International Journal of Technical Innovation in Modern Engineering & Science (IJTIMES)
Impact Factor: 5.22 (SJIF-2017), e-ISSN: 2455-2585
Volume 4, Issue 6, June-2018

ADVANCED PASSENGER SECURITY SYSTEM FOR RADIO CABS AND ENHANCED SYSTEM SECURITY WITH BIOMETRIC MODULE

Mr. Anoop M M[1], Ms. Megha P Krishna[2], Ms. Nissy Nelson[3]

Abstract:**In public transport vehicles such as cars, buses and auto-rickshaws as nowadays women are being molested, kidnapped and harassed by the drivers.This In today's world, women safety has become a major issue as they can't step out of their house at any given time due to physical/sexual abuse and a fear of violence. Even in the 21st century where the technology is rapidly growing and new gadgets were developed but still women's and girls are facing problems.Traditional vehicle security system depends on many sensors and cost is also high. When the vehicle is stolen, no more response or alternative could be available to help the owner of the vehicle to find it back. The main goal of this paper is to protect the vehicle from any *unauthorized access, using fast, easy-to-use, clear, reliable and economical fingerprint recognition technique*. This vehicle security system intimates the status of the vehicle to the authoritative person *(owner*) using Global System for Mobile (*GSM)* communication technology.The vehicle which has display, keypad, GPS, GSM and embedded board to control and interconnect all of the above. As journey is started passenger can enter her guardian, friend or relative mobile no, he/she is going to get all the notifications of the female passenger journey. First of all the driver's name, mobile number, vehicle registration number and the secure pin generated by passenger is sent by SMS to the concern person of passenger . It can also add destination region even though if the concerned person does not check the updates, then also it would be useful in investigation, if any mishappening occurs. The hardware used in the system are Renesas microcontroller , LCD, Buzzer, GPS, GSM, FP R305,Panic switch, Dc motor.**

Keywords: **GSM, GPS,FP R305, LCD**

I.INTRODUCTION

Women's Safety in Public Transport is one of the key challenges across the globe. The authorities are taking various measures to make Public Transport safe and comfortable for women. It is very important to understand the travel needs of men and women are very different. In developing countries, lots of women forced to remain at home owing to lack of safe transportation option.Crimes reported against women have surged over 80% in a decade and deadly cases of sexual violence often roil cities and villages.

Cab Tracking &Personal Security System proposes an Android-based application for smart phones with integrated and more efficient functioning for company admin as well as its employees.This concept installs a panic button system in the car which is directly connected to the car's ignition system. Whenever the passenger feels unsafe he/she can press this panic button. As soon as the button is pressed, the car ignition is turned off. The systemcommonly uses a Global Positioning System (*GPS*) for locating the vehicle and sending this location to the nearby police station through the use of GSM (Global System for Mobile Communication). An alarm also gets started for gaining the local attention for immediate help. A biometric system is employed in the circuit which is connected to the power supply of this panic button system and the car ignition.

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II. EXISTING TECHNOLOGY

A. *Design and Development of Suraksha-*

A Women Safety Device Nishantbharadwaj and NitishAggrawal Introduces India which sees itself as a promising super power and an economic hub, is still trapped in the clutches of various patriarchal evils like molestations, dowry, crime against women, worst among all is Rape. This explains the basic idea underlying suraksha which is to flash a warning giving an instant location of the distressed victim to the police so that the incident could be prevented and the culprit apprehended. The device can be actuated by three ways namely, voice, switch and shock.

B. *Smart Electronic System for Women Safety-*

S Shambhavi, M Nagaraja, M.Z Kurian proposed a technique which describes about a safety electronic system for women, built in public transport vehicles such as cars, buses and auto-rickshaws as nowadays women are being molested, kidnapped and harassed by the drivers. Hence implemented electronic system is fitted in the vehicle which has display, keypad, GPS, GSM and embedded board to control and interconnect all of the above.

C. *Intelligent security system for girls in hostel-*

Amol Sapkal, Samiksha U.Katait introduces the Intelligent security system for girls in hostel provides security technique This proposed work enlightens upon the invention as well as technology advancement in the field of security. The concept of finger print authentication will be used as password.

III. PROPOSED METHODOLOGY

The project circuit is considered as a vehicle and motor connected to it is acts like the vehicle engine and all the modules like finger print ,GPS , GSM ,motor driver are connected to the central microcontroller .GSM is connected with a phone which will receive the message from the it.

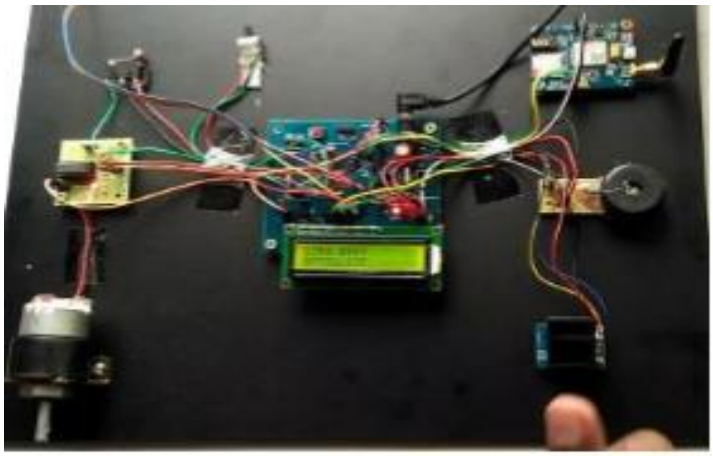

Fig.Working part

The vehicle with the finger print module using the accessiblefingers. If the finger print module detects the right finger then the system will be starts by running the motor. Otherwise it will stays on the still condition. At the same time a message will be sent to the phone it is connected with the system about the starting status of the vehicle, and the updated status like the running condition and stopping condition will be sent with the location. GSM module helps to sent the message and GPS module helps to find location of it .If an emergency situation occurs, the panic switch can be pressed, at that time the vehicle will be stop and buzzer will be activated. The current location of the vehicle will be sent to the phone connected with the GSM.

A. *Block diagram*

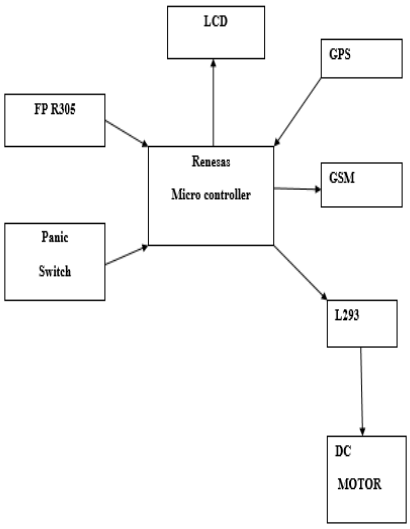

Fig . Block diagram

Renesas microcontroller is the central part of this purposed system. FP R305 is the finger print module using..GPS is used to access the location of the vehicle.When there is anything unfair happens inside the vehicle, Passenger can press the panic button and the buzzer will start to make sound for gaining local attention, at the same time and using GSM a message will passes to the nearest police station including the location of the cab using the GPS. Because of the biometric system the driver cannot manipulate the panic switch because the biometric system works only if the panic switch is intact.

B. *Circuit Diagram of components used*

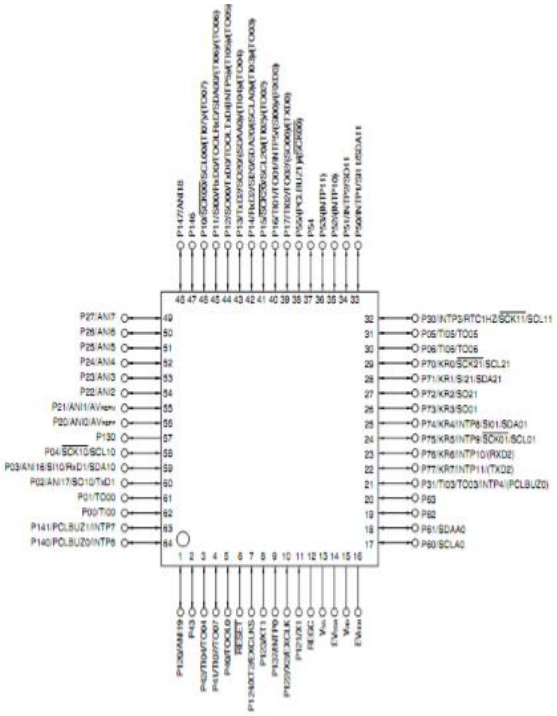

Fig.A.1 - RL 78 pin diagram

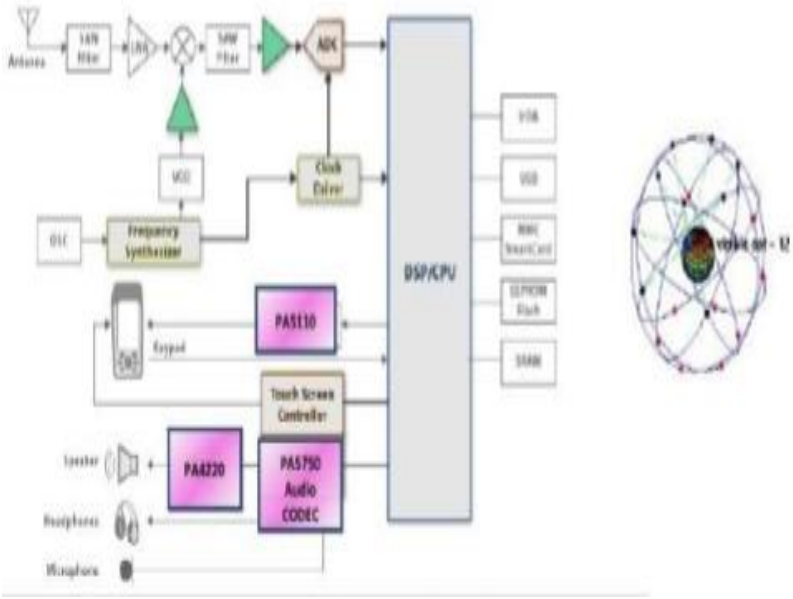

Fig.A.2-GPS architecture

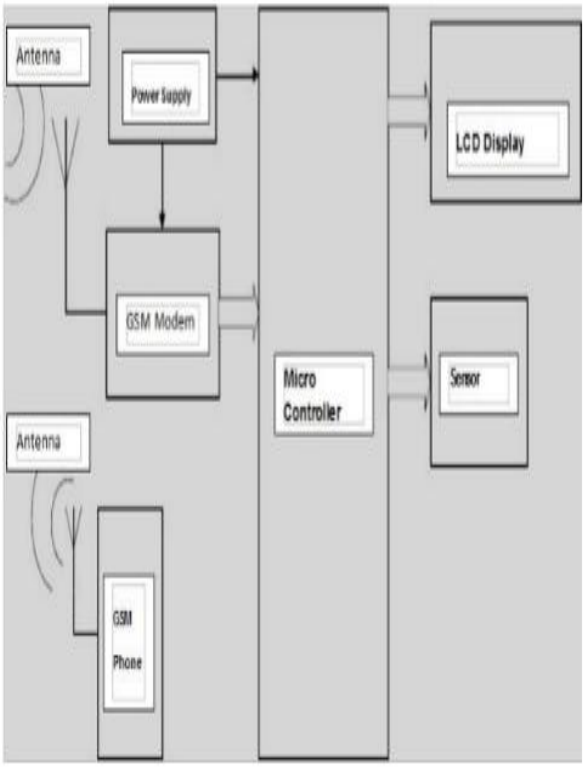

Fig.A.3- GSM Architecture

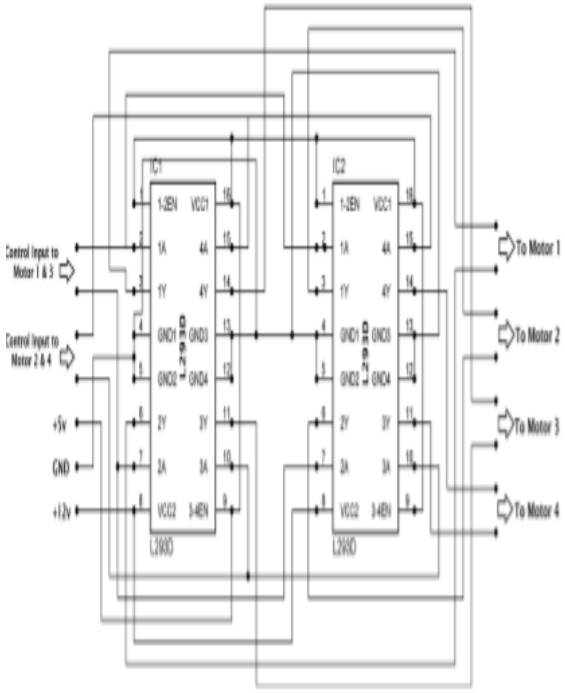

Fig.A.4- Motor driving circuit

Renesas RL78 microcontrollers consists of both general-purpose and application specific devices. The RL78/G1F group is ideal for applications that require high-performance timer and analog functions in small packages, such as motor control and sensor systems, as well as various consumer and industrial applications. A liquid-crystal display (LCD) is a flat-panel display or other electronically modulated optical device that uses the light-modulating properties of liquid crystals. LCD screens are energy efficient, low Power Consumption.A buzzer or beeper is an audio signaling device which may be mechanical, electromechanical, or piezoelectric.The Global Positioning System (GPS), originally Navstar GPS is a space-based radio navigation system.GSM is a mobile communication modem; it is stands for global system for mobile communication (GSM).

IV. ADVANTAGES AND DISADVANTAGES

A. *Advantages:*

- It saves time.
- Manual operation has been reduced to major extent.
- Less man power required.
- Efficient distribution system
- Easy to use
- Efficient and reliable
- Eliminate the paper based records using smart phone

B. *Disadvantages:*

- Carrying power supply

V. RESULTS

Safety and security of a passenger and Safety and security of the driver can be ensured with the real life implementation of this system.The combination of smart cards and biometrics delivers a number of significant benefits to organizations implementing secure identification system ,in the contrast that the no of theft and mishappening is increasing dramatically .

The no of women being molested, kidnapped and harassed by the drivers is ever increasing. There is at most maximum level of security for the passenger since there are several levels of security measures like- As journey is started passenger can enter her guardian, friend or relative mobile no, he/she is going to get all the notifications of the female passenger journey. First of all the driver's name, mobile number, vehicle registration number and the secure pin generated by passenger is sent by SMS to the concern person of passenger . It can also add destination region even though if the concerned person does not check the updates, then also it would be useful in investigation, if any mishappening occurs. Passenger may always not get down at destination decided , she may get down little early or little further depending on various factors, hence an option to terminate journey is also provided called as end of journey which is executed and validated using secure pin, which driver will not be aware of .The prototype model for the security system is built on the embedded platform using PIC Microcontroller which controls all the processes and cost is also very stumpy. On higher end theft attempts like cutting battery power supply, protection to the vehicle is provided by Engine Control Unit (ECU) embedded on microcontroller. By using GPS technology, vehicle can be identified very easily.

VI. CONCLUSION

Advanced passenger security system for radio cabs and enhanced system security with biometric module is a perfect system for ensuring at most safety for the female passenger and also for the safety of the cab and driver as well.Providing security is the fundamental aim of this project.GSM and GPS together will help in finding the cab location. Biometric will prevent the access to unauthorized users and the buzzer will help in gaining the local attention.

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AUTHORS

1 Mr. Anoop M M

Head of Department

Department of Electronics and Communication

St Thomas College of Engineering and Technology, Chengannur

Email id: Anoopmm777@gmail.com

[2]Megha P Krishna

B.Tech Scholar

Department of Electronics and Communication

St Thomas College of Engineering and Technology, Chengannur

Email id: Meghapadmajan@gmail.com

[3]Nissy Nelson

B.Tech Scholar

Department of Electronics and Communication

St Thomas College of Engineering and Technology, Chengannur

Email id: Nissynelsonmvk@gmail.com