

IMPLEMENTATION OF HIGH PROTECTIVE TRANSACTION SECURITY SYSTEM TO ATM

Ananthi.T

Project Guide: Mr. M. Pradeep Kumar M.E.,
PG scholar, Department of Electronics And Communication Engineering
The Kavery Engineering College Mecheri, Salem-636 453.

E-mail id: anandhi.aswa@gmail.com

Abstract

The security is one of the most essential thing in all kind of fields. So I developed some security systems in one of the application of ATM because the robberies taking the transaction amount by making the duplicate ATM card and duplicate password. In ATM security there are so many techniques is invented but some drawbacks is there in that system. That is the finger print sensor is used to detect the authorized user. This causes more memory is needed to save the fingerprint of the user but in controller have the limited amount of memory. So instead of using finger print technique, the GSM techniques is used for the security. This technique, which helps to overcome all those above problems. In this project the RFID reader is consider as an ATM card. When it swaps to the RFID tag, the door gets opened. The RF check whether the user is present around the location or not. If the user is around the RF region, GSM send message to the authorised user. The authorized user replied the password to the system to continue the transaction. If the user replied password does not match, he/she consider as an unknown person, then the door of the ATM gets closed and the cheating person could be arrested.

Keywords—ATM , microcontroller
ATMEGA 320, GSM Module, RF
Transmitter and Receiver, RFID Reader,
EM Lock

I Introduction

Security of ATM

The Microcontroller based secure pin entry method is mainly developed for the prevention of theft of the ATM card and to control the usage of the ATM card by unauthorized person. The additional feature of this project is that no transaction can be done without the knowledge of the respective card holder. The main software's that are using in this project are visual basic and embedded C. The main advantage of this project is it helps in the prevention of ATM looting. The main advantage of this system is that the card holder can remotely access hi ATM card and control the whole transaction process if his card is used by another known person who can't be fully trusted.

This system can be implemented in all the sectors where the ATM card is using. Like shopping, money transaction, online payments. Whenever the RF-ID Reader detects an active tag it generates a particular frequency digital signals and give these

signals to the microcontroller whenever the microcontroller receives these digital signals from the RF-ID reader it will check for the list of mobile number that has been associated with the card frequency. Next the controller will generate a pin number of four digits and send this pin number to the visual basic interface. Each time whenever a transaction has to be done the pin number that are generating in the microcontroller will be different. The embedded C program implemented in the microcontroller mainly helps for generate pin number randomly. The pin number given to the visual basic interface will communicate with the GSM modem that has been connected with it and will give command to the GSM modem to send the pin number to the particular mobile number. The card user will receive this pin number as text message on his mobile.

The pin number can be entered in the ATM machine using 4*4 keypad. Then the ATM machine will move on to the next process. If the pin number that has been entered in the ATM machine is wrong the ATM card will get blocked. If the entered pin number is correct, the user can move on the next level of transaction. At this the embedded C program in the microcontroller will give command to the visual basic program to continue the transaction and the visual basic program will generate another message that ask the card holder to enter the amount that the user wants to withdraw from the ATM machine. So, at this time the user has to enter the amount in the mobile that has to be taken out from the ATM machine. Then the ATM machine will continue to next transaction level and completes the process. On the other hand, if the entered pin number

is wrong the card will get blocked and the doors of the ATM Centre will get locked. A camera that is provided with this will capture the image of the person who is using that ATM card at that time the Motor will rotate if the entered pin is wrong which represents the blocking of ATM card and locking the doors of the ATM centre.

II proposed system

Flow Diagram

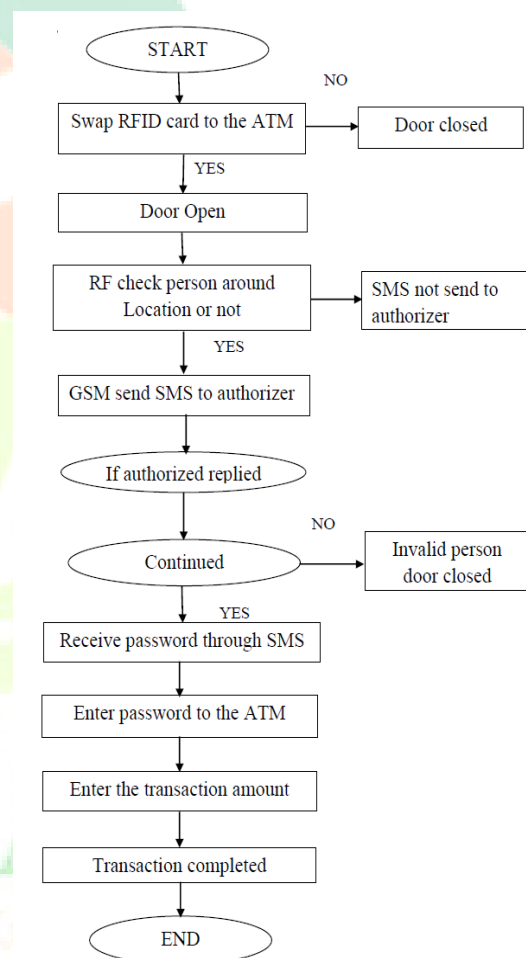


Figure 1. Flow Diagram

In this flow, when a person enters in the ATM, first swaps the ATM card then using GSM module, the RF check whether the user is present around the location or not. If

the user is around the RF region, GSM send message to the authorized user. Otherwise the message can't be sent. The authorized user replied the password to the system to continue the transaction. If the user replied password does not match, he/she consider as an unknown person, then the door of the ATM gets closed and the cheating person could be arrested and the process will STOP.

Transmitter section

The block of ATM security system is consist of two sections that is RF transmitter and RF receiver sections. The transmitter section is shown in figure (2). In the RF Transmitter section consists of 4 data's, they are d0, d1, d2, d3 for each pins carries different frequencies. By using encoder we can select the data lines any of the four and transmitting the data frequencies through RF transmitter antenna.

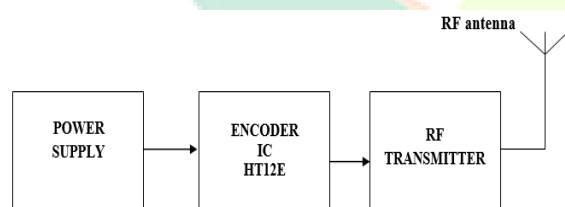


Figure: 2 Block Diagram of transmitter

Receiver section

In this receiver section shown in figure 3. In the system the RFID card is the input of micro-controller. The RF Receiver which receives the data from the RF transmitter, it also having 4RX pins depending upon the frequencies. The particular data line is get enabled. The decoder is used to decode the data from RFTX. When the card is swaps to the RFID reader the GSM module which

send message to the authorized user when the RF transmitter and the RF receiver signal matches.

If the signal is matched the GSM module send password to the respective mobile then the user consider as an authorized user. Otherwise the user is an unauthorized user to turn on the relay to close the door by a motor and the alarm also takes place.

RF antenna

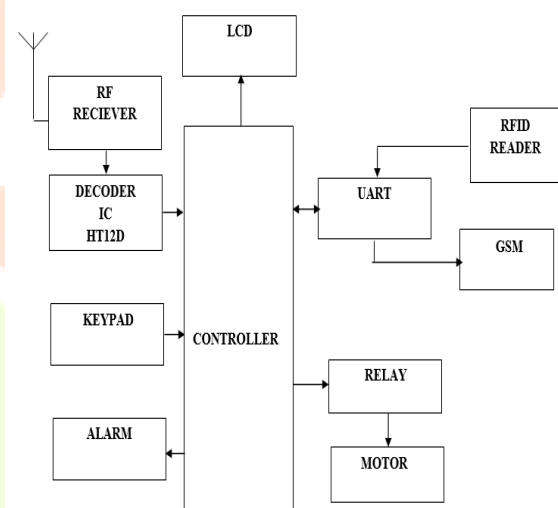


Figure: 3 Block Diagram of Receiver

III Experimental Results

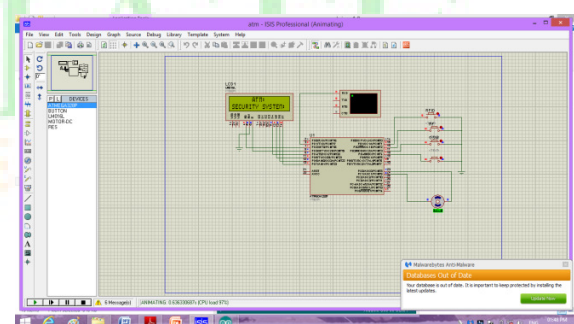


Figure (a): ATM security system

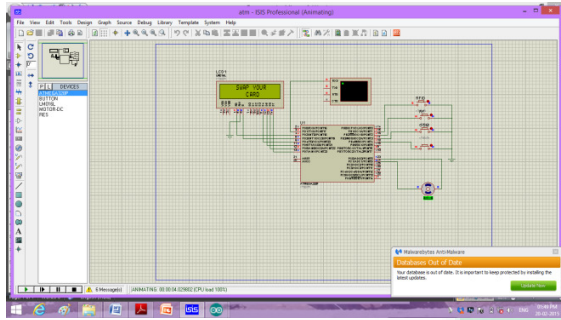


Figure (b): swap card

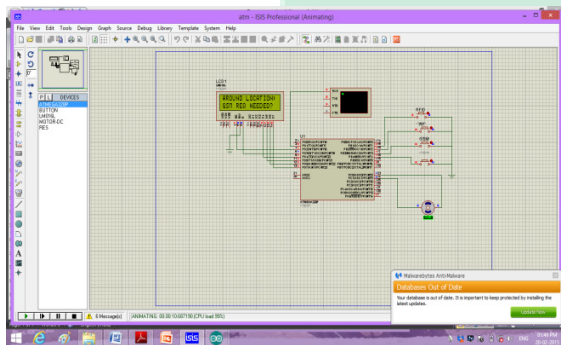


Figure (c): check GSM around the location

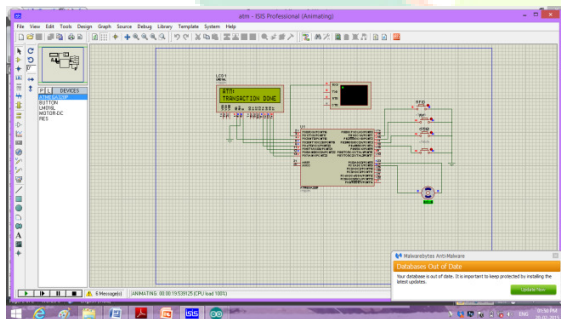


Figure (d): access done

IV Conclusion

The progress in science & technology is a non-stop process. New things and new technology are being invented. As the technology grows day by day, we can imagine about the future in which thing we may occupy every place. The growth in electronic transactions has resulted in a greater demand for fast and accurate user

identification and authentication. Access codes for buildings, banks accounts and computer systems often use PIN's for identification and security clearances.

The proposed system based on Atmega microcontroller is found to be more compact, user friendly and less complex, which can readily be used in order to perform several tedious and repetitive tasks. Though it is designed keeping in mind about the need for security purpose, it extended for other purposes such as industrial & research applications. Many people continue to choose easily guessed PIN's and passwords birthdays, phone numbers and social security numbers. This paper may solve this problem and useful for detecting a fraud. It is used in Bank sector and any ATM related security. It is also called as thief tracking system.

REFERENCES

- 1) S.P. Balwir, K.R. Katole, R.D. Thakare, N.S.P. anchbudhe, P.K. Balwir- Secured ATM Transaction System Using Micro-Controller Volume 4, Issue 4, April 2014 ISSN: 2277 128X.
- 2) Saatci, V avsanogh, M. Purser. ATM security System using fingerprint biometric identifier: An Investigative - Year of publishing paper 2009-2010 IEEE.
- 3) S.S, Das and J. Debbarma .Designing a Biometric Strategy (Fingerprint) Measure for Enhancing ATM Security in Indian e-banking System, vol.1, no. 5, pp.197-203, 2011.
- 4) R. Rasu, Krishna Kumar, M. Chandraman. Security for ATM Terminal Using Various

Recognition Systems-Volume 2, Issue 4,
October 2012.

5)Khatmode Ranjit P, Kulkarni Ramchandra
V, Ghodke Bharat S, Prof. P. P. Chitte, Prof.
Anap S. ARM7 Based Smart ATM Access
& Security System Using Fingerprint
Recognition & GSM Technology Volume
4, Issue 2, February 2014)

6) Asynchronous Transfer Mode Switching
(ATM) Version 2 CSE IIT, Kharagpur

7)Padmapriya V, PrakasamS.Enhancing
ATM Security Using Fingerprint and GSM
Technology,ISSN: 0975-8887, Vol. 80, pp:
43-46, Issue No. 16, October 2013.

8) H. Dutton and P. Lenhard, ATM
Textbooks [DL95] "Asynchronous Transfer
Mode (ATM) Technical Overview", 2nd
Ed., Prentice Hall, 1995.



IJARMATE
Your uli-MATE Research Paper !!!