Partial EMI Test Report

Tested in accordance with
Federal Communications Commission (FCC)
Personal Communications Services
CFR 47 Parts 2, 22, 24 and 27
&
Industry Canada (IC) RSS-132 and 133

A division of Research In Motion Limited

REPORT NO: RTS-2474-1003-30

PRODUCT MODEL NO:	RCX72UW
TYPE NAME:	BlackBerry® smartphone
FCC ID:	L6ARCX70UW
IC:	2503A–RCX70UW
EMISSION DESIGNATOR (GSM):	247KGXW
EMISSION DESIGNATOR (EDGE):	245KG7W
EMISSION DESIGNATOR (WCDMA):	4M18F9W

DATE: 22 March 2010

Statement of Performance:

The BlackBerry® smartphone, model RCX72UW, part number CER-31370-001 Rev 1 and accessories performs within the requirements of the test standards when configured and operated per RIM's 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:

Fahd Faisal
Regulatory Compliance Associate
Date: 22 March 2010

Reviewed by:

Michael Cino
Regulatory Compliance Associate
Date: 23 March 2010

Reviewed and Approved by:

Masud S. Attayi, P.Eng.
Manager, Regulatory Compliance
Date: 29 March 2010

Table of Contents

A) Scope

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

- FCC CFR 47 Part 2, October 2009
- FCC CFR 47 Part 22, Subpart H, Cellular Radiotelephone Services, October 2009
- FCC CFR 47 Part 24 Subpart E, Broadband PCS, October 2009
- FCC CFR 47 Part 27 Subpart C, Technical Standards, October 2009
- Industry Canada, RSS-132 Issue 2, September 2005, Cellular Telephones Employing New Technologies Operating in the Bands 824-849 MHz and 869-894 MHz.
- Industry Canada, RSS-133 Issue 5, February 2009, 2 GHz Personal Communications Services.
- Industry Canada, RSS-139 Issue 2, February 2009, Advanced Wireless Services Equipment Operating in the Bands 1710 – 1755 and 2110 – 2155 MHz

B) Associated Documents

1) RTS-2474-1002-50
2) RCX71UW_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 locations:

RIM Testing Services EMI test facilities

305 Phillip Street
Waterloo, Ontario
Canada, N2L 3W8
Phone: 519 888 7465
Fax: 519 888 6906

440 Phillip Street
Waterloo, Ontario,
Canada , N2L 5R9
Phone: 519 888 7465
Fax: 519 888 6906

The testing was performed from March 10 to 11, 2010.

The sample EUT included:

SAMPLE	MODEL	CER NUMBER	PIN
1	RCX72UW	CER-31369-001 Rev 1	21F2591A
2	RCX72UW	CER-31369-001 Rev 1	21F2589F

GSM/UMTS radiated emissions testing was performed on samples 1 and 2.

Model RCX72UW is similar to model RCX71UW except that it contains a 14 key ITU keypad rather than a 20 key QWERTY keypad. To view the differences between RCX71UW and RCX72UW, see document *RCX71UW_72UW_kbd_differences_document*.
Only the characteristics that maybe impacted the change were re-measured

D) Support Equipment Used for the Testing of the EUT

No support equipment required; for list of equipment refer to section G, Compliance Test Equipment Used.

E) Test Voltage

The ac input voltage was 120 volts, 60 Hz where applicable. This configuration was per RIM's specifications.

F) Summary of Results

SPECIFICATION		TEST TYPE	RESULT	TEST DATA APPENDIX
FCC CFR 47	IC			
Part 2.1051 Part 22.917 Part 22.901	RSS-GEN, 4.9	GSM 850 Conducted Spurious Emissions	See Test Report RTS-2474-1002-50	-
Part 2.1051 Part 24.238(a)	RSS-GEN, 4.9	GSM PCS Conducted Spurious Emissions	See Test Report RTS-2474-1002-50	-
Part 2.202 Part 22.917	RSS-GEN, 4.6	GSM 850 Occupied Bandwidth and Channel Mask	See Test Report RTS-2474-1002-50	-
Part 2.202 Part 24.238	RSS-GEN, 4.6	GSM PCS Occupied Bandwidth and Channel Mask	See Test Report RTS-2474-1002-50	-
Part 2.1046(a)	RSS-133, 6.4 RSS-132, 4.4	GSM Conducted RF Output Power	See Test Report RTS-2474-1002-50	-
Part 2.1055(a)(d) Part 22.917	RSS-132, 4.3	GSM 850 Frequency Stability vs. Temperature and Voltage	See Test Report RTS-2474-1002-50	-
Part 2.1055(a)(d) Part 24.235	RSS-132, 4.3	GSM PCS Frequency Stability vs. Temperature and Voltage	See Test Report RTS-2474-1002-50	-
Part 22, Subpart H, Part 24, Subpart E	RSS-GEN, 4.9	GSM ERP, EIRP	See Test Report RTS-2474-1002-50	-
Part 22, Subpart H Part 24, Subpart E	RSS-GEN, 4.9	GSM Radiated Spurious/Harmonic Emissions	Pass	1
Part 27.53	RSS-139, 6.5	WCDMA UMTS1700 Conducted Spurious Emissions	See Test Report RTS-2474-1002-50	-
Part 2.202 Part 27.53	RSS-GEN, 2.3	WCDMA UMTS1700 Occupied Bandwidth and Channel Mask	See Test Report RTS-2474-1002-50	-
Part 2.1046(a)	RSS-139, 6.4	WCDMA Conducted RF Output Power	See Test Report RTS-2474-1002-50	-
Part 2.1055(a)(d) Part 27.54	RSS-139, 6.3	WCDMA UMTS1700 Frequency Stability vs. Temperature and Voltage	See Test Report RTS-2474-1002-50	-
Part 27.53	RSS-139, 6.5	WCDMA UMTS1700 Radiated Spurious/Harmonic Emissions	Pass	2
Part 27.50	RSS-139, 6.4	WCDMA EIRP	See Test Report RTS-2474-1002-50	-

Summary of Results cont'd

Radiated Emissions

The radiated spurious emission and carrier harmonics were measured up to the 10th harmonic for middle channel in the GSM850 and PCS bands. Each band was measured in GSM mode. Both the horizontal and vertical polarizations were measured.

The test margins in the GSM850 and PCS1900 bands for both GSM mode harmonic emissions were greater than 25 dB below the accepted limits for all tested frequencies.

The radiated spurious emission and carrier harmonics were measured up to the 10th harmonic for middle channel in the UMTS1700 band. Both the horizontal and vertical polarizations were measured.

The test margin in the UMTS1700 band harmonic emissions were greater than 25 dB below the accepted limits for all tested frequencies.

Sample Calculation:

Field Strength (dBµV/M) is calculated as follows:
FS = Measured Level (dBµV) + A.F. (dB/m) + Cable Loss (dB) - Preamp (dB) + Filter Loss (dB)

To view the test data see APPENDIX 4A and 4B.

Measurement Uncertainty ±4.6 dB

G) Compliance Test Equipment Used

UNIT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL DUE DATE (YY MM DD)	USE
Preamplifier	Sonoma	310N/11909A	185831	10-11-14	Radiated Emissions
Preamplifier system	TDK RF Solutions	PA-02	080010	10-11-06	Radiated Emissions
Preamplifier	Rohde & Schwarz	TS-ANA4-SP	001	11-02-17	Radiated Emissions
Preamplifier	Rohde & Schwarz	TS-ANA-SP	001	11-02-19	Radiated Emissions
Hybrid Log Antenna	EMC Automation	HLP-3003C	017301	11-02-02	Radiated Emissions
Hybrid Log Antenna	EMC Automation	HLP-3003C	017401	10-09-26	Radiated Emissions
Horn Antenna	EMC Automation	HRN-0118	030101	10-07-22	Radiated Emissions
Horn Antenna	EMC Automation	HRN-0118	030201	11-03-12	Radiated Emissions
Horn Antenna	Emco	3117	47563	11-07-15	Radiated Emissions
Horn Antenna	CMT	LHA 0180	R52734-001	12-01-21	Radiated Emissions
Preamplifier	TDK RF Solutions	18-26	030002	10-11-06	Radiated Emissions
Dipole Antenna	Schwarzbeck	UHAP	1018	11-03-12	Radiated Emissions
Dipole Antenna	Schwarzbeck	UHAP	974	10-10-16	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	837493/073	10-11-30	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	112394	10-11-30	Radiated Emissions
EMI Receiver	Rohde & Schwarz	ESIB-40	100255	10-11-30	Radiated Emissions
EMI Receiver	Rohde & Schwarz	ESU-40	100162	10-11-29	Radiated Emissions
Environment Monitor	Control Company	1870	230355190	11-01-08	Radiated Emissions
Environment Monitor	Control Company	1870	80117164	11-01-08	Radiated Emissions
Signal Generator	Agilent	E8257D	MY45140527	11-11-05	Radiated Emissions
Signal Generator	Agilent	83630B	3844A00927	10-10-31	Radiated Emissions

APPENDIX 1 – GSM RADIATED EMISSIONS TEST DATA

Radiated Power Test Data Results

GSM850

GSM Mode

Date of Test: March 10, 2010
The following measurements were performed by Fahd Faisal.

The environmental test conditions were: Temperature: 20 ºC
Pressure: 996 mb
Relative Humidity: 23 %

Test Distance was 3.0 meters with a height of 1.0 meter, 30 MHz to 1000 MHz.
The BlackBerry® smartphone was in standalone, Horizontal position.

The measurement was performed in GSM850 Tx mode on channel 190.

All emissions had a test margin greater than 25.0 dB.

Date of Test: March 11, 2010
The following measurements were performed by Steven Wang.

The environmental test conditions were: Temperature: 25 ºC
Pressure: 1012 mb
Relative Humidity: 29 %

Test Distance was 3.0 meters with a height of 1.0 meter, 1 GHz to 9 GHz.
The BlackBerry® smartphone was in standalone, Horizontal position.

The measurement was performed in GSM850 Tx mode on channel 190

All emissions had a test margin greater than 25.0 dB.

Radiated Emissions Test Data Results cont'd

PCS1900

GSM Mode

Date of Test: March 10, 2010

The environmental test conditions were: Temperature: 20 ºC
Pressure: 996 mb
Relative Humidity: 23 %

Test Distance was 3.0 meters with a height of 1.0 meter, 30 MHz to 1000 MHz.
The BlackBerry® smartphone was in standalone, USB Up position.

The measurement was performed in PCS1900 Tx mode on channel 661.

All emissions had a test margin greater than 25.0 dB.

Date of Test: March 11, 2010

The environmental test conditions were: Temperature: 25 ºC
Pressure: 1012 mb
Relative Humidity: 29 %

Test Distance was 3.0 meters with a height of 1.0 meter, 1 GHz to 9 GHz.
The BlackBerry® smartphone was in standalone, USB Up position.

The measurement was performed in PCS1900 Tx mode on channel 661.

All emissions had a test margin greater than 25.0 dB.

APPENDIX 2 – UMTS RADIATED EMISSIONS TEST DATA

Radiated Emissions Test Data Results

UMTS 1700 MHz Band

Date of Test: March 10, 2010
The following measurement was performed by Fahd Faisal.

The environmental test conditions were: Temperature: 20 ºC
Pressure: 996 mb
Relative Humidity: 23 %

Test Distance was 3.0 meters with a height of 1.0 meter, 30 MHz to 1000 MHz.
The BlackBerry® smartphone was in standalone, Horizontal face down position.

The measurement was performed in UMTS1700 Tx mode on channel 1413

All emissions had a test margin greater than 25.0 dB.

Date of Test: March 11, 2010
The following measurement was performed by Steven Wang.

The environmental test conditions were: Temperature: 25 ºC
Pressure: 1012 mb
Relative Humidity: 29 %

Test Distance was 3.0 meters with a height of 1.0 meter, 1 GHz to 9 GHz.
The BlackBerry® smartphone was in standalone, Horizontal face down position.

The measurement was performed in UMTS1700 Tx mode on channel 1413

All emissions had a test margin greater than 25.0 dB.