THE WOMEN PROTECTION SYSTEM USING ANDROID APPLICATION AND MICROCONTROLLER

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ABSTRACT- *The Women Protection System aims at helping women from any type of physical assault. A wearable Belt having magnetic circuit is used which will prevent any kind of assault from occurring. A smart phone application is to be implemented that informs the user defined numbers about the urgency alert and location of the use. This application can be accessed automatically along manually. The microcontroller is mainly used to achieve this purpose. The connectivity between the microcontroller and the smart phone is maintained through the Bluetooth modem. At the same time women are having problems like kidnapping, harassment and molestation. Women security issue has become most serious and important. Women security system has considered for providing the solution to different problems. The important part of the system is avoidance of incident & communication through wireless medium. A security system in which avoidance will be the highest event & communication is second event.*

Keywords- *smart phones, Conductive belt, microcontroller, Bluetooth modem*.

1. INTRODUCTION

Self preservation and self protection are an much more important priority for women in these days. A woman has to fight back against crime to avoid it from happening. Pepper sprays, teaser guns, knuckles, etc all weapons used for self preservation. They prove to be a fail because of a major negative point as these weapons can protect as long as they are capable of fighting back. Women Protection system is a device which uses modern technologies to communicate. The moment she presses the key her location will be captured and an alert message with the current or past location will be sent to the user defined numbers. In case she is not able to press the key or she is unconscious due to any unaware reason, on opening of the belt the same process will be processed.

2. PROPOSED SYSTEM

The basic Principle used for security system is avoidance & communication by using Bluetooth and microcontroller Atmega 328. The avoidance of Molestation, kidnapping, murders is most important events than the communication of that event wireless communication.
Hence the project is divided into two major parts:
1) Avoidance from the Incident happening.

 2) Communication of the incident through wireless technology.

The SMS of the information can be sent to various people like police, friends, Doctor, Family Members. A important information will be sent to the curtain people.

2.2 DEVICES USED

Atmega328:- The Atmega 328 is a 8 bit microcontroller based on AVR enhanced RISC architecture. It executes powerful instructions in a single clock cycle; the Atmega328 achieves throughputs approaching 1MIPS per MHz allow the system designed to optimize power consumption v/s processing speed.

1. 131 powerful instructions
2. 32 x 8 general purpose working registers
3. Fully static operation performed
4. Up to 20MIPS throughput at 20MHz
5. On-chip 2-cycle multiplier
6. Write/erase cycles: 10,000 flash/100,000 EEPROM

7. System programming on chip by boot program

8. Read while write operation

9. Up to 64 sense channels

10. Two 8-bit timer/counters

11. One 16-bit timer/counter

12. Real time counter with separate oscillator

13. Six PWM channels

14. Programmable serial USART

15. Master/Slave SPI

Bluetooth modem:- Serial ort Bluetooth module is totally qualified Bluetooth V2.0+EDR (Enhanced Data Rate) 3Mbps Modulation with complete 2.4GHz radio transceiver and baseband. It uses External single chip Bluetooth system with CMOS technology and with AFH(Adaptive Frequency Hopping Feature). It has the footprint as small as 12.7mmx27mm..

Emergency button:-It is a Push button that activates the system.
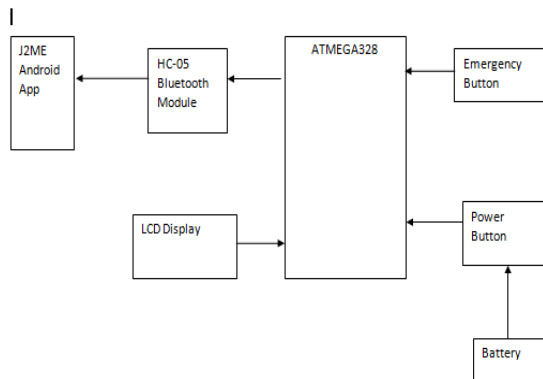
WORKING OF THE SYSTEM:

The Microcontroller Atmega328 is used as a main component of the system. The microcontroller Atmega328 will be programmed using Arduino IDE and burn it into the 32 bit flash memory. Atmega 328 uses AT commands for programming. The Key, Battery, magnetic switch and Bluetooth modem. The connected key is used in urgency case whenever the victim presses the key instantly the signal goes to the microcontroller and it contact to Bluetooth modem and sends the alert message and the location where victim is using the android app. Also the magnetic switch which is connected to microcontroller also acts as an key. At the breakpoint of the magnetic switch signal will be send to the user defined numbers. Same as when the smart phone goes out of the limit of Bluetooth modem i.e. 1oomtrs then also the signal passed to the microcontroller and message will be sent. The Battery is connected to the power button.

The android app consists the 3 parts. In 1st part the status of the system is displayed. In 2nd part the location is fetched. 3rd part of module number can be saved.

3. RESULTS

VARIOUS CONDITIONS:

In case of sudden attack, there are 3 possibilities:

1. The smart phone is with the person (in the bag or pocket).

 2. The smart phone is thrown away OR the purse is left behind.
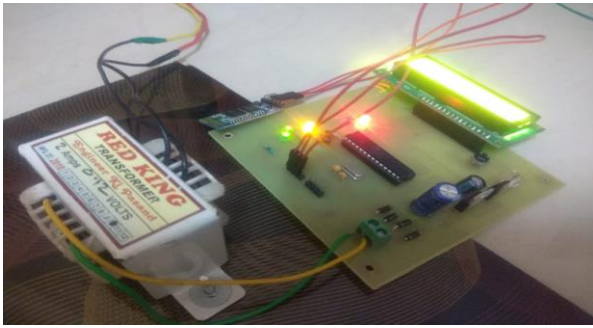
3. The conductive belt is break.

Fig.1 Conductive belt

Fig.2 Screenshots of Android App

RESPONSE OF THE SYSTEM:

Case 1:

a. If the user is able to press emergency key present on the belt will send a signal to the smart phone and smart phone will fetch the current location and will send these information to the user defined numbers using SMS method.

b. In case of unconsciousness (due to some drug or chloroform) If the user is not able to press the key; and if the belt is forcefully opened or it got break in the struggle then automatically the Microcontroller will generate alert command to the smart phone and it will send the current location and alert SMS to family.

Case 2:

The link between the smart phone and the hardware will get disconnected then the smart phone will automatically fetch and send the location and emergency alert SMS on user defined numbers.

4. ADVANTAGES

1. As every component is easily available so it is easy to design and manufacture.

2. Highly exact, particular and steady.

3. Easy to carry or wearable on any cloths.

4. It can be reprogrammed if required.

5. DISADVANTAGES

1 .Failure of any component can lead to consequences..

2. Smart phone battery died the system will be not able to send urgency message and location to the defined number.

6. FUTURE SCOPE

1. The efficiency of this system can be increased or in fact improved by making the belt water proof.

2. A voice processor can be employed. The voice of the victim will be transmitted as a voice message to the user defined numbers.

3. To increase the security more intensely a shock system can also be added, which gives a shock to the attacker if he tries to touch the belt unnecessarily.

4. Spy camera can be added to record the entire situation.

7. CONCLUSION

Being safe and secure is a true struggle in these days. Our motive to design this system is to provide some personal security. This design will help the women to be secured. This system helps to reduce the criminal cases and provide security.

8. REFERENCES

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