

# Ultrasonic Braking System

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**Abstract** – The system was specifically construct and applied to the car for driving process safety.in current scenario accident are form by late for the press the brake pedal and ignorance of driver that project main aim to design the prototype that system develop the function of collision while vehicle in production. System can operate spontaneously with the high image of sensor base on relay circuit and few changes in braking system and apply the brake spontaneously in emergency condition. That result form of system can get the high accuracy measurement and short distance measurement also improve. In safety application that measurement used to control the braking system .arduino nano microcontroller is a brain of system. The braking is a form of 3/2 soleniod valve which produce the brake and clutch.

## 1. INTRODUCTION

Automatic braking system is also known as ultrasonic braking system that system include the wave emitter to give the forward face of the car producing and emitted wave. Forward face of the car is on the ultrasonic receiver. The best importance of this system of business of vehicle are given the problem with safety. Negligiance of breaking of vehicle it form the heavy accident stop the longer distance and output of better energy of brake in case of combination. Speed are controlled by the compressed air by the conventional medium. Swift brake are response for the commercial vehicle and every single wheel release.electroic control used by the critical shortening the braking system by the control the system.it enable to realize the given task. The management strategy for braking force advance. The improve the processor of digital signal.

### 1.1 Need of Proposed System

Accident happen because of some technical issue of vehicle or because driver mistake. Vehicle lose the control by the driver and rash driving occur accident. That fashion occur more accident. This project help to prevent such type of accident.

## 2. Specification

Table -1:

Microcontroller	A Tmega 328P
Range	100-160 cm
Resolution	12 inches
Signal output	0-5V
Excitation voltage	12V

## 3. Proposed System

In that section we explain about the complete system of working of flow.

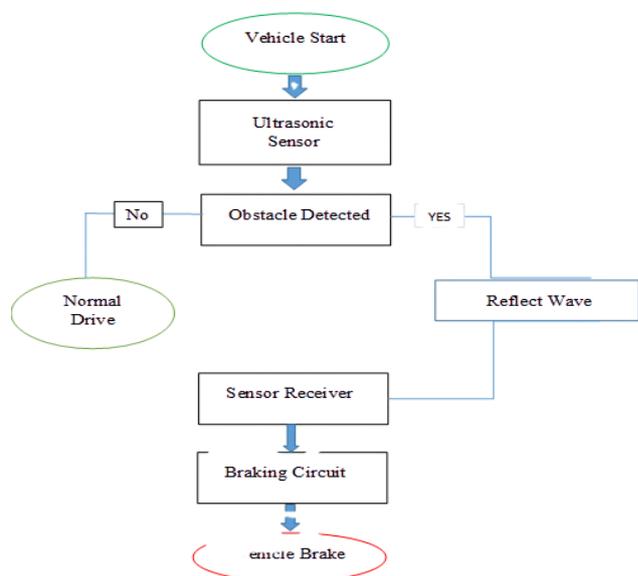


Fig.1 Working flow diagram

## 4. System Architecture

### 4.1 Ultrasonic Sensor

The device of detecting and ranging of sound wave of high frequency to detect the object. this object measures the sound wave of the eco reflection and detect the braking of sound because of object passes through the receiver and

transmitter transducer develop the output of electrical signal it occur the ultrasonic wave. The minimum angle horizontal aperture is 8 degree for distance for 75 meter between vehicle.



Fig2. Ultrasonic Sensor



Fig 4. Arduino uno microcontroller

### 4.2 Hydraulic braking system

Pascal law applied on the system. It states that pressure is applied on the inside the system in same direction the pressure act on the fluid passes through the same direction. This applied on all four wheel brake pad against the rotating disc with brake force because of piston. The vehicle of mechanical energy is converted to heat or release to the environment.

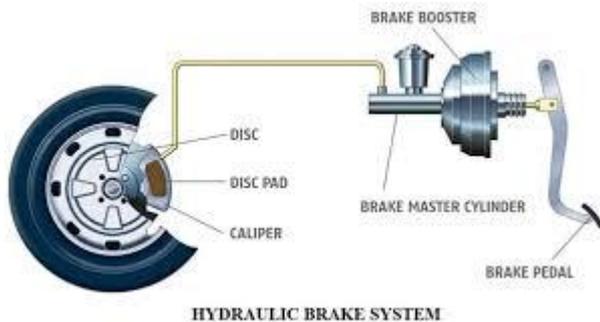


Fig 3. Hydraulic brake system

### 4.3 Microcontroller

The microcontroller are the open source platform to benefit for the developing electronic type of project. Both microcontroller handle the arduino and a bit of software or IDE that run on your PC. This microcontroller doesn't want a separate bit of hardware. Then upload the new code on to the board C++ version also simply by arduino IDE.

### 5. Conclusion

The Ultrasonic braking system, if acted can to prevent the accident or to save human live. Wearing seat belt in order by implemented in such complicated system are made it compulsory. Our ultrasonic braking system it give the automotive safety for the long run and advance this system are often for to prevent the accident and protect the vehicle to occupied and after they are into one system. To develop the new technology for long run of automotive safety.

### 6. Acknowledgement

Would like to express my sincere gratitude to prof. sagar khatavkar, Automobile Engineering Department. Saraswati College of Engineering, Kharghar for providing their invaluable guidance, comments and suggestions.

### 7. References

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