

EXHIBIT D

REPORT OF MEASUREMENTS



Retlif Testing Laboratories

Test Report Number R-7482
FCC ID: B4SHP564A

REPORT OF MEASUREMENTS

APPLICANT X-10 USA, Inc. 91 Ruckman Road Closter, NJ 07624	MANUFACTURER X-10 Electronics Shenzhen Co. Ltd. X-10 Building Labour Industrial District Shenzhen, Xixiang, Bao An Guang Dong, China, 518102
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TEST SPECIFICATION: FCC Rules and Regulations Part 15, Subpart C

TEST PROCEDURE: ANSI C63.4:1992

TEST SAMPLE DESCRIPTION

BRANDNAME: X-10 MODEL: HP564B

TYPE: Heart Pendant RF Pulsed Transmitter

POWER REQUIREMENTS: 3 VDC Batteries

FREQUENCY OF OPERATION: 310 MHz

FCC ID: B4SHP564A

TESTS PERFORMED FOR CLASS II PERMISSIVE CHANGE TO FCC ID: B4SHP564A

Para. 15.231(a), Radiated Emissions, Fundamental and Harmonics

Para. 15.231(c), Occupied Bandwidth

I HEREBY CERTIFY THAT: The measurements shown here were in accordance with the procedure indicated and that the energy emitted by this equipment was found to be within the limits applicable. I assume full responsibility for the accuracy and completeness of these measurements and vouch for the qualifications of all persons taking them.

I FURTHER CERTIFY THAT: On the basis of the measurements made, the device tested is capable of operation in compliance with the requirements of Part 15, Subpart C of the FCC Rules under normal use and maintenance.

SIGN	PRINT	TITLE
	Thomas J. Schneider	EMC Test Engineer



Retlif Testing Laboratories

Test Report Number R-7482
FCC ID: B4SHP564A

REPORT OF MEASUREMENTS

Applicant: X-10 (USA), Inc.
Device: 310 MHz Heart Pendant RF Pulsed Transmitter
FCC ID: B4SHP564A
Power Requirements: 3 VDC Batteries
Applicable Rule Section: Part 15, Subpart C, Section 15.231

TEST RESULTS

- 15.231 (a) - The device is used as a Personal Assistance Alarm Transmitter for Safety of Life purposes
- 15.231 (a)(1) - The transmitter is manually operated.
- 15.231 (b)(2) - The transmitter is manually activated and employs a switch that automatically deactivates the transmitter within not more than 5 seconds after being released.
- 15.231 (a)(3) - The transmitter does not perform periodic transmissions.
- 15.231 (a)(4) - The device is employed for RC purposes involving Safety of Life.
- 15.231 (b) - The fundamental field strength did not exceed $5830\mu\text{V/M}$ (Average) at a test distance of 3 meters. In addition, the requirements of section 15.35 for averaging pulsed emissions and for limiting peak emissions were met.
- The field strength of harmonic and spurious emissions did not exceed $583\mu\text{V/M}$ (AVERAGE).
- 15.231 (c) - The device operates at 310 MHz. The bandwidth of emissions did not exceed 0.25% of the operating frequency (775 kHz).



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REPORT OF MEASUREMENTS (continued)

DETERMINATION OF FIELD STRENGTH LIMITS

The field strength limits shown below are found in Section 15.231.

		Frequency		Limit
F1	=	260	3750	= L1
Fo	=	310		Lo
F2	=	470	12500	= L2

The formula below was utilized to determine the limits:

$$\text{Limit} = L1 + [(Fo-F1)(L2-L1)/(F2-F1)]$$

Solving yields:

Fundamental Limit = 5830 μ V/M (AVERAGE) @ 3 Meters

Harmonic Limit = 583 μ V/M (AVERAGE) @ 3 Meters



Retlif Testing Laboratories

Test Report Number R-7482

FCC ID: B4SHP564A

EXHIBIT D
REPORT OF MEASUREMENTS
TEST DATA



Retlif Testing Laboratories

Test Report Number R-7482
FCC ID: B4SHP564A

EXHIBIT D
PARAGRAPH 15.231(a)
RADIATED EMISSIONS, FUNDAMENTAL & HARMONICS



Retlif Testing Laboratories

Test Report Number R-7482
FCC ID: B4SHP564A

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

TEST METHOD:	FCC Part 15 Subpart C Radiated Emissions		
CUSTOMER:	X-10 (USA) Inc.	JOB No.:	R-7482
TEST SAMPLE:	Heart Pendant RF Transmitter FCC ID: B4SHP564B		
MODEL No.:	HP564B	SERIAL No.:	N/A
TEST SPECIFICATION:	FCC Part 15 Subpart C		PARAGRAPH: 15.231
OPERATING MODE:	Continuously Transmitting 310 Mhz Transmitter		
TECHNICIAN:	Dennis Cortes	DATE:	March 30, 1998
NOTES:	Test Distance: 3 Meters Detector Function: Peak		

f = 75.3

Test Frequency	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(H/V) / meters	X / Y / Z	dBuV	dB	dBuV/m	uV/m	uV/m
310	H/1.4	X	76.1	-4.0	72.1	4027.2	58300
310	H/1.3	Y	77.6	-4.0	73.6	4786.3	58300
310	H/1.0	Z	78.6	-4.0	74.6	5370.3	58300
310	V/1.5	X	69.1	-4.0	65.1	1798.9	58300
310	V/1.0	Y	57.3	-4.0	53.3	462.4	58300
310	V/1.4	Z	68.6	-4.0	64.6	1698.2	58300
620	H/1.0	X	44.9	2.8	47.7	242.7	5830
620	H/1.3	Y	36.7	2.8	39.5	94.4	5830
620	H/1.0	Z	49.7	2.8	52.5	421.7	5830
620	V/1.5	X	35.6	2.8	38.4	83.2	5830
620	V/1.4	Y	49.1	2.8	51.9	393.6	5830
620	V/1.1	Z	38.0	2.8	40.8	109.6	5830
930	H/1.0	X	43.6	8.5	52.1	402.7	5830
930	H/1.3	Y	44.6	8.5	53.1	451.9	5830
930	H/1.0	Z	46.6	8.5	55.1	568.9	5830
930	V/1.4	X	39.5	8.5	48.0	251.2	5830
930	V/1.5	Y	43.2	8.5	51.7	384.6	5830
930	V/1.6	Z	41.0	8.5	49.5	298.5	5830
1240	H/1.6	X	52.9	-5.6	47.3	231.7	5000
1240	H/1.0	Y	50.8	-5.6	45.2	182.0	5000
1240	H/1.0	Z	58.3	-5.6	52.7	431.5	5000
1240	V/2.6	X	48.4	-5.6	42.8	138.0	5000
1240	V/1.3	Y	55.1	-5.6	49.5	298.5	5000
1240	V/1.5	Z	50.3	-5.6	44.7	171.8	5000
1550	H/1.3	X	51.8	-4.4	47.4	234.4	5000
1550	H/1.2	Y	47.4	-4.4	43.0	141.3	5000
1550	H/1.3	Z	54.7	-4.4	50.3	327.3	5000
1550	V/1.0	X	47.5	-4.4	43.1	142.9	5000
1550	V/1.4	Y	52.2	-4.4	47.8	245.5	5000
1550	V/1.1	Z	49.0	-4.4	44.6	169.8	5000

The frequency range was scanned from 30 MHz to 3.1 GHz. All emissions not recorded were more than 10dB below the specified limit. Emissions from the EUT do not exceed the specified limits.

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

TEST METHOD:	FCC Part 15 Subpart C Radiated Emissions		
CUSTOMER:	X-10 (USA) Inc.	JOB No.:	R-7482
TEST SAMPLE:	Heart Pendant RF Transmitter FCC ID: B4SHP564B		
MODEL No.:	HP564B	SERIAL No.:	N/A
TEST SPECIFICATION:	FCC Part 15 Subpart C PARAGRAPH: 15.231		
OPERATING MODE:	Continuously Transmitting 310 Mhz Transmitter		
TECHNICIAN:	Dennis Cortes	DATE:	March 30, 1998
NOTES:	Test Distance: 3 Meters Detector Function: Peak		

Test Frequency	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(H/V) / meters	X / Y / Z	dBuV	dB	dBuV/m	uV/m	uV/m
1860	H/1.3	X	46.1	-2.4	43.7	153.1	5830
1860	H/1.2	Y	44.3	-2.4	41.9	124.5	5830
1860	H/1.0	Z	47.4	-2.4	45	177.8	5830
1860	V/1.2	X	44.1	-2.4	41.7	121.6	5830
1860	V/1.6	Y	47.2	-2.4	44.8	173.8	5830
1860	V/1.3	Z	44.5	-2.4	42.1	127.4	5830
2170	H/1.3	X	44.8	-1.3	43.5	149.6	5830
2170	H/1.2	Y	44.6	-1.3	43.3	146.2	5830
2170	H/1.3	Z	45.4	-1.3	44.1	160.3	5830
2170	V/1.6	X	44.7	-1.3	43.4	147.9	5830
2170	V/1.2	Y	45.5	-1.3	44.2	162.2	5830
2170	V/1.3	Z	44.9	-1.3	43.6	151.4	5830
2480	H/1.0	X	*41.6	0.1	41.7	121.6	5830
2480	H/1.0	Y	*41.6	0.1	41.7	121.6	5830
2480	H/1.0	Z	*41.6	0.1	41.7	121.6	5830
2480	V/1.0	X	*41.6	0.1	41.7	121.6	5830
2480	V/1.0	Y	*41.6	0.1	41.7	121.6	5830
2480	V/1.0	Z	*41.6	0.1	41.7	121.6	5830
2790	H/1.0	X	*41.2	1.4	42.6	134.9	5000
2790	H/1.0	Y	*41.2	1.4	42.6	134.9	5000
2790	H/1.0	Z	*41.2	1.4	42.6	134.9	5000
2790	V/1.0	X	*41.2	1.4	42.6	134.9	5000
2790	V/1.0	Y	*41.2	1.4	42.6	134.9	5000
2790	V/1.0	Z	*41.2	1.4	42.6	134.9	5000
3100	H/1.0	X	*41.9	3.5	45.4	186.2	5830
3100	H/1.0	Y	*41.9	3.5	45.4	186.2	5830
3100	H/1.0	Z	*41.9	3.5	45.4	186.2	5830
3100	V/1.0	X	*41.9	3.5	45.4	186.2	5830
3100	V/1.0	Y	*41.9	3.5	45.4	186.2	5830
3100	V/1.0	Z	*41.9	3.5	45.4	186.2	5830
The frequency range was scanned from 30 MHz to 3.1 GHz. All emissions not recorded were more than 10dB below the specified limit. Emissions from the EUT do not exceed the specified limits.							
*=Noise Floor Measurements							

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

TEST METHOD:	FCC Part 15 Subpart C Radiated Emissions		
CUSTOMER:	X-10 (USA) Inc.	JOB No.:	R-7482
TEST SAMPLE:	Heart Pendant RF Transmitter FCC ID: B4SHP564B		
MODEL No.:	HP564B	SERIAL No.:	N/A
TEST SPECIFICATION:	FCC Part 15 Subpart C PARAGRAPH: 15.231		
OPERATING MODE:	Continuously Transmitting 310 Mhz Transmitter		
TECHNICIAN:	Dennis Cortes <i>JP</i>	DATE:	March 30, 1998
NOTES:	Test Distance: 3 Meters Detector Function: Peak Worst Case Duty Cycle: 31.6% (-10.0 dB Duty Cycle Correction Factor)		

Test Frequency	Antenna Pol./Height	EUT Orientation	Peak Corrected Reading	Duty Cycle Corr. Factor	Corrected Average	Converted Average	Average Limit
MHz	(H/V) / meters	X / Y / Z	dBuV/m	dB	dBuV/m	uV/m	uV/m
310	H/1.4	X	72.1	-10.0	62.1	1273.5	5830
310	H/1.3	Y	73.6	-10.0	63.6	1513.6	5830
310	H/1.0	Z	74.6	-10.0	64.6	1698.2	5830
310	V/1.5	X	65.1	-10.0	55.1	568.9	5830
310	V/1.0	Y	53.3	-10.0	43.3	146.2	5830
310	V/1.4	Z	64.6	-10.0	54.6	537.0	5830
620	H/1.0	X	47.7	-10.0	37.7	76.7	583
620	H/1.3	Y	39.5	-10.0	29.5	29.9	583
620	H/1.0	Z	52.5	-10.0	42.5	133.4	583
620	V/1.5	X	38.4	-10.0	28.4	26.3	583
620	V/1.4	Y	51.9	-10.0	41.9	124.5	583
620	V/1.1	Z	40.8	-10.0	30.8	34.7	583
930	H/1.0	X	52.1	-10.0	42.1	127.4	583
930	H/1.3	Y	53.1	-10.0	43.1	142.9	583
930	H/1.0	Z	55.1	-10.0	45.1	179.9	583
930	V/1.4	X	48.0	-10.0	38.0	79.4	583
930	V/1.5	Y	51.7	-10.0	41.7	121.6	583
930	V/1.6	Z	49.5	-10.0	39.5	94.4	583
1240	H/1.6	X	47.3	-10.0	37.3	73.3	500
1240	H/1.0	Y	45.2	-10.0	35.2	57.5	500
1240	H/1.0	Z	52.7	-10.0	42.7	136.5	500
1240	V/2.6	X	42.8	-10.0	32.8	43.7	500
1240	V/1.3	Y	49.5	-10.0	39.5	94.4	500
1240	V/1.5	Z	44.7	-10.0	34.7	54.3	500
1550	H/1.3	X	47.4	-10.0	37.4	74.1	500
1550	H/1.2	Y	43.0	-10.0	33.0	44.7	500
1550	H/1.3	Z	50.3	-10.0	40.3	103.5	500
1550	V/1.0	X	43.1	-10.0	33.1	45.2	500
1550	V/1.4	Y	47.8	-10.0	37.8	77.6	500
1550	V/1.1	Z	44.6	-10.0	34.6	53.7	500
The frequency range was scanned from 30 MHz to 4.18 GHz. All emissions not recorded were more than 10dB below the specified limit. Emissions from the EUT do not exceed the specified limits.							

RETLIF TESTING LABORATORIES

TABULAR DATA SHEET

TEST METHOD: **FCC Part 15 Subpart C Radiated Emissions**

CUSTOMER: **X-10 (USA) Inc.**

JOB No.: **R-7482**

TEST SAMPLE: **Heart Pendant RF Transmitter**

FCC ID: B4SHP564B

MODEL No.: **HP564B**

SERIAL No.: **N/A**

TEST SPECIFICATION: **FCC Part 15 Subpart C**

PARAGRAPH: **15.231**

OPERATING MODE: **Continuously Transmitting 310 Mhz Transmitter**

TECHNICIAN: **Dennis Cortes**

DATE: **March 30, 1998**

NOTES: **Test Distance: 3 Meters
Detector Function: Peak**

Worst Case Duty Cycle: 31.6% (-10.0 dB Duty Cycle Correction Factor)

Test Frequency	Antenna Pol./Height	EUT Orientation	Peak Corrected Reading	Duty Cycle Corr. Factor	Corrected Average	Converted Average	Average Limit
Mhz	(H/V) / meters	X / Y / Z	dBuV/m	dB	dBuV/m	uV/m	uV/m
1860	H/1.3	X	43.7	-10.0	33.7	48.4	583
1860	H/1.2	Y	41.9	-10.0	31.9	39.4	583
1860	H/1.0	Z	45.0	-10.0	35.0	56.2	583
1860	V/1.2	X	41.7	-10.0	31.7	38.5	583
1860	V/1.6	Y	44.8	-10.0	34.8	55.0	583
1860	V/1.3	Z	42.1	-10.0	32.1	40.3	583
2170	H/1.3	X	43.5	-10.0	33.5	47.3	583
2170	H/1.2	Y	43.3	-10.0	33.3	46.2	583
2170	H/1.3	Z	44.1	-10.0	34.1	50.7	583
2170	V/1.6	X	43.4	-10.0	33.4	46.8	583
2170	V/1.2	Y	44.2	-10.0	34.2	51.3	583
2170	V/1.3	Z	43.6	-10.0	33.6	47.9	583
2480	H/1.0	X	*41.7	-10.0	31.7	38.5	583
2480	H/1.0	Y	*41.7	-10.0	31.7	38.5	583
2480	H/1.0	Z	*41.7	-10.0	31.7	38.5	583
2480	V/1.0	X	*41.7	-10.0	31.7	38.5	583
2480	V/1.0	Y	*41.7	-10.0	31.7	38.5	583
2480	V/1.0	Z	*41.7	-10.0	31.7	38.5	583
2790	H/1.0	X	*42.6	-10.0	32.6	42.7	500
2790	H/1.0	Y	*42.6	-10.0	32.6	42.7	500
2790	H/1.0	Z	*42.6	-10.0	32.6	42.7	500
2790	V/1.0	X	*42.6	-10.0	32.6	42.7	500
2790	V/1.0	Y	*42.6	-10.0	32.6	42.7	500
2790	V/1.0	Z	*42.6	-10.0	32.6	42.7	500
3100	H/1.0	X	*45.4	-10.0	35.4	58.9	583
3100	H/1.0	Y	*45.4	-10.0	35.4	58.9	583
3100	H/1.0	Z	*45.4	-10.0	35.4	58.9	583
3100	V/1.0	X	*45.4	-10.0	35.4	58.9	583
3100	V/1.0	Y	*45.4	-10.0	35.4	58.9	583
3100	V/1.0	Z	*45.4	-10.0	35.4	58.9	583

The frequency range was scanned from 30 MHz to 4.18 GHz. All emissions not recorded were more than 10dB below the specified limit. Emissions from the EUT do not exceed the specified limits.

*=Noise Floor Measurements

Equipment List

FCC 15.231 Radiated Emissions

EN	Type	Manufacturer	Frequency Range	Model No.	Serial No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3 Meter	RNY	001	8/30/97	8/30/99
128C	Double Ridge Guide	Eaton Corporation	1 GHz - 18 GHz	96001	2385	10/6/97	10/6/98
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	174	6/20/97	6/20/98
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	2637A03491	3/2/98	9/2/98
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	2517A07605	3/4/98	3/4/99
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	2521A00862	3/3/98	9/3/98
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	5785	6/20/97	6/20/98
523	Biconilog	Electro-Mechanics	26 MHz - 1100 MHz	3143	9602-1234	9/30/97	9/30/98
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	3008A00829	8/12/97	8/12/98



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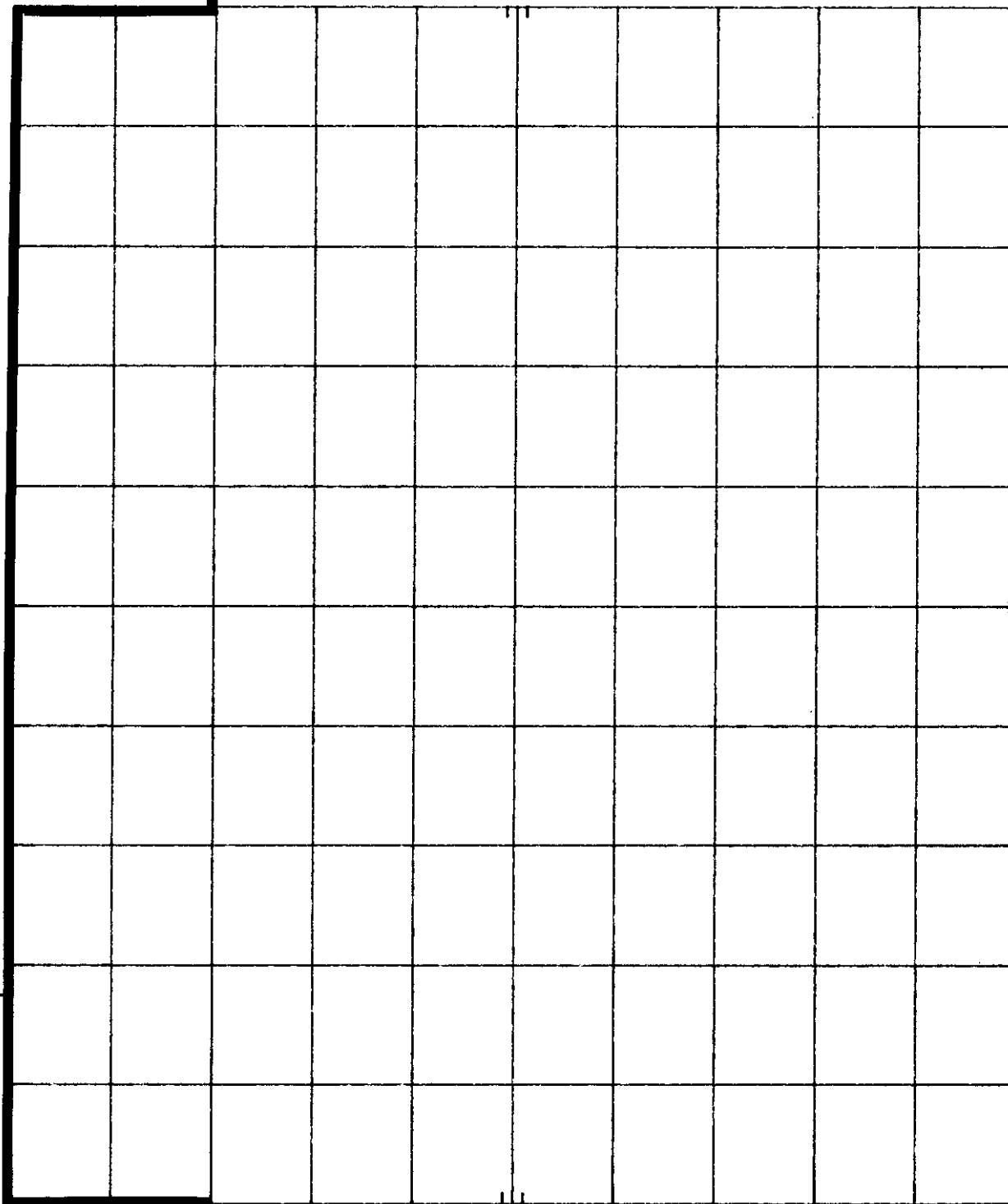
EXHIBIT D
PARAGRAPH 15.231(c)
OCCUPIED BANDWIDTH



Retlif Testing Laboratories

Test Report Number R-7482
FCC ID: B4SHP564A

R-7482 HP564A FCC ID B4SHP564A OCC BW 4/1/98 DC
 REF 76.8 dBμV ATTN 10 dB



SPAN 774 kHz
 SWP 30.0 msec

VBW 30 kHz

CENTER 310.167 MHz
 RES BW 10 kHz

hp
 0 dB/

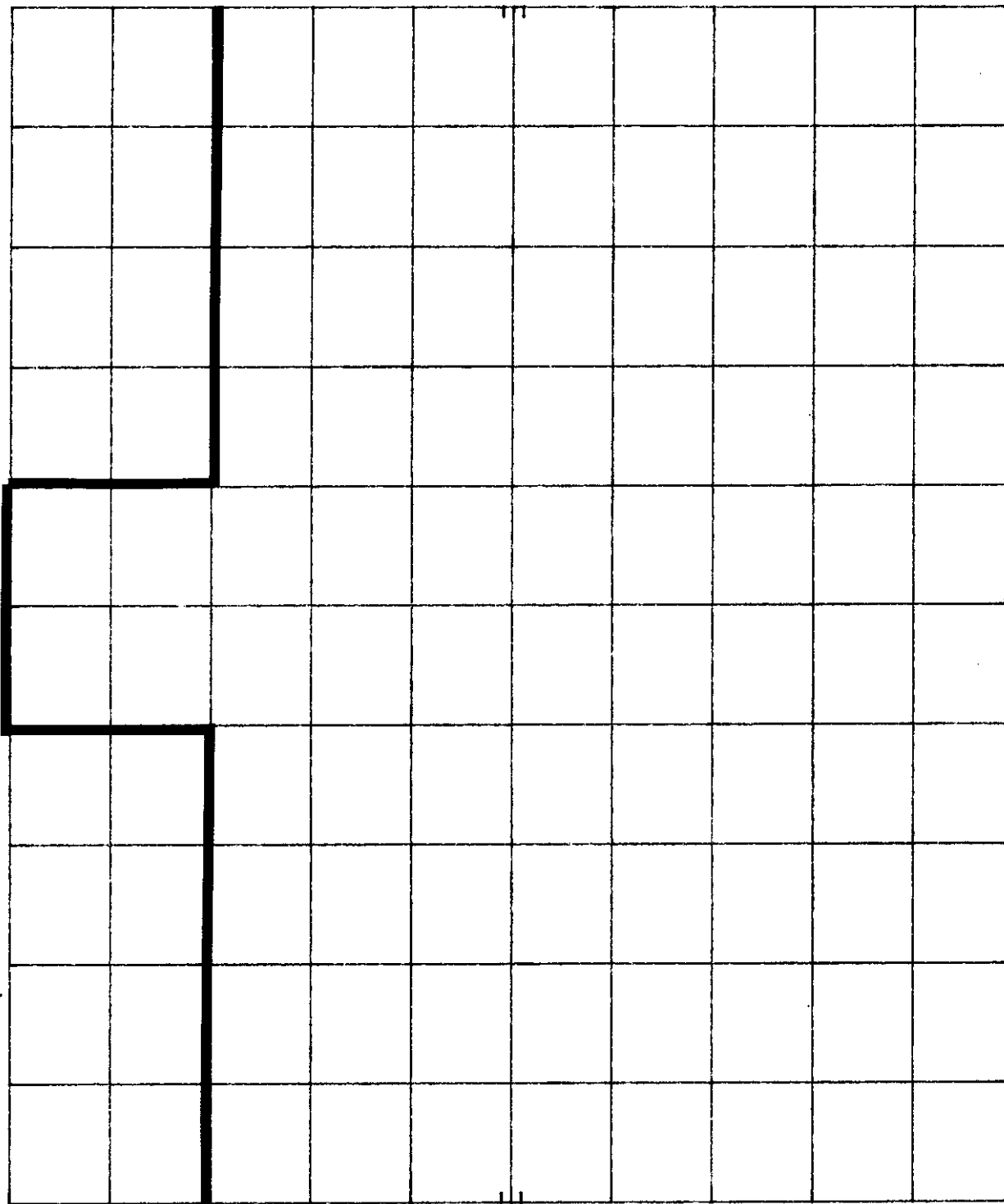
Customer:	X-10 (USA) Inc.
Test Sample:	Heart Pendant RF Transmitter
Model No.:	HP564B FCC ID:B4SHP564B
Test Method:	FCC 15.231(c) Occupied Bandwidth
Notes:	The Bandwidth of the emission is not wider than .25% of the Center Frequency 20dB down from the modulated carrier
Date:	March 31, 1998
Tech:	Dennis Cortes
Sheet	1 of 2



Retlif Testing Laboratories

Report No. R-7482

R-7482 HP564A FCC ID B4SHP564A OCC BW 4/1/98 DC
 REF 77.0 dBμV ATTEN 10 dB



SPAN 3.87 MHz
 SWP 116 msec

VBW 30 KHz

CENTER 310.23 MHz
 RES BW 10 KHz

Customer:	X-10 (USA) Inc.
Test Sample:	Heart Pendant RF Transmitter
Model No.:	HP564B FCC ID:B4SHP564B
Test Method:	FCC 15.231(c) Occupied Bandwidth
Notes:	The Bandwidth of the emission is not wider than .25% of the Center Frequency 20dB down from the modulated carrier
Date:	March 31, 1998
Tech:	Dennis Cortes
Sheet	2 of 2



Retlif Testing Laboratories

Report No. R-7482