



SMART SPEED BREAKER AND ROAD BLOCKING SYSTEM FOR EMERGENCY VEHICLE'S USING RFID

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ABSTRACT

To build a sensor system the infrastructure for vehicle communication and to humps, which can transmit the information provided by active signals placed on the road to adapt the EMERGENCY vehicles, by active signals we mean ordinary traffic signals that incorporate long-range active RFID tags with information stored into them. This information is noted in real time by RFID sensors placed onboard of the vehicle. The concept of this research work is to have an automatic speed breaker on time demand according to the time requirements. Means when there is no need of the speed breaker on the road, it vanishes from the road and the road becomes flat and when there is a need then the breaker comes on the road from ground and it starts its working of slowing speed of the vehicles. So when needed, it comes on the road by rotating itself from flat position and when not needed, it rotates itself again and gets flat and combines with flat road. In this system, we can use the real time clock to recognize the required time for having the speed breaker on road.

Keywords- Embedded System; Smart Speed Breaker; RFID; 24c02 Memory; RTC.

INTRODUCTION

Commonly road humps are laid at service road junctions. Speed humps are used in many locations where very low speeds are desired and reasonable. Speed humps are typically placed on residential roads. Depending on the speed of the vehicle and the distance to the speed breakers on road to any vehicle, the device indicates the driver about the hump through embedded system feedback. When ambulance or any VIP vehicle arrives its prime important them to move faster so automatically hump detects vehicle through RF signal and hump goes flat. Even at traffic signal, traffic signal senses such vehicles through RF signal and signal shifts to green. The concept is to have an automatic speed breaker on time demand according to the requirements. Means when there is no need of the speed breaker on the road, it vanishes from the road and the road becomes flat and when there is a need then the breaker comes on the road by rotating itself from its flat position and it starts its working of slowing speed of the vehicles. So when needed, it comes on the road and when not needed, it rotates itself again and gets flat and combines with flat road. When time gets started, breaker comes on the road and remains as for the countdown gets zero. . The concept of this research work is to have an automatic speed breaker on time demand according to the time requirements. Means when there is no need of the speed breaker on the road, it vanishes from the road and the road becomes flat and when there is a need then the breaker comes on the road from ground and it starts its working of slowing speed of the vehicles. So when needed, it comes on the road by rotating itself from flat position and when not needed, it rotates itself again and gets flat and combines with flat road. In this system, we can use the real time clock to recognize the required time for having the speed breaker on road.

METHODOLOGY

Whenever signal (radio frequency waves) is transmitted through the RF transmitter from the vehicle, the RF receiver receives the signal, if the RF ID of the both transmitter and receiver should be match then only RF receiver accept the signal otherwise it neglect, when the both RF ID of transmitter and receiver matched then it gives signal to the controller, then controller starts control the motor through the motor driver.

The speed breaker is connected to the motor by the gear system, so when signal is sent by controller to motor driver, then driver drives the motor according to the signal sent by the controller, so when the motor starts

running, the gear connected to the speed breaker will rotate so speed breaker will go down so by this speed breaker will flat so that vehicle moves smoothly without any disturbance

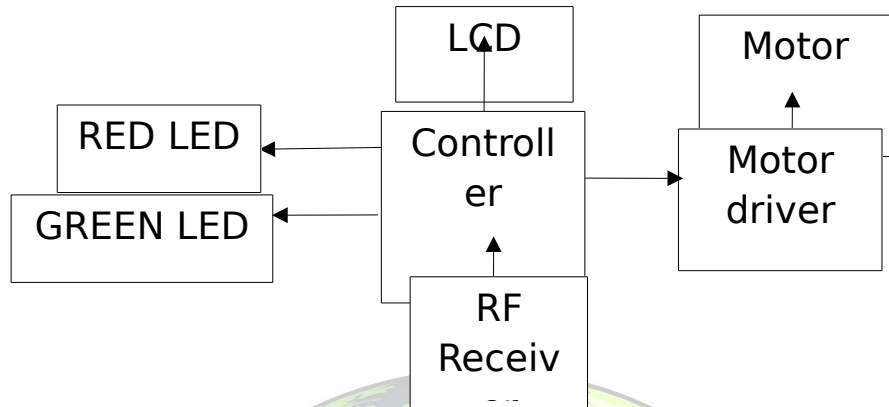


Fig 1. Block diagram of receiver



Fig 2. Block diagram of transmitter

The above fig 1. Is receiver part which is placed near the speed breaker, receiver consist of a microcontroller chip input is given by the RF receiver, the output ports of the microcontroller is connected to the devices like RED LED, GREEN LED, LCD display and motor driver circuit. motor is connected to the microcontroller by motor driver circuit, fig 2. is the transmitter which is placed in the emergency vehicles. Whenever signal (radio frequency waves) is transmitted through the RF transmitter from the vehicle, the RF receiver receives the signal, if the RF ID of the both transmitter and receiver should be match then only RF receiver accept the signal otherwise it neglect, when the both RF ID of transmitter and receiver matched then it gives signal to the controller, then controller starts control the motor through the motor driver.

The speed breaker is connected to the motor by the gear system, so when signal is sent by controller to motor driver, then driver drives the motor according to the signal sent by the controller, so when the motor starts running, the gear connected to the speed breaker will rotate so speed breaker will go down so by this speed breaker will flat so that vehicle moves smoothly without any disturbance

Road blocking system

The specified RF ID is given to the ambulance so when the RF ID matches then it sent signal controller so controller will control the traffic signal light by blocking all the roads except the ambulance road by giving RED signal to all the road, and it will give green signal to one road where there is near hospital, the near hospital road must set default so ambulance will go fast without any disturbance.

RESULT

When ambulance or any VIP vehicle arrives its prime important them to move faster so automatically hump detects vehicle through RF signal and hump goes flat. Traffic signal senses ambulance through RF signal as indicated by ambulance by giving green signal and blocks the rest of the road by giving red signal.

CONCLUSION

It is to build a sensor system for vehicle communication and for humps, which can transmit the information provided by active signals placed on the road to adapt the EMERGENCY vehicles. By active



signals which means ordinary traffic signals that incorporate long-range active RFID tags with information stored into them. This information is collected by RFID sensors placed onboard of the vehicle.

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