



## Anti-Theft ATM Machine Using Vibration Detection Sensor

**M. Ajaykumar\****M.Tech (S.E.) & SNIST, Hyderabad  
India***N. Bharath Kumar***B.Tech-CSE Department & JNTU, Hyderabad  
India*

**Abstract -** This paper provides security system for ATM machines. Now a days there is no particular security system for ATM machines. The only security system provided at the ATM centers is ATM card detector near the doors. If the inserted card is authorized then the door will open automatically

**Keywords –** GSM: global system for mobile communication, ATM: Automated Teller Machine, vibration sensors, Microcontroller, ADC

### I. INTRODUCTION

Now a days, there is no proper security for ATM machines. Robbery of the ATM machines has been increased widely. By using the existed technology ATM machines are not safe in order to provide proper security for money. So it is proposed a new technology which can overcome this problem. Vibration detection sensors, microcontroller and GSM modem are used here to make up the problem.

### II. EXISTING SYSTEM

Presently the ATM machines have only one security system. It only provides security to the entrance door itself, by placing ATM card detectors near the door. This technology exists in Few ATM centers only.

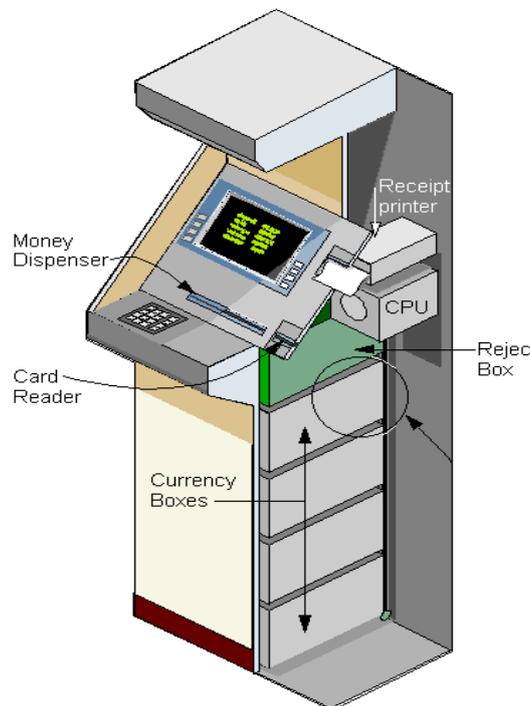


Figure 1: ATM Machine

### III. PROPOSED WORK

It Provides security for the ATM machine itself. When the attacker try to damage the ATM machine vibration detection sensors gets activated. A message is passed to the nearby police stations with the help of GSM modem.

#### GSM Modem

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. While these GSM modems are most frequently used for sending and receiving SMS and MMS messages (shown in Figure 2).

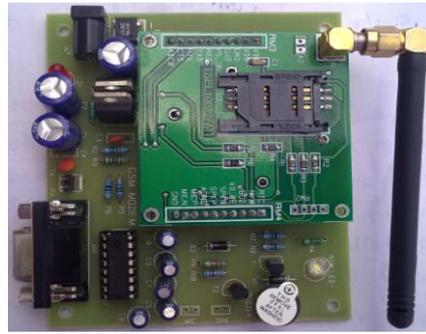


Figure2: GSM Modem

### Microcontroller

The AT89C51 is a low-power; high-performance CMOS 8-bit microcontroller with 4K bytes of Flash Programmable and erasable read only memory (PEROM). It is heart of our project. Fully Static Operation: 0 Hz to 24 MHz it has 32 Programmable I/O Lines it has two 16-bit Timer/Counter.

### Vibration Sensor

In engineering, the applications of vibration sensor are widely used, so it caused by a high degree of importance about its research and development in the world. At present, with the development of science and technology, the shortcomings of vibration sensors continue to be overcome; measurement accuracy and increasing the sensitivity range of applications are increasingly being used.

### Proposed Features:

- 1) It provides security for the ATM machine itself. When the attacker try to damage the ATM machine vibration detection sensors gets activated. A message is passed to the nearby police stations with the help of GSM modem. By using this technology attacks over the ATM machines can be overcome. The attackers can be caught easily.
- 2) ADC means Analog to Digital Converter. Here we have an analog input at pin6. And we have to convert it to digital output by giving certain set of commands to microcontroller to control ADC. By following steps one can convert analog data to digital data. Make CS (Chip Select) pin of ADC Low. Make a Low to High Transition on WR (Write) pin of ADC. Wait for 110 micro sec for Analog to Digital Conversion. Make RD (Read) pin Low. Copy the 8 bit Digital data. Make RD pin High for next reading. Vibration detector-vibration analysis [2] Holroyd manufacture a range sensors and accessories which are compatible with our vibration detector measurement and analysis equipment. This includes structural monitoring and remote monitoring accessories for vibration sensors (shown in figure 3).



Figure 3: Vibration Detector

## IV. BLOCK DIAGRAM

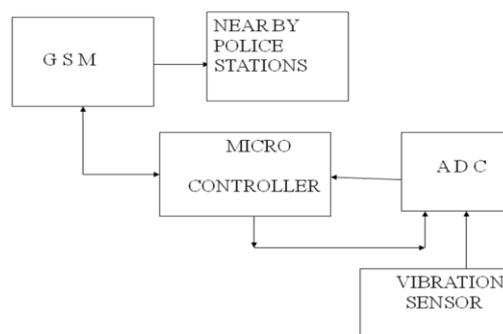


Figure 4: Block diagram of proposed work

## V. RESULTS

Continuous detection of vibrations can be done. A message is passed to the nearby police stations. The attacker can be caught easily. ATM robberies can be overcome.

## VI. CONCLUSIONS

By using this anti theft ATM machine, robberies of ATM machine can overcome, the theft can be caught easily. With the development of sensor technology, vibration sensors in the form will be varied, through the extensive application of electronic technology to achieve high overall performance further. Vibration sensors will play an

increasingly important role in scientific research and automate production process, and its development will profoundly affect the development of national economy and national defense science and technology.

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