International Research Journal of Engineering and Technology (IRJET) e-ISSN: 2395-0056
Volume: 07 Issue: 05 | May 2020 www.irjet.net p-ISSN: 2395-0072

Women Safety Device using LPC2148

S Tejaswi[1], Ritu Andrea[2], Rini Ann Thomas[3], Pavithra G S[4]

[1,2,3]Student, Dept. of ECE, Sai Vidya Institute of Technology, Karnataka, India
[4]Professor, Dept. of ECE, Sai Vidya Institute of Technology, Karnataka, India

---

Abstract – *In the present days, assaults on children and women are increasing day by day. At the time of attack, when the victim cannot contact any helpline or seek help from the police. This paper provides aid in such circumstances in not only notifying about the assault, but also in providing the exact location of the victim to the nearby police station. Women will be provided with a device which is inconspicuous to others. The device consists of a GPS module by which the exact geographical location of the victim can be traced and is displayed on the LCD. This device uses ARM microcontroller. In case of any emergency situation, she can raise an alarm by pressing the button on the device alerting the police and the linked contacts to the device by providing the exact location.*

Key Words: GPS, LCD, ARM Microcontroller, IoT

1. INTRODUCTION

The mischievous acts against children and women are raising every day. They are on the verge of effortlessly being seized. This framework uses a GPS innovation to help the victim. The GPS is used for gathering the information and intimation.

2. LITERATURE REVIEW

Year	RC	OM	HT	ABD
2008	21,467	40,413	2,659	22,939
2009	21,397	38,711	2,474	25,741
2010	22,172	40,613	2,499	29,795
2011	24,206	42,968	2,435	35,565
2012	24,923	45,351	2,563	38,262
2013	34,707	70,739	2,579	51,881
2014	36,735	82,235	2,070	57,311
2015	34,651	82,422	2,424	59,277

Table -1: Following cases in India in the year 2008 – 2015

RC: Rape Cases

HT: Human Trafficking

OM: Outrage Modesty

ABD: Abductions

The tabular column shows the number of rape cases, outrage modesty cases, human trafficking cases and abduction cases. There has been a drastic increase in the number of cases from the year 2008 to 2015. India is a developing country with respect to all aspects which includes technology and education. Even with all the advancements happening in the nation the cases just increased.

3. HARDWARE IMPLEMENTATION

Our proposed system focuses on six main factors. They are ARM microcontroller LPC2148, power supply, GPS module, emergency switch, LCD and GSM modem.

3.1 Emergency switch

A switch is a mechanical gadget used to associate and separate an electric circuit voluntarily. Switches cover an extensive variety of sorts, from sub smaller than normal up to mechanical plant exchanging megawatts of energy on high voltage dispersion lines. In applications where various exchanging choices are required, mechanical switches have for some time been supplanted by electronic exchanging gadgets which can be mechanized and shrewdly controlled. The change is alluded to as an "entryway" when disconnected to scientific shape. In the reasoning of rationale, operational contentions are spoken to as rationale doors. The utilization of electronic doors to work as an arrangement of intelligent entryways is the key reason for the PC.

3.2 ARM Microcontroller LPC2148

The LPC2148 microcontroller is designed by Philips with several built in features and peripherals. It is a 16-bit or 32-bit microcontroller based on ARM7 family. It has 512 kB on-chip flash memory as well as 32 kB on-chip SRAM.

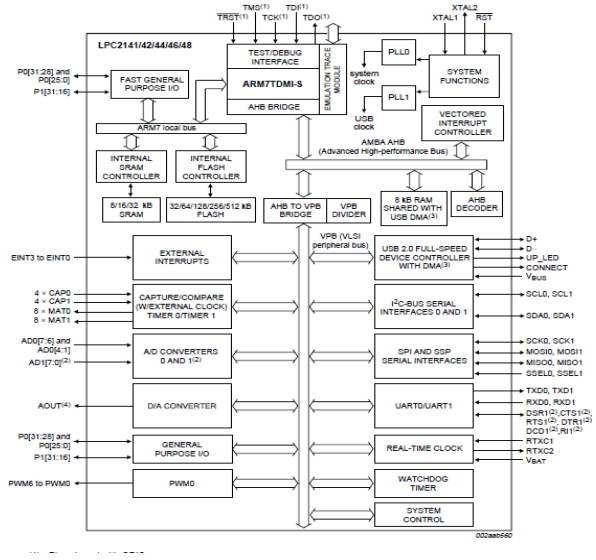


Fig -1: Block diagram of LPC2148

3.3 Regulated Power Supply

The power supplies are intended to change over high voltage AC mains power to a reasonable low voltage supply for electronic circuits. A power supply can be separated into progression of obstructs, every one of which plays out a specific capacity. A DC control supply which keeps up the yield voltage consistent regardless of AC mains vacillations or load varieties known as "Directed DC Power Supply".

3.4 GPS Module

GPS receiver is a route framework. It pinpoints the area and transmits signs to the earth. GPS captures the signs and locates the victims location by triangulation process .The GPS does not require the user to transmit any data, and it operates independently of any telephonic or internet reception. The satellite signals are modulated onto the same carrier frequency, the signals must be separated after demodulation. This is done by assigning each satellite to a unique binary sequence known as a Gold code. The signals are decoded after demodulation using addition of the Gold codes corresponding to the satellites monitored by the receiver.

3.5 Liquid Crystal Display (LCD)

A LCD comprises of two glass boards, with the fluid gem material sand witched in the middle of them. The inward surface of the glass plates are covered with straightforward terminals which characterize the character, images or examples to be shown polymeric layers are available in the middle of the anodes and the fluid stone, which makes the fluid atoms to keep up a characterized introduction point. One each polarizers stuck outside the two glass boards. These polarizers would pivot the light beams going through them to an unequivocal point in a specific bearing. At the point when the LCD is in the off state, light beams are pivoted by the two polarizers and the fluid precious stone, to such an extent that the light beams leave the LCD and seems straightforward. At the point when adequate voltage is provided to the anodes, the fluid stone atoms would be adjusted in a particular heading.

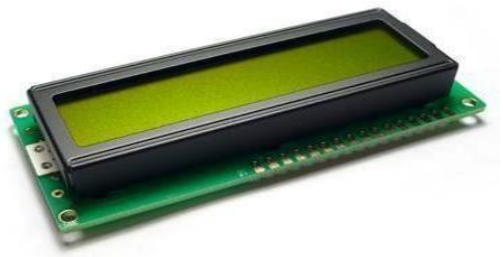


Fig -2: Liquid Crystal Display

3.6 GSM modem

A GSM modem is a specialized type of modem which accepts a SIM card and operation is over a subscription to a mobile operator just like a mobile phone. When a GSM modem is connected to computer, this allows the computer to use the GSM modem to communicate over the mobile network. While these GSM modems are most frequently used to provide mobile internet connectivity, many of them can also be used for sending and receiving SMS and MMS messages.

4. METHODOLOGY

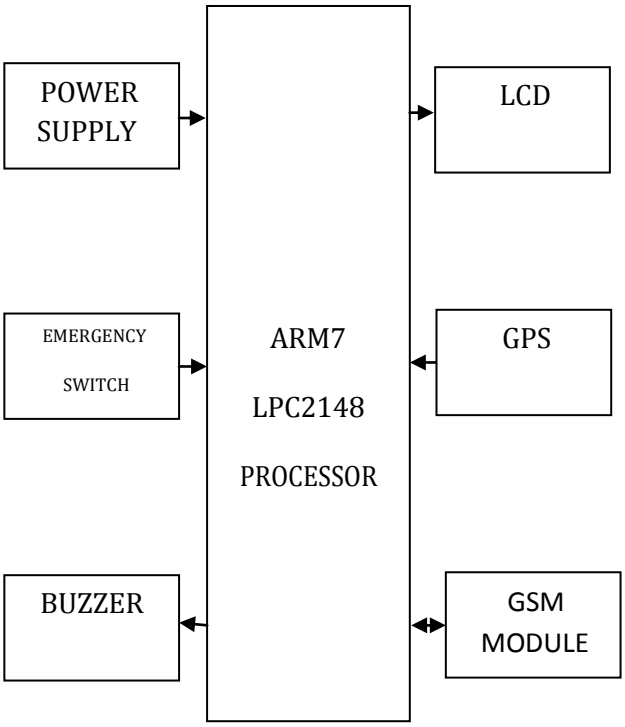
The block diagram shows the methodology followed in this paper. The device can be switched on or activated by a simple procedure of pressing the emergency button just once. When the device is activated the alarm begins to start ringing and simultaneously the device transfers its current location to the police station and listed relatives and persons as a cry for help. Figure shows the state of the device when the emergency button is pressed. When the emergency button is clicked, the device sends a message with the current location to the helpline and as an example in the photo it also sends the location to three numbers listed as emergency contacts. The location in this device is located using a GPS module. We use the GSM modem SIM 900 in this device as it accepts any GSM network SIM card and can operate as a cellphone. The added advantage to using this modem is that its RS232 port can be used to communicate with any other devices and can be used to develop any added embedded applications as necessary.

5. PROPOSED SYSTEM

The proposed device is designed using ARM7 microcontroller to which the GSM and GPS is connected. The ARM7 platform manages all operations. The microcontroller employs a high performance IC with 64 pins that is the LPC2148 IC. The ARM7 has two UART ports which is used for connecting GSM

and GPS systems. In the proposed system a liquid-crystal display is used to display the messages which are supposed to be received by the destination device. An audio signaling device is used such as a buzzer to function as an alarm. The whole device can run at a 12V in which 5V is sufficient for the ARM to process. When the device is supplied with power the GPS starts continuously tracking the device. As the emergency button is triggered during a situation of danger, the threshold values are detected and then microcontroller will immediately send a "HELP" message to the saved contacts using the GSM modem. This message is received by the destination device. The GPS still continues to track the device if its moving after the emergency switch is pressed. The buzzer also gives an alarm to alert anyone nearby for help. The receiver side devices can be a mobile phone, laptop or raspberry pi which are used for real time implementation of the proposed system. The IoT technology can be utilized for the continuous monitoring of changes in sensor values. For real time application the prototype of this system can be miniaturized in future.

6. BLOCK DIAGRAM



7. CONCLUSION

The main goal and object in our paper is to make sure each every single lady feels safe and comfortable, confident and secure without any fear or apprehensions whenever they decide to go outside for a stroll or any such activities even at their workplace. The device plays a role in providing women a safe and secure environment in all situations such as harassment or stalking or eve teasing or anytime they do not feel safe. By implementing real time applications we can curb or reduce the number of cases to an extent. With extended research and applications these devices can be handier by using it in watches, bracelets, rings or any small objects on our person.

REFERENCES

[1] Abhijeet Tekawade, Ahmed Tutake, Ravindra Shinde, Pranay Dhole, "Mobile Tracking Application for Locating Friends Using LBS", International journal Innovative research in computer and communication engineering, vol: 1, Issue: 2, April 2013.

[2] Suraksha. A device to help women in distress: An initiative by a student of ITM University Gurgaon. 2013. SURAKSHA-A Device to Help Women in Distress an Initiative by a Student of ITM University-Gurgaon.

[3] M Hymavathi, IoT based security system for women and children safety, 2018.