

Confidential

6033-TX Wireless Solar PIR Transmitter

Wireless Solar PIR Transmitter

Model Number: 6033-TX

General Description:

The 6033-TX Wireless Solar PIR Transmitter is a transmitting device used for the remote control of lighting by utilizing RF transmission technology and a compatible RF receiver. The device is capable of transmitting several commands, which that are used by the compatible receiver to turn the room lights ON, OFF or to dim the lights to a prescribed level.

The housing is made of a durable plastic and houses the electronics, batteries and solar cell used for recharging. . The assembly is designed to mount to a stake with and optional extension to allow the sensor to be positioned at 2 different heights.

The electrical circuitry is comprised of a set of AAA rechargeable batteries, a solar panel for recharging, a 2.4 to 5-Volt DC power supply converter, 3 tact switches, one 4-position dipswitch, a custom motion sensing ASIC, a digital encoder for the RF data stream, a 315 MHz RF oscillator circuit, and complementary passive components. All circuitry is mounted on two separate PCBs. The printed circuit boards are double-sided and have a 94V-0 rating.

Specifications:

- Input: 2.4VDC by battery or solar panel
- Circuit voltage: ~5.0 volts DC.
- RF Carrier Frequency: 315 MHz
- Modulated Data Frequency: 3.0 KHz
- User-selectable address codes: 16

Theory of Operation:

The wireless transmitter is normally off with the RF transmission starting when one of the two PIR sensors detects motion. At this time, the encoder outputs a 3 KHz, 1 sync bit plus 12-data bit transmission to the RF oscillator circuit transmitting the information at a carrier frequency of 315 MHz. The encoder transmits for approximately 1 second. It is then reset for another motion event.

The 12-bit output consists of a sync bit, 8-bit address and 4 bits of data. The user-selectable address is set with a four-position dipswitch. The other 4 address lines are permanently set. The receiving unit to be controlled is set to the same address as the wireless transmitter.