



TEST REPORT NO. RSI-2828E
ELECTROMAGNETIC EMISSION EVALUATION
OF THE
LUTRON ELECTRONICS
MODEL #: AR-6D-yy
FCC PART 15, SUBPART B AND C
24 JANUARY 2006

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ADMINISTRATIVE DATA

TEST PERFORMED:

Measurements of Radiated 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: **AR-6D-yy**

Serial Number: **NSN**

CONTRACT:

Purchase Order Number: 0047112

TEST PERIOD:

15 November through 20 December 2005 and 13 January 2006

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 Kavalusky

Lutron Electronics

Mark Clouser
Robert Bollinger



SUMMARY OF TEST RESULTS

The **Model #: AR-6D-yy**, 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.**

The test results contained in this report represent emission and/or immunity characteristics of only the product(s) (model and serial no.) tested. Radiation Sciences Inc. makes no claim that identical test results will be obtained for future tests of the same model/equipment.



1.0 INTRODUCTION

This document is a report of tests to determine the EME characteristics of the **Model #: AR-6D-yy**, 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", 2003.



2.0 DESCRIPTION OF THE TEST SAMPLE:

The **Model # AR-6D-yy**, manufactured by **Lutron Electronics** of Coopersburg PA, is a Wall mounted radio controlled lamp dimmer. The –yy stands for the color code.

Hereinafter, the **Model #AR-6D-yy**, will be referred to as the **EUT** (Equipment Under Test).



**3.0 TEST INSTRUMENTATION**

RSI INV NO.	DESCRIPTION	MANUFACTURER	MODEL #	SERIAL #	CAL DUE DATE
31	SPEC ANALYZER	ADVANTEST	R3271	J003583	1/27/2006
32.1	SPEC. ANALY.	H.P.	8566B	3638A08767	8/13/2006
33.1	SPEC. ANALY. DISPLY	H.P.		3701A22258	8/13/2006
39	PRE-AMP	H.P.	8349A	2403A00298	4/05/2006
52	ANTENNA	EMCO	3115	2425	6/10/2007
75	ANTENNA	TENSOR	4108	204	6/11/2007
80	ANTENNA	AMP.RES.Assoc.	AT1000	4094-025	6/14/2007
391	RECEIVER	R & S	ESVP	861744/015	3/15/2006
501	MINI MAST	EMCO	2075-2	0002-2278	
502	TURNTABLE	EMCO	2065-1.21	0001-2156	
503	CONTROLLER	EMCO	2090	0001-1489	
708	40ft Cable RG-223	PASTERNAK	BNC TO BNC	N/A	10/26/2006
712	20ft Cable RG-223	PASTERNAK	BNC TO BNC	N/A	10/26/2006
717	10ft SMA Cable	MIRO COAX(blue)	SMA TO SMA	N/A	9/15/2006

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 **EUT**.

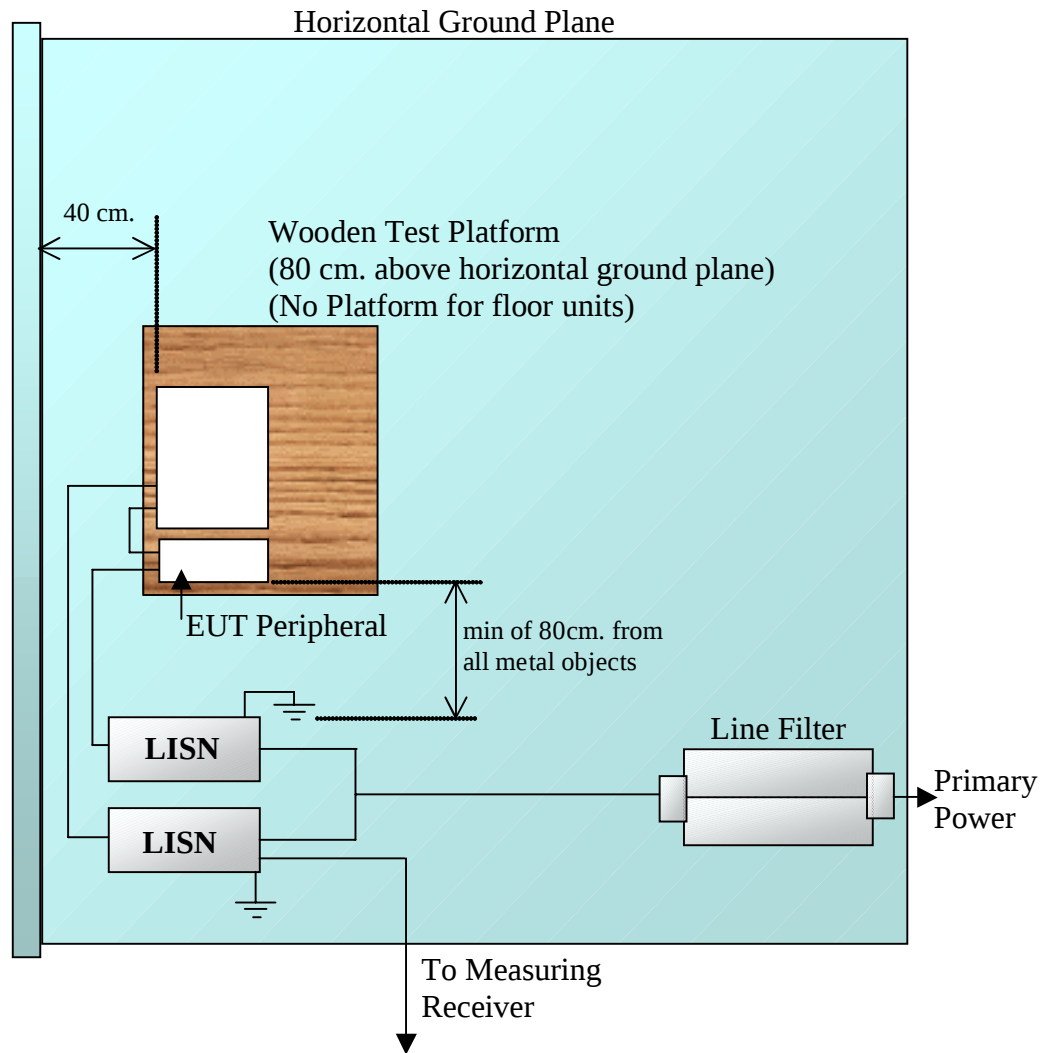
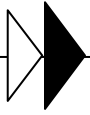
The **EUT** was placed on a table 80cm above a horizontal ground plane in a shield room. The power cable were bundled and oriented in a configuration which produced maximum emissions. The rear of the **EUT** was positioned at the edge of a 1m x 1.5m tabletop that was 40cm from the vertical ground plane. The **EUT** was positioned 80cm from all metal objects. The filtered power (115VAC, 60Hz) was fed through 50uh LISNs to the **EUT**. A spectrum analyzer was used to scan the frequency range of .150-30MHz.

The test setup diagram is shown in Figure 1 and photographs are shown in Figure 2.

The **EUT** was tested while being operated at two transmit frequencies of 434 and 437MHz.

The results of the line-to-ground radio noise voltage measurements are shown on graphs in Figures 3 through 6 for receive modes only of each operating frequency.

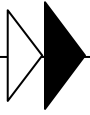
ALL LEVELS ARE BELOW THE APPLICABLE LIMITS AS SPECIFIED BY THE FCC IN PARAGRAPH 15.107.



Conducted Emissions Test Setup Diagram (Top View)
Figure 1



**Conducted Emissions Test Setup Photographs
Figure 2**



18 Nov 2005 01:17:07

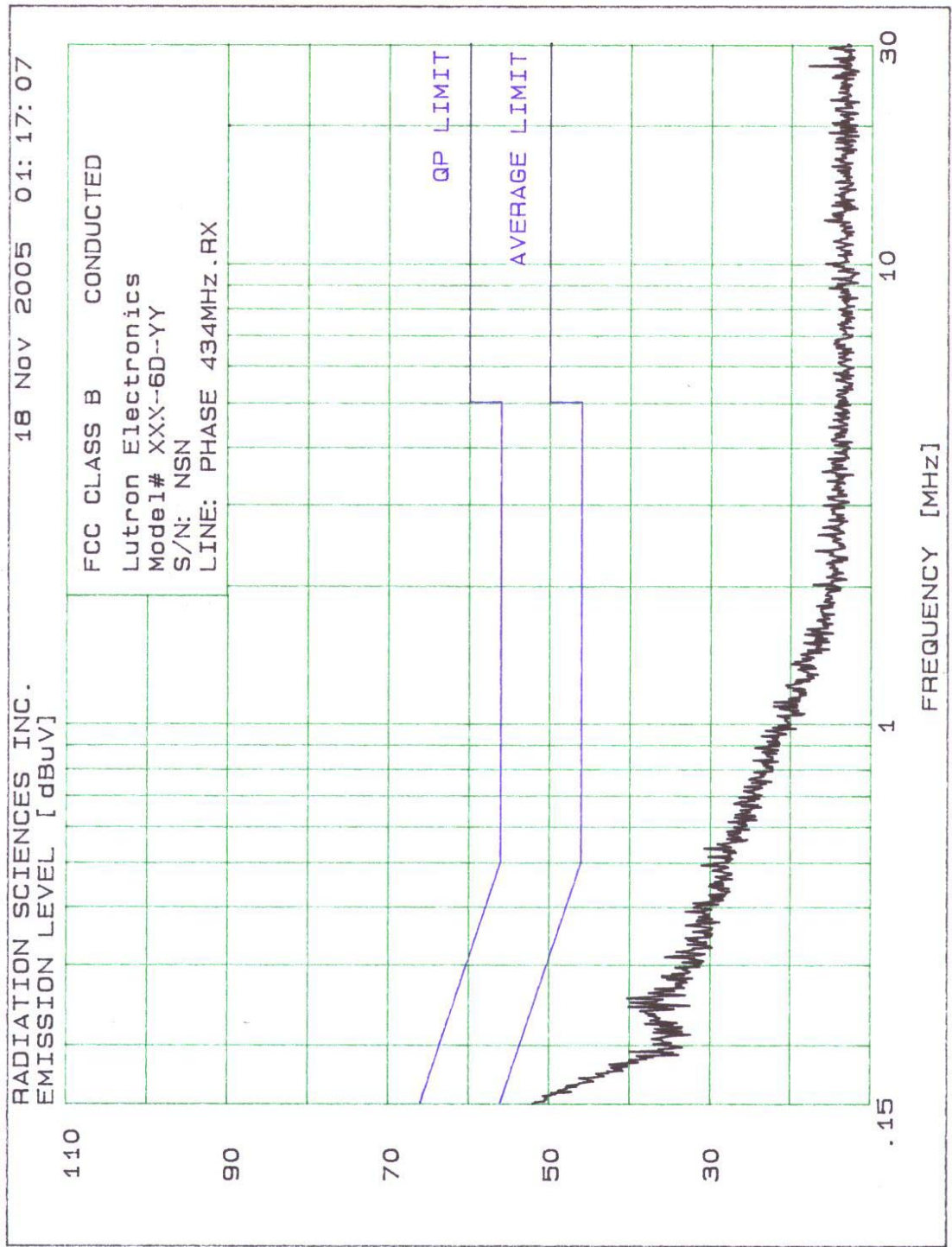


Figure 3

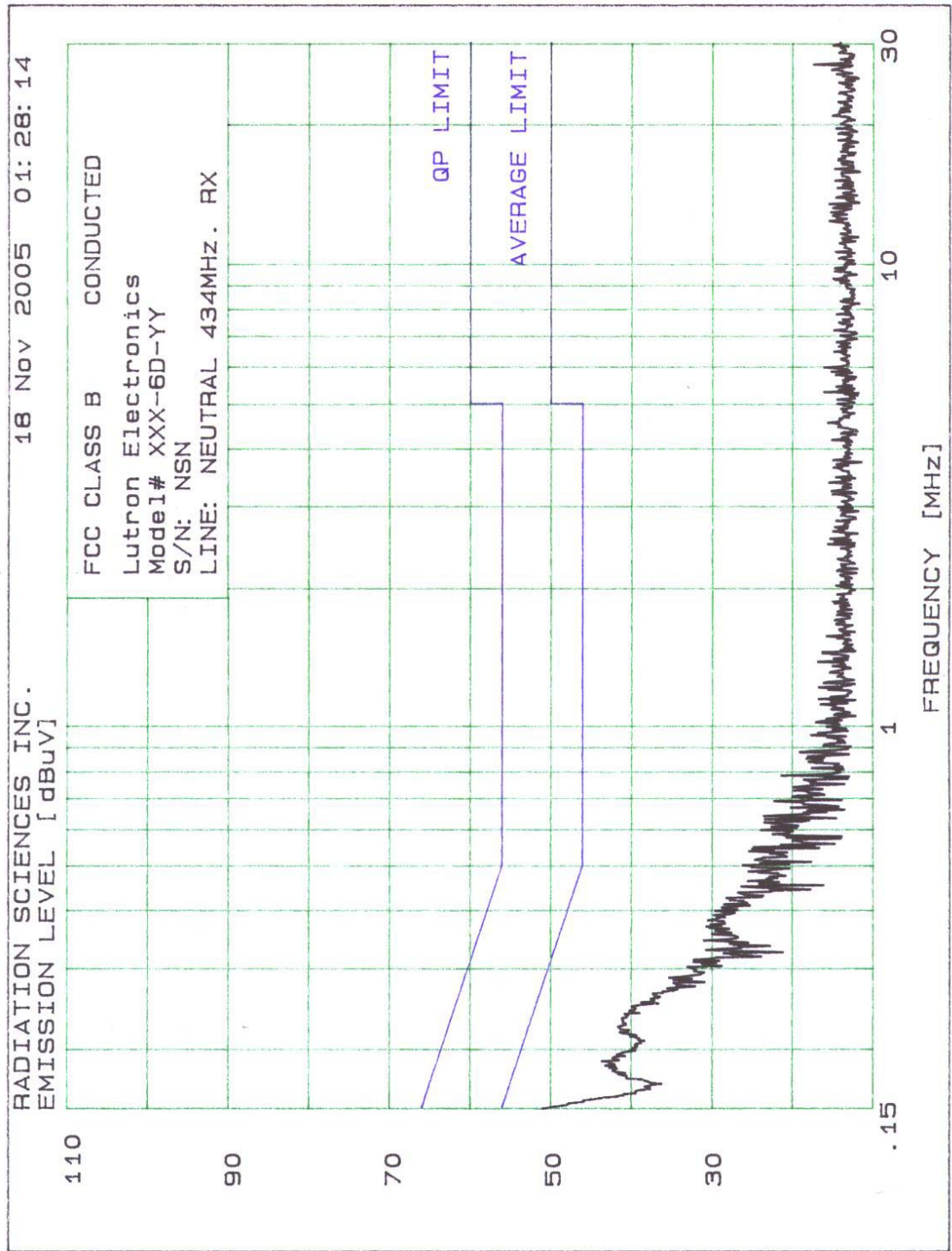


Figure 4

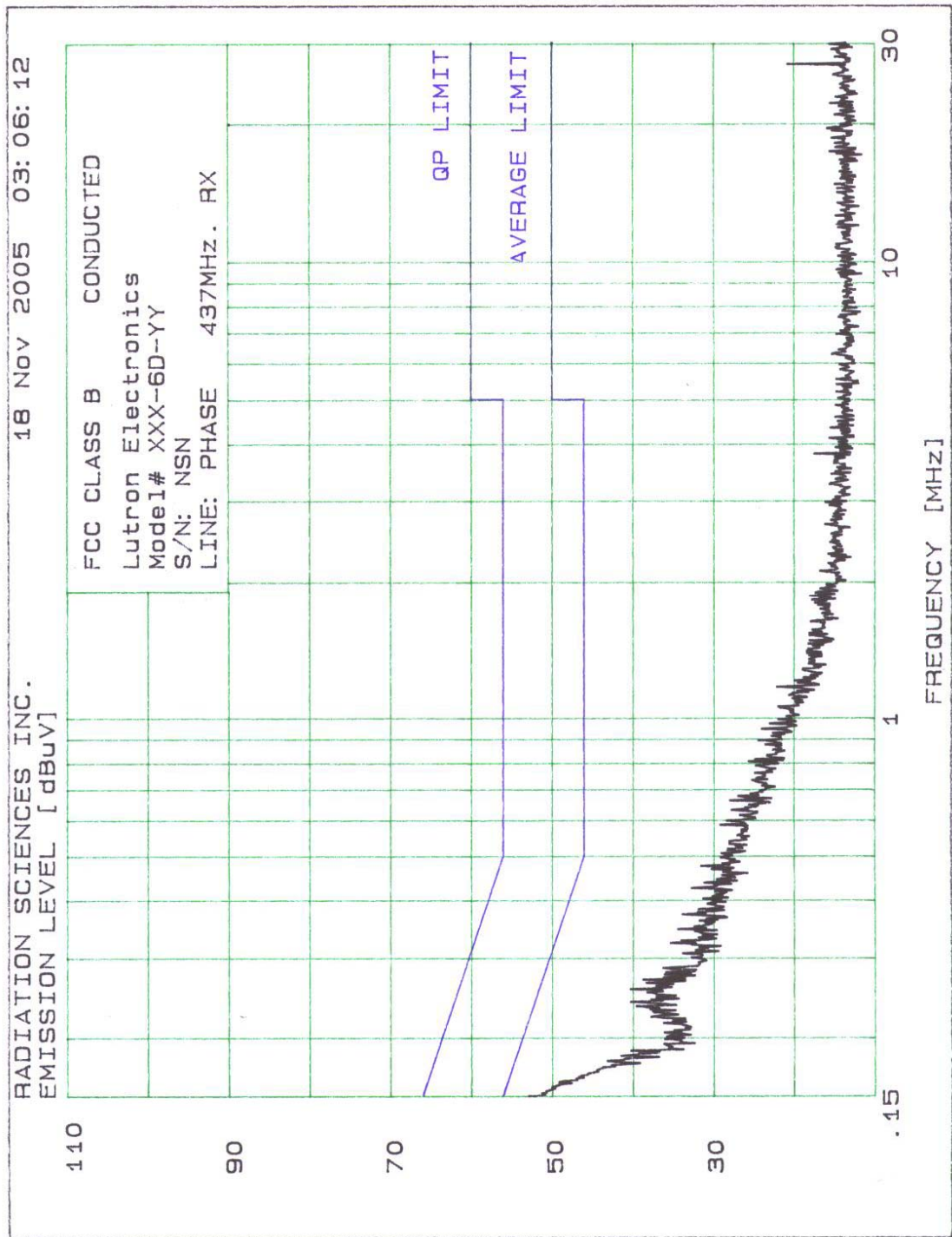
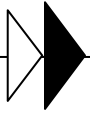


Figure 5

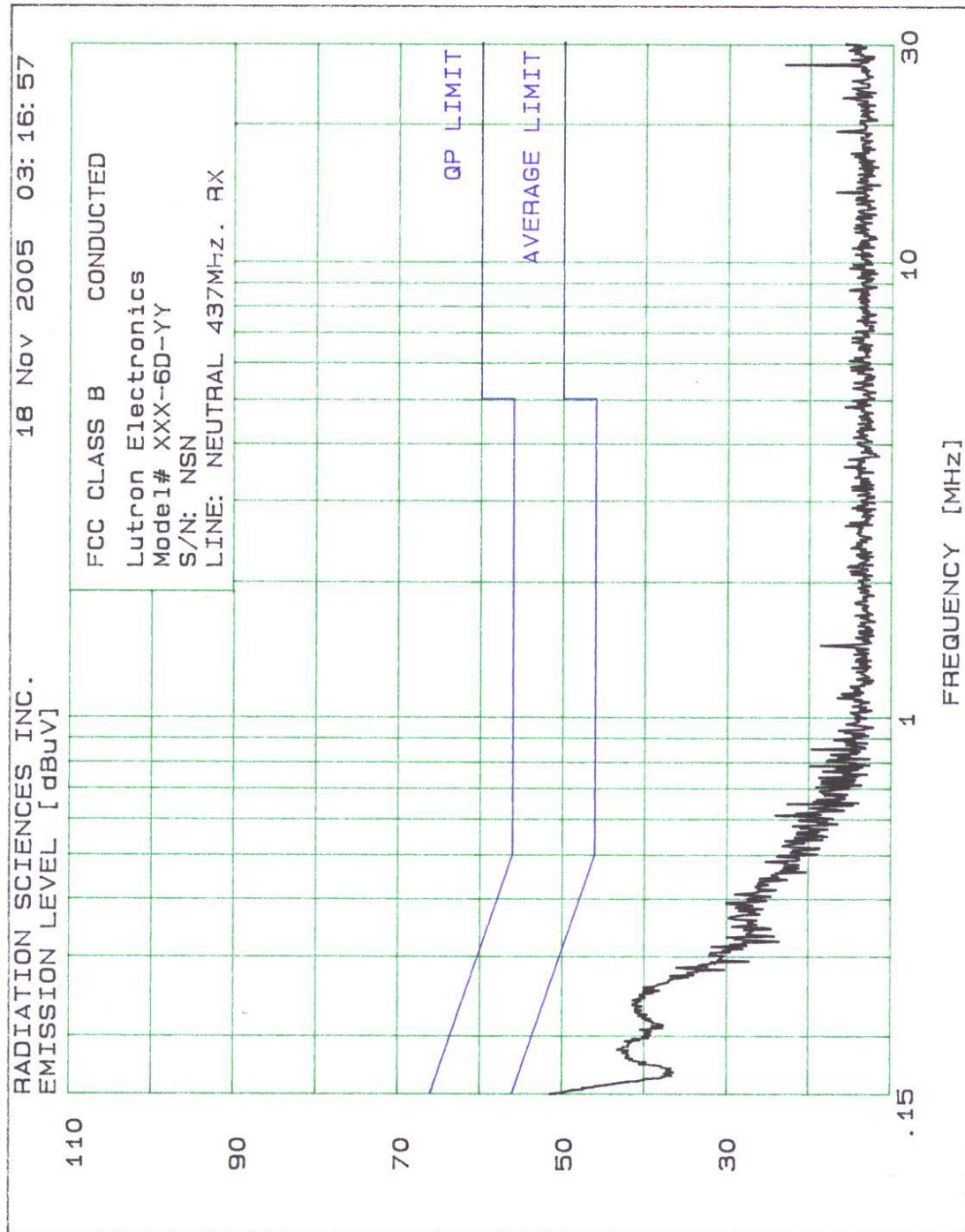
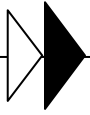


Figure 6



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** was measured out to the tenth harmonic of the carrier frequency. The carrier frequency was set to 434 and 437MHz.

An average factor of 20dB was applied to the level of the fundamental emission when compared to the **FCC** limit. The EUT duty cycle information supporting the -20dB factor is shown in Figure 7.

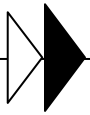
Figure 8 is a test setup diagram for Radiated Emissions and Figure 9 is a test setup photographs.

The test results for Radiated Emissions testing are shown in the following figures:

- Figure 10 Unintentional Radiated Emissions, data sheet, 434MHz Receive Mode
- Figure 11 Unintentional Radiated Emissions, graph, 434MHz Receive Mode
- Figure 12 Unintentional Radiated Emissions, data sheet, 437MHz Receive Mode
- Figure 13 Unintentional Radiated Emissions, graph, 437MHz Receive Mode
- Figure 14 Unintentional Radiated Emissions, data sheet, 434MHz CW Transmit Mode, Vert
- Figure 15 Unintentional Radiated Emissions, data sheet, 434MHz CW Transmit Mode, Horiz
- Figure 16 Unintentional Radiated Emissions, data sheet, 437MHz CW Transmit Mode, Vert
- Figure 17 Unintentional Radiated Emissions, data sheet, 437MHz CW Transmit Mode, Horiz

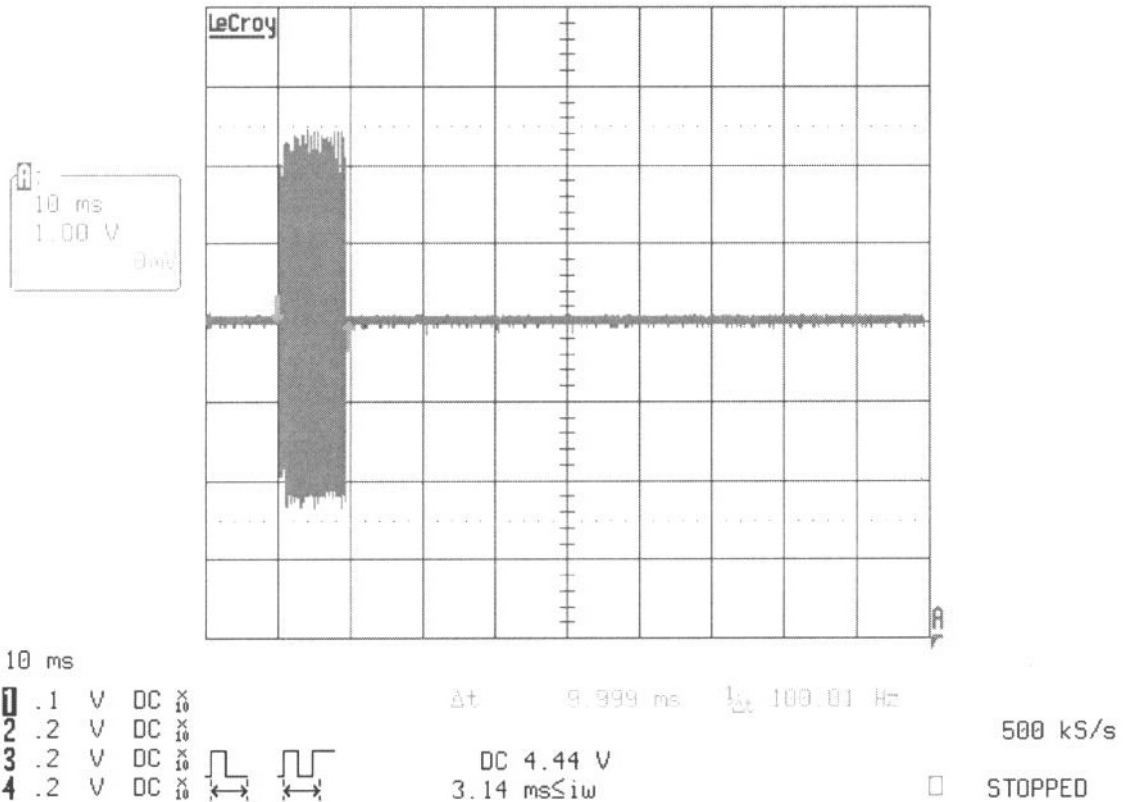
- Figure 18 Intentional Radiated Emissions, data sheet, 434MHz CW Transmit Mode
- Figure 19 Intentional Radiated Emissions, data sheet, 437MHz CW Transmit Mode

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



4-May-05
7:43:59

Reading Floppy Disk Drive



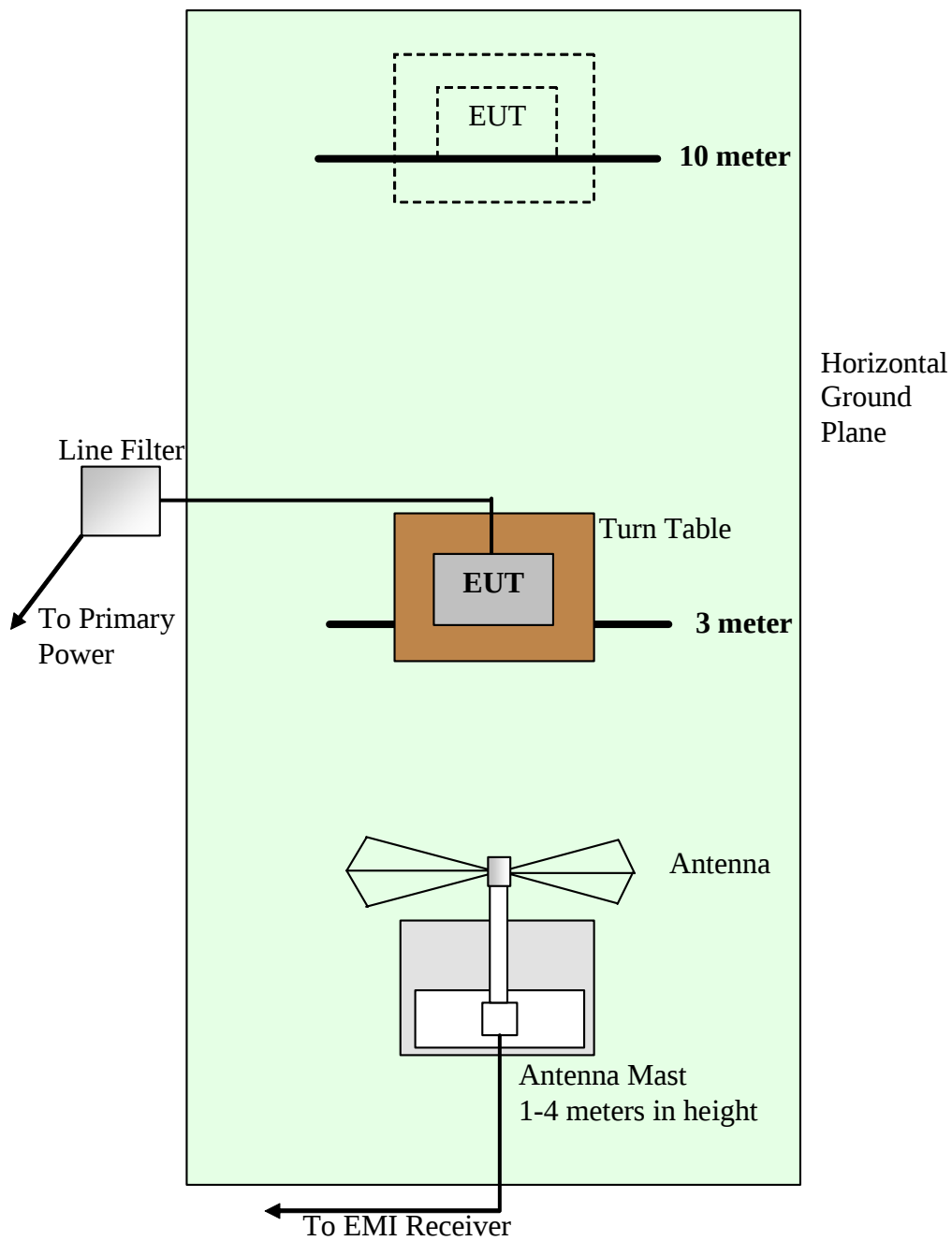
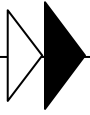
Duty Cycle Correction Factor Calculation:

Total Number of Pulses counted in 100ms

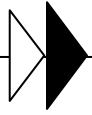
Total Time On = 9.999ms

$$\begin{aligned}\text{Duty Cycle Correction Factor} &= 20 \log [\text{Time On} / (\text{Time On} + \text{Time Off})] \\ &= 20 \log [9.999 \text{ ms} / 100 \text{ ms}] \\ &= 20 \log [0.1] \\ &= -20 \text{ dB}\end{aligned}$$

Duty Cycle Correction Factor
Figure 7



**Radiated Emissions Test Setup Diagram
Figure 8**



**Radiated Emission Test Setup Photographs
Figure 9**



Electromagnetic Emission Test

E U T	Manufacturer: Lutron Electronics				Date: 11/16-17/2005				Test Code RE	
	Model#: AR-6D-yy				Test Instruments: RSI # 75, 80, 391, 708, 501, 502, 503				Technician	
	Serial #: N/A				Frequency Range: 30MHz – 6936MHz				Engineer	
	Mode: Receive 434MHz									
Temperature: 73°F			Additional Info:			Test Spec: FCC Part 15, Class B Unintentional Radiators				
Humidity: 61%										
Radiated Distance: 3 meter Antenna: Bicon / Log			☒ HORIZ. ☐ BB ☐ NB ☒ VERT. ☐ H ☐ E		Conducted Line: Function:				☐ BB ☐ NB	
FREQ.	IND. Level	Pre-Amp Factor	Correction Factors			Final Level	Antenna Height	EUT Azimuth	Remarks	
MHz	dBμV	dB	ANT. dB	Cable loss dB		dBμV/m	Meters	Degree		
30.0	7.0	0.0	12.9	0.8		20.7	1.00	27.9	Vertical	
120.0	1.5	0.0	11.2	1.9		14.6	1.00	27.9		
200.0	1.0	0.0	14.6	2.3		17.9	1.00	27.9		
300.0	-1.5	0.0	14.8	3.0		16.3	1.14	34.6		
435.965	20.0	0.0	17.4	3.6		41.0	1.28	139.9		
436.1	17.1	0.0	17.4	3.6		38.1	1.28	139.9		
438.089	18.0	0.0	17.4	3.7		39.1	1.28	139.9		
500.0	-1.5	0.0	17.9	4.0		20.4	1.14	34.6		
1000.0	-0.2	0.0	24.2	5.8		29.8	1.14	34.6		
1734.0	47.0	-33.0	26.5	1.0		41.5	1.00	0.0		
3468.0	43.3	-25.0	31.8	1.0		51.1	1.00	0.0		
5202.0	40.6	-23.6	33.5	1.5		52.0	1.00	0.0		
6936.0	39.0	-22.8	35.2	1.9		53.3	1.00	0.0	↓	
30.0	1.5	0.0	13.1	0.8		15.4	1.00	27.9	Horizontal	
60.0	7.0	0.0	9.1	1.2		17.3	1.00	27.9		
120.0	5.0	0.0	11.1	1.9		18.0	1.00	27.9		
200.0	3.0	0.0	13.5	2.3		18.8	1.00	27.9		
300.0	-1.6	0.0	15.2	3.0		16.6	1.14	34.6		
435.967	20.0	0.0	17.3	3.6		40.9	1.28	139.9		
437.988	14.8	0.0	17.2	3.6		35.6	1.28	139.9		
440.016	12.5	0.0	17.3	3.7		33.5	1.28	139.9		
500.0	-1.1	0.0	18.2	4.0		21.1	1.14	139.9		
1000.0	-0.2	0.0	24.6	5.8		30.2	1.14	139.9		
1734.0	50.7	-33.0	26.5	1.0		45.2	1.00	0.0		
3468.0	43.3	-25.0	31.1	1.0		50.4	1.00	0.0		
5202.0	39.6	-23.6	33.6	1.5		51.1	1.00	0.0		
6936.0	38.0	-22.8	35.3	1.9		52.4	1.00	0.0	↓	

Figure 10

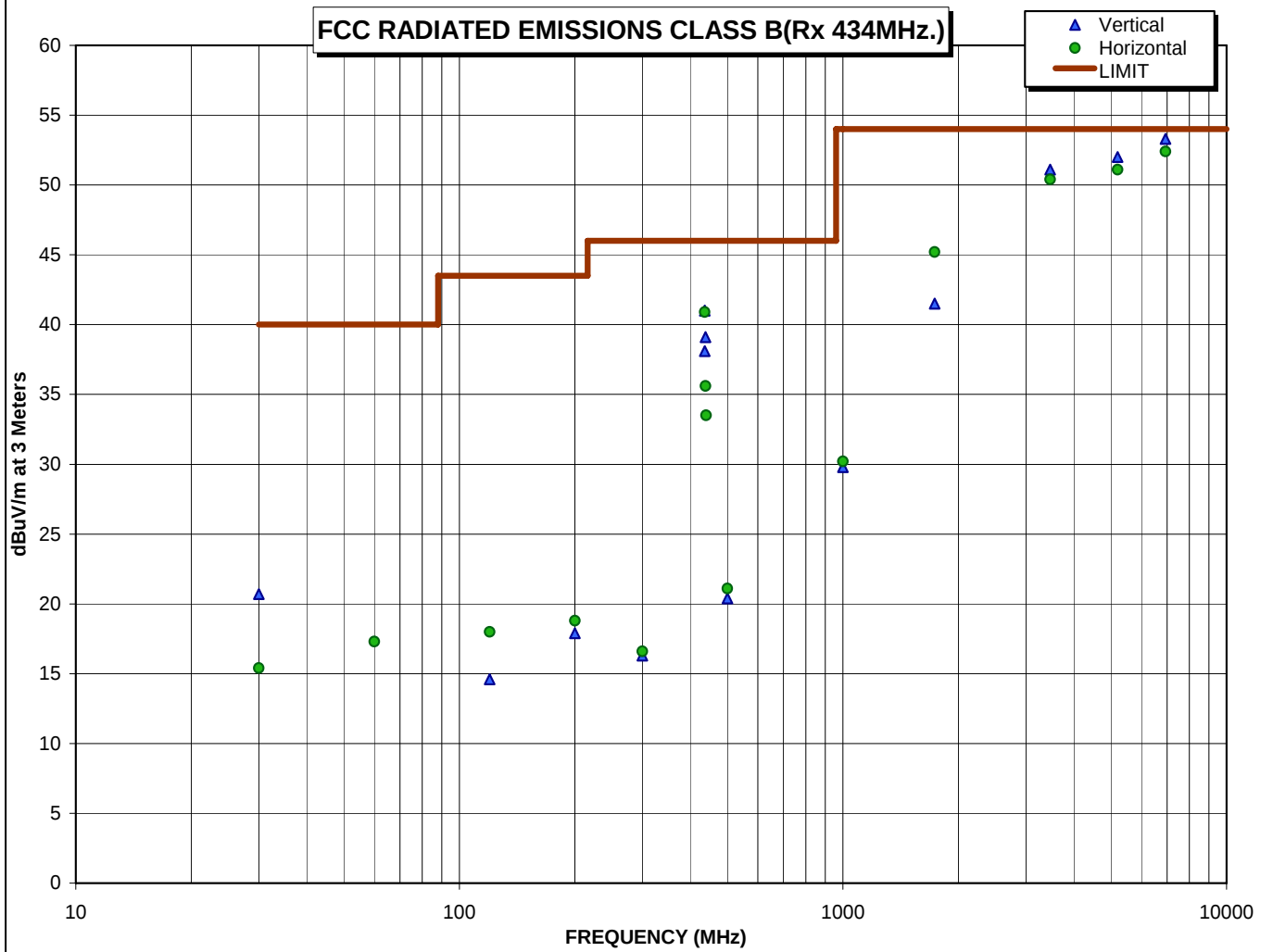


Figure 11



Electromagnetic Emission Test

E U T	Manufacturer: Lutron Electronics				Date: 11/16-17/2005				Test Code RE		
	Model#: AR-6D-yy				Test Instruments: RSI # 75, 80, 391, 708,				Technician		
	Serial #: N/A				501, 502, 503				Engineer		
	Mode: Receive 437MHz				Frequency Range: 30MHz – 2183MHz						
Temperature: 73°F			Humidity: 61%			Additional Info:			Test Spec: FCC Part15, Class B Unintentional Radiators		
Radiated Distance: 3 meter Antenna: Bicon / Log			☒ HORIZ. ☐ BB ☐ NB ☒ VERT. ☐ H ☐ E			Conducted Line: Function:			☐ BB ☐ NB		
FREQ.	IND. Level	Pre- Amp Factor	Correction Factors			Final Level	Antenna Height	EUT Azimuth	Remarks		
MHz	dBμV	dB	ANT.	Cable loss		dBμV/m	Meters	Degree			
30.0	8.0	0.0	12.9	0.8		21.7	1.37	33.1	Vertical		
120.0	1.0	0.0	11.2	1.9		14.1	1.37	33.1			
192.0	4.4	0.0	14.2	2.2		20.8	1.00	248			
200.0	4.0	0.0	14.6	2.3		20.9	1.37	33.1			
300.0	-1.6	0.0	14.8	3.0		16.2	1.14	38.7			
434.0	21.4	0.0	17.4	3.7		42.5	1.14	28.4			
437.9	13.9	0.0	17.4	3.6		34.9	1.36	150.8			
442.4	20.0	0.0	17.4	3.7		41.1	1.13	125.0			
500.0	-1.1	0.0	17.9	4.0		20.8	1.40	97			
873.386	2.4	0.0	22.8	5.4		30.6	1.38	97			
1000.0	-0.2	0.0	24.2	5.8		29.8	1.14	38.7			
1747.0	46.6	-33.0	25.4	1.0		40	1.00	0.0			
2183.0	47.3	-29.0	28.2	1.0		47.5	1.00	360		↓	
30.0	2.0	0.0	13.1	0.8		15.9	1.00	27.9	Horizontal		
60.0	10.0	0.0	9.1	1.2		20.3	1.52	33.1			
120.0	6.0	0.0	11.0	1.9		18.9	2.21	0.0			
200.0	6.8	0.0	14.0	2.3		23.1	2.21	0.0			
300.0	-1.1	0.0	15.2	3.0		17.1	1.14	38.7			
427.63	22.7	0.0	17.3	3.6		43.6	1.00	126			
432.0	17.7	0.0	17.3	3.6		38.6	1.14	38.7			
435.0	15.1	0.0	17.3	3.7		36.1	1.14	38.7			
442.4	7.3	0.0	17.1	3.7		28.1	1.14	38.7			
500.0	-1.6	0.0	18.2	4.0		20.6	1.14	38.7			
873.386	2.4	0.0	23.3	5.4		31.1	1.00	252			
1000.0	0.2	0.0	24.6	5.8		30.6	1.14	38.7			
1310.0	47.0	-31.0	25.1	1.0		42.1	1.00	0.0			
1747.0	46.6	-33.0	26.6	1.0		41.2	1.00	0.0			
2183.0	48.5	-29.0	28.2	1.0		48.7	1.00	0.0		↓	

Figure 12

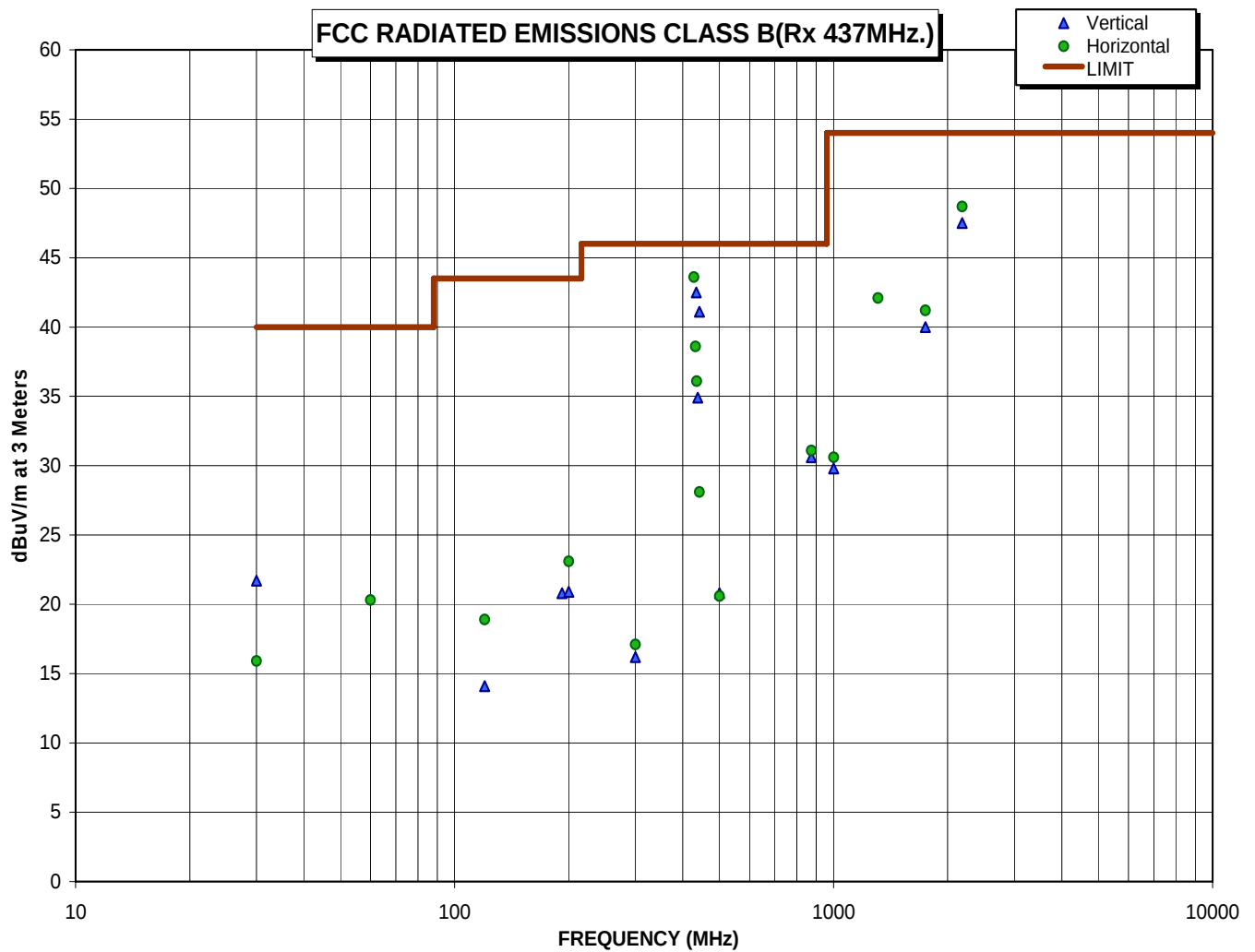
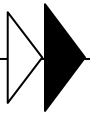


Figure 13



Company: Lutron Electronics
Model # AR-6D-yy
Fund. Freq.: 434MHz
MODE: Rx

Test Personnel: J. Kavalusky
Date: 11/16-17/2005

Radiated Emissions for Unintentional Radiators

Frequency (MHz)	Polarity	Antenna Height (Meters)	Azimuth (Degrees)	Indicated Level (dBuV)	Antenna Factor (dB)	Pre-Amp Gain Factor (dB)	Cable Loss (dB)	Averaging Factor (dB)	Field Strength @ 3m (dBuV/m)	Limits @ 3m (dBuV/m)	Margin (dB)
30	Vert	1.00	27.9	7.0	12.9	0.0	0.8		20.7	41.93	-21.2
120	Vert	1.00	27.9	1.5	11.2	0.0	1.9		14.6	41.53	-26.9
200.0	Vert	1.00	27.9	1.0	14.6	0.0	2.3		17.9	51.48	-33.6
300.0	Vert	1.14	34.6	-1.5	14.8	0.0	3.0		16.3	54.67	-38.4
435.965	Vert	1.28	139.9	20.0	17.4	0.0	3.6		41.0	60.92	-19.9
436.1	Vert	1.28	139.9	17.1	17.4	0.0	3.6		38.1	60.61	-22.5
438.089	Vert	1.28	139.9	18.0	17.40	0.0	3.7		39.1	60.84	-21.7
500	Vert	1.14	34.6	-1.5	17.9	0.0	4.0		20.4	61.90	-41.5
1000.0	Vert	1.14	34.6	-0.2	24.2	0.0	5.8		29.8	61.9	-32.1
1734	Vert	1.00	0.0	47.0	26.5	-33.0	1.0		41.5	61.9	-20.4
3468.0	Vert	1.00	0.0	43.3	31.8	-25.0	1.0		51.1	61.9	-10.8
5202.0	Vert	1.00	0.0	40.6	33.5	-23.6	1.5		52.0	61.9	-9.9
6936.0	Vert	1.00	0.0	39.0	35.2	-22.8	1.9		53.3	61.6	-8.3

Figure 14



Company: Lutron Electronics
Model # AR-6D-yy
Fund. Freq.: 434MHz
MODE: Rx

Test Personnel: J.Kavalusky
Date: 11/16-17/2005

Radiated Emissions for Unintentional Radiators

Frequency (MHz)	Polarity	Antenna Height (Meters)	Azimuth (Degrees)	Indicated Level (dBuV)	Antenna Factor (dB)	Pre-Amp Gain Factor (dB)	Cable Loss (dB)	Averaging Factor (dB)	Field Strength @ 3m (dBuV/m)	Limits @ 3m (dBuV/m)	Margin (dB)
30	Horiz	1.00	27.9	1.5	13.1	0.0	0.8		15.4	41.93	-26.5
60	Horiz	1.00	27.9	7.0	9.1	0.0	1.2		17.3	41.93	-24.6
120.0	Horiz	1.00	27.9	5.0	11.1	0.0	1.9		18.0	41.58	-23.6
200.0	Horiz	1.00	27.9	3.0	13.5	0.0	2.3		18.8	51.48	-32.7
300.0	Horiz	1.14	34.6	-1.6	15.2	0.0	3.0		16.6	54.67	-38.1
435.967	Horiz	1.28	139.9	20.0	17.3	0.0	3.6		40.9	60.61	-19.7
437.988	Horiz	1.28	139.9	14.8	17.2	0.0	3.6		35.6	60.84	-25.2
440.016	Horiz	1.28	139.9	12.5	17.30	0.0	3.7		33.5	60.86	-27.4
500	Horiz	1.14	139.9	-1.1	18.2	0.0	4.0		21.1	61.90	-40.8
1000.0	Horiz	1.14	139.9	-0.2	24.6	0.0	5.8		30.2	61.9	-31.7
1734	Horiz	1.00	0.0	50.7	26.5	-33.0	1.0		45.2	61.9	-16.7
3468.0	Horiz	1.00	0.0	43.3	31.1	-25.0	1.0		50.4	61.9	-11.5
5202.0	Horiz	1.00	0.0	39.6	33.6	-23.6	1.5		51.1	61.9	-10.8
6936.0	Horiz	1.00	0.0	38.0	35.3	-22.8	1.9		52.4	61.9	-9.5

Figure 15



Company: Lutron Electronics
Model # AR-6D-yy
Fund. Freq. 437MHz.
Mode: Rx

Test Personnel: J. Kavalusky
Date: 11/16-17/05

Radiated Emissions for Unintentional Radiators

Frequency (MHz)	Polarity	Antenna Height (Meters)	Azimuth (Degrees)	Indicated Level (dBuV)	Antenna Factor (dB)	Pre-Amp Gain Factor (dB)	Cable Loss (dB)	Averaging Factor (dB)	Field Strength @ 3m (dBuV/m)	Limits @ 3m (dBuV/m)	Margin (dB)
30	Vert	1.37	33.1	8.0	12.9	0.0	0.8		21.7	41.93	-20.2
120	Vert	1.37	33.1	1.0	11.2	0.0	1.9		14.1	41.53	-27.4
192.0	Vert	1.00	248	4.4	14.2	0.0	2.2		20.8	51.48	-30.7
200.0	Vert	1.37	33.1	4.0	14.6	0.0	2.3		20.9	51.48	-30.6
300.0	Vert	1.14	38.7	-1.6	14.8	0.0	3.0		16.2	54.67	-38.5
434	Vert	1.14	28.4	21.40	17.4	0.0	3.7		42.5	60.61	-18.1
437.8	Vert	1.36	150.8	13.9	17.4	0.0	3.6		34.9	60.84	-25.9
442.4	Vert	1.13	125.0	20.0	17.4	0.0	3.7		41.1	60.92	-19.8
500.0	Vert	1.40	97	-1.1	17.9	0.0	4.0		20.8	61.9	-41.1
873.386	Vert	1.38	97	2.4	22.8	0.0	5.4		30.6	61.9	-31.3
1000.0	Vert	1.14	38.7	-0.2	24.2	0.0	5.8		29.8	61.9	-32.1
1747.0	Vert	1.00	0	46.6	25.4	-33.0	1.0		40.0	61.9	-21.9
2183.0	Vert	1.00	360	47.3	28.2	-29.0	1.0		47.5	61.9	-14.4

Figure 16



Company: Lutron Electronics
Model # AR-6D-yy
Fund. Freq.: 437MHz
Mode: Rx

Test Personnel: J.Kavalusky
Date:11/16-17/2005

Radiated Emissions for Unintentional Radiators

Frequency (MHz)	Polarity	Antenna Height (Meters)	Azimuth (Degrees)	Indicated Level (dBuV)	Antenna Factor (dB)	Pre-Amp Gain Factor (dB)	Cable Loss (dB)	Averaging Factor (dB)	Field Strength @ 3m (dBuV/m)	Limits @ 3m (dBuV/m)	Margin (dB)
30	Horiz	1.00	27.9	2.0	13.1	0.0	0.8		15.9	41.93	-26.0
60	Horiz	1.52	33.1	10.0	9.1	0.0	1.2		20.3	41.93	-21.6
120.0	Horiz	2.21	0.0	6.0	11.0	0.0	1.9		18.90	41.58	-22.7
200.0	Horiz	2.21	0.0	6.8	14.0	0.0	2.3		23.1	51.48	-28.4
300.0	Horiz	1.14	38.7	-1.1	15.2	0.0	3.0		17.1	54.67	-37.6
427.63	Horiz	1.00	126	22.7	17.3	0.0	3.6		43.6	60.61	-17.0
432	Horiz	1.14	38.7	17.7	17.3	0.0	3.6		38.6	60.84	-22.2
435	Horiz	1.14	38.7	15.1	17.3	0.0	3.7		36.10	60.86	-24.8
442.4	Horiz	1.14	38.7	7.3	17.1	0.0	3.7		28.1	60.92	-32.8
500.0	Horiz	1.14	38.7	-1.6	18.2	0.0	4.0		20.6	61.9	-41.3
873.386	Horiz	1.00	252	2.4	23.3	0.0	5.4		31.1	61.9	-30.8
1000.0	Horiz	1.14	38.7	0.2	24.6	0.0	5.8		30.6	61.9	-31.3
1310.0	Horiz	1.00	0	47.0	25.1	-31.0	1.0		42.1	61.9	-19.8
1747.0	Horiz	1.00	0	46.6	26.6	-33.0	1.0		41.2	61.9	-20.7
2183.0	Horiz	1.00	0	48.5	28.2	-29.0	1.0		48.7	61.9	-13.2

Figure 17



Company: Lutron Electronics
Model # AR-6D-yy
Fund. Freq.: 434MHz.
Mode: Tx (CW)

Test Personnel John Kavalusky
DATE: 1/13/06

Radiated Emission for Intentional Radiators

Frequency (MHz)	Polarity	Antenna Height (Meters)	Azimuth (Degrees)	Indicated Level (dBuV)	Antenna Factor (dB)	Pre-Amp Gain Factor (dB)	Cable Loss (dB)	Averaging Factor (dB)	Field Strength @ 3m (dBuV/m)	Limits @ 3m (dBuV/m)	Margin (dB)
434	Vert	1.00	34.6	78.4	17.4	0.0	3.7	-20.0	79.5	80.73	-1.2
868	Vert	1.00	34.6	18.0	22.6	0.0	5.3	-20.0	25.9	61.93	-36.0
1302	Vert	1.00	0	59.00	24.9	-31.0	1.0	-20.0	33.90	54.00	-20.1
1736	Vert	1.00	0	51.00	26.5	-33.0	1.0	-20.0	25.50	61.93	-36.4
2170	Vert	1.00	0	55.6	27.7	-29.0	1.0	-20.0	35.3	61.93	-26.6
2604	Vert	1.00	0	54.00	28.7	-32.0	1.0	-20.0	31.70	61.93	-30.2
3038	Vert	1.00	0	47.20	30.0	-27.0	1.0	-20.0	31.20	61.93	-30.7
3472	Vert	1.00	0	48.6	31.8	-25.0	1.0	-20.0	36.4	61.93	-25.5
3906	Vert	1.00	0	46.2	32.1	-23.3	1.0	-20.0	36.00	54.0	-18.0
4340	Vert	1.00	0	46.2	32.0	-22.0	1.0	-20.0	37.2	54.0	-16.8
434	Horiz	1.00	34.6	59.9	17.3	0.0	3.7	-20.0	60.9	80.73	-19.8
868	Horiz	1.00	34.6	15.9	23.0	0.0	5.4	-20.0	24.3	61.93	-37.6
1302	Horiz	1.00	0	54.7	24.8	-31.0	1.0	-20.0	29.5	54.00	-24.5
1736	Horiz	1.00	0	55.3	26.5	-33.0	1.0	-20.0	29.8	61.93	-32.1
2170	Horiz	1.00	0	56.10	27.7	-29.0	1.0	-20.0	35.80	61.93	-26.1
2604	Horiz	1.00	0	52.90	28.5	-32.0	1.0	-20.0	30.4	61.93	-31.5
3038	Horiz	1.00	0	44.70	29.9	-27.0	1.0	-20.0	28.60	61.93	-33.3
3472	Horiz	1.00	0	43.60	31.1	-25.0	1.0	-20.0	30.70	61.93	-31.2
3906	Horiz	1.00	0	40.20	32.3	-23.3	1.0	-20.0	30.20	54.0	-23.8
4340	Horiz	1.00	0	40.80	32.5	-22.0	1.0	-20.0	32.30	54.0	-21.7

Figure 18



Company: Lutron Electronics
Model # AR-6D-yy
Fund. Freq.: 437MHz
Mode: Tx (CW)

Test Person: John Kavalusky
Date: 1/13/06

Radiated Emission for Intentional Radiators

Frequency (MHz)	Polarity	Antenna Height (Meters)	Azimuth (Degrees)	Indicated Level (dBuV)	Antenna Factor (dB)	Pre-Amp Gain Factor (dB)	Cable Loss (dB)	Averaging Factor (dB)	Field Strength @ 3m (dBuV/m)	Limits @ 3m (dBuV/m)	Margin (dB)
437	Vert	1.16	28.6	74.6	17.4	0.0	3.6	-20.0	75.6	80.3	-4.7
874	Vert	1.00	28.6	39.0	22.8	0.0	5.4	-20.0	47.2	61.9	-14.7
1311	Vert	1.00	0	56.30	25.1	-32.0	1.0	-20.0	30.4	61.9	-31.5
1748	Vert	1.00	0	52.70	26.3	-33.0	1.0	-20.0	27.00	54.0	-27.0
2185	Vert	1.00	0	48.0	28.2	-29.0	1.0	-20.0	28.2	61.9	-33.7
2622	Vert	1.00	0	49.00	30.0	-32.0	1.0	-20.0	28.00	61.9	-33.9
3059	Vert	1.00	0	44.80	30.3	-27.0	1.0	-20.0	29.10	61.9	-32.8
3496	Vert	1.00	0	43.5	31.4	-25.0	1.0	-20.0	30.9	54.0	-23.1
3933	Vert	1.00	0	40.2	32.44	-23.3	1.0	-20.0	30.34	54.0	-23.7
4370	Vert	1.00	0	40.6	32.5	-22.0	1.0	-20.0	32.1	54.0	-21.9
437	Horiz	1.00	0	57.3	17.3	0.0	3.6	-20.0	58.2	80.3	-22.1
874	Horiz	1.00	58.4	42.0	23.3	0.0	5.4	-20.0	50.7	61.9	-11.2
1311	Horiz	1.00	0	55.60	25.1	-32.0	1.0	-20.0	29.70	61.9	-32.2
1748	Horiz	1.00	0	53.70	26.6	-33.0	1.0	-20.0	28.30	54.0	-25.7
2185	Horiz	1.00	28.4	52.90	28.2	-29.0	1.0	-20.0	33.1	61.9	-28.8
2622	Horiz	1.00	28.4	51.00	29.9	-32.0	1.0	-20.0	29.90	61.9	-32.0
3059	Horiz	1.00	0	48.70	30.4	-27.0	1.0	-20.0	33.10	61.9	-28.8
3496	Horiz	1.00	0	47.40	31.5	-25.0	1.0	-20.0	34.90	54.0	-19.1
3933	Horiz	1.00	0	41.10	32.54	-23.3	1.0	-20.0	31.34	54.0	-22.7
4370	Horiz	1.00	0	39.90	32.5	-22.0	1.0	-20.0	31.40	54.0	-22.6

Figure 19



4.3 Bandwidth Measurements, Paragraph 15.231

Bandwidth measurements were made at the two transmit frequencies of 434 and 437MHz.

RSI used an HP 8566 Spectrum Analyzer to perform bandwidth measurements. Bandwidth plots are shown on data sheets.

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 20 through 23.

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



Bandwidth of Fundamental Frequency

Figure 20

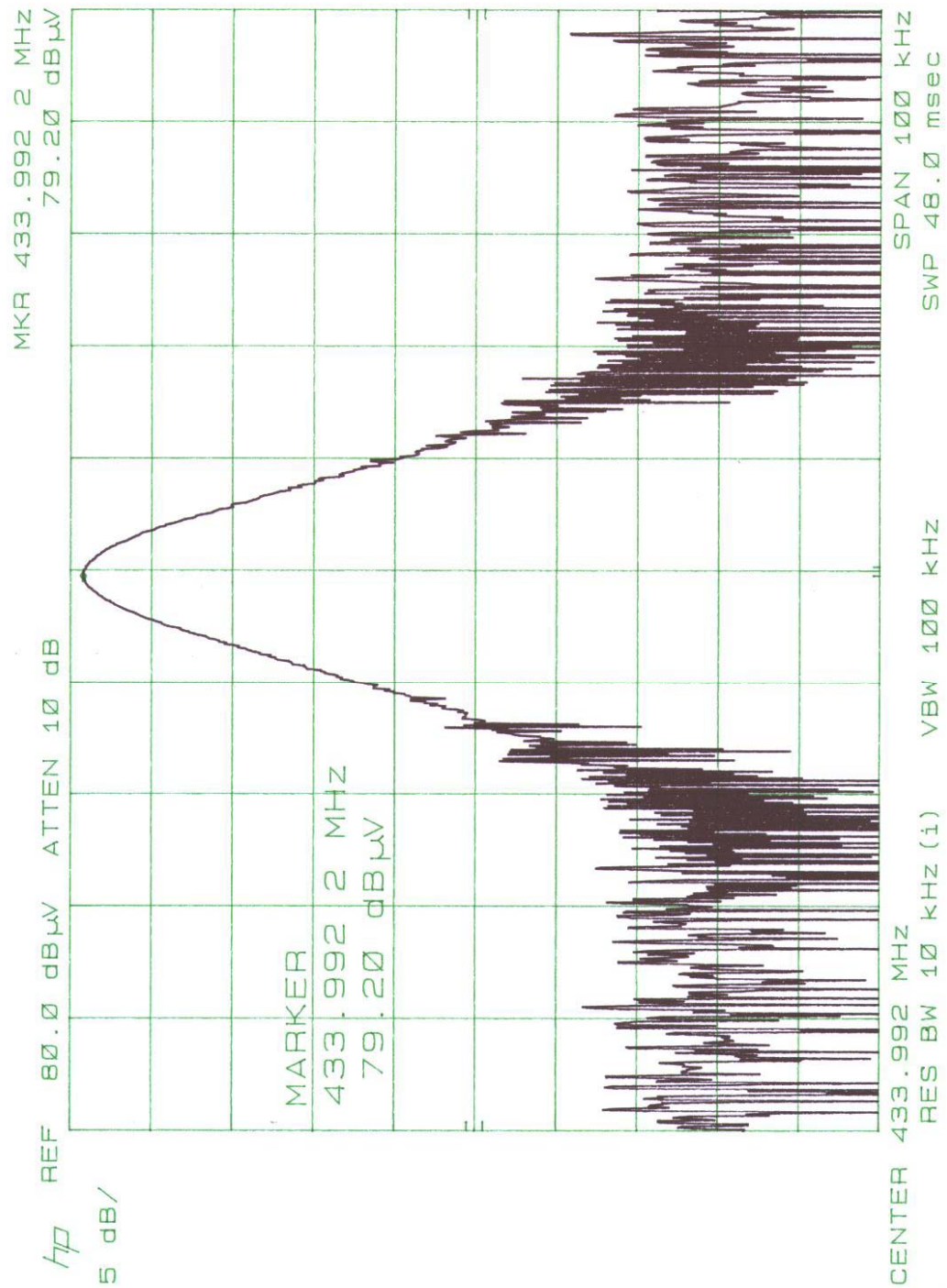
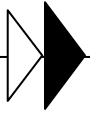


Figure 21



Company: Lutron Electronics
Model # AR-6D-yy
Fund. Freq.: 437MHz

Test Personnel: C. Kosiorek
Date: 11/15/2005

Bandwidth of Fundamental Frequency

	Frequency (MHz)	Measurement (dBuV/m)
Center Frequency	437.0	81.55
20 dB down	436.9811	61.35
20 dB down	437.0023	61.45

The bandwidth is 21.2 kHz.

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

Figure 22

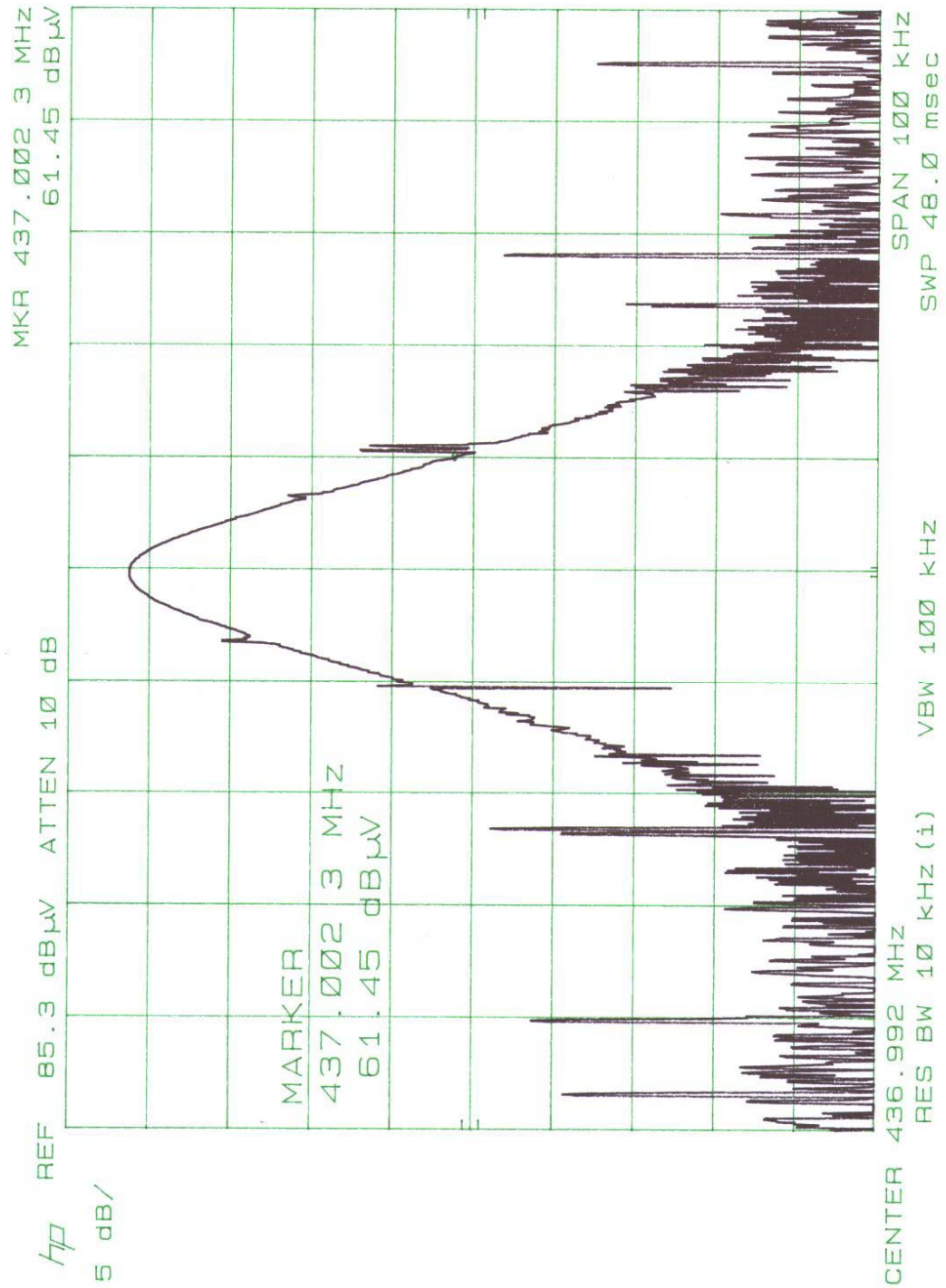
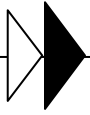


Figure 23



5.0 CONCLUSIONS

The evaluation of the **Lutron Electronics Model #: AR-6D-yy**, 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).