WOMEN'S SAFETY DEVICE WITH GPS TRACKING AND ALERT

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✓ ***Abstract :*** *The amount of violence against women has increased. Now it has become a major issue. Looking towards all these issues, we proposed a device that will be very helpful to women's safety.To send the victim's location to the preprogrammed contact numbers with the help of GPS and GSM modules.This project introduces women's safety through GPS monitoring and alerts via the ARDUINO system, which can be connected to an alarm system and notified by a neighbor. The GPS, ARDIUNO receiver, and GSM modem are all used in this messaging system. The suggested idea attempts to create an IoT-based security gadget for women's safety. In today's world both men and women are having equal responsibility in their work fields. Women face challenges in the workplace and safety become a major issue. Increase of issues like sexual harassment is most often happening in frequent. The thought haunting in women mind is how to move freely in streets during the odd hours. Women's safety plays a very vital role due to rising crimes against women. This, paper suggests a new perspective to use technology for women safety. To help resolve this issue we propose a GPS based women's safety system that has dual security feature, consists of dual-alerts that is voice module and message is sent through GSM. It can be turned on by a woman, even she thinks that she's in trouble. The device can be interconnected with the alarm system and alert the neighbors. The detection and messaging system is composed of a GPS receiver, GPS Receiver gets the location information from satellites in the form of latitude and longitude. The user receives the information from GSM which receives the processed information from the Micro controller. A GSM modem is interfaced to the MCU. The GSM modem sends an SMS to the predefined mobile number. When a woman is in danger and in need of self-defense then she can press the button, which is allotted to her. By pressing the button, the entire system will be activated then immediately a SMS will be sent to concern person with location using GSM and GPS.*

Key words: ***Women's Safety, Emergency, Alerting, Self-Defence***

I. INTRODUCTION

Proposed concept is to build a safety device to generate an emergency alarm and send a message to the user's friend, family, or the police. This will also help women concerned during their trouble and keep others alert. Through this process location tracking becomes easy, we develop an approach in which women can self-manage any uncertain event and protect themselves from such events. Women safety has always been an issue even in these modern times with so much advancement in technology. Women are not safe anywhere and are most vulnerable when traveling alone into lonely roads and deserted places. Existing handheld devices that are available for women safety require women intervention to activate them such as pressing the button or shake the device after sensing the danger. However, for some reason if a woman has no time to activate it when she is danger, the purpose of the safety device is not solved. In country like India where thegrowth rate of crime is considered to be more than the growth rate of population, whichincludes burglary, murders, rapes, and many more women's

safety is believed to be one of the most important issues. According to a report by Thomson Reuters Foundation, India is ranked as a highly dangerous place for women worldwide, India has the greatest number of child brides as well.

In Today's World the safety of women is in danger especially in India. The rateof crimes against women is not decreasing but in fact increasing at an alarming rate especially harassment, molestation, eve-teasing, rape, kidnapping and domesticviolence. Many preventive measures have been taken by the government to stop these misbehaving activities but still has not affected the growing rate of these crimes and has remained unaffected.

Students face incidents like child trafficking and kidnapping, when they are waiting to embark or disembark a school bus. Loaded with security apps for women, smart phone can help to send emergency alerts to the chosen people and also let people know if anything goes wrong. Sometimes there might be a situation that whenwomen had an accident in the late night and there are no one to help them, in such situations the person will not be able to tell the situation that he/she facing. And they do not know the basic first-aid details and to know the person where the incident has happened. Now a days though there are many apps and devices evolved for women safety via smart phone which can be activated only by a touch or one click or shake the mobile Women continue to experience crisis and harassment, which persists as a never-ending issue in today's society when technology has advanced to new heights and every issue has a contemporary answer. Because they are constantly concernedfor their daughters' safety, parents won't let their girls travel alone. Every time they gooutside, they wanted to feel secure and safe. A challenge to achieving their goals andfulfilling their responsibilities is the rise in crimes and abuse against women. Women workers are concerned about their safety and security when they have to travel at oddhours, go far away, or go to remote regions for work. Also, the growth and developmentof women may be threatened by this insecurity. The goal of the research is to developa portable safety gadget for women that uses IoT to constantly monitor the user usinga variety of sensors interfaced an Arduino. And suggested a portable gadget in the form of a belt that automatically activates when the pressure difference exceeds a threshold in a dangerous circumstance. IoT was a technology we employed to offer safety. This system includes a number of sensors, including temperature, moisture, pressure, heartbeat, vibration, GPS, and GSM sensors. This gadget was created withwomen's safety in mind. So she won't be afraid to go out alone. Also, it is portable andeasy to use, allowing them to carry it with them wherever they go. Delivering our prototype to all working women, kids, college students, and seniors is our main goal.

II. OVERVIEW

In the present situation, women are competing with men in every aspect of society. Girls contribute one-half to the events of our nation. However, the harassmentcases are increasing day by day. Thus, it's important to ensure the protection of girls.During this paper, a projected model of a system can provide girls with the necessarysafety. The projected model contains a device that will live in various positions endlessly and additionally send a message with its location to a predefined range. IOT (internet of things) may be a comparatively new and fast-developing concept. By usingIOT-based technology to become victims, guardians, relatives, and police will monitorand track totally different sensors, prices, and positions of a tool. The system is simplefor coming up with moveable.

The task includes the utilisation of Arduino, a movement sensor, a signal,and a straight-forward programme. At the point when the switch is on, that will triggerthe alert. It will likewise send the sign to Arduino, which processes the sign and sets off the alert alongside the discovery message in plain view. With this framework, we can without much of a stretch set up a security caution for undesirable badgering. Therequirement for women's security frameworks these days is a genuine interest.

III. METHODOLOGY

The proposed device will build a circuit (an emergency kit) that can easily be carried by the victim, uses which locatio n tracking as well as alerts will be issued whenever and wherever required. The main components used are Arduino N ano interface with GSM and GPS module for sending messages and getting the location coordinates respectively. So, the person associated with the device can ensure security, by switching the circuit on. A circuit is provided with a buz zer for an emergency alarm.

IV. EXISTING SYSTEM

- The In previous system the alert system for the women is done through the application. For the security purpose the applications contain the SOS number which will alert the family members of the victim.
- Disadvantages of existing system:
- Victim's phone may lose
- Battery may die

V. PROPOSED SYSTEM

- Our proposed system consists of sensors, Arduino with sensors tool which keepuser under observation at all the times using IoT.
- We proposed a portable device as a belt that is automatically activated whenthe pressure difference crosses over the threshold in an unsafe situation.
- The GPS is used to identify location.
- The device can send the victim's current location to the nearest police controlroom or registered mobile numbers to rescue the victim

VI. ADVANCE SECURITY SYSTEM FOR WOMEN

The paper purposes an automated highly reliable women security device which consists of advanced sensors embedded in a wearable dress. It consists of advanced sensors and ATMEGA8 micro controller with Arduino tool which keep user under observation at all time. It monitors the heartbeat rate, temperature and vibration in the body through sensors to check for uneasy situations.

VII. LITERATURE REVIEW

Women safety device and application

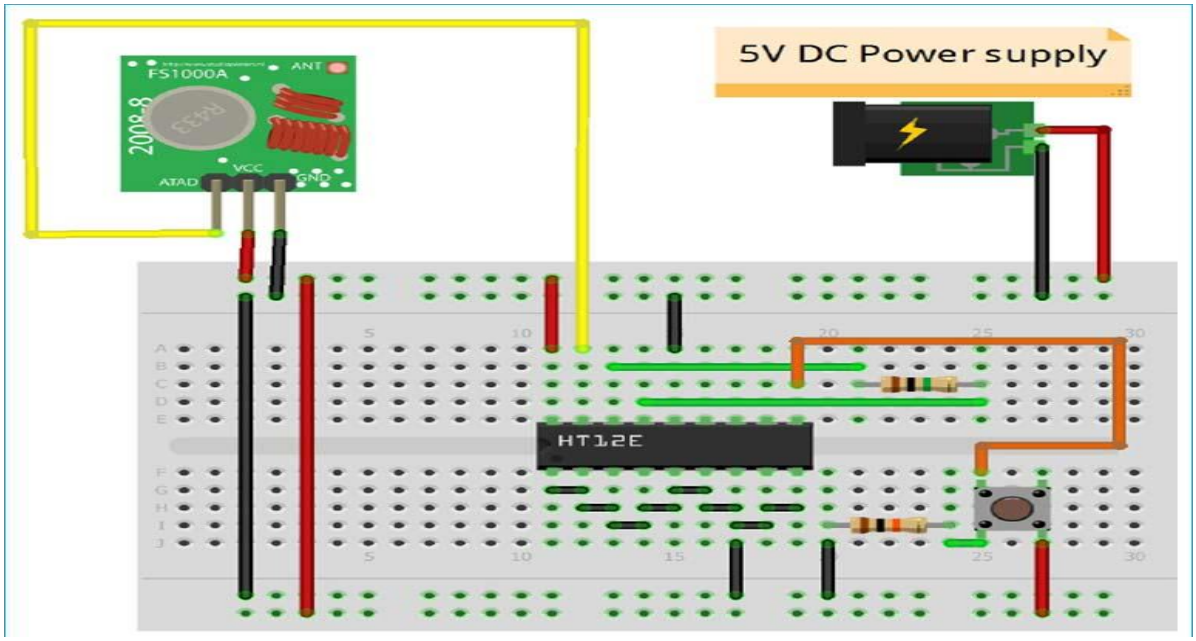
In this paper an ARM controller and Android application are used in which both the device and the smartphone are synchronized using Bluetooth, hence both can be triggered independently. It can record audio for further investigation and can give an alert call and message to the pre-set contacts with the instant location every 2 minutes and can be tracked live using the application. Hidden camera detector is also a distinct feature used which ensure privacy

VIII. CONNECTION DIAGRAM

The **Women Safety system with GPS Tracking & Alerts** can be subdivided into two sections such as Transmitter and Receiver section. The circuit diagrams for each section is described as follows,

IX. TRANSMITTER SECTION

In the RF Transmitter part, there will be an SOS button along with a 433 MHz RF transmitter, which will transmit the data to the receiver part wirelessly. The purpose of making two individual parts here is, to minimize the size of the transmitting module so that it can be worn as a wrist band. The circuit diagram for the transmitter part is shown below:



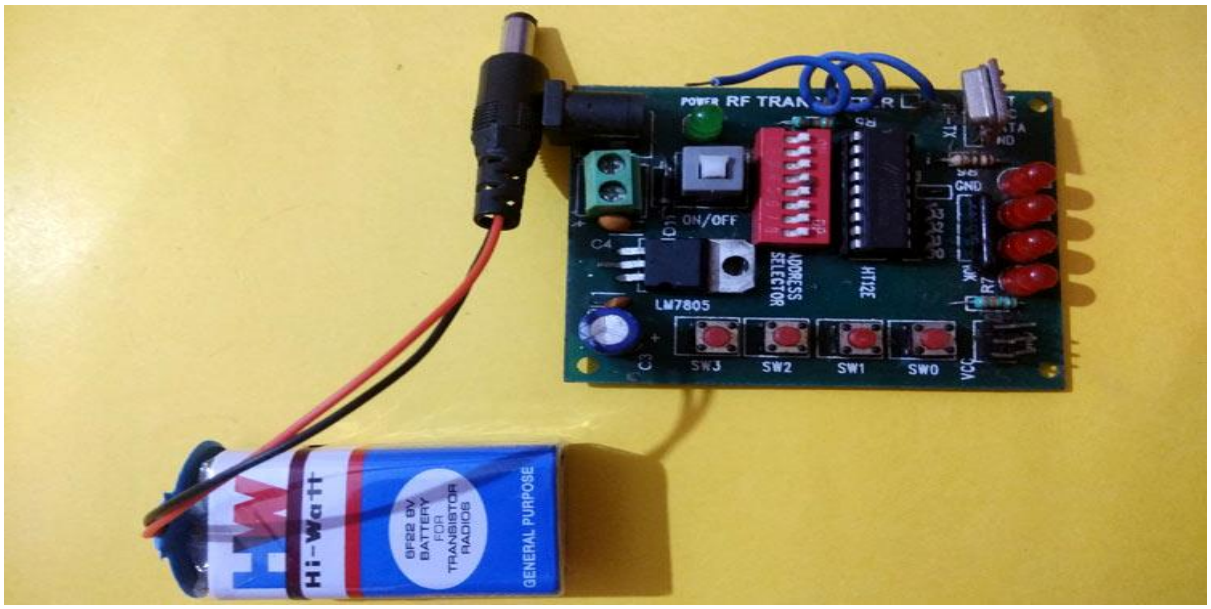
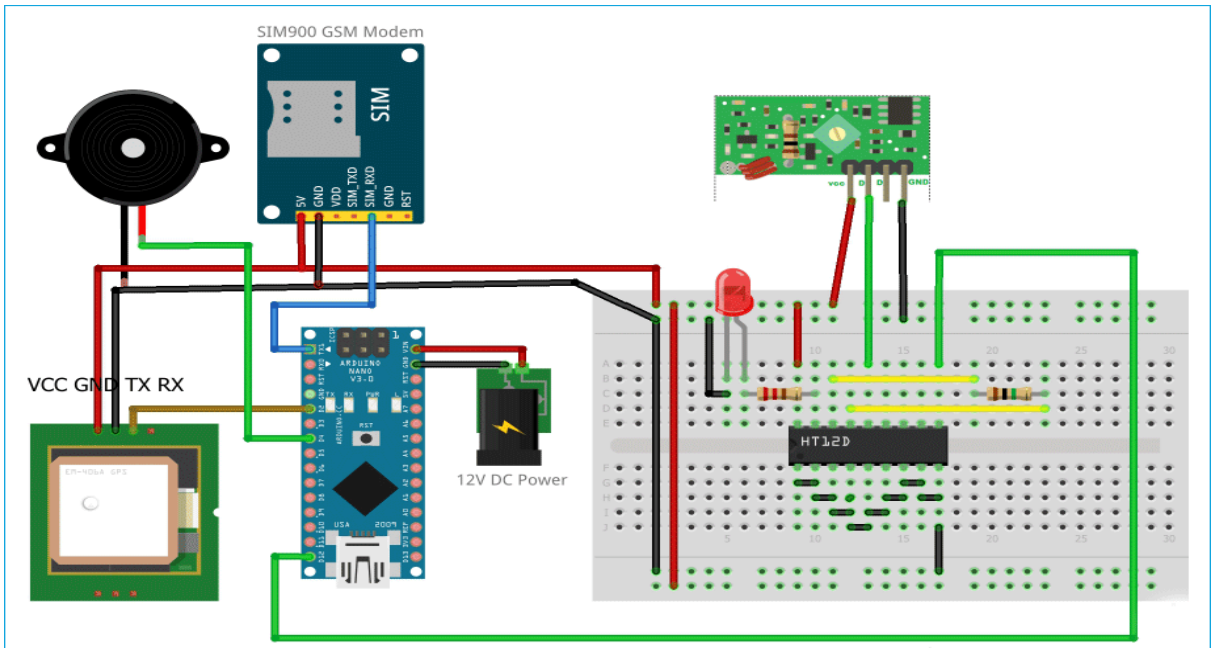


Fig1: TRANSMITTER SECTION

X. RECEIVER SECTION

In the RF Receiver section, the data transmitted from the wrist band (Transmitter part) is received by the device having a 433 MHz RF receiver. The RF receiver sends this information to Arduino through the digital pin. Arduino Nano then receives the signal and processes it using the program which is flashed into it. When the victim presses the SOS button in the transmitter part, a HIGH signal is generated and passes to the Arduino side, and then Arduino sends a signal to SIM900 modem, to send an SMS to Registered user along with the GPS coordinate which has already been stored in the Microcontroller by the help of NEO6M GPS module. The circuit diagram of the Receiver side is shown as below:



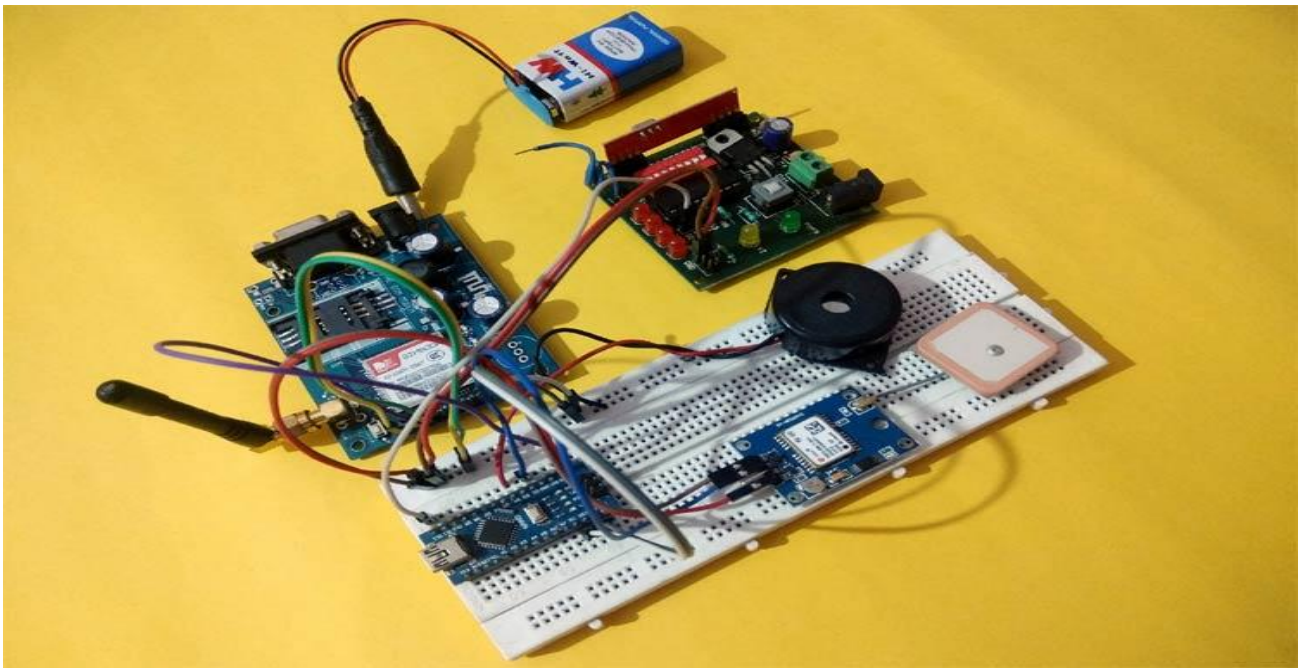


Fig2: RECEIVER SECTION

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XI. CONCLUSION

The project will solve the critical issues faced by women and will help to solve them with technologically sound equipment and ideas. The intention of this project is not only provide safety and it also provides security by means of self-defence mechanism. The crime against the women can be now brought to an end with the help of real system implementation of the proposed model.

The suggested design will address important problems and contribute to their resolution using cutting-edge tools and concepts. The strength of this approach is thatit offers security through a self-defence mechanism in addition to safety. With true system implementation of the suggested paradigm, the crime against women can nowbe put an end. In this paper, we suggest and present an Internet of Things-based safety gadget. The purpose of this safety feature is to protect women and children from harassment at all times. The tool can immediately alert law enforcement to takelegal action against the offenders. In order to save the victim, the device can also sendthe victim's location to the closest police station. The tool is very user-friendly, and it can be used easily and affordably by users of various skill levels.

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