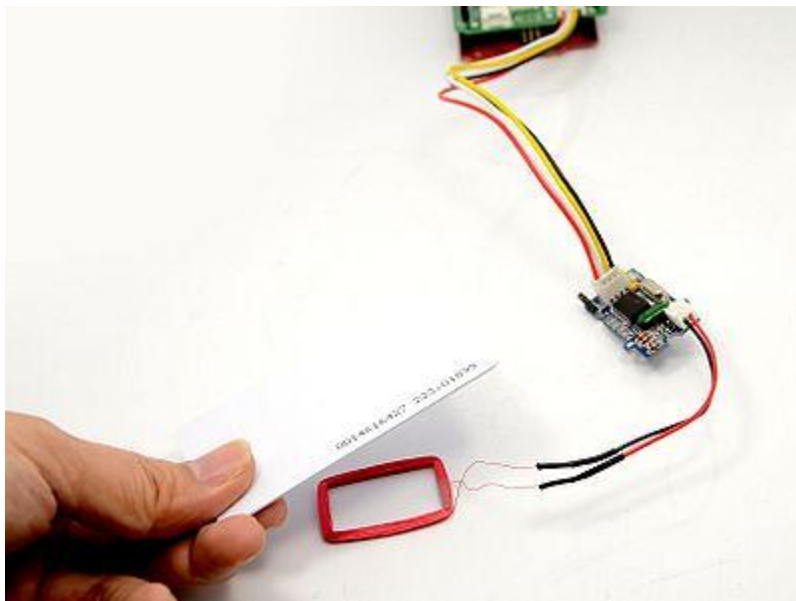


## RB-See-202

### Seedstudio Grove 125Khz RFID Reader

#### Introduction

This Grove-125KHz TFID Reader is a module used to read uem4100 RFID card information with two output formats: Uart and Wiegand. It has a sensitivity with maximum 7cm sensing distance. There is also the electronic brick version of this module.



#### Features

- Selectable output format: Uart or Wiegand.
- 4Pins Electronic Grove Interface

#### Application Ideas

- Internet of Thing
- Pet Toy
- Access Control System

#### Specifications

- Supply voltage: 5v
- Max sensing distance: 7cm
- Uart output: TTL output, 9600baudrate, 8 data bits, 1 stop bit, and no verify bit.
- Wiegand output: 26 bits Wiegand format, 1 even verify bit, 24 data bits, and 1 odd verify bit;

## Usage

### Pin Definition and Rating

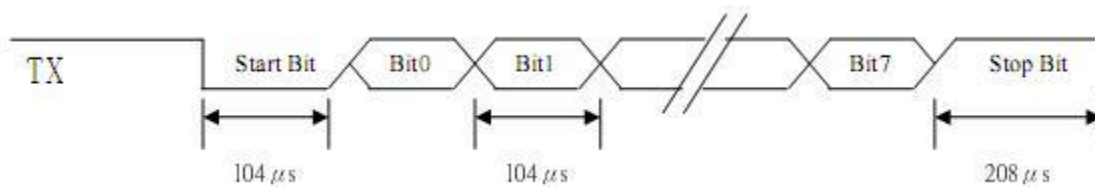
Pin Name	Function and Note	Rating
GND	Connect to the Host GND	-
VCC	Power supply	5V
RX/D0	RX - In Uart mode, it is unused	-
	D0 - In Wiegand mode, it represents Data0	5V or 0V
TX/D1	TX - In Uart mode, it represents TX data	5V or 0V
	D1 - In Wiegand mode, it represents Data1	5V or 0V

### Hardware Installation

#### \* Uart Mode (Jumper set to the left two pins)

You would need to select the jumper to "U" to enter this mode, and the setting is: 9600bps, N, 8, 1, TTL output

#### Output Time sequence



### Output Data Format

0x02	10ASCII Data Characters	Checksum	0x03
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0x02 - 1 byte start flag

10 ASCII Data Characters – Card number info

Checksum - 2 bytes

0x03 - 1 byte end flag

### Example

Card number: 62E3086CED

Checksum:( 62H)XOR(E3H)XOR(08H)XOR(6CH)XOR(EDH)=08H

Note: The 10 ASCII characters grouped as 5 hex data needs to be further processed as you may find that the 5 hex data is not equal to the number marked on the tags in Decimal. Actually the tag number is equal to the later 4 bytes in decimal. For example, the card number is 62E3086CED, the corresponding number marked on the tag should be 60717296877 which is the Decimal format of E3086CED.

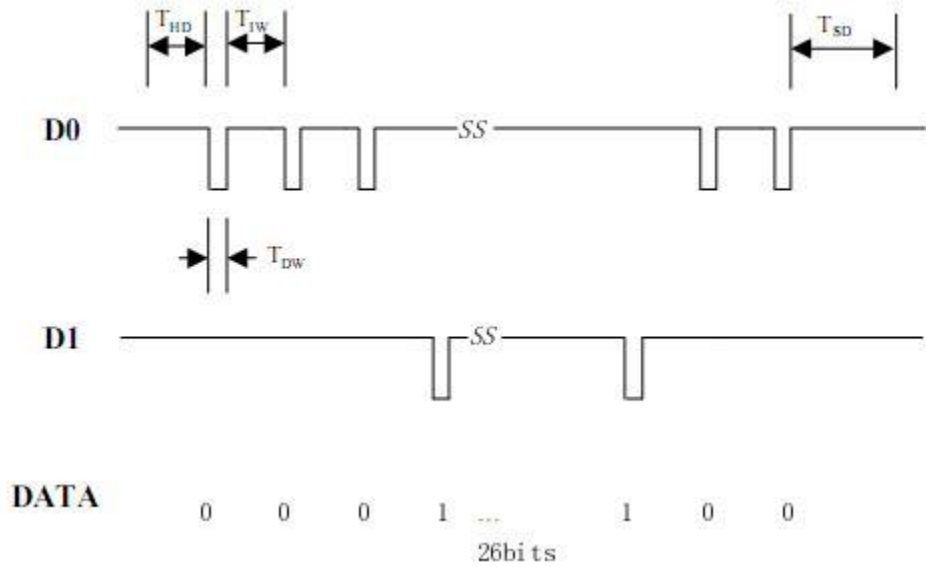
### \* Wiegand Mode (Jumper Set to the Right two Pins)

You would need to select the jumper to "U" to enter this mode, and the setting is: 9600bps, N, 8, 1, TTL output

In Wiegand Mode, output data is formatted with 26bits including 24bits card info and 2 bits parity.

bit	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
-	PE	D																						P0		
-	-	E										0										-				
-	-	D2[7..0]						D1[7..0]						D0[7..0]						-						

- PE is even bit, PO is odd bit;
- E is the data bit which was involved in even, O is the data bit which was involved in odd;
- DX[7..0] is the data bit which correspond to Mifare@ Standard & Light card read only ID;
- Wiegand Format 26bits' output time sequence;



#### Notes

Symbol	Specification	Representative value
THD	Sending Start Delay	1.2ms
TSD	Sending Stop Delay	1ms
TDW	Data pulse width	160μs
TIW	Data pulse interval width	880μs

## **Demo code**

The demo code for Arduino is designed to read Wiegand data in interrupt mode.

## **Programming**

Includes important code snippet. Demo code like :

Demo code

```
{
```

```
}
```