

RFID based Security Access Control System

The project aims in designing a completely automated security access system for domestic and industrial applications. Security is the bigger concern for an individual or a firm. Recognizing the need of security we developed an automated security access system with user friendly access.

Automation is the most frequently spelled term in the field of electronics. The hunger for automation brought many revolutions in the existing technologies. One among the technologies which had greater developments is RF communications. The result of this is the RFID cards which transmit a unique identification number. This number transmitted by the RFID can be read with the help of a RF reader.

The authentication to the house/industry can be provided in full or limited depending on the RFID cards. The decisions like full access or limited access are taken by an onboard computer to which the RF reader is interfaced. The doors of the house/industry form the output module and are interfaced to the same onboard computer through a stepper motor.

This onboard computer consists of number of input and output ports. The onboard computer is commonly termed as micro controller. The input and output port of the controller are interfaced with different input and output modules depending on the requirements. In other words micro controller acts as a communication medium for all the modules involved in the project. The device also consists of graphical LCD which displays the information about doors open and close.

The main objectives of the project are:

1. RFID based authentication system.
2. Automatic opening of door when RFID tag matches.

This project provides exposure to the following technologies:

1. RFID technology.
2. Interfacing RF reader and microcontroller.
3. Embedded C programming for microcontroller.
4. Conversion of AC supply to DC supply.
5. Design of PCB.
6. GLCD interfacing and programming.

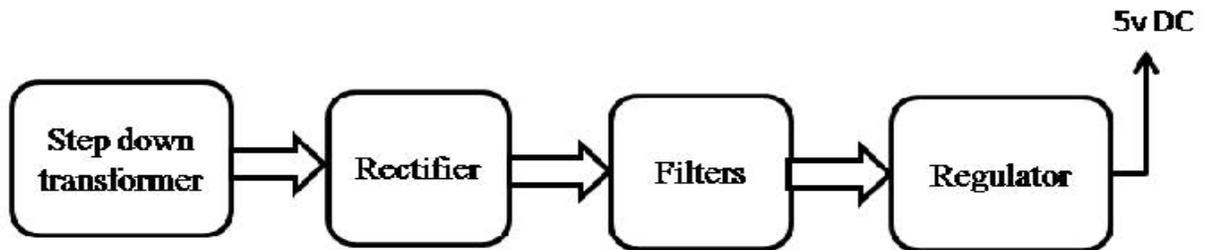
The major building blocks of this project are:

1. Regulated power supply.
2. RFID reader.
3. RFID tag.
4. Crystal oscillator.
5. Stepper motor with driver.
6. Microcontroller.
7. GLCD with driver.
8. LED Indicators.
9. Buzzer.

Software's used:

1. PIC-C compiler for Embedded C programming.
2. PIC kit 2 programmer for dumping code into Micro controller.
3. Express SCH for Circuit design.
4. Proteus for hardware simulation.

Regulated Power Supply:



Block Diagram:

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