

Vehicle To Vehicle Safety Device - An Ease for Safe Driving

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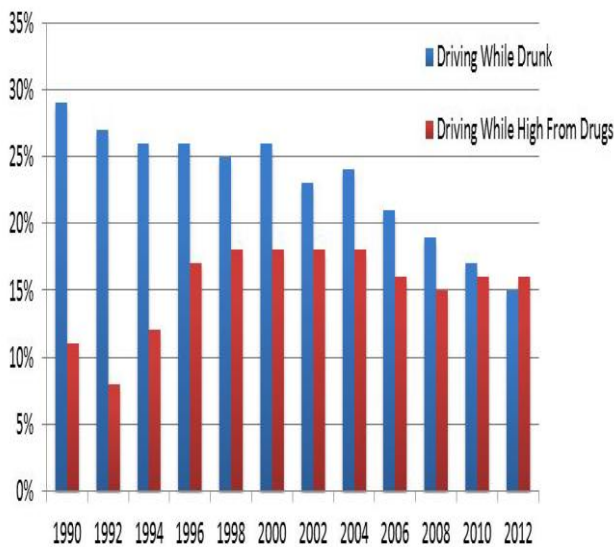
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Introduction

Alcohol affects you in a way that changes your judgment, depth perception as well as vital motor skills required to drive safely. Its easy to think you are driving normally when truly you are not. When the police take notice you could be hit with a DUI/DWI. This is the best case scenario. Getting into an accident your life could be lost as well as any others who too are involved in this accident.



Source: Texas Department of State Health Services

Existing system

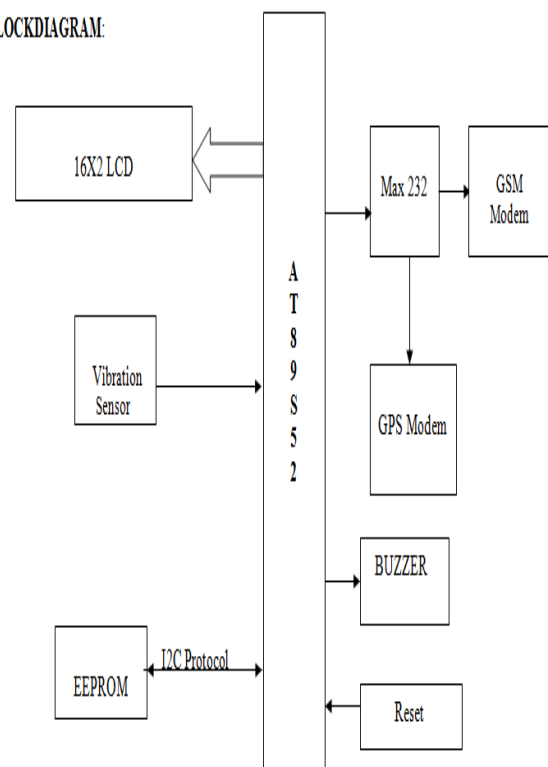
This project is designed to inform about an accident that is occurred to a vehicle to the family members of the traveling persons. This project uses a piezo-electric sensor which can detect the abrupt vibration when an accident is occurred. This sends a signal to microcontroller.

This Project presents an automatic vehicle accident detection system using GPS and GSM modems. The system can be interconnected with the car alarm system

and alert the owner on his mobile phone. This detection and messaging 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.

The Microcontroller processes this information and this processed information is sent to the user/owner using GSM modem A GSM modem is interfaced to the MCU. The GSM modem sends an SMS to the predefined mobile number and informs about this accident. This enable it to monitor the accident situations and it can immediately alerts the police/ambulance service with the location of accident.

BLOCKDIAGRAM:



Draw back: In the existing system drowsiness of the driver cannot be recognized and alcohol sensor is also not present.

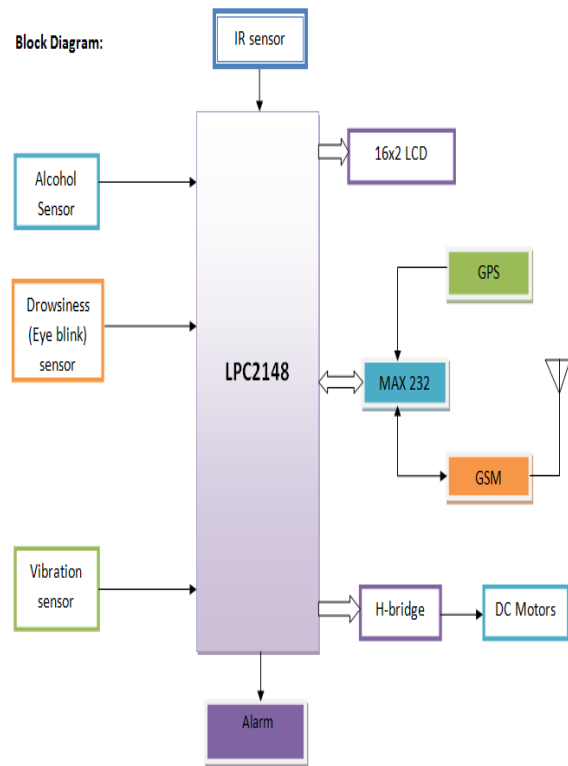
Proposed system

This Project presents an automatic vehicle accident detection system using GPS and GSM modems. The system can be interconnected with the Alcohol detection, and alert the owner on his mobile phone. This detection and messaging 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.

Eye blink sensor is also interfaced, if driver is feeling drowsy the car will stop and alerts with the burglar alarm.

The Microcontroller processes this information and this processed information is sent to the user/owner using GSM modem A GSM modem is interfaced to the MCU. The GSM modem sends an SMS to the predefined mobile number and informs about this accident. This enable it to monitor the accident situations and it can immediately alerts the police/ambulance service with the location of accident. An IR sensor is interfaced to the vehicle to drive it autonomously.

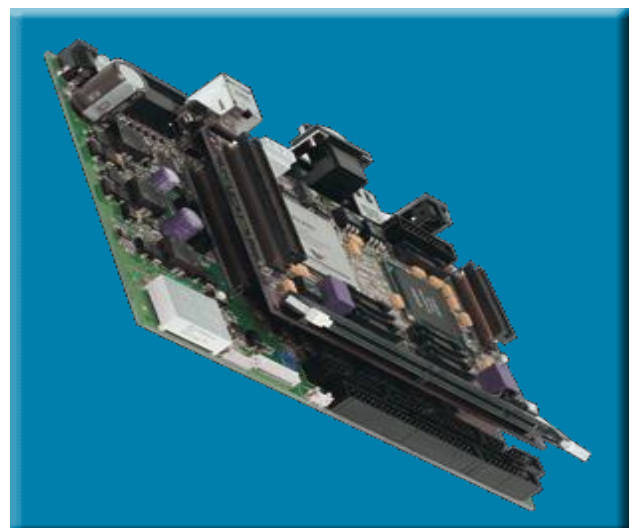
The project is built around the micro controller. This micro controller provides all the functionality of the SMS alert system. It also takes care of filtering of the signals at the inputs. In our android mobile name of the location can be viewed. This is to identify the place easily.



Module used in this project

ARM PROCESSOR

The LPC2148 are based on a 16/32 bit ARM7TDMI-S™ CPU with real-time emulation and embedded trace support, together with 128/512 kilobytes of embedded high speed flash memory. A 128-bit wide memory interface and unique accelerator architecture enable 32-bit code execution at maximum clock rate.



GSM



MODEM SPECIFICATIONS:

The SIM300 is a complete Tri-band GSM solution in a compact plug-in module.

Featuring an industry-standard interface, the SIM300 delivers GSM/GPRS900/1800/1900Mhz performance for voice, SMS, data and Fax in a small form factor and with low power consumption.

The leading features of SIM300 make it deal fir virtually unlimited application, such as WLL applications (Fixed Cellular Terminal), M2M application, handheld devices and much more.

1. Tri-band GSM/GPRS module with a size of 40x33x2.85
2. Customized MMI and keypad/LCD support
3. An embedded powerful TCP/IP protocol stack
4. Based upon mature and field proven platform, backed up by our support service, from definition to design and production.

Global Positioning System

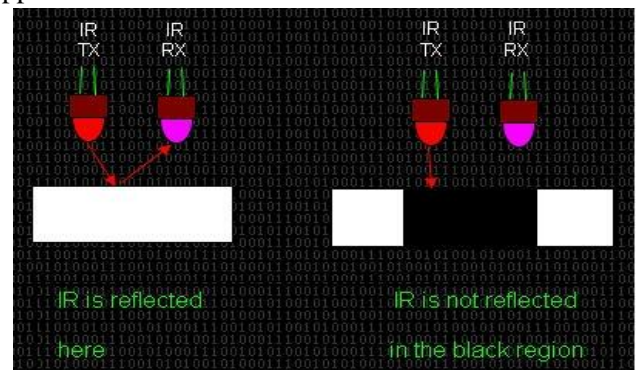
The **Global Positioning System (GPS)** is a U.S. space-based global navigation satellite system. It provides reliable positioning, navigation, and timing services to worldwide users on a continuous basis in all weather, day and night, anywhere on or near the Earth which has an unobstructed view of four or more GPS satellites.



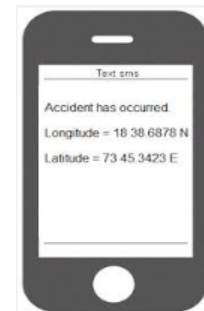
IR sensor

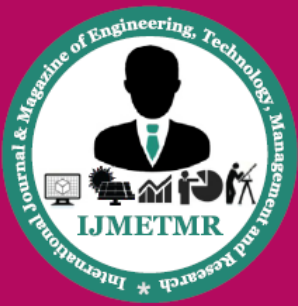
IR reflectance sensors contain a matched infrared transmitter and infrared receiver pair. These devices work by measuring the amount of light that is reflected into the receiver. Because the receiver also responds to ambient light, the device works best when well shielded from abient light, and when the distance between the sensor and the reflective surface is small(less than 5mm).

IR reflectance sensors are often used to detect white and black surfaces. White surfaces generally reflect well, while black surfaces reflect poorly. One of such applications is the line follower of a robot.



Result of the project





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