1. The Product

1.1 Outline

The RF keyfob transmitter is primarity used for remote garage door closing and locking/ unlocking and opening.

It is part of a system which also includes an RF receiver. The receiver, which is located in the garage, recevies, demodulates and decodes the RF transmission from the keyfob. This decoded transmission controls the action of the lock as well as the garage door opener.
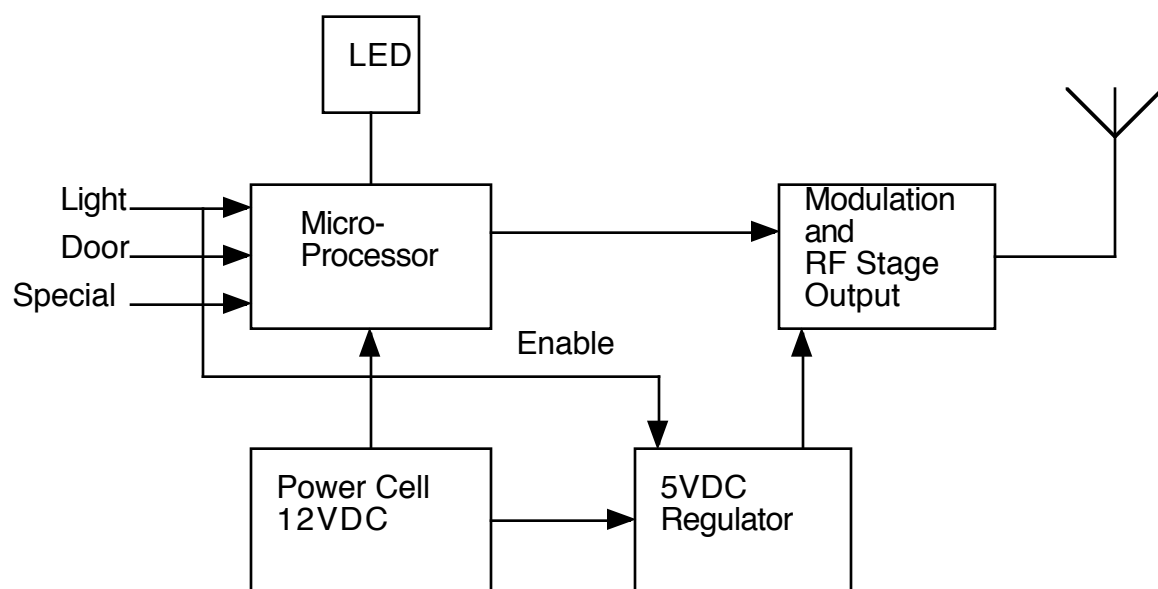
1.2 Appearance

The keyfob consists of a black plastic case with rubberized buttons. The size is approximately 2.7″ x 1.8″ (69mm x 46mm).

There is a single red LED visible to the user to provide feedback to the user that an RF transmission has been made. The LED also indicates a low battery condition to the user.

1.3 Transmission Format

The signals transmitted from the keyfob are encoded using PWM, employing 66 bits of data, with a modulation frequency of 833Hz and 100% amplitude modulation.

1.4 General Block Diagram

2 Operating Instructions

2.1 Normal Operation

In response to a single press of a button, the transmitter will send a single message for door/light or special. If a button is held, the transmitter will continuously transmit the message for up to approximately 20 seconds. The receiver ignores duplicate transmissions.

2.2 Test Modes

None.

3 Operation Description

3.1 Idle Mode

When no buttons are pressed, the 12VDC battery supplies a small standby current to the encoder chip, as well as a small current to the 5 VDC regulator. The regulator is disabled, so no power is supplied to the Modulation and RF stage.

3.2 Button Pressed

When any button is pressed, the microprocessor encodes a PWM 66 bit message and transmitts the message to the RF stage. At the same time, the button enables the 5 VDC regulator, which turns on the 5 V supply to the Modulation and RF Stage.

Once powered up the Modulation and RF Stage uses transmittes the data provided by the microprocessor.

3.3 Button Held

As long as the button is held, the microprocessor will continue to transmit messages, up to a preset time limit. After approximately 20 seconds, the microprocessor will terminate transmission.