

Automatic Security with Laser Shooter by PIR Technology with LCD Pageant

Aditya Agarwal

Assistant Professor
Department of ECE
SRM University NCR Campus
Modinagar

Karan Bhatia, Sanchita Sharma, Manan Chawla

B.Tech Student
Department of ECE
SRM University NCR Campus
Modinagar

ABSTRACT

This project is special and efficient system for security purpose. In this project we provide criminals detection and mention the direction and included shoot out with laser with On the basis of rotation of stepper motor. These days, radars are being used for detection but there are some materials like indium phosphite that can absorb the electromagnetic waves, so, to eliminate this disadvantage we use the P.I.R sensor which does not work on the principle of sending and receiving the EM waves as RADAR does, but it detects the infrared radiations of the human body which can't be blocked by any material and then identifies the target.

Keywords: Security, LASER, PIR sensor, LCD pageant, stepper motor.

1. INTRODUCTION

Due to increasing number of crime and burglary, the need of security system is very essential. The security system that monitors the area throughout the time and reacts effective to the threat is in need. We have lots of security systems in the market for both indoor and outdoor applications such as ultrasonic detectors, CCTV, microwave detectors, photoelectric detectors, infrared detectors etc. [1]. However one or the other systems have the limitations of being expensive, more electrical power consumption, more memory space utilization of the recording system and complex circuitry, etc.

A solution to overcome these problems could be by using a sensor of low cost which has the ability to detect the intruders as they come within the sensor's detection range and generates an output. This output can be used for further signal processing or activating other devices like alarm system, lighting system, recording system and similar devices. This could at least save some power consumptions as some components get actuated only when there are intruders in the sensors detection range. Passive Infrared Sensor is a low cost, low power and reliable sensor [2]. Therefore it was felt that a PIR sensor based security system consisting of the sensor, laser shooter and a LCD pageant could overcome few or all of the above stated problems. The sensor can detect the presence

I. SYSTEM DESIGN

- When the person enters from an unauthorized entry, his or her body temperature is sensed by the PIR sensor.
- These thermal radiations are focused on PIR filter using fresnal. Lens array.
- The sensing element converts these radiations into 1mv of charge which is then amplified by the FET.
- The step down transformer steps down the voltage from 220v to 9v.
- A full wave rectifier converts the AC to DC.

- Electrolytic capacitor is used as the main filter in order to convert the pulsating AC to DC.
- Voltage regulator regulates the power supply to 5v
- IC 4049 is used as an inverter IC for the microcontroller.
- The position of the person is displayed on the LCD pageant.
- ULN2003 the driver IC for the stepper motor directs it towards the position of the person
- The laser shooter points in the direction of the person
- Buzzer beeps and the LED glows.

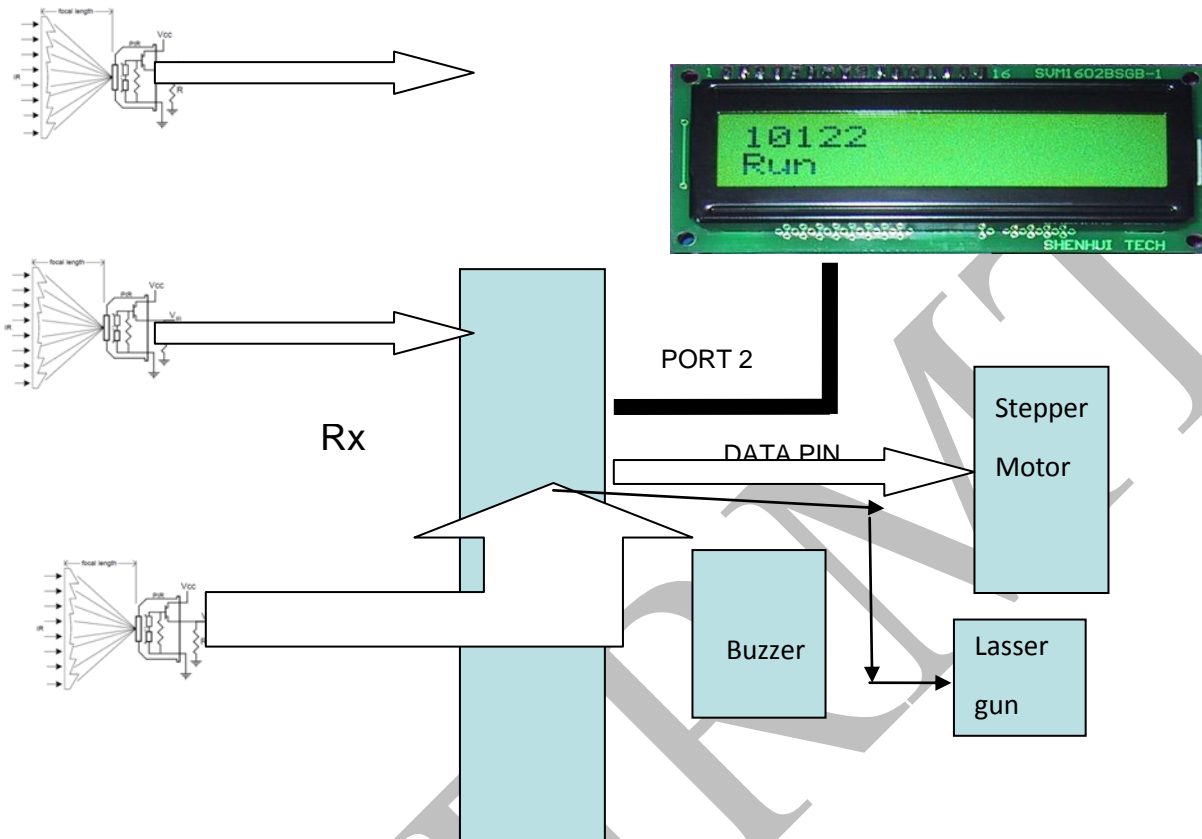


Fig.1. Block diagram of security system

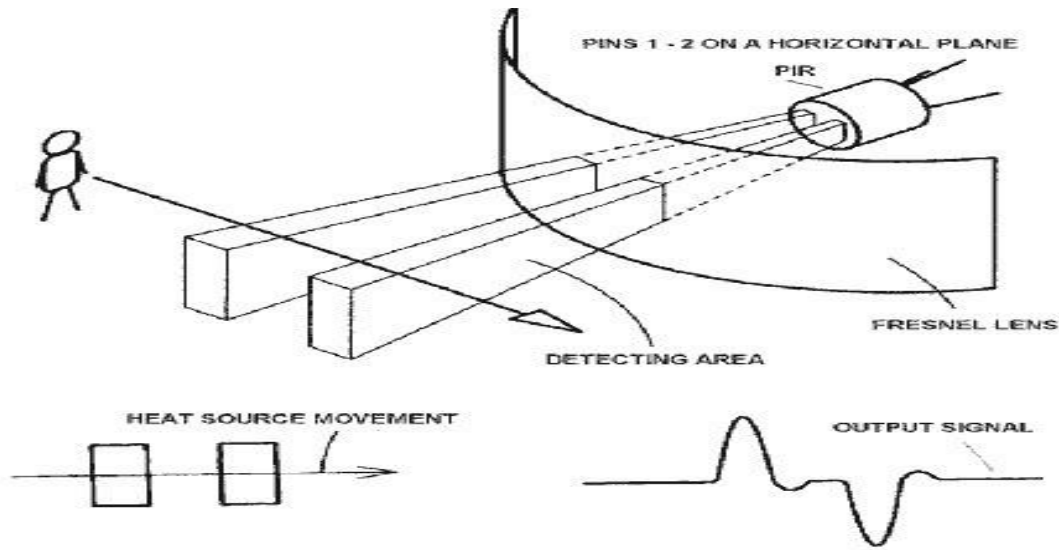


Fig. 3. Working of PIR sensor

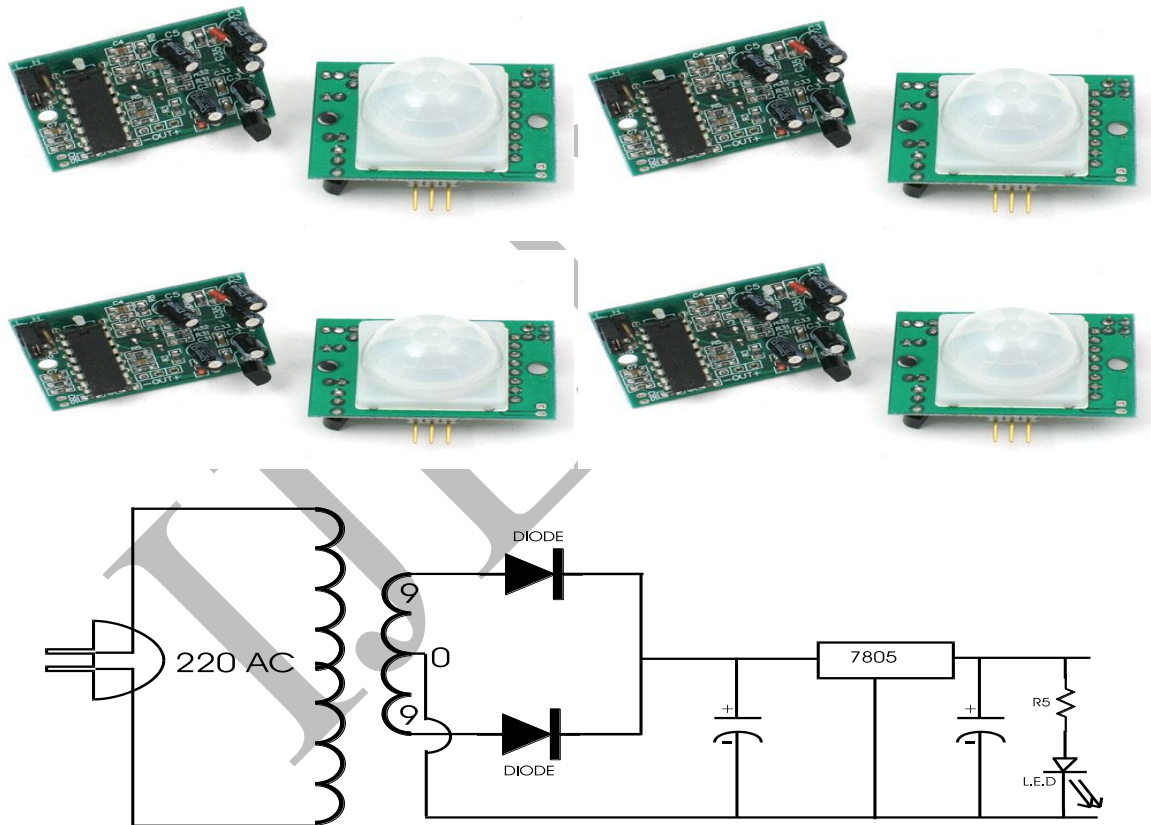
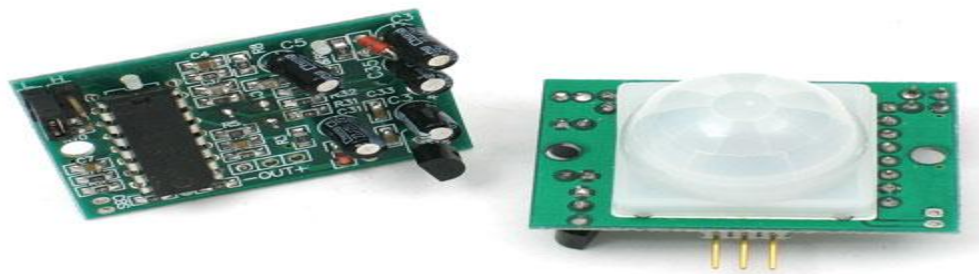


Fig. 4. Power supply circuit



2. LCD Screen

We use the lcd is total 16 pin lcd but here we show only 14 pins of the lcd with detail., Last two pins of the lcd is connected to the back light. Some time they are internally connected and some time they are connected by the power supply.[7]

All the code data , mode option and password option is to be displayed on the lcd during processing.

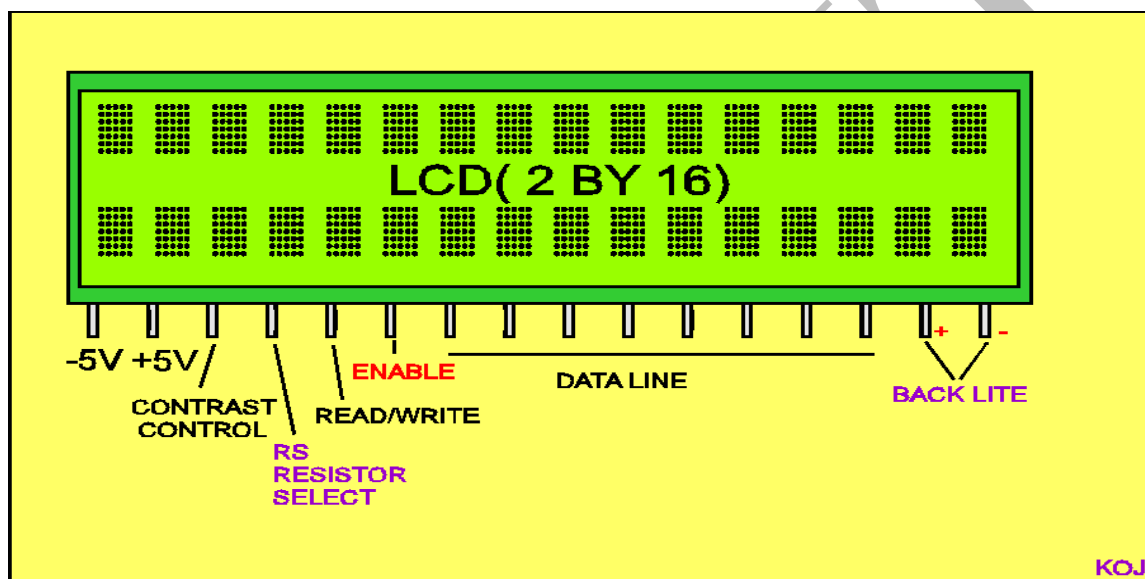


Fig. 5. LCD Display

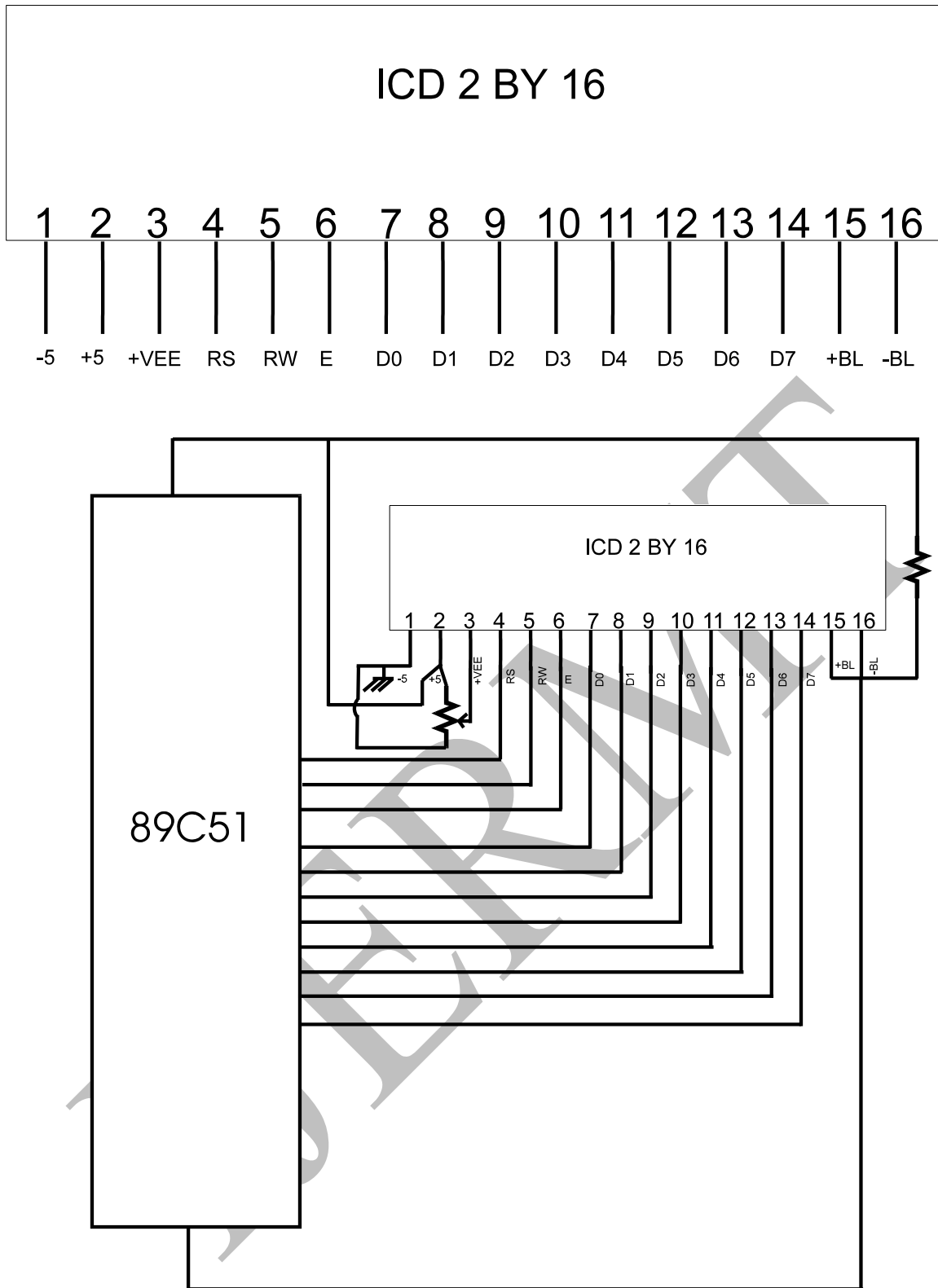


Fig .7 LDC interfaced with microcontroller

III. FUTURE WORKS

In this PIR Sensor Based Security System, we have used low power, low cost PIR sensor that are easy to interface with other components. By using this system we were able to reduce the power consumed and memory space of the system.

Considering all above points, followings are our future works set to improve the system:

Use more than one webcam for video recording and integrating these webcams with the system.

Work on the software to record videos from many webcams installed.

IV. CONCLUSION

In this paper, a PIR sensor based security system is proposed. It will combat the shortcomings of the RADAR system as they are radar absorption materials such as jaunnum materials which absorb the em waves thus detection is hindered. The PIR sensor works by sensing the radiations of human body, thus is very effective

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