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VLC based Vehicle to Vehicle Communication

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Abstract: The aim is to avoid the vehicle collision which is a serve problem in many urban cities. To solve this problem we are using this technology. Now-a-days, the increase of the transportation like car, bus and two wheeler in major cities of world raise the need to avoid the accident in our society. VLC is a form of Visible Light Communication. VLC is a wireless communication system and it uses light emitting diodes(LED) to transmit data wirelessly.
Keywords- Crash Avoidance, Safety application, Communication Security, Integrated Device.

I. INTRODUCTION

VLC is an important and popular technique in the communication system and is known as Visible Light Communication. It is very fast and inexpensive wireless communication system. The technology works by adapting LED to send digital type of information invisible to the naked eye. Vehicle to Vehicle Communication is the most effective solution that has been used in order to reduce vehicle accidents. It may also save thousands of lives a year.

II. PROPOSED WORK

A. Working Principle

Vehicle to vehicle communication is based on visible light communication. All cars will work both as transmitter and receiver.

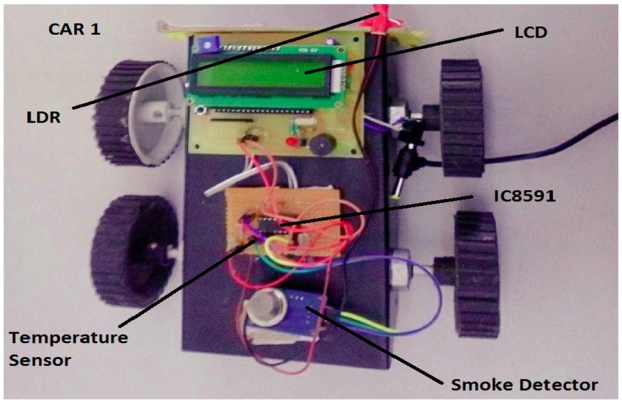
B. CAR II

Ultrasonic sensor which transmitter and receive the sound unit, one is transmitter and other is receiver. L239D IC control the two motor. We used two motors which controls the whole system. LCD is used to display the distance if any obstacle passes through the car. If obstacle is pass to the car.car will stop and if obstacle is for to the car, car will move slowly. 8051 microcontroller used and two pull up resistor control which have 5 volts and we have give full 5v supply to the micro controller. There is a buzzer and also reset button to reset the system.

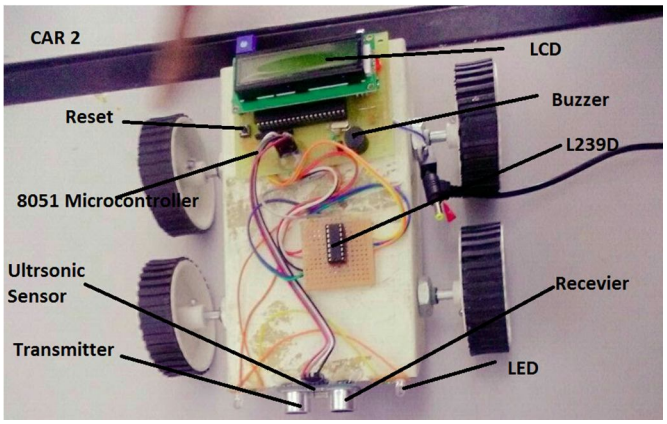
C. CAR I

In car 1 there is a smoke detector used to detect the smoke if occurs. IC 8591 convert the analog to digital signal ADC. Temperature sensor is used to sense the temperature goes high it will display on LCD. In car 1 LCD will display (distance for or near) and smoke high in digital signal.LCD is used which is light dependent resistor which range is 8 to10cm and ultrasonic rang is 10cm .

III. BLOCK DIAGRAM



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IV. RESULT

We present the first experimental results that we obtained with the prototype we made. The main objective is to show that the setup is suitable to transmit data using visible light technology. Ultrasonic sensor transmits an high frequency voice signal in order to calculate distance of the nearest object by receiving same voice signal like SONAR. Visible light is used as medium to defined distance of the car from behind smoke sensor module sense the combustion particles to determine the smoke level of the atmosphere.

V. CONCLUSION

Vehicle to vehicle communication is easy and simple to use. Cars will exchange the data within cars takes place because of this the drivers gets alert (which also helps to reduce traffic problems) The use of interactive board is a boon to the educational field and research survey in various countries has shown its increasing impact. There are many positive effects of this technology including ability to improve students learning environment and teachers teaching methods.

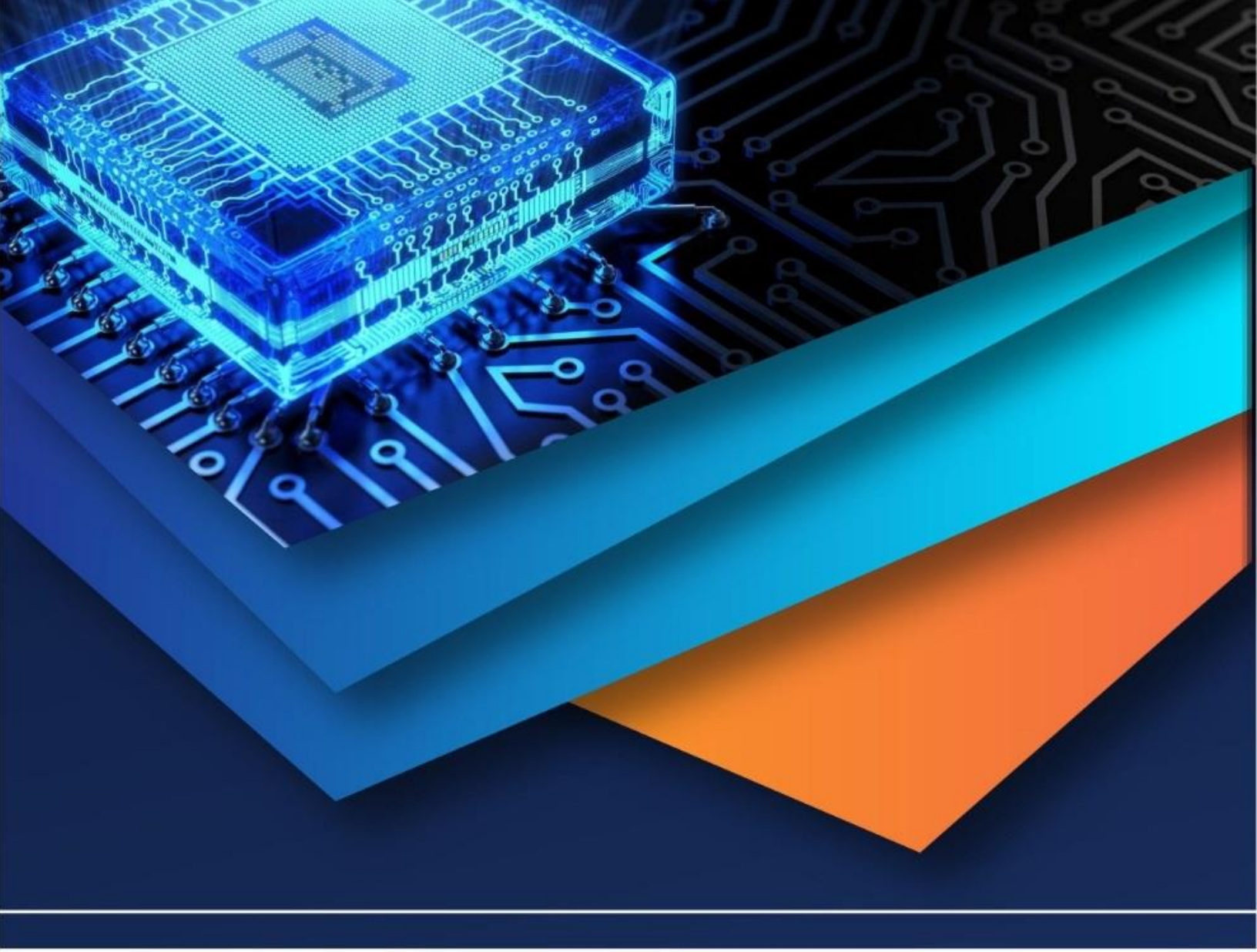
VI. ACKNOWLEDGEMENT

We have a great pleasure for representing this project report entitled **"**VLC BASED VEHICLE TO VEHICLE COMMUNICATION**"** and we grab this opportunity to convey our immense regards towards all the distinguished people who have their valuable contribution in the hour of need. We take this opportunity to thanks Dr. J.W.Bakal, Principal and Mrs. Prof.S.A.LONKAR, Head of the Department, Electronics and Telecommunication, for giving us an opportunity and the most needed guidance throughout the duration of the course. And also Prof. Kalindi Kalebere for the guidance and necessary support during each phase of the project. We also owe to our fellow colleagues who have been a constant source of help to solve the problems that cropped up during the project development process.

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