

## Technical Information

| APPLICANT         |                                      | MANUFACTURER      |                                             |
|-------------------|--------------------------------------|-------------------|---------------------------------------------|
| Name:             | <u>X10 (USA), Inc.</u>               | Name:             | <u>X-10 Electronics (Shenzhen) Co. Ltd.</u> |
|                   |                                      |                   | <u>Together Rich Industrial Park B</u>      |
|                   | <u>Blackriver Corporate Park</u>     |                   | <u>Sanwei Industrial District,</u>          |
| Address:          | <u>620 Naches Ave SW, Building A</u> | Address:          | <u>Xixiang Town</u>                         |
|                   |                                      |                   | <u>Baoan County,</u>                        |
| City, State, Zip: | <u>Renton, WA 98057</u>              | City, State, Zip: | <u>Shenzhen, China</u>                      |

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

TEST PROCEDURE: ANSI C63.4:2003

### TEST SAMPLE DESCRIPTION

TEST SAMPLE: 310 and 433.7 MHz Pulsed Transmitter

BRANDNAME(s): X10 (USA)

MODEL(s): IR27A

FCC ID: B4SIR27A

TYPE: Pulsed Transmitter

POWER REQUIREMENTS: 4.5 VDC derived from three alkaline batteries

FREQUENCY OF OPERATION: 310 and 433.9 MHz

APPLICABLE RULE SECTION: Part 15, Subpart C, Section 15.231(a)

### TESTS PERFORMED

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

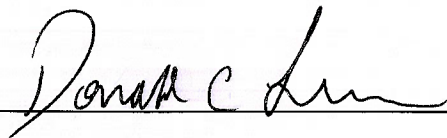
Para. 15.231(b), Radiated Emissions, Spurious Case

Para. 15.231(b), Duty Cycle Determination

Para. 15.231(c), Occupied Bandwidth

## Certification and Signatures

We certify that these Test Results are true results obtained from the tests of the equipment stated, and relates only to the equipment tested. We further certify that the measurements shown in this Test Results package were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.



Donald C. Lerner  
EMC Test Engineer



Nicholas Dragotta  
EMI Laboratory Supervisor

### Non-Warranty Provision

The testing services have been performed, findings obtained and reports prepared in accordance with generally accepted laboratory principles and practices. This warranty is in lieu of all others, either expressed or implied.

### Non-Endorsement

This test report contains only findings and results arrived at after employing the specific test procedures and standards listed herein. It is not intended to constitute a recommendation, endorsement or certification of the product or material tested. This test report may not be used by the client to claim product endorsement by NVLAP, NIST or any agency of the U.S. Government.

## TEST RESULTS

- 15.231 (a): This device transmits a control signal and is used as an: remote control transmitter.
- 15.231 (a)(1) The transmitter is manually operated. Transmission ends within 5 seconds of deactivation.
- 15.231 (a)(2) Transmission ends 5 seconds after activation.
- 15.231 (a)(3): The transmitter does not perform periodic transmissions

### EUT Operating at 310 MHz

- 15.231 (b): The fundamental field strength did not exceed 5833.3  $\mu\text{V/M}$  (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 583.3  $\mu\text{V/M}$  (AVERAGE).
- 15.231 (c) The Bandwidth of the emission was no wider than 0.25% of the center frequency (211 kHz) as measured 20 db down from the modulated carrier.

### EUT Operating at 433.7 MHz

- 15.231 (b): The fundamental field strength did not exceed 10996  $\mu\text{V/M}$  (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 1099.6  $\mu\text{V/M}$  (AVERAGE).
- 15.231 (c) The Bandwidth of the emission was no wider than 0.25% of the center frequency (478 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(a):

| EUT Operating at 310 MHz |     |         |    |
|--------------------------|-----|---------|----|
| 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 = 5833.3  $\mu\text{V/M}$  (AVERAGE) @ 3 Meters

Harmonic Limit = 583.3  $\mu\text{V/M}$  (AVERAGE) @ 3 Meters

| EUT Operating at 433.7 MHz |       |         |    |
|----------------------------|-------|---------|----|
| Frequency                  |       | Limit   |    |
| F1 =                       | 260   | 3750 =  | L1 |
| Fo =                       | 433.7 | 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 = 10996  $\mu\text{V/M}$  (AVERAGE) @ 3 Meters

Harmonic Limit = 1099.5  $\mu\text{V/M}$  (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).

## EUT Operating at 310 MHz

Transmitter On Time = 24.64 milliseconds (maximum)  
 Transmitter Cycle Time = 110 milliseconds  
 Transmitter Duty Cycle = 24.6 %

## CALCULATION

$$\begin{aligned} & \text{1 Large Pulse} = \underline{8.8} \text{ milliseconds} \\ \underline{133} \times \underline{480} \text{ } \mu\text{s (small pulse)} &= \underline{19.81} \text{ milliseconds} \\ \underline{21} + \underline{9} &= \underline{24.64} \text{ milliseconds} \\ \text{Duty Cycle (2464/100)} &= \underline{24.6} \% \\ \text{Correction Factor} = 20 \log \underline{(0.2464)} &= \underline{-12.2} \text{ dB} \end{aligned}$$

## EUT Operating at 433.7 MHz

Transmitter On Time = 113 milliseconds (maximum)  
 Transmitter Cycle Time = 11.88 milliseconds  
 Transmitter Duty Cycle = 11.88 %

## CALCULATION

$$\begin{array}{rcll} & & 1 \text{ Large Pulse} = & \underline{1.72} \text{ Milliseconds} = 5.16 \\ \underline{8} & \times & \underline{0.840} & \mu\text{s (small pulse)} = \underline{6.72} \text{ Milliseconds} \\ & & \underline{5.16} + \underline{6.72} = & \underline{11.88} \text{ Milliseconds} \\ & & \text{Duty Cycle} = & \underline{11.88} \% \\ \text{Correction Factor} = 20 \log (0.1188) & = & -18.5 & \text{dB} \end{array}$$

## 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:

$$\text{minimum bandwidth} = 1/\{\text{minimum pulse width (in seconds)} \times 1.5\} = \text{Hz}$$

Setting pulse desensitization equal to zero and utilizing the minimum observed pulse width of 480  $\mu\text{s}$  yields a minimum required bandwidth of 1388 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 4.34 GHz. All emissions not reported were more than 20 dB below the specified limit.

## EQUIPMENT LIST

### FCC Part 15, Subpart C, Radiated Emissions, Fundamental and Harmonics

| EN   | Type                    | Manufacturer      | Description          | Model No.    | Cal Date   | Due Date   |
|------|-------------------------|-------------------|----------------------|--------------|------------|------------|
| 067  | Open Area Test Site     | Retlif            | 3/10 Meter           | RNY          | 9/12/2006  | 9/12/2009  |
| 128  | Double Ridged Guide     | Electro-Mechanics | 1 GHz - 18 GHz       | 3105         | 2/21/2008  | 2/21/2009  |
| 133  | Broadband Pre-Amplifier | Electro-Metrics   | 10 kHz - 1 GHz, 26dB | BPA-1000     | 4/28/2008  | 4/28/2009  |
| 141  | Spectrum Analyzer       | Hewlett Packard   | 100 Hz - 40 GHz      | 8566B        | 4/30/2008  | 4/30/2009  |
| 141B | Quasi-Peak Adaptor      | Hewlett Packard   | 100 Hz - 1 GHz       | 85650A       | 4/30/2008  | 4/30/2009  |
| 206B | 6.0 dB Attenuator       | Texscan           | 0 - 1.0 GHz          | FP-50 - 6 dB | 4/28/2008  | 4/28/2009  |
| 512  | Graphics Plotter        | Hewlett Packard   | N/A                  | 7470A        | 10/19/2007 | 10/19/2008 |
| 523  | Biconilog               | Electro-Mechanics | 26 - 2000 MHz        | 3142B        | 10/24/2007 | 10/24/2008 |
| 543  | Preamplifier            | Hewlett Packard   | 1.0 GHz - 26.5 GHz   | 8449B        | 9/26/2007  | 9/26/2008  |
| 617  | Interference Analyzer   | Electro-Metrics   | 10 kHz - 1 GHz       | EMC-30       | 10/24/2007 | 10/24/2008 |

### FCC Part 15 Subpart C, Radiated Emissions Spurious Case

| EN   | Type                    | Manufacturer      | Description          | Model No.    | Cal Date   | Due Date   |
|------|-------------------------|-------------------|----------------------|--------------|------------|------------|
| 067  | Open Area Test Site     | Retlif            | 3/10 Meter           | RNY          | 9/12/2006  | 9/12/2009  |
| 128  | Double Ridged Guide     | Electro-Mechanics | 1 GHz - 18 GHz       | 3105         | 2/21/2008  | 2/21/2009  |
| 133  | Broadband Pre-Amplifier | Electro-Metrics   | 10 kHz - 1 GHz, 26dB | BPA-1000     | 4/28/2008  | 4/28/2009  |
| 141  | Spectrum Analyzer       | Hewlett Packard   | 100 Hz - 40 GHz      | 8566B        | 4/30/2008  | 4/30/2009  |
| 141B | Quasi-Peak Adaptor      | Hewlett Packard   | 100 Hz - 1 GHz       | 85650A       | 4/30/2008  | 4/30/2009  |
| 206B | 6.0 dB Attenuator       | Texscan           | 0 - 1.0 GHz          | FP-50 - 6 dB | 4/28/2008  | 4/28/2009  |
| 512  | Graphics Plotter        | Hewlett Packard   | N/A                  | 7470A        | 10/19/2007 | 10/19/2008 |
| 523  | Biconilog               | Electro-Mechanics | 26 - 2000 MHz        | 3142B        | 10/24/2007 | 10/24/2008 |
| 543  | Preamplifier            | Hewlett Packard   | 1.0 GHz - 26.5 GHz   | 8449B        | 9/26/2007  | 9/26/2008  |
| 617  | Interference Analyzer   | Electro-Metrics   | 10 kHz - 1 GHz       | EMC-30       | 10/24/2007 | 10/24/2008 |

### FCC Part 15.231(b), Duty Cycle Determination

| EN   | Type                | Manufacturer    | Description     | Model No. | Cal Date   | Due Date   |
|------|---------------------|-----------------|-----------------|-----------|------------|------------|
| 067  | Open Area Test Site | Retlif          | 3/10 Meter      | RNY       | 9/12/2006  | 9/12/2009  |
| 141  | Spectrum Analyzer   | Hewlett Packard | 100 Hz - 40 GHz | 8566B     | 4/30/2008  | 4/30/2009  |
| 141B | Quasi-Peak Adaptor  | Hewlett Packard | 100 Hz - 1 GHz  | 85650A    | 4/30/2008  | 4/30/2009  |
| 512  | Graphics Plotter    | Hewlett Packard | N/A             | 7470A     | 10/19/2007 | 10/19/2008 |

### FCC Part 15.231(c), Occupied Bandwidth

| EN   | Type                | Manufacturer    | Description     | Model No. | Cal Date   | Due Date   |
|------|---------------------|-----------------|-----------------|-----------|------------|------------|
| 067  | Open Area Test Site | Retlif          | 3/10 Meter      | RNY       | 9/12/2006  | 9/12/2009  |
| 141  | Spectrum Analyzer   | Hewlett Packard | 100 Hz - 40 GHz | 8566B     | 4/30/2008  | 4/30/2009  |
| 141B | Quasi-Peak Adaptor  | Hewlett Packard | 100 Hz - 1 GHz  | 85650A    | 4/30/2008  | 4/30/2009  |
| 512  | Graphics Plotter    | Hewlett Packard | N/A             | 7470A     | 10/19/2007 | 10/19/2008 |

**FCC Part 15 Subpart C, Radiated Emissions,  
Fundamental & Harmonic Emissions, Para. 15.231(a)  
310 MHz Transmitter  
Test Data**



|                 |                                                                                                                                                                                               |                 |               |                   |                   |                   |            |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------|-------------------|-------------------|-------------------|------------|
| Test Method:    | FCC Part 15 Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions,                                                                                                                  |                 |               |                   |                   |                   |            |
| Customer:       | X-10 (USA), Inc.                                                                                                                                                                              |                 |               |                   | Job No.           | R-12494-1         |            |
| Test Sample:    | 310 and 433.7 MHz Pulse Transmitter                                                                                                                                                           |                 |               |                   |                   |                   |            |
| Model No.:      | IR27A                                                                                                                                                                                         |                 |               |                   | FCC ID:           | B4SIR27A          |            |
| Operating Mode: | Continuously transmitting a Pulsed 310.0 MHz signal.                                                                                                                                          |                 |               |                   |                   |                   |            |
| Technician:     | R. Soodoo                                                                                                                                                                                     |                 |               |                   | Date:             | June 12-13, 2008  |            |
| Notes:          | Test Distance: 3 Meters<br>Detector: Peak, Unless otherwise specified                                                                                                                         |                 |               |                   |                   |                   |            |
| Test Freq.      | Antenna Pol./Height                                                                                                                                                                           | EUT Orientation | Meter Reading | Correction Factor | Corrected Reading | Converted Reading | Peak Limit |
| MHz             | (V/H)/Meters                                                                                                                                                                                  | X / Y / Z       | dBμV          | dB                | dBμV/m            | uV/m              | uV/m       |
| 310.0           | V / 1.0                                                                                                                                                                                       | X               | 65.0          | -3.3              | 61.7              | 1216.2            | 58333.0    |
|                 | V / 1.7                                                                                                                                                                                       | Y               | 74.6          | -3.3              | 71.3              | 3672.8            |            |
|                 | V / 1.5                                                                                                                                                                                       | Z               | 67.5          | -3.3              | 64.2              | 1621.8            |            |
|                 | H / 1.0                                                                                                                                                                                       | X               | 78.9          | -3.3              | 75.6              | 6025.6            |            |
|                 | H / 2.2                                                                                                                                                                                       | Y               | 64.1          | -3.3              | 60.8              | 1096.5            |            |
| 310.0           | H / 1.0                                                                                                                                                                                       | Z               | 76.4          | -3.3              | 73.1              | 4518.6            | 58333.0    |
|                 |                                                                                                                                                                                               |                 |               |                   |                   |                   |            |
| 620.0           | V / 1.0                                                                                                                                                                                       | X               | 40.7          | 5.9               | 46.6              | 213.8             | 5833.3     |
|                 | V / 1.0                                                                                                                                                                                       | Y               | 46.6          | 5.9               | 52.5              | 421.7             |            |
|                 | V / 1.0                                                                                                                                                                                       | Z               | 42.8          | 5.9               | 48.7              | 272.3             |            |
|                 | H / 1.0                                                                                                                                                                                       | X               | 46.9          | 5.9               | 52.8              | 436.5             |            |
|                 | H / 1.0                                                                                                                                                                                       | Y               | 40.2          | 5.9               | 46.1              | 201.8             |            |
| 620.0           | H / 1.0                                                                                                                                                                                       | Z               | 44.9          | 5.9               | 50.8              | 346.7             | 5833.3     |
|                 |                                                                                                                                                                                               |                 |               |                   |                   |                   |            |
| 930.0           | V / 1.0                                                                                                                                                                                       | X               | 39.2          | 10.8              | 50.0              | 316.2             | 5833.3     |
|                 | V / 1.0                                                                                                                                                                                       | Y               | 40.9          | 10.8              | 51.7              | 384.6             |            |
|                 | V / 1.0                                                                                                                                                                                       | Z               | 40.6          | 10.8              | 51.4              | 371.5             |            |
|                 | H / 1.0                                                                                                                                                                                       | X               | 40.8          | 10.8              | 51.6              | 380.2             |            |
|                 | H / 1.0                                                                                                                                                                                       | Y               | 34.9          | 10.8              | 45.7              | 192.8             |            |
| 930.0           | H / 1.0                                                                                                                                                                                       | Z               | 37.2          | 10.8              | 48.0              | 251.2             | 5833.3     |
|                 |                                                                                                                                                                                               |                 |               |                   |                   |                   |            |
| 1240.0          | V / 1.0                                                                                                                                                                                       | X               | 43.8          | 1.5               | 45.3              | 184.1             | 5000.0     |
|                 | V / 1.0                                                                                                                                                                                       | Y               | 42.5          | 1.5               | 44.0              | 158.5             |            |
|                 | V / 1.0                                                                                                                                                                                       | Z               | 40.0          | 1.5               | 41.5              | *118.9            |            |
|                 | H / 1.0                                                                                                                                                                                       | X               | 43.5          | 1.5               | 45.0              | 177.8             |            |
|                 | H / 1.0                                                                                                                                                                                       | Y               | 42.5          | 1.5               | 44.0              | 158.5             |            |
| 1240.0          | H / 1.0                                                                                                                                                                                       | Z               | 40.0          | 1.5               | 41.5              | *118.9            | 5000.0     |
|                 |                                                                                                                                                                                               |                 |               |                   |                   |                   |            |
| 1550.0          | V / 1.0                                                                                                                                                                                       | X               | 40.0          | 1.0               | 41.0              | *112.2            | 5000.0     |
|                 | V / 1.0                                                                                                                                                                                       | Y               | 40.0          | 1.0               | 41.0              | *112.2            |            |
|                 | V / 1.0                                                                                                                                                                                       | Z               | 40.0          | 1.0               | 41.0              | *112.2            |            |
|                 | H / 1.0                                                                                                                                                                                       | X               | 40.0          | 1.0               | 41.0              | *112.2            |            |
|                 | H / 1.0                                                                                                                                                                                       | Y               | 40.0          | 1.0               | 41.0              | *112.2            |            |
| 1550.0          | H / 1.0                                                                                                                                                                                       | Z               | 40.0          | 1.0               | 41.0              | *112.2            | 5000.0     |
|                 | The frequency range was scanned from 30 MHz to 3.1 GHz. All emissions not recorded were more than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits. |                 |               |                   |                   |                   |            |
|                 | *= Noise Floor Measurements (minimum sensitivity).                                                                                                                                            |                 |               |                   |                   |                   |            |

|                 |                                                                                                                                                                                               |                 |               |                   |                   |                   |            |
|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------|-------------------|-------------------|-------------------|------------|
| Test Method:    | FCC Part 15 Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions,                                                                                                                  |                 |               |                   |                   |                   |            |
| Customer:       | X-10 (USA), Inc.                                                                                                                                                                              |                 |               |                   | Job No.           | R-12494-1         |            |
| Test Sample:    | 310 and 433.7 MHz Pulse Transmitter                                                                                                                                                           |                 |               |                   |                   |                   |            |
| Model No.:      | IR27A                                                                                                                                                                                         |                 |               |                   | FCC ID:           | B4SIR27A          |            |
| Operating Mode: | Continuously transmitting a Pulsed 310.0 MHz signal.                                                                                                                                          |                 |               |                   |                   |                   |            |
| Technician:     | R. Soodoo                                                                                                                                                                                     |                 |               |                   | Date:             | June 12-13, 2008  |            |
| Notes:          | Test Distance: 3 Meters<br>Detector: Peak, unless otherwise specified                                                                                                                         |                 |               |                   |                   |                   |            |
| Test Freq.      | Antenna Pol./Height                                                                                                                                                                           | EUT Orientation | Meter Reading | Correction Factor | Corrected Reading | Converted Reading | Peak Limit |
| MHz             | (V/H)-Meters                                                                                                                                                                                  | X / Y / Z       | dBμV          | dB                | dBμV/m            | uV/m              | uV/m       |
| 1860.0          | V / 1.0                                                                                                                                                                                       | X               | 40.0          | 2.5               | 42.5              | *133.4            | 5833.3     |
|                 | V / 1.0                                                                                                                                                                                       | Y               | 40.0          | 2.5               | 42.5              | *133.4            |            |
|                 | V / 1.0                                                                                                                                                                                       | Z               | 40.0          | 2.5               | 42.5              | *133.4            |            |
|                 | H / 1.0                                                                                                                                                                                       | X               | 40.0          | 2.5               | 42.5              | *133.4            |            |
|                 | H / 1.0                                                                                                                                                                                       | Y               | 40.0          | 2.5               | 42.5              | *133.4            |            |
| 1860.0          | H / 1.0                                                                                                                                                                                       | Z               | 40.0          | 2.5               | 42.5              | *133.4            | 5833.3     |
|                 |                                                                                                                                                                                               |                 |               |                   |                   |                   |            |
| 2170.0          | V / 1.0                                                                                                                                                                                       | X               | 40.0          | 4.0               | 44.0              | *158.5            | 5833.3     |
|                 | V / 1.0                                                                                                                                                                                       | Y               | 40.0          | 4.0               | 44.0              | *158.5            |            |
|                 | V / 1.0                                                                                                                                                                                       | Z               | 40.0          | 4.0               | 44.0              | *158.5            |            |
|                 | H / 1.0                                                                                                                                                                                       | X               | 40.0          | 4.0               | 44.0              | *158.5            |            |
|                 | H / 1.0                                                                                                                                                                                       | Y               | 40.0          | 4.0               | 44.0              | *158.5            |            |
| 2170.0          | H / 1.0                                                                                                                                                                                       | Z               | 40.0          | 4.0               | 44.0              | *158.5            | 5833.3     |
|                 |                                                                                                                                                                                               |                 |               |                   |                   |                   |            |
| 2480.0          | V / 1.0                                                                                                                                                                                       | X               | 41.2          | 4.7               | 45.9              | *197.2            | 5833.3     |
|                 | V / 1.0                                                                                                                                                                                       | Y               | 41.2          | 4.7               | 45.9              | *197.2            |            |
|                 | V / 1.0                                                                                                                                                                                       | Z               | 41.2          | 4.7               | 45.9              | *197.2            |            |
|                 | H / 1.0                                                                                                                                                                                       | X               | 41.2          | 4.7               | 45.9              | *197.2            |            |
|                 | H / 1.0                                                                                                                                                                                       | Y               | 41.2          | 4.7               | 45.9              | *197.2            |            |
| 2480.0          | H / 1.0                                                                                                                                                                                       | Z               | 41.2          | 4.7               | 45.9              | *197.2            | 5833.3     |
|                 |                                                                                                                                                                                               |                 |               |                   |                   |                   |            |
| 2790.0          | V / 1.0                                                                                                                                                                                       | X               | 41.2          | 6.0               | 47.2              | *229.1            | 5000.0     |
|                 | V / 1.0                                                                                                                                                                                       | Y               | 41.2          | 6.0               | 47.2              | *229.1            |            |
|                 | V / 1.0                                                                                                                                                                                       | Z               | 41.2          | 6.0               | 47.2              | *229.1            |            |
|                 | H / 1.0                                                                                                                                                                                       | X               | 41.2          | 6.0               | 47.2              | *229.1            |            |
|                 | H / 1.0                                                                                                                                                                                       | Y               | 41.2          | 6.0               | 47.2              | *229.1            |            |
| 2790.0          | H / 1.0                                                                                                                                                                                       | Z               | 41.2          | 6.0               | 47.2              | *229.1            | 5000.0     |
|                 |                                                                                                                                                                                               |                 |               |                   |                   |                   |            |
| 3100.0          | V / 1.0                                                                                                                                                                                       | X               | 41.2          | 7.5               | 48.7              | *272.3            | 5833.3     |
|                 | V / 1.0                                                                                                                                                                                       | Y               | 41.2          | 7.5               | 48.7              | *272.3            |            |
|                 | V / 1.0                                                                                                                                                                                       | Z               | 41.2          | 7.5               | 48.7              | *272.3            |            |
|                 | H / 1.0                                                                                                                                                                                       | X               | 41.2          | 7.5               | 48.7              | *272.3            |            |
|                 | H / 1.0                                                                                                                                                                                       | Y               | 41.2          | 7.5               | 48.7              | *272.3            |            |
| 3100.0          | H / 1.0                                                                                                                                                                                       | Z               | 41.2          | 7.5               | 48.7              | *272.3            | 5833.3     |
|                 | The frequency range was scanned from 30 MHz to 3.1 GHz. All emissions not recorded were more than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits. |                 |               |                   |                   |                   |            |
|                 | *=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-12494-1         |            |
| Test Sample:    | 310 and 433.7 MHz Pulse Transmitter                                                              |                 |              |                   |                                 |                   |            |
| Model No.:      | IR27A                                                                                            |                 |              |                   | FCC ID:                         | B4SIR27A          |            |
| Operating Mode: | Continuously transmitting a Pulsed 310.0 MHz signal.                                             |                 |              |                   |                                 |                   |            |
| Technician:     | R. Soodoo                                                                                        |                 |              |                   | Date:                           | June 12-13, 2008  |            |
| Notes:          | Test Distance: 3 Meters                                                                          |                 |              |                   | Duty Cycle: 24.6%               |                   |            |
|                 | Detector: Peak, unless otherwise specified                                                       |                 |              |                   | Duty Cycle Correction: -12.2 dB |                   |            |
| Test Freq.      | Antenna Pol./Height                                                                              | EUT Orientation | Peak Reading | Correction Factor | Corrected Reading               | Converted Reading | Avg. Limit |
| MHz             | (V/H)-Meters                                                                                     | X / Y / Z       | dBμV         | dB                | dBμV/m                          | uV/m              | uV/m       |
| 310.0           | V / 1.0                                                                                          | X               | 61.7         | -12.2             | 49.5                            | 298.5             | 5833.3     |
|                 | V / 1.7                                                                                          | Y               | 71.3         | -12.2             | 59.1                            | 901.6             |            |
|                 | V / 1.5                                                                                          | Z               | 64.2         | -12.2             | 52.0                            | 398.1             |            |
|                 | H / 1.0                                                                                          | X               | 75.6         | -12.2             | 63.4                            | 1479.1            |            |
|                 | H / 2.2                                                                                          | Y               | 60.8         | -12.2             | 48.6                            | 269.2             |            |
| 310.0           | H / 1.0                                                                                          | Z               | 73.1         | -12.2             | 60.9                            | 1109.2            | 5833.3     |
|                 |                                                                                                  |                 |              |                   |                                 |                   |            |
| 620.0           | V / 1.0                                                                                          | X               | 46.6         | -12.2             | 34.4                            | 52.5              | 583.3      |
|                 | V / 1.0                                                                                          | Y               | 52.5         | -12.2             | 40.3                            | 103.5             |            |
|                 | V / 1.0                                                                                          | Z               | 48.7         | -12.2             | 36.5                            | 66.8              |            |
|                 | H / 1.0                                                                                          | X               | 52.8         | -12.2             | 40.6                            | 107.2             |            |
|                 | H / 1.0                                                                                          | Y               | 46.1         | -12.2             | 33.9                            | 49.5              |            |
| 620.0           | H / 1.0                                                                                          | Z               | 50.8         | -12.2             | 38.6                            | 85.1              | 583.3      |
|                 |                                                                                                  |                 |              |                   |                                 |                   |            |
| 930.0           | V / 1.0                                                                                          | X               | 50.0         | -12.2             | 37.8                            | 77.6              | 583.3      |
|                 | V / 1.0                                                                                          | Y               | 51.7         | -12.2             | 39.5                            | 94.4              |            |
|                 | V / 1.0                                                                                          | Z               | 51.4         | -12.2             | 39.2                            | 91.2              |            |
|                 | H / 1.0                                                                                          | X               | 51.6         | -12.2             | 39.4                            | 93.3              |            |
|                 | H / 1.0                                                                                          | Y               | 45.7         | -12.2             | 33.5                            | 47.3              |            |
| 930.0           | H / 1.0                                                                                          | Z               | 48.0         | -12.2             | 35.8                            | 61.7              | 583.3      |
|                 |                                                                                                  |                 |              |                   |                                 |                   |            |
| 1240.0          | V / 1.0                                                                                          | X               | 45.3         | -12.2             | 33.1                            | 45.2              | 500.0      |
|                 | V / 1.0                                                                                          | Y               | 44.0         | -12.2             | 31.8                            | 38.9              |            |
|                 | V / 1.0                                                                                          | Z               | 41.5         | -12.2             | 29.3                            | *29.2             |            |
|                 | H / 1.0                                                                                          | X               | 45.0         | -12.2             | 32.8                            | 43.7              |            |
|                 | H / 1.0                                                                                          | Y               | 44.0         | -12.2             | 31.8                            | 38.9              |            |
| 1240.0          | H / 1.0                                                                                          | Z               | 41.5         | -12.2             | 29.3                            | *29.2             | 500.0      |
|                 |                                                                                                  |                 |              |                   |                                 |                   |            |
| 1550.0          | V / 1.0                                                                                          | X               | 41.0         | -12.2             | 28.8                            | *27.5             | 500.0      |
|                 | V / 1.0                                                                                          | Y               | 41.0         | -12.2             | 28.8                            | *27.5             |            |
|                 | V / 1.0                                                                                          | Z               | 41.0         | -12.2             | 28.8                            | *27.5             |            |
|                 | H / 1.0                                                                                          | X               | 41.0         | -12.2             | 28.8                            | *27.5             |            |
|                 | H / 1.0                                                                                          | Y               | 41.0         | -12.2             | 28.8                            | *27.5             |            |
| 1550.0          | H / 1.0                                                                                          | Z               | 41.0         | -12.2             | 28.8                            | *27.5             | 500.0      |
|                 | The frequency range was scanned from 30 MHz to 3.1 GHz. All emissions not recorded were more     |                 |              |                   |                                 |                   |            |
|                 | Than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits. |                 |              |                   |                                 |                   |            |
|                 | *=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-12494-1         |            |
| Test Sample:    | 310 and 433.7 MHz Pulse Transmitter                                                              |                 |              |                   |                                 |                   |            |
| Model No.:      | IR27A                                                                                            |                 |              |                   | FCC ID:                         | B4SIR27A          |            |
| Operating Mode: | Continuously transmitting a Pulsed 310.0 MHz signal.                                             |                 |              |                   |                                 |                   |            |
| Technician:     | R. Soodoo                                                                                        |                 |              |                   | Date:                           | June 12-13, 2008  |            |
| Notes:          | Test Distance: 3 Meters                                                                          |                 |              |                   | Duty Cycle: 24.6%               |                   |            |
|                 | Detector: Peak, unless otherwise specified                                                       |                 |              |                   | Duty Cycle Correction: -12.2 dB |                   |            |
| Test Freq.      | Antenna Pol./Height                                                                              | EUT Orientation | Peak Reading | Correction Factor | Corrected Reading               | Converted Reading | Avg. Limit |
| MHz             | (V/H)-Meters                                                                                     | X / Y / Z       | dBμV         | dB                | dBμV/m                          | uV/m              | uV/m       |
| 1860.0          | V / 1.0                                                                                          | X               | 42.5         | -12.2             | 30.3                            | *32.7             | 583.3      |
|                 | V / 1.0                                                                                          | Y               | 42.5         | -12.2             | 30.3                            | *32.7             |            |
|                 | V / 1.0                                                                                          | Z               | 42.5         | -12.2             | 30.3                            | *32.7             |            |
|                 | H / 1.0                                                                                          | X               | 42.5         | -12.2             | 30.3                            | *32.7             |            |
|                 | H / 1.0                                                                                          | Y               | 42.5         | -12.2             | 30.3                            | *32.7             |            |
| 1860.0          | H / 1.0                                                                                          | Z               | 42.5         | -12.2             | 30.3                            | *32.7             | 583.3      |
|                 |                                                                                                  |                 |              |                   |                                 |                   |            |
| 2170.0          | V / 1.0                                                                                          | X               | 44.0         | -12.2             | 31.8                            | *38.9             | 583.3      |
|                 | V / 1.0                                                                                          | Y               | 44.0         | -12.2             | 31.8                            | *38.9             |            |
|                 | V / 1.0                                                                                          | Z               | 44.0         | -12.2             | 31.8                            | *38.9             |            |
|                 | H / 1.0                                                                                          | X               | 44.0         | -12.2             | 31.8                            | *38.9             |            |
|                 | H / 1.0                                                                                          | Y               | 44.0         | -12.2             | 31.8                            | *38.9             |            |
| 2170.0          | H / 1.0                                                                                          | Z               | 44.0         | -12.2             | 31.8                            | *38.9             | 583.3      |
|                 |                                                                                                  |                 |              |                   |                                 |                   |            |
| 2480.0          | V / 1.0                                                                                          | X               | 45.9         | -12.2             | 33.7                            | *48.4             | 583.3      |
|                 | V / 1.0                                                                                          | Y               | 45.9         | -12.2             | 33.7                            | *48.4             |            |
|                 | V / 1.0                                                                                          | Z               | 45.9         | -12.2             | 33.7                            | *48.4             |            |
|                 | H / 1.0                                                                                          | X               | 45.9         | -12.2             | 33.7                            | *48.4             |            |
|                 | H / 1.0                                                                                          | Y               | 45.9         | -12.2             | 33.7                            | *48.4             |            |
| 2480.0          | H / 1.0                                                                                          | Z               | 45.9         | -12.2             | 33.7                            | *48.4             | 583.3      |
|                 |                                                                                                  |                 |              |                   |                                 |                   |            |
| 2790.0          | V / 1.0                                                                                          | X               | 47.2         | -12.2             | 35.0                            | *56.2             | 500.0      |
|                 | V / 1.0                                                                                          | Y               | 47.2         | -12.2             | 35.0                            | *56.2             |            |
|                 | V / 1.0                                                                                          | Z               | 47.2         | -12.2             | 35.0                            | *56.2             |            |
|                 | H / 1.0                                                                                          | X               | 47.2         | -12.2             | 35.0                            | *56.2             |            |
|                 | H / 1.0                                                                                          | Y               | 47.2         | -12.2             | 35.0                            | *56.2             |            |
| 2790.0          | H / 1.0                                                                                          | Z               | 47.2         | -12.2             | 35.0                            | *56.2             | 500.0      |
|                 |                                                                                                  |                 |              |                   |                                 |                   |            |
| 3100.0          | V / 1.0                                                                                          | X               | 48.7         | -12.2             | 36.5                            | *66.8             | 583.3      |
|                 | V / 1.0                                                                                          | Y               | 48.7         | -12.2             | 36.5                            | *66.8             |            |
|                 | V / 1.0                                                                                          | Z               | 48.7         | -12.2             | 36.5                            | *66.8             |            |
|                 | H / 1.0                                                                                          | X               | 48.7         | -12.2             | 36.5                            | *66.8             |            |
|                 | H / 1.0                                                                                          | Y               | 48.7         | -12.2             | 36.5                            | *66.8             |            |
| 3100.0          | H / 1.0                                                                                          | Z               | 48.7         | -12.2             | 36.5                            | *66.8             | 583.3      |
|                 | The frequency range was scanned from 30 MHz to 3.1 GHz. All emissions not recorded were more     |                 |              |                   |                                 |                   |            |
|                 | Than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits. |                 |              |                   |                                 |                   |            |
|                 | *=Noise Floor Measurements ( Minimum system sensitivity)                                         |                 |              |                   |                                 |                   |            |

**FCC Part 15 Subpart C, Radiated Emissions,  
Fundamental & Harmonic Emissions, Para. 15.231(a)  
433.7 MHz Transmitter  
Test Data**

|                 |                                                                                                                                                                                                |                 |               |                   |                   |                   |            |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------|-------------------|-------------------|-------------------|------------|
| Test Method:    | FCC Part 15 Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions,                                                                                                                   |                 |               |                   |                   |                   |            |
| Customer:       | X-10 (USA), Inc.                                                                                                                                                                               |                 |               |                   | Job No.           | R-12494-1         |            |
| Test Sample:    | 310 and 433.7 MHz Pulse Transmitter                                                                                                                                                            |                 |               |                   |                   |                   |            |
| Model No.:      | IR27A                                                                                                                                                                                          |                 |               |                   | FCC ID:           | B4SIR27A          |            |
| Operating Mode: | Continuously transmitting a Pulsed 433.7 MHz signal.                                                                                                                                           |                 |               |                   |                   |                   |            |
| Technician:     | R. Soodoo                                                                                                                                                                                      |                 |               |                   | Date:             | June 12, 2008     |            |
| Notes:          | Test Distance: 3 Meters<br>Detector: Peak, Unless otherwise specified                                                                                                                          |                 |               |                   |                   |                   |            |
| Test Freq.      | Antenna Pol./Height                                                                                                                                                                            | EUT Orientation | Meter Reading | Correction Factor | Corrected Reading | Converted Reading | Peak Limit |
| MHz             | (V/H)/Meters                                                                                                                                                                                   | X / Y / Z       | dBμV          | dB                | dBμV/m            | uV/m              | uV/m       |
| 433.7           | V / 1.0                                                                                                                                                                                        | X               | 67.3          | 0.3               | 67.6              | 2398.8            | 10996.0    |
|                 | V / 1.0                                                                                                                                                                                        | Y               | 77.1          | 0.3               | 77.4              | 7413.1            |            |
|                 | V / 1.5                                                                                                                                                                                        | Z               | 76.8          | 0.3               | 77.1              | 7161.4            |            |
|                 | H / 2.1                                                                                                                                                                                        | X               | 65.9          | 0.3               | 66.2              | 2041.7            |            |
|                 | H / 1.7                                                                                                                                                                                        | Y               | 67.5          | 0.3               | 67.8              | 2454.7            |            |
| 433.7           | H / 1.8                                                                                                                                                                                        | Z               | 76.7          | 0.3               | 77.0              | 7079.5            | 10996.0    |
|                 |                                                                                                                                                                                                |                 |               |                   |                   |                   |            |
| 867.4           | V / 1.0                                                                                                                                                                                        | X               | 33.8          | 10.3              | 44.1              | 160.3             | 10996.0    |
|                 | V / 1.5                                                                                                                                                                                        | Y               | 28.7          | 10.3              | 39.0              | 89.1              |            |
|                 | V / 1.6                                                                                                                                                                                        | Z               | 30.7          | 10.3              | 41.0              | 112.2             |            |
|                 | H / 1.0                                                                                                                                                                                        | X               | 29.0          | 10.3              | 39.3              | 92.3              |            |
|                 | H / 1.0                                                                                                                                                                                        | Y               | 23.8          | 10.3              | 34.1              | 50.7              |            |
| 867.4           | H / 1.0                                                                                                                                                                                        | Z               | 27.6          | 10.3              | 37.9              | 78.5              | 10996.0    |
|                 |                                                                                                                                                                                                |                 |               |                   |                   |                   |            |
| 1301.1          | V / 1.0                                                                                                                                                                                        | X               | 44.3          | 1.5               | 45.8              | 195.0             | 5000.0     |
|                 | V / 1.0                                                                                                                                                                                        | Y               | 42.5          | 1.5               | 44.0              | 158.5             |            |
|                 | V / 1.0                                                                                                                                                                                        | Z               | 44.5          | 1.5               | 46.0              | 199.5             |            |
|                 | H / 1.0                                                                                                                                                                                        | X               | 43.2          | 1.5               | 44.7              | 171.8             |            |
|                 | H / 1.0                                                                                                                                                                                        | Y               | 42.2          | 1.5               | 43.7              | 153.1             |            |
| 1301.1          | H / 1.0                                                                                                                                                                                        | Z               | 43.1          | 1.5               | 44.6              | 169.8             | 5000.0     |
|                 |                                                                                                                                                                                                |                 |               |                   |                   |                   |            |
| 1734.8          | V / 1.1                                                                                                                                                                                        | X               | 44.3          | 2.1               | 46.4              | 208.9             | 10996.0    |
|                 | V / 1.0                                                                                                                                                                                        | Y               | 43.4          | 2.1               | 45.5              | 188.4             |            |
|                 | V / 1.0                                                                                                                                                                                        | Z               | 43.7          | 2.1               | 45.8              | 195.0             |            |
|                 | H / 1.0                                                                                                                                                                                        | X               | 46.9          | 2.1               | 49.0              | 281.8             |            |
|                 | H / 1.0                                                                                                                                                                                        | Y               | 43.6          | 2.1               | 45.7              | 192.8             |            |
| 1734.8          | H / 1.0                                                                                                                                                                                        | Z               | 42.4          | 2.1               | 44.5              | 167.9             | 10996.0    |
|                 |                                                                                                                                                                                                |                 |               |                   |                   |                   |            |
| 2168.6          | V / 1.0                                                                                                                                                                                        | X               | 40.2          | 4.0               | 44.2              | *162.2            | 10996.0    |
|                 | V / 1.0                                                                                                                                                                                        | Y               | 40.2          | 4.0               | 44.2              | *162.2            |            |
|                 | V / 1.0                                                                                                                                                                                        | Z               | 40.2          | 4.0               | 44.2              | *162.2            |            |
|                 | H / 1.0                                                                                                                                                                                        | X               | 40.2          | 4.0               | 44.2              | *162.2            |            |
|                 | H / 1.0                                                                                                                                                                                        | Y               | 40.2          | 4.0               | 44.2              | *162.2            |            |
| 2168.6          | H / 1.0                                                                                                                                                                                        | Z               | 40.2          | 4.0               | 44.2              | *162.2            | 10996.0    |
|                 | The frequency range was scanned from 30 MHz to 4.34 GHz. All emissions not recorded were more than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits. |                 |               |                   |                   |                   |            |
|                 | *= Noise Floor Measurements (minimum sensitivity).                                                                                                                                             |                 |               |                   |                   |                   |            |

|                 |                                                                                                                                                                                                |                 |               |                   |                   |                   |            |
|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------|---------------|-------------------|-------------------|-------------------|------------|
| Test Method:    | FCC Part 15 Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions,                                                                                                                   |                 |               |                   |                   |                   |            |
| Customer:       | X-10 (USA), Inc.                                                                                                                                                                               |                 |               |                   | Job No.           | R-12494-1         |            |
| Test Sample:    | 310 and 433.7 MHz Pulse Transmitter                                                                                                                                                            |                 |               |                   |                   |                   |            |
| Model No.:      | IR27A                                                                                                                                                                                          |                 |               |                   | FCC ID:           | B4SIR27A          |            |
| Operating Mode: | Continuously transmitting a Pulsed 433.7 MHz signal.                                                                                                                                           |                 |               |                   |                   |                   |            |
| Technician:     | R. Soodoo                                                                                                                                                                                      |                 |               |                   | Date:             | June 12, 2008     |            |
| Notes:          | Test Distance: 3 Meters<br>Detector: Peak, unless otherwise specified                                                                                                                          |                 |               |                   |                   |                   |            |
| Test Freq.      | Antenna Pol./Height                                                                                                                                                                            | EUT Orientation | Meter Reading | Correction Factor | Corrected Reading | Converted Reading | Peak Limit |
| MHz             | (V/H)-Meters                                                                                                                                                                                   | X / Y / Z       | dBμV          | dB                | dBμV/m            | uV/m              | uV/m       |
| 2602.3          | V / 1.0                                                                                                                                                                                        | X               | 41.8          | 5.0               | 46.8              | *218.8            | 10996.0    |
|                 | V / 1.0                                                                                                                                                                                        | Y               | 41.8          | 5.0               | 46.8              | *218.8            |            |
|                 | V / 1.0                                                                                                                                                                                        | Z               | 41.8          | 5.0               | 46.8              | *218.8            |            |
|                 | H / 1.0                                                                                                                                                                                        | X               | 41.8          | 5.0               | 46.8              | *218.8            |            |
|                 | H / 1.0                                                                                                                                                                                        | Y               | 41.8          | 5.0               | 46.8              | *218.8            |            |
| 2602.3          | H / 1.0                                                                                                                                                                                        | Z               | 41.8          | 5.0               | 46.8              | *218.8            | 10996.0    |
|                 |                                                                                                                                                                                                |                 |               |                   |                   |                   |            |
| 3036.0          | V / 1.0                                                                                                                                                                                        | X               | 41.8          | 7.2               | 49.0              | *281.8            | 10996.0    |
|                 | V / 1.0                                                                                                                                                                                        | Y               | 41.8          | 7.2               | 49.0              | *281.8            |            |
|                 | V / 1.0                                                                                                                                                                                        | Z               | 41.8          | 7.2               | 49.0              | *281.8            |            |
|                 | H / 1.0                                                                                                                                                                                        | X               | 41.8          | 7.2               | 49.0              | *281.8            |            |
|                 | H / 1.0                                                                                                                                                                                        | Y               | 41.8          | 7.2               | 49.0              | *281.8            |            |
| 3036.0          | H / 1.0                                                                                                                                                                                        | Z               | 41.8          | 7.2               | 49.0              | *281.8            | 10996.0    |
|                 |                                                                                                                                                                                                |                 |               |                   |                   |                   |            |
| 3469.7          | V / 1.0                                                                                                                                                                                        | X               | 38.5          | 9.6               | 48.1              | *254.1            | 10996.0    |
|                 | V / 1.0                                                                                                                                                                                        | Y               | 38.5          | 9.6               | 48.1              | *254.1            |            |
|                 | V / 1.0                                                                                                                                                                                        | Z               | 38.5          | 9.6               | 48.1              | *254.1            |            |
|                 | H / 1.0                                                                                                                                                                                        | X               | 38.5          | 9.6               | 48.1              | *254.1            |            |
|                 | H / 1.0                                                                                                                                                                                        | Y               | 38.5          | 9.6               | 48.1              | *254.1            |            |
| 3469.7          | H / 1.0                                                                                                                                                                                        | Z               | 38.5          | 9.6               | 48.1              | *254.1            | 10996.0    |
|                 |                                                                                                                                                                                                |                 |               |                   |                   |                   |            |
| 3903.4          | V / 1.0                                                                                                                                                                                        | X               | 40.4          | 12.8              | 53.2              | *457.1            | 5000.0     |
|                 | V / 1.0                                                                                                                                                                                        | Y               | 40.4          | 12.8              | 53.2              | *457.1            |            |
|                 | V / 1.0                                                                                                                                                                                        | Z               | 40.4          | 12.8              | 53.2              | *457.1            |            |
|                 | H / 1.0                                                                                                                                                                                        | X               | 40.4          | 12.8              | 53.2              | *457.1            |            |
|                 | H / 1.0                                                                                                                                                                                        | Y               | 40.4          | 12.8              | 53.2              | *457.1            |            |
| 3903.4          | H / 1.0                                                                                                                                                                                        | Z               | 40.4          | 12.8              | 53.2              | *457.1            | 5000.0     |
|                 |                                                                                                                                                                                                |                 |               |                   |                   |                   |            |
| 4337.0          | V / 1.0                                                                                                                                                                                        | X               | 40.4          | 13.2              | 53.6              | *478.6            | 5000.0     |
|                 | V / 1.0                                                                                                                                                                                        | Y               | 40.4          | 13.2              | 53.6              | *478.6            |            |
|                 | V / 1.0                                                                                                                                                                                        | Z               | 40.4          | 13.2              | 53.6              | *478.6            |            |
|                 | H / 1.0                                                                                                                                                                                        | X               | 40.4          | 13.2              | 53.6              | *478.6            |            |
|                 | H / 1.0                                                                                                                                                                                        | Y               | 40.4          | 13.2              | 53.6              | *478.6            |            |
| 4337.0          | H / 1.0                                                                                                                                                                                        | Z               | 40.4          | 13.2              | 53.6              | *478.6            | 5000.0     |
|                 | The frequency range was scanned from 30 MHz to 4.34 GHz. All emissions not recorded were more than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits. |                 |               |                   |                   |                   |            |
|                 | *=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-12494-1         |            |
| Test Sample:    | 310 and 433.7 MHz Pulse Transmitter                                                              |                 |              |                   |                                |                   |            |
| Model No.:      | IR27A                                                                                            |                 |              |                   | FCC ID:                        | B4SIR27A          |            |
| Operating Mode: | Continuously transmitting a Pulsed 433.7 MHz signal.                                             |                 |              |                   |                                |                   |            |
| Technician:     | R. Soodoo                                                                                        |                 |              |                   | Date:                          | June 12, 2008     |            |
| Notes:          | Test Distance: 3 Meters                                                                          |                 |              |                   | Duty Cycle: 11.9%              |                   |            |
|                 | Detector: Peak, unless otherwise specified                                                       |                 |              |                   | Duty Cycle Correction: -18.5dB |                   |            |
| Test Freq.      | Antenna Pol./Height                                                                              | EUT Orientation | Peak Reading | Correction Factor | Corrected Reading              | Converted Reading | Avg. Limit |
| MHz             | (V/H)-Meters                                                                                     | X / Y / Z       | dBμV         | dB                | dBμV/m                         | uV/m              | uV/m       |
| 433.7           | V / 1.0                                                                                          | X               | 67.6         | -18.5             | 49.1                           | 285.1             | 10996.0    |
|                 | V / 1.0                                                                                          | Y               | 77.4         | -18.5             | 58.9                           | 881.0             |            |
|                 | V / 1.5                                                                                          | Z               | 77.1         | -18.5             | 58.6                           | 851.1             |            |
|                 | H / 2.1                                                                                          | X               | 66.2         | -18.5             | 47.7                           | 242.7             |            |
|                 | H / 1.7                                                                                          | Y               | 67.8         | -18.5             | 49.3                           | 291.7             |            |
| 433.7           | H / 1.8                                                                                          | Z               | 77.0         | -18.5             | 58.5                           | 841.4             | 10996.0    |
|                 |                                                                                                  |                 |              |                   |                                |                   |            |
| 867.4           | V / 1.0                                                                                          | X               | 44.1         | -18.5             | 25.6                           | 19.1              | 1099.5     |
|                 | V / 1.5                                                                                          | Y               | 39.0         | -18.5             | 20.5                           | 10.6              |            |
|                 | V / 1.6                                                                                          | Z               | 41.0         | -18.5             | 22.5                           | 13.3              |            |
|                 | H / 1.0                                                                                          | X               | 39.3         | -18.5             | 20.8                           | 11.0              |            |
|                 | H / 1.0                                                                                          | Y               | 34.1         | -18.5             | 15.6                           | 6.0               |            |
| 867.4           | H / 1.0                                                                                          | Z               | 37.9         | -18.5             | 19.4                           | 9.3               | 1099.5     |
|                 |                                                                                                  |                 |              |                   |                                |                   |            |
| 1301.1          | V / 1.0                                                                                          | X               | 45.8         | -18.5             | 27.3                           | 23.2              | 500.0      |
|                 | V / 1.0                                                                                          | Y               | 44.0         | -18.5             | 25.5                           | 18.8              |            |
|                 | V / 1.0                                                                                          | Z               | 46.0         | -18.5             | 27.5                           | 23.7              |            |
|                 | H / 1.0                                                                                          | X               | 44.7         | -18.5             | 26.2                           | 20.4              |            |
|                 | H / 1.0                                                                                          | Y               | 43.7         | -18.5             | 25.2                           | 18.2              |            |
| 1301.1          | H / 1.0                                                                                          | Z               | 44.6         | -18.5             | 26.1                           | 20.2              | 500.0      |
|                 |                                                                                                  |                 |              |                   |                                |                   |            |
| 1734.8          | V / 1.1                                                                                          | X               | 46.4         | -18.5             | 27.9                           | 24.8              | 1099.5     |
|                 | V / 1.0                                                                                          | Y               | 45.5         | -18.5             | 27.0                           | 22.4              |            |
|                 | V / 1.0                                                                                          | Z               | 45.8         | -18.5             | 27.3                           | 23.2              |            |
|                 | H / 1.0                                                                                          | X               | 49.0         | -18.5             | 30.5                           | 33.5              |            |
|                 | H / 1.0                                                                                          | Y               | 45.7         | -18.5             | 27.2                           | 22.9              |            |
| 1734.8          | H / 1.0                                                                                          | Z               | 44.5         | -18.5             | 26.0                           | 20.0              | 1099.5     |
|                 |                                                                                                  |                 |              |                   |                                |                   |            |
| 2168.6          | V / 1.0                                                                                          | X               | 44.2         | -18.5             | 25.7                           | *19.3             | 1099.5     |
|                 | V / 1.0                                                                                          | Y               | 44.2         | -18.5             | 25.7                           | *19.3             |            |
|                 | V / 1.0                                                                                          | Z               | 44.2         | -18.5             | 25.7                           | *19.3             |            |
|                 | H / 1.0                                                                                          | X               | 44.2         | -18.5             | 25.7                           | *19.3             |            |
|                 | H / 1.0                                                                                          | Y               | 44.2         | -18.5             | 25.7                           | *19.3             |            |
| 2168.6          | H / 1.0                                                                                          | Z               | 44.2         | -18.5             | 25.7                           | *19.3             | 1099.5     |
|                 | The frequency range was scanned from 30 MHz to 4.34 GHz. All emissions not recorded were more    |                 |              |                   |                                |                   |            |
|                 | Than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits. |                 |              |                   |                                |                   |            |
|                 | *=Noise Floor Measurements ( Minimum system sensitivity)                                         |                 |              |                   |                                |                   |            |



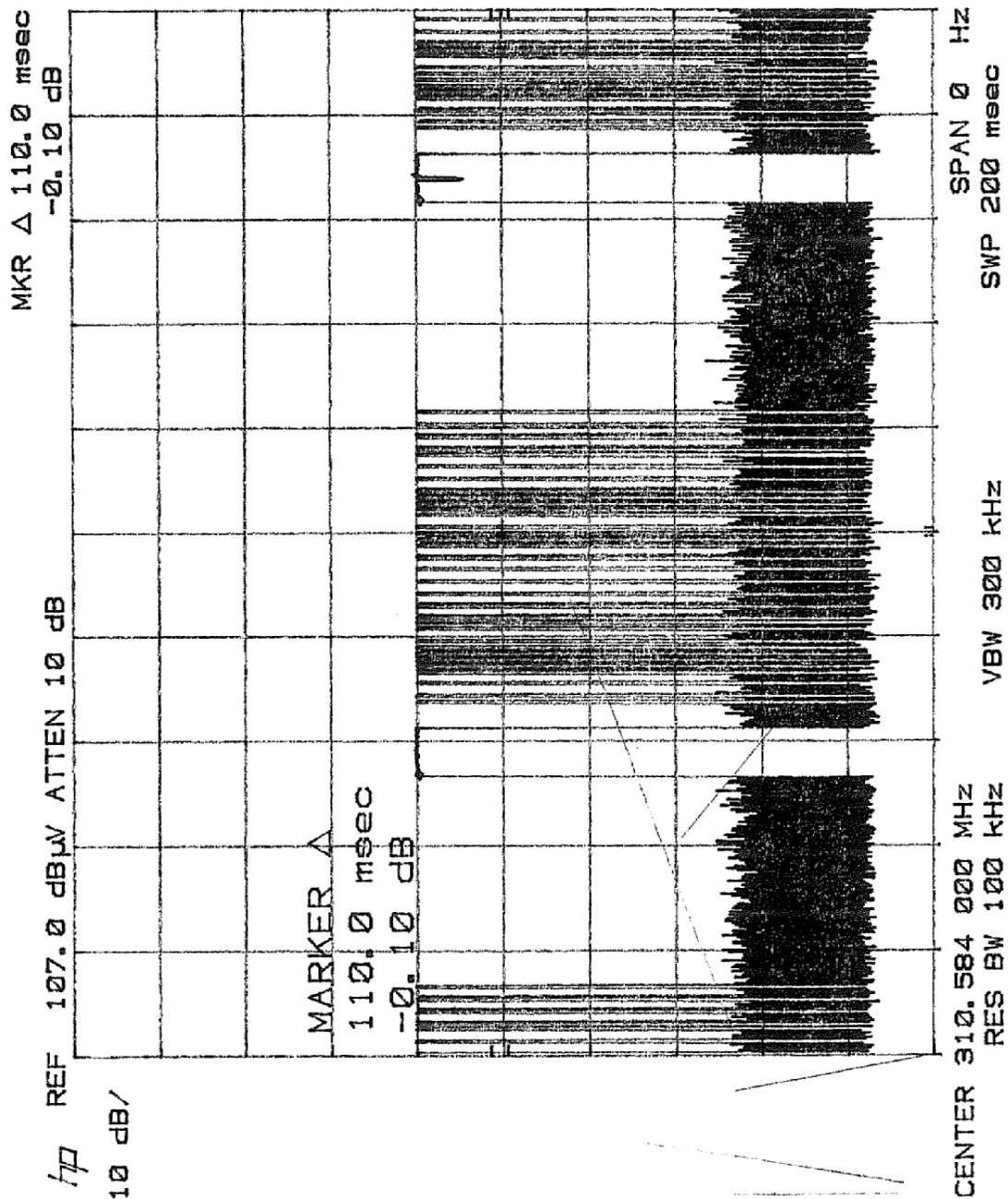
|                 |                                                                                                  |                 |              |                   |                                 |                   |            |
|-----------------|--------------------------------------------------------------------------------------------------|-----------------|--------------|-------------------|---------------------------------|-------------------|------------|
| Test Method:    | FCC Part 15 Subpart C, Radiated Emissions, Fundamental & Harmonic Emissions,                     |                 |              |                   |                                 |                   |            |
| Customer:       | X-10 (USA), Inc.                                                                                 |                 |              |                   | Job No.                         | R-12494-1         |            |
| Test Sample:    | 310 and 433.7 MHz Pulse Transmitter                                                              |                 |              |                   |                                 |                   |            |
| Model No.:      | IR27A                                                                                            |                 |              |                   | FCC ID:                         | B4SIR27A          |            |
| Operating Mode: | Continuously transmitting a Pulsed 433.7 MHz signal.                                             |                 |              |                   |                                 |                   |            |
| Technician:     | R. Soodoo                                                                                        |                 |              |                   | Date:                           | June 12, 2008     |            |
| Notes:          | Test Distance: 3 Meters                                                                          |                 |              |                   | Duty Cycle: 11.8%               |                   |            |
|                 | Detector: Peak, unless otherwise specified                                                       |                 |              |                   | Duty Cycle Correction: -18.5 dB |                   |            |
| Test Freq.      | Antenna Pol./Height                                                                              | EUT Orientation | Peak Reading | Correction Factor | Corrected Reading               | Converted Reading | Avg. Limit |
| MHz             | (V/H)-Meters                                                                                     | X / Y / Z       | dBμV         | dB                | dBμV/m                          | uV/m              | uV/m       |
| 2602.3          | V / 1.0                                                                                          | X               | 46.8         | -18.5             | 28.3                            | *26.0             | 1099.5     |
|                 | V / 1.0                                                                                          | Y               | 46.8         | -18.5             | 28.3                            | *26.0             |            |
|                 | V / 1.0                                                                                          | Z               | 46.8         | -18.5             | 28.3                            | *26.0             |            |
|                 | H / 1.0                                                                                          | X               | 46.8         | -18.5             | 28.3                            | *26.0             |            |
|                 | H / 1.0                                                                                          | Y               | 46.8         | -18.5             | 28.3                            | *26.0             |            |
| 2602.3          | H / 1.0                                                                                          | Z               | 46.8         | -18.5             | 28.3                            | *26.0             | 1099.5     |
|                 |                                                                                                  |                 |              |                   |                                 |                   |            |
| 3036.0          | V / 1.0                                                                                          | X               | 49.0         | -18.5             | 30.5                            | *33.5             | 1099.5     |
|                 | V / 1.0                                                                                          | Y               | 49.0         | -18.5             | 30.5                            | *33.5             |            |
|                 | V / 1.0                                                                                          | Z               | 49.0         | -18.5             | 30.5                            | *33.5             |            |
|                 | H / 1.0                                                                                          | X               | 49.0         | -18.5             | 30.5                            | *33.5             |            |
|                 | H / 1.0                                                                                          | Y               | 49.0         | -18.5             | 30.5                            | *33.5             |            |
| 3036.0          | H / 1.0                                                                                          | Z               | 49.0         | -18.5             | 30.5                            | *33.5             | 1099.5     |
|                 |                                                                                                  |                 |              |                   |                                 |                   |            |
| 3469.7          | V / 1.0                                                                                          | X               | 48.1         | -18.5             | 29.6                            | *30.2             | 1099.5     |
|                 | V / 1.0                                                                                          | Y               | 48.1         | -18.5             | 29.6                            | *30.2             |            |
|                 | V / 1.0                                                                                          | Z               | 48.1         | -18.5             | 29.6                            | *30.2             |            |
|                 | H / 1.0                                                                                          | X               | 48.1         | -18.5             | 29.6                            | *30.2             |            |
|                 | H / 1.0                                                                                          | Y               | 48.1         | -18.5             | 29.6                            | *30.2             |            |
| 3469.7          | H / 1.0                                                                                          | Z               | 48.1         | -18.5             | 29.6                            | *30.2             | 1099.5     |
|                 |                                                                                                  |                 |              |                   |                                 |                   |            |
| 3903.4          | V / 1.0                                                                                          | X               | 53.2         | -18.5             | 34.7                            | *54.3             | 500.0      |
|                 | V / 1.0                                                                                          | Y               | 53.2         | -18.5             | 34.7                            | *54.3             |            |
|                 | V / 1.0                                                                                          | Z               | 53.2         | -18.5             | 34.7                            | *54.3             |            |
|                 | H / 1.0                                                                                          | X               | 53.2         | -18.5             | 34.7                            | *54.3             |            |
|                 | H / 1.0                                                                                          | Y               | 53.2         | -18.5             | 34.7                            | *54.3             |            |
| 3903.4          | H / 1.0                                                                                          | Z               | 53.2         | -18.5             | 34.7                            | *54.3             | 500.0      |
|                 |                                                                                                  |                 |              |                   |                                 |                   |            |
| 4337.0          | V / 1.0                                                                                          | X               | 53.6         | -18.5             | 35.1                            | *56.9             | 500.0      |
|                 | V / 1.0                                                                                          | Y               | 53.6         | -18.5             | 35.1                            | *56.9             |            |
|                 | V / 1.0                                                                                          | Z               | 53.6         | -18.5             | 35.1                            | *56.9             |            |
|                 | H / 1.0                                                                                          | X               | 53.6         | -18.5             | 35.1                            | *56.9             |            |
|                 | H / 1.0                                                                                          | Y               | 53.6         | -18.5             | 35.1                            | *56.9             |            |
| 4337.0          | H / 1.0                                                                                          | Z               | 53.6         | -18.5             | 35.1                            | *56.9             | 500.0      |
|                 | The frequency range was scanned from 30 MHz to 4.34 GHz. All emissions not recorded were more    |                 |              |                   |                                 |                   |            |
|                 | Than 20 dB below the specified limit. Emissions from the EUT do not exceed the specified limits. |                 |              |                   |                                 |                   |            |
|                 | *=Noise Floor Measurements ( Minimum system sensitivity)                                         |                 |              |                   |                                 |                   |            |

**FCC Part 15, Subpart C, Radiated Emissions Spurious Case, 30 MHz to 4.34 GHz,  
Paragraph 15.231(b)  
Test Data**

|                 |                                                                                          |                 |                |                   |                   |                   |               |
|-----------------|------------------------------------------------------------------------------------------|-----------------|----------------|-------------------|-------------------|-------------------|---------------|
| Test Method:    | FCC Part 15, Subpart C, Radiated Emissions Spurious Case, 30 MHz to 1 GHz, Para:15.23(b) |                 |                |                   |                   |                   |               |
| Customer:       | X-10 (USA), Inc.                                                                         |                 |                |                   | Job No.:          | R-12494-1         |               |
| Test Sample:    | 310 and 433.7 MHz Pulse Transmitter                                                      |                 |                |                   |                   |                   |               |
| Model No.:      | IR27A                                                                                    |                 |                |                   | FCC ID:           | B4SIR27A          |               |
| Operating Mode: | Continuously transmitting a Pulsed 310.0 MHz signal.                                     |                 |                |                   |                   |                   |               |
| Technician:     | R. Soodoo                                                                                |                 |                |                   | Date:             | June 13, 2008     |               |
| Notes:          | Test Distance: 3 Meters<br>Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz            |                 |                |                   | Temp: 32.0°C      |                   | Humidity: 26% |
| Frequency       | 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           |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
| 88.00           |                                                                                          |                 |                |                   |                   |                   | 100           |
| 88.00           |                                                                                          |                 |                |                   |                   |                   | 150           |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
| 110.2           | V / 1.0                                                                                  | 200.0           | 12.0           | 10.0              | 22.0              | 12.6              |               |
| 111.6           | V / 1.0                                                                                  | 200.0           | 11.0           | 10.0              | 21.0              | 11.2              |               |
| 116.0           | V / 1.0                                                                                  | 200.0           | 14.0           | 9.7               | 23.7              | 15.3              |               |
| 119.0           | V / 1.0                                                                                  | 200.0           | 12.0           | 9.6               | 21.6              | 12.0              |               |
| 120.3           | V / 1.0                                                                                  | 200.0           | 13.0           | 9.4               | 22.4              | 13.2              |               |
| 121.9           | V / 1.0                                                                                  | 200.0           | 11.0           | 9.4               | 20.4              | 10.5              |               |
| 123.0           | V / 1.0                                                                                  | 200.0           | 16.0           | 9.4               | 25.4              | 18.6              |               |
| 124.6           | V / 1.0                                                                                  | 200.0           | 13.0           | 9.4               | 22.4              | 13.2              |               |
| 126.0           | H / 2.0                                                                                  | 86.0            | 18.0           | 9.4               | 27.4              | 23.4              |               |
| 128.8           | V / 1.0                                                                                  | 200.0           | 18.0           | 9.4               | 27.4              | 23.4              |               |
| 130.6           | V / 1.0                                                                                  | 200.0           | 17.0           | 9.3               | 26.3              | 20.7              |               |
| 133.0           | H / 1.0                                                                                  | 200.0           | 16.0           | 9.5               | 25.5              | 18.8              |               |
| 138.8           | H / 1.0                                                                                  | 200.0           | 13.0           | 10.0              | 23.0              | 14.1              |               |
| 141.4           | V / 1.0                                                                                  | 200.0           | 10.0           | 10.1              | 20.1              | 10.1              |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   | 150           |
| 216.0           |                                                                                          |                 |                |                   |                   |                   | 200           |
| 216.0           |                                                                                          |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
| 960.00          |                                                                                          |                 |                |                   |                   |                   | 200           |
| 960.00          |                                                                                          |                 |                |                   |                   |                   | 500           |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
| 4340.0          |                                                                                          |                 |                |                   |                   |                   | 500           |
|                 | The frequency range was scanned from 30 MHz to 4.34 GHz.                                 |                 |                |                   |                   |                   |               |
|                 | The emissions observed from the EUT do not exceed the specified limits.                  |                 |                |                   |                   |                   |               |
|                 | Emissions not recorded were more than 20dB under the specified limit.                    |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |

|                 |                                                                                          |                 |                |                   |                   |                   |               |
|-----------------|------------------------------------------------------------------------------------------|-----------------|----------------|-------------------|-------------------|-------------------|---------------|
| Test Method:    | FCC Part 15, Subpart C, Radiated Emissions Spurious Case, 30 MHz to 1 GHz, Para:15.23(b) |                 |                |                   |                   |                   |               |
| Customer:       | X-10 (USA), Inc.                                                                         |                 |                |                   | Job No.:          | R-12494-1         |               |
| Test Sample:    | 310 and 433.7 MHz Pulse Transmitter                                                      |                 |                |                   |                   |                   |               |
| Model No.:      | IR27A                                                                                    |                 |                | FCC ID:           | B4SIR27A          |                   |               |
| Operating Mode: | Continuously transmitting a Pulsed 433.7 MHz signal.                                     |                 |                |                   |                   |                   |               |
| Technician:     | R. Soodoo                                                                                |                 |                | Date:             | June 12, 2008     |                   |               |
| Notes:          | Test Distance: 3 Meters<br>Detector: Quasi-Peak Below 1 GHz, Peak above 1 GHz            |                 |                |                   | Temp: 32.0°C      |                   | Humidity: 26% |
| Frequency       | 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           |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
| 88.00           |                                                                                          |                 |                |                   |                   |                   | 100           |
| 88.00           |                                                                                          |                 |                |                   |                   |                   | 150           |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
| 110.2           | V / 1.0                                                                                  | 200.0           | 12.0           | 10.0              | 22.0              | 12.6              |               |
| 111.6           | V / 1.0                                                                                  | 200.0           | 11.0           | 10.0              | 21.0              | 11.2              |               |
| 116.0           | V / 1.0                                                                                  | 200.0           | 14.0           | 9.7               | 23.7              | 15.3              |               |
| 119.0           | V / 1.0                                                                                  | 200.0           | 12.0           | 9.6               | 21.6              | 12.0              |               |
| 120.3           | V / 1.0                                                                                  | 200.0           | 13.0           | 9.4               | 22.4              | 13.2              |               |
| 121.9           | V / 1.0                                                                                  | 200.0           | 11.0           | 9.4               | 20.4              | 10.5              |               |
| 123.0           | V / 1.0                                                                                  | 200.0           | 16.0           | 9.4               | 25.4              | 18.6              |               |
| 124.6           | V / 1.0                                                                                  | 200.0           | 13.0           | 9.4               | 22.4              | 13.2              |               |
| 126.0           | H / 2.0                                                                                  | 86.0            | 18.0           | 9.4               | 27.4              | 23.4              |               |
| 128.8           | V / 1.0                                                                                  | 200.0           | 18.0           | 9.4               | 27.4              | 23.4              |               |
| 130.6           | V / 1.0                                                                                  | 200.0           | 17.0           | 9.3               | 26.3              | 20.7              |               |
| 133.0           | H / 1.0                                                                                  | 200.0           | 16.0           | 9.5               | 25.5              | 18.8              |               |
| 138.8           | H / 1.0                                                                                  | 200.0           | 13.0           | 10.0              | 23.0              | 14.1              |               |
| 141.4           | V / 1.0                                                                                  | 200.0           | 10.0           | 10.1              | 20.1              | 10.1              |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   | 150           |
| 216.0           |                                                                                          |                 |                |                   |                   |                   | 200           |
| 216.0           |                                                                                          |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
| 960.00          |                                                                                          |                 |                |                   |                   |                   | 200           |
| 960.00          |                                                                                          |                 |                |                   |                   |                   | 500           |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |
| 4340.0          |                                                                                          |                 |                |                   |                   |                   | 500           |
|                 | The frequency range was scanned from 30 MHz to 4.34 GHz.                                 |                 |                |                   |                   |                   |               |
|                 | The emissions observed from the EUT do not exceed the specified limits.                  |                 |                |                   |                   |                   |               |
|                 | Emissions not recorded were more than 20dB under the specified limit.                    |                 |                |                   |                   |                   |               |
|                 |                                                                                          |                 |                |                   |                   |                   |               |

**FCC Part 15.231(b), Duty Cycle Determination  
310 MHz Transmitter  
Test Data**

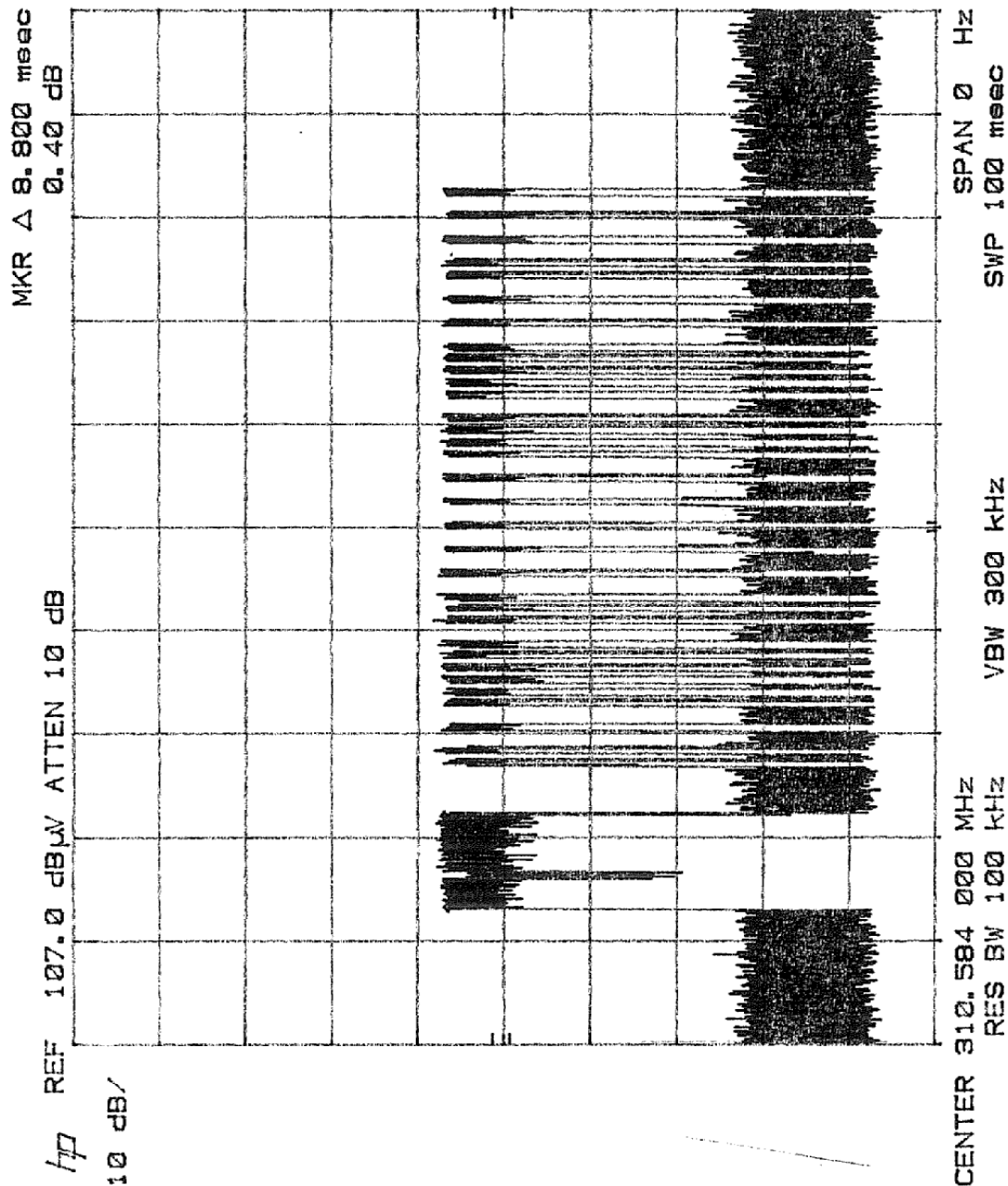


**Test Method:** FCC Part 15.35, Duty Cycle Determination.

**Notes:** Measurement of cycle time = 110.0mSec.

**FCC ID.:** B4SIR27A

|                     |                                      |              |
|---------------------|--------------------------------------|--------------|
| Customer            | X-10 (USA), Inc.                     |              |
| Test Sample         | 310 and 433.7 MHz Pulsed Transmitter |              |
| Model No.:          | IR27A                                |              |
| Date: June 11, 2008 | Tech: R.Soodoo                       | Sheet 1 of 4 |

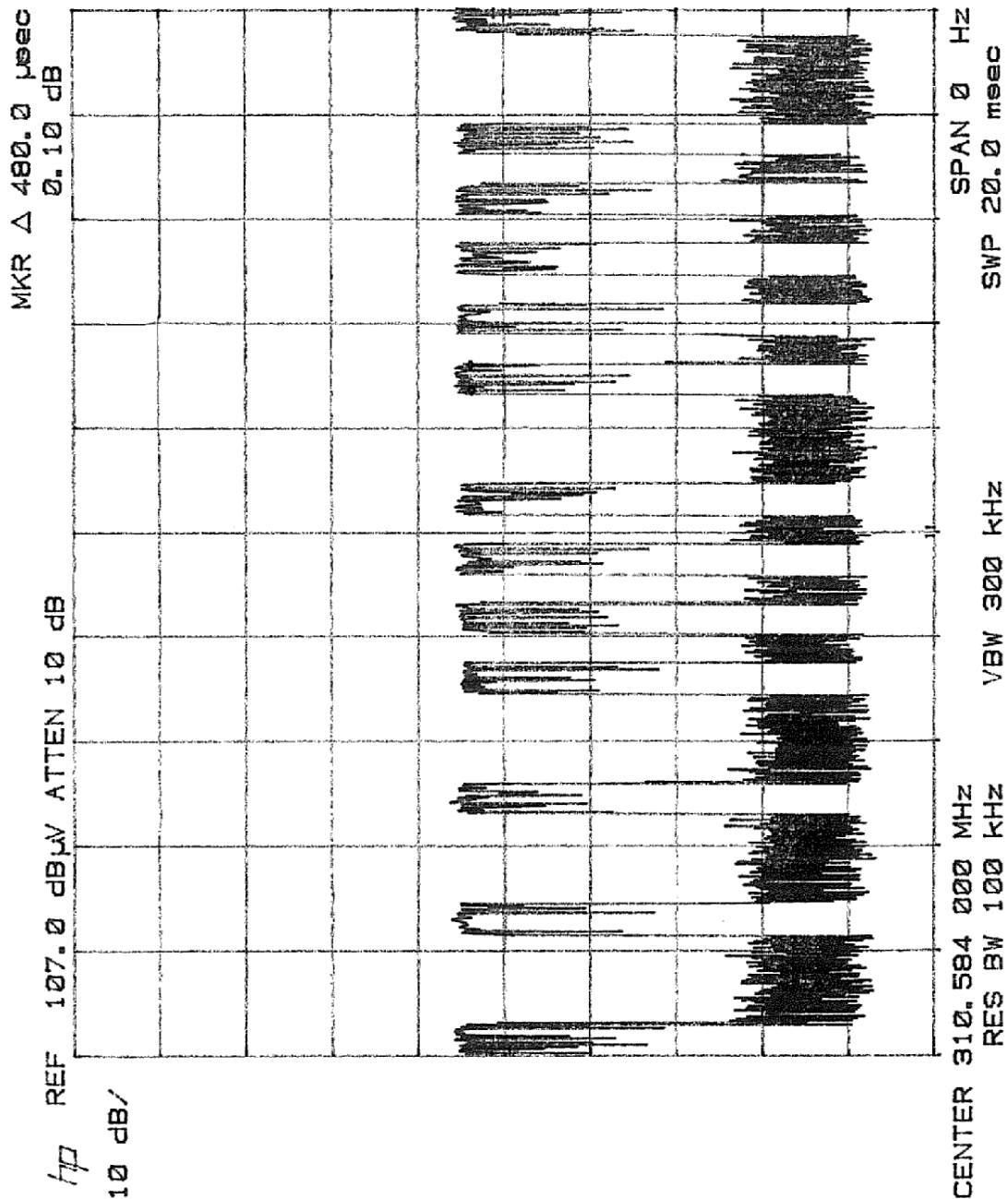


**Test Method:** FCC Part 15.35, Duty Cycle Determination.

**Notes:** Measurement of 1 large pulse = 8.8 mSec.

**FCC ID.:** B4SIR27A

|                     |                                      |              |  |
|---------------------|--------------------------------------|--------------|--|
| Customer            | X-10 (USA), Inc.                     |              |  |
| Test Sample         | 310 and 433.7 MHz Pulsed Transmitter |              |  |
| Model No.:          | IR27A                                |              |  |
| Date: June 11, 2008 | Tech: R.Soodoo                       | Sheet 2 of 4 |  |



**Test Method:** FCC Part 15.35, Duty Cycle Determination.

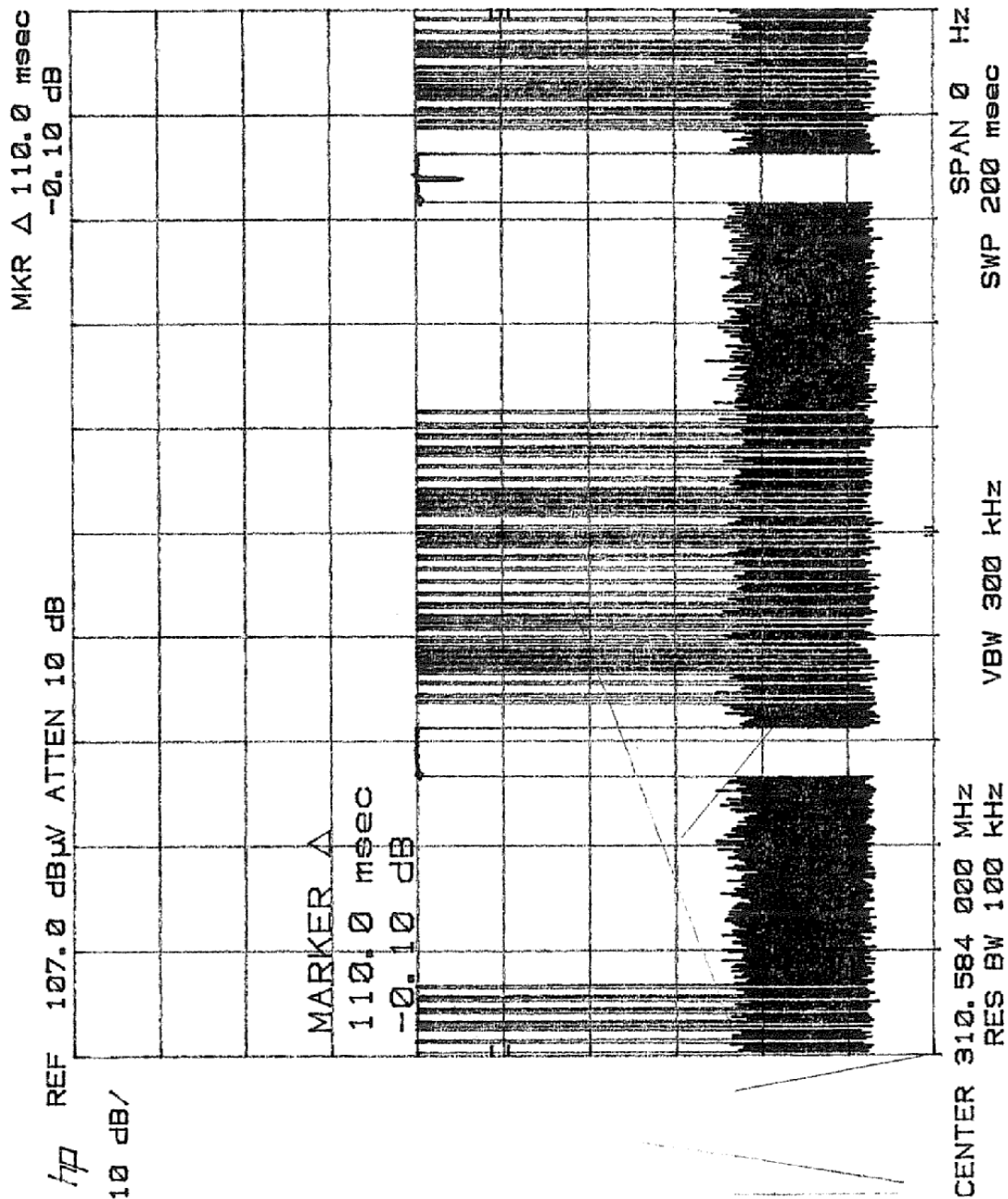
**Notes:** Measurement of 1 small pulse = 480  $\mu$ Sec.

Measurements of 33 small pulses = 33(480 $\mu$ Sec) = 15.84mSec.

**FCC ID.:** B4SIR27A

|                     |                                      |              |  |
|---------------------|--------------------------------------|--------------|--|
| Customer            | X-10 (USA), Inc.                     |              |  |
| Test Sample         | 310 and 433.7 MHz Pulsed Transmitter |              |  |
| Model No.:          | IR27A                                |              |  |
| Date: June 11, 2008 | Tech: R.Soodoo                       | Sheet 3 of 4 |  |





**Test Method:** FCC Part 15.35, Duty Cycle Determination.

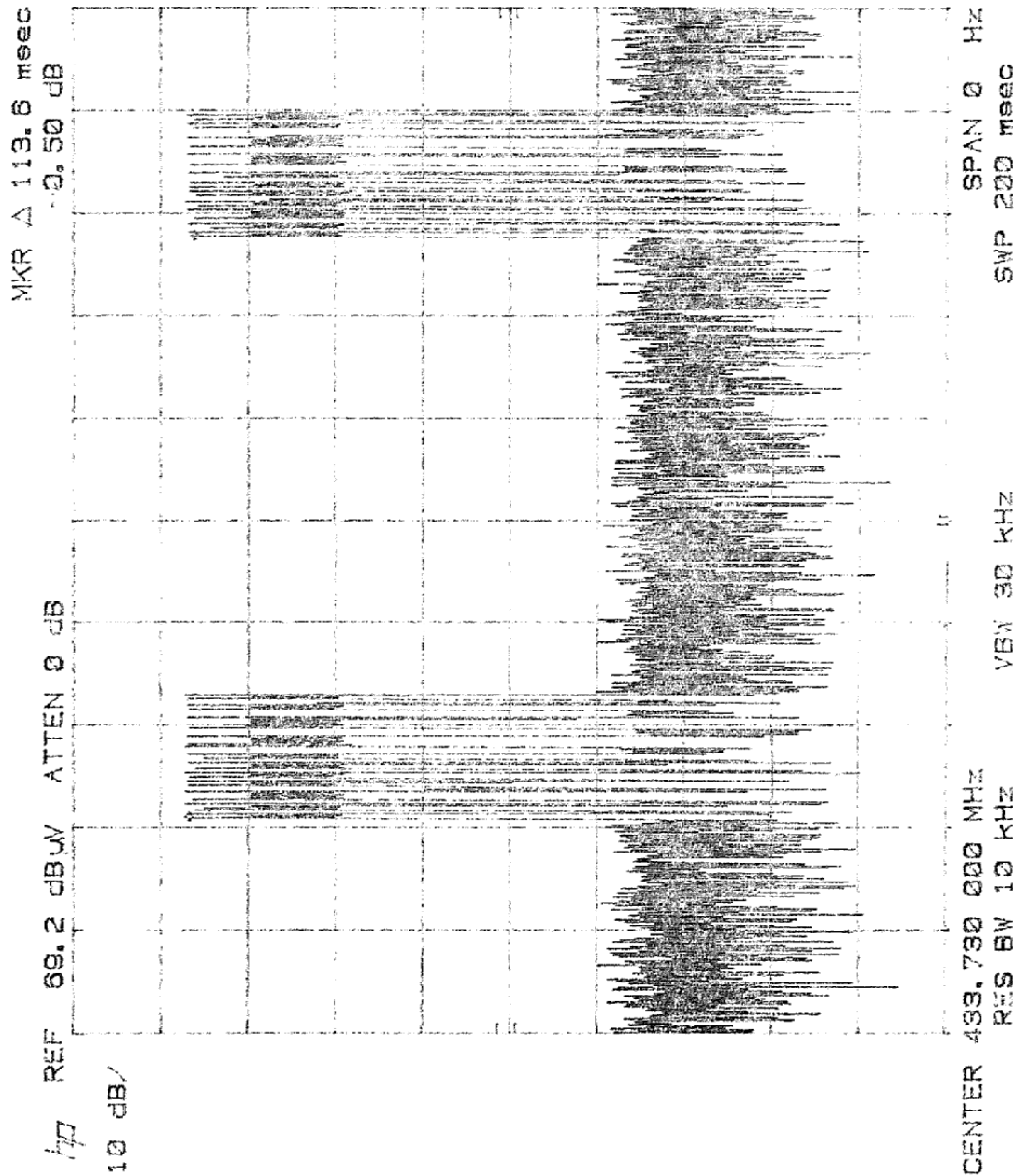
**Notes:** Duty cycle = (1) (8.8 mSec) + (33) (480  $\mu$ Sec) = 24.64 mSec.

Duty cycle = (24.64 mSec / 100=0.2464) 20 log 0.2464= -12.2 dB

**FCC ID.:** B4SIR27A

|                     |                                      |              |
|---------------------|--------------------------------------|--------------|
| Customer            | X-10 (USA), Inc.                     |              |
| Test Sample         | 310 and 433.7 MHz Pulsed Transmitter |              |
| Model No.:          | IR27A                                |              |
| Date: June 11, 2008 | Tech: R.Soodoo                       | Sheet 4 of 4 |

**FCC Part 15.231(b), Duty Cycle Determination**  
**433.7 MHz Transmitter**  
**Test Data**

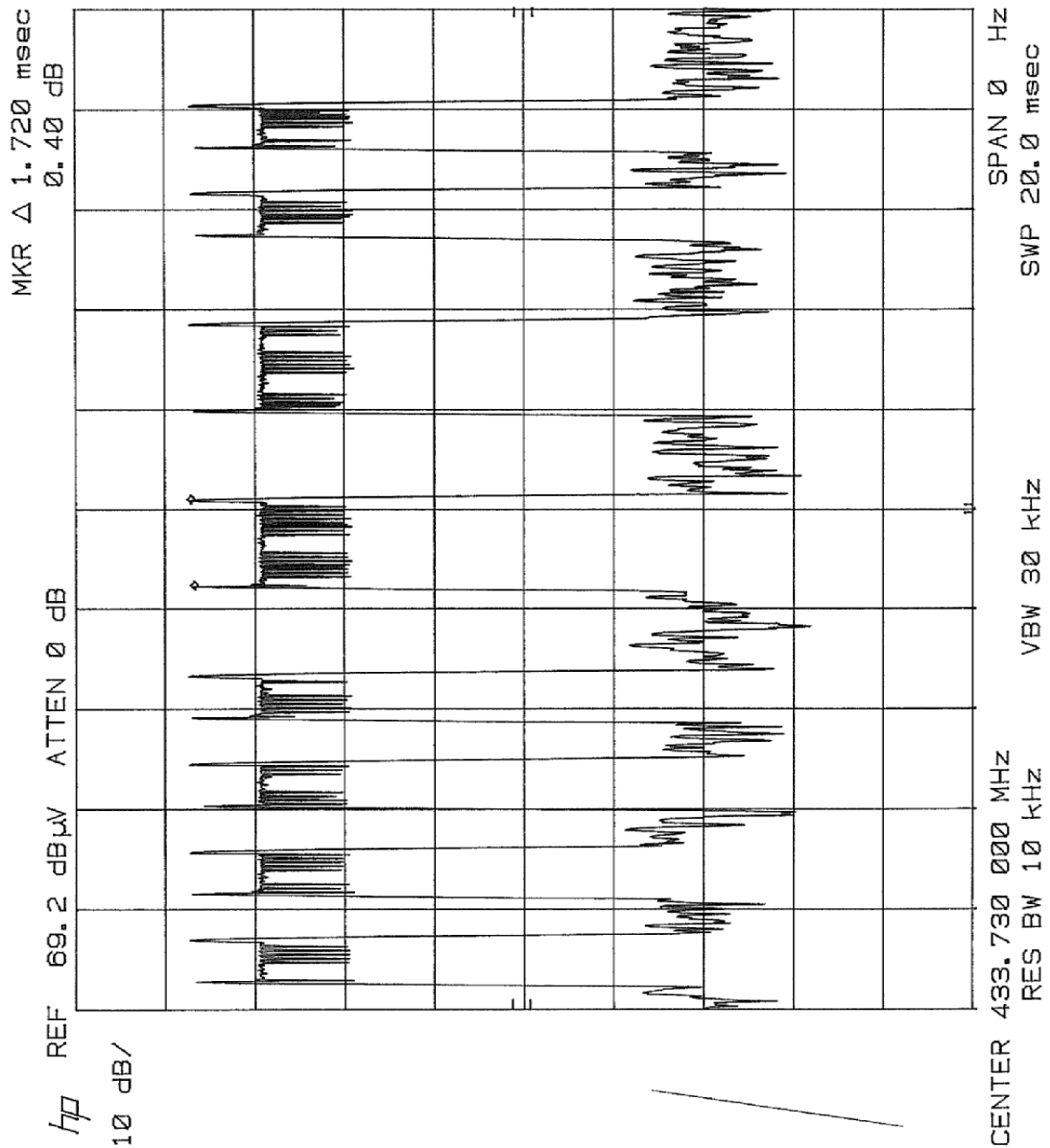


**Test Method: FCC Part 15.35, Duty Cycle Determination.**

**Notes:** Measurement of cycle time = 113.6mSec.

**FCC ID.:** B4SIR27A

|                     |                                      |              |  |
|---------------------|--------------------------------------|--------------|--|
| Customer            | X-10 (USA), Inc.                     |              |  |
| Test Sample         | 310 and 433.7 MHz Pulsed Transmitter |              |  |
| Model No.:          | IR27A                                |              |  |
| Date: June 11, 2008 | Tech: R.Soodoo                       | Sheet 1 of 4 |  |



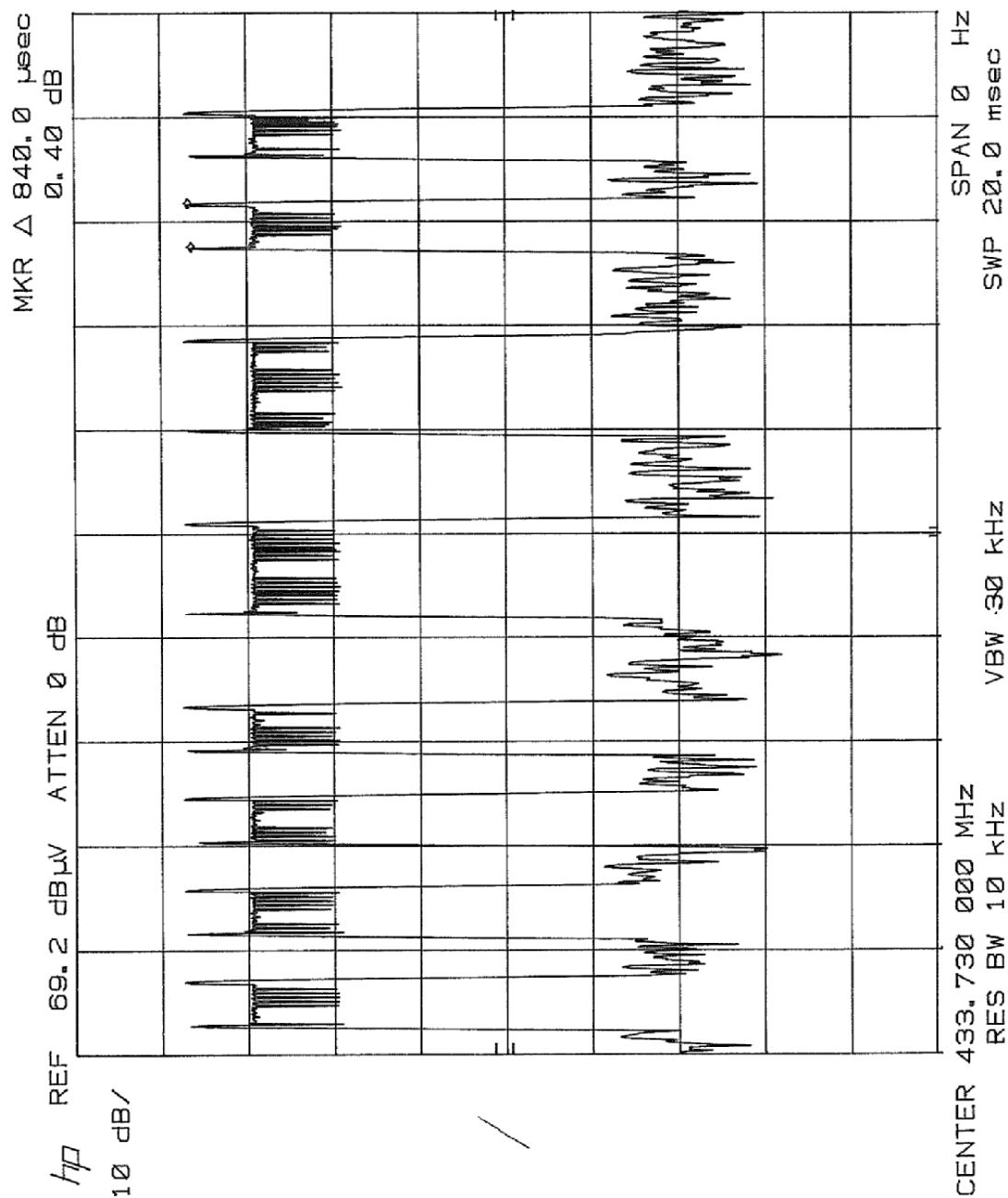
**Test Method:** FCC Part 15.35, Duty Cycle Determination.

**Notes:** Measurement of 1 large pulse = 1.72 mSec.

Measurements of 3 large pulses = 3(1.72 mSec) = 5.16mSec.

**FCC ID.:** B4SIR27A

|                     |                                      |              |
|---------------------|--------------------------------------|--------------|
| Customer            | X-10 (USA), Inc.                     |              |
| Test Sample         | 310 and 433.7 MHz Pulsed Transmitter |              |
| Model No.:          | IR27A                                |              |
| Date: June 11, 2008 | Tech: R.Soodoo                       | Sheet 2 of 4 |



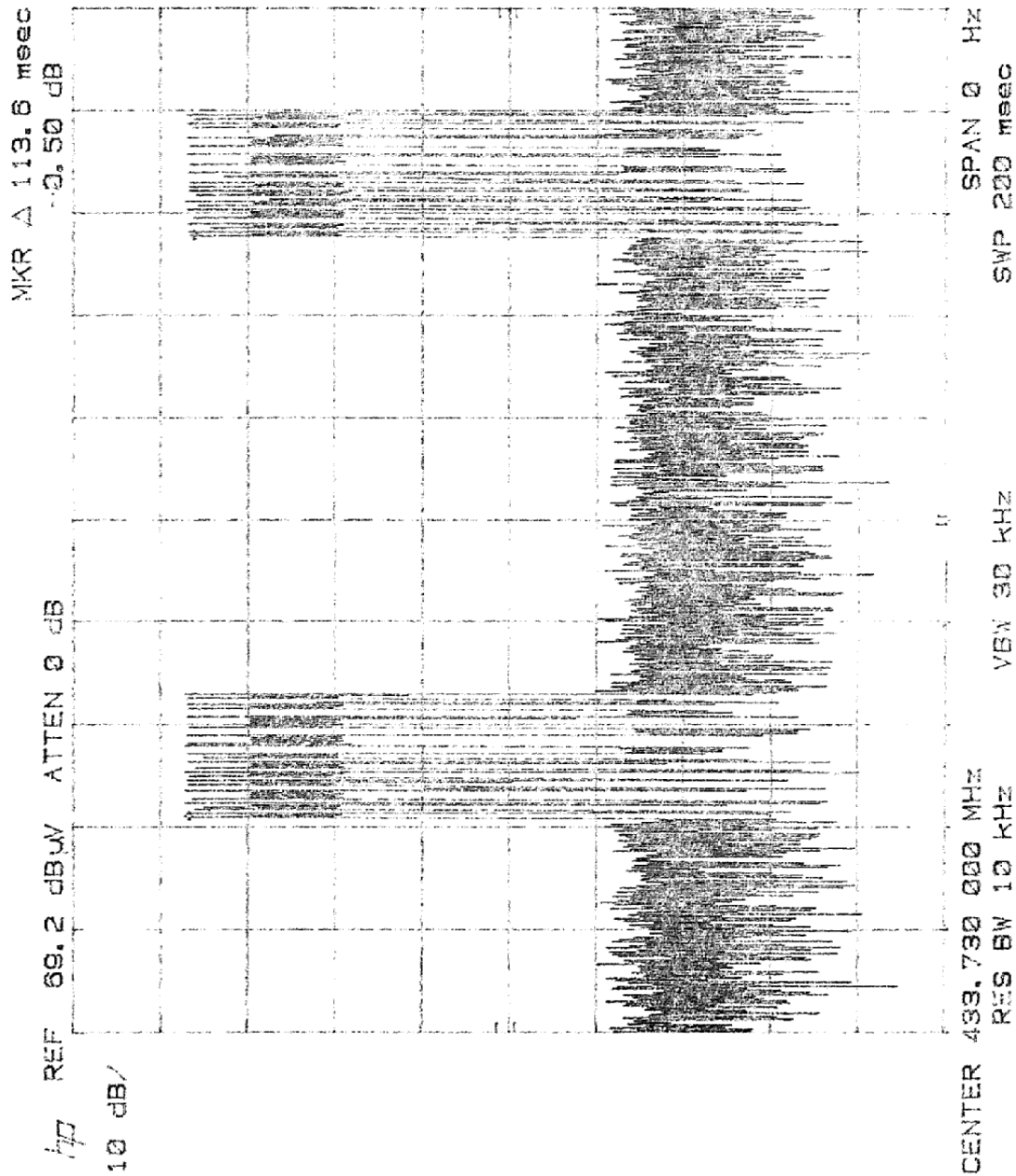
**Test Method:** FCC Part 15.35, Duty Cycle Determination.

**Notes:** Measurement of 1 small pulse = 840  $\mu$ Sec.

Measurements of 33 small pulses = 8(840 $\mu$ Sec) = 6.72mSec.

**FCC ID.:** B4SIR27A

|                     |                                      |              |  |
|---------------------|--------------------------------------|--------------|--|
| Customer            | X-10 (USA), Inc.                     |              |  |
| Test Sample         | 310 and 433.7 MHz Pulsed Transmitter |              |  |
| Model No.:          | IR27A                                |              |  |
| Date: June 11, 2008 | Tech: R.Soodoo                       | Sheet 3 of 4 |  |



**Test Method:** FCC Part 15.35, Duty Cycle Determination.

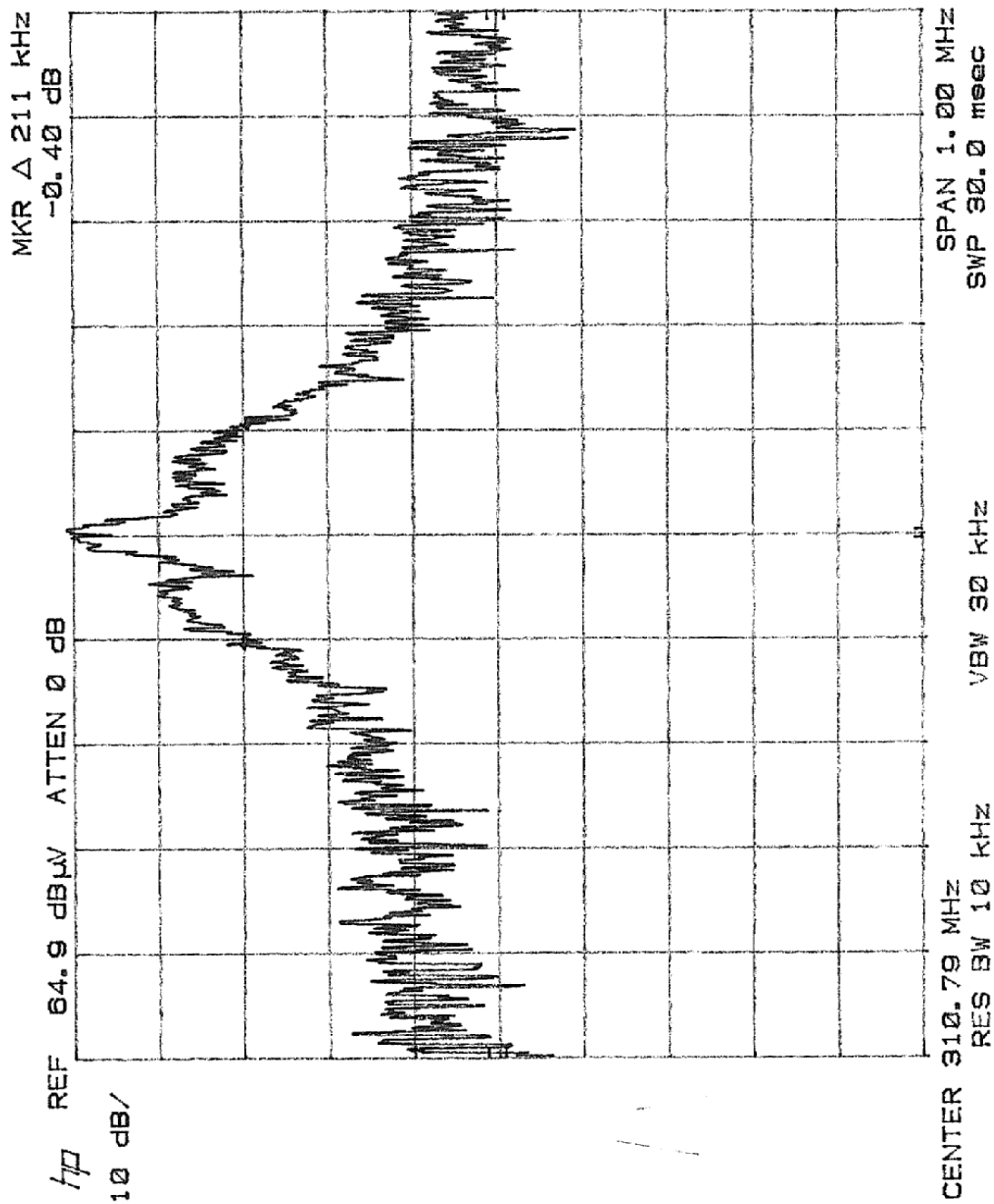
**Notes:** Duty cycle = (3) (1.72 mSec) + (8) (840 $\mu$ Sec) = 11.88 mSec.

Duty cycle = (11.88 mSec / 100=0.1188) 20 log 0.1188 = -18.5 dB

**FCC ID.:** B4SIR27A

|                     |                                      |              |  |
|---------------------|--------------------------------------|--------------|--|
| Customer            | X-10 (USA), Inc.                     |              |  |
| Test Sample         | 310 and 433.7 MHz Pulsed Transmitter |              |  |
| Model No.:          | IR27A                                |              |  |
| Date: June 11, 2008 | Tech: R.Soodoo                       | Sheet 4 of 4 |  |

**FCC Part 15, Subpart C, 15.231(c), Occupied Bandwidth  
310 MHz Transmitter  
Test Data**



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

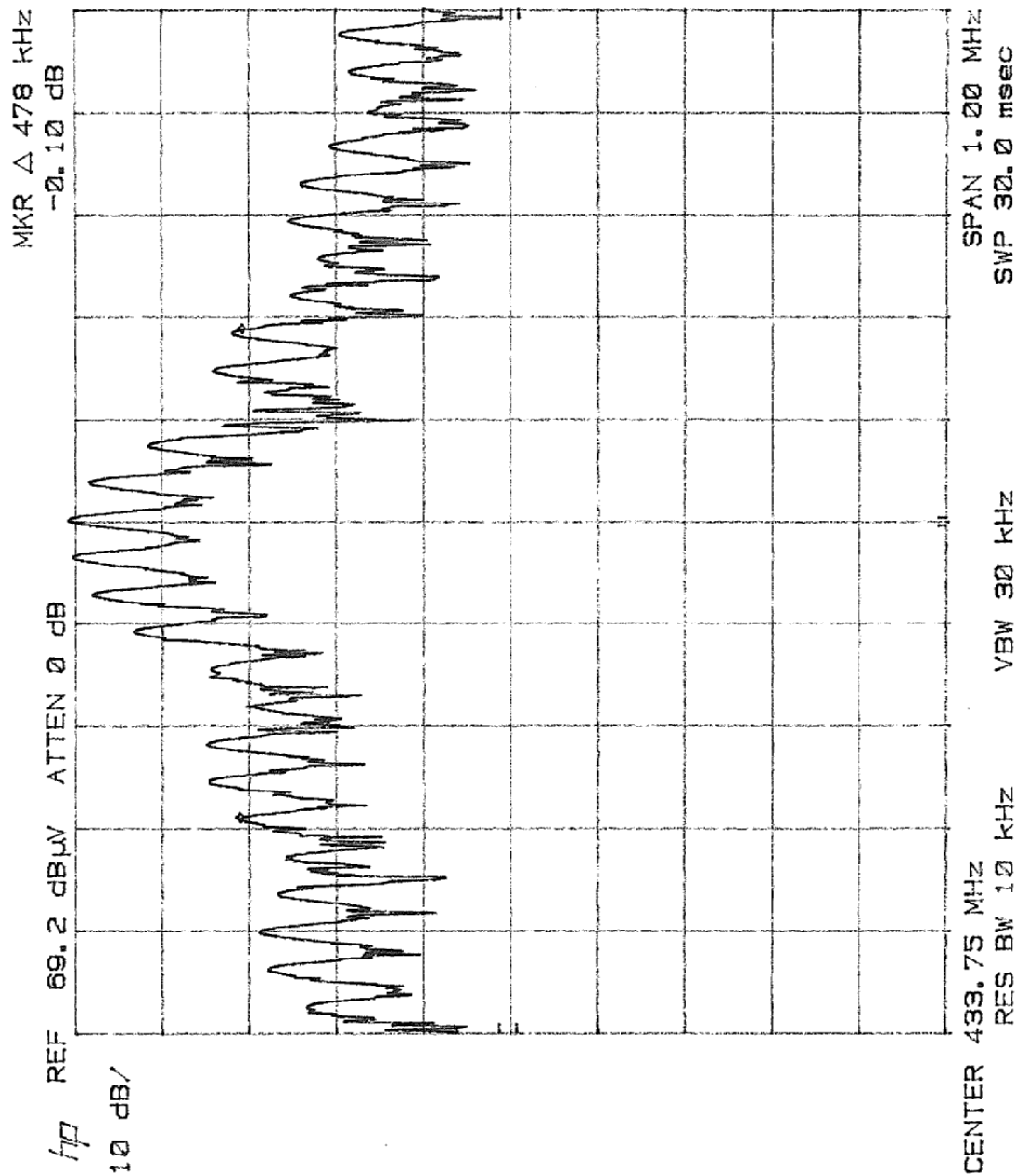
**Notes:** Occupied Bandwidth measured 211.0 kHz, does not exceed 0.25% of center frequency at the 20 dBc points ( 775 kHz)

**FCC ID.:** B4SIR27A

|                     |                                      |              |  |
|---------------------|--------------------------------------|--------------|--|
| Customer            | X-10 (USA), Inc.                     |              |  |
| Test Sample         | 310 and 433.7 MHz Pulsed Transmitter |              |  |
| Model No.:          | IR27A                                |              |  |
| Date: June 11, 2008 | Tech: R.Soodoo                       | Sheet 1 of 1 |  |



**FCC Part 15, Subpart C, 15.231(c), Occupied Bandwidth  
433.7 MHz Transmitter  
Test Data**

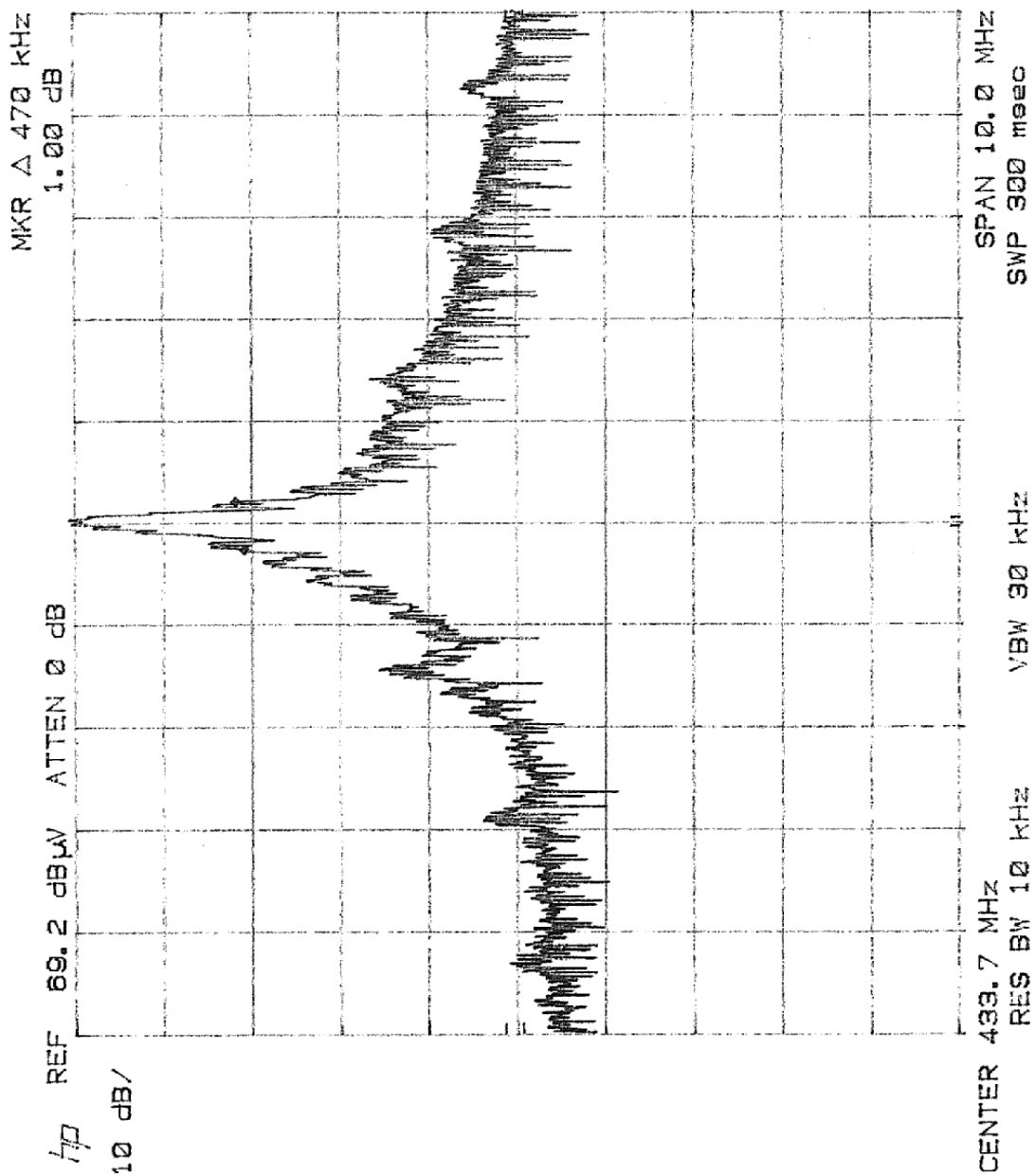


**Test Method: FCC Part 15, Subpart C, 15.231(c), Occupied Bandwidth.**

**Notes:** Occupied Bandwidth measured 478.0 kHz, does not exceed 0.25% of center frequency at the 20 dBc points ( 1.084 MHz)

**FCC ID.:** B4SIR27A

|                     |                                      |              |
|---------------------|--------------------------------------|--------------|
| Customer            | X-10 (USA), Inc.                     |              |
| Test Sample         | 310 and 433.7 MHz Pulsed Transmitter |              |
| Model No.:          | IR27A                                |              |
| Date: June 11, 2008 | Tech: R.Soodoo                       | Sheet 1 of 2 |



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

**Notes:** Occupied Bandwidth measured 470.0 kHz, does not exceed 0.25% of center frequency at the 20 dBc points ( 1.084 MHz)

**FCC ID.:** B4SIR27A

|                     |                                      |              |  |
|---------------------|--------------------------------------|--------------|--|
| Customer            | X-10 (USA), Inc.                     |              |  |
| Test Sample         | 310 and 433.7 MHz Pulsed Transmitter |              |  |
| Model No.:          | IR27A                                |              |  |
| Date: June 11, 2008 | Tech: R.Soodoo                       | Sheet 2 of 2 |  |