

APPLICANT	MANUFACTURER
Name: <u>X10 (USA), Inc.</u>	Name: <u>X-10 Electronics (Shenzhen) Co. Ltd.</u>
Address: <u>19823 58th Place South</u>	Address: <u>Together Rich Industrial Park B</u> <u>Sanwei Industrial District, Xixiang Town</u>
City, State, Zip: <u>Kent, WA 98032</u>	City, State, Zip: <u>Baoan County, Shenzhen, China</u>

TEST SPECIFICATION: FCC Rules and Regulations Part 15, Subpart C, Para. 15.231

TEST PROCEDURE: ANSI C63.4:2003

TEST SAMPLE DESCRIPTION

BRANDNAME(s): X10 (USA)

MODEL(s): JSC13A

FCC ID: B4S-JSC13A

TYPE: Pulsed Transmitter

POWER REQUIREMENTS: 8 VDC derived from 120 VAC, 60 Hz power adapter

FREQUENCY OF OPERATION: 319.45 MHz

APPLICABLE RULE SECTION: Part 15, Subpart C, Section 15.231

TESTS PERFORMED

Para. 15.207(a), Conducted Emissions

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

Para. 15.231(b), Radiated Emissions, Spurious Case

Para. 15.231(b), Duty Cycle Determination

Para. 15.231(c), Occupied Bandwidth

TEST RESULTS

- 15.207(a): The radio frequency voltage that was conducted back on to the AC power line on any frequency/frequencies within the bandwidth of 150 kHz to 30 MHz did not exceed Class B limits as specified in CISPR 22.
- 15.231 (a): This device transmits a control signal and is used as a remote control transmitter.
- 15.231 (a)(1) The transmitter is manually operated. Transmission ends within 5 seconds of deactivation.
- 15.231 (a)(3): The transmitter does not perform periodic transmissions or the transmitter performs periodic transmissions at predetermined intervals greater than 1 hour apart and are shorter than 1 second in duration.
- 15.231 (b): The fundamental field strength did not exceed 6227 $\mu\text{V/M}$ (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 622.7 $\mu\text{V/M}$ (AVERAGE).
- 15.231 (c) The Bandwidth of the emission was no wider than 0.25% of the center frequency (798 kHz) as measured 20 db down from the modulated carrier.

DETERMINATION OF FIELD STRENGTH LIMITS

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

Frequency		Limit	
F1 =	260	3750 =	L1
Fo =	319.45 MHz		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 = 6227 $\mu\text{V/M}$ (AVERAGE) @ 3 Meters

Harmonic Limit = 622.7 $\mu\text{V/M}$ (AVERAGE) @ 3 Meters

DUTY CYCLE DETERMINATION

The unit's RF output was directly coupled to the input of the spectrum analyzer. The analyzer was set for a frequency span of 0Hz. The sweep time was then adjusted in order to display one full pulse train. The transmitter on time was then summed and compared to the time for one full cycle in order to obtain the duty cycle. (See plots for additional information).

Transmitter On Time = 11.4 milliseconds (maximum per cycle)
Transmitter Cycle Time = 44 milliseconds (100 ms maximum)
Transmitter Duty Cycle = 26 %

CALCULATION

1 Large Pulse = 0.95 milliseconds
6 x 0.95 ms (large pulses) = 5.7 milliseconds
1 Small Pulse = 0.30 milliseconds
19 x 0.30 ms (small pulses) = 5.7 milliseconds
5.7 ms + 5.7 ms = 11.4 milliseconds
Duty Cycle (11.4 / 44) = 26 %
Correction Factor = $20 \log (0.26)$ = -11.7 dB

SPECTRUM ANALYZER DESENSITIZATION CONSIDERATIONS

Due to the nature of the emissions being measured, care was taken to ensure that the resolution bandwidth of the spectrum analyzer was adequate to provide accurate measurements. The following formula was utilized:

Setting pulse desensitization equal to zero and utilizing the minimum observed pulse width of 0.3 milliseconds yields a minimum required bandwidth of 2222 Hz. FCC specified bandwidths of 100 kHz and 1 MHz were utilized below and above 1GHz, respectively.

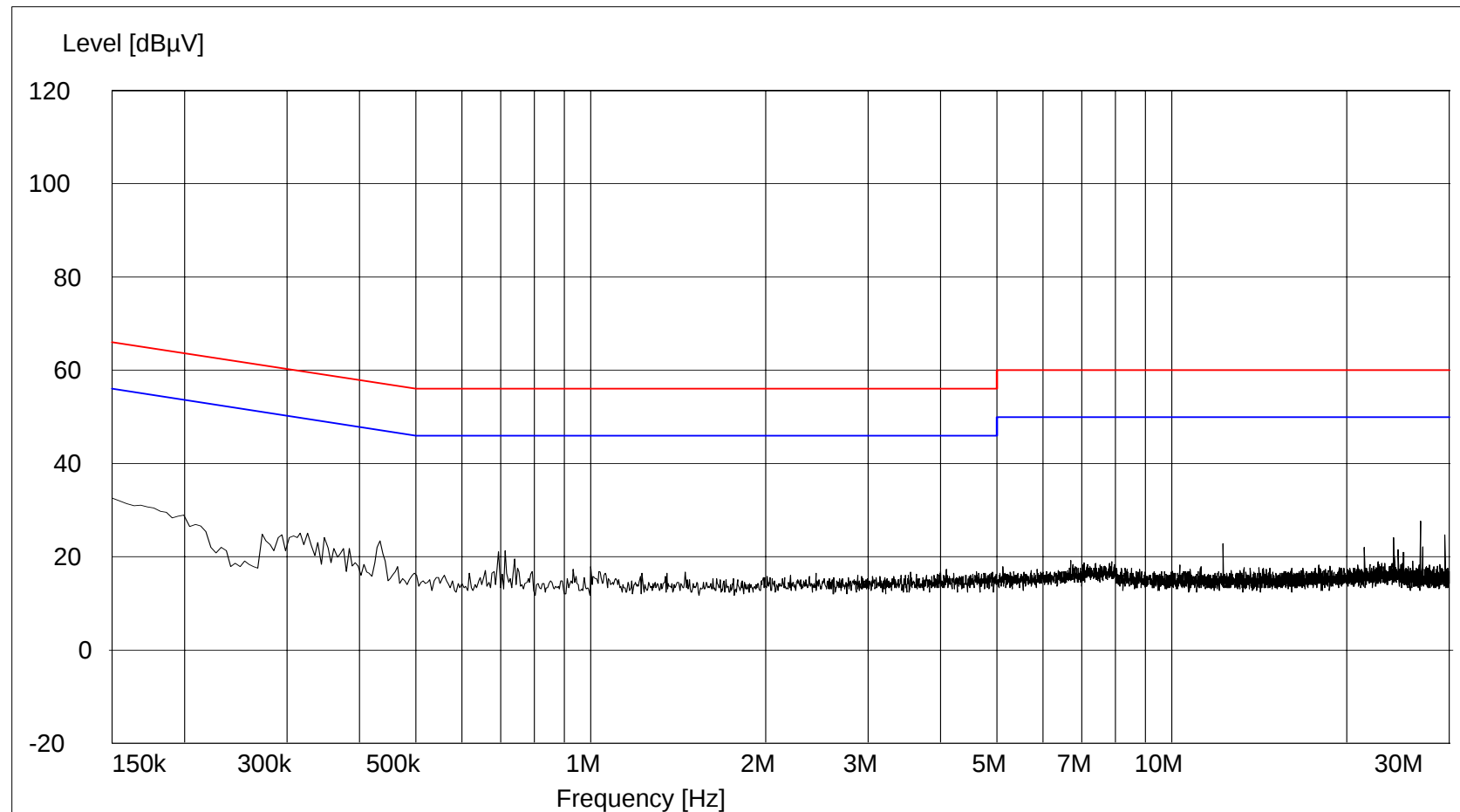
GENERAL NOTES

1. All readings were taken utilizing a peak detector function at a test distance of 3 meters.
2. The duty cycle was applied to the peak readings in order to determine the average value of the emissions.
3. The frequency range was scanned from 30 MHz to 3.19 GHz. All emissions not reported were more than 20 dB below the specified limit.

Para. 15.207(a), Conducted Emissions
Test Data

FCC Part 15, Subpart C, Conducted Emissions, 150kHz to 30MHz

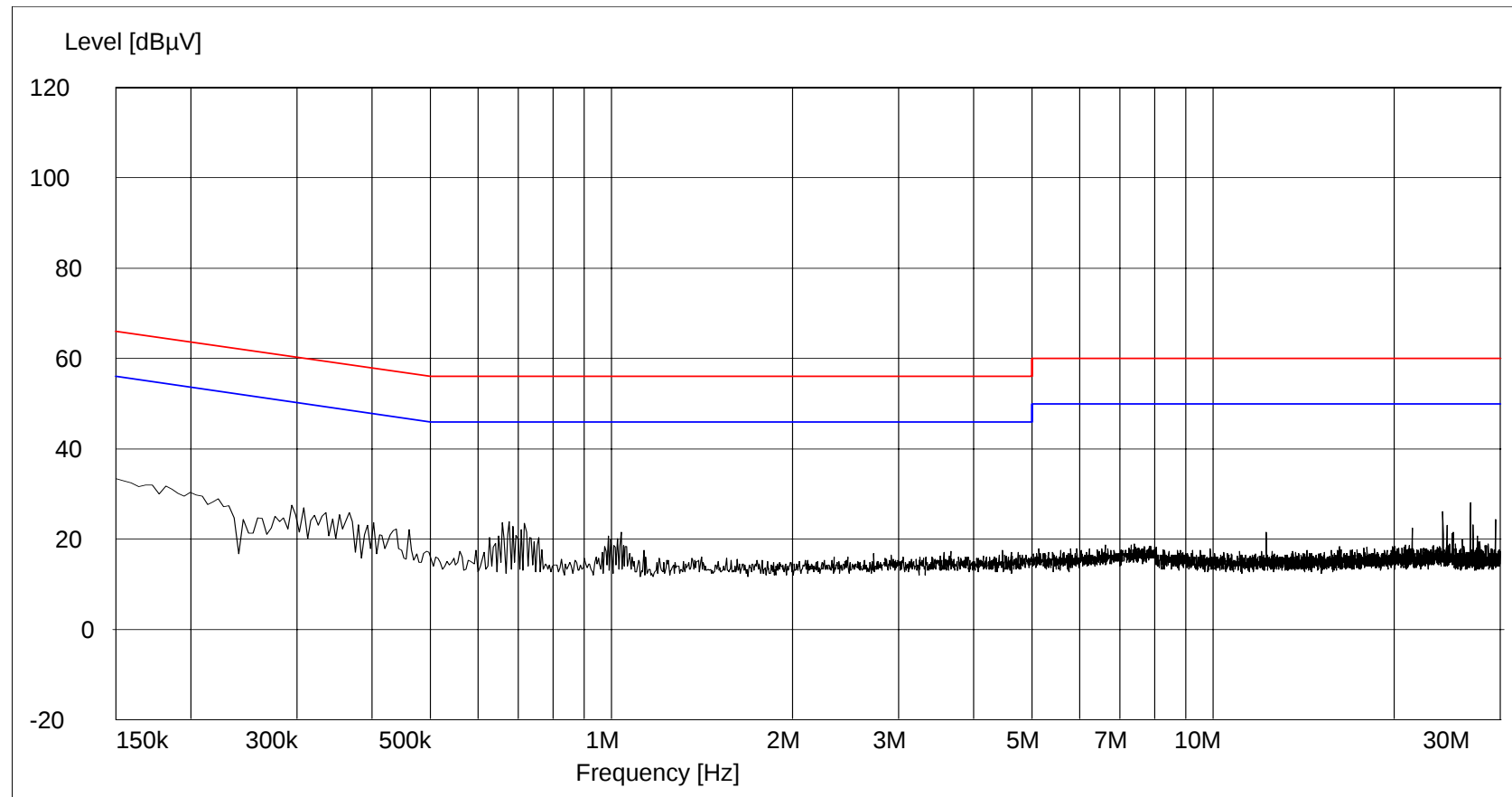
Customer: X-10(USA), Inc.
Test Sample: 319.45 MHz Transmitter Security System.
Model Number: JSC13A
Test Specification: FCC Part 15 Subpart C, 15.207(a)
Mode of Operation: Continuously transmitting a 319.45 MHz signal
Technician / Date: R.Soodoo / October 14, 2005.
Lead Tested: Hot input at 120 VAC, 60 Hz to power supply
Notes: Peak passes average limit.



Retlif Testing Laboratories, Job Number R-11175-1

FCC Part 15, Subpart C, Conducted Emissions, 150kHz to 30MHz

Customer: X-10(USA), Inc.
Test Sample: 319.45 MHz Transmitter
Model Number: JSC13A
Test Specification: FCC Part 15 Subpart C, 15.207(a)
Mode of Operation: Continuously transmitting a 319.45 MHz signal
Technician / Date: R.Soodoo / October 14, 2005.
Lead Tested: Neutral input at 120 VAC, 60 Hz to power supply
Notes: Peak passes average limit.



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

Test Method:	FCC Part 15, Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions						
Customer:	X-10 (USA), Inc.				Job No.	R-11175-1	
Test Sample:	319.45 MHz Transmitter Security System.				Paragraph:	15.231	
Model No.:	JSC13A				FCC ID:	B4S-JSC13A	
Operating Mode:	Continuously Transmitting a 319.45 MHz Signal						
Technician:	R. Soodoo				Date:	October 17, 2005.	
Notes:	Test Distance: 3 Meters Temperature: 20°C Humidity: 34% Detector: Peak, unless otherwise specified						
Frequency	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)/Meters	X / Y / Z	dBuV	dB	dBuV/m	uV/m	uV/m
319.45	H / 1.0	X	79.6	-3.4	76.2	6456.5	62270.0
	H / 1.0	Y	75.4	-3.4	72.0	3981.1	
	H / 1.0	Z	71.1	-3.4	67.7	2426.6	
	V / 1.5	X	71.5	-3.6	67.9	2483.1	
	V / 1.5	Y	69.2	-3.6	65.6	1905.5	
319.45	V / 1.5	Z	76.6	-3.6	73.0	4466.8	62270.0
638.9	H / 1.0	X	56.7	4.0	60.7	1083.9	6227.0
	H / 1.0	Y	53.1	4.0	57.1	716.1	
	H / 1.0	Z	51.4	4.0	55.4	588.8	
	V / 1.5	X	53.9	2.8	56.7	683.9	
	V / 1.5	Y	54.1	2.8	56.9	699.8	
638.9	V / 1.5	Z	56.0	2.8	58.8	871.0	6227.0
958.35	H / 1.0	X	41.6	8.3	49.9	312.6	6227.0
	H / 1.0	Y	42.2	8.3	50.5	335.0	
	H / 1.0	Z	42.8	8.3	51.1	358.9	
	V / 1.5	X	38.5	8.3	46.8	218.8	
	V / 1.5	Y	43.3	8.3	51.6	380.2	
958.35	V / 1.5	Z	40.6	8.3	48.9	278.6	6227.0
1277.8	H / 1.5	X	56.6	4.3	60.9	1109.2	6227.0
	H / 1.5	Y	50.8	4.3	55.1	568.9	
	H / 1.5	Z	52.2	4.3	56.5	668.3	
	V / 1.0	X	54.4	4.1	58.5	841.4	
	V / 1.5	Y	55.9	4.1	60.0	1000.0	
1277.8	V / 1.25	Z	56.2	4.1	60.3	1035.1	6227.0
1597.25	H / 1.5	X	47.7	9.6	57.3	732.8	5001
	H / 1.5	Y	48.9	9.6	58.5	841.4	
	H / 1.25	Z	49.0	9.6	58.6	851.1	
	V / 1.0	X	49.2	8.8	58.0	794.3	
	V / 1.5	Y	46.8	8.8	55.6	602.6	
1597.25	V / 1.0	Z	48.2	8.8	57.0	707.9	5001
	The frequency range was scanned from 30 MHz to 3.19 GHz.						
	All emissions not recorded were more than 20 dB below the specified limit.						
	*=Noise Floor Measurements (minimum system sensitivity).						

Test Method:	FCC Part 15, Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions						
Customer:	X-10 (USA), Inc.				Job No.	R-11175-1	
Test Sample:	319.45 MHz Transmitter Security System.				Paragraph:	15.231	
Model No.:	JSC13A				FCC ID:	B4S-JSC13A	
Operating Mode:	Continuously Transmitting a 319.45 MHz Signal						
Technician:	R. Soodoo				Date:	October 17, 2005.	
Notes:	Test Distance: 3 Meters				Duty Cycle: 26%		
	Detector: Peak, unless otherwise specified				Duty Cycle Correction: -11.7 dB		
Frequency	Antenna Pol./Height	EUT Orientation	Peak Reading	Correction Factor	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-Meters	X / Y / Z	dBuV	dB	dBuV/m	uV/m	uV/m
319.45	H / 1.0	X	76.2	-11.7	64.5	1678.8	6227.0
	H / 1.0	Y	72.0	-11.7	60.3	1035.1	
	H / 1.0	Z	67.7	-11.7	56.0	631.0	
	V / 1.5	X	67.9	-11.7	56.2	645.7	
	V / 1.5	Y	65.6	-11.7	53.9	495.5	
319.45	V / 1.5	Z	73.0	-11.7	61.3	1161.4	6227.0
638.9	H / 1.0	X	60.7	-11.7	49.0	281.8	622.7
	H / 1.0	Y	57.1	-11.7	45.4	186.2	
	H / 1.0	Z	55.4	-11.7	43.7	153.1	
	V / 1.5	X	56.7	-11.7	45.0	177.8	
	V / 1.5	Y	56.9	-11.7	45.2	182.0	
638.9	V / 1.5	Z	58.8	-11.7	47.1	226.5	622.7
958.35	H / 1.0	X	49.9	-11.7	38.2	81.3	622.7
	H / 1.0	Y	50.5	-11.7	38.8	87.1	
	H / 1.0	Z	51.1	-11.7	39.4	93.3	
	V / 1.5	X	46.8	-11.7	35.1	56.9	
	V / 1.5	Y	51.6	-11.7	39.9	98.9	
958.35	V / 1.5	Z	48.9	-11.7	37.2	72.4	
							622.7
1277.8	H / 1.5	X	60.9	-11.7	49.2	288.4	
	H / 1.5	Y	55.1	-11.7	43.4	147.9	
	H / 1.5	Z	56.5	-11.7	44.8	173.8	
	V / 1.0	X	58.5	-11.7	46.8	218.8	
	V / 1.5	Y	60.0	-11.7	48.3	260.0	
1277.8	V / 1.25	Z	60.3	-11.7	48.6	269.2	622.7
1597.25	H / 1.5	X	57.3	-11.7	45.6	190.5	501
	H / 1.5	Y	58.5	-11.7	46.8	218.8	
	H / 1.25	Z	58.6	-11.7	46.9	221.3	
	V / 1.0	X	58.0	-11.7	46.3	206.5	
	V / 1.5	Y	55.6	-11.7	43.9	156.7	
1597.25	V / 1.0	Z	57.0	-11.7	45.3	184.1	501
	The frequency range was scanned from 30 MHz to 3.19 GHz.						
	All emissions not recorded were more than 20 dB below the specified limit.						
	*=Noise Floor Measurements (minimum system sensitivity).						

Test Method:	FCC Part 15, Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions						
Customer:	X-10 (USA), Inc.				Job No.	R-11175-1	
Test Sample:	319.45 MHz Transmitter Security System.				Paragraph:	15.231	
Model No.:	JSC13A				FCC ID:	B4S-JSC13A	
Operating Mode:	Continuously Transmitting a 319.45 MHz Signal						
Technician:	R. Soodoo				Date:	October 17, 2005.	
Notes:	Test Distance: 3 Meters				Duty Cycle: 26 %		
	Detector: Peak, unless otherwise specified				Duty Cycle Correction: -11.7dB		
Frequency	Antenna Pol./Height	EUT Orientation	Peak Reading	Correction Factor	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-Meters	X / Y / Z	dBuV	dB	dBuV/m	uV/m	uV/m
1916.7	H / 1.0	X	62.0	-11.7	50.3	327.3	622.7
	H / 1.5	Y	65.4	-11.7	53.7	484.2	
	H / 1.5	Z	60.5	-11.7	48.8	275.4	
	V / 1.0	X	58.4	-11.7	46.7	216.3	
	V / 1.5	Y	57.3	-11.7	45.6	190.5	
1916.7	V / 1.0	Z	62.6	-11.7	50.9	350.8	622.7
2236.2	H / 1.5	X	53.7	-11.7	42.0	125.9	501
	H / 1.5	Y	54.1	-11.7	42.4	131.8	
	H / 2.0	Z	48.6	-11.7	36.9	70.0	
	V / 1.0	X	52.0	-11.7	40.3	103.5	
	V / 1.0	Y	53.7	-11.7	42.0	125.9	
2236.2	V / 1.0	Z	54.7	-11.7	43.0	141.3	501
2555.6	H / 1.25	X	55.7	-11.7	44.0	158.5	622.7
	H / 1.25	Y	57.1	-11.7	45.4	186.2	
	H / 2.5	Z	58.0	-11.7	46.3	206.5	
	V / 1.25	X	55.2	-11.7	43.5	149.6	
	V / 1.5	Y	60.0	-11.7	48.3	260.0	
2555.6	V / 1.0	Z	55.1	-11.7	43.4	147.9	622.7
2871.85	H / 1.25	X	50.2	-11.7	38.5	84.1	501
	H / 1.25	Y	53.5	-11.7	41.8	123.0	
	H / 1.5	Z	56.1	-11.7	44.4	166.0	
	V / 1.5	X	52.8	-11.7	41.1	113.5	
	V / 1.5	Y	55.9	-11.7	44.2	162.2	
2871.85	V / 1.0	Z	53.2	-11.7	41.5	118.9	501
3194.5	H / 1.0	X	*45.3	-11.7	33.6	47.9	622.7
	H / 1.0	Y	*45.3	-11.7	33.6	47.9	
	H / 1.0	Z	*45.3	-11.7	33.6	47.9	
	V / 1.0	X	*44.7	-11.7	33.0	44.7	
	V / 1.0	Y	*44.7	-11.7	33.0	44.7	
3194.5	V / 1.0	Z	*44.7	-11.7	33.0	44.7	622.7
	The frequency range was scanned from 30 MHz to 3.19 GHz.						
	All emissions not recorded were more than 20 dB below the specified limit.						
	*=Noise Floor Measurements (minimum system sensitivity).						

Test Method:	FCC Part 15, Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions						
Customer:	X-10 (USA), Inc.				Job No.	R-11175-1	
Test Sample:	319.45 MHz Transmitter Security System.				Paragraph:	15.231	
Model No.:	JSC13A				FCC ID:	B4S-JSC13A	
Operating Mode:	Continuously Transmitting a 319.45 MHz Signal						
Technician:	R. Soodoo				Date:	October 17, 2005.	
Notes:	Test Distance: 3 Meters Temperature: 20°C Humidity: 34% Detector: Peak, unless otherwise specified						
Frequency	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)/Meters	X / Y / Z	dBuV	dB	dBuV/m	uV/m	uV/m
319.45	H / 1.0	X	79.6	-3.4	76.2	6456.5	62270.0
	H / 1.0	Y	75.4	-3.4	72.0	3981.1	
	H / 1.0	Z	71.1	-3.4	67.7	2426.6	
	V / 1.5	X	71.5	-3.6	67.9	2483.1	
	V / 1.5	Y	69.2	-3.6	65.6	1905.5	
319.45	V / 1.5	Z	76.6	-3.6	73.0	4466.8	62270.0
638.9	H / 1.0	X	56.7	4.0	60.7	1083.9	6227.0
	H / 1.0	Y	53.1	4.0	57.1	716.1	
	H / 1.0	Z	51.4	4.0	55.4	588.8	
	V / 1.5	X	53.9	2.8	56.7	683.9	
	V / 1.5	Y	54.1	2.8	56.9	699.8	
638.9	V / 1.5	Z	56.0	2.8	58.8	871.0	6227.0
958.35	H / 1.0	X	41.6	8.3	49.9	312.6	6227.0
	H / 1.0	Y	42.2	8.3	50.5	335.0	
	H / 1.0	Z	42.8	8.3	51.1	358.9	
	V / 1.5	X	38.5	8.3	46.8	218.8	
	V / 1.5	Y	43.3	8.3	51.6	380.2	
958.35	V / 1.5	Z	40.6	8.3	48.9	278.6	6227.0
1277.8	H / 1.5	X	56.6	4.3	60.9	1109.2	6227.0
	H / 1.5	Y	50.8	4.3	55.1	568.9	
	H / 1.5	Z	52.2	4.3	56.5	668.3	
	V / 1.0	X	54.4	4.1	58.5	841.4	
	V / 1.5	Y	55.9	4.1	60.0	1000.0	
1277.8	V / 1.25	Z	56.2	4.1	60.3	1035.1	6227.0
1597.25	H / 1.5	X	47.7	9.6	57.3	732.8	5001
	H / 1.5	Y	48.9	9.6	58.5	841.4	
	H / 1.25	Z	49.0	9.6	58.6	851.1	
	V / 1.0	X	49.2	8.8	58.0	794.3	
	V / 1.5	Y	46.8	8.8	55.6	602.6	
1597.25	V / 1.0	Z	48.2	8.8	57.0	707.9	5001
	The frequency range was scanned from 30 MHz to 3.19 GHz.						
	All emissions not recorded were more than 20 dB below the specified limit.						
	*=Noise Floor Measurements (minimum system sensitivity).						

Test Method:	FCC Part 15, Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions						
Customer:	X-10 (USA), Inc.				Job No.	R-11175-1	
Test Sample:	319.45 MHz Transmitter Security System.				Paragraph:	15.231	
Model No.:	JSC13A				FCC ID:	B4S-JSC13A	
Operating Mode:	Continuously Transmitting a 319.45 MHz Signal						
Technician:	R. Soodoo				Date:	October 17, 2005.	
Notes:	Test Distance: 3 Meters Temperature: 20°C Humidity: 34% Detector: Peak, unless otherwise specified						
Frequency	Antenna Pol./Height	EUT Orientation	Meter Reading	Correction Factor	Corrected Reading	Converted Reading	Peak Limit
MHz	(V/H)-Meters	X / Y / Z	dBuV	dB	dBuV/m	uV/m	uV/m
1916.7	H / 1.0	X	50.8	11.2	62.0	1258.9	6227.0
	H / 1.5	Y	54.2	11.2	65.4	1862.1	
	H / 1.5	Z	49.3	11.2	60.5	1059.3	
	V / 1.0	X	47.8	10.6	58.4	831.8	
	V / 1.5	Y	46.7	10.6	57.3	732.8	
1916.7	V / 1.0	Z	52.0	10.6	62.6	1349.0	6227.0
2236.2	H / 1.5	X	56.7	-3.0	53.7	484.2	5001
	H / 1.5	Y	57.1	-3.0	54.1	507.0	
	H / 2.0	Z	51.6	-3.0	48.6	269.2	
	V / 1.0	X	54.6	-2.6	52.0	398.1	
	V / 1.0	Y	56.3	-2.6	53.7	484.2	
2236.2	V / 1.0	Z	57.3	-2.6	54.7	543.3	5001
2555.6	H / 1.25	X	56.8	-1.1	55.7	609.5	6227.0
	H / 1.25	Y	58.2	-1.1	57.1	716.1	
	H / 2.5	Z	59.1	-1.1	58.0	794.3	
	V / 1.25	X	56.7	-1.5	55.2	575.4	
	V / 1.5	Y	61.5	-1.5	60.0	1000.0	
2555.6	V / 1.0	Z	56.6	-1.5	55.1	568.9	6227.0
2871.85	H / 1.25	X	50.3	-0.1	50.2	323.6	5001
	H / 1.25	Y	53.6	-0.1	53.5	473.2	
	H / 1.5	Z	56.2	-0.1	56.1	638.3	
	V / 1.5	X	53.2	-0.4	52.8	436.5	
	V / 1.5	Y	56.3	-0.4	55.9	623.7	
2871.85	V / 1.0	Z	53.6	-0.4	53.2	457.1	5001
3194.5	H / 1.0	X	*43.3	2.0	45.3	184.1	6227.0
	H / 1.0	Y	*43.3	2.0	45.3	184.1	
	H / 1.0	Z	*43.3	2.0	45.3	184.1	
	V / 1.0	X	*43.3	1.4	44.7	171.8	
	V / 1.0	Y	*43.3	1.4	44.7	171.8	
3194.5	V / 1.0	Z	*43.3	1.4	44.7	171.8	6227.0
	The frequency range was scanned from 30 MHz to 3.19 GHz.						
	All emissions not recorded were more than 20 dB below the specified limit.						
	*=Noise Floor Measurements (minimum system sensitivity).						

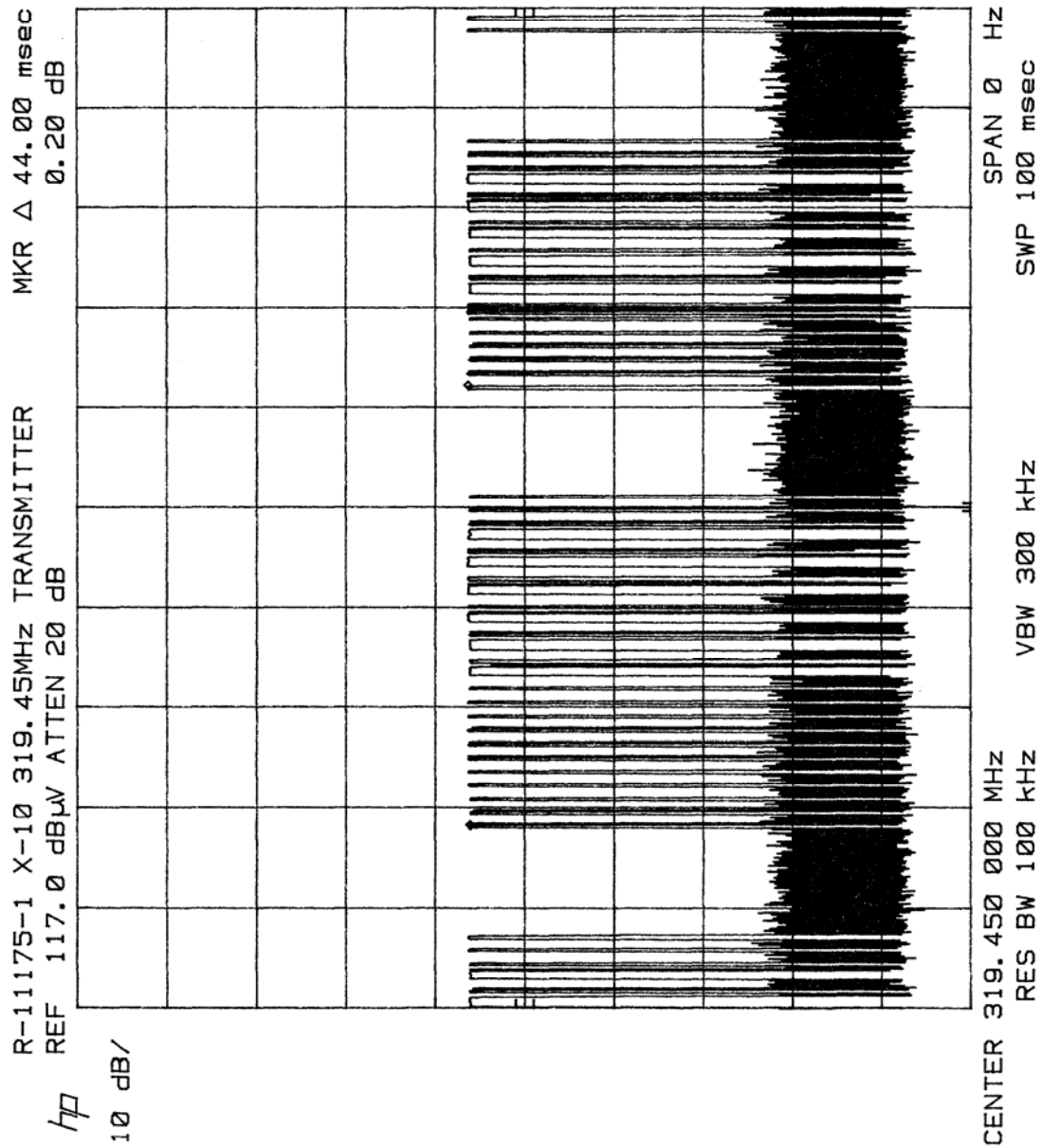
Test Method:	FCC Part 15, Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions						
Customer:	X-10 (USA), Inc.				Job No.	R-11175-1	
Test Sample:	319.45 MHz Transmitter Security System.				Paragraph:	15.231	
Model No.:	JSC13A				FCC ID:	B4S-JSC13A	
Operating Mode:	Continuously Transmitting a 319.45 MHz Signal						
Technician:	R. Soodoo				Date:	October 17, 2005.	
Notes:	Test Distance: 3 Meters				Duty Cycle: 26%		
	Detector: Peak, unless otherwise specified				Duty Cycle Correction: -11.7 dB		
Frequency	Antenna Pol./Height	EUT Orientation	Peak Reading	Correction Factor	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-Meters	X / Y / Z	dBuV	dB	dBuV/m	uV/m	uV/m
319.45	H / 1.0	X	76.2	-11.7	64.5	1678.8	6227.0
	H / 1.0	Y	72.0	-11.7	60.3	1035.1	
	H / 1.0	Z	67.7	-11.7	56.0	631.0	
	V / 1.5	X	67.9	-11.7	56.2	645.7	
	V / 1.5	Y	65.6	-11.7	53.9	495.5	
319.45	V / 1.5	Z	73.0	-11.7	61.3	1161.4	6227.0
638.9	H / 1.0	X	60.7	-11.7	49.0	281.8	622.7
	H / 1.0	Y	57.1	-11.7	45.4	186.2	
	H / 1.0	Z	55.4	-11.7	43.7	153.1	
	V / 1.5	X	56.7	-11.7	45.0	177.8	
	V / 1.5	Y	56.9	-11.7	45.2	182.0	
638.9	V / 1.5	Z	58.8	-11.7	47.1	226.5	622.7
958.35	H / 1.0	X	49.9	-11.7	38.2	81.3	622.7
	H / 1.0	Y	50.5	-11.7	38.8	87.1	
	H / 1.0	Z	51.1	-11.7	39.4	93.3	
	V / 1.5	X	46.8	-11.7	35.1	56.9	
	V / 1.5	Y	51.6	-11.7	39.9	98.9	
958.35	V / 1.5	Z	48.9	-11.7	37.2	72.4	
							622.7
1277.8	H / 1.5	X	60.9	-11.7	49.2	288.4	
	H / 1.5	Y	55.1	-11.7	43.4	147.9	
	H / 1.5	Z	56.5	-11.7	44.8	173.8	
	V / 1.0	X	58.5	-11.7	46.8	218.8	
	V / 1.5	Y	60.0	-11.7	48.3	260.0	
1277.8	V / 1.25	Z	60.3	-11.7	48.6	269.2	622.7
1597.25	H / 1.5	X	57.3	-11.7	45.6	190.5	501
	H / 1.5	Y	58.5	-11.7	46.8	218.8	
	H / 1.25	Z	58.6	-11.7	46.9	221.3	
	V / 1.0	X	58.0	-11.7	46.3	206.5	
	V / 1.5	Y	55.6	-11.7	43.9	156.7	
1597.25	V / 1.0	Z	57.0	-11.7	45.3	184.1	501
	The frequency range was scanned from 30 MHz to 3.19 GHz.						
	All emissions not recorded were more than 20 dB below the specified limit.						
	*=Noise Floor Measurements (minimum system sensitivity).						

Test Method:	FCC Part 15, Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions						
Customer:	X-10 (USA), Inc.				Job No.	R-11175-1	
Test Sample:	319.45 MHz Transmitter Security System.				Paragraph:	15.231	
Model No.:	JSC13A				FCC ID:	B4S-JSC13A	
Operating Mode:	Continuously Transmitting a 319.45 MHz Signal						
Technician:	R. Soodoo				Date:	October 17, 2005.	
Notes:	Test Distance: 3 Meters				Duty Cycle: 26 %		
	Detector: Peak, unless otherwise specified				Duty Cycle Correction: -11.7dB		
Frequency	Antenna Pol./Height	EUT Orientation	Peak Reading	Correction Factor	Corrected Reading	Converted Reading	Avg. Limit
MHz	(V/H)-Meters	X / Y / Z	dBuV	dB	dBuV/m	uV/m	uV/m
1916.7	H / 1.0	X	62.0	-11.7	50.3	327.3	622.7
	H / 1.5	Y	65.4	-11.7	53.7	484.2	
	H / 1.5	Z	60.5	-11.7	48.8	275.4	
	V / 1.0	X	58.4	-11.7	46.7	216.3	
	V / 1.5	Y	57.3	-11.7	45.6	190.5	
1916.7	V / 1.0	Z	62.6	-11.7	50.9	350.8	622.7
2236.2	H / 1.5	X	53.7	-11.7	42.0	125.9	501
	H / 1.5	Y	54.1	-11.7	42.4	131.8	
	H / 2.0	Z	48.6	-11.7	36.9	70.0	
	V / 1.0	X	52.0	-11.7	40.3	103.5	
	V / 1.0	Y	53.7	-11.7	42.0	125.9	
2236.2	V / 1.0	Z	54.7	-11.7	43.0	141.3	501
2555.6	H / 1.25	X	55.7	-11.7	44.0	158.5	622.7
	H / 1.25	Y	57.1	-11.7	45.4	186.2	
	H / 2.5	Z	58.0	-11.7	46.3	206.5	
	V / 1.25	X	55.2	-11.7	43.5	149.6	
	V / 1.5	Y	60.0	-11.7	48.3	260.0	
2555.6	V / 1.0	Z	55.1	-11.7	43.4	147.9	622.7
2871.85	H / 1.25	X	50.2	-11.7	38.5	84.1	501
	H / 1.25	Y	53.5	-11.7	41.8	123.0	
	H / 1.5	Z	56.1	-11.7	44.4	166.0	
	V / 1.5	X	52.8	-11.7	41.1	113.5	
	V / 1.5	Y	55.9	-11.7	44.2	162.2	
2871.85	V / 1.0	Z	53.2	-11.7	41.5	118.9	501
3194.5	H / 1.0	X	*45.3	-11.7	33.6	47.9	622.7
	H / 1.0	Y	*45.3	-11.7	33.6	47.9	
	H / 1.0	Z	*45.3	-11.7	33.6	47.9	
	V / 1.0	X	*44.7	-11.7	33.0	44.7	
	V / 1.0	Y	*44.7	-11.7	33.0	44.7	
3194.5	V / 1.0	Z	*44.7	-11.7	33.0	44.7	622.7
	The frequency range was scanned from 30 MHz to 3.19 GHz.						
	All emissions not recorded were more than 20 dB below the specified limit.						
	*=Noise Floor Measurements (minimum system sensitivity).						

Para. 15.231(b), Radiated Emissions, Spurious Case
Test Data

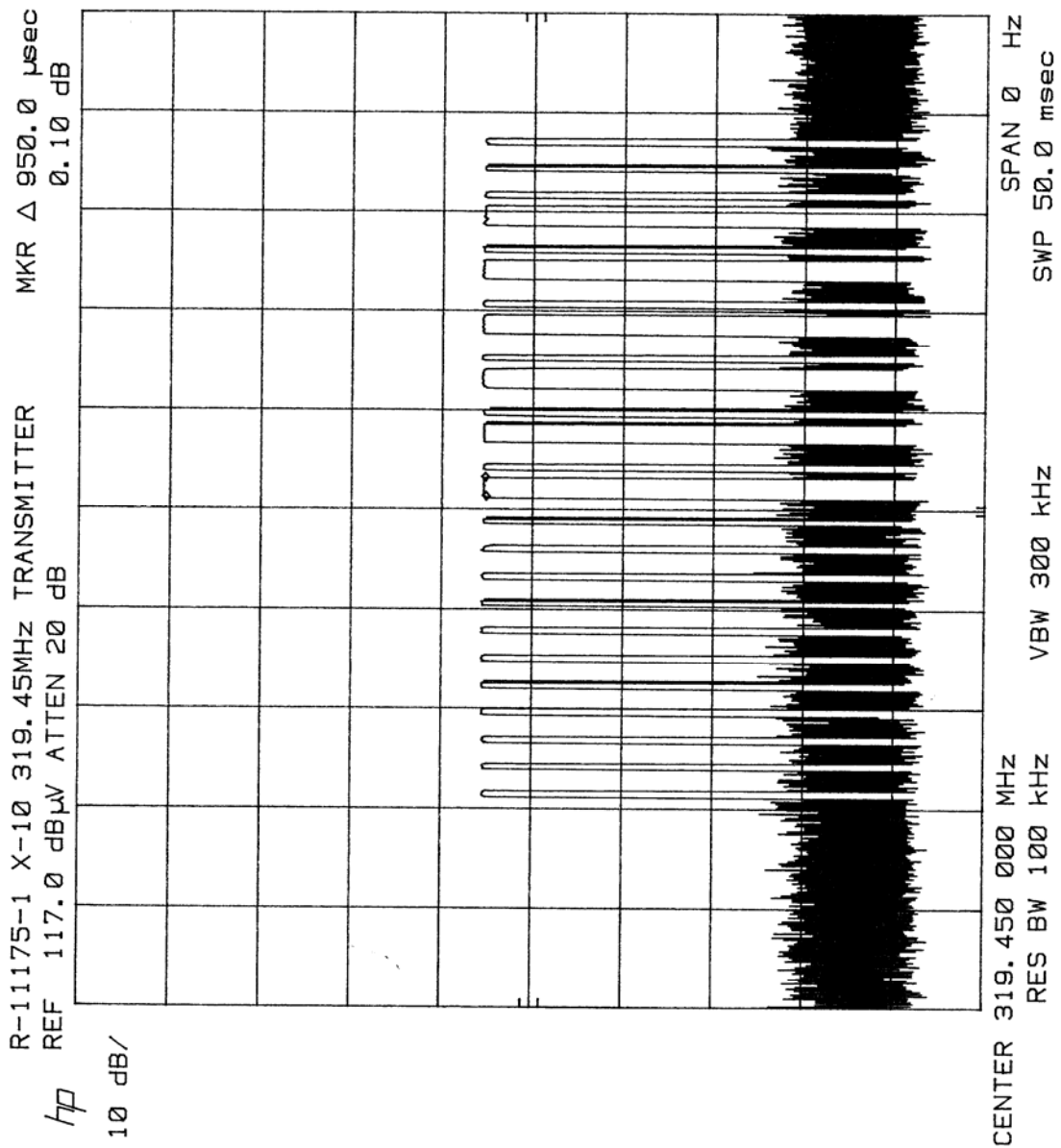
Test Method:	FCC Part 15, Subpart C, Spurious Case Radiated Emissions, Paragraph 15.209(a)						
Customer:	X-10 (USA), Inc.	Job No.		R-11175-1			
Test Sample:	319.45 MHz Transmitter Security System.						
Model No.:	JSC13A	FCC ID:		B4S-JSC13A			
Operating Mode:	Continuously Transmitting a 319.45 MHz Signal						
Technician:	R. Soodoo	Date:		October 17, 2005.			
Notes:	Test Distance: 3 Meters Temp: 20°C Humidity: 34% Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz						
Test Freq.	Antenna Position	EUT Orientation	Meter Readings	Correction Factor	Corrected Reading	Converted Reading	Limit
MHz	(V/H) / Meters	Degrees	dBuV	dB	dBuV/m	uV/m	uV/m
30.00							100
32.10	V / 1.0	0.0	16.0	17.0	33.0	44.7	
37.50	V / 1.0	180.0	10.0	15.0	25.0	17.8	
42.80	V / 1.0	180.0	12.0	12.0	24.0	15.8	
48.00	V / 1.0	180.0	8.0	10.3	18.3	8.2	
50.00	V / 1.0	0.0	14.0	10.3	24.3	16.4	
53.00	V / 1.0	315.0	12.0	10.0	22.0	12.6	
59.00	V / .10	0.0	10.0	9.3	19.3	9.2	
68.00	V / 1.0	0.0	8.0	8.6	16.6	6.8	
75.00	V / 1.0	180.0	18.0	8.7	26.7	21.6	
85.70	V / 1.0	315.0	10.0	9.1	19.1	9.0	
88.00							100
88.00							150
111.0	H / 1.0	180.0	3.0	10.3	13.3	4.6	
165.0	H / 1.0	90.0	2.0	11.9	13.9	5.0	
216.00							150
216.00							200
308.0	H / 1.0	203.0	14.0	16.2	30.2	32.4	
960.00							200
960.00							500
3190.0							500
	The EUT was scanned from 30 MHz to 3.19 GHz						
	The emissions observed from the EUT do not exceed the specified limits. Emissions not recorded						
	were more than 20dB under the specified limit						

Para. 15.231(b), Duty Cycle Determination
Test Data



Test Method: FCC Part 15.35, Duty Cycle Determination.
Notes: Measurement of cycle time = 44 mSec.

Customer	X-10 (USA), Inc.		
Test Sample	319.45 MHz Transmitter Security System.		
Model Number	JSC13A		
Date: October 17, 2005.	Tech: R. Soodoo	Sheet 1 of 4	

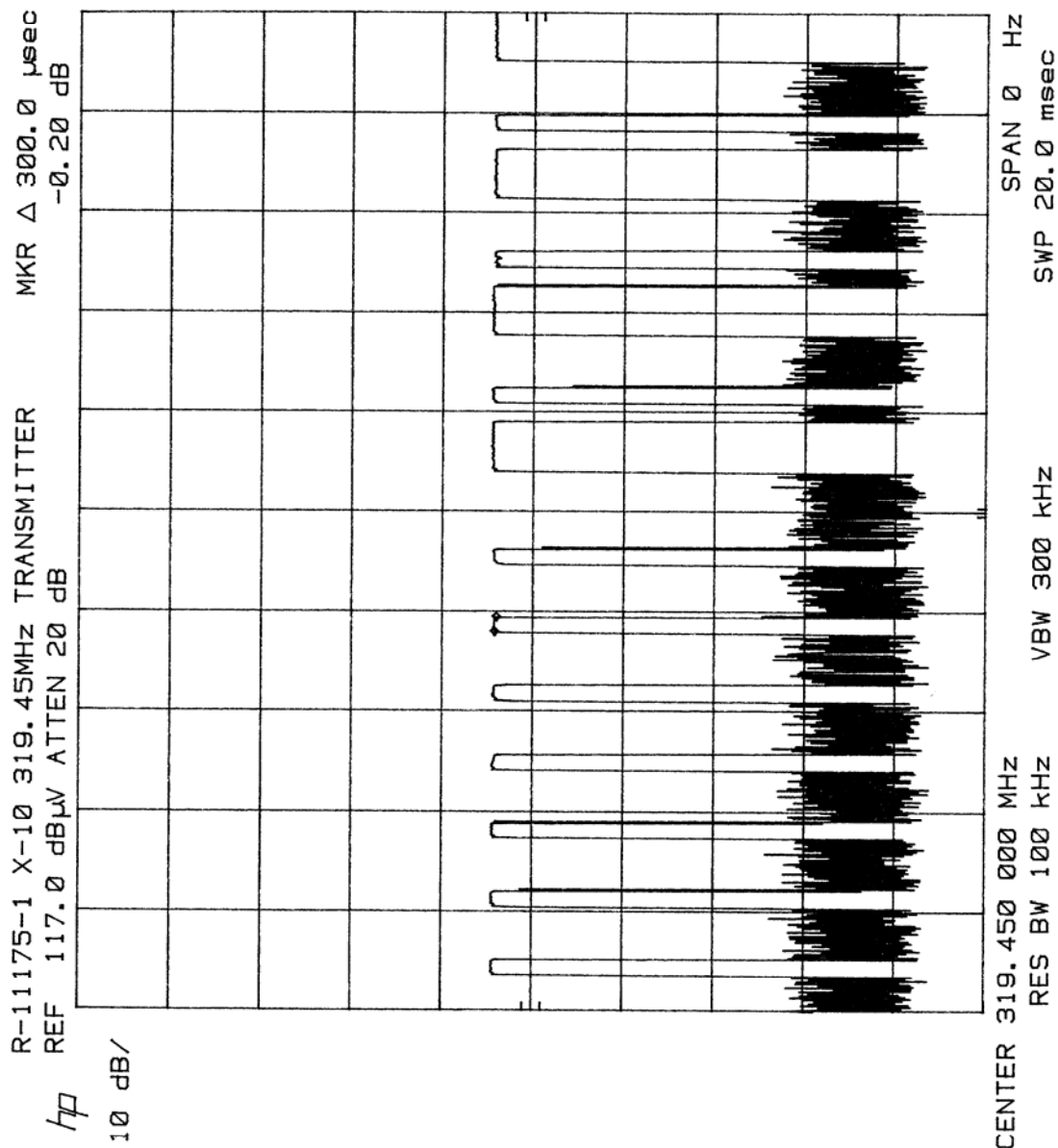


Test Method: FCC Part 15.35, Duty Cycle Determination.

Notes: Measurement of 1 large pulse = 950μSec.

Measurements of 6 large pulses = 6(950μSec) = 5.7mSec.

Customer	X-10 (USA), Inc.		
Test Sample	319.45 MHz Transmitter Security System.		
Model Number	JSC13A		
Date: October 17, 2005.	Tech: R. Soodoo	Sheet 2 of 4	

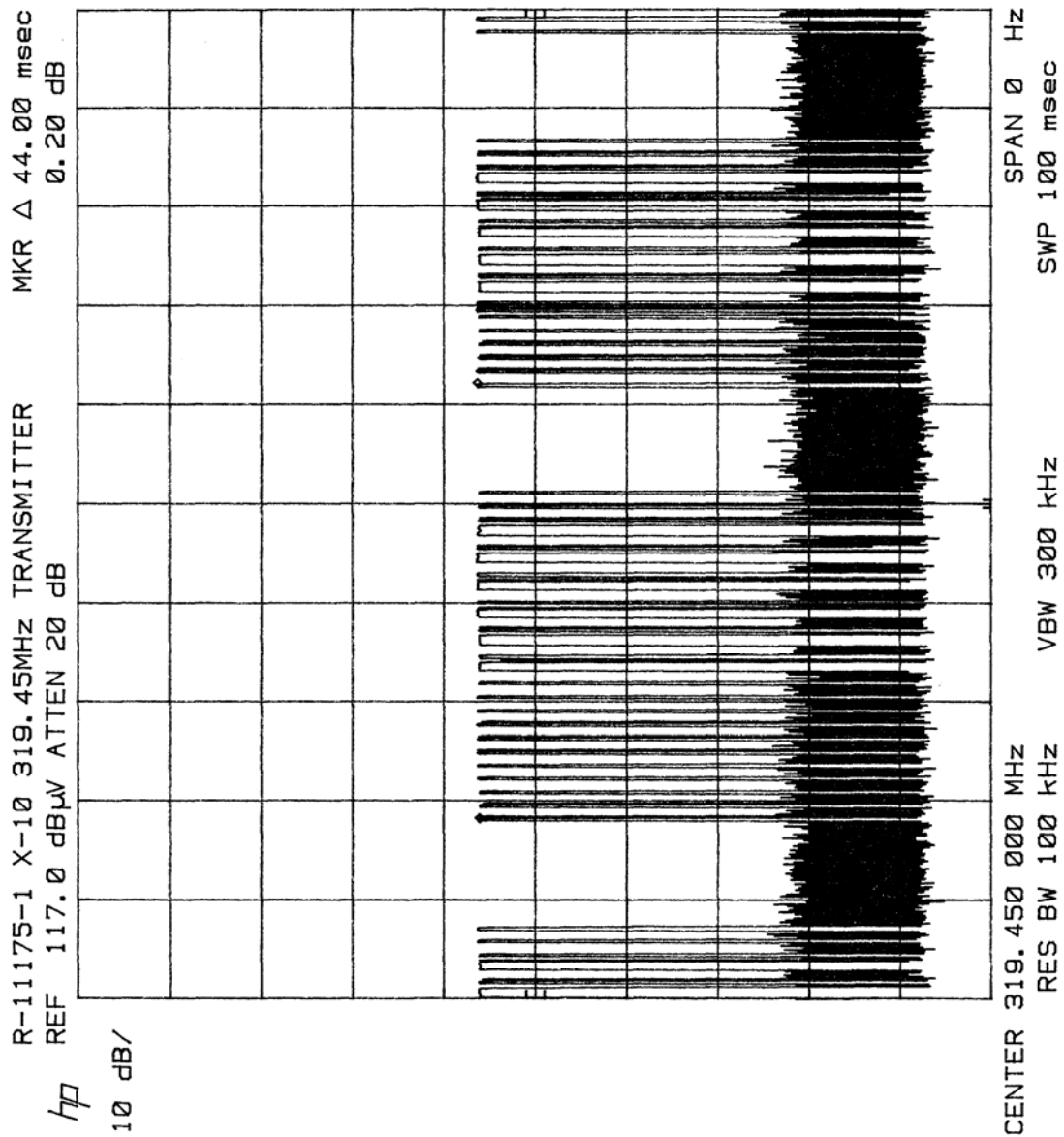


Test Method: FCC Part 15.35, Duty Cycle Determination.

Notes: Measurement of 1 small pulse = 300μSec.

Measurements of 19 small pulses = 19(300μSec) = 5.7mSec.

Customer	X-10 (USA), Inc.		
Test Sample	319.45 MHz Transmitter Security System.		
Model Number	JSC13A		
Date: October 17, 2005.	Tech: R. Soodoo	Sheet 3 of 4	

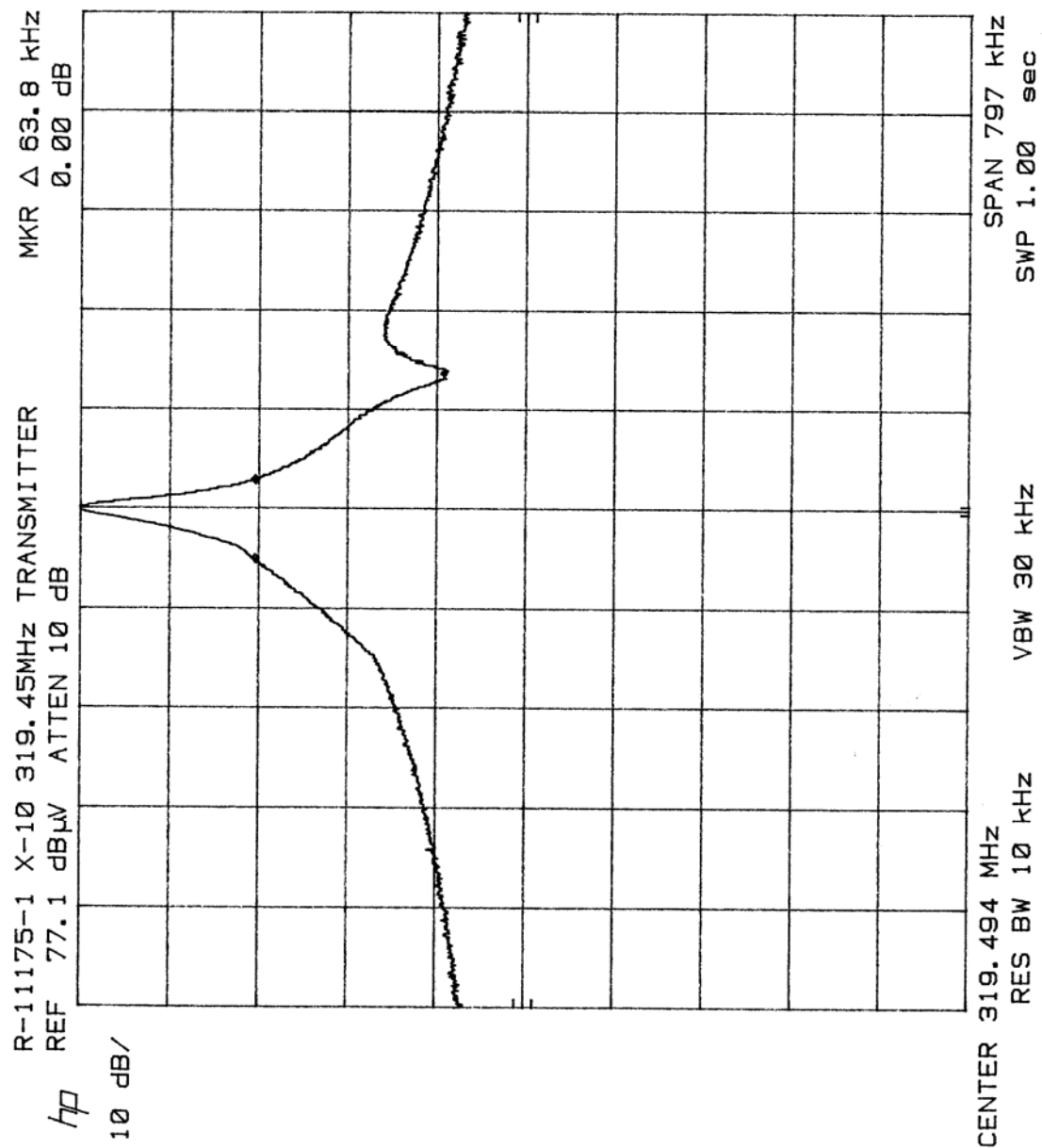


Test Method: FCC Part 15.35, Duty Cycle Determination.

Notes: Duty cycle = $(6)(950\mu\text{Sec}) + (19)(300\mu\text{Sec}) = 0.26 = 26\%$
 $= 20 \log 0.26 = -11.7 \text{ dB}$

Customer	X-10 (USA), Inc.		
Test Sample	319.45 MHz Transmitter Security System.		
Model Number	JSC13A		
Date: October 17, 2005.	Tech: R. Soodoo	Sheet 4 of 4	

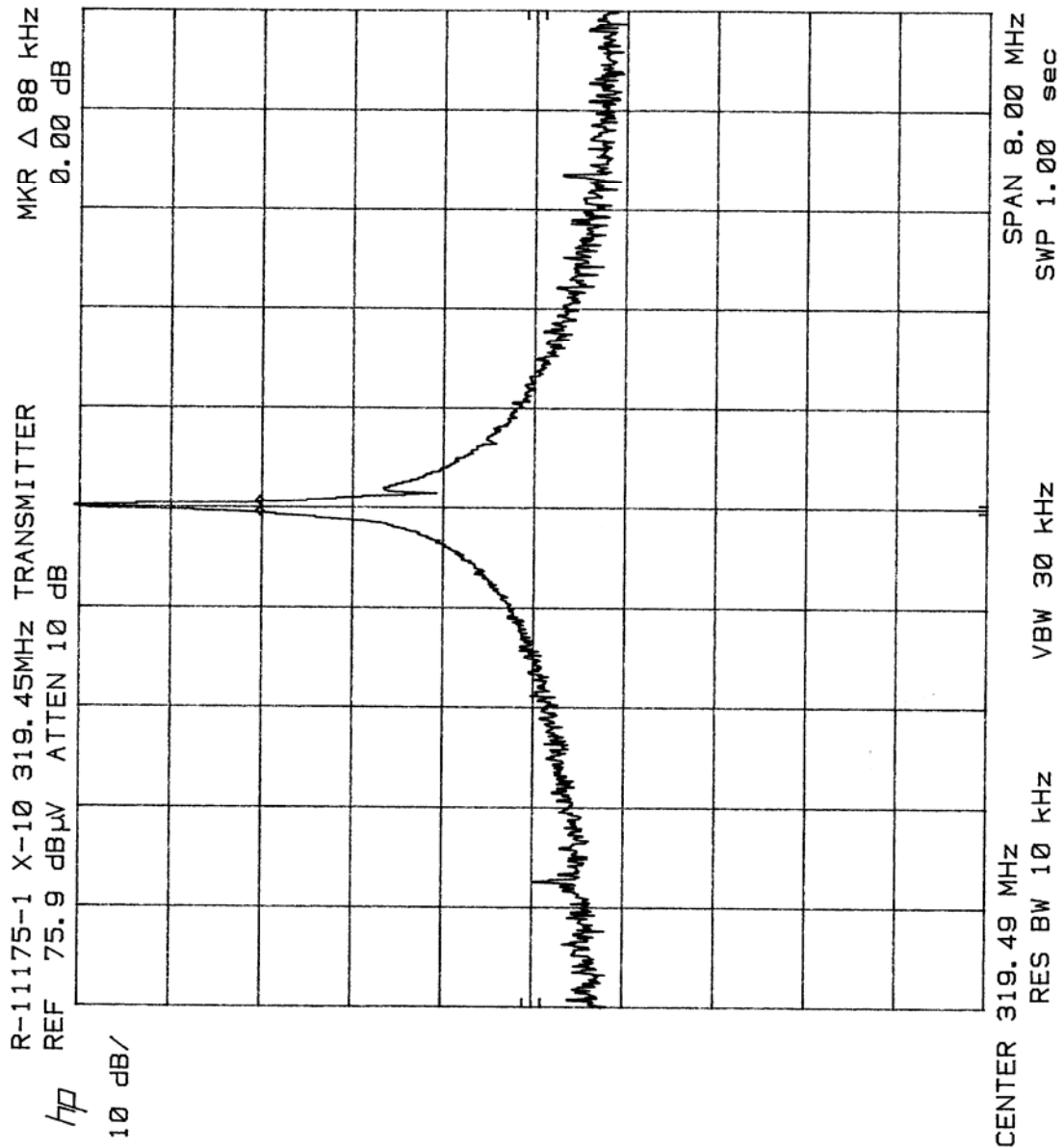
Para. 15.231(c), Occupied Bandwidth
Test Data



Test Method: FCC Part 15, Subpart C, 15.231(c), Occupied Bandwidth.

Notes: Bandwidth of 63.8 kHz does not exceed 0.25% of center frequency at the 20 dBc points (798 kHz)

Customer	X-10 (USA), Inc.		
Test Sample	319.45 MHz Transmitter Security System.		
Model Number	JSC13A		
Date: October 17, 2005.	Tech: R. Soodoo	Sheet 1 of 2	



Test Method: FCC Part 15, Subpart C, 15.231(c), Occupied Bandwidth.

Notes: Bandwidth does not exceed 0.25% of center frequency at the 20 dBc points (798 kHz)

Customer	X-10 (USA), Inc.		
Test Sample	319.45 MHz Transmitter Security System.		
Model Number	JSC13A		
Date: October 17, 2005.	Tech: R. Soodoo	Sheet 2 of 2	