IMPLEMENTATION OF ADVANCED ANTI-THEFT ATM

S.Karthick Raja, S.Manimaran, B.C.Lakshmi Narayanan, R.Naveen Kumar, Students of Electronics And Communication Ponnaiyah Ramajayam College Of Engineering And Technology Vallam, Thanjavur

S.MAHESHWARAN
Assistant Professor
Department of Electronics And Communication Engineering Ponnaiyah Ramajayam College Of Engineering And Technology Vallam, Thanjavur

Abstract—In this project, we propose a secure ATM transaction using GSM modem. This will work with Atmega Microcontroller. This will be connected using serial cable with GSM Modem, USB camera, alarm, card scanner. LCD is being used for displaying the password and ATM transaction by the use of 4*4 key pad. As the ATM is used then suddenly the message will go to the original card holder. If any problem occurred or delayed by the original user, then camera will take picture of the culprit and displayed on the bank manager PC.

Keywords—LCD, ATM, GSM, RFID

I. INTRODUCTION

ATM has become an irreplaceable communication and service channel between banks and cardholders due to its fast, convenience and human resource saving advantages; since the introduction of the first automated teller machine (ATM) in 1967, perpetrators have been devising ways to try to steal the cash inside. Because ATMs eliminate the need for round-the-clock human involvement and tend to be located in places that make them more vulnerable to attack. According to estimates by Retail Banking Research, there are more than 2.2 million ATMs deployed worldwide. This is a figure forecasted to exceed 3 million by 2016. As the number of ATMs in use increases, so do the frequency and sophistication of security threats, making the development of crime prevention measures a top priority for financial institutions (FIs) and ATM manufacturers.

security is the main concern and that too in case of ATMs it is very critical. The main aim of this project is to provide the security to the ATMs from theft. Automated Teller Machines (ATMs) security is the field of study that aims at solutions that provide multiple points of protection against physical and electronic theft from ATMs and protecting their installations.

The method of rapid reaction and minimization of loss by detecting the ATM machine at real-time when it has been stolen can be found through GSM technology.

The GSM technology, Alarm, Tap Motor, external ATM machine can be predicted. In this project buzzer is used to give message for corresponding bank and user mobile. Camera is used to take the picture of culprit.

A. GSM (Global System for Mobile Communications)

A GSM modem is a specialized type of modem which accepts a SIM card, and operates over a subscription to a mobile operator, just like a mobile phone. From the mobile operator perspective, a GSM modem looks just like a mobile phone. When a GSM modem is connected to a computer, this allows the computer to use the GSM modem to communicate over the mobile network. While these GSM modems are most frequently used to provide mobile internet connectivity, many of them can also be used for sending and receiving SMS and MMS messages. A GSM modem can be a dedicated modem device with a serial, USB or Bluetooth connection, or it can be a mobile phone that provides GSM modem capabilities

Abbreviations and Acronyms
B. TAP Motors

We are using tap motors. It is operated by 12V power supply. In any electric motor, operation is based on simple electromagnetism. A current carrying conductor generates a magnetic field; when and to the strength of the external magnetic field. Here we are placing tap Motor for money transaction inside the ATM, which is used for either withdrawn or stop the transaction.

C. Alarm

A buzzer or beeper is a signaling device, usually electronic, typically used in automobiles, household appliances such as a microwave oven, or game shows. It most commonly consists of a number of switches or sensors connected to a control unit that determines if and which button was pushed or a preset time has lapsed, and usually illuminates a light on the appropriate button or control panel, and sounds a warning in the form of a continuous or intermittent buzzing or beeping sound.

II. LITERATURE SURVEY

In today’s technically advanced world, autonomous systems are gaining rapid popularity. As the social computerization and automation has been increased and the ATM and credit card has been installed and spread out to simplify the activity for financial activity, the banking activity has been simplified, however the crime related with financial organization has been increased in proportion to the ratio of spread out of automation and devices. Those crimes for the financial organization have been increased gradually from year 1999 to 2003, little bit decreased in 2004, and then increased again from year 2005. In the year of 2007, 212,530 of theft and 4,439 of robber cases are happened, and 269,410 of theft and 4,409 of robber cases are happened in year 2010 and also in the year 2011, 270,109 of theft and 4,509 of robber cases are happened so that the cases of theft and robber have been increased gradually during past 12 years. Among the crime for financial organization, the cases of theft and robber have very high proportion of over 90% and the crime for the ATM has been increased because the external ATM has been increased and it is always exposed to the crime. Therefore, this study is going to suggest the method of rapid reaction and minimization of loss by detecting the ATM machine at real-time when it has been stolen can be found through GSM technology. So by using the GSM technology, Camera and PC we are implementing this project.

III. PROPOSED SYSTEM

Based on the results, the objective of developing ATM Security System using camera and GSM has been achieved. This project is used to provide security to ATM. Whenever a person trying to theft the ATM at that time the controller sensed. Then microcontroller produced the sound using Buzzer and sends a SMS via GSM. Transmitter GSM MODEM is interfaced with ATM module. If the user wants an amount in ATM, then he has to enter the correct password, after that acknowledgement message has send to user mobile. User send to reply message OK means ATM allow to take the cash may be user send the reply message NO means alarm make the sound and interfaced USB camera capture the unauthorized person image and to our Email id.

IV. HARDWARE COMPONENTS

A. RFID

RFID stands for Radio-Frequency Identification. The acronym refers to small electronic devices that consist of a small chip and an antenna. The chip typically is capable of carrying 2,000 bytes of data or less.

The RFID device serves the same purpose as a bar code or a magnetic strip on the back of a credit card or ATM card; it provides a unique identifier for that object. And, just as a bar code or magnetic strip must be scanned to get the information, the RFID device must be scanned to retrieve the identifying information.

B. Relay

A relay is an electrically operated switch. Current flowing through the coil of the relay creates magnetic field which attracts a lever and changes
the switch contacts. The coil current can be on or off so relays have two switch positions and they are double throw (changeover) switches. Relays allow one circuit to switch a second circuit which can be completely separate from the first.

C. RS232

In telecommunications, rs-232 is a standard for serial binary data interconnection between a dte (data terminal equipment) and a dce (data circuit-terminating equipment). It is commonly used in computer serial ports. The standard does not define such elements as character encoding (for example, ASCII, BAUDOT or EBCDIC), or the framing of characters in the data stream (bits per character, start/stop bits, parity). The standard does not define protocols for error detection or algorithms for data compression. The standard does not define bit rates for transmission, although the standard says it is intended for bit rates lower than 20,000 bits per second. Many modern devices can exceed this speed (38,400 and 57,600 bit/s being common, and 115,200 and 230,400 bit/s making occasional appearances) while still using rs-232 compatible signal levels.

D. Camera

It is mini wireless monitoring video camera and wireless receiver set for home and small business surveillance and is used here for demonstration purpose. Simply install the wireless camera in the room where we want to monitor and set the wireless receiver in the next room (up to 15 meters away) and hook it up to a TV or DVR to watch the action or record the footage for the security records.

Here we are placing this wireless camera in the ATM room. Depiction of AV Receiver wireless camera sends the continuous video footages to PC via mail.

V. Conclusion

The project “IMPLEMENTATION OF ADVANCED ANTI-THEFT ATM” has been successfully designed and tested. It has been developed by integrating features of all the hardware components and software used and tested. Presence of every module has been reasoned out and placed carefully thus contributing to the best working of the unit so we can secure our money very safe.

References

1. Best Practice for ATM Security (Overview of ATM security situation, forecast, and best practices) GRG Banking Equipment (HK) Co., Ltd. 2011/5/27


[8]. GSM Modem overview “http://www.sunrom.com/159”
