

# Accident Avoidance System at Corner in Night Mode using Solar

Miss. Chandgude Puja.<sup>1</sup>, Miss. Sawant Vaishali.<sup>2</sup>, Miss. Wadekar Yogita.<sup>3</sup>, Mr. M.N.Kadam.<sup>4</sup>

<sup>1, 2, 3, 4</sup> S.V.P.M'S College of Engineering, Malegaon (Bk), Baramati.

**Abstract-** Idea of Designing accident avoidance system project is born with the observation in our real life examples happening around us. This project overcomes the drawback of older technology used in our society. In this paper we present the idea is that when we drive our vehicle from corner, the light of our vehicle goes straight so driver can't see corner properly, so most accidents are happen. In this project we use pair of RF module and solar plates at both sides of corner, so driver can see the corner and avoid from accident.

**Keywords-** PIC18F4520 Controller, RF transmitter, RF receiver, LDR, Buzzer, Relay, LCD display, Lamp, Solar plate etc.

## I. INTRODUCTION

In Today's world accidents are being increasing day By day. There are many reasons like high speed, improper indication, darkness, etc. The accidents are mostly happened at night Mode at corner. The main reason behind it is darkness at corner. In this project we are mainly focusing on a solution to avoid the accidents at night mode. Solar energy systems have emerged as a viable source of renewable energy over the past two or three decades, and are now widely used for a variety of in industrial and domestic applications. Such systems are based on a solar collector, designed to collect the sun's energy and to convert it into either electrical power or thermal energy. RF module can cover the 500 meter area as the range is 500 meter [4]. RF module contains RF transmitter module and RF receiver module.

## II. SYSTEM BLOCK DIAGRAM

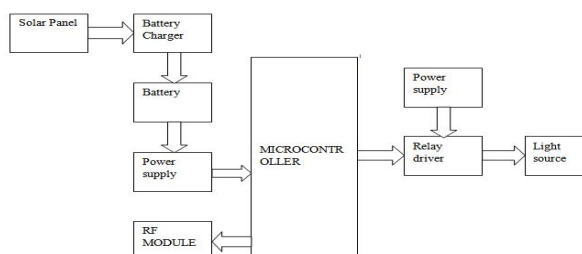


Fig. Block diagram for accident avoidance system at left/right corner

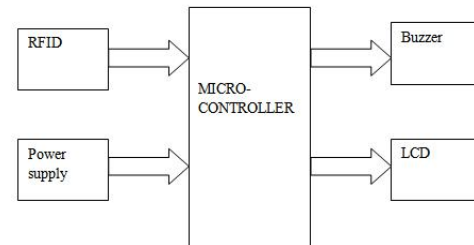


Fig. Accident avoidance system in the vehicle

**Block Diagram Discription** - This is the block diagram of accident avoidance system at left / right corner. Solar Panel generate electricity this electricity pass to the battery charger with the help of power supply it pass to the microcontroller . Buzzer and LCD are connected to the microcontroller buzzer generate alarm when any vehicle is pass at corner.

## III. RELETED WORK

### a. Solar panel:

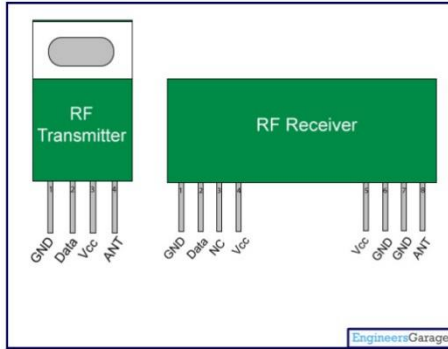
A solar panel is a device that collects photons of sunlight ,which are very small packets of electromagnetic radiation energy, and converts them into electrical current that can be used to power electrical loads. Using solar panels is a very practical way to produce electricity for many applications. The obvious would have to be off-grid living. Living off-grid means living in a location that is not serviced by the main electric utility grid. Remote homes and cabins benefit nicely from solar power systems. No longer is it necessary to pay huge fees for the installation of electric utility poles and cabling from the nearest main grid access point.

### b. RF module:

The RF module operates at radio frequency. The corresponding frequency varies between 30kHz to 300GHz. In this RF system, the digital data is represented as variations in the amplitude of carrier wave. This kind of modulation is known as Amplitude Shift keying(ASK)[1].

This RF module comprises of an RF transmitter and an RF receiver. The transmitter /receiver pair operates at a

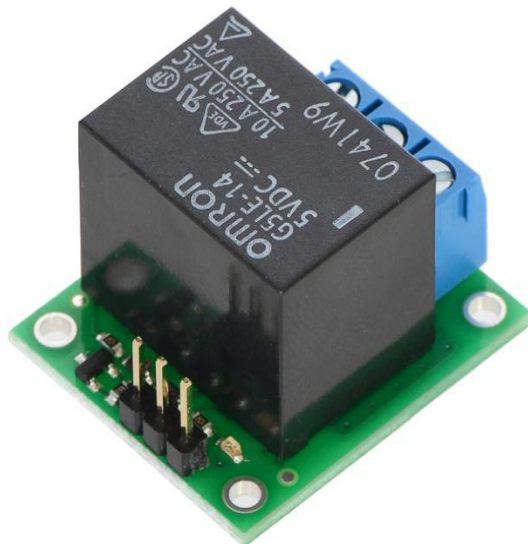
frequency of 434MHz. An RF transmitter receives serial data and transmits it wirelessly through RF through its antenna at pin 4. The transmission occur at the rate of 1kbps-10kbps. The transmitted data is received by an RF receiver operating at the same frequency. An RF receiver module receives the RF modulated signal and demodulates it.



**c. Relay:**

A relay is an electromechanical device that is actuated by an electrical current. The current flowing in one circuit causes the opening or closing of another circuit. Relays are like remote control switches and are used in many applications because of their relative simplicity, long life and proven high reliability.

All relays contain a sensing unit, the electric coil, which is powered by AC or DC current. When the applied current or voltage exceeds a threshold value, the coil activates the armature, which operates either to close the open contact. When power is supplied to the coil, it generates a magnetic force that actuates the switch mechanism. The magnetic force is, in effect, relaying the action from one circuit to another.



**d. LDR:**

When headlights of the car are incident on the LDR, the LDR will give the signal to controller. According to that condition, the relay will turn on and light on the road also get turn on.

**FLOWCHART**

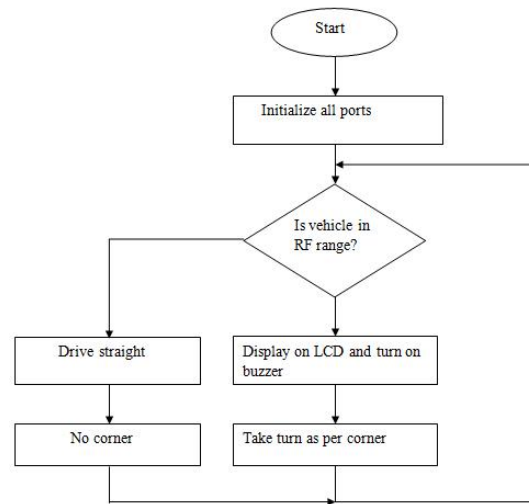


Fig. Flowchart for vehicle section

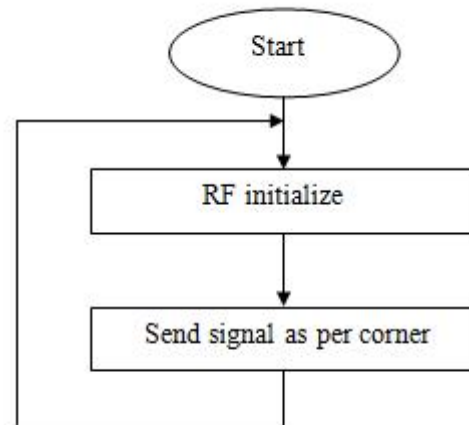
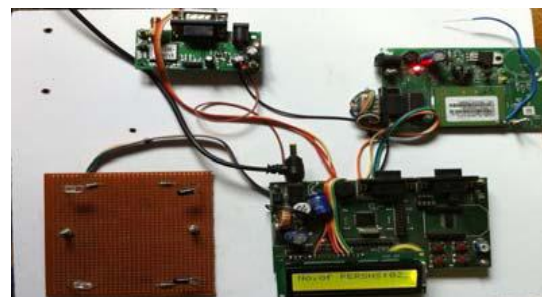


Fig. Flowchart for transmitter (corner)

**III. RESULT**



**IV. CONCLUSION**

This paper concludes that by using The Accident avoidance system at corner in night mode reduces the number of accidents happening at night time at corner. The driver will get alert about next incoming corner with the help of proper indications on LCD display and beeping of Buzzer. So he can drive safely at the corner.

#### REFERENCES

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