

## 1. Executive Summary

This EMC compliance report for a 418 MHz Transmitter and receiver is prepared on behalf of Sons Design and Manufacturing, Inc. The report is in accordance with the rules of the Federal Communications Commission (47 CFR 15.231)

This report cover testing for the Pool Leveler and all testing was performed on the 2<sup>nd</sup> and 3<sup>rd</sup> of May 2000.

All equipment configurations and measurements contained in this report were performed in accordance with the revision of the standards listed in this report. Also, the instrumentation and facilities utilized for the measurements conform to all appropriate standards. Calibration checks are performed yearly on the instruments by a local calibration lab, with traceability to the National Institute of Standards and Technology (NIST).

All radiated and conducted emission measurements are performed manually at National Technical Systems, Inc. The radiated emission measurements required by the rules were performed on a 10m open area test site (OATS) maintained by National Technical Systems, Inc., 1701 East Plano Parkway, Suite 150, Plano, Texas 75074, USA. Complete site descriptions and site attenuation measurement data are maintained at the test facility and can be made available upon request. The Power Line Conducted Emission Measurements were performed in a shielded enclosure also located at the same facility.

### 1.1 ***Modifications to EUT***

There were no modifications made.

### 1.2 ***Special Accessories***

There were no special accessories found necessary as a result of this testing.

## 2. Test Facility

The open area test site used to collect the radiated emissions data and the shielded room used to collect the conducted emissions data have been listed by the Federal Communications Commission (FCC) and accredited by the National Voluntary Laboratory Accreditation Program (NVLAP).

## 3. EUT Configuration

### 3.1 ***Technical Description***

This is an RF linked device operating at 418 MHz. The transmitter, when required, transmits a burst of less than 1-second duration, of a single byte ID once every three minutes. When not transmitting, the transmitter is disabled.

The receiver is continuously enabled to receive this transmitted address burst. Upon receipt of a correctly coded byte of ID from the transmitter, the receiver enables a water valve for ten minutes. The installed transmitter/ receiver link has an affective range approximately 100 feet.

### 3.2 Test Configuration(s)

DU = Data Unshielded  
DS = Data Shielded

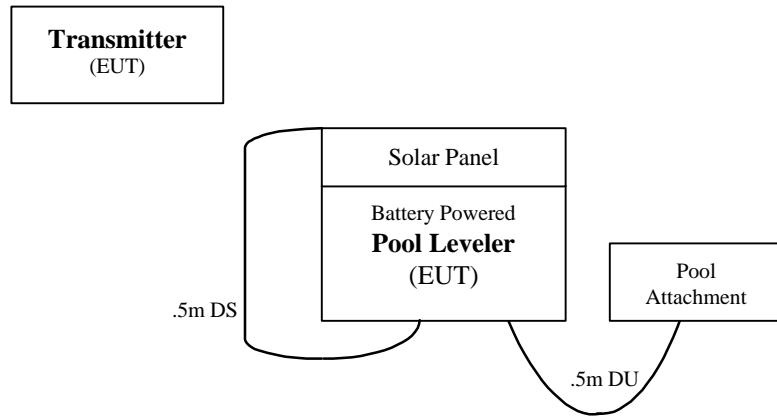


Figure 1 - Block Diagram of System Configuration

The system was configured for testing in a typical fashion (as a customer would normally use it). A list of the equipment under test (EUT) and its support equipment is found below.

Table 1 - Components in Block Diagram

Part	Manufacturer	Model	Serial Number	FCC ID	NTS Bar Code
TRANSMITTER CHASSIS	SDMI	CHASSIS	101785	NONE	101785
RECEIVER CHASSIS	SDMI	CHASSIS	101789	NONE	101789
VALVE	R/C VALVE COMPANY	12VDC 6 WATTS	12D-1044	NONE	101790

Table 2 - Internal Components

Part	Manufacturer	Model	Serial Number	FCC ID	NTS Bar Code
TRANSMITTER (EUT)	SDMI	TXM 418 LC	101786	NONE	101786
RECEIVER BOARD	SDMI	10-7453-A	101788	NONE	101788
BATTERY	SDMI	12V ACID BATTERY	UB1245	NONE	101787

### 3.3 Exercise Software

The EUT exercise program used during emissions testing has been designed to exercise the various system components in a manner similar to a typical use and was contained within the firmware of the devices.