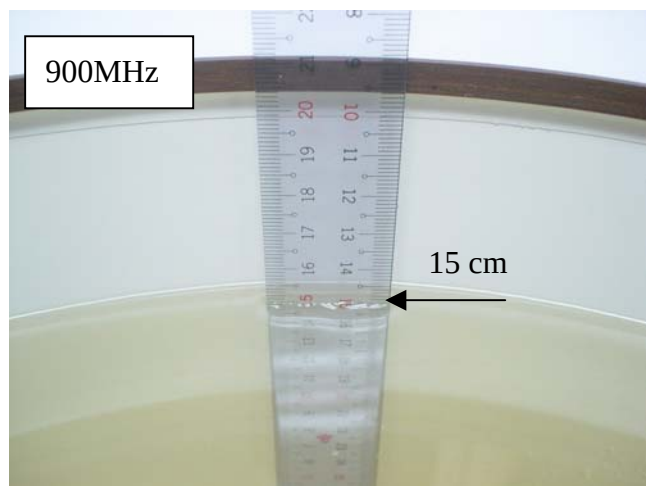


Fig.3 Photograph of the Tissue Simulant Fluid liquid depth 15cm for Flat (Body)

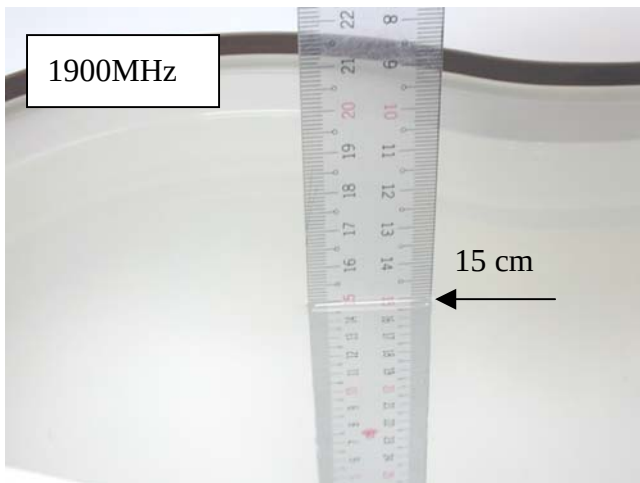


Fig.2 Photograph of the Tissue Simulant Fluid liquid depth 15cm for Right-head Side

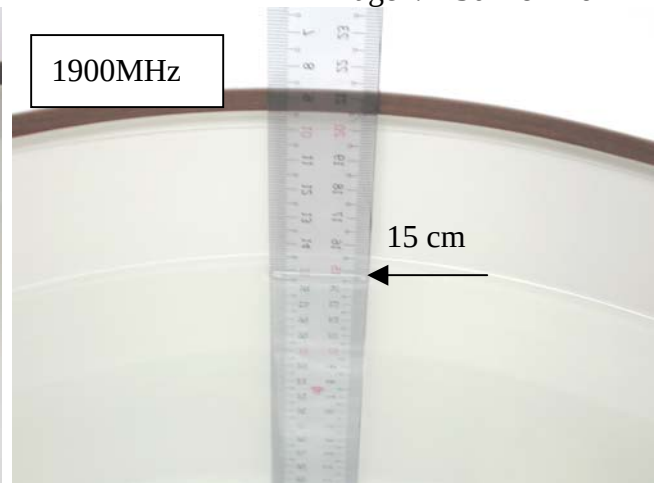


Fig.3 Photograph of the Tissue Simulant Fluid liquid depth 15cm for Flat (Body)

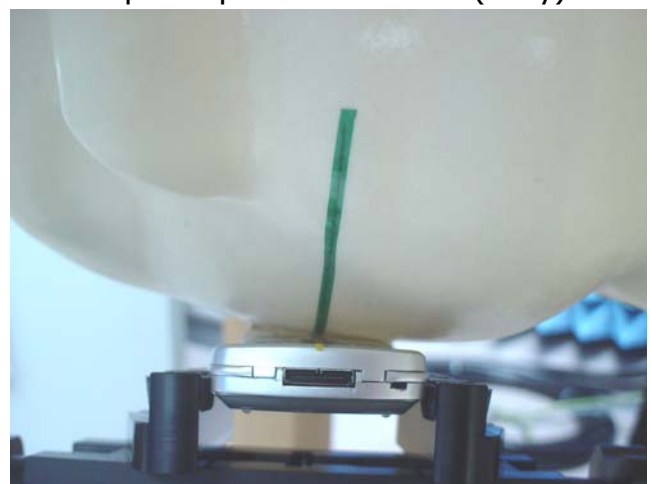
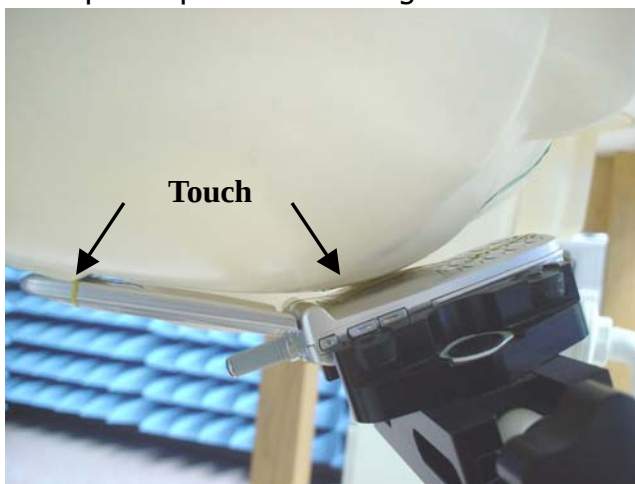


Fig.4 Right Head Section / Cheek-Touch Position

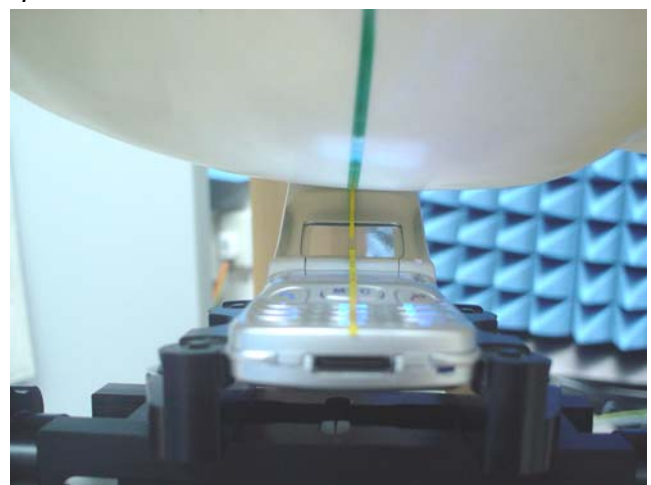
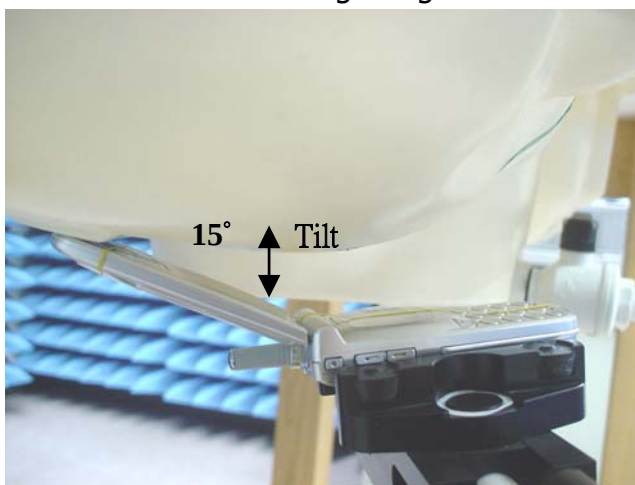


Fig.5 Right Head Section / Ear-Tilt Position(15°)

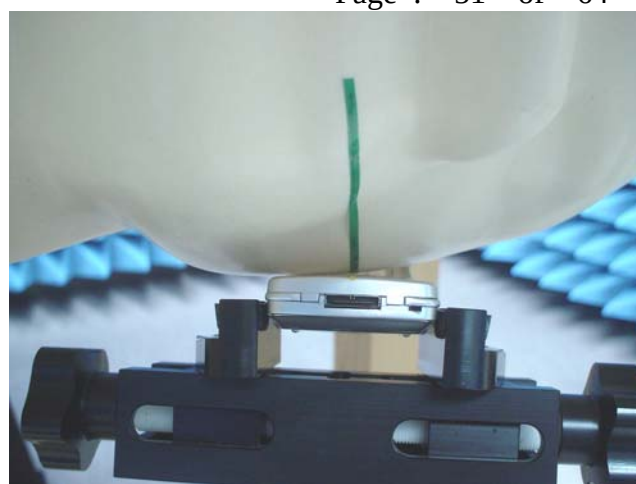
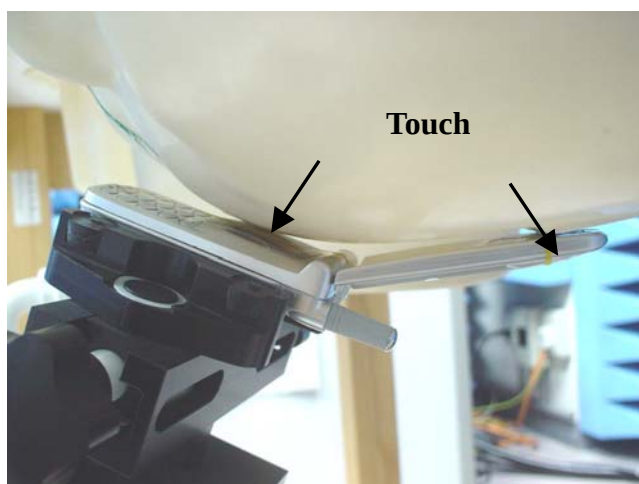


Fig.6 Left Head Section / Cheek-Touch Position

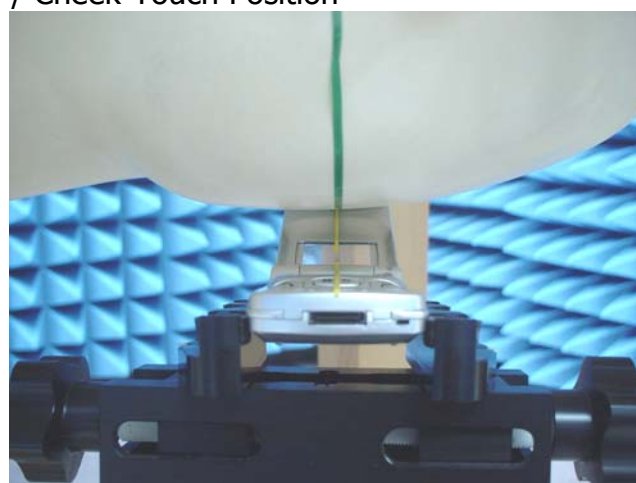
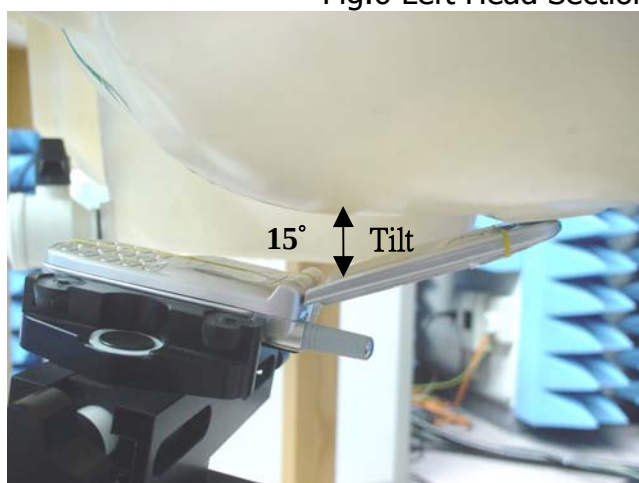


Fig.7 Left Head Section / Ear-Tilt Position(15°)

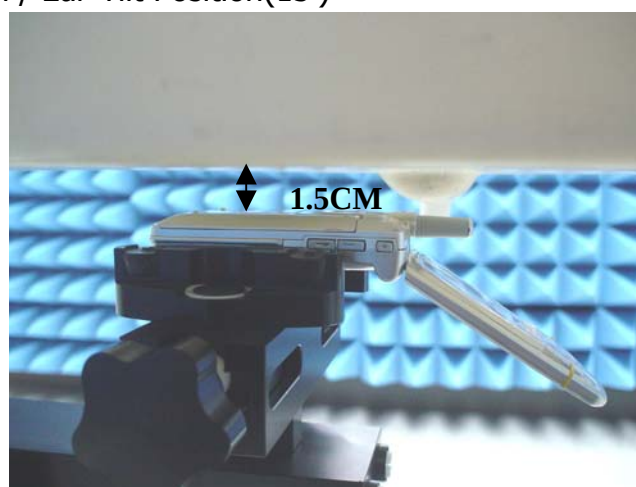


Fig.8 Body Worn with Headset Position

Photographs of the EUT



Fig.9 Front view of device



Fig.10 Back view of device



Fig.11 Open view of the Phone



Fig.12 Front view of the Phone connect with Charger

Photographs of the Battery



Fig.13 Front view of Battery



Fig.14 Back view of Battery

Probe Calibration certificate

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

Client **SGS Taiwan (Auden)**

CALIBRATION CERTIFICATE

Object(s) ET3DV6 - SN:1760

Calibration procedure(s) QA CAL-01.v2
Calibration procedure for dosimetric E-field probes

Calibration date: February 17, 2004

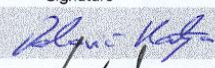
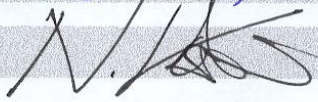
Condition of the calibrated item In Tolerance (according to the specific calibration document)

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

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

Calibration Equipment used (M&TE critical for calibration)

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

	Name	Function	Signature
Calibrated by:	Katja Pokovic	Laboratory Director	
Approved by:	Niels Kuster	Quality Manager	

Date issued: February 17, 2004

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

Probe ET3DV6

SN:1760

Manufactured:	November 12, 2002
Last calibrated:	March 7, 2003
Recalibrated:	February 17, 2004

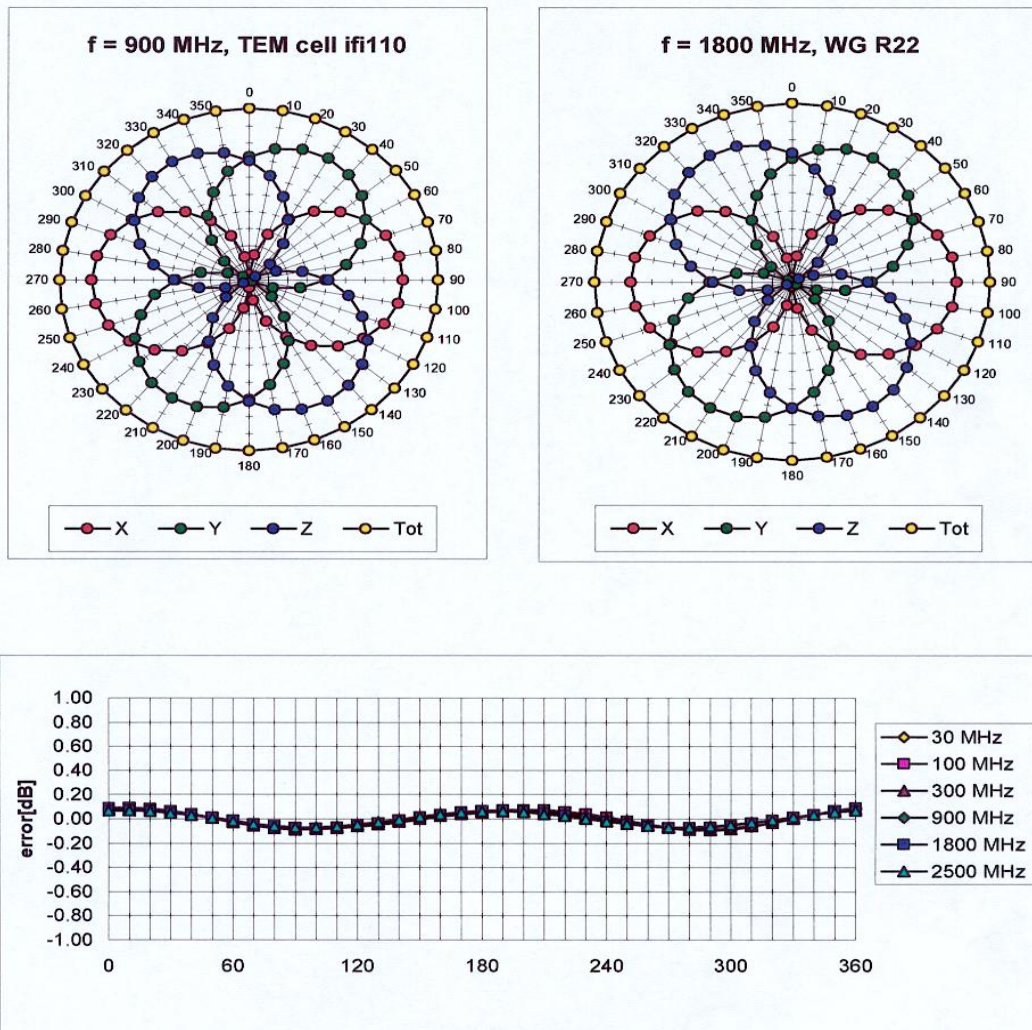
Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

ET3DV6 SN:1760

February 17, 2004

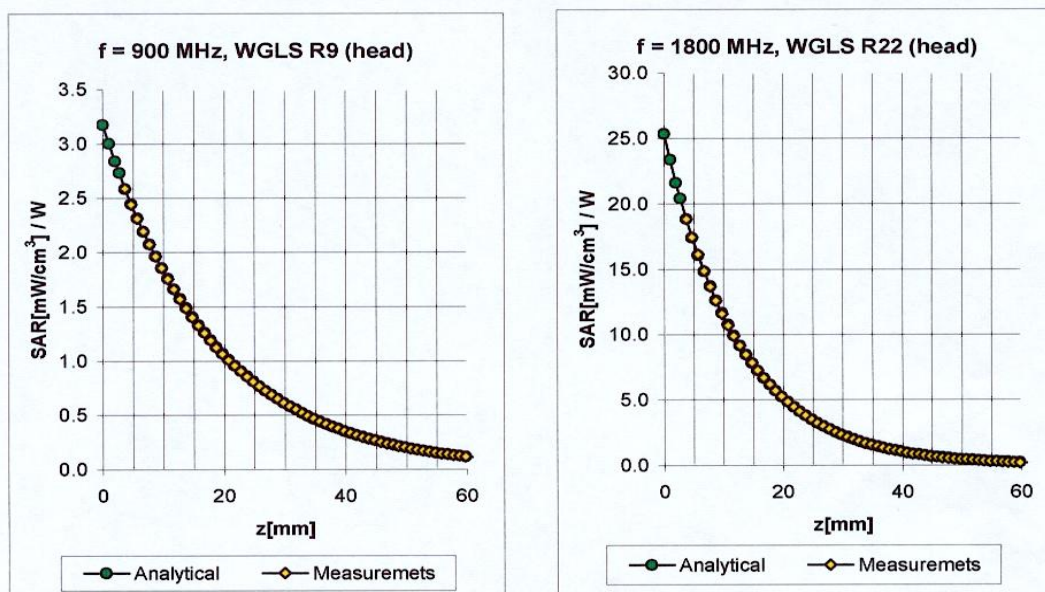
Receiving Pattern (ϕ) , $\theta = 0^\circ$



ET3DV6 SN:1760

February 17, 2004

Conversion Factor Assessment



f [MHz]	Validity [MHz] ^B	Tissue	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	800-1000	Head	41.5 ± 5%	0.97 ± 5%	0.51	1.96	6.34 ± 11.3% (k=2)
1800	1710-1890	Head	40.0 ± 5%	1.40 ± 5%	0.52	2.36	5.13 ± 10.9% (k=2)
1900	1805-1995	Head	40.0 ± 5%	1.40 ± 5%	0.54	2.42	5.10 ± 11.1% (k=2)
900	800-1000	Body	55.0 ± 5%	1.05 ± 5%	0.43	2.21	6.04 ± 11.3% (k=2)
1800	1710-1890	Body	53.3 ± 5%	1.52 ± 5%	0.60	2.56	4.56 ± 10.9% (k=2)
1900	1805-1995	Body	53.3 ± 5%	1.52 ± 5%	0.59	2.76	4.43 ± 11.1% (k=2)
2450	2400-2500	Body	52.7 ± 5%	1.95 ± 5%	1.47	1.45	4.18 ± 9.7% (k=2)

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

Uncertainty Analysis

DASY4 Uncertainty Budget According to IEEE P1528 [1]								
Error Description	Uncertainty value	Prob. Dist.	Div.	(c_i) 1g	(c_i) 10g	Std. Unc. (1g)	Std. Unc. (10g)	(v_i) v_{eff}
Measurement System								
Probe Calibration	$\pm 4.8\%$	N	1	1	1	$\pm 4.8\%$	$\pm 4.8\%$	∞
Axial Isotropy	$\pm 4.7\%$	R	$\sqrt{3}$	0.7	0.7	$\pm 1.9\%$	$\pm 1.9\%$	∞
Hemispherical Isotropy	$\pm 9.6\%$	R	$\sqrt{3}$	0.7	0.7	$\pm 3.9\%$	$\pm 3.9\%$	∞
Boundary Effects	$\pm 1.0\%$	R	$\sqrt{3}$	1	1	$\pm 0.6\%$	$\pm 0.6\%$	∞
Linearity	$\pm 4.7\%$	R	$\sqrt{3}$	1	1	$\pm 2.7\%$	$\pm 2.7\%$	∞
System Detection Limits	$\pm 1.0\%$	R	$\sqrt{3}$	1	1	$\pm 0.6\%$	$\pm 0.6\%$	∞
Readout Electronics	$\pm 1.0\%$	N	1	1	1	$\pm 1.0\%$	$\pm 1.0\%$	∞
Response Time	$\pm 0.8\%$	R	$\sqrt{3}$	1	1	$\pm 0.5\%$	$\pm 0.5\%$	∞
Integration Time	$\pm 2.6\%$	R	$\sqrt{3}$	1	1	$\pm 1.5\%$	$\pm 1.5\%$	∞
RF Ambient Conditions	$\pm 3.0\%$	R	$\sqrt{3}$	1	1	$\pm 1.7\%$	$\pm 1.7\%$	∞
Probe Positioner	$\pm 0.4\%$	R	$\sqrt{3}$	1	1	$\pm 0.2\%$	$\pm 0.2\%$	∞
Probe Positioning	$\pm 2.9\%$	R	$\sqrt{3}$	1	1	$\pm 1.7\%$	$\pm 1.7\%$	∞
Max. SAR Eval.	$\pm 1.0\%$	R	$\sqrt{3}$	1	1	$\pm 0.6\%$	$\pm 0.6\%$	∞
Test Sample Related								
Device Positioning	$\pm 2.9\%$	N	1	1	1	$\pm 2.9\%$	$\pm 2.9\%$	875
Device Holder	$\pm 3.6\%$	N	1	1	1	$\pm 3.6\%$	$\pm 3.6\%$	5
Power Drift	$\pm 5.0\%$	R	$\sqrt{3}$	1	1	$\pm 2.9\%$	$\pm 2.9\%$	∞
Phantom and Setup								
Phantom Uncertainty	$\pm 4.0\%$	R	$\sqrt{3}$	1	1	$\pm 2.3\%$	$\pm 2.3\%$	∞
Liquid Conductivity (target)	$\pm 5.0\%$	R	$\sqrt{3}$	0.64	0.43	$\pm 1.8\%$	$\pm 1.2\%$	∞
Liquid Conductivity (meas.)	$\pm 2.5\%$	N	1	0.64	0.43	$\pm 1.6\%$	$\pm 1.1\%$	∞
Liquid Permittivity (target)	$\pm 5.0\%$	R	$\sqrt{3}$	0.6	0.49	$\pm 1.7\%$	$\pm 1.4\%$	∞
Liquid Permittivity (meas.)	$\pm 2.5\%$	N	1	0.6	0.49	$\pm 1.5\%$	$\pm 1.2\%$	∞
Combined Std. Uncertainty						$\pm 10.3\%$	$\pm 10.0\%$	331
Expanded STD Uncertainty						$\pm 20.6\%$	$\pm 20.1\%$	

Phantom description

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'S 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'S 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. Bommelt

Schmid & Partner
Engineering AG

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

Thomas Kappeler

System Validation from Original equipment supplier **SPEAG Schmid** & Partner of GSM 900& 1900 for HSL & Muscle

Page 1 of 1

Date/Time: 02/17/04 13:19:33

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN5d027

Communication System: CW-1900; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: HSL 1900 MHz;

Medium parameters used: $f = 1900 \text{ MHz}$; $\sigma = 1.47 \text{ mho/m}$; $\epsilon_r = 38.8$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507; ConvF(4.96, 4.96, 4.96); Calibrated: 1/23/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn411; Calibrated: 1/16/2003
- Phantom: SAM with CRP - TP1006; Type: SAM 4.0; Serial: TP:1006;
- Measurement SW: DASY4, V4.2 Build 30; Postprocessing SW: SEMCAD, V1.8 Build 101

Pin = 250 mW; d = 10 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 93 V/m; Power Drift = 0.0 dB

Maximum value of SAR (interpolated) = 11.9 mW/g

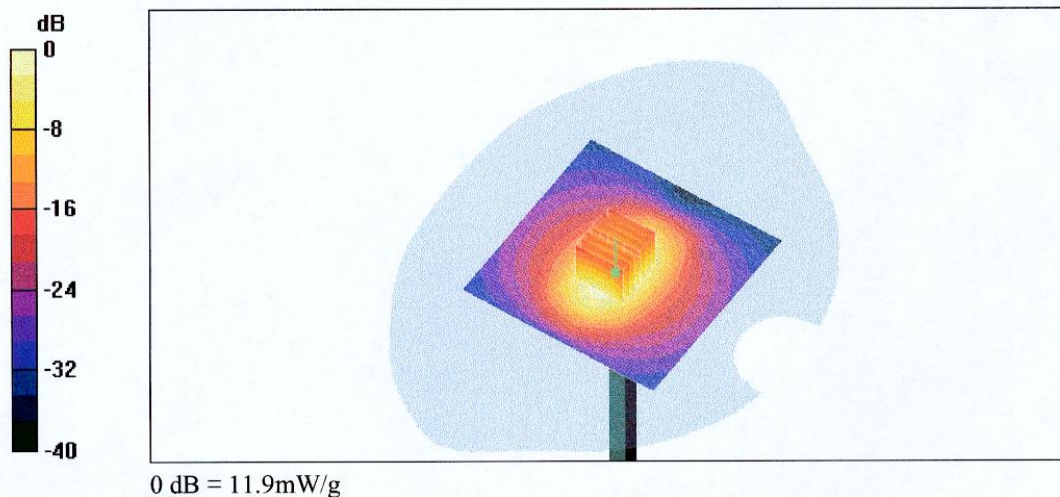
Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 93 V/m; Power Drift = 0.0 dB

Maximum value of SAR (measured) = 11.9 mW/g

Peak SAR (extrapolated) = 18.8 W/kg

SAR(1 g) = 10.5 mW/g; SAR(10 g) = 5.44 mW/g



Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN5d027

Communication System: CW-1900; Frequency: 1900 MHz; Duty Cycle: 1:1

Medium: Muscle 1900 MHz

Medium parameters used: $f = 1900$ MHz; $\sigma = 1.58$ mho/m; $\epsilon_r = 52.5$; $\rho = 1000$ kg/m³

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507; ConvF(4.57, 4.57, 4.57); Calibrated: 1/23/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 - SN411; Calibrated: 1/16/2003
- Phantom: SAM with CRP - TP1006; Type: SAM 4.0; Serial: TP:1006
- Measurement SW: DASY4, V4.2 Build 25; Postprocessing SW: SEMCAD, V2.0 Build 19

Pin = 250 mW; d = 10 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 92.5 V/m

Power Drift = 0.002 dB

Maximum value of SAR = 12.1 mW/g

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

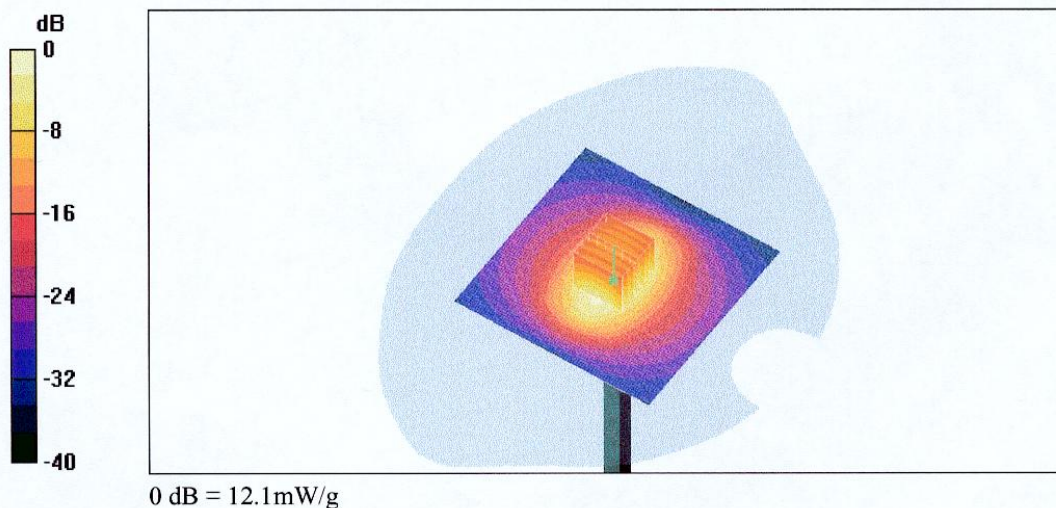
Peak SAR (extrapolated) = 19.3 W/kg

SAR(1 g) = 10.7 mW/g; SAR(10 g) = 5.6 mW/g

Reference Value = 92.5 V/m

Power Drift = 0.002 dB

Maximum value of SAR = 12.1 mW/g



Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN178

Communication System: CW-900; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: HSL 900 MHz

Medium parameters used: $f = 900 \text{ MHz}$; $\sigma = 0.95 \text{ mho/m}$; $\epsilon_r = 41.4$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507; ConvF(6.18, 6.18, 6.18); Calibrated: 1/23/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 - SN411; Calibrated: 1/16/2003
- Phantom: SAM with CRP - TP1006; Type: SAM 4.0; Serial: TP:1006
- Measurement SW: DASY4, V4.2 Build 25; Postprocessing SW: SEMCAD, V1.8 Build 93

Pin = 250 mW; d = 15 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm

Reference Value = 56.9 V/m

Power Drift = 0.002 dB

Maximum value of SAR = 2.88 mW/g

Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm

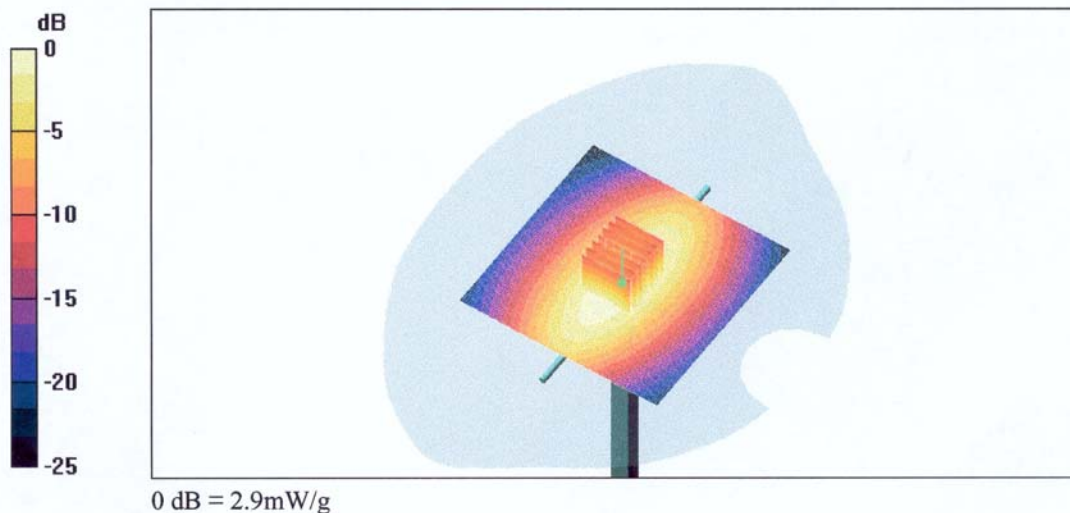
Peak SAR (extrapolated) = 4.11 W/kg

SAR(1 g) = 2.68 mW/g; SAR(10 g) = 1.72 mW/g

Reference Value = 56.9 V/m

Power Drift = 0.002 dB

Maximum value of SAR = 2.9 mW/g



Date/Time: 02/10/04 12:11:27

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 900 MHz; Type: D900V2; Serial: D900V2 - SN178

Communication System: CW-900; Frequency: 900 MHz; Duty Cycle: 1:1

Medium: Muscle 900 MHz

Medium parameters used: $f = 900 \text{ MHz}$; $\sigma = 1.05 \text{ mho/m}$; $\epsilon_r = 55$; $\rho = 1000 \text{ kg/m}^3$

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507; ConvF(6.02, 6.02, 6.02); Calibrated: 1/23/2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 - SN411; Calibrated: 1/16/2003
- Phantom: SAM with CRP - TP1006; Type: SAM 4.0; Serial: TP:1006
- Measurement SW: DASY4, V4.2 Build 25; Postprocessing SW: SEMCAD, V2.0 Build 19

Pin = 250 mW; d = 15 mm/Area Scan (81x81x1): Measurement grid: $dx=15\text{mm}$, $dy=15\text{mm}$

Reference Value = 55.2 V/m

Power Drift = -0.0 dB

Maximum value of SAR = 2.98 mW/g

Pin = 250 mW; d = 15 mm/Zoom Scan (7x7x7)/Cube 0: Measurement grid: $dx=5\text{mm}$, $dy=5\text{mm}$, $dz=5\text{mm}$

Peak SAR (extrapolated) = 4.06 W/kg

SAR(1 g) = 2.74 mW/g; SAR(10 g) = 1.77 mW/g

Reference Value = 55.2 V/m

Power Drift = -0.0 dB

Maximum value of SAR = 2.96 mW/g

