3rd National Conference on Enhancement in Biomedical Engineering and Healthcare
Organised by Department of Biomedical Engineering,
Adhiyamaan College of Engineering, Hosur, Tamil Nadu, India

GSM Aided Women Safety Device

Bagyalakshmi. N[1], Lavanya. P[2], Sreeja. T. S[3], Vigneshwari. M[4]

[1]Assistant Professor, Department of Electronics & Instrumentation Engineering, Adhiyamaan College of Engineering (Autonomous), Dr. M. G. R. Nagar, Hosur, Tamil Nadu, India

[2-4]Student, Department of Electronics & Instrumentation Engineering, Adhiyamaan College of Engineering (Autonomous), Dr. M. G. R. Nagar, Hosur, Tamil Nadu, India

ABSTRACT

Personal safety is one of the most important concerns for women, as offence against women has not decreased. Now a days, various devices are available in markets which claim to protect women in many ways. Still there arises the need of a safeguarding device which acts as a guardian at time of an attack. This increases a new thought of a GPS/GSM Aided Safety device for Women. In such situation, the aid of a safety device that will inform victims family members or the authorities may help women feel safer confident a reduces the chances of harassment. It may not be possible for victim to reach for her phone in some situations without the knowledge of perpetrator. In this approach they focuses on a security system that is designed merely to same the purpose of providing security to women so that they never feel helpless while facing such social challenges. It is a simple and easy to carry device with generous functionality. The basic approach is to intimidate rapid location and a distress message to the cops and registered number, so that unfortunate incidents would be averted and to provide real time evidence for immediate action against the perpetrators of crime against women. The ADXL sensor is activated when the victim fall down and the impact sensor get activated when an external force beyond the threshold value is enforced on the victim.

Keywords : GPS, GSM, ADXL

I. INTRODUCTION

In today's world, women safety has become a major issue in our country as women can't step out of their house at any time, particularly during night. It is primarily due to fear of violence against them or being physically. The fear of harassment opposed to women is not only the condition at outside but it may also happen at homes[1]. Even in the 21st century where the technology is quickly growing and new gadgets are being developed but still women and girls are facing problems. They often work across ethnic, religious, political, and cultural divides to help liberty. Our society is all aware of importance of women safety, there is a need of a simpler safety solution that can be activated automatically and can instantly send alerts to the near one of the victim[2]. This projects focuses on a security system that is designed uniquely to serve the purpose of providing security and safety to women.

II. OBJECTIVES

The objectives of this work is

- To create a portable safety device for women that provides the facilities like alert family and friends

by sending emergency messages, and exact locations

- To provide safety to the women from dangerous zone. This project provides facilities to secure women by providing this safety kit.
- To provide an SMS containing the location of the victim will be sent to preferred mobile numbers informing them of danger.
- The received coordinates can be viewed on Google maps to discover the location of the woman and appropriate help can be provided.

III. BLOCK DIAGRAM

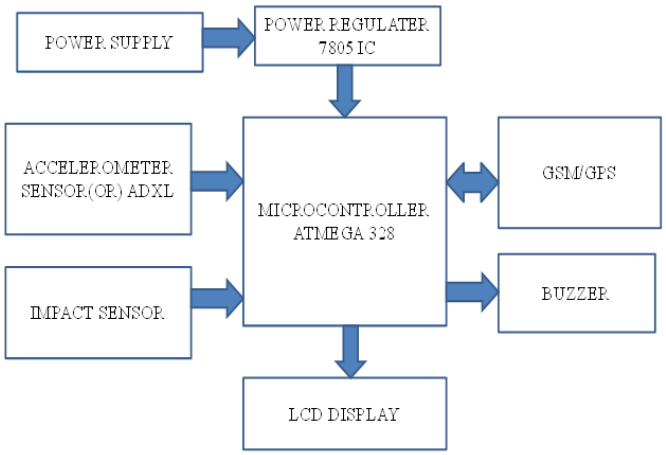

Fig. 1 Block Diagram

The block diagram shows the women safety device and it provide the current location of the women upon receiving of the message from the user. The ADXL sensor activated when the victim fall down and the impact sensor get activated when an external force beyond the threshold value is enforced on the victim[3]. The GSM in the device provide the current location of the victim and sent alert message to the registered numbers.

IV. HARDWARE DESCRIPTION

A. ATMEGA328
MICROCONTROLLER

It is embedded based device that carry throughput of 16 MIPS at 16 MHz and operates between 2.7-5.5 volts. High-performance, Low-power Atmel AVR 8-bit Microcontroller. It employed to develop the arduino mega platform.

B. POWER SUPPLY

The present chapter introduces the operation of power supply circuits constructed using filters, rectifiers, and then voltage regulators. Starting with an AC voltage, a steady DC voltage is get by correct the AC voltage, then clarify to a DC level, and finally, regulating to obtain a desired fixed DC voltage. The regulation is generally get from an IC voltage regulator unit, which takes a DC voltage and gives a somewhat lower DC voltage, which remains the same even if the input DC voltage range , or the output load connected to the DC voltage changes.

C. LCD

An LCD is a small low cost display. it is uncomplicated to interface with a micro-controller because of an embedded controller (the black blob on the back of the board). This controller is merit over the more displays (hd 44780), which means numerous micro-controllers have libraries that make displaying messages is easy to a single line of code.

D. AXIS SENSOR

3 Axis Acceleration Sensor Board form on ADXL from Anolog devices. It is a first creation of 3 axis acceleration sensor. User could receive acceleration value of X, Y, and Z axis. And it is generally used in shock, slope, and moving detection. Output sensitivity could be select by directly set voltage level on few pins. The output of MMA7260Q is analog mode, so you demand a A/D converter to read the acceleration value

E. IMPACT SENSOR

An impact sensor is a device that utilize the piezoelectric effect, to calculate variation in pressure, acceleration, temperature, strain, or force by changing them to an electrical charge. The affix piezo- is Greek for 'press' or 'squeeze'.

F. GPS/GSM MODULE

SIM800C is a quad-band GSM/GPRS module that operates on various frequencies. With a small-scale configuration of 17.6*15.7*2.3mm, SIM800C can meet all the extent demand in customers' applications, such as smart phone, PDA and other mobile devices. SIM800C is designed with power saving mode so that the present consumption is as low as 0.6mA in sleep mode.

G. BUZZER

A buzzer is a tiny and efficient component to add sound features to our project/system. It is very small and compact 2-pin structure. we are using simple buzzer which when powered will make a Continuous Beeeeeeppp.... it can be customised with help of other circuits to fit easily in our application. This buzzer power supply ranging from 4v to 9v and to regulated +5V or +6V DC supply. The buzzer is generally working to turn ON or turn OFF.

V. SOFTWARE DESCRIPTION

The Keil C51 C Compiler for the 8051 microcontroller is the most agree to 8051 C compiler in the world. It provides more features than any other 8051 C compiler accessible today[4]. The C51 Compiler permits you to write 8051 microcontroller applications in C that, once compiled, have the efficiency and speed of assembly language. Language supplement in the C51 Compiler permit you full approach to all resources of the 8051[5].The C51 Compiler translates C source files into reloadable object modules which contain full symbolic details for debugging with the µVision Debugger or an in-circuit emulator. In addition to the object file, the compiler create a listing file which may optionally include symbol table and cross reference information.

VI. CIRCUIT DIAGRAM

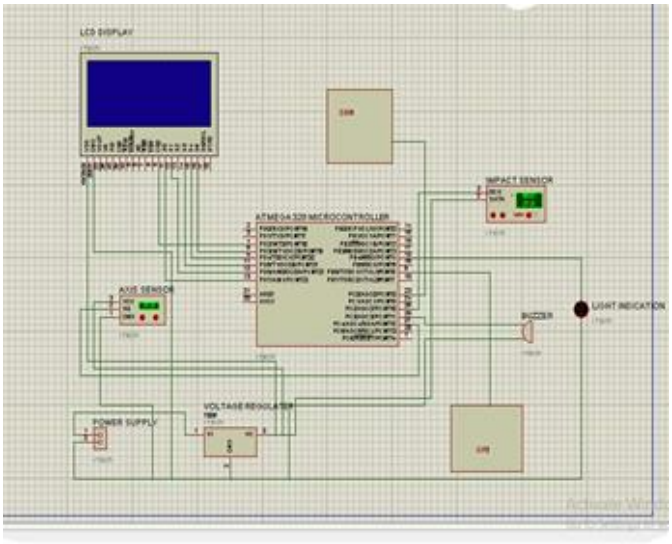

Fig.2 Circuit Diagram

VII. RESULTS

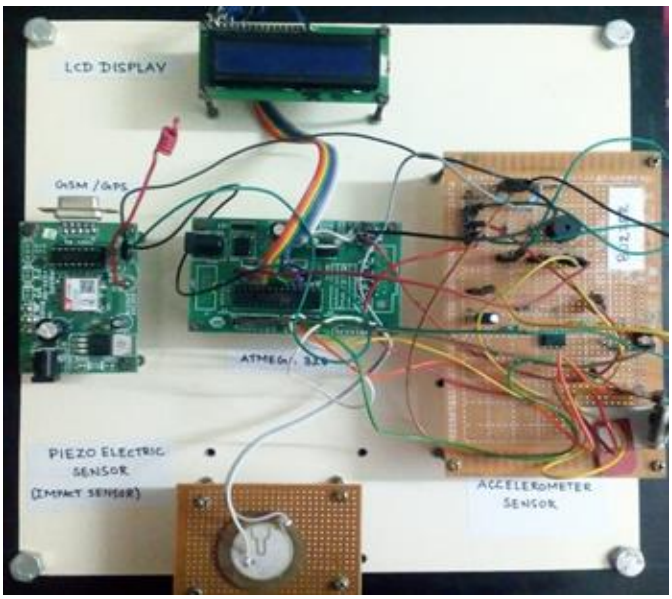

Fig.3 Result (Model)

External force beyond a value is applied

Women fall unconscious

An SMS is sent to registered the mobile numbers along with these information.

The system continuously monitor the safety of women. When the victim fall down, the ADXL sensor is activated and sent message "fall down" [6]. When an external force beyond a threshold value is enforced on the victim the impact sensor get activated and sent message as "impact on women". GSM sent alert message to the registered mobile number and GPS provide the exact location of victim [7].

VIII. CONCLUSION

Being safe and secure is the insistence of the day. Our effort behind this project is to design and fabricate a gadget which is so dense in itself that give advantage of personal security system[8]. This design will deal with most of the dangerous issues faced by women and will help them to be secure. Existing systems provide the mechanisms to track the vehicle but no other emergency mechanism is proposed[9]. The proposed mechanism provides viewing the exact location and current state of the victim within short time period. This systems helps to decrease the crime rate against women. Women's security is a critical issue in present situation. These crimes can be brought to an end with the help of real time implementation of our proposed system[10].

IX. REFERENCES

[1]. Muskan, Teena Khandelwal "Women Safety Device Designed Using IOT and Machine Learning", International Journal of Science, Engineering and Technology Research, ISSN 2395-0056, Vol 3, Issue 11, Nov 20162018

[2]. Ambika, Poornima, Swetha "IOT Based Artificial Intelligents Woman Protection Device", International of Engineering Research and Technology, ISSN 2278-0181, Vol 6, Issue 13,2018

[3]. Priyanga Yuvaraj Gonde "Woman Safety System Using Raspberry Pi", International Journal of Advanced Research, Ideas and Innovations in Technology, ISSN 2454-132X, Vol 4, Issue 6, 2018

[4]. Nandita Viswanath Naga, Vaishnavi Pakyala Dr. G. Muneeswari "Smart Foot Device For Women Safety ", ISSN 2395-0056, Vol 3, Issue 11, Nov 2018

[5]. Suhas Shirol, G C Harikiran, Karthik Menasinkai, "Smart Security Solution for Women based on Internet Of Things", International Conference on Electrical, Electronics, and Optimization Techniques, ISSN 2395-0056, Vol 3, Issue 11, Nov 2018

[6]. R Anitha "Woman Safety System Using Arduino Uno and Integrated Safety App", International Journal of Advance Research , Ideas and Innovations in Technology, ISSN 2454-132X, Vol 4 , Issue 3, 2018

[7]. Mr. Vaibhav "A Study Based On Women Security System" International Journal of Science, Engineering and Technology Research, Vol 6, ISSN: 2278 -7798, Issue 8, Aug 2017

[8]. Saranya, Mr. Karthik, "Women Safety Application Using Android Mobile", ISSN 2395-0056, Vol 3, Issue 11, Nov 2017

[9]. Dr. Sridhar Mandapati, Sravya Pamidi, Sriharitha Ambati, "A Mobile Based Women Safety

Application", ISSN 2395-0056, Vol 3, Issue 11, Nov 2017

[10]. V.Saravanan, R.Charulatha, M.Kavipriya, "Women's Safety System Using Raspberry PI", International Journal of Advanced Research in Basic Engineering Sciences and Technology, ISSN 2395-0056, Vol 8, Issue 11, Nov 2017

Cite this article as :

Bagyalakshmi. N, Lavanya. P, Sreeja. T. S, Vigneshwari. M, "GSM Aided Women Safety Device", International Journal of Scientific Research in Science and Technology (IJSRST), Online ISSN : 2395-602X, Print ISSN : 2395-6011, Volume 5 Issue 5, pp. 172-176, March-April 2020.
Journal URL : http://ijsrst.com/EBHEI022