HOME DOOR SAFEGUARD USING RFID (RADIO FREQUENCY IDENTIFICATION) 125 KHZ MICROCONTROLLERS HAVE AS BASE ATmega 328

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ABSTRACT

The purposes of making this home door safeguard using RFID (Radio Frequency Identification) 125 KHz microcontrollers have as base ATmega328 is to make an easy tool of home door safeguard, cheap, practice in the uses of increasing comfortable and safeness in opening home door without handle many kind of keys that maybe really annoying. This tool will detect/work after the RFID detect tag card which facing the door, which automatically will read tag card to open the breach-blocking the door in the form of solenoid.

The method which is used in making the this home safeguard using RFID (Radio Frequency Identification) 125 KHz microcontroller have as base ATmega328 is experimental. This method consist of some steps, they are (1) software, (2) the analysis of necessity, (3) the design of hardware and software, (4) the tool pretense, (5) the tool test and (6) the tool operational. The hardware is consists of (1) ATmega328 minimum system as the main controlled, (2) tag card as the key of opening door safeguard, (3) solenoid as the door's key.

Based on the test result it can be summarize that the door safeguard can works as good as the principle works that is planned. It is showed by all the series when it's work, RFID sensor is able to detect tag card with its database, the solenoid are able to open the keys when database tag card have been matched by the microcontroller. The percentage of error in measurement this solenoid is 15.8% and the percentage of the success is 84.2%, the percentage of error in measurement 13 pin is 9.8% and the percentage of the success is 91.2%, the percentage of error in measurement RFID module is 2% and the percentage of the success is 98%, the percentage of error in the regulator is 0% and the percentage of the success is 100%.

Key words: RFID Sensor, ATmega328, Tag Card, Home Safeguard.