APPLICANT	MANUFACTURER
X-10 USA, Inc. 19823, 58 <sup>th</sup> Place S Kent, WA 98032	X-10 Electronics Shenzhen Co. Ltd. X-10 Building Labour Industrial District Shenzhen, Xixiang, Bao An Guang Dong, China, 518102

TEST SPECIFICATION: FCC Rules and Regulations Part 15, Subpart C, Para. 15.231 TEST PROCEDURE: ANSI C63.4:2003

#### TEST SAMPLE DESCRIPTION

BRANDNAME: X10

MODEL: KR33A

TYPE: Pulsed Transmitter

POWER REQUIREMENTS: 6 VDC via (2) CR2016 Lithium Batteries

FREQUENCY OF OPERATION: 310 MHz

### TESTS PERFORMED

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

#### REPORT OF MEASUREMENTS

Applicant:	X-10 (USA), Inc.
Device:	Pulsed Transmitter
FCC ID:	B4S-DS11A
Power Requirements:	6 VDC via (2) CR2016 Lithium Batteries
Applicable Rule Section:	Part 15, Subpart C, Section 15.231

#### TEST RESULTS

- 15.231 (a): This device 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.
- 15.231 (b): The fundamental field strength did not exceed 5833 μV/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  $\mu$ V/M (AVERAGE).

#### DETERMINATION OF FIELD STRENGTH LIMITS

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

Frequency F1 = 260 F0 = 310		ency		Limit
F1	=	260	3750 =	L1
Fo	=	310	Lo	
F2	=	470	12500 =	L2

The formula below was utilized to determine the limits:

Limit = L1 + [(Fo-F1)(L2-L1)/(F2-F1)]

Solving yields:

Fundamental Limit = 5833  $\mu$ V/M (AVERAGE) @ 3 Meters Harmonic Limit = 583  $\mu$ 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 =	37.9 millise	conc	ls (maximum)
Transmitter Cycle Time =	203.1 millis	ecor	lds
Transmitter Duty Cycle =	37.9 %		
CALCULATION:			
2 Large Pulse		=	2(8.8)=17.6 milliseconds
39 x 520 µs (small puls	se)	=	20.3 milliseconds
17.6+20.3		=	37.9 milliseconds
Duty Cycle (37.9/100)		=	37.9 %
Correction Factor = 20	log(0.30)	=	-8.4 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 500 µs yields a minimum required bandwidth of 1333 Hz. FCC specified bandwidths of 100 kHz and 1MHz 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 3.1 GHz. All emissions not reported were more than 20 dB below the specified limit.

# EQUIPMENT LIST FCC Part 15/C Spurious, Fundamental & Harmonic Radiated Emissions

EN	Туре	Manufacturer	Description	Model No.	Cal Date	Due
128	Double Ridged Guide	Electro-Mechanics	1 GHz - 18 GHz	3105	6/21/2004	6/21/2005
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	6/12/2004	6/12/2005
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	8/5/2004	2/5/2005
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	8/7/2004	2/7/2005
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	6/12/2004	6/12/2005
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	7/27/2004	7/27/2005
723	H.P. Filter	Mini-Circuits	1 GHz	BHP-1000	7/14/2004	7/14/2005
067	Open Area Test Site	Retlif	3 Meter	RNY	10/1/2003	10/1/2006

# FCC 15.231(b) RADIATED EMISSIONS, FUNDAMENTAL & SPURIOUS CASE

Test Metho	d:	FCC Pa	rt 15 Subpart C	Radiated Em	issions, Fund	amental & Har	monic Emissions	
Customer:		X-10 Wi	reless Technolo	ogy, Inc.		Job No.	R-10715-1	
Test Sample	e:	Pulsed 3	310MHz Transm	nitter		Paragraph:	15.231	
Model No.:		KR33A				FCC ID:	B4S-KR33A	
Operating N	/lode:	Continu	ously Transmitti	ng a pulsed 3	10 MHz signa	al		
Fechnician:		R. Sood	loo	<u> </u>		Date:	January 3, 2005	
Notes:	Test Dist	ance: 3 N	/leters		•			
	Detector:	Peak, U	nless otherwise	specified				
	Ante	nna	EUT	Meter	Correction	Corrected	Converted	Peak
Test Freq.	Pol./H		Orientation	Reading	Factor	Reading	Reading	Limit
MHz	(V/H)/N	Veters	X/Y/Z	dBuV	dB	dBuV/m	uV/m	uV/m
					-			
310	V /	1.0	Х	56.0	-4.0	52.0	398.1	58330
	V /		Y	77.8	-4.0	73.8	4897.8	
	V /	1.5	Z	77.3	-4.0	73.3	4623.8	
	Η/	1.0	Х	78.7	-3.9	74.8	5495.4	
	Η/	2.0	Y	71.7	-3.9	67.8	2454.7	
310	Η/	1.0	Z	74.4	-3.9	70.5	3349.7	58330
620	V /		Х	38.5	3.5	42.0	125.9	5833
	V /		Y	42.8	3.5	46.3	206.5	
	V /		Z	43.4	3.5	46.9	221.3	
	Η/		Х	47.3	2.6	49.9	312.6	
	Η/		Y	41.8	2.6	44.4	166.0	
620	Η/	1.5	Z	40.8	2.6	43.4	147.9	5833
930	V / 1	25	Х	23.4	8.5	31.9	39.4	5833
	V /		Y	27.8	8.5	36.3	65.3	1
I	V /		Z	34.6	8.5	43.1	142.9	
	H/		X	24.9	8.4	33.3	46.2	
	H/		Y	26.8	8.4	35.2	57.5	
930	H/1		Z	26.6	8.4	35.0	56.2	5833
1240	V /	1.0	Х	43.6	3.8	50.1	319.9*	5000
	V /	1.0	Y	43.6	3.8	47.4	234.4*	
	V /	1.0	Z	47.2	3.8	51.0	354.8	
	Η/	1.0	Х	41.0	3.8	44.8	173.8	
	Η/	1.0	Y	39.9	3.8	43.7	153.1	
1240	Η/	1.0	Z	38.2	3.8	42.0	125.9	5000
1550	V /	10	Х	43.6	8.7	52.3	412.1*	5000
	V /		Y	43.6	8.7	52.3	412.1*	1
	V /		Z	43.6	8.7	52.3	412.1*	
	H/		X	33.7	7.7	41.4	117.5*	
	H/		Y	33.7	7.7	41.4	117.5*	
1550	H/		Z	33.7	7.7	41.4	117.5*	5000
	The Free	quency R	ange was scan	ned from the f	irst to the ten	th harmonic. A	Il emissions not re the applicable lim	eported
			easurements (M			comprise with		

Retlif Testing Laboratories, Test Report R-10715-1, X-10(USA), FCC ID B4S-KR33A Page 6 of 18

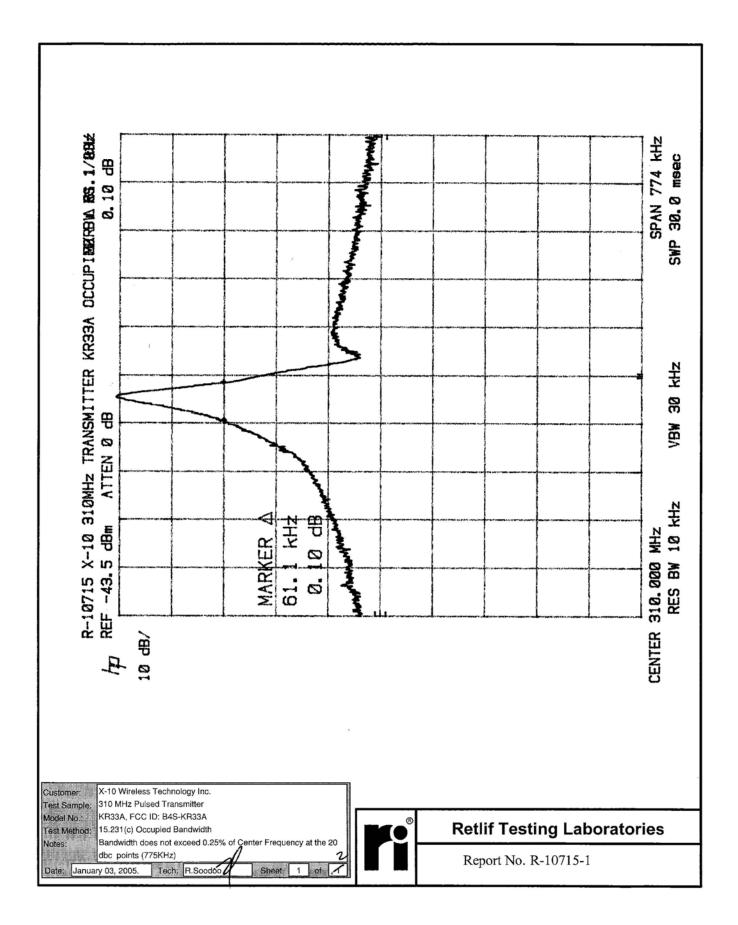
Test Metho	d:	FCC Pa	rt 15 Subpart C	Radiated Em	issions, Fund	amental & Hari	monic Emissions	
Customer:		X-10 Wi	ireless Technolo	ogy, Inc.		Job No.	R-10715-1	
Test Sampl	e:		310MHz Transn	• ·		Paragraph:	15.231	
Model No.:		KR33A			FCC ID:	B4S-KR33A		
Operating N	Node:		ously Transmitt	ing a pulsed 3	10 MHz signa			
Technician:		R. Sood		<u> </u>		Date:	January 3, 2005.	
Notes:		ance: 3 M		Detector:	Peak, unless	otherwise spe		
Test Freq.	Ante		EUT	Meter	Correction			Peak
		leight	Orientation	Reading	Factor	Reading	Reading	Limit
MHz	(V/H)-l	Meters	X/Y/Z	dBuV	dB	dBuV/m	uV/m	uV/m
1860	н	/ 1.0	Х	42.6	11.1	53.7	484.2*	5833
		/ 1.0	Y	42.6	11.1	53.7	484.2*	
I		1/1.0	Z	42.6	11.1	53.7	484.2*	
I		/ 1.0	X	32.6	10.2	42.8	138.0*	
I		/ 1.0	Y	32.6	10.2	42.8	138.0*	
1860		/ 1.0	Z	32.6	10.2	42.8	138.0*	5833
1000	· ·	/ 1.0		02.0	10.2	12.0	100.0	0000
2170	H / 1.0		Х	28.0	1.7	29.7	30.5*	5833
	Н	/ 1.0	Y	28.0	1.7	29.7	30.5*	
	F	1/1.0	Z	28.0	1.7	29.7	30.5*	
	V	/ 1.0	Х	28.8	1.7	30.5	33.5*	
	V	/ 1.0	Y	28.8	1.7	30.5	33.5*	
2170	V	/ 1.0	Z	28.8	1.7	30.5	33.5*	5833
0.400		110	X	00.0	2.0		20.0*	5000
2480		/ 1.0	X Y	28.0	3.8	31.8	38.9*	5833
		/ 1.0		28.0	3.8	31.8	38.9*	
		1/1.0	Z	28.0	3.8	31.8	38.9*	
		/ 1.0	X	28.8	3.8	32.6	42.7*	
		/ 1.0	Y	28.8	3.8	32.6	42.7*	5000
2480	V	/ 1.0	Z	28.8	3.8	32.6	42.7*	5833
2790	н	/ 1.0	Х	28.0	5.1	33.1	45.2*	5000
	Н	/ 1.0	Y	28.0	5.1	33.1	45.2*	
	F	1/1.0	Z	28.0	5.1	33.1	45.2*	
	V	/ 1.0	Х	28.8	5.1	33.9	49.5*	
	V	/ 1.0	Y	28.8	5.1	33.9	49.5*	
2790	V	/ 1.0	Z	28.8	5.1	33.9	49.5*	5000
3100	Ц Ц	/ 1.0	Х	28.0	6.7	34.7	54.3*	5833
		/ 1.0	Y	28.0	6.7	34.7	54.3*	1
I		1/1.0	Z	28.0	6.7	34.7	54.3*	
I		/ 1.0	X	28.8	6.7	35.5	59.6*	
I		/ 1.0	Y	28.8	6.7	35.5	59.6*	
3100		/ 1.0	Z	28.8	6.7	35.5	59.6*	5833
	The Fre	quency R	ange was scan	ned from the f	irst to the ten	th harmonic. A	Il emissions not re the applicable lim	ported
		ie ai lede		ne specified li	III. THE EUT		une applicable IIII	it.

Pulsed KR33A de: Continu R. Soo est Distance: 3	uously Transmitti doo	nitter ng a pulsed 3	D	Date: Outy Cycle: 37.9	B4S-KR33A January 3, 2005.	Avg. Limit	
KR33A de: Continu R. Soo est Distance: 3 etector: Peak, u Antenna Pol./Height (V/H)-Meters V / 1.0 V / 1.5 V / 1.5 H / 1.0 H / 2.0	Jously Transmitti doo Meters Inless otherwise EUT Orientation X / Y / Z X Y Z	ng a pulsed 3 specified Peak Reading dBuV 52.0	D D Correction Factor dB	FCC ID: Date: Duty Cycle: 37. Duty Cycle Corrected Reading	B4S-KR33A January 3, 2005. 9% rection: -8.4dB Converted Reading	Avg.	
KR33A de: Continu R. Soo est Distance: 3 etector: Peak, u Antenna Pol./Height (V/H)-Meters V / 1.0 V / 1.5 V / 1.5 H / 1.0 H / 2.0	Jously Transmitti doo Meters Inless otherwise EUT Orientation X / Y / Z X Y Z	ng a pulsed 3 specified Peak Reading dBuV 52.0	D D Correction Factor dB	FCC ID: Date: Duty Cycle: 37. Duty Cycle Corrected Reading	B4S-KR33A January 3, 2005. 9% rection: -8.4dB Converted Reading	Avg.	
de: Continu R. Soo est Distance: 3 etector: Peak, u Antenna Pol./Height (V/H)-Meters V / 1.0 V / 1.5 V / 1.5 H / 1.0 H / 2.0	uously Transmitti doo Meters inless otherwise EUT Orientation X / Y / Z X Y Z	specified Peak Reading dBuV 52.0	D D Correction Factor dB	Date: Duty Cycle: 37. Duty Cycle Corr Corrected Reading	January 3, 2005. 9% rection: -8.4dB Converted Reading	Avg.	
R. Soo est Distance: 3 etector: Peak, u Antenna Pol./Height (V/H)-Meters V / 1.0 V / 1.5 V / 1.5 H / 1.0 H / 2.0	doo Meters EUT Orientation X / Y / Z X Y Z	specified Peak Reading dBuV 52.0	D D Correction Factor dB	Date: Outy Cycle: 37.9 Outy Cycle Corr Corrected Reading	9% rection: -8.4dB Converted Reading	Avg.	
etector: Peak, u Antenna Pol./Height (V/H)-Meters V / 1.0 V / 1.5 V / 1.5 H / 1.0 H / 2.0	EUT Orientation X / Y / Z X Y Z	Peak Reading dBuV 52.0	D Correction Factor dB	outy Cycle: 37. outy Cycle Corr Corrected Reading	9% rection: -8.4dB Converted Reading	Avg.	
Antenna Pol./Height (V/H)-Meters V / 1.0 V / 1.5 V / 1.5 H / 1.0 H / 2.0	EUT Orientation X / Y / Z X Y Z	Peak Reading dBuV 52.0	D Correction Factor dB	Outy Cycle Corr Corrected Reading	rection: -8.4dB Converted Reading		
Pol./Height (V/H)-Meters V / 1.0 V / 1.5 V / 1.5 H / 1.0 H / 1.0 H / 2.0	Orientation X/Y/Z X Y Z	Reading dBuV 52.0	Correction Factor dB	Corrected Reading	Converted Reading		
Pol./Height (V/H)-Meters V / 1.0 V / 1.5 V / 1.5 H / 1.0 H / 1.0 H / 2.0	X/Y/Z X Y Z	Reading dBuV 52.0	Factor dB	Reading	Reading		
V / 1.0 V / 1.5 V / 1.5 H / 1.0 H / 2.0	X Y Z	52.0		dBuV/m	uV/m	ing Limit	
V / 1.5 V / 1.5 H / 1.0 H / 2.0	Y Z		-8.4		G V/III		
V / 1.5 V / 1.5 H / 1.0 H / 2.0	Y Z		-8.4				
V / 1.5 H / 1.0 H / 2.0	Z	73.8		43.6	151.4	5833	
H / 1.0 H / 2.0			-8.4	65.4	1862.1		
H / 2.0	X	73.3	-8.4	64.9	1757.9		
		74.8	-8.4	66.4	2089.3		
H / 1.0	Y	67.8	-8.4	59.4	933.3		
	Z	70.5	-8.4	62.1	1273.5	5833	
V / 1.0	X	42.0	-8.4	33.6	47.9	583	
V / 1.5	Y	46.3	-8.4	37.9	78.5	<u> </u>	
V / 1.5	Z	46.9	-8.4	38.5	84.1	<u> </u>	
H / 1.0	X	49.9	-8.4	41.5	118.9	<u> </u>	
H / 1.0	Y	44.4	-8.4	36.0.	63.1		
H / 1.5	Z	43.4	-8.4	35.0	56.2	583	
V / 1.25	X	31.9	-8.4	23.5	15.0	583	
V / 1.0	Y	36.3	-8.4	27.9	24.8	000	
	Z		-8.4			583	
V / 1.0	Х	50.1	-8.4	41.7	121.6*	500	
V / 1.0	Y	47.4	-8.4	39.0	89.1*		
V / 1.0	Z	51.0	-8.4	42.6	134.9		
H / 1.0	Х	44.8	-8.4	36.4	66.1		
H/1.0	Y	43.7	-8.4	35.3	58.2		
H / 1.0	Z	42.0	-8.4	33.6	47.9	500	
		50.0	0.4	40.0	450.7*	500	
						500	
						E00	
he Frequency I	Range was scan	ned from the f	irst to the tentl	h harmonic. A	Il emissions not re		
erein are at lea		•		complies with	the applicable limi	lt.	
	V / 1.0 H / 1.0 H / 1.5 H / 1.75 V / 1.0 V / 1.0 V / 1.0 H / 1.0 H / 1.0 V / 1.0 V / 1.0 V / 1.0 V / 1.0 V / 1.0 V / 1.0 H / 1.0 H / 1.0 H / 1.0 H / 1.0 H / 1.0 E Frequency Frein are at lea	V / 1.0 Z   H / 1.0 X   H / 1.5 Y   H / 1.75 Z   V / 1.0 X   V / 1.0 Y   H / 1.0 Y   V / 1.0 Y   H / 1.0 Y   H / 1.0 Y   H / 1.0 Y   H / 1.0 Z   e Frequency Range was scan rein are at least 20 dB below t	V / 1.0 Z 43.1   H / 1.0 X 33.3   H / 1.5 Y 35.2   H / 1.75 Z 35.0   V / 1.0 X 50.1   V / 1.0 Y 47.4   V / 1.0 Z 51.0   H / 1.0 X 44.8   H / 1.0 Y 43.7   H / 1.0 Y 43.7   H / 1.0 X 52.3   V / 1.0 Z 52.3   V / 1.0 Y 41.4   H / 1.0 Y 41.4   H / 1.0 Y 41.4   H / 1.0 Z 41.4	V / 1.0 Z 43.1 -8.4   H / 1.0 X 33.3 -8.4   H / 1.5 Y 35.2 -8.4   H / 1.75 Z 35.0 -8.4   H / 1.75 Z 35.0 -8.4   V / 1.0 X 50.1 -8.4   V / 1.0 Y 47.4 -8.4   V / 1.0 Z 51.0 -8.4   H / 1.0 X 44.8 -8.4   H / 1.0 X 44.8 -8.4   H / 1.0 X 42.0 -8.4   H / 1.0 X 52.3 -8.4   W / 1.0 X 52.3 -8.4   V / 1.0 X 52.3 -8.4   W / 1.0 X 52.3 -8.4   W / 1.0 X 41.4 -8.4   H / 1.0 X 41.4 -8.4   H / 1.0 Y 41.4 -8.4   H / 1.0 Z 41.4 -8.4	$\vee/1.0$ Z43.1-8.434.7 $H/1.0$ X33.3-8.424.9 $H/1.5$ Y35.2-8.426.8 $H/1.75$ Z35.0-8.426.6V/1.0X50.1V/1.0Y47.4-8.441.7 $\vee/1.0$ Y47.4-8.439.0 $\vee/1.0$ Z51.0-8.442.6 $H/1.0$ X44.8-8.436.4 $H/1.0$ Y43.7-8.435.3 $H/1.0$ Y52.3-8.443.9 $\vee/1.0$ Z52.3-8.443.9 $\vee/1.0$ Z52.3-8.443.9 $\vee/1.0$ Z52.3-8.443.9 $\vee/1.0$ Z52.3-8.433.0 $H/1.0$ Y41.4-8.433.0 $H/1.0$ Z41.4-8.433.0 $H/1.0$ Z41.4-8.4	$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	

Test Metho	d:	FCC Pa	rt 15 Subpart C	Radiated Em	issions, Fund	amental & Har	monic Emissions		
Customer:		X-10 Wi	reless Technolo	R-10715-1					
Test Sampl	e:	Pulsed 3	310MHz Transn	nitter		Paragraph:	15.231		
Model No.:		KR33A			FCC ID:	B4S-KR33A			
Operating N	Node:	Continu	ously Transmitti	ng a pulsed 3	10 MHz signa	al			
Fechnician:		R. Sood	•	0		Date:	January 3, 2005.		
Notes:	Test Dist	ance: 3 N	leters			Duty Cycle: 37.			
	Detector	: Peak, ur	nless otherwise	specified			rection: -8.4 dB		
	Ante	enna	EUT	Peak	Correction	Corrected	Converted	Avg.	
Test Freq.	Pol./H	leight	Orientation	Reading	Factor	Reading	Reading	Limit	
MHz	(V/H)-	Meters	X / Y / Z	dBuV	dB	dBuV/m	uV/m	uV/m	
4000		110	Y			45.0	404.4*	500	
1860		/ 1.0	X	53.7	-8.4	45.3	184.1*	583	
		/ 1.0	Y	53.7		45.3	184.1*		
		1/1.0	Z	53.7	-8.4	45.3	184.1*		
<u> </u>		<u>/ 1.0</u> / / 1.0	X Y	42.8 42.8	-8.4	34.4	<u>52.5*</u> 52.5*		
1860		/ 1.0	Z	42.8	-8.4	34.4	52.5*	583	
1000	V	/ 1.0	۷.	42.0	-0.4	34.4	52.5	563	
2170	2170 H /		Х	29.7	-8.4	21.3	11.6*	583	
1		/ 1.0	Y	29.7	-8.4	21.3	11.6*	1	
I		/ 1.0	Z	29.7	-8.4	21.3	11.6*		
I		/ 1.0	X	30.5	-8.4	22.1	12.7*		
		/ 1.0	Y	30.5	-8.4	22.1	12.7*		
2170		/ 1.0	Z	30.5	-8.4	22.1	12.7*	583	
2480	Н	/ 1.0	Х	31.8	-8.4	23.4	14.8*	583	
	Н	/ 1.0	Y	31.8	-8.4	23.4	14.8*		
	F	1/1.0	Z	31.8	-8.4	23.4	14.8*		
	V	/ 1.0	Х	32.6	-8.4	24.2	16.2*		
	V	/ 1.0	Y	32.6	-8.4	24.2	16.2*		
2480	V	/ 1.0	Z	32.6	-8.4	24.2	16.2*	583	
2790	Ц	/ 1.0	Х	33.1	-8.4	24.7	17.2*	500	
2130		/ 1.0	Y	33.1	-0.4	24.7	17.2*	500	
I		/ 1.0 1 / 1.0	Z	33.1	-8.4	24.7	17.2*		
<u> </u>		/ 1.0	X	33.9	-8.4	25.5	18.8*		
I		/ 1.0	Y	33.9	-8.4	25.5	18.8*		
2790		/ 1.0	Z	33.9	-8.4	25.5	18.8*	500	
3100		/ 1.0	Х	34.7	-8.4	26.3	20.7*	583	
		/ 1.0	Y	34.7	-8.4	26.3	20.7*		
		1/1.0	Z	34.7	-8.4	26.3	20.7*		
		/ 1.0	Х	35.5	-8.4	27.1	22.6*		
		/ 1.0	Y	35.5	-8.4	27.1	22.6*		
3100		/ 1.0	Z	35.5	-8.4	27.1	22.6*	583	
							Il emissions not re the applicable lim		
			asurements (M						

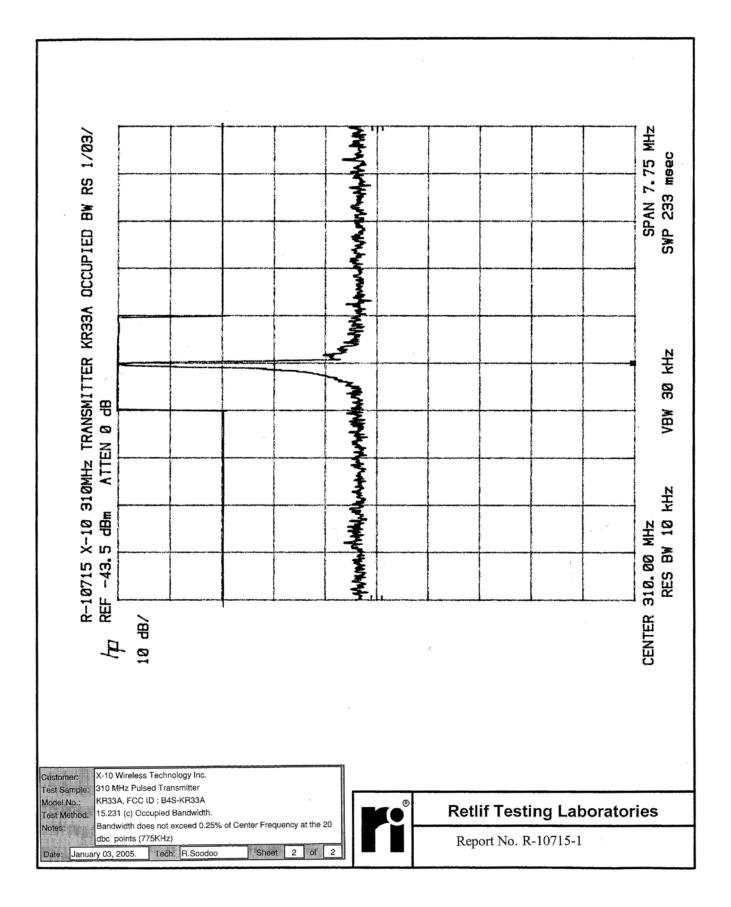
Test Meth	od:	FCC	Part 15 Subp	art C. Spurio	ous Case Rad	iated E	Emissions. Par	agraph 15.209(a)	)	
Customer			Wireless Tec					R-10715-1	/	
Test Sam			MHz RF Trans			I				
Model No.		KR3					FCC ID:	B4S-KR33A		
Operating				smitting a pu	ulsed 310 MH	z Siana				
Technicia			oodoo	V			Date:	January 03, 20	05.	
Notes:	Test Dist	ance:	3 Meters	Temp: 1	3°C H	umidity	/: 76%			
	Detector	: Qua	si-Peak Belov		ak above 1 Gł	-				
Test	Antenr		EUT	Meter	Correction		orrected	Converted		
Freq.		Position Orientation Readings Factor Reading Reading		LIMI	Т					
MHz	(V/H) /		Degrees	dBuV	dB	(	dBuV/m	uV/m	u∖	//m
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	Emission	is not	recorded were	e more than	20dB under th	ie spec	cified limit.			

# FCC 15.231(c) OCCUPIED BANDWIDTH



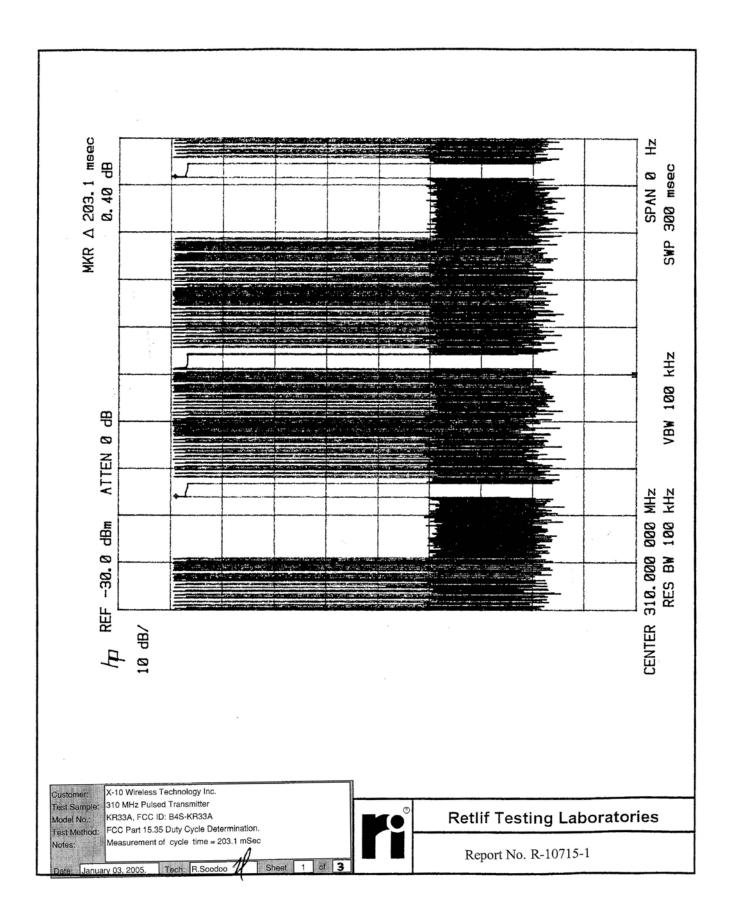
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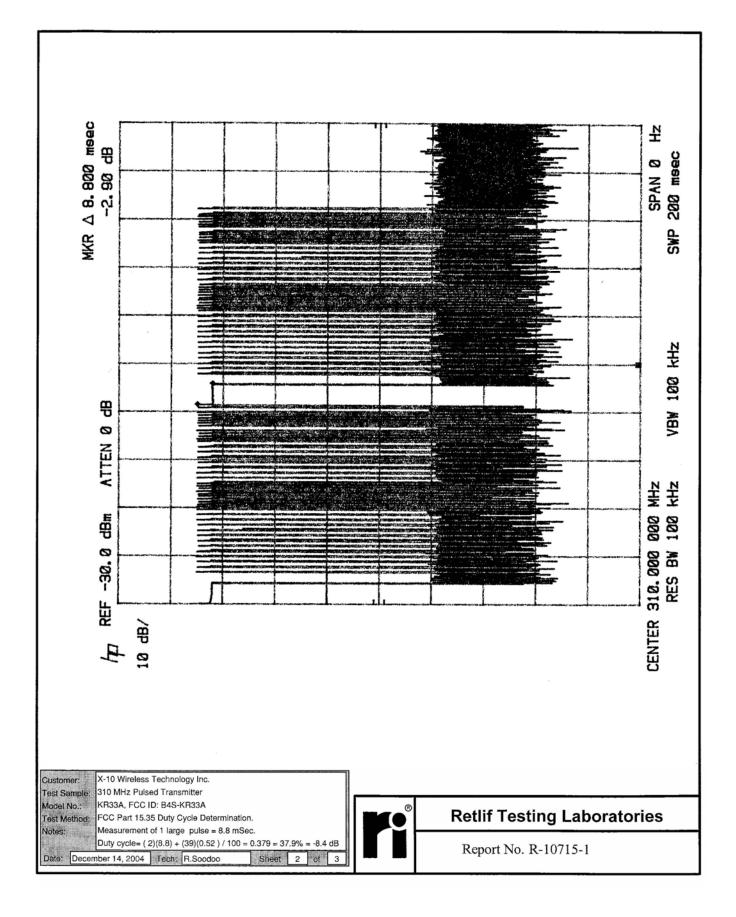


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## FCC 15.231(c) DUTY CYCLE



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MKR A 520.0 µsec -2.60 dB Ł 20.0 msec SPAN Ø SWP VBW 100 kHz 뮉 0 ATTEN 310.000 000 MHz RES BW 100 KHz 围 -30.0 REF CENTER 10 dB/ X-10 Wireless Technology Inc. Customer 310 MHz Pulsed Transmitter Test Sample: KR33A, FCC ID: B4S-KR33A Model No : R **Retlif Testing Laboratories** FCC Part 15.35 Duty Cycle Determination. Test Method: Measurement of 1 small pulse = 0.52 mSec. Notes: Duty cycle= ( 2)(8.8) + (39)(0.52 ) / 100 = 0.379 = 37.9% = -8.4 dB Report No. R-10715-1 Sheet 3 of 3 Date: December 14, 2004 Tech: R.Soodoo