

REPORT OF MEASUREMENTS

Applicant: Mitsuboshi Boeki, Inc.
Device: 301.105 MHz RF Transmitter
FCC ID: OFS500SERIES
Power Requirements: 4.5 VDC via 3X "AA" Batteries
Applicable Rule Section: Part 15, Subpart C, Section 15.231

TEST RESULTS

- 15.231 (a) - The device is used as a transmitter for versatile remote control safety purposes such as controlling cranes, multiple hoists, trolleys, mining equipment etc.
- 15.231 (a)(1) & - The transmitter is manually operated and ceases transmission within 5
15.231(2) 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 and may transmit during the pendency of the alarm condition.
- 15.231 (b) - The fundamental field strength did not exceed 5,460 $\mu\text{V/M}$ (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 546 $\mu\text{V/M}$ (AVERAGE).
- 15.231 (c) - The device operates at 301.105 MHz. The bandwidth of emissions did not exceed 0.25% of the operating frequency (752.7 kHz).

REPORT OF MEASUREMENTS (continued)

DETERMINATION OF FIELD STRENGTH LIMITS

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

Frequency			Limit		
F1	=	260	3750	=	L1
Fo	=	301.105			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:

$$\text{Fundamental Limit} = 5,460 \mu\text{V/M (AVERAGE) @ 3 Meters}$$

$$\text{Harmonic Limit} = 546 \mu\text{V/M (AVERAGE) @ 3 Meters}$$

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.

$$\text{Transmitter On Time} = >100 \text{ milliseconds (maximum- worst case in 100 ms)}$$

$$\text{Transmitter Cycle Time} = 0 \text{ milliseconds}$$

$$\text{Transmitter Duty Cycle} = 100.0 \%$$

$$\text{Correction Factor} = -0.0 \text{ db}$$

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 (3) new "AA" batteries installed in the unit.
4. The frequency range was scanned from 30 MHz to 3.1 GHz . All emissions not reported were more than 10 dB below the specified limit.

EQUIPMENT LIST

FCC Part 15 Radiated Emissions, 30 MHz to 3.1 GHz

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
088A	Conical Log Spiral	Electro-Mechanics	200 MHz - 1 GHz	3101	12/28/98	12/28/99
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 - 2000 MHz	3142B	10/22/98	4/22/00
530	AM/FM Signal Generator	Marconi Instru.	10 kHz - 1.2 GHz	2023	4/29/98	4/29/99