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Design and Implementation of Vehicle Theft Detection System

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Abstract:

There are large number of vehicles are burgle by the thief our surroundings. The owner of vehicles have to register a complaint to police. Before the police caught the thief, they expel the different parts of vehicle and use this expelled parts into other vehicles. Sometimes these type of cases is not solve by the police and is in trouble. According to a media report, a 44158 vehicle's theft cases were reported in 2018 in Delhi as it is more than 39084 such cases in 2017. A total of 32984 were two-wheelers, 8036 were cars and 3138 other vehicles. Only 4619(10.46%) stolen vehicles were recovered and 6751 auto lifters were arrested. According to Delhi police, over 5 vehicles were reported stolen in every hours in 2018. Basically this project help in minimizing the vehicles stolen cases and to make more secure your vehicles, money and time.

Keywords: Arduino, LCD Display, GSM.

I. INTRODUCTION

The objective of vehicle theft detection system is to provide prevention of theft activity for any vehicle. Electronic gadgets being a great advancement in the field of technology, these can be used to solve so many day to day problems. If we talk about the theft activity then this mainly happens with vehicles. The technology has also given great solution for these activities. The purpose of this project is to prevent vehicle theft detection. The issue of vehicle theft has increased tremendously.

II. BLOCK DIAGRAM

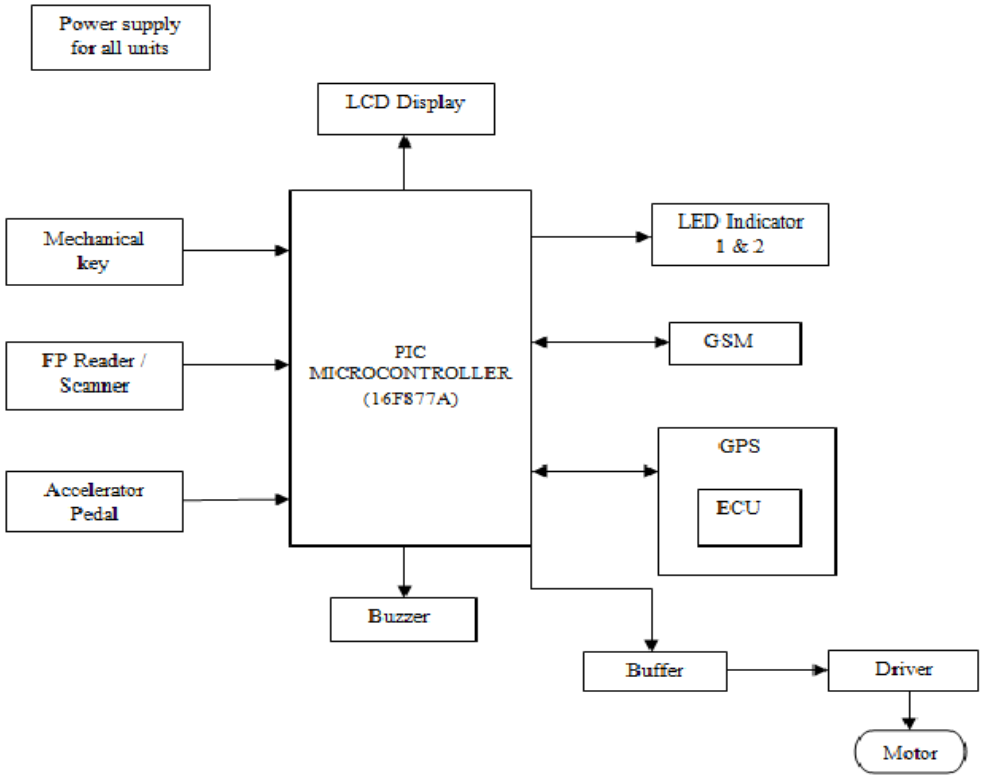

Fig.1: Block Diagram

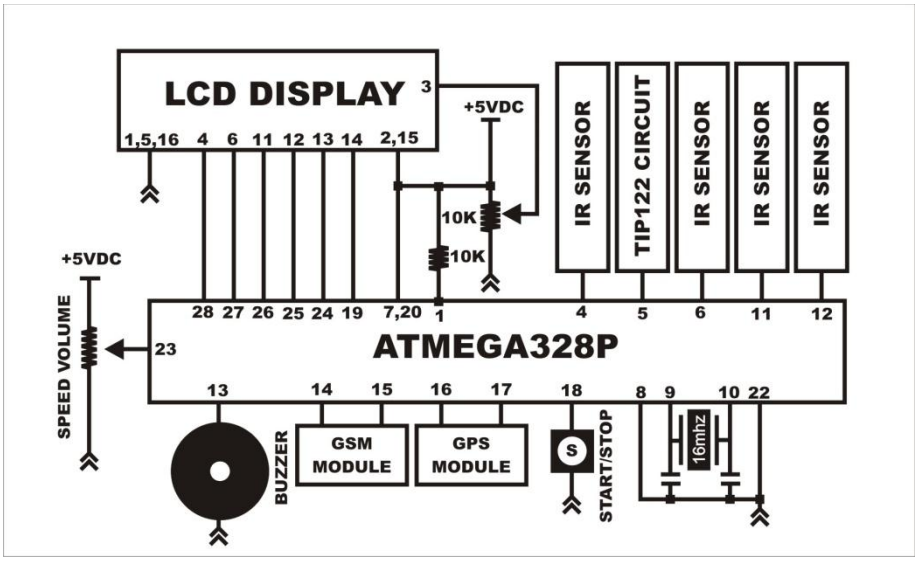

Fig 2: Internal Block Diagram

II. COMPONENT

A. SIM300 GSM Module

Vehicle theft detection system uses a SIM 300 GSM technology. It is use for transmission. The operating voltage is 7- 15V AC or DC. It also contains antenna for better reception. It use for GSM based voice communication. SIM 300 allowed an adjustable baud rate 1200 to 115200 bps. It also give option for adding an external antenna. It use power, ring and network LED for easy debugging. It can be controlled by standard AT commands

Fig 2: GSM module

B.GPS Module

GPS is global positioning system. GPS gets a signal from GPS satellite. It determine your position in three dimensions east, north and altitude. It is a satellite based navigation system made up of a network of 24 satellite orbiting the earth all the times. 4 satellite give accurate position of any person or we can say that allow a user to tell where they are located.

Fig.3: GPS Module

C. ATMEGA328P Microcontroller

ATmega328 is an 8-bit and 28 Pins AVR Microcontroller, manufactured by Microchip, follows RISC Architecture and has a flash type program memory of 32KB.It has an EEPROM memory of 1KB and its SRAM memory is of 2KB.It has 8 Pin for ADC operations, which all combines to form Port A (PA0 – PA7).It also has 3 built in Timers. It's UNO's heart. It operates ranging from 3.3V to 5.5V but normally we use 5V as a standard. Its excellent features include the cost efficiency, low power dissipation, programming lock for security purposes, and real timer counter with separate oscillator.

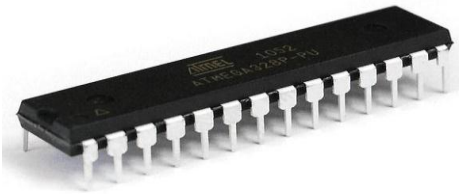

Fig 4: ATMEGA328P Microcontroller

IV. WORKING

This project is mainly based on GSM and GPS. The main purpose of the project is to prevent the theft of the car. Basically this works for the ignition key. When someone tries to unlock the car with wrong key a message will be transferred to the owner of the car using GSM. Moreover if by chance if someone enters the car by breaking the glass and when he will start the car a buzzer will be active and an alert message will be transferred to the owner. One additional feature of the module is that there is a speed control section. In this section we have set a speed limit if the speed exceeded the limit then a message will be transferred to the owner and then if owner sends a reverse message then according to message either speed will be controlled or the car will stop. This module is has a practical approach. The GPS is gives the current location of your car.

V. ADVANTAGE

- This system provides instantaneous alerts on the mobile phone of the owner in case of unauthorized use.
- The owner of the vehicle need not worry anymore about the safety of the vehicle, as anyone who illegally tries to gain access is caught up immediately.
- The device's unique feature of alerting the user in case the vehicles crosses a certain speed limit allows him/her to keep a check on the rough usage of the vehicle.

VI. CONCLUSION

The ant- theft system introduced lately suffered several drawbacks on various grounds of reliability, accuracy, security, range etc. this new ingenious device will come beyond all these limitations as it provides a full proof highly reliable alert system that is both hard to crack and almost impossible to get through. Its range is global unlike the conventional systems that used radio frequency signals for alerts which no doubt became obsolete after a certain distance. Moreover the device's speed limit detection and alert system sets it apart from the other available devices as it paves the way for allowing decent usage of the vehicle resulting in least maintenance and hence longer life.

VII. REFERENCES

1. Pham Hoang DAT,MICHEAL DRIEBERG, Nguyen chi CUONG, "development of vehicle tracking system using GPS and GSM modem", 2013 IEEE conference on open system (ICOS), December 2-4, 2013, Sarawak , Malaysia.
2. Wu AIPING, "the design of anti-theft device for vehicle based on GSM", international conference on smart grid and electrical automation, 2017.
3. S M OSMAN GANI, YASER P.FALLAH, GAURAV BANSAL, TAKAYUKI SHIMIZU, "message content control for distributed map sharing in vehicle safety communications".
4. FATIN BALKIS BINTI ALZAHRI, MAZIANI SABUDIN, "vehicle tracking device".
5. B.G. NAGARAJA, RAVI RAYPPA, M Mahesh, Chandrasekhar M PATIL, Dr. T.C. MANJUNATH," design and development of a GSM based vehicle theft control system", international conference on advanced computer control.
6. Dr. ALI OKATAN, ALI SALIH, CAGATAY AKPOLAT CELIK, "micro-controller based vehicle tracking system via use of GPS and GSM".