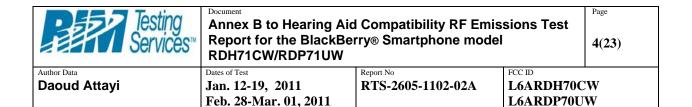
Testing Services**	Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RDH71CW/RDP71UW			Page 1(23)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Jan. 12-19, 2011 RTS-2605-1102-02A L6ARDH70CW			W
	Feb. 28-Mar. 01, 2011 L6ARDP70U			W

## Annex B: Probe and dipole descriptions and calibration certificates

**B.2** Dipole calibration certificate

r Data		CW/RDP71UW	Report No	artphone model	FCC ID	2(23)
oud Attayi	Jan. 12-	19, 2011 Mar. 01, 2011		05-1102-02A	L6ARDH70	
Calibration Laborato	rv of	and the state of t		Schweizerischer Kalibrie		
Schmid & Partner Engineering AG eughausstrasse 43, 8004 Zuri			No N	Service suisse d'étalonn Servizio svizzero di tarat Swiss Calibration Servic	age tura	
Accredited by the Swiss Accre The Swiss Accreditation Servi Multilateral Agreement for the	ce is one of the signatori		Accreditation	No.: SCS 108		
Client RTS (RIM Tes	ting Services)		Certificate No	: CD835V3-1011_No	9000	
CALIBRATION	CERTIFICAT	E 🕗 🍃 🏸				
Object	CD835V3 - SN:	1011			<sup>R</sup>	
Calibration procedure(s)	QA CAL-20.v4 Calibration proc	edure for dipoles in air				
	11 <sup>0</sup>	and the second second	a de la construcción de la constru	25 Martin Carlos	<u>6</u>	
Calibration date:	November 17, 2	and the set of the		and and a second se	8	
This calibration certificate docur All calibrations have been cond	ments the traceability to na ucted in the closed laborate	009 tional standards, which realize			8	
Calibration date: This calibration certificate docu All calibrations have been cond Calibration Equipment used (Ma Primary Standards	ments the traceability to na ucted in the closed laborate	009 tional standards, which realize			n	
This calibration certificate docu All calibrations have been cond Calibration Equipment used (Me Primary Standards Power meter EPM-442A	ments the traceability to na ucted in the closed laborati STE critical for calibration) ID # GB37480704	009 tional standards, which realize ory facility: environment temper Cal Date (Certificate No.) 06-Oct-09 (No. 217-01066)	rature (22 ± 3)*0	C and humidity < 70%. Scheduled Calibratics Oct-10	n	
This calibration certificate docur All calibrations have been cond Calibration Equipment used (M Primary Standards Power meter EPM-442A Power sensor HP 8481A	ments the traceability to na ucted in the closed laborati STE critical for calibration) ID # GB37480704 US37292783	009 tional standards, which realize ory facility: environment temper Cal Date (Certificate No.) 06-Oct-09 (No. 217-01066) 06-Oct-09 (No. 217-01066)	rature (22 ± 3)*0	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10	n	
This calibration certificate docur All calibrations have been cond Calibration Equipment used (Mi Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6	ID # GB37480704 US37292783 SN: 2336	Coop tional standards, which realize ory facility: environment temper Cal Date (Certificate No.) 06-Oct-09 (No. 217-01066) 06-Oct-09 (No. 217-01066) 22-Dec-08 (No. ER3-2336)	rature (22 ± 3)*0	Scheduled Calibration Oct-10 Oct-09 Dec-09	n	
This calibration certificate docur All calibrations have been cond Calibration Equipment used (M Primary Standards Power meter EPM-442A Power sensor HP 8481A	ments the traceability to na ucted in the closed laborati STE critical for calibration) ID # GB37480704 US37292783	009 tional standards, which realize ory facility: environment temper Cal Date (Certificate No.) 06-Oct-09 (No. 217-01066) 06-Oct-09 (No. 217-01066)	Dec08)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10	n	
This calibration certificate docur All calibrations have been condi- Calibration Equipment used (Ma Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4	ID # GB37480704 US37282783 SN: 2336 SN: 6065 SN: 781	009 tional standards, which realize ory facility: environment temper Gal Date (Certificate No.) 06-Oct-09 (No. 217-01066) 06-Oct-09 (No. 217-01066) 08-Oct-09 (No. 217-01066) 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. H3-60551 20-Feb-09 (No. DAE4-781)	Dec08)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Dec-09 Dec-09 Feb-10	<u>n</u>	
This calibration certificate docur All calibrations have been cond Calibration Equipment used (Mi Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER30V6 Probe H3DV6 DAE4 Secondary Standards	ments the traceability to na ucted in the closed laboration) STE critical for calibration) ID # GB37480704 US37282783 SN: 2336 SN: 2336 SN: 6065 SN: 781 ID #	Cal Date (Certificate No.) Cal Date (Certificate No.) 06-Oct-09 (No. 217-01066) 06-Oct-09 (No. 217-01066) 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. DAE4-781, Check Date (in house)	Dec08) Feb09)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Oct-10 Dec-09 Feb-10 Scheduled Check		
This calibration certificate docur All calibrations have been cond Calibration Equipment used (Ma Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 4419B	ID # GB37480704 US37292783 SN: 2336 SN: 2336 SN: 781 ID # ID # SN: GB42420191	Coop tional standards, which realize ory facility: environment temper Cal Date (Certificate No.) 06-Oct-09 (No. 217-01066) 06-Oct-09 (No. 217-01066) 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. H3-6065,- 20-Feb-09 (No. DAE4-781, Check Date (in house) 09-Oct-09 (in house check	rature (22 ± 3)*0 Dec08) Dec08) Feb09) Oct-09)	Scheduled Calibration Oct-10 Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check In house check: Oct-	10	
This calibration certificate docur All calibrations have been cond Calibration Equipment used (M/ Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 4419B Power sensor HP 8482H	ID # GB37480704 US37292783 SN: 2336 SN: 2336 SN: 781 ID # ID # SN: GB42420191 SN: 3318A09450	Coop tional standards, which realize ory facility: environment temper Cal Date (Certificate No.) 06-Oct-09 (No. 217-01066) 06-Oct-09 (No. 217-01066) 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. H3-60651 20-Feb-09 (No. DAE4-781, Check Date (in house) 09-Oct-09 (in house check 09-Oct-09 (in house check	rature (22 ± 3)*0 Dec08) Dec08) Feb09) Oct-09) Oct-09)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check In house check: Oct- In house check: Oct-	10	
This calibration certificate docu All calibrations have been cond Calibration Equipment used (M/ Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power sensor HP 8482H Power sensor HP 8482H Power sensor HP 8482H	ID # GB37480704 US37292783 SN: 2336 SN: 2336 SN: 781 ID # ID # SN: GB42420191	Coop tional standards, which realize ory facility: environment temper Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 22-Dec-08 (No. H3-6065 20-Feb-09 (No. DAE4-781_ Check Date (in house) 09-Oct-09 (in house check 09-Oct-09 (in house check 09-Oct-09 (in house check	ature (22 ± 3)*0 Dec08) Dec08) Feb09) Oct-09) Oct-09) Oct-09)	Scheduled Calibration Oct-10 Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check In house check: Oct-	10 10 10	
This calibration certificate docur All calibrations have been cond Calibration Equipment used (Ma Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 4419B	ID # GB37480704 US37292783 SN: 2336 SN: 2336 SN: 6055 SN: 781 ID # SN: GB42420191 SN: 3318A09450 SN: US37295597	Coop tional standards, which realize ory facility: environment temper Cal Date (Certificate No.) 06-Oct-09 (No. 217-01066) 06-Oct-09 (No. 217-01066) 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. H3-60651 20-Feb-09 (No. DAE4-781, Check Date (in house) 09-Oct-09 (in house check 09-Oct-09 (in house check	ature (22 ± 3)*0 Dec08) Dec08) Feb09) Oct-09) Oct-09) Oct-09) Oct-09)	C and humidity < 70%. Scheduled Calibration Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check In house check: Oct- In house check: Oct- In house check: Oct-	10 10 10 10	
This calibration certificate docur All calibrations have been cond Calibration Equipment used (M/ Primary Standards Power meter EPM-442A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Aglient 4419B Power sensor HP 8482H Power sensor HP 8482H Power sensor HP 8482A Network Analyzer HP 8753E	ID #         GB37480704           U37292783         SN: 2336           SN: 6055         SN: 781           ID #         SN: 6045           SN: 781         SN: 3318A09450           SN: U337295597         US37295657	009 tional standards, which realize ory facility: environment temper Cal Date (Certificate No.) 06-Oct-09 (No. 217-01066) 06-Oct-09 (No. 217-01066) 02-Dec-08 (No. ER3-2336, 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. DAE4-781, Check Date (in house) 09-Oct-09 (in house check 09-Oct-09 (in house check 18-Oct-01 (in house check	ature (22 ± 3)*0 Dec08) Dec08) Feb09) Oct-09) Oct-09) Oct-09) Oct-09)	C and humidity < 70%. Scheduled Calibration Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check In house check: Oct- In house check: Oct- In house check: Oct- In house check: Oct- In house check: Oct-	10 10 10 10	
This calibration certificate docur All calibrations have been cond Calibration Equipment used (M/ Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power sensor HP 8482A Power sensor HP 8482H Power sensor HP 8482A Network Analyzer HP 8753E RF generator E4433B	ID # GB37480704 US37292783 SN: 2336 SN: 2336 SN: 6055 SN: 781 ID # SN: GB42420191 SN: 3318A09450 SN: US37295597 US37390585 MY 41000675	Coop tional standards, which realize ory facility: environment temper Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 22-Dec-08 (No. H3-6065 20-Feb-09 (No. DAE4-781_ Check Date (in house) 09-Oct-09 (in house check 09-Oct-09 (in house check 09-Oct-09 (in house check 09-Oct-09 (in house check 03-Nov-04 (in house check	rature (22 ± 3)*0 Dec08) Dec08) Feb09) Oct-09) Oct-09) Oct-09) Oct-09) Oct-09)	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check In house check: Oct- In house check: Oct- In house check: Oct- In house check: Oct- In house check: Oct-	10 10 10 10	
This calibration certificate docur All calibrations have been cond Calibration Equipment used (M/ Primary Standards Power meter EPM-442A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Aglient 4419B Power sensor HP 8482H Power sensor HP 8482H Power sensor HP 8482A Network Analyzer HP 8753E	ID # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # ID # SN: GB42420191 SN: 3318A09450 SN: US37296597 US37390585 MY 41000675 Name	009 tional standards, which realize ory facility: environment temper 09 Cal Date (Certificate No.) 06-Oct-09 (No. 217-01086) 06-Oct-09 (No. 217-01086) 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. H3-6065 20-Feb-09 (No. DAE4-781, 09-Oct-09 (in house check 09-Oct-09 (in house check 09-Oct-09 (in house check 09-Oct-09 (in house check 03-Nov-04 (in house check 03-Nov-04 (in house check	rature (22 ± 3)*0 Dec08) Dec08) Dec08) Feb09) Oct-09) Oct-09) Oct-09) Oct-09) Oct-09) Arrician	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check In house check: Oct- In house check: Oct- In house check: Oct- In house check: Oct- In house check: Oct-	10 10 10 10	
This calibration certificate docur All calibrations have been cond Calibration Equipment used (Mi Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER30V6 Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 44198 Power sensor HP 8482H Power sensor HP 8482H Power sensor HP 8482H Power sensor HP 8482A Network Analyzer HP 8753E RF generator E4433B	ID # GB37490704 US37292783 SN: 2336 SN: 2336 SN: 6065 SN: 781 ID # ID # SN: GB42420191 SN: 3318A09450 SN: US37296597 US37390585 MY 41000675 Name Mike Met	Coop tional standards, which realize ory facility: environment temper O6-Oct-09 (No. 217-01066) 06-Oct-09 (No. 217-01066) 22-Dec-08 (No. ER3-2336, 22-Dec-08 (No. H3-6065,- 20-Feb-09 (No. DAE4-781, Check Date (in house) 09-Oct-09 (in house check 09-Oct-09 (in house check 03-Nov-04 (in house check Eunction	rature (22 ± 3)*0 Dec08) Dec08) Dec08) Feb09) Oct-09) Oct-09) Oct-09) Oct-09) Oct-09) Arrician	C and humidity < 70%. Scheduled Calibration Oct-10 Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check In house check: Oct- In house check: Oct- In house check: Oct- In house check: Oct- In house check: Oct-	10 10 10 11	

Testing Services™	Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RDH71CW/RDP71UW			Page 3(23)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Jan. 12-19, 2011 RTS-2605-1102-02A L6ARDH70CW			CW
	Feb. 28-Mar. 01, 2011 L6ARDP70UW			W



NISS

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



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

Accreditation No.: SCS 108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

#### References

[1]

ANSI-C63.19-2006 American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

#### [2] ANSI-C63.19-2007 American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

#### Methods Applied and Interpretation of Parameters:

- Coordinate System: y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes. In coincidence with the standards [1, 2], the measurement planes (probe sensor center) are selected to be at a distance of 10 mm above the top edge of the dipole arms.
- Measurement Conditions: Further details are available from the hardcopies at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole connected is set with a calibrated power meter connected and monitored with an auxiliary power meter connected to a directional coupler. While the dipole under test is connected, the forward power is adjusted to the same level.
- Antenna Positioning: The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections. It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASY5 Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the probe is essential for the accuracy.
- Feed Point Impedance and Return Loss: These parameters are measured using a HP 8753E Vector Network Analyzer. The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminating by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles.
- E- field distribution: E field is measured in the x-y-plane with an isotropic ER3D-field probe with 100 mW forward power to the antenna feed point. In accordance with [1, 2], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 10 mm (in z) above the top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any non-parallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, 10mm above the dipole surface.
- H-field distribution: H-field is measured with an isotropic H-field probe with 100mW forward power to the
  antenna feed point, in the x-y-plane. The scan area and sensor distance is equivalent to the E-field
  scan. The maximum of the field is available at the center (subgrid 5) above the feed point. The H-field
  value stated as calibration value represents the maximum of the interpolated H-field, 10mm above the
  dipole surface at the feed point.

Certificate No: CD835V3-1011\_Nov09

Page 2 of 6

Testing Services™	Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RDH71CW/RDP71UW			Page <b>5(23)</b>
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Jan. 12-19, 2011 RTS-2605-1102-02A L6ARDH70CW			CW
	Feb. 28-Mar. 01, 2011 L6ARDP70UW			W



## 1 Measurement Conditions

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

DASY Version	DASY5	V5.2 B157
DASY PP Version	SEMCAD X	V14.0 B57
Phantom	HAC Test Arch SD HAC P01 BA	
Distance Dipole Top - Probe Center	10 mm	
Scan resolution	dx, dy = 5 mm area = 20 x 18	
Frequency	835 MHz ± 1 MHz	
Forward power at dipole connector	20.0 dBm = 100mW	
Input power drift	< 0.05 dB	

#### 2 Maximum Field values

H-field 10 mm above dipole surface	condition	interpolated maximum
Maximum measured	100 mW forward power	0.464 A/m
Incertainty for H-field measurement: 8 2% (k=2)		

Jncertainty for H-field measurement: 8.2% (k=2)

E-field 10 mm above dipole surface	condition	Interpolated maximum
Maximum measured above high end-	100 mW forward power	168.6 V/m
Maximum measured above low end	100 mW forward power	157.4 V/m
Averaged maximum above arm	100 mW forward power	163.0 V/m

Uncertainty for E-field measurement: 12.8% (k=2)

#### 3 Appendix

## 3.1 Antenna Parameters

Frequency	Return Loss	Impedance
800 MHz	15.7 dB	(44.8 – j14.9) Ohm
835 MHz	31.8 dB	(48.5 + j2.0) Ohm
900 MHz	17.7 dB	(54.3 – j12.9) Ohm
950 MHz	20.5 dB	(44.7 + j7.2) Ohm
960 MHz	16.3 dB	( 51.0 + j15.7 ) Ohm

#### 3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth.

The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals.

Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

Certificate No: CD835V3-1011\_Nov09

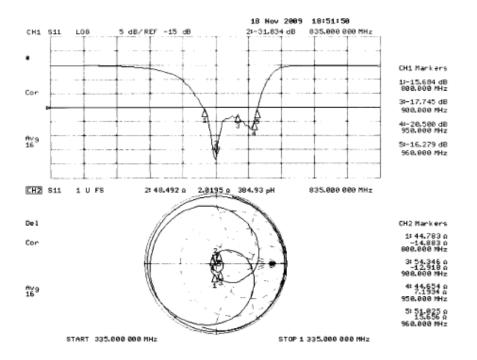
Page 3 of 6

Testing Services™	Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RDH71CW/RDP71UW			Page 7(23)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Jan. 12-19, 2011 RTS-2605-1102-02A L6ARDH70CW			W
	Feb. 28-Mar. 01, 2011 L6ARDP70U			W

Testing Services <sup>™</sup>	Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RDH71CW/RDP71UW			Page 8(23)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Jan. 12-19, 2011 RTS-2605-1102-02A L6ARDH70C			
	Feb. 28-Mar. 01, 2011		L6ARDP70U	W

## 3.3 Measurement Sheets

## 3.3.1 Return Loss and Smith Chart



Certificate No: CD835V3-1011\_Nov09

Page 4 of 6

Testing Services™	Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RDH71CW/RDP71UW			Page 9(23)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Jan. 12-19, 2011 RTS-2605-1102-02A L6ARDH70CW			CW
	Feb. 28-Mar. 01, 2011 L6ARDP70UW			W



## Document Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RDH71CW/RDP71UW

Author Data	Dates of Test	Report No	FCC ID
Daoud Attayi	Jan. 12-19, 2011	RTS-2605-1102-02A	L6ARDH70CW
	Feb. 28-Mar. 01, 2011		L6ARDP70UW

------

## 3.3.2 DASY4 H-field Result

Date/Time: 17.11.2009 15:02:26

Test Laboratory: SPEAG Lab2

HAC RF\_CD835\_1011\_091117\_H\_MM DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: 1011 Communication System: CW; Frequency: 835 MHz Medium parameters used:  $\sigma = 0$  mho/m,  $\epsilon_r = 1$ ;  $\rho = 1$  kg/m<sup>3</sup> Phantom section: RF Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: H3DV6 SN6065; ; Calibrated: 22.12.2008
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.02.2009
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

# Dipole H-Field measurement @ 835MHz/H Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x361x1):

Measurement grid: dx=5mm, dy=5mm

Maximum value of peak Total field = 0.464 A/m

Probe Modulation Factor = 1

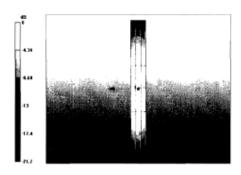
Device Reference Point: 0, 0, -6.3 mm

Reference Value = 0.494 A/m; Power Drift = -0.00467 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.384	0.405	0.386
M4	M4	M4
Grid 4	Grid 5	Grid 6
0.441	0.464	0.439
M4	M4	M4
Grid 7	Grid 8	Grid 9
0.390	0.409	0.382
M4	M4	M4

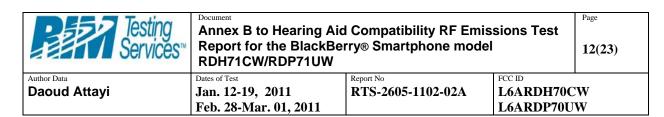


0 dB = 0.464A/m

Certificate No: CD835V3-1011\_Nov09

Page 5 of 6

Testing Services™		Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model			
Author Data	Dates of Test	Report No	FCC ID		
Daoud Attayi	Jan. 12-19, 2011 RTS-2605-1102-02A L6ARDH70CW			W	
_	Feb. 28-Mar. 01, 2011		L6ARDP70U	W	



## 3.3.3 DASY4 E-field Result

Date/Time: 17.11.2009 11:56:37

Test Laboratory: SPEAG Lab2

HAC RF\_CD835\_1011\_091117\_E\_MM DUT: HAC-Dipole 835 MHz; Type: D835V3; Serial: 1011 Communication System: CW; Frequency: 835 MHz Medium parameters used:  $\sigma = 0$  mho/m,  $\varepsilon_r = 1$ ;  $\rho = 1000$  kg/m<sup>3</sup> Phantom section: RF Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

Probe: ER3DV6 - SN2336; ConvF(1, 1, 1); Calibrated: 22.12.2008

- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.02.2009 ٠
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

Dipole E-Field measurement @ 835MHz/E Scan - measurement distance from the probe sensor center to CD835 Dipole = 10mm/Hearing Aid Compatibility Test (41x361x1):

Measurement grid: dx=5mm, dy=5mm

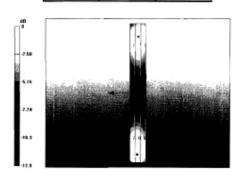
Maximum value of peak Total field = 168.6 V/m Probe Modulation Factor = 1

Device Reference Point: 0, 0, -6.3 mm

Reference Value = 109.2 V/m; Power Drift = -0.023 dB

Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m				
Grid I	Grid 2	Grid 3		
152.1	157.4	154.5		
M4	M4	M4		
Grid 4	Grid 5	Grid 6		
84.1	86.8	84.5		
M4	M4	M4		
Grid 7	Grid 8	Grid 9		
165.5	168.6	158.2		
M4	M4	M4		



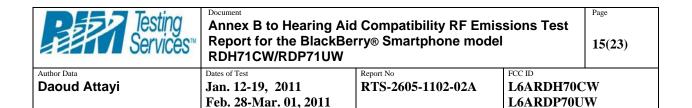
0 dB = 168.6V/m

Certificate No: CD835V3-1011\_Nov09

Page 6 of 6

Testing Services™		Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model			
Author Data	Dates of Test	Report No	FCC ID		
Daoud Attayi	Jan. 12-19, 2011 RTS-2605-1102-02A L6ARDH70C			W	
_	Feb. 28-Mar. 01, 2011		L6ARDP70U	W	

r Data	Dates of Test		Report No		FCC ID	
oud Attayi	<b>Jan. 12-</b>	19, 2011 Mar. 01, 2011	*	5-1102-02A	L6ARDH7( L6ARDP70	
Calibration Laborato Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zuri			WISS S C SRATO S	Schweizerischer Kalibri Service suisse d'étalon Servizio svizzero di tara Swiss Calibration Servi	nage atura	
Accredited by the Swiss Accre The Swiss Accreditation Servic Multilateral Agreement for the	e is one of the signatori		Accreditation N	No.: SCS 108		
Client RTS (RIM Tes	ing Services)		Certificate No:	CD1880V3-1008_1	Nov09	
CALIBRATION						
Object	CD1880V3 - SN	: 1008	Menteria, Michellania		-	
Calibration procedure(s)	QA CAL-20.v4 Calibration proce	edure for dipoles in a	r		<i>影</i>	
	(Wildor Hilling Maint), A	New Alter Markelle	-3		Basic	
Calibration date:	November 18, 2	009			57. 97.	
Calibration date: This calibration certificate docur All calibrations have been condu Calibration Equipment used (M8	nents the traceability to na acted in the closed laborate	tional standards, which realiz				
This calibration certificate docur All calibrations have been condu Celibration Equipment used (Mé	nents the traceability to na acted in the closed laborate TE critical for calibration)	tional standards, which realiz ory facility: environment temp	erature (22 ± 3)°C	and humidity < 70%.		
This calibration certificate docur All calibrations have been condu	nents the traceability to na acted in the closed laborate	tional standards, which realiz	erature (22 ± 3)°C		on	
This calibration certificate docur All calibrations have been conde Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A	nents the traceability to na icted in the closed laborate TE critical for calibration)	tional standards, which realiz ory facility: environment temp Cal Date (Certificate No.)	erature (22 ± 3)°C	and humidity < 70%. Scheduled Calibratio	on	
This calibration certificate docur All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6	ID # GB37480704 US37292783 SN: 2336	tional standards, which realiz ory facility: environment temp Cal Date (Certificate No.) 06-Oct-09 (No. 217-0108 06-Oct-09 (No. 217-0108 22-Dec-08 (No. ER3-233	erature (22 ± 3)°C 6) 6) 6_Dec08)	Scheduled Calibratic Oct-10 Oct-10 Dec-09	on	
This calibration certificate docur All calibrations have been conde Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A	nents the traceability to na acted in the closed laborate TE critical for calibration) ID # GB37480704 US37292783	tional standards, which realiz ory facility: environment temp Cal Date (Certificate No.) 06-Oct-09 (No. 217-0108 06-Oct-09 (No. 217-0108	erature (22 ± 3)*C 6) 6) 6_Dec08) Dec08)	Scheduled Calibratio Oct-10 Oct-10	on	
This calibration certificate docur All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards	ID # GB37480704 US37292783 SN: 2336 SN: 781	tional standards, which realiz ory facility: environment temp Cal Date (Certificate No.) 06-Oct-09 (No. 217-0108 06-Oct-09 (No. 217-0108 22-Dec-08 (No. ER3-233 22-Dec-08 (No. ER3-233 22-Dec-08 (No. ER3-235 20-Feb-09 (No. DAE4-78 Check Date (in house)	erature (22 ± 3)*C 6) 6) 6_Dec08) -Dec08) 1_Feb09)	Scheduled Calibratio Oct-10 Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check		
This calibration certificate docur All calibrations have been condu Calibration Equipment used (M& Primary Standards Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 4419B	ID # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # ID # SN: GB42420191	tional standards, which realiz ory facility: environment temp Gal Date (Certificate No.) 06-Oct-09 (No. 217-0108 06-Oct-09 (No. 217-0108 22-Dec-08 (No. ER3-233 22-Dec-08 (No. ER3-233 22-Dec-08 (No. ER3-233 22-Dec-08 (No. DAE4-78 Check Date (in house) 09-Oct-09 (in house chec	erature (22 ± 3)*C 6) 6) 6-Dec08) -Dec08) 1_Feb09) * Oct-09)	Scheduled Calibratio Oct-10 Oct-10 Dec-09 Feb-10 Scheduled Check In house check: Oct	F10	
This calibration certificate docur All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Prote ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 4419B Power sensor HP 8482H	ID # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # SN: GB42420191 SN: 3318A09450	tional standards, which realiz Cal Date (Certificate No.) 06-Oct-09 (No. 217-0108 06-Oct-09 (No. 217-0108 22-Dec-08 (No. ER3-233 22-Dec-08 (No. H3-6065, 20-Feb-09 (No. DAE4-78 Check Date (in house) 09-Oct-09 (in house chec 09-Oct-09 (in house chec	erature (22 ± 3)*C 6) 6) 6-Dec08) 1_Feb09) * Oct-09) * Oct-09)	Scheduled Calibratic Oct-10 Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check In house check: Oct In house check: Oct	-10 -10	
This calibration certificate docur All calibrations have been condu Calibration Equipment used (M& Primary Standards Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 4419B	ID # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # ID # SN: GB42420191	tional standards, which realiz ory facility: environment temp Gal Date (Certificate No.) 06-Oct-09 (No. 217-0108 06-Oct-09 (No. 217-0108 22-Dec-08 (No. ER3-233 22-Dec-08 (No. ER3-233 22-Dec-08 (No. ER3-233 22-Dec-08 (No. DAE4-78 Check Date (in house) 09-Oct-09 (in house chec	erature (22 ± 3)*C 6) 6) 6-Dec08) 1_Feb09) * Oct-09) & Oct-09)	Scheduled Calibratio Oct-10 Oct-10 Dec-09 Feb-10 Scheduled Check In house check: Oct	10 10 10	
This calibration certificate docur All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 4419B Power sensor HP 8482H Power sensor HP 8482A	ID # GB37480704 US # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # SN: GB42420191 SN: 3318A09450 SN: US37295597	tional standards, which realiz ory facility: environment temp Gal Date (Certificate No.) 06-Oct-09 (No. 217-0108 06-Oct-09 (No. 217-0108 22-Dec-08 (No. E13-233 22-Dec-08 (No. H3-6065, 20-Feb-09 (No. DAE4-78 Check Date (in house) 09-Oct-09 (in house chec 09-Oct-09 (in house chec 09-Oct-09 (in house chec	erature (22 ± 3)*C 6) 6) 6_Dec08) Dec08) 1_Feb09) * Oct-09) * Oct-09) * Oct-09)	and humidity < 70%. Scheduled Calibratic Oct-10 Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check In house check: Oct In house check: Oct In house check: Oct	-10 -10 -10 -10	
This calibration certificate docur All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 4419B Power sensor HP 8482H Power sensor HP 8482H Power sensor HP 8482A Network Analyzer HP 8753E	ID # ID # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # ID # ID # ID # ID # ID # ID # ID # ID # SN: GB42420191 SN: 3318A09450 SN: US37295597 US37390585	tional standards, which realiz ory facility: environment temp Gal Date (Certificate No.) 06-Oct-09 (No. 217-0108 06-Oct-09 (No. 217-0108 22-Dec-08 (No. ER3-233 22-Dec-08 (No. ER3-233 22-Dec-08 (No. DAE4-78 20-Feb-09 (No. DAE4-78 Check Date (in house) 09-Oct-09 (in house chec 09-Oct-09 (in house chec 18-Oct-01 (in house chec	erature (22 ± 3)*C 6) 6) 6_Dec08) Dec08) 1_Feb09) * Oct-09) * Oct-09) * Oct-09)	Scheduled Calibratic Oct-10 Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check In house check: Oct In house check: Oct In house check: Oct In house check: Oct	-10 -10 -10 -10	
This calibration certificate docur All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 4419B Power sensor HP 8482H Power sensor HP 8482H Power sensor HP 8482A Network Analyzer HP 8753E	ID # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # SN: GB42420191 SN: 3318A09450 SN: US3729597 US37390585 MY 41000675	tional standards, which realiz Cal Date (Certificate No.) 06-Oct-09 (No. 217-0108 06-Oct-09 (No. 217-0108 22-Dec-08 (No. H3-6065, 20-Feb-09 (No. DAE4-78 Check Date (in house) 09-Oct-09 (in house chec 09-Oct-09 (in house chec 09-Oct-09 (in house chec 03-Nov-04 (in house chec	erature (22 ± 3)*C 6) 6) 6. Dec08) Dec08) 1_Feb09) * Oct-09) * Oct-09) * Oct-09) * Oct-09) * Oct-09)	Scheduled Calibratic Oct-10 Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check In house check: Oct In house check: Oct In house check: Oct In house check: Oct	-10 -10 -10 -10	
This calibration certificate docur All calibrations have been condu Calibration Equipment used (Ma Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 4419B Power sensor HP 8482A Power sensor HP 8482A Network Analyzer HP 8753E RF generator E4433B	ID # GB37480704 US # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # SN: GB42420191 SN: 3318A09450 SN: US37295597 US37290585 MY 41000675 Name	tional standards, which realiz ory facility: environment temp Gal Date (Certificate No.) 06-Oct-09 (No. 217-0108 06-Oct-09 (No. 217-0108 22-Dec-08 (No. EF3-233 22-Dec-08 (No. H3-6065, 20-Feb-09 (No. DAE4-78 Check Date (In house) 09-Oct-09 (In house chec 09-Oct-09 (In house chec 09-Oct-09 (In house chec 09-Oct-09 (In house chec 03-Nov-04 (In house chec 03-Nov-04 (In house chec	erature (22 ± 3)*C 6) 6) 6-Dec08) Dec08) 1_Feb09) * Oct-09) * Oct-09) * Oct-09) * Oct-09) * Oct-09) * Oct-09)	Scheduled Calibratic Oct-10 Oct-10 Dec-09 Dec-09 Feb-10 Scheduled Check In house check: Oct In house check: Oct In house check: Oct In house check: Oct	-10 -10 -10 -10	



NISS

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



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

Accreditation No.: SCS 108

Accredited by the Swiss Accreditation Service (SAS) The Swiss Accreditation Service is one of the signatories to the EA Multilateral Agreement for the recognition of calibration certificates

#### References

- ANSI-C63.19-2006 American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.
- ANSI-C63.19-2007 American National Standard for Methods of Measurement of Compatibility between Wireless Communications Devices and Hearing Aids.

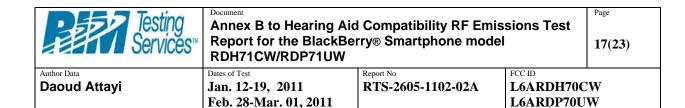
## Methods Applied and Interpretation of Parameters:

- Coordinate System: y-axis is in the direction of the dipole arms. z-axis is from the basis of the antenna (mounted on the table) towards its feed point between the two dipole arms. x-axis is normal to the other axes. In coincidence with the standards [1, 2], the measurement planes (probe sensor center) are selected to be at a distance of 10 mm above the top edge of the dipole arms.
- Measurement Conditions: Further details are available from the hardcopies at the end of the certificate. All figures stated in the certificate are valid at the frequency indicated. The forward power to the dipole connector is set with a calibrated power meter connected and monitored with an auxiliary power meter connected to a directional coupler. While the dipole under test is connected, the forward power is adjusted to the same level.
- Antenna Positioning: The dipole is mounted on a HAC Test Arch phantom using the matching dipole positioner with the arms horizontal and the feeding cable coming from the floor. The measurements are performed in a shielded room with absorbers around the setup to reduce the reflections. It is verified before the mounting of the dipole under the Test Arch phantom, that its arms are perfectly in a line. It is installed on the HAC dipole positioner with its arms parallel below the dielectric reference wire and able to move elastically in vertical direction without changing its relative position to the top center of the Test Arch phantom. The vertical distance to the probe is adjusted after dipole mounting with a DASY5 Surface Check job. Before the measurement, the distance between phantom surface and probe tip is verified. The proper measurement distance is selected by choosing the matching section of the HAC Test Arch phantom with the proper device reference point (upper surface of the dipole) and the matching grid reference point (tip of the probe) considering the probe sensor offset. The vertical distance to the accuracy.
- Feed Point Impedance and Return Loss: These parameters are measured using a HP 8753E Vector Network Analyzer. The impedance is specified at the SMA connector of the dipole. The influence of reflections was eliminating by applying the averaging function while moving the dipole in the air, at least 70cm away from any obstacles.
- E-field distribution: E field is measured in the x-y-plane with an isotropic ER3D-field probe with 100 mW forward power to the antenna feed point. In accordance with [1, 2], the scan area is 20mm wide, its length exceeds the dipole arm length (180 or 90mm). The sensor center is 10 mm (in z) above the top of the dipole arms. Two 3D maxima are available near the end of the dipole arms. Assuming the dipole arms are perfectly in one line, the average of these two maxima (in subgrid 2 and subgrid 8) is determined to compensate for any non-parallelity to the measurement plane as well as the sensor displacement. The E-field value stated as calibration value represents the maximum of the interpolated 3D-E-field, 10mm above the dipole surface.
- H-field distribution: H-field is measured with an isotropic H-field probe with 100mW forward power to the
  antenna feed point, in the x-y-plane. The scan area and sensor distance is equivalent to the E-field
  scan. The maximum of the field is available at the center (subgrid 5) above the feed point. The H-field
  value stated as calibration value represents the maximum of the interpolated H-field, 10mm above the
  dipole surface at the feed point.

Certificate No: CD1880V3-1008\_Nov09

Page 2 of 6

Testing Services™		Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model			
Author Data	Dates of Test	Report No	FCC ID		
Daoud Attayi	Jan. 12-19, 2011 RTS-2605-1102-02A L6ARDH70CW			CW	
	Feb. 28-Mar. 01, 2011		L6ARDP70U	W	



#### 1. Measurement Conditions

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

DASY Version	DASY5	V5.2 B157
DASY PP Version	SEMCAD X	V14.0 B57
Phantom	HAC Test Arch	SD HAC P01 BA, #1070
Distance Dipole Top - Probe Center	10 mm	
Scan resolution	dx, dy = 5 mm	area = 20 x 90 mm
Frequency	1880 MHz ± 1 MHz	
Forward power at dipole connector	20.0 dBm = 100mW	
Input power drift	< 0.05 dB	

## 2. Maximum Field values

	H-field 10 mm above dipole surface	condition	Interpolated maximum
	Maximum measured	100 mW forward power	0.471 A/m
- t	Incertainty for H-field measurement: 8.2% (k=2)		

E-field 10 mm above dipole surface	condition	Interpolated maximum
Maximum measured above high end	100 mW forward power	136.2 V/m
Maximum measured above low end	100 mW forward power	132.1 V/m
Averaged maximum above arm	100 mW forward power	134.2 V/m

Uncertainty for E-field measurement: 12.8% (k=2)

## 3. Appendix

## 3.1 Antenna Parameters

Frequency	Return Loss	Impedance
1710 MHz	22.8 dB	(52.2 + j7.1) Ohm
1880 MHz	20.0 dB	(50.5 + j10.1) Ohm
1900 MHz	20.9 dB	(53.2 + j8.8) Ohm
1950 MHz	29.5 dB	(52.3 + 2.6) Ohm
2000 MHz	18.7 dB	(43.2 + j8.4) Ohm

#### 3.2 Antenna Design and Handling

The calibration dipole has a symmetric geometry with a built-in two stub matching network, which leads to the enhanced bandwidth.

The dipole is built of standard semirigid coaxial cable. The internal matching line is open ended. The antenna is therefore open for DC signals.

Do not apply force to dipole arms, as they are liable to bend. The soldered connections near the feedpoint may be damaged. After excessive mechanical stress or overheating, check the impedance characteristics to ensure that the internal matching network is not affected.

After long term use with 40W radiated power, only a slight warming of the dipole near the feedpoint can be measured.

Certificate No: CD1880V3-1008\_Nov09

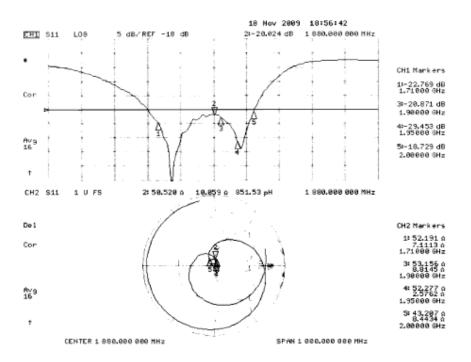
Page 3 of 6

Testing Services <sup>**</sup>		Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model			
Author Data	Dates of Test	Report No	FCC ID		
Daoud Attayi	Jan. 12-19, 2011 RTS-2605-1102-02A L6ARDH70CW			CW	
	Feb. 28-Mar. 01, 2011		L6ARDP70U	W	

Testing Services™	Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RDH71CW/RDP71UW			Page 19(23)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Jan. 12-19, 2011         RTS-2605-1102-02A         L6ARDH70CV           Feb. 28-Mar. 01, 2011         L6ARDP70UV			

## 3.3 Measurement Sheets

3.3.1 Return Loss and Smith Chart



Certificate No: CD1880V3-1008\_Nov09

Testing Services <sup>**</sup>	Document Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RDH71CW/RDP71UW			Page <b>20(23)</b>
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Jan. 12-19, 2011	RTS-2605-1102-02A	L6ARDH70CW	
	Feb. 28-Mar. 01, 2011 L6ARDP70UW		W	

Testing Services™	Document Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RDH71CW/RDP71UW			Page <b>21(23)</b>
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Jan. 12-19, 2011	RTS-2605-1102-02A	L6ARDH70CW	
	Feb. 28-Mar. 01, 2011		L6ARDP70U	W

## 3.3.2 DASY4 H-Field Result

Date/Time: 18.11.2009 12:32:23

Test Laboratory: SPEAG Lab2

#### HAC\_RF\_CD1880\_1008\_091118\_H\_CL DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1008 Communication System: CW; Frequency: 1880 MHz Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$ ; $\rho = 1$ kg/m<sup>3</sup>

Phantom section: RF Section

Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

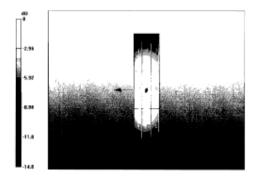
- Probe: H3DV6 SN6065; ; Calibrated: 22.12.2008
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.02.2009
- · Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57

## Dipole H-Field measurement @ 1880MHz/H Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1):

Measurement grid: dx=5mm, dy=5mm Maximum value of peak Total field = 0.471 A/m Probe Modulation Factor = 1 Device Reference Point: 0, 0, -6.3 mm Reference Value = 0.499 A/m; Power Drift = 0.00498 dB Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak H-field in A/m

Grid I	Grid 2	Grid 3
0.408	0.423	0.398
M2	M2	M2
Grid 4	Grid 5	Grid 6
0.456	0.471	0.439
M2	M2	M2
Grid 7	Grid 8	Grid 9
0.420	0.435	0.400
M2	M2	M2



0 dB = 0.471A/m

Certificate No: CD1880V3-1008\_Nov09

Page 5 of 6

Testing Services™	Document Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RDH71CW/RDP71UW			Page <b>22(23)</b>
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Jan. 12-19, 2011	RTS-2605-1102-02A	L6ARDH70CW	
	Feb. 28-Mar. 01, 2011		L6ARDP70U	W

Testing Services™	Document Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RDH71CW/RDP71UW			Page 23(23)
Author Data	Dates of Test	Report No	FCC ID	
Daoud Attayi	Jan. 12-19, 2011	RTS-2605-1102-02A	L6ARDH70CW	
	Feb. 28-Mar. 01, 2011		L6ARDP70U	W

## 3.3.3 DASY4 E-Field Result

Date/Time: 18.11.2009 17:16:43

Test Laboratory: SPEAG Lab2

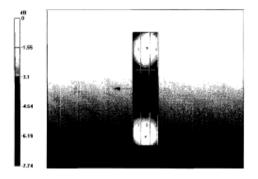
## HAC\_RF\_CD1880\_1008\_091118\_E\_CL DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: 1008 Communication System: CW; Frequency: 1880 MHz Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$ ; $\rho = 1000$ kg/m<sup>3</sup> Phantom section: RF Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007) DASY5 Configuration:

- Probe: ER3DV6 SN2336; ConvF(1, 1, 1); Calibrated: 22.12.2008
- Sensor-Surface: (Fix Surface) •
- Electronics: DAE4 Sn781; Calibrated: 20.02.2009
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070 ٠
- Measurement SW: DASY5, V5.2 Build 157; SEMCAD X Version 14.0 Build 57 .

## Dipole E-Field measurement @ 1880MHz/E Scan - measurement distance from the probe sensor center to CD1880 Dipole = 10mm/Hearing Aid Compatibility Test (41x181x1):

Measurement grid: dx=5mm, dy=5mm Maximum value of peak Total field = 136.2 V/m Probe Modulation Factor = 1 Device Reference Point: 0, 0, -6.3 mm Reference Value = 152.3 V/m; Power Drift = -0.00386 dB Hearing Aid Near-Field Category: M2 (AWF 0 dB)

> Peak E-field in V/m Grid 1 Grid 2 Grid 3 124.7 132.1 131.1 M2 M2 M2 Grid 4 Grid 5 Grid 6 87.7 90.1 86.6 M3 M3 M3 Grid 7 Grid 8 Grid 9 130.7 136.2 132.2 M2 M2 M2





Certificate No: CD1880V3-1008\_Nov09

Page 6 of 6