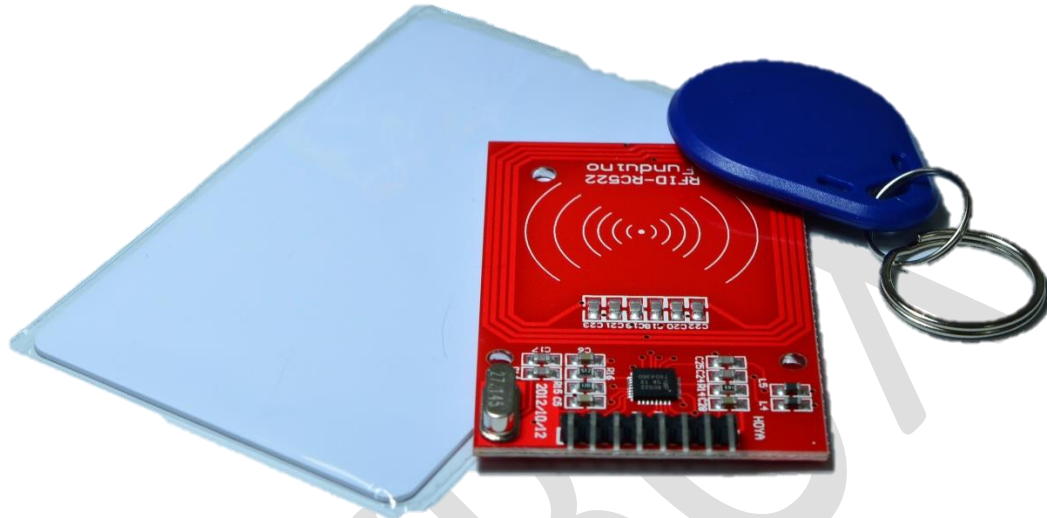


Keyes RFID RC522 Development Kit (Rev 1)



General Description

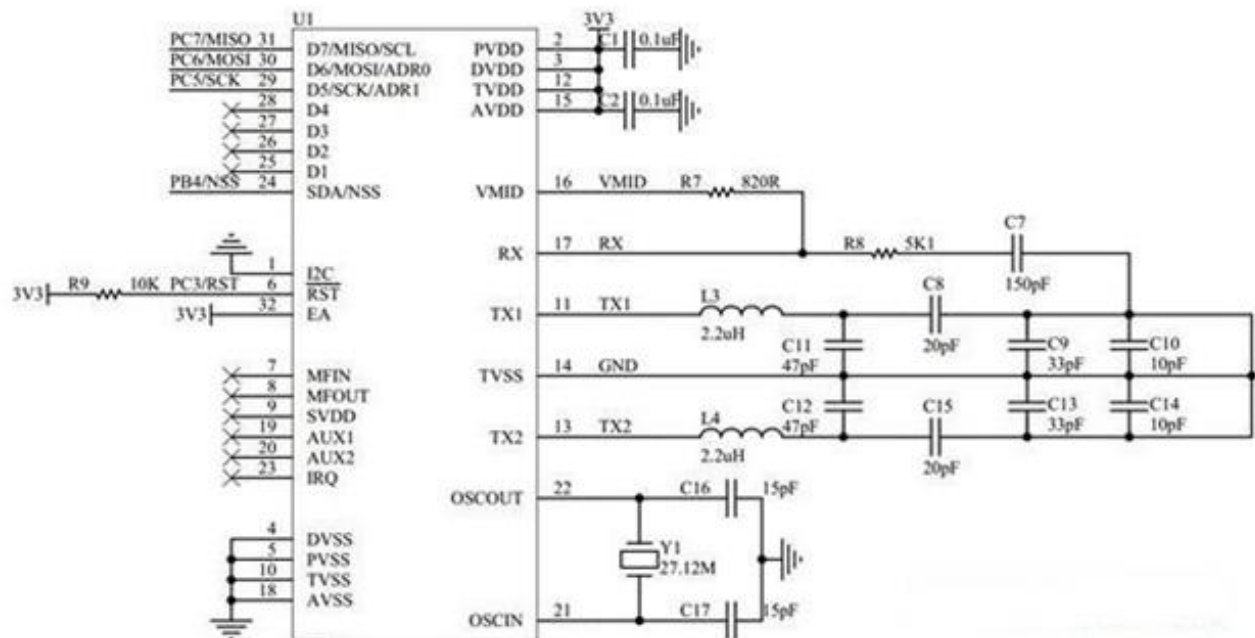
Keyes RFID RC522 Development Kit is a low cost and easy to use module suitable for equipment and advanced applications development that needs RFID application. RFID stands for Radio-Frequency Identification. The acronym refers to small electronic devices that consist of a small chip and an antenna. The chip typically is capable of carrying 2,000 bytes of data or less.

The module uses NXP's MFRC522 which is a highly integrated reader/writer IC for contactless communication at 13.56MHz. The MFRC522 reader supports ISO/IEC 14443 A/MIFARE mode. The MFRC522's internal transmitter is able to drive a reader/writer antenna designed to communicate with ISO/IEC 14443 A/MIFARE cards and transponders without additional active circuitry. The receiver module provides a robust and efficient implementation for demodulating and decoding signals from ISO/IEC 14443 A/MIFARE compatible cards and transponders. The digital module manages the complete ISO/IEC 14443 A-framing and error detection (parity and CRC) functionality.

Specifications

- Module Name: MFRC522
- Working current: 13—26mA/ DC 3.3V
- Standby current: 10-13mA/ DC 3.3V
- Working frequency: 13.56MHz
- Card reading distance: 0-50mm (RFID card), 0-30mm (RFID Key)
- Protocol: SPI
- Data communication Speed: Maximum 10Mbit/s
- Card types supported: Mifare1 S20, Mifare1 S50, Mifare1 S70
- Dimension: 40mm×60mm
- Working temperature: -25—80 degree
- Max SPI speed: 10Mbit/s

Schematic

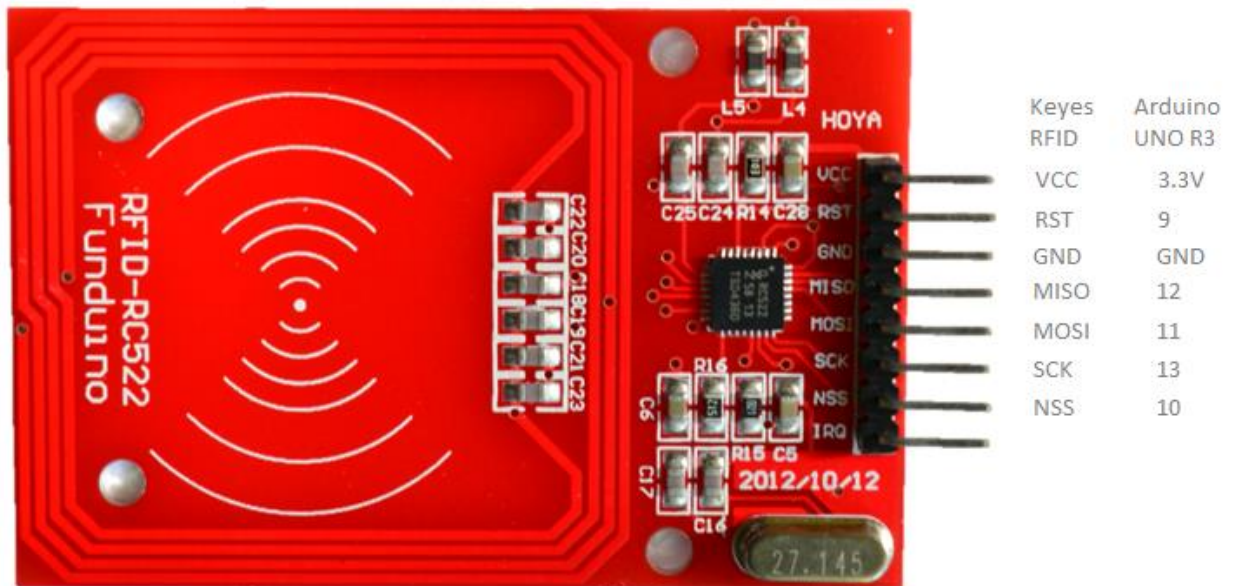


Using the module

You need:

- Arduino
- Keys RFID-RC522 Module
- Wire Connectors
- Breadboard

1. Connect the Keys RFID-RC522 Module to your arduino by following the pin connections shown below.



2. Enter this sketch to your Arduino IDE then click upload. You can also find this at RFID library examples. This program will read and display the RFID of the RFID enabled device into your Serial Monitor.

```
#include <SPI.h>
#include <RFID.h>

#define SS_PIN 10
#define RST_PIN 9

RFID rfid(SS_PIN, RST_PIN);

// Setup variables:
int serNum0;
int serNum1;
int serNum2;
int serNum3;
int serNum4;
```

```

void setup()
{
  Serial.begin(9600);
  SPI.begin();
  rfid.init();
}

void loop()
{
  if (rfid.isCard()) {
    if (rfid.readCardSerial()) {
      if (rfid.serNum[0] != serNum0
          && rfid.serNum[1] != serNum1
          && rfid.serNum[2] != serNum2
          && rfid.serNum[3] != serNum3
          && rfid.serNum[4] != serNum4
      ) {
        /* With a new cardnumber, show it. */
        Serial.println(" ");
        Serial.println("Card found");
        serNum0 = rfid.serNum[0];
        serNum1 = rfid.serNum[1];
        serNum2 = rfid.serNum[2];
        serNum3 = rfid.serNum[3];
        serNum4 = rfid.serNum[4];

        //Serial.println(" ");
        Serial.println("Cardnumber:");
        Serial.print("Dec: ");
        Serial.print(rfid.serNum[0], DEC);
        Serial.print(", ");
        Serial.print(rfid.serNum[1], DEC);
        Serial.print(", ");
        Serial.print(rfid.serNum[2], DEC);
        Serial.print(", ");
        Serial.print(rfid.serNum[3], DEC);
        Serial.print(", ");
        Serial.print(rfid.serNum[4], DEC);
        Serial.println(" ");

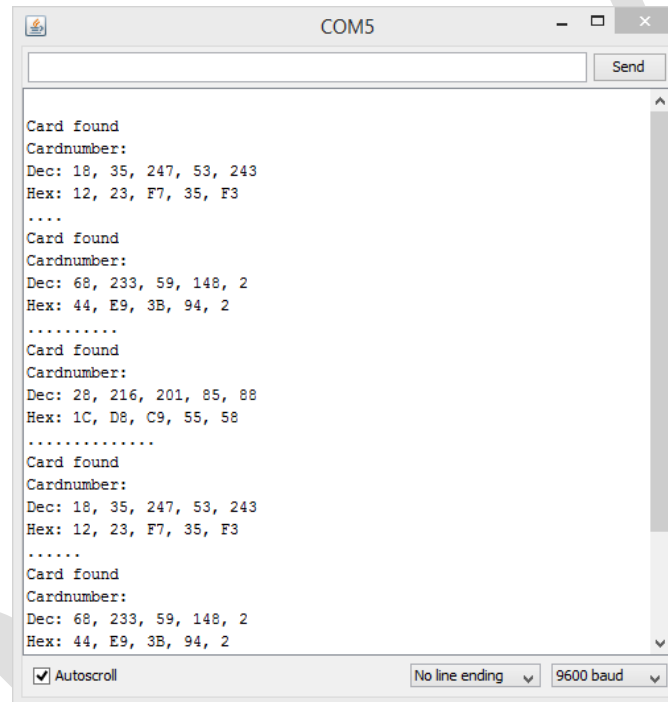
        Serial.print("Hex: ");
        Serial.print(rfid.serNum[0], HEX);
        Serial.print(", ");
        Serial.print(rfid.serNum[1], HEX);
        Serial.print(", ");
        Serial.print(rfid.serNum[2], HEX);
        Serial.print(", ");
        Serial.print(rfid.serNum[3], HEX);
        Serial.print(", ");
        Serial.print(rfid.serNum[4], HEX);
        Serial.println(" ");
      } else {
        /* If we have the same ID, just write a dot. */

```

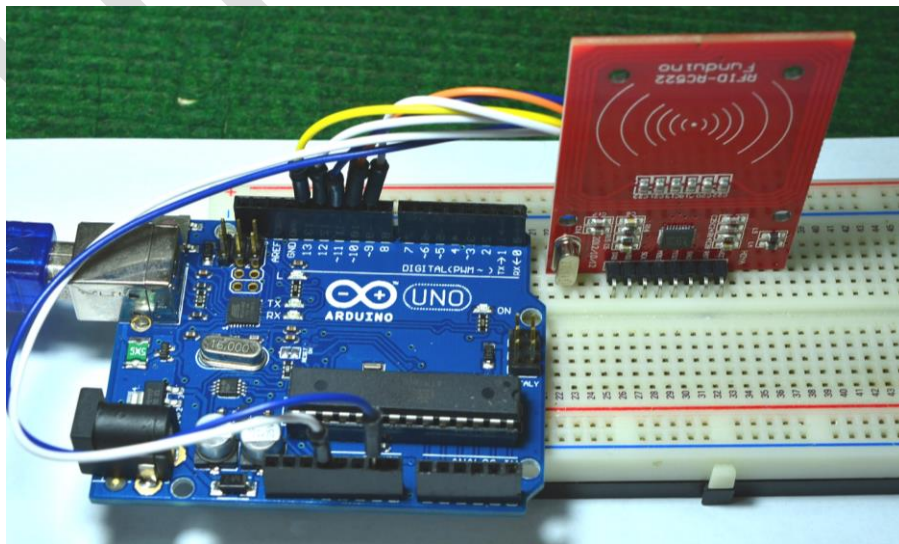
```
        Serial.print(".");  
    }  
}  
}  
  
rfid.halt();  
}
```

3. Now place the RFID card or RFID key near the module.

Results



Actual Setup



Sample Program

You already know the RFID tag of your card and key. So let's put a message on it. This might be easy but when you think of its application it's quite broad.

```
#include <SPI.h>
#include <RFID.h>

#define SS_PIN 10
#define RST_PIN 9

RFID rfid(SS_PIN, RST_PIN);

// Setup variables:
int serNum0;
int serNum1;
int serNum2;
int serNum3;
int serNum4;
String yourName;

void setup()
{
  Serial.begin(9600);
  SPI.begin();
  rfid.init();
}

void loop() {
  if (rfid.isCard()) {
    if (rfid.readCardSerial()) {
      if (rfid.serNum[0] != serNum0
          && rfid.serNum[1] != serNum1
          && rfid.serNum[2] != serNum2
          && rfid.serNum[3] != serNum3
          && rfid.serNum[4] != serNum4
      ) {
        /* With a new cardnumber, show it. */
        Serial.println(" ");
        Serial.println("Card found");
        serNum0 = rfid.serNum[0];
        serNum1 = rfid.serNum[1];
        serNum2 = rfid.serNum[2];
        serNum3 = rfid.serNum[3];
        serNum4 = rfid.serNum[4];

        yourName = String(serNum0)+String(serNum1)+String
(serNum2)+String(serNum3)+String(serNum4);
        if (yourName == "68233591482"){
          Serial.println("Hi Phillip!!!");
        }
        if (yourName == "183524753243"){
          Serial.println("Good Day Boss!");
        }
      }
    }
  }
}
```

```

    }
    if (yourName == "282162018588"){
        Serial.println("You can now make your own
project! have fun");
    }

    Serial.println("Cardnumber:");
    Serial.print("Dec: ");
    Serial.print(rfid.serNum[0], DEC);
    Serial.print(", ");
    Serial.print(rfid.serNum[1], DEC);
    Serial.print(", ");
    Serial.print(rfid.serNum[2], DEC);
    Serial.print(", ");
    Serial.print(rfid.serNum[3], DEC);
    Serial.print(", ");
    Serial.print(rfid.serNum[4], DEC);
    Serial.println(" ");
}
else {
    /* If we have the same ID, just write a dot. */
    Serial.print(".");
}
}
}
rfid.halt();
}
}

```

Result

```

COM5
| Send
Card found
Hi Phillip!!!
Cardnumber:
Dec: 68, 233, 59, 148, 2
.....
Card found
Good Day Boss!
Cardnumber:
Dec: 18, 35, 247, 53, 243
.....
Card found
You can now make your own project! have fun
Cardnumber:
Dec: 28, 216, 201, 85, 88
..
Card found
Good Day Boss!
Cardnumber:
Dec: 18, 35, 247, 53, 243
.....

```

Autoscroll

 No line ending v
 9600 baud v