ISSN XXXX XXXX © 2019 IJESC

Research Article Volume 9 Issue No.3

Alert System for Vehicle

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Abstract:
Initially the GPS continuously takes input data from the satellite and stores the latitude and longitude values in AT89s52 microcontroller's buffer. If we have to track the vehicle, we need to send a message to GSM device, by which it gets activated. It also gets activated by detecting accident on the shock sensor connected to vehicle. Parallel deactivates GPS with the help of relay .Once GSM gets activated it takes the last received latitude and longitude positions values from the buffer and sends a message to the particular number or laptop which is predefined in the program. Once message has been sent to the predefined device the GSM gets deactivated and GPS gets activated.

Keywords: GSM, LCD, GPS, CPU.

I. INTRODUCTION

Vehicle tracking system main aim is to give Security to all vehicles. Accident alert system main aim is to rescuing people in accidents. This is improved security systems for vehicles. The latest like GPS are highly useful now days, this system enables the owner to observe and track his vehicle and find out vehicle movement and its past activities of vehicle. This new technology, popularly called vehicle Tracking Systems which created many wonders in the security of the vehicle. This hardware is fitted on to the vehicle in such a manner that it is not visible to anyone who is inside or outside of the vehicle. Thus it is used as a covert unit which continuously or by any interrupt to the system, sends the location data to the monitoring unit When the vehicle is stolen, the location data from tracking system can be used to find the location and can be informed to police for further action. Some Vehicle tracking System can even detect unauthorized movements of the vehicle and then alert the owner. This gives an edge over other pieces of technology for the same purpose. This accident alert system in it detects the accident and the location of the accident occurred and sends GPS coordinates to the specified mobile, computer etc.

II .BLOCK DIAGRAM

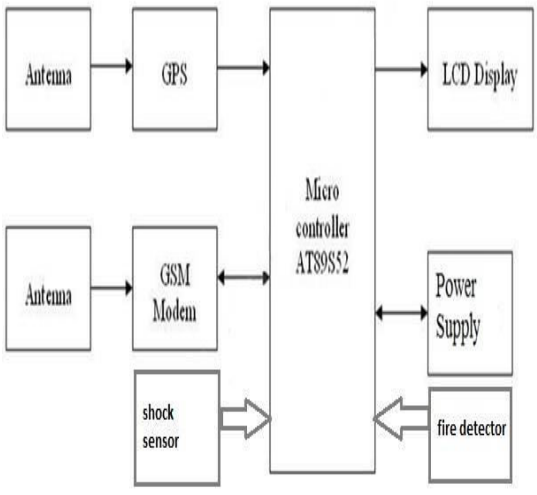

figure.1. block diagram of alert system

II.1.Microcontroller

Here in this system micro controller used is AT89S52. Mainly micro controller consists of CPU, memory and various I/O pins, and the speed of this micro controller is enough to execute the program in real time. This particular micro controller is chosen because the experiment requires minimum of 8-bit micro controller. This microcontroller contains 4Kb flash memory inbuilt in it, this memory is enough to dump our code in to the microcontroller.

II.2. GPS:

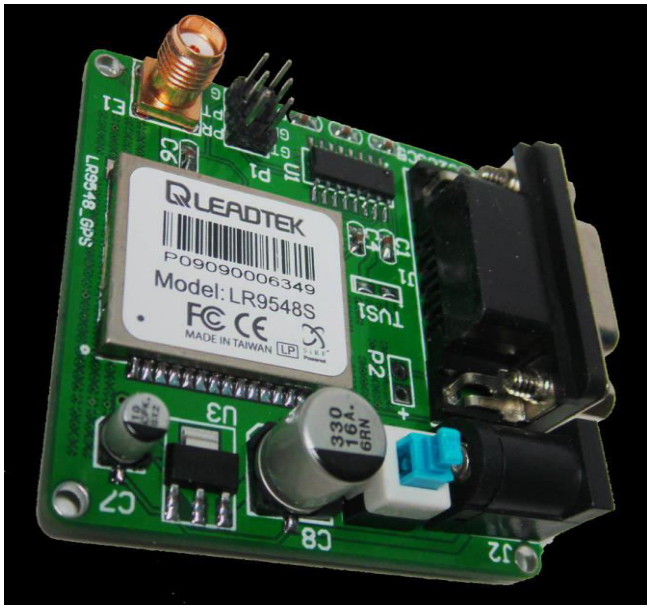

Figure.2. GPS module

GPS abbreviates global positioning system and this is used to detect the latitude and longitude of the particular position and it also shows the exact time. It detects these values anywhere on the earth. In our project it plays main role and it is the main source of the latitude and longitude of the vehicle to know the accident occurred location, or even for theft tracking of the vehicle. This gadget gets the coordinates from the satellite for each and every second. This device is the main component of vehicle tracking project

II.3. GSM:

Figure.3. GSM module

GSM abbreviates global system for mobile communication; this is a second generation (2G) mobile network. This is widely used in all over the world for mobile communication. This GSM device consists of sim slot in which a sim can be inserted which has a unique number, this unique number is used for contact. This GSM device consists a unique number called imei number and this is different for each and every hardware kit. In our project the device is used for transmitting data. The data from GPS is transmitted to given mobile through this GSM itself

II.4. LCD

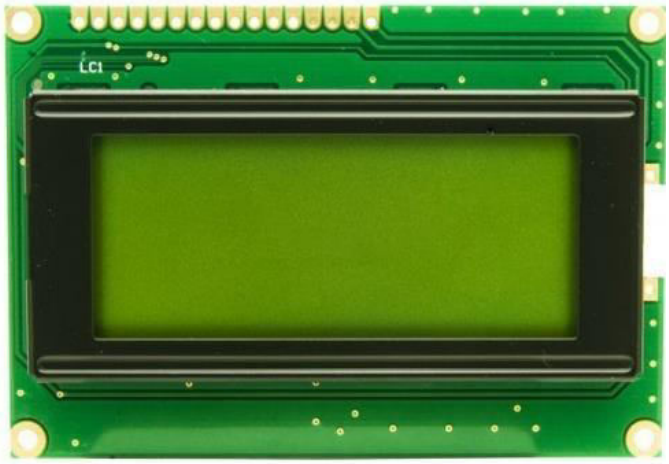

Figure.4. LCD

An LCD is made with either a passive matrix or an active matrix display display grid. The active matrix LCD is also known as a thin film transistor (TFT) display. The passive matrix LCD has a grid of conductors with pixels located at each intersection in the grid. A current is sent across two conductors on the grid to control the light for any pixel. An active matrix has a transistor located at each pixel intersection, requiring less current to control the luminance of a pixel. For this reason, the current in an active matrix display can be switched on and off more frequently, improving the screen refresh time

II.5. Power Supply

A power supply is an electrical device that supplies electric power to an electrical load. The primary function of a power supply is to convert electric current from a source to the correct voltage, current, and frequency to power the load. As a result, power supplies are sometimes referred to as electric power converters. Some power supplies are separate standalone pieces of equipment, while others are built into the load appliances that they power. Examples of the latter include power supplies found in desktop computers and consumer electronics devices. Other functions that power supplies may perform include limiting the current drawn by the load to safe levels, shutting off the current in the event of an electrical fault, power conditioning to prevent electronic noise or voltage surges on the input from reaching the load, power-factor correction, and storing energy so it can continue to power the load in the event of a temporary interruption in the source power

II.6 .Shock Sensor

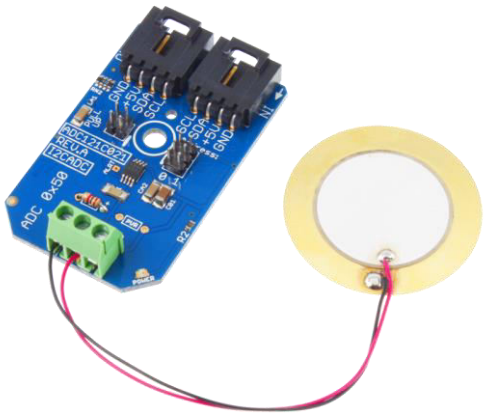

Figure.5. Shock sensor

A shock detector or impact monitor is a device which indicates whether a physical shock or impact has occurred. These usually have a binary output (go/no-go) and are sometimes called shock overload devices. Shock detectors can be used on shipments of fragile valuable items to indicate whether a potentially damaging drop or impact may have occurred. They are also used in sports helmets to help estimate if a dangerous impact may have occurred. By contrast, a shock data logger is a data acquisition system for analysis and recording of shock pulses.

II.7. Fire detector

Fire detectors sense one or more of the products or phenomena resulting from fire, such as smoke, heat, infrared and/or ultraviolet light radiation, or gas. In dwellings, smoke detectors are often stand-alone devices. In non-domestic buildings, fire detection will typically take the form of a fire alarm system, incorporating one or more of the following automatic devices:

II.8. Vehicle tracking system working

This system takes input from GPS and which goes into rs232. This Rs232 sends data into max232 and it converts the data format and sends it to the Rx (receiver pin) of microcontroller and this microcontroller stores this data in USART buffer and the data stored is sent again through TX pin into max232 this max 232 sends the data into GSM via rs232. This is how vehicle tracking works using GSM and GPS. The LCD interfaced to the microcontroller also shows the display of the coordinates. This LCD display is only used to know the working condition of the vehicle tracking system.

II.9. Accident alert system working

Accident in the sense it could be collision of two vehicles or fire accident inside the vehicle. These shock sensors are

attached to the car on all sides of the vehicle and they all are connected to the OR gate .OR gate is used because to detect at least one sensor is high .the output from the or gate is connected to the interrupt pin of microcontroller and whenever this pin 12 is high the micro controller sends the message about the accident.

III. FEATURES

III.1. Vehicle Tracking Features

It is mainly benefit for the companies which are based on transport system. Since it can show the position of all vehicles in real time, so that they can create the expected data accordingly. These tracking system can store the whole data where the vehicle had gone, where did it stop, how much time it take at every stop and can create whole data analysis. It is also used in buses and trains, to estimate how far are they, how much time it takes for them to come to a particular stop. These systems are used to data capture, data storage, data analysis and finally data transfer.

III.2.Accident Alert System Features:

This system is based on new technology, its main purpose is to detect an accident and alert to the control room, so the victim can find some help. It can detect accidents the intensity of the accident without any visual contact from control room. If this system is inserted in every vehicle then it is easy to understand how many vehicles are involved in a particular accident and how intense is it. So that the help from control room will be according to the control room. The present board designed has both vehicle tracking and accident alert systems, which make it more valuable and useful. This board alerts us from theft and on accident detection also. This device detects fire accidents also by placing fire detector in one of the interrupt pins.

IV. APPLICATIONS

Commercial fleet operators are by far the largest users of vehicle tracking systems. These systems are used for operational functions such as routing, security, dispatch and collecting on-board information These are also used for fire detector in large vehicles like train, bus etc. because the vehicle like train contains large number of people and the sending alert of fire accident can save many lives. The applications for this project are in military, navigation, automobiles, aircrafts, fleet management, remote monitoring, remote control, security systems, teleservices, etc.

- Fleet monitoring
- Vehicle scheduling
- Route monitoring
- Driver monitoring
- Accident analysis
- Geo-fencing geo-coding

V. CONCLUSION:

Vehicle tracking system makes better fleet management and which in turn brings large profits. Better scheduling or route planning can enable you handle larger jobs loads within a particular time. Vehicle tracking both in case of personal as well as business purpose improves safety and security, communication medium, performance monitoring and increases productivity. So in the coming year, it is going to play a major role in our day-to-day living.

Main motto of the accident alert system project is to decrease the chances of losing life in such accident which we can't stop from occurring. Whenever accident is alerted the paramedics are reached to the particular location to increase the chances of life. This device invention is much more useful for the accidents occurred in deserted places and midnights. This vehicle tracking and accident alert feature plays much more important role in day to day life in future.

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