

POWER ON WRIST FOR WOMEN AND SCHOOL CHILDREN TO TESTIMONY BY GPS AND GSM USING WIRELESS PERSONAL AREA NETWORK

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ABSTRACT:

In India, many girls are being kidnapped and killed. They don't have proper security within the cities. There's no measure taken until now for increasing the protection or informing where they have been kidnapped. To overcome this problem, we have a tendency to develop a security watch that may detect the location, where she is taken through and send message to their friends or family about the location wherever she is taken to. This will be developed by using embedded system and GPS technology. Our system provides an exact location to the person for whom we need to send about the kidnapping activity done by strangers. This increases the security measures for the women's. This can even be used for children's and other persons who want high security precautions. In 20th century folks expect new technologies like automation in home appliances. So by victimization PIC and GSM we are able to manage the automated home appliances like automatic door locking system and that we can notice gas leakage victimization using gas sensors and alarm intimation.

Index terms:

GSM-Global System for Mobile Communication

GPS-Global Positioning System

UART-Universal Asynchronous Receiver and Transmitter

I.INTRODUCTION

Now a day's kidnapping has become very common. Safety for women and school children is decreasing day by day. Till now remedies has not been taken for their safety. The crime rate is increasing and in the same way safety is decreasing.

Harassments on women are also increasing by kidnapping them and demanding money from the family members. This problem has become more common mostly in every family. The Indian Government is bringing up new laws but all is in vain. Proper steps are to be taken to overcome this problem of kidnapping. So, for that we have chosen electronic device as the best remedy. We have created a hardware which is to be controlled by software. That is what Embedded System means. This embedded system looks like a normal watch. But it will not show time. As said before it is a remedy for the people's safety. This watch will contain three micro buttons. One is for safety purpose, other is for light control and the third one is for door locking system. When first button is pressed automatically the GPS inside the watch will track the location and through GSM message will be sent to any of the family member whose number is saved during the programming. All this is done with the help of a Microcontroller, GSM and GPS mainly. The other parts like UART, RF Receiver and Transmitter are also used in the process. We have also included some other applications along with this safety unit. The applications are Light ON and OFF system and Automatic Door Locking System mainly for physically challenged people, Gas leakage Detection and alarm intimation using LPG Gas Sensor. When second button is pressed light is being controlled and in the same way if third button is pressed door is locked. The door will open only when the button is pressed one more time and is same case for light also. For controlling these applications we are using relay switch for light control, DC motor for door locking and unlocking, and ADC for gas

sensing detection and alarm intimation. Microcontroller PIC16F877A is one among the PIC micro Family microcontroller that is widely spread at this moment, begin from beginner till all professionals. Because it is very easy to use PIC16F877A and it also contains in-built flash memory technology so the data can be written-erased around ten thousand times. PIC16F877A have 40 pin by 33 path of I/O. PIC16F877A perfectly fits several uses, from automotive industries and controlling home appliances to industrial instruments, remote sensors, electrical door locks and safety devices. It is also ideal for smart cards as well as for battery supplied devices due to its low energy consumption. EEPROM memory makes it easier to use microcontrollers to devices where permanent storage of various parameters is needed. Low cost, low consumption, simple handling and flexibility make PIC16F877A applicable even in areas wherever microcontrollers had not previously been considered like timer functions, interface replacement in larger systems, coprocessor applications, etc.

II. SPECIAL FEATURES

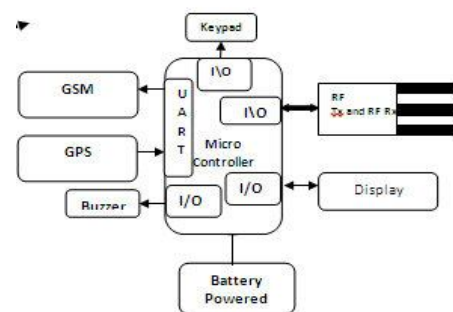
- 100,000 erase/write cycle Enhanced Flash program memory typical
- 1,000,000 erase/write cycle Data EEPROM memory typical
- Data EEPROM Retention > 40 years
- Self-reprogrammable under software control
- In-Circuit Serial Programming™ (ICSP™) via two pins
- Single-supply 5V In-Circuit Serial Programming.
- Watchdog Timer (WDT) with its own on-chip RC oscillator for reliable operation
- Programmable code protection
- In-Circuit Debug (ICD) via two pins
- Power saving Sleep mode

- Selectable oscillator options
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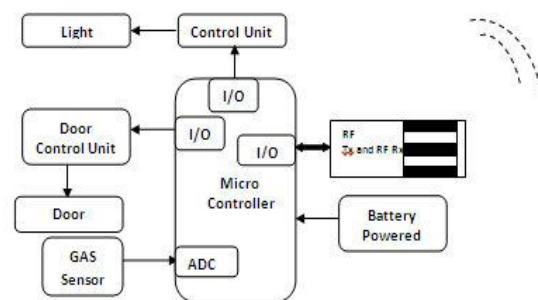
III .BLOCK DIAGRAM



Watch Outlook



Transmitter Unit



Receiver Unit

IV.WORKING

The women can have the security watch unit with them. Once a intruder kidnaps her, she is going to press the safety key of the unit. The PIC Microcontroller can get the security key as input and locates the location of the place wherever is taken to by the GPS. The Microcontroller can get the latitude and longitude value from GPS modem through UART communication and sends the details to the person's friend or family member through GSM modem by sending a message which contains the details of the location immediately. And presently now-a-days, people's expectations in their life quality are increasing because the technology is continuously up. Folks required an intelligent & reasonable system that may make their lives more comfortable & refined, and more safety is additionally required. This Automation System is an electrical and electronic system designed to regulate home appliances with a watch unit. The 2 main technologies applied within the system are GSM and PIC from microchip. In this system, SIM 900 GSM Module is chosen so that the GSM receiver receives the command and transfers it to controller. As a result of rapidly advancing of mobile communication technology and

wide availability has made it possible to incorporate mobile technology into home automation systems also. GSM AT command is used for communication between GSM modem and microcontroller. The main system is based on PIC microcontroller which is PIC16f877A. GSM Module SIM900 is connected through RF Tx & Rx pin in TTL mode. Each will communicate using AT commands. And using relay board we will control electrical appliances. The GSM Module for SMS Communication is done using GUI Mobile Application is used. A buzzer is connected to produce audible alert signal. This LPG Gas sensor is used to build wireless Gas leak detector in home security system. The LPG Gas sensing element Module is meant to enable LPG detection interface to Microcontroller while not ADC Channels.

Hardware Used:

- PIC16f877A
- SIM300 GSM Modem
- GPS Modem
- Safety Key
- 9v Battery

Software Used:

- MPLAB IDE
- C18 Compiler
- Embedded C Programming Language

V. CONCLUSION

Thus a wrist watch for women's and school children's safety using wireless personal area network is successfully implemented using an 8-bit micro controller. The GPS is employed for tracking the locations and GSM is used for sending the SMS ALERT. Similarly for home appliances, relay for light control, DC motor for Door locking and unlocking, ADC and LPG gas sensor for gas leakage detection are being used. The watch is implemented in transmitter unit and for controlling home appliances is done in receiver unit. Thus this device is not only used as a safety kit but is also additionally used for multipurpose like home appliances, gas leak sensing etc...

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