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Author Data Daoud Attayi	Dates of Test	Test Report No	FCC ID:
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APPENDIX A: SAR DISTRIBUTION COMPARISON FOR ACCURACY VERIFICATION

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Author Data	Dates of Test	Test Report No	FCC ID:
Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

Date/Time: 16/01/2006 10:59:08 AM

Test Laboratory: RTS

Dipole_Validation_835 MHz_Amb_Temp. 24.3_Liq_Temp. 23.1

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:446

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1 Medium parameters used: f = 835 MHz; s = 0.86 mho/m; $e_r = 40.8$; ? = 1000 kg/m³ Phantom section: Flat Section

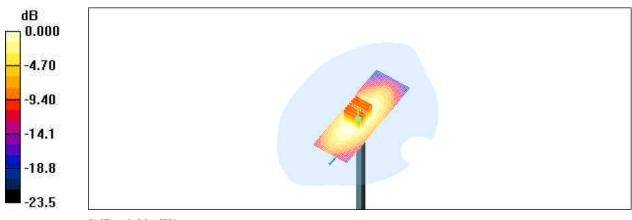
DASY4 Configuration:

- Probe: ET3DV6 SN1643; ConvF(6.48, 6.48, 6.48); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

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

Reference Va lue = 112.0 V/m; Power Drift = -0.026 dB Peak SAR (extrapolated) = 13.6 W/kg SAR(1 g) = 9.26 mW/g; SAR(10 g) = 6.04 mW/g Maximum value of SAR (measured) = 9.98 mW/g

d=15mm, Pin=250mW/Area Scan (41x111x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 9.99 mW/g





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	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

Date/Time: 19/01/2006 11:48:33 AM

Test Laboratory: RTS

Dipole_Validation_835 MHz_Amb_Temp. 24.2_Liq_Temp. 23.9_01_19_06

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:446

Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1 Medium parameters used: f = 835 MHz; s = 0.89 mho/m; $e_r = 41$; ? = 1000 kg/m³ Phantom section: Flat Section

DASY4 Configuration:

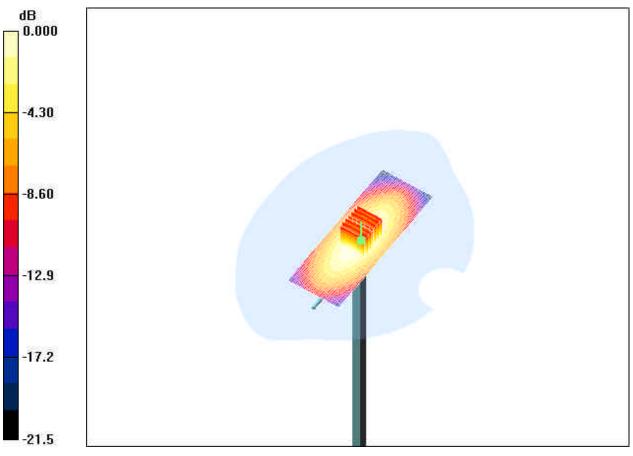
- Probe: ET3DV6 SN1643; ConvF(6.48, 6.48, 6.48); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

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

Reference Value = 112.7 V/m; Power Drift = -0.035 dB Peak SAR (extrapolated) = 14.2 W/kg SAR(1 g) = 9.64 mW/g; SAR(10 g) = 6.31 mW/g Maximum value of SAR (measured) = 10.4 mW/g

d=15mm, Pin=250mW/Area Scan (41x111x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 10.4 mW/g

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Е	L	Dates of Test Test Report No



 $0 \; dB = 10.4 mW/g$

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	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

Date/Time: 21/03/2006 2:16:14 PM

Test Laboratory: RTS

Dipole_Validation_835 MHz_Amb_Temp. 23_9_Liq_Temp. 23_0_C

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN:446

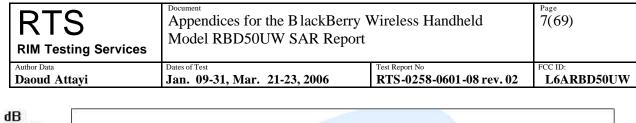
Communication System: CW; Frequency: 835 MHz;Duty Cycle: 1:1 Medium parameters used: f = 835 MHz; s = 0.87 mho/m; e_r = 42.7; ? = 1000 kg/m³ Phantom section: Flat Section

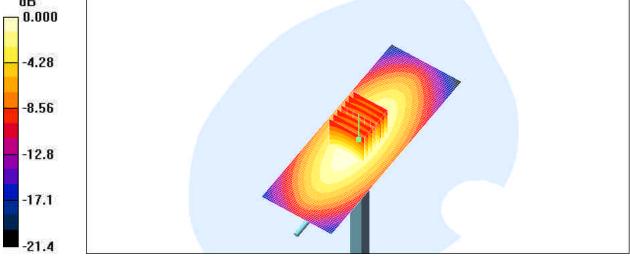
DASY4 Configuration:

- Probe: ET3DV6 SN1644; ConvF(6.27, 6.27, 6.27); Calibrated: 11/11/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 12/01/2006
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

d=15mm, Pin=250mW/Zoom Scan (7x7x7) (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 110.3 V/m; Power Drift = -0.026 dB Peak SAR (extrapolated) = 13.9 W/kg SAR(1 g) = 9.16 mW/g; SAR(10 g) = 5.93 mW/g Maximum value of SAR (measured) = 9.96 mW/g

d=15mm, Pin=250mW/Area Scan (41x111x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 9.88 mW/g





 $0 \, dB = 9.88 mW/g$

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Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

Date/Time: 11/01/2006 10:39:48 AM

Test Laboratory: RTS

1900MHz_Validation_Ambient_Temp_24_2_C_Liquid_Temp_23_5_C_01-11-2006

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:545

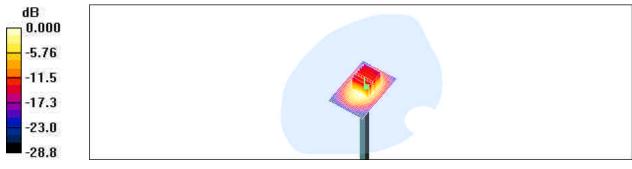
Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1 Medium parameters used: f = 1900 MHz; s = 1.43 mho/m; $e_r = 38.2$; ? = 1000 kg/m³ Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 SN1643; ConvF(5.11, 5.11, 5.11); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Dipole Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 194.4 V/m; Power Drift = -0.041 dB Peak SAR (extrapolated) = 73.7 W/kg **SAR(1 g) = 42.6 mW/g; SAR(10 g) = 22.5 mW/g** Maximum value of SAR (measured) = 48.4 mW/g

Dipole Validation/Area Scan (41x61x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 51.4 mW/g



0 dB = 51.4 mW/g

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Date/Time: 23/03/2006 12:19:13 PM

Test Laboratory: RTS

1900MHz_Validation_Ambient_Temp_23_9_C_Liquid_Temp_22_8_C

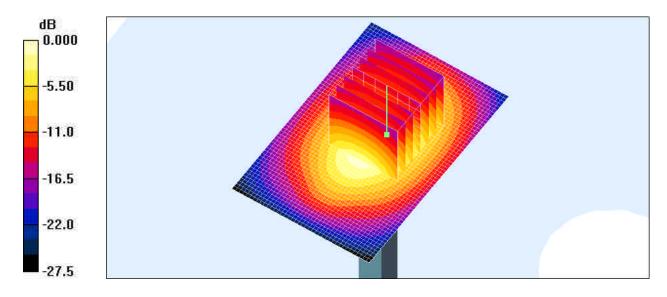
DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN:545

Communication System: CW; Frequency: 1900 MHz;Duty Cycle: 1:1 Medium parameters used: f = 1900 MHz; s = 1.46 mho/m; e = 39.8; ? = 1000 kg/m³ Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 SN1644; ConvF(5.25, 5.25, 5.25); Calibrated: 11/11/2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 12/01/2006
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Dipole Validation/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 181.4 V/m; Power Drift = 0.025 dB Peak SAR (extrapolated) = 65.9 W/kg SAR(1 g) = 38.5 mW/g; SAR(10 g) = 20.3 mW/g Maximum value of SAR (measured) = 43.8 mW/g Dipole Validation/Area Scan (41x61x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 45.7 mW/g



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0 dB = 45.7 mW/g

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APPENDIX B: SAR DISTRIBUTION PLOTS FOR HEAD CONFIGURATION

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Date/Time: 16/01/2006 12:29:07 PM

Test Laboratory: RTS

RightHandSide_Touch_GSM850_High_Chan_Amb_Temp_23.5_Liq_Temp_22.9

DUT: BlackBerry Wireless Handheld; Type: Sample ;

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 848.8 MHz; s = 0.86 mho/m; $e_r = 40.8$; ? = 1000 kg/m³ Phantom section: Right Section

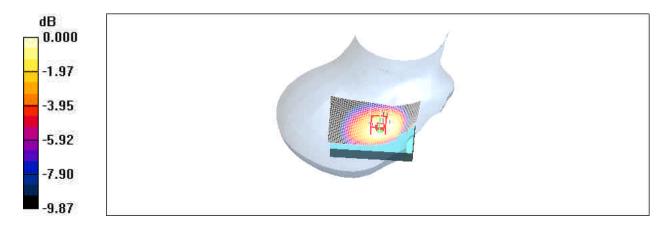
DASY4 Configuration:

- Probe: ET3DV6 SN1643; ConvF(6.48, 6.48, 6.48); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Touch position - Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.36 mW/g

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

Reference Value = 23.4 V/m; Power Drift = -0.159 dBPeak SAR (extrapolated) = 1.63 W/kg**SAR(1 g) = 1.26 \text{ mW/g}; SAR(10 g) = 0.930 \text{ mW/g}** Maximum value of SAR (measured) = 1.34 mW/g



RIM Testing Services Author Data Daoud Attavi	1		FCC ID: L6ARBD50UW
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Date/Time: 16/01/2006 1:52:07 PM

Test Laboratory: RTS

RightHandSide_Tilt_GSM850_Mid_Chan_Amb_Temp_23.5_Liq_Temp_22.8

DUT: BlackBerry Wireless Handheld; Type: Sample

Communication System: GSM 850; Frequency: 836.8 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 836.8 MHz; s = 0.86 mho/m; $e_r = 40.8$; ? = 1000 kg/m³ Phantom section: Right Section

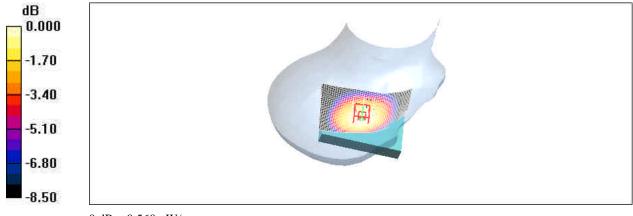
DASY4 Configuration:

- Probe: ET3DV6 SN1643; ConvF(6.48, 6.48, 6.48); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Touch position - Low/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.562 mW/g

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

Reference Value = 20.6 V/m; Power Drift = -0.225 dBPeak SAR (extrapolated) = 0.665 W/kg**SAR(1 g) = 0.532 \text{ mW/g}; SAR(10 g) = 0.397 \text{ mW/g}** Maximum value of SAR (measured) = 0.560 mW/g



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	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

Date/Time: 16/01/2006 3:15:50 PM

Test Laboratory: RTS

LeftHandSide_Touch_GSM850_High_Chan_Amb_Temp_24.4_Liq_Temp_23.1

DUT: BlackBerry Wireless Handheld; Type: Sample

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 848.8 MHz; s = 0.89 mho/m; $e_r = 41.6$; ? = 1000 kg/m³ Phantom section: Left Section

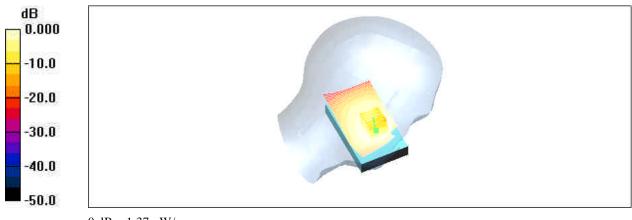
DASY4 Configuration:

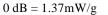
- Probe: ET3DV6 SN1643; ConvF(6.48, 6.48, 6.48); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

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

Reference Value = 20.3 V/m; Power Drift = -0.043 dBPeak SAR (extrapolated) = 1.63 W/kg**SAR(1 g) = 1.26 \text{ mW/g}; SAR(10 g) = 0.935 \text{ mW/g}** Maximum value of SAR (measured) = 1.33 mW/g

Touch position - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.37 mW/g





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	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

Date/Time: 16/01/2006 3:46:57 PM

Test Laboratory: RTS

LeftHandSide_Tilt_GSM850_Mid_Chan_Amb_Temp_24.5_Liq_Temp_23.0

DUT: BlackBerry Wireless Handheld; Type: Sample

Communication System: GSM 850; Frequency: 836.8 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 836.8 MHz; s = 0.86 mho/m; $e_r = 40.8$; ? = 1000 kg/m³ Phantom section: Left Section

DASY4 Configuration:

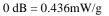
- Probe: ET3DV6 SN1643; ConvF(6.48, 6.48, 6.48); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

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

Reference Value = 17.8 V/m; Power Drift = -0.215 dBPeak SAR (extrapolated) = 0.496 W/kg**SAR(1 g) = 0.403 \text{ mW/g}; SAR(10 g) = 0.304 \text{ mW/g}** Maximum value of SAR (measured) = 0.425 mW/g

Touch position - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.436 mW/g





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	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

Date/Time: 10/01/2006 11:01:24 AM

Test Laboratory: RTS

Right_Touch_GSM1900_Low_Chan_Ambient_Temp_24_6_C_Liquid_Temp_23_4_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 1850.2 MHz; s = 1.44 mho/m; $e_r = 38.9$; ? = 1000 kg/m³ Phantom section: Right Section

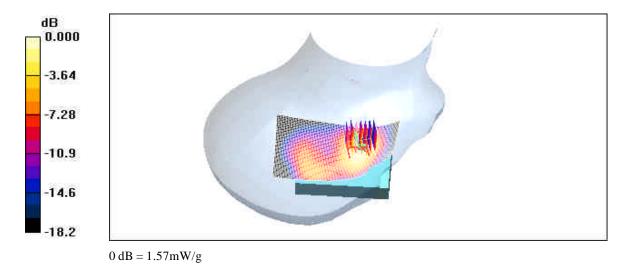
DASY4 Configuration:

- Probe: ET3DV6 SN1643; ConvF(5.11, 5.11, 5.11); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Touch position - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.65 mW/g

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

Reference Value = 16.5 V/m; Power Drift = 0.004 dB Peak SAR (extrapolated) = 1.99 W/kg SAR(1 g) = 1.44 mW/g; SAR(10 g) = 0.862 mW/g Maximum value of SAR (measured) = 1.57 mW/g



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Date/Time: 10/01/2006 12:03:01 PM

Test Laboratory: RTS

Right_Tilted_GSM1900_Mid_Chan_Ambient_Temp_24_6_C_Liquid_Temp_23_5_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 1880 MHz; s = 1.44 mho/m; $e_r = 38.9$; ? = 1000 kg/m³ Phantom section: Right Section

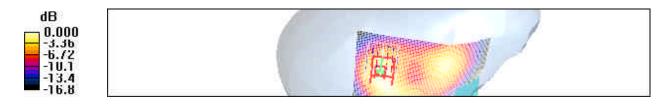
DASY4 Configuration:

- Probe: ET3DV6 SN1643; ConvF(5.11, 5.11, 5.11); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Touch position - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.389 mW/g

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

Reference Value = 16.9 V/m; Power Drift = -0.037 dBPeak SAR (extrapolated) = 0.535 W/kg**SAR(1 g) = 0.354 \text{ mW/g}; SAR(10 g) = 0.209 \text{ mW/g}** Maximum value of SAR (measured) = 0.396 mW/g



 $0 \ dB = 0.396 mW/g$

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Date/Time: 10/01/2006 1:33:28 PM

Test Laboratory: RTS

Left_Touch_GSM1900_Low_Chan_Ambient_Temp_24_7_C_Liquid_Temp_23_6_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 1850.2 MHz; s = 1.44 mho/m; $e_r = 39.9$; ? = 1000 kg/m³ Phantom section: Left Section

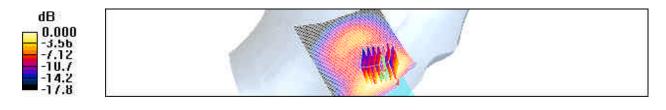
DASY4 Configuration:

- Probe: ET3DV6 SN1643; ConvF(5.11, 5.11, 5.11); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Touch position - Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.37 mW/g

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

Reference Value = 15.6 V/m; Power Drift = -0.090 dBPeak SAR (extrapolated) = 1.58 W/kg**SAR(1 g) = 1.12 \text{ mW/g}; SAR(10 g) = 0.669 \text{ mW/g}** Maximum value of SAR (measured) = 1.22 mW/g



 $0 \ dB = 1.22 mW/g$

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)a		ttes of Test Test Report No

Date/Time: 10/01/2006 2:25:19 PM

Test Laboratory: RTS

Left_Tilted_GSM1900_Mid_Chan_Ambient_Temp_24_6_C_Liquid_Temp_23_2_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 1880 MHz; s = 1.44 mho/m; $e_r = 38.9$; ? = 1000 kg/m³ Phantom section: Left Section

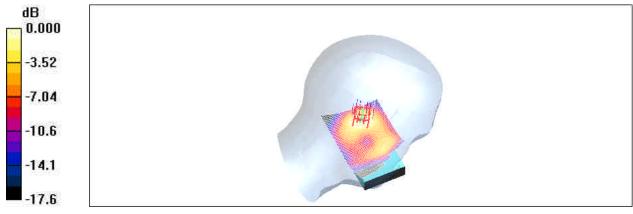
DASY4 Configuration:

- Probe: ET3DV6 SN1643; ConvF(5.11, 5.11, 5.11); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Touch position - Middle/Area Scan (61x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 0.453 mW/g

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

Reference Value = 17.4 V/m; Power Drift = -0.063 dBPeak SAR (extrapolated) = 0.619 W/kg**SAR(1 g) = 0.398 \text{ mW/g}; SAR(10 g) = 0.228 \text{ mW/g}** Maximum value of SAR (measured) = 0.447 mW/g





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Date/Time: 10/01/2006 3:51:39 PM

Test Laboratory: RTS

Right_Touch_GSM1900_Low_Chan_Battery_2_Ambient_Temp_24_6_C_Liquid_Temp_23_4_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 1850.2 MHz; s = 1.44 mho/m; $e_r = 38.9$; ? = 1000 kg/m³ Phantom section: Right Section

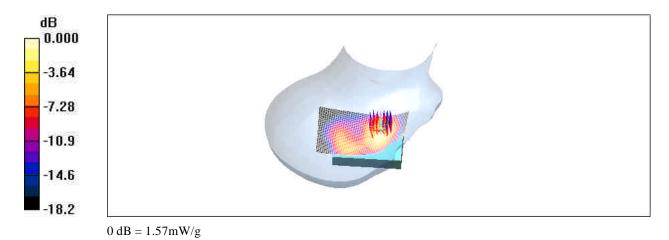
DASY4 Configuration:

- Probe: ET3DV6 SN1643; ConvF(5.11, 5.11, 5.11); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Touch position - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.70 mW/g

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

Reference Value = 16.4 V/m; Power Drift = -0.092 dBPeak SAR (extrapolated) = 2.05 W/kg**SAR(1 g) = 1.45 \text{ mW/g}; SAR(10 g) = 0.848 \text{ mW/g}** Maximum value of SAR (measured) = 1.57 mW/g



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Date/Time: 11/01/2006 9:49:29 AM

Test Laboratory: RTS

Right_Touch_GSM1900_Low_Chan_Battery_3_Ambient_Temp_24_0_C_Liquid_Temp_23_1_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 1850.2 MHz; s = 1.44 mho/m; $e_r = 38.9$; ? = 1000 kg/m³ Phantom section: Right Section

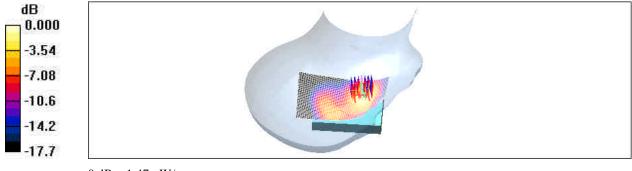
DASY4 Configuration:

- Probe: ET3DV6 SN1643; ConvF(5.11, 5.11, 5.11); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Touch position - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.58 mW/g

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

Reference Value = 13.2 V/m; Power Drift = -0.147 dBPeak SAR (extrapolated) = 1.85 W/kg**SAR(1 g) = 1.33 \text{ mW/g}; SAR(10 g) = 0.782 \text{ mW/g}** Maximum value of SAR (measured) = 1.47 mW/g



0 dB = 1.47 mW/g

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Date/Time: 31/01/2006 2:24:21 PM

Test Laboratory: RTS

Right_Touch_GSM1900

2nd LCD_batt2_Low_Chan_Ambient_Temp_23_8_C_Liquid_Temp_22_9_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

Communication System: GSM 1900; Frequency: 1850.2 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 1850.2 MHz; s = 1.44 mho/m; $e_r = 38.9$; ? = 1000 kg/m³ Phantom section: Right Section

DASY4 Configuration:

Probe: ET3DV6 - SN1643; ConvF(5.11, 5.11, 5.11); Calibrated: 15/03/2005

Sensor-Surface: 4mm (Mechanical Surface Detection)

Electronics: DAE3 Sn473; Calibrated: 14/03/2005

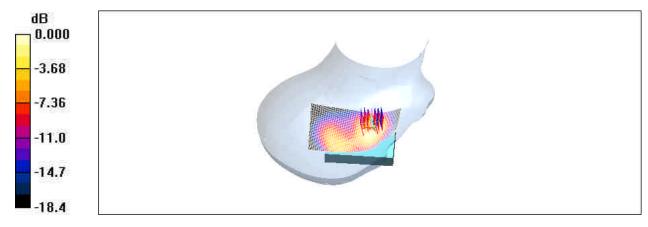
Phantom: SAM 1; Type: SAM 4.0; Serial: 1076

Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Touch position - Middle/Area Scan (51x91x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 1.34 mW/g

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

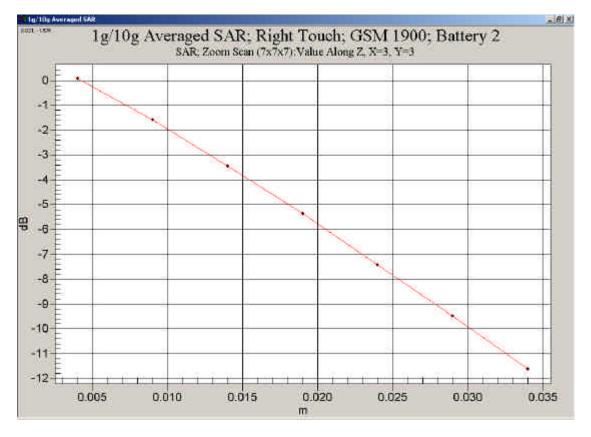
Reference Value = 16.1 V/m; Power Drift = -0.031 dBPeak SAR (extrapolated) = 1.69 W/kg**SAR(1 g) = 1.18 \text{ mW/g}; SAR(10 g) = 0.696 \text{ mW/g}** Maximum value of SAR (measured) = 1.28 mW/g



0 dB = 1.28 mW/g

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Z-axis plot for worst-case head configuration:



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Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	K15-0258-0001-08 rev. 02	LOAKDDSUUW

APPENDIX C: SAR DISTRIBUTION PLOTS FOR BODY-WORN CONFIGURATION

RIM Testing Services Author Data Daoud Attavi	Dates of Test	Test Report No	FCC ID:
	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW
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Date/Time: 21/03/2006 5:08:34 PM

Test Laboratory: RTS

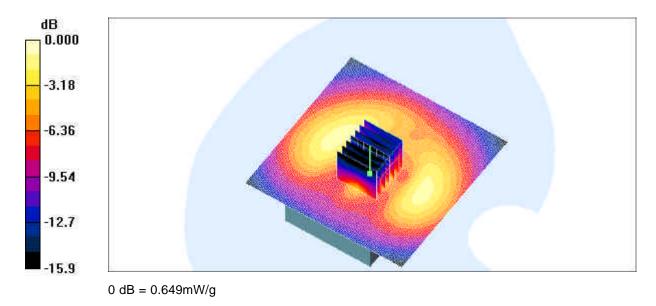
Body_worn_Holster_GSM850_High_Chan_Back_Amb_Temp_24_0_C_Liquid_Temp_23_0_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 848.8 MHz; s = 0.98 mho/m; e = 53.3; ? = 1000 kg/m³ Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 SN1644; ConvF(6.16, 6.16, 6.16); Calibrated: 11/11/2005
- Sensor Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 12/01/2006
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160 Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 19.6 V/m; Power Drift = 0.088 dB Peak SAR (extrapolated) = 2.61 W/kg SAR(1 g) = 0.640 mW/g; SAR(10 g) = 0.230 mW/g Maximum value of SAR (measured) = 0.721 mW/g Unnamed procedure/Area Scan (121x121x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (interpolated) = 0.649 mW/g



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Date/Time: 21/03/2006 5:45:51 PM

Test Laboratory: RTS

Body_worn_Holster_GSM850_High_Chan_Front_Amb_Temp_24_0_C_Liquid_Temp_22_9_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

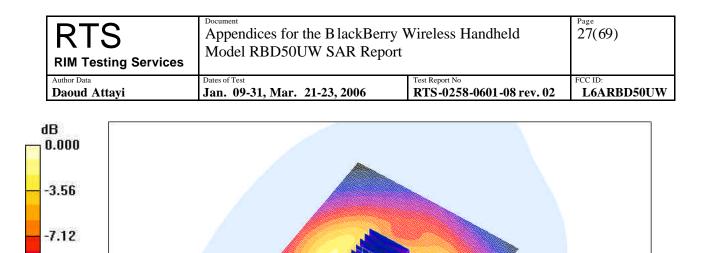
Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 848.8 MHz; s = 0.98 mho/m; e_f = 53.3; ? = 1000 kg/m³ Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 SN1644; ConvF(6.16, 6.16, 6.16); Calibrated: 11/11/2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 12/01/2006
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

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

Reference Value = 18.8 V/m; Power Drift = 0.099 dB Peak SAR (extrapolated) = 2.27 W/kg **SAR(1 g) = 0.690 mW/g; SAR(10 g) = 0.265 mW/g** Maximum value of SAR (measured) = 0.808 mW/g **Unnamed procedure/Area Scan (121x121x1):** Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (interpolated) = 0.707 mW/g



-10.7

-14.2

-17.8

0 dB = 0.707 mW/g

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Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

Date/Time: 22/03/2006 10:28:01 AM

Test Laboratory: RTS

Body_worn_Holster_GSM850_High_Chan_BT_Headset_Front_Amb_Temp_24_8_C_Liq_Te mp_22_7_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

Communication System: GSM 850; Frequency: 848.8 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 848.8 MHz; s = 0.98 mho/m; e_r = 53.3; ? = 1000 kg/m³ Phantom section: Flat Section

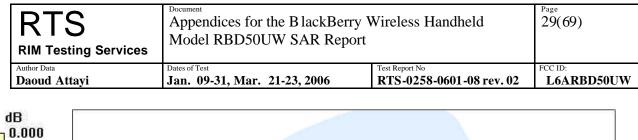
DASY4 Configuration:

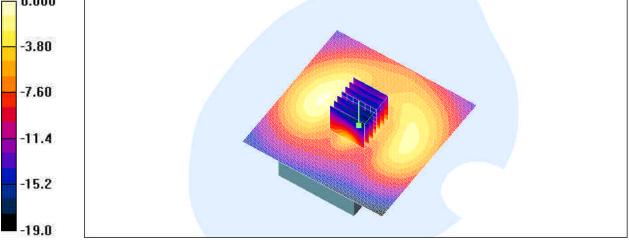
- Probe: ET3DV6 SN1644; ConvF(6.16, 6.16, 6.16); Calibrated: 11/11/2005
- Sensor Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 12/01/2006
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

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

Reference Value = 22.0 V/m; Power Drift = 0.134 dB Peak SAR (extrapolated) = 1.64 W/kg SAR(1 g) = 0.439 mW/g; SAR(10 g) = 0.162 mW/g Maximum value of SAR (measured) = 0.505 mW/g

Unnamed procedure/Area Scan (121x121x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (interpolated) = 0.460 mW/g





0 dB = 0.460 mW/g

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Date/Time: 20/01/2006 11:07:56 AM

Test Laboratory: RTS

Body_worn_15mm_distance_GSM850_Mid_Chan_Back_Amb_Temp_24.5_C_Liquid_Temp_22.7_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

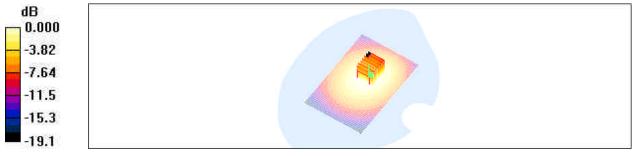
Communication System: GSM 850; Frequency: 836.8 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 836.8 MHz; s = 0.98 mho/m; $e_r = 54$; ? = 1000 kg/m³ Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 SN1643; ConvF(6.17, 6.17, 6.17); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 26.4 V/m; Peak SAR (extrapolated) = 1.49 W/kg SAR(1 g) = 0.692 mW/g; SAR(10 g) = 0.512 mW/g Maximum value of SAR (measured) = 0.730 mW/g

Unnamed procedure/Area Scan (101x151x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (interpolated) = 0.724 mW/g



 $^{0 \;} dB = 0.724 mW/g$

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Date/Time: 23/03/2006 1:58:16 PM

Test Laboratory: RTS

Body_worn_Holster_Back_GSM1900_Mid_Chan_Amb_Temp_23_5_C_Liq_Temp_22_7_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 1880 MHz; s = 1.57 mho/m; e_r = 51.1; ? = 1000 kg/m³ Phantom section: Flat Section

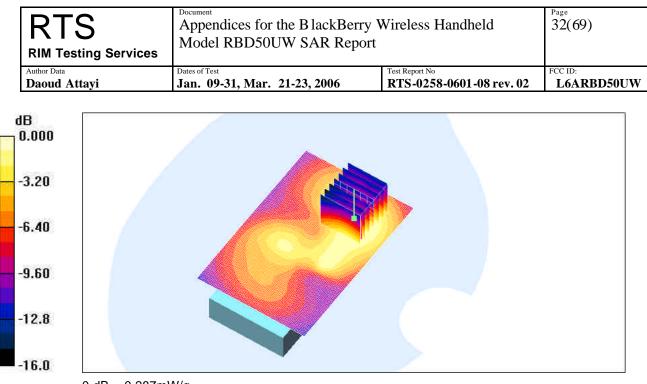
DASY4 Configuration:

- Probe: ET3DV6 SN1644; ConvF(4.51, 4.51, 4.51); Calibrated: 11/11/2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 12/01/2006
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Unnamed procedure/Area Scan (81x121x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (interpolated) = 0.287 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 9.65 V/m; Power Drift = -0.024 dB

Peak SAR (extrapolated) = 0.462 W/kg SAR(1 g) = 0.263 mW/g; SAR(10 g) = 0.154 mW/g Maximum value of SAR (measured) = 0.287 mW/g



0 dB = 0.287 mW/g

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Date/Time: 23/03/2006 2:27:59 PM

Test Laboratory: RTS

Body_worn_Holster_Front_GSM1900_Mid_Chan_Amb_Temp_23_6_C_Liq_Temp_22_8_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 1880 MHz; s = 1.57 mho/m; e_r = 51.1; ? = 1000 kg/m³ Phantom section: Flat Section

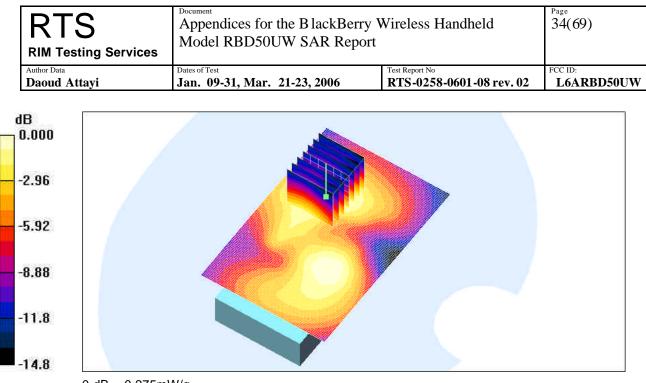
DASY4 Configuration:

- Probe: ET3DV6 SN1644; ConvF(4.51, 4.51, 4.51); Calibrated: 11/11/2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 12/01/2006
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Unnamed procedure/Area Scan (81x121x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (interpolated) = 0.277 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 8.27 V/m; Power Drift = -0.030 dB

Peak SAR (extrapolated) = 0.421 W/kg SAR(1 g) = 0.251 mW/g; SAR(10 g) = 0.150 mW/g Maximum value of SAR (measured) = 0.275 mW/g



0 dB = 0.275mW/g

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	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

Date/Time: 23/03/2006 3:06:44 PM

Test Laboratory: RTS

Body_worn_Holster_Back_GSM1900_Mid_Chan_BT_ON_Headset_Amb_Temp_23_5_C_Li q_Temp_22_7_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 1880 MHz; s = 1.57 mho/m; e = 51.1; ? = 1000 kg/m³ Phantom section: Flat Section

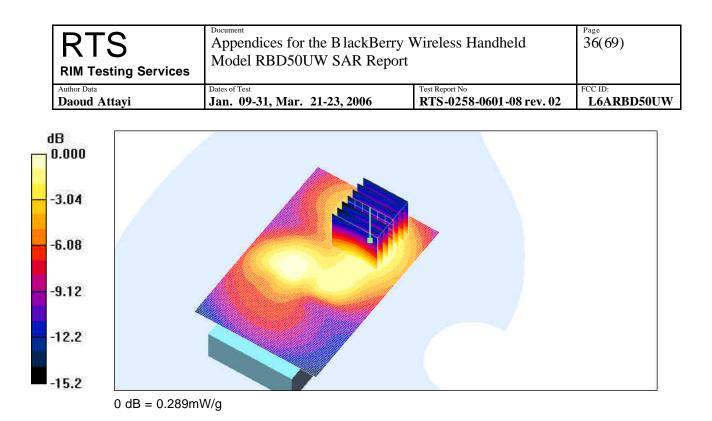
DASY4 Configuration:

- Probe: ET3DV6 SN1644; ConvF(4.51, 4.51, 4.51); Calibrated: 11/11/2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn472; Calibrated: 12/01/2006
- Phantom: SAM 1; Type: SAM 4.0; Serial: 1076
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

Unnamed procedure/Area Scan (81x121x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (interpolated) = 0.289 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 11.8 V/m; Power Drift = -0.032 dB

Peak SAR (extrapolated) = 0.464 W/kg SAR(1 g) = 0.263 mW/g; SAR(10 g) = 0.154 mW/g Maximum value of SAR (measured) = 0.289 mW/g



Author Data Daoud Attavi	Dates of Test	Test Report No	FCC ID:
	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW
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Date/Time: 11/01/2006 3:08:51 PM

Test Laboratory: RTS

Body_Worn_15mm_Space_Back_GSM1900_Mid_Chan_Ambient_Temp_23_8_C_Liquid_Temp_22_9_C

DUT: BlackBerry Wireless Handheld ; Type: Sample

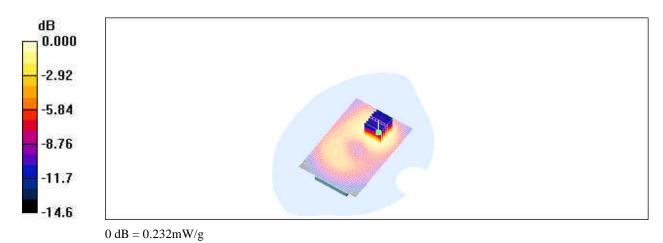
Communication System: GSM 1900; Frequency: 1880 MHz;Duty Cycle: 1:8.3 Medium parameters used: f = 1880 MHz; s = 1.56 mho/m; $e_r = 51.6$; ? = 1000 kg/m³ Phantom section: Flat Section

DASY4 Configuration:

- Probe: ET3DV6 SN1643; ConvF(4.69, 4.69, 4.69); Calibrated: 15/03/2005
- Sensor-Surface: 4mm (Mechanical And Optical Surface Detection)
- Electronics: DAE3 Sn473; Calibrated: 14/03/2005
- Phantom: SAM 2; Type: SAM 4.0; Serial: 1080
- Measurement SW: DASY4, V4.6 Build 23; Postprocessing SW: SEMCAD, V1.8 Build 160

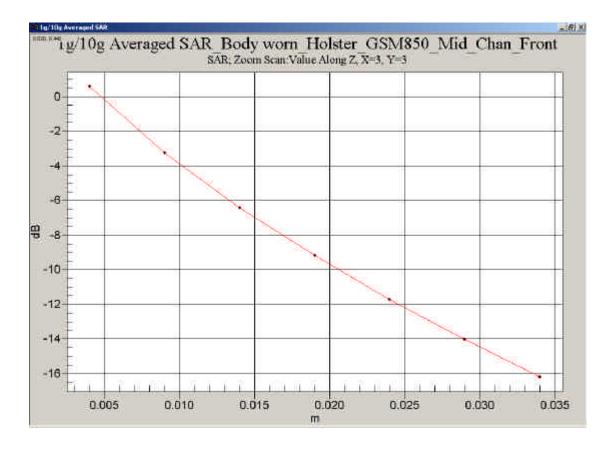
Unnamed procedure/Area Scan (101x151x1): Measurement grid: dx=10mm, dy=10mm Maximum value of SAR (interpolated) = 0.235 mW/g

Unnamed procedure/Zoom Scan (7x7x7)/Cube 0: Measurement grid: dx=5mm, dy=5mm, dz=5mm Reference Value = 4.93 V/m; Power Drift = -0.096 dB Peak SAR (extrapolated) = 0.348 W/kg SAR(1 g) = 0.216 mW/g; SAR(10 g) = 0.132 mW/g Maximum value of SAR (measured) = 0.232 mW/g



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Z-axis plot for worst-case body worn configuration:



Dates of Test Test Report No Jan. 09-31, Mar. 21-23, 2006 RTS-0258-0601-08 rev. 02	
	RTS-0258-0601-08 rev. 02

APPENDIX D: PROBE & DIPOLE CALIBRATION DATA

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Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

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



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

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Accreditation No.: SCS 108

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

Client RIM Certificate No: ET3-1643_Mar05

Dbjeat	ET3DV6 - SN:1	643	
Calibration procedure(s)	QA CAL-01.v5 Calibration proc	edure for dosimetric E-field probes	
Calibration cate:	March 15, 2005		
Condition of the calibrated item	In Tolerance		
	cted in the closed laborat	probability are given on the following pages and en tory facility: environment temperature (22 ± 3)°C and	
Primary Standards	ID #	Cal Date (Calibrated by Certificate No.)	Scheduled Calibration
	GB41293874	5-May-04 (METAS, No. 251-00388)	May-05
Power meter #44198			
	MY41495277	5-May-34 (METAS, No. 251-00368)	May 05
Power sensor E4412A	MY41495277 SN: S5054 (3c)		
Power meter 24419B Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator		5-May-34 (METAS, No. 251-00368)	May 05
Power sensor E4412A Reference 3 dB Attenuator	SN, S5054 (3c)	5-May-34 (METAS, No. 251-00368) 10 Aug 04 (METAS, No. 251-00403)	May 05 Aug-05
Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 30 dB Attenuator	SN: S5054 (3c) SN: S5086 (20b)	5-May-34 (METAS, No. 251-00368) 13 Aug 84 (METAS, No. 251-00403) 3-May-04 (METAS, No. 251-00369)	May 05 Aug-05 May-06
Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2	SN: S5054 (3c) SN: S5086 (20b) SN: S5129 (30b)	5-May-34 (METAS, No. 251-00388) 13 Aug 04 (METAS, No. 251-00403) 3-May-04 (METAS, No. 251-00389) 13-Aug-04 (METAS, No. 251-00404)	May 05 Aug-05 May-06 Aug-05
Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2 SAE4	SN: S5054 (3c) SN: S5086 (20b) SN: S5129 (30b) SN: 3013	5-May-34 (METAS, No. 251-00368) 13 Aug 04 (METAS, No. 251-00403) 3-May-04 (METAS, No. 251-00369) 13-Aug-04 (METAS, No. 251-00404) 7-Jan-05 (SPEAG, No. ES3-3013, Jan05)	May 05 Aug-05 May-06 Aug-05 Jan-06
Power sensor E4412A Reference 3 dB Attonuator Reference 20 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2 SAE4 Secondary Standards	SN. S5354 (3c) SN: S5386 (20b) SN: S5129 (30b) SN: 3013 SN: 617	5-May-34 (METAS, No. 251-00388) 10 Aug 04 (METAS, No. 251-00403) 3-May-04 (METAS, No. 251-00389) 10-Aug-04 (METAS, No. 251-00404) 7-Jan-05 (SPEAG, No. ES3-3013, Jan05) 19-Jan-05 (SPEAG, No. DAE4-617_Jan05)	May 05 Aug-05 May-05 Aug-05 Jan-06 Jan-06
Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 20 dB Attenuator Reference Probe FS3DV2 SAE4 Secondary Standarcs Power sensor MP 8481A	SN, S5354 (3c) SN: S5386 (20b) SN: S5129 (30b) SN: 3013 SN: 617	5-May-34 (METAS, No. 251-00368) 10 Aug 04 (METAS, No. 251-00403) 3-May-04 (METAS, No. 251-00369) 10-Aug-04 (METAS, No. 251-00404) 7-Jan-05 (SPEAG, No. 263-3013 Jan05) 19-Jan-05 (SPEAG, No. 2AE4-617_Jan05) Check Date (in house) 18-Sep-32 (SPEAG, in house check Oct-03) 4-Aug-99 (SPEAG, in house check Dec-03)	May 05 Aug-05 Aug-05 Jan-06 Jan-06 Scheduled Check In house check: Ont 06 In house check: Dec-05
Power sensor E4412A Reference 3 dB Artenuator Reference 20 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2 CAE4 Secondary Standards Power sensor MP 8481A RF generator MP 8648C	SN: S5054 (3c) SN: S5086 (20b) SN: S5129 (30b) SN: 3013 SN: 617 ID # MY41092180	5-May-34 (METAS: No. 251-00368) 13 Aug 04 (METAS: No. 251-00403) 3-May-04 (METAS: No. 251-00403) 13-Aug-04 (METAS: No. 251-00404) 7-Jan-05 (SPEAG; No. ES3-3013 Jan05) 19-Jan-05 (SPEAG; No. SAE4-617_Jan05) Check Date (in house) 18-Sep-02 (SPEAG; in house check Oct-03)	May 05 Aug-05 Aug-05 Jan-06 Jan-06 Scheduled Check In house check: Oat 05
Power sensor E4412A Reference 3 dB Attonuator Reference 20 dB Attenuator Reference 30 dB Attenuator Reference Probe ES3DV2 CAE4 Secondary Standards Power sensor HP 8648C	SN: 95054 (3c) SN: 55086 (20b) SN: 35129 (30b) SN: 3013 SN: 617 ID # MY41092180 US3642U01700	5-May-34 (METAS, No. 251-00368) 10 Aug 04 (METAS, No. 251-00403) 3-May-04 (METAS, No. 251-00369) 10-Aug-04 (METAS, No. 251-00404) 7-Jan-05 (SPEAG, No. 263-3013 Jan05) 19-Jan-05 (SPEAG, No. 2AE4-617_Jan05) Check Date (in house) 18-Sep-32 (SPEAG, in house check Oct-03) 4-Aug-99 (SPEAG, in house check Dec-03)	May 05 Aug-05 Aug-05 Jan-06 Jan-06 Scheduled Check In house check: Ont 06 In house check: Dec-05
Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator	SN: S5054 (3c) SN: S5066 (205) SN: S5129 (305) SN: 3013 SN: 617 ID # MY41092180 US3642U01700 US37390585	5-May-34 (METAS, No. 251-00388) 10 Aug 04 (METAS, No. 251-00403) 3-May-04 (METAS, No. 251-00403) 10-Aug-04 (METAS, No. 251-00404) 7-Jan-05 (SPEAG, No. 251-00404) 19-Jan-05 (SPEAG, No. 2AE4-617_Jan05) 19-Jan-05 (SPEAG, No. 2AE4-617_Jan05) Check Date (in house) 18-Scp-02 (SPEAG, in house check Oct-03) 4-Aug-99 (SPEAG, in house check Dec-03) 18-Oct-01 (SPEAG, in house check Nov-04)	May 05 Aug-05 May-05 Jan-06 Jan-06 Scheduled Check In house check: Oct 05 In house check: Oct 05 In house check: Dec-05 an house check: Nov 05
Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 20 dB Attenuator Reference Probe ES3DV2 CAE4 Secondary Standarcs Power sensor HP 8481A RF generator HP 8648C Network Analyzer HP 8753F	SN: S5054 (3c) SN: S5086 (20b) SN: S5129 (30b) SN: 3013 SN: 617 ID # MY41092180 US3642U01700 US37390585 Name	5-May-34 (METAS: No. 251-00388) 13 Aug 04 (METAS: No. 251-00403) 3-May-04 (METAS: No. 251-00403) 13-Aug-04 (METAS: No. 251-00404) 7-Jan-05 (SPEAG; No. 251-00404) 7-Jan-05 (SPEAG; No. 261-0404) 19-Jan-05 (SPEAG; No. 264-617_Jan05) 19-Jan-05 (SPEAG; No. 264-617_Jan05) 19-Jan-05 (SPEAG; No. 264-617_Jan05) 19-Sep-02 (SPEAG; In house check Oct-03) 4-Aug-09 (SPEAG; In house check Det-03) 18-Oct-01 (SPEAG; In house check Nov-04) Function	May 05 Aug-05 May-05 Jan-06 Scheduled Check In house check: Oct 05 In house check: Dec-05 in house check: Nov 05

RTS RIM Testing Services			Page 41(69)
Author Data Daoud Attavi	Dates of Test Jan. 09-31, Mar. 21-23, 2006	FCC ID: L6ARBD50UW	
Davuu Anayi	Jan. 07-51, Mai. 21-25, 2000	RTS-0258-0601-08 rev. 02	LUARDDSUUW

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



Schweizerischer Kelibrierdianst Service suisse d'étaionnage Servizio svizzero di teretura

Swiss Calibration Service

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Accreditation No.: SCS 108

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

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
Polarization ϕ	φ rotation around probe axis
Polarization 9	§ rotation around an axis that is in the plane normal to probe axis (at
	measurement center), i.e., $\vartheta = 0$ is normal to probe axis

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

Methods Applied and Interpretation of Parameters:

- NORMx,y,z: Assessed for E-field polarization ∂ = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx,y,z are only intermediate values, i.e., the uncertainties of NORMx,y,z does not effect the E²-field uncertainty inside TSL (see below *ConvF*).
- NORM(f)x,y,z = NORMx,y,z * frequency_response (see Frequency Response Chart). This
 linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of
 the frequency response is included in the stated uncertainty of ConvF.
- DCPx,y,z: DCP are numerical linearization parameters assessed based on the data of
 power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- ConvF and Boundary Effect Parameters: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx,y,z * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

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RTS RIM Testing Services			Page 42(69)
Author Data	Dates of Test	FCC ID:	
Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

March 15, 2005

Probe ET3DV6

SN:1643

Manufactured: Last calibrated: Recalibrated: November 7, 2001 September 21, 2004 March 15, 2005

Calibrated for DASY Systems (Note: non-compatible with DASY2 system!)

Certificate No: ET3-1643_Mar05

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Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

March 15, 2005

_

DASY - Parameters of Probe: ET3DV6 SN:1643

Sensitivity in Free Space ^A			Diode C	ompression ⁸
NormX	1.76 ± 10.1%	μV/(V/m) ²	DCP X	94 mV
NormY	1.88 ± 10.1%	μV/(V/m) ²	DCP Y	94 mV
NormZ	1.78 ± 10.1%	μV/(V/m) ²	DCP Z	94 mV

Sensitivity in Tissue Simulating Liquid (Conversion Factors)

Please see Page 8.

Boundary Effect

TSL 900 MHz Typical \$AR gradient: 5 % per mm Sensor Center to Phantom Surface Distance 3.7 mm 4.7 mm

SAR	Without Correction Algorithm	9.0	4.6
SAR _{be} [%]	With Correction Algorithm	0.1	0.3

TSL 1810 MHz Typical SAR gradient: 10 % per mm

Sensor Center to Phantom Surface Distance		3.7 mm	4.7 mm
SAR _{be} [%]	Without Correction Algorithm	13.7	9.4
SAR _{be} [%]	With Correction Algorithm	0.5	0.1

Sensor Offset

Probe Tip to Sensor Center

2.7 mm

- .-

The reported uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

^A The uncertainties of NomX,Y,Z do not affect the E^2 -field uncertainty inside TSL (see Page 8).

^a Numerical linearization parameter: uncertainty not required.

Certificate No: ET3-1643_Mar05

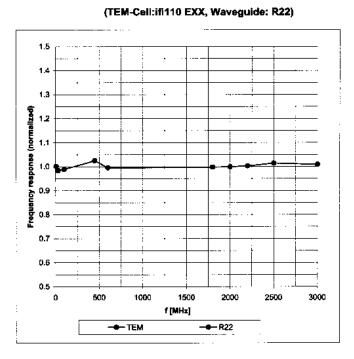
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RTS RIM Testing Services			Page 44(69)
Author Data	Dates of Test	FCC ID:	
Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

March 15, 2005

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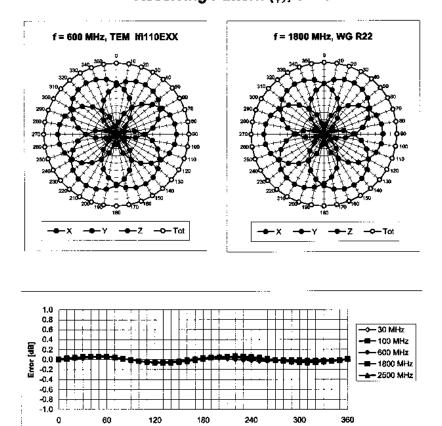
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Certificate No: ET3-1643_Mar05

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RTS	Appendices for the BlackBerry	Page
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March 15, 2005



Receiving Pattern (ϕ), $\vartheta = 0^{\circ}$

Uncertainty of Axial isotropy Assessment: ± 0.5% (k=2)

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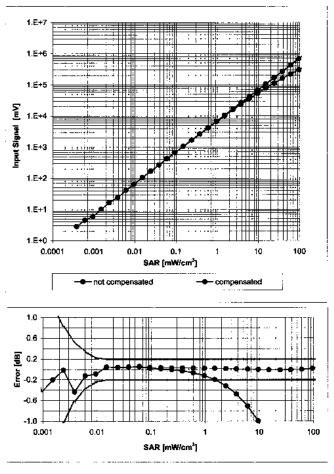
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Certificate No: ET3-1643_Mar05

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Author Data	Dates of Test	Test Report No	FCC ID:
Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

March 15, 2005



Dynamic Range f(SAR_{head}) (Waveguide R22, f = 1800 MHz)

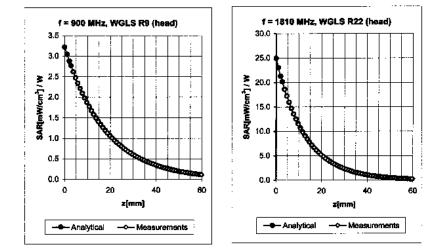
Uncertainty of Linearity Assessment: ± 0.6% (k=2)

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RTS RIM Testing Services	Appendices for the BlackBerry Model RBD50UW SAR Report	^{Page} 47(69)
Author Data Daoud Attayi	Dates of Test Jan. 09-31, Mar. 21-23, 2006	FCC ID: L6ARBD50UW

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Conversion Factor Assessment

<u>f [MHz]</u>	Validity [NHz] ^C	TSL	Permittivity	Conductivity	Alpha	Depth	ConvF Uncertainty
900	±50/±100	Head	41.5 ± 5%	0.97 ± 5%	0.67	1.77	6.48 ± 11.0% (k=2)
1810	$\pm 50 / \pm 100$	Head	40.0 ± 5%	1.40 ± 5%	0.52	2.58	5.11 ± 11.0% (k=2)
900	± 50 / ± 100	Body	55.0 ± 5%	1.05 ± 5%	0.53	2.09	6.17 ± 11.0% (k=2)
1810	± 50 / ± 100	Body	53.3 ± 5%	1.52 ± 5%	0.52	2.87	4.69 ± 11.0% (k=2)

 $^{\rm D}$ The validity of \pm 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

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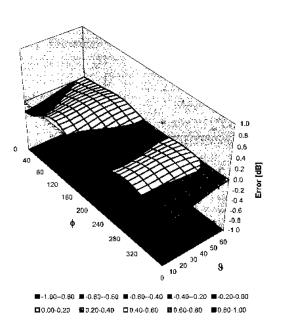
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RTS RIM Testing Services	Appendices for the BlackBerry Model RBD50UW SAR Report	Page 48(69)	
Author Data	Dates of Test	Test Report No	FCC ID:
Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

March 15, 2005

Deviation from Isotropy in HSL

Error (¢, 8), f = 900 MHz



Uncertainty of Spherical Isotropy Assessment: \pm 2.6% (k=2)

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	Testing Services				
or Data oud At		Dates of Test Jan. 09-31, Mar	. 21-23, 2006	Test Report No RTS-0258-0601-08 rev. 0	FCC ID: 2 L6ARBD50U
	Calibration Labora Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 2		NAC NORA	ISG S Schweizerischer Kalibrierdiens Service suisse d'etalonnage Servizie svizzero di taratura S Servizie svizzero di taratura S Servizie svizzero di taratura	
	Accredited by the Swiss Fed The Swiss Accreditation Se Multilateral Agreement for I	rvice is one of the signator	ies to the EA	Accreditation No.: SCS 108	
	Client RIM			Certificate No: ET3-1644_Nov05	
	CALIBRATION	CERTIFICAT	E		
	Object.	ET3DV6 - SN:1	644		
	Calibration procedure(s)	QA CAL-01.v5 Calibration proc	edure for dosimetric E-	field probes	
	Calibration date:	November 11, 2	2005	and the second second	
	Condition of the calibrated in	In Tolerance			
)	The measurements and the All calibrations have been co	uncertainties with confidence	probability are given on the followy facility: environment temper	the physical units of measurements (Si), swing pages and are part of the certificate ature (22 ± 3)*C and turnidity < 70%.	
	Primary Standards	10.4	Cal Oato (Calibrated by, Cr	rtificate No.) Scheduled Calibration	
	Power meter E44198 Power sensor E4412A Power sensor E4412A Reference 3 dB Attenuator Reference 20 dB Attenuator Reference 20 dB Attenuator Reference 20 dB Attenuator Reference Probe E53DV2 DAE4	GB41203874 MY41465277 MY41465057 SN: 55054 (3c) SN: 55056 (20b) SN: 55129 (30b) SN: 55129 (30b) SN: 554	3-May-05 (METAS, No. 25 3-May-05 (METAS, No. 25 3-May-05 (METAS, No. 25 11-Aug-05 (METAS, No. 25 3-May-05 (METAS, No. 25 11-Aug-05 (METAS, No. 25 7-Jam-05 (SPEAG, No. ES) 27-Oct-05 (SPEAG, No. D/	1-00466) Muy-06 1-00466) Muy-06 11-00499) Aug-06 1-00467) Muy-06 1-00450) Aug-06 1-0050) Aug-06	
	Secondary Standards RF generator HP 8648C Network Analyzer HP 8753E	US3642U01700 US37390565	Check Date (in house) 4-Aug-99 (SPEAG, in hous 18-Oct-01 (SPEAG, in hous		_
	Calibrated by:	Namo Nico Voțierii	Function Laboratory Te	Signature D.VAD	
	Approved by:	Kirije Pokovic	Technical Man	iterican DSAD war foller: 164-	
	This calibration curtificate sh	all but he month and excert	in full without written approval o	lesued: November 12, 2005	
	Certificate No: ET3-1644		Page 1 of 9		-

RTS RIM Testing Services	Appendices for the BlackBerry Model RBD50UW SAR Report	Wireless Handheld	Page 50(69)
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Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

Calibration Laboratory of Schmid & Partner Engineering AG Zeughausstrasse 43, 3004 Zurich, Switzerland



S Schweizerlacher Kalibrierdiens: Service suisse d'étaionnage Servizio svizzero di taratura S Swiss Calibration Service

Accreditation No.: SCS 108

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

Glossary:

TSL	tissue simulating liquid
NORMx,y,z	sensitivity in free space
ConF	sensitivity in TSL / NORMx,y,z
DCP	diode compression point
Polarization ϕ	φ rotation around probe axis
Polarization 9	ϑ rotation around an axis that is in the plane normal to probe axis (at measurement center), i.e., $\vartheta = 0$ is normal to probe axis

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

Methods Applied and Interpretation of Parameters:

- NORMx, y, z: Assessed for E-field polarization 9 = 0 (f ≤ 900 MHz in TEM-cell; f > 1800 MHz: R22 waveguide). NORMx, y, z are only intermediate values, i.e., the uncertainties of NORMx, y, z does not effect the E²-field uncertainty inside TSL (see below ConvF).
- NORM(f)x,y,z = NORMx,y,z * frequency_response (see Frequency Response Chart). This
 linearization is implemented in DASY4 software versions later than 4.2. The uncertainty of
 the frequency response is included in the stated uncertainty of ConvF.
- DCPx,y,z: DCP are numerical linearization parameters assessed based on the data of
 power sweep (no uncertainty required). DCP does not depend on frequency nor media.
- ConvF and Boundary Effect Parameters: Assessed in flat phantom using E-field (or Temperature Transfer Standard for f ≤ 800 MHz) and inside waveguide using analytical field distributions based on power measurements for f > 800 MHz. The same setups are used for assessment of the parameters applied for boundary compensation (alpha, depth) of which typical uncertainty values are given. These parameters are used in DASY4 software to improve probe accuracy close to the boundary. The sensitivity in TSL corresponds to NORMx, y, z * ConvF whereby the uncertainty corresponds to that given for ConvF. A frequency dependent ConvF is used in DASY version 4.4 and higher which allows extending the validity from ± 50 MHz to ± 100 MHz.
- Spherical isotropy (3D deviation from isotropy): in a field of low gradients realized using a
 flat phantom exposed by a patch antenna.
- Sensor Offset: The sensor offset corresponds to the offset of virtual measurement center from the probe tip (on probe axis). No tolerance required.

Certificate No: ET3-1644_Nov05

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	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

)

November 11, 2005

Probe ET3DV6

SN:1644

Manufactured: Last calibrated: Recalibrated: November 7, 2001 November 19, 2004 November 11, 2005

Calibrated for DASY Systems

(Note: non-compatible with DASY2 system!)

Certificate No: ET3-1644_Nov05

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	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

November 11, 2005

DASY - Parameters of Probe: ET3DV6 SN:1644

			۵		Diada	Compropries
Sensi	tivity in Fre	e Space	£.		Diode	Compression ^B
	NormX	1.8	1 ± 10.1%	μV/(V/m) ²	DCP X	92 mV
	NormY	1.9	7 ± 10.1%	μV/(V/m) ²	DCP Y	92 mV
	NormZ	1.6	9 ± 10.1%	μV/(V/m) ²	DCP Z	92 mV
Sensi	itivity in Tis	sue Sim	ulating Li	iquid (Convers	sion Factors	\$)
	see Page 8.		_			
FIEADO	300 Fage u.					
Boun	dary Effect	t				
T\$L	S	900 MHz	Typical S	AR gradient: 5 % p	er mm	
	Sensor Cente	er to Phanto	om Surface D	listance	3.7 mm	4.7 mm
	SAR _{be} [%]		t Correction		8.3	4.3
	SAR _{be} [%]	With C	orrection Alg	orithm	0.0	0.2
TSL	1:	810 MHz	Typical S	AR gradient: 10 %	per mm	
	•		.,,		•	
	Sensor Cent	er to Phante	om Surface E	listance	3.7 mm	4.7 mm
	SAR _{be} [%]	Withou	t Correction .	Algorithm	15.5	10.2
	SAR _{be} [%]	With C	orrection Alg	orithm	0.5	0.2
Sens	or Offset					
	Probe Tip to	Sensor Ce	nter		2.7 mm	
				nent is stated as	the standard	uncertainty of
The r	reported unco surement mu	ertainty of Itiplied by	r measuren the covers	ige factor k=2, w	hich for a no	mal distribution
corre	sponds to a	coverage	probability	of approximate	ly 95%.	
			-			
^ The u	ncertainties of Norr	mX,Y,Z do not	affect the E ² -fiel	d uncertainty inside TSL	(see Page 8).	
⁶ Nume	rical linearization p	parameter: und	ertainty not requ	iirəd.		

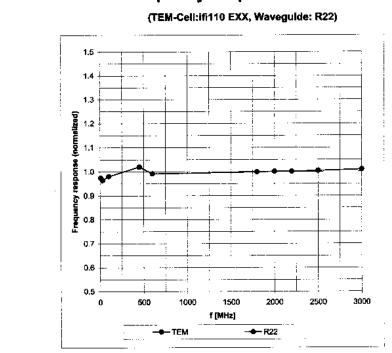
Certificate No: ET3-1644_Nov05

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November 11, 2005



Frequency Response of E-Field

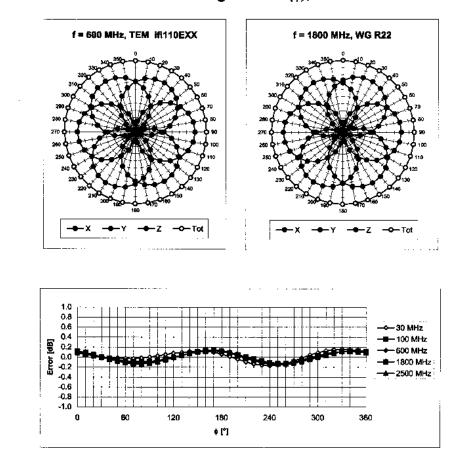
Uncertainty of Frequency Response of E-field: ± 6.3% (k=2)

Certificate No: ET3-1644_Nov05

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RTS RIM Testing Services	Appendices for the BlackBerry Model RBD50UW SAR Repo		Page 54(69)
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Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

November 11, 2005



Receiving Pattern (ϕ), $\vartheta = 0^{\circ}$

Uncertainty of Axial Isotropy Assessment: ± 0.5% (k=2)

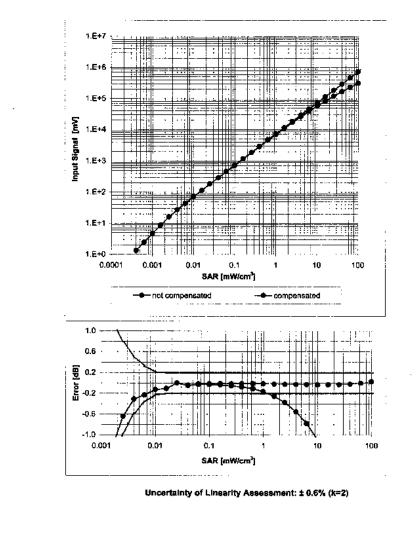
Certificate No: ET3-1644_Nov05

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Author Data	Dates of Test	Test Report No	FCC ID:
Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

November 11, 2005



Dynamic Range f(SAR_{head}) (Waveguide R22, f = 1800 MHz)

Certificate No: ET3-1844_Nov05

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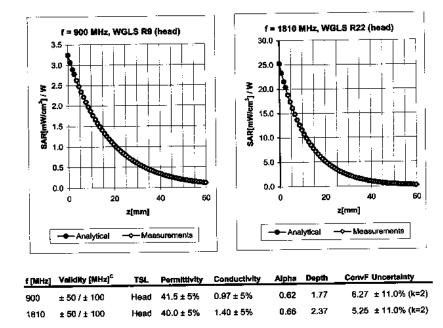
		^{Page} 56(69)
Dates of Test Jan 09-31 Mar 21-23 2006	Test Report No BTS_0258_0601_08 rov_02	FCC ID: L6ARBD50UW
	Appendices for the BlackBerry Model RBD50UW SAR Report	Appendices for the BlackBerry Wireless Handheld Model RBD50UW SAR Report

November 11, 2005

6.16 ± 11.0% (k=2)

4.51 ± 11.0% (k=2)

- - -



Conversion Factor Assessment

^C The validity of ± 100 MHz only applies for DASY v4.4 and higher (see Page 2). The uncertainty is the RSS of the ConvF uncertainty at calibration frequency and the uncertainty for the indicated frequency band.

Body 55.0 ± 5% 1.05 ± 5%

Body 53.3 ± 5% 1.52 ± 5%

0.49

0.60

2.07

2.65

Certificate No: ET3-1644_Nov05

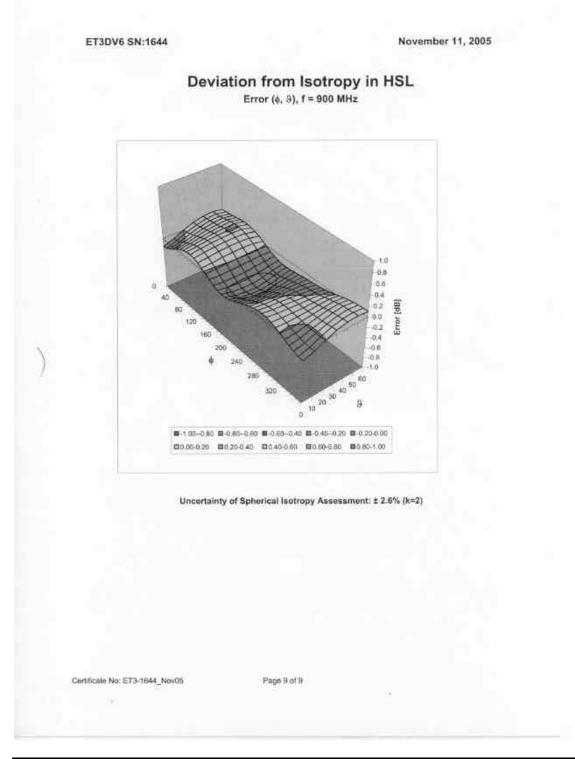
± 50 / ± 100

1810 ± 50 / ± 100

900

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Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW



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Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

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

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Accreditation No.: SCS 108

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Certificate No: D835V2-446_Jan05

Dbject	D835V2 - SN: 44	6	
Calibration procedure(s)	QA CAL-05.v6 Calibration proces	dure for dipole validation kits	
alibration date:	January 7, 2005	an a	
Condition of the calibrated item	In Tolerance		
This calibration certificate docum	ents the traceability to nation	onal standards, which realize the physical units of	measurements (SI).
		obability are given on the following pages and are	
All collibrations have been condu	rted in the closest laborator	y facility: environment temperature (22 ± 3)°C and	t humidity < 70%.
Calibration Equipment used (M&	TE critical for calibration)		
Primary Standards	ID#	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM E442	GB37480704	12-Oct-04 (METAS, No. 251-00412)	Oct-05
Power sensor HP 8481A	U\$37292783	12-Oct-04 (METAS, No. 251-00412)	Oct-05
Reference 20 dB Attenuator	SN: 5086 (20g)	10-Aug-04 (METAS, No 251-00402)	Aug-05
Reference 10 dB Attenuator	SN: 5047.2 (10r)	10-Aug-04 (METAS, No 251-00402)	Aug-05
Reference Probe ET3DV6	SN 1507	26-Oct-04 (SPEAG, No. ET3-1507_Oct04)	Oct-05
DAE4	SN 907	03-May-04 (SPEAG, No. DAE4-907_Mayl04)	May-05
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-03)	In house check: Oct-05
RF generator R&S SML-03	100698	27-Mar-02 (SPEAG, in house check Dec-03)	In house check: Dec-05
Network Analyzer HP 8753E	US37390585 S4206	Oct-01 (SPEAG, in house check Nov-04)	In house check: Nov-05
	Name	Function	Signature
Calibrated by:	Judith Müller	Leborstory Technicten	Anutla
Approved by:	Ketja Pokovic	Technical Manager	Plaine Katz
			/
			Issued: January 13, 2005

RTS RIM Testing Services	Appendices for the BlackBerry Model RBD50UW SAR Report		^{Page} 59(69)
Author Data Daoud Attayi	Dates of Test	Test Report No	FCC ID:
	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

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



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Accreditation No.: SCS 108

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

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.

Certificate No: D835V2-446 Jan05

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Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

Measurement Conditions

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

DASY Version	DASY4	V4.4
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	42.2 ± 6 %	0.91 mho/m ± 6 %
Head TSL temperature during test	(22.0 ± 0.2) °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	condition	
SAR measured	250 mW input power	2.27 mW / g
SAR normalized	normalized to 1W	9.08 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	9.10 mW / g ± 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
	condition 250 mW input power	1.48 mW / g
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured SAR normalized		1.48 mW / g 5.92 mW / g

¹ Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Certificate No: D835V2-446_Jan05

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Author Data Daoud Attayi	Dates of Test	Test Report No	FCC ID:
	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW
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RIM Testing Services	Model RBD50UW SAR Report		61(69)

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	50.1 Ω - 7.1 jΩ
Return Loss	- 22.9 dB

General Antenna Parameters and Design

· · · · · · · · · · · · · · · · · · ·	
Electrical Delay (one direction)	1.385 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	October 24, 2001

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Certificate No: D835V2-446_Jan05

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Author Data Daoud Attayi	Dates of Test	Test Report No	FCC ID:
	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

DASY4 Validation Report for Head TSL

Date/Time: 01/07/05 15:08:43

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 835 MHz; Type: D835V2; Serial: D835V2 - SN446

Communication System: CW-835; Frequency: 835 MHz; Duty Cycle: 1:1 Medium: HSL 900 MHz; Medium parameters used: f = 835 MHz; $\sigma = 0.91$ mho/m; $\varepsilon_f = 42.2$; $\rho = 1000$ kg/m³ Phantom section: Flat Section Measurement Standard: DASY4 (High Precision Assessment)

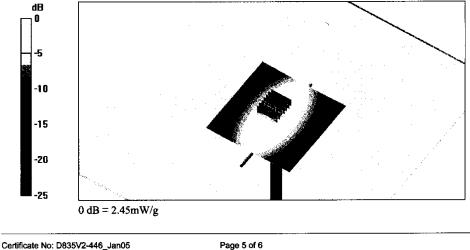
DASY4 Configuration:

- Probe: ET3DV6 SN1507; ConvF(6.24, 6.24, 6.24); Calibrated: 26.10.2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn907; Calibrated: 03.05.2004
- Phantom: Flat Phantom 4.9L; Type: QD000P50AA; Serial: SN:1001;
- Measurement SW: DASY4, V4.4 Build 10; Postprocessing SW: SEMCAD, V1.8 Build 133 •

Pin = 250 mW; d = 15 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 2.44 mW/g

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

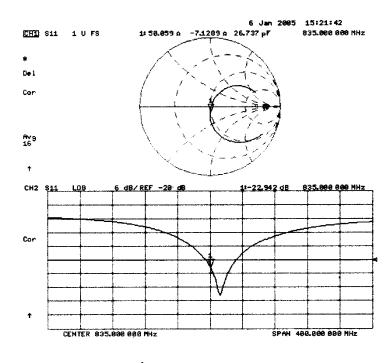
Reference Value = 54.2 V/m; Power Drift = 0.0 dB Peak SAR (extrapolated) = 3.36 W/kg SAR(1 g) = 2.27 mW/g; SAR(10 g) = 1.48 mW/g Maximum value of SAR (measured) = 2.45 mW/g



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Impedance Measurement Plot for Head TSL



Certificate No: D835V2-446_Jan05

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Certificate No: D1900V2-545_Jan05

	CERTIFICATE		
Object	D1900V2 - SN: 5	45	
Calibration procedure(s)	QA CAL-05.v6 Calibration proce	dure for dipole validation kits	
Calibration date:	January 06, 2005	i	
Condition of the calibrated item	In Tolerance		
The measurements and the unce	ertainties with confidence p	onal standards, which realize the physical units of robability are given on the following pages and are y facility: environment temperature (22 ± 3)°C and	e part of the certificate.
Calibration Equipment used (M&	TE critical for calibration)		
Primary Standards	ID#	Cal Date (Calibrated by, Certificate No.)	Scheduled Calibration
Power meter EPM E442	GB37480704	12-Oct-04 (METAS, No. 251-00412)	Oct-05
Power sensor HP 8481A	US37292783	12-Oct-04 (METAS, No. 251-00412)	Oct-05
Reference 20 dB Attenuator	SN: 5086 (20g)	10-Aug-04 (METAS, No 251-00402)	Aug-05
Reference 10 dB Attenuator	SN: 5047.2 (10r)	10-Aug-04 (METAS, No 251-00402)	Aug-05
Reference Probe ET3DV6	SN 1507	26-Oct-04 (SPEAG, No. ET3-1507_Oct04)	Oct-05
DAE4	SN 907	03-May-04 (SPEAG, No. DAE4-907_Mayl04)	May-05
Secondary Standards	ID #	Check Date (in house)	Scheduled Check
Power sensor HP 8481A	MY41092317	18-Oct-02 (SPEAG, in house check Oct-03)	In house check: Oct-05
RF generator R&S SML-03	100698	27-Mar-02 (SPEAG, in house check Dec-03)	In house check: Dec-05
Network Analyzer HP 8753E	US37390585 54206	18-Oct-01 (SPEAG, in house check Nov-04)	In house check: Nov 05
-			
	Name	Function	Signature
Calibrated by:	Name Judith Müller	Function	
Calibrated by: Approved by:		Function	Signature MMM Lon := Kat-

Certificate No: D1900V2-545_Jan05

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Appendices for the BlackBerry V Model RBD50UW SAR Report	Vireless Handheld	65(69)
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]	Model RBD50UW SAR Report	Dates of Test Report No

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



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Swiss Calibration Service

Accreditation No.: SCS 108

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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.

Certificate No: D1900V2-545_Jan05

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Measurement Conditions

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

DASY Version	DASY4	V4.4
Extrapolation	Advanced Extrapolation	
Phantom	Modular Flat Phantom V4.9	
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

	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	38.9 ± 6 %	1.45 mho/m ± 6 %
Head TSL temperature during test	(22.0 ± 0.2) °C		

SAR result with Head TSL

SAR averaged over 1 cm ³ (1 g) of Head TSL	condition	•
SAR measured	250 mW input power	10.2 mW / g
SAR normalized	normalized to 1W	40.8 mW / g
SAR for nominal Head TSL parameters ¹	normalized to 1W	39.5 mW / g ± 17.0 % (k=2)
SAR averaged over 10 cm ³ (10 g) of Head TSL	condition	
	condition 250 mW input power	5.34 mW / g
SAR averaged over 10 cm ³ (10 g) of Head TSL SAR measured SAR normalized		5.34 mW / g 21.4 mW / g

¹ Correction to nominal TSL parameters according to d), chapter "SAR Sensitivities"

Certificate No: D1900V2-545_Jan05

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	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

Appendix

Antenna Parameters with Head TSL

Impedance, transformed to feed point	51.7 Ω + 2.1 jΩ
Return Loss	- 31.5 dB

General Antenna Parameters and Design

Electrical Delay (one direction)	1.198 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	November 15, 2001

Certificate No: D1900V2-545_Jan05

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	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

DASY4 Validation Report for Head TSL

Date/Time: 01/06/05 18:30:23

Test Laboratory: SPEAG, Zurich, Switzerland

DUT: Dipole 1900 MHz; Type: D1900V2; Serial: D1900V2 - SN545

Communication System: CW-1900; Frequency: 1900 MHz;Duty Cycle: 1:1 Medium: HSL 1900 MHz; Medium parameters used: f = 1900 MHz; σ = 1.45 mho/m; ϵ_r = 39.6; ρ = 1000 kg/m³ Phantom section: Flat Section Measurement Standard: DASY4 (High Precision Assessment)

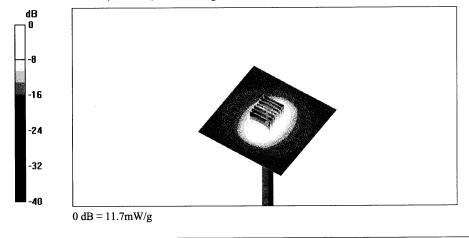
DASY4 Configuration:

- Probe: ET3DV6 SN1507; ConvF(4.96, 4.96, 4.96); Calibrated: 26.10.2004
- Sensor-Surface: 4mm (Mechanical Surface Detection)
- Electronics: DAE4 Sn907; Calibrated: 03.05.2004
- Phantom: Flat Phantom quarter size; Type: QD000P50AA; Serial: SN:1001;
- Measurement SW: DASY4, V4.4 Build 10; Postprocessing SW: SEMCAD, V1.8 Build 133

Pin = 250 mW; d = 10 mm/Area Scan (81x81x1): Measurement grid: dx=15mm, dy=15mm Maximum value of SAR (interpolated) = 11.6 mW/g

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

Reference Value = 95.2 V/m; Power Drift = 0.007 dBPeak SAR (extrapolated) = 18 W/kgSAR(1 g) = 10.2 mW/g; SAR(10 g) = 5.34 mW/gMaximum value of SAR (measured) = 11.7 mW/g

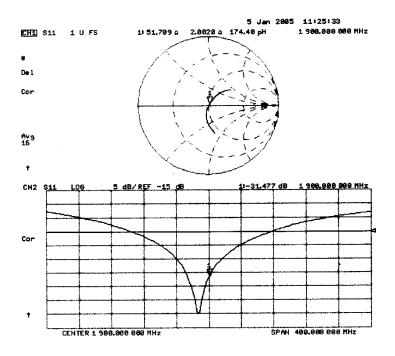


Certificate No: D1900V2-545_Jan05

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Daoud Attayi	Jan. 09-31, Mar. 21-23, 2006	RTS-0258-0601-08 rev. 02	L6ARBD50UW

Impedance Measurement Plot for Head TSL



Certificate No: D1900V2-545_Jan05

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