WATCHDOG-AN ELECTRONIC SAFETY SYSTEM

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Abstract - *Electronic watchdog is used for your house that sounds to inform you that somebody is at gate or passing through it. The circuit comprises of a transmitter unit and receiver units, which are mounted face to face on the opposite pillars of the gate or door such that the IR beam transmitted through IR LED1 of the transmitter, get interrupted when someone is standing at the gate or passing through it.*

Key Words: Watchdog, IR beam , IR LED

1. CIRCUIT OPERATION:

The transmitter circuit shown in below fig.1 is built around timer NE555(u1),which is wired as an astable multivibrator producing a frequency of about 38KHz,The infrared(IR) beam is transmitted through IR LED1.

2. TRANSMITTER:

The receiver circuit is as shown in fig.2 . it comprises IR sensor TSOP1738 (IR RX1), NPN transistor BC548 (q1),timer NE555 and some resistors and capacitors. Timer is wired as a monostable multivibrator with a time period of around 30 seconds. The melody or barking generator section is built around melody generator IC UM66, transistor (Q2) and loudspeaker.
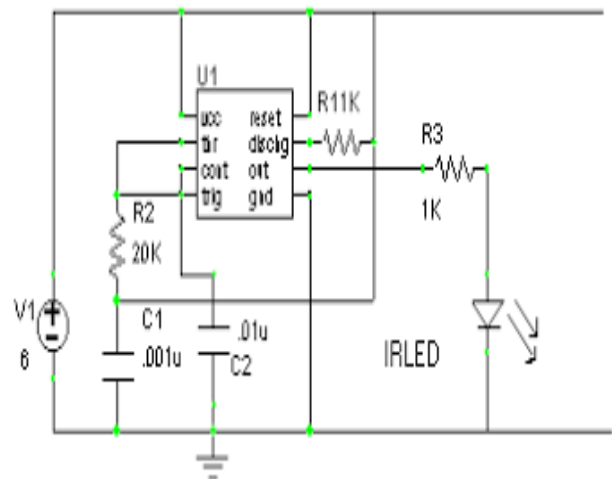
The power supply for transmitter is derived from the receiver is powered by regulated 6V dc.For this purpose you can use a 6V battery.

3. RECEIVER:

The transmitter and receiver units are aligned such that the IR beam falls directly on the IR sensor. As long as the IR beam falls on the sensor, its output remains low , transistor Q1 does not conduct trigger pin of IC remains high. When anyone interrupts IR the beam falling on the sensor, its output goes high to transistor Q1 into a conduction and trigger pin of IC goes low momentarily.

As a result IC gets triggered its pin3(output) goes high to supply 3.3V to melody generator IC at pin2, which produces a barking melody of a dog through the speaker fitted inside the house. Output pin of 555IC remains high for around 30 seconds.

4. APPLICATION:

To achieve high directivity of the IR beam towards the sensor ,use a reflector behind IR LED. When somebody enters through a gate or door the IR beam is interrupted and the alarm sounds for 30 seconds . The alarm keeps sounding as long as the one stands between transmitter and receiver units.

 This circuit can also produce burglar alarm and doorbell.
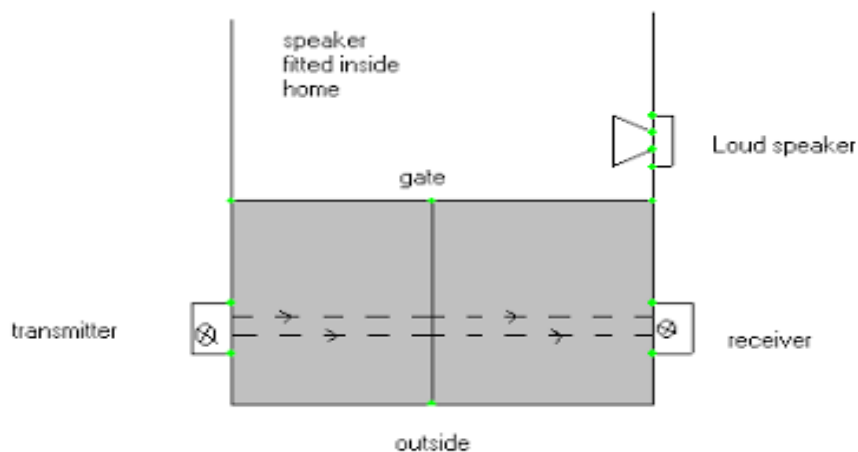
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