

GPS-Enabled Security System

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Abstract:

Security is a paramount factor in ensuring the safety of women. In the contemporary context, women often require assistance and enhanced safety measures. Recognizing this need, there is a compelling requirement to develop a portable system dedicated to women's security. The project focuses on creating a portable and accessible security system tailored specifically for women. This system aims to empower women with the tools they need to enhance their personal safety, providing a reliable solution that can be easily carried and utilized in various situations. The emphasis on portability suggests that women can carry this security system with them wherever they go, ensuring that they have a means of protection readily available in different scenarios. The development of such a system acknowledges the evolving needs and challenges faced by women today, offering a proactive approach to enhancing their security and well-being.

Keywords —GPS, Security system

I. INTRODUCTION

Orlando Pereira, et al (2010) proves the theory of using body sensors by using Network mobile solutions for biofeedback monitoring. The SHIMMER firmware and blue tooth firmware has been implemented in this work. The limitations of this work are Bluetooth should be always connected to phone; it cannot be used if phone is lost [1]. MirjamJutila, et al (2014) proves the new concept of a wearable sensor vest for children. Safety vest Design, Gateway Implementation, Sensor web elements has been implemented in this work. The limitations of this work are the device used is very begin size, it cannot be carried to places all can go [2]. Samuel Tanga (2016) proves the concept of sensors in his work" Development of Prototype Smart Home Intelligent Lighting Control Architecture Using Sensors Onboard a Mobile Computing System".

"Luminaire controlled by the Arduino micro controller" has been implemented. The limitations of this concept is Wi-Fi or internet is need to work the application [3]. Threats in Information Security are life-threatening more particularly in medical field. [4]. Software providing more feature-sand more security leads to increased execution time and also leads to poor usability of the software [5]. The application can be secured with fingerprint authentication for providing more security and to avoid false positive. The Dynamic Cognitive System shows how the application can be protected against vulnerabilities and attacks in the social network.

II. METHODOLOGY

In this flow chart diagram as shows that of telegram app we create a BOT father user ID in that we create GMITBOT group in the group we add 2000 plus contacts like parents, family, friends, nearby police station and hospitals .When give the

power supply to the main board the buzzer should give the audio signal and the bot start up message will send the GMITBOT group .When women get scared she will press the push button then it initialize the BOT start up in GMITBOT group and immediately share the current location to group through the GPS. The images will also be captured and sends to the group but it only share the private contacts. Because, It acts as an evidence so we have to save or protect the women’s through with above details. The flowchart for this work is as shown in Fig. 1.

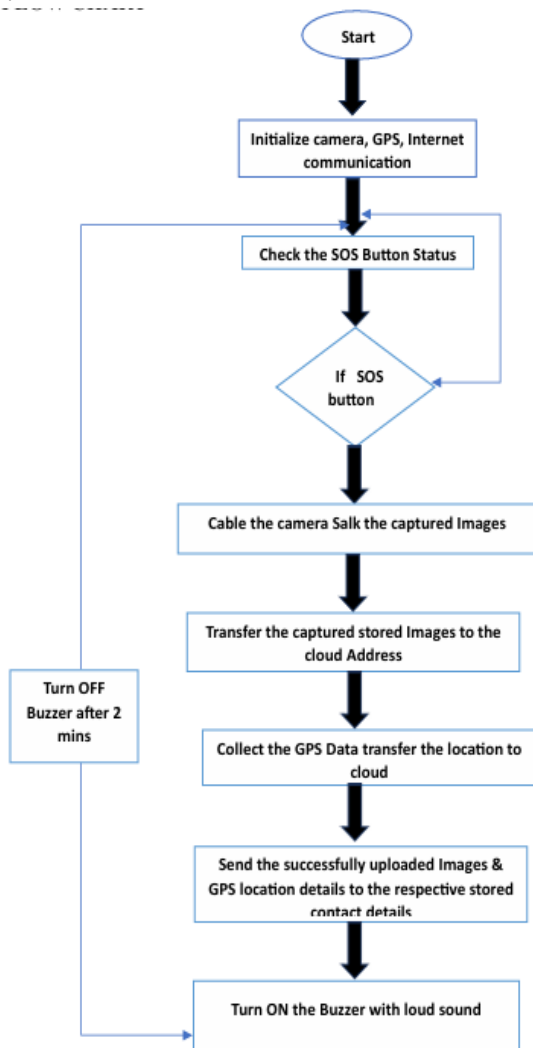


Fig. 1: Flow chart of women’s Protection System monitoring

A. WIRING DIAGRAM

The wiring diagram done in this project work is as shown in Fig. 2.

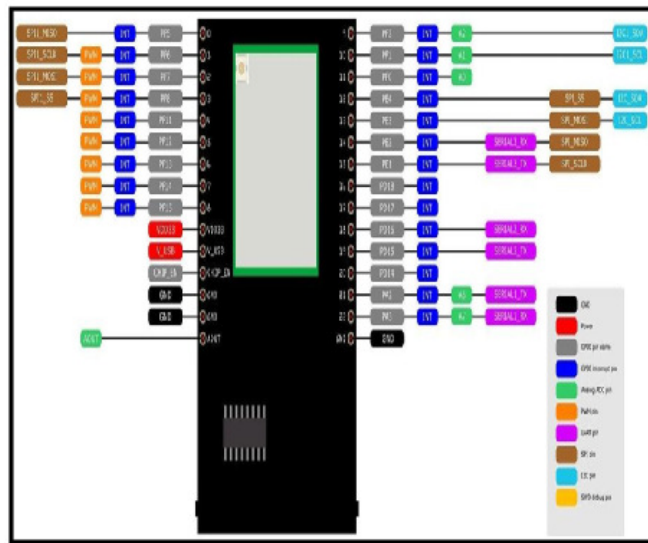


Fig. 2: Wiring connection diagram

III. COMPONENTS DETAILS

1. GPS Receiver Module

GPS receivers are generally used in smartphones, fleet management system, military etc. for tracking or finding location. Global Positioning System (GPS) is a satellite-based system that uses satellites and ground stations to measure and compute its position on Earth. GPS is also known as Navigation System with Time and Ranging (NAVSTAR) GPS. GPS receiver needs to receive data from at least 4 satellites for accuracy purpose. GPS receiver does not transmit any information to the satellites. This GPS receiver is used as in Fig. 3 in many applications like smartphones, Cabs, Fleet management etc.



Fig. 3: GPS receiver

2. Piezo buzzer

The piezo buzzer as in Fig. 4 produces sound based on reverse of the piezoelectric effect. The generation of pressure variation or strain by the application of electric potential across a piezoelectric material is the underlying principle. These buzzers can be used alert a user of an event corresponding to a switching action, counter signal or sensor input. They are also used in alarm circuits. The buzzer produces a same noisy sound irrespective of the voltage variation applied to it. It consists of piezo crystals between two conductors. When a potential is applied across these crystals, they push on one conductor and pull on the other. This, push and pull action, results in a sound wave. Most buzzers produce sound in the range of 2 to 4 kHz. The Red lead is connected to the Input and the Black lead is connected to Ground.



Fig. 4: Piezo buzzer

3. Bluetooth Camera SOC(System-On-Chip)

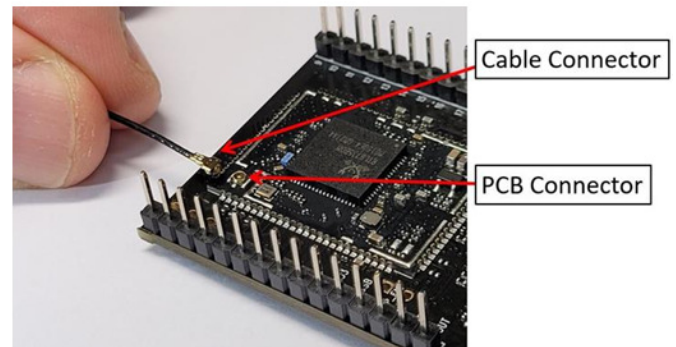
Bluetooth camera SoCs (System on Chips) integrate Bluetooth functionality with camera systems. They feature Bluetooth radio, DSP, MCU, and camera interfaces in a single chip. Efficient power management extends battery life for portable devices. Peripheral interfaces like USB, SPI, and GPIO enable connectivity with external devices. Security features ensure secure data transmission over Bluetooth. Bluetooth camera SoCs find applications in consumer electronics, smart home devices, industrial, and automotive systems. They contribute to the growth of IoT and wireless camera solutions. Integration of multiple components

reduces system complexity and cost. These SoCs support wireless camera deployment in diverse environments. Enhanced security features protect against unauthorized access and data breaches. Continuous innovation drives improvements in performance and functionality.

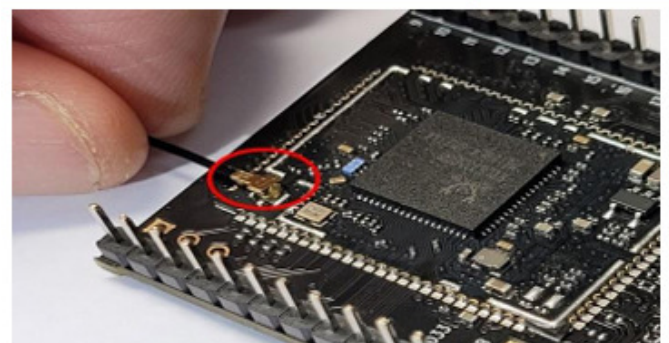
IV. RESULTS BUILT INSTRUCTIONS

There are two accessories for AMB82-MINI, one is IPEX RF antenna and the other is image sensor module.

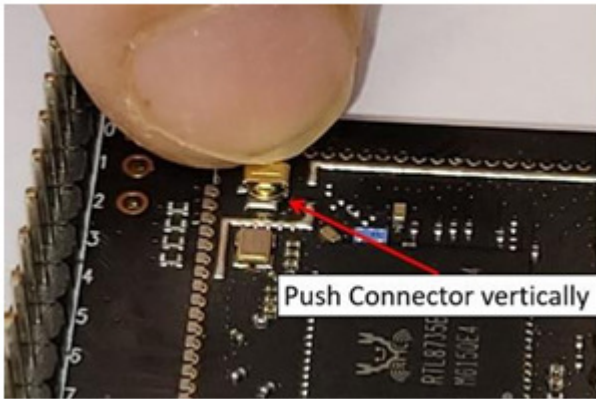
How to assemble components Step 1 : Keep AMB82-MINI at back side, hold the cable connector as shown in following figure:



Step 2 : Combine cable connector with PCB connector, please check they are set firmly.



Step 3 : Push cable connector at centre location vertically. The connectors mating action is completed when click sound could be heard.



When we give the power supply to the main board the system will be activated, then buzzer should give the audio signal and in fraction of second bot start-up will send the GMITBOT group on telegram application. Fig. 5 shows to Get the Bot started up messages

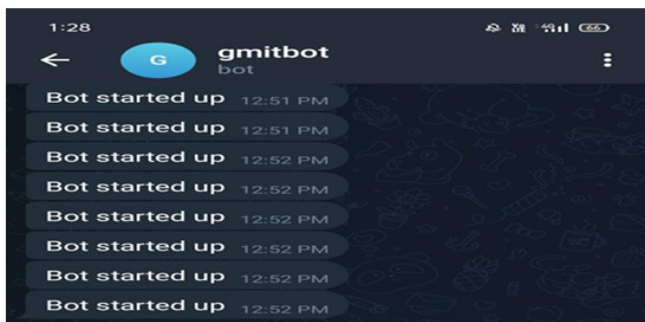


Fig. 5: Get the Bot started up messages

When women's get scared, she will press the push button then it initializes the bot start up in GMITBOT group. In that group we add 2000 plus contacts like parents, family members, friends, nearby police station and also hospitals. In that group immediately shares the location to the added contacts and images will also be captured but it will only share the private contacts because, It acts as an evidence. So, we have to save the women's through with above the details.

V. CONCLUSIONS

In this project another application is there like heart rate sensor, temperature sensor, spo2 (saturation of peripheral oxygen) sensor. 1. Heart rate sensor: It recognizes heart ratings when they are in unhealthy

condition. It immediately shares the current location to nearby hospital. 2. Temperature sensor: It senses the body temperature when it crosses the normal temperature the alarm should sound. Then it sends the location to nearby hospital. 3. spo2 sensor: It will sense the oxygen rate. When the oxygen rate is low it immediately shares the current location to nearby hospital.

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