# 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

5

# Hardware Overview Pinout

GND: connect this module to the system GND
Max13487E IC
VCC: you can use 5V or 3.3V for this module
RX: UART data reception
TX: UART data UART transmission

[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.



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

D

#### 22 }

- **Step 2.** Chose different ports for different devices while you using the Grove RS485.
- **Step 3.** Send the message and check the results.

Sketch_sep18b   Arduino 1.8.15 -	0 X	💿 1   Arduino 1.8.1	5		- 🗆 X
文件 编辑 项目 工具 帮助		文件 编辑 项目 工具	4 帮助		
	ø		<u>•</u>		<u>@</u>
sketch_sep18b		1			
/* Master */	^	/* Slave	*/		^
<pre>#include <softwareserial.h></softwareserial.h></pre>		finclude <softwareserial s<="" td=""><td>reserial.h&gt; lave(6, 7):</td><td></td><td></td></softwareserial>	reserial.h> lave(6, 7):		
SoftwareSerial Master(6, 7);		char val;			
char val;					
void setup() I		Serial.begin(3	\$400);		
Serial.begin(38400);		Serial println	("Slave is ready!");		
Serial.println("Master is ready!");		Slave.begin(35	100] 1		
Master.begin(38400);					
3		<pre>void loop() {     while (Serial)</pre>	wailable()) /		
		val = Serial	read();		
void loop() {		Slave.write(	ral);		
while (Serial Available()) (		,			
Master.write(val);		while (Slave.av	<pre>silable()) (</pre>		
		val = Slave.: Serial.write	read(); (val);		
		)			
<pre>while(Master.available()) {</pre>		)			
val = Master.read();			@ COM20	×	
Serial.write(val);				44/24	
3				az	
			Slave is ready! Hello COM20		
•					
© COM21 – LI X					
发送					
Master is ready!					
Hello COM21	v				~
上传或功。		上传成功。			
avrdude: 32	^				^
avrdude: ve uild_37997	7/sketch				
avrdude: in epi8b.inc.b	hex cont				
avrduds: re		avrdude: Verifyin avrdude: load dat			
		avrdude: input fi			
Reading   F					
avzdude: ve					
avzdude: 32		avrdude: verifyin			
	×		目初発祥   Show timestemp	※何端宋付 ~  35400 波特军 ~  清空編出	
4 (dia) (0/87040) 22	> 00171 CO1171	2		0	>
o anti o oportega se	01911-0-0 W21			0	citeronio cossi de comizo

## Platforms Supported

Arduino	Raspberry Pi	
00	1000	
(		•

## 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]