December 2, 1998

X-10 (USA), Inc.
91 Ruckman Road
Closter, NJ 07624-0420

Attention: Mr. Dave Rye

Dear Sir:

Enclosed you will find Retlif Testing Laboratories' Test Report R-7739-1, which covers the Part 15, Subpart C Certification testing of your 310 MHz Wrist Watch Emergency Call Button Transmitter Model: WR10A, FCC ID: B4S-WR10A. This testing was performed and application generated in accordance with your Verbal Authorization.

As of this date the original application has been forwarded to the Federal Communications Commission via electronic filing..

We thank you for this opportunity to be of service to you. Should you have any questions regarding the enclosed application please feel free to contact me.

Very truly yours,

RETLIF TESTING LABORATORIES

Michelle Tirado
Administrative Coordinator

Enc. (as stated)

FCC COMPLIANCE TEST REPORT
ON A
310 MHZ WRIST WATCH EMERGENCY CALL BUTTON TRANSMITTER
MODEL: WR10A
FCC ID: B4S-WR10A

CUSTOMER NAME:	X-10 (USA), Inc.
CUSTOMER P.O.:	Verbal Authorization
DATE OF REPORT:	December 2, 1998
TEST REPORT NO.:	R-7739-1
TEST START DATE:	September 29, 1998
TEST FINISH DATE:	November 12, 1998
TEST TECHNICIAN:	D. Cortes
TEST ENGINEER:	T. Schneider
SUPERVISOR:	R.J. Reitz
REPORT PREPARED BY:	L. Anderson
GOVERNMENT SOURCE INSPECTION:	Not Applicable

CERTIFICATION AND SIGNATURES

We certify that this report is a true report of the results obtained from the tests of the equipment stated. We further certify that the measurements shown in this report were made in accordance with the procedures indicated and vouch for the qualifications of all Retlif Testing Laboratories personnel taking them.

Thomas J.Schneider
EMC Test Engineer
NVLAP Approved Signatory

Richard J. Reitz
Laboratory Manager
NVLAP Approved Signatory

TABLE OF EXHIBITS

EXHIBIT 1

FCC ID Label

Para. 2.1033(b)(7)

EXHIBIT 2

Equipment Photographs

Para. 2.1033(b)(7)

EXHIBIT 3

Technical Description

Para. 2.1033(b)(4)

Technical Report 2.1033(b)(4)

Equipment Manufacturer

X-10 Electronics Shenzhen Co. Ltd.
X-10 Building
Labour Industrial District
Shenzhen, Xixiang, Bao An
Guang Dong, China, 518102

FCC Identifier

B4S-WR10A

Operating Instructions

See Exhibit 5

Trade Name

X-10 (USA)

Model Number

WR10A

Additional Model Numbers and Trade Names

Not Applicable

EXHIBIT 4

Block Diagram and Schematic

Para. 2.1033(b)(5)

EXHIBIT 5

Installation and Operating Instructions

Para. 2.1033(b)(3)

EXHIBIT 6

Report of Measurements

Para. 2.1033(b)(6)

APPLICANT	MANUFACTURER
X-10 (USA), Inc. 91 Ruckman Road Closter, NJ 07624-0420	X-10 Electronics Shenzhen Co. Ltd. X-10 Building Labour Industrial District Shenzhen, Xixiang, Bao An Guang Dong, China, 518102

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

TEST PROCEDURE: ANSI C63.4:1992

TEST SAMPLE DESCRIPTION

~~BRANDNAME: X-10 (USA), Inc. MODEL: WR10A~~

TYPE: 310 MHz RF Transmitter

POWER REQUIREMENTS: CR2016 Lithium 3 VDC Battery

FREQUENCY OF OPERATION: 310 MHz

TESTS PERFORMED

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

Para. 15.231(c), Occupied Bandwidth

Duty Cycle Determination

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

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

SIGN	PRINT	TITLE
	Thomas J. Schneider	EMC Test Engineer

REPORT OF MEASUREMENTS

Applicant:	X-10 (USA), Inc.
Device:	310 MHz Wrist Watch Emergency Call Button Transmitter
FCC ID:	B4S-WR10A
Power Requirements:	CR2016 Lithium 3VDC Bbattery
Applicable Rule Section:	Part 15, Subpart C, Section 15.231

TEST RESULTS

15.231 (a) - The device is used as a transmitter for safety of life purposes in emergency situations.

15.231 (a)(1) & 15.231(2) - The transmitter is manually operated and ceases transmission within 5 seconds after deactivation.

15.231 (a)(3) - The transmitter does not perform periodic transmissions.

15.231 (a)(4)- The device is employed for RC purposes involving safety of life purposes.

15.231 (b) - The fundamental field strength did not exceed 5833 µV/M (Average) at a test distance of 3 meters. In addition, the requirements of section 15.35 for averaging pulsed emissions and for limiting peak emissions were met.

The field strength of harmonic and spurious emissions did not exceed 583 µV/M (AVERAGE).

15.231 (c) - The device operates at 310 MHz. The bandwidth of emissions did not exceed 0.25% of the operating frequency (775 kHz).

DETERMINATION OF FIELD STRENGTH LIMITS

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

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

The formula below was utilized to determine the limits:

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

Solving yields:

Fundamental Limit = 5,833 µV/M (AVERAGE) @ 3 Meters

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

DETERMINATION OF DUTY CYCLE

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.

Transmitter On Time = 39.0 milliseconds (maximum- worst case in 100 ms)

Transmitter Cycle Time = 126.4 milliseconds

Transmitter Duty Cycle = 39.0 %

CALCULATION:

1 Large Pulse = 9.6 milliseconds

42 x 700 µs (small pulse) = 29.4 milliseconds

9.6 + 29.4 = 39 milliseconds

Duty Cycle = 39.0 %

Correction Factor = -8.2 db (.39 log 20 = 8.2)

SPECTRUM ANALYZER DESENSITIZATION CONSIDERATIONS

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

Setting pulse desensitization equal to zero and utilizing the minimum observed pulse width of 700µs yields a minimum required bandwidth of 952.4 Hz. FCC specified bandwidths of 100kHz and 1MHz were utilized below and above 1GHz, respectively.

GENERAL NOTES

1. All readings were taken utilizing a peak detector function at a test distance of 3 meters.

2. The duty cycle was applied to the peak readings in order to determine the average value of the emissions.

3. All measurements were made with (1) CR2016 Lithium 3 VDC battery installed in the unit.

4. The frequency range was scanned from 30 MHz to 3.1 GHz . All emissions not reported were more than 20 dB below the specified limit.

Exhibit 6

Report of Measurements

Radiated Emissions Data, Para. 15.231(a)

Exhibit 6

Report of Measurements

Occupied Bandwidth, Para. 15.231(c)

Exhibit 6

Report of Measurements

Duty Cycle Determination

Exhibit 6

Report of Measurements

TEST EQUIPMENT LIST

EQUIPMENT LIST

FCC Part 15 Subpart C Radiated Emissions

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3 Meter	RNY	8/30/97	8/30/99
128C	Double Ridge Guide	Eaton Corporation	1 GHz - 18 GHz	96001	10/6/97	10/6/98
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	6/22/98	6/22/99
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	9/19/98	3/19/99
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	3/4/98	3/4/99
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	9/19/98	3/19/99
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	6/22/98	6/22/99
523	Biconilog	Electro-Mechanics	26 MHz - 1100 MHz	3143	9/30/98	10/31/98
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	9/3/98	9/3/99