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Overspeed detection with the help of speedbreaker

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ABSTRACT

The main concern of this project is to overcome the road accidents and the safety of the peoples or the family members from road accidents. So to overcome this issue we are working on this project to detect the speed of the vehicles with the help of the ultrasonic system and Arduino board. When the vehicle has come in the range of the ultrasonic system then they start detecting their speed and if their speed has been exceeding from the speed limit of the road then they send the signals to Arduino and the motor turn on the speedbreaker and if the vehicle having in their normal speed then the speedbreaker remains constant..

Keywords— Overspeed, Ultrasonic system, Speedbreaker

1. INTRODUCTION

Over speeding, vehicles are major issues in road safety and need proper addressing to minimize the accidents. Excessive Speed is the factor in one-third of all fatal crashes. Vehicle speed detection is based on the use of Ultrasonic system to find the speed of the moving vehicles. Ultrasonic system effect can be exploited to measure the speed of vehicles and identify those crossing speed limit. The shift in frequency between the transmitted and reflected high-frequency wave is the key factor used to calculate speed. The Ultrasonic system based speed detector can be interfaced to a microprocessor-based system for measurement and comparison. And all the data has been transmitted to the Arduino board by which the speed breaker has been turned on and the vehicle has been decreasing there speed limit by which the road accidents have been decreases.

2. LITERATURE SURVEY

The main purpose of the project is to decreases the road accidents to some extent with the help of overspeed detecting speed breaker by using Ultrasonic system. the Ultrasonic system is the main sensor in this project by which the vehicle speed has been detecting and if the vehicle exceeds the speed limit then the speed breaker has been automatic turn on by which the vehicle speed has been decreasing due to which the road accident cases have been also minimized to some extent. Now a days we are noticing that the numbers of road accidents are done because of the over speeding the vehicles and we are also searching a lots of surveys that tell now there is not having any type of proper solution for this problem that's why we are working on this project to overcome the road accidents to some extent by which we can save the peoples life.

3. HARDWARE SPECIFICATION

3.1 Arduino board

Arduino is a microprocessor and having input/output pins which we can also know as an open source device and the Arduino is a hardware device that is used to command the other devices with the help of the programming that we are used to do in the ArduinoIDE software.

3.2 Ultrasonic system

2cm - 400cm non-contact measurement function, 3mm ranging accuracy. There is having ultrasonic transmitters, control circuit and receiver for the modules of the ultrasonic system. The ultrasonic system working is to detect the speed of the vehicles by sending the waves and when the signal is reflected they calculate their accuracy properly to detect the speed of the vehicle. There is having lots of points to describe there working and the range of accuracy. That is given below.

- Trigger 10us high-level signal
- Detect pulse signal back
- Test distance= $high\ level \times velocity$

4. PROPOSED SYSTEM

There are many reasons behind the implementation of this system in the highways are The road accidents have been decreases with the help of automatic speed breaker by using Ultrasonic system and Arduino board to detect the speed of the vehicles and for the transferring the signals to the motor for turn on and off the speed breaker.

5. OBJECTIVE

- The main objective of our project is to overcome the road accidents.
- From lots of surveys we are noticing that most of the road accidents are done by the overspeeding of the vehicles in the highways.
- The motor turn on and off the speedbreaker with the help of Arduino board commands when the vehicle exceeds the speed limit.
- Detecting the speed of the vehicle with the help of the ultrasonic system.
- This project is implemented for the concern of our family members and the other people’s safety will driving the vehicle.
- If the vehicle is exceeding the speed limit then the speedbreaker has been turned on and if the vehicle is not exceeding the road speed limit then the speedbreaker remains constant.

6. ARCHITECTURE DIAGRAM

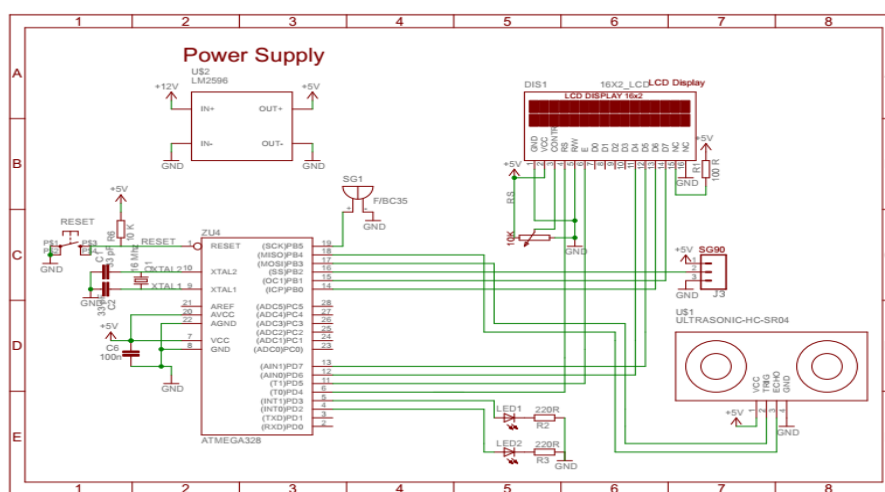


Fig. 1: System architecture

7. CONCLUSION

The conclusion of this project is to how we can overcome the road accidents and in this project, we are recognizing the speed of the vehicle by which we decrease the road accidents and there main concern is also to save the life of peoples and our family members from the road accidents. We are now trying to make this model more efficient by which they are having useful to the common peoples on the road and their safety concern.

8. REFERENCES

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