

# Intellectual Bank Safekeeping System

Joshua Bapu.J

*Assistant Professor*

*Department of Electronics and Communication Engineering  
Dr.Sivanthi Aditanar College of Engineering,  
Tiruchendur, Tamilnadu, India*

S.R.Aryalekshmi

*Department of Electronics and Communication Engineering  
Dr.Sivanthi Aditanar College of Engineering  
Tiruchendur, Tamilnadu, India*

S.Deepika

*Department of Electronics and Communication Engineering  
Dr.Sivanthi Aditanar College of Engineering,  
Tiruchendur,Tamilnadu,India*

G.Kezia

*Department of Electronics and Communication Engineering  
Dr.Sivanthi Aditanar College of Engineerin,  
Tiruchendur,Tamilnadu,India*

P.Maria Jothi Jenifer

*Department of Electronics and Communication Engineering  
Dr.Sivanthi Aditanar College of Engineerin,  
Tiruchendur,Tamilnadu,India*

**ABSTRACT-Bank security is important for a number of reasons; one of those reasons includes providing secure banking for clients and protecting the bank from fraudulent behavior. The main aim of this project is to design a security system that provide efficient way of security for banks, by means of an advanced door lock system. It is used in the fields where security and secrecy is the primary constraint. The main objective is to design digital code lock which is used to reduce manual interference to the maximum extent along with the ultrasonic motion sensor. Here users are given with separate passwords by means of GSM, when they use their RF-IDS. If any of the users want to open the door or locker then he needs to enter his password in the system correctly, then the system sends a message to the user automatically. This message is sent through a G S M Modem. By this System we provide advanced Security in Banks.**

## I. INTRODUCTION

Increasing incidence of crimes against banks has necessitated a serious re-look at the security arrangements and guidelines followed by the banks. Increase in anti social activities is a cause of concern as the banks are considered soft targets by criminal. The prevailing crime scenario demands compatible, efficient and reliable security and safety measures. In this security system the specific persons can only enter; by using this embedded system we can give access to the authorized people through the finger print modules and keypads. The system is programmable we can change the data of the authorized people in the data base of the embedded system. We can access the data on the embedded system on to computer. There is no control of the cash delivery motor by the authenticated user. This is the main disadvantage. So to overcome this, our project has been developed.

## II. PROPOSED SYSTEM

### 2.1 Block diagram of proposed system-

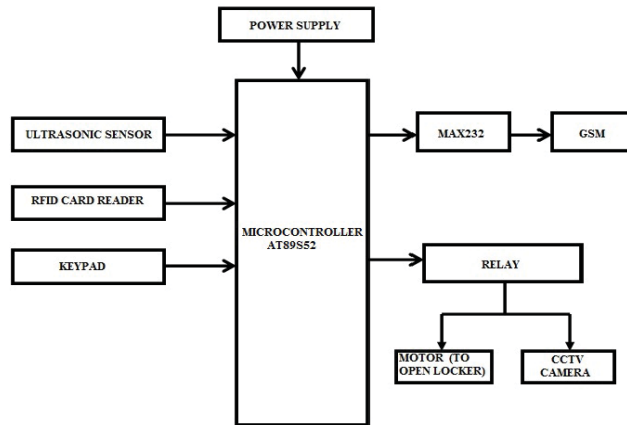


Figure 1. Block diagram

The power required by the microcontroller (5V) is given through the power supply circuit. The power supply circuit is used to convert the 230V AC supply into 5V DC supply by using the step-down transformer and bridge rectifier arrangement. The core of the system is microcontroller which includes matrix keyboard, CCTV camera, LCD. The ultrasonic sensor is used to detect any motions inside the locker room. An RFID (Radio-frequency identification and detection) reader is a device which is used to communicate with RFID tags by receiving and transmitting signals. RFID reader is connected to the microcontroller. GSM module will be connected to the microcontroller through the MAX232. The relay circuit directly connected to the microcontroller that is used to driven the motor and CCTV camera.

### 2.2 Concept Description-

When there is any motion near the locker, the ultrasonic motion sensor will detect it and its output is given to the CCTV camera. The user is provided with an RF-Id card which will generate a password when it is swiped. The generated password is sent to the user's mobile through GSM. The user has to enter that password so that he/she can access the locker. Each and every time when the user accesses his/her locker, one message will be sent to his/her mobile. So that the accessing of lockers by the unauthorized user can be prevented. Thus a multilevel security can be provided to the locker system.

### 2.3 AT-89S52-Architecture

ATMEL 89S52 is the heart of the circuit. This device is a Single-Chip 8 bit Microcontroller manufactured and is a derivative of the 89S52 microcontroller family. The device has four 8-bits I/O ports, three 16-bitt timer/event counters, a multisource, and four -priority-level, nested interrupt structure, an enhanced UART and on-chip oscillator and timing circuits.

P1.0	1		40	VCC
P1.1	2		39	P0.0(AD0)
P1.2	3		38	P0.1(AD1)
P1.3	4		37	P0.2(AD2)
P1.4	5		36	P0.3(AD3)
P1.5	6		35	P0.4(AD4)
P1.6	7		34	P0.5(AD5)
P1.7	8		33	P0.6(AD6)
RST	9		32	P0.7(AD7)
(RXD)P3.0	10	AT89S52	31	EA/VPP
(TXD)P3.1	11		30	ALE/PROG
(INT0)P3.2	12		29	PSEN
(INT1)P3.3	13		28	P2.7(A15)
(T0)P3.4	14		27	P2.6(A14)
(T1)P3.5	15		26	P2.5(A13)
(WR)P3.6	16		25	P2.4(A12)
(RD)P3.7	17		24	P2.3(A11)
XTAL2	18		23	P2.2(A10)
XTAL1	19		22	P2.1(A9)
GND	20		21	P2.0(A8)

Figure 2.Pindigram

## 2.4 ULTRASONIC SENSOR

This Ultrasonic Sensor Circuit consists of a set of ultrasonic receiver and transmitter which operate at the same frequency. When something moves in the area covered the circuit's fine balance is disturbed and the alarm is triggered. The ultrasonic circuit is very sensitive and can be adjusted to reset itself automatically or to stay triggered till it is reset manually after an alarm.

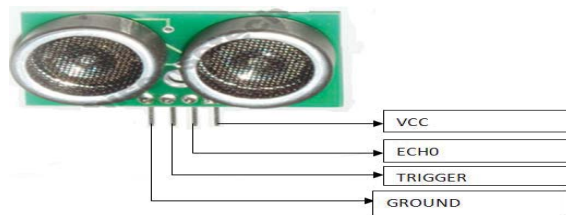


Figure 3.Ultrasonic sensor

## 2.5 RF-ID

**RFID** is the use of a wireless non-contact system that uses radio-frequency electromagnetic fields to transfer data from a tag attached to an object, for the purposes of automatic identification and tracking. Some tags require no battery and are powered and read at short ranges via magnetic fields. Others use a local power source and emit radio waves (at radio frequencies). The tag contains electronically stored information which may be read from up to several meters (yards) away. Purpose of radio frequency identification and detection system is to facilitate data transmission through portable devices known as tag that is read with the help of RFID reader.

## 2.6 CCTV CAMERA

As the name implies, Closed Circuit Television (CCTV) is a system in which the circuit is closed and all the elements are directly connected. This is unlike broadcast television where any receiver that is correctly tuned can pick up the signal from the airwaves. Directly connected in this context includes systems linked by microwave, infrared beams, etc. This article introduces the main components that can go to make up CCTV systems of varying complexity. CCTV camera systems include one or more video cameras which are used to send on video images and

audio data to a monitor (larger security systems feature an entire bank of security monitors). Essentially, these CCTV camera systems use cameras to transmit a signal to a main hub which then records that data for later viewing or for live viewing if you have full time security personnel on your premises.

### 2.7 GSM

GSM is considered as highly efficient communication through the mobile which will be useful in industrial controls, automobiles, and appliances which would be controlled from anywhere else. It is also highly economic and less expensive. Global System for Mobile (GSM) is a second generation cellular standard developed to cater voice services and data delivery using digital modulation. GSM (Global System for Mobile communication) is a digital mobile telephony system. It uses a variation of time division multiple access (TDMA) and is the most widely used of the three digital wireless telephony technologies (TDMA, GSM and CDMA). GSM digitizes and compresses data, then sends it down a channel with two other streams of user data each in its own times slot . It operates at either 900 MHz or 1800MHz frequency band.

### III. EXPERIMENT AND RESULT

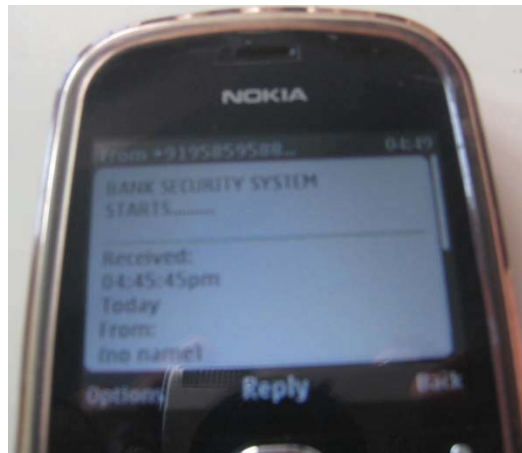


Figure 4. Bank Security System initialization

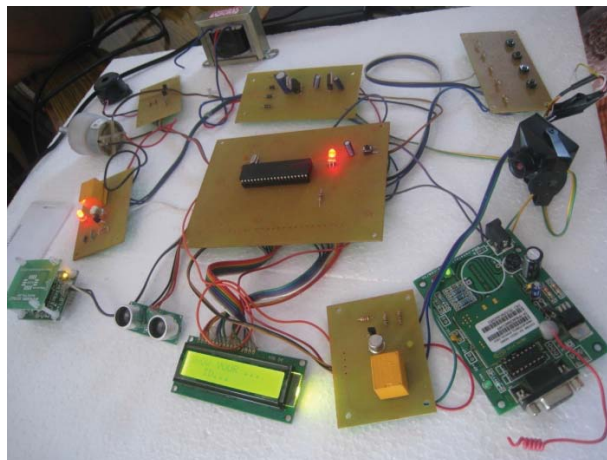


Figure 5. After detection process

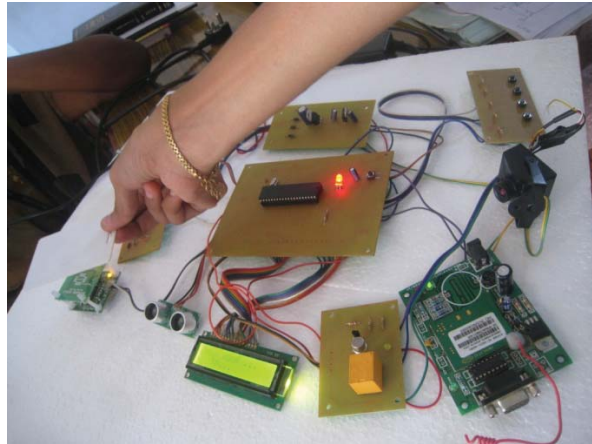


Figure 6. Showing of RF-ID Tag

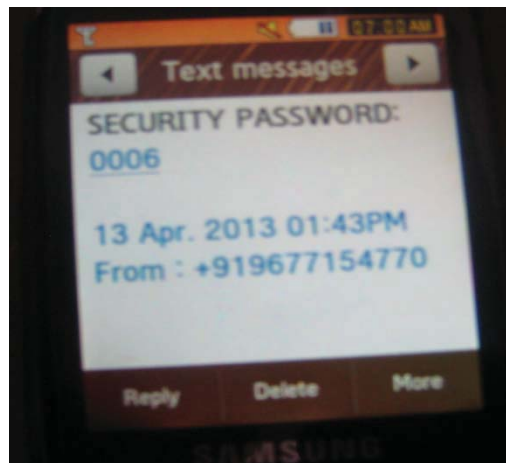


Figure 7. Security Password through GSM

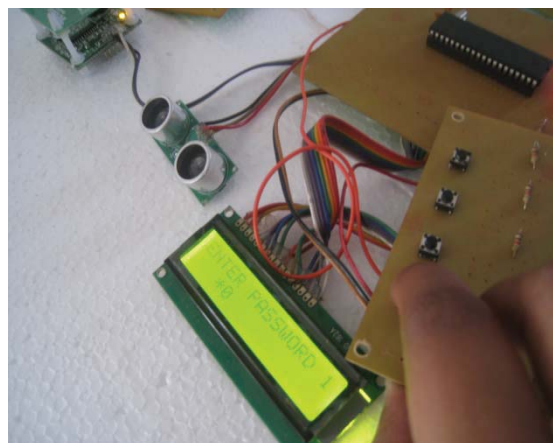


Figure 8. Entering the password

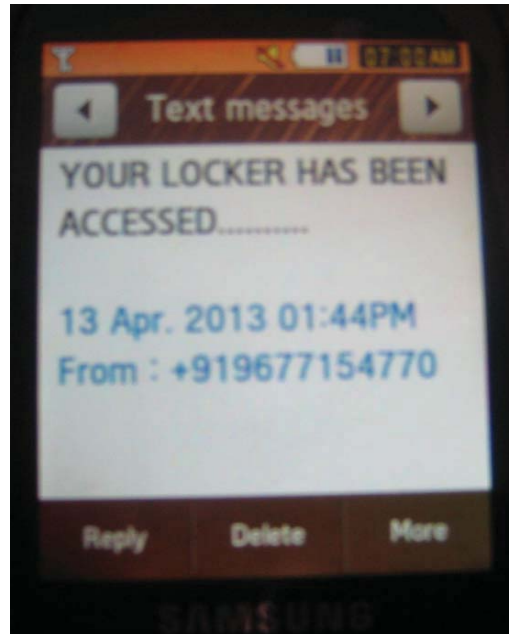


Figure 9.Message after accessing the locker

#### IV.CONCLUSION

Thus our project provides new revolution in modern world. We can reduce theft in bank locker by providing full security to it. Therefore the antisocial crimes in banks can be controlled by our project. By implementing our project the bank larceny can be avoided and so it will provide efficient security in banks. The concept can be developed further by increasing the range of controller and interfacing GSM module in output side to provide more security.

#### REFERENCES

- [1] Journal: "Embedded for you-Emerging Developments in RFID Security" Published in- July/Aug 2008, Page no:7
- [2] Chapter-1L01: "Embedded Systems ", Raj Kamal, Publication: McGraw-Hill Education 9
- [3] Journal: "Electronics For You -RFID Testing Challenges for Complex RF Environment", Published in –October 2010, Page no: 99.
- [4] Website-<http://www.engineersgarage.com/microcontroller/8051projects>
- [5] <http://www.engineersgarage.com/electronic-components/max232-datasheet>
- [6] Janice Gillispie Mazidi, Rolin D.McKinlay, Third edition(2007), The 8051 Microcontroller and Embedded Systems Using Assembly and C.Pearson Edition
- [7] Motion Based Security Alarming System for Video Surveillance.
- [8] SMS Based Wireless Home Appliance Control System (HACS) for Automating Appliances and Security.
- [9] Journal "Home security systems" –Electronics For You.
- [10] <http://www.bankinfosecurity.in/>
- [11] <http://www.atmmarketplace.com/whitepapers/intro/104/Bank-Branch-Security-in-the-21st-Century>
- [12] Design of Auto-guard System Based on RFID and Network