## **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

# **RIM Testing Services (RTS)**

# A division of Research In Motion Limited

**REPORT NO.:** RTS-1191-0809-13

PRODUCT MODEL NO.:RBW71CWTYPE NAME:BlackBerry® smartphoneFCC ID:L6ARBW70CWIC:2503A-RBW70CW

DATE: 26 September, 2008

#### **Statement of Performance:**

The BlackBerry<sup>®</sup> smartphone, model RBW71CW, part number CER-17673-001 Rev. 4, and accessories when configured and operated per RIM's operation instructions, perform 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:

Gurjeev Singh Compliance Specialist Date: 29 September, 2008

Reviewed by:

Maurice Battler

Maurice Battler Compliance Specialist Date: 29 September 2008

Reviewed by:

Masud S. Attayi, P.Eng. Team Lead, Regulatory Compliance Date: 29 September, 2008

Approved by:

Paul G. Cardinal, Ph.D. Director Date: 29 September, 2008

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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, July 10, 2008 Class B Digital Devices, Unintentional Radiators
- IC ICES-003 Issue 4, February 2004, Class B Digital Devices, Unintentional Radiators

#### **B.** Associated Documents

- 1. Document number RTS-1191-RBW71CW-01
- 2. Document number RTS-1191-RBW71CW-02

#### 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 RIM Testing Services (RTS) EMI test facilities, located at:

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 on August 6 to September 25, 2008.

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The sample EUT included:

SAMPLE	MODEL	CER NUMBER	PIN
1	RBW71CW	CER-17673-001 Rev 2	302C08EC
2	RBW71CW	CER-17673-001 Rev 2	3047A3BE
3	RBW71CW	CER-17673-001 Rev 2	302C08F6
4	RBW71CW	CER-17673-001 Rev 4	3047AA52

To view the differences between CER-17673-001 Rev. 2 to CER-17673-001 Rev. 3, see document number RTS-1191-RBW71CW-01.

To view the differences between CER-17673-001 Rev. 3 to CER-17673-001 Rev. 4, see document number RTS-1191-RBW71CW-02.

The changes from Rev 2 to Rev 4 had no effect on the measurement results in this report.

## BlackBerry<sup>®</sup> smartphone Accessories Tested

- 1) Folding Blade Charger, part number HDW-19129-001 with an output voltage of 5.0 volts dc, 700 mA with an attached USB cable with a length of 1.80 metres.
- 2) Captive Cable Charger part number HDW-17957-003 with an output voltage of 5.0 volts dc, 700 mA and attached USB cable with a lead length of 1.80 meters.
- 3) USB Data Cable, part number HDW-06610-009, model 6191-10AL-0180, 1.00 metre long.
- 4) Stereo Headset, 3.5 mm, part number HDW-14322-003, 1.3 metres long.
- 5) Premium Single Button Stereo Headset, 3.5 mm, part number HDW-15766-005, 1.3 meters long.
- 6) Premium Multi-Button Stereo Headset, 3.5 mm, part number HDW-15765-001, 1.3 meters long.
- 7) Premium Mono Headset, 3.5 mm part number HDW-17906-001, 1.3 meters long
- 8) BlackBerry<sup>®</sup> Charging Pod, part number HDW-19135-001
- 9) BlackBerry<sup>®</sup> Remote Stereo Gateway, part number ASY-16007-001
- 10) External Battery Charger, (EBC), part number HDW-19137-001.
- 11) USB Y-Cable, part number HDW-19137-002, lead lengths of 26 cm and 11 cm

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

- 1) IBM Thinkpad Lenovo T60p laptop, type 8742, product ID 8742C2U
- 2) Communication Tester, Rohde & Schwarz, model CMU 200, serial number 837493/073
- 3) Communication Tester, Rohde & Schwarz, model CMU 200, serial number 112394

#### E. Modifications to EUT

No modifications were required on the EUT.

#### F. Summary of Results

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

#### a) CONDUCTED AC LINE EMISSIONS

The conducted emissions were measured using the test procedure outlined in CISPR Recommendation 22 through a 50 Ohm Line Impedance Stabilization Network (LISN), which was inserted in the power line to the equipment to provide the specified impedance for measurements. The EUT was placed on a nonconductive wooden table, 80 cm high that was positioned 40 cm from a vertical ground plane. The RF output of the network was connected to an EMI receiver system with characteristics that duplicate those of the receiver specified in CISPR Publication 16.

BlackBerry<sup>®</sup> smartphone was in battery charging mode. The input voltage was 120 V, 60 Hz.

The following test configurations were measured:

- 1. The BlackBerry<sup>®</sup> smartphone PIN 302C08EC in CDMA Cellular Idle mode with the 3.5 mm Stereo Headset attached was connected to the Folding Blade Charger.
- 2. The BlackBerry<sup>®</sup> smartphone PIN 3047AA52 in CDMA PCS Idle mode with the 3.5 mm Premium Mono Stereo Headset attached was connected to the Captive Cable Charger and the External Battery Charger.
- 3. The BlackBerry<sup>®</sup> smartphone PIN 302C08EC in GSM850 Idle mode with the 3.5 mm Multi-Button Stereo Headset attached was connected to the Folding Blade Charger.
- 4. The BlackBerry<sup>®</sup> smartphone PIN 3047AA52 in GSM PCS Idle mode with the 3.5 mm Premium Stereo Headset attached was connected to the Captive Cable Charger.

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The sample EUT's conducted emissions were compared with respect to the FCC CFR 47 Part 15, Subpart B, and IC ICES-003, Class B limit. The sample EUT had a worse case test margin of 11.58 dB below the QP limit at 1.766 MHz using the quasipeak detector for the Captive Cable Charger, test configuration 2

#### Measurement Uncertainty ±3.0 dB

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

#### 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 and a fully-anechoic room (FAR). The semi-anechoic chamber FCC registration number is **778487** and the Industry Canada(IC) file number is **2503B-1**. The FAR's FCC registration number is **959115** and the IC file number is **2503C-1** 

The EUT was configured and operated to produce the maximum radiated emissions while still keeping within RIM's specifications.

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

The following test configurations were measured:

- 1. The BlackBerry<sup>®</sup> smartphone, PIN 302C08F6 in GSM PCS idle mode with the 3.5 mm Stereo Multi-Button Headset attached was connected to the Folding Blade Charger.
- 2. The BlackBerry<sup>®</sup> smartphone, PIN 302C08F6 in CDMA Cellular idle mode and transmitting to the Bluetooth Stereo Gateway connected to the laptop through the USB cable. The BlackBerry<sup>®</sup> smartphone was connected to the Folding Blade Charger.
- 3. The BlackBerry<sup>®</sup> smartphone, PIN 302C08F6 in CDMA PCS idle mode was connected to the laptop through the USB cable with data transfer.
- 4. The BlackBerry<sup>®</sup> smartphone, PIN 3047AA52 in GSM850 idle mode was positioned in the Charging Pod. The Charging Pod was connected to the laptop through the USB cable.

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- 5. The BlackBerry<sup>®</sup> smartphone, PIN 3047AA52 in GSM850 idle mode with the 3.5 mm Stereo Headset attached was connected to the Captive Cable Charger.
- 6. The BlackBerry<sup>®</sup> smartphone, PIN 302C08F6 in Bluetooth Tx mode with the 3.5 mm Stereo Headset attached was connected to the Folding Blade Charger

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 5.78 dB at 39.10 MHz using test configuration 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 ±4.6 dB

To view the test data see APPENDIX 2.

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## G. Compliance Test Equipment Used

<u>UNIT</u>	MANUFACTURER	<u>MODEL</u>	<u>SERIAL</u> <u>NUMBER</u>	<u>CAL DUE</u> <u>DATE</u> (YY MM DD)	USE
Preamplifier	Sonoma	310N/11909A	185831	08-11-21	Radiated Emissions
Preamplifier system	TDK RF Solutions	PA-02	080010	08-11-16	Radiated Emissions
Preamplifier	Rohde & Schwarz	TS-ANA4-SP	001	09-06-03	Radiated Emissions
Preamplifier	Rohde & Schwarz	TS-ANA-SP	001	09-02-29	Radiated Emissions
EMC Analyzer	Aglient	E7405A	US40240226	08-10-01	Radiated Emissions
Digital Multimeter	Hewlett Packard	34401A	US36042324	08-09-28	Conducted/Radiated Emissions
Environment Monitor	Control Company	1870	230355190	08-12-11	Conducted/Radiated Emissions
Environment Monitor	Control Company	1870	230355189	08-12-11	RF Conducted Emissions
L.I.S.N.	Rohde & Schwarz	ENV216	100060	10-04-08	Conducted Emissions
Hybrid Log Antenna	TDK	HLP-3003C	017301	08-12-15	Radiated Emissions
Hybrid Log Antenna	TDK	HLP-3003C	017201	09-10-24	Radiated Emissions
Horn Antenna	TDK	HRN-0118	030201	09-01-17	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	837493/073	08-12-06	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	112394	08-12-10	Radiated/Conducted Emissions
EMI Test Receiver	Rohde & Schwarz	ESIB 40	100255	08-12-24	Conducted/Radiated Emissions
EMI Receiver	Agilent	8546A	3942A00517	08-11-19	Radiated Emissions
RF Filter Section	Agilent	85460A	3704A00481	08-11-19	Radiated Emissions

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## APPENDIX 1 - AC LINE CONDUCTED EMISSIONS TEST DATA

#### AC Conducted Emissions Test Results

The measurements were performed by Andrew Fleming and Savtej Sandhu.

#### Test Configuration 1

The environmental test conditions were:	Temperature Pressure Relative Humidity	24ºC 1012 mb 37%

#### FCC CFR 47 Part 15, Subpart B and IC ICES-003, Class B

Date of test: August 6, 2008

Frequency	Line	Reading (QP)	Correction Factor	Corrected Reading (QP)	Limit (QP)	Limit (AV)	Margin (QP) Limits
(MHz)		(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)
0.173	L1	40.55	9.88	50.43	64.84	54.84	-14.41
0.186	Ν	31.91	9.98	41.89	64.21	54.21	-22.32
0.218	Ν	30.80	9.80	40.60	62.91	52.91	-22.31
0.330	L1	25.09	9.80	34.89	59.45	49.45	-24.56
0.366	L1	28.90	9.77	38.68	58.59	48.59	-19.91
0.371	Ν	27.99	9.85	37.84	58.49	48.49	-20.65
0.506	L1	28.15	9.66	37.81	56.00	46.00	-18.19
0.506	Ν	26.86	9.88	36.74	56.00	46.00	-19.26
2.373	L1	22.18	9.55	31.73	56.00	46.00	-24.27

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

Measurements were done with the quasi-peak detector.

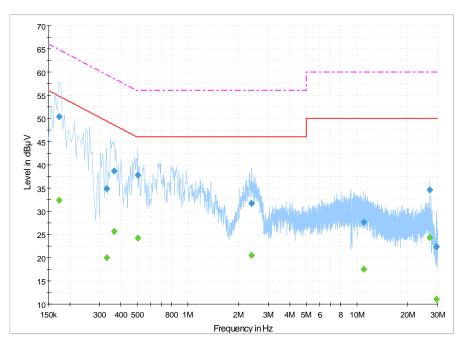
See figure 1-1 and figure 1-2 for the measurement plot of the L1 and N lines of AC power line conducted emissions.

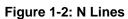
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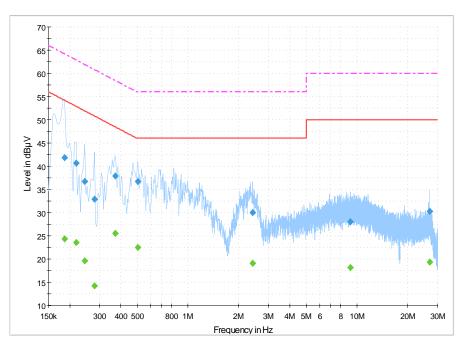
## AC Conducted Emissions Test Graphs

#### Test Configuration 1

#### Figure 1-1: L1 lines







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#### AC Conducted Emissions Test Results

#### **Test Configuration 2**

The environmental test conditions were:Temperature24°CPressure1020mbRelative Humidity32%

#### FCC CFR 47 Part 15, Subpart B and IC ICES-003, Class B

Date of test: September 26, 2008

Frequency	Line	Reading (QP)	Correction Factor	Corrected Reading (QP)	Limit (QP)	Limit (AV)	Margin (QP) Limits
(MHz)		(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)
0.173	L1	33.03	9.88	42.91	64.84	54.84	-21.93
0.177	Ν	39.83	10.05	49.89	64.63	54.63	-14.74
0.267	L1	28.79	9.85	38.64	61.21	51.21	-22.57
0.272	Ν	30.44	9.81	40.25	61.07	51.07	-20.82
0.443	L1	30.97	9.72	40.69	57.01	47.01	-16.32
0.443	Ν	32.44	9.87	42.32	57.01	47.01	-14.69
1.514	Ν	32.33	9.60	41.93	56.00	46.00	-14.07
1.766	L1	34.92	9.50	44.42	56.00	46.00	-11.58
2.009	L1	34.29	9.54	43.83	56.00	46.00	-12.17
2.369	L1	33.42	9.55	42.97	56.00	46.00	-13.03
2.432	Ν	34.48	9.60	44.07	56.00	46.00	-11.93
2.666	Ν	33.57	9.61	43.18	56.00	46.00	-12.82
3.764	L1	32.91	9.63	42.54	56.00	46.00	-13.46
4.119	Ν	33.01	9.60	42.62	56.00	46.00	-13.38

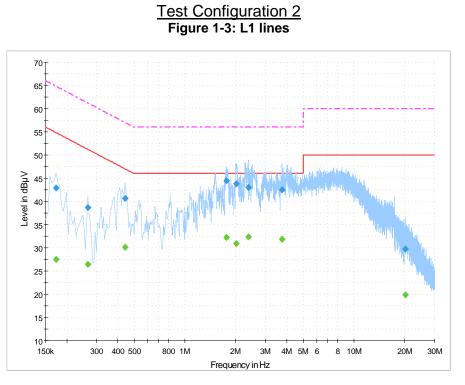
All other emission levels had a test margin of greater than 25 dB.

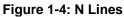
Measurements were done with the quasi-peak detector.

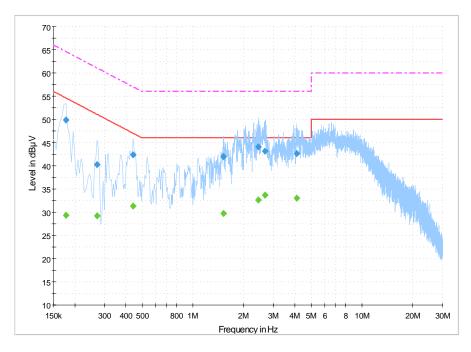
See figure 1-3 and figure 1-4 for the measurement plot of the L1 and N lines of AC power line conducted emissions.

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#### AC Conducted Emissions Test Graphs







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#### AC Conducted Emissions Test Results

#### Test Configuration 3

The environmental test conditions were:	Temperature	24ºC
	Pressure	1012 mb
	Relative Humidity	37%

#### FCC CFR 47 Part 15, Subpart B and IC ICES-003, Class B

Date of test: August 6, 2008

Frequency	Line	Reading (QP)	Correction Factor	Corrected Reading (QP)	Limit (QP)	Limit (AV)	Margin (QP) Limits
(MHz)		(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)
0.182	Ν	34.85	10.04	44.89	64.42	54.42	-19.53
0.218	Ν	33.78	9.80	43.57	62.91	52.91	-19.34
0.267	L1	34.15	9.85	44.00	61.21	51.21	-17.21
0.375	Ν	27.54	9.85	37.39	58.39	48.39	-21.00
0.465	L1	28.97	9.71	38.68	56.60	46.60	-17.92
0.510	Ν	26.17	9.88	36.05	56.00	46.00	-19.95
0.798	L1	28.79	9.57	38.36	56.00	46.00	-17.64
2.261	L1	21.56	9.55	31.11	56.00	46.00	-24.89
2.301	Ν	21.59	9.61	31.21	56.00	46.00	-24.79
26.993	L1	25.41	10.35	35.76	60.00	50.00	-24.24

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

Measurements were done with the quasi-peak detector.

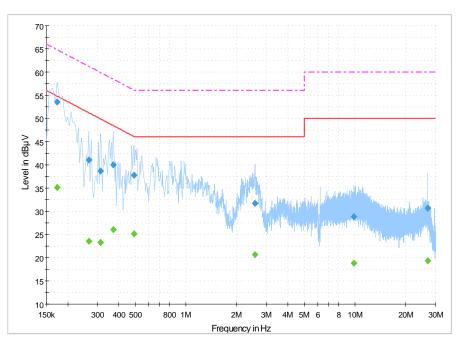
See figure 1-5 and figure 1-6 for the measurement plot of the L1 and N lines of AC power line conducted emissions.

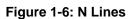
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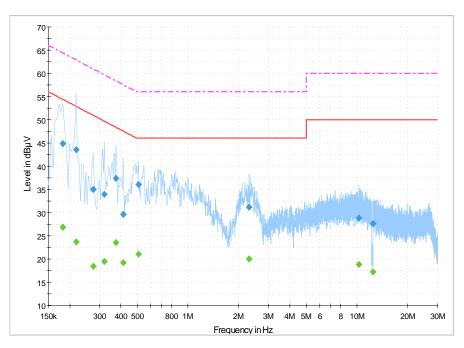
## AC Conducted Emissions Test Graphs

#### Test Configuration 3

#### Figure 1-5: L1 lines







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#### AC Conducted Emissions Test Results

#### Test Configuration 4

The environmental test conditions were:	Temperature Pressure Relative Humidity	24ºC 1020mb 32%

#### FCC CFR 47 Part 15, Subpart B and IC ICES-003, Class B

Date of test: September 26, 2008

Frequency	Line	Reading (QP)	Correction Factor	Corrected Reading (QP)	Limit (QP)	Limit (AV)	Margin (QP) Limits
(MHz)		(dBµV)	(dB)	(dB)	(dBµV)	(dBµV)	(dB)
0.164	L1	36.02	9.99	46.01	65.28	55.28	-19.27
0.326	L1	23.62	9.80	33.42	59.57	49.57	-26.15
0.429	L1	32.58	9.73	42.31	57.27	47.27	-14.96
0.429	Ν	32.85	9.87	42.72	57.27	47.27	-14.55
0.825	Ν	24.37	9.72	34.10	56.00	46.00	-21.90
1.563	L1	27.46	9.50	36.96	56.00	46.00	-19.04
2.481	Ν	30.69	9.61	40.30	56.00	46.00	-15.70
2.562	L1	30.01	9.56	39.57	56.00	46.00	-16.43

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

Measurements were done with the quasi-peak detector.

See figure 1-7 and figure 1-8 for the measurement plot of the L1 and N lines of AC power line conducted emissions.

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#### AC Conducted Emissions Test Graphs

#### Test Configuration 4

#### Figure 1-7: L1 lines

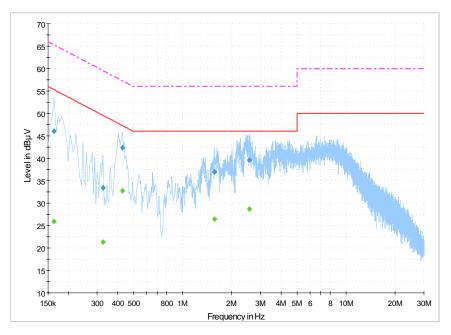
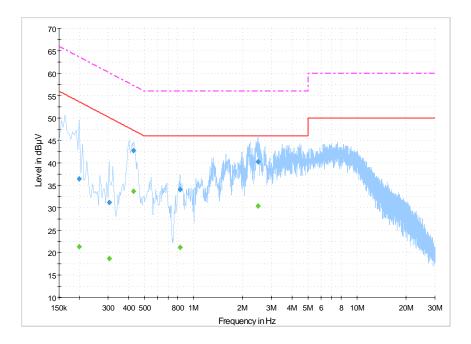


Figure 1-8: N Lines



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	APPENDIX 2

### APPENDIX 2 - RADIATED EMISSIONS TEST DATA

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#### Radiated Emissions Test Results

The measurements were performed by Gurjeev Singh, Arjun Rai Bhatti, Savtej Sandhu, Andrew Fleming.

#### Test Configuration 1

The environmental test conditions were:	Temperature	24ºC
	Pressure	1003mb
	Relative Humidity	31%

FCC CFR 47 Part 15, Subpart B and IC ICES-003, Class B

Date of test: August 15, 2008

Test Distance was 3.0 metres.

Frequency	An Pol.	tenna Height	Test Angle	Detector	Measured Level	Correction Factor for preamp/antenna / cables/ filter	Field Strength Level (reading+corr)	Limit @ 3.0 m	Test Margin
(MHz)	(V/H)	(metres)	(Deg.)	(Q.P. or Peak)	(dBµV)	(dB/m)	(dBµV/m)	(dBµV/m)	(dB)
38.75	V	1.43	353	Q.P.	48.84	-15.10	33.73	40.00	-6.27
39.10	V	1.85	353	Q.P.	49.63	-15.41	34.22	40.00	-5.78
63.50	V	2.11	270	Q.P.	39.11	-21.04	18.06	40.00	-21.94
652.65	Н	1.38	48	Q.P.	26.71	-4.23	22.47	46.00	-23.53

RTS RIM Testing Services	EMI Test Report for the BlackBerry <sup>®</sup> smartphone Model RBW71CW APPENDIX 2				
Test Report No.	Dates of Test	Author Data			
RTS-1191-0809-13	August 6 to September 25, 2008	Gurjeev Singh			

#### Test Configuration 2

The environmental test conditions were:	Temperature Pressure Relative Humidity	23ºC 1006 mb 33%
	Relative Humidity	33%

#### FCC CFR 47 Part 15, Subpart B and IC ICES-003, Class B

#### Date of test: August 14, 2008

Test Distance was 3.0 metres.

Frequency	Ar Pol.	ntenna Height	Test Angle	Detector (Q.P. or	Measured Level	Correction Factor for preamp/antenna / cables/ filter	Field Strength Level (reading+corr)	Limit @ 3.0 m	Test Margin
(MHz)	(V/H)	(metres)	(Deg.)	Peak)	(dBµV)	(dB/m)	(dBµV/m)	(dBµV/m)	(dB)
39.00	Н	2.00	27	Q.P.	39.76	-15.25	24.51	40.00	-15.49
39.00	V	3.85	294	Q.P.	36.78	-15.25	21.53	40.00	-18.47
68.30	Н	2.79	168	Q.P.	42.08	-21.10	20.98	40.00	-19.02
69.25	V	1.47	235	Q.P.	47.39	-20.63	26.76	40.00	-13.24
201.90	Н	1.80	201	Q.P.	50.81	-14.39	36.42	43.50	-7.08
245.45	Н	1.42	73	Q.P.	42.62	-16.08	26.53	46.00	-19.47
429.40	Н	1.87	107	Q.P.	37.84	-9.67	28.17	46.00	-17.83
430.05	V	2.49	13	Q.P.	38.68	-9.67	29.01	46.00	-16.99

RTS	EMI Test Report for the BlackBerry <sup>®</sup> smartphone Model RBW71CW				
RIM Testing Services	APPENDIX 2				
Test Report No.	Dates of Test	Author Data			
RTS-1191-0809-13	August 6 to September 25, 2008	Gurjeev Singh			
R13-1171-0007-13	August 0 to September 25, 2000	Ourjeev Singh			

#### Test Configuration 3

The environmental test conditions were:	Temperature Pressure Relative Humidity	24ºC 1009 mb 31%
	relative frammary	0170

#### FCC CFR 47 Part 15, Subpart B and IC ICES-003, Class B

#### Date of test: August 14, 2008

Test Distance was 3.0 metres.

Frequency		tenna	Test Angle	Detector	Measured Level	Correction Factor for preamp/antenna /	Field Strength Level	Limit @ 3.0 m	Test Margin
(1.1.1.)	Pol.	Height	Ũ	(Q.P. or Peak)		cables/ filter (dB/m)	(reading+corr)		° °
(MHz)	(V/H)	(metres)	(Deg.)	Peak	(dBµV)	(ud/iii)	(dBµV/m)	(dBµV/m)	(dB)
30.05	V	143	225	Q.P.	36.52	-10.24	26.29	40.00	-13.71
49.25	V	146	354	Q.P.	45.27	-24.26	21.01	40.00	-18.99
132.60	Н	194	112	Q.P.	41.07	-18.56	22.52	43.50	-20.98
216.10	Н	128	102	Q.P.	49.41	-14.78	34.64	46.00	-11.36
232.40	Н	136	277	Q.P.	42.96	-15.82	27.14	46.00	-18.86
426.10	V	260	57	Q.P.	39.35	-9.67	29.67	46.00	-16.33
432.05	Н	241	202	Q.P.	44.93	-9.57	35.37	46.00	-10.63
720.10	V	196	43	Q.P.	33.32	-3.12	30.19	46.00	-15.81

RTS	EMI Test Report for the BlackBerry <sup>®</sup> smartphone Model RBW71CW				
RIM Testing Services	APPENDIX 2				
Test Report No.	Dates of Test	Author Data			
RTS-1191-0809-13	August 6 to September 25, 2008	Gurjeev Singh			

#### Test Configuration 4

The environmental test conditions were:	Temperature	25.5⁰C
	Pressure	1027 mb
	Relative Humidity	32%

#### FCC CFR 47 Part 15, Subpart B and IC ICES-003, Class B

#### Date of test: September 24, 2008

Test Distance was 3.0 metres.

Fraguanay	Ar	ntenna	Test	Detector	Measured	Correction Factor for	Field Strength Level	Limit @	Test
Frequency	Pol.	Height	Angle	(Q.P. or	Level	preamp/antenna / cables/ filter	(reading+corr)	3.0 m	Margin
(MHz)	(V/H)	(metres)	(Deg.)	Peak)	(dBµV)	(dB/m)	(dBµV/m)	(dBµV/m)	(dB)
167.69	Н	2.60	100	Q.P.	45.25	-19.27	25.98	43.50	-17.52
216.03	Н	1.78	105	Q.P.	49.80	-17.48	32.32	46.00	-13.68
225.00	Н	1.62	258	Q.P.	46.11	-18.17	27.94	46.00	-18.06
390.89	Н	1.00	264	Q.P.	46.76	-12.81	33.95	46.00	-12.05
427.40	V	1.00	162	Q.P.	46.92	-11.89	35.03	46.00	-10.98

RTS	EMI Test Report for the BlackBerry <sup>®</sup> smartphone Model RBW71CW				
RIM Testing Services	APPENDIX 2				
Test Report No.	Dates of Test	Author Data			
RTS-1191-0809-13	August 6 to September 25, 2008	Gurjeev Singh			
		eurjeet einign			

#### Test Configuration 5

The environmental test conditions were:	Temperature	24ºC
	Pressure	1008 mb
	Relative Humidity	31%

#### FCC CFR 47 Part 15, Subpart B and IC ICES-003, Class B

#### Date of test: August 24, 2008

Test Distance was 3.0 metres.

Frequency	An	tenna	Test	Detector	Measured Level	Correction Factor for preamp/antenna /	Field Strength Level	Limit @	Test
	Pol.	Height	Angle	(Q.P. or		cables/ filter	(reading+corr)	3.0 m	Margin
(MHz)	(V/H)	(metres)	(Deg.)	Peak)	(dBµV)	(dB/m)	(dBµV/m)	(dBµV/m)	(dB)
44.74	V	1.17	70	Q.P.	49.41	-22.05	27.36	40.00	-12.65
199.40	V	1.17	180	Q.P.	35.91	-16.37	19.54	43.50	-23.96
202.39	н	1.98	255	Q.P.	50.46	-16.27	34.19	43.50	-9.31
203.92	V	1.47	180	Q.P.	41.97	-16.28	25.69	43.50	-17.81
204.76	Н	1.98	255	Q.P.	44.22	-16.28	27.93	43.50	-15.57
207.59	н	1.77	250	Q.P.	48.37	-16.61	31.76	43.50	-11.75
212.69	V	1.18	0	Q.P.	41.27	-17.18	24.09	43.50	-19.41

RTS	EMI Test Report for the BlackBerry <sup>®</sup> smartphone Model RBW71CW				
RIM Testing Services	APPENDIX 2				
Test Report No.	Dates of Test	Author Data			
RTS-1191-0809-13	August 6 to September 25, 2008	Gurjeev Singh			
		eurjeet einign			

#### Test Configuration 6

The environmental test conditions were:	Temperature	24°C
	Pressure	1006 mb
	Relative Humidity	31%

#### FCC CFR 47 Part 15, Subpart B and IC ICES-003, Class B

#### Date of test: August 12, 2008

Test Distance was 3.0 metres.

Frequency	An Pol.	tenna Height	Test Angle	Detector (Q.P. or	Measured Level	Correction Factor for preamp/antenna / cables/ filter	Field Strength Level (reading+corr)	Limit @ 3.0 m	Test Margin
(MHz)	(V/H)	(metres)	(Deg.)	Peak)	(dBµV)	(dB/m)	(dBµV/m)	(dBµV/m)	(dB)
38.25	V	1.82	146	Q.P.	40.93	-14.82	26.11	40.00	-13.89
81.10	V	2.76	354	Q.P.	46.20	-18.90	27.30	40.00	-12.70
256.10	Н	1.21	182	Q.P.	55.79	-15.67	40.12	46.00	-5.88
343.30	Н	2.84	8	Q.P.	28.94	-9.23	19.71	46.00	-26.29
646.00	Н	1.32	226	Q.P.	33.59	-4.44	29.15	46.00	-16.85
668.60	Н	1.22	8	Q.P.	29.83	-4.03	25.80	46.00	-20.20