Luxurious Transporting System

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Abstract

In today's world the accident prone countries are more. Among those countries INDIA ranks first. There are three accidents occurring in an hour according to the recent surveys in INDIA. So in order to prevent accidents and to save ones precious life we are proposing a new system which incorporates latest technology that helps to prevent accidents if at all an accident occurs an automatic message was provided to ambulance services as well as police men.

Keywords

AT Mega 16/32-bit Micro Controller, angle sensors, tilt sensors, GSM, GPS Modules.

Introduction

In this paper we are going to use an AT Mega controller in order to access our proposed technique. We are going to load a C program which is used to open the doors and windows automatically if there is a fire accident in our vehicle. At the same time accidents through bikes are not controllable. So in this paper we are proposing a system which prevents bike accidents too.

Principle of Operation

Accident prevention:

In order to prevent accident we are using RF as well as IF sensors. The IF rays are the rays which can travel a distance up to 30meters without any interruption. If any obstacle comes in between IF rays the rays get reflected /deflected. The same concept is incorporated in this paper. When ever an obstacle such as a person or a vehicle or a building comes across these rays, the IR rays get deflected. When ever these rays goes deflected at the receiver end the receiver can't receive those IR rays and the brake is automatically applied. The detailed concept is explained below with the help of block diagram.

Block Diagram:

Block Diagram

Working:

The block diagram shown above explains that AT Mega 16/32-bit Micro Controller is the heart of the system micro controller acts as a computer which it self performs and controls all the operation that have to be carried out. It has 44pins. It is a high performance, Low-power Atmel Micro- controller. It has 131 powerful RISC instruction set architecture. It has 32*8 general purpose registers. It has 128Kbytes of flash program memory. It has 4Kbytes of EEPROM along with 16Kbytes internal SRAM. It has two 8-bit timer/counters and two programmable serial USART.

PIN DIAGRAM:

In this microcontroller we are dumping a program which enables the pins of microcontroller and the devices connected to the I/O pins.

Block Diagram:

Schematic diagram:
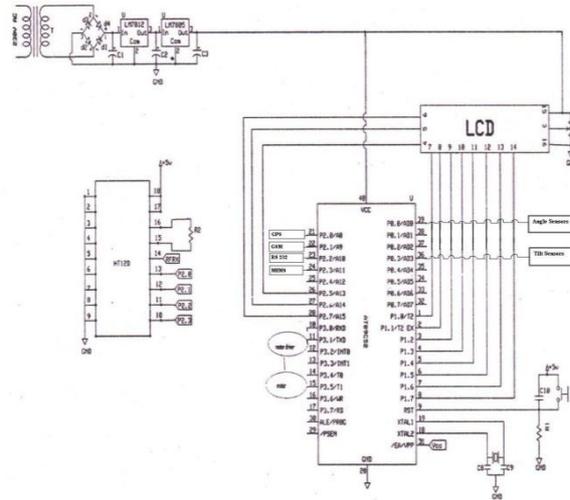
IR Sensors

IR Sensors are the sensors which sense the IR rays. In this project we are using IR Transmitter which transmits the IR rays. IR rays are the rays which can travel up to smaller distances in the range of meters. By using this IR transmitter we transmit the IR rays as IR rays cannot penetrate through strong objects the IR receiver cannot receive the IR rays it means that there is strong object right in front of the vehicle. By using these IR sensors we can easily detect that there is an obstacle in front of the vehicle if the driver does not recognize and stops the vehicle, an accident will indefinitely occurs. When the IR sensor does not sense the IR rays hardware is inbuilt developed that automatically brake was applied without manual interpretation.

Accident Identification:

If at all accident occurs, the accident identification is also an important task. For that, we are using Angle sensors, MEMS, GPS, GSM modules.

Angle Sensors

Angle sensors are the sensor which senses the information about which location was the person occurred accident for Angle sensors, we use the longitude and latitude values on the earth. By these values the perfect/exact location of the person is identified.

MEMS

MEMS stand for micro electro mechanical sensors. The MEMS are used to get and give information about the eliminate conditions where the accident is occurred such that rescue team can rescue the person by getting information to them that the climate conditions are bad. This information is given by the help of GSM module.

GSM

GSM stands for global system for mobile communications. The GSM module sense the message to the service center from there the message was transmitted to the 100/108 services.

Block Diagram:
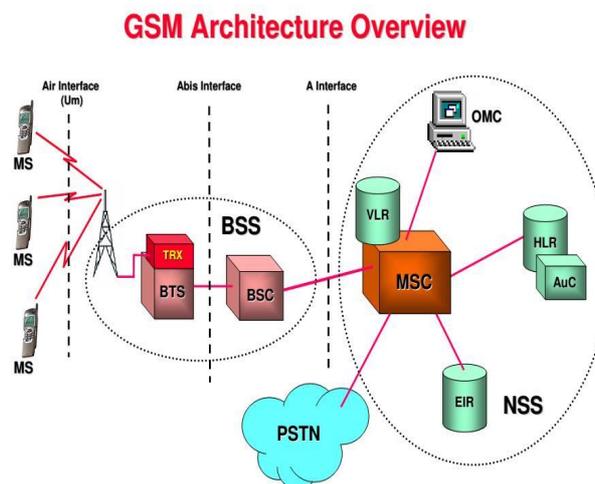
GPS

GPS stands for global positioning system. The GPS is used to cover the information of earth around 3600 where the person is particularly located. The information was given to the 100/108 i.e. Ambulance and police men, but in order to locate the person at that particular place where the accident is occurred is given through GPS.

Tilt Sensor

Tilt sensors are the sensors which sense an angle of tilt for suppose if the person is using a two wheeler or a motor cycle; it is difficult to prevent accident. If the accident occurs by hitting at the sides and we cannot arrange any blocking system. Hence these tilt sensors are used if the person was hit by a vehicle, and angle of inclination is grater than 450, the system knows that accident is occurred and this information is given to 100/108 services automatically with the GSM module and persons location information is given to the 100/108 by GPS.

Block Diagram:
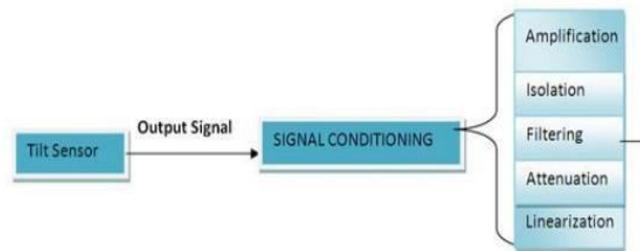
Accident by Fire

If the fire accident is happened in a vehicle, it is difficult to get rid of that accident and save one's life. So we are using a MEMS sensor which is a temperature sensor which senses the temperature or climate condition continuously. By monitoring with this sensor, the temperature increases or decreases, the person gets alert tone in his doors or windows are opened automatically. For this we are writing a C program in micro controller is given below.

C Program:

```
1   Program for automatic door opening:
2   #include<stdio.h>
3   #include<conio.h>
4   #include<math.h>
5   #include<adc.h>
6   Main()
7   {
8       Int temp;
9       If temp>=35;
10      Port 0.1=1;
11      Glass door open;
12      Adc=1;
13      {
14          Else if
15          Port 0.1=0;
16          Glass door close;
17      }
18      End
19  }
```

```
1   Program for automatic break applying depending on temperature:
2   #include<stdio.h>
3   #include<conio.h>
4   #include<math.h>
5       Main()
6       Int float a;
7       Int temp;
8       {
9           If (temp>=35);
10          Port 1.0=1;
11          {
12              If (a>=350ppm);
13              Port 1.1=1;
14              Break on;
15              Else
16              Break off;
17          }
18          Else
19          Break off;
20      }
21  }
```

Conclusion

In this paper we are introducing and providing a new technology which helps the person to get rid of the accidents and if at all accident occurs, we provide the information to the ambulance and policemen and provide the medical aid for the person who met with an accident and give their location with the help of GPS and reduce the time in giving the information to ambulance and prevent the manual interruption. By this paper, we are automatically opening the doors and windows of the vehicle whenever there is a fire accident or any temperature mismatch, which helps the person to save his life by climbing down through the doors and windows that too without manual interruption the accident can be avoided simply by sending IR rays and if any obstacle comes before the vehicle, the break was automatically applied and person's life is saved.

References

[1]. 8-bit Microcontroller with 16K Bytes In-System Memory: www.atmel.com/images/doc2466.pdf

[2]. Wikipedia: List of common microcontrollers: http://en.wikipedia.org/wiki/List_of_common_microcontrollers

[3]. Automobile Sensors: www.sensorsweb.com/car_sensors

[4]. Tilt Sensors: www.instructables.com/id/Tilt-Sensor-Tutorial/

[5]. Angular Position Sensors: www.futureelectronics.com

[6]. MEMS-Based Sensor Technology: http://www.freescale.com/webapp/sps/site/overview.jsp?code=SNSMEMSOVERVIEW

[7]. GPS Modules: http://www.futurlec.com/GPS.shtml

[8]. GSM/GPRS Modules: www.engineersgarage.com/articles/gsm-gprs-modules