

Smart Automatic Vehicle Accident Detection, Tracking and Messaging System using GPS and GSM

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Abstract - The technology is growing rapidly and it made our life so easy but is also a very hazardous to human life. By increasing the traffic is dangerous in one way it causes the destroy of property and also causes on the human life. An accident is a such type of that occurs unexpectedly, unusually external event it occur in any particular time and a place, we permanently cannot stop the accidents but we can help that injured person .hence here is my paper provide the facility to avoid huge accident and if any accident is detected then it try to help that injured person as quick as possible by using GPS ans GSM.

1. INTRODUCTION

Accident is detected by the system with the help of vibration sensor and at that time GPS trace the location and gives the details to the near hospital to provide emergency ambulance and medical facility as fast as possible using GSM. There is one more facility if victim is not injured badly and he think he do not need any type of medical treatment then one function is given that the victim can stop that system for sending the message to the hospital by using switch. There is main purpose of this paper is to avoid the accident and save the human life nowadays many accident is occurs due to the drunk and drive cases for this one extra feature is add is that we can detect if the person in the car is drunk then this system can detected by the alcohol sensor and it avoid the accident by alerting the driver. If the driver not wearing the seatbelt properly then also system alerting and save the human life at least.

2. METHODOLOGY

2.1 WORKING

- 1] A sensor will sense the mismatch any occurrence of the accident will found then it gives the output to the ARM processor.
- 2] Buzzer is start beeping that indicate the system is activated.
- 3] GPS detect the latitude and longitude value of the vehicle to provide essential treatment to near hospital, police station and and its regarding home number.
- 4] The processor sends the alerting message if any to the pre save number using GSM module. The phone number save in GSM module which we can change at any time.
- 5] The LCD screen display the status of the output.
- 6] Depending on the output action will be taken by the user.

3. BLOCK DIAGRAM

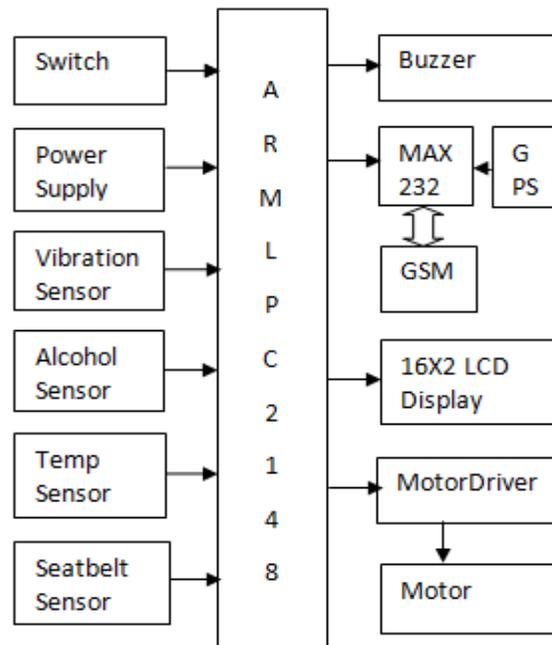


Fig 1:- vehicular section

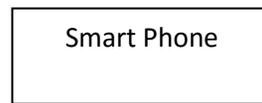


Fig 2:- Monitoring Section

3.1 ARM LPC2148 PROCESSOR

An ARM processor is one of a group of CPU depends on the RISC engineering created by Advanced RISC Machines. ARM makes 32bit and 64bit RISC multicore processor. RISC processor are intended to play out fewer sort of PC directions with the goal that they can work at a higher speed, performing progressively a large number of guidelines every second. ARM processor are broadly utilized in shopper electronic gadget such as smartphones, tablets, of there sight and sound players and other cell phone, for example, wearable. As a result of their diminished guidance set, they required less transistors, which empowers a littler pass on size of the incorporated circuit. The arm processor's littler size, diminished multifaceted nature and lower control utilization makes them appropriate for progressively scaled down gadgets.

FEATURES OF ARM PROCESSOR

1. Load/store architecture.
2. An orthogonal instruction set.
3. Mostly single cycle execution.
4. Enhanced power saving design.
5. 64 and 32bit execution states for scalable high performance.
6. Hardware virtualization support.

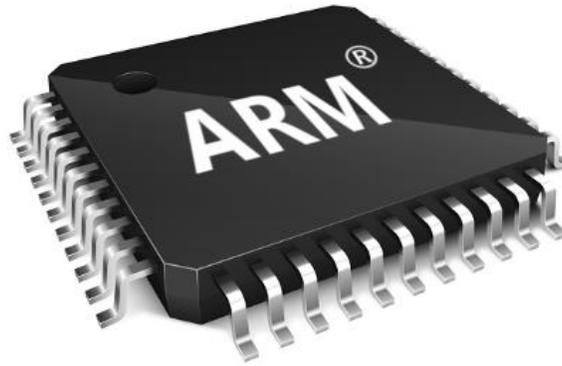


Fig 3:- ARM Processor

3.2 ALCOHOL SENSOR

The liquor sensor comprises of a tin dioxide (SnO₂), a viewpoint layer inside aluminum oxide smaller scale tube and a warming component inside a rounded packaging. The end face of the sensor is encased by a tempered steel net and the rear holds the association terminals. Ethyl liquor present in the breath is oxidized into acidic corrosive going through the warmth component. With the ethyl liquor course on the tin dioxide detecting layer, the opposition diminishes. By utilizing the outer load obstruction the opposition variety is changed over into an appropriate voltage variety. The circuit graph and the association course of action of a liquor is appeared as follows.

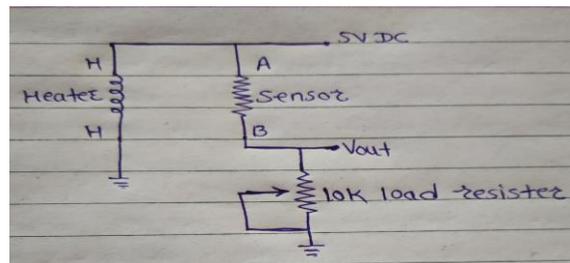


Fig 4:- Circuit Diagram of Alcohol Sensor

3.3 GPS MODULE

GPS modem get connected with the required satellites. Then it calculates coordinates of location. The arm receives data from GPS modem.



Fig 5:- GPS Module

3.4 LCD DISPLAY

It shows the latitude and longitude on display.

3.5 GSM MODULE

GSM is a standard developed developed to describe protocols. For second generation digital cellular network used by mobile phones. SIM 900GSM module will be used for this project. It is a type of modem that accepts a SIM card and operates over a subscription to a mobile operator, just like a mobile phone. It will be capable of sending and receiving SMS &MMS messages.

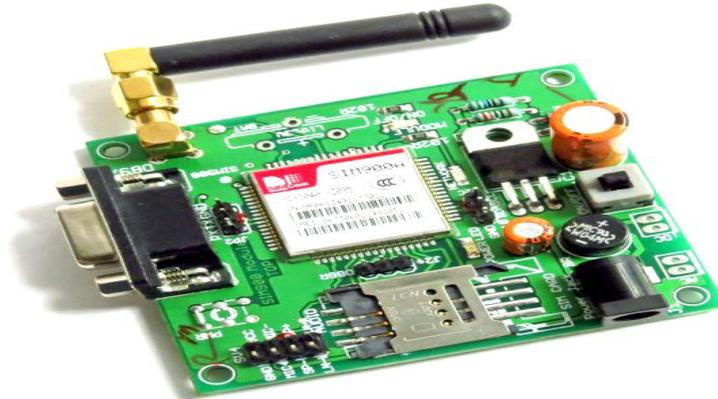


Fig 6:- GSM Module

3.6 MAX232

MAX232 is required since the communication level of ARM and GSM modem is different.

4 FUTURE MODELING

We can modify the circuit by adding the wireless webcam through which we can capture the image which also providing to the driver's assistance and the police station for future processing. In future use some safety sensors to save the human life for e.g pulse sensor to save the life of human.

5. CONCLUSION

In this fastest growing generation somewhere accident is playing a vital roal for reducing the valuable human life. so, we have designed a system which helps to stop the accident and if any accident is detected then provide the medical facility to that victim as fast as possible by sending the message to the hospital, police station, and his own house.

6. REFERENCES

- 1) ARM processor Architecture IJSETR Volume4, Issue 10 By [Joshi, Vaibhav Vijay, Balbhim Bansod] and www.askindiatech.com from this i got an idea about ARM.
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- 3) Information about sensors from IJSETR By [S.Naveen Kumar, G.Khenchu Krishnaiah].
- 4) GPS: Automatic vehicle accident detection and messaging system using GSM and GPS modem Volume 05 Issue: 03 By [Nimisha Chaturvedi, Pallika Srivastava].
- 5) I make an discussion with Pro. V.S.Gawali from this i got the some ideas about future modeling of the circuit and some self thoughts are included.