**RFID BASED SECURITY AND AUTHENTICATION SYSTEM**

A MINI PROJECT REPORT

*Submitted by*

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TO THE SAVITRIBAI PHULE PUNE UNIVERSITY, PUNE

*In partial fulfillment for the award of the Degree of*

**Bachelor of Engineering**

In

ELECTRONICS ENGINEERING

**Under the Guidance of**

**Prof. N. P. Mawale sir**



**DEPARTMENT OF ELECTRONICS AND TELECOMMUNICATION ENGINEERING**

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**APRIL- 2018.**



CERTIFICATE

This is to certify that the Mini Project Report entitled:

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Last but not the least, we wish to thank our parents for financing our studies in this college as well as for constantly encouraging us to learn engineering. Their personal sacrifice in providing this opportunity to learn engineering is gratefully acknowledged.

Thank you.

**DECLARATION**

We hereby declare that this submission is our work and that, to the best of our knowledge and belief, it contains no material previously published or written by another person nor material which has been accepted for award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgement has been made in the text.

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**ABSTRACT**

Now a days all the data of companies, colleges or any organizations is stored in digital format. So the safety of this precious data is the major concern of any authorities.

In this project, the low cost RFID Based Security and Authentication System has been designed with using PIC 18F4520. It checks the authorized or unauthorized person and displayed on LCD.

The concern is for the physical property and also for the intellectual property. So it is important to secure it from unauthorized or unwanted person.

For this reason, by installing this system in organization, only the authorized person with a valid RFID tag is allowed into the secured premises.

In such a way, unauthorized persons can be caught which will surely improve the security level in the organization.

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**Why we use 1N4007 Diodes?**

1N400X diodes are used as rectifiers for low frequency having big capacitance at the junction, other diodes have less capacitance value therefore they have quick ON –OFF time.

These 1N4007 diodes are usually slow. To measure the voltage drop across the diode connect a load resistance across the cathode terminal and other terminal of the load is connected to negative terminal of the battery. Then the drop across the diode is 0.7 volts.

**Regulator:**

The purpose of regulator is to maintain constant voltage. For positive voltage output use LM78XX, XX indicates value of output voltage and 78 indicates positive output. For negative voltage output use LM79XX, 79 indicate negative voltage and XX indicates value of output. To get positive 5V regulated output use LM7805.To get negative 5V regulated output use LM7905. To get positive 12V regulated output use LM7812

**Filtering:**

The output of the rectifier is pulsating DC. This pulsating DC is converted into pure DC using filter. The filter used in this circuit is LC filter, but practically we won’t use inductor because it is bulky. The value of capacitor depends upon the output voltage and output current. To calculate the value of capacitor the following formulae is used

Q = C x V equation (1)

Q = C x IR

Q = I x RC

Q = I x T equation (2)

Substitute equation (2) in equation (1)

I x T = C x V

C = (I x T) **/** V

Here output voltage is V = 5 DC and V= 12V DC

Here output current is I = 1 amps

**EM-18 RFID Reader:**

This module directly connects to any microcontroller UART or through a DB9 converter to PC. It gives UART/Wiegand26 output. This RFID Reader Module works with any 125 KHz RFIDtags***Specifications***

* 5VDC through USB (External 5V supply will boost range of the module)
* Current: <50mA
* Operating Frequency: 125Khz
* Read Distance: 10cm
* Size of RFID reader module: 32mm(length) \* 32mm(width) \* 8mm(height)

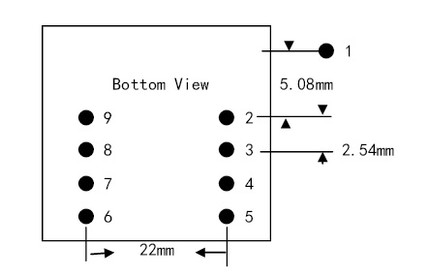
L293D Motor Drive:

The L293D is popular motor driver IC that is usable from 6 to 12 V at up to 1A total output current makes it such more convenient

**Features**

The L293D is a popular motor driver IC that is usable from 6 to12V, at up to 1A total output current. By itself, the IC is somewhat difficult to wire and use, but the Compact L293D Motor Driver makes it much more convenient to use.

**Board Special Features**

* Four motor direction indicator LEDS
* Schottky EMF-protection diodes
* Socket pin connectors for easy logic interfacing
* Enable pins are user accessible. 

**L298 Features**

|  |
| --- |
| http://www.nskelectronics.com/images/p113_0_00_02.jpg |

 1n4007







