Design and Implementation of Women Security System Based on GSM and GPS

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Abstract— Today in the current global scenario, the prime question in every girl's mind, taking into account the even raising increase of issues on women harassment in recent past, is only about her safety and security. The only thought haunting every girl is when they will be able to move freely on the streets even in odd without worrying about their security.
Key words: Micro Controller, GSM Module, GPS Module

I. INTRODUCTION

Micro controller is a computer with most of the necessary supports chips on board. It is also known "system on chip". It has 128 bytes RAM, 4K bytes ROM, 2Timers, 1 serial port and 4 ports on a single chip.

Basically this paper is based on the concept of security purpose and made it simple by using microcontroller which is interfaced with other components to make it more secured and reliable.

In my paper we implemented a system for women security based on GSM and GPS. When the women rescue occurred the alarm can be raised and after receiving the alarm information is passed to the related persons and make them alert. When the alarm is ON the message will be passed through GSM module which have in built contact numbers receives a message as panic alert with longitudinal and latitudinal locations which will give to GPS module.

II. MOTIVATION

Many unfortunate incidents has been taking place in women's case. When the emergency situation occurs then women cannot protect and operate the smart phones. In that time she can set an alert function, when they are in risk situation and immediately they can pass their location to the police and family members. This paper focuses on the proposed model that can be used to deal with the problem of security issues of women using GPS and GSM

III. HARDWARE REQUIREMENTS
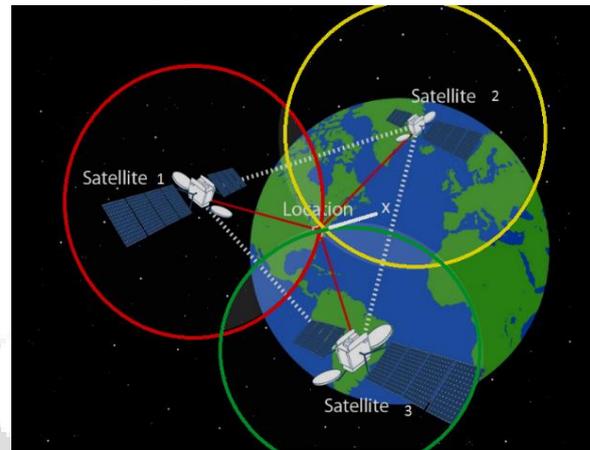
A. Microcontroller

Microcontroller is the most important part of the whole system. The microcontroller used for this project is 8051. It is 40 pin IC. A single chips contains the processor non-volatile memory for input and output, a clock and an input control unit.

B. Power Supply

A power supply is a device that supplies electrical power to electrical load. The primary function of power supply is to convert one form of energy into another and as result, power supplies are sometimes referred to as electrical power converters.

C. GPS (Global Positioning System)

GPS is used to find the location of any object or vehicle to monitor a women continuously using satellite signals. Three satellite signals are necessary to locate the receiver in 3D space and fourth satellite is used for time accuracy. It gives the information of parameters like latitude and longitude. In this technology, the communication takes place between GPS transceiver and GPS satellite.

D. RESET

A power on reset generator is a microcontroller that generates a rest signal when power is applied. It also used to reset the microcontroller to its initial value.

E. LCD Display (Liquid Crystal Display)

To perform the operation of an input device to enter the data and in turn output device displays the result of the operation. It consists of 16 rows and 2 columns of 5*7 or5*8 LCD dot matrices. LCD can be interfaced with microcontroller in 4 bit or 8 bit mode. It is commonly used electronic display module and having a wide range of applications such as calculators, laptops, mobile phones etc…,

F. GSM (Global System for Mobile Communication)

GSM is the technology that underpins most of the world's mobile phone networks. The GSM platform is a hugely successful wireless technology and an unprecedented story of global achievement and co-operation.

It is an open digital cellular technology used for transmitting mobile voice and data services. GSM operates in the 900MHz and 1.8GHz bands GSM supports data transfer speeds of up to 9.6kbps, allowing the transmission of basic data services such as sms.
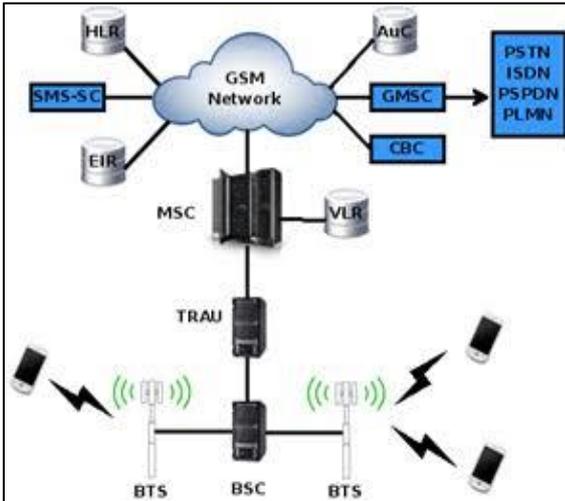
G. MAX 232IC

It is an IC which converts the signal from RS232 to serial port communication. It converts the signals like RX, TX, CTS and RTS. It is an dual driver or receiver. It consists of 16 pins and it is a resourceful IC mostly used in voltage level signal problems. Generally the MAX232 IC is used in the RS232 communication system for the conversion of voltage levels on TTL devices that are interfaced with the PC serial port and the microcontroller. This IC is used as a hardware layer converter like to communicate two systems simultaneously.

H. DRIVER IC

It is an electronic circuit used to control another circuit or component such as LCD.

1) Block Diagram:
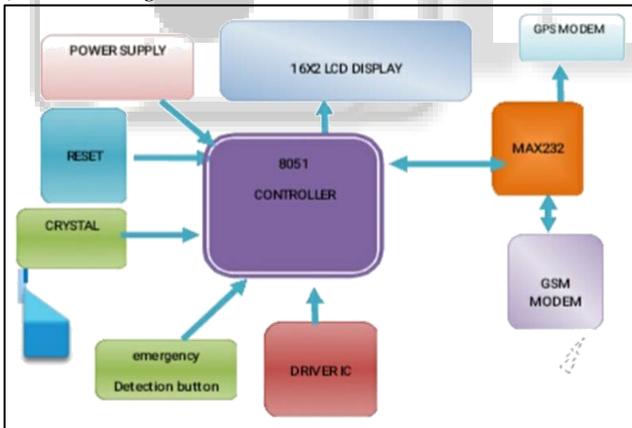
The aim of this project is to provide security for working and non-working women's. In this system the security of the women can be done with the help of GPS and GSM. In this system the GPS trace the location of women which is in dangerous condition and with the help of GSM we can send the data to the number which is already saved in the sim the enter control is done within the MAX 232 IC. In addition to this there is one panic button when we press the button then at the time the MAX232IC starts working the first it interfaces between the GPS and microcontroller. The message is send to the saved contacts in the sim, then the MAX232IC interfaces between GSM and GPS, then the GPS traces the location

I. Crystal Oscillator

It is used to generate continuous clock pulses required for the synchronization of all the internal operations. It is an electric oscillator circuit that use the mechanical resonance of a vibrating crystal of piezoelectric material to create an electrical signal with a precise frequency.
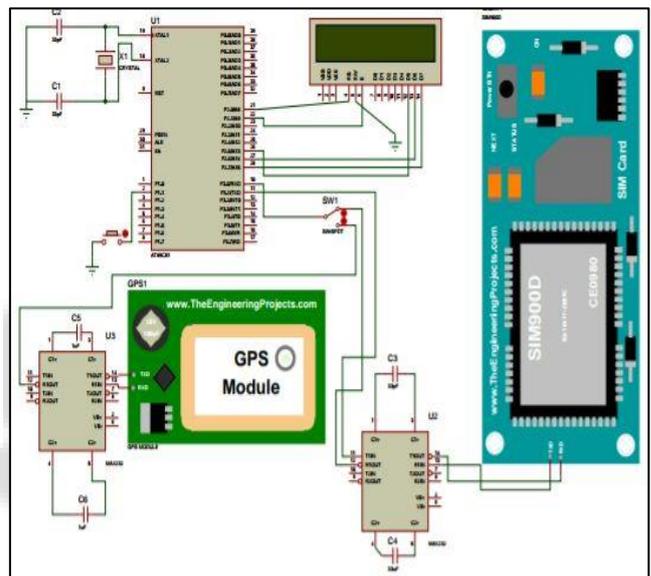
J. Panic Button

It is an electronic device to assist in alerting somebody in emergency situations where a threat to person.
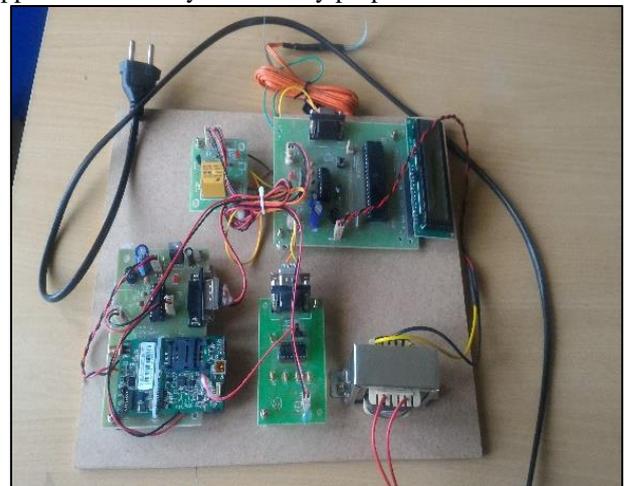
IV. SOFTWARE USED

– Keil Microvison
– Embedded C Language
– AT Commands

V. LOGIC DIAGRAM

VI. RESULT AND SIMULATION

The project is being tested in keil microvision software and is working properly. It is also tested live properly. It has lots of applications mainly for security purposes. It is cost effective

VII. APPLICATIONS

－ Flexible one
－ Low cost
－ Less weight
－ Easy coding
－ Maintenance

VIII. CONCLUSION

In this project we develop a system for women security and the circuit is implemented using 8051 microcontroller with interfacing GPS and GSM module.

IX. FUTURE SCOPE

In future we are going to expand it by making compatible in size, gadgets and accessories