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CRIME PREVENTION SYSTEM

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ABSTRACT This paper presents an Automated Teller Machine (ATM) surveillance system to increase the security which is a smart system based on embedded technology. To avoid ATM fraud, the secure electronic transaction has become a top priority. This system consists different sensors to continuously monitor its surroundings for suspicious activities like physical attack, break-in and theft that might jeopardize the ATM and people nearby the machine. For proper surveillance we have also discussed the security and safety measures that can be implemented to prevent such raids. This paper focuses on different forms of physical attacks on ATM's and the methods that are used to detect the threat, commence proactive measures and tip-off officials through GSM network. Three security tools are proposed to enhance ATM transaction security.

Keywords- ATM, embedded technology, GSM network, ATM transaction security.

OBJECTIVES

The objectives of offered work are as employs: 1) To detect the vibrations to the ATM machine for a longer duration of time. 2) To detect the uneven motion for a longer duration of time behind the

machine. 3) To detect the increase in sound level in case of screaming or shouting in ATM booth. 4) To make the place more secure for money transactions.

INTRODUCTION

Modern era has one of the primary concerns as the security. Due to the easy and readily available cash at everyone's convenience, Automated Teller Machines (ATM) today have become areas of target. The biggest disadvantage of using electronic sensors and machinery is that the data can be hacked and leaked, privacy violated, theft and burglary. ATMs are open throughout the day as 24 hours; their

locations are also at prime spots in the city. As the bank is under high security, it is very difficult to steal money from bank. Hence, an ATM is in great danger of being burgled. Due to this easy and readily available cash at very convenience, ATMs have become areas of target. Hence, the attacks on the ATMs are increasing slowly. This is a serious problem for banking sectors and law enforcement authorities.

The sole purpose of the ATM is to provide service to customer through automation and reduce manual interaction through the bank. Therefore, the security provided must be efficient and automatic. To fulfill this purpose, in this research paper a secure layer for electronic transaction mechanism of ATM is developed. The main goal of the proposed mechanism is to reduce anonymity and increase authenticity, protect bank assets, confidentiality as well as users' trust towards ATM electronic transaction security and to make the place more secure for money transactions. The proposed paper includes the embedded system which includes three sensors namely; Piezo sensor, PIR sensor and microphone. Three parameters are taken into consideration with respect to the various situations that can occur in the ATM booth when a robber tries to steal the money or break-in ATM. After detecting the threat from any of the different sensors implemented, the system will send the alert message to the police and bank authority in order to take the immediate action against the incident.

LITERATURE SURVEY Much research work has been done to increase the security level of the ATM. ATM security and surveillance had become an active research area which attracts researchers

from all around the globe since last one decade. At the initial stage, security of ATM environment was limited to the detection of individual objects like helmet, knife, pistols, daggers, etc. Raj M and Anitha Julian discussed the use of Machine-to-machine (M2M) communications technology. They implemented a low cost stand-alone Embedded Web Server (EWS) based on ARM11 processor and Linux operating system using Raspberry Pi. It offers a robust networking solution with wide range of application areas over internet. (ICCPCT 2015 IEEE)[1] Jacinha V, Jamuna Rani S verbalized Protection of ATM is supplied through putting CCTV protection cameras and Emergency sirens. Other strategies are researched to put in force at low price embedded internet server. An anti-theft device is applied by way of the use of gadget to gadget and RFID. (ICONSTEM 2017 IEEE)[2] Sambarta Ray and Sauvik Das proposed a system having detection of human face and number of the persons inside the ATM booth. Also it can detect whether a person is wearing mask or not. (INDICON 2015 IEEE)[3] S. Shriram and Swastik B. Shetty with introduction of some parameters measurement with particular sensors. The proactive measures that are employed in the system are the siren, notification to

officials using GSM and visual alert in the ATM kiosk (ICCPCT 2016 IEEE) [4] Prachi More and S. Markande implemented a system based on Biometric

EXISTING

In past activities, numerous analysts have built up a framework for programmed ATM security utilizing Microcontroller 8051 without any wireless data transfer

PROPOSED

In proposed framework we are utilizing ARM7 to actualize this task, and we are utilizing GSM innovation to send the security data through SMS. We are utilizing MEMS Technology to distinguish the breakage of ATM machines and that

METHODOLOGY

When there is damage or mishandling for longer time to ATM machine, piezo sensor is used to sense it. Also when any mishap occurs to an individual during using the ATM machine and the thief tries to snatch away money or try to harm the individual then if the victim will shout and it will be captured by mic and the input is compared by comparator with the reference voltage which is set already. When there is an

technology and RFID technology. First module placed in the door and second module is placed inside the ATM center. (IJARCCE 2016)

SYSTEM

system. Practically all frameworks are wired, yet now we have attempted the equivalent by the utilization of remote.

SYSTEM

data would be send to microcontroller then it will send to security framework. We are utilizing smoke sensor to recognize the flame mishaps. Advantage of Proposed system is Cost productive and Low Power utilization

uneven motion of an individual for longer time around ATM machine, then it will be sensed by PIR sensor. If any of one condition is sensed, then by using the GSM module, a SMS will be sent to the bank authority and the nearby police station so that they can take an immediate action to track the robbery. Also there is buzzer connected to alert the surrounding people about robbery

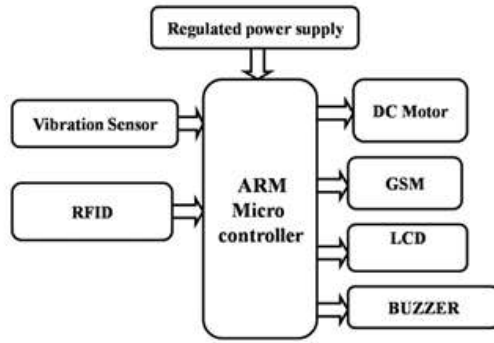


Fig. 1. Block Diagram.

FUNCTIONAL DESCRIPTION

A. Regulated Power Supply

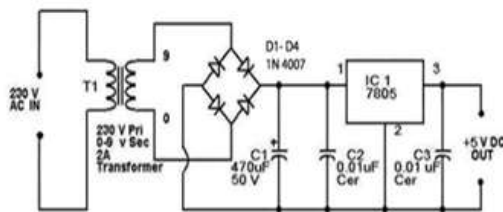


Fig. 2. power supply.

Regulated power supply is the main power source to provide +5v dc to throughout project. This section having step down transformer which converts high voltage to 12v ac voltage and bridge rectifier converts

to 10v dc, filter section used to convert constant voltage and finally voltage regulator finally give 5v with 1A power supply to function circuit components perfectly.

B. Functional Module

Implement panel is groundbreaking improvement stage dependent LPC2148. We are going to design complete application using LPC2148 Microcontroller. Board having 64 GPIO pins distributed in 2 PORTS. PORT0 and PORT1. Each port having 32 pins with that we connect all input and output modules to General purpose input and output pins. Controller having 512kb flash

ARM Microcontroller

memory used for data storage and code. 32 kb RAM for processing data. Having 64MHz crystal oscillator for carrier generation and fast process. Controller also compatible for serial communication. ARM microcontroller acquires the data from input modules and process as per code and produce output through output modules.

C. LCD display

Liquid crystal display used to display the data which used for status of the proposed system. We used 16*2 LCD in the proposed system can display 32 characters from the two rows. LCD driver board used



Fig: 6*2 LCD Module

D.

The GSM is remote framework and it has low-control, low cost and settlement module. Global System for Mobile is a wireless communication module to send the data or receive the data from one place to another place. In our project we used GSM SIM 800L model which works on 5V Power supply and consumes 100ma Current. Operating frequency of GSM



Fig: GSM Module

to convert 16 pins to required 8 pins among them four data pins used to display the data and remaining pins are power and special purpose pins.

GSM

modem is 860 MHz to 960MHz. it can send the data through Transmission antenna and Receive data trough Receiver Antenna. GSM modem works based on AT commands. The role of GSM in this project is to send the SMS when microcontroller request while there will be when ATM crime happens.

CONCLUSION

The implementation of ATM security system by makes it ideal for protecting the ATM. It uses PIC using smart sensors and GSM/GPRS modem to controller based embedded system including PIR advantages of the stability and reliability of sensor and piezoelectric sensors as well as microphone to characteristics. Therefore the proposed security process real time data collected using the sensor. system here utilizes the latest technology like smart Using this real time data nearest police station can sensors and GSM/GPRS modem which as a system be contacted using GSM module and crime can be has a very good endurance in the long run, which prevented.

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