Document Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFF91LW, RFK121LW				Page 1(24)	
Author Data Daoud Attayi	Dates of Test Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	Report No RTS-6012-1207-39B		FF90LW FK120LW

Annex B: Probe and dipole descriptions and calibration certificates

B.2 Dipole calibration certificate

	Feb. 17, June 18	8-Sep. 28 , 2012	RTS-6012	2-1207-39B	L6ARFF90LW
					LOARFRIZULV
Calibration Laborato Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurie			J _z C	Schweizerischer Kalib Service suisse d'étalor Servizio svizzero di ta Swiss Calibration Serv	nnage ratura
Accredited by the Swiss Accredit The Swiss Accreditation Servic Multilateral Agreement for the	ce is one of the signatori		Accreditation N	io.: SCS 108	
Client RTS (RIM Test	ting Services)	S. S. 453	Certificate No:	CD835V3-1011_	Nov11
CALIBRATION	CERTIFICAT			te de de	
Object	CD835V3 - SN:	1011 s c s s s	E ST St St	さけんていい	
Calibration procedure(s)	QA CAL-20.v5	edure for dipoles in air		6636	ų L
		edure for dipoles in air	14	1914	ана 19
Calibration date:	November 08, 2	011 tional standards, which realize	the physical units	; of measurements (SI).	
This calibration certificate docur The measurements and the unc All calibrations have been condu	November 08, 2 ments the traceability to na certainties with confidence	011 tional standards, which realize probability are given on the foll	the physical units owing pages and	of measurements (SI). are part of the certificate	
This calibration certificate docur The measurements and the unc All calibrations have been cond, Calibration Equipment used (M8	November 08, 2 ments the traceability to na actualities with confidence ucted in the closed laborate ATE critical for calibration)	011 tional standards, which realize probability are given on the foll ory facility: environment tempe	the physical units owing pages and	of measurements (SI). are part of the certificate and humidity < 70%.	9.
This calibration certificate docur The measurements and the unc All calibrations have been cond, Calibration Equipment used (M& Primary Standards	November 08, 2 ments the traceability to na certainties with confidence ucted in the closed laborate ATE critical for calibration)	011 tional standards, which realize probability are given on the foll ory facility: environment tempe Cal Date (Certificate No.)	the physical units owing pages and rature (22 ± 3)°C (of measurements (SI). are part of the certificate and humidity < 70%. Scheduled Calibrat	9.
This calibration certificate docur The measurements and the unc All calibrations have been cond, Calibration Equipment used (M8	November 08, 2 ments the traceability to na actualities with confidence ucted in the closed laborate ATE critical for calibration)	011 tional standards, which realize probability are given on the foll ory facility: environment tempe	the physical units owing pages and rature (22 ± 3)°C a	of measurements (SI). are part of the certificate and humidity < 70%.	9.
This calibration certificate docur The measurements and the unc All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter EPM-442A	November 08, 2 ments the traceability to na certainties with confidence ucted in the closed laborate ATE critical for calibration)	011 tional standards, which realize probability are given on the foll ory facility: environment tempe <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451)	the physical units owing pages and rature (22 ± 3)°C a	of measurements (SI). are part of the certificate and humidity < 70%. Scheduled Calibrat Oct-12	9.
This calibration certificate docur The measurements and the unc All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 6481A Probe ER3DV6 Probe H3DV6	November 08, 2 ments the traceability to na certainties with confidence ucted in the closed laborato RTE critical for calibration) ID # GB37480704 US37292783 SN: 2336 SN: 2036	011 tional standards, which realize probability are given on the foll ory facility: environment tempe <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451 05-Oct-11 (No. 217-01451 29-Dec-10 (No. ER3-2336, 29-Dec-10 (No. H3-6065_0	the physical units owing pages and rature (22 ± 3)°C () 	of measurements (SI). are part of the certificate and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11	9.
This calibration certificate docur The measurements and the unc All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 6481A Probe ER3DV6	November 08, 2 ments the traceability to na certainties with confidence ucted in the closed laborato RTE critical for calibration) ID # GB37480704 US37292783 SN: 2336	011 tional standards, which realize probability are given on the foll ory facility: environment tempe <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451 05-Oct-11 (No. 217-01451 29-Dec-10 (No. ER3-2336)	the physical units owing pages and rature (22 ± 3)°C () 	of measurements (SI). are part of the certificate and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11	9.
This calibration certificate docur The measurements and the unc All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4	November 08, 2 ments the traceability to na certainties with confidence ucted in the closed laborato RTE critical for calibration) ID # GB37480704 US37292783 SN: 2336 SN: 2036	011 tional standards, which realize probability are given on the foll ory facility: environment tempe <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336, 29-Dec-10 (No. H3-6065_(20-Apr-11 (No. DAE4-781)	the physical units owing pages and rature (22 ± 3)°C () 	of measurements (SI). are part of the certificate and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11 Apr-12	9.
This calibration certificate docur The measurements and the unc All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 6481A Probe ER3DV6 Probe H3DV6	November 08, 2 ments the traceability to na certainties with confidence ucted in the closed laborator RTE critical for calibration) D # GB37480704 US37292783 SN: 2336 SN: 2336 SN: 2605 SN: 781	011 tional standards, which realize probability are given on the foll ory facility: environment tempe <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451 05-Oct-11 (No. 217-01451 29-Dec-10 (No. ER3-2336, 29-Dec-10 (No. H3-6065_0	the physical units owing pages and rature (22 ± 3)°C () Dec10) Dec10) Apr11)	of measurements (SI). are part of the certificate and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11	a. lion
This calibration certificate docur The measurements and the unc All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP B481A Probe ER3DV6 Probe H3DV6 DAE4 Secondary Standards	November 08, 2 ments the traceability to na sertainties with confidence ucted in the closed laborator RTE critical for calibration) D # GB37480704 US37292783 SN: 2336 SN: 2336 SN: 2665 SN: 781 ID #	011 tional standards, which realize probability are given on the foll ory facility: environment tempe Cal Date (Certificate No.) 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336) 29-Dec-10 (No. H3-6065) 20-Apr-11 (No. DAE4-781) Check Date (in house)	the physical units owing pages and rature (22 ± 3)°C () Dec10) Dec10) Apr11) Oct-11)	of measurements (SI). are part of the certificate and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11 Dec-11 Apr-12 Scheduled Check	s. ion
This calibration certificate docur The measurements and the unc All calibrations have been condy Calibration Equipment used (M8 Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe H3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 44198 Power sensor HP 8482A	November 08, 2 nents the traceability to na sertainties with confidence ucted in the closed laborato RTE critical for calibration) D # GB37480704 US37292783 SN: 2336 SN: 2336 SN: 2085 SN: 781 ID # SN: GB42420191	011 tional standards, which realize probability are given on the foll ory facility: environment tempe Cal Date (Certificate No.) 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336) 29-Dec-10 (No. H3-6065) 20-Apr-11 (No. DAE4-781) Check Date (in house) 09-Oct-09 (in house check	the physical units owing pages and rature (22 ± 3)°C a) Dec10) Dec10) Apr11) Oct-11) Oct-11)	of measurements (SI). are part of the certificate and humidity < 70%. <u>Scheduled Calibrat</u> Oct-12 Oct-12 Dec-11 Dec-11 Apr-12 Scheduled Check In house check: Oc	s. iion ct-12 pt-12
This calibration certificate docur The measurements and the unc All calibrations have been condy Calibration Equipment used (M8 Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe H3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 44198 Power sensor HP 8482A Power sensor HP 8482A Network Analyzer HP 8753E	November 08, 2 nents the traceability to nate and an anticipation of the confidence acted in the closed laborate acted in	011 tional standards, which realize probability are given on the foll ory facility: environment tempe Cal Date (Certificate No.) 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336, 29-Dec-10 (No. ER3-2336, 20-Apr-11 (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	the physical units owing pages and rature (22 ± 3)°C ;) Dec10) Apr11) Oct-11) Oct-11) Oct-11) Oct-11) Oct-11)	s of measurements (SI). are part of the certificate and humidity < 70%. <u>Scheduled Calibrat</u> Oct-12 Oct-12 Dec-11 Dec-11 Apr-12 <u>Scheduled Check</u> In house check: Oc In house check: Oc	tion
This calibration certificate docur The measurements and the unc All calibrations have been condy Calibration Equipment used (M8 Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe H3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 44198 Power sensor HP 8482H Power sensor HP 8482A	November 08, 2 nents the traceability to nate tertainties with confidence ucted in the closed laborato ATE critical for calibration) ID # GB37480704 US37292783 SN: 2336 SN: 2336 SN: 781 ID # ID # SN: GB42420191 SN: 3318A09450 SN: US37295597	011 tional standards, which realize probability are given on the foll ory facility: environment tempe <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451 05-Oct-11 (No. 217-01451 29-Dec-10 (No. ER3-2336, 29-Dec-10 (No. ER3-2336, 29-Dec-10 (No. H3-6065_(20-Apr-11 (No. DAE4-781) <u>Check Date (in house)</u> 09-Oct-09 (in house check 09-Oct-09 (in house check 09-Oct-09 (in house check	the physical units owing pages and rature (22 ± 3)°C ;) Dec10) Apr11) Oct-11) Oct-11) Oct-11) Oct-11) Oct-11)	s of measurements (SI). are part of the certificate and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11 Apr-12 Scheduled Check In house check: Oc In house check: Oc	5. tion ci-12 ci-12 ci-12 ci-12 ci-12 ci-12
This calibration certificate docur The measurements and the unc All calibrations have been cond, Calibration Equipment used (M8 Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe H3DV6 Probe H3DV6 DAE4 Secondary Standards Power meter Agilent 44198 Power sensor HP 8482A Power sensor HP 8482A Network Analyzer HP 8753E	November 08, 2 nents the traceability to nate and an anticipation of the confidence acted in the closed laborate acted in	011 tional standards, which realize probability are given on the foll ory facility: environment tempe Cal Date (Certificate No.) 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336, 29-Dec-10 (No. ER3-2336, 20-Apr-11 (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	the physical units owing pages and rature (22 ± 3)°C ;) Dec10) Dec10) Apr11) Oct-11) Oct-11) Oct-11) Oct-11) Oct-11) Oct-11)	s of measurements (SI). are part of the certificate and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11 Apr-12 Scheduled Check In house check: Oc In house check: Oc In house check: Oc	5. tion ci-12 ci-12 ci-12 ci-12 ci-12 ci-12

	Annex B to Hearing Aid Compatibility RF Emissions Test				Page 3(24)
Author Data Daoud Attayi	Dates of Test Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	Report No RTS-6012-1207-39B		FF90LW FK120LW



Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFF91LW, RFK121LW

NIS.S

Page

Author Data Daoud Attavi

Dates of Test

Document

Jan. 31, Feb. 17, June 18-Sep. 28, 2012

Report No

L6ARFF90LW L6ARFK120LW

FCC ID

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland



- Schweizerischer Kalibrierdienst s
- Service suisse d'étalonnage С
- 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

ANSI-C63.19-2007 [1]

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], 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 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], 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_Nov11

Page 2 of 6

This report shall NOT be reproduced except in full without the written consent of RIM Testing Services Copyright 2005-2012, RIM Testing Services, A division of Research In Motion Limited

RTS-6012-1207-39B

Document Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFF91LW, RFK121LW				Page 5(24)	
Author Data Daoud Attayi	Dates of Test Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	Report No RTS-6012-1207-39B		FF90LW FK120LW

	Testing Services™	Annex B to Hearing Aid Compatibility RF Emissions Test			Page 6(24)
Author Data	Dates of Test		Report No	FCC ID	
Daoud Attayi	Attayi Jan. 31, Feb. 17, June 18-Sep. 28, 2012		RTS-6012-1207-39B	L6AR	FF90LW

L6ARFK120LW

Measurement Conditions

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

DASY Version	DASY5	V52.6.2
Extrapolation	Advanced Extrapolation	
Phantom	HAC Test Arch	
Distance Dipole Top - Probe Center	10 mm	
Scan resolution	dx, dy = 5 mm	
Frequency	835 MHz ± 1 MHz	
Input power drift	< 0.05 dB	

Maximum Field values

H-field 10 mm above dipole surface	condition	interpolated maximum	
Maximum measured	100 mW input power	0.462 A / m ± 8.2 % (k=2)	
E-field 10 mm above dipole surface	condition	Interpolated maximum	
Maximum measured above high end	100 mW input power	161.2 V / m	
Maximum measured above low end	100 mW input power	158.2 V / m	
Averaged maximum above arm	100 mW input power	159.7 V / m ± 12.8 % (k=2)	

Appendix

Antenna Parameters with Head TSL

Frequency	Return Loss	Impedance	
800 MHz	14.5 dB	41.1 Ω - 15.0 jΩ	
835 MHz	24.4 dB	48.1 Ω + 5.6 jΩ	
900 MHz	16.0 dB	56.8 Ω - 15.6 jΩ	
950 MHz	17.8 dB	40.7 Ω + 7.2 jΩ	
960 MHz	14.6 dB	46.7 Ω + 17.9 jΩ	

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.

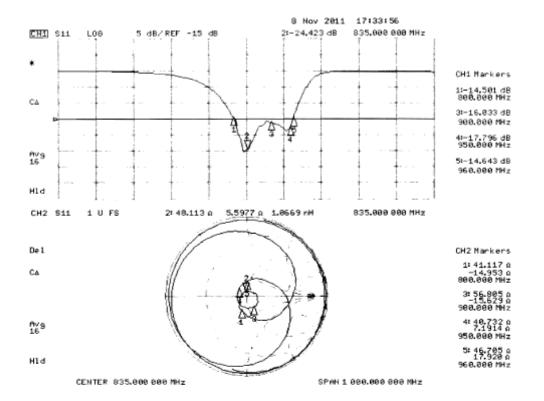
Certificate No: CD835V3-1011_Nov11

This report shall <u>NOT</u> be reproduced except in full without the written consent of RIM Testing Services Copyright 2005-2012, RIM Testing Services, A division of Research In Motion Limited

	Document Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFF91LW, RFK121LW				Page 7(24)
Author Data Daoud Attayi	Dates of Test Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	Report No RTS-6012-1207-39B		FF90LW FK120LW

	Testing Services™	Annex B to Hearing Aid Compatibility RF Emissions Test			Page 8(24)
Author Data	Dates of Test		Report No	FCC ID	
Daoud Attayi	Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	RTS-6012-1207-39B	-	FF90LW FK120LW

Impedance Measurement Plot



Certificate No: CD835V3-1011_Nov11

Page 4 of 6

Annex B to Hearing Aid Compatibility RF Emissions Test				Page 9(24)	
Author Data Daoud Attayi	Dates of Test Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	Report No RTS-6012-1207-39B		FF90LW FK120LW

	Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFF91LW, RFK121LW			Page 10(24)	
Author Data	Dates of Test		Report No	FCC ID	
Daoud Attayi	Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	RTS-6012-1207-39B		FF90LW FK120LW

DASY4 H-field Result

Date/Time: 08.11.2011 10:14:07

Test Laboratory: SPEAG Lab2

DUT: HAC-Dipole 835 MHz; Type: CD835V3; Serial: CD835V3 - SN: 1011

Communication System: CW; Frequency: 835 MHz Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: RF Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

DASY Configuration:

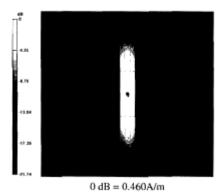
- Probe: H3DV6 SN6065; ; Calibrated: 29.12.2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.04.2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole H-Field measurement @ 835MHz/H-Scan - 835MHz d=10mm/Hearing Aid Compatibility Test (41x361x1):

Measurement grid: dx=5mm, dy=5mm Maximum value of peak Total field = 0.462 A/m Probe Modulation Factor = 1.000 Device Reference Point: 0, 0, -6.3 mm Reference Value = 0.491 A/m; Power Drift = -0.0027 dB Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak H-field in A/m

Grid 1	Grid 2	Grid 3
0.372	0.396	0.381
M4	M4	M4
Grid 4	Grid 5	Grid 6
0.426	0.462	0.449
M4	M4	M4
Grid 7	Grid 8	Grid 9
0.375	0.410	0.399
M4	M4	M4



Page 5 of 6

This report shall <u>NOT</u> be reproduced except in full without the written consent of RIM Testing Services Copyright 2005-2012, RIM Testing Services, A division of Research In Motion Limited

	Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFF91LW, RFK121LW			Page 11(24)	
Author Data Daoud Attayi	Dates of Test Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	Report No RTS-6012-1207-39B	-	FF90LW FK120LW

	festing ervices™	Annex B to Hearing Aid Compatil Report for the BlackBerry® Smar RFK121LW			Page 12(24)
Author Data	Dates of Test		Report No	FCC ID	
Daoud Attayi	Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012			FF90LW FK120LW

DASY4 E-field Result

Date/Time: 08.11.2011 15:05:22

Test Laboratory: SPEAG Lab2

DUT: HAC-Dipole 835 MHz; Type: CD835V3; Serial: CD835V3 - SN: 1011

Communication System: CW; Frequency: 835 MHz Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³ Phantom section: RF Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

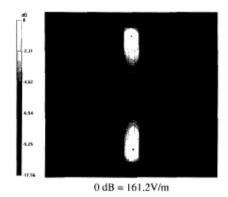
DASY Configuration:

- Probe; ER3DV6 SN2336; ConvF(1, 1, 1); Calibrated: 29.12.2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.04.2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole E-Field measurement @ 835MHz/E-Scan - 835MHz d=10mn/Hearing Aid Compatibility Test (41x361x1):

Measurement grid: dx=5mm, dy=5mm Maximum value of peak Total field = 161.2 V/m Probe Modulation Factor = 1.000 Device Reference Point: 0, 0, -6.3 mm Reference Value = 119.5 V/m; Power Drift = -7.4e-005 dB Hearing Aid Near-Field Category: M4 (AWF 0 dB)

Peak E-field in V/m					
Grid 1	Grid 2	Grid 3			
154.9	161.2	156.1			
M4	M4	M4			
Grid 4	Grid 5	Grid 6			
80.699	88.078	87.550			
M4	M4	M4			
Grid 7	Grid 8	Grid 9			
142.8	158.2	157.7			
M4	M4	M4			



Certificate No: CD835V3-1011_Nov11

Page 6 of 6

	Testing Services™	Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFF91LW, RFK121LW			Page 13(24)
Author Data Daoud Attayi	Dates of Test Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	Report No RTS-6012-1207-39B		FF90LW FK120LW

ata Dates of Test		Report No		FCC ID
d Attayi Jan. 31,	Feb. 17, June 18	8-Sep. 28 , 2012 RTS-60	12-1207-39B	L6ARFF90LW L6ARFK120LV
Calibration Laborator Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurio	-	Hac MRA Regenter S	Schweizerischer Kalib Service suisse d'étalor Servizlo svizzero di tar Swiss Calibration Serv	nnage ratura
Accredited by the Swiss Accredit The Swiss Accreditation Servic Multilateral Agreement for the r	e is one of the signatori	es to the EA	No.: SCS 108	
Client RTS (RIM Test			o: CD1880V3-1008	_Nov11
CALIBRATION				and an an an
Object	CD1880V3 - SN	production and the production of the second se	open open open open open open open open	
Calibration procedure(s)	QA CAL-20.v5 Calibration proce	adure for dipoles in air		
Calibration date:	November 08, 2	011-		5
This calibration certificate docun The measurements and the unc	nents the traceability to nat ertainties with confidence p acted in the closed laborate	011 tional standards, which realize the physical un probability are given on the following pages ar any facility: environment temperature (22 ± 3)*	nits of measurements (SI). Ind are part of the certificate	
This calibration certificate docun The measurements and the unc All calibrations have been condu	nents the traceability to nat ertainties with confidence p acted in the closed laborate	tional standards, which realize the physical un probability are given on the following pages ar	nits of measurements (SI). Ind are part of the certificate	ι.
This calibration certificate docun The measurements and the unc All calibrations have been condu Calibration Equipment used (M8	nents the traceability to nat entainties with confidence p acted in the closed laborate TE critical for calibration)	tional standards, which realize the physical un probability are given on the following pages ar bry facility: environment temperature $(22 \pm 3)^{\circ}$	nits of measurements (SI). nd are part of the certificate C and humidity < 70%.	ι.
This calibration certificate docun The measurements and the unc All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter EPM-442A Power sensor HP 8481A	nents the traceability to na ertainties with confidence (acted in the closed laborato TE critical for calibration) ID # GB37490704 US37292783	tional standards, which realize the physical un probability are given on the following pages ar any facility: environment temperature (22 ± 3) ⁴ Cal Date (Certificate No.) 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451)	hits of measurements (SI). Ind are part of the certificate C and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12	ι.
This calibration certificate docum The measurements and the unc All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6	nents the traceability to na ertainties with confidence (in the closed laborato TE critical for calibration) ID # GB37490704 US37292783 SN: 2336	tional standards, which realize the physical un probability are given on the following pages ar any facility: environment temperature (22 ± 3) ^{on} <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336_Dec10)	hits of measurements (SI). Ind are part of the certificate C and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11	ι.
This calibration certificate docum The measurements and the unc All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6	nents the traceability to na ertainties with confidence p acted in the closed laborato TE critical for calibration) ID # GB37490704 US37292783 SN: 2336 SN: 6065	tional standards, which realize the physical un probability are given on the following pages ar any facility: environment temperature (22 ± 3) ⁴ Cal Date (Certificate No.) 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336_Dec10) 29-Dec-10 (No. H3-6065_Dec10)	hits of measurements (SI). Ind are part of the certificate C and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11	ι.
This calibration certificate docum The measurements and the unc All calibrations have been condu Calibration Equipment used (M& Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6	nents the traceability to na ertainties with confidence (in the closed laborato TE critical for calibration) ID # GB37490704 US37292783 SN: 2336	tional standards, which realize the physical un probability are given on the following pages ar any facility: environment temperature (22 ± 3) ^{on} <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336_Dec10)	hits of measurements (SI). Ind are part of the certificate C and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11	ι.
This calibration certificate docum The measurements and the unc All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6	nents the traceability to na ertainties with confidence p acted in the closed laborato TE critical for calibration) ID # GB37490704 US37292783 SN: 2336 SN: 6065	tional standards, which realize the physical un probability are given on the following pages ar any facility: environment temperature (22 ± 3) ⁴ Cal Date (Certificate No.) 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336_Dec10) 29-Dec-10 (No. H3-6065_Dec10)	hits of measurements (SI). Ind are part of the certificate C and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11	ι.
This calibration certificate docum The measurements and the unc All calibrations have been condu Calibration Equipment used (M8 Primary Standards Power meter EPM-442A Power sensor HP 8481A Probe ER3DV6 Probe H3DV6 DAE4	ID # GB37490704 US37292783 SN: 2336 SN: 781	tional standards, which realize the physical un probability are given on the following pages ar any facility: environment temperature (22 ± 3) ^{on} <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336_Dec10) 29-Dec-10 (No. H3-6065_Dec10) 20-Apr-11 (No. DAE4-781_Apr11)	aits of measurements (SI). Ind are part of the certificate C and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11 Apr-12	ion
This calibration certificate docum The measurements and the unc 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 # GB37490704 US37292783 SN: 2336 SN: 6065 SN: 781	tional standards, which realize the physical un probability are given on the following pages ar any facility: environment temperature (22 ± 3) ^{on} <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336_Dec10) 29-Dec-10 (No. H3-6065_Dec10) 20-Apr-11 (No. DAE4-781_Apr11) Check Date (in house)	hits of measurements (SI). Ind are part of the certificate C and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11 Apr-12 Scheduled Check	ion st-12
This calibration certificate docum The measurements and the unc 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 Power meter Agilent 4419B Power sensor HP 8482H Power sensor HP 8482A	ID # GB37480704 US37292783 SN: 2036 SN: 6065 SN: 6065 SN: 6065 SN: 6065 SN: 6075 SN: 6085 SN:	tional standards, which realize the physical un probability are given on the following pages an ony facility: environment temperature (22 ± 3) ^{on} <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-236_Dec10) 29-Dec-10 (No. H3-6065_Dec10) 29-Dec-10 (No. H3-6065_Dec10) 20-Apr-11 (No. DAE4-781_Apr11) <u>Check Date (in house)</u> 09-Oct-09 (in house check Oct-11) 09-Oct-09 (in house check Oct-11)	hits of measurements (SI). Ind are part of the certificate C and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11 Apr-12 Scheduled Check In house check: Oc In house check: Oc	tion tr-12 tr-12 tr-12
This calibration certificate docum The measurements and the unc 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 Power meter Agilent 4419B 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: US37295597 US37390585	tional standards, which realize the physical un probability are given on the following pages ar bry facility: environment temperature (22 ± 3) ^o <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336_Dec10) 29-Dec-10 (No. ER3-2336_Dec10) 20-Apr-11 (No. DAE4-781_Apr11) <u>Check Date (in house)</u> 09-Oct-09 (in house check Oct-11) 09-Oct-09 (in house check Oct-11) 18-Oct-01 (in house check Oct-11)	hits of measurements (SI). Ind are part of the certificate C and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11 Apr-12 Scheduled Check In house check: Oc In house check: Oc In house check: Oc In house check: Oc	tion t-12 t-12 t-12 t-12 t-12
This calibration certificate docum The measurements and the unc 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 Power meter Agilent 4419B Power sensor HP 8482H Power sensor HP 8482A	ID # GB37480704 US37292783 SN: 2036 SN: 6065 SN: 6065 SN: 6065 SN: 6065 SN: 6075 SN: 6085 SN:	tional standards, which realize the physical un probability are given on the following pages an ony facility: environment temperature (22 ± 3) ^{on} <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-236_Dec10) 29-Dec-10 (No. H3-6065_Dec10) 29-Dec-10 (No. H3-6065_Dec10) 20-Apr-11 (No. DAE4-781_Apr11) <u>Check Date (in house)</u> 09-Oct-09 (in house check Oct-11) 09-Oct-09 (in house check Oct-11)	hits of measurements (SI). Ind are part of the certificate C and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11 Apr-12 Scheduled Check In house check: Oc In house check: Oc	tion t-12 t-12 t-12 t-12 t-12
This calibration certificate docum The measurements and the unc 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 Power meter Agilent 4419B 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: US37295597 US37390585	tional standards, which realize the physical un probability are given on the following pages ar bry facility: environment temperature (22 ± 3) ^o <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336_Dec10) 29-Dec-10 (No. ER3-2336_Dec10) 20-Apr-11 (No. DAE4-781_Apr11) <u>Check Date (in house)</u> 09-Oct-09 (in house check Oct-11) 09-Oct-09 (in house check Oct-11) 18-Oct-01 (in house check Oct-11)	hits of measurements (SI). Ind are part of the certificate C and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11 Apr-12 Scheduled Check In house check: Oc In house check: Oc In house check: Oc In house check: Oc	tion t-12 t-12 t-12 t-12 t-12
This calibration certificate docum The measurements and the unc 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 Power meter Agilent 4419B Power sensor HP 8482H Power sensor HP 8482H Power sensor HP 8482A Network Analyzer HP 8753E RF generator E4433B	ID # GB37480704 US37292783 SN: 2336 SN: 6065 SN: 781 ID # SN: GB42420191 SN: 3318A09450 SN: US37295597 US37390585 MY 41000675 Name	tional standards, which realize the physical un probability are given on the following pages ar bry facility: environment temperature (22 ± 3) ^o <u>Cal Date (Certificate No.)</u> 05-Oct-11 (No. 217-01451) 05-Oct-11 (No. 217-01451) 29-Dec-10 (No. ER3-2336_Dec10) 29-Dec-10 (No. ER3-2336_Dec10) 29-Dec-10 (No. DAE4-781_Apr11) <u>Check Date (in house)</u> 09-Oct-09 (in house check Oct-11) 09-Oct-09 (in house check Oct-11) 09-Oct-09 (in house check Oct-11) 18-Oct-01 (in house check Oct-11) 03-Nov-04 (in house check Oct-11) Function	hits of measurements (SI). Ind are part of the certificate C and humidity < 70%. Scheduled Calibrat Oct-12 Oct-12 Dec-11 Dec-11 Apr-12 Scheduled Check In house check: Oc In house check: Oc In house check: Oc In house check: Oc	tion t-12 t-12 t-12 t-12 t-12

	Testing Services™	Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFF91LW, RFK121LW			Page 15(24)
Author Data Daoud Attayi	Dates of Test Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	Report No RTS-6012-1207-39B		FF90LW FK120LW



Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFF91LW, RFK121LW

NISS

BRP

16(24)

Page

Author Data Daoud Attavi

Document

Jan. 31, Feb. 17, June 18-Sep. 28, 2012

Report No RTS-6012-1207-39B

L6ARFF90LW L6ARFK120LW

FCC ID

Calibration Laboratory of

Schmid & Partner Engineering AG Zeughausstrasse 43, 8004 Zurich, Switzerland

Dates of Test



- Schweizerischer Kalibrierdienst
- Service suisse d'étalonnage С
- 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

ANSI-C63.19-2007 [1]

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], 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 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], 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_Nov11

Page 2 of 6

This report shall NOT be reproduced except in full without the written consent of RIM Testing Services Copyright 2005-2012, RIM Testing Services, A division of Research In Motion Limited

s

	Testing Services™	Annex B to Hearing Aid Compati Report for the BlackBerry® Smar RFK121LW			Page 17(24)
Author Data Daoud Attayi	Dates of Test Jan. 31,	Feb. 17, June 18-Sep. 28 , 2012	Report No RTS-6012-1207-39B	-	FF90LW FK120LW

	Testing Services™	Annex B to Hearing Aid Compati Report for the BlackBerry® Smar RFK121LW			Page 18(24)
Author Data	Dates of Test		Report No	FCC ID	
Daoud Attayi	Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	RTS-6012-1207-39B	L6AR	FF90LW

L6ARFK120LW

Measurement	Conditions

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

DASY Version	DASY5	V52.6.2
Extrapolation	Advanced Extrapolation	
Phantom	HAC Test Arch	
Distance Dipole Top - Probe Center	10 mm	
Scan resolution	dx, dy = 5 mm	
Frequency	1880 MHz ± 1 MHz	
Input power drift	< 0.05 dB	

Maximum Field values

H-field 10 mm above dipole surface	condition	interpolated maximum
Maximum measured	100 mW input power	0.456 A / m ± 8.2 % (k=2)
E-field 10 mm above dipole surface	condition	Interpolated maximum
Maximum measured above high end	100 mW input power	136.9 V / m
Maximum measured above low end	100 mW input power	133.7 V / m
Averaged maximum above arm	100 mW input power	135.3 V / m ± 12.8 % (k=2)

Appendix

Antenna Parameters with Head TSL

Frequency	Return Loss	Impedance
1730 MHz	27.3 dB	53.1 Ω + 3.2 jΩ
1880 MHz	20.8 dB	51.1 Ω + 9.2 jΩ
1900 MHz	21.7 dB	52.1 Ω + 8.2 jΩ
1950 MHz	28.4 dB	53.0 Ω + 2.5 jΩ
2000 MHz	18.3 dB	43.0 Ω + 9.0 jΩ

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.

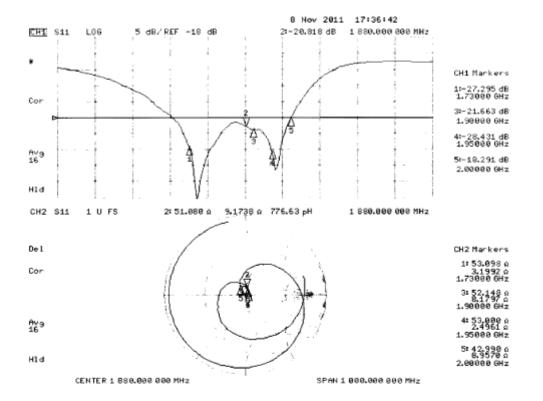
Certificate No: CD1880V3-1008_Nov11

Page 3 of 6

	Testing Services™	Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFF91LW, RFK121LW			Page 19(24)
Author Data Daoud Attayi	Dates of Test Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	Report No RTS-6012-1207-39B	-	FF90LW FK120LW

	Testing Services™	Annex B to Hearing Aid Compatibility RF Emissions Test		Page 20(24)	
Author Data Daoud Attayi	Dates of Test Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	Report No RTS-6012-1207-39B		FF90LW FK120LW

Impedance Measurement Plot



Certificate No: CD1880V3-1008_Nov11

Page 4 of 6

	Testing Services™	Annex B to Hearing Aid Compatibility RF Emissions Test			Page 21(24)
Author Data Daoud Attayi	Dates of Test Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	Report No RTS-6012-1207-39B		FF90LW FK120LW

	festing ervices™	Document Annex B to Hearing Aid Compatibility RF Emissions Test Report for the BlackBerry® Smartphone model RFF91LW, RFK121LW			Page 22(24)
Author Data	Dates of Test		Report No	FCC ID	
Daoud Attayi	Jan. 31, F	Feb. 17, June 18-Sep. 28 , 2012	RTS-6012-1207-39B		FF90LW FK120LW

DASY4 H-field Result

Date/Time: 08.11.2011 10:46:23

Test Laboratory: SPEAG Lab2

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: CD1880V3 - SN: 1008

Communication System: CW; Frequency: 1880 MHz Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1$ kg/m³ Phantom section: RF Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

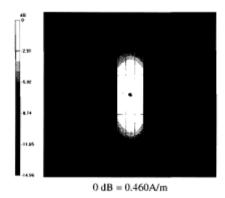
DASY Configuration:

- Probe; H3DV6 SN6065; ; Calibrated: 29.12.2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.04.2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole H-Field measurement @ 1880MHz/H-Scan - 1880MHz d=10mm/Hearing Aid Compatibility Test (41x181x1):

Measurement grid: dx=5mm, dy=5mm Maximum value of peak Total field = 0.456 A/m Probe Modulation Factor = 1.000 Device Reference Point: 0, 0, -6.3 mm Reference Value = 0.482 A/m; Power Drift = -0.0047 dB Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak H-field in A/m					
Grid 1	Grid 2	Grid 3			
0.387	0.410	0.399			
M2	M2	M2			
Grid 4	Grid 5	Grid 6			
0.427	0.456	0.446			
M2	M2	M2			
Grid 7	Grid 8	Grid 9			
0.389	0.422	0.414			
M2	M2	M2			



Certificate No: CD1880V3-1008_Nov11

Page 5 of 6

	Testing Services™	Annex B to Hearing Aid Compatibility RF Emissions Test			Page 23(24)
Author Data Daoud Attayi	Dates of Test Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	Report No RTS-6012-1207-39B		FF90LW FK120LW

	festing ervices™	Annex B to Hearing Aid Compatibility RF Emissions Test		Page 24(24)	
Author Data	Dates of Test		Report No	FCC ID	
Daoud Attayi	Jan. 31, I	Feb. 17, June 18-Sep. 28 , 2012	RTS-6012-1207-39B		FF90LW FK120LW

DASY4 E-field Result

Date/Time: 08.11.2011 14:16:19

Test Laboratory: SPEAG Lab2

DUT: HAC Dipole 1880 MHz; Type: CD1880V3; Serial: CD1880V3 - SN: 1008

Communication System: CW; Frequency: 1880 MHz Medium parameters used: $\sigma = 0$ mho/m, $\epsilon_r = 1$; $\rho = 1000$ kg/m³ Phantom section: RF Section Measurement Standard: DASY5 (IEEE/IEC/ANSI C63.19-2007)

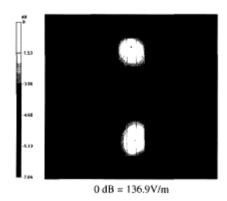
DASY Configuration:

- Probe: ER3DV6 SN2336; ConvF(1, 1, 1); Calibrated: 29.12.2010
- Sensor-Surface: (Fix Surface)
- Electronics: DAE4 Sn781; Calibrated: 20.04.2011
- Phantom: HAC Test Arch with AMCC; Type: SD HAC P01 BA; Serial: 1070
- DASY52 52.6.2(482); SEMCAD X 14.4.5(3634)

Dipole E-Field measurement @ 1880MHz/E-Scan - 1880MHz d=10mm/Hearing Aid Compatibility Test (41x181x1):

Measurement grid: dx=5mm, dy=5mm Maximum value of peak Total field = 136.9 V/m Probe Modulation Factor = 1.000 Device Reference Point: 0, 0, -6.3 mm Reference Value = 139.6 V/m; Power Drift = 0.0093 dB Hearing Aid Near-Field Category: M2 (AWF 0 dB)

Peak E-field	in V/m	
Grid 1	Grid 2	Grid 3
131.0	136.9	132.2
M2	M2	M2
Grid 4	Grid 5	Grid 6
79.581	88.112	88.112
M3	M3	M3
Grid 7	Grid 8	Grid 9
119.9	133.7	133.5
M2	M2	M2



Certificate No: CD1880V3-1008_Nov11

Page 6 of 6