MFRC-522 RFID NFC Reader with card and tag

Technical Manual Rev 1r0

MFRC-522 RFID NFC Reader with Card and tag is based on RF module RC522 near field communication module. With operating frequency of 13.56Mhz where you can read and write a tag. Compatible in all gizDuino/Arduino Microcontroller boards.

General Specifications:

Input Supply Voltage: 3.3 VDC
Working Current: 13 to 26mA
Part Number: MF522-ED
Card reading distance: 0 to 60mm
Interface: SPI communication
Data Communication speed: 10Mbit/s Max.
Operarting Frequency: 13.56Mhz
Supported card types:
Mifare1 S50, Mifare1 S70, Mifare UltraLight, Mifare Pro, Mifare Desfire
Weight: 8g
Dimensions: 60mm x 40mm

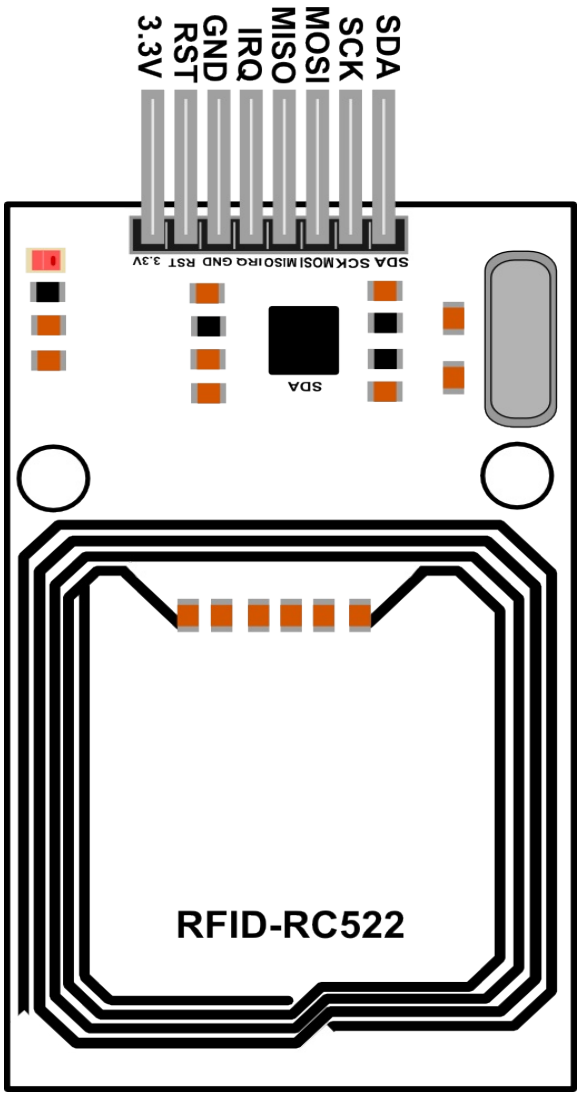
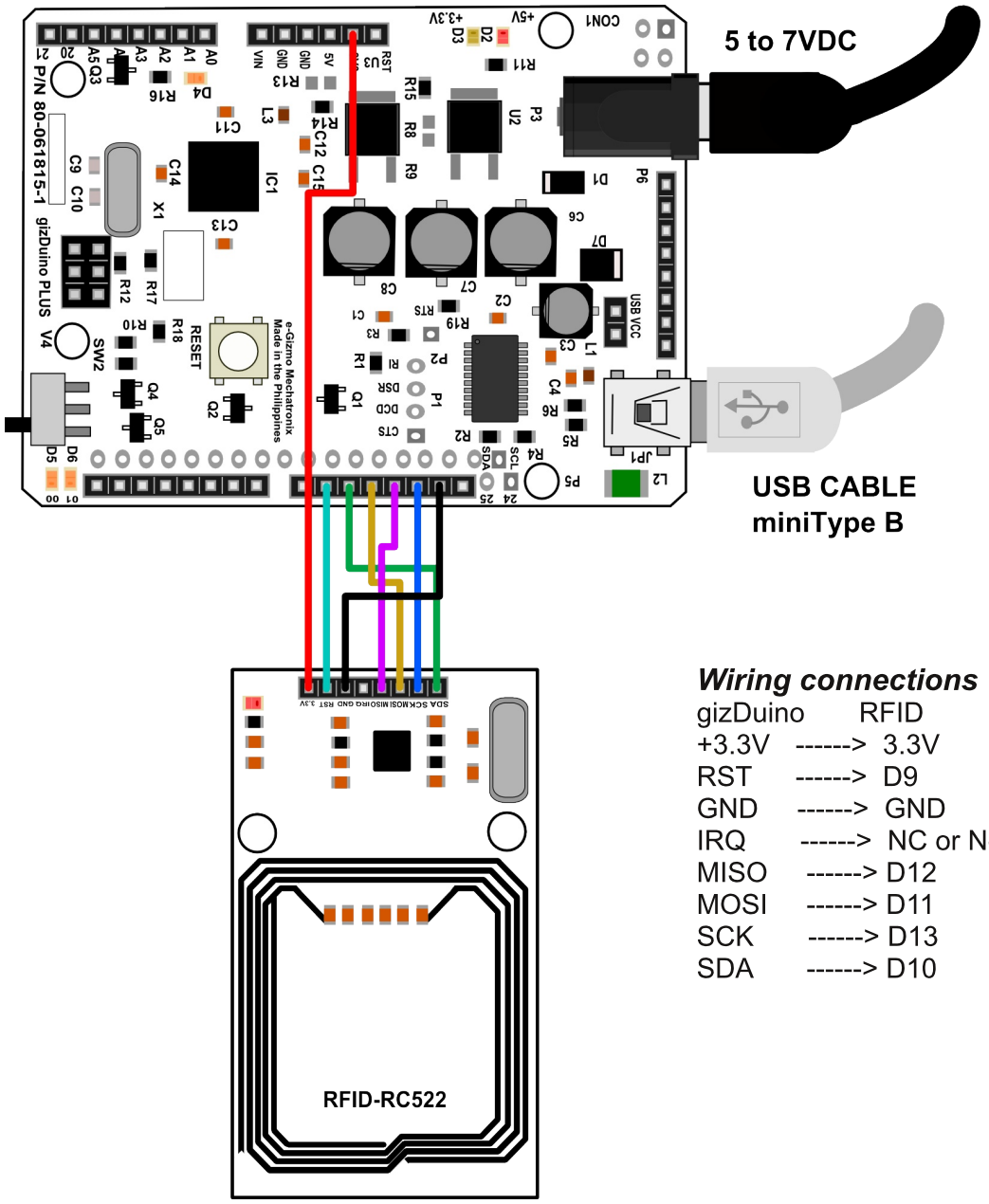


Figure 1. PCB Major Presentation



Wiring connections

gizDuino RFID
+3.3V ------> 3.3V
RST ------> D9
GND ------> GND
IRQ ------> NC or No connection
MISO ------> D12
MOSI ------> D11
SCK ------> D13
SDA ------> D10

Figure 2. Sample connections

Upload this code to the gizDuino PLUS Microcontroller. then Open the Serial Monitor.

Note: For advanced user only!
MF522 RFID write data to a tag
Please watch the video link.
At your own risk, if try to change the data on the tag/card.
https://www.youtube.com/watch?v=uihjXyMuqMY

```
/*
 E-GIZMO NFC RFID-RC522 RF IC Card 13.56Mhz

 SAMPLE CODE TO READ A CARD
 USING A MFRC522 READER ON YOUR SPI INTERFACE.

 NOTE: DOWNLOAD THE RFID LIBRARY.

 WIRE CONNECTIONS:
 GIZDUINO PLUS   RFID-RC522
 =============   ============
 SS   ------> PIN 10
 MOSI ------> PIN 11 /ICSP-4
 MISO ------> PIN 12 /ICSP-1
 SCK  ------> PIN 13 /ICSP-3
 RST  ------> PIN  9

 CODES BY E-GIZMO MECHATRONIX CENTRAL
 http://www.e-gizmo.com
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 */
//LIBRARY
#include <SPI.h>
#include <RFID.h>

#define SS_PIN 10
#define RST_PIN 9

RFID rfid(SS_PIN,RST_PIN);

//SERIAL NUMBER CARD
int serNum[5];
int cards[][5] = {
  {5,117,21,219,190} // 5 117 21 219 190

};

bool access = false;
```

Figure 3. Sample Code

```
void setup(){
  //INITIALIZE SERIAL COMMUNICATION
  Serial.begin(9600);
  SPI.begin();
  rfid.init();


}

void loop(){

  if(rfid.isCard()){
    //READ THE RFID CARD INFO
    if(rfid.readCardSerial()){
      //PRINTS THE SERIAL NUMBER
      Serial.print(rfid.serNum[0]);
      Serial.print(" ");
      Serial.print(rfid.serNum[1]);
      Serial.print(" ");
      Serial.print(rfid.serNum[2]);
      Serial.print(" ");
      Serial.print(rfid.serNum[3]);
      Serial.print(" ");
      Serial.print(rfid.serNum[4]);
      Serial.println("");

      for(int x = 0; x < sizeof(cards); x++){
        for(int i = 0; i < sizeof(rfid.serNum); i++ ){
          if(rfid.serNum[i] != cards[x][i]) {
            access = false;
            break;
          }
          else {
            access = true;
          }
        }
        if(access) break;
        delay(100); // DELAY TO READ A CARD (NOTE: YOU CAN COMMENT/DELETE IT)
      }
        if(access){
            //ADD YOUR CODES HERE
      }
    }
    rfid.halt();

  }
}
```

Figure 3. Serial Monitor