

EMC Test Report

Tested in accordance with
Federal Communications Commission (FCC)
Personal Communications Services
CFR 47, Parts 15.107, 15.109
&
Industry Canada (IC), ICES-003



REPORT NO.: RTS-6067-1505-19

PRODUCT MODEL NO.: RHR191LW (SQW100-4)
TYPE NAME: BlackBerry® smartphone
FCC ID: L6ARHR190LW
IC: 2503A-RHR190LW

DATE: May 19, 2015

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



592

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4)	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

Statement of Performance:

The BlackBerry® smartphone, model RHR191LW (SQW100-4), part number CER-59662-001 Rev3-x10-00 and 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:

Reviewed by:

Savtej S. Sandhu
Compliance Specialist I

Shiva Kumbham
Compliance Associate

Reviewed and Approved by:

Masud S. Attayi, P.Eng.
Manager, Regulatory Certification & Compliance

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4)	
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Table of Contents

A.	Scope	4
B.	Associated Documents	4
C.	Product Identification	4
D.	Support Equipment Used for the Testing of the EUT	6
E.	Summary of Results	6
F.	Compliance Test Equipment Used	9
G.	Test Software Used	10
	APPENDIX 1 - AC POWERLINE CONDUCTED EMISSIONS TEST DATA	11
	APPENDIX 2 - RADIATED UNINTENTIONAL SPURIOUS EMISSIONS TEST DATA	22

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4)	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

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, 2014 Class B Digital Devices, Unintentional Radiators
- IC ICES-003 Issue 5, August 2012, Information Technology Equipment (ITE) – Limits and methods of measurement

B. Associated Documents

- 1) RHR191LW-R158-HWD_CER-59662-001-Rev2-x08-00
- 2) RHR191LW-R158-HWD_CER-59662-001-Rev2-x08-01
- 3) RHR191LW-R158-HWD_CER-59662-001-Rev2-x08-02
- 4) RHR191LW-R164-HWD_CER-59662-001-Rev3-x10-00
- 5) MultiSourceDeclaration_R164_AAA728_10.3.2.2025

C. Product Identification

Manufactured by BlackBerry Limited whose headquarters is located at:

2200 University Ave. East
Waterloo, Ontario
Canada, N2K 0A7
Phone: 519 888 7465
Fax: 519 888 6906

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

BlackBerry RTS EMC 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 April 13 to May 13, 2015.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4)	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

The sample EUT included:

SAMPLE	MODEL	HARDWARE	SN/PIN	Software
1	RHR191LW (SQW100-4)	CER-59662-001 Rev1-x08-00	1160694539	Software Build: AAA728
2	RHR191LW (SQW100-4)	CER-59662-001 Rev1-x08-00	1160693373	Software Build: AAA728
3	RHR191LW (SQW100-4)	CER-59662-001 Rev1-x08-00	1160692430	Software Build: AAA728
4	RHR191LW (SQW100-4)	CER-59662-001 Rev1-x08-00	1160685324	Software Build: AAA728
5	RHR191LW (SQW100-4)	CER-59662-001 Rev3-x10-00	2FFE902C	OS Version: 10.3.2.2024 Radio Version: 10.3.2.2025 SW Release Version: 10.3.2.2012
6	RHR191LW (SQW100-4)	CER-59662-001 Rev3-x10-00	2FFE9034	OS Version: 10.3.2.2024 Radio Version: 10.3.2.2025 SW Release Version: 10.3.2.2012

AC Powerline conducted testing was performed on samples 1, 2 and 5.

Radiated Emissions testing was performed on samples 1, 2, 3, 4, 5 and 6.

The characteristics that may have been affected by the changes from Rev1-x08-00 to Rev3-x10-00 for RHR191LW were verified/re-tested.

For more details, refer to RHR191LW-R158-HWD_CER-59662-001-Rev2-x08-00, RHR191LW-R158-HWD_CER-59662-001-Rev2-x08-01, RHR191LW-R158-HWD_CER-59662-001-Rev2-x08-02, and RHR191LW-R164-HWD_CER-59662-001-Rev3-x10-00

To view the differences between software bundles 10.3.2.711/AAA728 to 10.3.2.2024 for RHR191LW, see document MultiSourceDeclaration_R164_AAA728_10.3.2.2025.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4)	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

BlackBerry® smartphone Accessories Tested

- 1) Fixed Blade Charger, part number HDW-58920-001 with an output voltage of 5.0 volts dc, 1300mA
- 2) Headset, part number HDW-49299-001, with a lead length of 1.1 metres
- 3) Alt. Headset, part number HDW-44306-001, with a lead length of 1.1 metres
- 4) USB Data Cable, part number HDW-50071-001, 1.2 metres long
- 5) Alt. USB Data Cable, part number HDW-51800-001, 1.2 metres long

D. Support Equipment Used for the Testing of the EUT

- 1) Lenovo Thinkpad laptop, type 4236-D84, S/N PB-HX502 12/02, product ID 4236D84
- 2) Phillips Monitor, Model MWE12244T, Product ID 2444E1SB/27
- 3) HDMI Cable, Model CTI AWM with a length of 1 metre
- 4) HDMI-to-USB Adapter, HDW-29572-001

E. Summary of Results

SPECIFICATION		TEST TYPE	Meets Requirement	Test Data APPENDIX
FCC CFR 47	IC			
Part 15.107	ICES-003,6.1	AC Powerline Conducted Emission	Yes	1
Part 15.109	ICES-003,6.1	Radiated Unintentional Spurious Emissions	Yes	2

a) AC POWERLINE CONDUCTED EMISSIONS

The AC Powerline 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 powerline 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/Analyzer system with characteristics that duplicate those of the receiver specified in CISPR Publication 16.

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

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4)	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

Test Configuration	Operating Mode(s)	Charger + Accessories
1	PCS 1900, Idle, Charging and Video Playback	Fixed Blade Charger + Headset + USB Cable
2	LTE FDD 2, Idle, Charging and Audio Playback	Alt. Headset + Alt. USB Cable + Laptop
3	UMTS FDD II HSDPA+, Idle, Charging and Audio Playback	Fixed Blade Charger + Alt. Headset + Alt. USB Cable + Monitor + HDMI Cable + HDMI-to-USB Adapter
4	UMTS FDD IV DC HSDPA, Idle, Charging and Video Playback	Fixed Blade Charger + Headset + USB Cable
5	FM, Idle, Charging and Audio Playback	Fixed Blade Charger + Headset + USB Cable

The sample EUT's AC Powerline conducted emissions were compared with respect to the FCC CFR 47 Part 15.107, Class B Limit, and IC ICES-003, 6.1.

The sample EUT had a worst case test margin of 10.14 dB below the QP limit at 0.164 MHz using the QP detector in Test Configuration 1.

Measurement Uncertainty ± 3.2 dB

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

b) RADIATED UNINTENTIONAL SPURIOUS EMISSIONS

The radiated unintentional spurious 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. The emissions were then 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.

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Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

The measurements were done in a semi-anechoic chamber (SAC) below 1 GHz and a modified semi-anechoic chamber (modified SAC) with floor absorbers above 1 GHz. The SAC's FCC registration number is **778487** and the Industry Canada (IC) file number is **2503B-1**. The modified SAC'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 BlackBerry'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	PCS 1900, Idle, Charging and Video Playback	Fixed Blade Charger + Headset + USB Cable
2	LTE FDD 2, Idle, Charging and Audio Playback	Alt. Headset + Alt. USB Cable + Laptop
3	NFC, Tx, Charging and Video Playback	Fixed Blade Charger + Headset + USB Cable
4	UMTS FDD II HSDPA+, Idle, Charging and Audio Playback	Fixed Blade Charger + Alt. Headset + Alt. USB Cable + Monitor + HDMI Cable + HDMI-to-USB Adapter
5	UMTS FDD IV DC HSDPA, Idle, Charging and Video Playback	Fixed Blade Charger + Headset + USB Cable
6	Bluetooth, Tx, Charging and Video Playback	Fixed Blade Charger + Alt. Headset + Alt. USB Cable
7	802.11b, Tx, Charging and Audio Playback	Fixed Blade Charger + Headset + Alt. USB Cable
8	802.11ac, Tx, Charging and Video Playback	Fixed Blade Charger + Alt. Headset + Alt. USB Cable
9	FM, Idle, Charging and Audio Playback	Fixed Blade Charger + Headset + USB Cable

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4)	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

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 4.46 dB below the QP limit at 126.05 MHz using QP detector in Test Configuration 4.

To view the test data see APPENDIX 2.

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)

Measurement Uncertainty ±4.2 dB

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	15-10-22	Radiated Emissions
Preamplifier system	TDK RF Solutions	PA-02	080010	15-10-22	Radiated Emissions
EMI Receiver	Rohde & Schwarz	ESIB 40	100255	15-12-05	Radiated Emissions
Environment Monitor	OMEGA	iTHX-SD	0380561	16-11-15	Radiated Emission
Environment Monitor	OMEGA	iTHX-SD	0380567	16-11-15	Radiated Emission
L.I.S.N.	Rohde & Schwarz	ENV216	100060	15-10-08	AC Powerline Conducted Emissions
Hybrid Log Antenna	EMC Automation	HLP-3003C	017401	16-02-03	Radiated Emissions
Horn Antenna	EMC Automation	HRN-0118	030101	16-08-14	Radiated Emissions
Preamplifier	Rohde & Schwarz	TS-ANA-SP	001	15-09-10	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	837493/073	15-12-09	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	112394	15-12-05	Radiated/AC Powerline Conducted Emission
Universal Radio Communication Tester	Rohde & Schwarz	CMW500	101469	16-11-27	Radiated Emissions

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Page 9 of 31

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4)	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

Universal Radio Communication Tester	Rohde & Schwarz	CMW500	109949	16-11-27	Radiated /RF Conducted Emission
EMI Test Receiver	Rohde & Schwarz	ESU 40	100162	15-12-10	Radiated/AC Powerline Conducted Emission
Bluetooth Tester	Rohde & Schwarz	CBT	100368	15-11-25	Radiated Emissions
Bluetooth Tester	Rohde & Schwarz	CBT	100737	15-11-25	Radiated/AC Powerline Conducted Emission

G. Test Software Used

<u>SOFTWARE</u>	<u>COMPANY</u>	<u>VERSION</u>	<u>USE</u>
EMC32	Rohde & Schwarz	8.52.0	Radiated Emissions
TDK Standard Emission Test	TDK RF Solutions	8.53.1.62	Radiated Emissions

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 1	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

APPENDIX 1 - AC POWERLINE CONDUCTED EMISSIONS TEST DATA

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 1	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

AC Powerline Conducted Emissions Test Results

The following tests were performed by Winston Vernon.

Test Configuration 1

Date of the test: April 17, 2015

The environmental conditions were: Temperature: 25.1 °C
Humidity: 39.4 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.164	N	44.02	11.14	55.16	65.30	55.30	-10.14
0.182	L1	43.03	10.99	54.02	64.40	54.40	-10.39
0.254	L1	36.38	10.48	46.87	61.60	51.60	-14.74
0.258	N	35.89	10.47	46.36	61.50	51.50	-15.14
0.510	L1	31.77	9.90	41.67	56.00	46.00	-14.33
1.046	L1	28.96	9.80	38.76	56.00	46.00	-17.24
1.055	N	29.43	9.81	39.24	56.00	46.00	-16.76
1.986	N	25.16	9.83	34.99	56.00	46.00	-21.01
4.128	L1	22.63	9.90	32.53	56.00	46.00	-23.47
16.278	L1	26.07	10.13	36.20	60.00	50.00	-23.80
16.985	N	26.74	10.18	36.93	60.00	50.00	-23.07

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

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.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 1	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

AC Powerline Conducted Emissions Test Graphs

Test Configuration 1

Figure 1-1: L1 lines

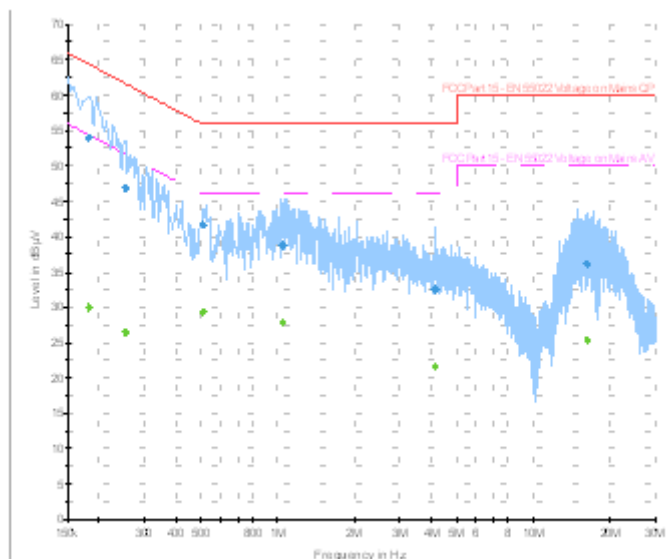
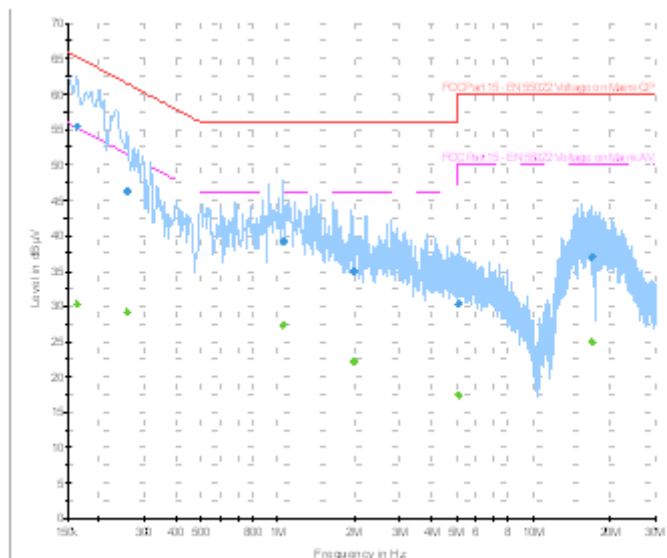


Figure 1-2: N Lines



	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 1	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

AC Powerline Conducted Emissions Test Results cont'd

Test Configuration 2

Date of the test: April 17, 2015

The environmental conditions were: Temperature: 24.5 °C
Humidity: 14.4 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.164	L1	39.20	11.11	50.31	65.30	55.30	-14.99
0.168	N	39.41	11.11	50.52	65.10	55.10	-14.58
0.308	L1	29.01	10.15	39.16	60.00	50.00	-20.84
0.438	L1	32.91	9.95	42.86	57.10	47.10	-14.24
0.479	N	28.76	9.93	38.69	56.40	46.40	-17.72
0.573	L1	31.87	9.87	41.74	56.00	46.00	-14.26
0.587	N	29.98	9.87	39.86	56.00	46.00	-16.15
0.933	N	27.73	9.81	37.54	56.00	46.00	-18.46
1.028	L1	28.97	9.80	38.77	56.00	46.00	-17.23
1.109	N	30.11	9.81	39.92	56.00	46.00	-16.08
1.239	L1	28.69	9.80	38.49	56.00	46.00	-17.51
1.293	N	26.33	9.80	36.14	56.00	46.00	-19.86

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

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.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 1	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

AC Powerline Conducted Emissions Test Graphs

Test Configuration 2

Figure 1-3: L1 lines

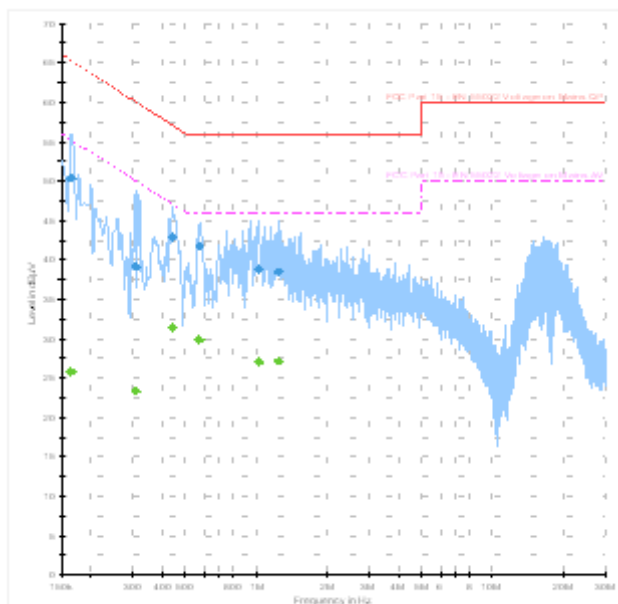
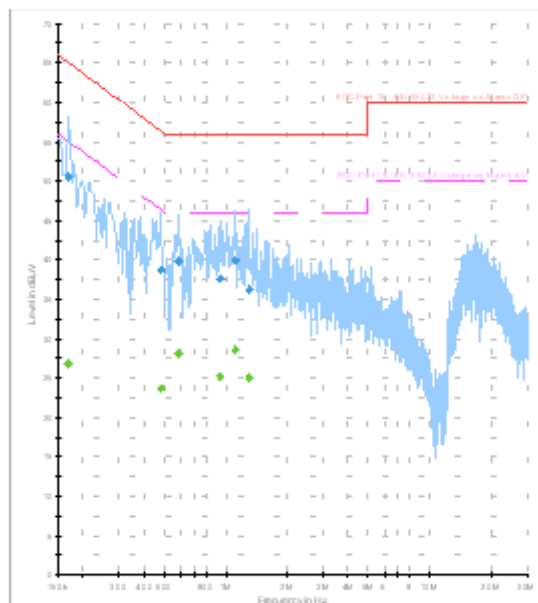


Figure 1-4: N Lines



	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 1	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

AC Powerline Conducted Emissions Test Results cont'd

Test Configuration 3

Date of the test: April 17, 2015

The environmental conditions were: Temperature: 24.5 °C
Humidity: 14.4 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.168	L1	38.67	11.08	49.75	65.10	55.10	-15.35
0.213	L1	35.94	10.77	46.71	63.10	53.10	-16.39
0.308	N	28.78	10.17	38.95	60.00	50.00	-21.05
0.465	L1	31.49	9.93	41.42	56.60	46.60	-15.18
0.686	N	26.39	9.84	36.24	56.00	46.00	-19.76
1.073	L1	27.54	9.80	37.35	56.00	46.00	-18.66
1.118	N	28.41	9.81	38.21	56.00	46.00	-17.79
1.167	N	28.55	9.80	38.35	56.00	46.00	-17.65
1.226	L1	27.06	9.80	36.86	56.00	46.00	-19.14
1.725	L1	25.07	9.81	34.88	56.00	46.00	-21.12
2.112	N	24.16	9.83	33.99	56.00	46.00	-22.01
3.426	N	22.25	9.89	32.14	56.00	46.00	-23.86

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

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.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 1	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

AC Powerline Conducted Emissions Test Graphs

Test Configuration 3

Figure 1-5: L1 lines

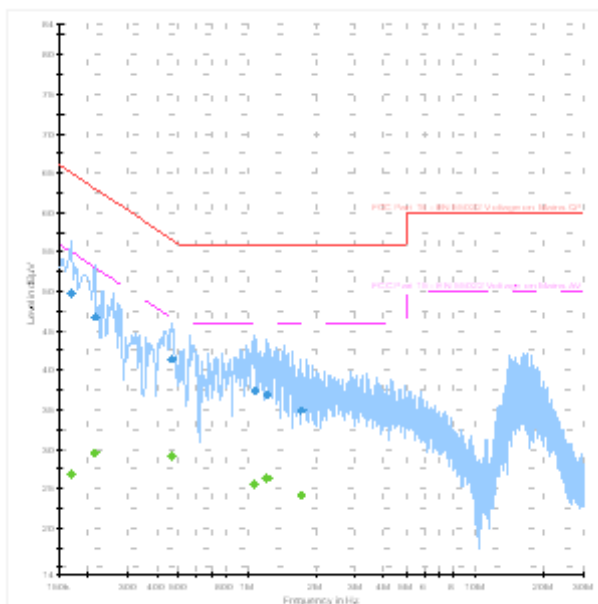
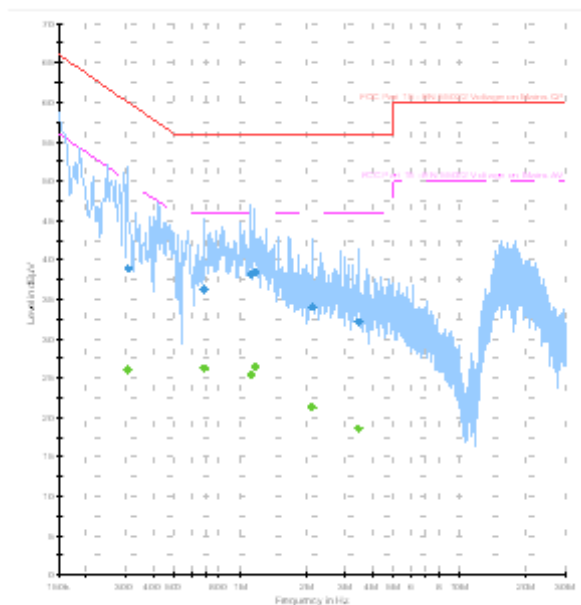


Figure 1-6: N Lines



	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 1	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

AC Powerline Conducted Emissions Test Results cont'd

Test Configuration 4

Date of the test: April 17, 2015

The environmental conditions were: Temperature: 25.1 °C
Humidity: 39.4 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.173	L1	42.87	11.05	53.92	64.80	54.80	-10.88
0.191	N	40.94	10.95	51.89	64.00	54.00	-12.11
0.276	L1	32.89	10.33	43.22	60.90	50.90	-17.68
0.416	N	32.19	10.00	42.19	57.50	47.50	-15.31
0.533	L1	32.61	9.89	42.50	56.00	46.00	-13.50
1.086	L1	28.35	9.80	38.15	56.00	46.00	-17.85
1.109	N	28.58	9.81	38.39	56.00	46.00	-17.61
1.811	N	25.62	9.82	35.44	56.00	46.00	-20.56
3.732	N	21.41	9.90	31.30	56.00	46.00	-24.70
4.997	L1	22.60	9.91	32.50	56.00	46.00	-23.50
15.828	N	27.15	10.10	37.24	60.00	50.00	-22.76
16.665	L1	25.65	10.15	35.81	60.00	50.00	-24.20

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

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.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 1	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

AC Powerline Conducted Emissions Test Graphs

Test Configuration 4

Figure 1-7: L1 lines

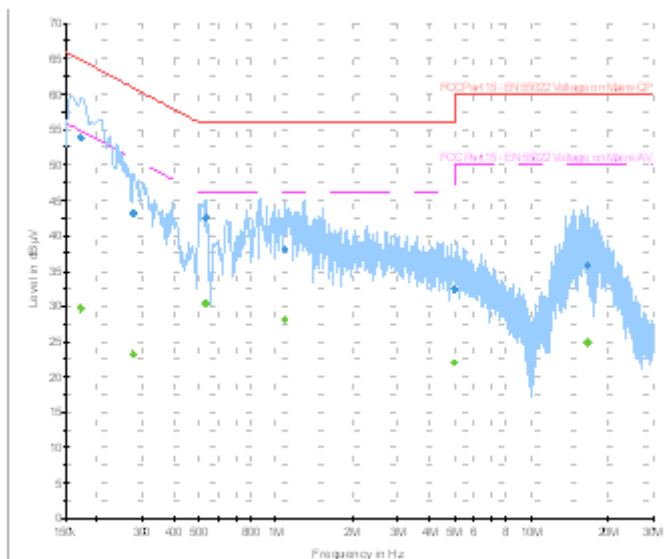
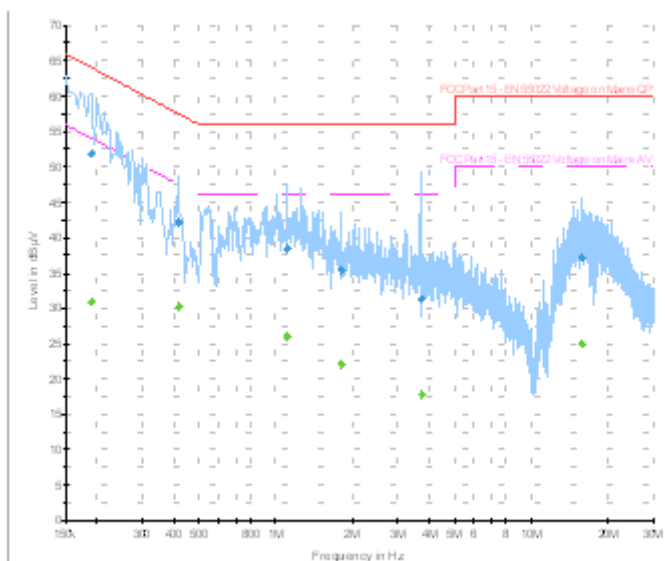


Figure 1-8: N Lines



	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 1	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

AC Powerline Conducted Emissions Test Results cont'd

Test Configuration 5

Date of the test: May 13, 2015

The environmental conditions were: Temperature: 24.5 °C
Humidity: 39.1 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.195	L1	38.22	10.89	49.12	63.80	53.80	-14.69
0.218	N	32.25	10.76	43.01	62.90	52.90	-19.90
0.483	L1	35.54	9.92	45.46	56.30	46.30	-10.84
0.488	N	32.90	9.92	42.82	56.20	46.20	-13.38
1.005	L1	28.67	9.80	38.48	56.00	46.00	-17.52
1.091	N	28.87	9.81	38.68	56.00	46.00	-17.32
1.707	N	24.50	9.82	34.32	56.00	46.00	-21.68
2.607	L1	26.58	9.86	36.44	56.00	46.00	-19.56
15.707	L1	27.39	10.07	37.47	60.00	50.00	-22.53
16.575	N	25.70	10.16	35.87	60.00	50.00	-24.14

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

Measurements were done with the quasi-peak detector.

See figure 1-9 and figure 1-10 for the measurement plot of the L1 and N lines of AC power line conducted emissions.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 1	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

AC Powerline Conducted Emissions Test Graphs

Test Configuration 5

Figure 1-9: L1 lines

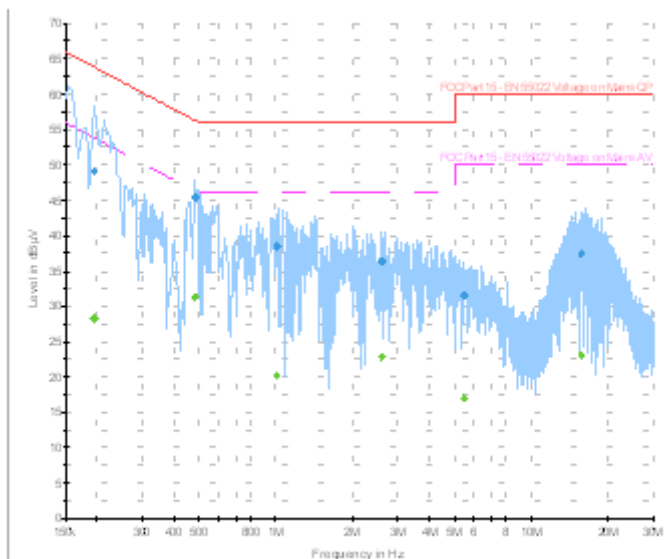
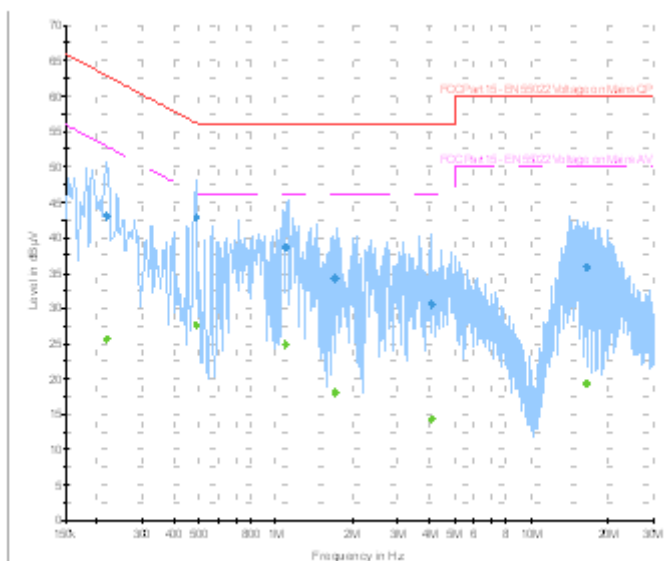


Figure 1-10: N Lines



	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 2	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

APPENDIX 2 - RADIATED UNINTENTIONAL SPURIOUS EMISSIONS TEST DATA

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 2	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

Radiated Unintentional Spurious Emissions Test Results

The following tests were performed by Savtej Sandhu and Kevin Guo.

Test Configuration 1

Date of the test: April 13 and 16, 2015

The environmental conditions were: Temperature: 27.0 °C
Humidity: 16.6 %

Frequency (MHz)	Antenna		Test Angle (Deg.)	Detector (Q.P. or Peak)	Measured Level (dBµV)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading +corr) (dBµV/m)	Limit @ 3.0 m (dBµV/m)	Test Margin (dB)
	Pol. (V/H)	Height (metres)							
31.200	V	2.02	97.00	Q.P.	31.33	-11.41	19.92	40.00	-20.08
59.600	V	3.00	19.00	Q.P.	34.04	-15.41	18.63	40.00	-21.37

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

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 2	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

Radiated Unintentional Spurious Emissions Test Results cont'd

Test Configuration 2

Date of the test: April 13 and 20, 2015

The environmental conditions were: Temperature: 27.4 °C

Humidity: 16.8 %

Frequency (MHz)	Antenna		Test Angle (Deg.)	Detector (Q.P. or Peak)	Measured Level (dBµV)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading +corr) (dBµV/m)	Limit @ 3.0 m (dBµV/m)	Test Margin (dB)
	Pol. (V/H)	Height (metres)							
33.800	V	1.47	244.00	Q.P.	31.12	-12.09	19.03	40.00	-20.97
39.950	V	2.85	207.00	Q.P.	29.83	-13.86	15.97	40.00	-24.03
41.100	V	1.45	355.00	Q.P.	29.82	-13.96	15.86	40.00	-24.14
56.050	V	1.69	259.00	Q.P.	34.73	-15.29	19.44	40.00	-20.56

All emissions are at least 25 dB below the limit.

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 2	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

Radiated Unintentional Spurious Emissions Test Results cont'd

Test Configuration 3

Date of the test: May 13, 2015

The environmental conditions were: Temperature: 24.1 °C
Humidity: 26.3 %

Frequency (MHz)	Antenna		Test Angle (Deg.)	Detect or (Q.P. or Peak)	Measured Level (dBµV)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading+corr) (dBµV/m)	Limit @ 3.0 m (dBµV/m)	Test Margin (dB)
	Pol. (V/H)	Height (metres)							
30.100	V	1.46	159.00	Q.P.	37.11	-11.10	26.01	40.00	-13.99
42.400	V	1.51	230.00	Q.P.	35.09	-14.07	21.02	40.00	-18.98

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

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 2	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

Radiated Unintentional Spurious Emissions Test Results cont'd

Test Configuration 4

Date of the test: April 15 and 20, 2015

The environmental conditions were: Temperature: 26.7 °C
Humidity: 16.7 %

Frequency (MHz)	Antenna		Test Angle (Deg.)	Detect or (Q.P. or Peak)	Measured Level (dBµV)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading+corr) (dBµV/m)	Limit @ 3.0 m (dBµV/m)	Test Margin (dB)
	Pol. (V/H)	Height (metres)							
30.300	V	1.48	174.00	Q.P.	33.53	-11.15	22.38	40.00	-17.62
74.050	V	2.11	129.00	Q.P.	42.41	-14.22	28.19	40.00	-11.81
107.250	V	1.41	36.00	Q.P.	38.46	-11.43	27.03	43.50	-16.47
126.050	V	1.42	247.00	Q.P.	49.97	-10.93	39.04	43.50	-4.46
148.450	V	2.31	25.00	Q.P.	36.92	-10.70	26.22	43.50	-17.28
255.200	H	1.14	323.00	Q.P.	42.42	-8.20	34.22	46.00	-11.78
314.750	H	3.95	202.00	Q.P.	28.41	-4.71	23.70	46.00	-22.30
378.000	H	1.22	315.00	Q.P.	39.94	-3.62	36.32	46.00	-9.68

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

	EMC Test Report for the BlackBerry® smartphone Model RHR191LW (SQW100-4) Appendix 2	
Test Report No. RTS-6067-1505-19	Date of Test April 13 to May 13, 2015	FCC ID: L6ARHR190LW IC : 2503A-RHR190LW

Radiated Unintentional Spurious Emissions Test Results cont'd

Test Configuration 8

Date of the test: April 13 and 16, 2015

The environmental conditions were: Temperature: 27.7 °C
Humidity: 21.1 %

Frequency (MHz)	Antenna		Test Angle (Deg.)	Detector (Q.P. or Peak)	Measured Level (dBµV)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading+corr) (dBµV/m)	Limit @ 3.0 m (dBµV/m)	Test Margin (dB)
	Pol. (V/H)	Height (metres)							
30.850	V	3.64	106.00	Q.P.	27.55	-11.30	16.25	40.00	-23.75
43.750	V	1.40	256.00	Q.P.	31.45	-14.41	17.04	40.00	-22.96
58.650	V	3.27	135.00	Q.P.	32.12	-15.40	16.72	40.00	-23.28

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

