

Technological Shield for Women by An Innovative Approach

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Abstract— Nowadays, women and children safety are a first issue of our society. The increment count of the victim are increasing day by day. In this paper, proposing a model which will help to ensure the safety of women and children's all over the global. We have used different sensors like flex sensor, force sensor, accelerometer sensor for detecting sudden change in motion of user. We have also used Global Positioning System which will help to detect location of the device. Global System For Mobile Communication used in the model is used to send alert message to guardians, relatives and police station. We have proposed Wi-Fi Technology based device which will help to continuously monitor values of different sensors and Global Positioning System used in device. There are many mobile applications like android for women safety but they are not as much as efficient. This reduces the time consumption and that victim gets help without lagging. Also in the case of Children security the system proposes a speed monitoring and location tracking facilities using Global Positioning System, GPRS, Global System For Mobile Communication.

Keywords— Arduino UNO, Global System For Mobile Communication, Sensor, RADAR

I. INTRODUCTION

In this project it gives a required safety to girl so that they can do late night work. Proposed model includes and provides various sensors which will measure different parameters continually. Global System For Mobile Communication is relatively new and fast-developing concept. By using global system for mobile Communication-based technology guardians, relatives and police can monitor and track different sensors value and position of a device. A device is comfortable one and so it is easy to carry. Today Current Scenario, the major question in every girl's or woman's mind, considering the ever rising increase of issues on women harassment in recent past is mostly about her safety and security. The only idea for haunting every girl is when they will be able to move freely on the streets even in odd hours without worrying about their security. This project suggests a new perspective to use technology for women safety. A night when media broadcasts most of women's achievements rather than harassment, it's a feat achieved! Since we (humans) can't respond aptly in critical situations, the need for a device which automatically senses and rescues the victim is the venture of our idea in this project. We propose to have a microcontroller

device using global system for mobile Communication, which continuously communicates with Smart phone that has access to the internet. The application is programmed and loaded with all the required data which includes temperature, heart beat and also victim motion. The software or application has access to global positioning system and Messaging services which is pre-programmed in such a way that whenever it receives emergency signal, it can send help request along with the location co-ordinates to the relatives and the parents. From this device we can take the immediate action on the situation.

II. LITERATURE SURVEY

In [1] Orlando proposed model which will help to ensure the safety of women and children's all over the global. We have used different sensors like heartbeat sensor, temperature sensor, and accelerometer sensor for detecting heartbeat, temperature and sudden change in motion of user. We have also used global positioning system which will help to detect location of the device. Global system for mobile communication used in the model is used to send alert message to guardians, relatives and police station. We have proposed IoT(internet of things) based device which will help to continuously monitor values of different sensors and GLOBAL POSITIONING SYSTEM used in device.

In [2] Girma Tewolde proposed that saves the time and that victim get help without loss of time. Also in the case of Children security the system proposes a speed monitoring and location tracking facilities using global positioning system, GPRS, global system for mobile communication. The system consists of bus unit.

In [3] A. D. Thierer proposed system that Purpose of the project is to provide security for woman. In case of emergency situations woman will press an emergency button which will activates the Global Positioning System for location tracking and a SMS is sent to the police and family members of woman along with time.

III. EXSITING SYSTEM

In the Existing system, Flex and Force sensor are used. Bluetooth covers only short distance. The microcontroller is used in system. It is somewhat difficult to implement Wifi Module. Woman may injure in this system. Women are the subject of exploitation inside and outside the home say whether on roads, trains, cabs, schools etc. Women’s empowerment in the country can be brought once their safety and security is ensure, either it may be at home, publics places or during travelling. LED is used to implement alert unit.

a. Disadvantages

- Cases of acid attacks on women could be seen as another vector of violence that exclusively targets females by rejected males who attack the face, symbol of feminine persona.
- Sexual harassment at the workplace is common with a 2010 survey indicating that 88 percent of women who work in large numbers in the IT/ITES sector have faced some form of persecution. Though as the current public debate indicates all professions seem equally vulnerable. To those working in less privileged jobs exploitative maltreatment may be even more brutal.
- There is no hidden camera detector which is portable to ensure our privacy.

IV. PROPOSED SYSTEM

The proposed system is to design a portable device which resembles a Smart device. The force sensor used to find out body abnormal activity and mems used to find out the body position used to find whether women are under abnormal conditions. If the person is in Emergency means she can press the Emergency switch means the device will get activated automatically and emergency messages will be sent to contacts which we have stored already and one to police control room every two minutes through Wi-Fi Technology and the alarm unit will be activated. The electric Shock unit tricks the muscles of an attacker, making them do a great deal of work rapidly. In short, he can’t able to produce energy for his muscles, and his body becomes unable to function. MEMS sensor is used to prevent and rescue the women from rapes and Flex sensor and Vibration sensor are used to intimate the police whether she is in unsafe through Wi-Fi module. In emergency situation it will send the message including instant location to the police, via the transmitter module and registered numbers via a WI-FI module. Sprayer Motor is used to spray the chloroform to human who irritate girl or woman.

a. Advantages

- User does not require a Mobile App or Phone unlike other applications that have been developed earlier.
- It is an all-in-one system. Hence no need to carry multiple devices. Global Positioning System tracking feature

tracks the user lively when you are the move after triggering the emergency button.

- This device works without internet connectivity.

V. BLOCK DIAGRAM

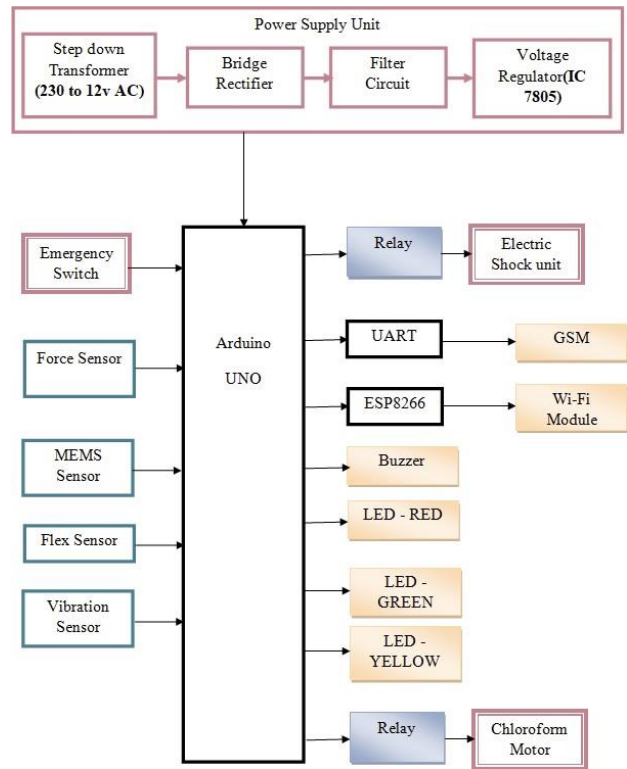


Fig. 1. Block Diagram

VI. MODULE DESCRIPTION

a. POWER SUPPLY UNIT:

Power supply unit is a reference to a source of electrical power. A system that provides energy in any form to an output load is called a power supply unit or PSU. This term is commonly applied mostly to electrical energy supplies, less rarely to others and often to mechanical. Basic power supply the input power transformer has its primary winding connected to the mains (line) supply. A secondary winding, coupled in an electro-magnetically way but it was electrically isolated from the primary is used to get an Alternating Current voltage of preferred amplitude, and after further processing by the Power Supply Unit, to drive the electronics circuit it is to supply. Rectifier circuit is used; to convert the Alternative Current input is converted to Direct Current. The bridge rectifier can be built from separate diodes or a combined bridge rectifier (2W10) can be used. A filter circuit (Capacitor) can be understood by splitting the circuit into two parts, one is

the capacitor and another is the low pass filter. Each of these parts gives effects to remove the remaining AC pulses. Voltage regulator Integrated Circuits are available in both fixed and variable output voltages.

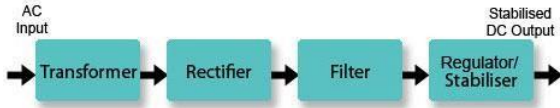


Fig. 2. Power Supply Unit

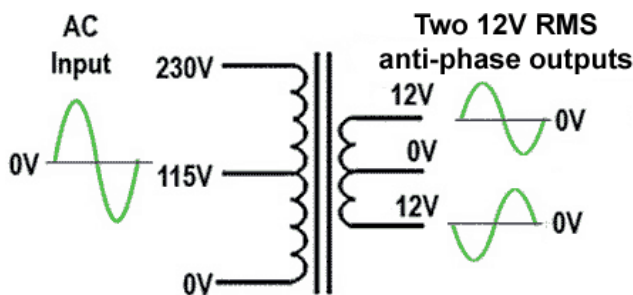


Fig. 3. Step Down Transformer

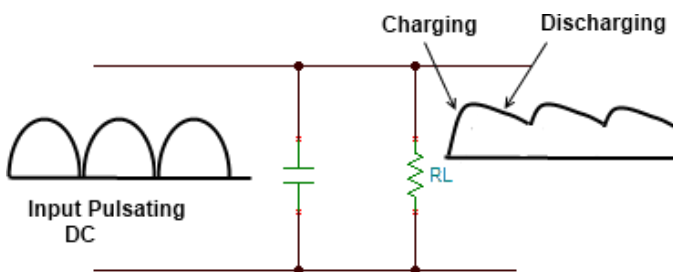


Fig. 4. Filter Circuit

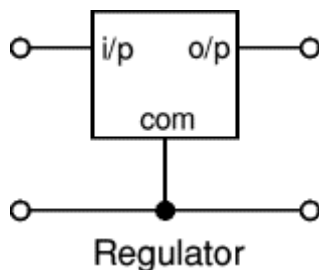


Fig. 5. Regulator Circuit

b. ARDUINO UNO

An Arduino UNO is embedded system based microcontroller kit which can be used directly by purchasing from the server using the hardware components. The Arduino Uno is an embedded system based micro controller board based on the ATmega328. It has 20 pins. From this, 14 digital input/output pins and 6 analog inputs. It involves everything needed to support the micro controller kit; simply connect it to a PC with a Universal Serial Bus cable or power it with a Alternative



Fig. 6. Arduino UNO

c. ARDUINO UNO

A force-sensing resistor is a material whose resistance changes when a force or pressure is applied. They are also known as force-sensitive resistor and are sometimes referred to by the initialise FSR.



Fig. 7. Force Sensor

d. Vibration Sensor

Vibration sensors are used in a number of different projects, machines and applications. Whether you're attempting to gauge the speed of a vehicle, or to gauge the

power of an impending earthquake, the device you're likely using is considered to be a vibration sensor. Some of them operate on their own, and others require their own power source.

Various machine operating conditions concerning temperature extremes, magnetic fields, vibration range, frequency range, electromagnetic compatibility (EMC) and electrostatic discharge (ESD) conditions and the required signal quality necessitate the need for a variety of sensors.

e. MEMS SENSOR

MEMS can be defined as sensor that in its most general form can be defined as miniaturized mechanical and electro-mechanical elements that are made using the techniques of micro fabrication. The Physical three dimensions of MEMS devices can vary from well below one micron on the lower end of the dimensional spectrum, all the way to several millimeters. Likewise, the types of MEMS devices can vary from relatively simple approached having no moving elements, to extremely complex electromechanical systems with multiple moving elements under the control of integrated microelectronics. The main approach of MEMS is that there are at least some elements having some sort of mechanical functionality whether or not these elements can move.

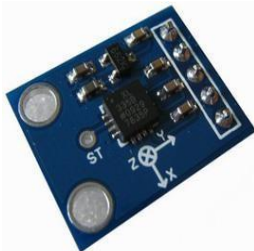


Fig. 8. MEMS Sensor

f. RELAY:

The Relay can be used to control a circuit. It is used in places where signal can be used to control a lot of circuits like motors, fan and 230v Bulb. The applications of channel relays require high power to be driven by electric motors and so on. Such relays are called contactors. Relays are simple switches which are worked. Switch based Relays consist of an electromagnet and also a set of contacts. The switching mechanism is continued with the help of the electromagnet. But they differ according to their applications.



Fig. 9. Relay

g. BUZZER

A buzzer is an audio signaling device for alert system. A buzzer takes some arrangement of input and emits a sound in. They may use various means to create the sound; everything from metal clappers to electromechanical devices.



Fig. 10. Buzzer

h. GSM

GSM is a mobile communication modem; it stands for global system for mobile communication (GSM). The idea of GSM was developed at Bell Laboratories in 1970. It is widely used mobile communication system in the world. GSM is an open and digital cellular technology used for transmitting mobile voice and data services operates at the 850MHz, 900MHz, 1800MHz and 1900MHz frequency bands.

i. GLOBAL POSITIONING SYSTEM

Global positioning system stands for global positioning system and was developed by the us department of defence as a worldwide navigation and positioning facility for both military and civilian use. It is a space-based radio-navigation system consisting of 24 satellites and ground support. Global positioning system provides users with accurate information about their position and velocity, as well as the time, anywhere in the world and in all weather conditions.

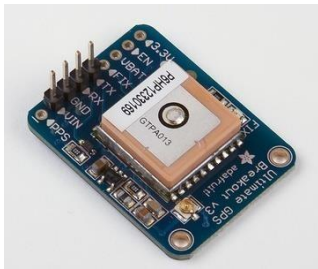


Fig. 11. Wi-Fi

VII. CONCLUSION

In this project we have proposed the system for security of women and children. This project presented a wireless method which will alert and communicate with secure medium. This information will be sent to the registered phone number through wi-fi along with the image link. This system will . Speed monitoring for children and women security can also be done by using the Global Positioning System tracking mechanism. The bus Unit will locate travelling routes. This system uses Haversine and Trilateration algorithm for tracking the bus. Alert messaging will be done on the registered phone numbers.

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