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# An Intensive Rate Control in Accident Zone Using RF Sensor

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**ABSTRACT:** The objective of this project is to automatically control the speed of the vehicle at speed restricted areas such as school and hospital U-turn etc. At particular zone RF signal is continuously radiated. When the vehicle comes within this radiation the receiver in the vehicle gets activated. Whenever the vehicle is within the zone, the vehicle speed is controlled by receiving the signal. The vehicle speed is decreased to some cutoff and kept constant until the vehicle moves out of the zone.

**KEYWORDS:** PIC Microcontroller, RF Transmitter and RECEIVER, DC MOTOR

## I. INTRODUCTION

Nowadays in India many accidents are occurred due to driver careless. They are driving a vehicle in very high speed because their intension is to reach their destination as fast as. Due to this reason the people get affects by rash driving. Sometimes even drivers are missing their concentration while driving. Due to this issue this project has created for s. RF Transmitter and RF Receiver are used to transmit and receive the signal from the vehicle. The transmitter has to be installed in required places where the speed of the vehicle has to be checked. The transmitter will transmit signal and the receiver has to be installed vehicle for controlling purpose.

## II. MICROCONTROLLERS

Circumstances that we find ourselves in today in the field of microcontrollers had their beginnings in the development of technology of integrated circuits. This development has made it possible to store hundreds of thousands of transistors into one chip. That was a prerequisite for production of microprocessors, and the first computers were made by adding external peripherals such as memory, input-output lines, timers and other. Further increasing of the volume of the package resulted in creation of integrated circuits. These integrated circuits contained both processor and peripherals. That is how the first chip containing a microcomputer, or what would later be known as a microcontroller came.

Serial communication:

As we have separate lines for receiving and sending, it is possible to receive and send data (info.) at the same time. So called full-duplex mode block which enables this way of communication is called a serial communication block. Unlike the parallel transmission, data moves here bit by bit, or in a series of bits what defines the term serial communication comes from. After the reception of data we need it to read from the receiving location and store it in memory as opposed to sending where the process is reversed. In order for this to work, we need to set the rules of exchange of data. These rules are called protocol. Data goes from memory through the bus to the sending location, and then to the receiving unit according to the protocol.

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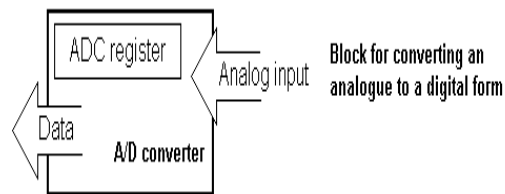
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## III. ANALOG TO DIGITAL CONVERTER:

As the peripheral signals usually are substantially different from the ones that microcontroller can understand (zero and one), they have to be converted into a pattern which can be comprehended by a microcontroller.



This task is performed by a block for analog to digital conversion or by an ADC. This block is responsible for converting an information about some analog value to a binary number and for follow it through to a CPU block so that CPU block can further process it.

### Timer unit :

The timer block this can give us information about time, duration, protocol etc. The basic unit of the timer is a free-run counter which is in fact a register whose numeric value increments by one in even intervals, so that by taking its value during periods T1 and T2 and on the basis of their difference we can determine how much time has elapsed. This is a very important part of the microcontroller whose understanding requires most of our time.

### DC motor

Geared DC motors can be defined as an extension of DC motor which already had its Insight details demystified. A geared DC Motor has a gear assembly attached to the motor. The speed of motor is counted in terms of rotations of the shaft per minute and is termed as RPM. The gear assembly helps in increasing the torque and reducing the speed. Using the correct combination of gears in a gear motor, its speed can be reduced to any desirable figure. This concept where gears reduce the speed of the vehicle but increase its torque is known as gear reduction. This Insight will explore all the minor and major details that make the gear head and hence the working of geared DC motor.



## IV. WORKING

When the vehicle enters in the normal area it speed does not decrease and it goes normally no action is performed. when the vehicle enters into the restricted areas that means it enters into the speed limiting. When ever it enters the transmitter module just send an information that contains how much speed a vehicle can go inside the speed limited

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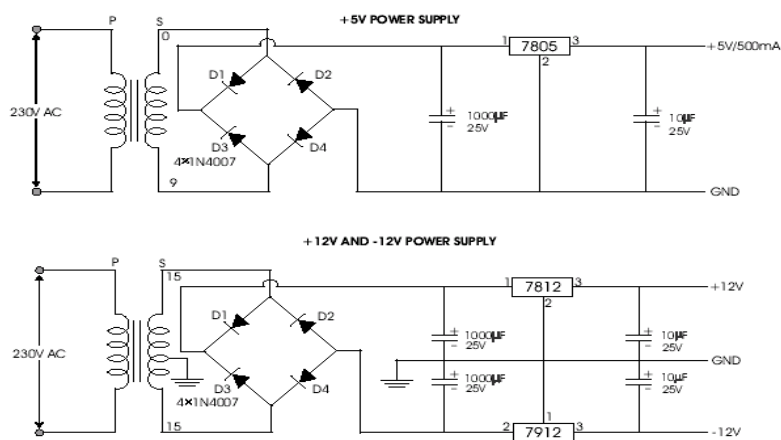
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region. the receiver and the signal acquired from the speed meter is also given to the controller. The signal is basically analog in nature that will be converted into digital so only the microcontroller able to process the signal. The signal from the transmitter and the speed meter is compared by the controller. If the current speed is less than the transmitted speed the vehicle goes normally no action is taken. If the current speed is greater than the transmitter speed the action is taken immediately and the speed is reduced automatically.

## POWER SUPPLY:

- The power supply section consists of a transformer, a bridge circuit, a filter and a regulator. The step down transformer is used to convert 230v ac to 12v ac. 230V is to be brought down to the required voltage level. This is done by a transformer. Thus, a step down transformer is employed to decrease the voltage to a required level.
- The bridge circuit converts ac to dc. The filter is used to remove the ripples in the supply. The regulator makes the supply voltage constant.
- The regulator makes the supply voltage constant Usually, DC voltages are required to operate various electronic equipment and these voltages are 5V, 9V or 12V. But these voltages cannot be obtained directly. Thus the a.c input available at the mains supply 230V is to be brought down to the required voltage level. This is done by a transformer. Thus, a step down transformer is employed to decrease the voltage to a required level.



## V. CONCLUSION

In this paper we developed a new design to control the speed of the automobiles. In normal driving mode, we can expect other vehicles interfering nearby and possibly blocking or attenuating RF signals. In this aspect, we are going to use buzzer to indicate the vehicle. The speed is reduced automatically in the restricted area.

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