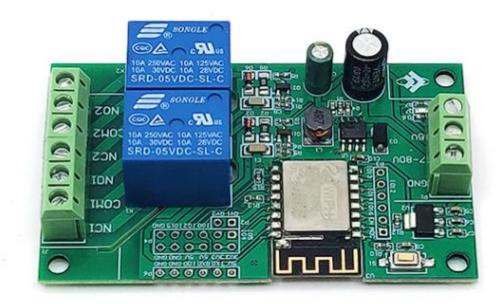
# LC-Relay-ESP12-2R-D8

The ESP8266 eight-way relay development board is equipped with ESP-12F WiFi module and supports DC7-28V/5V power supply. Provide for Arduino development environment reference code, suitable for ESP8266 secondary development learning, smart home wireless control and other occasions.



#### **Feature introduction:**

- 1. Onboard mature and stable ESP-12F WIFI module, large capacity 4M BYTE FLASH;
- 2. The I/O port of the WIFI module and the UART program download port are all led out to facilitate secondary development;
- 3. Onboard AC-DC switching power supply module, power supply mode supports AC90-250V/DC7-30V/5v;
- Onboard WIFI module RST reset button;
- 5. ESP-12F supports the use of development tools such as ECLIPSE/ARDUINO IDE, and provides ARDUINO Reference program in the development environment;
- Onboard 2ch 5V relays, output switch signal, suitable for controlling the working voltage of AC Load within 250V/DC 30V;
- 7. On-board power indicator, 1 programmable LED and relay indicator.

#### **Burning port:**

The GND, RX, TX, and 5V of ESP8266 are respectively connected to the GND, TX, RX, of the external TTL serial port module

5V, IOO needs to be connected to GND when downloading, and then disconnect the connection between IOO and GND after downloading;

## **Relay output:**

NC: Normally closed, the relay is short-connected with COM before it is closed, and it is suspended after being closed;

COM: public end;

NO: Normally open end, the relay is suspended before being closed, and shorted to COM after being closed

## **Introduction to GPIO port**

Num.	Name	Function	Num.	Name	Function
1	ADC	A/D conversion result.	11	1015	GPIO15; MTDO;
		Input voltage range 0 $\sim$ 1V,			HSPI_CS; UARTO_RTS
		value range: 0 $\sim$ 1024			
2	EN	Enable pin, pull up by	12	TXD	UARTO_TXD; GPIO1
		default			
3	1016	GPIO16	13	RXD	UARTO_RXD; GPIO3
4	IO14	GPIO14; HSPI_CLK	14	GND	Power ground
5	IO12	GPIO12; HSPI_MISO	15	5V	5V power supply
6	IO13	GPIO13; HSPI_MOSI;	16	3.3V	3.3V power supply
		UARTO_CTS			
7	105	GPIO5	17	RY1	One relay drive port, you
					can use a shorting cap and
					IO16 to short; if you want
					to use other I/O drive
					relays, you can use DuPont
					wire jumpers
8	104	GPIO4	18	RY2	One relay drive port, you
					can use a shorting cap and
					IO14 to short; if you want
					to use other I/O drive
					relays, you can use DuPont
					wire jumpers
9	100	GPIO0	19	RY3	One relay drive port, you
					can use a shorting cap and
					IO12 to short; if you want
					to use other I/O drive
					relays, you can use DuPont
					wire jumpers
10	102	GPIO2; UART1_TXD	20	RY4	One relay drive port, you
					can use a shorting cap and
					IO13 to short; if you want
					to use other I/O drive
					relays, you can use DuPont
					wire jumpers

## **Arduino development environment construction**

ESP8266 supports development tools such as Eclipse/Arduino IDE. It is relatively simple to use Arduino. Here is how to build Arduino development environment:

- 1. Install Arduino IDE 1.8.9 or the latest version;
- 2. Open the Arduino IDE, click File-Preferences in the menu bar, and click Add URL in "Additional Development Board Manager URL" after entering the preferences: <a href="http://arduino.esp8266.com/stable/package">http://arduino.esp8266.com/stable/package</a> esp8266com index.json
- 3. Click Tools-Development Board-Development Board Manager in the menu bar, then search for "ESP8266" to install the Arduino support package 2.5.2 or the latest version of ESP8266

#### **Program download**

1. Use a jumper cap to connect the IOO and GND pins, prepare a TTL serial port module (for example: FT232) to plug into the computer USB, the serial port module and the development board are connected as follows:

TTL serial port module	ESP8266 development board		
GND	GND		
TX	RX		
RX	TX		
5V	5V		

- 2. Click Tools-Development Board in the menu bar, select the development board as ESPino (ESP-12 module)
- Open the program you want to download, click on Tools-Port in the menu bar to select the correct port number
- 4. After clicking "Upload", the program will be automatically compiled and downloaded to the development board, as follows:



5. Finally, disconnect IOO and GND, power on the development board again or press the reset button to run the program.