

SECURITY AND SAFETY ENHANCED SYSTEM FOR ATM

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Abstract

The Idea of Security and safety Enhanced system for ATM project is born with the observation in our real life incidents happening around us. This project deals with prevention of ATM theft from robbery. .so overcome the drawback found in existing technology in our society. An embedded system is a special-purpose computer system designed to perform a dedicated function. Since the system is dedicated to specific tasks, design engineers can optimize it, reducing the size and cost of the product. Embedded system is fast growing technology in various fields like industrial automation, home appliances, automobiles, aeronautics etc. With the increase in the technology, misuse of the technology is also increased to the greater extend. Hence a need to prevent the security and secret as become a great importance now days. In this project we are going to implement a new technology microcontroller to enhance the security and safety of using ATM. The proposed system is disturbances and mishandling of the ATM machine is reported to the Bank Officials and the nearby Police station for taking the immediate action of the theft and the shutter will close automatically. Also, the alert system has been implemented in these unit.

Keywords : PIC16F887,GSM,DC MOTOR,STEPPER MOTOR

1. INTRODUCTION

In the technological world developed world, everyone uses ATM instead Of using banks. By using ATM, time consumption for taking money will be low. But at the same time security of the ATM becomes low, fraudulent Occurs very normally in ATM's . The banking activity has been simplified, however the related with financial organization has been increased in proportion to the ratio of spread out of automation and devices. Those crimes 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 2010 and also in the year 2011, 270,109. 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. The past year also (2016&2017) The ATM theft and robbery cases little bit increasing compare to other year's. So, in the proposed system many type of security measurement. Many type of methodologies were proposed in past. But those were not much efficient . since in this method , we do complete safety through PIC processor .which has multiple pipelines and makes more efficient than ARM processor .

2. PROPOSED METHODOLOGY BLOCK DIAGRAM

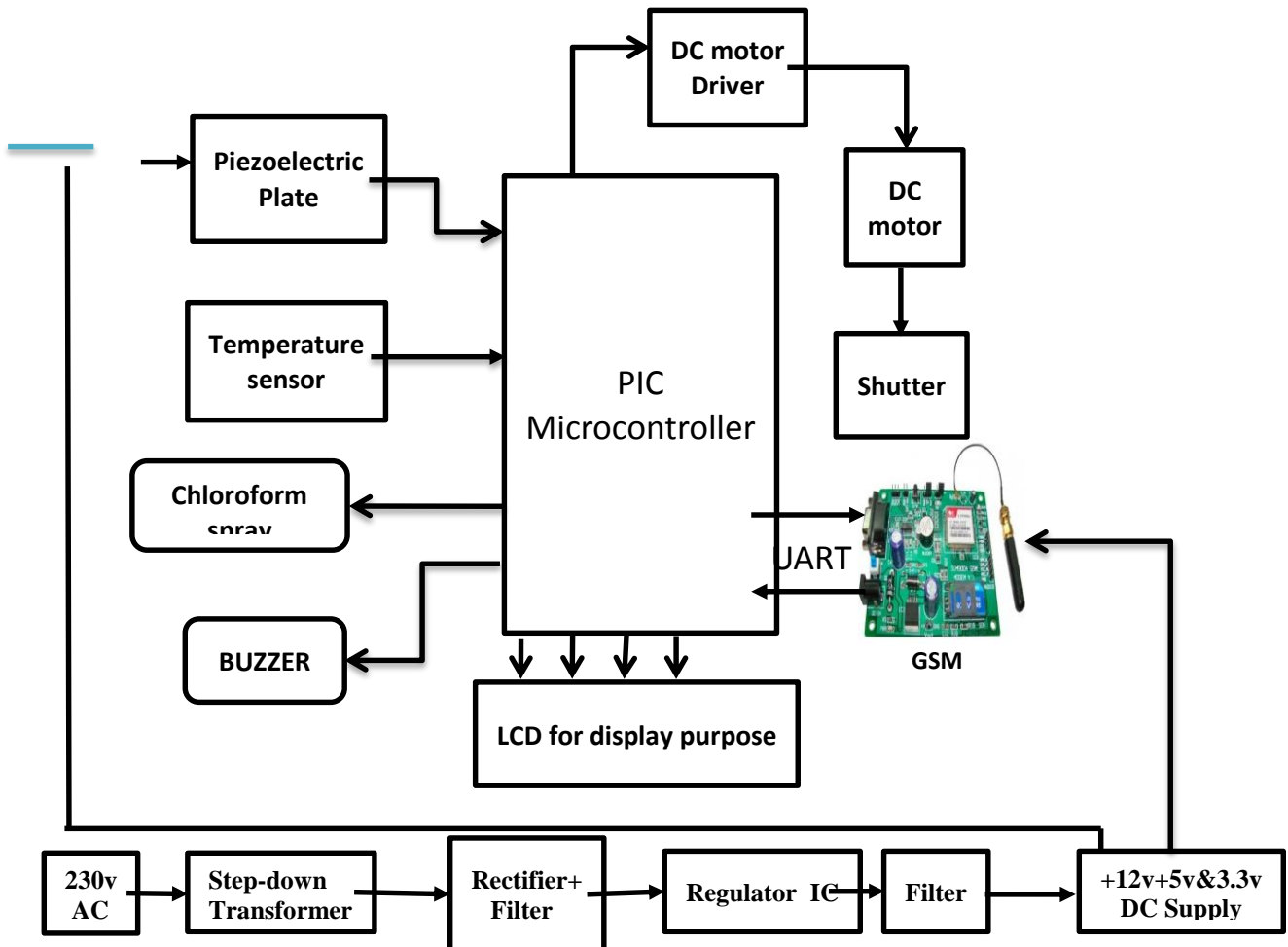


Figure:1 block diagram

Description

From the block diagram Whenever robbery occurs, Vibration sensor is used here which senses vibration produced from ATM machine. This system uses ARM controller based embedded system to process real time data collected using the vibration sensor. Once the vibration is sensed the beep sound will occur from the buzzer. DC Motor is used for closing the door of ATM. Stepper motor is used to leak the gas inside the ATM to bring the thief into unconscious stage. time and send the robbery occur time with the message to the nearby police station and corresponding bank through the GSM. Hear LCD display board using showing the output of the message continuously.

3. SOFTWARE DETAILS

CCS COMPILER

A compiler is a computer program (or set of programs) that transforms source code written in a programming language (the source language) into another computer language (the target language, often having a binary form known as object code). The most common reason for wanting to transform source code is to create an executable program. This integrated C development environment gives developers the capability to quickly produce very efficient code from an easily maintainable high level language. The compiler includes built-in functions to access the PIC microcontroller hardware such as READ_ADC to read a value from the A/D converter. Discrete I/O is handled by describing the port characteristics in a PROGRAM. Functions such as INPUT and OUTPUT_HIGH will properly maintain the tri-state registers. Variables including structures may be directly mapped to memory such as I/O ports to best represent the hardware structure in C.

PROTEUS 7.0 SIMULATION TOOL

Proteus 7.0 is a Virtual System Modelling (VSM) that combines circuit simulation, animated components and microprocessor models to co-simulate the complete microcontroller based designs. This is the perfect tool for engineers to test their microcontroller designs before constructing a physical prototype in real time.

4. HARDWARE DETAILS

- PIC microcontroller
- GPS
- GSM
- Buzzer
- SMPS
- DC Motor
- Stepper motor
- LCD

5. REUSLTS AND DISCUSSIONS

A. Starting stage of ATM machine

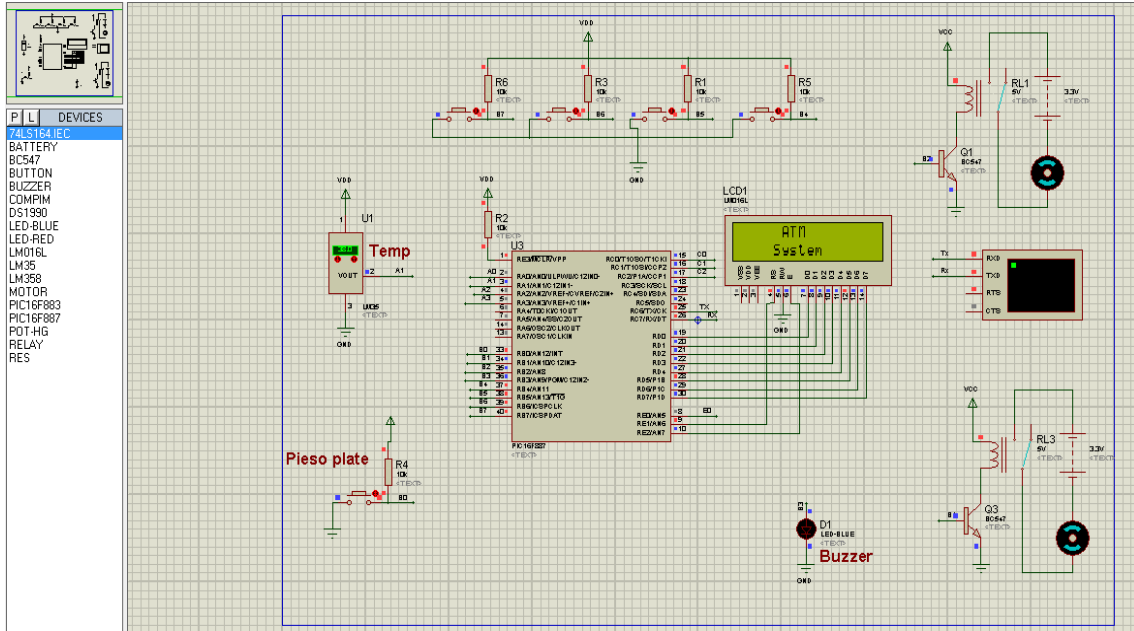


Figure: Starting stage of ATM machine

Form the above diagram ATM initial stage

B. Initial stage condition

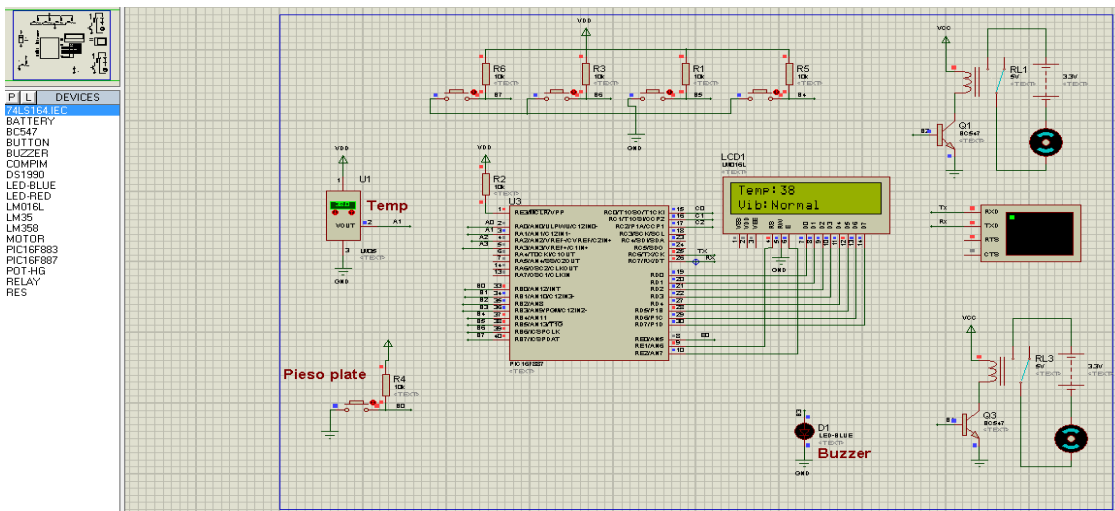


Figure: Initial stage condition

When indicate the normal temperature & vibration level

Hardware Output

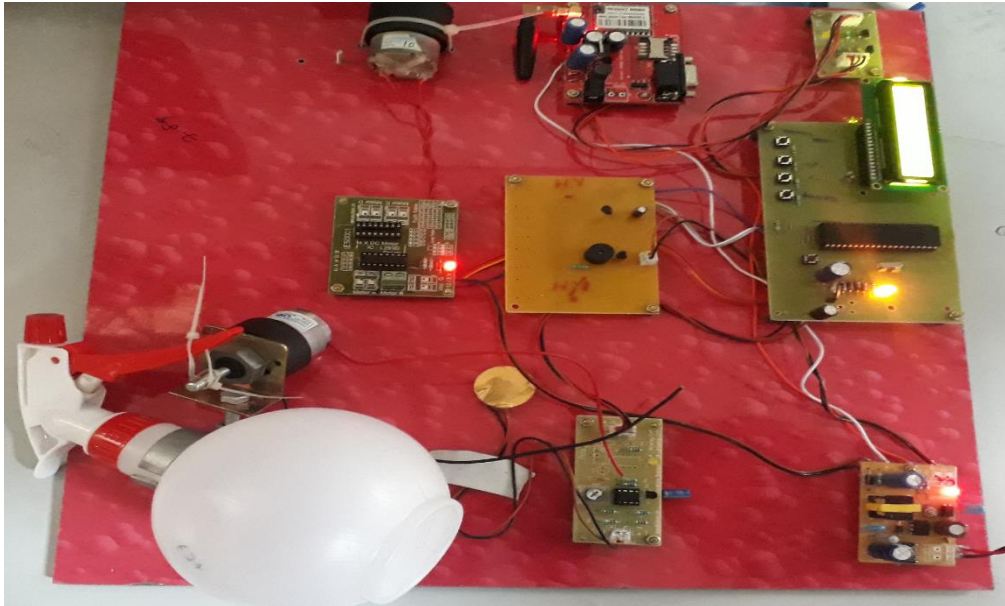


Figure: Hardware output

The vibration sensor which is placed in the ATM unit when senses any abnormal vibration the signals get amplified and send to the microcontroller. The microcontroller processes the signal and send it to the GSM and displays the message. At the same time the motors connected with the Motor driver I293D circuit will be performing certain tasks.

CONCLUSION

As we all know, these days most of the ATM has been attacked by the robberies. Also gradual increases the theft of ATM after the year by year. In this paper demonstrates, we have proposed an ATM protection unit which will provide a complete safety of ATM. If any theft tries to do any mischief inside the ATM, it will close the room and sprays an chloroform and sound produce from buzzer which will alert the outside person. This advanced research makes the ATM total secure and enter into the new generation of the artificial intelligence. The future scope can be done by 'scanning the card holder' and allowing to take money and 'interfacing aahdar card' with the bank will decrement the chance of the ATM robbery.

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