



TEST REPORT NO. RSI-2709E
ELECTROMAGNETIC EMISSION EVALUATION
OF THE
LUTRON ELECTRONICS
MODEL #: HRD-5KP
FCC PART 15, SUBPART B AND C
29 MARCH 2005

PREPARED FOR:

Lutron Electronics
7200 Suter Road
Coopersburg, PA 18036

SUBMITTED BY:

Radiation Sciences Inc.
3131 Detwiler Road
Harleysville, PA 19438

PREPARED BY:

John Kavaluski
EMC Test Engineer
Radiation Sciences Inc.

REVIEWED BY:

Daniel J. Signore
President
Radiation Sciences Inc.



ADMINISTRATIVE DATA

TEST PERFORMED:

Measurements of Radiated RF and Conducted Emissions.

PURPOSE OF TEST:

To evaluate the ElectroMagnetic Emission (EME) characteristics of the Equipment Under Test (EUT) with respect to Subpart B and C of Part 15 of the Federal Communications Commission (FCC) Rules for intentional and unintentional radiators.

EQUIPMENT UNDER TEST (EUT):

Model Number: **HRD-5KP**
Serial Number: 070002062092

CONTRACT:

Purchase Order Number: 56107

TEST PERIOD:

29 October 2004 and 23 March 2005

TEST FACILITY:

Radiation Sciences Incorporated (RSI), EMC Test Laboratory, located at: 3131 Detwiler Road, Harleysville, Pennsylvania 19438.

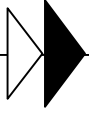
TEST PERSONNEL AND COORDINATORS:

Radiation Sciences Inc.

John Kavaluski

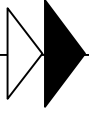
Lutron Electronics

Mark Clouser



SUMMARY OF TEST RESULTS

The **Model #:** **HRD-5KP**, configured as described herein, **FULLY COMPLIES WITH THE REQUIREMENTS SET FORTH IN SUBPART B AND C OF PART 15 OF THE FEDERAL COMMUNICATIONS COMMISSION (FCC) RULES FOR INTENTIONAL AND UNINTENTIONAL RADIATORS.**



1.0 INTRODUCTION

This document is a report of tests to determine the EME characteristics of the **Model #: HRD-5KP**, presented by **Lutron Electronics** of Coopersburg, Pennsylvania.

The purpose of the testing was to evaluate the EMC characteristics of the test sample with respect to Subpart B and C of Part 15 of the **FCC** Rules for intentional and unintentional radiators.

All test procedures used meet the requirements of the American National Standards Institute Procedure C63:4: "Methods of Measurement of Radio-Noise Emissions from Low-Voltage Electrical and Electronic Equipment in the Range of 9kHz to 40GHz", dated 17 July 1992.

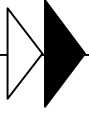


2.0 DESCRIPTION OF THE TEST SAMPLE:

The **Lutron Electronics HRD-5KP** is a wireless wall keypad operating between 431 and 437MHz. The keypad can be programmed to control any light or group of lights. The unit is powered by 115VAC and contains clock signals of 14.756 and 32.0MHz.

The “5” notation in the **5KP** Part Number denotes the number of buttons available in the device. The unit tested for **FCC** compliance was an **HRD-5KP**, which signifies that it was a 5-button/scene device. Depending on the configuration of the unit, this number can be substituted with other numeral designations.

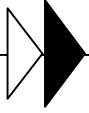




3.0 TEST INSTRUMENTATION

RSI INV NO.	DESCRIPTION	MANUFACTURER	MODEL #	SERIAL #	CAL DUE DATE
32.1	SPEC. ANALY.	H.P.	8566B	3638A08767	8/13/2005
33.1	SPEC. ANALY. DISPLY	H.P.		3701A22258	8/13/2005
75	ANTENNA	TENSOR	4108	204	6/11/2005
80	ANTENNA	AMP.RES.Assoc.	AT1000	4094-025	6/14/2005
177	COMPUTER	H.P. (Disc Drive)	9122C	2804A8894	
236	LISN	SOLAR	8012-50-R-12-BNC	807-52	3/26/2005
390	RECEIVER	R & S	ESH 3	861742/012	4/18/2005
391	RECEIVER	R & S	ESVP	861744/015	6/15/2005
474	TRANSFORMER	G.E.	9T51B33G3	NSN	
501	MINI MAST	EMCO	2075-2	0002-2278	
502	TURNTABLE	EMCO	2065-1.21	0001-2156	
503	CONTROLLER	EMCO	2090	0001-1489	
701	12 ft Cable RG-223	PASTERNAK	BNC TO BNC	N/A	9/16/2005
708	40ft Cable RG-223	PASTERNAK	BNC TO BNC	N/A	9/23/2005

IF CAL DUE DATE = BLANK FIELD
Calibration is not required for this item. Equipment
not used to obtain a final reading (i.e. transmitting antenna).



4.0 TEST RESULTS

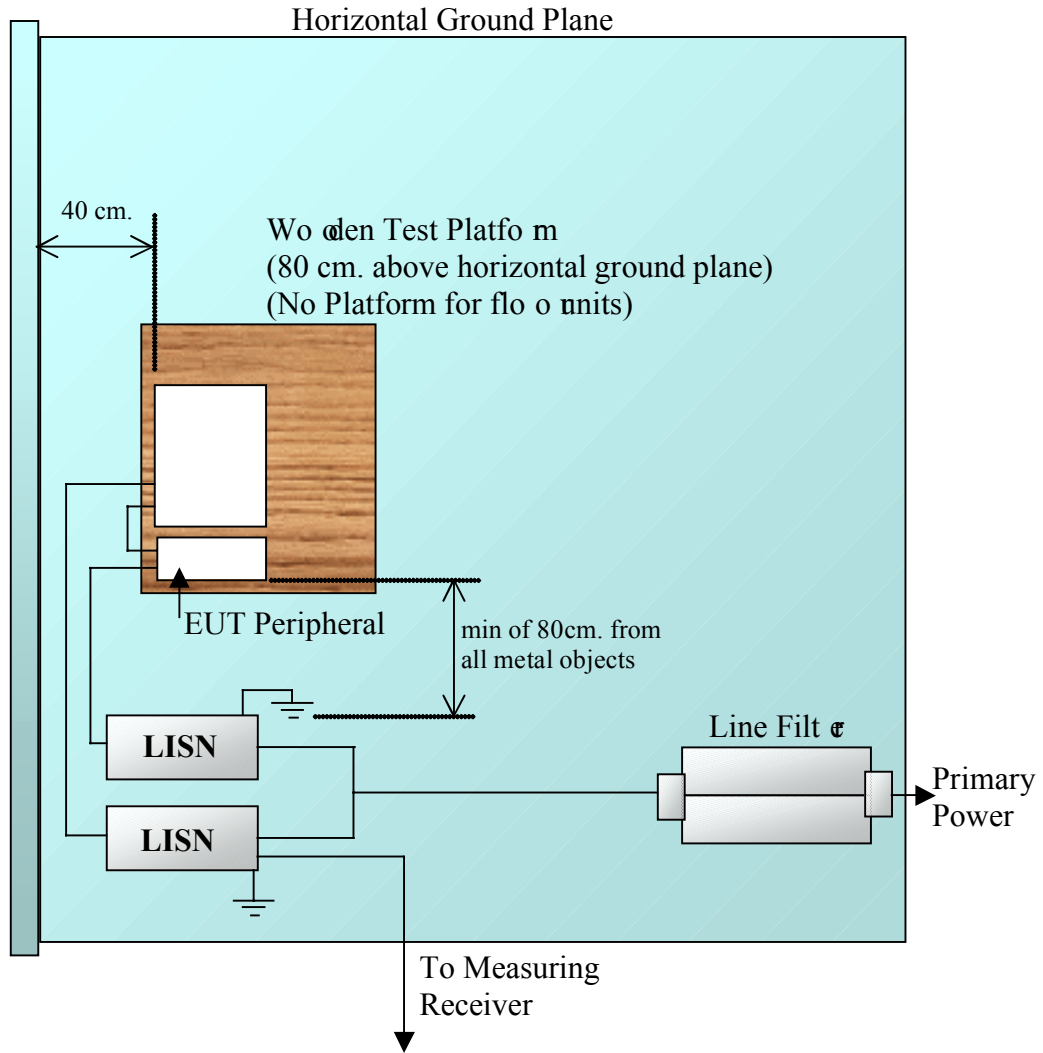
4.1 Conducted Power Line Measurements, Paragraph 15.107

Conducted power line measurements were recorded for the **Model HRD-5KP**.

The test setup diagram is shown in Figure 1 and a photograph is shown in Figure 2.

The results of the line-to-ground radio noise voltage measurements are shown on graphs, Figures 3 and 4 for the phase and neutral lines, respectively. Figure 5 is a data sheet presenting average detector readings for those points on the graphs shown above the limit during the automated peak search.

**ALL LEVELS ARE BELOW THE APPLICABLE LIMITS AS SPECIFIED BY THE FCC
IN PARAGRAPH 15.107.**



**Conducted Emissions Test Setup Diagram (Top View)
Figure 1**



**Conducted Emissions Test Setup Photograph
Figure 2**

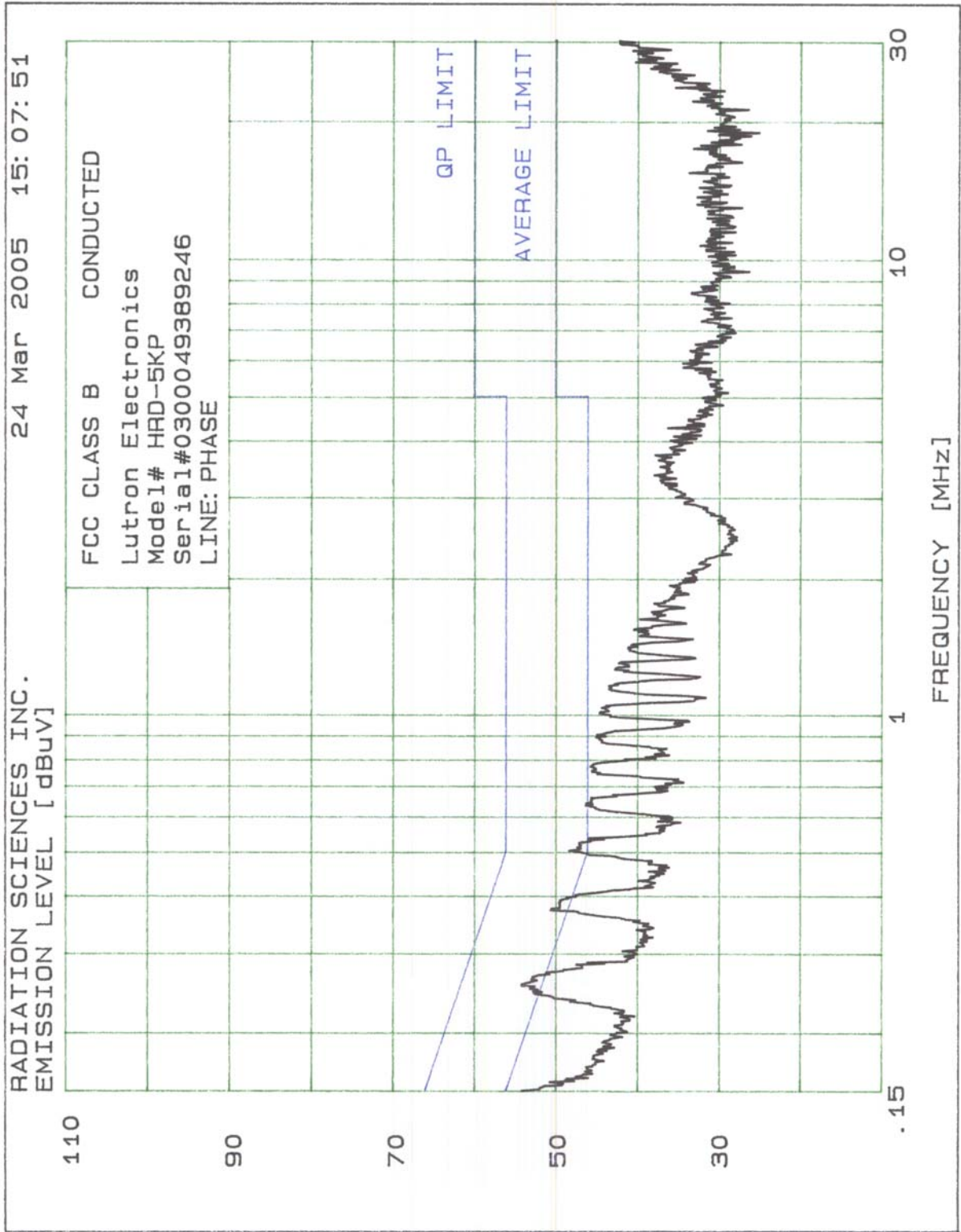
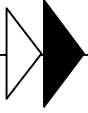


Figure 3

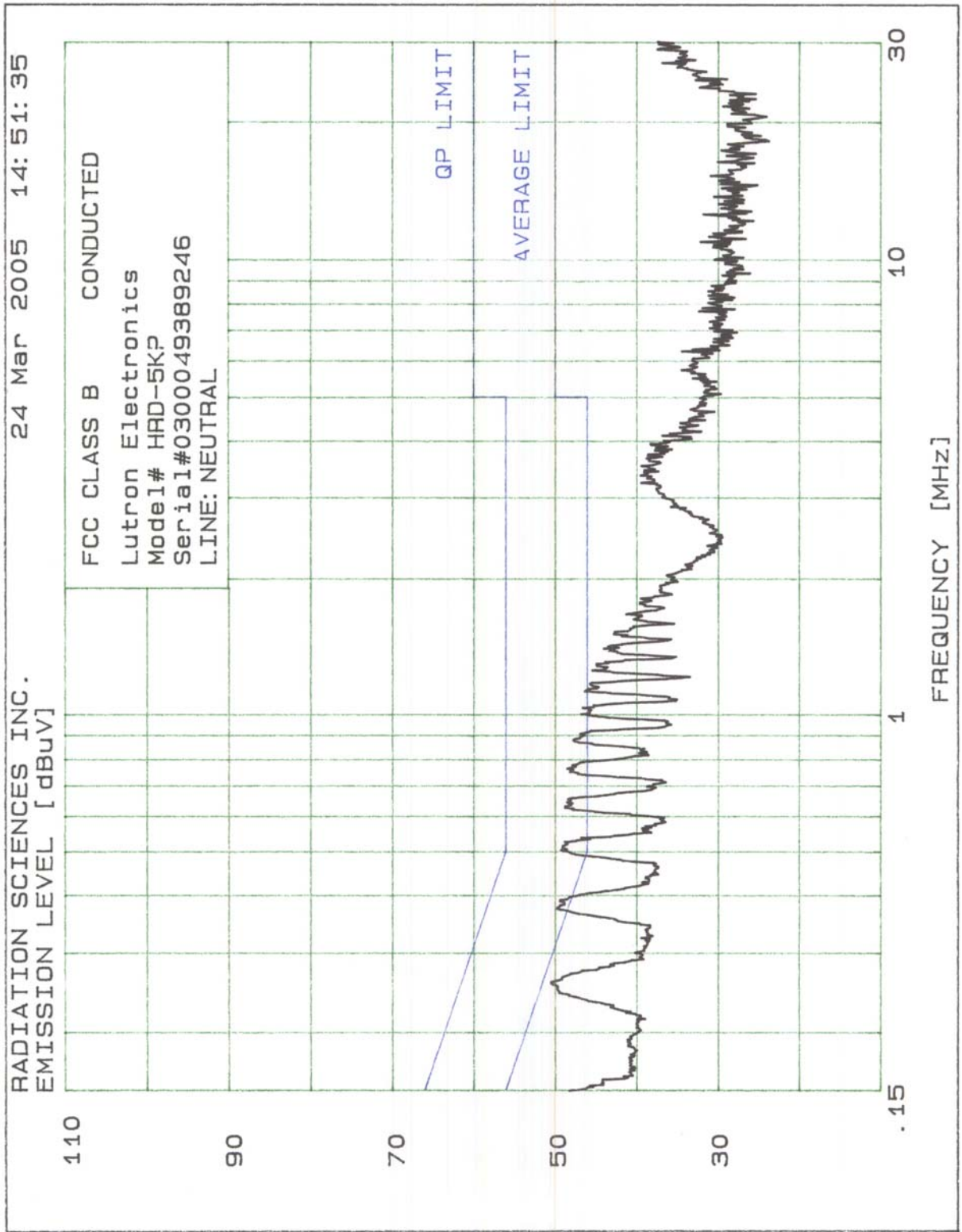
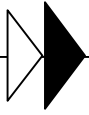


Figure 4



Electromagnetic Emission Test

E U T	Manufacturer: Lutron	Date: 3/24/05	Test Code CE
	Model #: HRD-5KP	Test Instruments: RSI # 32.1, 33.1, 177, 236, 390, 494, 701,	Technician
	Serial #: 0300049389246	Frequency Range: .150-30MHz	Test Engineer
Mode: ON			

Temperature: 70 °F Humidity: 25 %	Additional Info:	Test Spec: FCC Class B
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Radiated Distance: Antenna:	<input type="checkbox"/> HORIZ. <input type="checkbox"/> BB <input type="checkbox"/> NB <input type="checkbox"/> VERT. <input type="checkbox"/> H <input type="checkbox"/> E	Conducted Line: <i>Phase/Neutral</i> Function:	<input type="checkbox"/> BB <input type="checkbox"/> NB
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FREQ.	QP IND. Level	AVG IND. Level	Correction Factors		QP Final Level	AVG Final Level		Remarks
			ANT.					
MHz	dB μ V	dB μ V			dB μ V	dB μ V		
.27		29.2				29.2		Phase
.38		31.3				31.3		↓
.50		27.1				27.1		
.64		28.6				28.6		
.25		32.5				32.5		Neutral
.3819		31.6				31.6		↓
.511		31.8				31.8		
.65		29.6				29.6		
.89		39.7				39.7		
1.009		26.9				26.9		
1.28		25.1				25.1		

Figure 5



4.2 Radiated Emissions Measurements, §15.33, §15.35, §15.109, §15.205, §15.209, §15.231

Radiated Emissions measurements were recorded for the test sample at a distance of 3 meters. Radiated Emissions were measured with the antenna in both the horizontal and vertical polarizations. The antenna was raised 1 to 4 meters in height and the Equipment Under Test (**EUT**) was rotated 360° to maximize the emission. No significant emission level changes occurred while positioning the **EUT** power cable.

For intentional radiators the field strength of emissions of the **EUT** were measured out to the tenth harmonic of the carrier frequency. The carrier frequency was set to 431, 434 and 437MHz.

An average factor of 20dB was applied to the level of the fundamental emission when compared to the **FCC** limit.

Figure 6 is a test setup diagram for Radiated Emissions and Figure 7 is a test setup photograph.

The test results for both unintentional and intentional Radiated Emissions testing are shown in the following figures:

Figure 8 Unintentional Radiated Emissions, data sheet, 431MHz Receive Mode

Figure 9 Unintentional Radiated Emissions, graph, 431MHz Receive Mode

Figure 10 Unintentional Radiated Emissions, data sheet, 437MHz Receive Mode

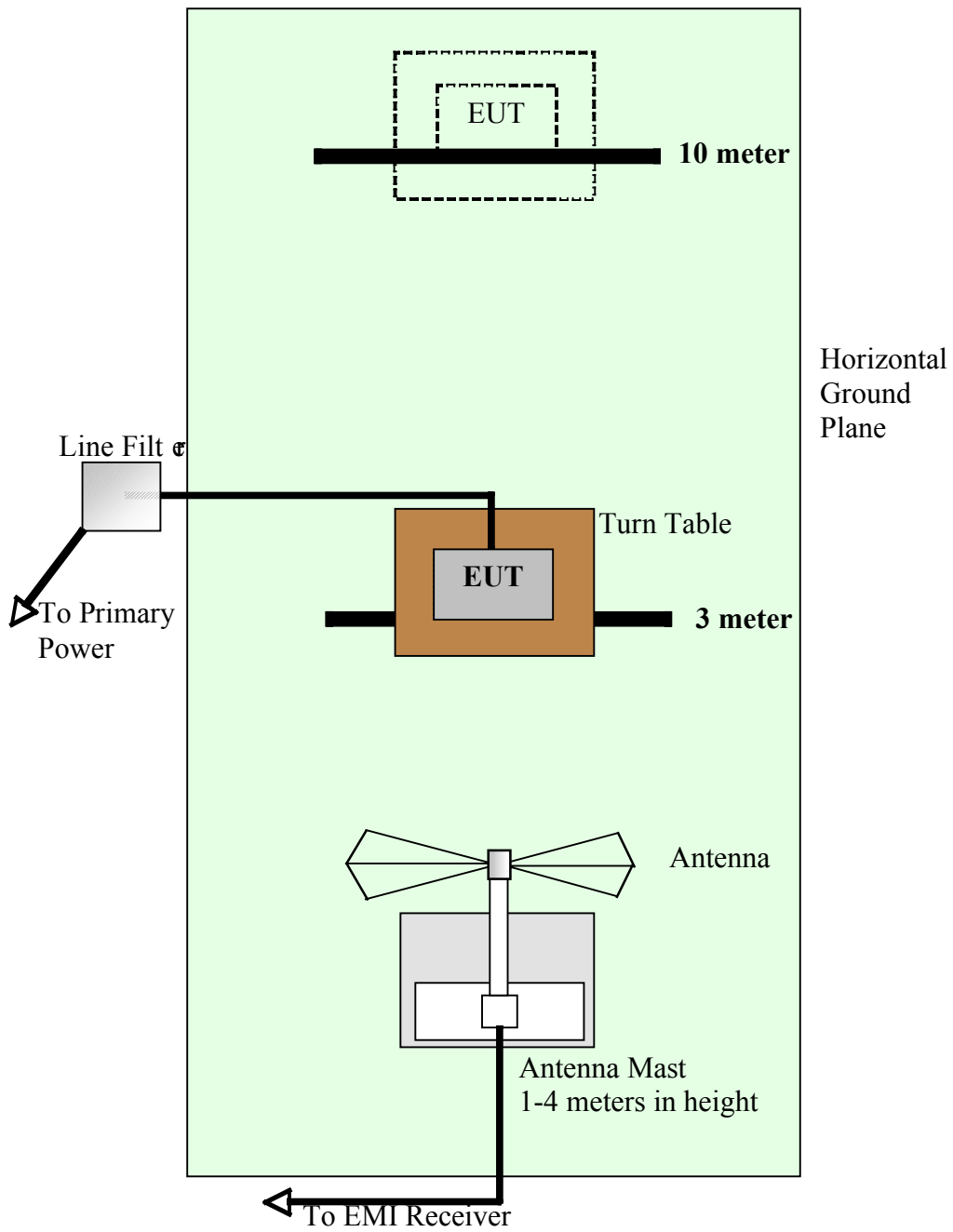
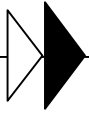
Figure 11 Unintentional Radiated Emissions, graph, 437MHz Receive Mode

Figure 12 Intentional Radiated Emissions, data sheet, 431MHz Transmit Mode

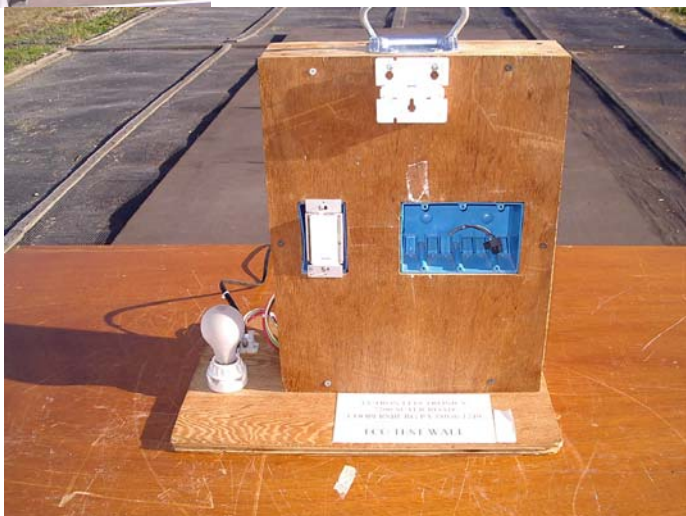
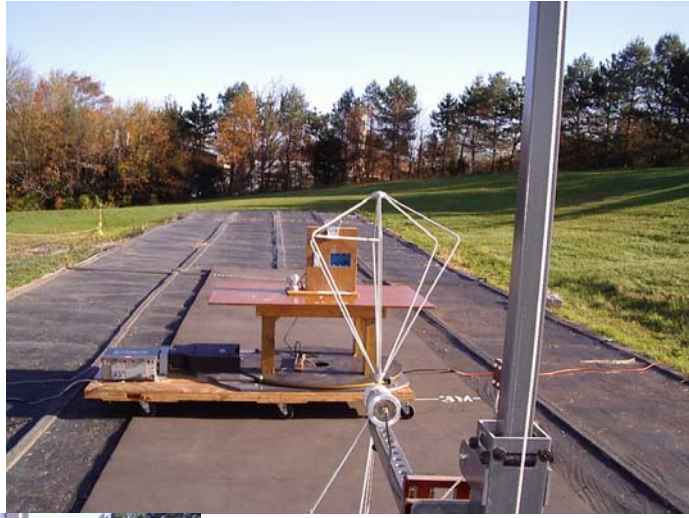
Figure 13 Intentional Radiated Emissions, data sheet, 434MHz Transmit Mode

Figure 14 Intentional Radiated Emissions, data sheet, 437MHz Transmit Mode

ALL LEVELS COMPLY WITH THE APPLICABLE FCC LIMITS FOR RADIATED EMISSIONS PER THE APPLICABLE PARAGRAPHS.



**Radiated Emissions Test Setup Diagram
Figure 6**



**Radiated Emission Test Setup Photographs
Figure 7**



Electromagnetic Emission Test

E U T	Manufacturer: Lutron Electronics	Date: 10/28/04	Test Code RE
	Model#: HRD-5KP	Test Instruments: RSI # 75, 80,391, 708,501,502,503	Technician
	Serial #: 070002062092	Frequency Range: 30MHz – 1000MHz	Engineer
	Mode: Receive 431MHz		

Temperature: 52°F Humidity: 46%	Additional Info:	Test Spec: FCC Part15, Class B Unintentional Radators
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Radiated Distance: 3 meter Antenna: Bicon /Log	<input checked="" type="checkbox"/> HORIZ. <input type="checkbox"/> BB <input type="checkbox"/> NB <input checked="" type="checkbox"/> VERT. <input type="checkbox"/> H <input type="checkbox"/> E	Conducted Line: Function:	<input type="checkbox"/> BB <input type="checkbox"/> NB
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FREQ.	IND. Level	Correction Factors		Final Level	Antenna Height	EUT Azimuth	Remarks
		ANT.	Cable loss				
MHz	dB μ V	dB	dB	dB μ V/m	Meters	Degree	Polarity/Antenna
30.0	6.7	12.0	1.0	19.7	1.0	0.0	Vertical/Bicon
32.0	12.5	12.5	1.0	26	1.0	90.0	
64.0	13.1	8.0	1.0	22.1	1.5	0.0	
128.0	10.2	12.0	2.0	24.2	1.0	0.0	
160.0	9.0	13.0	2.0	24	1.0	0.0	
200.0	2.1	14.0	2.0	18.1	1.0	25.0	↓
200.0	-0.2	11.5	2.0	13.3	2.0	0.0	Vertical/LogP.
300.0	-1.4	14.0	3.0	15.6	2.0	0.0	
431.0	-1.6	18.0	4.0	20.4	2.0	0.0	
500.0	-1.5	22.0	4.0	24.5	2.0	0.0	
700.0	-0.2	22.0	6.0	27.8	2.0	0.0	
1000	-0.2	24.0	6.0	29.8	2.02	0.0	↓
30.0	4.0	13.0	1.0	18	1.00	0.0	Horiz./Bicon
32.0	5.4	13.5	1.0	19.9	3.35	96.5	
64.0	10.0	9.0	1.0	20	2.67	202.6	
128.0	7.9	12.0	2.0	21.9	2.72	0.0	
160.0	3.5	12.5	2.0	18	2.72	0.0	
200.0	3.6	14.0	2.0	19.6	2.72	0.0	↓
200.0	-0.2	12.0	2.0	13.8	2.04	180.0	Horiz./LogP.
300.0	-1.1	16.0	3.0	17.9	1.50	180.0	
431.0	-1.6	17.5	4.0	19.9	1.50	180.0	
500.0	-1.1	18.0	4.0	20.9	1.50	180.0	
700.0	-0.2	22.0	6.0	27.8	1.50	180.0	
1000.0	-0.2	25.0	6.0	30.8	1.00	180.0	↓

Figure 8

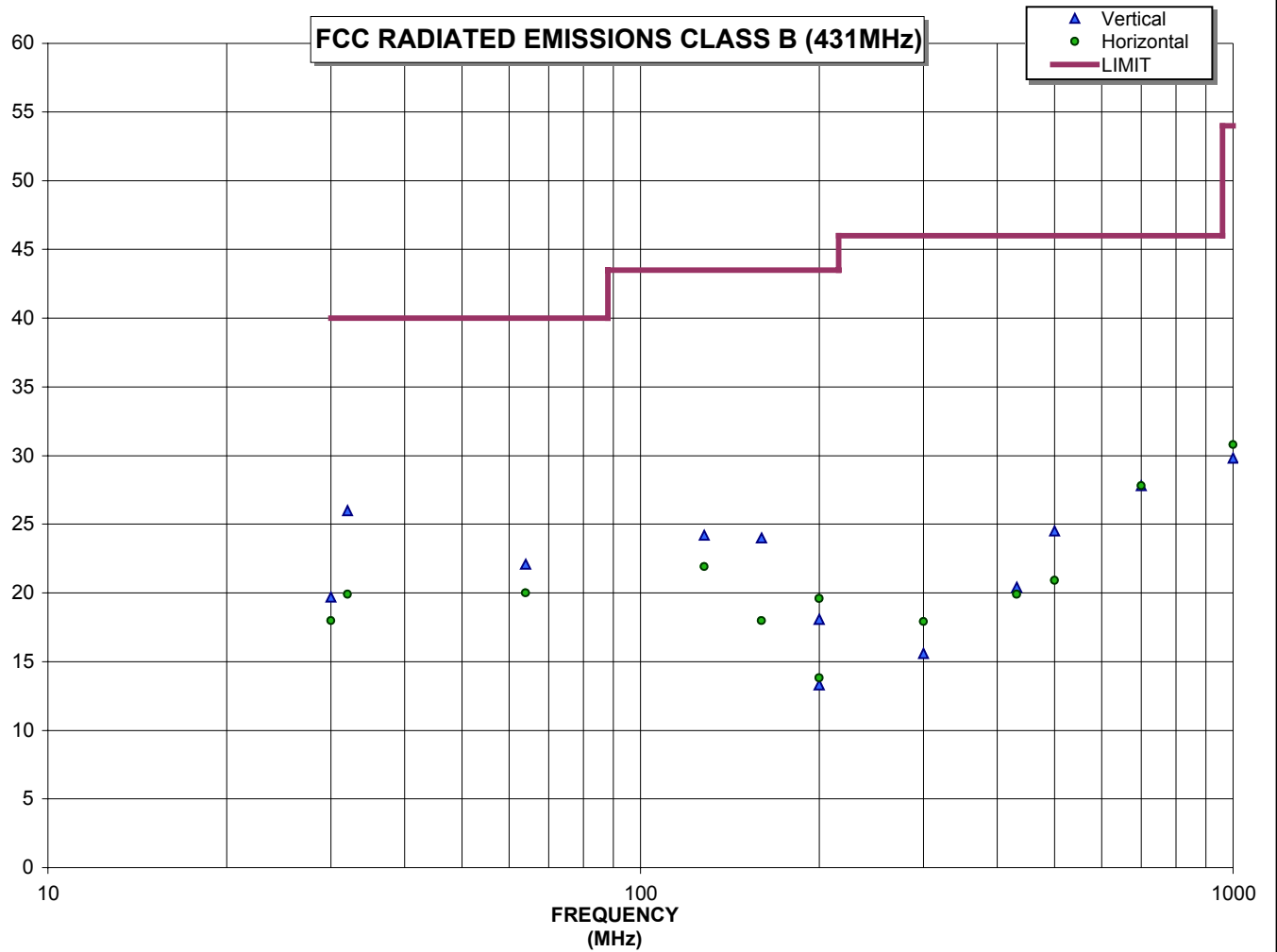
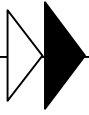


Figure 9



Electromagnetic Emission Test

E U T	Manufacturer: Lutron Electronics	Date: 10/28/04	Test Code RE
	Model#: HRD-5KP	Test Instruments: RSI # 75, 80,391, 708,501,502,503	Technician
	Serial #: 070002062092	Frequency Range: 30MHz – 1000MHz	Engineer
Mode: Receive 437MHz			

Temperature: 52°F Humidity: 46%	Additional Info:	Test Spec: FCC Part15, Class B Unintentional Radiators
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Radiated Distance: 3 meter Antenna: Bicon /Log	<input checked="" type="checkbox"/> HORIZ. <input type="checkbox"/> BB <input type="checkbox"/> NB <input checked="" type="checkbox"/> VERT. <input type="checkbox"/> H <input type="checkbox"/> E	Conducted Line: Function:	<input type="checkbox"/> BB <input type="checkbox"/> NB
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FREQ.	IND. Level	Correction Factors		Final Level	Antenna Height	EUT Azimuth	Remarks
		ANT.	Cable loss				
MHz	dB μ V	dB	dB	dB μ V/m	Meters	Degree	Polarity/Antenna
30.0	6.7	12.0	1.0	19.7	1.0	0.0	Vertical/Bicon
32.0	12.5	12.5	1.0	26	1.0	290.0	
64.0	15.1	8.0	1.0	24.1	1.5	18.0	
128.0	10.0	12.0	2.0	24	1.0	0.0	
160.0	4.0	13.0	2.0	19	1.0	0.0	
200.0	2.4	14.0	2.0	18.4	2.04	90.0	↓
200.0	-1.1	11.5	2.0	12.4	2.0	0.0	Vertical/LogP.
300.0	-1.1	14.0	3.0	15.9	2.0	0.0	
437.0	-1.6	18.0	4.0	20.4	2.0	0.0	
500.0	-1.6	22.0	4.0	24.4	2.0	0.0	
700.0	-0.2	22.0	6.0	27.8	2.0	0.0	
1000	-0.2	24.0	6.0	29.8	2.02	0.0	↓
30.0	4.0	13.0	1.0	18	3.35	100	Horiz./Bicon
32.0	6.2	13.5	1.0	20.7	3.35	100	
64.0	4.0	9.0	1.0	14	3.35	123.5	
128.0	12.2	12.0	2.0	26.2	2.72	0.0	
160.0	4.6	12.5	2.0	19.1	2.72	0.0	
200.0	5.0	14.0	2.0	21	2.72	0.0	↓
200.0	-0.2	12.0	2.0	13.8	2.04	180.0	Horiz./LogP.
300.0	-1.1	14.0	3.0	15.9	1.50	180.0	
437.0	-1.6	17.5	4.0	19.9	1.50	180.0	
500.0	-1.1	18.0	4.0	20.9	1.50	180.0	
700.0	-0.2	22.0	6.0	27.8	1.50	180.0	
1000.0	-0.2	25.0	6.0	30.8	1.00	180.0	↓

Figure 10

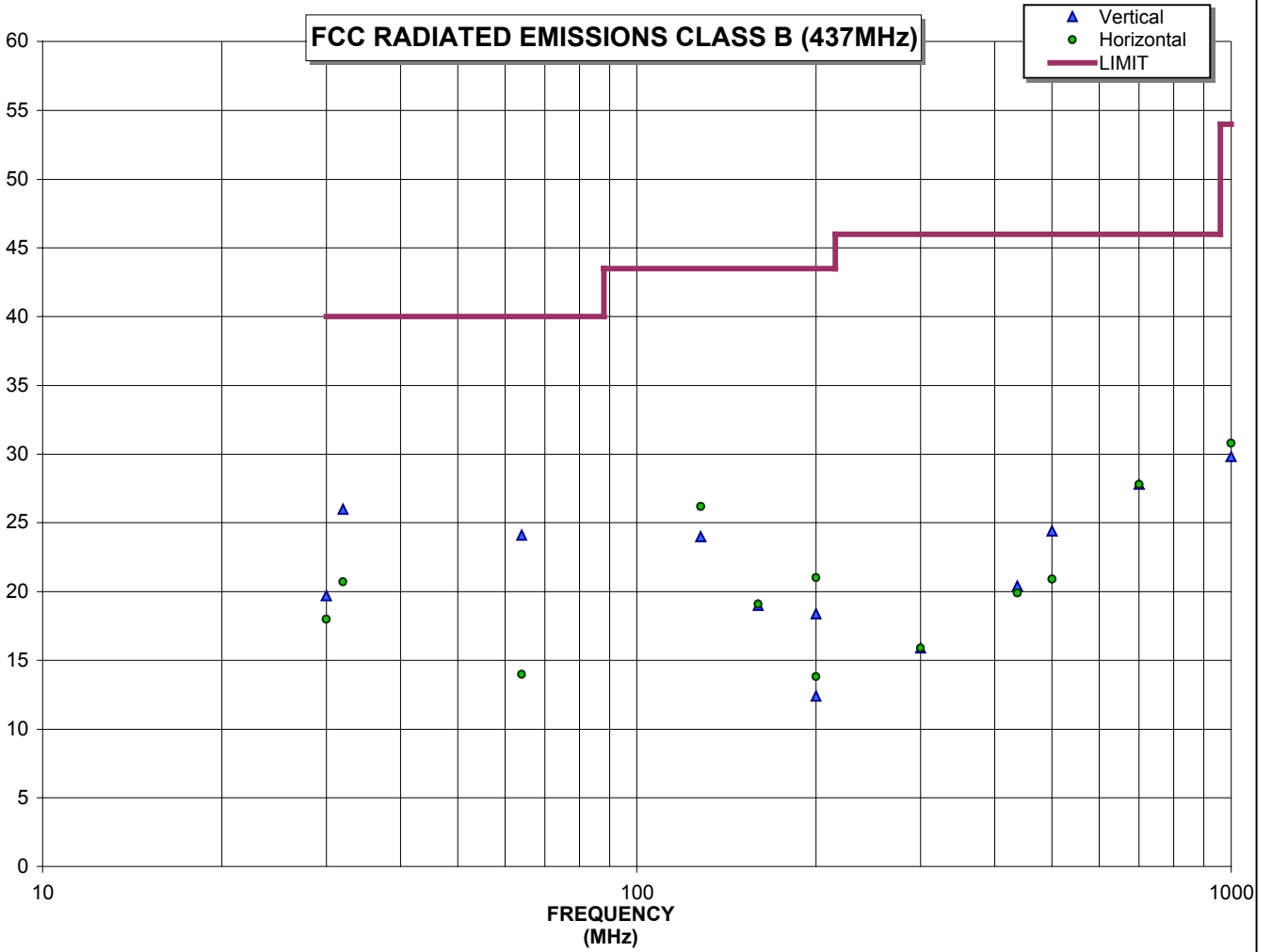
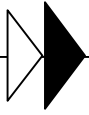


Figure 11



Company: Lutron Electronics
Model #: HRD-5KP
Fund. Freq.: 431MHz

Test Personnel: John Kavaluski
Date: 10/28/04

Radiated Emission for Intentional Radiators

Frequency (MHz)	Polarity	Antenna Height (Meters)	Azimuth (Degrees)	Indicated Level (dBuV)	Antenna Factor (dB)	Distance Factor 1m to 3m (dB)	Cable Loss (dB)	Averaging Factor (dB)	Field Strength @ 3m (dBuV/m)	Limits @ 3m (dBuV/m)	Margin (dB)
431	Vert	1.00	335	63.3	18.0	0.0	4.0	-20.0	65.3	80.3	-15.0
862	Vert	1.00	0	30.0	23.2	0.0	5.0	-20.0	38.2	61.9	-23.7
1293	Vert	1.00	135	20.8	25.0	0.0	1.0	-20.0	26.8	61.9	-35.1
1724	Vert	1.00	0	19.8	26.0	0.0	1.0	-20.0	26.8	54.0	-27.2
2155	Vert	1.00	0	14.0	28.3	0.0	1.0	-20.0	23.3	61.9	-38.6
2586	Vert	1.00	0	19.1	29.0	0.0	1.0	-20.0	29.1	61.9	-32.8
3017	Vert	1.00	0	19.0	30.3	0.0	1.0	-20.0	30.3	61.9	-31.6
3448	Vert	1.00	0	19.0	31.4	0.0	1.0	-20.0	31.4	54.0	-22.6
3879	Vert	1.00	0	22.0	32.6	0.0	1.0	-20.0	35.6	54.0	-18.4
4310	Vert	1.00	0	22.0	32.5	0.0	1.0	-20.0	35.5	54.0	-18.5
431	Horiz	1.00	335	54.2	17.3	0.0	4.0	-20.0	55.5	80.3	-24.8
862	Horiz	1.00	0	29.1	23.5	0.0	5.0	-20.0	37.6	61.9	-24.3
1293	Horiz	1.00	135	26.0	25.0	0.0	1.0	-20.0	32.0	61.9	-29.9
1724	Horiz	1.00	0	21.0	26.6	0.0	1.0	-20.0	28.6	54.0	-25.4
2155	Horiz	1.00	0	19.0	28.0	0.0	1.0	-20.0	28.0	61.9	-33.9
2586	Horiz	1.00	0	19.5	29.0	0.0	1.0	-20.0	29.5	61.9	-32.4
3017	Horiz	1.00	0	19.0	30.4	0.0	1.0	-20.0	30.4	61.9	-31.5
3448	Horiz	1.00	0	18.0	31.5	0.0	1.0	-20.0	30.5	54.0	-23.5
3879	Horiz	1.00	0	20.0	32.7	0.0	1.0	-20.0	33.7	54.0	-20.3
4310	Horiz	1.00	0	22.0	32.6	0.0	1.0	-20.0	35.6	54.0	-18.4

Figure 12



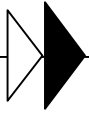
Company: Lutron Electronics
Model # HRD-5KP
Fund. Freq.: 434MHz

Test Personnel: John Kavaluski
Date: 10/28/04

Radiated Emission for Intentional Radiators

Frequency (MHz)	Polarity	Antenna Height (Meters)	Azimuth (Degrees)	Indicated Level (dBuV)	Antenna Factor (dB)	Distance Factor 1m to 3m (dB)	Cable Loss (dB)	Averaging Factor (dB)	Field Strength @ 3m (dBuV/m)	Limits @ 3m (dBuV/m)	Margin (dB)
434	Vert	1.00	335	67.8	18.0	0.0	4.0	-20.0	69.8	80.3	-10.5
868	Vert	1.00	0	19.1	23.2	0.0	5.0	-20.0	27.3	61.9	-34.6
1302	Vert	1.00	135	22.0	25.0	0.0	1.0	-20.0	28.0	61.9	-33.9
1736	Vert	1.00	0	22.0	26.0	0.0	1.0	-20.0	29.0	54.0	-25.0
2170	Vert	1.00	0	16.0	28.3	0.0	1.0	-20.0	25.3	61.9	-36.6
2604	Vert	1.00	0	17.2	29.0	0.0	1.0	-20.0	27.2	61.9	-34.7
3038	Vert	1.00	0	16.9	30.3	0.0	1.0	-20.0	28.2	61.9	-33.7
3472	Vert	1.00	0	15.7	31.4	0.0	1.0	-20.0	28.1	54.0	-25.9
3909	Vert	1.00	0	17.6	32.6	0.0	1.0	-20.0	31.2	54.0	-22.8
4340	Vert	1.00	0	19.0	32.5	0.0	1.0	-20.0	32.5	54.0	-21.5
434	Horiz	1.00	335	54.1	17.3	0.0	4.0	-20.0	55.4	80.3	-24.9
868	Horiz	1.00	0	23.9	23.5	0.0	5.0	-20.0	32.4	61.9	-29.5
1302	Horiz	1.00	135	11.1	25.0	0.0	1.0	-20.0	17.1	61.9	-44.8
1736	Horiz	1.00	0	16.0	26.6	0.0	1.0	-20.0	23.6	54.0	-30.4
2170	Horiz	1.00	0	15.5	28.0	0.0	1.0	-20.0	24.5	61.9	-37.4
2604	Horiz	1.00	0	20.1	29.0	0.0	1.0	-20.0	30.1	61.9	-31.8
3038	Horiz	1.00	0	16.0	30.4	0.0	1.0	-20.0	27.4	61.9	-34.5
3472	Horiz	1.00	0	15.3	31.5	0.0	1.0	-20.0	27.8	54.0	-26.2
3909	Horiz	1.00	0	17.6	32.7	0.0	1.0	-20.0	31.3	54.0	-22.7
4340	Horiz	1.00	0	20.1	32.6	0.0	1.0	-20.0	33.7	54.0	-20.3

Figure 13



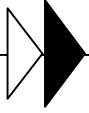
Company: Lutron Electronics
Model # HRD-5KP
Fund. Freq.: 437MHz

Test Personnel: John Kavaluski
Date: 10/28/04

Radiated Emission for Intentional Radiators

Frequency (MHz)	Polarity	Antenna Height (Meters)	Azimuth (Degrees)	Indicated Level (dBuV)	Antenna Factor (dB)	Distance Factor 1m to 3m (dB)	Cable Loss (dB)	Averaging Factor (dB)	Field Strength @ 3m (dBuV/m)	Limits @ 3m (dBuV/m)	Margin (dB)
437	Vert	1.00	335	66.2	18.0	0.0	4.0	-20.0	68.2	80.3	-12.1
874	Vert	1.00	0	50.0	23.2	0.0	5.0	-20.0	58.2	61.9	-3.7
1311	Vert	1.00	135	22.8	25.0	0.0	1.0	-20.0	28.8	61.9	-33.1
1748	Vert	1.00	0	22.6	26.0	0.0	1.0	-20.0	29.6	54.0	-24.4
2185	Vert	1.00	0	15.4	28.3	0.0	1.0	-20.0	24.7	61.9	-37.2
2622	Vert	1.00	0	16.7	29.0	0.0	1.0	-20.0	26.7	61.9	-35.2
3059	Vert	1.00	0	16.0	30.3	0.0	1.0	-20.0	27.3	61.9	-34.6
3496	Vert	1.00	0	15.2	31.4	0.0	1.0	-20.0	27.6	54.0	-26.4
3933	Vert	1.00	0	17.8	32.6	0.0	1.0	-20.0	31.4	54.0	-22.6
4370	Vert	1.00	0	19.6	32.5	0.0	1.0	-20.0	33.1	54.0	-20.9
431	Horiz	1.00	135	51.3	17.3	0.0	4.0	-20.0	52.6	80.3	-27.7
874	Horiz	1.00	0	52.0	23.5	0.0	5.0	-20.0	60.5	61.9	-1.4
1311	Horiz	1.00	0	22.5	25.0	0.0	1.0	-20.0	28.5	61.9	-33.4
1748	Horiz	1.00	0	15.7	26.6	0.0	1.0	-20.0	23.3	54.0	-30.7
2185	Horiz	1.00	0	17.7	28.0	0.0	1.0	-20.0	26.7	61.9	-35.2
2622	Horiz	1.00	0	16.3	29.0	0.0	1.0	-20.0	26.3	61.9	-35.6
3059	Horiz	1.00	0	16.0	30.4	0.0	1.0	-20.0	27.4	61.9	-34.5
3496	Horiz	1.00	0	15.0	31.5	0.0	1.0	-20.0	27.5	54.0	-26.5
3933	Horiz	1.00	0	16.9	32.7	0.0	1.0	-20.0	30.6	54.0	-23.4
4370	Horiz	1.00	0	18.8	32.6	0.0	1.0	-20.0	32.4	54.0	-21.6

Figure 14



4.3 Bandwidth Measurements, Paragraph 15.231

Bandwidth measurements were made at the three transmit frequencies of 431, 434, and 437MHz.

The requirement states that the bandwidth shall be no wider than .25% of the center frequency at the 20dB down points. Results of testing are shown in Figures 15, 16, and 17.

THE BANDWIDTH MEASUREMENTS COMPLIED WITH THE FCC REQUIREMENTS SET FORTH IN PARAGRAPH 15.231.



Model # HRD-5KP
Fund. Freq.: 431MHz

Test Personnel: J Kavalusky
Date: 10/28/04

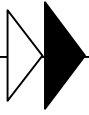
Bandwidth of Fundamental Frequency

	Frequency (MHz)	Measurement (dBuV/m)
Center Frequency	431.0	91.15
20 dB down	431.016	71.15
20 dB down	430.980	71.25

The bandwidth is 36KHz

Allowable Bandwidth: 0.25% of Fundamental Frequency
For 431MHz: ± 0.5388 MHz

Figure 15



Company: Lutron Electronics
Model # HRD-5KP
Fund. Freq.: 434MHz

Test Personnel: J Kavalusky
Date: 10/28/04

Bandwidth of Fundamental Frequency

	Frequency (MHz)	Measurement (dBuV/m)
Center Frequency	434.0	82.2
20 dB down	434.014	62.0
20 dB down	433.980	62.0

The bandwidth is 34KHz

Allowable Bandwidth: 0.25% of Fundamental Frequency
For 434MHz: ± 0.5425 MHz

Figure 16



Company: Lutron Electronics
Model # HRD-5KP
Fund. Freq.: 437MHz

Test Personnel: J Kavalusky
Date: 10/28/04

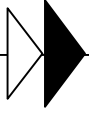
Bandwidth of Fundamental Frequency

	Frequency (MHz)	Measurement (dBuV/m)
Center Frequency	437.0	92.6
20 dB down	437.014	72.75
20 dB down	436.979	72.40

The bandwidth is 35KHz

Allowable Bandwidth: 0.25% of Fundamental Frequency
For 437MHz: ± 0.5463 MHz

Figure 17



5.0 CONCLUSIONS

The evaluation of the **Lutron Electronics Model #: HRD 5KP**, configured as described herein, indicated that the unit complies with the requirements set forth in Subpart B and C of Part 15 of the **FCC Rules** for unintentional and intentional radiators.

1. The **EUT** meets the Conducted Emissions limits set forth in §15.107
2. The **EUT** meets the Radiated Emissions limits for unintentional radiators set forth in §15.109.
3. The **EUT** meets the Radiated Emissions limits for intentional radiators set forth in §15.205, §15.209, and §15.231 (c).