



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/20

**Body\_WCDMA Ch9400\_EUT Rear Face Touch\_RMC12.2K+HSDPA\_Open Mode\_CPT\_Simplo**

**DUT: 780709-01**

Communication System: WCDMA; Frequency: 1880 MHz; Duty Cycle: 1:1

Medium: MSL\_1900 Medium parameters used:  $f = 1880$  MHz;  $\sigma = 1.47$  mho/m;  $\epsilon_r = 55$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C ; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.68, 4.68, 4.68); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch9400/Area Scan (91x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.19 mW/g

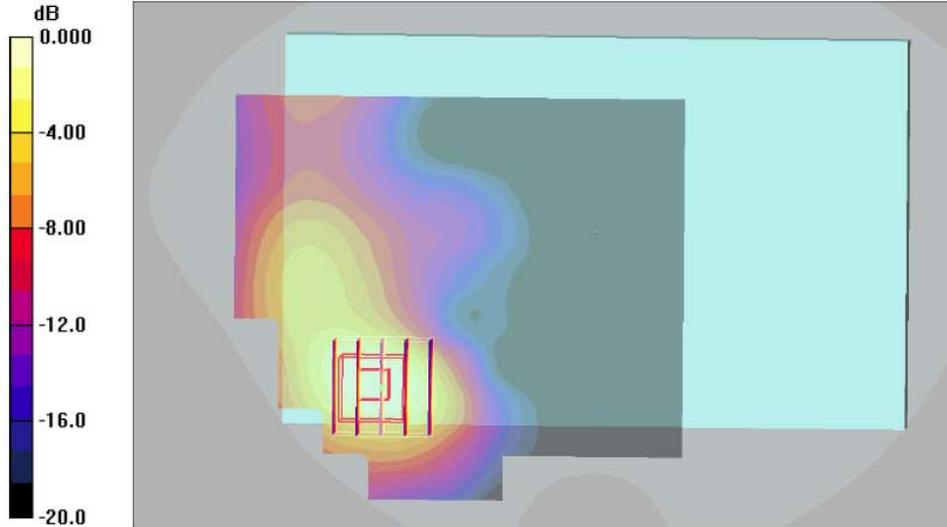
**Ch9400/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.28 V/m; Power Drift = 0.098 dB

Peak SAR (extrapolated) = 1.74 W/kg

**SAR(1 g) = 1.05 mW/g; SAR(10 g) = 0.593 mW/g**

Maximum value of SAR (measured) = 1.15 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/20

Body\_802.11b Ch6\_EUT Top Side Touch\_Close Mode\_CPT\_Simplo

DUT: 780709-01

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

Medium: MSL\_2450 Medium parameters used: f = 2437 MHz;  $\sigma = 1.95$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.0 °C ; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.02, 4.02, 4.02); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Ch6/Area Scan (41x161x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.055 mW/g

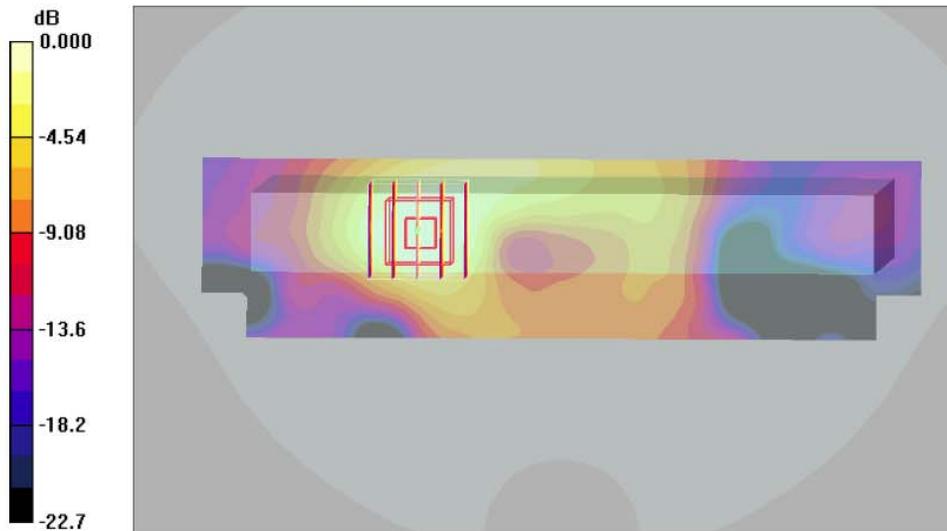
Ch6/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.94 V/m; Power Drift = -0.065 dB

Peak SAR (extrapolated) = 0.095 W/kg

SAR(1 g) = 0.047 mW/g; SAR(10 g) = 0.026 mW/g

Maximum value of SAR (measured) = 0.049 mW/g



0 dB = 0.049mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/20

**Body\_802.11g Ch6\_EUT Top Side Touch\_Close Mode\_CPT\_Simplo**

**DUT: 780709-01**

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

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.95$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C ; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.02, 4.02, 4.02); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 55; Postprocessing SW: SEMCAD, V1.8 Build 176

**Ch6/Area Scan (41x161x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.016 mW/g

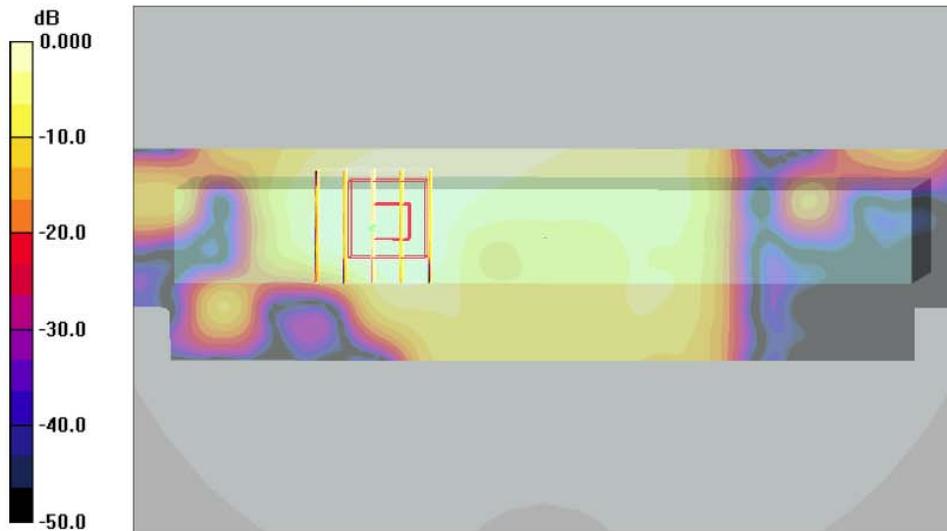
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.06 V/m; Power Drift = -0.134 dB

Peak SAR (extrapolated) = 0.029 W/kg

**SAR(1 g) = 0.013 mW/g; SAR(10 g) = 0.00699 mW/g**

Maximum value of SAR (measured) = 0.014 mW/g



0 dB = 0.014mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/20

**Body\_802.11b Ch6\_EUT Bottom Side Touch\_Close Mode\_CPT\_Simplo**

**DUT: 780709-01**

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

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.95$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C ; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.02, 4.02, 4.02); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (41x161x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.007 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.04 V/m; Power Drift = -0.101 dB

Peak SAR (extrapolated) = 0.014 W/kg

**SAR(1 g) = 0.00291 mW/g; SAR(10 g) = 0.000767 mW/g**

Maximum value of SAR (measured) = 0.007 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.04 V/m; Power Drift = -0.101 dB

Peak SAR (extrapolated) = 0.009 W/kg

**SAR(1 g) = 0.00194 mW/g; SAR(10 g) = 0.000467 mW/g**

Maximum value of SAR (measured) = 0.003 mW/g



0 dB = 0.003mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/20

**Body\_802.11b Ch6\_EUT Front Face Touch\_Close Mode\_CPT\_Simplo**

**DUT: 780709-01**

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

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.95$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.0 °C ; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.02, 4.02, 4.02); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (131x171x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.033 mW/g

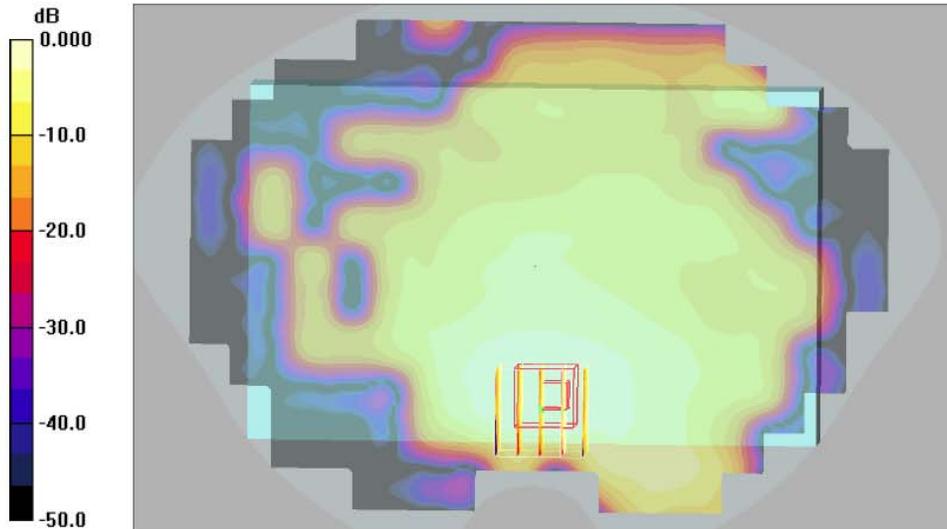
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 1.98 V/m; Power Drift = 0.191 dB

Peak SAR (extrapolated) = 0.123 W/kg

**SAR(1 g) = 0.024 mW/g; SAR(10 g) = 0.013 mW/g**

Maximum value of SAR (measured) = 0.026 mW/g



0 dB = 0.026mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/20

**Body\_802.11b Ch6\_EUT Rear Face Touch\_Close Mode\_CPT\_Simple**

**DUT: 780709-01**

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

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.95$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C ; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.02, 4.02, 4.02); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (131x171x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.055 mW/g

**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.05 V/m; Power Drift = -0.140 dB

Peak SAR (extrapolated) = 0.095 W/kg

**SAR(1 g) = 0.046 mW/g; SAR(10 g) = 0.025 mW/g**

Maximum value of SAR (measured) = 0.049 mW/g

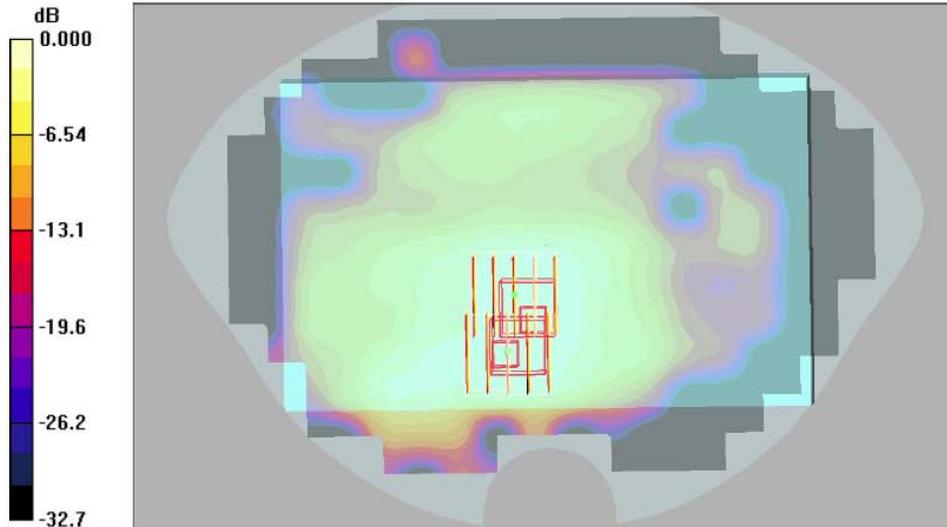
**Ch6/Zoom Scan (5x5x7)/Cube 1:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 4.05 V/m; Power Drift = -0.140 dB

Peak SAR (extrapolated) = 0.068 W/kg

**SAR(1 g) = 0.038 mW/g; SAR(10 g) = 0.023 mW/g**

Maximum value of SAR (measured) = 0.041 mW/g



0 dB = 0.041mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/20

Body\_802.11b Ch6\_EUT Right Side Touch\_Close Mode\_CPT\_Simplo

DUT: 780709-01

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

Medium: MSL\_2450 Medium parameters used: f = 2437 MHz;  $\sigma = 1.95 \text{ mho/m}$ ;  $\epsilon_r = 53$ ;  $\rho = 1000 \text{ kg/m}^3$

Ambient Temperature : 23.1 °C ; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.02, 4.02, 4.02); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Ch6/Area Scan (41x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.002 mW/g

Ch6/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.688 V/m; Power Drift = 0.145 dB

Peak SAR (extrapolated) = 0.004 W/kg

SAR(1 g) = 0.000121 mW/g; SAR(10 g) = 5.3e-005 mW/g

Maximum value of SAR (measured) = 0.004 mW/g

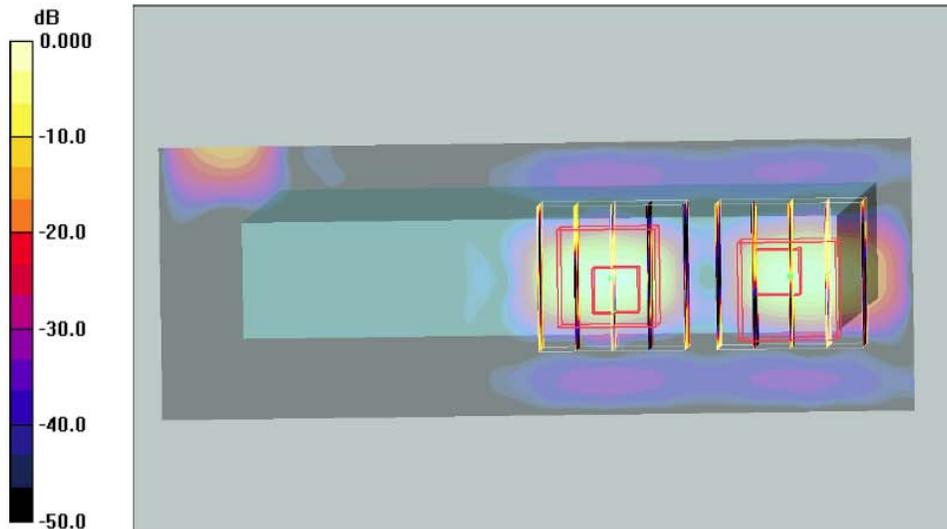
Ch6/Zoom Scan (5x5x7)/Cube 1: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.688 V/m; Power Drift = 0.145 dB

Peak SAR (extrapolated) = 0.004 W/kg

SAR(1 g) = 0.000536 mW/g; SAR(10 g) = 7.92e-005 mW/g

Maximum value of SAR (measured) = 0.003 mW/g



0 dB = 0.003mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/20

**Body\_802.11b Ch6\_EUT Left Side Touch\_Close Mode\_CPT\_Simplo**

**DUT: 780709-01**

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

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.95$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C ; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.02, 4.02, 4.02); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (41x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.009 mW/g

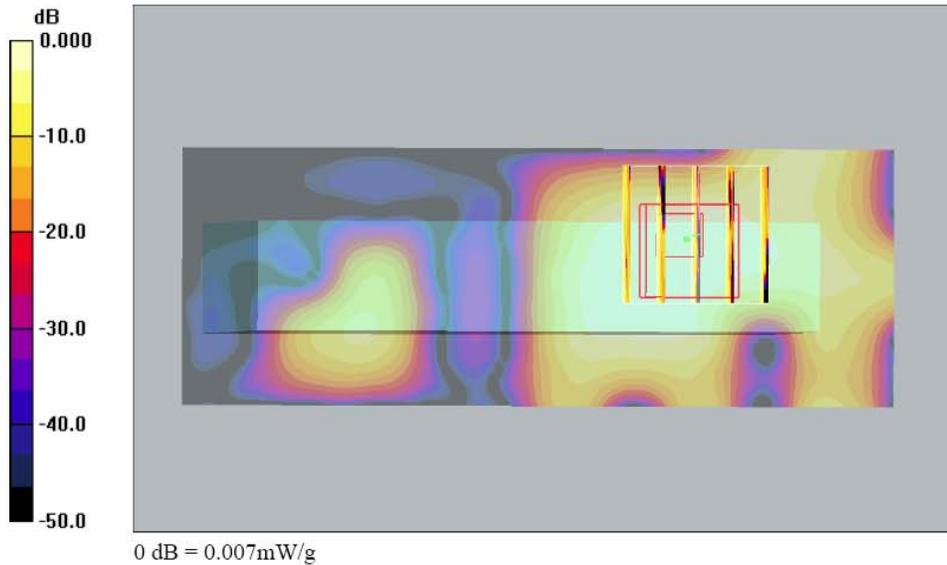
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 0.916 V/m; Power Drift = 0.127 dB

Peak SAR (extrapolated) = 0.016 W/kg

**SAR(1 g) = 0.00596 mW/g; SAR(10 g) = 0.0025 mW/g**

Maximum value of SAR (measured) = 0.007 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/20

**Body\_802.11b Ch6\_EUT Rear Face Touch\_Open Mode\_CPT\_Simple**

**DUT: 780709-01**

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

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.95$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C ; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.02, 4.02, 4.02); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (131x171x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.245 mW/g

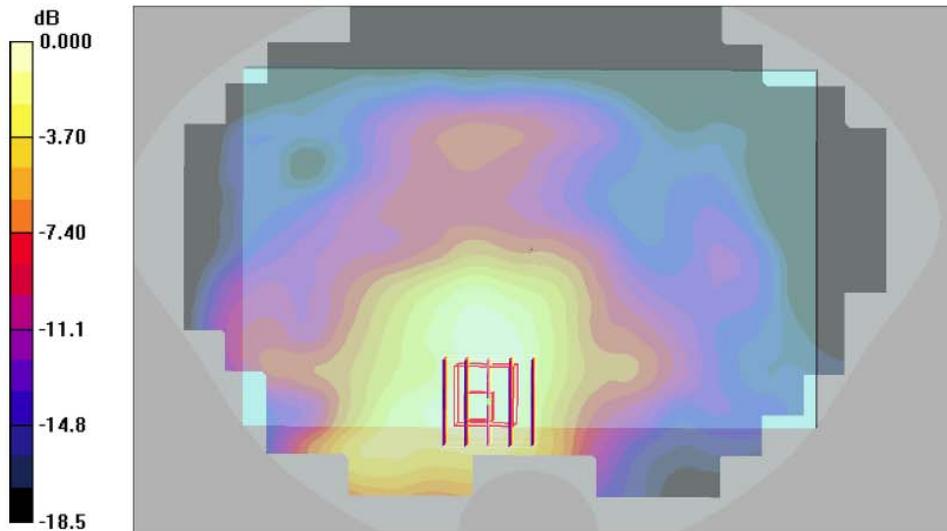
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.55 V/m; Power Drift = 0.142 dB

Peak SAR (extrapolated) = 0.453 W/kg

**SAR(1 g) = 0.226 mW/g; SAR(10 g) = 0.130 mW/g**

Maximum value of SAR (measured) = 0.237 mW/g



0 dB = 0.237mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date : 2007/9/20

**Body\_802.11b Ch6\_EUT Rear Face Touch\_Open Mode\_CPT\_Simplo\_BT On**

**DUT: 780709-01**

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

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.95$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C ; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.02, 4.02, 4.02); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch6/Area Scan (61x121x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.248 mW/g

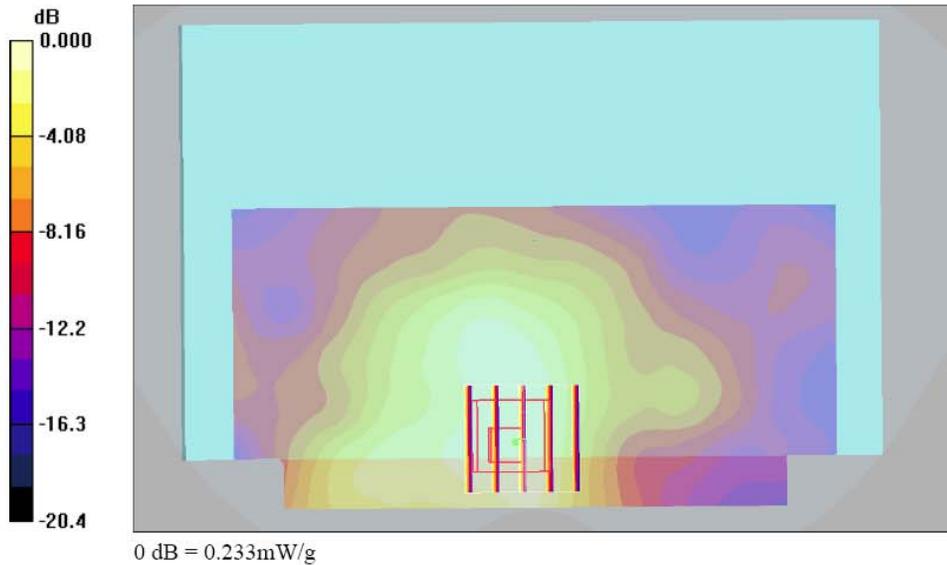
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.23 V/m; Power Drift = -0.086 dB

Peak SAR (extrapolated) = 0.430 W/kg

**SAR(1 g) = 0.223 mW/g; SAR(10 g) = 0.131 mW/g**

Maximum value of SAR (measured) = 0.233 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/20

**Body\_802.11b Ch6\_EUT Rear Face Touch\_Open Mode\_Toppoly\_Dynapack**

**DUT: 780709-01**

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

Medium: MSL\_2450 Medium parameters used:  $f = 2437$  MHz;  $\sigma = 1.92$  mho/m;  $\epsilon_r = 55$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.8 °C ; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.02, 4.02, 4.02); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 176

**Ch6/Area Scan (91x111x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.232 mW/g

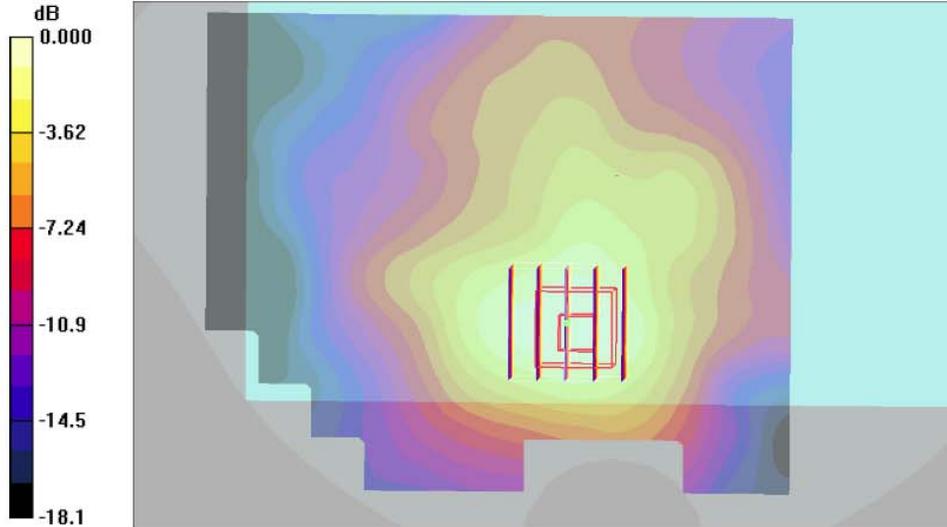
**Ch6/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 7.28 V/m; Power Drift = -0.082 dB

Peak SAR (extrapolated) = 0.430 W/kg

**SAR(1 g) = 0.209 mW/g; SAR(10 g) = 0.118 mW/g**

Maximum value of SAR (measured) = 0.217 mW/g



0 dB = 0.217mW/g



Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/5

Body\_GSM850 Ch189\_EUT Left Side Touch\_GPRS10\_Close Mode\_CPT\_Simplo\_2D

DUT: 780709-01

Communication System: GSM850; Frequency: 836.4 MHz; Duty Cycle: 1:4

Medium: MSL\_850 Medium parameters use: f = 836.4 MHz;  $\sigma = 0.97$  mho/m;  $\epsilon_r = 55$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C ; Liquid Temperature : 21.5 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1788; ConvF(6.33, 6.33, 6.33); Calibrated: 2006/9/19
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Ch189/Area Scan (41x11x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.806 mW/g

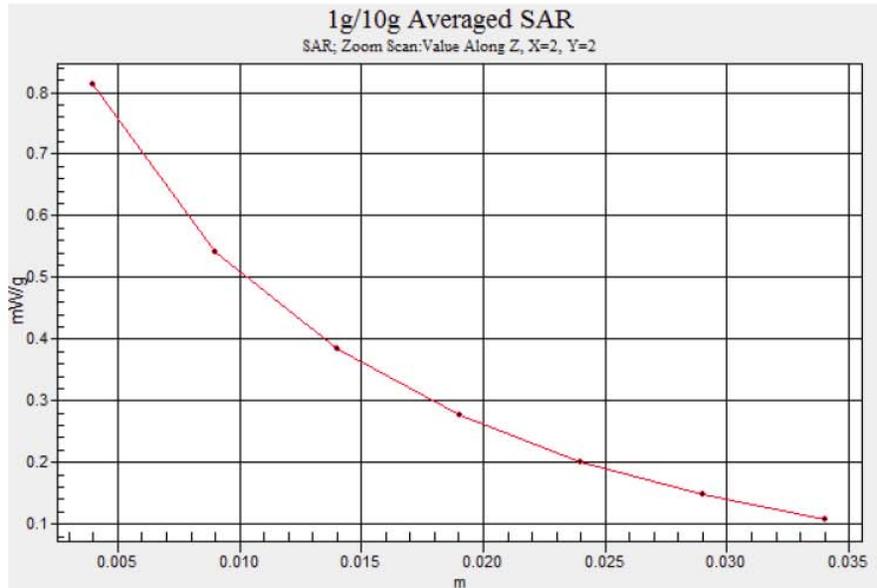
Ch189/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 29.5 V/m; Power Drift = -0.010 dB

Peak SAR (extrapolated) = 1.13 W/kg

SAR(1 g) = 0.753 mW/g; SAR(10 g) = 0.502 mW/g

Maximum value of SAR (measured) = 0.813 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date : 2007/9/22

**Body\_PCS Ch810\_EUT Rear Face Touch\_GPRS10\_Open Mode\_CPT LCD\_Simplo Battery\_2D**

**DUT: 780709-01**

Communication System: PCS; Frequency: 1909.8 MHz; Duty Cycle: 1:4

Medium: MSL\_1900 Medium parameters used:  $f = 1910$  MHz;  $\sigma = 1.52$  mho/m;  $\epsilon_r = 50.8$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 23.0 °C; Liquid Temperature : 21.6 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.68, 4.68, 4.68); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch810/Area Scan (81x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.35 mW/g

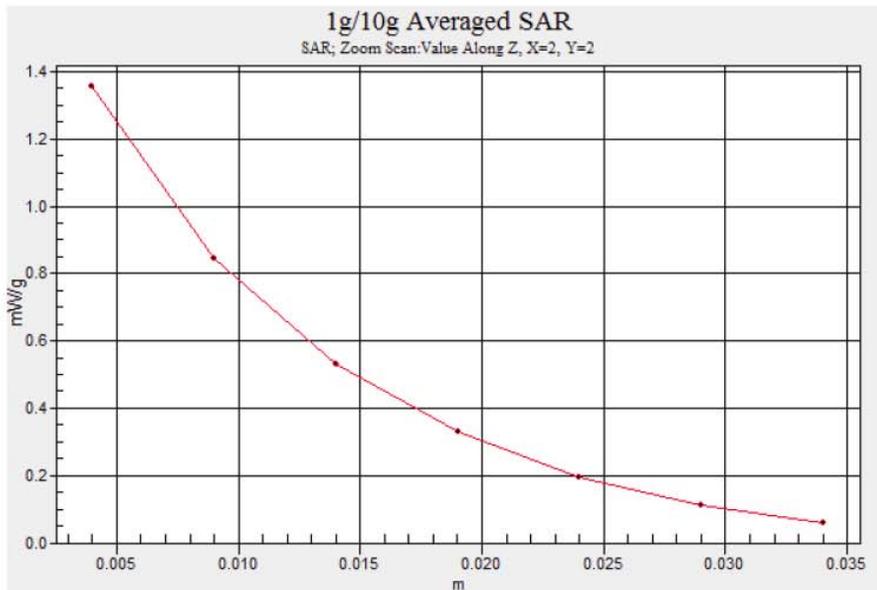
**Ch810/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 2.92 V/m; Power Drift = 0.018 dB

Peak SAR (extrapolated) = 2.00 W/kg

**SAR(1 g) = 1.23 mW/g; SAR(10 g) = 0.679 mW/g**

Maximum value of SAR (measured) = 1.35 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/12

Body\_WCDMA Ch4182\_EUT Left Side Touch\_RMC12.2k\_Close Mode\_CPT\_Simplo\_2D

DUT: 780709-01

Communication System: WCDMA; Frequency: 836.4 MHz; Duty Cycle: 1:1

Medium: MSL\_850 Medium parameters used: f = 836.4 MHz;  $\sigma = 0.969$  mho/m;  $\epsilon_r = 55$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.8 °C; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(6.1, 6.1, 6.1); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-A; Type: QD 000 P40 C; Serial: TP-1303
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Ch4182/Area Scan (41x111x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.621 mW/g

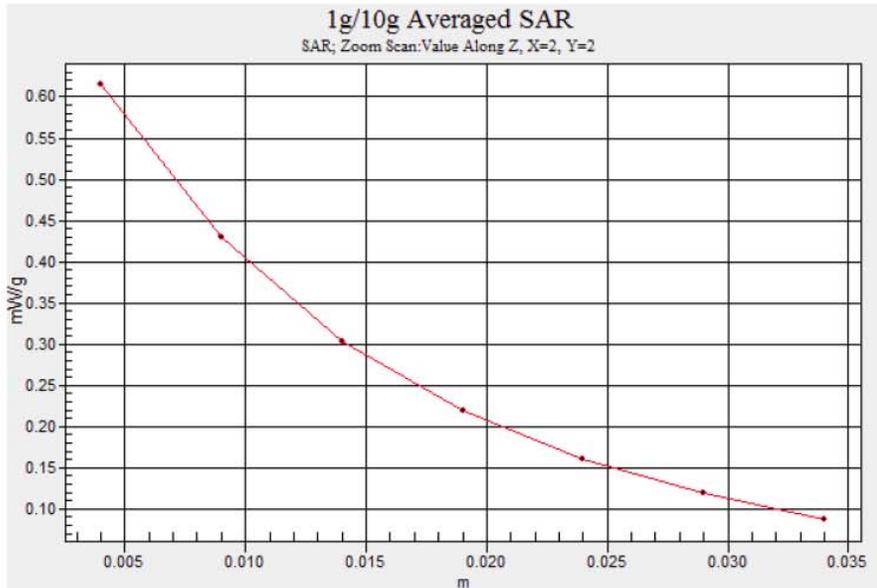
Ch4182/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 25.1 V/m; Power Drift = -0.084 dB

Peak SAR (extrapolated) = 0.823 W/kg

SAR(1 g) = 0.577 mW/g; SAR(10 g) = 0.391 mW/g

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





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/20

**Body\_WCDMA Ch9538\_EUT Rear Face Touch\_RMC384K\_Open Mode\_CPT\_Simplo\_2D**

**DUT: 780709-01**

Communication System: WCDMA; Frequency: 1907.6 MHz; Duty Cycle: 1:1

Medium: MSL\_1900 Medium parameters used:  $f = 1908$  MHz;  $\sigma = 1.53$  mho/m;  $\epsilon_r = 54.4$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.8 °C ; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.68, 4.68, 4.68); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

**Ch9538/Area Scan (91x101x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 1.38 mW/g

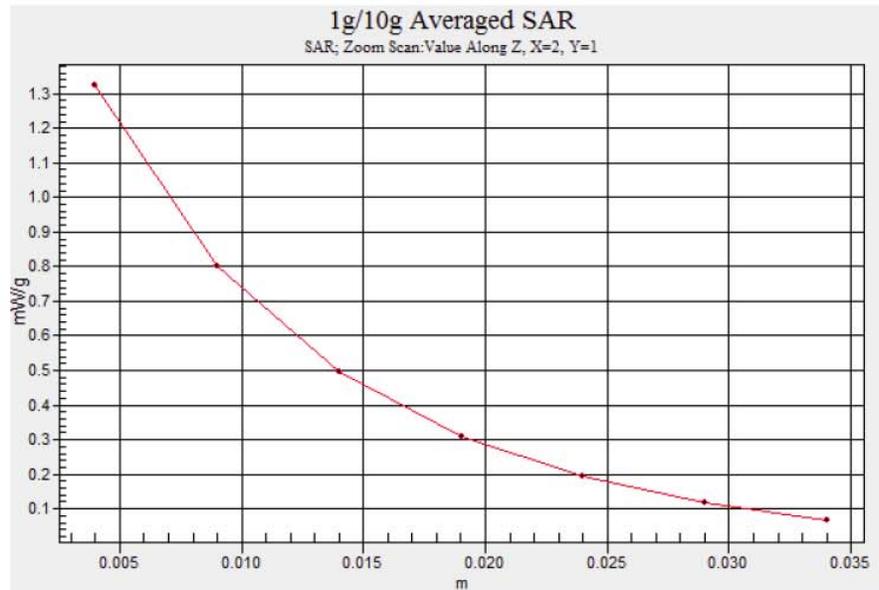
**Ch9538/Zoom Scan (5x5x7)/Cube 0:** Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 3.22 V/m; Power Drift = -0.130 dB

Peak SAR (extrapolated) = 2.03 W/kg

**SAR(1 g) = 1.22 mW/g; SAR(10 g) = 0.680 mW/g**

Maximum value of SAR (measured) = 1.32 mW/g





Test Laboratory: Sporton International Inc. SAR Testing Lab

Date: 2007/9/20

Body\_802.11b Ch6\_EUT Rear Face Touch\_Open Mode\_CPT\_Simplo\_2D

DUT: 780709-01

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

Medium: MSL\_2450 Medium parameters used: f = 2437 MHz;  $\sigma = 1.95$  mho/m;  $\epsilon_r = 53$ ;  $\rho = 1000$  kg/m<sup>3</sup>

Ambient Temperature : 22.9 °C ; Liquid Temperature : 21.4 °C

DASY4 Configuration:

- Probe: ET3DV6 - SN1787; ConvF(4.02, 4.02, 4.02); Calibrated: 2007/8/28
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn577; Calibrated: 2006/11/21
- Phantom: SAM-B; Type: QD 000 P40 C; Serial: TP-1383
- Measurement SW: DASY4, V4.7 Build 53; Postprocessing SW: SEMCAD, V1.8 Build 172

Ch6/Area Scan (131x171x1): Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 0.245 mW/g

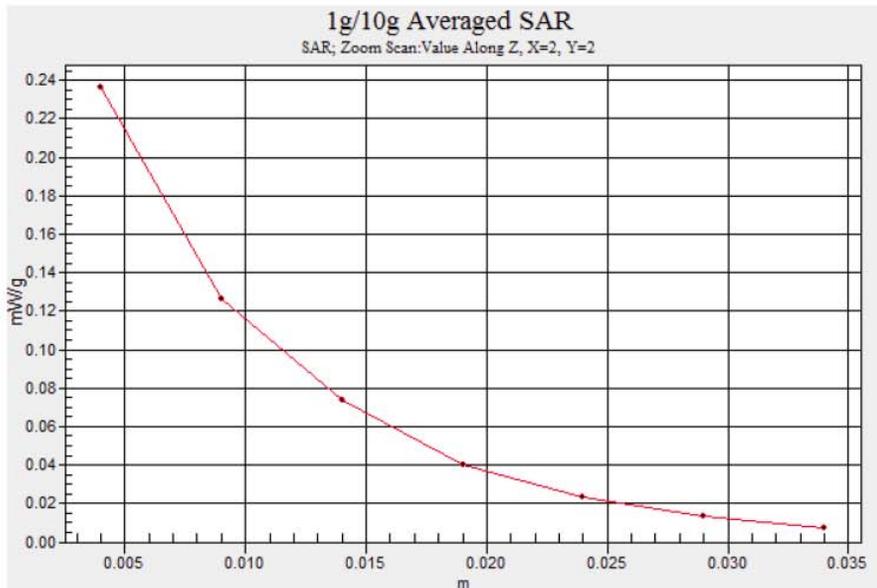
Ch6/Zoom Scan (5x5x7)/Cube 0: Measurement grid: dx=8mm, dy=8mm, dz=5mm

Reference Value = 5.55 V/m; Power Drift = 0.142 dB

Peak SAR (extrapolated) = 0.453 W/kg

SAR(1 g) = 0.226 mW/g; SAR(10 g) = 0.130 mW/g

Maximum value of SAR (measured) = 0.237 mW/g





Appendix C – Calibration Data

Calibration Laboratory of Schmid & Partner Engineering AG



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Accreditation No.: SCS 108

Client Sporton (Auden)

Certificate No: D835V2-499\_Mar06

CALIBRATION CERTIFICATE

Object: D835V2 - SN: 499
Calibration procedure(s): QA CAL-05.v6
Calibration procedure for dipole validation kits
Calibration date: March 15, 2006
Condition of the calibrated item: In Tolerance

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

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Table with 4 columns: Primary Standards, ID #, Cal Date (Calibrated by, Certificate No.), Scheduled Calibration. Includes items like Power meter EPM-442A, Power sensor HP 8481A, Reference 20 dB Attenuator, etc.

Calibrated by: Judith Müller, Laboratory Technician
Approved by: Katja Pokovic, Technical Manager

Issued: March 16, 2006

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



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



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Multilateral Agreement for the recognition of calibration certificates

Accreditation No.: SCS 108

**Glossary:**

TSL tissue simulating liquid  
ConvF sensitivity in TSL / NORM x,y,z  
N/A not applicable or not measured

**Calibration is Performed According to the Following Standards:**

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
- b) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001
- c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

**Additional Documentation:**

- d) DASY4 System Handbook

**Methods Applied and Interpretation of Parameters:**

- *Measurement Conditions:* Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
- *Antenna Parameters with TSL:* The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
- *Feed Point Impedance and Return Loss:* These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
- *Electrical Delay:* One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
- *SAR measured:* SAR measured at the stated antenna input power.
- *SAR normalized:* SAR as measured, normalized to an input power of 1 W at the antenna connector.
- *SAR for nominal TSL parameters:* The measured TSL parameters are used to calculate the nominal SAR result.



Measurement Conditions

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
Distance Dipole Center - TSL	15 mm	with Spacer
Area Scan resolution	dx, dy = 15 mm	
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	835 MHz ± 1 MHz	

Head TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	41.5	0.90 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	42.1 ± 6 %	0.94mho/m ± 6 %
Head TSL temperature during test	(22.2 ± 0.2) °C	---	---

SAR result with Head TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	condition	
SAR measured	250 mW input power	2.35 mW / g
SAR normalized	normalized to 1W	9.40 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	9.24 mW / g ± 17.0 % (k=2)

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	condition	
SAR measured	250 mW input power	1.53 mW / g
SAR normalized	normalized to 1W	6.12 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	6.07 mW / g ± 16.5 % (k=2)

<sup>1</sup> Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"



Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	55.2	0.97 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	56.8 ± 6 %	0.98 mho/m ± 6 %
Body TSL temperature during test	(21.4 ± 0.2) °C	---	---

SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	condition	
SAR measured	250 mW input power	2.45 mW / g
SAR normalized	normalized to 1W	9.80 mW / g
SAR for nominal Body TSL parameters <sup>2</sup>	normalized to 1W	<b>9.91 mW / g ± 17.0 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	1.62 mW / g
SAR normalized	normalized to 1W	6.48 mW / g
SAR for nominal Body TSL parameters <sup>2</sup>	normalized to 1W	<b>6.55 mW / g ± 16.5 % (k=2)</b>

<sup>2</sup> Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"



**Appendix**

**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	52.1 $\Omega$ - 2.9 $j\Omega$
Return Loss	- 29.1 dB

**Antenna Parameters with Body TSL**

Impedance, transformed to feed point	47.9 $\Omega$ - 5.1 $j\Omega$
Return Loss	- 24.9 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.391ns
----------------------------------	---------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

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.  
No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

Manufactured by	SPEAG
Manufactured on	July 10, 2003

**DASY4 Validation Report for Head TSL**

Date/Time: 15.03.2006 12:51:44

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:499**

Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1

Medium: HSL U10 BB;

Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.942 \text{ mho/m}$ ;  $\epsilon_r = 42.1$ ;  $\rho = 1000 \text{ kg/m}^3$ 

Phantom section: Flat Section

Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (HF); ConvF(6.09, 6.09, 6.09); Calibrated: 28.10.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 15.12.2005
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; ;
- Measurement SW: DASY4, V4.7 Build 14; Postprocessing SW: SEMCAD, V1.8 Build 165

**Pin = 250 mW; d = 10 mm/Area Scan (71x81x1):** Measurement grid: dx=15mm, dy=15mm

Maximum value of SAR (interpolated) = 2.54 mW/g

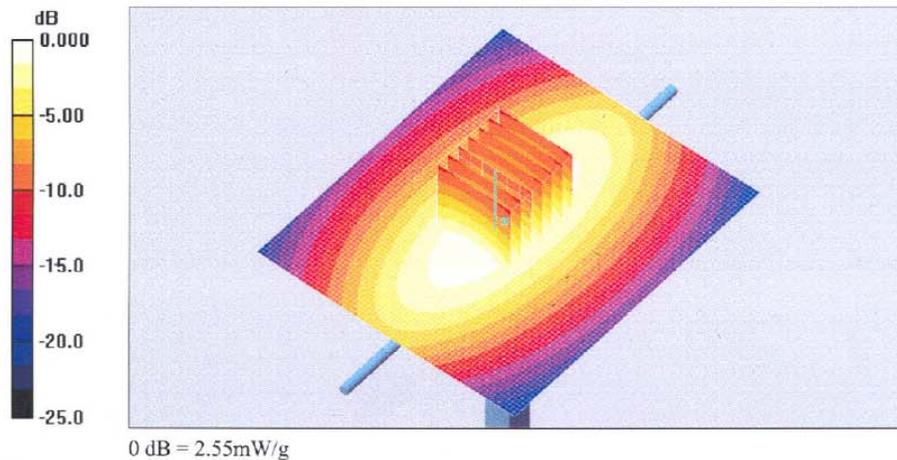
**Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm

Reference Value = 53.7 V/m; Power Drift = -0.008 dB

Peak SAR (extrapolated) = 3.53 W/kg

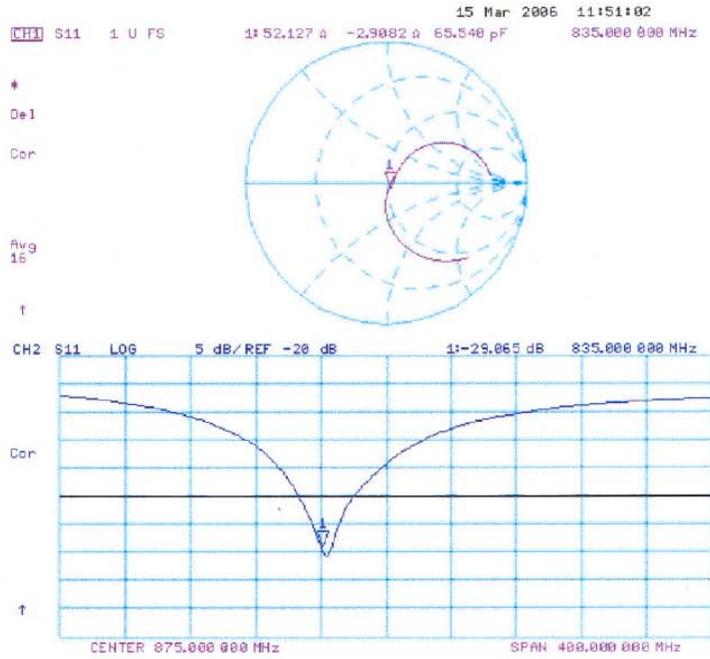
**SAR(1 g) = 2.35 mW/g; SAR(10 g) = 1.53 mW/g**

Maximum value of SAR (measured) = 2.55 mW/g





Impedance Measurement Plot for Head TSL



**DASY4 Validation Report for Body TSL**

Date/Time: 14.03.2006 12:37:15

Test Laboratory: SPEAG, Zurich, Switzerland

**DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:499**

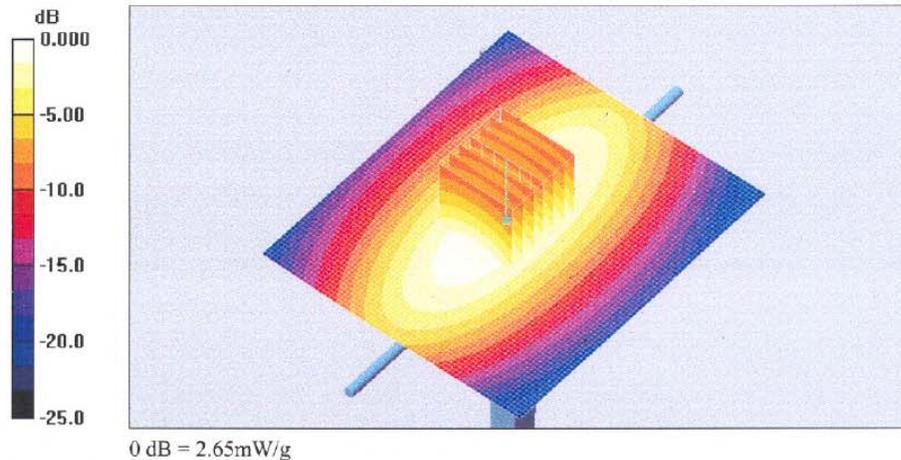
Communication System: CW; Frequency: 835 MHz; Duty Cycle: 1:1  
Medium: MSL U10;  
Medium parameters used:  $f = 835 \text{ MHz}$ ;  $\sigma = 0.972 \text{ mho/m}$ ;  $\epsilon_r = 56.9$ ;  $\rho = 1000 \text{ kg/m}^3$   
Phantom section: Flat Section  
Measurement Standard: DASY4 (High Precision Assessment)

DASY4 Configuration:

- Probe: ET3DV6 - SN1507 (HF); ConvF(5.84, 5.84, 5.84); Calibrated: 28.10.2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn601; Calibrated: 15.12.2005
- Phantom: Flat Phantom 4.9L; Type: QD000P49AA; ;
- Measurement SW: DASY4, V4.7 Build 14; Postprocessing SW: SEMCAD, V1.8 Build 165

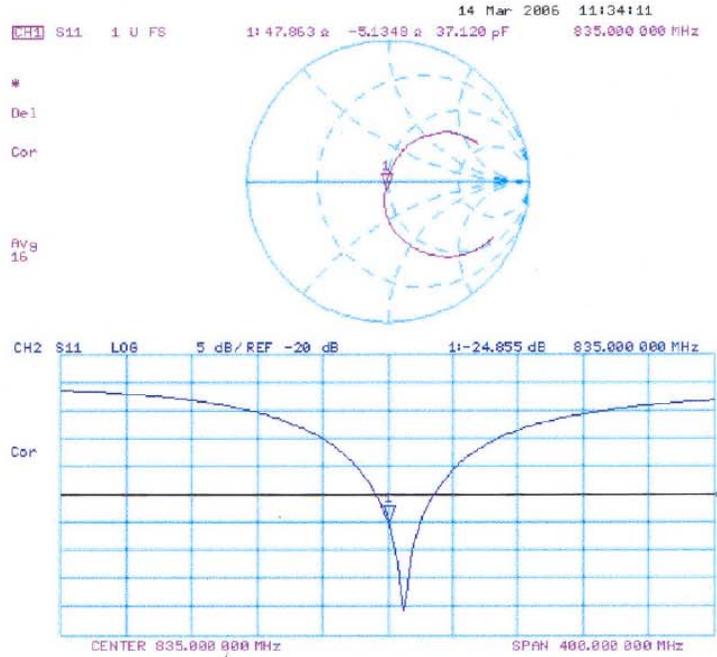
**Pin = 250 mW; d = 10 mm/Area Scan (71x81x1):** Measurement grid: dx=15mm, dy=15mm  
Maximum value of SAR (interpolated) = 2.63 mW/g

**Pin = 250 mW; d = 10 mm/Zoom Scan (7x7x7)/Cube 0:** Measurement grid: dx=5mm, dy=5mm, dz=5mm  
Reference Value = 53.3 V/m; Power Drift = 0.026 dB  
Peak SAR (extrapolated) = 3.51 W/kg  
**SAR(1 g) = 2.45 mW/g; SAR(10 g) = 1.62 mW/g**  
Maximum value of SAR (measured) = 2.65 mW/g





Impedance Measurement Plot Body TSL





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Accreditation No.: SCS 108

Client Sporton (Auden)

Certificate No: D1900V2-5d041\_Mar06

CALIBRATION CERTIFICATE

Object D1900V2 - SN: 5d041
Calibration procedure(s) QA CAL-05.v6
Calibration procedure for dipole validation kits
Calibration date: March 21, 2006
Condition of the calibrated item In Tolerance

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

All calibrations have been conducted in the closed laboratory facility: environment temperature (22 ± 3)°C and humidity < 70%.

Calibration Equipment used (M&TE critical for calibration)

Table with 4 columns: Primary Standards, ID #, Cal Date (Calibrated by, Certificate No.), Scheduled Calibration. Includes items like Power meter EPM-442A, Power sensor HP 8481A, Reference 20 dB Attenuator, etc.

Calibrated by: Judith Müller, Laboratory Technician
Approved by: Katja Pokovic, Technical Manager

Handwritten signatures of Judith Müller and Katja Pokovic

Issued: March 22, 2006

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



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Accreditation No.: SCS 108

Glossary:

TSL tissue simulating liquid
ConvF sensitivity in TSL / NORM x,y,z
N/A not applicable or not measured

Calibration is Performed According to the Following Standards:

- a) IEEE Std 1528-2003, "IEEE Recommended Practice for Determining the Peak Spatial-Averaged Specific Absorption Rate (SAR) in the Human Head from Wireless Communications Devices: Measurement Techniques", December 2003
b) CENELEC EN 50361, "Basic standard for the measurement of Specific Absorption Rate related to human exposure to electromagnetic fields from mobile phones (300 MHz - 3 GHz), July 2001
c) Federal Communications Commission Office of Engineering & Technology (FCC OET), "Evaluating Compliance with FCC Guidelines for Human Exposure to Radiofrequency Electromagnetic Fields; Additional Information for Evaluating Compliance of Mobile and Portable Devices with FCC Limits for Human Exposure to Radiofrequency Emissions", Supplement C (Edition 01-01) to Bulletin 65

Additional Documentation:

- d) DASY4 System Handbook

Methods Applied and Interpretation of Parameters:

- Measurement Conditions: Further details are available from the Validation Report at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated.
Antenna Parameters with TSL: The dipole is mounted with the spacer to position its feed point exactly below the center marking of the flat phantom section, with the arms oriented parallel to the body axis.
Feed Point Impedance and Return Loss: These parameters are measured with the dipole positioned under the liquid filled phantom. The impedance stated is transformed from the measurement at the SMA connector to the feed point. The Return Loss ensures low reflected power. No uncertainty required.
Electrical Delay: One-way delay between the SMA connector and the antenna feed point. No uncertainty required.
SAR measured: SAR measured at the stated antenna input power.
SAR normalized: SAR as measured, normalized to an input power of 1 W at the antenna connector.
SAR for nominal TSL parameters: The measured TSL parameters are used to calculate the nominal SAR result.



**Measurement Conditions**

DASY system configuration, as far as not given on page 1.

DASY Version	DASY4	V4.7
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V5.0	
Distance Dipole Center - TSL	10 mm	with Spacer
Area Scan resolution	dx, dy = 15 mm	
Zoom Scan Resolution	dx, dy, dz = 5 mm	
Frequency	1900 MHz ± 1 MHz	

**Head TSL parameters**

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Head TSL parameters	22.0 °C	40.0	1.40 mho/m
Measured Head TSL parameters	(22.0 ± 0.2) °C	39.4 ± 6 %	1.42 mho/m ± 6 %
Head TSL temperature during test	(21.5 ± 0.2) °C	---	---

**SAR result with Head TSL**

SAR averaged over 1 cm <sup>3</sup> (1 g) of Head TSL	condition	
SAR measured	250 mW input power	9.75 mW / g
SAR normalized	normalized to 1W	39.0 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	<b>38.4 mW / g ± 17.0 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Head TSL	Condition	
SAR measured	250 mW input power	5.17 mW / g
SAR normalized	normalized to 1W	20.7 mW / g
SAR for nominal Head TSL parameters <sup>1</sup>	normalized to 1W	<b>20.5 mW / g ± 16.5 % (k=2)</b>

<sup>1</sup> Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"



Body TSL parameters

The following parameters and calculations were applied.

	Temperature	Permittivity	Conductivity
Nominal Body TSL parameters	22.0 °C	53.3	1.52 mho/m
Measured Body TSL parameters	(22.0 ± 0.2) °C	54.7 ± 6 %	1.54 mho/m ± 6 %
Body TSL temperature during test	(21.6 ± 0.2) °C	---	---

SAR result with Body TSL

SAR averaged over 1 cm <sup>3</sup> (1 g) of Body TSL	Condition	
SAR measured	250 mW input power	10.2 mW / g
SAR normalized	normalized to 1W	40.8 mW / g
SAR for nominal Body TSL parameters <sup>2</sup>	normalized to 1W	<b>41.1 mW / g ± 17.0 % (k=2)</b>

SAR averaged over 10 cm <sup>3</sup> (10 g) of Body TSL	condition	
SAR measured	250 mW input power	5.40 mW / g
SAR normalized	normalized to 1W	21.6 mW / g
SAR for nominal Body TSL parameters <sup>2</sup>	normalized to 1W	<b>21.8 mW / g ± 16.5 % (k=2)</b>

<sup>2</sup> Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"



**Appendix**

**Antenna Parameters with Head TSL**

Impedance, transformed to feed point	53.5 $\Omega$ + 5.1 $j\Omega$
Return Loss	- 24.8 dB

**Antenna Parameters with Body TSL**

Impedance, transformed to feed point	47.9 $\Omega$ + 6.3 $j\Omega$
Return Loss	- 23.4 dB

**General Antenna Parameters and Design**

Electrical Delay (one direction)	1.200 ns
----------------------------------	----------

After long term use with 100W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

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.

No excessive force must be applied to the dipole arms, because they might bend or the soldered connections near the feedpoint may be damaged.

**Additional EUT Data**

Manufactured by	SPEAG
Manufactured on	July 4, 2003