13.56Mhz RFID module - IOS/IEC 14443 type a

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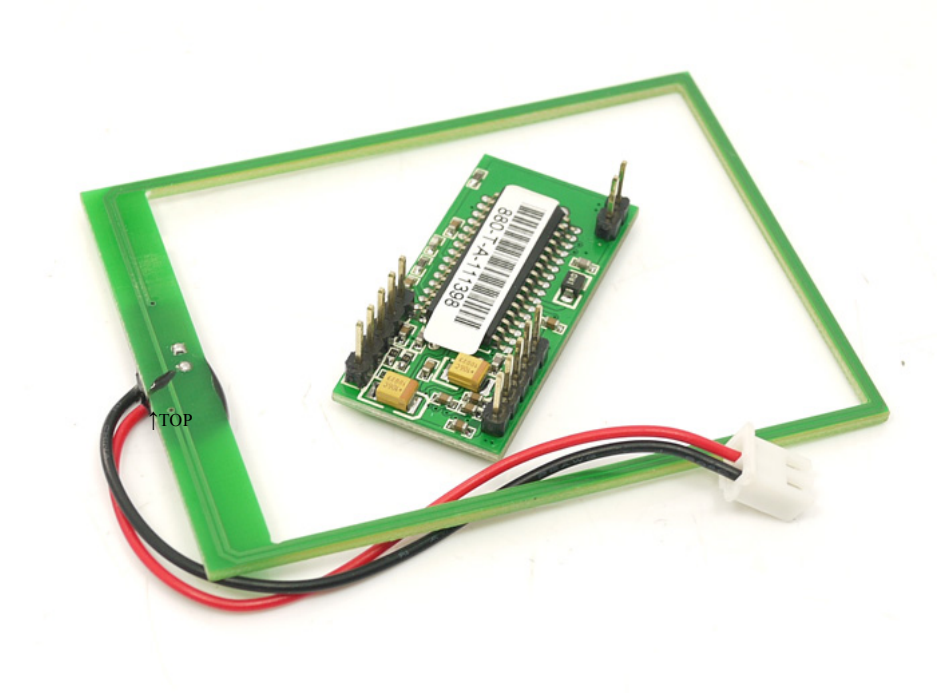
Contents

Introduction

Model:RFR105A1M (http://www.seeedstudio.com/depot/1356mhz-rfid-module-iosiec-14443-type-a-p-196.html?cPath=84_85&zenid=020999c566d2f31841dc54602b7d02ef)



Specification

- Model No. RDM880-T-A
- R/W chip MFRC500，MFRC400，MFRC531，MFRC632
- Standard ISO/IEC 14443 type a
- Frequency 13.56MHz
- Baud Rate 9600-115200bit/s（configurable, default9600）
- Power supply DC5V(5%)
- Current <70mA
- Operating range 30-100mm（reading range depend on antenna and card/tag）
- interface TTL electrical level
- Working temperature -10 degree to 70 degree
- Storage temperature -20 degree to 80 degree
- Size 39*19*9 mm（DIP28）

Resource

- RDM880 Document (http://www.seeedstudio.com/depot/datasheet/RDM880-Spec..pdf)
- RDM880 LED Control.doc (http://www.seeedstudio.com/wiki/File:RDM880_LED_Control.doc)
- API and Demo Code on Windows and Linux for13.56M RFID Reader (http://garden.seeedstudio.com/images/2/29/API_and_Demo_Code_on_Windows_and_Linux_for13.56M_RFID_Reader.zip) (download this tools if you want to write data to your tag)

How to buy

Click here to buy: http://www.seeedstudio.com/depot/1356mhz-rfid-module-iosiec-14443-type-a-p-196.html

See Also

Other related products and resources.

Licensing

This documentation is licensed under the Creative Commons Attribution-ShareAlike License 3.0 (http://creativecommons.org/licenses/by-sa/3.0/) Source code and libraries are licensed under GPL/LGPL (http://www.gnu.org/licenses/gpl.html) , see source code files for details.

External Links

Links to external webpages which provide more application ideas, documents/datasheet or software libraries.

- Basic example, use the RDM880 with a buspirate: http://neophob.com/2010/03/bus-pirate-fun-rdm880-rfid-module/
- Python library to access the RDM880 https://github.com/synack/rfid
- Maker's site http://www.datarfid.com/doce/Product/pic_69.html
- Eduardo Velloso'blog (http://eduardovelloso.com/2011/11/22/rfid-part-iii-high-frequency-tutorial/)

Connecting to an Arduino

The SeeedStudio 13.56Mhz RFID module is an RFID reader capable support ISO14443A, Mifare series card over a serial line. It can easely be attached to an arduino to have RFID fun.

Schematics

```
     .-----------------------------.
     | [1][2]      [5][4][3][2][1] |
     |  J3             J1          |
     |           RDM880 (top view) |
     |                 J2          |
     |             [5][4][3][2][1] |
     .-----------------------------.
```

```
J1:(accessory pins)
  PIN 1 -- LEDG (Green led)
  PIN 2 -- 5V (DC)
  PIN 3 -- GND
  PIN 4 -- LEDR (Red led)
  PIN 5 -- BUZ (Buzzer)
```

J1 Alt: Note that some units are arranged:

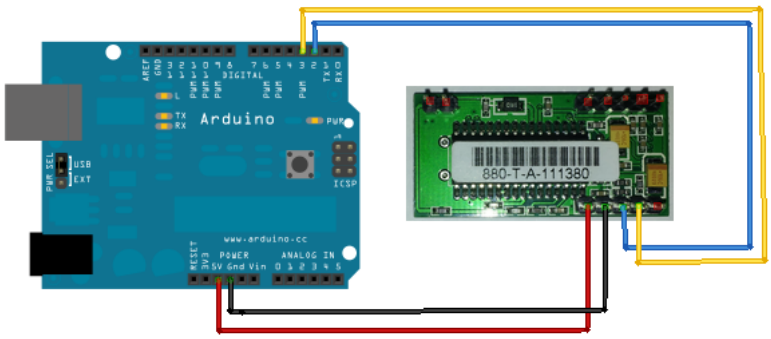
```
  PIN 1 --
  PIN 2 --
  PIN 3 -- LED1 (Green led)
  PIN 4 -- LED2 (RED led)
  PIN 5 -- BUZ (Buzzer)
```

```
J2:(Communication using serial 9600 8N1 TTL level)
  PIN 1 -- RESET (pull low to reset e.g. set default baudrate)
  PIN 2 -- RX
  PIN 3 -- TX
  PIN 4 -- GND
  PIN 5 -- 5V (in)

J3:
  PIN 1 -- + Antenna
  PIN 2 -- - Antenna
```

Connecting to an Arduino

Use the J2 pin headers to connect 5 volt and the ground as shown in the picture. Connect the TX (Pin 3) to the Arduino digital pin 2 and RX to digital pin 3 as shown bellow. It is not needed to connect the reset as long as you don't change the default connection speed.



Software

[PROTOCOL-821-880_2_.pdf (https://www.google.com.hk/url?sa=t&rct=j&q=&esrc=s&source=web&cd=1&ved=0CCwQFjAA&url=%68%74%74%70%3a%2f%2f%6e%65%6f%70%68%6f%62%2e%63%6f%6d%2f%66%69%6c%6
] describes the protocol used for now we only created a small program to read the RDIF tag number when pressing enter in the Serial monitor of the Arduino IDE

Warning: when writing your sketches use **only** system, Type-A and Mifare commands. ISO14443-B and ISO15693 are accepted only by RDM880-T-**E** (not 'A') reader! And as of today (21 may, 2012) remember that this module **does not support** anticollision for Mifare cards -- sometimes it tells there's more than one card, but there's no way to address the non-default card. It's a firmware issue, confirmed by manufacturer.

```
#include <SoftwareSerial.h>

SoftwareSerial mySerial(2, 3);
char txrxbuffer[255];

char get_readID[] = { 0xAA , 0x00, 0x03, 0x25, 0x26, 0x00, 0x00, 0xBB };
void setup()
{
Serial.begin(57600);
Serial.println("Hit Enter to read the RFID number");
mySerial.begin(9600);
}

void loop() // run over and over
{

int counter = 0;
if (mySerial.available())
  Serial.print(mySerial.read(),HEX);

if (Serial.available()){
    Serial.read();
    Serial.println(">");
    for (counter =0 ; counter < 8 ; counter++){
      mySerial.write(get_readID[counter]);
    }
}
}
```

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Category: Sensors

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