

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-2340-0911-10

PRODUCT MODEL NO.: RCS71CW
TYPE NAME: BlackBerry® smartphone
FCC ID: L6ARCS70CW
IC: 2503A-RCS70CW

DATE: November 19, 2009

RIM Testing Services™	EMI Test Report for the BlackBerry® smartphone Model RCS71CW	
Test Report No. RTS-2340-0911-10	Dates of Test October 26 to November 25, 2009	Author Data Fahd Faisal

Statement of Performance:

The BlackBerry® smartphone, model RCS71CW, part number CER-27172-001 Rev. 5 and accessories when configured and operated per RIM'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:



Fahd Faisal
Regulatory Compliance Associate
Date: 19 November, 2009

Reviewed by:



Michael Cino
Regulatory Compliance Associate
Date: 19 November, 2009

Reviewed and Approved by:



Masud S. Attayi, P.Eng.
Manager, Regulatory Compliance
Date: 30 November, 2009

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

B. Associated Documents

- 1) HW_Declaration_CER-27172_Rev3

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 October 26 to November 25, 2009.

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The sample EUT included:

SAMPLE	MODEL	CER NUMBER	PIN
1	RCS71CW	CER-27172-001 Rev. 1	30F4F739
2	RCS71CW	CER-27172-001 Rev. 1	30F4F746
3	RCS71CW	CER-27172-001 Rev. 3	310F4B7E
4	RCS71CW	CER-27172-001 Rev. 3	310F4B7A

AC conducted testing was performed on samples 1 and 4.

Radiated Emissions testing was performed on samples 2 and 3.

To view the differences between CER-27172-001 Rev. 1 and CER-27172-001 Rev. 3, see document number 9650_RCS71CW_HW_Declaration_CER-27172_Rev3. Only the characteristics that may have been impacted by the changes were re-measured.

BlackBerry® smartphone Accessories Tested

- 1) Folding Blade Charger, part number HDW-17955-001 with an output voltage of 5.0 volts dc, 700 mA and attached USB cable with a lead 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 metres.
- 3) Fixed Blade Charger, part number HDW-24481-001, with an output voltage of 5.0 volts dc.
- 4) D Series External Battery Charger, (EBC), part number HDW-19137-001.
- 5) BlackBerry® Remote Stereo Gateway, part number HDW-16007-001.
- 6) USB Y-Cable, part number HDW-19137-002, lead lengths of 26 cm and 11 cm.
- 7) Stereo Headset, part number HDW-14322-003 with a lead length of 1.3 metres.
- 8) Premium Stereo Headset, part number HDW-15766-005, 1.3 metres long.
- 9) USB Data Cable, part number HDW-06610-013, 0.30 metres long.
- 10) USB Data Cable, part number HDW-06610-009, 1.00 metre long.
- 11) USB Data Cable, part number HDW-06610-005, 1.50 metres long.
- 12) Charging POD, part number HDW-22385-001.

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

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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:

1. The BlackBerry® smartphone, PIN 30F4F739 in PCS idle mode with the Premium Stereo Headset attached was placed on a Charging Pod. The Pod was connected in parallel to the External Battery Charger, and both were connected to the Folding Blade Charger via the USB Y-Cable.
2. The BlackBerry® smartphone, PIN 30F4F739 in GSM850 idle mode on the Charging Pod with the Stereo Headset attached was connected to the Folding Blade Charger.
3. The BlackBerry® smartphone, PIN 30F4F739 in CDMA Cellular idle mode, MP3 Audio Playback mode, and communicating with the Bluetooth Stereo Gateway in Bluetooth Tx mode, was connected to the Folding Blade Charger. A 1.0m USB cable and a Mini to Micro adapter connected the Bluetooth Stereo Gateway to the Laptop to allow for audio playback.
4. The BlackBerry® smartphone, PIN 310F4B7A in GSM 850 idle mode with the Stereo Headset attached, was connected to the Fixed Blade Charger via a 1.5m USB cable.

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 6.79 dB below the QP limit at 2.495 MHz using the quasi-peak detector, test configuration 4.

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 configurations were measured:

1. The BlackBerry® smartphone, PIN 30F4F746 in GSM850 idle mode with the Stereo Headset attached, was placed in the Charging Pod which was connected to the Laptop via a 1.0m USB Cable.
2. The BlackBerry® smartphone, PIN 30F4F746 in PCS Idle mode was connected to the Laptop in High Speed USB mode via the 1m USB Cable.
3. The BlackBerry® smartphone, PIN 30F4F746 in CDMA Cellular Idle mode with the Premium Stereo Headset attached was connected to the laptop via a 1.5m USB Cable.
4. The BlackBerry® smartphone, PIN 30F4F746 in CDMA PCS idle mode with the Stereo Headset attached, was connected to the Fixed Blade Charger via a 1.5m USB Cable.
5. The BlackBerry® smartphone, PIN 30F4F746 in CDMA PCS idle mode with the Premium Stereo Headset attached, was connected to the Laptop in High Speed USB mode via the 0.3m USB Cable.
6. The BlackBerry® smartphone, PIN 30F4F746 in 802.11b Tx mode with the Premium Stereo Headset attached, was connected to a Folding Blade Charger.
7. The BlackBerry® smartphone, PIN 310F4B7E in Bluetooth Tx mode with the Stereo Headset attached, was connected to a Captive Cable Charger.
8. The BlackBerry® smartphone, PIN 310F4B7E in GSM850 idle mode with the Premium Stereo Headset attached, was connected to a Fixed Blade Charger via the 1.5m USB cable.
9. The BlackBerry® smartphone, PIN 310F4B7E in PCS1900 idle mode with the Premium Stereo Headset attached, was connected in parallel to the External Battery Charger via the USB Y-Cable. The USB Y-Cable was connected to a 1.5m USB Cable, which was connected to the Fixed Blade Charger.

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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 2.34 dB at 239.950 MHz using test configuration 5.

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 ± 4.6 dB

To view the test data see APPENDIX 2.

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	Agilent	85462A	3942A00517	10-02-10	Radiated Emissions
Digital Multimeter	Hewlett Packard	34401A	US36042324	10-10-08	Conducted/Radiated Emissions
Environment Monitor	Control Company	1870	230355190	10-01-30	Radiated Emissions
Environment Monitor	Control Company	1870	80117164	10-01-08	Conducted/Radiated Emissions
L.I.S.N.	Rohde & Schwarz	ENV216	100060	10-04-21	Conducted Emissions
Hybrid Log Antenna	EMC Automation	HLP-3003C	017301	10-02-02	Radiated Emissions
Horn Antenna	EMC Automation	HRN-0118	030101	10-07-22	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	837493/073	09-12-08	Radiated Emissions
Universal Radio Communication Tester	Rohde & Schwarz	CMU 200	112394	09-12-07	Radiated/Conducted Emissions
EMI Test Receiver	Rohde & Schwarz	ESU 40	100162	10-04-22	Radiated/Conducted Emissions
Bluetooth Tester	Rohde & Schwarz	CBT	100368	09-12-09	Radiated Emissions
Bluetooth Tester	Rohde & Schwarz	CBT	100370	09-12-09	Radiated/Conducted Emissions

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APPENDIX 1 - AC CONDUCTED EMISSIONS TEST DATA

RIM Testing Services	EMI Test Report for the BlackBerry® smartphone Model RCS71CW APPENDIX 1		
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AC Conducted Emissions Test Results

The measurements were performed by Steven Wang.

Test Configuration 1

The BlackBerry® smartphone PIN 30F4F739 was tested on October 26, 2009.

The environmental test conditions were: Temperature: 24 °C
Pressure: 1019 mb
Relative Humidity: 22 %

Frequency (MHz)	Line	Reading (QP) (dB μ V)	Correction Factor (dB)	Corrected Reading (QP) (dB)	Limit (QP) (dB μ V)	Limit (AV) (dB μ V)	Margin (QP) Limits (dB)
0.182	L1	39.80	9.78	49.58	64.42	54.42	-14.84
0.182	N	33.54	10.04	43.58	64.42	54.42	-20.84
0.272	L1	33.59	9.84	43.43	61.07	51.07	-17.64
0.276	N	29.09	9.81	38.90	60.94	50.94	-22.04
0.348	L1	24.49	9.79	34.28	59.01	49.01	-24.73
0.407	N	34.16	9.87	44.02	57.72	47.72	-13.70
0.483	L1	26.77	9.69	36.45	56.29	46.29	-19.83
0.686	N	29.54	9.79	39.34	56.00	46.00	-16.67
0.771	L1	27.94	9.58	37.52	56.00	46.00	-18.48
1.244	L1	31.79	9.50	41.29	56.00	46.00	-14.71
1.370	N	33.27	9.60	42.87	56.00	46.00	-13.13
2.405	L1	39.63	9.54	49.17	56.00	46.00	-6.83
2.495	N	36.69	9.61	46.30	56.00	46.00	-9.70
4.151	N	28.00	9.60	37.60	56.00	46.00	-18.40
4.160	L1	30.62	9.64	40.25	56.00	46.00	-15.75
4.835	L1	28.98	9.67	38.65	56.00	46.00	-17.35
7.193	N	26.80	9.63	36.43	60.00	50.00	-23.57
9.965	N	26.93	9.66	36.60	60.00	50.00	-23.40

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

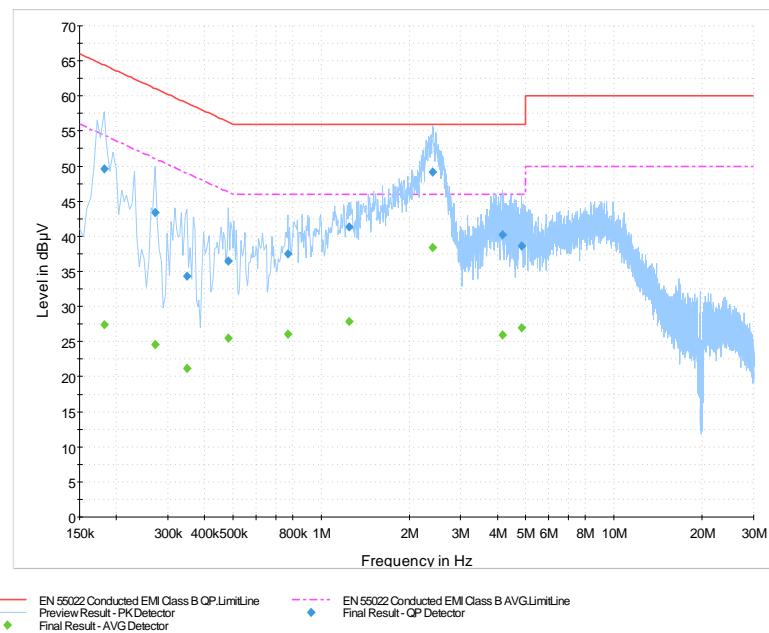
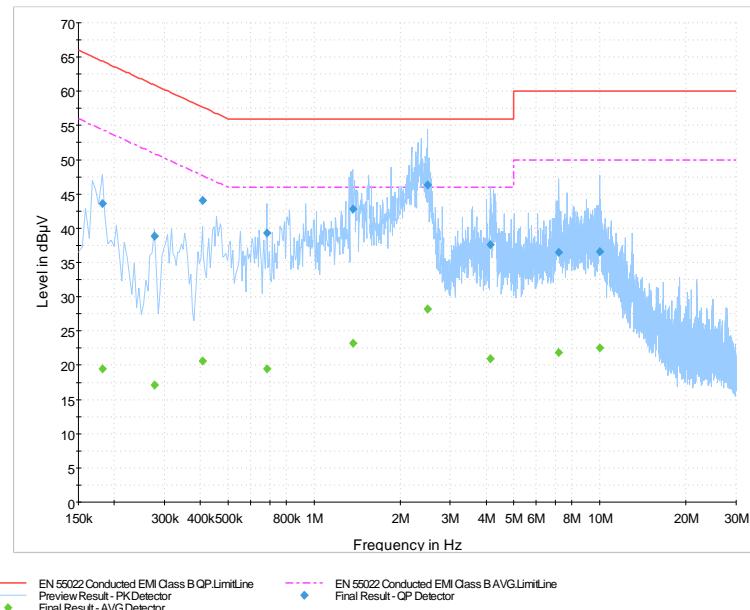


Figure 1-2: N Lines



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AC Conducted Emissions Test Results cont'd

Test Configuration 2

The BlackBerry® smartphone PIN 30F4F739 was tested on October 29, 2009.

The environmental test conditions were: Temperature: 24 °C
Pressure: 1019 mb
Relative Humidity: 22 %

Frequency (MHz)	Line	Reading (QP) (dB μ V)	Correction Factor (dB)	Corrected Reading (QP) (dB)	Limit (QP) (dB μ V)	Limit (AV) (dB μ V)	Margin (QP) Limits (dB)
0.173	N	34.25	10.04	44.30	64.84	54.84	-20.54
0.182	L1	32.64	9.78	42.42	64.42	54.42	-22.00
0.218	L1	31.66	9.89	41.55	62.91	52.91	-21.37
0.272	L1	27.67	9.84	37.52	61.07	51.07	-23.56
0.317	L1	28.73	9.80	38.53	59.80	49.80	-21.26
0.461	L1	29.03	9.71	38.74	56.68	46.68	-17.94
0.461	N	29.57	9.89	39.46	56.68	46.68	-17.22
1.145	N	25.62	9.63	35.25	56.00	46.00	-20.75
2.018	N	28.62	9.61	38.24	56.00	46.00	-17.77
2.378	L1	34.33	9.55	43.88	56.00	46.00	-12.12
2.432	N	31.43	9.60	41.03	56.00	46.00	-14.97
3.656	L1	24.62	9.62	34.24	56.00	46.00	-21.76
4.484	N	21.67	9.58	31.25	56.00	46.00	-24.75
8.808	L1	25.30	9.79	35.10	60.00	50.00	-24.90

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 2

Figure 1-3: L1 lines

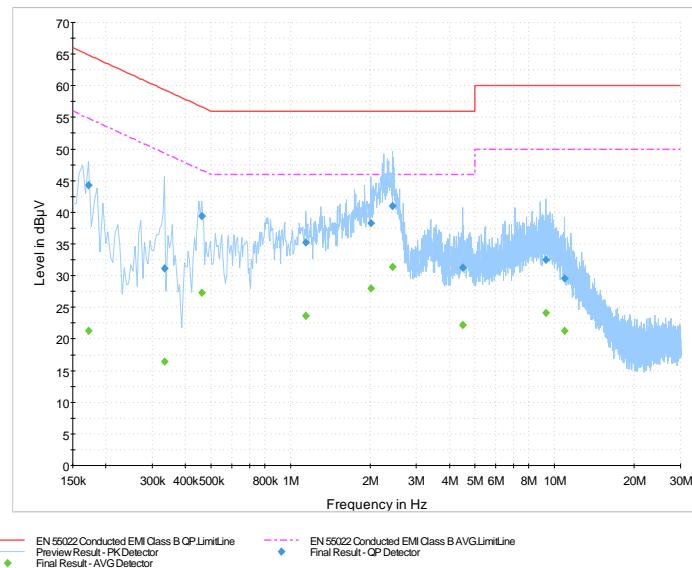
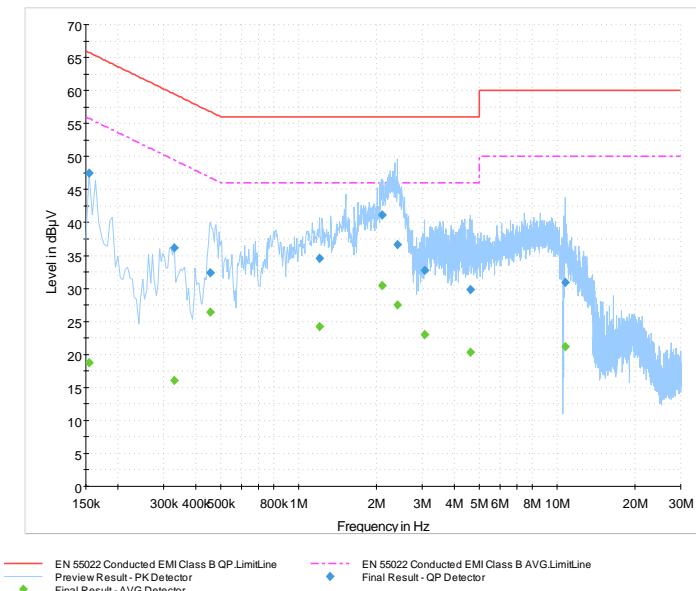


Figure 1-4: N Lines



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AC Conducted Emissions Test Results cont'd

Test Configuration 3

The BlackBerry® smartphone PIN 30F4F739 was tested on November 02, 2009.

The environmental test conditions were: Temperature: 24 °C
Pressure: 1021 mb
Relative Humidity: 29 %

Frequency (MHz)	Line	Reading (QP) (dB μ V)	Correction Factor (dB)	Corrected Reading (QP) (dB)	Limit (QP) (dB μ V)	Limit (AV) (dB μ V)	Margin (QP) Limits (dB)
0.186	L1	38.73	9.81	48.54	64.21	54.21	-15.67
0.231	N	35.18	9.81	44.99	62.41	52.41	-17.42
0.276	L1	27.88	9.84	37.71	60.94	50.94	-23.22
0.330	N	26.18	9.84	36.02	59.45	49.45	-23.44
0.335	L1	24.95	9.81	34.75	59.34	49.34	-24.59
0.452	N	23.73	9.88	33.62	56.85	46.85	-23.23
0.492	L1	28.39	9.68	38.07	56.13	46.13	-18.06
0.546	L1	24.76	9.67	34.43	56.00	46.00	-21.57
1.095	N	24.44	9.63	34.07	56.00	46.00	-21.93
1.230	L1	28.49	9.50	37.99	56.00	46.00	-18.01
2.036	N	29.29	9.62	38.90	56.00	46.00	-17.10
2.040	L1	32.61	9.54	42.16	56.00	46.00	-13.85
2.166	N	26.34	9.63	35.97	56.00	46.00	-20.03
2.495	L1	39.65	9.55	49.21	56.00	46.00	-6.79
3.863	L1	27.40	9.63	37.03	56.00	46.00	-18.97
4.767	L1	27.69	9.67	37.36	56.00	46.00	-18.64
8.430	L1	28.06	9.76	37.83	60.00	50.00	-22.17

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.

AC Conducted Emissions Test Graphs

Test Configuration 3

Figure 1-5: L1 lines

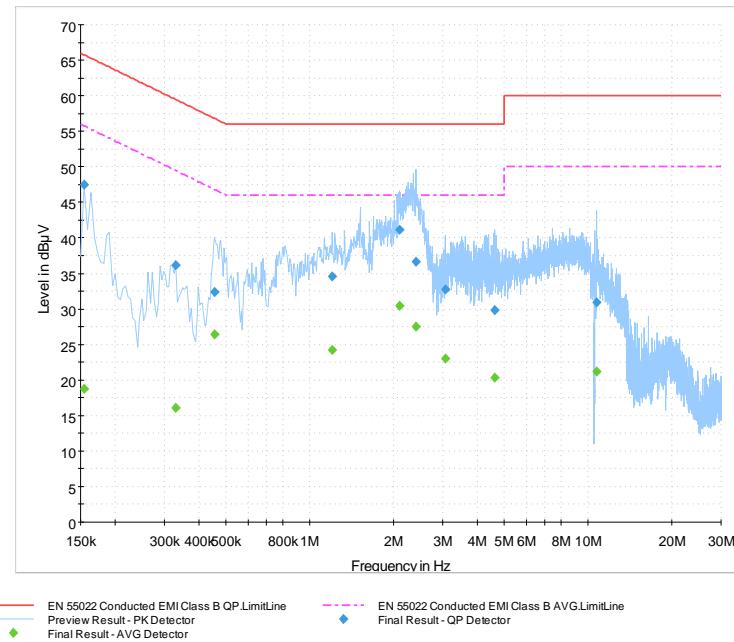
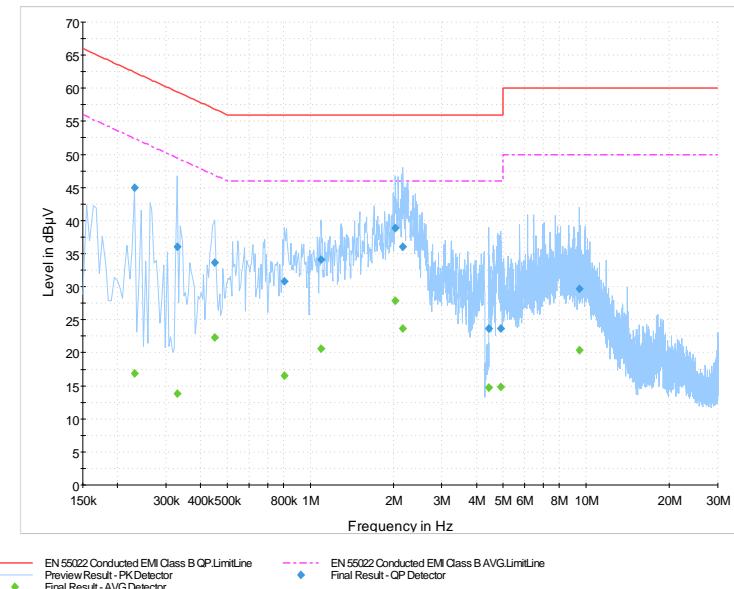


Figure 1-6: N Lines



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AC Conducted Emissions Test Results cont'd

Test Configuration 4

The BlackBerry® smartphone PIN 310F4B7A was tested on November 25, 2009.

The environmental test conditions were: Temperature: 24 °C
Pressure: 1004 mb
Relative Humidity: 27 %

Frequency (MHz)	Line	Reading (QP) (dB μ V)	Correction Factor (dB)	Corrected Reading (QP) (dB)	Limit (QP) (dB μ V)	Limit (AV) (dB μ V)	Margin (QP) Limits (dB)
0.150	N	32.23	9.69	41.93	66.00	56.00	-24.08
0.168	L1	36.20	9.94	46.15	65.06	55.06	-18.91
0.429	N	23.33	9.87	33.20	57.27	47.27	-24.07
0.438	N	23.46	9.87	33.33	57.10	47.10	-23.77
3.503	N	22.46	9.61	32.07	56.00	46.00	-23.93
4.097	L1	29.44	9.64	39.07	56.00	46.00	-16.93
4.160	L1	29.29	9.64	38.92	56.00	46.00	-17.08
4.394	L1	31.15	9.64	40.79	56.00	46.00	-15.21
4.619	L1	32.07	9.66	41.73	56.00	46.00	-14.27
4.664	N	27.38	9.60	36.98	56.00	46.00	-19.02
4.803	L1	30.63	9.67	40.30	56.00	46.00	-15.70
4.853	L1	30.52	9.67	40.19	56.00	46.00	-15.81
4.947	L1	30.61	9.68	40.28	56.00	46.00	-15.72
4.997	L1	30.65	9.68	40.33	56.00	46.00	-15.67
6.450	N	25.76	9.61	35.36	60.00	50.00	-24.64

All other emission levels had a test margin of 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.

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AC Conducted Emissions Test Graphs

Test Configuration 4

Figure 1-7: L1 lines

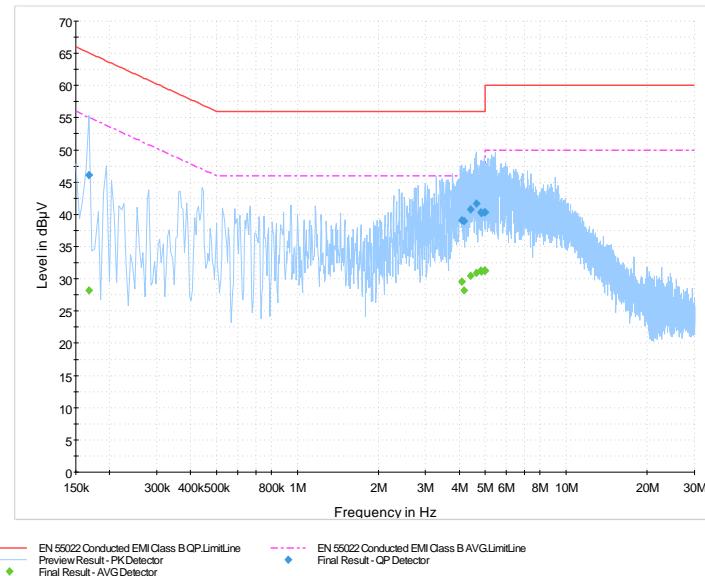
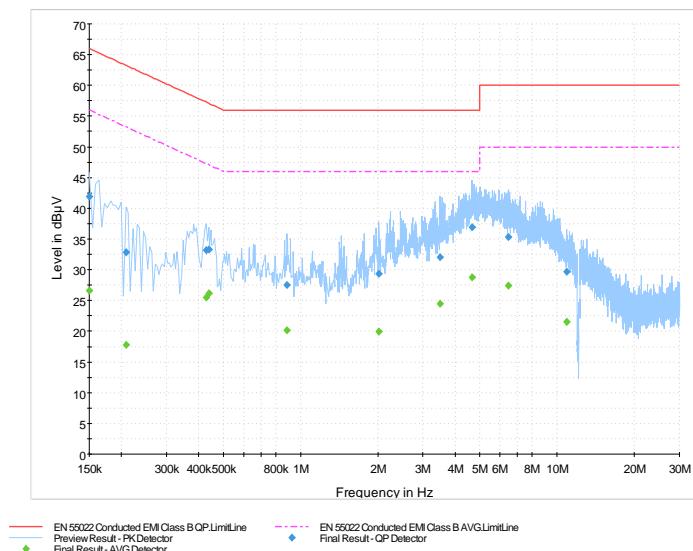


Figure 1-8: N Lines



APPENDIX 2 - RADIATED EMISSIONS TEST DATA

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Radiated Emissions Test Results

Test Configuration 1

The measurement was performed by Kevin Rose.

The environmental test conditions were: Temperature: 24 °C
Pressure: 1007 mb
Relative Humidity: 30 %

The BlackBerry® smartphone, PIN 30F4F746 was tested on October 27, 2009.

Test Distance was 3.0 metres.

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)							
52.700	V	1.50	22.00	Q.P.	43.87	-21.47	22.40	40.00	-17.60
183.250	H	1.92	287.00	Q.P.	46.58	-16.53	30.05	43.50	-13.45
215.950	H	1.21	88.00	Q.P.	52.40	-14.57	37.83	43.50	-5.67
239.950	H	1.40	271.00	Q.P.	53.86	-15.41	38.45	46.00	-7.55
245.100	H	1.19	258.00	Q.P.	46.14	-15.33	30.81	46.00	-15.19
298.800	H	1.15	131.00	Q.P.	40.72	-13.01	27.71	46.00	-18.29
339.150	V	2.73	354.00	Q.P.	34.66	-8.97	25.69	46.00	-20.31
364.950	V	1.85	68.00	Q.P.	40.44	-11.08	29.36	46.00	-16.64
366.550	H	1.01	278.00	Q.P.	42.42	-11.05	31.37	46.00	-14.63
430.000	V	2.13	55.00	Q.P.	44.96	-8.84	36.12	46.00	-9.88
430.250	H	2.09	94.00	Q.P.	47.33	-8.85	38.48	46.00	-7.52
788.750	H	1.38	124.00	Q.P.	34.81	-1.36	33.45	46.00	-12.55
821.050	H	2.75	295.00	Q.P.	32.60	-0.59	32.01	46.00	-13.99

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

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Radiated Emissions Test Results cont'd

Test Configuration 2

The following measurement was performed by Fahd Faisal.

The environmental test conditions were: Temperature: 24 °C
 Pressure: 1008 mb
 Relative Humidity: 32 %

The BlackBerry® smartphone, PIN 30F4F746 was tested on October 27, 2009.

Test Distance was 3.0 metres.

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)							
122.250	H	2.92	254.00	Q.P.	39.34	-16.28	23.06	43.50	-20.44
184.400	H	1.97	233.00	Q.P.	46.39	-15.90	30.49	43.50	-13.01
216.050	H	1.29	260.00	Q.P.	52.43	-14.54	37.89	46.00	-8.11
232.350	H	1.70	252.00	Q.P.	48.75	-15.45	33.30	46.00	-12.70
365.300	H	1.01	199.00	Q.P.	42.36	-10.88	31.48	46.00	-14.52
430.300	H	2.06	97.00	Q.P.	46.66	-8.64	38.02	46.00	-7.98
499.100	H	1.82	247.00	Q.P.	33.65	-6.71	26.94	46.00	-19.06
528.050	H	1.92	111.00	Q.P.	39.66	-6.08	33.58	46.00	-12.42
719.950	H	2.60	50.00	Q.P.	35.82	-2.51	33.31	46.00	-12.69

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

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Radiated Emissions Test Results cont'd

Test Configuration 3

The following measurement was performed by Kevin Rose.

The environmental test conditions were: Temperature: 24 °C
Pressure: 1008 mb
Relative Humidity: 32 %

The BlackBerry® smartphone, PIN 30F4F746 was tested on October 27, 2009.

Test Distance was 3.0 metres.

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+c orr) (dB μ V/m)	Limit @ 3.0 m (dB μ V/m)	Test Margin (dB)
	Pol. (V/H)	Height (metres)							
44.700	V	1.42	68.00	Q.P.	46.88	-20.18	26.70	40.00	-13.30
183.850	H	2.59	275.00	Q.P.	47.27	-15.92	31.35	43.50	-12.15
215.950	H	1.00	98.00	Q.P.	48.67	-14.53	34.14	43.50	-9.36
216.100	V	2.23	345.00	Q.P.	46.17	-14.54	31.63	46.00	-14.37
232.550	H	1.54	236.00	Q.P.	47.57	-15.45	32.12	46.00	-13.88
366.250	H	1.04	202.00	Q.P.	39.66	-10.85	28.81	46.00	-17.19
366.250	V	3.13	48.00	Q.P.	37.71	-10.85	26.86	46.00	-19.14
429.200	H	1.79	103.00	Q.P.	40.22	-8.63	31.59	46.00	-14.41
854.700	V	2.80	334.00	Q.P.	26.67	0.27	26.94	46.00	-19.06
1000.000	V	1.86	183.00	Q.P.	29.29	2.59	31.88	54.00	-22.12
1330.500	H	2.02	180.00	Q.P.	60.43	-2.65	57.78	74.00	-16.22
2495.000	H	1.79	11.00	Q.P.	40.56	8.99	49.55	74.00	-24.45
2509.000	V	2.56	343.00	Q.P.	44.53	8.95	53.48	74.00	-20.52
3345.500	H	1.91	304.00	Q.P.	41.17	11.40	52.57	74.00	-21.43
3345.500	V	3.82	152.00	Q.P.	42.17	11.40	53.57	74.00	-20.43

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

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Radiated Emissions Test Results cont'd

Test Configuration 4

The following measurement was performed by Kevin Rose.

The environmental test conditions were: Temperature: 24 °C
 Pressure: 1008 mb
 Relative Humidity: 32 %

The BlackBerry® smartphone, PIN 30F4F746 was tested on October 27, 2009.

Test Distance was 3.0 metres.

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+c orr) (dB μ V/m)	Limit @ 3.0 m (dB μ V/m)	Test Margin (dB)
	Pol. (V/H)	Height (metres)							
37.150	V	1.44	162.00	Q.P.	49.35	-18.36	30.99	40.00	-9.01
52.250	V	1.64	316.00	Q.P.	55.20	-21.47	33.73	40.00	-6.27
52.650	H	3.99	206.00	Q.P.	58.11	-21.48	36.63	40.00	-3.37
84.300	V	1.94	248.00	Q.P.	47.23	-18.89	28.34	40.00	-11.66
128.400	H	1.80	66.00	Q.P.	47.37	-16.71	30.66	43.50	-12.84
131.550	V	2.31	156.00	Q.P.	40.54	-16.83	23.71	43.50	-19.79

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

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Radiated Emissions Test Results cont'd

Test Configuration 5

The following measurement was performed by Kevin Rose.

The environmental test conditions were: Temperature: 24 °C
 Pressure: 1008 mb
 Relative Humidity: 32 %

The BlackBerry® smartphone, PIN 30F4F746 was tested on October 27, 2009.

Test Distance was 3.0 metres.

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)							
71.600	V	2.23	99.00	Q.P.	43.44	-20.39	23.05	40.00	-16.95
99.450	V	1.58	268.00	Q.P.	40.66	-16.79	23.87	43.50	-19.63
130.900	H	1.53	158.00	Q.P.	45.68	-16.81	28.87	43.50	-14.63
144.000	V	1.38	216.00	Q.P.	44.08	-16.71	27.37	43.50	-16.13
166.300	H	1.55	265.00	Q.P.	42.55	-16.56	25.99	43.50	-17.51
184.400	H	1.69	259.00	Q.P.	47.09	-15.90	31.19	43.50	-12.31
216.050	H	1.76	302.00	Q.P.	51.68	-14.54	37.14	46.00	-8.86
216.050	V	2.56	17.00	Q.P.	50.52	-14.54	35.98	46.00	-10.02
233.150	H	1.35	270.00	Q.P.	49.10	-15.45	33.65	46.00	-12.35
239.950	H	1.34	82.00	Q.P.	59.07	-15.41	43.66	46.00	-2.34
272.100	H	1.17	293.00	Q.P.	51.25	-14.37	36.88	46.00	-9.12
365.850	V	2.54	67.00	Q.P.	37.45	-10.86	26.59	46.00	-19.41
365.950	H	1.01	187.00	Q.P.	40.45	-10.86	29.59	46.00	-16.41
427.250	H	1.82	102.00	Q.P.	48.16	-8.62	39.54	46.00	-6.46
429.950	V	2.11	58.00	Q.P.	45.34	-8.64	36.70	46.00	-9.30
430.250	H	2.40	76.00	Q.P.	45.80	-8.64	37.16	46.00	-8.84
479.950	V	1.44	11.00	Q.P.	33.81	-7.70	26.11	46.00	-19.89

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Radiated Emissions Test Results cont'd

Test Configuration 5 cont'd

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)							
480.000	H	1.90	227.00	Q.P.	48.52	-7.70	40.82	46.00	-5.18
664.600	V	1.88	37.00	Q.P.	30.81	-3.89	26.92	46.00	-19.08
720.050	V	1.96	352.00	Q.P.	40.38	-2.51	37.87	46.00	-8.13
863.900	V	2.42	193.00	Q.P.	31.82	0.36	32.18	46.00	-13.82
924.650	V	1.46	165.00	Q.P.	26.24	1.09	27.33	46.00	-18.67
480.000	H	1.90	227.00	Q.P.	48.52	-7.70	40.82	46.00	-5.18

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

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Radiated Emissions Test Results cont'd

Test Configuration 6

The following measurement was performed by Kevin Rose.

The environmental test conditions were: Temperature: 24 °C
 Pressure: 1008 mb
 Relative Humidity: 32 %

The BlackBerry® smartphone, PIN 30F4F746 was tested on October 28, 2009

Test Distance was 3.0 metres.

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+c orr) (dB μ V/m)	Limit @ 3.0 m (dB μ V/m)	Test Margin (dB)
	Pol. (V/H)	Height (metres)							
51.700	V	1.53	115.00	Q.P.	46.76	-21.44	25.32	40.00	-14.68
143.050	H	1.99	354.00	Q.P.	50.04	-16.72	33.32	43.50	-10.18
265.800	V	1.38	62.00	Q.P.	46.43	-14.07	32.36	46.00	-13.64
338.800	V	1.60	285.00	Q.P.	35.94	-9.23	26.71	46.00	-19.29
502.300	V	1.37	254.00	Q.P.	28.79	-6.55	22.24	46.00	-23.76
802.600	H	1.54	164.00	Q.P.	25.93	-1.37	24.56	46.00	-21.44
870.300	V	1.91	161.00	Q.P.	26.02	0.30	26.32	46.00	-19.68
873.500	V	1.55	18.00	Q.P.	37.46	0.26	37.72	46.00	-8.28

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

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Radiated Emissions Test Results cont'd

Test Configuration 7

The following measurement was performed by Kevin Rose.

The environmental test conditions were: Temperature: 24 °C
 Pressure: 1034 mb
 Relative Humidity: 23 %

The BlackBerry® smartphone, PIN 310F4B7E was tested on November 12, 2009

Test Distance was 3.0 metres.

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+c orr) (dB μ V/m)	Limit @ 3.0 m (dB μ V/m)	Test Margin (dB)
	Pol. (V/H)	Height (metres)							
809.650	H	3.79	224.00	Q.P.	24.88	-1.29	23.59	46.00	-22.41
819.200	H	1.00	88.00	Q.P.	25.85	-0.76	25.09	46.00	-20.91
824.600	V	1.50	157.00	Q.P.	25.25	-0.66	24.59	46.00	-21.41
841.900	H	1.68	153.00	Q.P.	29.88	-0.28	29.60	46.00	-16.40
852.200	H	1.53	90.00	Q.P.	24.63	0.13	24.76	46.00	-21.24
905.900	V	2.48	126.00	Q.P.	24.57	1.06	25.63	46.00	-20.37
924.750	H	3.08	240.00	Q.P.	23.97	1.09	25.06	46.00	-20.94
936.700	H	2.78	192.00	Q.P.	24.04	1.33	25.37	46.00	-20.63

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

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Radiated Emissions Test Results cont'd

Test Configuration 8

The following measurement was performed by Fahd Faisal.

The environmental test conditions were: Temperature: 25 °C
 Pressure: 1008 mb
 Relative Humidity: 27 %

The BlackBerry® smartphone, PIN 310F4B7E was tested on November 24, 2009

Test Distance was 3.0 metres.

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+c orr) (dB μ V/m)	Limit @ 3.0 m (dB μ V/m)	Test Margin (dB)
	Pol. (V/H)	Height (metres)							
50.500	V	1.58	27.00	Q.P.	49.99	-23.00	26.99	40.00	-13.01
51.700	H	4.00	145.00	Q.P.	40.04	-23.05	16.99	40.00	-23.01
51.750	V	1.44	353.00	Q.P.	55.45	-23.05	32.40	40.00	-7.60
84.400	V	2.75	57.00	Q.P.	37.64	-20.27	17.37	40.00	-22.63
125.500	V	1.41	156.00	Q.P.	43.06	-18.30	24.76	43.50	-18.74

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

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Radiated Emissions Test Results cont'd

Test Configuration 9

The following measurement was performed by Fahd Faisal.

The environmental test conditions were: Temperature: 25 °C
 Pressure: 1008 mb
 Relative Humidity: 27 %

The BlackBerry® smartphone, PIN 310F4B7E was tested on November 24, 2009

Test Distance was 3.0 metres.

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+c orr) (dB μ V/m)	Limit @ 3.0 m (dB μ V/m)	Test Margin (dB)
	Pol. (V/H)	Height (metres)							
46.950	H	3.11	157.00	Q.P.	47.77	-22.27	25.50	40.00	-14.50
47.900	V	1.72	89.00	Q.P.	48.69	-22.52	26.17	40.00	-13.83
98.350	V	1.55	348.00	Q.P.	43.72	-18.57	25.15	43.50	-18.35
107.950	V	2.00	112.00	Q.P.	39.83	-17.83	22.00	43.50	-21.50
108.000	V	1.40	123.00	Q.P.	41.48	-17.83	23.65	43.50	-19.85

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