Car locking and tracking system by using Embedded based GSM and GPS technology

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Abstract

This paper summary whole research aimed to develop "Car locking and tracking system by using Embedded based GSM and GPS technology." There are numerous systems that provide security from theft by avoiding starting of engine but they do not protect other important parts like wheels.In this system,we are using tilt sensor to avoid the theft of wheels fit in the car by using jack.Also we are using IR sensor in the bonnet to protect the parts situated in bonnet.we are using GPS for tracking the location of car and using password based engine ignition system.we are using GSM to inform the owner about any above mentioned issues like theft and tracking.This system avoids the situation in which the car is being stolen by using toeing car.

I.INTRODUCTION

The car locking and tracking system uses password based engine locking system to provide security to car. If the password does not match with database ,the engine will not start .GPS module is used to track the location of stolen car. It will keep tracking the location and keep sending the information to concerned owner by using GSM.IR sensor used in this system will protect the important and expensive parts located in bonnet of the car by generating an alarm if there is any attempt of theft. Tilt sensor used in the system will protect the car from toeing and thefts using car jack.

II.PROPOSED SYSTEM

In this proposed work, a novel method of car tracking and locking system used to track the theft car by using GPS and GSM technology. This system puts into sleeping mode while the car handled by the owner or authorized person otherwise goes to active mode, the mode of operation changed by in person or remotely. If any interruption occurred in any side of the door, then the IR sensor senses the signals and SMS sends to the microcontroller. The controller issues the message about the place of the car to the car owner or authorized person. When send SMS to the controller, issues the control signals to the engine motor. Engine motor speeds are gradually decreases and come to the off place. After that all the doors locked. To open the door or restart the engine, authorized person needs to enter the passwords. In this method, tracking of car place easy and doors locked automatically, thereby thief cannot get away from the car[3].

III.REVIEW OF LITERATURE

Password Based Circuit Breaker is design to protect a circuit from damage which is caused by over load or short circuit. Many fatal electrical accidents are happen due to miscommunication between the maintenance staff & the electric substation staff. To avoid accidents, the project is designed in which only authorized person can operate it with the help of a password. The password based circuit breaker is a system that access only specified password to control the circuit breaker by authorized person only. Here, there is also a provision of changing the password. The system is fully controlled by the 8 bit microcontroller from 8051 family which has an 8KB of ROM for the program memory. A matrix keypad is used to enter the password and relay driver IC is used to switch ON / OFF the loads through relays[1].

This paper mainly deals with the concept of vehicle security and how it can be implemented to the vehicle engine.The second generation (2G) GSM technology is used for sending messages to know the status of our vehicle. The main objective of this paper is to protect the vehicle from unauthorized access by giving a secure password and controlling it by using GSM technology. A four digit password is set as default, using a 4x3 keypad and is displayed on the 16x2 LCD. If incase we enter a wrong password a message is sent to the owner's mobile number and a buzzer is heard after a delay of milliseconds time. After 3 wrong attempts, a continuous loud buzzer is heard. If we enter a correct password, the system waits for the confirmation from the owner. After receiving the confirmation, the engine starts and moves. In any case the GSM technology fails or we forget a mobile for receiving and confirmation SMS we had a switch to control the system[2].

GPS tracking system is a common approach to get vehicle location information in real-time for fleet planning. We proposed a GPS tracking system called Goo-Tracking that is composed of commodity hardware, open source software and an easy-to-manage user interface via a web server with Google Map or via Google Earth software. The system includes a GPS/GPRS module to location acquisition and message transmission, MMC to temporary store location information, and an 8-bit AVR microcontroller[4].

IV.BLOCK DIAGRAM

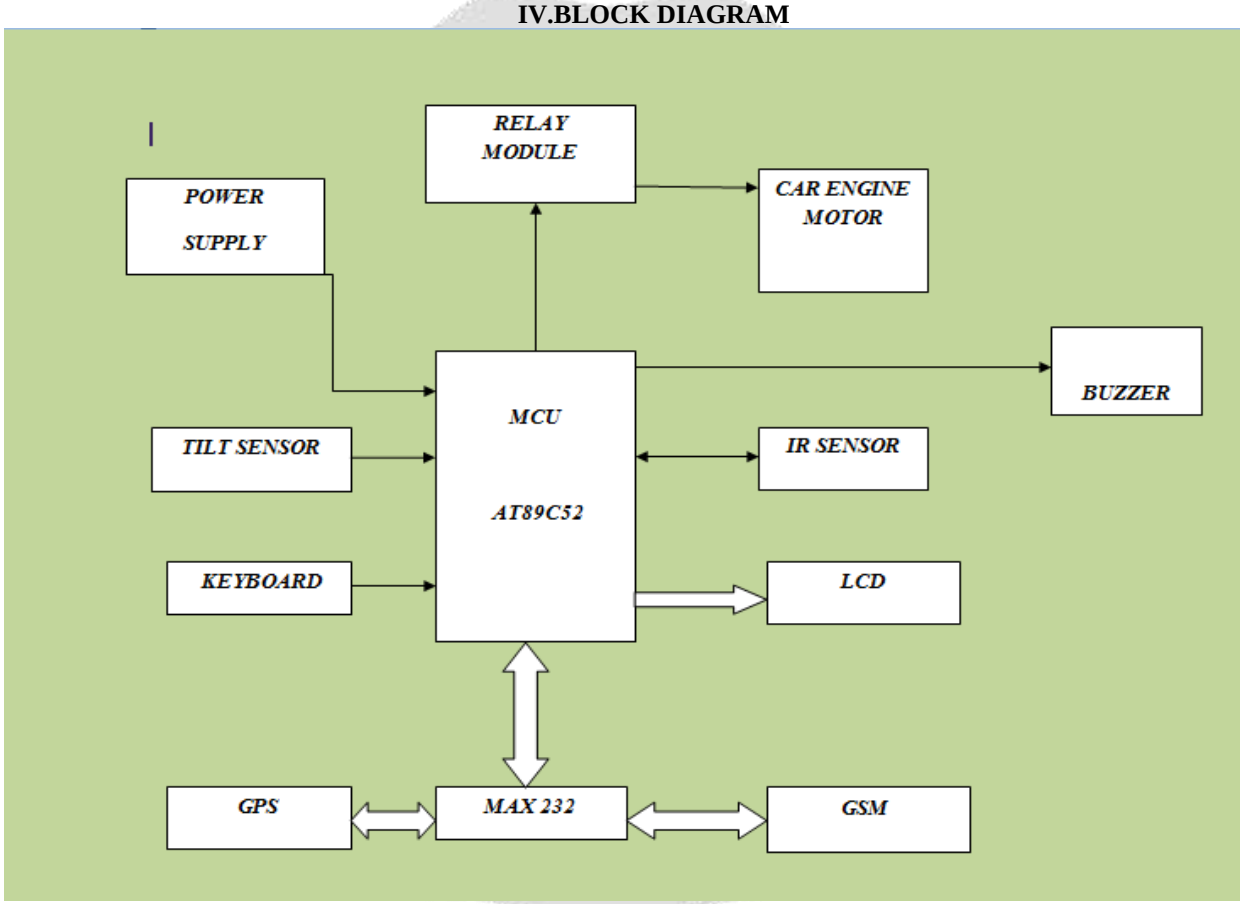

fig.4.1.Block Diagram

The Block diagram of Car tracking and locking system based on GSM and GPS technology is shown in the figure1. It consists the power supply section, keyboard, GSM, GPS, microcontroller, MAX232driver, relay driver, IR Transmitter, IR receiver, LCD and Tilt sensor. The GSM board has a valid SIM card with a sufficient recharge amount to make outgoing calls. The circuits powered by +5v Dc[2].

V.CIRCUIT DIAGRAM

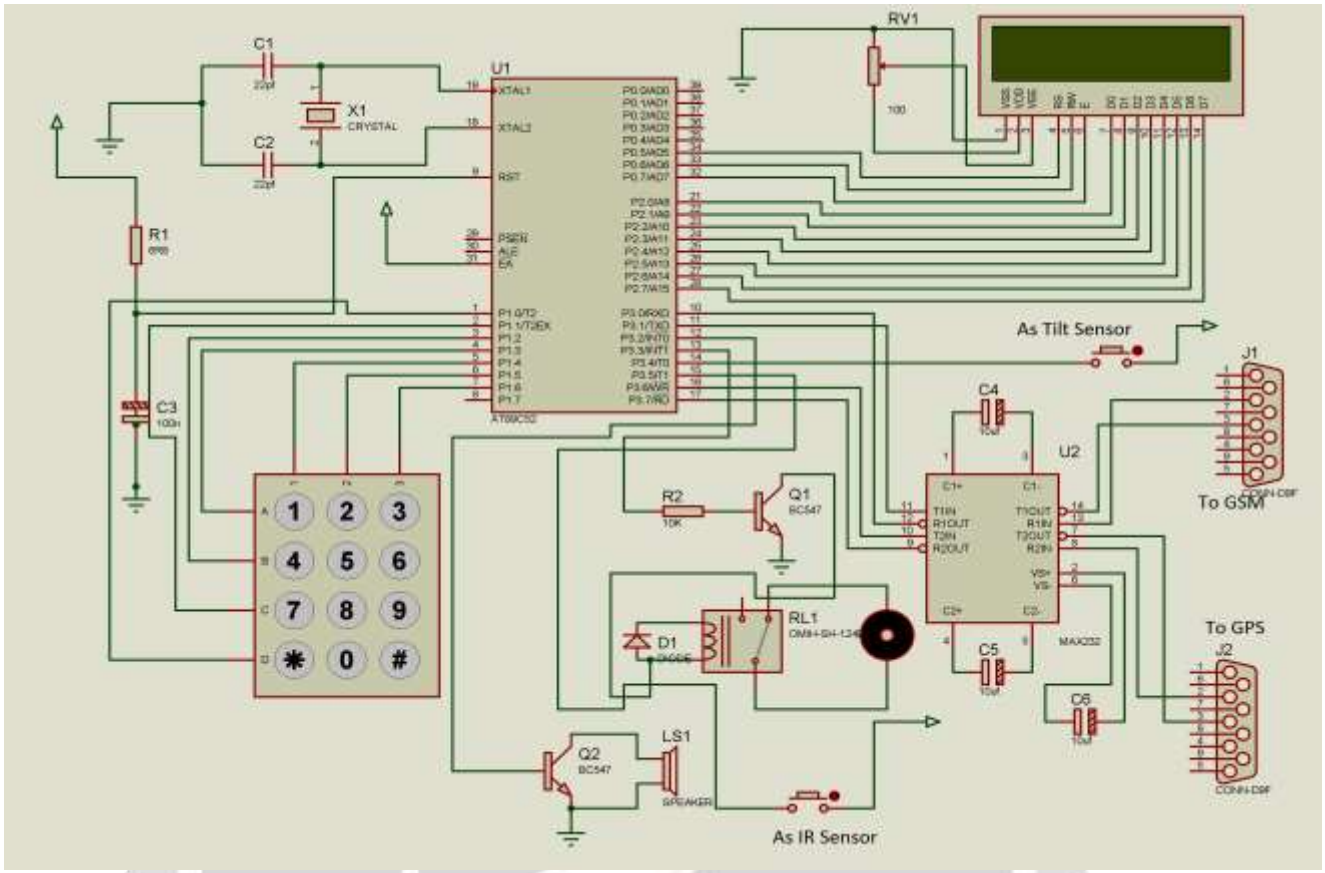

fig.5.1.Circuit Diagram

In this system we are using AT 89c52 microcontroller.LCD crystal display is connected to port2 of the microcontroller.4*4 matrix keyboard is connected to port1 of controller for entering password.MAX 232 is connected to pin P3^1 and P3^2 for TTL logic.GSM module is connected through MAX232 for sending alert message to owner and GPS module is also connected through MAX 232 for tracking the car. Tilt sensor is connected to P3^5 of controller and IR sensor is connected to pin P3^ 4 for detecting presence of theft.

VI.CONCLUSION

This system protect owner's car by using password protection. And also protect parts of the vehicle.This System also provide real time tracking of the car.

OBJECTIVES

- To Keep the vehicles safe from thieves.
- To send a message to the owner if there is any attempt to steal the vehicle.
- To generate an alarm if there is attempt of theft.
- To secure vehicle parts from theft.
- To break the connection of engine if there is any attempt to unauthorised access.

FUTURE SCOPE

- Presently only SMS feature is available, we can include the Call feature for ease of operation.
- Using android application we can also stop the engine.
- Microphone could be interfaced to the GSM/GPS module so that during theft activity voice call could be established with the owner.
- We can use alcohol sensors to avoid drunk and drive.
- We can use this system for accident detection.

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