**ATM Safe Electronic Combination Lock Control System Based on Raspberry pi**

**Abstract**

The ATM Safe electronics combination lock control System using raspberry pi, Finger print identification module, GPRS and Vibration sensor. Bank personnel who adds money is authorized operating authorization by the integrated management system of upper machine, sending a signal to notify the hand-held MCU to send packets in the authorized time after verification of hand-held fingerprint identification module, and the packets are also passed into combination lock host through 2.4G wireless module. When packets are received, combination lock host will compare and extract in advance, and ID number of hand-held device will be verified first. The contents of the packet will be extracted if the ID is meeting the permission scope, and the unlock password in the package content and the authorization record time are recorded at the moment, which is going to be matched with the password generated by combination lock host. The host will directly drive electromagnetic equipment to play the lock tongue if the password is correct. The whole process of verifying the unlock password must be done within the scope of authorization time, generally half a day or a day, which is determined by the bank unit. That is to say, such a practice must be carried out within the control of management system. The lock is verified by actual operation in the bank that it can effectively improve the security of Bank ATM safe electronic password system, and it has a profound historical significance to promote the development of bank ATM safe electronic combination lock industry.

**INTRODUCTION**

The bank ATM safe lock has been a high-end product in financial machine. With the improvement of intelligent embedded technology, the lock system which offers cash box reliable protection is gaining the favour of the big Banks in term of its simple operation and high reliability, and now in the rapid development of China it has a large market demand. In view of the mechanical locks used by financial industry cannot meet the needs of banking security and reliability now. So a new product which can improve the safety of the locks meanwhile taking operating convenience for bank managers into account needs .This new type of ATM safe lock system is mainly composed of three components which are electronic combination lock host, hand-held set intelligent key and host computer.

EXISTING SYSTEM

In the ATM center they use only camera for live footage and replay footage if anything goes wrong. They can identify the thieves by using the footage.

And to withdraw the money the only authentication is pin Number which is provided along with the ATM cards. But now a day the hackers are hacking the pin number and other details of the person easily. The Four digits Pin Number is not sufficient for protecting the money from the hackers. In ATM they also require the Staff for most of the ATM. It again not well enough to protect the ATM machine from both thieves and hackers.

EXISTING SYSTEM DISADVANTGE

* Thieves are looting the money easily
* Hackers can able to hack the Accounts
* Require human protection
* Authentication is not enough
* No automatic alert system.

PROPOSED SYTEM

In the proposed ATM system we are using raspberry pi, GSM/GPRS,

Fire sensor and vibration sensor and finger print module. By using this we can monitor the ATM live feedback and Extra protection by OTP and finger print. In this system we can protect ATM from intruder by using fire and vibration sensor. When the intruder attempt to break or try to move the system activate and send the signal to the Banks. And protect from the hacker by using biometric scanner and OTP. By using this system we can provide better protection to the ATM centre. And the account money also having better protection from the hackers.

PROPOSED SYTEM ADVANTAGE

* Better protection.
* Safe biometric lock
* OTP protection
* Fire and Vibration sensor Protection.

BLOCK DIAGRAM

KEYPAD

BUZZER

POWER SUPPLY

GSM/GPRS

FINGER PRINT SENSOR

FIRE SENSOR

VIBRATION SENSOR

RASBPERRY PI

HARDWARE REQUIREMENT

* RASBPERRY PI
* FINGER PRINT SENSOR
* GSM/GPRS
* KEYPAD
* BUZZER
* FIRE SENSOR
* VIBRATION SENSOR

SOFTWARE REQUIREMENT

* PYTHON