



# Smart highway With E scanning Emergency

Abida Kanavi, A.H.Birasal, Chetana Hooli, S. China Venkatesh Waralu

Department Of Electronics and Communication, RTE Society's Rural Engineering College Hulkoti, (VTU ), GADAG India

## ABSTRACT

Driving on some of the highways has become dreadful for most of the people. With the exponential growth of population and the increase in number of vehicles day by day is posing a threat not only on the city roads but also on the highways. The fast growing cities demands transport of material and other resources to distant places on a daily basis. As we see daily many of the trucks travel with over load and even with over height. This causes accidents, bridge collapsing. To overcome the above said problems, we planned to do the project to detect the over load and over height of the trucks. This project also helps in detecting the bomb under the vehicles, while they are in motion itself. Automatic power saving System is a simple yet powerful concept, which uses transistor as a switch. By using this system manual works are 100% removed. It automatically switches ON lights when the sunlight goes below the visible region of our eyes. This is done by a sensor called Light Dependant Resistor (LDR) which senses the light actually like our eyes. It automatically switches OFF lights whenever the sunlight comes, visible to our eyes. By using this system energy consumption is also reduced because nowadays the manually operated street lights are not switched off even the sunlight comes and also switched on earlier before sunset. In this project, no need of manual operation like ON time and OFF time setting.

**KEYWORDS:** Emergency boxes using GSM in case of emergency like Accident, Medical emergency and vehicle breakdown and information sending concerned department. Explosive detection. Detects over load. Over height Automatic power saving during Dusk (night) and Dawn (day).

## 1. INTRODUCTION

Driving on some of the highways has become dreadful for most of the people. With the exponential growth of population and the increase in number of vehicles day by day is posing a threat not only on the city roads but also on the highways. The fast growing cities demands transport of material and other resources to distant places on a daily basis. This forces all the vehicles on the highway to move at greater speeds to reach the destination on time. But, unfortunately, such high speed may sometimes change their destination itself. It is not uncommon that some vehicles breakdown for various reasons, some are prone to fatal accident; some people may develop unexpected serious health problems while on the high way. In all such cases, in spite of having sophisticated technology devices like mobile phones, one may not be able to communicate or reach out others even to call for help for various reasons like no network /signal, out of service area, not sufficient currency (in case of pre-paid connections), no roaming facility, etc. With hardly any facilities around, it will be really pathetic for anyone who experiences such unforeseen events and he/she may even panic. It would be of great help if there is an access to some communication/control system at a distance (say every 8-10kms) on the highway so that a person in need can seek the assistance from a central



station or the nearest gasoline station where a call box controller is installed. The proposed call box system helps a person to easily and clearly communicate to the control station just with the press of a button the type of the assistance needed such as medical assistance, tow motor vehicle, accident relief services etc., without any feel of helplessness irrespective of where he/she is. Automatic power saving System is a simple yet powerful concept, which uses transistor as a switch. By using this system manual works are 100% removed. It automatically switches ON lights when the sunlight goes below the visible region of our eyes. This is done by a sensor called Light Dependant Resistor (LDR) which senses the light actually like our eyes.

## LITERATURE REVIEW

The literature survey includes a detailed study of challenges present in the existing techniques for an intelligence monitoring of distribution transformer. If installed this system in the toll gate if it is attached along with toll it will check for the over load, over height and bomb detection everything. So that accident also will be decreased by implementing our project. So when if start implementing this one so if there is no over load to the vehicle they will go in the normal speed and they can balance the vehicle. So that accident occurring will become can be minimized. William Vickrey the Nobel Economics prize winner, in 1959, was the first who proposed electronic toll system for. The Toll Collection system has changed drastically over the year; from being a single borderline, a small passage booth to the hung toll collection infrastructure that has key role in the revenue generation as well as working of the traffic of a city or even a state. While majority of the population is traveling via different means it has become a necessity and a regulatory method to control traffic.

## 2. BLOCK DIAGRAM

A proximity sensor detects the presence of objects that are nearly placed without any point of contact. Since there is no contact between the sensors and sensed object and lack of mechanical parts, these sensors have long functional life and high reliability. The IR based proximity sensor is used to detect the garbage bin position, if the garbage is full it provides the signal to the driver circuit. The program is stored in the flash ROM of Microcontroller, once the power is made ON, the Microcontroller checks the signals from its ports to detect the magnetic card. Depending on the card the ports of microcontroller send signals to the microcontroller, the microcontroller enables the port to activate to produce sound for say 10 seconds, then the gate will be closed.

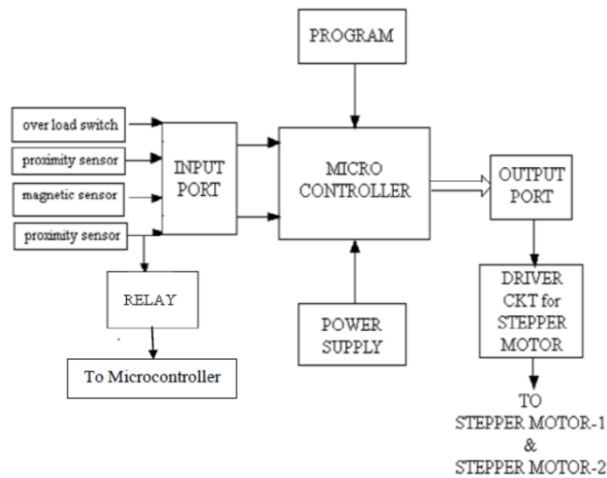


Fig 1: Block Diagram

### 3. HARDWARE DESIGN

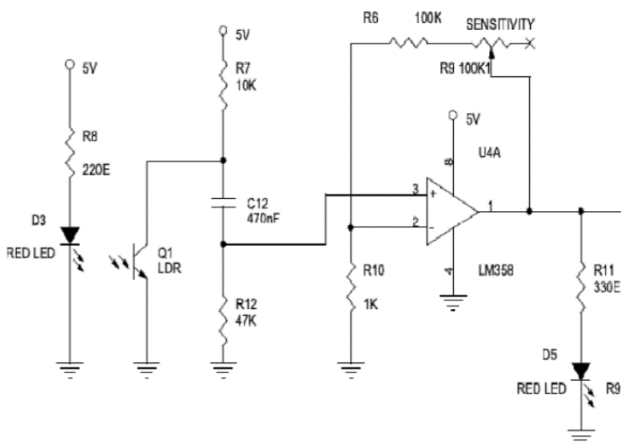


Fig.2: Connection of components

The transmitter part of the sensor is an Infrared (IR) Led which transmits continuous IR rays to be received by an IR receiver. The output of the receiver varies depending upon its reception of IR rays. Since this variation cannot be analyzed as such, therefore this output can be fed to a comparator. Here operational amplifier (opamp) of LM 358 is used as comparator. When the IR receiver does not receive signal the potential at the inverting input goes higher than that that at non-inverting input of the comparator (LM 358). Thus the output of the comparator goes low and the LED does not glow .When the IR receiver receives signal the potential at the inverting input goes low. Thus the output of the comparator (LM 358) goes high and the LED starts glowing. Resistor

R1 (100), R2 (10k) and R3 (330) are used to ensure that minimum 10mA current passes through the IR LED, photodiode and normal LED, respectively. Resistor VR2 (preset=5k) is used to adjust the output. Resistor VR1 (preset=10k) is used to set the sensitivity of the circuit. The o/p of IR LED is fed to the relay.

#### 4.SYSTEM DESIGN AND IMPLEMENTATION

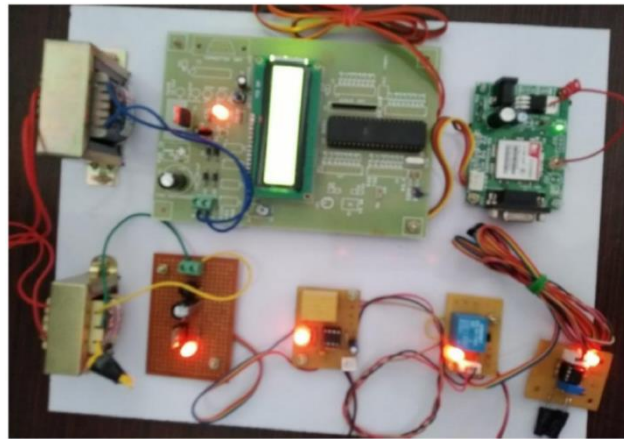


Fig 3:Implementation of system

It would be of great help if there is an access to some communication/control system at a walk-able distance (say every 8-10kms) on the highway so that a person in need can seek the assistance from a central station or the nearest gasoline station where a call box controller is installed. The proposed call box system helps a person to easily and clearly communicate to the control station just with the press of a button the type of the assistance needed such as medical assistance, tow motor vehicle, accident relief services etc., without any feel of helplessness irrespective of where he/she is.

#### 4. SOFTWARE IMPLEMENTATION

For emergency complaints a switch is provided where the public can activate by pressing it to send emergency SMS to the ambulance For emergency complaints a switch is provided where the public can activate by pressing it to send emergency SMS to the police For emergency complaints a switch is provided where the public can activate by pressing it to send emergency SMS to the mechanical.

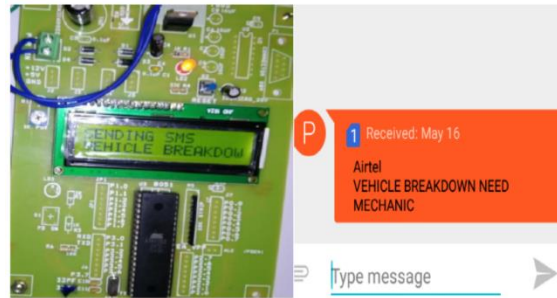


Fig 4:Implementation of software

## RESULT

Safeguards our Country from the unauthorized people. Saves power and increases our country economy. Due to over load application, damaging of roads can be prevented. By avoiding over height vehicles, minimizes the accidents. By installing GSM based emergency switches we can safe guard human life and we can have journey without interruption. Since Microcontroller is used, it consumes less power More reliable and flexible. More accuracy.

## FUTURE SCOPE

LM7805 is a linear regulator, to improve efficiency of battery charge circuit. We can use the buck boost converter or even for higher efficiency we can use SEPIC (single ended primary inductor converter) where rectification is used. AT89S52 which is a 40pin IC. To reduce the size in physical and in software we can go for flash type PIC IC'S. New sensory systems and sensory fusion is to be explored to plug additional information to the control system. This system can be installed not only in highways and for other roads, where safety can be increased. GPS can be installed along with the GSM to locate the location. We can record the video using cameras. The size of the circuits can be made compact, while doing for customized design.

## CONCLUSION

In this project elaborates the design and construction of automatic street control system circuit. Circuit work properly to turn street lamp ON/OFF. Here the over height sensing is done with the help of IR rays and load switch detects the over load, these parameters are sensed and it is cascaded to the ASK transmitters encoded data is transmitted. As soon as the over height detected, pulse is given to controller to control the gate, and when vehicle detection is detected it will close to main gate and open the office gate.

## REFERENCE



## International Journal on Recent Researches in Science, Engineering & Technology (IJRRSET)

A Journal Established in early 2000 as National journal and upgraded to International journal in 2013 and is in existence for the last 10 years. It is run by Retired Professors from NIT, Trichy. Journal Indexed in JIR, DIIF and SJIF.

Available online at: [www.ijrrset.com](http://www.ijrrset.com)

ISSN (Print) : 2347-6729  
ISSN (Online) : 2348-3105

JIR IF : 2.54  
SJIF IF : 4.334  
Cosmos: 5.395

**Volume 6, Issue 12 - December 2018 - Pages 116-121**

- [1] Electronic Communication Systems by George Kennedy.
- [2] Radio Engineering by G. K. Mithal.
- [3] Principles of Electronics by V. K. Mehta.
- [4] Programming & Customizing the 8051 Microcontroller by MykePredko.
- [5] Embedded System Design using 8051 Microcontroller by Prof. Satish Shah
- [6] Analog Circuits by D. V. Kamat & Sudha Kamat.