

# Blind Spot Detection System

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**Abstract**— The Project has aim to detect blind spot to avoid accidents takes place in highways. The Blind Spot Detection System is designed to aid in detecting vehicles that may have entered the blind spot zone. The detection area is on both sides of your vehicle, extending rearward from the exterior mirrors. The system is designed to alert you if vehicles, approaching from the rear, enter the blind spot zone. When driving a vehicle on a road, if a driver want to change lane, he must glance the rear and side mirrors of his vehicle and turn his head to scan the possible approaching vehicles on the side lanes. However, the view scope by the above behavior is limited; there is a blind spot area invisible. To avoid the possible traffic accident, we here propose a blind spot detection system. Car Driver Assisted for Blind Spot System is invented to observe the blind spot region and alert the driver automatically to ensure the driver safety on highway due to the driver inability to observe the blind spot area directly which had caused many accident occur.

**Key words:** ATmega328P Microcontroller, HC SR04 Ultrasonic Sensor, OLED Display

## I. INTRODUCTION

In the present days the toll of road accidents has been in the increasing graph and many accidents are caused due to negligence of the driver. Most of the accidents also happen in the highway driving, where driver have negligence during lane departure/switching of vehicles. So to avoid accidents we are proposing blind spot detection system to avoid blind spot accidents. The Blind Spot Detection System is designed to aid in detecting vehicles that may have entered the blind spot zone. The detection area is on both sides of your vehicle, extending rearward from the exterior mirrors. The system is designed to alert you if vehicles, approaching from the rear, enter the blind spot zone.

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## II. SCOPE OF PROJECT

- Main purpose of Blind Spot Detection system to detect blind spot which cannot seen by drive while driving vehicle and display the indications of blind spots.
- The system is useful in four wheeler vehicle and it is significantly using in accident avoidance in vehicles.

- Sensor uses to detect blind spots and microcontroller being use so the cost of system is low and that can be affordable to common man.
- Now a days, Luxurious vehicles are mostly using the system and due to reduction of cost the system using in moderate cost vehicle also.

## III. LITERATURE SURVEY

Blind spot region is an area to the side and slightly behind driver fields of vision that is not reflected in the vehicle rear mirror and requires the driver to turn their head slightly to monitor the area before making any action such as changing the lane. A problem will be occurs when a vehicle approaching another vehicle blind spot and the driver unable to see the vehicle decide to change the lane. For example, refer picture in Figure 2.1.1 below, location of cars on the road and the driver's view from side mirror and rear mirror was shown. At the right side, the blue car is in the green car blind spot area and drivers are able to see a little bit part of the blue car and assume the location of the car is far behind from his car. Then, when the green car decides to change the lane, accident may happen. In addition, many road accident are occurs in blind spot region especially in highway due to overtaking, being overtake or changing the lane action. Sometimes, some drivers are too focusing to monitor their blind spot region and loss focus on the road in front of them. Those actions may lead them into accidents that contribute into injury, loss and even death. The consequence of the accident will bring misfortune tony involving party.

Awareness from the problem, many gadgets had been invented to monitor the region such as blind spot mirror but it less effective as accident still occurs because the device accuracy is depends on the driver. Thus, a system that can detect vehicles presence in blind spot and alerting the driver had been invented to ensure the road user safety. Three technologies protect the side and back of your car: blind spot detection, lane departure warning, and rear parking sonar. Here's how they differ: Blind spot detection (BSD) was developed by Volvo a decade ago. BSD uses ultrasonic or radar sensors on the side and rear of the car. The name comes from the blind spot to the side just behind the car where you may not see a car because the mirror doesn't cover and if you turn you're heard, it could be obscured by the B-pillar (the one between the front and back seat on four-door cars). The opposite, passive blind spot monitoring, means — wait for it — looking in the side mirror. Just as the names vary, so does the performance. Some only detect cars once they've overlapped your rear bumper (that is, already alongside), while others detect cars 3-5 car lengths back. Blind spot detection also works (as BSD) to spot cars and trucks; even motorcycles and bicycles have enough mass to be sensed. Although: How often are you overtaken by a bicycle? Lane departure warning tracks whether you're centered in your lane or not. It uses a forward-facing camera usually in the rear view mirror mount so it's typically an optical system. If you

drift across the lane, you get a visual alert in the dashboard and an audible alert or a steering wheel or seat bottom vibration. If your turn signal is on, you won't get an alert; the car assumes you intend to cross over lanes. That's the opposite of BSD, which gives a full alert with the turn signal blinking, because the car fears you're about to move into the path of another car.

#### IV. PROPOSED SYSTEM

In this blind spot detection system we are using the ultrasonic sensor for the purpose to detect the blind spots around cars. OLED display is using to display the indication and also buzzer is using for the purpose of indication. We are using microcontroller for processing and controlling system

functions. Our system is less expensive and has large range of blind spot detection.

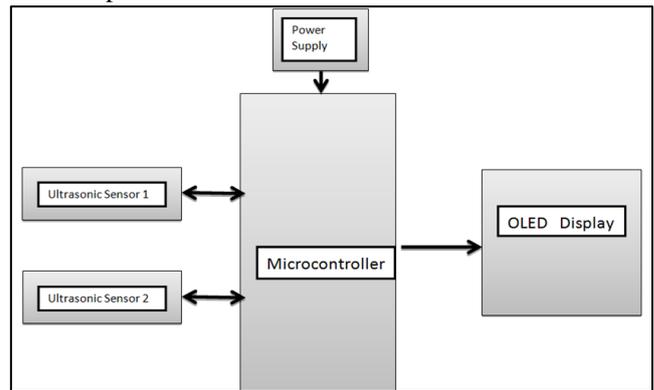


Fig. 1: Block Diagram of Proposed System

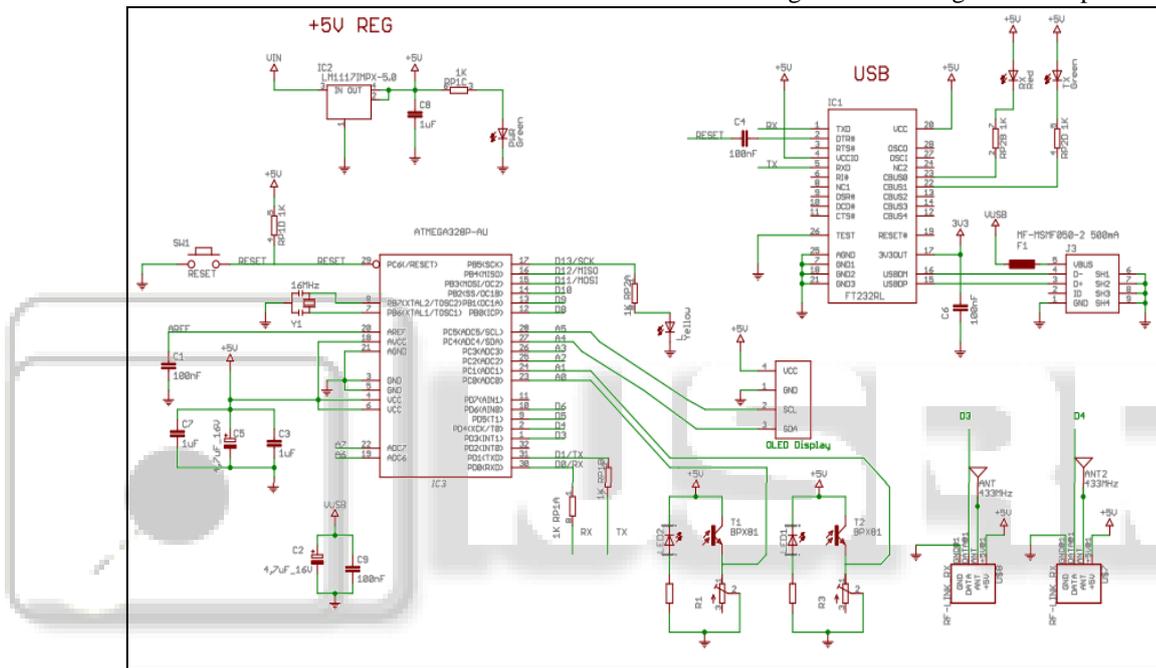


Fig. 2: Simulation of Proposed System

#### V. CONCLUSION

In this project we are going to implementing Blind spot detection system which helpful to avoid accidents in the highways. Thus by the following system developed the vehicle detects the blind spot area and controls according to that blind spot areas. As per the National Highway Authority of India (NHAI) road accidents occur due mostly due to the overtaking in the highways due to negligence of the driver. And therefore with this kind of system developed the accidents caused due to driver negligence can be brought down by an extent.

In this way, Blind spot detection system is designed for the purpose of monitoring detection of blind spot. The main purpose of this system is in vehicles. This system can also be implemented with reliability and accuracy that is important to detect blind spot and indicate the driver to take require action to avoid accidents.

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