

EMI Test Report

Tested in accordance with
Federal Communications Commission (FCC)
Personal Communications Services
CFR 47, Parts 15, Subpart B
&
Industry Canada (IC), ICES-003



A division of Research In Motion Limited

REPORT NO.: RTS-2474-1003-29

PRODUCT MODEL NO.: RCX72UW
TYPE NAME: BlackBerry® smartphone
FCC ID: L6ARCX70UW
IC: 2503A-RCX70UW

DATE: March, 22 2010

	EMI Test Report for the BlackBerry® smartphone Model RCX72UW	
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Statement of Performance:

The BlackBerry® smartphone, model RCX72UW, part number CER-31370-001 Rev 1 and accessories when configured and operated per RIM's operation instructions, and 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:



Kevin Rose
Regulatory Compliance Specialist
Date: 22 March 2010

Reviewed by:



Fahd Faisal
Regulatory Compliance Associate
Date: 23 March 2010

Reviewed and Approved by:



Masud S. Attayi, P.Eng.
Manager, Regulatory Compliance
Date: 23 March 2010

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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 01, 2009 Class B Digital Devices, Unintentional Radiators
- IC ICES-003 Issue 4, February 2004, Class B Digital Devices, Unintentional Radiators

B. Associated Documents

- 1) RTS-2474-1002-46
- 2) RCX 71UW_72UW_kbd_differences_document

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 location:

RIM Testing Services EMI test facility
 305 Phillip Street
 Waterloo, Ontario
 Canada, N2L 3W8
 Phone: 519 888 7465
 Fax: 519 888 6906

The testing was performed on March 13, 2010.

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The sample EUT included:

SAMPLE	MODEL	CER NUMBER	PIN
1	RCX72UW	CER-31370-001 Rev 1	21F2591A

Radiated Emissions testing was performed on sample 1

Model RCX72UW is similar to model RCX71UW except that it contains an ITU keypad rather than a 20 key QWERTY keypad. Only the characteristics that may be impacted by the changes were re-measured. To view the differences between RCX71UW and RCX72UW see the document RCV71UW_72UW_kbd_difference_document.

BlackBerry® smartphone Accessories Tested

- 1) Premium Stereo Headset, part number HDW-15766-005, 1.3 metres long.
- 2) USB Data Cable, part number HDW-06610-005, 1.50 metres long.

D. Support Equipment Used for the Testing of the EUT

- 1) IBM Thinkpad Lenovo T60p laptop, type 8742-C2U, product ID 8742C2U

E. Summary of Results

SPECIFICATION		TEST TYPE	Meets Requirement	Test Data APPENDIX
FCC CFR 47	IC			
Part 15, Subpart B	ICES-003	Conducted AC Line Emission	See report RTS-2474-1002-46	1
Part 15, Subpart B	ICES-003	Radiated Unintentional Spurious Emissions	Yes	2

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a) AC CONDUCTED EMISSIONS

All AC Conducted emission results of the report RTS-2474-1002-46 are referenced for this section.

Measurement Uncertainty ± 3.0 dB

To view the test data/plots, see APPENDIX 1.

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b) RADIATED EMISSIONS

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 frequency range measured was from 30 MHz to 5.0 GHz. 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.

The following test configuration was measured:

1. The BlackBerry® smartphone in GSM850 idle mode connected to the Laptop via 1.5 Meter USB cable and Premium ST HS.

The system's radiated emission levels were compared with respect to the FCC CFR 47 Part 15, Subpart B, and IC ICES-003, Class B limit.

The system met the requirements with a worse case emission test margin of 7.43 dB at 864MHz using test configuration 4.

Sample Calculation:

Field Strength (dB μ V/m) is calculated as follows:

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

Measurement Uncertainty \pm 4.6 dB

To view the test data see APPENDIX 2.

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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	10-11-14	Radiated Emissions
Preamplifier system	TDK RF Solutions	PA-02	080010	10-11-06	Radiated Emissions
EMC Analyzer	Rohde & Schwarz	ESIB 40	3942A00517	10-11-30	Radiated Emissions
Digital Multimeter	Hewlett Packard	34401A	US36042324	10-10-08	Conducted/Radiated Emissions
Environment Monitor	Control Company	1870	230355190	11-01-08	Radiated Emissions
Environment Monitor	Control Company	1870	80117164	11-01-08	Conducted/Radiated Emissions
Hybrid Log Antenna	EMC Automation	HLP-3003C	017401	10-09-11	Radiated Emissions
Horn Antenna	EMC Automation	HRN-0118	030101	10-07-22	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	837493/073	10-11-30	Radiated Emissions
Bluetooth Tester	Rohde & Schwarz	CBT	100368	10-11-26	Radiated Emissions

APPENDIX 1 - AC CONDUCTED EMISSIONS TEST DATA

	EMI Test Report for the BlackBerry® smartphone Model RCW72UW APPENDIX 1	
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AC Conducted Emissions Test Results

All AC Conducted emission results of the report RTS-2474-1002-46 are referenced for this section.

APPENDIX 2 - RADIATED EMISSIONS TEST DATA

RIM Testing Services™	EMI Test Report for the BlackBerry® smartphone Model RCX72UW APPENDIX 2		
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Radiated Emissions Test Results

Test Configuration 1

The following test was performed by Fahd Faisal

Date of Test: March 13, 2010

The environment conditions were:

Temperature: 19 C

Pressure: 1003 mb

Humidity: 24 %

Frequency (MHz)	Antenna		Test Angle (Deg.)	Detector (Q.P. or Peak)	Measured Level (dB μ V)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading +corr) (dB μ V/m)	Limit @ 3.0 m (dB μ V/m)	Test Margin (dB)
	Pol. (V/H)	Height (metres)							
864.000	V	2.04	186.00	Q.P.	40.01	-1.44	38.57	46.00	-7.43
216.050	H	1.89	304.00	Q.P.	48.56	-16.23	32.33	46.00	-13.67
216.050	V	2.33	171.00	Q.P.	46.53	-16.23	30.30	46.00	-15.70
432.000	V	2.14	189.00	Q.P.	40.78	-10.85	29.93	46.00	-16.07
245.900	H	1.65	91.00	Q.P.	45.90	-17.02	28.88	46.00	-17.12
122.950	H	2.93	281.00	Q.P.	43.30	-18.61	24.69	43.50	-18.81
1331.500	V	1.93	203.00	Q.P.	56.86	-2.92	53.94	74.00	-20.06

All other emission levels had a test margin greater than 25 dB.