ISSN No: 2348-4845
International Journal & Magazine of Engineering, Technology, Management and Research
A Peer Reviewed Open Access International Journal

# Mobile Application for Drivers Health Status Using GSM Technology



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## ABSTRACT:
In our world everything is replaced or they can be developed in an advanced manner by using different technologies. But there is no replacement for life of humans. Now a days, people totally depending on the vehicles. So many people are met with accidents for the small reasons. The main reason is driver's health condition and negligence. Sometimes this reason causes even the death of so many people. The role of driver fatigue in driving safety is a complex one. Research shows that driver fatigue is a significant factor in approximately 20% of commercial road transport crashes. • Surveys show that over 50% of long haul drivers have fallen asleep at the wheel. • Increased crash risk occurs at night (peak levels at night can be 10 times daytime levels), the longer the working day and with irregular hours. Those fatigue factors that have been shown to influence road safety need to be better controlled in regulation policy and risk management. The most important factor that will ensure safety is to effectively implement and enforce regulation. Both working time and driving time need to be addressed in the same Regulation. In this project an automated monitoring system is introduced in order to avoid the above problem to maximum extent. In this project by using sensors and GSM technology we can detect the driver's health condition and sleeping mode also. If driver's condition is sickness and sleeping mode then automatically we can alert the driver through the SMS or phone call. Here we use the embedded technology for avoid this problem and save the so many people life. The main aim of this project is to detect the driver's health status and present condition. The purpose of this project is to implement an automated system for saving the lives of the human beings who are travelling in the vehicles like car, bike, school and college busses etc.., without met the accidents. We can alert the driver whenever it is necessary and can save the passengers.

## Index-Terms:
ARM processor, eye blink sensor, GSM modem, heart-beat sensor, temperature sensor.

## I. PROJECT RELATED WORK:

### 1. 1 BLOCK DIAGRAM:

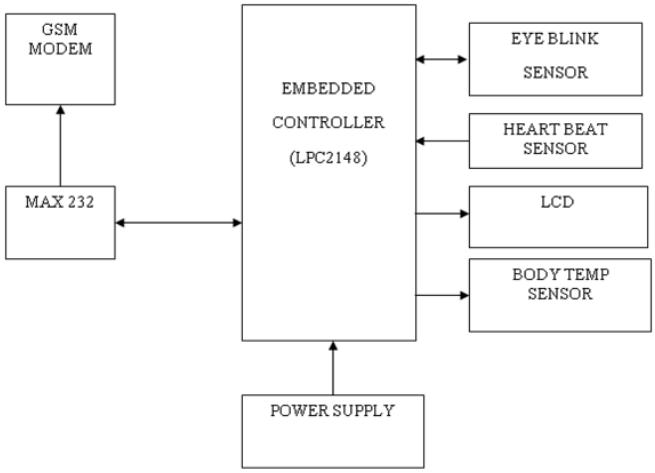


Figure-1: Block diagram of the project

### 1.2. ARM based LPC2148 Controller:

The LPC2148 microcontrollers are based on a 32/16 bit ARM7TDMI-S CPU with real-time emulation and embedded trace support, that combines the microcontroller with embedded high speed flash memory ranging from 32 kB to 512 kB. A 128-bit wide memory interface and a unique accelerator architecture enable 32-bit code execution at the maximum clock rate. For critical code size applications, the alternative 16-bit Thumb mode reduces code by more than 30 % with minimal performance penalty. Due to their tiny size and low power consumption, LPC2141/2/4/6/8 are ideal for applications where miniaturization is a key requirement, such as access control and point-of-sale.

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A blend of serial communications interfaces ranging from a USB 2.0 Full Speed device, multiple UARTS, SPI, SSP to I2Cs and on-chip SRAM of 8 kB up to 40 kB, make these devices very well suited for communication gateways and protocol converters, soft modems, voice recognition and low end imaging, providing both large buffer size and high processing power. Various 32-bit timers, single or dual 10-bit ADC(s), 10-bit DAC, PWM channels and 45 fast GPIO lines with up to nine edge or level sensitive external interrupt pins make these microcontrollers particularly suitable for industrial control and medical systems.


Figure-2: LPC2148 Microcontroller

## II. HARDWARE COMPONENTS:

### 2.1 LCD:

To display interactive messages we are using LCD Module. We examine an intelligent LCD display of two lines,16 characters per line that is interfaced to the controllers. The protocol (handshaking) for the display is as shown. Whereas D0 to D7th bit is the Data lines, RS, RW and EN pins are the control pins and remaining pins are +5V, -5V and GND to provide supply. Where RS is the Register Select, RW is the Read Write and EN is the Enable pin.


Figure-3: 2x16 Line Alphanumeric LCD Display

### 2.2 TEMPERATURE SENSOR (LM35):

The LM35 sensor series are precision integrated-circuit temperature sensors, whose output voltage is linearly proportional to the Celsius (Centigrade) temperature. The LM35 series are precision integrated-circuit LM35 temperature sensors, whose output voltage is linearly proportional to the Celsius (Centigrade) temperature. The LM35 sensor thus has an advantage over linear temperature sensors calibrated in ° Kelvin, as the user is not required to subtract a large constant voltage from its output to obtain convenient Centigrade scaling. The LM35 sensor does not require any external calibration or trimming to provide typical accuracies of ±¼°C at room temperature and ±¾°C over a full -55 to +150°C temperature range. Low cost is assured by trimming and calibration at the wafer level.

Figure-4: Temperature sensor

### 2.3. 8IR BASED EYE BLINK SENSOR:

The Objective of this project is to develop a system to keep the vehicle secure and protect it by the occupation of the intruders. We can't take care of ours while in running by less conscious. If we done all the vehicles with automated security system that provides high security to driver, also gives alarm. This Eye Blink sensor is IR based. The Variation Across the eye will vary as per eye blink. If the eye is closed means the output is high otherwise output is low. This to know the eye is closing or opening position. This output is give to logic circuit to indicate the alarm.This can be used for project involves controlling accident due to unconscious through Eye blink.

## III. RESULTS:

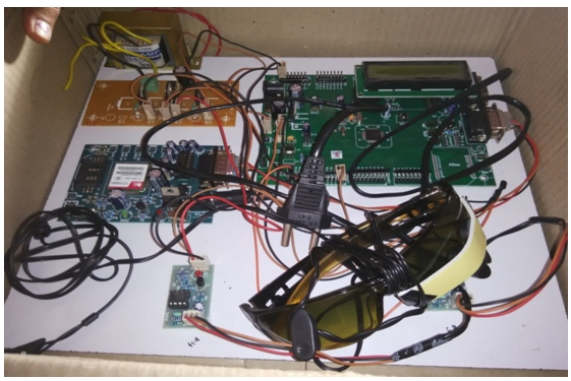

Figure-5: Mobile application for driver health status using GSM

In this project Embedded controller and GSM modem are placed in vehicle and where embedded controller is connected with various sensors like temp sensor, heart beat sensor and eye blink sensor and LCD display.

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Here, we connect the RS-232 cable from GSM to Embedded controller with MAX 232.This MAX 232 is a voltage converter. All sensing devices are connected to the Embedded controller when ever some changes are observed by the sensors and the same will be detected by the embedded controller. By knowing the status of the driver regularly, one can alert the driver at any time and any place so that we can save the people who travelled in the vehicle.

## IV. CONCLUSION AND FUTURE SCOPE:

The project "MOBILE APPLICATION FOR DRIVERS HEALTH STATUS USING GSM TECHNOLOGY" has been successfully designed and tested. Integrating features of all the hardware components used have developed it. Presence of every module has been reasoned out and placed carefully thus contributing to the best working of the unit. Tracking system is very important in modern world. Global Positioning System (GPS) can be added to this system, which will receive the coordinates from the satellites among other critical information. Using the GPS technology fully automated real-time vehicle tracking system can be implemented for tracking of the theft vehicle along with the monitoring of the health condition of driver and can be used for various other applications.

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