

# Partial EMI Test Report

Tested in accordance with  
Federal Communications Commission (FCC)  
Personal Communications Services  
CFR 47, Part 15 Subpart C  
&  
Industry Canada (IC) RSS-210, RSS-GEN




**A division of Research In Motion Limited**

**REPORT NO.:** RTS-5316-1109-64A

**PRODUCT MODEL NO.:** REA71UW, REB71UW  
**TYPE NAME:** BlackBerry® smartphone  
**FCC ID:** L6AREA70UW, L6AREB70UW  
**IC:** 2503A-REA70UW, 2503A-REB70UW

**DATE:** October 06, 2011

	EMI Test Report for the BlackBerry® smartphone Model REA71UW, REB71UW	
<b>Test Report No.</b> RTS-5316-1109-64A	<b>Dates of Test</b> September 23, 2011	<b>FCC ID: L6AREA70UW IC: 2503A-REA70UW</b> <b>FCC ID: L6AREB70UW IC: 2503A-REB70UW</b>

**Statement of Performance:**

The BlackBerry® smartphone, model REA71UW, part number CER-41251-001 Rev1, and its accessories perform within the requirements of the test standards when configured and operated under RIM's operation instructions.

The BlackBerry® smartphone, model REB71UW, part number CER-41250-001 Rev1, and its accessories perform within the requirements of the test standards when configured and operated under RIM's operation instructions.

**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:



Savtej S. Sandhu  
Regulatory Compliance Specialist  
Date: October 13, 2011

Reviewed by:




Heng Lin  
Regulatory Compliance Specialist  
Date: October 14, 2011

Reviewed and Approved by:




Masud S. Attayi, P.Eng.  
Manager, Regulatory Compliance  
Date: October 14, 2011

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## A. Scope

This report details the results of compliance tests which were performed in accordance to the requirements of:

- o FCC CFR 47 Part 15, Subpart C, October, 2010
- o Industry Canada, RSS-210, Issue 8, December 2010, Licence-exempt Radio Apparatus
- o Industry Canada, RSS-GEN, Issue 3, December 2010, General Requirements and Information for the Certification of Radio Apparatus

## B. Associated Documents

1. Test report 2-0023-11-1-7b
2. Test report 2-0023-11-1-7b-A1
3. Test report 2-0023-11-1-7c
4. Test report 2-0023-11-1-7c-A1
5. Test report 2-0023-11-1-7d
6. Test report 2-0023-11-1-7d-A1
7. BlackBerrySystemSimilarity\_REA71UW\_REB71UW


## C. Product Identification

Manufactured by Research In Motion Limited 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:

RIM Testing Services 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 September 23, 2011.

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The sample EUT included:


SAMPLE	MODEL	CER NUMBER	PIN	SOFTWARE
1	REA71UW	CER-41251-001 Rev1	27EB7A45	V7.0.0.300 (Platform 9.0.0.190) Bundle 1482

Near Field Communications testing was performed on sample 1.

Only the characteristics that may have been affected by the changes from model REA71UW to REB71UW were re-tested. For more information, see BlackBerrySystemSimilarity\_REA71UW\_REB71UW.


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

No support equipment used. See section *G. Compliance Test Equipment Used.*

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## E. Test Results Chart

SPECIFICATION		TEST TYPE	Meets Requirements	TEST DATA
FCC CFR 47	IC			APPENDIX
Part 15.207	RSS-210 RSS-GEN	Conducted AC Line Emission	See Test Report 2-0023-11-1-7c 2-0023-11-1-7c-A1 2-0023-11-1-7b 2-0023-11-1-7b-A1	-
Part 15.209 Part 15.247	RSS-210 RSS-GEN	BT Radiated Spurious Emissions	See Test Report 2-0023-11-1-7c 2-0023-11-1-7c-A1	-
Part 15.209 Part 15.247	RSS-210 RSS-GEN	BT Radiated Band Edge Compliance	See Test Report 2-0023-11-1-7c 2-0023-11-1-7c-A1	-
Part 15.209 Part 15.247	RSS-210 RSS-GEN	802.11b/g/n Radiated Spurious Emissions	See Test Report 2-0023-11-1-7b 2-0023-11-1-7b-A1	-
Part 15.209 Part 15.247	RSS-210 RSS-GEN	802.11b/g/n Radiated Band Edge Compliance	See Test Report 2-0023-11-1-7b 2-0023-11-1-7b-A1	-
Part 15.247(a)	RSS-210	BT, 20 dB Bandwidth	See Test Report 2-0023-11-1-7c 2-0023-11-1-7c-A1	-
Part 15.247(a)	RSS-210	BT, Carrier Frequency Separation	See Test Report 2-0023-11-1-7c 2-0023-11-1-7c-A1	-
Part 15.247(a)	RSS-210	BT, Number of Hopping Frequencies	See Test Report 2-0023-11-1-7c 2-0023-11-1-7c-A1	-
Part 15.247(a)	RSS-210	BT, Time of Occupancy (Dwell Time)	See Test Report 2-0023-11-1-7c 2-0023-11-1-7c-A1	-
Part 15.247(b)	RSS-210	BT, Maximum Peak Conducted Output Power	See Test Report 2-0023-11-1-7c 2-0023-11-1-7c-A1	-
Part 15.247(c)	RSS-210	BT, Band-Edge Compliance of RF Conducted Emissions	See Test Report 2-0023-11-1-7c 2-0023-11-1-7c-A1	-
Part 15.247(c)	RSS-210	BT, Spurious RF Conducted Emissions	See Test Report 2-0023-11-1-7c 2-0023-11-1-7c-A1	-
Part 15.247(b)	RSS-210	802.11b/g/n, 6 dB Bandwidth	See Test Report 2-0023-11-1-7b 2-0023-11-1-7b-A1	-
Part 15.247(b)	RSS-210	802.11b/g/n, Maximum Conducted Output Power	See Test Report 2-0023-11-1-7b 2-0023-11-1-7b-A1	-

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## Test Results Chart cont'd

SPECIFICATION		TEST TYPE	Meets Requirements	TEST DATA
FCC CFR 47	IC			APPENDIX
Part 15.247(b)	RSS-210	802.11b/g/n, Band-Edge	See Test Report 2-0023-11-1-7b 2-0023-11-1-7b-A1	-
Part 15.247(b)	RSS-210	802.11b/g/n, Peak Power Spectral Density	See Test Report 2-0023-11-1-7b 2-0023-11-1-7b-A1	-
Part 15.247(b)	RSS-210	802.11b/g/n, Spurious RF Conducted Emissions	See Test Report 2-0023-11-1-7b 2-0023-11-1-7b-A1	-
Part 15.209 Part 15.225(a)	RSS-210 RSS-GEN	Near Field Communications, Radiated Emissions	See Test Report 2-0023-11-1-7d 2-0023-11-1-7d-A1	-
Part 15.225(e)	RSS-210	Near Field Communications, Occupied Bandwidth	Pass	1
Part 15.225(e)	RSS-210	Near Field Communications, Frequency Stability	Pass	1

## F. Summary of Results

The following test configurations were measured for model REA71UW:

### 1) Near Field Communications (NFC)

The Near Field Communications emissions from the BlackBerry® smartphone were measured using the methods outlined in FCC CFR 47 Part 15, Subpart C.

#### a) Occupied Bandwidth


The EUT met the requirements of the Occupied Bandwidth as per 47 CFR 15 C and RSS-210. The EUT was measured in test mode with modulation on and transmitting at 13.56 MHz.

See APPENDIX 1 for the test data.

#### b) Frequency Stability

The EUT met the requirements of the Frequency Stability as per 47 CFR 15.225(e) and RSS-210. The EUT was measured in test mode with modulation on and transmitting at 13.56 MHz.


See APPENDIX 1 for the test data.

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### G. 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>
Spectrum Analyzer	HP	8563E	3745A08112	11-09-30	RF Conducted Emissions
DC Power Supply	HP	6632B	US37472178	11-11-19	RF Conducted Emissions
Environment Monitor	Omega	iTHX-SD	0340060	12-09-07	RF Conducted Emissions
Temperature Probe	Control Company	23609-234	21352860	12-09-07	Frequency Stability
Environmental Chamber	Test Equity	107	0900246	N/R	Frequency Stability



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## APPENDIX 1 – NEAR FIELD COMMUNICATIONS TEST DATA/PLOTS

	EMI Test Report for the BlackBerry® smartphone Model REA71UW <b>APPENDIX 1</b>	
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### Near Field Communications (NFC) Test Results

#### Occupied Bandwidth

The following test configurations were measured for model REA71UW:

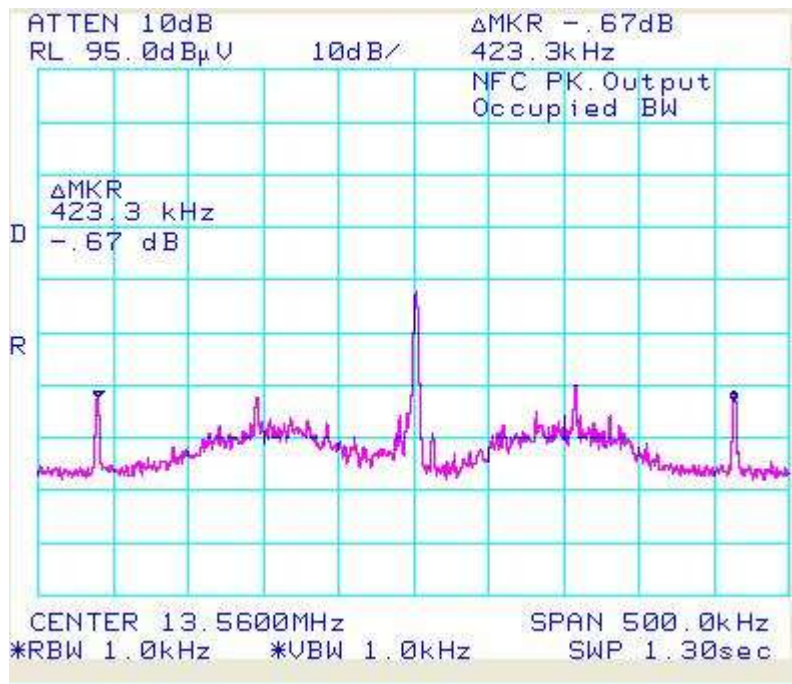
Date of test: September 23, 2011.


The measurements were performed by Kevin Guo.

The environmental test conditions were:    Temperature:        24 °C  
  Relative Humidity:   46 %

Operation mode (TX ON)	Occupied Bandwidth (kHz)
NFC, modulated	423.30

**Figure 7-1: Occupied Bandwidth, NFC TX Frequency = 13.56 MHz**



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Near Field Communications (NFC) Test Results cont'd

Frequency Stability

Date of test: September 23, 2011.  
The measurements were performed by Kevin Guo.

The environmental test conditions were:   Temperature:         24 °C  
  Relative Humidity:     46 %

Test Temperature (Celsius)	Nominal Freq. (MHz)	Measured Freq. (MHz)	Input Voltage (Volts)	Max Freq Error (Hz)	% Deviation (Limit .01%)	PPM
-20	13.56	13.559792	3.6	-208	-0.00153	-15.3392
-20	13.56	13.559842	3.7	-158	-0.00117	-11.6519
-20	13.56	13.559817	4.2	-183	-0.00135	-13.4956
-10	13.56	13.560008	3.6	8	0.00006	0.5900
-10	13.56	13.560008	3.7	8	0.00006	0.5900
-10	13.56	13.559975	4.2	-25	-0.00018	-1.8437
0	13.56	13.560258	3.6	258	0.00190	19.0265
0	13.56	13.560275	3.7	275	0.00203	20.2802
0	13.56	13.560225	4.2	225	0.00166	16.5929
10	13.56	13.560400	3.6	400	0.00295	29.4985
10	13.56	13.560383	3.7	383	0.00282	28.2448
10	13.56	13.560417	4.2	417	0.00308	30.7522
20	13.56	13.560558	3.6	558	0.00412	41.1504
20	13.56	13.560542	3.7	542	0.00400	39.9705
20	13.56	13.560600	4.2	600	0.00442	44.2478
30	13.56	13.560550	3.6	550	0.00406	40.5605
30	13.56	13.560592	3.7	592	0.00437	43.6578
30	13.56	13.560525	4.2	525	0.00387	38.7168

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Near Field Communications (NFC) Test Results cont'd

Frequency Stability cont'd

Test Temperature (Celsius)	Nominal Freq. (MHz)	Measured Freq. (MHz)	Input Voltage (Volts)	Max Freq Error (Hz)	% Deviation (Limit .01%)	PPM
40	13.56	13.560558	3.6	558	0.00412	41.1504
40	13.56	13.560508	3.7	508	0.00375	37.4631
40	13.56	13.560475	4.2	475	0.00350	35.0295
50	13.56	13.560517	3.6	517	0.00381	38.1268
50	13.56	13.560488	3.7	488	0.00360	35.9882
50	13.56	13.560425	4.2	425	0.00313	31.3422
60	13.56	13.560167	3.6	167	0.00123	12.3156
60	13.56	13.560183	3.7	183	0.00135	13.4956
60	13.56	13.560250	4.2	250	0.00184	18.4366