



ISSN (Print) : 2320 – 3765
ISSN (Online): 2278 – 8875

International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

An ISO 3297: 2007 Certified Organization

Volume 8, Special Issue 1, March 2019

A Two Days National Conference on Emerging Trends in Electronic and Instrumentation Engineering (NCETEE 19)

12th & 13th March 2k19

Organized by

Department of Electronics and Instrumentation Engineering, Adhiyamaan College of Engineering, Hosur, Tamilnadu, India

Smart Safety System for Women

M.Anbarasan¹, N.Divya², S.Kamatchi³, S.Swetha⁴,

Assistant Professor, Department of EIE, Adhiyamaan College of Engineering, Hosur, Tamilnadu, India¹

U.G Student, Department of EIE, Adhiyamaan College of Engineering, Hosur, Tamilnadu, India^{2,3,4}

ABSTRACT: As technology grows, problem too grows, so let we use technology for our safety purpose too. In our proposed system we have connected different sensor and modules to make a system for women security, where our primary controller will control all the accessory things. GPS module will fetch the Latitude and Longitude, GSM would send the details as SMS, RF module will fetch and transfer data, LCD would display the information, Heart beat sensor would sense the stage of need, and few switches to make the module turn on & off. Proposed method would ensure safety to the women's.

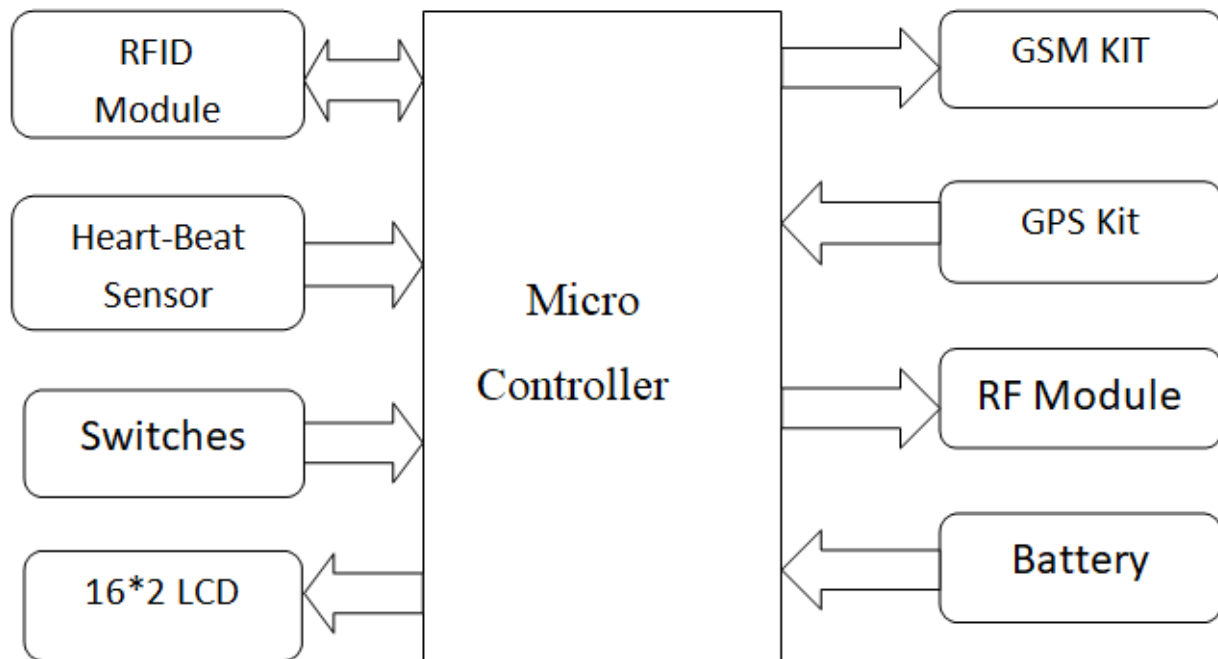
KEYWORDS: GPS module, RF module, Heartbeat sensor.

I.INTRODUCTION

In today's world, women come across many situations that make them feel unsafe. Women from various walks of life face situations that make them feel threatened in different environments. It has also been proven that in urban environments, women are more prone to experience harassment especially in developing countries[1]. In today's date, women face physical harassment in public places, schools and at workplaces or while travelling. Most cases of physical harassment take place when women are alone or while travelling. Women feel insecure to step outside their house[2]. There are many android applications for smart phones but for those who don't use smart phones or those who cannot keep their mobile handy at their workplace, this proposed system will be helpful[5][3]. At any emergency state of affairs individuals get terrified and in this state of affairs, they will not be able to operate their smart phone applications, and can't straight off defend the offender and shield themselves[4]. The proposed system can be useful for women security purpose.

This we do using same RF technology. Also we have heart beat sensor to sense the pulse and alert during emergency. In such situations, the aid of a safety device that will inform the victim's family members or the authorities (in severe situations) may help women feel safer, confident and reduce the chances of harassment. But so when we plan for that, we came across few problem creating places and solution for the same. Few are like: when they hire some local vehicles and that solution is, if that person knows that his details are with police then he would not cross his line. Second is assistance for help when the victim is inside the closed vehicle. Third is based on tension creation we need an alert system. So we have incorporated all this into a smart module and we are naming this mode as women safety system and dedicate it to the women who travel out for purpose of business, work, education etc. Also In future we can block the driver based on misbehave cases registered by maintaining the databases. The main objective of the system is to provide a reliable security system for a women when they are alone or feel unsafe.

II.WORKING OF COMPONENTS



Here is the initial stage where we use battery to power up the controller Arduino Mega which requires 5v, and this controller is associated with GPS Module, GSM Module, RF module, Heart Beat sensor, LCD Display. So all this would be powered up. And so for user identification we have 3 LED's which will work on 3.3v and this 3 led would read us the status of working of GPS, GSM and RF module. So if any LED is not working, then it states the condition of the module.

Then the user have 2 switches to start and stop the operation, which is connected to the controller input data pins (for pin number verify the circuit diagram), so when the start switch is enabled, the controller receives 5v then it would check the program, as per the program it would read the RF data of the Cab , then it also will read the data of GPS module which is connected through Receive & transmit Pin of the controller is serially connected. That receives the information and stores the Latitude and Longitude of the location. As we use basic module the accuracy may slightly vary for one digit. Also that GPS module works with 5V, module we use is UART GPS NEO-6M, compatible with 3V/5V systems; Baud rate: 9600kbps (default), adjustable by u-center. And this details are bundled through our Arduino code and we would send it as SMS for the allocated number.

This SMS is send by SIM800C , it's an entire Quad-band GSM/GPRS answer in a very SMT sort, which might be embedded within the client applications.SIM800C supports Quad-band 850/900/1800/1900MHz, it will transmit Voice, SMS and data information with low power consumption. With small size of seventeen.6*15.7*2.3mm, it will swimmingly work into slim and compact demands of client style. And we need to insert a sim card into the module.

Also we have connect a boost circuit with the module because while sending Message it will draw upto 2A of power so we need some protection and boost circuit LM2596 DC-DC Adjustable PSU Module for this purpose, and normally it would take upto 4V of supply. Parallel our controller would check the heartbeat of the person through invento pulse sensor, this would work between power supply of 3 to 5 V dc, and this pulses are recorded and when it goes beyond certain abnormal range then we would send an alert to the external people using an RF transmission. This data would be received and displayed in the LCD. Using I2C connector, because this I2C would get Transmit & receive data's and convert to LCD required format. Where this too works on same 5V dc supply. And the entire operation stops when the stop switch is enabled.

III.FUNCTIONAL DESCRIPTION

User module should be carried by the traveller personal. While entering in the cab, he/she need to press button and scan the RFID card available with the Cab. Upon successful validation of card, a message will pop-up on LCD and a SMS will be sent to the known mobile number. The SMS will have information about cab registration number and the cab location.

The system also consists of a heart beat sensor. In case user heart beat goes beyond a particular value, emergency message will be sent on the mobile number associated. The emergency message along with the cab number will be transmitted through a wireless RF channel.

There will be another module mounted on the signals, which will receive these alert message and display on the LCD. This system will allow other people around to know the situation and help the passenger. Upon completion of the successful trip, user needs to press another switch to stop the SMS service and close the trip.

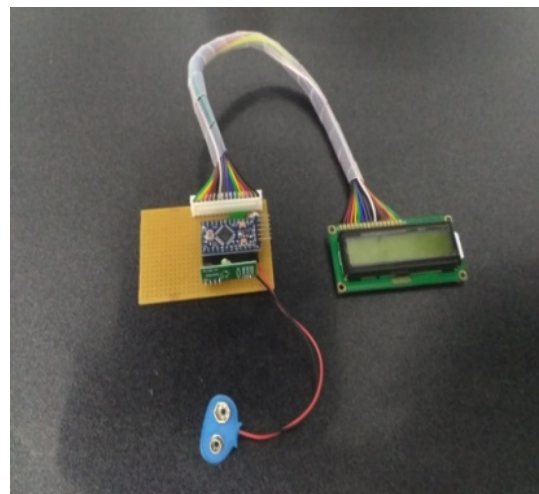
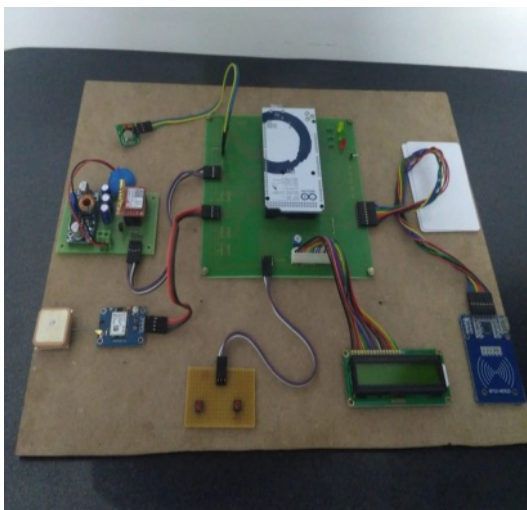


Fig.: Hardware Setup

IV.RESULTS AND DISCUSSIONS

The user module has 2 switches to start and stop the trip, the switches sends the information about the start and end of the trip, and also displays the vehicle number whether it is authenticated or unauthenticated. The messages are sent to the saved number for the start of the trip with the location of the vehicle. The heart beat sensor, senses the beat level and gives the alert message in the display as well as it sends the emergency message to the saved number.

V.CONCLUSION

Most cases of physical harassment take place when women are alone or while traveling. Women feel insecure to step outside their house. There are many android applications for smartphones but for those who don't use smartphones or those who cannot keep their mobile handy at their workplace. The proposed system can be useful for women security purpose. Hereby we have successfully designed and tested the hardware with software for women's safety system. So this prototype can be made into product to help the public. Also In future, we can block the driver based on misbehave cases registered by maintaining the databases. The main objective of the system is to provide a reliable security system for a women when they are alone or feel unsafe.



ISSN (Print) : 2320 – 3765
ISSN (Online): 2278 – 8875

International Journal of Advanced Research in Electrical, Electronics and Instrumentation Engineering

An ISO 3297: 2007 Certified Organization

Volume 8, Special Issue 1, March 2019

A Two Days National Conference on Emerging Trends in Electronic and Instrumentation Engineering (NCETEIE 19)

12th & 13th March 2k19

Organized by

Department of Electronics and Instrumentation Engineering, Adiyamaan College of Engineering, Hosur, Tamilnadu, India

REFERENCES

- [1] D. G. Monisha, M. Monisha, G. Pavithra, and R. Subhashini, " Women Safety Device and Application-FEMME". Vol 9(10), Issue March 2016
- [2] Dr. Sridhar Mandapati, Sravya Pamidi, Sriharitha Ambati, " A Mobile-based Women Safety Application (I Safe App)". Vol 17, Issue 1, Ver. I (Jan – Feb. 2015)
- [3] Deepak Sharma, Abhijit Paradkar "All in one Intelligent Safety System for Women Security". Vol 130 No.11 November 2015.
- [4] Prof. R.A. Jain, Aditya Patil, Prasenjeet Nikam, Shubham More, Saurabh Totewar, " Women's safety using IOT ". Vol: 04 Issue: 05| May-2017
- [5] Swapnil N. Gadhawe, Saloni D. Kale, Sonali N. Shinde (2017) " Electronic Jacket for Women Safety". Volume 04 Issue 05 May 2017
- [6] R. George, A. Cherian., A. Antony, H. Sebastian, M. Antony, B.T.Rosemary" An Intelligent Security System for Violence against Women in Public Places", International Journal of Engineering and Advanced Technology (IJEAT) ISSN: 2249 – 8958, Volume-3, Issue-4, April 2014.
- [7] S. Sangeetha, P. Radhika, " Application for Women Safety", IOSR Journal of Computer Engineering (IOSR-JCE), Volume 17, Issue 3, Ver. IV (May – Jun. 2015), PP 01-04.
- [8] E. Peter, Andrew, and B Paul, S. Matt, H. Jason, P. Carlos, and M. Scarlett." Designing Public Safety Mobile Applications for Disconnected, Interrupted and Low Bandwidth Communication Environments". IEEE. 10 (978-1-4799-1535-4/13), p790-796(2013).
- [9] Y. Tian, T. Kanade and J. Cohn, " Recognizing Action Units for Facial Expression Analysis", IEEE Trans. Pattern Analysis and Machine Intelligence ,vol. 23, no. 2, pp. 97–115, 2001.
- [10] Prof. Basavaraj Chougula1, Archana Naik Monika Monu, Priya Patil and Priyanka Das "SMART GIRLS SECURITY SYSTEM "Vol 3, Issue 4, April 2014.