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-0552-0804-14

PRODUCT MODEL NO.: RBT71UW
TYPE NAME: BlackBerry® smartphone
FCC ID: L6ARBT70UW
IC: 2503A-RBT70UW

DATE: 06 May, 2008

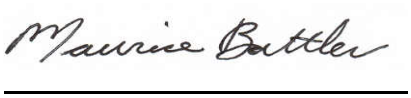
Statement of Performance:

The BlackBerry® smartphone, model RBT71UW, part number CER-17671-001 Rev. 2, 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:



Maurice Battler
Compliance Specialist
Date: 06 May, 2008

Reviewed by:

Masud S. Attayi, P.Eng.
Team Lead, Regulatory Compliance
Date: 09 May, 2008

Approved by:

Paul G. Cardinal, Ph.D.
Director
Date: 14 May, 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, September 20, 2007 Class B Digital Devices, Unintentional Radiators
- IC ICES-003 Issue 4, February 2004, Class B Digital Devices, Unintentional Radiators

B. Associated Document

1. Document number RTS-0552-RBT71UW-01

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 facility, located at:

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

The testing was performed on April 02 to May 02, 2008.

The sample EUT included:

SAMPLE	MODEL	CER NUMBER	PIN
1	RBT71UW	CER-17671-001 Rev. 1	206CE13A
2	RBT71UW	CER-17671-001 Rev. 2	206EB117

To view the differences between CER-17671-001 Rev. 1 and CER-17671-001 Rev. 2, see document number RTS-0552-RBT71UW-01.

Only the measurements that may have been impacted by the changes from Rev 1 to Rev 2 were re-measured.

BlackBerry® smartphone Accessories Tested

1) Folding Blade Charger, part number ASY-07040-002 with an output voltage of 5.0 volts dc, 750 mA and attached USB cable with a lead length of 1.80 metres.
2) Alternative Folding Blade Charger, part number ASY-12709-001 with an output voltage of 5.0 volts dc, 750 mA with an attached USB cable with a length of 1.80 metres.
3) Captive Cable Charger, part number ASY-07559-001 with an output voltage of 5.0 volts dc, 500 mA and attached USB cable with a lead length of 1.80 metres.
4) Alternative Captive Cable Charger part number HDW-14917-001 with an output voltage of 5.0 volts dc, 750 mA and attached USB cable with a lead length of 1.80 metres.
5) BlackBerry® Power Station, part number HDW-12736-001 Rev. 2
6) USB Data Cable, part number HDW-06610-001, 1.45 metres long.
7) Mini External Battery Charger, part number HDW-12743-004
8) Extra Bluetooth Headset including Charging Pocket, part number ASY-12747-002
9) Headset Adapter (2.5 mm plug to 3.5 mm jack), part number HDW-15306-002
10) Stereo Headset, 3.5 mm, part number HDW-14322-001, 1.3 metres long.
11) Premium Single Button Stereo Headset, 3.5 mm, part number HDW-15766-001, 1.3 metres long.
12) Stereo Headset, 2.5 mm, part number HDW-13019-001, 1.3 metres long
13) Mono Headset, 2.5 mm, part number HDW-03458-001, 1.25 metres long
14) Premium black Mono Headset, 3.5 mm part number HDW-17906-001
15) BlackBerry® Charging Pod, part number HDW-16216-001
16) BlackBerry® Remote Stereo Gateway, part number ASY-16007-001

D. Support Equipment Used for the Testing of the EUT

1) IBM Thinkpad Lenovo T60p laptop, type 8742, product ID 8742C2U

E. Modifications to EUT

No modifications were required on the EUT.

F. 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) 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® 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 206CE13A in WCDMA idle mode with the 3.5 mm Premium Headset connected was connected to the Folding Blade Charger.
2. The BlackBerry® smartphone PIN 206EB117 in GPS Receive mode with the 3.5 mm Alternate Stereo Headset connected was connected to the Alternative Folding Blade Charger.

3. The BlackBerry® smartphone PIN 206CE13A in GSM idle mode with the 2.5mm Mono Headset and the Headset adapter was connected to the Captive Cable Charger.
4. The BlackBerry® smartphone PIN 206CE13A in WCDMA idle mode with the 3.5mm Stereo Headset connected was connected to the Captive Cable Charger.
5. The BlackBerry® smartphone PIN 206EB117 with the Bluetooth Headset, and 3.5 mm Single Button Stereo Headset was connected to the BlackBerry® Power Station which was connected to an extra Bluetooth Headset and to the Mini External Battery Charger. The BlackBerry® smartphone was in PCS idle mode.
6. The BlackBerry® smartphone PIN 206EB117 with the Bluetooth Headset and 3.5 mm Premium Mono Headset was connected to the BlackBerry® Power Station which was connected to an extra Bluetooth Headset. The BlackBerry® smartphone was in PCS idle mode.

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 11.26 dB below the QP limit at 0.150 MHz using the quasi-peak detector for the Captive Cable charger, test configuration 3.

Measurement Uncertainty ±2.0 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 polarisations of the emissions were measured.

The measurements were done in a semi-anechoic chamber. The semi-anechoic chamber FCC registration number is **778487** and the Industry Canada site 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 206EB117 in WCDMA Band V idle mode with the 2.5 mm Stereo Headset attached via the Headset Adapter was positioned on the BlackBerry Charging Pod which was connected to the Folding Blade Charger.
2. The BlackBerry® smartphone, PIN 206EB117 in Bluetooth Tx mode was connected to the Folding Blade Charger.
3. The BlackBerry® smartphone, PIN 206EB117 in 802.11b/g Tx mode with the 3.5 mm Stereo Headset attached was positioned on the BlackBerry Charging Pod which was connected to the Alternative Folding Blade Charger.
4. The BlackBerry® smartphone, PIN 206EB117 in 802.11a Tx mode with the 2.5 mm Mono Headset attached via the Headset Adapter was connected to the Alternative Folding Blade Charger.
5. The BlackBerry® smartphone, PIN 206EB117 in Bluetooth Tx mode with the 2.5 mm Stereo Headset attached via the Headset Adapter was connected to the Captive Cable Charger.
6. The BlackBerry® smartphone, PIN 206CE13A in GSM850 idle mode with the 2.5 mm black Stereo Headset attached via the Headset Adapter was positioned on the BlackBerry Charging Pod which was connected to the Captive Cable Charger. The IBM Thinkpad Lenovo T60p laptop through the USB Data Cable was connected to the BlackBerry® smartphone.
7. The BlackBerry® smartphone, PIN 206EB117 in PCS1900 idle mode with the 3.5 mm Alternative black Stereo Headset was connected to the Alternative Captive Cable Charger. The BlackBerry® Remote Stereo Gateway IBM in Bluetooth Tx mode was connected to the Thinkpad Lenovo T60p laptop through the USB Data Cable.
8. The BlackBerry® smartphone, PIN 206EB117 in GPS Rx mode with the 3.5 mm Premium Single Button Stereo Headset was connected to the BlackBerry® Power Station.
9. The BlackBerry® smartphone, PIN 206EB117 in WCDMA Band II Idle mode with the 3.5 mm Premium Single Button Stereo Headset was connected to the BlackBerry® Power Station with the Mini External Battery Charger which was charging an extra battery.

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 6.97 dB at 96.056 MHz using test configuration 6.

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 ±4.0 dB

To view the test data see APPENDIX 2.

G. Compliance Test Equipment Used

UNIT	MANUFACTURER	MODEL	SERIAL NUMBER	CAL DUE DATE (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
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
L.I.S.N.	Emco	3816/2	1120	08-08-28	Conducted Emissions
Impulse Limiter	Rohde & Schwarz	ESHS-Z2	100786	08-09-11	Conducted Emissions
Hybrid Log Antenna	TDK	HLP-3003C	17401	08-08-04	Radiated Emissions
Horn Antenna	TDK	HRN-0118	030101	08-07-26	Radiated Emissions
Universal Radio Communication Tester	R&S	CMU 200	837493/073	08-12-06	Radiated/Conducted Emission
EMI Receiver	Agilent	8546A	3942A00517	08-11-19	Conducted/Radiated Emissions
RF Filter Section	Agilent	85460A	3704A00481	08-11-19	Conducted/Radiated Emissions

APPENDIX 1 - AC LINE CONDUCTED EMISSIONS TEST DATA

AC Conducted Emissions Test Results

The measurements were performed by Anas Hawari and Gurjeev Singh.

Test Configuration 1

The environmental test conditions were:

Temperature	23ºC
Pressure	1025 mb
Relative Humidity	23%

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

Date of test: April 02, 2008

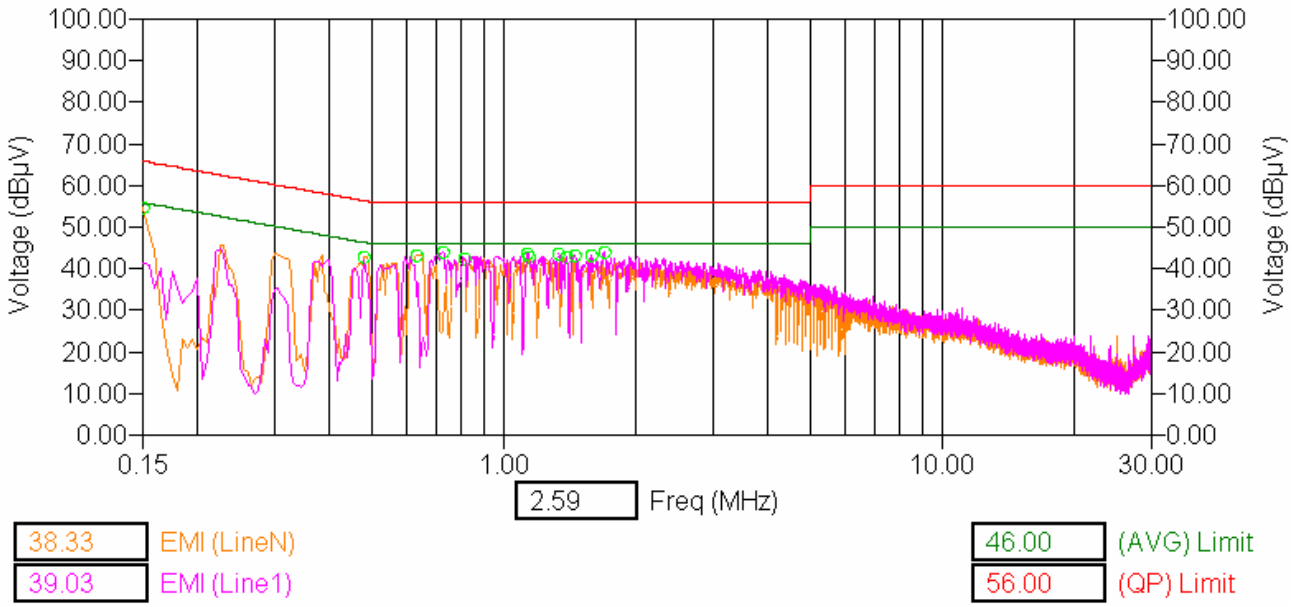
Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dB)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.155	N	38.79	9.87	48.66	66.00	56.00	-17.34
0.477	N	32.06	9.91	41.97	56.34	46.34	-14.37
0.625	N	30.66	9.93	40.59	56.00	46.00	-15.41
0.713	L1	32.97	9.94	42.91	56.00	46.00	-13.09
0.816	N	29.48	9.93	39.41	56.00	46.00	-16.59
1.112	L1	31.64	9.94	41.58	56.00	46.00	-14.42
1.144	N	27.71	9.94	37.65	56.00	46.00	-18.35
1.330	L1	29.87	9.95	39.82	56.00	46.00	-16.18
1.397	N	26.67	9.96	36.63	56.00	46.00	-19.37
1.453	L1	28.03	9.96	37.99	56.00	46.00	-18.01
1.587	L1	29.55	9.97	39.52	56.00	46.00	-16.48
1.703	L1	28.50	9.98	38.48	56.00	46.00	-17.52

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

Measurements were done with the quasi-peak detector.

See graph 1 for the measurement plot.

AC Conducted Emissions Test Graph 1



Test Configuration 1

AC Conducted Emissions Test Results

Test Configuration 2

The environmental test conditions were:

Temperature	23ºC
Pressure	1010 mb
Relative Humidity	26%

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

Date of test: May 05, 2008

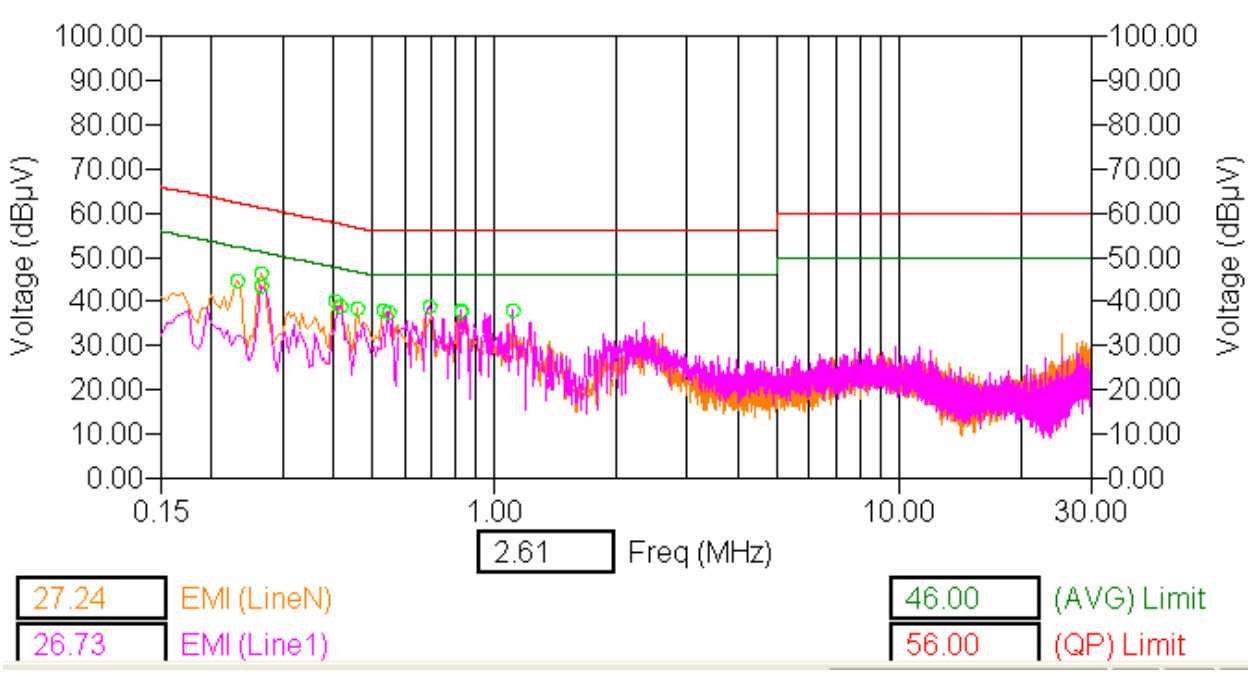
Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dB)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.271	N	32.29	9.88	42.17	61.27	51.27	-19.10
0.275	L1	29.00	9.88	38.88	61.27	51.27	-22.39
0.411	N	27.73	9.89	37.62	57.75	47.75	-20.13
0.415	L1	27.34	9.90	37.24	57.55	47.55	-20.31
0.468	N	23.81	9.92	33.73	56.69	46.69	-22.97
0.547	N	27.15	9.91	37.06	56.00	46.00	-18.94
0.554	L1	26.01	9.91	35.92	56.00	46.00	-20.08
0.681	L1	25.70	9.94	35.64	56.00	46.00	-20.36
0.817	N	24.72	9.93	34.65	56.00	46.00	-21.35
0.832	L1	23.62	9.93	33.55	56.00	46.00	-22.45

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

Measurements were done with the quasi-peak detector.

See graph 2 for the measurement plot.

AC Conducted Emissions Test Graph 2



Test Configuration 2

AC Conducted Emissions Test Results

Test Configuration 3

The environmental test conditions were:

Temperature	23ºC
Pressure	1026 mb
Relative Humidity	23%

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

Date of test: April 02, 2008

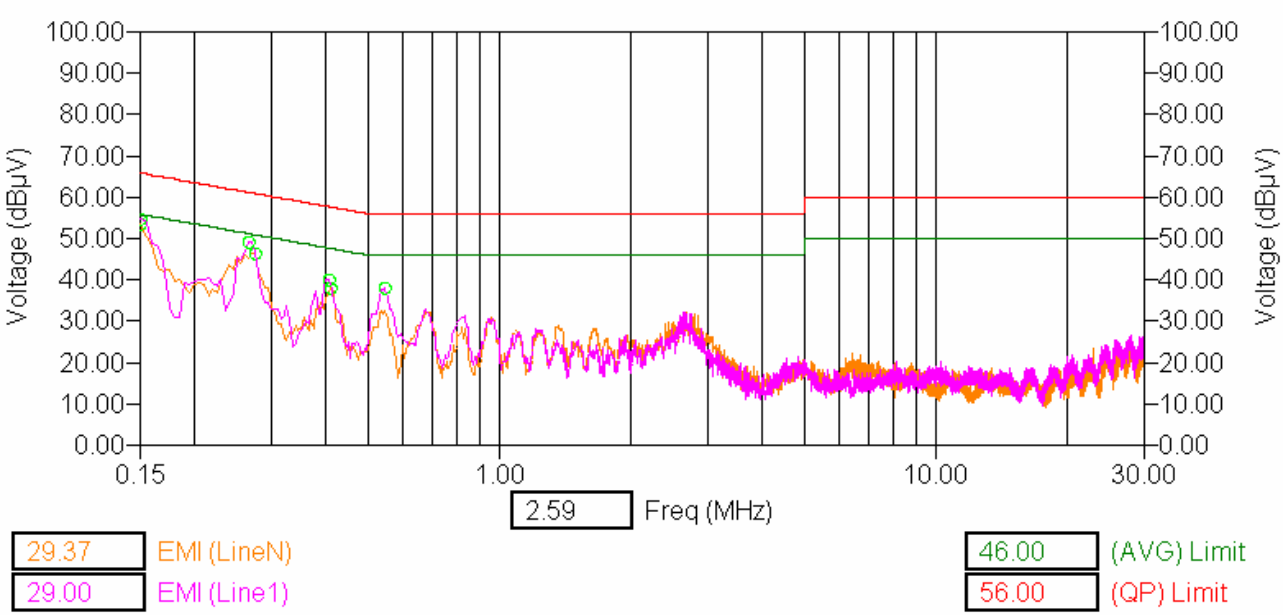
Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dB)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.150	N	42.63	9.87	52.50	66.00	56.00	-13.50
0.150	L1	44.60	9.87	54.47	65.73	55.73	**-11.26**
0.262	N	30.19	9.88	40.07	61.27	51.27	-21.20
0.267	L1	36.02	9.88	45.90	61.12	51.12	-15.22
0.400	N	24.45	9.89	34.34	57.85	47.85	-23.51
0.401	L1	26.52	9.89	36.41	57.85	47.85	-21.44
0.537	L1	25.05	9.91	34.96	56.00	46.00	-21.04

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

Measurements were done with the quasi-peak detector.

See graph 3 for the measurement plot.

AC Conducted Emissions Test Graph 3



Test Configuration 3

AC Conducted Emissions Test Results

Test Configuration 4

The environmental test conditions were:

Temperature	23ºC
Pressure	1005 mb
Relative Humidity	24%

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

Date of test: April 05, 2008

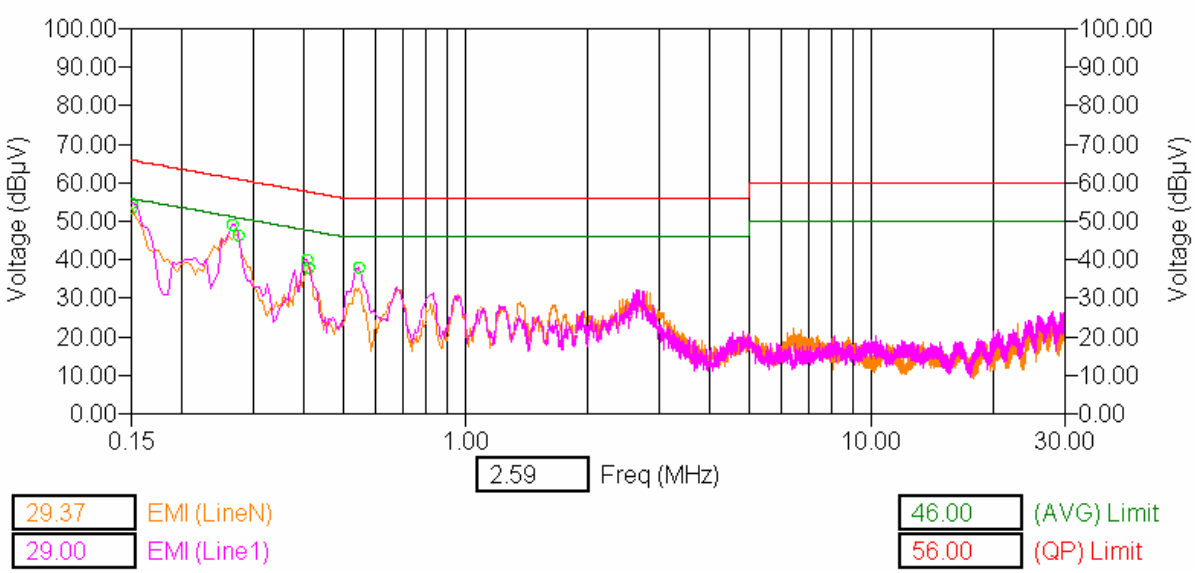
Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dB)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.154	N	39.21	9.87	49.08	66.00	56.00	-16.92
0.150	L1	43.90	9.87	53.77	66.00	56.00	-12.23
0.266	L1	35.44	9.88	45.32	61.27	51.27	-15.95
0.268	N	34.13	9.89	44.02	60.97	50.97	-16.95
0.401	L1	26.71	9.89	36.60	57.75	47.75	-21.15
0.405	N	24.82	9.90	34.72	57.65	47.65	-22.93
0.542	L1	25.15	9.91	35.06	56.00	46.00	-20.94

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

Measurements were done with the quasi-peak detector.

See graph 4 for the measurement plot.

AC Conducted Emissions Test Graph 4



Test Configuration 4

AC Conducted Emissions Test Results

Test Configuration 5

The environmental test conditions were:

Temperature	23ºC
Pressure	1014 mb
Relative Humidity	31%

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

Date of test: April 22, 2008

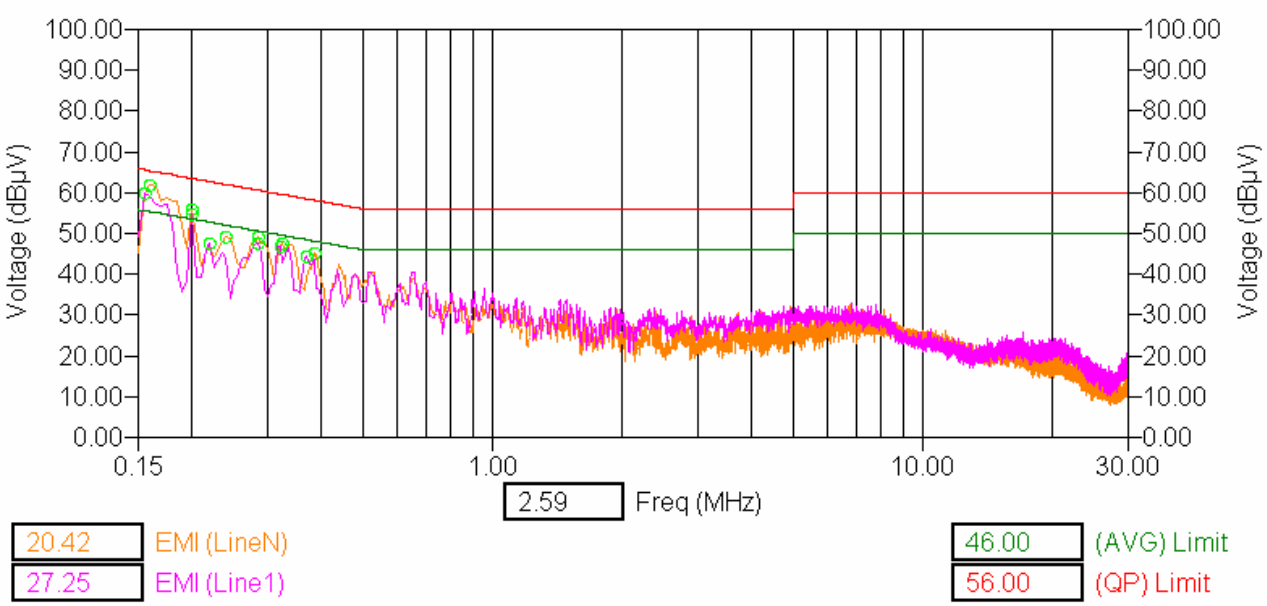
Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dB)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.166	L1	37.40	9.87	47.27	65.73	55.73	-18.46
0.159	N	37.12	9.87	46.99	65.46	55.46	-18.47
0.186	N	41.16	9.87	51.03	63.61	53.61	-12.58
0.182	L1	41.40	9.87	51.27	63.61	53.61	-12.34
0.208	L1	31.12	9.87	40.99	62.82	52.82	-21.83
0.257	N	38.88	9.87	48.75	62.10	52.10	-13.35
0.292	N	29.28	9.89	39.17	60.67	50.67	-21.50
0.290	L1	28.07	9.89	37.96	60.67	50.67	-22.71
0.310	L1	32.38	9.90	42.28	59.71	49.71	-17.43
0.313	N	32.87	9.89	42.76	59.58	49.58	-16.81
0.388	L1	29.82	9.89	39.71	58.50	48.50	-18.79
0.384	N	30.28	9.89	40.17	58.17	48.17	-18.00

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

Measurements were done with the quasi-peak detector.

See graph 5 for the measurement plot.

AC Conducted Emissions Test Graph 5



Test Configuration 5

AC Conducted Emissions Test Results

Test Configuration 6

The environmental test conditions were:

Temperature	23ºC
Pressure	1014 mb
Relative Humidity	31%

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

Date of test: April 22, 2008

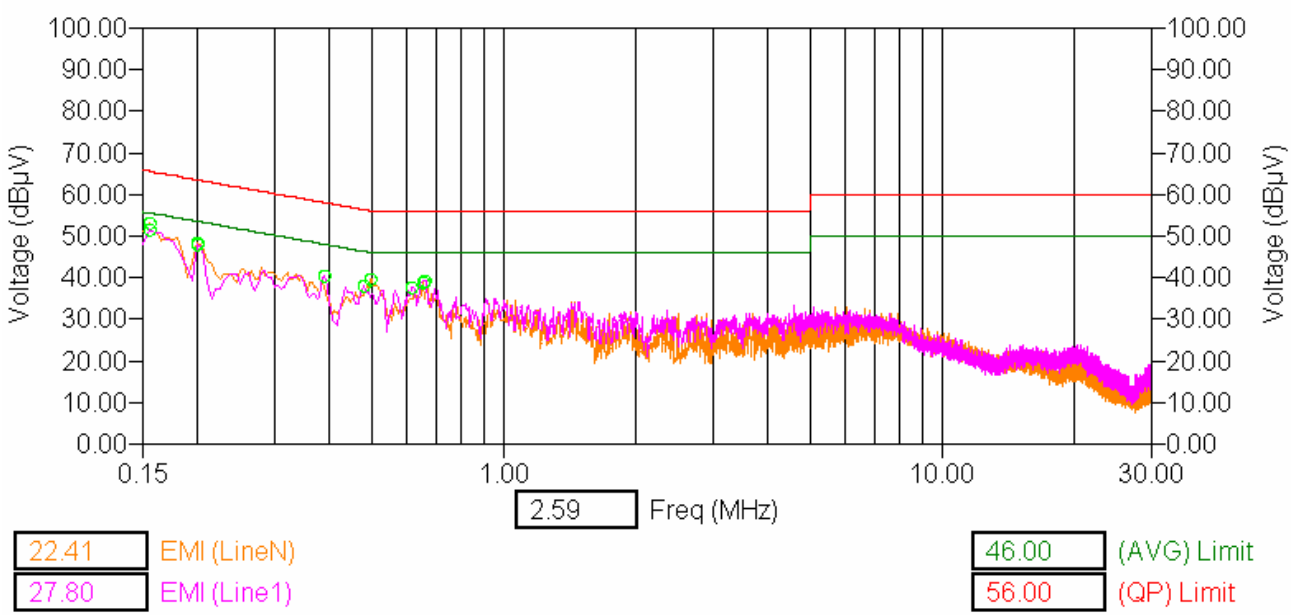
Frequency (MHz)	Line	Reading (QP) (dBµV)	Correction Factor (dB)	Corrected Reading (QP) (dB)	Limit (QP) (dBµV)	Limit (AV) (dBµV)	Margin (QP) Limits (dB)
0.157	N	40.55	9.87	50.42	65.73	55.73	-15.31
0.156	L1	38.92	9.87	48.79	65.73	55.73	-16.94
0.206	N	35.37	9.87	45.24	63.61	53.61	-18.37
0.208	L1	34.47	9.87	44.34	63.61	53.61	-19.27
0.385	L1	26.94	9.89	36.83	58.06	48.06	-21.23
0.477	L1	24.54	9.91	34.45	56.34	46.34	-21.89
0.493	N	26.49	9.90	36.39	56.08	46.08	-19.69
0.616	L1	23.66	9.92	33.58	56.00	46.00	-22.42
0.654	N	24.46	9.94	34.40	56.00	46.00	-21.60
0.647	L1	26.80	9.94	36.74	56.00	46.00	-19.26

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

Measurements were done with the quasi-peak detector.

See graph 6 for the measurement plot.

AC Conducted Emissions Test Graph 6



Test Configuration 6

APPENDIX 2 - RADIATED EMMISIONS TEST DATA

Radiated Emissions Test Results

The measurements were performed by Vimal Olaganathan

Test Configuration 1

The environmental test conditions were:

Temperature	23ºC
Pressure	1012 mb
Relative Humidity	28%

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

Date of test: April 08, 2008

Test Distance was 3.0 metres.

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)
78.614	V	2.09	279	Q.P.	37.81	-21.85	15.96	40.00	-24.04
85.477	H	2.19	42	Q.P.	40.87	-21.61	19.26	40.00	-20.74
124.819	V	2.39	242	Q.P.	50.71	-18.12	32.59	43.50	-10.91
124.816	H	1.46	167	Q.P.	53.90	-18.12	35.78	43.50	-7.72
171.008	V	1.48	216	Q.P	46.59	-17.39	29.20	43.50	-14.30
171.062	H	1.83	161	Q.P	50.25	-17.38	32.87	43.50	-10.63
198.877	H	1.53	137	Q.P	46.12	-14.09	32.03	43.50	-11.47
205.812	V	1.40	67	Q.P	46.23	-14.34	31.89	43.50	-11.61
254.210	H	1.06	171	Q.P	48.33	-15.53	32.80	46.00	-13.20
254.211	V	1.61	197	Q.P	41.70	-15.53	26.17	46.00	-19.83
399.736	H	2.01	122	Q.P	41.93	-10.27	31.66	46.00	-14.34
400.006	V	2.21	280	Q.P	41.27	-10.27	31.00	46.00	-15.00

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

Radiated Emissions Test Results cont'd

Test Configuration 2

The environmental test conditions were:

Temperature	22ºC
Pressure	1013 mb
Relative Humidity	27%

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

Date of test: April 08, 2008 Test Distance was 3.0 metres.

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)
171.178	H	1.81	127	Q.P.	52.42	-17.38	35.04	43.50	-8.46
171.098	V	1.45	201	Q.P.	49.42	-17.38	32.04	43.50	-11.46
205.770	V	1.42	260	Q.P.	43.20	-14.35	28.85	43.50	-14.65
214.922	H	1.36	141	Q.P.	47.13	-15.27	31.86	43.50	-11.64
217.344	H	1.24	127	Q.P.	49.26	-15.53	33.73	46.00	-12.27
254.502	V	1.54	186	Q.P.	46.22	-15.50	30.72	46.00	-15.28
256.643	H	1.13	127	Q.P.	48.71	-15.26	33.45	46.00	-12.55
256.730	V	1.57	186	Q.P.	45.39	-15.25	30.14	46.00	-15.86
480.011	H	2.02	220	Q.P.	40.46	-8.05	32.41	46.00	-13.59
480.023	V	1.57	96	Q.P.	37.60	-8.05	29.55	46.00	-16.45
520.000	H	1.60	210	Q.P.	42.53	-7.41	35.12	46.00	-10.88
520.027	V	1.56	112	Q.P.	42.06	-7.41	34.65	46.00	-11.35

Radiated Emissions Test Results cont'd

Test Configuration 3

The environmental test conditions were:

Temperature	23ºC
Pressure	1006 mb
Relative Humidity	30%

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

Date of test: May 02, 2008

Test Distance was 3.0 metres.

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)
134.331	H	2.28	136.00	Q.P.	37.30	-18.21	19.09	43.50	-24.41

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

Radiated Emissions Test Results cont'd

Test Configuration 4

The environmental test conditions were:

Temperature	23ºC
Pressure	1017 mb
Relative Humidity	24%

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

Date of test: April 08, 2008

Test Distance was 3.0 metres.

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)
67.055	H	2.48	132	Q.P.	39.52	-21.93	17.59	40.00	-22.41
67.097	V	1.72	260	Q.P.	43.36	-21.93	21.43	40.00	-18.57
127.173	V	1.46	211	Q.P.	41.87	-18.18	23.69	43.50	-19.81
235.653	V	1.67	171	Q.P.	43.65	-16.54	27.11	46.00	-18.89
235.874	H	1.25	181	Q.P.	50.65	-16.55	34.10	46.00	-11.90
390.790	V	1.81	78	Q.P.	36.15	-10.51	25.64	46.00	-20.36
404.484	H	1.93	206	Q.P.	44.82	-10.04	34.78	46.00	-11.22
480.015	H	1.91	246	Q.P.	43.73	-8.05	35.68	46.00	-10.32
480.022	V	2.14	72	Q.P.	38.85	-8.05	30.80	46.00	-15.20
520.044	V	2.10	191	Q.P.	37.74	-7.41	30.33	46.00	-15.67

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

Radiated Emissions Test Results cont'd

Test Configuration 5

The environmental test conditions were: Temperature 23ºC
Pressure 1015
Relative Humidity 24%

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

Date of test: April 08, 2008

Test Distance was 3.0 metres.

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)
33.454	H	3.99	67	Q.P.	44.30	-19.06	25.24	40.00	-14.76
34.594	V	2.39	174	Q.P.	44.83	-19.47	25.36	40.00	-14.64
44.686	H	2.91	230	Q.P.	47.38	-21.91	25.47	40.00	-14.53
45.287	V	2.15	170	Q.P.	50.01	-22.05	27.96	40.00	-12.04
88.433	V	1.47	210	Q.P.	49.55	-21.65	27.90	43.50	-15.60
116.331	V	1.40	235	Q.P.	45.83	-18.22	27.61	43.50	-15.89
120.650	H	1.49	155	Q.P.	46.47	-18.18	28.29	43.50	-15.21
164.562	H	1.25	241	Q.P.	44.87	-17.95	26.92	43.50	-16.58
480.024	H	1.81	240	Q.P.	44.61	-8.05	36.56	46.00	-9.44
480.027	V	1.87	111	Q.P.	38.52	-8.05	30.47	46.00	-15.53
520.016	H	1.45	245	Q.P.	40.84	-7.41	33.43	46.00	-12.57
520.040	V	1.52	121	Q.P.	40.62	-7.41	33.21	46.00	-12.79

Radiated Emissions Test Results cont'd

Test Configuration 6

The environmental test conditions were:

Temperature	23ºC
Pressure	1011 mb
Relative Humidity	25%

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

Date of test: April 07, 2008

Test Distance was 3.0 metres.

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)
31.990	V	1.43	133	Q.P	36.04	-18.57	17.47	40.00	-22.53
32.070	H	1.15	63	Q.P	41.96	-18.60	23.36	40.00	-16.64
96.056	H	1.95	130	Q.P	57.49	-20.96	36.53	43.50	**-6.97**
96.061	V	1.40	47	Q.P	54.31	-20.96	33.35	43.50	-10.15
212.955	V	2.51	18	Q.P	38.60	-15.00	23.60	43.50	-19.90
239.986	H	1.44	211	Q.P	48.63	-16.60	32.03	46.00	-13.97
240.013	V	1.84	162	Q.P	43.85	-16.60	27.25	46.00	-18.75
428.638	V	1.40	12	Q.P	45.47	-9.84	35.63	46.00	-10.37
428.965	H	1.72	99	Q.P	41.26	-9.85	31.41	46.00	-14.59
432.013	H	2.51	206	Q.P	45.94	-9.72	36.22	46.00	-9.78
432.035	V	2.19	167	Q.P	41.50	-9.71	31.79	46.00	-14.21
480.021	H	2.04	235	Q.P	35.85	-8.05	27.80	46.00	-18.20

Radiated Emissions Test Results cont'd

Test Configuration 7

The environmental test conditions were:

Temperature	23ºC
Pressure	1012 mb
Relative Humidity	28%

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

Date of test: April 08, 2008

Test Distance was 3.0 metres.

Frequency (MHz)	Antenna Pol. (V/H)	Antenna Height (metres)	Test Angle (Deg.)	Detector (Q.P. or AVE.)	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)
32.623	V	1.87	136	Q.P.	39.18	-18.85	20.33	40.00	-19.67
32.773	H	1.18	135	Q.P.	46.19	-18.89	27.30	40.00	-12.70
51.049	H	3.05	215	Q.P.	53.12	-22.67	30.45	40.00	-9.55
52.129	V	1.72	350	Q.P.	49.78	-22.81	26.97	40.00	-13.03
177.968	V	1.40	344	Q.P.	42.08	-16.98	25.10	43.50	-18.40
180.275	H	1.68	77	Q.P.	52.04	-16.93	35.11	43.50	-8.39
235.666	H	1.50	277	Q.P.	54.08	-16.54	37.54	46.00	-8.46
245.138	V	2.06	339	Q.P.	44.86	-16.29	28.57	46.00	-17.43
399.857	H	1.01	121	Q.P.	45.59	-10.27	35.32	46.00	-10.68
425.921	V	1.47	22	Q.P.	45.23	-9.86	35.37	46.00	-10.63
480.026	H	1.56	186	Q.P.	42.18	-8.05	34.13	46.00	-11.87
480.047	V	2.18	161	Q.P.	39.45	-8.05	31.40	46.00	-14.60

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

Radiated Emissions Test Results cont'd

Test Configuration 8

The environmental test conditions were:

Temperature	23ºC
Pressure	1012 mb
Relative Humidity	28%

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

Date of test: April 08, 2008

Test Distance was 3.0 metres.

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)
35.455	V	3.99	106	Q.P	34.68	-19.68	15.00	40.00	-25.00
68.827	V	1.63	298	Q.P	39.89	-21.66	18.23	40.00	-21.77
73.722	V	3.00	342	Q.P	41.49	-21.55	19.94	40.00	-20.06
74.067	H	2.34	96	Q.P	36.63	-21.55	15.08	40.00	-24.92
91.537	H	2.64	140	Q.P	41.94	-21.45	20.49	43.50	-23.01
137.257	V	1.51	175	Q.P	38.04	-18.05	19.99	43.50	-23.51

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

Radiated Emissions Test Results cont'd

Test Configuration 9

The environmental test conditions were: Temperature 23ºC
Pressure 1006 mb
Relative Humidity 31%

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

Date of test: April 23, 2008

Test Distance was 3.0 metres.

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)
49.05	H	3.40	234.00	Q.P	38.06	-22.46	15.60	40.00	-24.40
49.10	V	1.40	343.00	Q.P	43.90	-22.47	21.43	40.00	-18.57
72.92	V	2.05	307.00	Q.P	47.49	-21.57	25.92	40.00	-14.08
74.47	H	2.27	190.00	Q.P	46.13	-21.60	24.53	40.00	-15.47
85.78	V	2.72	146.00	Q.P	39.84	-21.57	18.27	40.00	-21.73
85.89	H	2.12	294.00	Q.P	53.67	-21.58	32.09	40.00	-7.91
191.21	H	1.85	101.00	Q.P	45.13	-15.78	29.35	43.50	-14.15
194.26	V	2.67	231.00	Q.P	38.70	-14.89	23.81	43.50	-19.69
312.07	H	1.00	265.00	Q.P	36.41	-12.26	24.15	46.00	-21.85
364.03	H	1.03	191.00	Q.P	27.50	-11.43	16.07	46.00	-29.93
364.03	V	1.47	107.00	Q.P	29.13	-11.43	17.70	46.00	-28.30
873.68	V	3.11	146.00	Q.P	21.67	0.14	21.81	46.00	-24.19

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