

Unlock computer with RFID

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Introduction

I built this project because I wanted to make it easier for me to log into my computer. We have many types of verification methods these days, like password, pin, pattern, gestures, fingerprint recognition, face recognition and much more. It is going to be a device that securely unlocks the computer using a RFID tag.

General description

The user will have very high security without having to type the password. The Arduino Board and RFID reader will always be connected to the computer. All that is needed is to sweep the RFID tag over RFID reader to unlock the system. The computer will log in after the Arduino sends the UID of the RFID tag to the computer.

Block Diagram:



Hardware Design

Parts list:

- Computer
- Arduino Nano
- RC522 RFID module
- RFID tag/card
- Breadboard
- Wires
- 4N35 Optocoupler (Optional | used to boot up the computer)

Electric diagram:



Software Design

It is included the MFRC522 and SPI Arduino library.

In the void setup is initialized the serial, SPI communication and the RFID reader.

In the loop function is the search for the card. If the card is found, RFID tag data will be transferred to the system using serial print. This serial print value will be compared with the file that we placed earlier and if it a match the windows will unlock itself.

The Arduino code and the Windows Library can be found in the Download section.

Obtained results

[Youtube Video](#)

Conclusion

I am very happy with what I built. Now I can unlock my computer very securely.

Download

[Arduino Code](#)

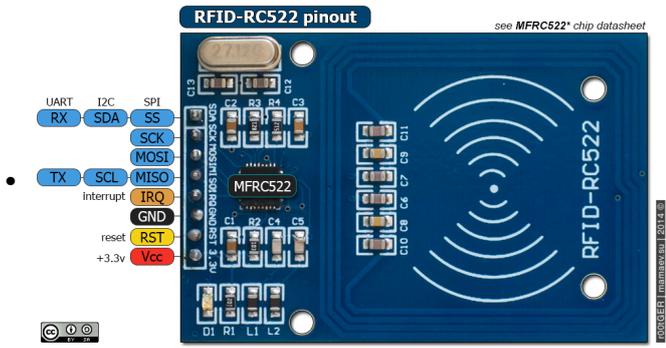
[Windows Library](#)

Journal

The project was built initially using an Arduino Pro Micro, but the board bricked. I chose Arduino Pro Micro for it's compatibility with "Keyboard.h" library. After the board gave up, I used an Arduino Nano. I had problems with the Arduino Nano seeing the Windows Library. After all, everything went smooth.

Bibliography/Resources

- [Arduino Nano Specifications](#)
- [Source of inspiration for Windows Library](#)



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