ADVANCED VEHICLE SECURITY SYSTEM

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Abstract: Vehicle Tracking System is a low cost object tracking system using GSM. The system allows a user to view the current location of a vehicle on PC through the map. This tracking system is composed of a GPS receiver, Microcontroller and a GSM Modem. GPS Receiver gets the location information from satellites in the form of latitude and longitude this is an inexpensive device which reduces the problem associated with accident notification and antitheft control to protect the vehicle, motion sensor circuit is placed at the door of vehicle. We can ignite off our vehicle at emergency. There is a dual security system such as voice recognition access to the vehicle.

I. INTRODUCTION:

The Vehicle Tracking System allows the user to monitor their vehicle and their routes and arrival. A vehicle tracking system will provide effective, real time vehicle location, mapping and reporting.

In this project the GPS is used to provide the exact position of the vehicle. The information that is collected by the GPS modem is passed to the microcontroller on its request. The information provided by the GPS system contains longitudinal and latitude positions .Here we use microcontroller. It mainly controls the all function of the project. It gets the information from the GPS module and passed it to the GSM module. It controls the ignition sensor and accident sensor. GSM modem is used to send messages to the predefined numbers stored in the microcontroller. This GSM modem uses AT commands in order to send messages to the predefined number. We can also control the vehicle by decelerating it if it is found to be in a suspicious or dangerous condition.

II. OPERATION:

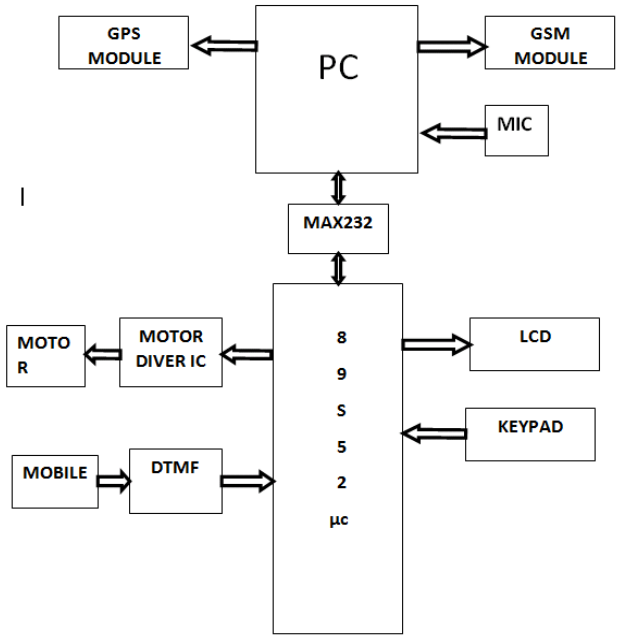
The interaction between PC and microcontroller IC is done through MAX232 which is use to interface between microcontroller and PC. GSM module is connected serially to PC.GSM module tracks the vehicle sends the SMS to the owner of the vehicle along with its longitude and latitude. MIC is connected as input device to PC which is used for voice recognition purpose Along with it a keypad is also connected as input to microcontroller to enter the password. If the correct password is entered then the vehicle is unlocked. LCD connected as the output device to microcontroller displays the status of the vehicle either on or off

After that we can ignite the car. The system reads the current position of the vehicle using GPS; the data is sent and received via GSM network. The received data is displayed on the screen. In case of accident or thief the message will be received on the user phone. We can thus de-accelerate the car and re-enter the password by the person who is driving. He thus enters on keypad password. For tracking the car we have to message ‘TRACK’ to the number which is used in GSM module and in reply we will get the location of the car in terms of longitude and latitude.

III. FEATURES:

- Voice recognition based security system which facilitates the user with enhanced security.
- Optional password protection using keypad.
- GPS based real-time location tracking system.
- SMS notification via GSM technology.
- Administrative control over the vehicle from remote location.

IV. BLOCK DIAGRAM



GPS Module:

Global positioning system module\receiver is used to find latitude and longitude of the location. The data obtained from GPS receiver is processed by microcontroller to extract its latitude and longitude values and they also display altitude.

GSM Module:

The GSM/GPRS Module comes with a serial interface through which the module can be controlled using AT command interface. An antenna and a power adapter are provided. The basic segregation of working of the module is as follows:

• Voice calls

• SMS

• GPRS

Microcontroller:

It is the central processor of the project. All commands received from the Computer are given to microcontroller and controlling action for the motor is provided by this.

MAX 232:

Max232 is an IC that converts signals from an RS232 serial port to signals suitable for use in TTL compatible digital logic circuit. Since microcontroller is working at logic 0 – 0V and logic 1 - 5V. While for serial port logic 0 is (-3V to -13V) and for logic 1 is (3V to 13V).

Keypad:

Keypad is a set of buttons arranged in a block or a pad which mostly contains number. We use push buttons for number input. Five buttons are used as input five digit password. Five connections from the push button is connected to 5 pins of port of microcontroller. When the key is pressed it is grounded and microcontroller sense the input of which key is pressed.

V. CONCLUSION:

Vehicle Tracking System is the total protection to vehicle and fleet management solution. By using the GPS and GSM technology we can protect and monitor car, truck, bike (or movable asset). GSM technology is used because of the extensive availability of GSM network in India and its roaming facility ensure that vehicle can be tracked even on the national highways and in many remote areas. The user or operator can monitor the vehicle in any dangerous condition and thus can perform various tasks including turning off the vehicle. The company that uses this system will achieve higher level of accuracy and satisfaction.

VI. REFERENCES:

[I]. "Cell phone bus tracking applications developed". *Metro Magazine*. April 2009. Retrieved 2009-11-26.

[II]. "WebWatch allows you to obtain 'real-time' schedule information for your bus stop and (to) track buses in real time." Duluth Transit Authority. 2007. Retrieved 2009-11-26.