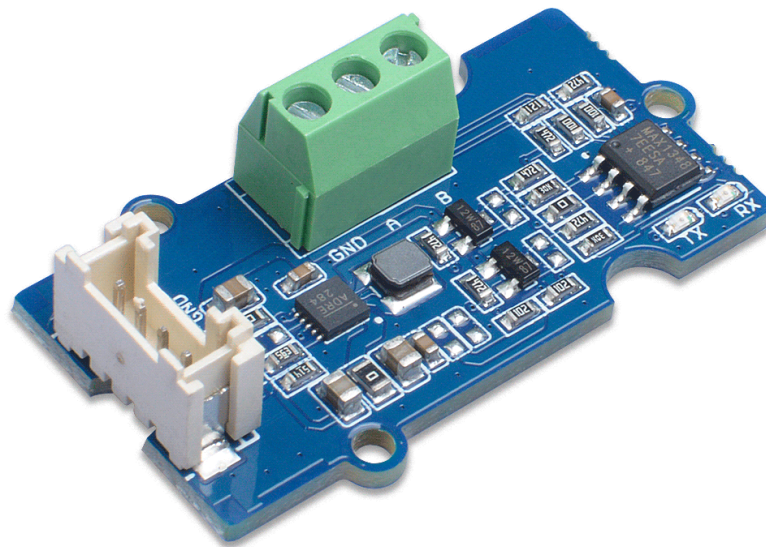# Grove - RS485

The Grove RS-485 allows your Arduino connect with RS-485 device easily, you just need to plug and play. This module is highly stable and supports error-free transmission of 500k bps.

RS485 is cost-effective solution in serial communication, it can be used to data rate at 10Mbit/s or distance up to 1200m at lower speed.

[https://www.seeedstudio.com/Grove-RS485-p-2924.html]

Version

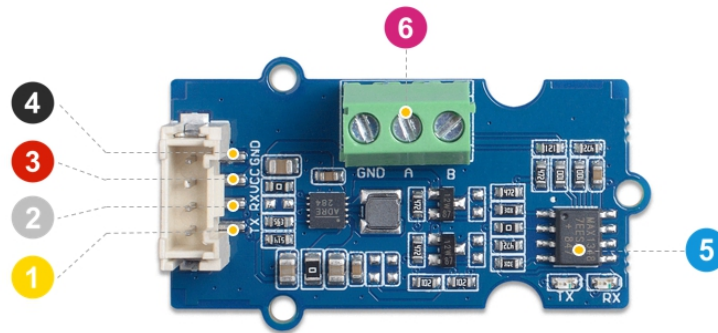| Product Version	Changes	Released Date
Grove - RS485	Initial	Nov 2018

Features

- Supply voltage: 3.3V/5V

- Interface: UART

- 500k bps error-free transmission

Specification

Parameter	Value
Size	L: 40mm W: 20mm H: 12mm
Weight	4.9g
Package Size	L: 135mm W: 85mm H: 13mm
Gross Weight	11g

Hardware Overview

Pinout

[https://files.seeedstudio.com/wiki/Grove-
RS485/img/pinout.jpg]

Figure 1. *Pinout*

Getting Started

> ✏️ **Note**
> If this is the first time you work with Arduino, we strongly recommend you to see Getting Started with Arduino [https://wiki.seeedstudio.com/Getting_Started_with_Arduino/] before the start.

The Grove - NFC supports I2C and UART, Seeed Arduino NFC Library [https://github.com/Seeed-Studio/Seeed_Arduino_NFC] supports Arduino Uno/Seeeduino v4.2, Arduino Mega/Seeeduino Mega, Arduino Zero/Seeeduino Lorawan and Arduino Leonardo/Seeeduino Lite.
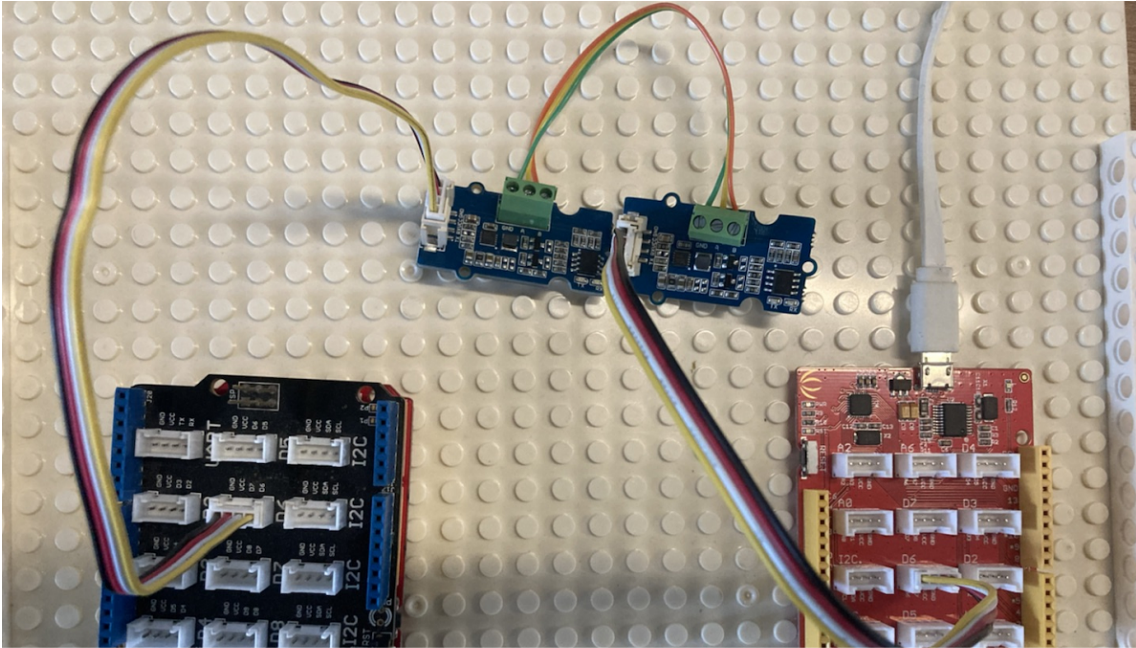
Play with Arduino

Hardware

Materials required

- Seeeduino V4.2(ATMega328P)
  [https://www.seeedstudio.com/Seeeduino-V4-2-p-2517.html]
  x1

- Seeeduino Lotus V1.1
  [https://www.seeedstudio.com/Seeeduino-Lotus-V1-1-
  ATMega328-Board-with-Grove-Interface.html] x1

- Grove - RS485 [https://www.seeedstudio.com/Grove-RS485-p-
  2924.html] x1

- Grove Base Shield V2.0 [https://www.seeedstudio.com/Base-
  Shield-V2.html] x1

Materials Connected

- **Step 1.** Connect both Seeeduino Lotus and Seeeduino V4.2 to the PC.

- **Step 2.** Plug Grove - Base Shield into Seeeduino Lite.

- **Step 3.** Using port 6 and port 7 as soft port RX and TX connect two boards with two Grove Rs485.

Software

- **Step 1.** Open two Arduino IDE windows and copy these codes as below separately. One of the device is using as master device and the other one is using as slave device.

```
1   /*      Slave      */
2   #include <SoftwareSerial.h>
3   SoftwareSerial Slave(6, 7);
4   char val;
5
```

```
 6  void setup() {
 7    Serial.begin(38400);
 8    Serial.println("Slave is ready!");
 9    Slave.begin(38400);
10  }
11
12  void loop() {
13    while (Serial.available()) {
14      val = Serial.read();
15      Slave.write(val);
16    }
17
18    while(Slave.available()) {
19      val = Slave.read();
20      Serial.write(val);
21    }
22  }
```

```
 1  /*      Master       */
 2  #include <SoftwareSerial.h>
 3  SoftwareSerial Master(6, 7);
 4  char val;
 5
 6  void setup() {
 7    Serial.begin(38400);
 8    Serial.println("Master is ready!");
 9    Master.begin(38400);
10  }
11
12  void loop() {
13    while (Serial.available()) {
14      val = Serial.read();
15      Master.write(val);
16    }
17
18    while(Master.available()) {
19      val = Master.read();
20      Serial.write(val);
21    }
```

```
 22   }
```

- **Step 2.** Chose different ports for different devices while you using the Grove RS485.

- **Step 3.** Send the message and check the results.
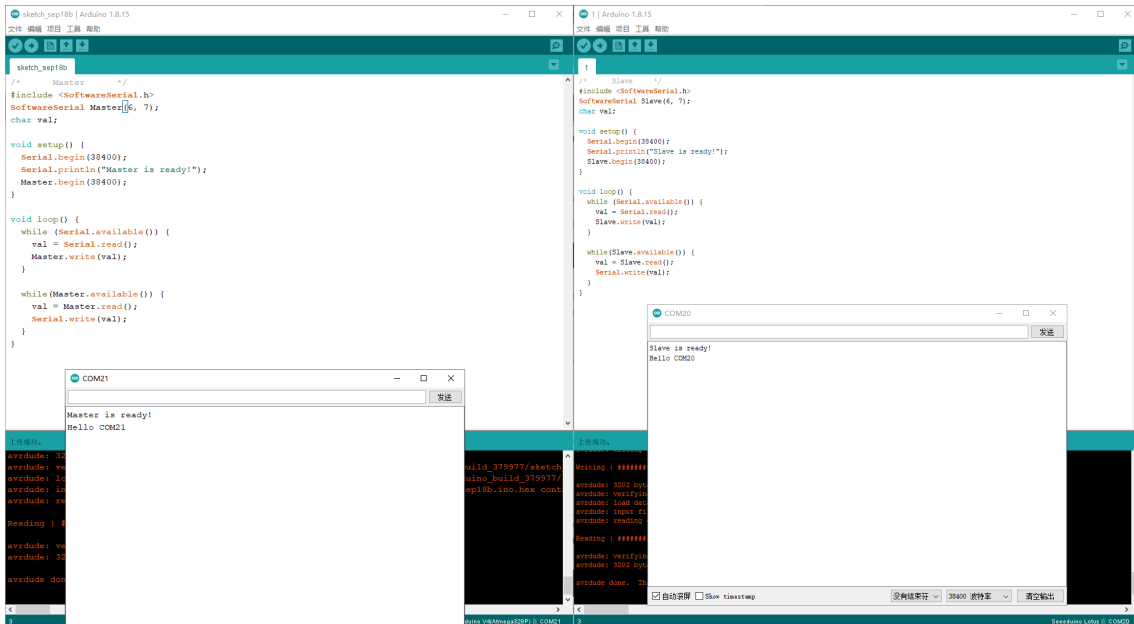
Platforms Supported

Arduino	Raspberry Pi		

Schematic Online Viewer

Resources

- **[ZIP]** Grove - RS485 Schematic file
  [https://files.seeedstudio.com/wiki/Grove-
  RS485/res/Grove%20-%20RS485.zip]

- **[PDF]** Max13478E Datasheet
  [https://files.seeedstudio.com/wiki/Grove-

RS485/res/Max13478.pdf]

Tech Support

Please submit any technical issue into our forum
[https://forum.seeedstudio.com/]

[https://www.seeedstudio.com/act-4.html?
utm_source=wiki&utm_medium=wikibanner&utm_campaign=newpr
oducts]