



1250 Peterson Dr., Wheeling, IL 60090

Company: RF Technologies, Inc.  
Model Tested: 0800-0351 (Internal Antenna), 0800-0354 (External Antenna)  
Report Number: 14076

FCC Rules and Regulations / CFR 47

Receivers and all other Unintentional Radiators

Part 15, Subpart B, Sections 15.107a & 15.109a

**THE FOLLOWING MEETS THE ABOVE TEST SPECIFICATION**

Formal Name: Extended Range Router

Kind of Equipment: Nurse Call and Security Device

Test Configuration: Wired power via wall transformer. Serial data cable also tested. (Tested at 120 vac, 60 Hz)

Model Number(s): 0800-0351 & 0800-0354

Model(s) Tested: 0800-0351 (Internal Antenna), 0800-0354 (External Antenna)

Serial Number(s): N/A

Date of Tests: April 3 & 4, 2008

Test Conducted For: RF Technologies, Inc.  
3125 North 126th Street  
Brookfield, Wisconsin 53066

**NOTICE:** "This test report relates only to the items tested and must not be used by the client to claim product endorsement by NVLAP, NIST, or any agency of the U.S. Government". Please see the "Additional Description of Equipment Under Test" page listed inside of this report.

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Report Number: 14076

SIGNATURE PAGE

Report By:

Arnom C. Rowe  
Test Engineer  
EMC-001375-NE

Reviewed By:

William Stumpf  
OATS Manager

Approved By:

Brian Mattson  
General Manager



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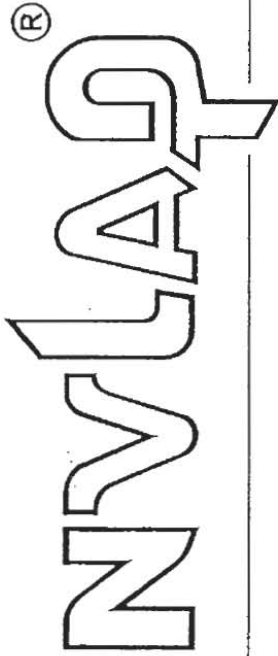


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14076

United States Department of Commerce  
National Institute of Standards and Technology



# Certificate of Accreditation to ISO/IEC 17025:2005

NVLAP LAB CODE: 100276-0

**D.L.S. Electronic Systems, Inc.**  
Wheeling, IL

is accredited by the National Voluntary Laboratory Accreditation Program for specific services,  
listed on the Scope of Accreditation, for:

## ELECTROMAGNETIC COMPATIBILITY AND TELECOMMUNICATIONS

This laboratory is accredited in accordance with the recognized International Standard ISO/IEC 17025:2005.  
This accreditation demonstrates technical competence for a defined scope and the operation of a laboratory quality management system (refer to joint ISO-ILAC-IAF Communiqué dated 18 June 2005).



2007-10-01 through 2008-09-30

Effective dates

*Dolly S. Buser*  
For the National Institute of Standards and Technology

NVI AP-01C (REV. 2006-09-13)



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Model Tested: 0800-0351 (Internal Antenna), 0800-0354 (External Antenna)  
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## 1.0 SUMMARY OF TEST REPORT

It was found that the Extended Range Router, Model Number(s) 0800-0351 (Internal Antenna), 0800-0354 (External Antenna), **meets** the radio interference Power Line Conducted and Radiated emission requirements of FCC "Rules and Regulations", Part 15, Subpart B, Sections 15.107a & 15.109a for Receivers and all other Unintentional Radiators.

## 2.0 INTRODUCTION

On April 3 & 4, 2008, a series of radio frequency interference measurements was performed on Extended Range Router, Model Number(s) 0800-0351 (Internal Antenna), 0800-0354 (External Antenna), Serial Number: N/A. All tests were performed according to the procedures of the FCC as stated in the American National Standards Institute, ANSI C63.4-2003. These test procedures were performed by personnel of D.L.S. Electronic Systems, Inc. who are responsible to Donald L. Sweeney, Senior EMC Engineer.

## 3.0 OBJECT

The purpose of this series of tests was to determine if the test sample could meet the radio frequency emission requirements of the FCC Rules and Regulations, Part 15, Subpart B, Sections 15.107a & 15.109a for Receivers and all other Unintentional Radiators.

## 4.0 TEST FACILITY

All emission tests were performed at D.L.S. Electronic Systems, Inc. according to the American National Standards Institute, ANSI C63.4-2003.

D.L.S. Electronic Systems, Inc. is a full service EMC/Safety Testing Laboratory accredited to ISO 17025. NVLAP Certificate and Scope can be viewed at <http://www.dlsemc.com/certificate>. Our facilities are registered with the FCC, Industry Canada, and VCCI.



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## 5.0 TEST EQUIPMENT

A list of the test equipment used can be found in Table 1. All primary equipment was calibrated against known reference standards with a verified traceable path to NIST.

## 6.0 POWER LINE CONDUCTED EMISSION MEASUREMENTS

Power Line Conducted emissions were measured in accordance with the American National Standards Institute, ANSI C63.4-2003. Plots and tabular data can be viewed in Appendix A of this test report.

All test measurements were made at a screen room temperature of **70°F** at **29%** relative humidity.

## 7.0 RADIATED EMISSION MEASUREMENTS

All tests were performed according to the procedures of ANSI C63.4-2003. Plots and tabular data can be viewed in Appendix B of this test report.

### NOTE:

FCC Part 15.33b states that measurements shall be made up to the 5th harmonic of the highest clock or timing frequency of the EUT. The highest timing frequency in the Extended Range Router is 32MHz. Therefore measurements were made up to 13000 MHz.

All radiated emissions measurements were made at a test room temperature of 72°F at 29% relative humidity.



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## 8.0 D.L.S. ELECTRONIC SYSTEMS, INC. MEASUREMENT UNCERTAINTY

Compliance with the limits in this standard are based on the results of the compliance measurement. Our calculated measurement uncertainty including the measurement instrumentation, associated connections between the various instruments in the measurement chain, and other contributions, are provided in this section of the test report.

<b>Line Conducted Uncertainty</b>		
Contribution	Probability Distribution	Uncertainty (+/- dB)
Combined Standard, Uncertainty	Normal	1.05
<b>Expanded Uncertainty</b>	<b>Normal (k=2)</b>	<b>2.10</b>

<b>Radiated Emission Uncertainty in MHz (1/4/08)</b>									
Contribution	Probability Distribution	(+/- dB)	(+/- dB)	(+/- dB)	(+/- dB)	(+/- dB)	(+/- dB)	(+/- dB)	(+/- dB)
		3M	3M	3M	3M	10 M	10 M	10 M	10 M
		30-100	100-700	700-1000	700-1000	30-100	100-700	700-1000	700-1000
Combined Standard Uncertainty	Normal	1.70	1.62	1.66	1.55	1.64	1.58	1.66	1.54
Expanded Uncertainty	Normal (k=2)	<b>3.40</b>	<b>3.23</b>	<b>3.33</b>	<b>3.11</b>	<b>3.29</b>	<b>3.16</b>	<b>3.31</b>	<b>3.09</b>



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## 9.0 DESCRIPTION OF TEST SAMPLE:

### 9.1 Description:

This test sample is a wireless transceiver device that receives signals from battery powered devices and transmits these signals to other test samples on route to a final destination. The test sample communicates with other routers to create a mesh of wireless connectivity.

The unit was tested in a constant TX modulated carrier mode. TX radiated emissions were also checked with a 50% TX/RX duty-cycle. For all RX tests, the unit was tested in a constant RX mode.

A maximum duty-cycle field condition was included with the tests.

### 9.2 PHYSICAL DIMENSIONS OF EQUIPMENT UNDER TEST

Length: 114mm x Width: 68mm x Height: 14mm

### 9.3 INTERNAL CLOCK FREQUENCIES:

32 MHz

### 9.4 DESCRIPTION OF ALL CIRCUIT BOARDS:

ZigBee Router PCB Assembly, Chipcon, Internal Antenna0830-0058 Rev. A

ZigBee Router PCB Assembly, Chipcon, External Antenna0830-0074 Rev. A





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## 10.0 MODIFICATIONS MADE TO EUT FOR EMC COMPLIANCE:

There were no additional descriptions noted at the time of test.

### NOTE:

The tests were run in the "Continuous Transmit" mode for the Low, Mid, and High channels with internal antenna for Model: 0800-0351 and external antenna for Model: 0800-0354. Two different AC power adapters were tested.

## 11.0 CONCLUSION

It was found that the Extended Range Router, Model Number(s) 0800-0351 (Internal Antenna), 0800-0354 (External Antenna) **meets** the radio interference Power Line Conducted and Radiated emission requirements of FCC Rules and Regulations, Part 15, Subpart B, Sections 15.107a & 15.109a for Receivers and all other Unintentional Radiators.



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## 12.0 PHOTO INFORMATION AND TEST SET-UP

Item 0 Extended Range Router

Model Number: 0800-0351 (Internal Antenna), 0800-0354 (External Antenna); Serial Number:  
N/A

Item 1 AC power adapter: Intelink Electronic model: ILD35-090200 or GlobTek model: GT-348-12-500R

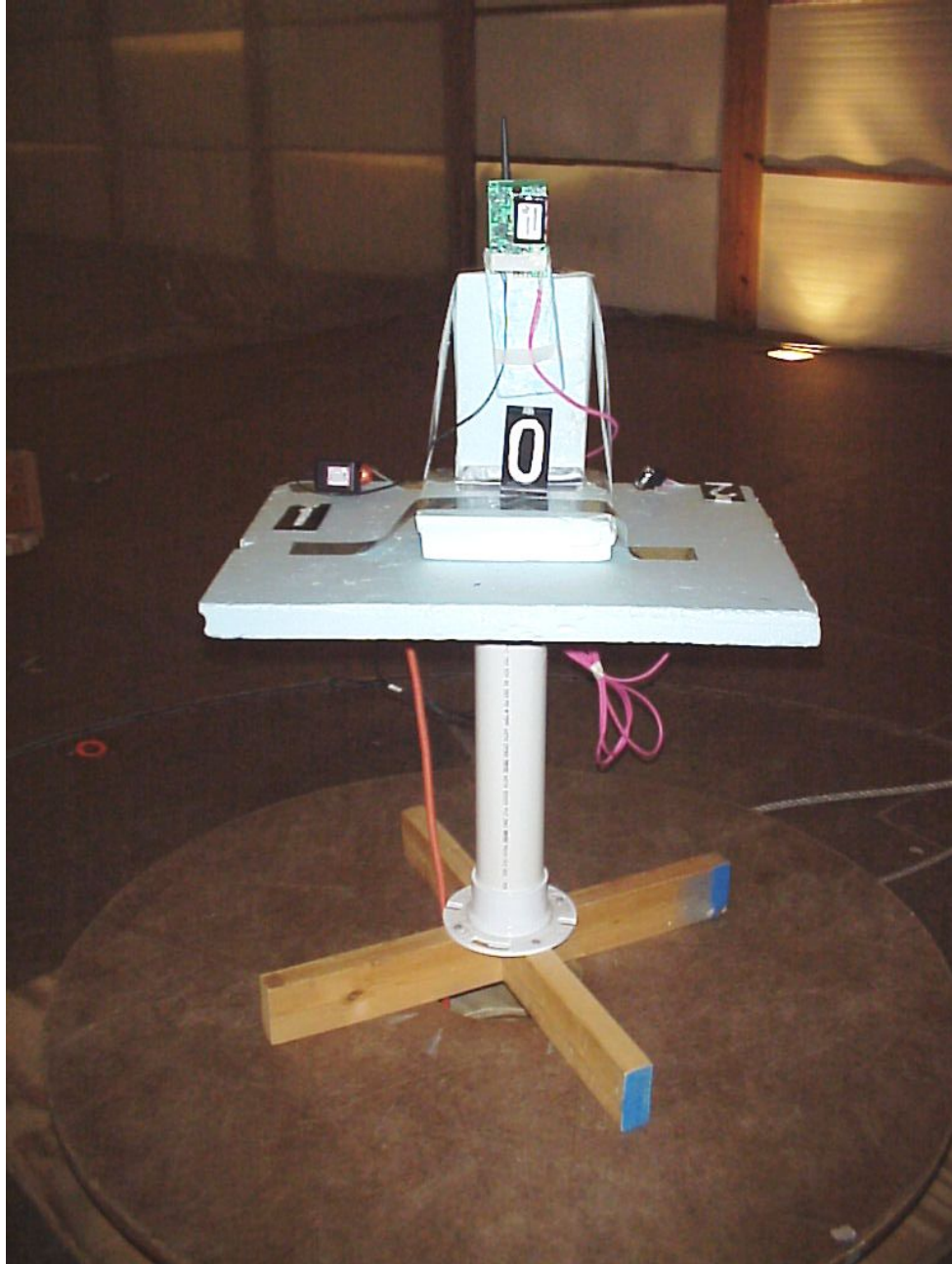
Item 2 Non-shielded RS-232 cable with Plastic Shells. 3m



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### 13.0 RADIATED PHOTOS TAKEN DURING TESTING



RADIATED FRONT



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### 13.0 RADIATED PHOTOS TAKEN DURING TESTING (CON'T)



**RADIATED REAR**





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#### 14.0 POWER LINE CONDUCTED PHOTOS TAKEN DURING TESTING



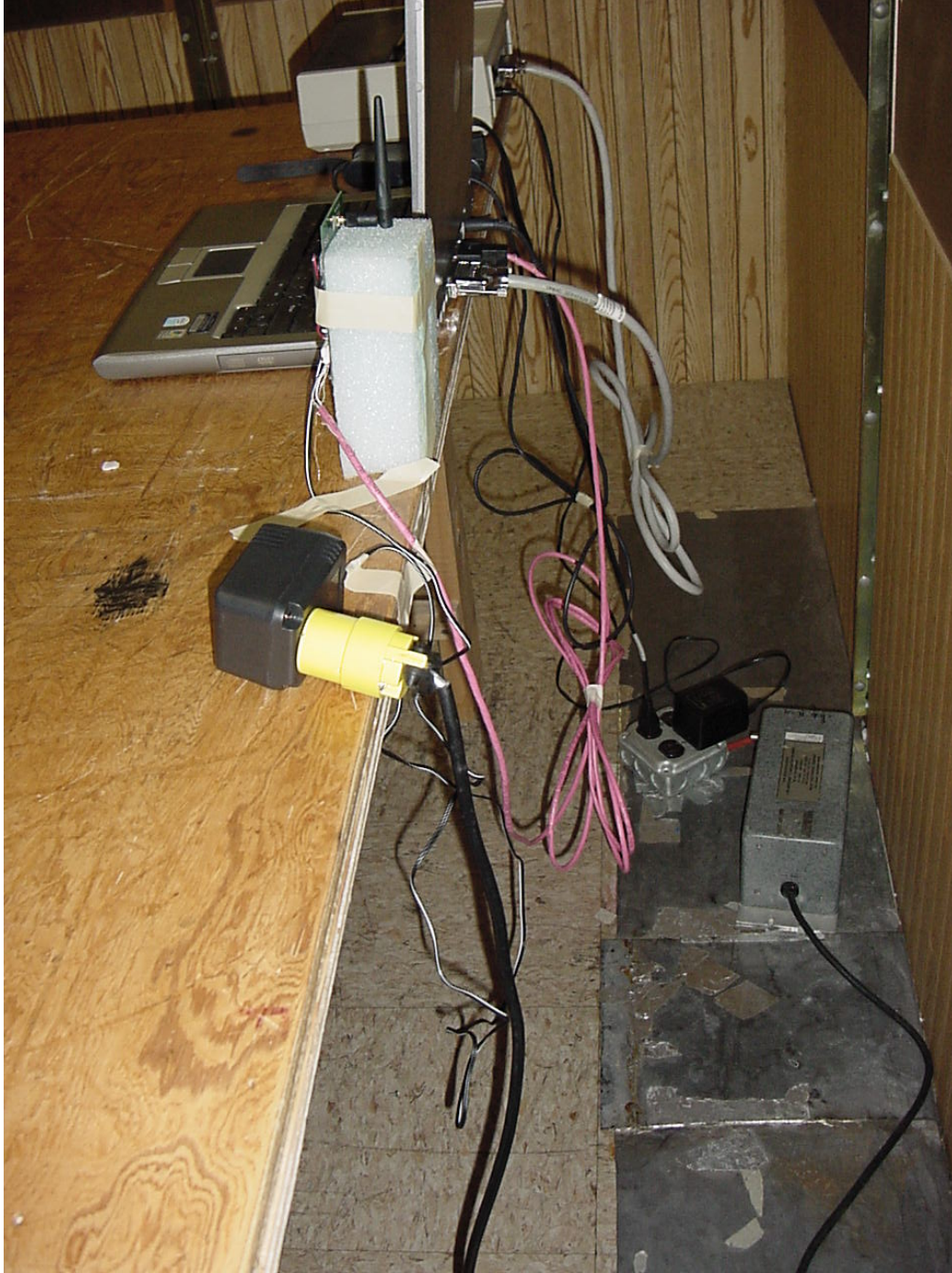
**LINE CONDUCTED**



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#### 14.0 POWER LINE CONDUCTED PHOTOS TAKEN DURING TESTING (CON'T)



**LINE CONDUCTED GLOBTEK**





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#### 14.0 POWER LINE CONDUCTED PHOTOS TAKEN DURING TESTING (CON'T)



LINE CONDUCTED INTELINK



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TABLE 1 – EQUIPMENT LIST

Test Equipment	Manufacturer	Model Number	Serial Number	Frequency Range	Cal Due Dates
Receiver	Rohde & Schwarz	ESI 26	837491/010	20 Hz – 26 GHz	11/08
Receiver	Rohde & Schwarz	ESI 40	837808/006	20 Hz – 40 GHz	12/08
Preamp	R&S	TS-PR10	032001/005	1GHz-10GHz	1/08
Preamp	Miteq	MF-6D-010100-50 A	213976	10GHz-18GHz	5/08
Preamp	Miteq	AMF-8B-180265-40-10P-H/S	438727	18GHz-26GHz	9/08
RF Limiter	Electrometrics	EM-7600	706		1/09
Antenna	EMCO	3104C	97014785	20 MHz – 200 MHz	2/08
Antenna	EMCO	3146	97024895	200 MHz – 1 GHz	3/08
Horn Antenna	EMCO	3115	5731	1-18GHz	6/08
Horn Antenna	EMCO	3115	6204	1-18GHz	5/08
Horn Antenna	EMCO	3116	2549	18 – 40GHz	5/08
LISN	SOLAR	9252-50-R-24-BNC	961019		7/08

All primary equipment is calibrated against known reference standards with a verified traceable path to NIST.





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# APPENDIX A

CONDUCTED EMISSIONS DATA

AND

CHARTS TAKEN DURING TESTING

GLOBTEK SUPPLY

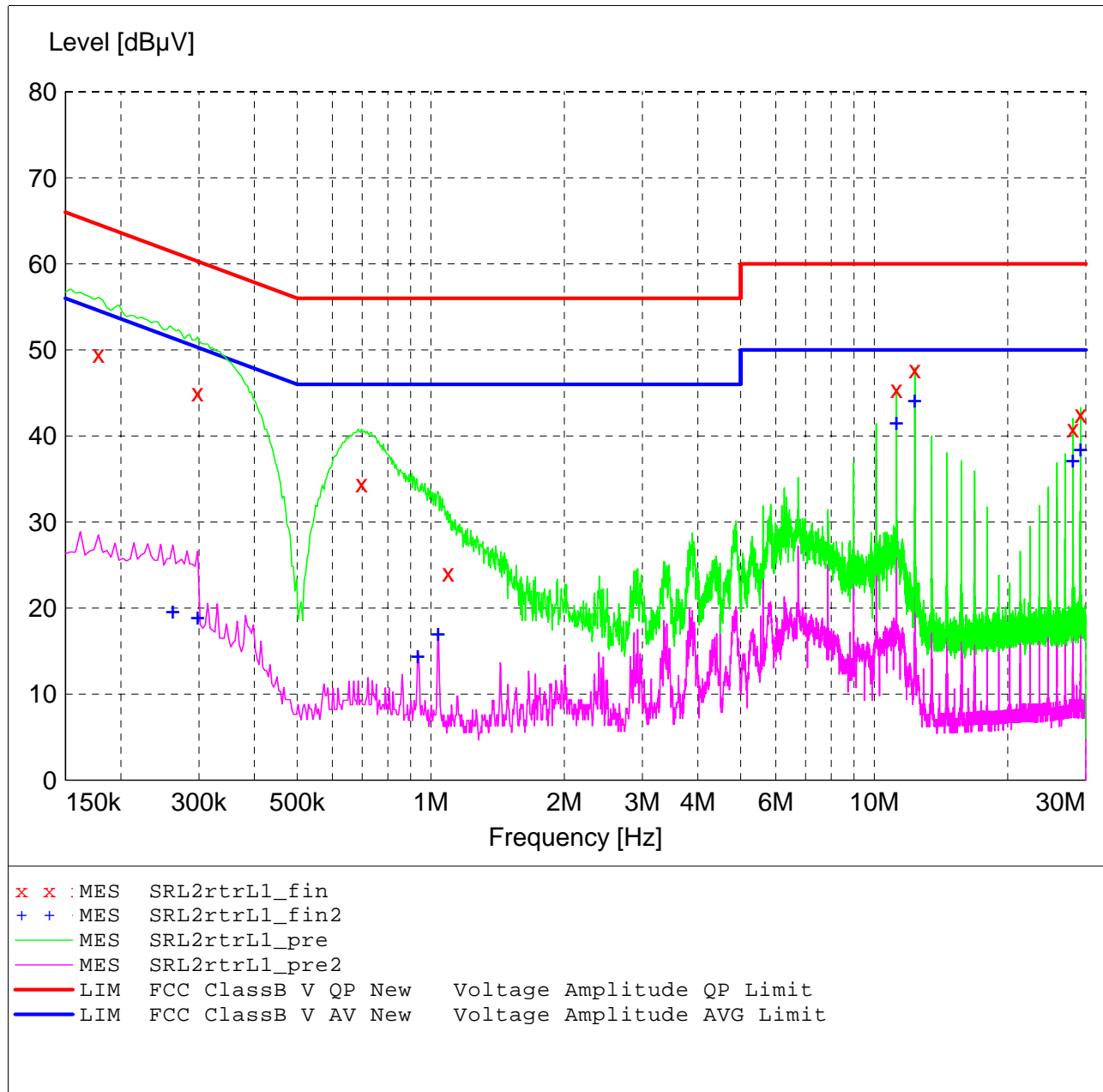
**FCC Part 15 Class B**

**Voltage Mains Test**

EUT: Extended Range Router w/ GlobTek supply  
 Manufacturer: RF Technologies  
 Operating Condition: 70 deg. F, 29% R.H.  
 Test Site: DLS O.F. Site 1 (Screenroom)  
 Operator: Craig B  
 Test Specification: 120 V 60 Hz  
 Comment: Line 1  
 Date: 04-04-2008

**SCAN TABLE: "Line Cond Scrn RmFin"**

Short Description:			Line Conducted Emissions				Transducer
Start	Stop	Step	Detector	Meas. Time	IF Bandw.		
150.0 kHz	30.0 MHz	4.0 kHz	QuasiPeak	2.0 s	9 kHz	LISN DLS#128	
							CISPR AV



**MEASUREMENT RESULT: "SRL2rtrL1\_fin"**

4/4/2008 11:16AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.178000	49.50	11.2	65	15.1	QP	---	---
0.298000	45.00	10.6	60	15.3	QP	---	---
0.698000	34.50	10.3	56	21.5	QP	---	---
1.094000	24.10	10.2	56	31.9	QP	---	---
11.226000	45.40	10.8	60	14.6	QP	---	---
12.350000	47.70	10.9	60	12.3	QP	---	---
28.066000	40.80	12.0	60	19.2	QP	---	---
29.190000	42.50	12.0	60	17.5	QP	---	---

**MEASUREMENT RESULT: "SRL2rtrL1\_fin2"**

4/4/2008 11:16AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.262000	19.70	10.6	51	31.7	CAV	---	---
0.298000	19.00	10.6	50	31.3	CAV	---	---
0.934000	14.50	10.2	46	31.5	CAV	---	---
1.038000	17.10	10.2	46	28.9	CAV	---	---
11.226000	41.70	10.8	50	8.3	CAV	---	---
12.350000	44.20	10.9	50	5.8	CAV	---	---
28.066000	37.30	12.0	50	12.7	CAV	---	---
29.190000	38.60	12.0	50	11.4	CAV	---	---

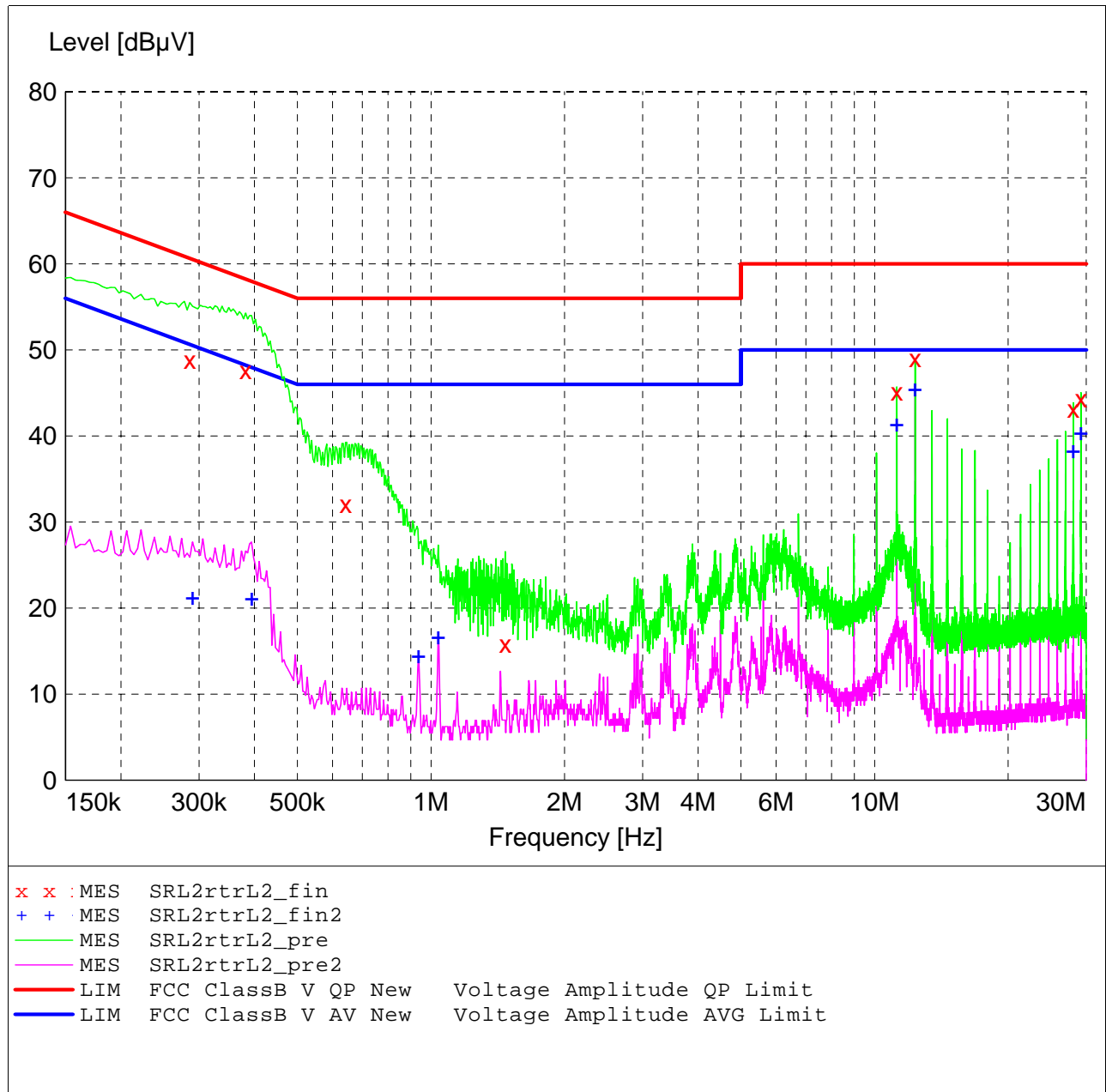
**FCC Part 15 Class B**

**Voltage Mains Test**

EUT: Extended Range Router w/ GlobTek supply  
 Manufacturer: RF Technologies  
 Operating Condition: 70 deg. F, 29% R.H.  
 Test Site: DLS O.F. Site 1 (Screenroom)  
 Operator: Craig B  
 Test Specification: 120 V 60 Hz  
 Comment: Line 2  
 Date: 04-04-2008

**SCAN TABLE: "Line Cond Scrn RmFin"**

Short Description:		Line Conducted Emissions					Transducer
Start	Stop	Step	Detector	Meas. Time	IF Bandw.		
150.0 kHz	30.0 MHz	4.0 kHz	QuasiPeak	2.0 s	9 kHz	LISN DLS#128	
CISPR AV							



**MEASUREMENT RESULT: "SRL2rtrL2\_fin"**

4/4/2008 11:21AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.286000	48.80	10.6	61	11.8	QP	---	---
0.382000	47.60	10.4	58	10.6	QP	---	---
0.642000	32.10	10.2	56	23.9	QP	---	---
1.470000	15.80	10.3	56	40.2	QP	---	---
11.226000	45.10	10.8	60	14.9	QP	---	---
12.350000	49.00	10.9	60	11.0	QP	---	---
28.066000	43.10	12.0	60	16.9	QP	---	---
29.186000	44.30	12.0	60	15.7	QP	---	---

**MEASUREMENT RESULT: "SRL2rtrL2\_fin2"**

4/4/2008 11:21AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.290000	21.30	10.6	51	29.2	CAV	---	---
0.394000	21.20	10.4	48	26.8	CAV	---	---
0.938000	14.50	10.2	46	31.5	CAV	---	---
1.038000	16.70	10.2	46	29.3	CAV	---	---
11.226000	41.40	10.8	50	8.6	CAV	---	---
12.350000	45.50	10.9	50	4.5	CAV	---	---
28.066000	38.30	12.0	50	11.7	CAV	---	---
29.186000	40.50	12.0	50	9.5	CAV	---	---



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# APPENDIX A

CONDUCTED EMISSIONS DATA

AND

CHARTS TAKEN DURING TESTING

INTELINK SUPPLY

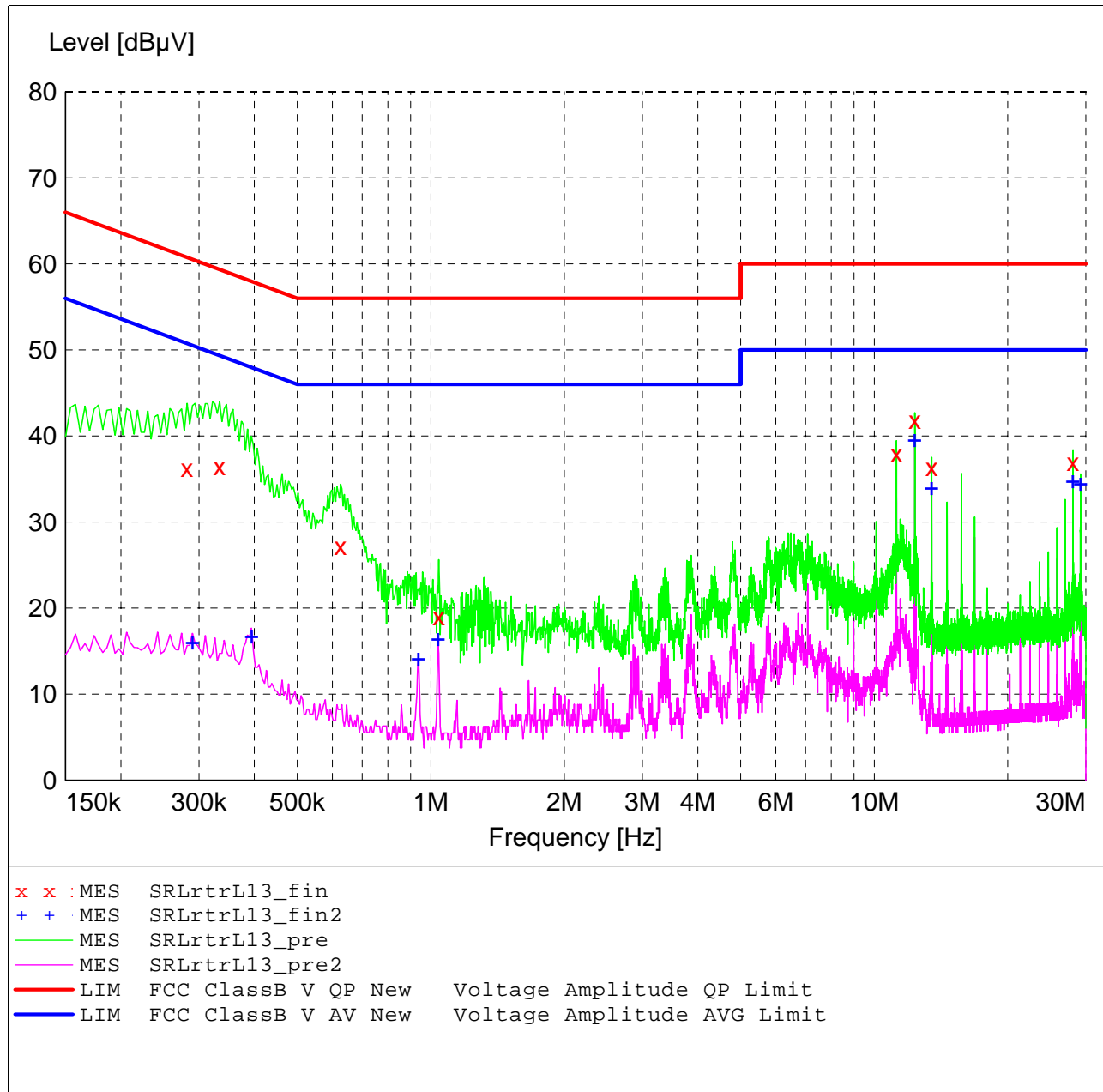
**FCC Part 15 Class B**

**Voltage Mains Test**

EUT: Extended Range Router w/ Intelink supply  
 Manufacturer: RF Technologies  
 Operating Condition: 70 deg. F, 29% R.H.  
 Test Site: DLS O.F. Site 1 (Screenroom)  
 Operator: Craig B  
 Test Specification: 120 V 60 Hz  
 Comment: Line 1  
 Date: 04-04-2008

**SCAN TABLE: "Line Cond Scrn RmFin"**

Short Description:		Line Conducted Emissions					Transducer
Start	Stop	Step	Detector	Meas. Time	IF Bandw.		
150.0 kHz	30.0 MHz	4.0 kHz	QuasiPeak	2.0 s	9 kHz	LISN DLS#128	
CISPR AV							



**MEASUREMENT RESULT: "SRLrtrL13\_fin"**

4/4/2008 11:01AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.282000	36.30	10.6	61	24.5	QP	---	---
0.334000	36.50	10.5	59	22.9	QP	---	---
0.626000	27.20	10.2	56	28.8	QP	---	---
1.042000	19.00	10.2	56	37.0	QP	---	---
11.226000	38.00	10.8	60	22.0	QP	---	---
12.350000	41.80	10.9	60	18.2	QP	---	---
13.474000	36.40	11.0	60	23.6	QP	---	---
28.070000	37.00	12.0	60	23.0	QP	---	---

**MEASUREMENT RESULT: "SRLrtrL13\_fin2"**

4/4/2008 11:01AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.290000	16.10	10.6	51	34.4	CAV	---	---
0.394000	16.80	10.4	48	31.2	CAV	---	---
0.938000	14.20	10.2	46	31.8	CAV	---	---
1.038000	16.50	10.2	46	29.5	CAV	---	---
12.350000	39.60	10.9	50	10.4	CAV	---	---
13.474000	34.10	11.0	50	15.9	CAV	---	---
28.066000	34.90	12.0	50	15.1	CAV	---	---
29.190000	34.60	12.0	50	15.4	CAV	---	---



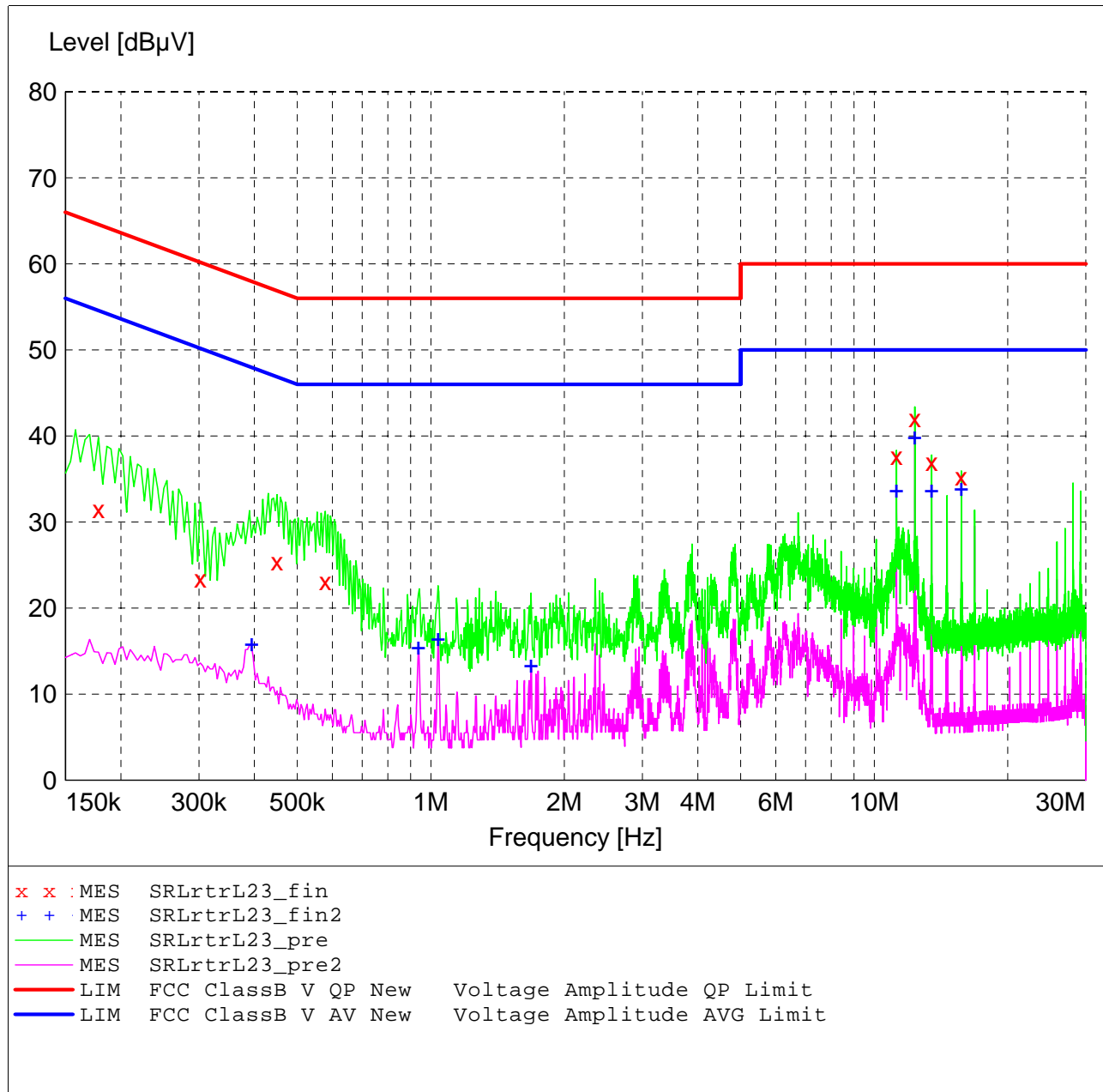
**FCC Part 15 Class B**

**Voltage Mains Test**

EUT: Extended Range Router w/ Intelink supply  
 Manufacturer: RF Technologies  
 Operating Condition: 70 deg. F, 29% R.H.  
 Test Site: DLS O.F. Site 1 (Screenroom)  
 Operator: Craig B  
 Test Specification: 120 V 60 Hz  
 Comment: Line 2  
 Date: 04-04-2008

**SCAN TABLE: "Line Cond Scrn RmFin"**

Short Description:		Line Conducted Emissions					Transducer
Start	Stop	Step	Detector	Meas. Time	IF Bandw.		
150.0 kHz	30.0 MHz	4.0 kHz	QuasiPeak	2.0 s	9 kHz	LISN DLS#128	
							CISPR AV



**MEASUREMENT RESULT: "SRLrtrL23\_fin"**

4/4/2008 10:56AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.178000	31.50	11.2	65	33.1	QP	---	---
0.302000	23.40	10.6	60	36.8	QP	---	---
0.450000	25.40	10.4	57	31.5	QP	---	---
0.578000	23.10	10.3	56	32.9	QP	---	---
11.226000	37.70	10.8	60	22.3	QP	---	---
12.350000	42.00	10.9	60	18.0	QP	---	---
13.474000	37.00	11.0	60	23.0	QP	---	---
15.718000	35.30	11.1	60	24.7	QP	---	---

**MEASUREMENT RESULT: "SRLrtrL23\_fin2"**

4/4/2008 10:56AM

Frequency MHz	Level dBμV	Transd dB	Limit dBμV	Margin dB	Detector	Line	PE
0.394000	15.90	10.4	48	32.1	CAV	---	---
0.938000	15.50	10.2	46	30.5	CAV	---	---
1.038000	16.50	10.2	46	29.5	CAV	---	---
1.682000	13.40	10.3	46	32.6	CAV	---	---
11.226000	33.80	10.8	50	16.2	CAV	---	---
12.350000	39.90	10.9	50	10.1	CAV	---	---
13.474000	33.80	11.0	50	16.2	CAV	---	---
15.718000	34.00	11.1	50	16.0	CAV	---	---



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## APPENDIX B

### RADIATED EMISSIONS DATA

AND

### CHARTS TAKEN DURING TESTING

30 MHz – 1000 MHz

**FCC Part 15 Class B**

**Electric Field Strength**

EUT: Extended Range Router W/ Intelink & GlobTek power adapters  
Manufacturer: RF Technologies  
Operating Condition: 72 deg. F; 29% R.H.  
Test Site: DLS O.F. Site 3  
Operator: Craig B  
Test Specification: 120 V 60 Hz  
Comment: Tx and Rx mode; Low, Mid, and High channels  
Date: 04-03-2008

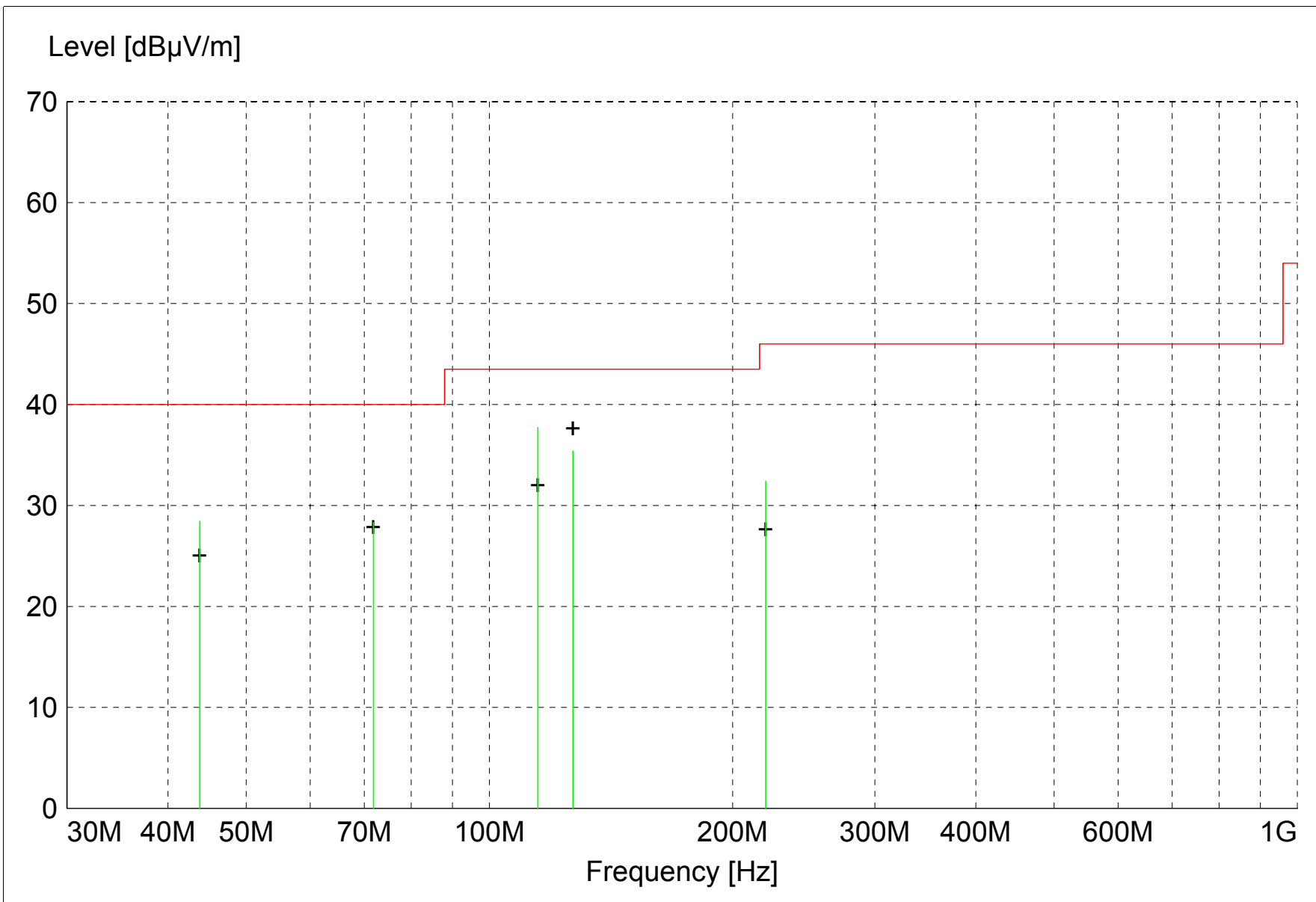
**TEXT: "Site 3 MidV 3M"**

Short Description: Test Set-up Vert30-1000MHz  
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/005

Antennas ---  
Biconical -- EMCO 3104C SN: 9701-4785  
Log Periodic -- EMCO 3146 SN: 9702-4895

Pre-Amp --- Rohde&Schwarz TS-PR10 SN: 032001/005

TEST SET-UP: EUT Measured at 3 Meters with VERTICAL Antenna Polarization



||||| MES A4103\_F1V\_Quasi-Peak  
 + + · MES A4103\_F1V\_Peak\_List  
 — LIM FCC ClassB F QP/AV Field Strength FCC Class B 3m

**MEASUREMENT RESULT: "A4103\_F1V\_Final"**

4/3/2008 3:23PM

Frequency	Level	Antenna	System	Total	Limit	Margin	Height	EuT	Final	Comment
MHz	dB $\mu$ V	Factor	Loss	Level	dB $\mu$ V/m	dB	Ant.	Angle	Detector	
		dB $\mu$ V/m	dB	dB $\mu$ V/m	dB $\mu$ V/m		m	deg		
114.825000	49.03	12.18	-23.5	37.7	43.5	5.8	1.00	110	QUASI-PEAK	None
114.825000	49.03	12.18	-23.5	37.7	43.5	5.8	1.00	110	QUASI-PEAK	None
126.870000	46.14	12.65	-23.4	35.4	43.5	8.1	1.00	315	QUASI-PEAK	None
43.790000	41.71	11.30	-24.6	28.4	40.0	11.6	1.00	45	QUASI-PEAK	None
71.850000	45.12	7.37	-24.2	28.3	40.0	11.7	1.00	225	QUASI-PEAK	None
219.720000	44.59	10.40	-22.6	32.4	46.0	13.6	1.00	315	QUASI-PEAK	None

**FCC Part 15 Class B**

**Electric Field Strength**

EUT: Extended Range Router W/ Intelink & GlobTek power adapters  
Manufacturer: RF Technologies  
Operating Condition: 72 deg. F; 29% R.H.  
Test Site: DLS O.F. Site 3  
Operator: Craig B  
Test Specification: 120 V 60 Hz  
Comment: Tx and Rx mode; Low, Mid, and High channels  
Date: 04-03-2008

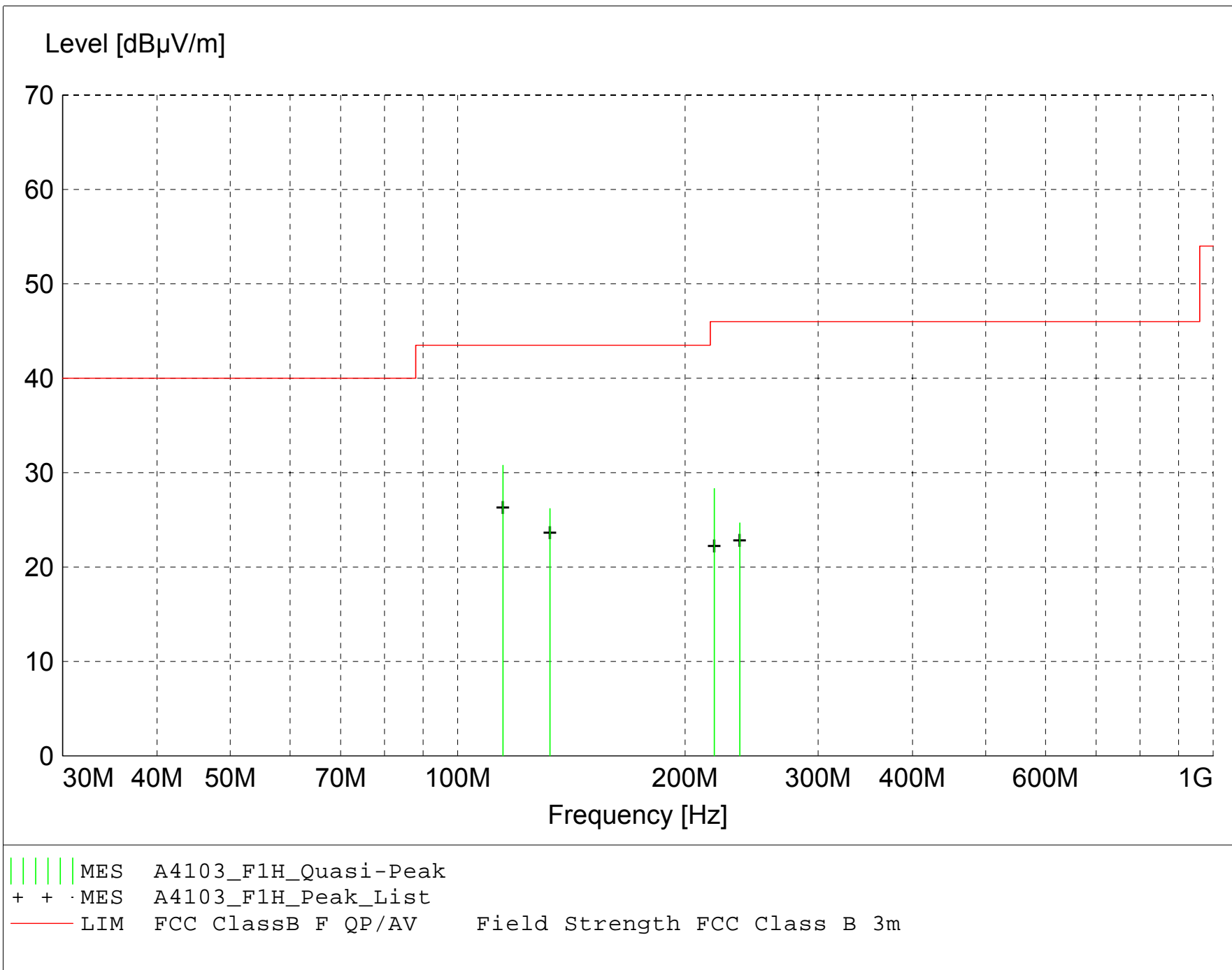
**TEXT: "Site 3 MidH 3M"**

Short Description: Test Set-up Horz30-1000MHz  
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/005

Antennas ---  
Biconical -- EMCO 3104C SN: 9701-4785  
Log Periodic -- EMCO 3146 SN: 9702-4895

Pre-Amp --- Rohde&Schwarz TS-PR10 SN: 032001/005

TEST SET-UP: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization





**MEASUREMENT RESULT: "A4103\_F1H\_Final"**

4/3/2008 3:20PM

Frequency	Level	Antenna	System	Total	Limit	Margin	Height	EuT	Final	Comment
MHz	dB $\mu$ V	Factor	Loss	Level	dB $\mu$ V/m	dB	Ant.	Angle	Detector	
		dB $\mu$ V/m	dB	dB $\mu$ V/m	dB $\mu$ V/m		m	deg		
114.815000	42.07	12.18	-23.5	30.8	43.5	12.7	1.80	250	QUASI-PEAK	None
132.480000	37.20	12.33	-23.3	26.2	43.5	17.3	1.90	260	QUASI-PEAK	None
218.630000	40.51	10.40	-22.6	28.3	46.0	17.7	1.30	135	QUASI-PEAK	None
236.310000	36.20	10.90	-22.4	24.7	46.0	21.3	1.20	120	QUASI-PEAK	None



1250 Peterson Dr., Wheeling, IL 60090

Company: RF Technologies, Inc.  
Model Tested: 0800-0351 (Internal Antenna), 0800-0354 (External Antenna)  
Report Number: 14076

# APPENDIX C

## RADIATED EMISSIONS DATA

AND

## CHARTS TAKEN DURING TESTING

0800-0351 - INTERNAL ANTENNA

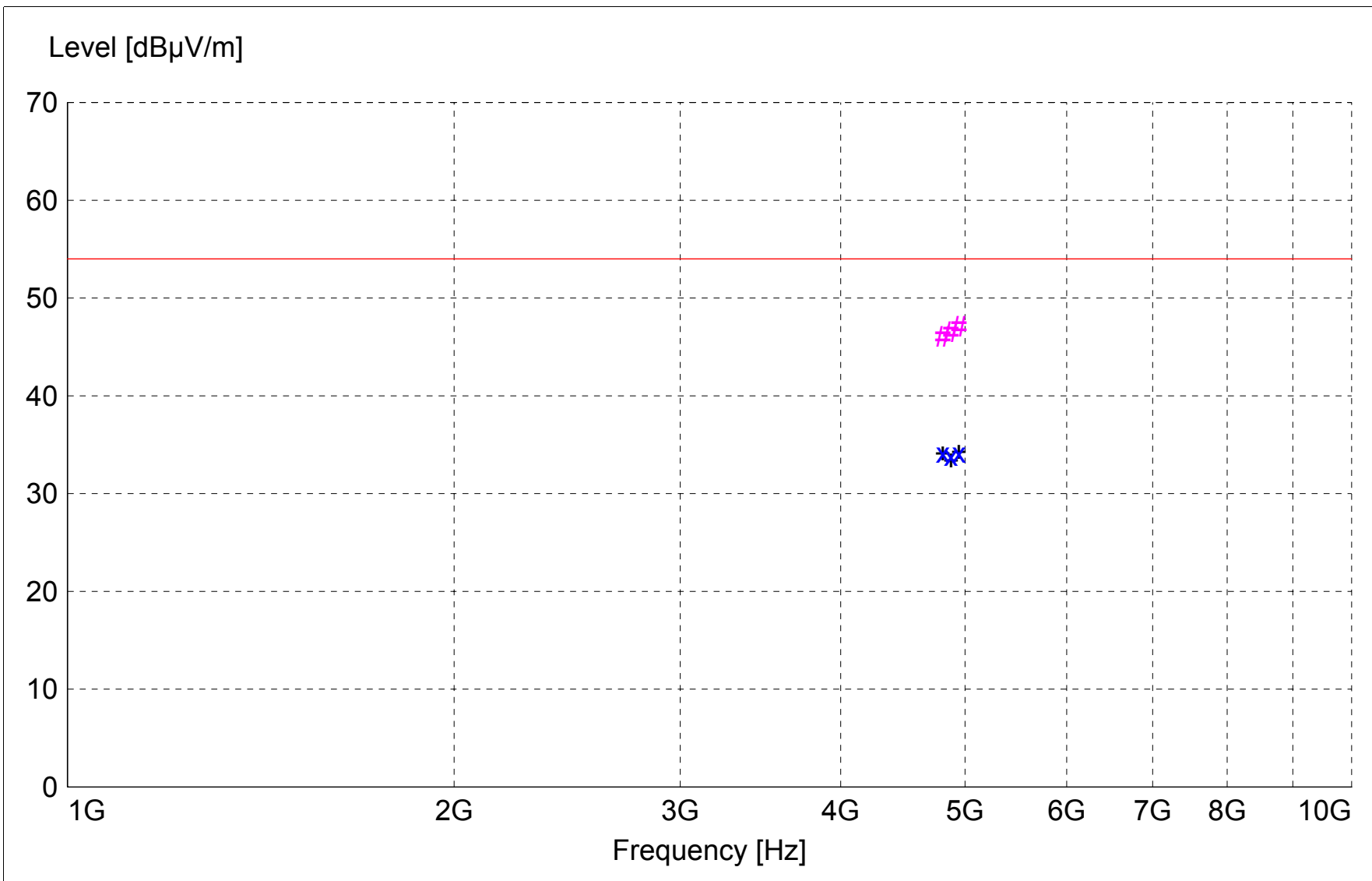
**FCC Part 15 Class B**

**Electric Field Strength**

EUT: Extended Range Router Model: 0800-0351  
Manufacturer: RF Technologies  
Operating Condition: 72 deg. F; 29% R.H.  
Test Site: DLS O.F. Site 3  
Operator: Craig B  
Test Specification: 120 V 60 Hz  
Comment: Receive mode; Low, Mid, and High channels  
Date: 04-03-2008

**TEXT: "Site 3 5731&106 V3M"**

Short Description: Test Set-up Vert1GHz-  
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/006  
  
Horn Antenna --- EMCO 3115 SN: 9903-5731  
  
Pre-Amps ---  
1 - 10 GHz -- Miteq AMF-6B-100200-50 SN: 313936  
10 - 18 GHz -- Miteq AMF-6D-010100-50 SN: 213976  
  
TEST SET-UP: EUT Measured at 3 Meters with VERTICAL Antenna Polarization



```

x x :MES  A4301_sv_Average
# # :MES  A4301_sv_Peak
+ + :MES  A4301_sv_Peak_List
— LIM  FCC ClassB F QP/AV   Field Strength FCC Class B 3m
— LIM  FCC ClassB F Peak   Field Strength FCC Class B 3m

```

**MEASUREMENT RESULT: "A4301\_sv\_Final"**

4/3/2008 2:02PM

Frequency	Level	Antenna	System	Total	Limit	Margin	Height	EuT	Final	Comment
MHz	dBµV	Factor	Loss	Level	dBµV/m	dB	Ant.	Angle	Detector	
		dBµV/m	dB	dBµV/m	dBµV/m		m	deg		
4945.900000	35.26	33.09	-34.2	34.2	54.0	19.8	1.10	45	AVERAGE	High ch
4805.950000	35.72	32.81	-34.4	34.2	54.0	19.8	1.20	315	AVERAGE	Low ch
4875.950000	35.10	32.95	-34.2	33.8	54.0	20.2	1.10	315	AVERAGE	Mid ch
4945.900000	48.12	33.09	-34.2	47.0	74.0	27.0	1.10	45	MAX PEAK	High ch
4875.950000	47.74	32.95	-34.2	46.5	74.0	27.5	1.10	315	MAX PEAK	Mid ch
4805.950000	47.62	32.81	-34.4	46.1	74.0	27.9	1.20	315	MAX PEAK	Low ch

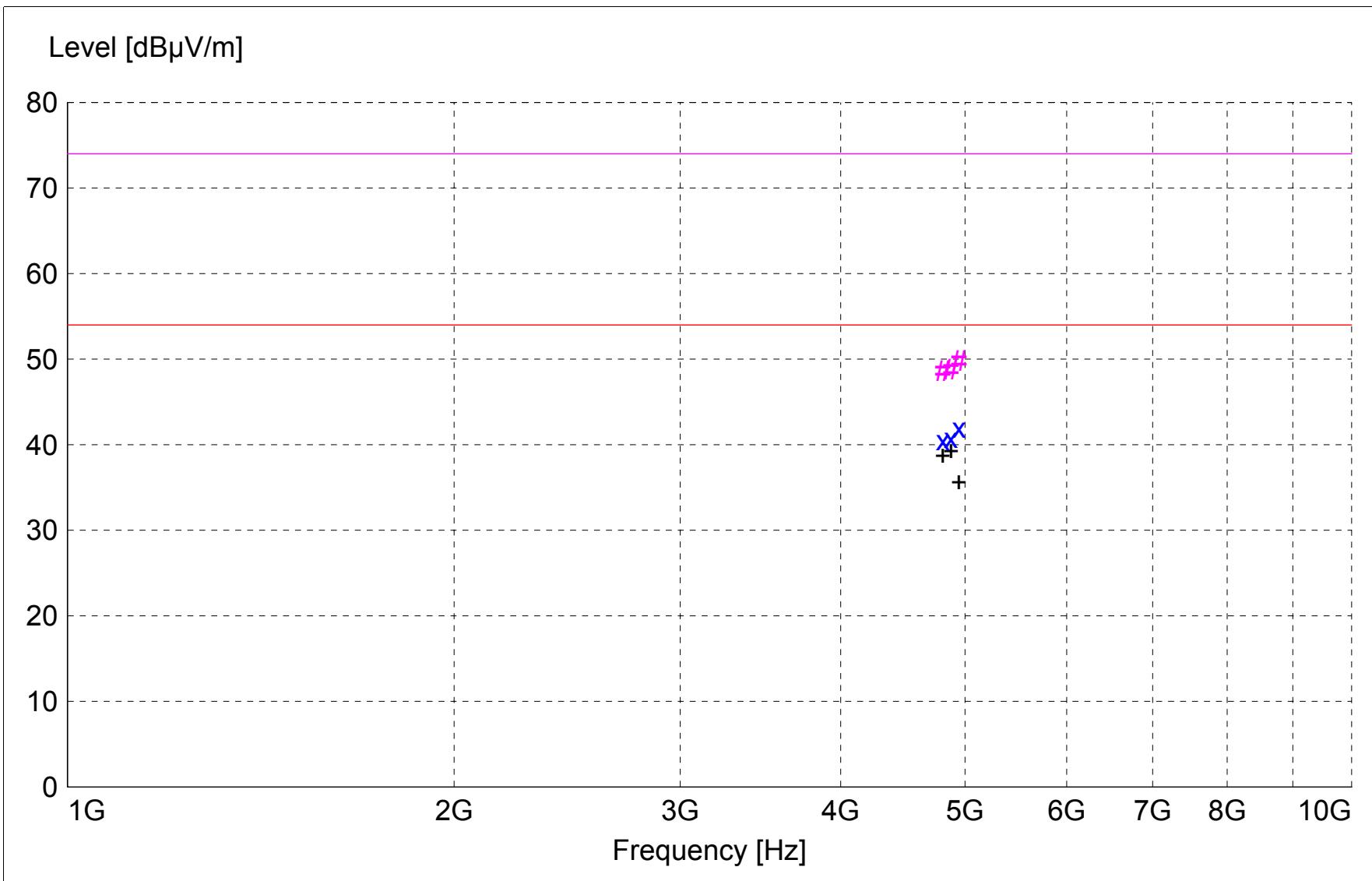
**FCC Part 15 Class B**

**Electric Field Strength**

EUT: Extended Range Router Model: 0800-0351  
Manufacturer: RF Technologies  
Operating Condition: 72 deg. F; 29% R.H.  
Test Site: DLS O.F. Site 3  
Operator: Craig B  
Test Specification: 120 V 60 Hz  
Comment: Receive mode; Low, Mid, and High channels  
Date: 04-03-2008

**TEXT: "Site 3 5731&106 H3M"**

Short Description: Test Set-up Horz1GHz-  
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/006  
  
Horn Antenna --- EMCO 3115 SN: 9903-5731  
  
Pre-Amps ---  
1 - 10 GHz -- Miteq AMF-6D-010100-50 SN: 213976  
10 - 18 GHz -- Miteq AMF-6B-100200-50 SN: 313936  
  
TEST SET-UP: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization



```

x x :MES A4301_sh_Average
# # :MES A4301_sh_Peak
+ + :MES A4301_sh_Peak_List
— LIM FCC ClassB F QP/AV Field Strength FCC Class B 3m
— LIM FCC ClassB F Peak Field Strength FCC Class B 3m

```

**MEASUREMENT RESULT: "A4301\_sh\_Final"**

4/3/2008 2:03PM

Frequency	Level	Antenna	System	Total	Limit	Margin	Height	EuT	Final	Comment
MHz	dBµV	Factor	Loss	Level	dBµV/m	dB	Ant.	Angle	Detector	
		dBµV/m	dB	dBµV/m	dBµV/m		m	deg		
4945.900000	43.03	33.09	-34.2	41.9	54.0	12.1	1.00	315	AVERAGE	High ch
4875.900000	42.07	32.95	-34.2	40.8	54.0	13.2	1.00	315	AVERAGE	Mid ch
4806.000000	42.07	32.81	-34.4	40.5	54.0	13.5	1.00	180	AVERAGE	Low ch
4945.900000	50.84	33.09	-34.2	49.8	74.0	24.2	1.00	315	MAX PEAK	High ch
4875.900000	50.08	32.95	-34.2	48.8	74.0	25.2	1.00	315	MAX PEAK	Mid ch
4806.000000	50.20	32.81	-34.4	48.6	74.0	25.4	1.00	180	MAX PEAK	Low ch



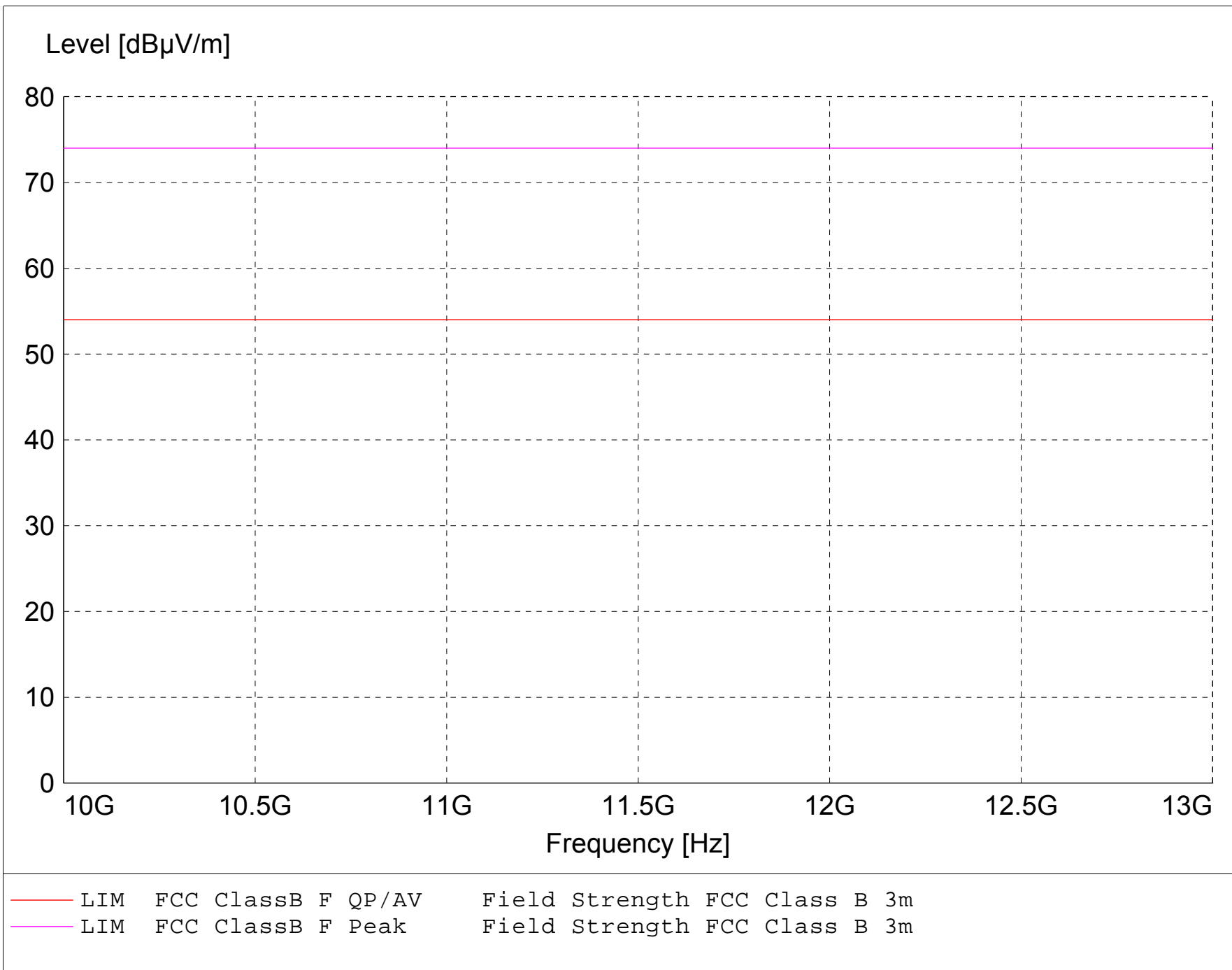
**FCC Part 15 Class B**

**Electric Field Strength**

EUT: Extended Range Router Model: 0800-0351  
Manufacturer: RF Technologies  
Operating Condition: 72 deg. F; 29% R.H.  
Test Site: DLS O.F. Site 3  
Operator: Craig B  
Test Specification: 120 V 60 Hz  
Comment: Rx mode; Low, Mid, and High channels  
Date: 04-03-2008

**TEXT: "Site 3 5731&106 V3M"**

Short Description: Test Set-up Vert1GHz-  
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/006  
Horn Antenna --- EMCO 3115 SN: 9903-5731  
Pre-Amps ---  
1 - 10 GHz -- Miteq AMF-6B-100200-50 SN: 313936  
10 - 18 GHz -- Miteq AMF-6D-010100-50 SN: 213976  
TEST SET-UP: EUT Measured at 3 Meters with VERTICAL Antenna Polarization



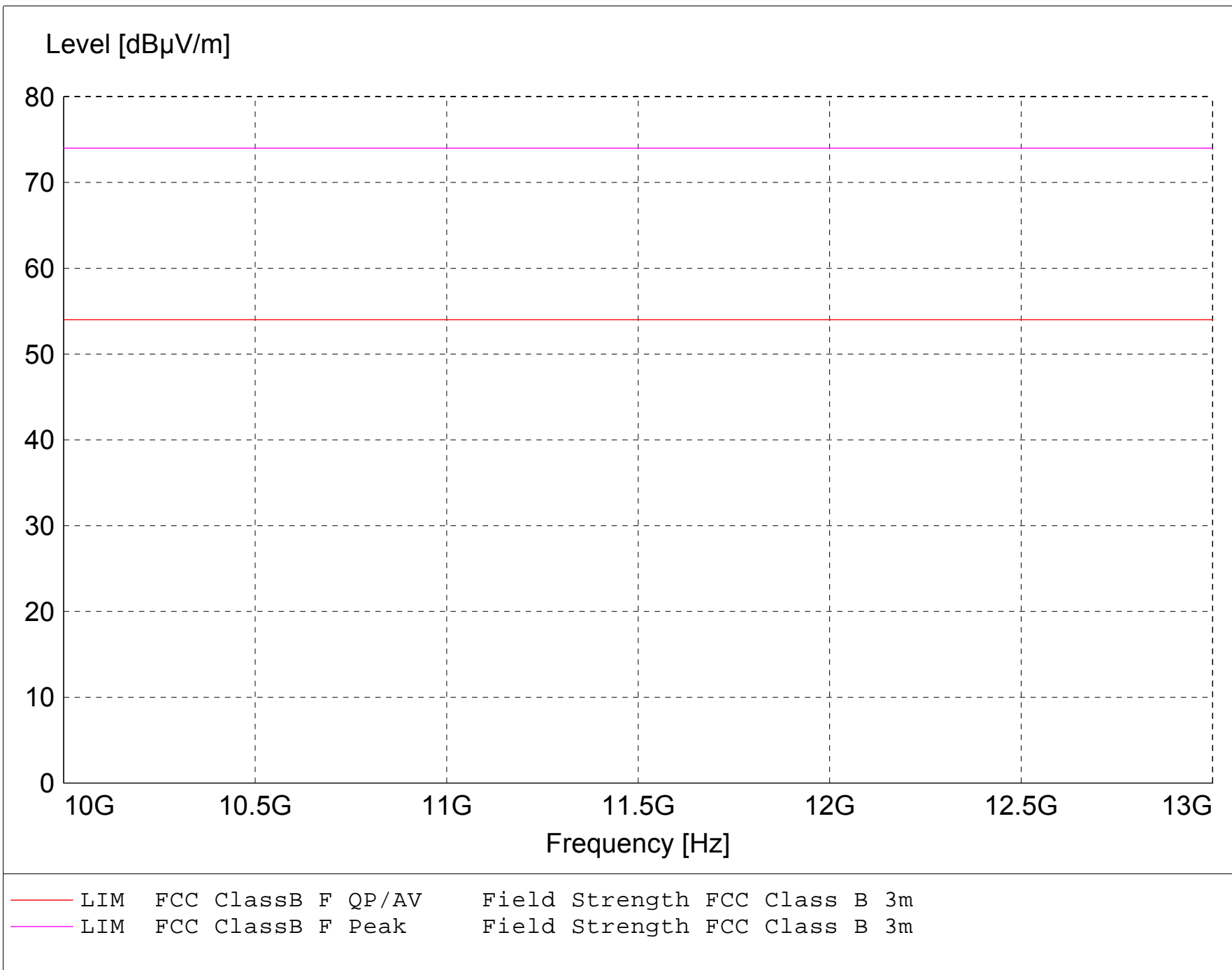
**FCC Part 15 Class B**

**Electric Field Strength**

EUT: Extended Range Router Model: 0800-0351  
Manufacturer: RF Technologies  
Operating Condition: 72 deg. F; 29% R.H.  
Test Site: DLS O.F. Site 3  
Operator: Craig B  
Test Specification: 120 V 60 Hz  
Comment: Rx mode; Low, Mid, and High channels  
Date: 04-03-2008

**TEXT: "Site 3 5731&106 H3M"**

Short Description: Test Set-up Horz1GHz-  
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/006  
Horn Antenna --- EMCO 3115 SN: 9903-5731  
Pre-Amps ---  
1 - 10 GHz -- Miteq AMF-6D-010100-50 SN: 213976  
10 - 18 GHz -- Miteq AMF-6B-100200-50 SN: 313936  
TEST SET-UP: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization





1250 Peterson Dr., Wheeling, IL 60090

Company: RF Technologies, Inc.  
Model Tested: 0800-0351 (Internal Antenna), 0800-0354 (External Antenna)  
Report Number: 14076

# APPENDIX C

## RADIATED EMISSIONS DATA

AND

## CHARTS TAKEN DURING TESTING

0800-0354 - EXTERNAL ANTENNA

**FCC Part 15 Class B**

**Electric Field Strength**

EUT: Extended Range Router Model: 0800-0354  
Manufacturer: RF Technologies  
Operating Condition: 72 deg. F; 29% R.H.  
Test Site: DLS O.F. Site 3  
Operator: Craig B  
Test Specification: 120 V 60 Hz  
Comment: Receive mode; Low, Mid, and High channels  
Date: 04-03-2008

**TEXT: "Site 3 5731&106 V3M"**

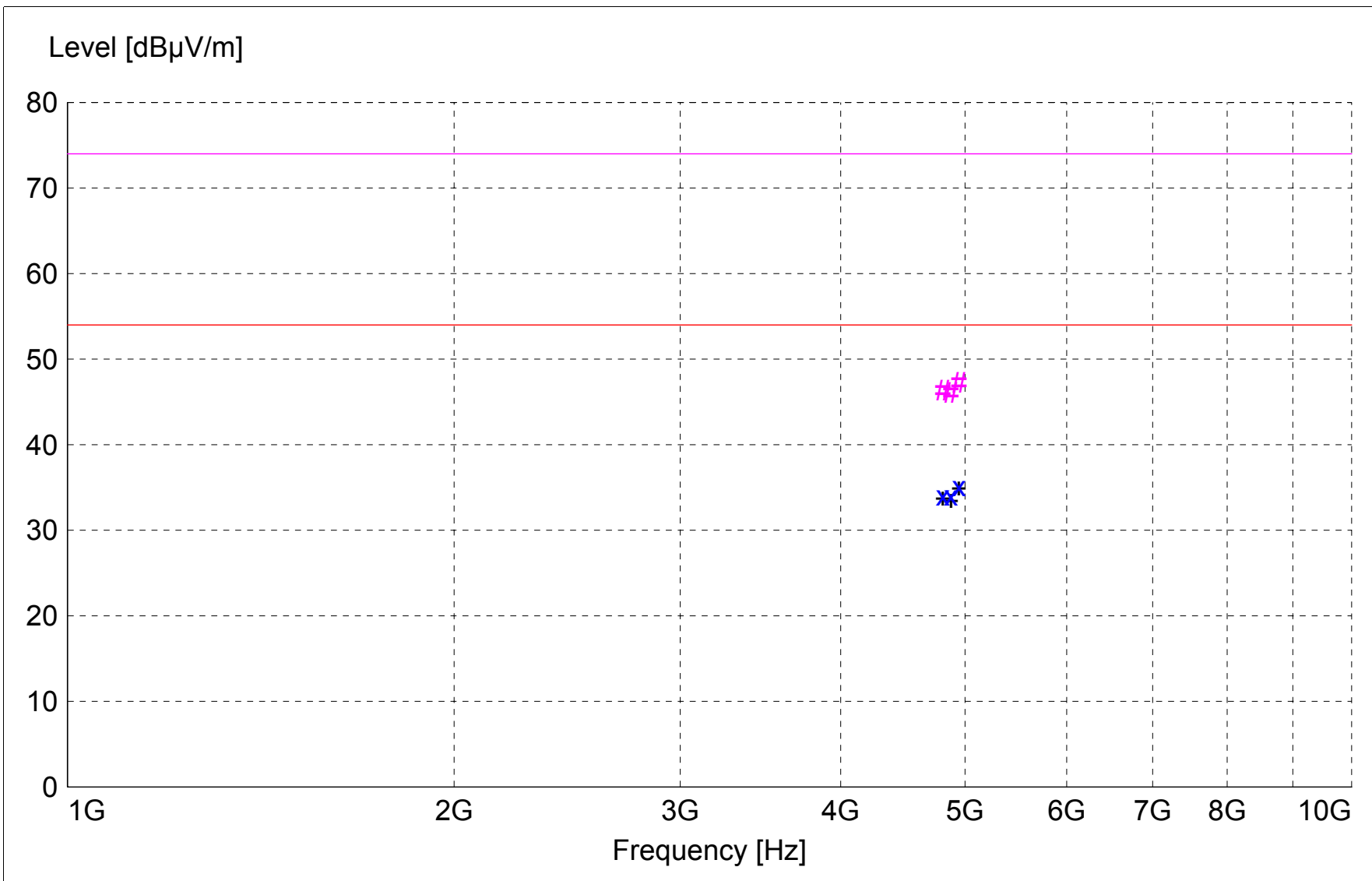
Short Description: Test Set-up Vert1GHz-  
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/006

Horn Antenna --- EMCO 3115 SN: 9903-5731

Pre-Amps ---

1 - 10 GHz -- Miteq AMF-6B-100200-50 SN: 313936  
10 - 18 GHz -- Miteq AMF-6D-010100-50 SN: 213976

TEST SET-UP: EUT Measured at 3 Meters with VERTICAL Antenna Polarization



x x :MES A4303\_sv\_Average  
 # # :MES A4303\_sv\_Peak  
 + + :MES A4303\_sv\_Peak\_List  
 — LIM FCC ClassB F QP/AV Field Strength FCC Class B 3m  
 — LIM FCC ClassB F Peak Field Strength FCC Class B 3m

**MEASUREMENT RESULT: "A4303\_sv\_Final"**

4/3/2008 2:45PM

Frequency	Level	Antenna	System	Total	Limit	Margin	Height	EuT	Final	Comment
MHz	dBµV	Factor	Loss	Level	dBµV/m	dB	Ant.	Angle	Detector	
		dBµV/m	dB	dBµV/m	dBµV/m		m	deg		
4945.950000	36.16	33.09	-34.2	35.1	54.0	18.9	1.00	280	AVERAGE	High ch
4875.900000	35.34	32.95	-34.2	34.1	54.0	19.9	1.20	315	AVERAGE	Mid ch
4805.900000	35.57	32.81	-34.4	34.0	54.0	20.0	1.00	280	AVERAGE	Low ch
4945.950000	48.37	33.09	-34.2	47.3	74.0	26.7	1.00	280	MAX PEAK	High ch
4805.900000	47.87	32.81	-34.4	46.3	74.0	27.7	1.00	280	MAX PEAK	Low ch
4875.900000	47.36	32.95	-34.2	46.1	74.0	27.9	1.20	315	MAX PEAK	Mid ch



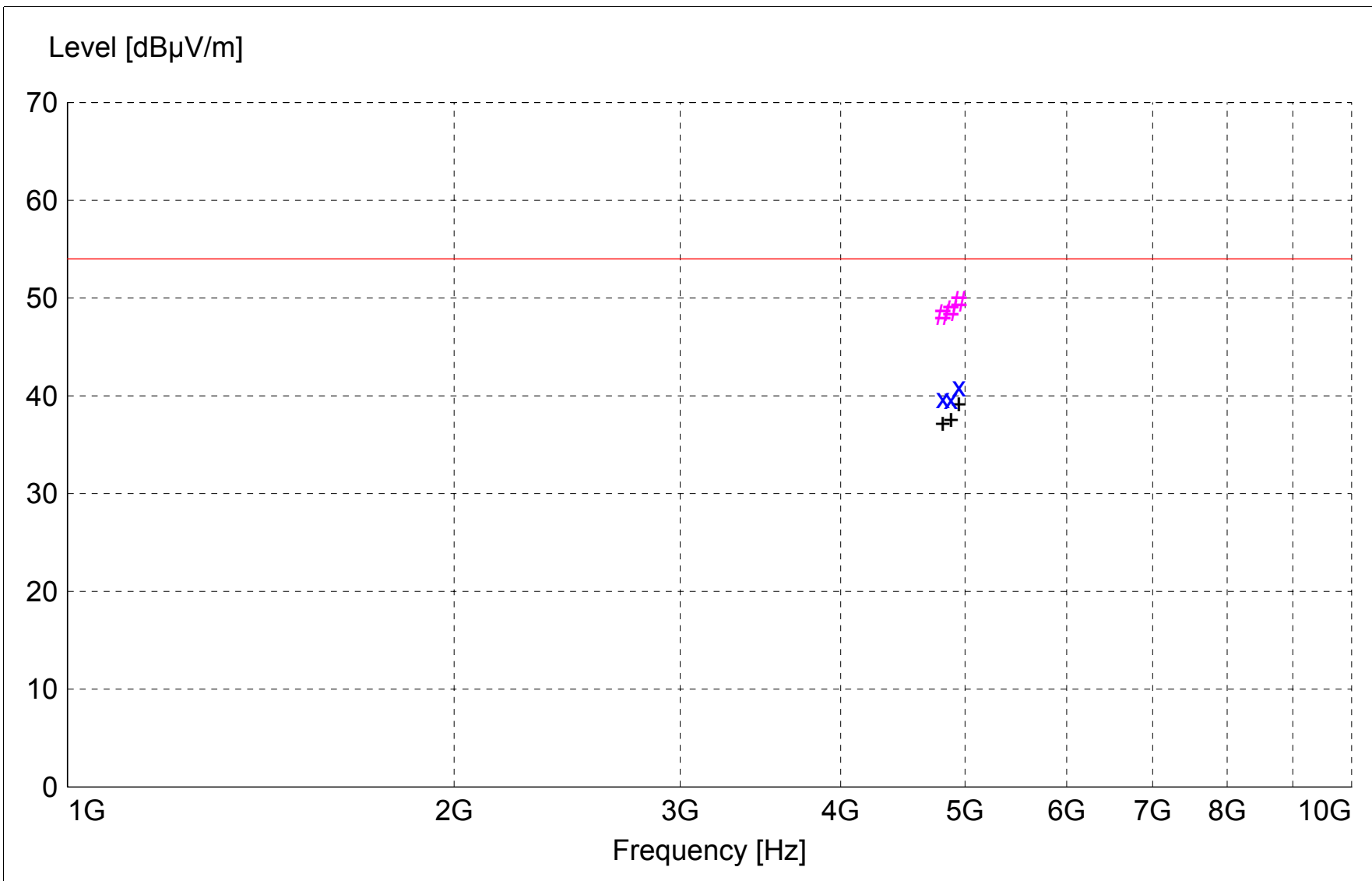
**FCC Part 15 Class B**

**Electric Field Strength**

EUT: Extended Range Router Model: 0800-0354  
Manufacturer: RF Technologies  
Operating Condition: 72 deg. F; 29% R.H.  
Test Site: DLS O.F. Site 3  
Operator: Craig B  
Test Specification: 120 V 60 Hz  
Comment: Receive mode; Low, Mid, and High channels  
Date: 04-03-2008

**TEXT: "Site 3 5731&106 H3M"**

Short Description: Test Set-up Horz1GHz-  
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/006  
  
Horn Antenna --- EMCO 3115 SN: 9903-5731  
  
Pre-Amps ---  
1 - 10 GHz -- Miteq AMF-6D-010100-50 SN: 213976  
10 - 18 GHz -- Miteq AMF-6B-100200-50 SN: 313936  
  
TEST SET-UP: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization



```

x x :MES A4303_sh_Average
# # :MES A4303_sh_Peak
+ + :MES A4303_sh_Peak_List
— LIM FCC ClassB F QP/AV Field Strength FCC Class B 3m
— LIM FCC ClassB F Peak Field Strength FCC Class B 3m

```

**MEASUREMENT RESULT: "A4303\_sh\_Final"**

4/3/2008 2:47PM

Frequency	Level	Antenna	System	Total	Limit	Margin	Height	EuT	Final	Comment
MHz	dBµV	Factor	Loss	Level	dBµV/m	dB	Ant.	Angle	Detector	
		dBµV/m	dB	dBµV/m	dBµV/m		m	deg		
4946.000000	42.00	33.09	-34.2	40.9	54.0	13.1	1.00	315	AVERAGE	High ch
4806.000000	41.28	32.81	-34.4	39.7	54.0	14.3	1.00	0	AVERAGE	Low ch
4875.900000	40.96	32.95	-34.2	39.7	54.0	14.3	1.00	35	AVERAGE	Mid ch
4946.000000	50.71	33.09	-34.2	49.6	74.0	24.4	1.00	315	MAX PEAK	High ch
4875.900000	49.95	32.95	-34.2	48.7	74.0	25.3	1.00	35	MAX PEAK	Mid ch
4806.000000	49.81	32.81	-34.4	48.3	74.0	25.7	1.00	0	MAX PEAK	Low ch

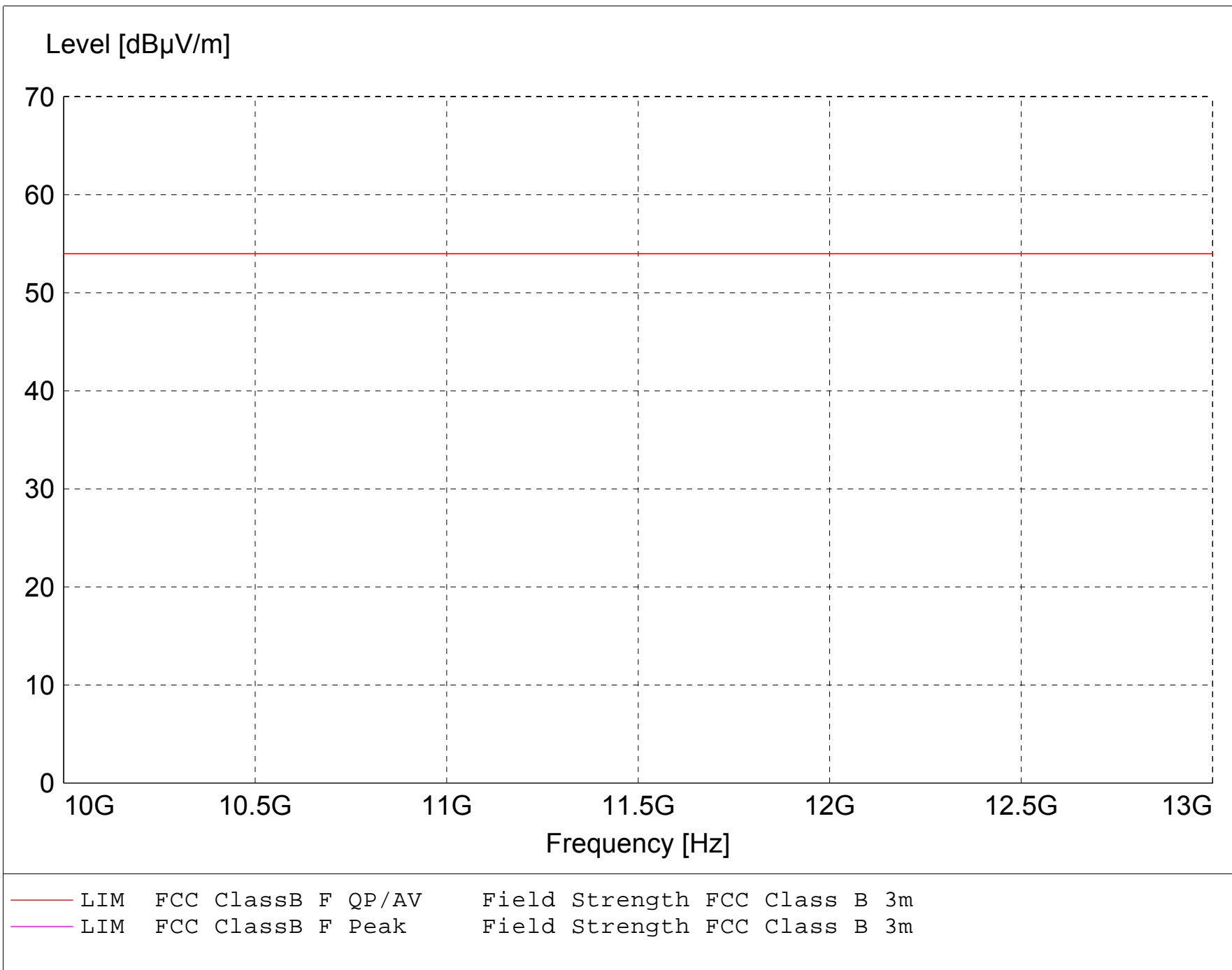
**FCC Part 15 Class B**

**Electric Field Strength**

EUT: Extended Range Router Model: 0800-0354  
Manufacturer: RF Technologies  
Operating Condition: 72 deg. F; 29% R.H.  
Test Site: DLS O.F. Site 3  
Operator: Craig B  
Test Specification: 120 V 60 Hz  
Comment: Receive mode; Low, Mid, and High channels  
Date: 04-03-2008

**TEXT: "Site 3 5731&106 V3M"**

Short Description: Test Set-up Vert1GHz-  
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/006  
  
Horn Antenna --- EMCO 3115 SN: 9903-5731  
  
Pre-Amps ---  
1 - 10 GHz -- Miteq AMF-6B-100200-50 SN: 313936  
10 - 18 GHz -- Miteq AMF-6D-010100-50 SN: 213976  
  
TEST SET-UP: EUT Measured at 3 Meters with VERTICAL Antenna Polarization



**FCC Part 15 Class B**

**Electric Field Strength**

EUT: Extended Range Router Model: 0800-0354  
Manufacturer: RF Technologies  
Operating Condition: 72 deg. F; 29% R.H.  
Test Site: DLS O.F. Site 3  
Operator: Craig B  
Test Specification: 120 V 60 Hz  
Comment: Receive mode; Low, Mid, and High channels  
Date: 04-03-2008

**TEXT: "Site 3 5731&106 H3M"**

Short Description: Test Set-up Horz1GHz-  
TEST EQUIPMENT: Receiver --- Rohde&Schwarz ESI 40 SN: 837808/006  
  
Horn Antenna --- EMCO 3115 SN: 9903-5731  
  
Pre-Amps ---  
1 - 10 GHz -- Miteq AMF-6D-010100-50 SN: 213976  
10 - 18 GHz -- Miteq AMF-6B-100200-50 SN: 313936  
  
TEST SET-UP: EUT Measured at 3 Meters with HORIZONTAL Antenna Polarization

