April 25, 2000

Federal Communications Commission
Equipment Approval Services
PO Box 358315
Pittsburgh, PA 15251-5315

Dear Sir/Madam:

Enclosed you will find an application for Certification of a Sensor/Transmitter for the Alert System Model 1000, FCC ID: OZDMLTRNXSENSXMIT. Certification is requested to the requirements of Part 15, Subpart C of the Commission's rules. This application is being filed by Retlif Testing Laboratories on behalf of Miltronics Manufacturing Services, Inc. The applicable Certification Filing Fee and 731 Form have been submitted.

I trust that you will find the enclosed application to be complete; however, should you have any questions or require any additional information, please feel free to contact us.

Very truly yours,

RETLIF TESTING LABORATORIES

Scott Wentworth
Manager

Enc. (as stated)

APPLICANT	MANUFACTURER
Miltronics Manufacturing Services, Inc. 95 Krif Road Keene, NH 03431	SAME

POWER REQUIREMENTS: 9Volt DC Battery

FREQUENCY OF OPERATION: 303.8MHz

TESTS PERFORMED

Duty Cycle Determination

The EUT is battery operated and was tested with newly installed batteries. For testing purposes only,

the EUT was configured to operate continuously, which required peak detector readings combined

with the duty cycle factor to produce the required average reading. Normal operation of the EUT

complies with the parameters required in Part 15, Subpart C, Section 15.231.

TEST SAMPLE / TEST PROGRAM

- The transmitter is automatically activated and ceases transmission less than 5 seconds after

deactivation.

- The transmitter does not perform periodic transmissions at regularly predetermined intervals.

- The device can be employed for RC purposes involving security.

- The fundamental field strength at 303.8MHz did not exceed 5575.0µV/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 558µV/M or 500µV/M

as applicable.

- The device operates at a frequency range of 303.8MHz. The bandwidth of emissions did not

exceed 0.25% of the operating frequency and was determined as follows:

Fundamental Frequency = 303.8MHz

0.25% of Center Frequency = 0.7595MHz

0.7595 divided by 2 = 0.379MHz

Bandwidth Range = Fundamental Frequency + and - 0.379MHz

303.8MHz - 0.379MHz = 303.421MHz

303.8MHz + 0.379MHz = 304.179MHz

Bandwidth Range = 303.421MHz - 304.179MHz

- The device uses a permanently attached 7_" straight wire antenna.

- Radiated Emissions from the EUT were measured in all three axis. Worst case emissions

were found with the EUT in the vertical upright position, with the antenna pointed straight

up. This orientation is also the position in which the device will normally be installed. The

attached Radiated Emissions test data is representative of this worst case orientation.

TEST SAMPLE / TEST PROGRAM (continued)

DETERMINATION OF FIELD STRENGTH LIMITS

The field strength limits shown below were calculated as instructed in Section 15.231.

Fundamental Frequency: 303.8MHz

Where F is the frequency in MHz, the formula for calculating the maximum permitted fundamental

field strength for the band 260-470MHz, µV/m at 3 meters is as follows:

41.6667(F) - 7083.3333 = Field Strength Limit (µV/m)

41.6667 x 303.8 = 12658.343

12658.343 - 7083.3333 = 5575

Field Strength Limit = 5575 µV/m

The maximum permitted unwanted emission level is 20dB below the maximum permitted

fundamental level.

DETERMINATION OF DUTY CYCLE

The transmitter controls were adjusted to maximize the transmitted duty cycle. 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 = 22.5 milliseconds (maximum)

Transmitter Cycle Time = 47.75 milliseconds

Transmitter Duty Cycle = 47.1 %

On Time divided by Cycle Time = Duty Cycle Factor

22.5 divided by 47.75 = 0.471

0.471 converted to dB (LOG_{10} .471)20 = -6.5dB

Duty Cycle Factor **=** ***-6.5dB***

Duty Cycle Factor Determination Plots are included with this application as a separate attachment.

TEST SAMPLE / TEST PROGRAM (continued)

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 1.4

milliseconds yields a minimum required bandwidth of 476 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. The frequency range was scanned from 30 MHz to 3.1 GHz.

Emission levels closest to the specified limit are listed on the

attached data sheet.

EQUIPMENT LISTS

Spurious Radiated Emissions

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date

3116	Pre-Amplifier	Miteq	0.1GHz - 18GHz	AFS42-35	01/04/00	01/04/01

3117	Power Supply	B&K Precision	0-30Vdc, 3.0A	1630	2/23/00	2/23/01

3118	Broadband Pre-Amplifier	Electro-Metrics	10kHz - 1GHz	BPA-1000	7/16/99	7/16/00

3258	Double Ridge Guide	EMCO	1-18GHz	3115	4/7/99	4/7/00

4202	Biconilog	EMCO	26MHz - 2GHz	3142	6/16/99	6/16/00

4895	Spectrum Analyzer	Hewlett Packard	9kHz-22GHz	8593EM	2/17/00	2/17/01

4921	Graphics plotter	Hewlett Packard	N/A	7550A	4/19/99	4/19/00

4986	EMC Analyzer	Electro-Metrics	9kHz-1GHz	EMC-30C	2/14/00	2/14/01

Occupied Bandwidth

EN	Type	Manufacturer	Frequency Range	Model No.	Cal Date	Due Date

4202	Biconilog	EMCO	26MHz - 2GHz	3142	6/16/99	6/16/00

4895	Spectrum Analyzer	Hewlett Packard	9kHz-22GHz	8593EM	2/17/00	2/17/01

4921	Graphics plotter	Hewlett Packard	N/A	7550A	4/19/99	4/19/00