



iJRASET

International Journal For Research in
Applied Science and Engineering Technology



INTERNATIONAL JOURNAL FOR RESEARCH

IN APPLIED SCIENCE & ENGINEERING TECHNOLOGY

Volume: 6 Issue: V Month of publication: May 2018

DOI: <http://doi.org/10.22214/ijraset.2018.5113>

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Human Speed Detection Project

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Abstract: Human sensing encompasses a range of technologies for detecting the presence of a human body on area of space, typically without the intentional participation of the detected person. Common applications include search and rescue, surveillance, and customer analytics.

Keywords: 8051 Microcontroller, 16x2 LCD, Speed Sensor, Relay, Buzzer, LED.

I. INTRODUCTION

The main objective of this project to detect the speed of humans. Therefore this system is very beneficial in the sports areas. In order to record the speed of humans, this system uses a handheld radar gun pointing at the person whose speed is to be detected. In case of a race, it may be necessary to detect the speed of the participants to make the decision or for some other reason. The proposed system calculates the speed considering the time parameter taken to travel from the beginning to the end point. For this IR transmitter and receiver are installed on either side of the road at the set points. The calculation of the time taken by the human being is done by the control unit. The speed of the human being is shown on an LCD screen. While driving on highways, motorists should not exceed maximum speed limit permitted for their vehicle. However accidents keep occurring due to speed violations since the drivers tend to ignore their speedometer. This speed checker will come handy for the highway traffic it will not only provide a digital display in accordance with a vehicles speed but sound an alarm if the vehicle exceeds the per-missible.

II. LITERATURE REVIEW

The wireless technology used here was Radio Frequency technology. Many types of human detection robots were designed depending on the application. The detection by rescue team was done, it consumes a lot of time. Detection of human in appropriate time was very important in these situations. The wireless robot is operated manually using PC. it is difficult to rescue the human beings under the buildings. The main principle of the circuit is to detect the human using human detection sensor. . The commands for operating the robots were transmitted using Personal computer.

The data is transmitted to receiver through RF. using the received data, robot is operated and controlled. The transmitter section consists of MAX232IC, RF transmitter, DB9 connector PC transmits the data to the RF transmitter through max232. This article presents a simple human detection robot that is operated manually using RF technology.

Max232 converts the logic levels. The logic levels of PC are in the range $\pm 3v$ to $\pm 15V$, while the logic levelsof RF module is compatible with TTL. In order to convert this voltage MAX 232 is used .This is also called level converter .The T1in pin of the MAX232 is connected to the receive pin of the DB9 which is in turn connected to the PC. The output pins are connected to the RF transmitter. Radio frequency is the wireless technology used here to transmit the data .Several carrier frequencies were used in available modules such as 433.92 MHZ,315MHZ ,868MHZ,915MHZ,2400MHZ .Here the RF modules uses a frequency of 433 MHZ. The DATA pin of the RF transmitter is connected to the T1out of the MAX232.A Vcc of 5v is applied to the RF transmitter. The receiver section consists of AT89c51microcontroller, L293D motor driver IC, RF receiver, motors of the robot, PIR sensor. Rohith Punuganti, Anusha Srinivas, Lakshmi F SavanoorAT89c51 is an 8051 family microcontroller. It is an 8-bit microcontroller. It has 40pins.It has flash memory of 4K bytes. The RF receiver module is connected to the port3 of the microcontroller. Data pins of RF receiver are connected to the receiver pin of the microcontroller. The two Vcc pins are shorted and connected to a supply of 5v.GND pins are shorted and connected to ground. The receiver module receives the data and transmits it to the microcontroller .PIR sensor plays a main role in the circuit. This is used to detect the human beings. The PIR sensor is nothing but Passive Infra-Red sensor. These sensors work on the principle that they every human being emits infra-red radiations of very low wave length. Thus this sensor senses these radiations and outputs a logic high value. This sensor can sense the human within the range of 20feet. They have an operating voltage of 2.2-5V. PIR sensor is connected to the Port1 of the micro controller.

A. Block Diagram

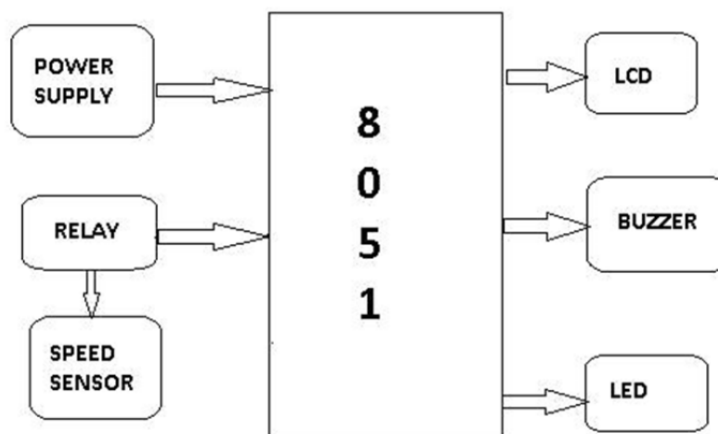
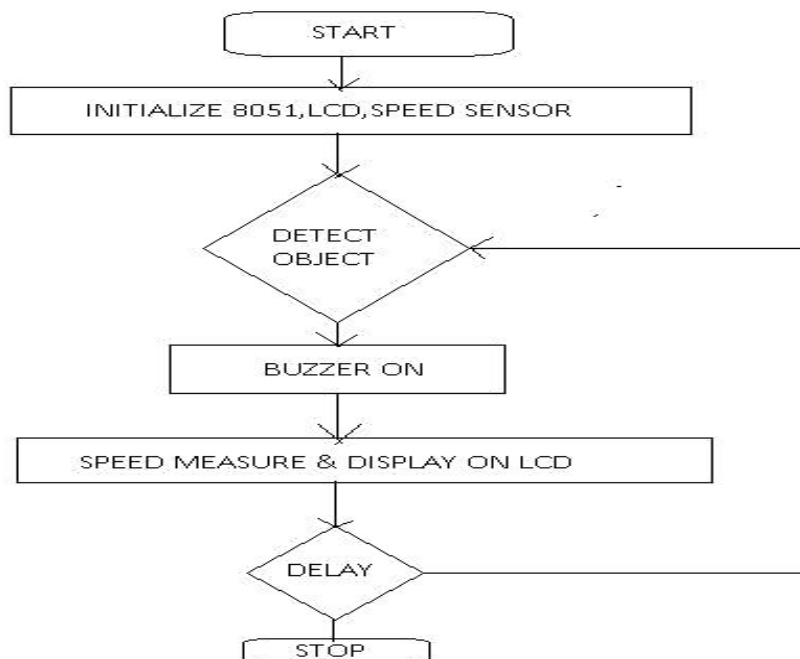


Fig 1. Block Diagram.

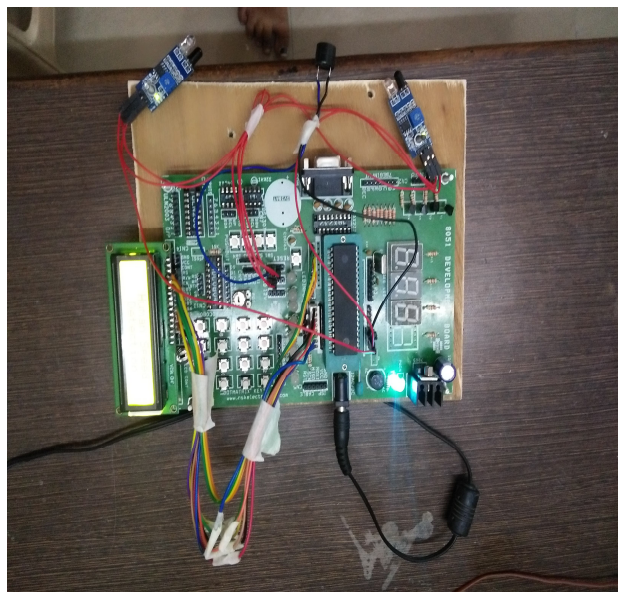
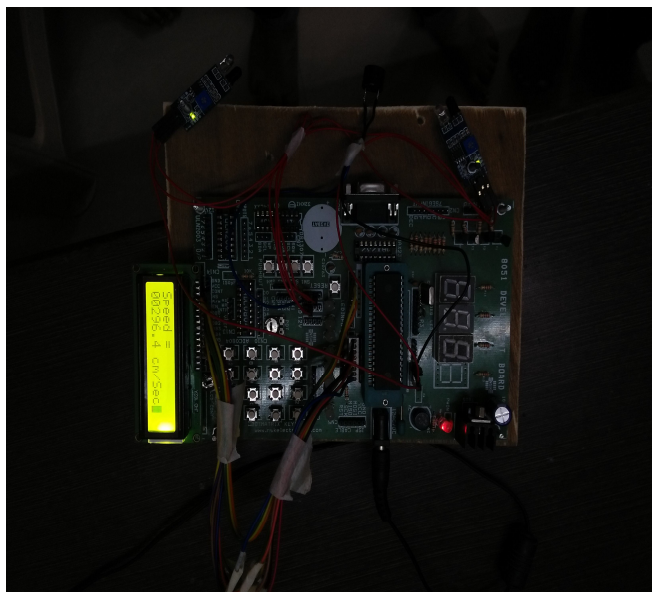
The block diagram consists of microcontroller 89C51, power supply, relay, Buzzer, LED, LCD display and the speed sensors. The drive the all the components 5v DC and 12v DC are required. The mains give the 230v AC so first we step down the 230v AC into 12v AC by using step down transformer. Then the output is given to the bridge rectifier. The rectifier eliminates the negative peak voltage of the input voltage.

The output of the rectifier is the pulsating DC. The error pulses are eliminating by using capacitor filter. Then the output at the parallel of the capacitor is the 12v DC. But the Microcontroller is work on 5v dc. To convert the 12v dc into 5v dc regulator (7805) is used. The output of the regulator is constant irrespective of the input voltage .the microcontroller requires the preset logic circuit for protection of the internal program and internal clock in case of power failure. A sudden change in the power may cause data error resulting in the corruption of the internal program. The reset logic circuit contains one capacitor and a resistor. The driver circuit generally made by using one transistor and ne relay.

III.FLOWCHART



IV.RESULT



V. ACKNOWLEDGMENT

Today on completion of this project report, the persons we need to thank the most who have helped us throughout the making of this project seminar report and without whose help it would not have seen the light of the day.

Primarily, we submit our gratitude and sincere thanks to College Of Engineering, Phaltan for their constant motivation and support during the project report. We truly appreciate and value their esteemed guidance and encouragement from the beginning to the end of this project report. We are thankful to our Head of the Department Prof. A. A. Ranaware for their unwavering moral support and motivation during the entire project seminar report.

We would also like to thank our Principal Dr. M. K. Phadatare who encouraged us and created a healthy environment for all of us to learn in best possible way.

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