

## Partial EMI Test Report

Tested in accordance with  
Federal Communications Commission (FCC)  
Personal Communications Services  
CFR 47, Parts 15.107, 15.109



**A division of BlackBerry Limited**

**REPORT NO.:** RTS-6046-1307-50A

**PRODUCT MODEL NO.:** RFX101LW, RGB141LW  
**TYPE NAME:** BlackBerry® smartphone  
**FCC ID:** L6ARFX100LW, L6ARGB140LW

**DATE:** August 29, 2013

RTS is accredited  
according to  
EN ISO/IEC 17025 by:



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	EMI Test Report for the BlackBerry® smartphone Model RFX101LW, RFB141LW		
<b>Test Report No.</b> RTS-6046-1307-50A	<b>Date of Test</b> July 30, 2013	<b>FCC ID:</b> L6ARFX100LW	<b>FCC ID:</b> L6ARGB140LW

### Statement of Performance:

The BlackBerry® smartphone, model RFX101LW, part number CER-54735-001 Rev3-x05-05 and accessories when configured and operated per BlackBerry's operation instructions, and performs within the requirements of the test standards.

The BlackBerry® smartphone, model RFB141LW, part number CER-56897-001 Rev 1-x04-00 and its accessories when configured and operated per BlackBerry's operation instructions, performs within the requirements of the test standards.

### Declaration:

We hereby certify that:

The test data reported herein is an accurate record of the performance of the sample(s) tested.

The test results are valid for the tested unit (s) only.

The test equipment used was suitable for the tests performed and within manufacturer's published specifications and operating parameters.

The test methods were consistent with the methods described in the relevant standards.

Documented by:

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## A. Scope

This report details the results of compliance tests that were performed in accordance with the requirements of:

- FCC CFR 47 Part 15, Subpart B, October, 2012 Class B Digital Devices, Unintentional Radiators

## B. Associated Documents

- 1) Test Report 1-6234\_13-03-14-C.
- 2) Test Report TR2-0085-13-3-1b.
- 3) BlackBerry\_System\_Similartity\_Declaration\_RFX101LW\_RGB141LW\_Rev5.doc

## C. Product Identification

Manufactured by BlackBerry whose headquarters is located at:  
 295 Phillip Street  
 Waterloo, Ontario  
 Canada, N2L 3W8  
 Phone: 519 888 7465  
 Fax: 519 888 6906

The equipment under test (EUT) was tested at the following locations:

RTS EMI test facilities	
305 Phillip Street	440 Phillip Street
Waterloo, Ontario	Waterloo, Ontario
Canada, N2L 3W8	Canada, N2L 5R9
Phone: 519 888 7465	Phone: 519 888 7465
Fax: 519 888 6906	Fax: 519 888 6906

The testing was performed on July 30 , 2013.



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The sample EUT included:

SAMPLE	MODEL	CER NUMBER	PIN	Software
1	RFX101LW	CER-54735-001 Rev3-x05-05	334120DE	OS Version 10.2.0.912 Bundle: 912

Radiated Emissions testing was performed on sample 1.

As per manufacturer's  
BlackBerry\_System\_Similartity\_Declaration\_RFX101LW\_RGB141LW\_Rev5,  
there is no retesting impact applicable.  
Changes between RFX101LW and RGB141LW did not impact the measurements in  
this report.

#### BlackBerry® smartphone Accessories Tested

- 1) NA Fixed Blade Charger Rev B, part number HDW-46445-001 with an output voltage of 5.0 volts dc, 850mA
- 2) Alt.1 Wired Headset, part number HDW-49299-001, with a lead length of 1.1 metres
- 3) USB Data Cable, part number HDW-51800-001 RevB, 1.2 metre long
- 4) HDMI Cable, part number HDW 29572-001, with a lead length of 6 feet

#### **D. Support Equipment Used for the Testing of the EUT**

- 1) Phillips Monitor, Model Number MWE12244T, Product ID 2444E1SB/27

#### **E. Summary of Results**

SPECIFICATION	TEST TYPE	Meets Requirement	Test Data APPENDIX
FCC CFR 47			
Part 15.109 Part 15.209	Radiated Unintentional Spurious Emissions	Yes	1 and Test Reports 1-6234_13-03-14-C, TR2-0085-13-3-1b

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### a) RADIATED EMISSIONS

Testing was performed on model RFX101LW

The radiated emissions from the EUT were measured using the methods outlined in CISPR Recommendation 22. The EUT was placed on a nonconductive Styrofoam table, 80 cm high that was positioned on a remote controlled turntable. The test distance used between the EUT and the receiving antenna was three metres. The turntable was rotated to determine the azimuth of the peak emissions. Then the emissions were maximized by elevating the antenna in the range of 1 to 4 metres. The maximum emission level was recorded. The radiated emissions were measured up to the fifth harmonic of the highest frequency of the band tested. Both the horizontal and vertical polarizations of the emissions were measured.

The measurements were done in a semi-anechoic chamber. The FCC registration number is **778487** and the Industry Canada(IC) file number is **2503B-1**. The EUT was configured and operated to produce the maximum radiated emissions while still keeping within RIM's specifications.

The BlackBerry® smartphone was in battery charging mode for all configurations. The ac input voltage was 120V, 60Hz.

Test Configuration	Operating Mode(s)	Charger + Accessories
1	LTE B4 Idle, Charging	NA Fixed Blade Charger + Alt.1 Wired Headset + 1.2m USB Cable + Monitor + HDMI Cable

The system's radiated emission levels were compared with respect to the FCC CFR 47 Part 15.109, Class B limit and IC ICES-003, 6.2.

The system met the requirements with a worst case emission test margin of 2.03 dB below the QP limit at 742.550 MHz using QP detector in Test Configuration 1.

To view the test data see APPENDIX 1.

#### Sample Calculation:

Field Strength (dB $\mu$ V/m) is calculated as follows:

FS = Measured Level (dB $\mu$ V) + A.F. (dB/m) + Cable Loss (dB) - Preamp (dB) + Filter Loss (dB)

#### **Measurement Uncertainty $\pm 4.5$ dB**

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## F. Compliance Test Equipment Used

<u>UNIT</u>	<u>MANUFACTURER</u>	<u>MODEL</u>	<u>SERIAL NUMBER</u>	<u>CAL DUE DATE</u> (YY MM DD)	<u>USE</u>
Preamplifier	Sonoma	310N/11909A	185831	13-10-10	Radiated Emissions
Preamplifier system	TDK RF Solutions	PA-02	080010	13-10-10	Radiated Emissions
EMI Receiver	Rohde & Schwarz	ESIB 40	100255	13-11-30	Radiated Emissions
Digital Multimeter	Hewlett Packard	34401A	US36042324	13-11-13	Conducted/Radiated Emissions
Environment Monitor	OMEGA	iTHX-SD	0380561	13-10-30	Radiated Emission
Environment Monitor	OMEGA	iTHX-SD	0380567	13-10-30	Radiated Emission
Wideband Radio Communication Tester	Rohde & Schwarz	CMW500	101469	13-12-10	Conducted/Radiated Emissions
Hybrid Log Antenna	EMC Automation	HLP-3003C	017401	13-08-23	Radiated Emissions
Horn Antenna	EMC Automation	HRN-0118	030101	14-07-08	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	837493/073	13-11-26	Radiated Emissions
Loop Antenna	ETS-Lindgren	6507	00126538	13-09-08	Radiated Emissions
EMI Test Receiver	Rohde & Schwarz	ESU 40	100162	13-11-29	Radiated/Conducted Emissions

## G. Test Software Used

<u>SOFTWARE</u>	<u>COMPANY</u>	<u>VERSION</u>	<u>USE</u>
EMC32	Rohde & Schwarz	8.53.0	Radiated Emissions
TDK Standard Emission Test	TDK RF Solutions	8.53.1.62	Radiated Emissions

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## APPENDIX 1 - RADIATED EMISSIONS TEST DATA



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**Date of Test**  
July 30, 2013

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### Test Configuration 1

Testing was performed on Device RFX101LW

Date of the test: July 30, 2013

The environmental conditions were: Temperature: 24.0 °C  
Humidity: 33.5 %

Frequency (MHz)	Antenna		Test Angle (Deg.)	Detector (Q.P. or Peak)	Measured Level (dB $\mu$ V)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading +corr) (dB $\mu$ V/m)	Limit @ 3.0 m (dB $\mu$ V/m)	Test Margin (dB)
	Pol. (V/H)	Height (metres)							
30.750	V	1.50	141.00	Q.P.	45.64	-11.00	34.64	40.00	-5.36
68.450	V	1.94	67.00	Q.P.	43.68	-15.09	28.59	40.00	-11.41
148.550	V	1.40	152.00	Q.P.	45.28	-11.25	34.03	43.50	-9.47
288.000	H	1.07	354.00	Q.P.	42.70	-6.79	35.91	46.00	-10.09
742.550	H	1.14	341.00	Q.P.	38.34	5.63	43.97	46.00	<b>-2.03</b>

All other emissions are at least 25 dB below the limit.