APPLICANT	Manufacturer
Techsonic Industries Incorporated 5 Humminbird Lane Eufala, AL 36027	Techsonic Industries Incorporated 5 Humminbird Lane Eufala, AL 36027

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

TEST PROCEDURE: FCC 15.249(a)

TEST SAMPLE DESCRIPTION

BRANDNAME: Techsonic Industries Incorporated

MODEL: SmartCast Remote Sonar Sensor (RSS)

FCC ID: ICLSMC1

TYPE: Pulse Modulated Transmitter

FREQUENCY RANGE: 916.5 MHz

POWER REQUIREMENTS: Internal Batteries

TESTS PERFORMED

- 15.209(a) Radiated Emissions, Spurious Case
- 15.249(a) Radiated Emissions, Fundamental and Harmonics
- 15.249(c) Occupied Bandwidth
- 15.35(a) Duty Cycle Determination

REPORT OF MEASUREMENTS

Applicant:	Techsonic Industries Incorporated
Device:	Pulse RF Transmitter
FCC ID:	ICLSMC1
Power Requirements:	Internal Batteries
Applicable Rule Section:	Part 15, Subpart C, Section 15.249

TEST RESULTS

15.209(a): Field strength of emissions from the intentional radiator operating in the 902 MHz to 928 MHz GHz frequency band did not exceed 50 mV/m average for the fundamental and 500 uV/m average for harmonics.

15.249(b): Field strength readings were recorded at a distance of three meters from the Intentional Radiator unless otherwise specified.

15.249(c): Emissions radiated outside the specified frequency band except for harmonics, were attenuated by at least 50dB or to the emissions limits of 15.209, whichever was the lesser attenuation.

15.249(d): All measurements were taken utilizing a peak detector. The peak field strength did not exceed the average limits under any condition of modulation.

Duty Cycle Information:

The EUT has on time of 4.98 mSec (worst case) in any 100 mSec period. This yields a duty cycle of 4.98% or a duty cycle factor of -26dB. See also attached plot dutycycle.pdf.

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 160 microseconds yields a minimum required bandwidth of 4,167 Hz. FCC specified bandwidths of 100kHz and 1MHz were utilized below and above 1GHz, respectively.

GENERAL NOTES

1. All user accessible controls were adjusted to produce maximum emissions.
2. The unit operates in the band of 902 MHz to 928 MHz GHz band at a single frequency of 916.5 MHz.
3. The frequency range was scanned from 30 MHz to 9.3 GHz. All emissions not reported were more than 10dB below the specified limit.

EXHIBIT 4

Radiated Emissions, Spurious Case

Para. 15.249(c)

(Please see separate e-file attachment named RESpur.pdf)

EXHIBIT 4

Radiated Emissions, Fundamental & Harmonic

Para. 15.249(a)

(Please see separate e-file attachment named REfundharm.pdf)

EXHIBIT 4

Occupied Bandwidth

Para. 15.249(c)

(Please see separate e-file attachment named OccBw.pdf)

EXHIBIT 4

Duty Cycle Determination

Para. 15.35

(Please see separate e-file attachment named dutycycle.pdf)

EQUIPMENT LIST

FCC15.249 Compliance Testing

EN	Type	Manufacturer	Description	Model No.	Cal Date	Due Date
067	Open Area Test Site	Retlif	3 Meter	RNY	09/20/2000	09/20/2003
128	Double Ridged Guide	Electro-Mechanics	1 GHz - 18 GHz	3105	05/31/2001	05/31/2002
133	Broadband Pre-Amplifier	Electro-Metrics	10 kHz - 1 GHz, 26dB	BPA-1000	06/13/2001	06/13/2002
141	Spectrum Analyzer	Hewlett Packard	100 Hz - 40 GHz	8566B	01/16/2002	07/16/2002
141A	Graphics Plotter	Hewlett Packard	N/A	7470A	03/05/2002	03/05/2003
141B	Quasi-Peak Adaptor	Hewlett Packard	100 Hz - 1 GHz	85650A	01/15/2002	07/15/2002
206B	6.0 dB Attenuator	Texscan	0 - 1.0 GHz	FP-50 - 6 dB	06/13/2001	06/13/2002
543	Preamplifier	Hewlett Packard	1.0 GHz - 26.5 GHz	8449B	06/27/2001	06/27/2002
767	Biconilog	EMCO	26 - 2000 MHz	3142B	08/28/2001	08/28/2002

Test Setup Photograph