



Project:	04ME09006
File:	NC2219
Date:	9/28/04
Model:	HRP5-120
FCC ID:	JPZ0033

Test Report

On

Electromagnetic Compatibility Testing

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File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

Test Report Details

Tests Performed By:	Underwriters Laboratories Inc. 1285 Walt Whitman Rd. Melville, NY 11747
Tests Performed For:	Lutron Electronics Inc. 7200 Suter Road Coopersburg, PA 18036
Applicant Contact:	Mark Clouser
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Test Report Date:	9/17/2004
Product Type:	Processor
Model Number:	HRP5-120
Sample Serial Number:	Not Provided
Sample Tag Number:	0592754001
Sample Receive Date:	7/1/2004
EUT Category:	Radio Transmitter
Testing Start Date:	7/1/2004
Date Testing Complete:	7/6/2004

Underwriters Laboratories Inc. reports apply only to the specific samples tested under stated test conditions. All samples tested were in good operating condition throughout the entire test program. It is the manufacturer's responsibility to assure that additional production units of this model are manufactured with identical electrical and mechanical components. Underwriters Laboratories Inc. shall have no liability for any deductions, inferences or generalizations drawn by the client or others from Underwriters Laboratories Inc. issued reports. This report shall not be used to claim, constitute or imply product certification, approval, or endorsement by NVLAP, A2LA, or any agency of the US government.

This report may contain test results that are not covered by the NVLAP or A2LA accreditation. The scope of accreditation is limited to the specific tests that are listed on the NVLAP and/or A2LA certificates provided at the end of this report.

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Report Revision History

Revision Date	Description	Revised By	Revision Reviewed By
9/17/2004	Original	--	--

1.0 G E N E R A L - Product Description

Device Function: The HRP5 acts as a data storage hub of an integrated lighting control system. It contains an FM transceiver and an antenna. The purpose of the RF communication is to transmit and receive command signals. Transmitted commands allow the triggering of system events and the updating of control indicator status.

Analog Function: The HRP5 obtains power from a Class 2 wall plug in transformer. The Class 2 voltage is then down converted with a switching buck converter to produce a 5Vdc output, which is used to power all analog and micro controller activities.

Device is exempt from routine RF exposure testing per FCC Part 2.1091.

Device contains an integrated antenna. It is not detachable or replaceable by the user

1.1 Device Configuration During Test

The device under test was tested in normal orientation that represents the worst-case orientation.

The device was tested in two modes of operation:

1. Continuously transmitting an intentional radio frequency in Continuous Wave (CW).
2. Standby mode (Receive). The device is waiting to receive a signal source.

The manufacturer configured the device. The device was powered with 120VAC, 60Hz.

1.1.1 Equipment Used During Test:

Use*	Product Type	Manufacturer	Model	Comments
EUT	Processor	Lutron	HRP5-2P	None
ACC	Laptop	IBM	-	None

* Use = EUT - Equipment Under Test, ACC - Accessory (Not Subjected to Test), or SIM - Simulator (Not Subjected to Test)

1.1.2 Input/Output Ports:

Port #	Name	Type*	Cable Max. >3m	Cable Shielded	Comments
0	Enclosure	N/E	-	-	None
1	Mains	AC	< 3M	No	None
2	Ethernet	DC	> 3m	Yes	None
3	RS232	DC	> 3m	Yes	None

*AC = AC Power Port DC = DC Power Port N/E = Non-Electrical

I/O = Signal Input or Output Port (Not Involved in Process Control)

PMC = Process Measurement and Control Port

1.1.3 EUT Internal Operating Frequencies:

Frequency (MHz)	Description	Frequency (MHz)	Description
431	Operating Frequency	-	-
437	Operating Frequency	-	-

1.1.4 Power Interface:

Mode #	Voltage (V)	Current (A)	Power (W)	Frequency (DC/AC-Hz)	Phases (#)	Comments
Rated	-	-	-	-	-	-
1	120	-	-	AC/60	1	-

1.2 EUT Operation Modes:

Mode #	Description
1	Transmit 431MHz
2	Receive 431MHz
3	Transmit 437MHz
4	Receive 437MHz

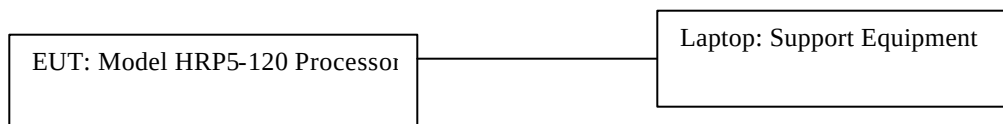
1.3 EUT Configuration Modes:

Mode #	Description
1	The device was tested in two modes of operation: The manufacturer configured the device. 1. Continuously transmitting an intentional radio frequency in Continuous Wave (CW). 2. Standby mode (Receive). The device is waiting to receive a signal source.

"The results contained in this report reflect the results for this particular model and serial number. It is the responsibility of the manufacturer to ensure that all production models meet the intent of the requirements detailed within this report"

1.4 Block Diagram:

The diagram below illustrates the configuration of the equipment above.



1.5 Deviations from standard test methods.

Not Applicable

1.6 Device Modifications Necessary for Compliance

Not Applicable.

1.7 Test Summary

Test Name	Comply	Does Not Comply	See Remark
Test Requirement/Specification			
Radiated Disturbance Emissions - 30 to 5000MHz Electric Field	Y	-	1
FCC Part 15 Subpart C, Intentional Radiators, Paragraph 15.209			
FCC Part 15 Subpart B, Class B, Un-Intentional Radiators, Paragraph 15.109	Y	-	1
FCC Part 15, Subpart C, Cease Operation < 5seconds	Y	-	1
FCC Part 15 Subpart C, Paragraph 15.231, Occupied Bandwidth	Y	-	1
FCC Part 15 Subpart C, Paragraph 15.231, Pulse Train Measurements	Y	-	1

Remarks:

- 1) No Modifications required for compliance.
- 2) Modifications required to comply as described in Section 1.6

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2.0 Conclusion:

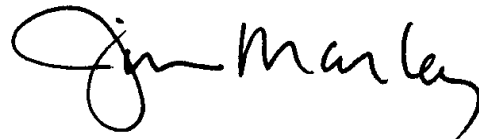
The tests listed in the Summary of Testing section of this report have been performed and the results recorded by Underwriters Laboratories Inc. in accordance with the procedures stated in each test requirement and specification. The Applicant as being applicable to the Equipment Under Test determined the test list. As a result, the subject product has been verified to comply or not comply as noted in the Summary of Testing with each test specification. The test results relate only to the items tested.

The equipment under test has met the technical requirements as defined under section 5.0.

Test Start Date: 01 July 2004
Test Completion Date: 06 July 2004



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3.0 FCC Labeling Information

3.1 Identification.

Devices Subject to Verification

In 47 CFR, Part 2, § 2.954:

“Devices subject only to verification shall be uniquely identified by the person responsible for marketing or importing the equipment within the United States. However, the identification shall not be of a format which could be confused with the FCC Identifier required on certified, notified or type accepted equipment. The importer or manufacturer shall maintain adequate identification records to facilitate positive identification for each verified device.”

Devices Subject to Declaration of Conformity

In 47 CFR, Part 2, § 2.1074:

“Devices subject only to a Declaration of Conformity shall be uniquely identified by the responsible party. This identification shall not be of a format which could be confused with the FCC Identifier required on certified, notified, type accepted or type approved equipment. The responsible party shall maintain adequate identification records to facilitate positive identification for each device.”

3.2 Compliance information

§ 2.1077 Compliance information.

(a) If a product must be tested and authorized under a Declaration of Conformity, a compliance information statement shall be supplied with the product at the time of marketing or importation, containing the following information:

- (1) Identification of the product, e.g., name and model number;
- (2) A statement, similar to that contained in § 15.19(a)(3) of this chapter, that the product complies with part 15 of this chapters; and
- (3) The identification, by name, address and telephone number, of the responsible party, as defined in §

2.909.

The responsible party for a Declaration of Conformity must be located within the United States.

(c) The compliance information statement shall be included in the user’s manual or as a separate sheet.

§ 15.19(a)(3):

“ All other devices shall bear the following statement in a conspicuous location on the device:

This device complies with part 15 of the FCC rules. Operation is subject to the following two conditions:

- (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.”

3.3 Labeling.

Labeling Certification or Verification

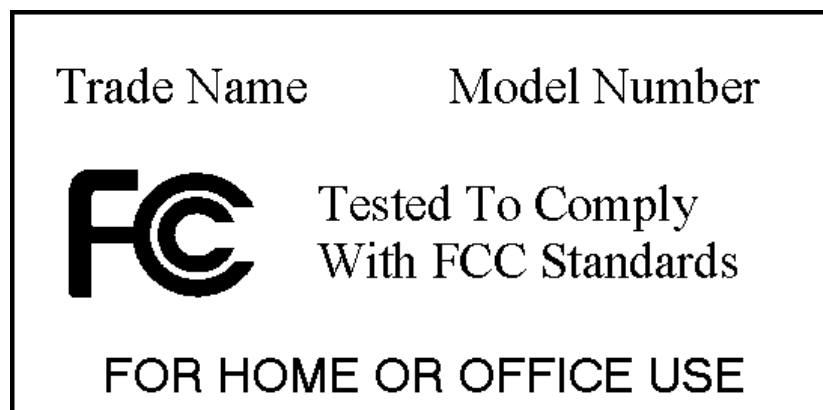
In addition to the requirements in Part 2 of this CFR 47 (See **1.6.1 Identification** above), a device subject to certification or verification shall be labeled as follows:

- (1) Receivers associated with the operation of a licensed radio service, e.g., FM broadcast under Part 73, land mobile operation under Part 90, etc., shall bear the following statement in a conspicuous location on the device:
This device complies with Part 15 of the FCC Rules. Operation is subject to the condition that this device does not cause harmful interference.
- (2) A stand-alone cable input selector switch, shall bear the following statement in a conspicuous location on the device:
This device is verified to comply with Part 15 of the FCC Rules for use with cable television service.
- (3) All other devices shall bear the following statement in a conspicuous location on the device:
This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:
(1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
- (4) Where a device is constructed in two or more sections connected by wires and marketed together, the statement specified under paragraph (a) of this section is required to be affixed only to the main control unit.
- (5) When the device is so small or for such use that it is not practicable to place the statement specified under paragraph (a) of this section on it, the information required by this paragraph shall be placed in a prominent location in the instruction manual or pamphlet supplied to the user or, alternatively, shall be placed on the container in which the device is marketed. However, the FCC identifier or the unique identifier, as appropriate, must be displayed on the device.

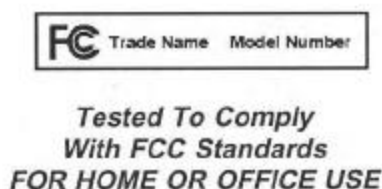
Declaration of Conformity Labeling

In addition to the requirements in Part 2 of CFR 47 (See **1.6.1 Identification** above), a device subject to authorization under a Declaration of Conformity shall be labeled as follows:

- (1) The label shall be located in a conspicuous location on the device and shall contain the unique identification described in Section 2.1074 of this chapter and the following logo:
 - (i) If the product is authorized based on testing of the product or system:



Alternate label format for small devices:



The text shown in ***bold-face italics*** may be placed in a prominent location in the instruction manual or pamphlet supplied to the user.

- (2) Label text and information should be in a size of type large enough to be readily legible, consistent with the dimensions of the equipment and the label. However, the type size for the text is not required to be larger than eight point.
- (3) When the device is so small or for such use that it is not practicable to place the statement specified under paragraph (b)(1) of this section on it, such as for a CPU board or a plug-in circuit board peripheral device, the text associated with the logo may be placed in a prominent location in the instruction manual or pamphlet supplied to the user. However, the unique identification (trade name and model number) and the logo must be displayed on the device.
- (4) The label shall not be a stick-on, paper label. The label on these products shall be permanently affixed to the product and shall be readily visible to the purchaser at the time of purchase, as described in Section 2.925(d) of this chapter. "Permanently affixed" means that the label is etched, engraved, stamped, silk-screened, indelibly printed, or otherwise permanently marked on a permanently attached part of the equipment or on a nameplate of metal, plastic, or other material fastened to the equipment by welding, riveting, or a permanent adhesive. The label must be designed to last the expected lifetime of the equipment in the environment in which the equipment may be operated and must not be readily detachable.

3.4 User information.

In 47 CFR, Part 15, § 15.21 Information to user:

“The users manual or instruction manual for an intentional or unintentional radiator shall caution the user that changes or modifications not expressly approved by the party responsible for compliance could void the user’s authority to operate the equipment.”

In 47 CFR, Part 15, § 15.105 Information to the user:

Class A Devices

“(a) For a Class A digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

NOTE: This equipment has been tested and found to comply with the limits for a Class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.”

Class B Devices

“(b) For a Class B digital device or peripheral, the instructions furnished the user shall include the following or similar statement, placed in a prominent location in the text of the manual:

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- *Reorient or relocate the receiving antenna.*
- *Increase the separation between the equipment and receiver.*
- *Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.*
- *Consult the dealer or an experienced radio/TV technician for help*

“(d) For systems incorporating several digital devices, the statement shown in paragraph (a) or (b) of this section needs to be contained only in the instruction manual for the main control unit.”

4.0 Calibration of Equipment Used for Measurement

All test equipment and test accessories are calibrated on a regular basis. The maximum time between calibrations is the manufacturer recommends one year or what whichever is less.

All test equipment calibrations are traceable to the National Institute of Standards and Technology (NIST); therefore, all test data recorded in this report is traceable to NIST.

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5.0 EMISSIONS TEST REGULATIONS

The emissions tests were performed according to following regulations:

----- United States -----

FCC Part 15, Subpart C Code of Federal Regulations, Part 15, Radio Frequency
Devices.

FCC Part 15, Subpart B, Paragraph 15.107 & 15.109

FCC Part 15 Subpart C, Paragraph 15.205, 15.207, 15.209 & 15.231

5.1.1 Conducted Emissions Tests

Test Applicable

Measurements were made on a ground plane that extends 1-meter minimum beyond all sides of the system under test. All power was connected to the system through Line Impedance Stabilization Networks (LISN). Conducted voltage measurements on mains lines were made at the output of the LISN.

Results

The system met the requirements for conducted emissions. Data Pages follow.

Temperature:	21 °C
Humidity:	60 %RH
Pressure:	1008 mbar
Date test performed:	02 July 2004

1 fully configured sample was scanned over the following frequency range

Frequency range on each side of line	Measurement Point	Mode*	
		Power	Operation
150kHz to 30MHz	Voltage, Mains	<u>1</u>	<u>1</u>
150kHz to 30MHz	Voltage, Mains	<u>1</u>	<u>2</u>
150kHz to 30MHz	Voltage, Mains	<u>1</u>	<u>3</u>
150kHz to 30MHz	Voltage, Mains	<u>1</u>	<u>4</u>

*See Power Interface and EUT Operating Modes for details

Test equipment used for conducted emissions

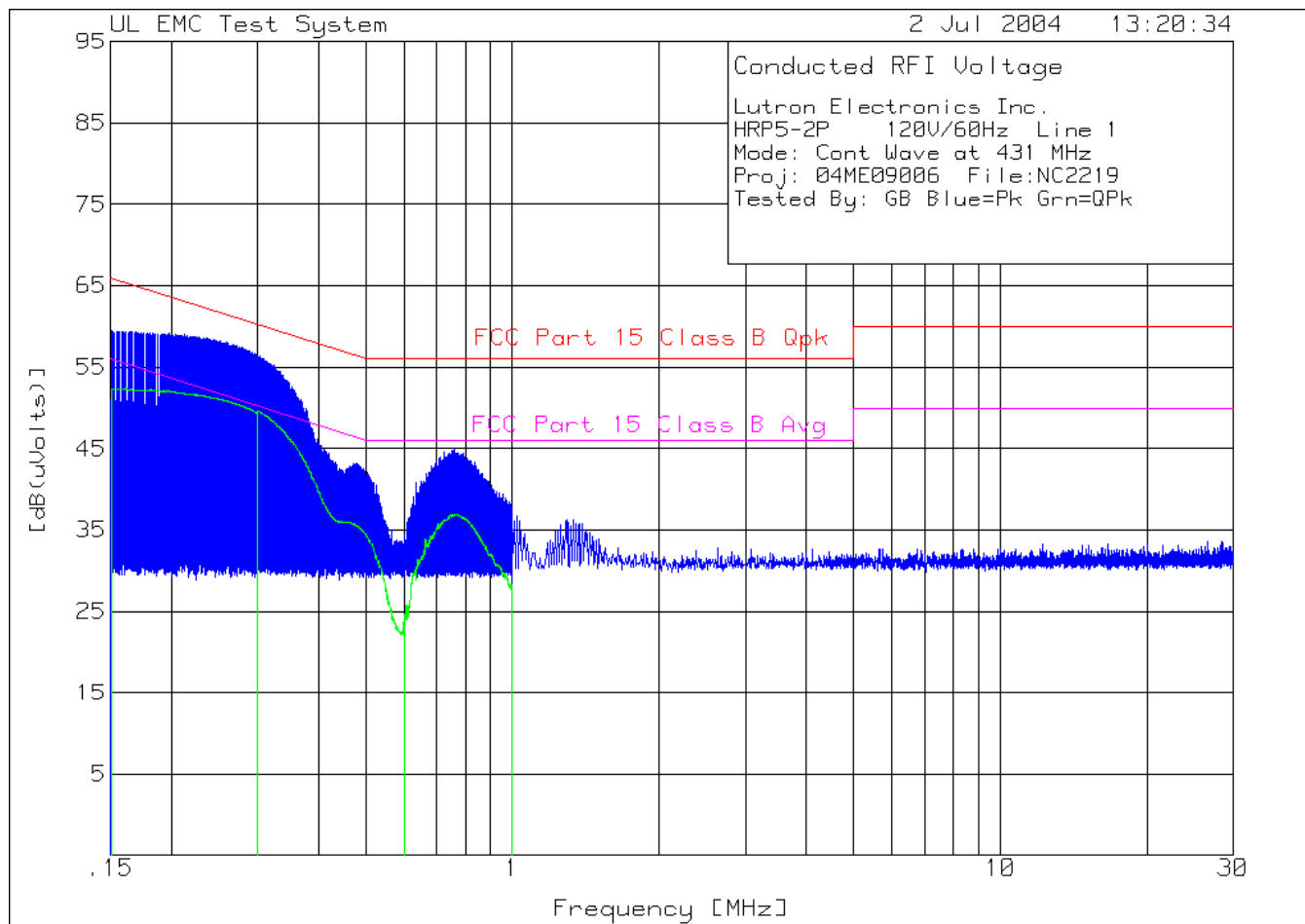
E7402A	Agilent	EMI Spectrum Analyzer	Equipment No.: ME5B-123
Range: 150k-30MHz	Last Calibration Date: 22 January 2004	Calibration Due Date: 22 January 2005	

Test Accessories for Conducted Emissions

EC - 3825/2	EMCO	50W LISN	Equipment No.: ME5-629
Range: 150k-30MHz	Last Calibration Date: 26 March 2004	Calibration Due Date: 26 March 2005	
11947A	Hewlett Packard	Transient Limiter	Equipment No.: ME5A-444
Range:	Last Calibration Date:	Calibration Due Date: 27 March 2005	
99760-00	Cole -Parmer	Hygrometer/Temp/Baro meter	Equipment No.: ME4-268
		Ranges	Temp: 0°C-55°C
			Humidity: 25% to 95 %RH
			Pressure: 795 to 1050 mbar
	Last Calibration Date: 18 June 2004		Calibration Due Date: 18 June 2005

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File Number: NC2219
 Project Number: 04ME09006
 Model Number: HRP5-120
 FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
 HRP5-120 120V/60Hz Line 1
 Mode: Cont Wave at 431 MHz
 Proj: 04ME09006 File:NC2219
 Tested By: GB Blue=Pk Grn=QPk

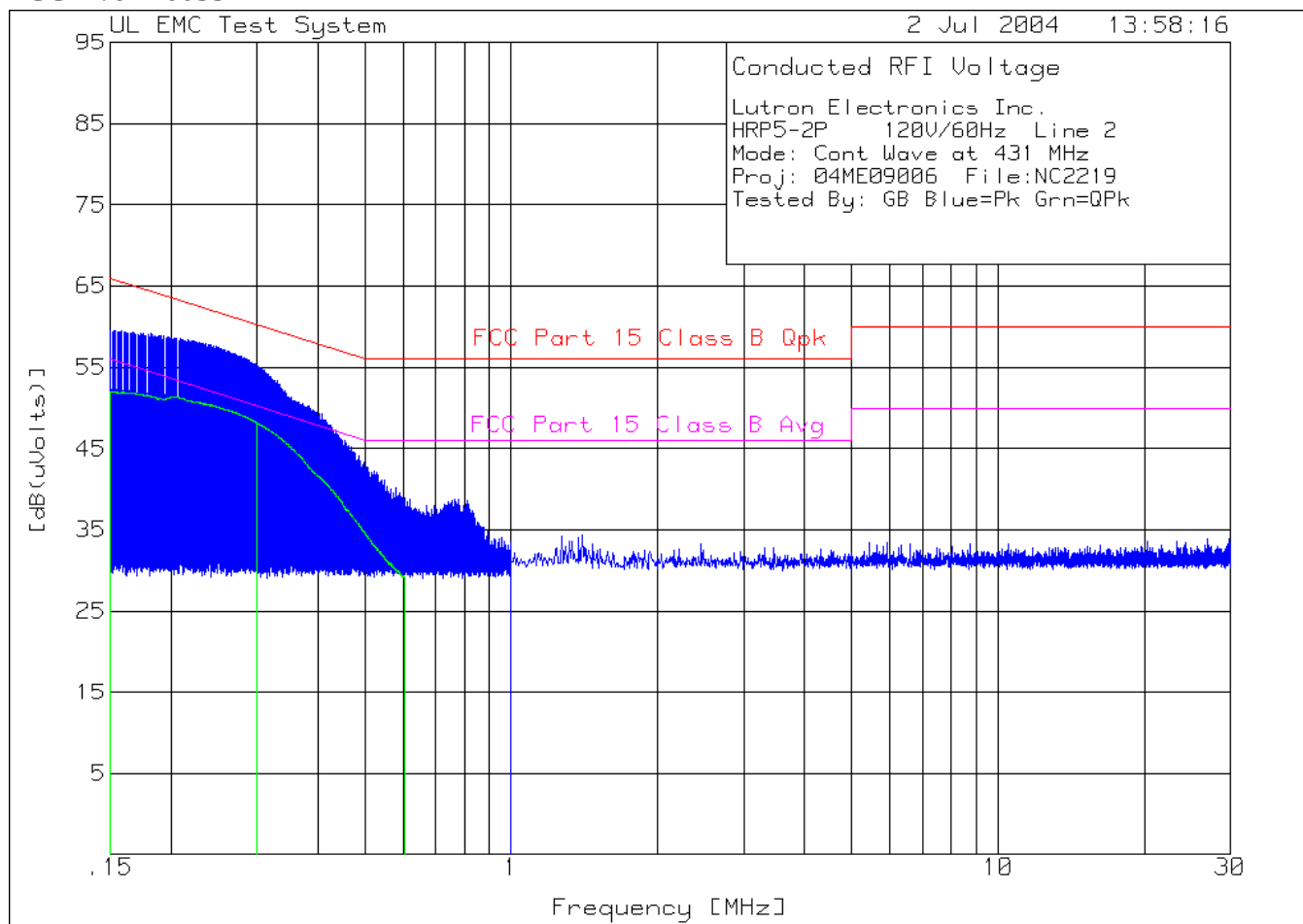
Test No.	Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
=====							
Range: 1 .15 - 1MHz -----							
1	.16145	42.29 qp	10.1	0	52.39	65.4	55.4
				Margin [dB]		-13.01	-3.01
2	.26741	40.51 qp	10.1	0	50.61	61.2	51.2
				Margin [dB]		-10.59	-.59
3	.29264	39.59 qp	10.1	0	49.69	60.4	50.4
				Margin [dB]		-10.71	-.71
4	.31722	38.57 qp	10.1	0	48.67	59.8	49.8
				Margin [dB]		-11.13	-1.13
5	.37249	33.55 qp	10.1	0	43.65	58.4	48.4
				Margin [dB]		-14.75	-4.75
6	.76672	26.83 qp	10.1	0	36.93	56	46
				Margin [dB]		-19.07	-9.07

LIMIT 1: FCC Part 15 Class B Qpk
 LIMIT 2: FCC Part 15 Class B Avg

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector
 avlg - denotes average log detection
 avem - denotes EMI average detection
 tm - Trace Math Result

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Issued: 9/28/2004

Lutron Electronics Inc.
HRP5-120 120V/60Hz Line 2
Mode: Cont Wave at 431 MHz
Proj: 04ME09006 File:NC2219
Tested By: GB Blue=Pk Grn=QPk

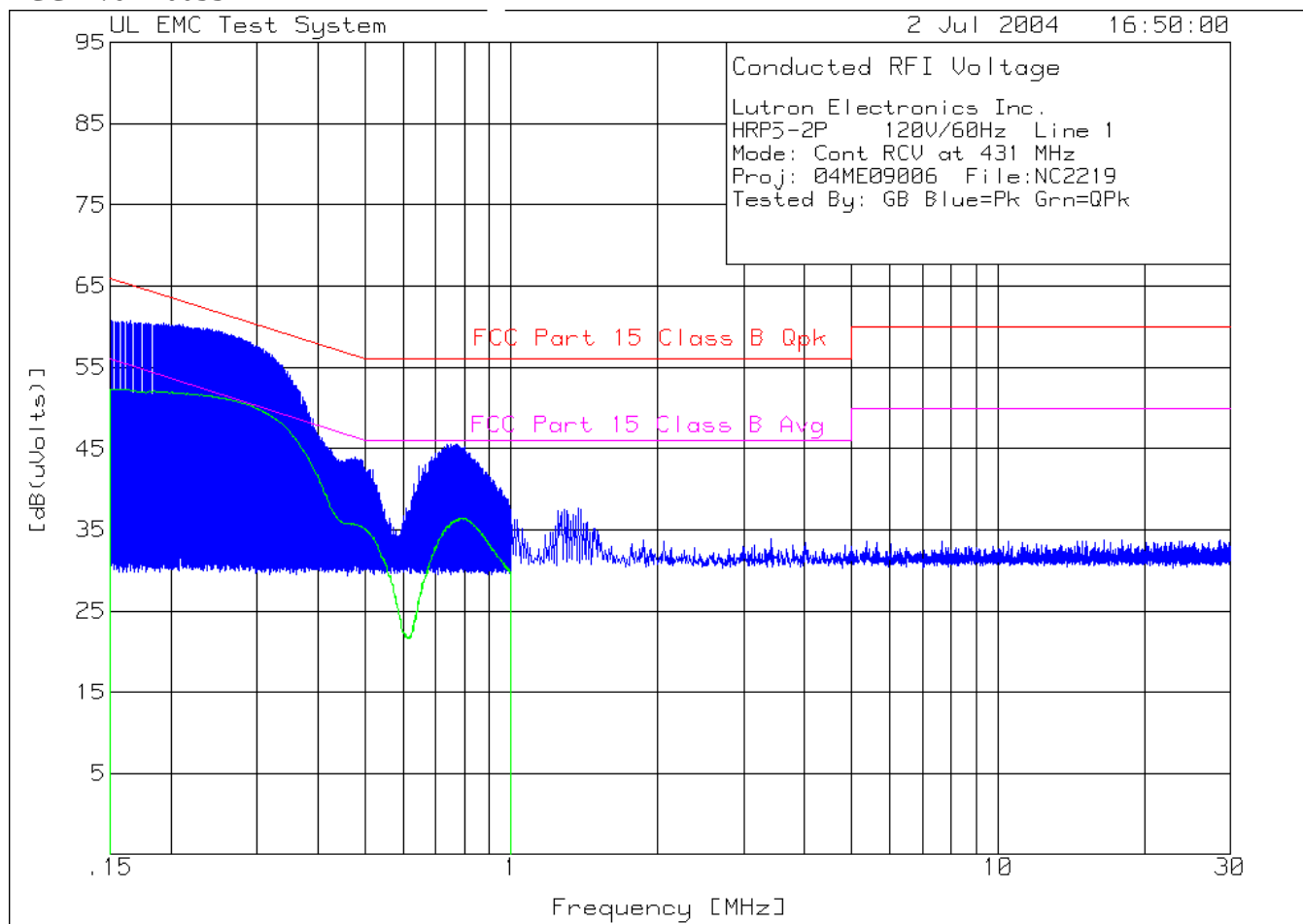
Test No.	Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
=====							
Range: 1 .15 - 1MHz -----							
1	.15883	41.8 qp	10.1	0	51.9	65.5	55.5
				Margin [dB]		-13.6	-3.6
2	.20167	41.28 qp	10.1	0	51.38	63.5	53.5
				Margin [dB]		-12.12	-2.12
3	.2926	38.46 qp	10.1	0	48.56	60.5	50.5
				Margin [dB]		-11.94	-1.94
4	.34368	35.65 qp	10.1	0	45.75	59.1	49.1
				Margin [dB]		-13.35	-3.35
5	.42092	30.27 qp	10.1	0	40.37	57.4	47.4
				Margin [dB]		-17.03	-7.03
6	.52556	22.79 qp	10.1	0	32.89	56	46
				Margin [dB]		-23.11	-13.11

LIMIT 1: FCC Part 15 Class B Qpk
LIMIT 2: FCC Part 15 Class B Avg

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection
tm - Trace Math Result

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Lutron Electronics Inc.
 HRP5-120 120V/60Hz Line 1
 Mode: Cont RCV at 431 MHz
 Proj: 04ME09006 File:NC2219
 Tested By: GB Blue=Pk Grn=QPk

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
=====							
Range: 1 .15 - 1MHz -----							
1	.15742	42.22 qp	10.1	0	52.32	65.6	55.6
				Margin [dB]		-13.28	-3.28
2	.18073	41.97 qp	10.1	0	52.07	64.5	54.5
				Margin [dB]		-12.43	-2.43
3	.20511	41.76 qp	10.1	0	51.86	63.4	53.4
				Margin [dB]		-11.54	-1.54
4	.23584	41.42 qp	10.1	0	51.52	62.2	52.2
				Margin [dB]		-10.68	-.68
5	.25915	41.03 qp	10.1	0	51.13	61.5	51.5
				Margin [dB]		-10.37	-.37
6	.28247	40.45 qp	10.1	0	50.55	60.7	50.7
				Margin [dB]		-10.15	-.15
7	.31108	39.35 qp	10.1	0	49.45	59.9	49.9
				Margin [dB]		-10.45	-.45
8	.33228	38.29 qp	10.1	0	48.39	59.4	49.4
				Margin [dB]		-11.01	-1.01
9	.35559	36.4 qp	10.1	0	46.5	58.8	48.8
				Margin [dB]		-12.3	-2.3
10	.36725	35.37 qp	10.1	0	45.47	58.6	48.6
				Margin [dB]		-13.13	-3.13

LIMIT 1: FCC Part 15 Class B Qpk
 LIMIT 2: FCC Part 15 Class B Avg

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector
 avlg - denotes average log detection
 avem - denotes EMI average detection
 tm - Trace Math Result

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Lutron Electronics Inc.
 HRP5-120 120V/60Hz Line 1
 Mode: Cont RCV at 431 MHz
 Proj: 04ME09006 File:NC2219
 Tested By: GB Blue=Pk Grn=QPk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
=====						
Range: 1 .15 - 1MHz						
.15742	-4.52 avem	10.1	0	5.58	65.6	55.6
			Margin [dB]:		-60.02	-50.02
.18073	-2.6 avem	10.1	0	7.5	64.5	54.5
			Margin [dB]:		-57	-47
.20511	-2.9 avem	10.1	0	7.2	63.4	53.4
			Margin [dB]:		-56.2	-46.2
.23584	-4.99 avem	10.1	0	5.11	62.2	52.2
			Margin [dB]:		-57.09	-47.09
.25915	-3.14 avem	10.1	0	6.96	61.5	51.5
			Margin [dB]:		-54.54	-44.54
.28247	-5.01 avem	10.1	0	5.09	60.7	50.7
			Margin [dB]:		-55.61	-45.61
.31108	-3.84 avem	10.1	0	6.26	59.9	49.9
			Margin [dB]:		-53.64	-43.64
.33228	-2.87 avem	10.1	0	7.23	59.4	49.4
			Margin [dB]:		-52.17	-42.17
.35559	.73 avem	10.1	0	10.83	58.8	48.8
			Margin [dB]:		-47.97	-37.97
.36725	.44 avem	10.1	0	10.54	58.6	48.6
			Margin [dB]:		-48.06	-38.06

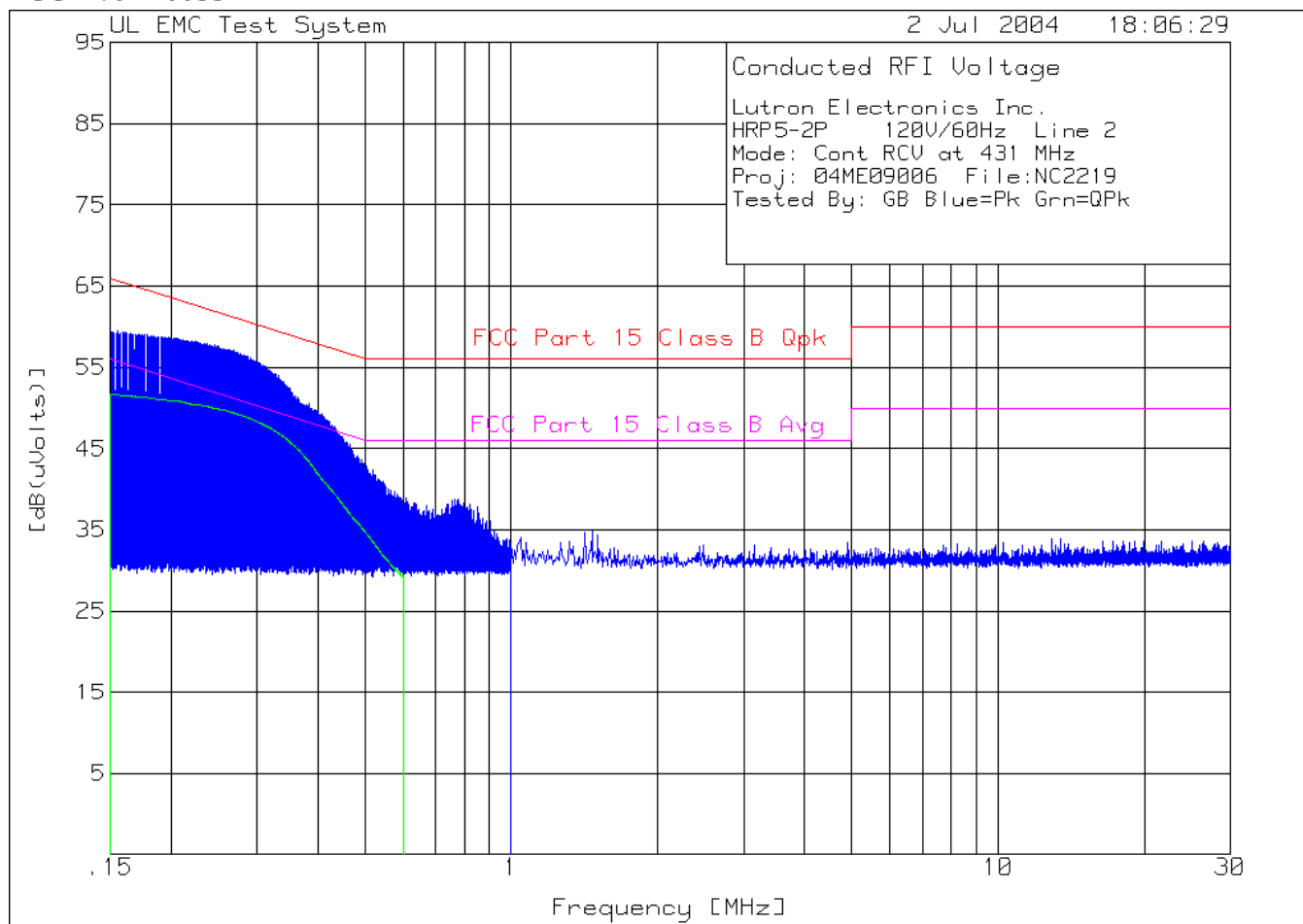
NOTE: "+" - Indicates an emission level in excess of the applicable limit (s).

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector
 avlg - denotes average log detection
 avem - denotes EMI average detection

LIMIT 1: FCC Part 15 Class B Qpk
 LIMIT 2: FCC Part 15 Class B Avg

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



File Number: NC2219
 Project Number: 04ME09006
 Model Number: HRP5-120
 FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
 HRP5-120 120V/60Hz Line 2
 Mode: Cont RCV at 431 MHz
 Proj: 04ME09006 File:NC2219
 Tested By: GB Blue=Pk Grn=QPk

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
=====							
Range: 1 .15 - 1MHz -----							
1	.15	41.58 qp	10.1	0	51.68	66	56
				Margin [dB]		-14.32	-4.32
2	.17876	41.17 qp	10.1	0	51.27	64.5	54.5
				Margin [dB]		-13.23	-3.23
3	.21203	40.63 qp	10.1	0	50.73	63.1	53.1
				Margin [dB]		-12.37	-2.37
4	.24811	39.83 qp	10.1	0	49.93	61.8	51.8
				Margin [dB]		-11.87	-1.87
5	.29604	38.38 qp	10.1	0	48.48	60.4	50.4
				Margin [dB]		-11.92	-1.92
6	.33382	36.7 qp	10.1	0	46.8	59.4	49.4
				Margin [dB]		-12.6	-2.6
7	.37329	34.12 qp	10.1	0	44.22	58.4	48.4
				Margin [dB]		-14.18	-4.18
8	.40431	31.44 qp	10.1	0	41.54	57.8	47.8
				Margin [dB]		-16.26	-6.26

LIMIT 1: FCC Part 15 Class B Qpk
 LIMIT 2: FCC Part 15 Class B Avg

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector
 avlg - denotes average log detection
 avem - denotes EMI average detection
 tm - Trace Math Result

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
HRP5-120 120V/60Hz Line 2
Mode: Cont RCV at 431 MHz
Proj: 04ME09006 File:NC2219
Tested By: GB Blue=Pk Grn=QPk

Test	Meter	Gain/Loss	Transducer	Level	Limit:1	2
Frequency	Reading	Factor	Factor	[dB(uVolts)]		
[MHz]	[dB(uV)]	[dB]	[dB]			
=====						
Range: 1 .15 - 1MHz						
.15175	-1.89 avem	10.1	0	8.21	65.9	55.9
			Margin [dB]:		-57.69	-47.69
.17876	.91 avem	10.1	0	11.01	64.5	54.5
			Margin [dB]:		-53.49	-43.49
.21203	-1.05 avem	10.1	0	9.05	63.1	53.1
			Margin [dB]:		-54.05	-44.05
.24811	-.8 avem	10.1	0	9.3	61.8	51.8
			Margin [dB]:		-52.5	-42.5
.29604	1.99 avem	10.1	0	12.09	60.4	50.4
			Margin [dB]:		-48.31	-38.31
.33382	1.87 avem	10.1	0	11.97	59.4	49.4
			Margin [dB]:		-47.43	-37.43
.37329	2.08 avem	10.1	0	12.18	58.4	48.4
			Margin [dB]:		-46.22	-36.22
.40431	.2 avem	10.1	0	10.3	57.8	47.8
			Margin [dB]:		-47.5	-37.5

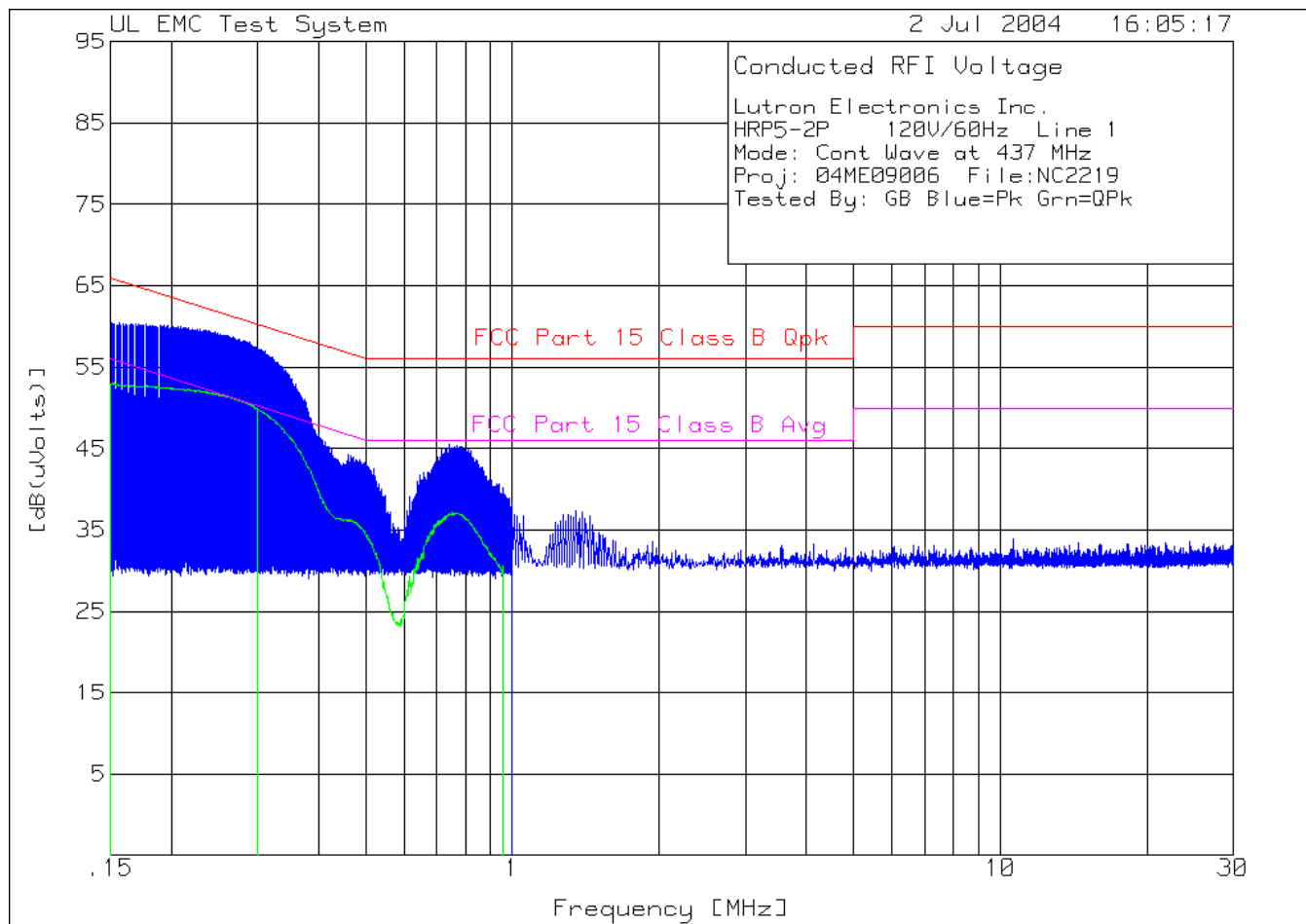
NOTE: "+" - Indicates an emission level in excess of the
applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: FCC Part 15 Class B Qpk
LIMIT 2: FCC Part 15 Class B Avg

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



File Number: NC2219
 Project Number: 04ME09006
 Model Number: HRP5-120
 FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
 HRP5-120 120V/60Hz Line 1
 Mode: Cont Wave at 437 MHz
 Proj: 04ME09006 File:NC2219
 Tested By: GB Blue=Pk Grn=QPk

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
=====							
Range: 1 .15 - 1MHz -----							
1	.15357	42.77 qp	10.1	0	52.87	65.8	55.8
				Margin [dB]		-12.93	-2.93
2	.20599	42.23 qp	10.1	0	52.33	63.4	53.4
				Margin [dB]		-11.07	-1.07
3	.27381	40.85 qp	10.1	0	50.95	61	51
				Margin [dB]		-10.05	-.05
4	.3003	39.72 qp	10.1	0	49.82	60.2	50.2
				Margin [dB]		-10.38	-.38
5	.39708	30.36 qp	10.1	0	40.46	57.9	47.9
				Margin [dB]		-17.44	-7.44
6	.75055	27.03 qp	10.1	0	37.13	56	46
				Margin [dB]		-18.87	-8.87

LIMIT 1: FCC Part 15 Class B Qpk
 LIMIT 2: FCC Part 15 Class B Avg

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector
 avlg - denotes average log detection
 avem - denotes EMI average detection
 tm - Trace Math Result

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
HRP5-120 120V/60Hz Line 1
Mode: Cont Wave at 437 MHz
Proj: 04ME09006 File:NC2219
Tested By: GB Blue=Pk Grn=QPk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
=====						
Range: 1 .15 - 1MHz						
.15357	-2.27 avem	10.1	0	7.83	65.8	55.8
			Margin [dB]:		-57.97	-47.97
.20599	-6.48 avem	10.1	0	3.62	63.4	53.4
			Margin [dB]:		-59.78	-49.78
.27381	-3.01 avem	10.1	0	7.09	61	51
			Margin [dB]:		-53.91	-43.91
.3003	-2.63 avem	10.1	0	7.47	60.2	50.2
			Margin [dB]:		-52.73	-42.73
.39708	1.36 avem	10.1	0	11.46	57.9	47.9
			Margin [dB]:		-46.44	-36.44
.75055	-2.64 avem	10.1	0	7.46	56	46
			Margin [dB]:		-48.54	-38.54

NOTE: "+" - Indicates an emission level in excess of the
applicable limit (s).

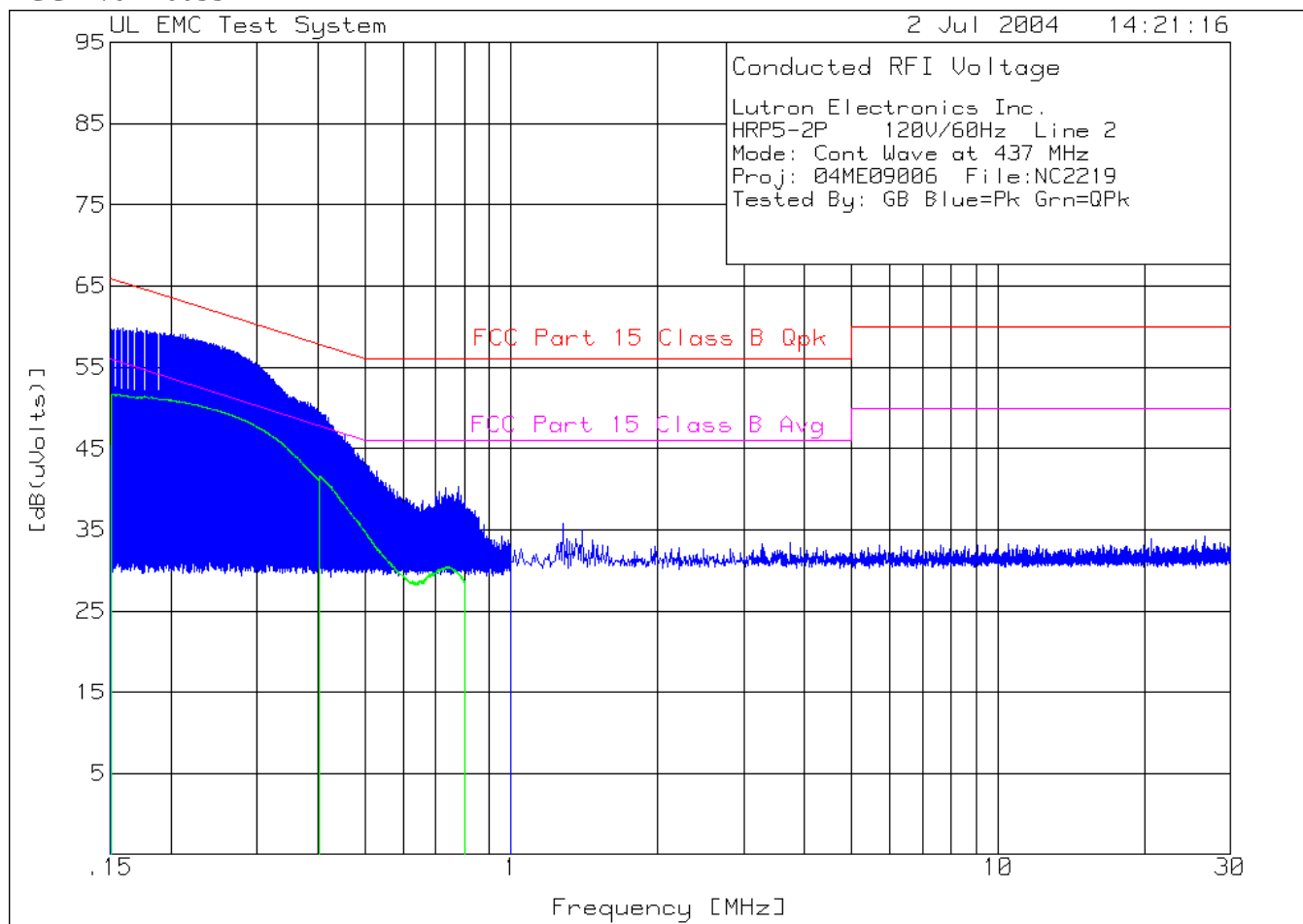
pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: FCC Part 15 Class B Qpk

LIMIT 2: FCC Part 15 Class B Avg

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



File Number: NC2219
 Project Number: 04ME09006
 Model Number: HRP5-120
 FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
 HRP5-120 120V/60Hz Line 2
 Mode: Cont Wave at 437 MHz
 Proj: 04ME09006 File:NC2219
 Tested By: GB Blue=Pk Grn=QPk

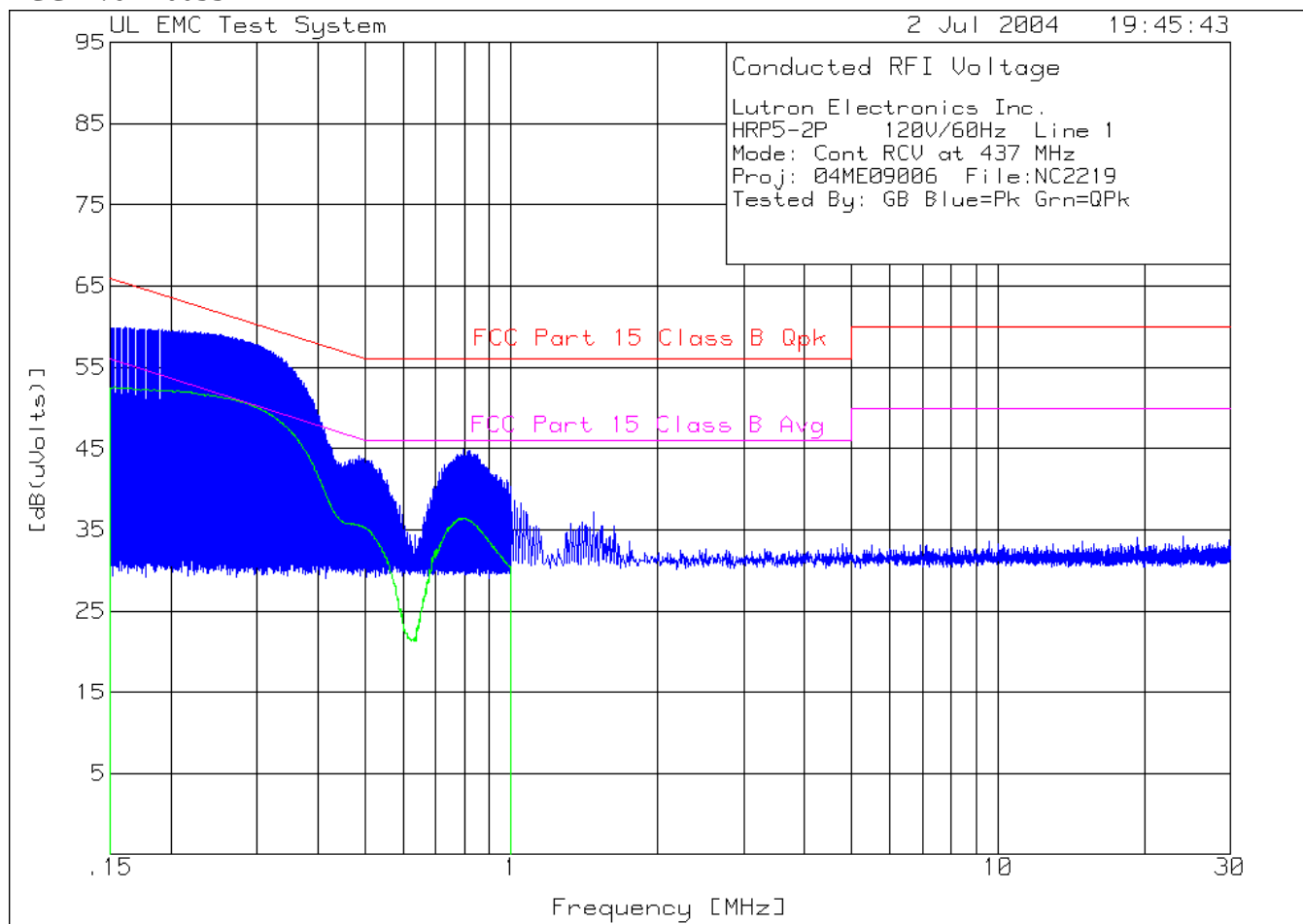
Test No.	Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
=====							
Range: 1 .15 - 1MHz -----							
1	.15206	41.59 qp	10.1	0	51.69	65.9	55.9
				Margin [dB]		-14.21	-4.21
2	.19757	40.87 qp	10.1	0	50.97	63.7	53.7
				Margin [dB]		-12.73	-2.73
3	.25634	39.35 qp	10.1	0	49.45	61.5	51.5
				Margin [dB]		-12.05	-2.05
4	.3107	37.06 qp	10.1	0	47.16	60	50
				Margin [dB]		-12.84	-2.84
5	.38559	32.08 qp	10.1	0	42.18	58.2	48.2
				Margin [dB]		-16.02	-6.02
6	.74309	20.39 qp	10.1	0	30.49	56	46
				Margin [dB]		-25.51	-15.51

LIMIT 1: FCC Part 15 Class B Qpk
 LIMIT 2: FCC Part 15 Class B Avg

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector
 avlg - denotes average log detection
 avem - denotes EMI average detection
 tm - Trace Math Result

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



File Number: NC2219
 Project Number: 04ME09006
 Model Number: HRP5-120
 FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
 HRP5-120 120V/60Hz Line 1
 Mode: Cont RCV at 437 MHz
 Proj: 04ME09006 File:NC2219
 Tested By: GB Blue=Pk Grn=QPk

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
=====							
Range: 1 .15 - 1MHz -----							
1	.15318	42.42 qp	10.1	0	52.52	65.8	55.8
				Margin [dB]		-13.28	-3.28
2	.17014	42.22 qp	10.1	0	52.32	65	55
				Margin [dB]		-12.68	-2.68
3	.20087	41.99 qp	10.1	0	52.09	63.6	53.6
				Margin [dB]		-11.51	-1.51
4	.24008	41.46 qp	10.1	0	51.56	62.1	52.1
				Margin [dB]		-10.54	-.54
5	.27293	40.83 qp	10.1	0	50.93	61	51
				Margin [dB]		-10.07	-.07
6	.30472	39.75 qp	10.1	0	49.85	60.1	50.1
				Margin [dB]		-10.25	-.25
7	.35029	37.2 qp	10.1	0	47.3	59	49
				Margin [dB]		-11.7	-1.7
8	.37255	35.12 qp	10.1	0	45.22	58.4	48.4
				Margin [dB]		-13.18	-3.18
9	.39162	32.92 qp	10.1	0	43.02	58	48
				Margin [dB]		-14.98	-4.98
10	.42342	28.08 qp	10.1	0	38.18	57.4	47.4
				Margin [dB]		-19.22	-9.22

LIMIT 1: FCC Part 15 Class B Qpk
 LIMIT 2: FCC Part 15 Class B Avg

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector
 avlg - denotes average log detection
 avem - denotes EMI average detection
 tm - Trace Math Result

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
HRP5-120 120V/60Hz Line 1
Mode: Cont RCV at 437 MHz
Proj: 04ME09006 File:NC2219
Tested By: GB Blue=Pk Grn=QPk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
=====						
Range: 1 .15 - 1MHz						
.15318	-3.8 avem	10.1	0	6.3	65.8	55.8
			Margin [dB]:		-59.5	-49.5
.17014	-6.46 avem	10.1	0	3.64	65	55
			Margin [dB]:		-61.36	-51.36
.20087	-3.89 avem	10.1	0	6.21	63.6	53.6
			Margin [dB]:		-57.39	-47.39
.24008	-1.79 avem	10.1	0	8.31	62.1	52.1
			Margin [dB]:		-53.79	-43.79
.27293	-4.05 avem	10.1	0	6.05	61	51
			Margin [dB]:		-54.95	-44.95
.30472	-3.06 avem	10.1	0	7.04	60.1	50.1
			Margin [dB]:		-53.06	-43.06
.35029	-1.94 avem	10.1	0	8.16	59	49
			Margin [dB]:		-50.84	-40.84
.37255	-.53 avem	10.1	0	9.57	58.4	48.4
			Margin [dB]:		-48.83	-38.83
.39162	-.01 avem	10.1	0	10.09	58	48
			Margin [dB]:		-47.91	-37.91
.42342	.02 avem	10.1	0	10.12	57.4	47.4
			Margin [dB]:		-47.28	-37.28

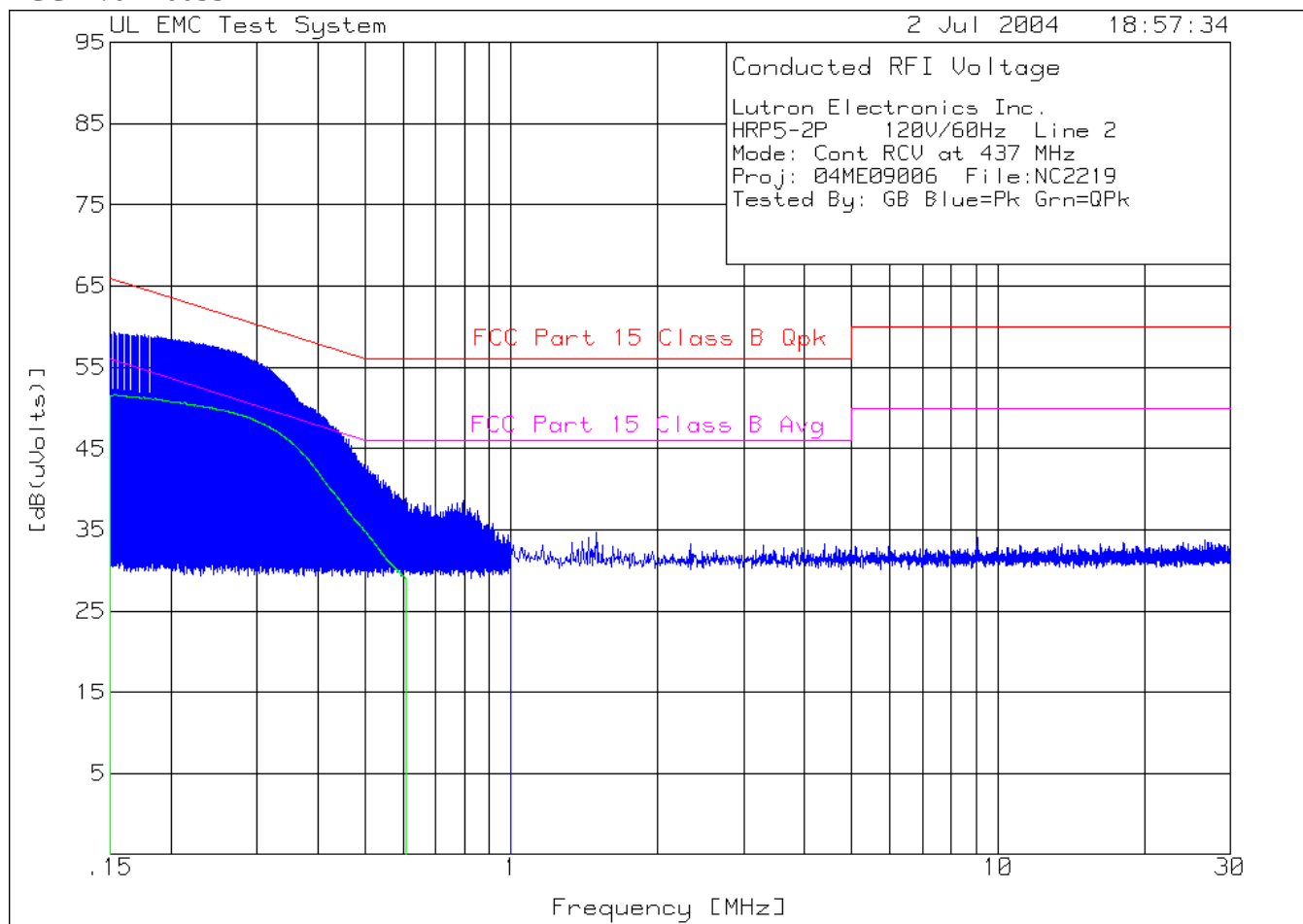
NOTE: "+" - Indicates an emission level in excess of the
applicable limit (s).

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: FCC Part 15 Class B Qpk
LIMIT 2: FCC Part 15 Class B Avg

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



File Number: NC2219
 Project Number: 04ME09006
 Model Number: HRP5-120
 FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
 HRP5-120 120V/60Hz Line 2
 Mode: Cont RCV at 437 MHz
 Proj: 04ME09006 File:NC2219
 Tested By: GB Blue=Pk Grn=QPk

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
=====							
Range: 1 .15 - 1MHz -----							
1	.15458	41.5 qp	10.1	0	51.6	65.8	55.8
				Margin [dB]		-14.2	-4.2
2	.17635	41.16 qp	10.1	0	51.26	64.7	54.7
				Margin [dB]		-13.44	-3.44
3	.21302	40.56 qp	10.1	0	50.66	63.1	53.1
				Margin [dB]		-12.44	-2.44
4	.24166	39.92 qp	10.1	0	50.02	62	52
				Margin [dB]		-11.98	-1.98
5	.26286	39.43 qp	10.1	0	49.53	61.3	51.3
				Margin [dB]		-11.77	-1.77
6	.29608	38.42 qp	10.1	0	48.52	60.4	50.4
				Margin [dB]		-11.88	-1.88
7	.31728	37.56 qp	10.1	0	47.66	59.8	49.8
				Margin [dB]		-12.14	-2.14
8	.33733	36.58 qp	10.1	0	46.68	59.3	49.3
				Margin [dB]		-12.62	-2.62
9	.3591	35.3 qp	10.1	0	45.4	58.7	48.7
				Margin [dB]		-13.3	-3.3
10	.38488	33.38 qp	10.1	0	43.48	58.2	48.2
				Margin [dB]		-14.72	-4.72
11	.3992	32.11 qp	10.1	0	42.21	57.9	47.9
				Margin [dB]		-15.69	-5.69

LIMIT 1: FCC Part 15 Class B Qpk
 LIMIT 2: FCC Part 15 Class B Avg

pk - Peak detector
 qp - Quasi-Peak detector
 av - Average detector
 avlg - denotes average log detection
 avem - denotes EMI average detection
 tm - Trace Math Result

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
HRP5-120 120V/60Hz Line 2
Mode: Cont RCV at 437 MHz
Proj: 04ME09006 File:NC2219
Tested By: GB Blue=Pk Grn=QPk

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level [dB(uVolts)]	Limit:1	2
=====						
Range: 1 .15 - 1MHz						
.15458	-1.45 avem	10.1	0	8.65	65.8	55.8
			Margin [dB]:		-57.15	-47.15
.17635	-.01 avem	10.1	0	10.09	64.7	54.7
			Margin [dB]:		-54.61	-44.61
.21302	-1.42 avem	10.1	0	8.68	63.1	53.1
			Margin [dB]:		-54.42	-44.42
.24166	.33 avem	10.1	0	10.43	62	52
			Margin [dB]:		-51.57	-41.57
.26286	-1.07 avem	10.1	0	9.03	61.3	51.3
			Margin [dB]:		-52.27	-42.27
.29608	1.59 avem	10.1	0	11.69	60.4	50.4
			Margin [dB]:		-48.71	-38.71
.31728	1.84 avem	10.1	0	11.94	59.8	49.8
			Margin [dB]:		-47.86	-37.86
.33733	2.06 avem	10.1	0	12.16	59.3	49.3
			Margin [dB]:		-47.14	-37.14
.3591	2.41 avem	10.1	0	12.51	58.7	48.7
			Margin [dB]:		-46.19	-36.19
.38488	1.41 avem	10.1	0	11.51	58.2	48.2
			Margin [dB]:		-46.69	-36.69
.3992	1.07 avem	10.1	0	11.17	57.9	47.9
			Margin [dB]:		-46.73	-36.73

NOTE: "+" - Indicates an emission level in excess of the
applicable limit (s).

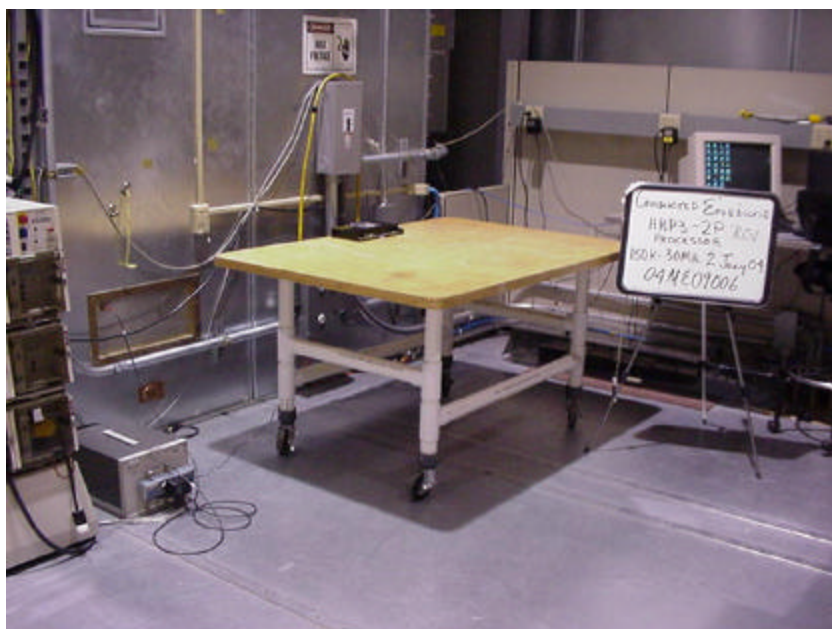
pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection

LIMIT 1: FCC Part 15 Class B Qpk
LIMIT 2: FCC Part 15 Class B Avg



HRP5-120 XMT

The model number depicted in the title block should be HRP5-120



HRP5-120 RCV

The model number depicted in the title block should be HRP5-120

Conducted Emissions Test Set-Up

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

5.1.2 Conducted Click Emissions Tests

Test Not Applicable

The EUT does not contain devices that produce transient emissions as defined by the standard.

5.1.3 Cease Operation Within 5 Seconds

Test Applicable

Test Procedure:

This test is performed one time at any frequency band. A manual operated transmitter shall employ a switch that will automatically deactivate the transmitter within not more than 5 seconds of being released

Results

The system met the requirements for conducted emissions. Data Pages follow.

Temperature:	21.5 °C
Humidity:	42 %RH
Pressure:	1011 mbar
Date test performed:	6 July 2004

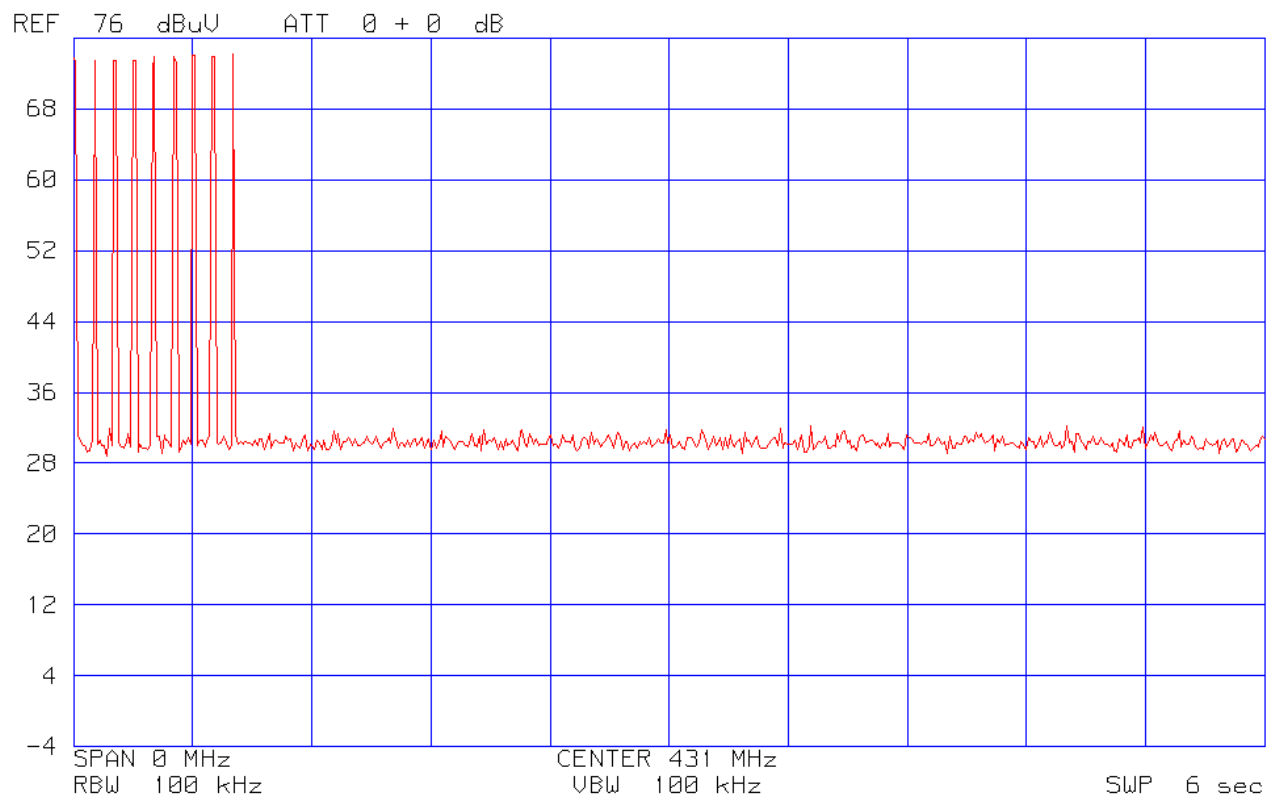
1 fully configured sample was scanned over the following frequency range

Test equipment used for Cease Operation measurements:

ESI26	Rhode & Schwartz	EMI Receiver	Equipment No.: ME5B-081
			Quasi Peak BW: 200Hz 9kHz to 150kHz
			RBW 10 KHz
			Quasi Peak BW: 9kHz 150kHz to 30MHz
			RBW 100 KHz
			Quasi Peak BW: 120 30 to 1000MHz
			kHz
			RBW 1.0 MHz
Range: 30MHz-1000MHz	Last Calibration Date: 28 August 2003		Calibration Due Date: 31 August 2004
3121C-DB4	EMCO Log-Periodic Antenna		Equipment No.: ME5-811
Last Calibration Date: 1 April 2004			Calibration Due Date: 1 April 2005
99760-00	Cole -Parmer	Hydrometer/Temp/Barometer	Equipment No.: ME4-268
Ranges: Temp:0°C-55°C			
Humidity 25% to 95 %RH			
Pressure 795 to 1050 mbar			
Last Calibration Date: 18 June 2004			Calibration Due Date: 18 June 2005

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



Cease Operation < 5 seconds

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



Cease Operation Test Set-Up

5.1.4 Radiated Emissions Test (10 Meter Semi-Anechoic Chamber)

Test Applicable

Measurements were made in a 10-meter semi-anechoic chamber that complies to ANSI C63.4. All frequencies were investigated in both horizontal and vertical antenna polarity, where applicable.

Results

The system met the requirements for radiated emissions. Data Pages follow.

Temperature:	21 °C
Humidity:	58 %RH
Pressure:	1011mbar
Date test performed:	01 July 2004

Mode*	
Power	Operation
<u>1</u>	<u>1</u>
<u>1</u>	<u>2</u>
<u>1</u>	<u>3</u>
<u>1</u>	<u>4</u>

1 fully configured sample was scanned over the following frequency range:

Electric fields:	30MHz - 5GHz	(3 meter measurement distance) Intentional Transmit at 431 MHz and 437 MHz
Electric fields:	30MHz - 2GHz	(3 meter measurement distance) Unintentional Receive at 431 MHz and 437 MHz

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

Test equipment used for radiated emissions

ESI26	Rhode & Schwartz	EMI Receiver	Equipment No.: ME5B-081
			Quasi Peak BW: 200Hz
			RBW 10 KHz
			Quasi Peak BW: 9kHz
			RBW 100 KHz
			Quasi Peak BW: 120 kHz
			RBW 1.0 MHz
Range: 30-1000MHz	Last Calibration Date: 28 August 2003		Calibration Due Date: 31 August 2004

Test equipment used for radiated emissions above 1GHz

ESI26	Rhode & Schwartz	EMI Receiver	Equipment No.: ME5B-081
			Resolution BW: 1MHz
			Video BW: 1MHz
Range: 1-5GHz	Last Calibration Date: 28 August 2003		Calibration Due Date: 31 August 2004

Test Accessories for Radiated Emissions

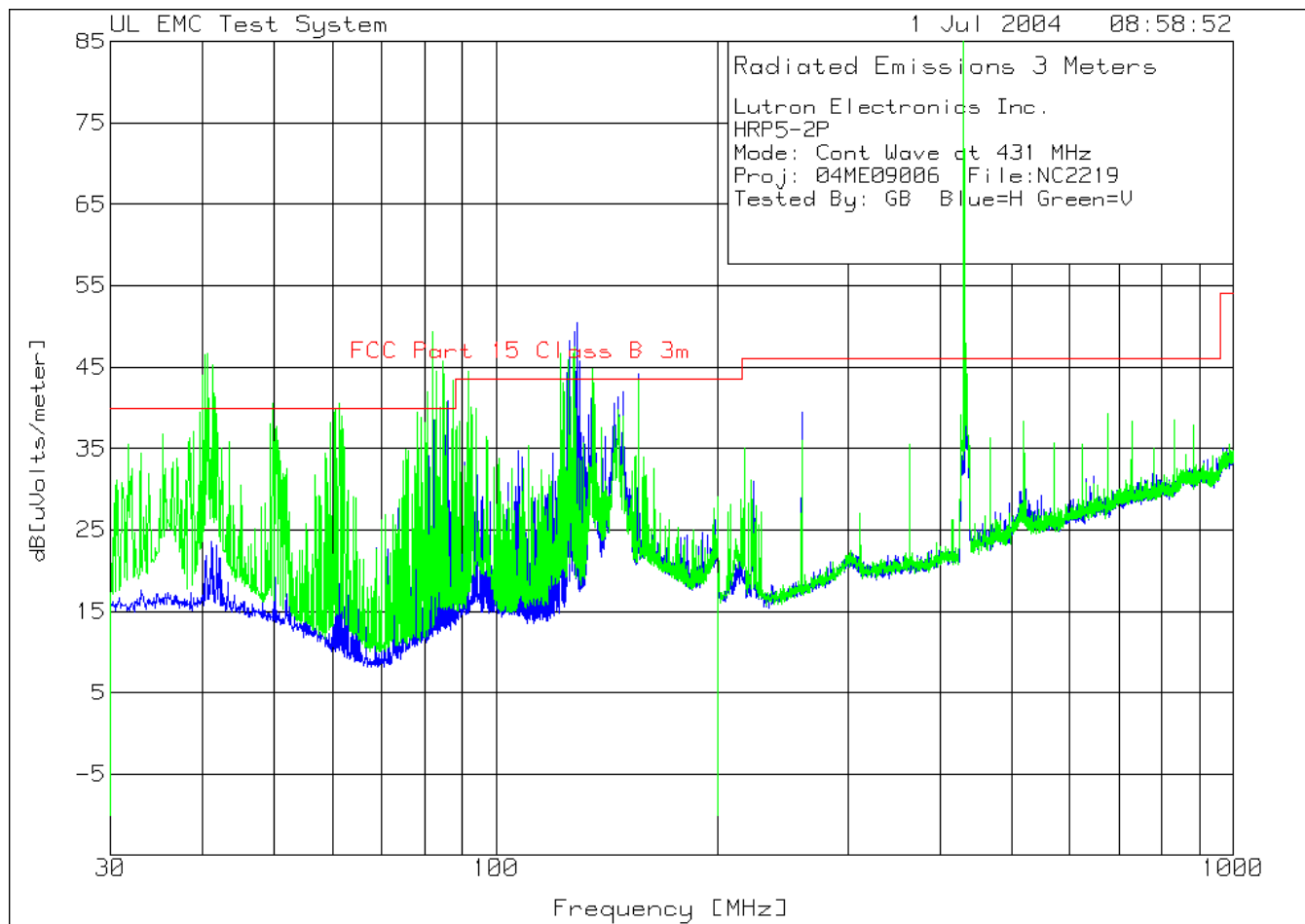
94455-1	Ailtech	Biconnical Antenna	Equipment No.: ME5-439
Range: 30-200MHz	Last Calibration Date: 02 December 2003		Calibration Due Date: 02 December 2004
3146	EMCO	Log Periodic Antenna	Equipment No.: ME5-451
Range: 200-1000MHz	Last Calibration Date: 04 December 2003		Calibration Due Date: 04 December 2004
3115	EMCO	Horn Antenna	Equipment No.: ME5A-766
Range: 1-5GHz	Last Calibration Date: 18 July 2003		Calibration Due Date: 18 July 2004
8449B	Hewlett Packard	1-26GHz Pre-Amp	Equipment No.: ME5-914
Range: 1-5GHz	Last Calibration Date: 21 January 2004		Calibration Due Date: 21 January 2005
99760-00	Cole -Parmer	Hygrometer/Temp/Baro meter	Equipment No.: ME4-268
		Ranges	Temp: 0°C-55°C
			Humidity: 25% to 95 %RH
			Pressure: 795 to 1050 mbar
	Last Calibration Date: 02 June 2004		Calibration Due Date: 02 June 2005

Paragraph 15.35:

When the Radiated Limits are expressed in terms of the average value of the emissions, and pulse operation is employed, the pulse measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds (100ms) or in cases where the pulse train exceeds 0.1seconds the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



The model number depicted in the title block should be HRP5-120

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
HRP5-120
Mode: Cont Wave at 431 MHz
Proj: 04ME09006 File:NC2219
Tested By: GB Blue=H Green=V

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level	Limit:1 dB[uVolts/meter]	Limit:2
=====							
Horizontal 30 - 200MHz -----							
5	125.6734	35.1 pk	1.6	11.5	48.2	43.5	60.7
	Azimuth:202	Height:168	Horz	Margin [dB]		4.7	-12.5
6	129.0751	36.59 pk	1.6	12.3	50.49	43.5	60.7
	Azimuth:202	Height:168	Horz	Margin [dB]		6.99	-10.21
Vertical 30 - 200MHz -----							
3	40.5453	32.38 pk	.9	13.4	46.68	40	60.7
	Azimuth:314	Height:100	Vert	Margin [dB]		6.68	-14.02
4	81.9613	39.47 pk	1.3	8.6	49.37	40	60.7
	Azimuth:2	Height:100	Vert	Margin [dB]		9.37	-11.33
Horizontal 200 - 1000MHz -----							
1	431.0107	*46.33pk	3	16.3	*65.63	46	80.7
	Azimuth:201	Height:168	Horz	Margin [dB]		42.63	-15.07
Vertical 200 - 1000MHz -----							
2	431.0107	*48.13pk	3	16.3	*67.43	46	80.7
	Azimuth:267	Height:100	Vert	Margin [dB]		44.43	-13.27

LIMIT 1: FCC Part 15 Class B 3m
LIMIT 2: FCC Part 15 Subpart C-Section 15.231

***Duty Cycle correction factor of -23dB added to Average level.**

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection
tm - Trace Math Result

File Number: NC2219

Issued: 9/28/2004

Project Number: 04ME09006

Model Number: HRP5-120

FCCID: JPZ0033

Lutron Electronics Inc.

HRP5-120

Mode: Cont Wave at 431 MHz

Proj: 04ME09006 File:NC2219

Tested By: GB Blue=H Green=V

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====					
Horizontal 30 - 200MHz					
125.67	18.06 qp	1.6	11.5	31.16	43.5
Azimuth: 24	Height:106	Horz		Margin [dB]:	-12.34
129	18.24 qp	1.6	12.3	32.14	43.5
Azimuth: 138	Height:205	Horz		Margin [dB]:	-11.36
Vertical 30 - 200MHz					
40.5	16.48 qp	.9	13.4	30.78	40
Azimuth: 0	Height:100	Vert		Margin [dB]:	-9.22
82	17.3 qp	1.3	8.6	27.2	40
Azimuth: 33	Height:102	Vert		Margin [dB]:	-12.8

LIMIT 1: FCC Part 15 Class B 3m

pk - Peak detector

qp - Quasi-Peak detector

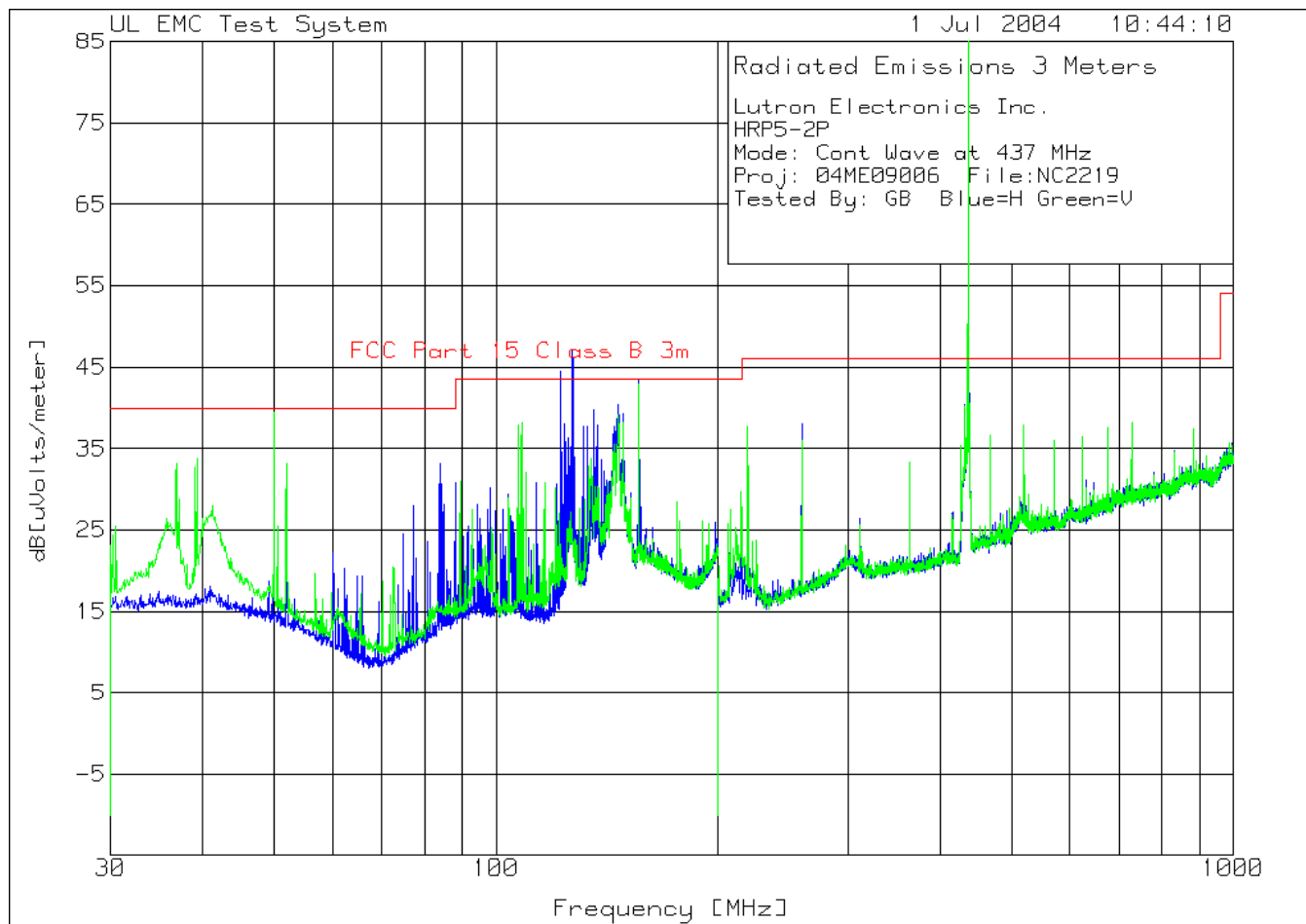
av - Average detector

avlg - Average log detector

ave - Average detector

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



The model number depicted in the title block should be HRP5-120

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
HRP5-120
Mode: Cont Wave at 437 MHz
Proj: 04ME09006 File:NC2219
Tested By: GB Blue=H Green=V

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level	Limit:1 dB[uVolts/meter]	Limit:2
Horizontal 30 - 200MHz -----							
2	122.4417	32.16 pk	1.6	10.7	44.46	43.5	60.9
	Azimuth:159	Height:101	Horz	Margin [dB]		.96	-16.44
3	126.7789	33.56 pk	1.6	11.8	46.96	43.5	60.9
	Azimuth:159	Height:298	Horz	Margin [dB]		3.46	-13.94
4	127.5443	32.77 pk	1.6	11.9	46.27	43.5	60.9
	Azimuth:343	Height:199	Horz	Margin [dB]		2.77	-14.63
Vertical 30 - 200MHz -----							
1	49.9851	26.91 pk	1	11.5	39.41	40	60.9
	Azimuth:18	Height:100	Vert	Margin [dB]		-.59	-21.49
Horizontal 200 - 1000MHz -----							
5	436.8793	*47.64pk	3	16.5	*67.14	46	80.9
	Azimuth:292	Height:198	Horz	Margin [dB]		44.14	-13.76
Vertical 200 - 1000MHz -----							
6	436.8793	*46.52pk	3	16.5	*66.02	46	80.9
	Azimuth:358	Height:100	Vert	Margin [dB]		43.07	-14.88

LIMIT 1: FCC Part 15 Class B 3m
LIMIT 2: FCC Part 15 Subpart C-Section 15.231

***Duty Cycle correction factor of -23dB added to Average level.**

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection
tm - Trace Math Result

File Number: NC2219

Issued: 9/28/2004

Project Number: 04ME09006

Model Number: HRP5-120

FCCID: JPZ0033

Lutron Electronics Inc.

HRP5-120

Mode: Cont Wave at 437 MHz

Proj: 04ME09006 File:NC2219

Tested By: GB Blue=H Green=V

Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====					
Horizontal 30 - 200MHz					
122.44	18.06 qp	1.6	10.7	30.36	43.5
Azimuth: 230 Height:157 Horz			Margin [dB]: -13.14		
126.8	18.24 qp	1.6	11.8	31.64	43.5
Azimuth: 15 Height:224 Horz			Margin [dB]: -11.86		
127.55	18.24 qp	1.6	11.9	31.74	43.5
Azimuth: 35 Height:184 Horz			Margin [dB]: -11.76		
Vertical 30 - 200MHz					
50	16.9 qp	1	11.5	29.4	40
Azimuth: 143 Height:100 Vert			Margin [dB]: -10.6		

LIMIT 1: FCC Part 15 Class B 3m

pk - Peak detector

qp - Quasi-Peak detector

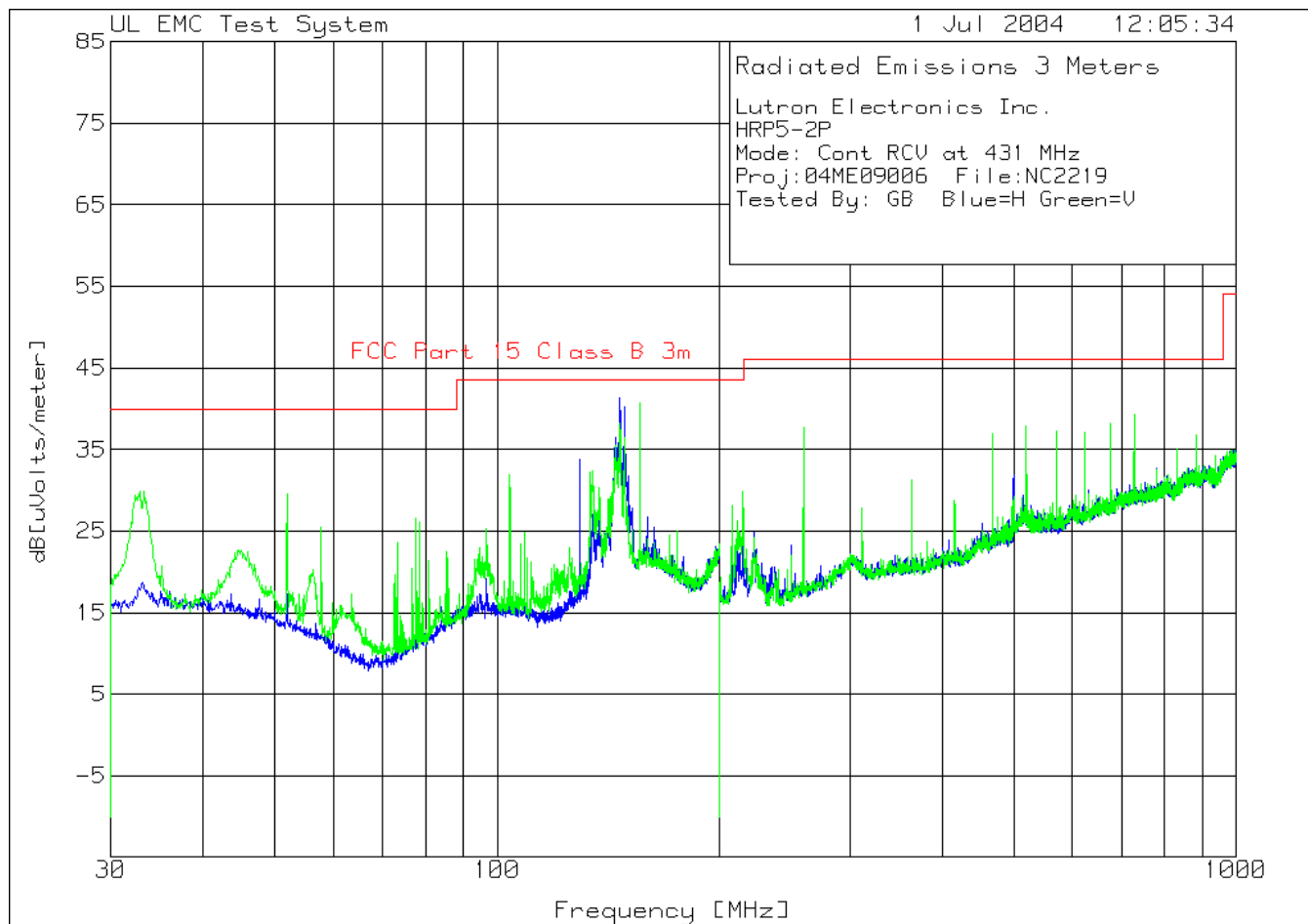
av - Average detector

avlg - Average log detector

ave - Average detector

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



The model number depicted in the title block should be HRP5-120

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
HRP5-120
Mode: Cont RCV at 431 MHz
Proj:04ME09006 File:NC2219
Tested By: GB Blue=H Green=V

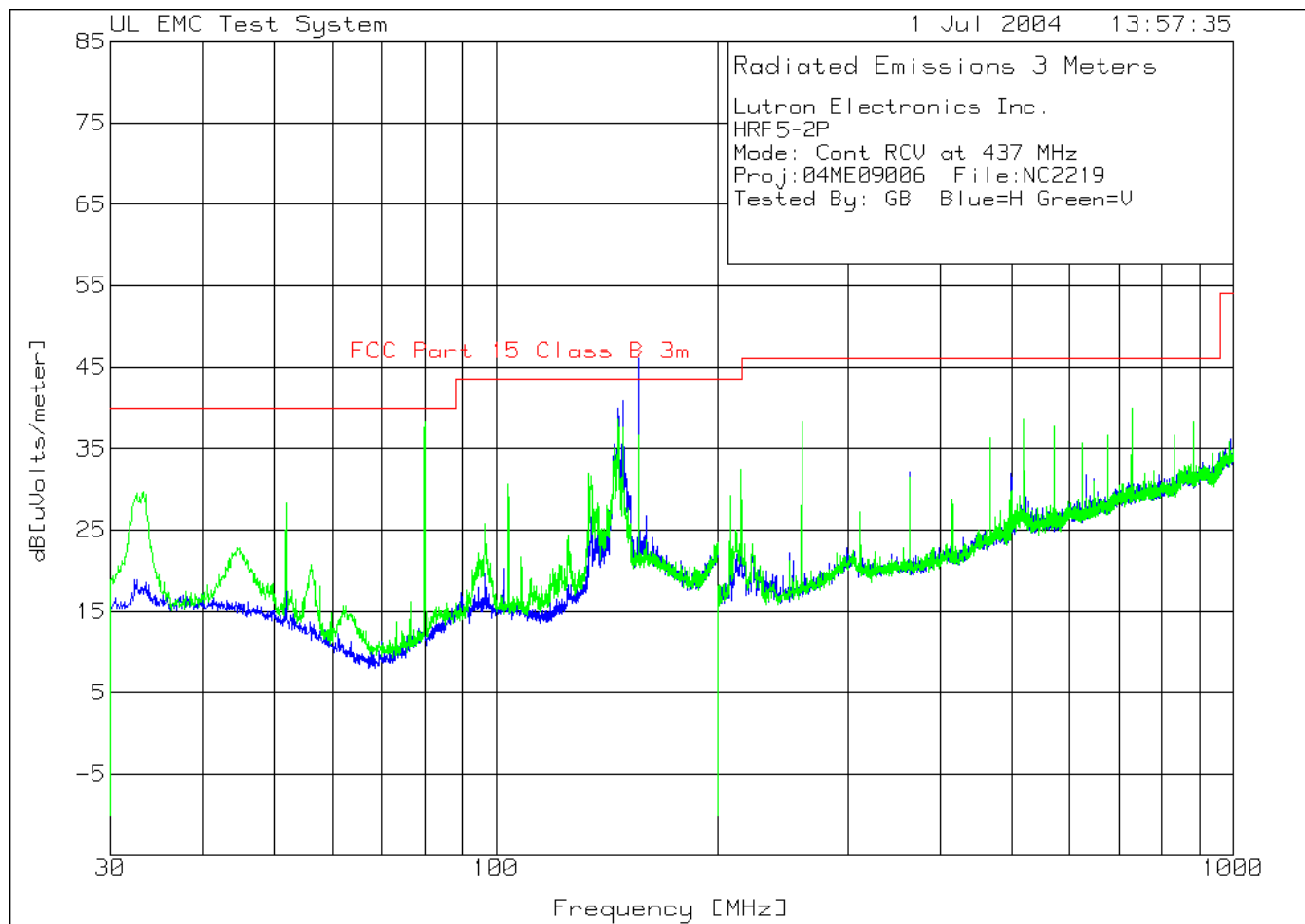
No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====						
Vertical 200 - 1000MHz -----						
259.7533	22.31 qp	2.3	13.1	37.71	46	
	Azimuth:345	Height:198 Vert		Margin [dB]		-8.29
519.8404	15.34 qp	3.3	19.3	37.94	46	
	Azimuth:197	Height:101 Vert		Margin [dB]		-8.06
Horizontal 30 - 200MHz						
146.5338	14.21 qp	1.7	15.6	31.51	43.5	
	Azimuth: 49	Height:194 Horz		Margin [dB]:		-11.99
148.6944	20.92 qp	1.7	15.8	38.42	43.5	
	Azimuth: 45	Height:196 Horz		Margin [dB]:		-5.08
155.9969	23.31 qp	1.8	16.3	41.41	43.5	
	Azimuth: 247	Height:185 Horz		Margin [dB]:		-2.09
Vertical 30 - 200MHz						
155.9956	20.46 qp	1.8	16.3	38.56	43.5	
	Azimuth: 98	Height:101 Vert		Margin [dB]:		-4.94

LIMIT 1: FCC Part 15 Class B 3m

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - Average log detector
avem - EMI Average detector

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



The model number depicted in the title block should be HRP5-120

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
HRP5-120
Mode: Cont RCV at 437 MHz
Proj:04ME09006 File:NC2219
Tested By: GB Blue=H Green=V

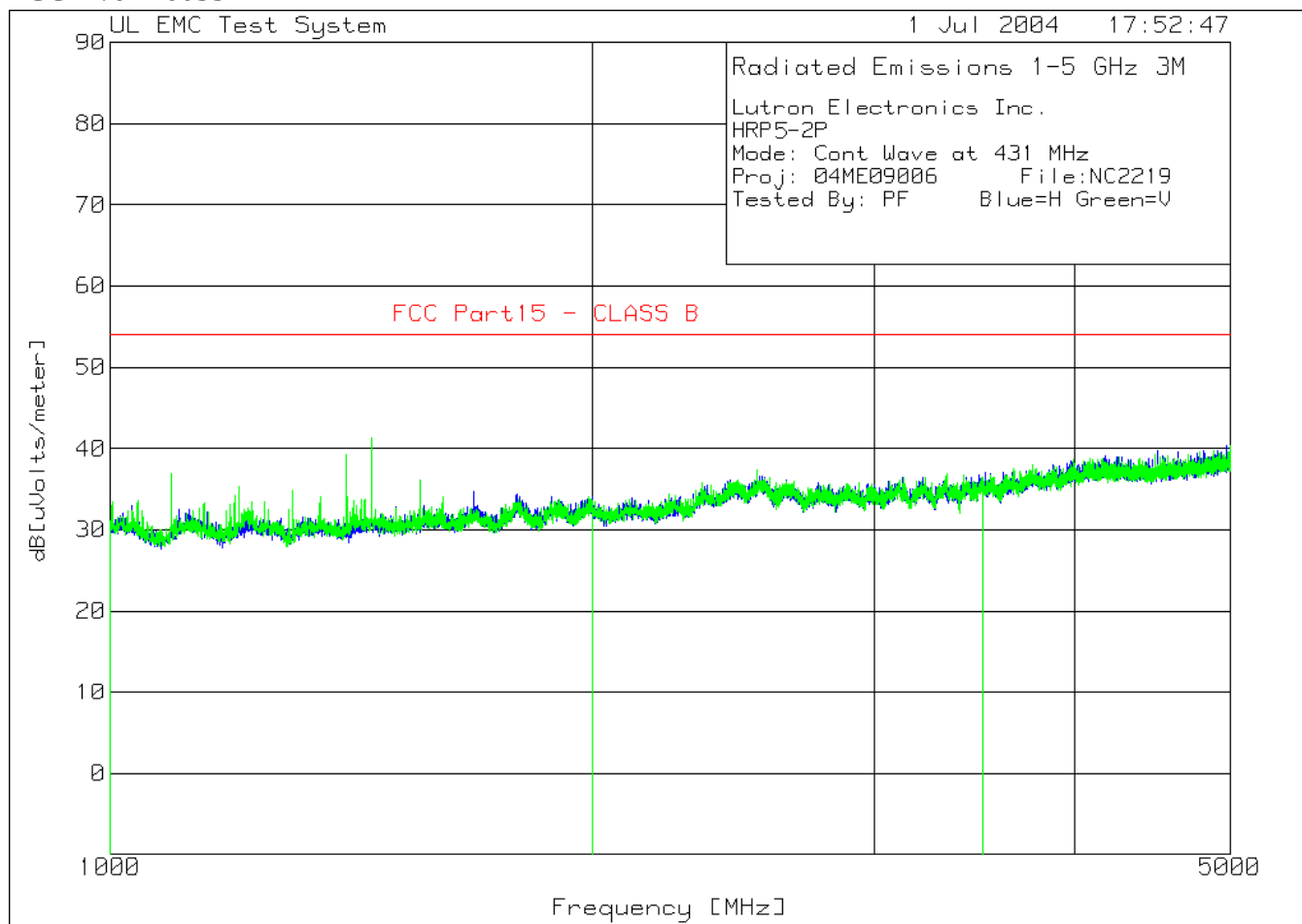
Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====					
Horizontal 30 - 200MHz					
146.7	14.51 qp	1.7	15.6	31.81	43.5
Azimuth: 29 Height:209 Horz				Margin [dB]:	-11.69
148.7432	18.27 qp	1.7	15.8	35.77	43.5
Azimuth: 43 Height:204 Horz				Margin [dB]:	-7.73
156.0102	22.4 qp	1.8	16.3	40.5	43.5
Azimuth: 0 Height:187 Horz				Margin [dB]:	-3
Vertical 30 - 200MHz					
80	7.84 qp	1.2	8	17.04	40
Azimuth: 73 Height:119 Vert				Margin [dB]:	-22.96
146.6263	11.59 qp	1.7	15.6	28.89	43.5
Azimuth: 320 Height:182 Vert				Margin [dB]:	-14.61
148.683	16.39 qp	1.7	15.8	33.89	43.5
Azimuth: 314 Height:199 Vert				Margin [dB]:	-9.61

LIMIT 1: FCC Part 15 Class B 3m

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - Average log detector
avem - EMI Average detector

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



The model number depicted in the title block should be HRP5-120

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
HRP5-120
Mode: Cont Wave at 431 MHz
Proj: 04ME09006 File:NC2219
Tested By: PF Blue=H Green=V

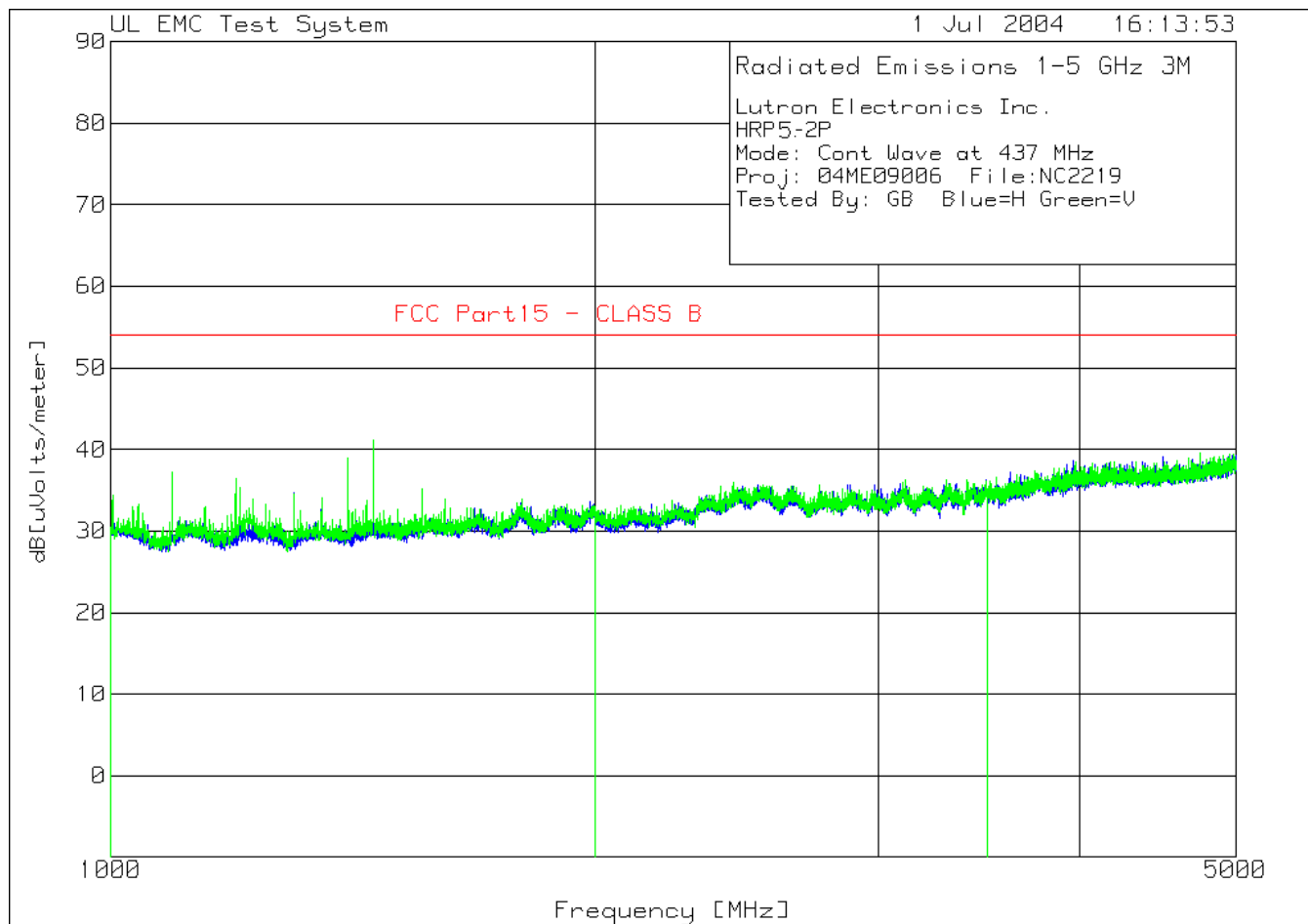
No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====						
Vertical 1000 - 2000MHz -----						
1	1091.697	43.56 pk	-31.8	25.2	36.96	54
	Azimuth:167	Height:100 Vert		Margin [dB]		-17.04
2	1203.067	41.17 pk	-31.5	25.6	35.27	54
	Azimuth:21	Height:100 Vert		Margin [dB]		-18.73
3	1299.766	40.02 pk	-31.2	26	34.82	54
	Azimuth:358	Height:100 Vert		Margin [dB]		-19.18
4	1403.801	43.7 pk	-30.9	26.4	39.2	54
	Azimuth:328	Height:100 Vert		Margin [dB]		-14.8
5	1455.818	45.43 pk	-30.7	26.5	41.23	54
	Azimuth:328	Height:100 Vert		Margin [dB]		-12.77
6	1559.852	39.5 pk	-30.4	27	36.1	54
	Azimuth:18	Height:100 Vert		Margin [dB]		-17.9

LIMIT 1: FCC Part15 - CLASS B

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection
tm - Trace Math Result

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



The model number depicted in the title block should be HRP5-120

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
HRP5-120
Mode: Cont RCV at 437 MHz
Proj: 04ME09006 File: NC2219
Tested By: PF Blue=H Green=V

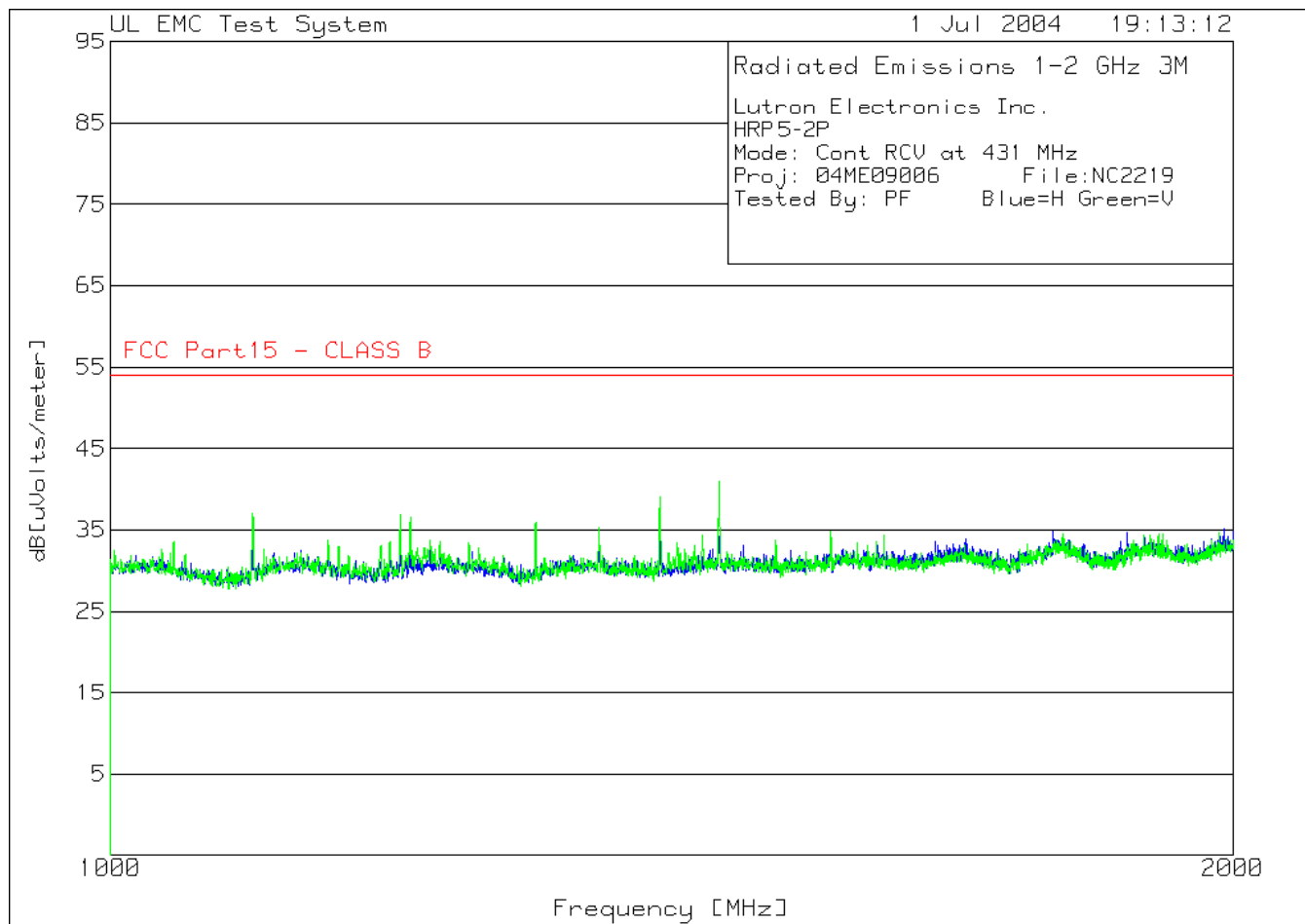
No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====						
Horizontal 1000 - 2000MHz -----						
1	1092.031	43.87 pk	-31.8	25.2	37.27	54
	Azimuth:358	Height:198	Vert	Margin [dB]		-16.73
2	1195.732	42.35 pk	-31.5	25.6	36.45	54
	Azimuth:21	Height:198	Vert	Margin [dB]		-17.55
3	1203.401	41.6 pk	-31.5	25.6	35.7	54
	Azimuth:359	Height:198	Vert	Margin [dB]		-18.3
4	1351.783	40.8 pk	-31	26.2	36	54
	Azimuth:196	Height:101	Vert	Margin [dB]		-18
5	1403.801	43.54 pk	-30.9	26.4	39.04	54
	Azimuth:338	Height:101	Vert	Margin [dB]		-14.96
6	1456.151	44.71 pk	-30.7	26.5	40.51	54
	Azimuth:338	Height:198	Vert	Margin [dB]		-13.49

LIMIT 1: FCC Part15 - CLASS B

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection
tm - Trace Math Result

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



The model number depicted in the title block should be HRP5-120

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

Lutron Electronics Inc.
HRP5-120
Mode: Cont RCV at 431 MHz
Proj: 04ME09006 File:NC2219
Tested By: PF Blue=H Green=V

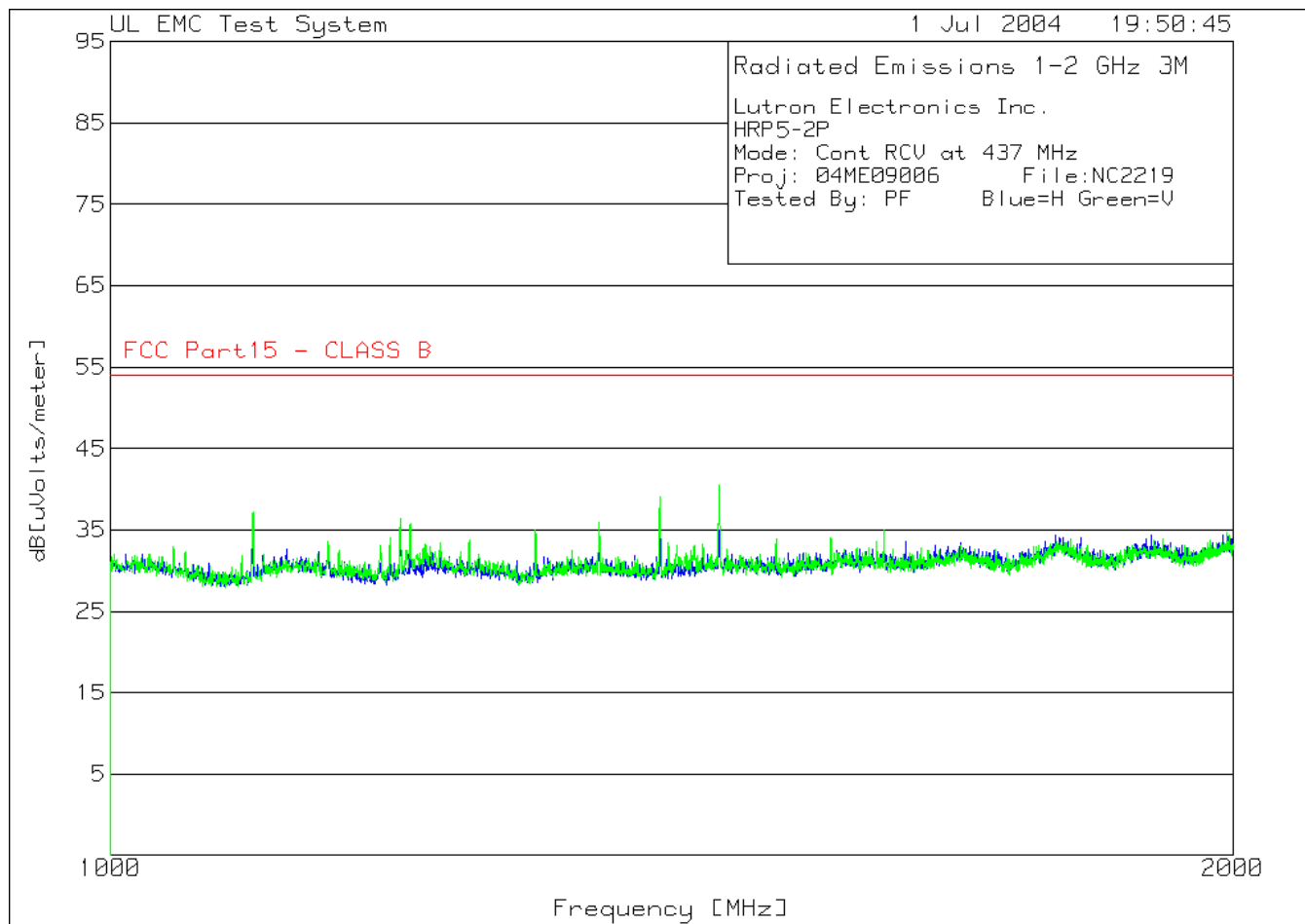
No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====						
Horizontal 1000 - 2000MHz -----						
1	1091.697	43.68 pk	-31.8	25.2	37.08	54
	Azimuth:359	Height:101	Vert	Margin [dB]		-16.92
2	1196.065	42.75 pk	-31.5	25.6	36.85	54
	Azimuth:359	Height:199	Vert	Margin [dB]		-17.15
3	1203.401	42.48 pk	-31.5	25.6	36.58	54
	Azimuth:21	Height:199	Vert	Margin [dB]		-17.42
4	1300.1	41.14 pk	-31.2	26	35.94	54
	Azimuth:213	Height:101	Vert	Margin [dB]		-18.06
5	1403.801	43.6 pk	-30.9	26.4	39.1	54
	Azimuth:338	Height:199	Vert	Margin [dB]		-14.9
6	1456.151	45.16 pk	-30.7	26.5	40.96	54
	Azimuth:338	Height:101	Vert	Margin [dB]		-13.04

LIMIT 1: FCC Part15 - CLASS B

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection
tm - Trace Math Result

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



The model number depicted in the title block should be HRP5-120

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

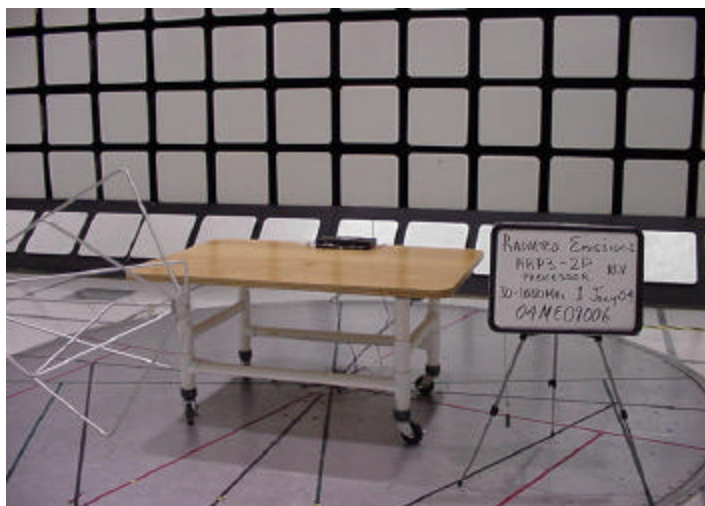
Issued: 9/28/2004

Lutron Electronics Inc.
HRP5-120
Mode: Cont RCV at 437 MHz
Proj: 04ME09006 File:NC2219
Tested By: PF Blue=H Green=V

No.	Test Frequency [MHz]	Meter Reading [dB(uV)]	Gain/Loss Factor [dB]	Transducer Factor [dB]	Level dB[uVolts/meter]	Limit:1
=====						
Horizontal 1000 - 2000MHz -----						
1	1092.031	43.87 pk	-31.8	25.2	37.27	54
	Azimuth:358	Height:198	Vert	Margin [dB]		-16.73
2	1195.732	42.35 pk	-31.5	25.6	36.45	54
	Azimuth:21	Height:198	Vert	Margin [dB]		-17.55
3	1203.401	41.6 pk	-31.5	25.6	35.7	54
	Azimuth:359	Height:198	Vert	Margin [dB]		-18.3
4	1351.783	40.8 pk	-31	26.2	36	54
	Azimuth:196	Height:101	Vert	Margin [dB]		-18
5	1403.801	43.54 pk	-30.9	26.4	39.04	54
	Azimuth:338	Height:101	Vert	Margin [dB]		-14.96
6	1456.151	44.71 pk	-30.7	26.5	40.51	54
	Azimuth:338	Height:198	Vert	Margin [dB]		-13.49

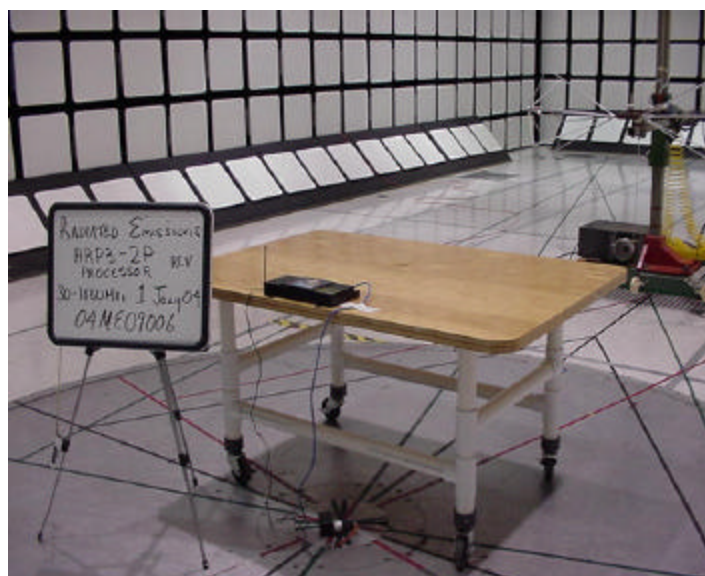
LIMIT 1: FCC Part15 - CLASS B

pk - Peak detector
qp - Quasi-Peak detector
av - Average detector
avlg - denotes average log detection
avem - denotes EMI average detection
tm - Trace Math Result



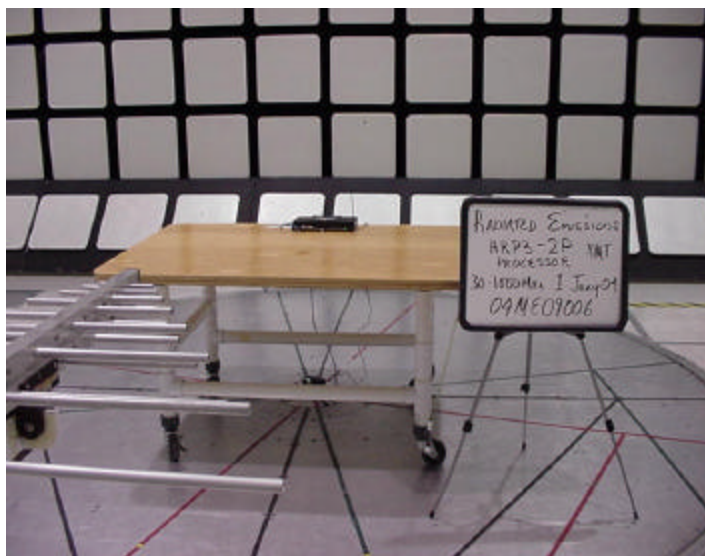
Front – 30-1000MHz – Receiver

The model number depicted in the title block should be HRP5-120



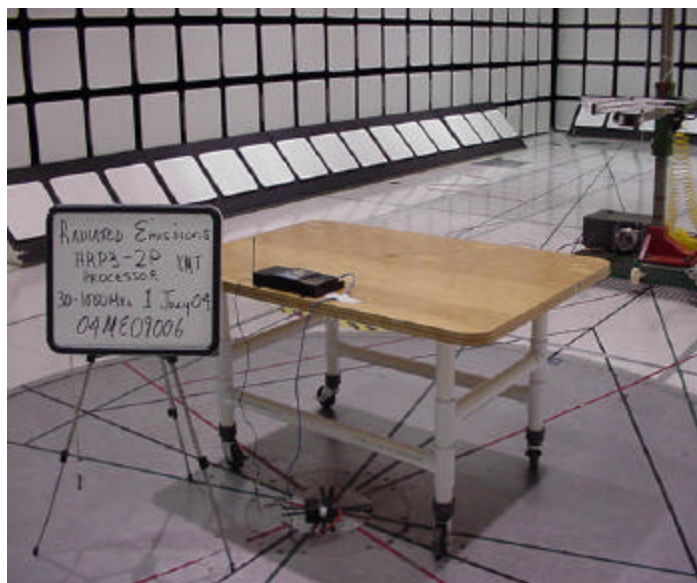
Rear – 30-1000MHz - Receiver

The model number depicted in the title block should be HRP5-120



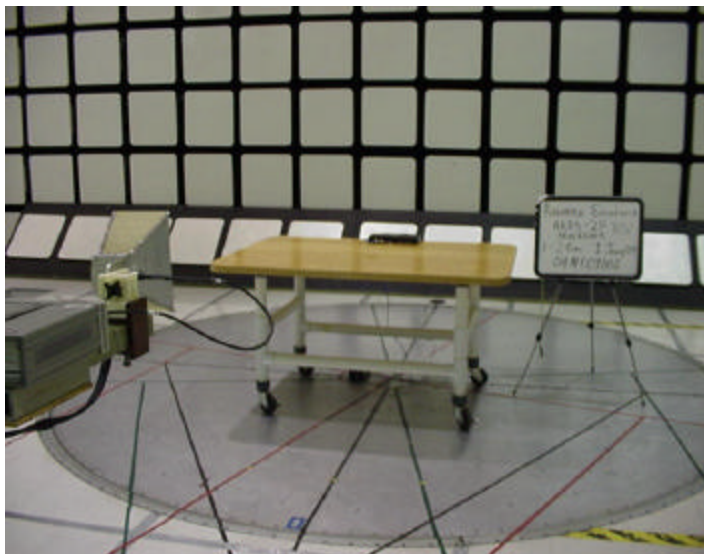
Front – 30-1000MHz - Transmitter

The model number depicted in the title block should be HRP5-120



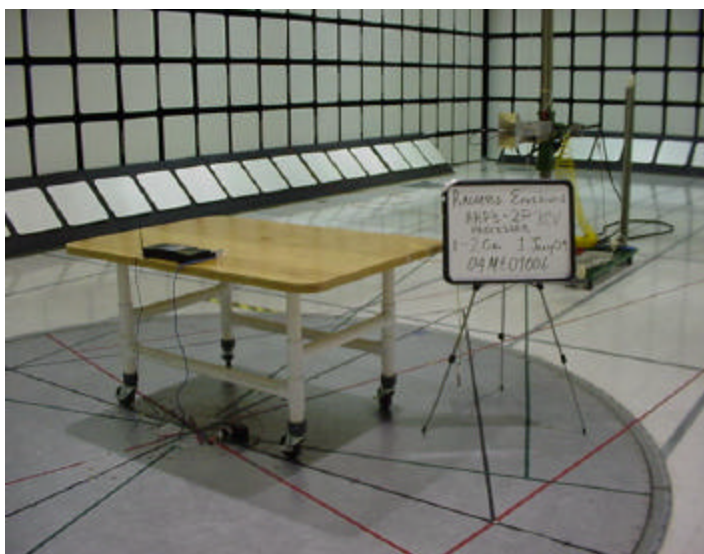
Rear – 30-1000MHz - Transmitter

The model number depicted in the title block should be HRP5-120



Front - 1-2GHz – Receiver

The model number depicted in the title block should be HRP5-120



Rear – 1-2GHz – Receiver

The model number depicted in the title block should be HRP5-120

Radiated Emissions Test Set-Up

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

5.1.5 Pulse Train

Test Applicable

Test Procedure: Paragraph 15.35:

When the Radiated Limits are expressed in terms of the average value of the emissions, and pulse operation is employed, the pulse measurement field strength shall be determined by averaging over one complete pulse train, including blanking intervals, as long as the pulse train does not exceed 0.1 seconds (100ms) or in cases where the pulse train exceeds 0.1seconds the measured field strength shall be determined from the average absolute voltage during a 0.1 second interval during which the field strength is at its maximum value.

Results

The system met the requirements for conducted emissions. Data Pages follow.

Temperature:	21.5°C
Humidity:	46%RH
Pressure:	1011mbar
Date test performed:	24 May 2004

ESI26

Rhode & Schwartz

EMI Receiver

Equipment No.: ME5B-081

Quasi Peak BW: 200Hz 9kHz to 150kHz

RBW 10 KHz

Quasi Peak BW: 9kHz 150kHz to 30MHz

RBW 100 KHz

Quasi Peak BW: 120 kHz 30 to 1000MHz

RBW 1.0 MHz

Range: 30MHz-1000MHz Last Calibration Date: 28 August 2003

Calibration Due Date: 31 August 2004

3121C-DB4 EMCO Log-Periodic Antenna
Last Calibration Date: 1 April 2004

Equipment No.: ME5-811
Calibration Due Date: 1 April 2005

99760-00 Cole -Parmer Hydrometer/Temp/Barometer Equipment No.: ME4-268

Ranges: 0°C-55°C

Temp:0°C-55°C

Humidity 25% to 95 %RH

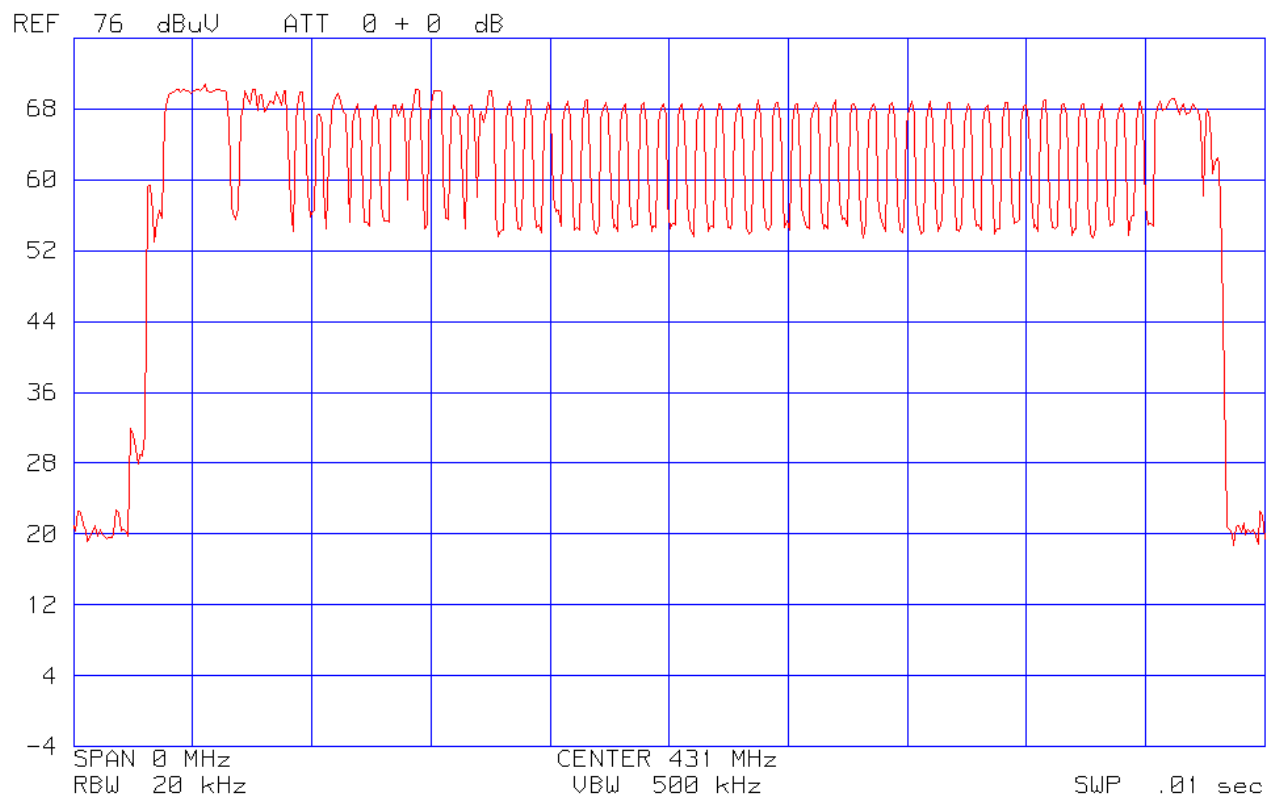
Pressure 795 to 1050 mbar

Last Calibration Date: 27 May 2003

Calibration Due Date: 27 May 2004

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

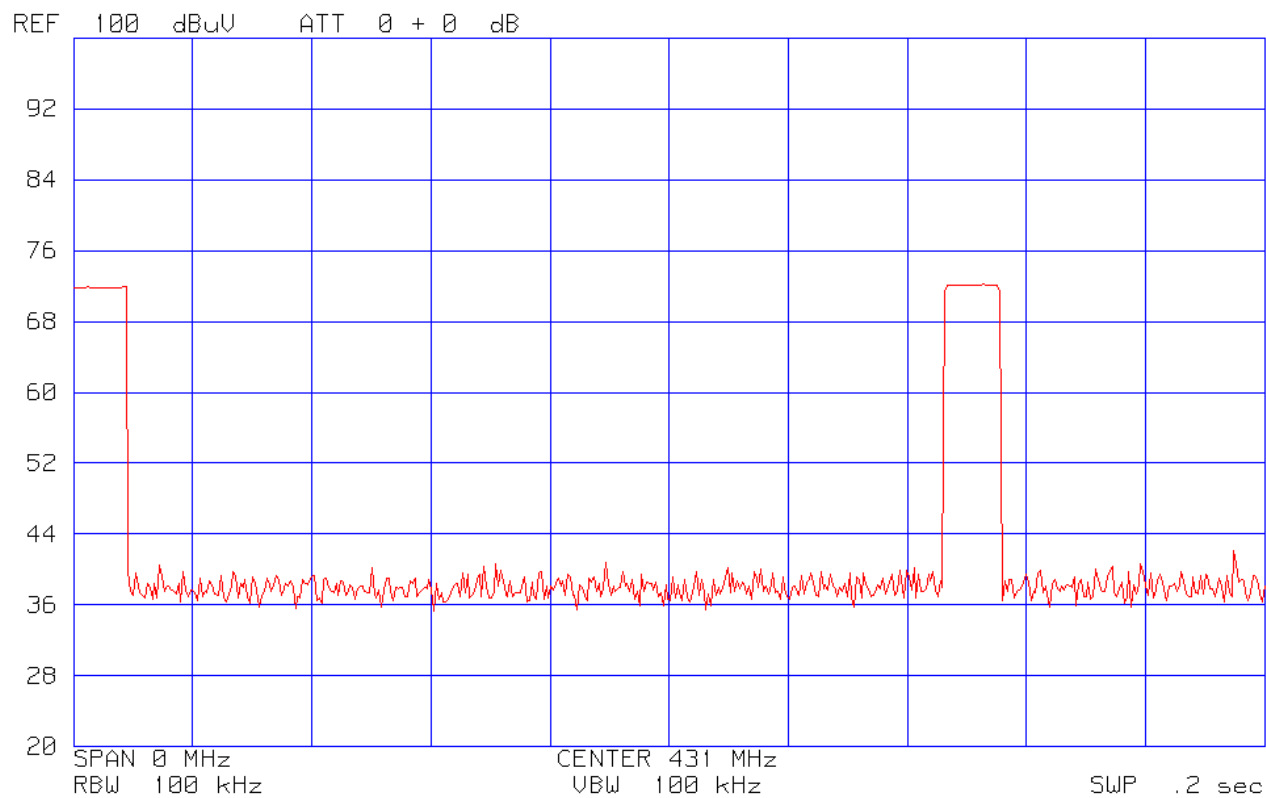
Issued: 9/28/2004



One Complete Pulse Train 8.96ms

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



Depicting two pulse trains
Blanking Interval =146.29ms

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



Pulse Train Test Set-Up

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004

5.1.6 Occupied Bandwidth:

Test Applicable

Temperature: 21.0 °C
Humidity: 59.0 RH
Pressure: 1007 mbar
Date test performed: 06 July 2004

The bandwidth of the emissions shall be no wider than 0.25% of the center frequency for the devices operating above 70 MHz and below 900 MHz. Bandwidth is determined at the points 20 dB down from the modulated carrier at a distance of 100cm.

Mode: “ Constant (Continuous) Transmit”
Frequency range:

431MHz and 437MHz

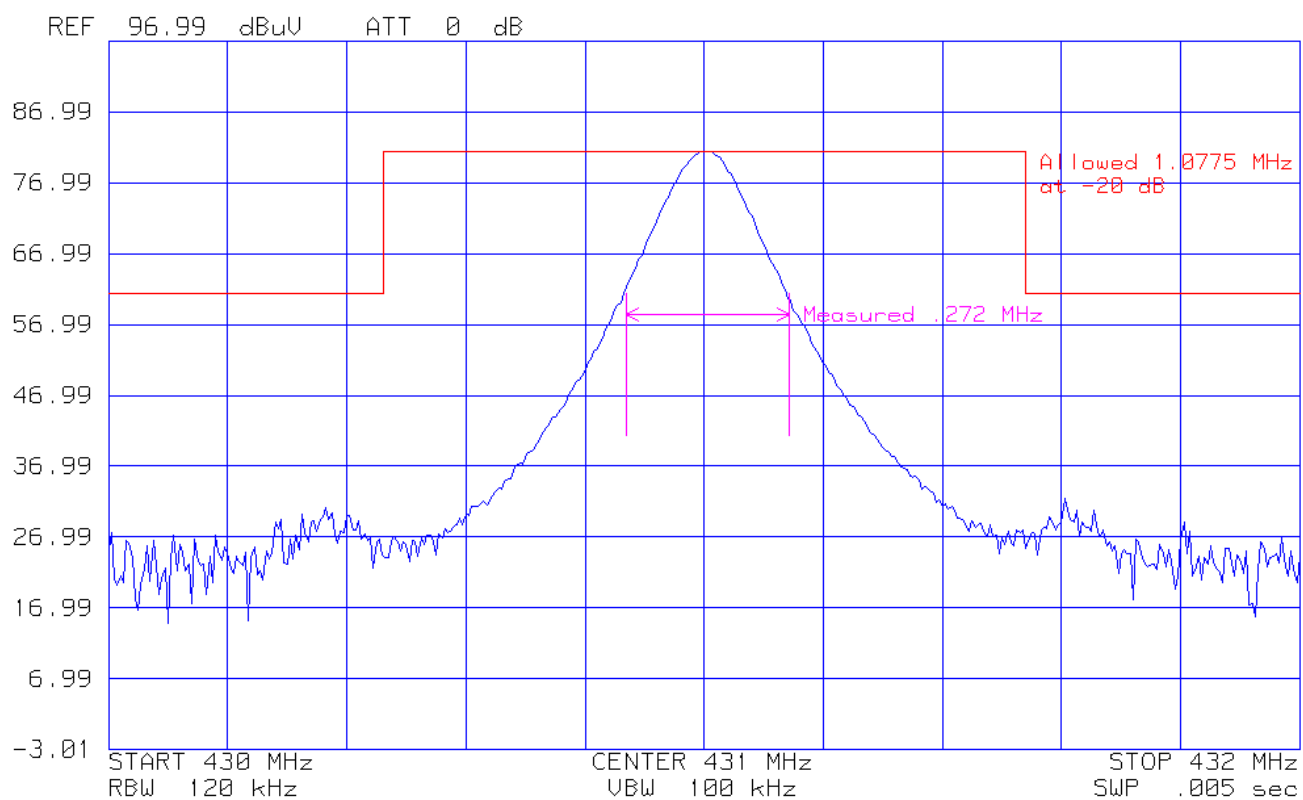
Bandwidth = 0.25% of 431MHz = 1.0775MHz
Bandwidth = 0.25% of 437MHz = 1.0925MHz

Test equipment used for Occupied Bandwidth Measurements:

E7402A	Agilent	EMI Spectrum Analyzer	Equipment No.: ME5B-123
	Technologies		
Range: 150k-30MHz	Last Calibration Date: 22 January 2004		Calibration Due Date: 22 January 2005
3146	EMCO	Log Periodic Antenna	Equipment No.: ME5-811
	Last Calibration Date: 01 April 2004		Calibration Due Date: 01 April 2005
99760-00	Cole –Parmer	Hygrometer/Temp/Barometer	Equipment No.: ME4-268
		Ranges	Temp: 0°C-55°C
			Humidity: 25% to 95 %RH
			Pressure: 795 to 1050 mbar
	Last Calibration Date: 02 June 2004		Calibration Due Date: 02 June 2005

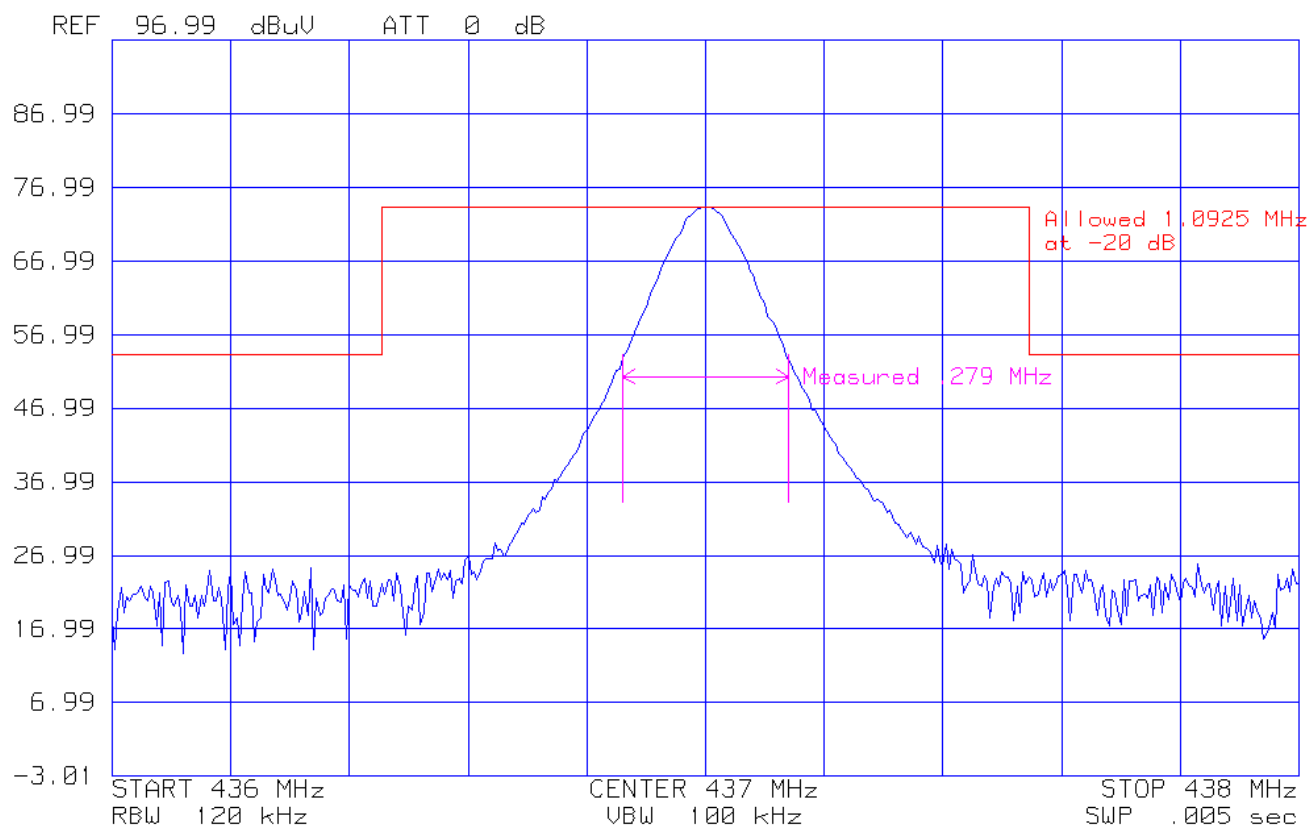
File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
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Project Number: 04ME09006
Model Number: HRP5-120
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Occupied Bandwidth Test Set-Up

The model number depicted in the title block should be HRP5-120

5.1.7 Fundamental Frequency and Spurious Emissions Measurement Limit Calculations

Limit Calculation:

Fundamental Frequency is 437MHz

From table in section 15.231

Limit = $41.6667(437) - 7083.3333$

Limit = 11125.018uV

Limit = $\text{Log } 11125.018 (20)$

Limit = 80.9dBuV

Limit for Spurious Emissions = 20dB lower then fundamental = 60.9dBuV/m

Radiated Emissions Limit conversion from mV/m to dBmV/m (accordance with paragraph 15.109)

Radiated Emissions Limit (dBμV/m) = $20 \cdot \log (\mu\text{V/m})$

Radiated Emissions Limit (dBμV/m) = $20 \cdot \log (90)$

Radiated Emissions Limit (dBμV/m) = 39.1

Radiated Emissions test data obtained during measurements.

Field Strength (dBμV/m) = Measured field strength (dBμV/m) + Antenna Factor (dB) + Cable Factor (dB)

Field Strength (dBμV/m) = 19.7dBμV/m + 12.5dB + 0.3dB

Field Strength (dBμV/m) = 32.5

Duty Cycle factor calculation.

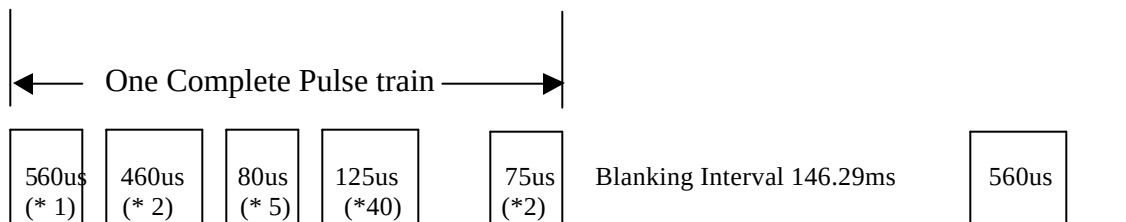
Total number of pulses = 50

P1=560us * 1, P2=460us *2, P3= 125us *40, P4=80 *5, P5=75us *2

Blanking interval = 146.29ms

Pulse width= 560us+ 920us + 125us + 75us + 200us = Total time on

Total time on = 7ms



Duty cycle correction factor = $20 \log (7 / 100\text{ms})$
= $20 \log (0.07)$
= - 23dB

The correction factor is added to the measured field strength in dBuV/m

Appendix A

Accreditations and Authorizations



NVLAP Lab code: 100255-0

NVLAP: Recognized under the National Voluntary Laboratory Accreditation Program (NVLAP) for satisfactory compliance with criteria established in Title 15, Part 285 Code of Federal Regulations. These criteria encompass the requirements of ISO/IEC EN17025 and the relevant requirements of ISO 9002 (ANSI/ASQC Q92-1987) as suppliers of calibration or test results. The specific scope includes IEC/CISPR 22:1997, Amendment 1:1995, Amendment 2:1997, EN 55022:1998, AS/NZS 1044, CNS 13438:1997, ANSI C63.4, FCC Method - 47 CFR Part 15, FCC Method - 47 CFR Part 68, AS/NZS 3548, IEC 61000-3-2, EN 61000-3-2, CISPR 14-1, EN 55014-1, AS/NZS 1044, CNS 13783-1, CISPR 22, IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8, and IEC 61000-4-11 testing.



FCC: Details of the measurement facilities used for these tests have been filed with the Federal Communications Commission's Laboratory in Columbia, Maryland and accepted in a letter dated September 24, 1997 (Ref. No. 91040).



Industry Canada Industrie Canada

Industry of Canada: Accredited by Industry Canada for performance of radiated measurements. Our test site complies with RSP 100, Issue 7, Section 3.3. File #: IC 2181



VCCI: Accepted as an Associate Member to the VCCI. The measurement facilities detailed in this test report have been registered in accordance with Regulations for Voluntary Control Measures, Article 8. Registration Nos.: (Radiated Emissions) R-797, (Conducted Emissions) C-832, C-833, C-834 and (Conducted Emissions - Telecommunications Ports) T-160.

File Number: NC2219
Project Number: 04ME09006
Model Number: HRP5-120
FCCID: JPZ0033

Issued: 9/28/2004



ICASA: ICASA (Independent Communications Authority of South Africa) has appointed UL as a Designated Test Laboratory to test Telecommunications equipment for type approval in compliance with CISPR 22 to assist in fulfilling its mandate under section 54(1) of the Telecommunications Act, 1996 (Act 103 of 1996).



NIST/CAB: Validated by the European Commission as a U.S. Conformity Assessment Body (CAB) of the U.S.-EU Mutual Recognition Agreement (MRA) for the Electromagnetic Compatibility - Council Directive 89/336/EEC, Article 10 (2). Also validated for the Telecommunication Equipment-Council Directive 99/5/EC, Annex III and IV, Identification Number: 0983.

NIST/CAB: Provisioned to act as a U.S. Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the Asia Pacific Economic Cooperation (APEC) MRA between the American Institute in Taiwan (AIT) and the United States. Our laboratory is considered qualified to test equipment subject to the applicable EMC regulations of the Chinese Taipei Bureau of Standards, Metrology and Inspection (BSMI) which require testing to CNS 13438 (CISPR 22).

NIST/CAB: Recognized by the Infocomm Development Authority of Singapore (IDA) under the Asia Pacific Economic Cooperation Mutual Recognition Agreement (APEC MRA). Our laboratory is provisionally designated to act as a Conformity Assessment Body (CAB) under Appendix B, Phase I Procedures, of the APEC MRA. Our scope of designation includes IDA TS EMC (CISPR 22), IEC 61000-4-2, -4-3, -4-4, -4-5, and -4-6. U.S. Identifier Number: US0113