

# RFID

## WIEGAND RFID MODULE

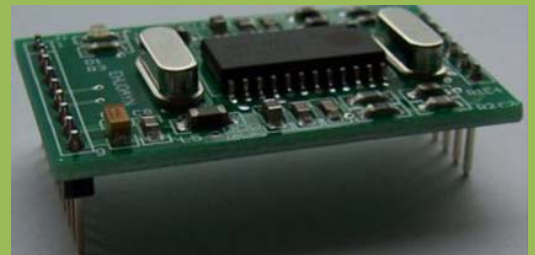


**YHY502W Wiegand  
Reader**

[RFID Reader OEM Module](#)

**User manual**

Version 1.0  
Oct, 2017



## 1. Features

---

- ▲ Can detect UID clone card
- ▲ Small size and need to connect antenna external
- ▲ Auto scan for presence of tags and upload UID
- ▲ Contactless operating frequency 13.56 MHz
- ▲ Supports ISO14443A , Mifare<sup>®</sup> Classic1K
- ▲ Wiegand26 or 34,default WG26
- ▲ Typical Operating Distance: 0 ~5cm
- ▲ Operating Voltage : DC 5.0V/3.3V
- ▲ 1 LED indicator
- ▲ Size: 40mm × 25mm × 6mm
- ▲ Weight:10g

## 2. Pinning information

---

### 2.1 Pining

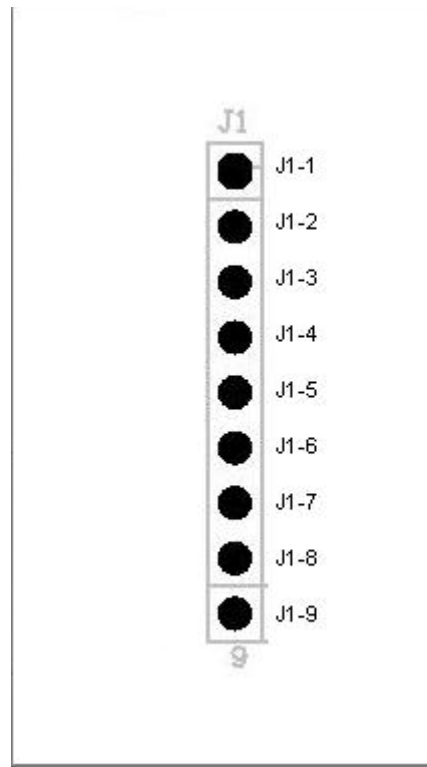


Figure 3 – Pinning configuration

## 2.2 Pin description

Table 1: J1 Pin description

Pin	Symbol	Type	Description
J1-1	RFU		
J1-2	RFU		
J1-3	OUT1	O	Output 1
J1-4	<b>WS</b>	<b>I</b>	Empty is WG26, if connect to ground is WG34
J1-5	RST	I	Reset, active-low, floating for power-on reset by default
J1-6	<b>D0</b>	<b>O</b>	Wiegand Data0 output
J1-7	<b>D1</b>	<b>O</b>	Wiegand Data1 output
J1-8	<b>V<sub>CC</sub></b>	<b>PWR</b>	Power supply, 5.0V or 3.3V
J1-9	<b>GND</b>	<b>PWR</b>	Power supply Ground

## 3. Electrical Characteristics

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
V <sub>CC</sub>	Supply voltage	GND=0V	2.7	5.0	5.5	V
I <sub>VCC</sub>	Supply Current	V <sub>CC</sub> =5.0V		53	85	mA
D <sub>RW</sub>	Read card Distance	V <sub>CC</sub> =5.0V	0	50	90	mm
T <sub>amb</sub>	Operating ambient temperature		-25		+85	°C

## 4. Package outline

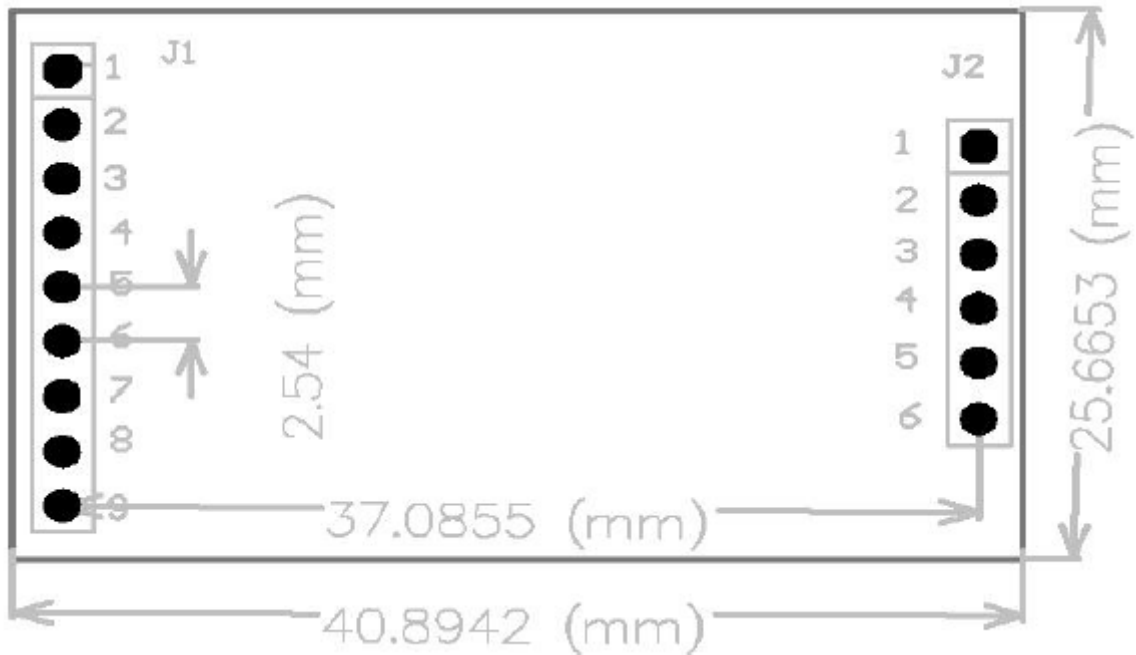


Figure 4– YHY502W Top view

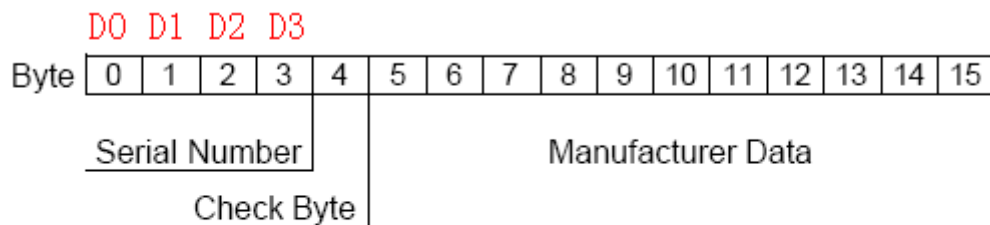


Figure 5– YHY502W Side View

## 6. Wiegand protocol

YHY502W wiegand reader will read the m1 card and output the UID by wiegand 26 or 34. Default is WG26, and if connect the WS pin to the ground, it will output WG34.

Below is the UID stored in the M1 card’s block 0.



UID Block0

Figure 6. UID stored in block 0

If it works on G26, the reader will output 3 bytes of the UID, and the sequence is “D2D1D0”.  
If the reader detects a cloned UID card, it will output the data all “0”.  
Below is the test result by using the ARDUINO UNO board.

```
Wiegand HEX = AA089A, DECIMAL = 11143322, Type W26
Wiegand HEX = B8E6FE, DECIMAL = 12117758, Type W26
Wiegand HEX = 1E2C16, DECIMAL = 1977366, Type W26
Wiegand HEX = 1E2F26, DECIMAL = 1978150, Type W26
Wiegand HEX = 370488, DECIMAL = 3605640, Type W26
Wiegand HEX = 140488, DECIMAL = 1311880, Type W26
Wiegand HEX = 0, DECIMAL = 0, Type W26
```

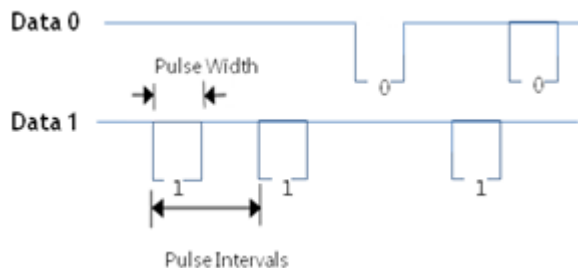
Figure 7. UNO read WG26 data

If it works on WG34, the reader will output 4 bytes of the UID, and the sequence is “D3D2D1D0”.  
If the reader detects a cloned UID card, it will output the data all “0”.  
Below is the test result by using the ARDUINO UNO board.

```
Wiegand HEX = 71AA089A, DECIMAL = 1906968730, Type W34
Wiegand HEX = 261E2C16, DECIMAL = 639511574, Type W34
Wiegand HEX = E5BEF5FA, DECIMAL = 3854497274, Type W34
Wiegand HEX = 37B5D7FB, DECIMAL = 934664187, Type W34
Wiegand HEX = 0, DECIMAL = 0, Type W26
```

Figure 8. UNO read WG34 data

When a 0 is sent the DATA0 wire is pulled to a low voltage while the DATA1 wire stays at a high voltage. When a 1 is sent the DATA1 wire is pulled to a low voltage while DATA0 stays at a high voltage.



The pulse with is 100us, the pulse interval is 1.6ms(100+1500us).

## 7. Contact information

To obtain information about EHUOYAN Inc sales and technical information, please reference the following information.

**Contact Information:**

Ehuoyan Technology Co.,Ltd.

Tel: +86-010-80128328

email: info@ehuoyan.com

Web Site : <http://www.ehuoyan.com/>