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-5995-1205-26

PRODUCT MODEL NO.: REU71UW
TYPE NAME: BlackBerry® smartphone
FCC ID: L6AREU70UW
IC: 2503A-REU70UW

DATE: June 26, 2012

Statement of Performance:

The BlackBerry® smartphone, model REU71UW, part number CER-48021-001 Rev3 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:

Savtej S. Sandhu
Regulatory Compliance Specialist
Date: June 26, 2012

Reviewed by:

Heng Lin
Regulatory Compliance Specialist
Date: June 27, 2012

Reviewed and Approved by:

Masud S. Attayi, P.Eng.
Manager, Regulatory Compliance
Date: June 28, 2012

Table of Contents

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, 2011 Class B Digital Devices, Unintentional Radiators
- IC ICES-003 Issue 4, February 2004, Class B Digital Devices, Unintentional Radiators

B. Associated Documents

1. REU71UW_HW_Declaration_CER-48921-001_Rev3
2. MultiSourceDeclaration_REU71UW_b1201

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 April 02 and May 08 to May 24, 2012.

The sample EUT included:

SAMPLE	MODEL	CER NUMBER	PIN	Software
1	REU71UW	CER-48921-001 Rev2	297604E9	V7.1.0.277 Bundle: 969 Platform: 5.1.0.240
2	REU71UW	CER-48921-001 Rev3	29D05115	V7.1.0.358 Bundle: 1201 Platform: 5.1.0.291
3	REU71UW	CER-48921-001 Rev3	29D04E1B	V7.1.0.358 Bundle: 1201 Platform: 5.1.0.291

AC conducted testing was performed on sample 2.
Radiated Emissions testing was performed on samples 1 and 3.

Only the characteristics that may have been affected by the changes from model REU71UW Rev2 to REU71UW Rev3 were re-tested. For more information, see REU71UW_HW_Declaration_CER-48921-001_Rev3.

To view the differences between software bundles 969 to 1201, see document MultiSourceDeclaration_REU71UW_b1201.

BlackBerry® smartphone Accessories Tested

1) Fixed Blade Charger, part number HDW-24481-001 (model number RIM-C-4ADUUS-001 with an output voltage of 5.0 volts dc, 750mA.
2) Alt. Fixed Blade Charger, part number HDW-24481-001 (model number PSM04A-050QRIM-R), with an output voltage of 5.0 volts dc, 750mA
3) Alt.1 Fixed Blade Charger, part number HDW-47725-001 with an output voltage of 5.0 volts dc, 850mA
4) Alt. 2 Fixed Blade Charger, part number HDW-44303-001 with an output voltage of 5.0 volts dc, 550mA
5) Captive Cable Charger, part number HDW-34725-001 with an output voltage of 5.0 volts dc, 750 mA.
6) Folding Blade Charger, part number HDW-34724-001 with an output voltage of 5.0 volts dc and current of 1.8 Amps.
7) Stereo Headset, part number HDW-14322-005, 1.3 metres long.
8) Wired Headset B, part number HDW-44306-001, with a lead length of 1.1 metres
9) Wired Headset D, part number HDW-44306-001,with a lead length of 1.1 metres
10) USB Data Cable, part number HDW-48415-001, 1.0 metre long.
11) USB Data Cable, part number HDW-28109-003, 1.2 metre long.
12) USB Y-Cable, part number HDW-19137-002, lead lengths of 26 cm and 11 cm
13) External Battery Charger, part number HDW-24478-001.

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	Yes	1
Part 15, Subpart B	ICES-003	Radiated Unintentional Spurious Emissions	Yes	2

a) AC CONDUCTED 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® smartphone was in battery charging mode. The input voltage was 120 V, 60 Hz.

The following test configurations were measured for model REU71UW:

Test Configuration	Operating Mode(s)	Charger + Accessories
1	GSM 850 Idle, Charging and Audio Playback	Folding Blade Charger Stereo Headset
2	GSM1900 Idle Charging and Video Playback	Alt. Fixed Blade Charger Wired Headset B 1.2m USB Cable
3	FM Idle, Charging	Captive Cable Charger Wired Headset B
4	UMTS Band 2 Idle, Charging	Wired Headset D 1.2m USB Cable IBM Thinkpad Lenovo T60p laptop
5	UMTS Band 4 idle, Charging	Fixed Blade Charger Wired Headset D 1.0m USB Cable Y-Cable External Battery Charger

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 worst case test margin of 7.45 dB below the QP limit at 1.091 MHz using the quasi-peak detector and the test margin of 1.94 dB below the AV limit at 1.091 MHz using the average detector in Test Configuration 4.

Measurement Uncertainty ±3.2 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. 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 configurations were measured for model REU71UW:

Test Configuration	Operating Mode(s)	Charger + Accessories
1	GSM 850 Idle, Charging and Audio Playback	Folding Blade Charger Stereo Headset
2	GSM1900 Idle Charging and Video Playback	Alt. Fixed Blade Charger Wired Headset B 1.2m USB Cable
3	Bluetooth Tx, Charging and Audio Playback	Alt.1 Fixed Blade Charger Wired Headset D 1.0m USB Cable
4	802.11b Tx, Charging and Video Playback	Alt.2 Fixed Blade Charger Stereo Headset 1.2m USB Cable
5	FM Idle, Charging	Captive Cable Charger Wired Headset B
6	UMTS Band 2 Idle, Charging	Wired Headset D 1.2m USB Cable IBM Thinkpad Lenovo T60p laptop
7	UMTS Band 4 idle, Charging	Fixed Blade Charger Wired Headset D 1.0m USB Cable Y-Cable External Battery 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 worst case emission test margin of 12.54 dB below the QP limit at 38.09 MHz using quasi-peak detector in Test Configuration 6.

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 ±4.5 dB

F. Compliance Test Equipment Used

UNIT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL DUE DATE (YY MM DD)	USE
Preamplifier	Sonoma	310N/11909A	185831	12-10-17	Radiated Emissions
Preamplifier system	TDK RF Solutions	PA-02	080010	12-10-17	Radiated Emissions
EMC Analyzer	Rohde & Schwarz	ESIB 40	100255	12-12-08	Radiated Emissions
Digital Multimeter	Hewlett Packard	34401A	US36042324	12-11-16	Conducted/Radiated Emissions
Environment Monitor	OMEGA	iTHX-SD	0380561	12-10-20	Radiated Emission
Environment Monitor	OMEGA	iTHX-SD	0380567	12-10-20	Radiated Emission
L.I.S.N.	Rohde & Schwarz	ENV216	100060	13-10-25	Conducted Emissions
Hybrid Log Antenna	EMC Automation	HLP-3003C	017401	13-08-23	Radiated Emissions
Horn Antenna	EMC Automation	HRN-0118	030101	12-07-20	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	837493/073	12-11-30	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	112394	12-11-30	Radiated/Conducted Emissions
EMI Test Receiver	Rohde & Schwarz	ESU 40	100162	12-12-07	Radiated/Conducted Emissions
Bluetooth Tester	Rohde & Schwarz	CBT	100368	12-11-30	Radiated Emissions
Bluetooth Tester	Rohde & Schwarz	CBT	100370	12-11-30	Radiated/Conducted Emissions

APPENDIX 1 - AC CONDUCTED EMISSIONS TEST DATA

AC Conducted Emissions Test Results

The following tests were performed by Shuo Wang.

Test Configuration 1

Date of the test: May 8, 2012
The environmental conditions were: Temperature: 25.7 °C
Humidity: 36.6 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Margin (QP) Limits (dB)
0.150	L1	41.46	11.20	52.66	66.00	-13.34
0.150	N	38.21	11.23	49.45	66.00	-16.55
0.195	L1	38.41	10.89	49.30	63.80	-14.50
0.195	N	36.70	10.92	47.62	63.80	-16.18
0.249	L1	33.18	10.51	43.70	61.80	-18.10
0.249	N	31.53	10.54	42.06	61.80	-19.74
0.299	L1	31.89	10.17	42.06	60.30	-18.24
0.492	N	37.61	9.92	47.53	56.10	-8.57
0.497	L1	37.47	9.91	47.39	56.10	-8.72
0.627	N	26.47	9.86	36.33	56.00	-19.67
0.663	L1	29.17	9.84	39.02	56.00	-16.98
1.001	N	29.43	9.81	39.24	56.00	-16.76
1.131	L1	30.17	9.80	39.97	56.00	-16.03
1.527	N	29.38	9.81	39.19	56.00	-16.81
1.707	L1	26.94	9.81	36.76	56.00	-19.24
2.162	L1	25.46	9.83	35.29	56.00	-20.71
2.180	N	27.94	9.84	37.77	56.00	-18.23
2.661	L1	25.05	9.86	34.91	56.00	-21.09

Frequency (MHz)	Line	Reading (AV) (dBµV)	Correction Factor (dB)	Corrected Reading (AV) (dBµV)	Limit (AV) (dBµV)	Margin (AV) Limits (dB)
0.150	L1	30.07	11.20	41.28	56.00	-14.73
0.150	N	34.12	11.23	45.35	56.00	-10.65
0.195	L1	25.56	10.89	36.45	53.80	-17.35
0.195	N	32.14	10.92	43.06	53.80	-10.74
0.249	L1	22.18	10.51	32.69	51.80	-19.11
0.249	N	27.29	10.54	37.83	51.80	-13.97
0.299	L1	26.48	10.17	36.65	50.30	-13.65
0.492	N	31.83	9.92	41.76	46.10	-4.34
0.497	L1	32.15	9.91	42.06	46.10	-4.04
0.627	N	19.68	9.86	29.54	46.00	-16.47
0.663	L1	24.31	9.84	34.15	46.00	-11.85
1.001	N	23.76	9.81	33.57	46.00	-12.43
1.131	L1	21.52	9.80	31.32	46.00	-14.68
1.527	N	23.29	9.81	33.10	46.00	-12.90
1.707	L1	21.20	9.81	31.02	46.00	-14.98
2.162	L1	18.57	9.83	28.40	46.00	-17.60
2.180	N	22.52	9.84	32.36	46.00	-13.64
2.661	L1	20.09	9.86	29.95	46.00	-16.05

All other emission levels had test margins of greater than 25 dB.
Measurements were done with the quasi-peak and average detectors.

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

AC Conducted Emissions Test Graphs

Test Configuration 1

Figure 1-1: L1 lines

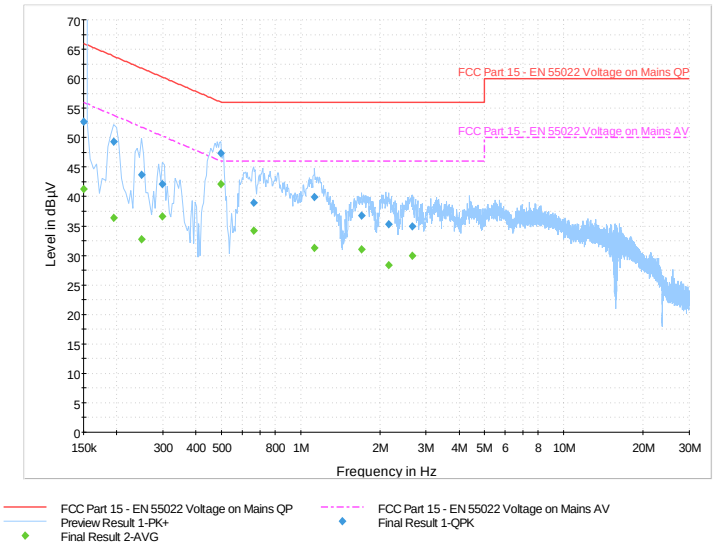
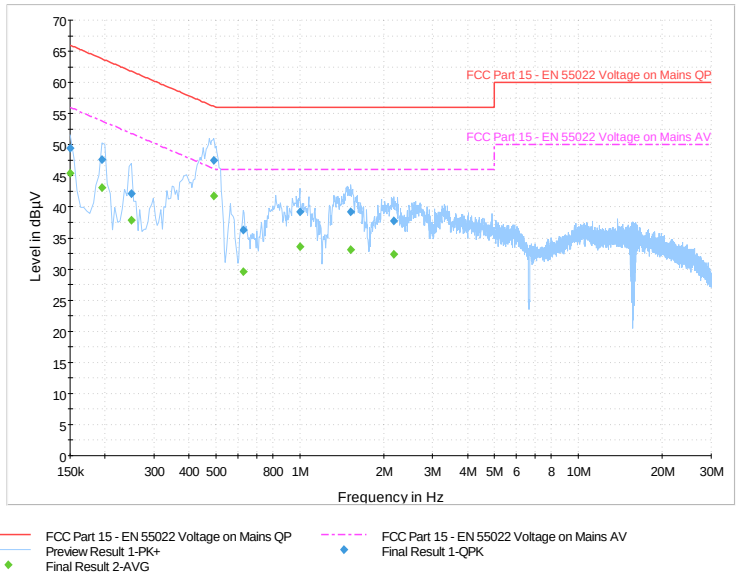


Figure 1-2: N Lines



AC Conducted Emissions Test Results cont'd

Test Configuration 2

Date of the test: May 8, 2012
The environmental conditions were: Temperature: 25.7 °C
Humidity: 36.6 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.150	L1	32.06	11.20	43.26	66.00	56.00	-22.74
0.164	N	32.38	11.14	43.52	65.30	55.30	-21.78
0.173	L1	34.28	11.05	45.33	64.80	54.80	-19.47
0.258	L1	28.73	10.45	39.18	61.50	51.50	-22.32
0.258	N	27.21	10.47	37.68	61.50	51.50	-23.82
11.729	N	28.16	10.02	38.18	60.00	50.00	-21.82
11.904	L1	34.13	10.02	44.14	60.00	50.00	-15.86

All other emission levels had test margins 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.

AC Conducted Emissions Test Graphs

Test Configuration 2

Figure 1-3: L1 lines

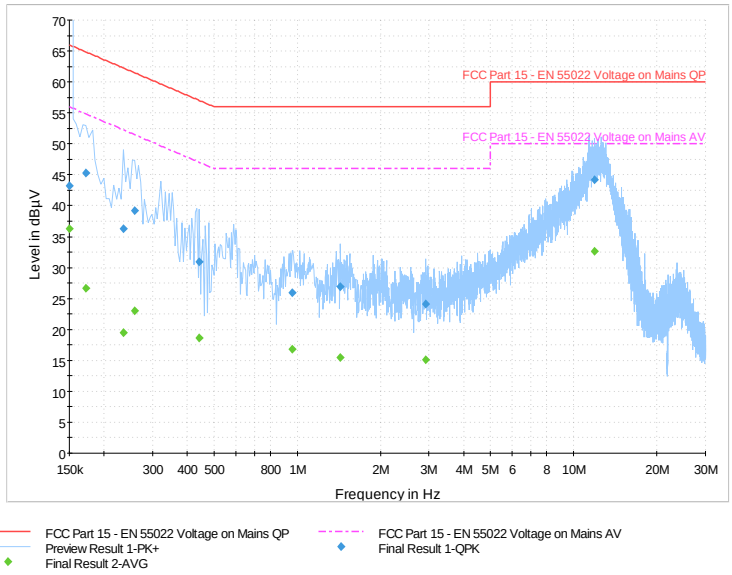
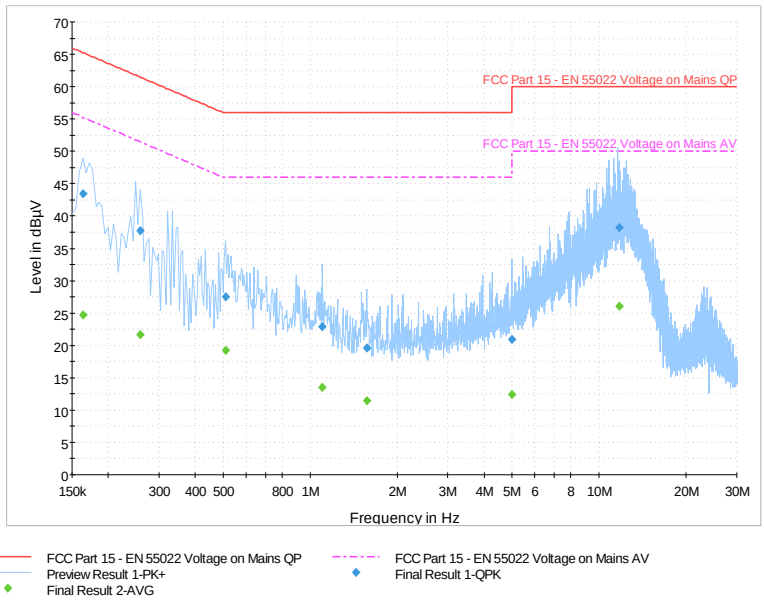


Figure 1-4: N Lines



AC Conducted Emissions Test Results cont'd

Test Configuration 3

Date of the test: May 8, 2012
The environmental conditions were: Temperature: 25.7 °C
Humidity: 36.6 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.150	L1	32.34	11.20	43.54	66.00	56.00	-22.46
0.150	N	30.25	11.23	41.49	66.00	56.00	-24.51
0.177	L1	28.76	11.02	39.78	64.60	54.60	-24.82
0.429	L1	34.59	9.97	44.56	57.30	47.30	-12.74
0.438	N	31.34	9.96	41.30	57.10	47.10	-15.80
0.465	L1	36.03	9.93	45.96	56.60	46.60	-10.64
0.465	N	31.47	9.94	41.41	56.60	46.60	-15.19
0.749	L1	25.62	9.83	35.45	56.00	46.00	-20.55
1.136	L1	33.52	9.80	43.32	56.00	46.00	-12.68
1.275	N	23.23	9.80	33.03	56.00	46.00	-22.97
2.562	L1	21.77	9.85	31.63	56.00	46.00	-24.38

All other emission levels had test margins greater than 25 dB.
Measurements were done with the quasi-peak and the average 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.

AC Conducted Emissions Test Graphs

Test Configuration 3

Figure 1-5: L1 lines

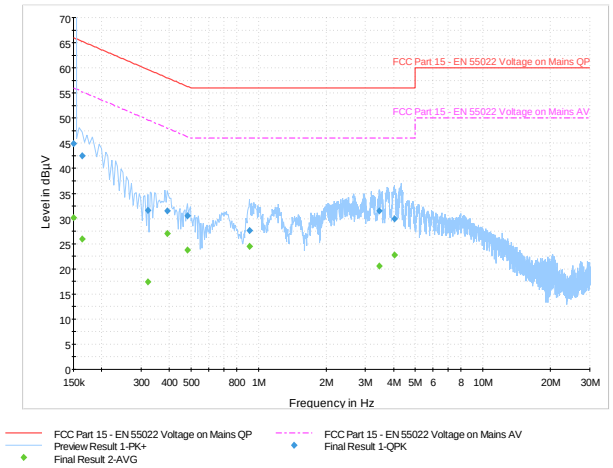
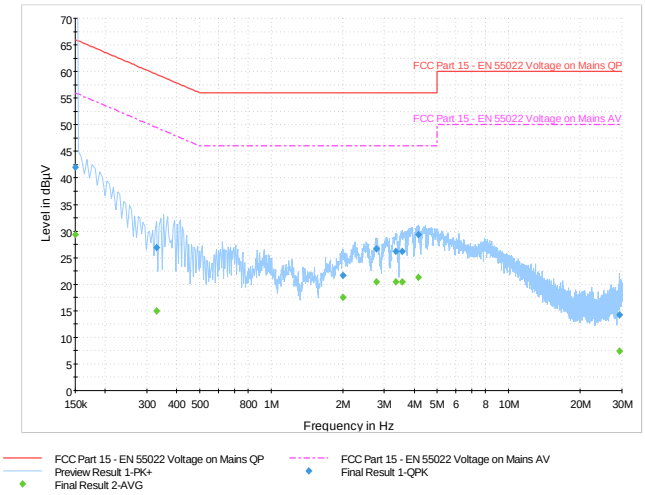


Figure 1-6: N Lines



AC Conducted Emissions Test Results cont'd

Test Configuration 4

Date of the test: May 8, 2012
The environmental conditions were: Temperature: 25.7 °C
Humidity: 36.6 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Margin (QP) Limits (dB)
0.150	L1	41.83	11.20	53.03	66.00	-12.97
0.168	N	35.70	11.11	46.81	65.10	-18.29
0.204	L1	41.83	10.83	52.66	63.40	-10.74
0.240	N	43.03	10.60	53.63	62.10	-8.47
0.371	N	28.77	10.07	38.84	58.50	-19.66
0.483	N	34.43	9.93	44.36	56.30	-11.94
0.492	L1	36.51	9.91	46.43	56.10	-9.68
0.596	L1	35.49	9.86	45.35	56.00	-10.65
0.690	L1	33.89	9.84	43.73	56.00	-12.27
0.726	N	35.17	9.83	45.00	56.00	-11.00
0.996	L1	37.00	9.80	46.80	56.00	-9.20
1.091	L1	38.75	9.80	48.56	56.00	**-7.45**
1.100	N	35.82	9.81	45.63	56.00	-10.37
1.199	L1	34.81	9.80	44.61	56.00	-11.39
1.329	N	34.93	9.81	44.73	56.00	-11.27
1.473	L1	33.44	9.80	43.25	56.00	-12.75
1.577	N	32.75	9.81	42.57	56.00	-13.43
2.103	L1	31.55	9.83	41.38	56.00	-14.62
2.436	N	31.79	9.85	41.64	56.00	-14.37
4.376	N	28.53	9.91	38.44	56.00	-17.56
4.398	L1	27.87	9.90	37.78	56.00	-18.22

Frequency (MHz)	Line	Reading (AV) (dBµV)	Correction Factor (dB)	Corrected Reading (AV) (dBµV)	Limit (AV) (dBµV)	Margin (AV) Limits (dB)
0.150	L1	28.45	11.20	39.65	56.00	-16.35
0.168	N	20.07	11.11	31.18	55.10	-23.92
0.204	L1	25.86	10.83	36.69	53.40	-16.71
0.240	N	36.51	10.60	47.11	52.10	-4.99
0.371	N	21.02	10.07	31.08	48.50	-17.42
0.483	N	31.57	9.93	41.50	46.30	-4.80
0.492	L1	29.95	9.91	39.86	46.10	-6.24
0.596	L1	31.73	9.86	41.59	46.00	-4.41
0.690	L1	28.90	9.84	38.74	46.00	-7.26
0.726	N	30.22	9.83	40.06	46.00	-5.94
0.996	L1	31.10	9.80	40.91	46.00	-5.09
1.091	L1	34.26	9.80	44.06	46.00	**-1.94**
1.100	N	29.60	9.81	39.41	46.00	-6.60
1.199	L1	29.83	9.80	39.63	46.00	-6.37
1.329	N	25.97	9.81	35.78	46.00	-10.23
1.473	L1	25.14	9.80	34.95	46.00	-11.05
1.577	N	24.49	9.81	34.30	46.00	-11.70
2.103	L1	24.74	9.83	34.57	46.00	-11.43
2.436	N	22.95	9.85	32.80	46.00	-13.20
4.376	N	19.28	9.91	29.19	46.00	-16.81
4.398	L1	21.11	9.90	31.02	46.00	-14.98

All other emission levels had test margins greater than 25 dB.
Measurements were done with the quasi-peak and the average detectors.

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

AC Conducted Emissions Test Graphs

Test Configuration 4

Figure 1-7: L1 lines

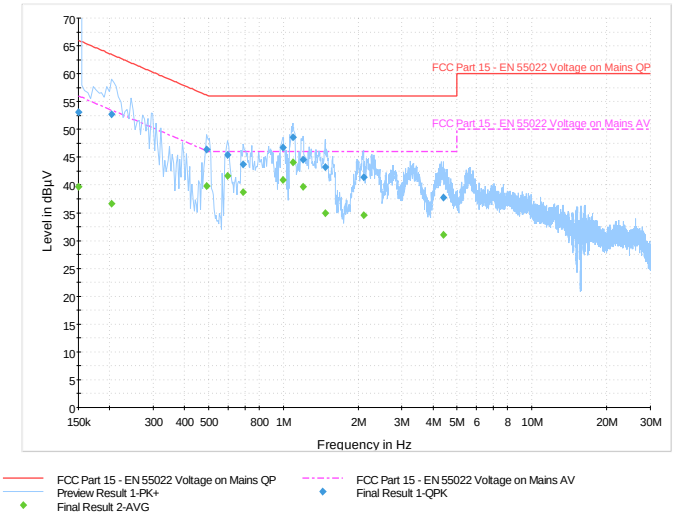
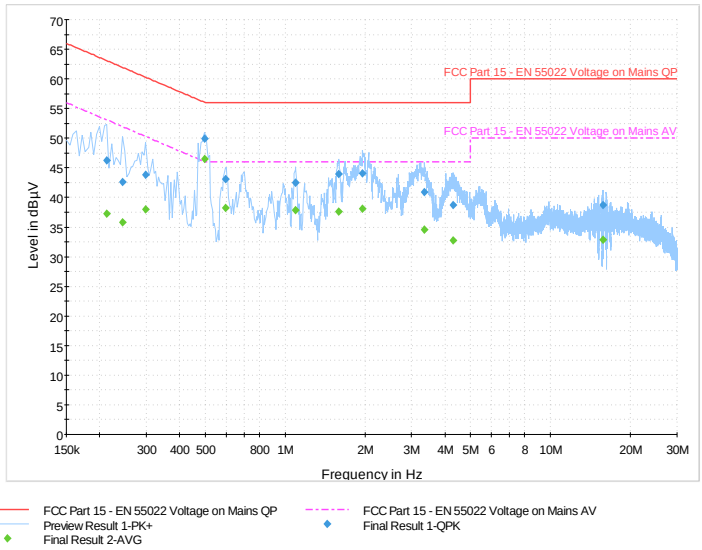


Figure 1-8: N Lines



AC Conducted Emissions Test Results cont'd

Test Configuration 5

Date of the test: May 8, 2012
The environmental conditions were: Temperature: 25.7 °C
Humidity: 36.6 %

Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dBµV)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.150	L1	39.50	11.20	50.70	66.00	56.00	-15.30
0.159	N	40.70	11.17	51.87	65.50	55.50	-13.63
0.186	L1	33.46	10.95	44.41	64.20	54.20	-19.79
0.218	N	33.66	10.76	44.42	62.90	52.90	-18.48
0.231	L1	29.80	10.64	40.44	62.40	52.40	-21.96
0.344	L1	29.79	10.10	39.89	59.10	49.10	-19.21
0.353	N	30.53	10.10	40.63	58.90	48.90	-18.27
0.407	L1	28.56	10.00	38.56	57.70	47.70	-19.14
0.416	N	28.82	10.00	38.82	57.50	47.50	-18.69
0.515	N	27.41	9.91	37.32	56.00	46.00	-18.68
0.812	N	26.23	9.82	36.05	56.00	46.00	-19.95
0.870	L1	28.27	9.81	38.08	56.00	46.00	-17.92
1.118	L1	27.68	9.80	37.48	56.00	46.00	-18.52
2.054	N	27.28	9.83	37.11	56.00	46.00	-18.89
2.670	L1	29.28	9.86	39.14	56.00	46.00	-16.86
3.467	N	27.71	9.89	37.60	56.00	46.00	-18.40
4.538	L1	29.60	9.90	39.50	56.00	46.00	-16.50
5.154	N	27.15	9.91	37.06	60.00	50.00	-22.94

All other emission levels had test margins greater than 25 dB.
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.

AC Conducted Emissions Test Graphs

Test Configuration 5

Figure 1-9: L1 lines

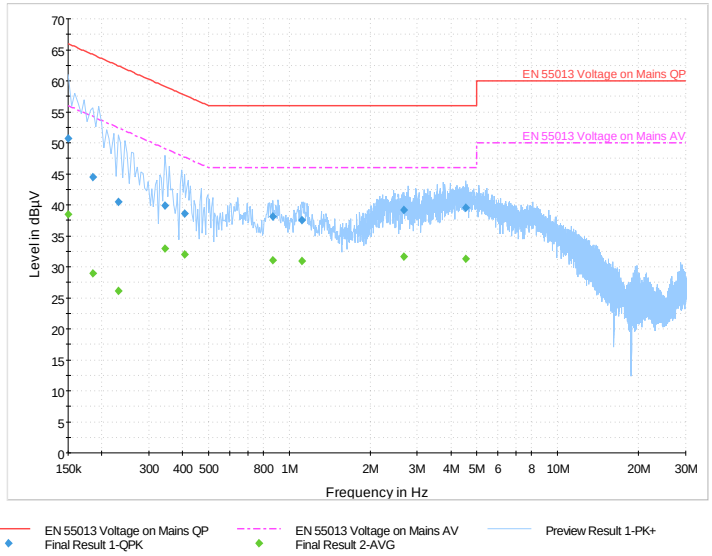
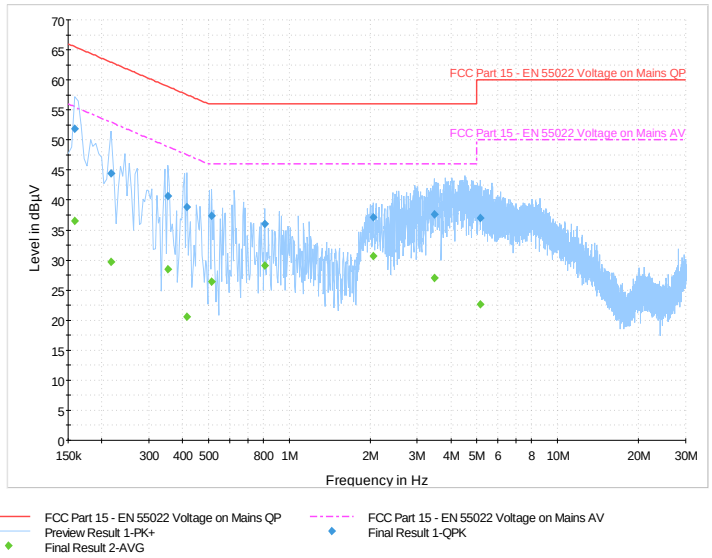


Figure 1-10: N Lines



APPENDIX 2 - RADIATED EMISSIONS TEST DATA

Radiated Emissions Test Results

The following tests were performed by Savtej Sandhu.

Test Configuration 1

Date of the test: May 11, 2012
The environmental conditions were: Temperature: 26.0 °C
Humidity: 23.9 %

Frequency	Antenna		Test Angle	Detector (Q.P. or Peak)	Measured Level (dBµV)	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading +corr)	Limit @ 3.0 m	Test Margin
	Pol.	Height							
(MHz)	(V/H)	(metres)	(Deg.)				(dBµV/m)	(dBµV/m)	(dB)
55.057	V	1.54	120.00	Q.P.	38.49	-16.37	22.12	40.00	-17.88
64.344	V	3.13	159.00	Q.P.	31.59	-15.79	15.80	40.00	-24.20

All other emission levels had test margins greater than 25 dB.

Radiated Emissions Test Results cont'd

Test Configuration 2

Date of the test: April 02, 2012
The environmental conditions were: Temperature: 26.4 °C
Humidity: 17.4 %

Frequency (MHz)	Antenna Pol. (V/H)	Antenna Height (metres)	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)
49.699	V	1.40	319.00	Q.P.	42.87	-16.13	26.74	40.00	-13.26

All other emission levels had test margins greater than 25 dB.

Radiated Emissions Test Results cont'd

Test Configuration 3

Date of the test: May 14, 2012
The environmental conditions were: Temperature: 25.0 °C
Humidity: 24.4 %

Frequency (MHz)	Antenna Pol. (V/H)	Antenna Height (metres)	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)
54.896	V	2.75	59.00	Q.P.	43.14	-16.37	26.77	40.00	-13.23

All other emission levels had test margins greater than 25 dB.

Radiated Emissions Test Results cont'd

Test Configuration 4

Date of the test: May 11, 2012
The environmental conditions were: Temperature: 24.5 °C
Humidity: 25.6 %

Frequency (MHz)	Antenna Pol. (V/H)	Antenna Height (metres)	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)
44.993	V	1.77	205.00	Q.P.	38.57	-15.24	23.33	40.00	-16.67
52.215	V	1.50	53.00	Q.P.	31.63	-16.38	15.25	40.00	-24.75
57.586	V	2.37	143.00	Q.P.	31.94	-16.41	15.53	40.00	-24.47
199.419	V	1.78	330.00	Q.P.	28.29	-6.37	21.92	43.50	-21.58

All other emission levels had test margins greater than 25 dB.

Radiated Emissions Test Results cont'd

Test Configuration 5

Date of the test: April 2, 2012
The environmental conditions were: Temperature: 28.0 °C
Humidity: 12.6 %

Frequency	Antenna		Test Angle	Detector	Measured Level	Correction Factor for preamp/antenna / cables/ filter (dB/m)	Field Strength Level (reading+corr)	Limit @ 3.0 m	Test Margin
	Pol.	Height		(Q.P. or Peak)	(dBµV)				
(MHz)	(V/H)	(metres)	(Deg.)				(dBµV/m)	(dBµV/m)	(dB)
34.212	V	1.40	163.00	Q.P.	34.15	-12.46	21.69	40.00	-18.31
49.643	V	1.47	346.00	Q.P.	35.71	-16.08	19.63	40.00	-20.37
60.283	V	1.40	276.00	Q.P.	33.19	-16.16	17.03	40.00	-22.97
162.924	H	1.00	154.00	Q.P.	31.55	-10.27	21.28	43.50	-22.22
185.563	H	3.72	16.00	Q.P.	29.92	-9.12	20.80	43.50	-22.70
194.768	V	3.56	153.00	Q.P.	28.07	-7.53	20.54	43.50	-22.96

All other emission levels had test margins greater than 25 dB.

Radiated Emissions Test Results cont'd

Test Configuration 6

Date of the test: April 2, 2012
The environmental conditions were: Temperature: 28.0 °C
Humidity: 10.8%

Frequency (MHz)	Antenna Pol. (V/H)	Antenna Height (metres)	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)
38.093	V	1.40	324.00	Q.P.	41.08	-13.62	27.46	40.00	**-12.54**
49.174	V	3.98	63.00	Q.P.	34.26	-15.87	18.39	40.00	-21.61
61.662	V	1.59	354.00	Q.P.	33.52	-15.96	17.56	40.00	-22.44
79.165	V	1.40	354.00	Q.P.	30.27	-13.57	16.70	40.00	-23.30
122.237	H	2.48	354.00	Q.P.	33.90	-10.42	23.48	43.50	-20.02
215.983	H	3.85	297.00	Q.P.	31.64	-7.56	24.08	46.00	-21.92
233.173	H	1.00	265.00	Q.P.	32.00	-8.52	23.48	46.00	-22.52
240.007	H	1.00	256.00	Q.P.	38.71	-8.46	30.25	46.00	-15.75
244.336	H	1.00	50.00	Q.P.	31.48	-8.13	23.35	46.00	-22.65
272.036	H	1.02	223.00	Q.P.	38.39	-6.80	31.59	46.00	-14.41
299.749	H	1.00	41.00	Q.P.	28.30	-5.08	23.22	46.00	-22.78
305.28	V	3.08	57.00	Q.P.	22.72	-0.45	22.27	46.00	-23.73
427.75	H	3.22	196.00	Q.P.	32.63	-0.41	32.22	46.00	-13.78
432.003	V	1.40	297.00	Q.P.	23.02	-0.13	22.89	46.00	-23.11
442.86	V	1.96	62.00	Q.P.	25.50	1.25	26.75	46.00	-19.25

All other emission levels had test margins greater than 25 dB.

Radiated Emissions Test Results cont'd

Test Configuration 7

Date of the test: April 2, 2012
The environmental conditions were: Temperature: 28.0 °C
Humidity: 8.8 %

Frequency (MHz)	Antenna Pol. (V/H)	Antenna Height (metres)	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)
57.053	V	3.60	14.00	Q.P.	34.16	-16.39	17.77	40.00	-22.23
85.452	V	3.49	258.00	Q.P.	34.38	-12.80	21.58	40.00	-18.42

All other emission levels had test margins greater than 25 dB.