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AUTO VEHICLE SPEED CONTROL IN RESTRICTED AREA

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ABSTRACT

Vehicle speed control is an important thing to avoid the accident in the accident zone or school zone. It uses the controller and RF (radio frequency) wireless communication. So the driver needs to be concentrate on it. If he/she is unconscious, then there is a chance of occurrence of accident. This paper is used to control the speed of the vehicle from the remote place. It uses the microcontroller to control the speed of the vehicle, by using RF wireless communication we can control the vehicle speed. The RF transmitter is fixed on the important zones. The speed of the vehicle can be controlled through RF communication in the zones. The RF transmitter transfers the encoded signal to RF receiver. The RF receiver receives the data from and decodes the incoming data that data is fed to controller. The vehicle is interfaced with the controller with the help of solenoid value. Depending on the message received from RF transmitter, the controller controls the speed.

Keywords:RF transmitter, receiver, controller, solenoid valve, speed control.

I. INTRODUCTION

In order to provide the safety for the schools and colleges located in the high ways, this project is proposed. This system provides the indication for the drivers passing nearer to the schools and colleges. A Radio Frequency transmitter is placed in the institution campus, which transmit a code continuously. The RF receiver is fitted in the vehicle. Whenever the vehicle passes nearer to the institution, the RF receiver receives the code transmitted by the transmitter. Upon the reception of the code, it will produce a beep indication through buzzer to alert the driver. The 8051 is used to construct the transmitter and receiver part of this project. In the transmitter part, a PIC microcontroller generates the code and sends it to the RF transmitter through USART peripheral. In the receiver side, the received data from the RF receiver is decoded by means of the microcontroller. Based on the decoded code, it will generate the buzzer beep. The 433MHz RF transmitter and Receiver modules are used to transmit and receive the code.

Existing system

In this proposed system, the DC motor is considered as a vehicle motor. The RF transmitter is fixed on the important zones. The speed of the DC motor can be controlled through RF communication in the zones. The RF transmitter transfers the encoded signal to RF receiver. The RF receiver receives the data from and decodes the incoming data that data is fed to microcontroller. The DC motor is interfaced with the controller with the help of

relay circuit. Depending on the message received from RF transmitter, the controller controls the speed. So the driver needs to be concentrate on it. If he is unconscious then there is a chance of occurrence of accident. This project is used to control the speed of the vehicle from the remote place. It uses the microcontroller to control the speed of the vehicle, by using RF wireless communication we can control the vehicle speed.

Proposed System

Here the DC motor is replaced by two wheeler. The RF transmitter is fixed on the important zones. The speed of the two wheeler can be controlled through RF communication in the zones.

II.METHODOLGY:

1. RF Transmitter and Receiver

Radio frequency, or RF, is a frequency or rate of oscillation within the range of about 3 Hz and 300 GHz. This range corresponds to frequency of alternating current electrical signals used to produce and detect radio waves. Since most of this range is beyond the vibration rate that most mechanical systems can respond to, RF usually refers to oscillations in electrical circuits.

Electrical currents that oscillate at RF have special properties not shared by direct current signals. One such property is the ease with which it can ionize air to create a conductive path through air. This property is exploited by 'high frequency' units used in electric arc welding. Another special property is an electromagnetic force that drives the RF current to the surface of conductors, known as the skin effect. Another property is the ability to appear to flow through paths that contain insulating material, like the dielectric insulator of a capacitor. The degree of effect of these properties depends on the frequency of the signals.

RF transmitter and receiver are available for operation in the 868-870MHz band in Europe and the 902–928MHz band in North America, both modules combine full screening with internal filtering to ensure EMC compliance by minimizing spurious radiation and susceptibility.

2. SOLENOID VALVE WORKING PRINCIPLE:

A solenoid valve has two main parts: the solenoid and the valve. The solenoid converts electrical energy into mechanical energy which, in turn, opens or closes the valve mechanically.

A Direct Acting valve has only a small flow circuit, shown within section E of this diagram (this section is mentioned below as a pilot valve). This Diaphragm Piloted Valve multiplies this small flow by using it to control the flow through a much larger orifice. Solenoid valve may use metal seals or rubber seals, and may also have electrical interfaces to allow for easy control. A spring may be used to hold the valve opened or closed while the valve is not activated.

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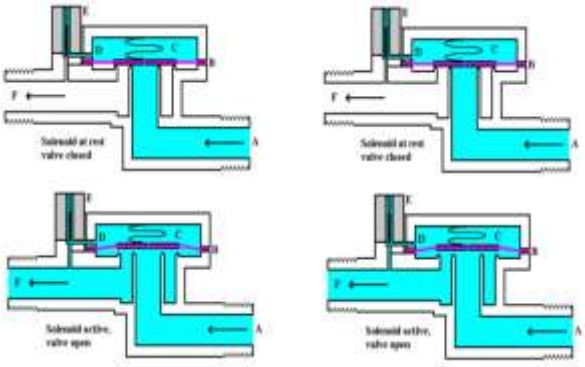
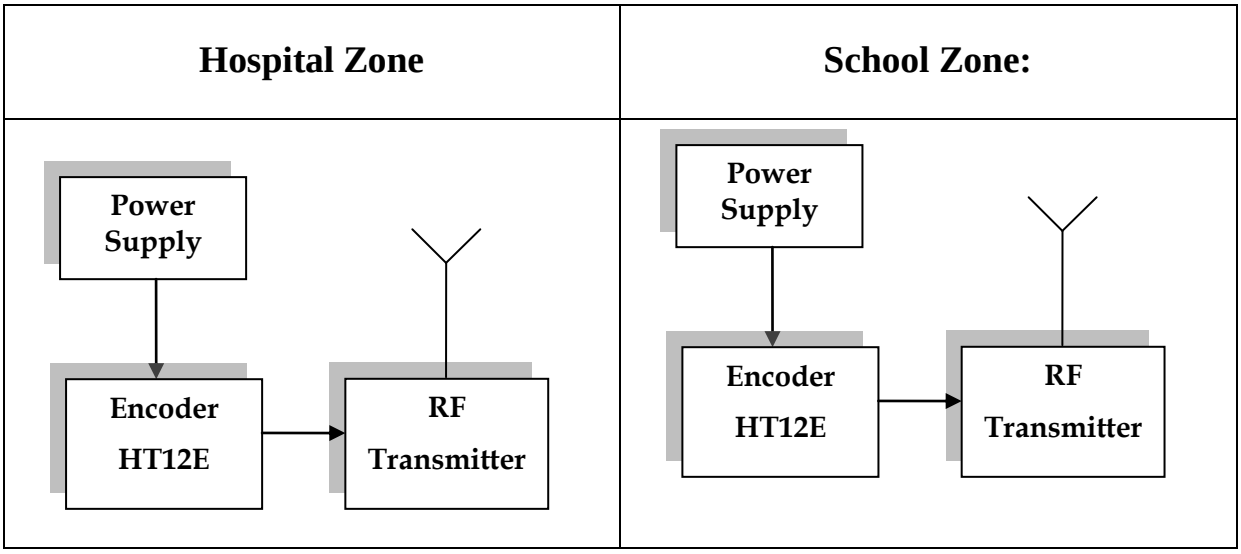
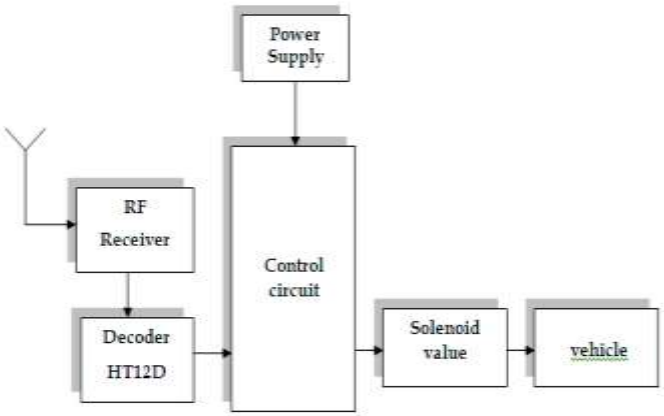


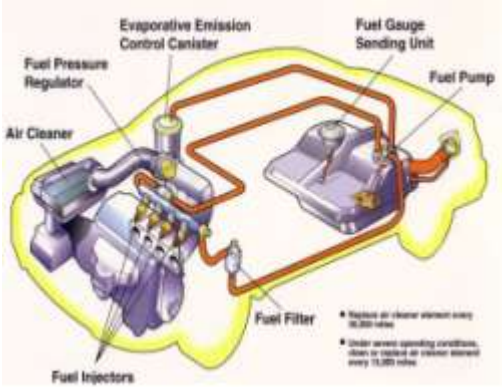
III. WORK PLAN

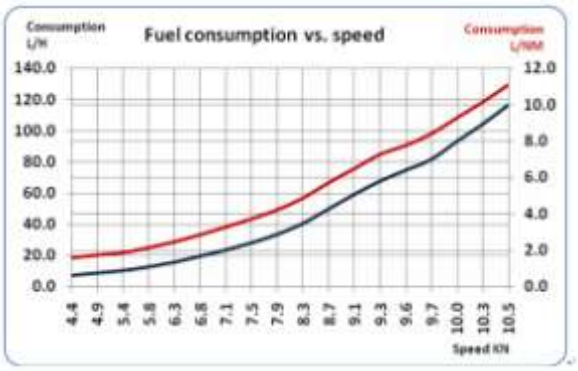
3.1 Transmitter section:



3.2 Vehicle section:







IV. CONCLUSION

In order to provide the safety for the schools and colleges located in the high ways, this project is proposed. This system provides the indication for the drivers passing nearer to the schools and colleges. A Radio Frequency transmitter is placed in the institution campus, which transmit a code continuously. The RF receiver is fitted in the vehicle. Whenever the vehicle passes nearer to the institution, the RF receiver receives the code transmitted by the transmitter. Upon the reception of the code, it will produce a beep indication through buzzer to alert the driver.

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