

## RFID BASED VEHICLE SPEED CONTROL SYSTEM

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**ABSTRACT:** - This page aims at automatically controlling the speed of vehicles at speed restricted areas such as schools, hospitals zones etc. Now a days the drivers drive vehicles at high speed even in speed limited areas without considering the safety of the public. The RFID reader is attached along with the vehicle and the RFID tag with these zones. The tags are placed at the beginning and the end of the regions for which the speed should be reduced.

**KEYWORDS:** - Motor Driver unit, Opto-Coupler, Proximity module, RFID (Radio Frequency Identification Device).

### INTRODUCTION: -

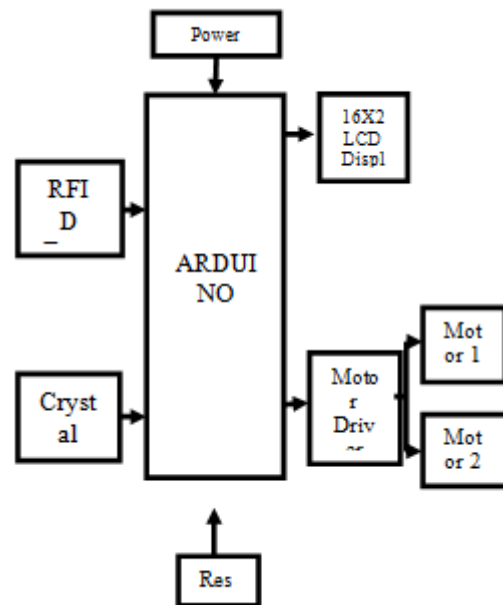
In present days' people are driving very fast, accidents are occurring frequently and we are losing valuable life by making small mistake while driving.

- The traffic police are not able to control them with full effect and also it is not practical to monitor these areas throughout.
- In the last years, RFID technology has been gradually incorporated to commercial transportation systems.

Therefore, main aim of project is to design RFID based Vehicle Speed control system.

### PROPOSED WORK

The Fig. (1) shows the block diagram of the proposed system.



**Fig. (1): - Block diagram**

The above diagram shows the architecture of proposed system.

Here we are using RFID card reader in identifying the restricted zones mentioned on the road, which is interfacing with the Arduino. The RFID tags at zones are programmed to send a coded signal when the reader comes in proximity. Whenever the vehicles enter into these zones their receivers will receive this code and the speed of the vehicles is controlled automatically with the help of the micro controller unit present inside the vehicle. The tags are placed at the beginning and the end of the regions for which the speed

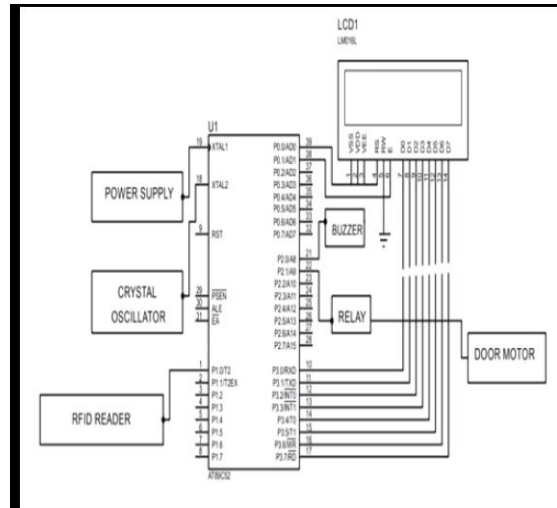
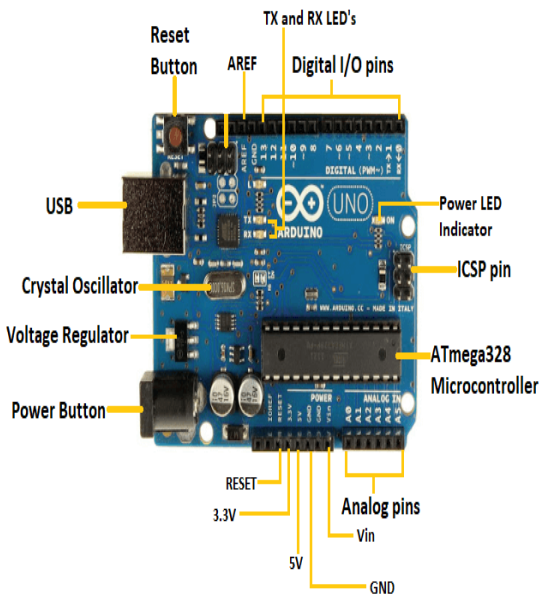
should be reduced.

### ARDUINO

Arduino UNO is a microcontroller board based on the ATmega328p. It has 14 digital inputs/output pins (of which 6 can be used as PWM outputs), 6 analog inputs, a 16MHZ ceramic resonator, a USB connection, a power jack, an ICSP header and a reset button. It contains everything needed to support the microcontroller; simply connect it to a computer with a USB cable or power it with an AC-to-DC adapter or battery to get started.

"Uno" means one in Italian and is named to mark the upcoming release of Arduino 1.0. The Uno and version 1.0 will be the reference versions of Arduino, moving forward. The Uno is the latest in a series of USB Arduino boards, and the reference model for the Arduino platform; for a comparison with previous version.

#### CIRCUIT DIAGRAM: -



The above figure is the circuit diagram for the proposed system.

#### ADVANTAGES: -

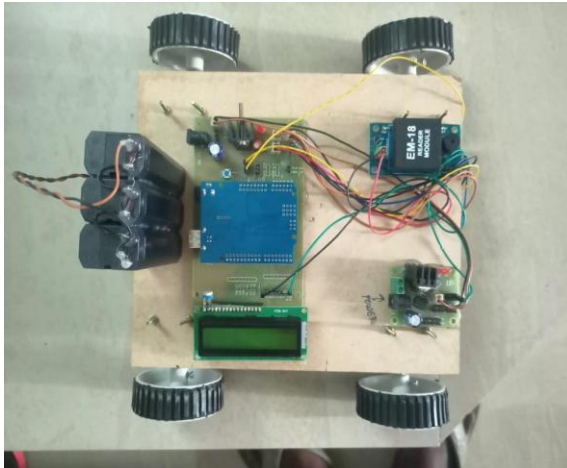
- [1] It reduces scanning time.
- [2] Automation billing.
- [3] No need of staff.
- [4] Personalization of items
- [5] Maintains history of purchased products.
- [6] Provides information regarding discounts and offers.
- [7] Proposed system gives effective result
- [8] Proposed system detects very fast

#### APPLICATIONS: -

- [1] School zones.
- [2] Office zones.
- [3] Hospital zones.
- [4] College zones.

In these zones the vehicles move on with a limited speed so that there will be a control on vehicle speed as well as safety measurements can be taken for these zones.

#### RESULT: -



### CONCLUSION: -

Thus, RFID vehicle speed control system was proposed in our project. The system was designed and implemented successfully via the use of Arduino microcontroller and RFID reader for vehicle speed controller. The project has an RFID tag which indicates the vehicle when it enters a speed limit zone.

The speed of the vehicle can be maintained in the limited speed without the intervention of the driver. If this can be implemented effectively rash driving and over speeding in the speed limit zones can be reduced to a large extent. Thus, decreasing the total number of road accidents in our country. The system can prevent the road accidents in critical zones which are caused by the negligent driving or speeding by the driver. It also reduces the traffic rule violations. Main motive for designing this system is to avoid accidents and alert the drivers about speed limit for safe travelling. It is used to govern and regulate the speed of the vehicle in hospital, school and work zones.

### FUTURE SCOPE: -

In future we implement our projects in two wheelers by reducing the size of a sensor module and its display unit and increasing the range of the RF sensor units to control the vehicle speed beyond the range of its

zones like schools and hospitals.

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