



## **LC AC&DC supply single ESP8266 relay development board**

### **LC-Relay-ESP12-1R-MV**

#### **AC/DC power ESP8266 WIFI single relay    ESP-12F Dev board**

##### **Overview:**

LC ESP8266 single relay development board onboard ESP-12F WiFi module, I/O orifice full lead ,support AC90-250V/DC7-12V/USB 5V etc.many supply power way. Provide Arduino develop environment reference code,suit for ESP8266 secondary development study, smart home wireless control.

##### **The function characteristics**

- 1.Onboard Mature and stable ESP-12F WiFi module, high capacity 4M Byte Flash
2. The I/O port of the WiFi module and the UART program download port are all extracted, convenient secondary development
- 3.Onboard AC-DC switch power module,supply power way support AC90-250V/DC7-12V/USB5V
4. Onboard Wifi module RST reset button
- 5.ESP-12F support use Eclipse/Arduino IDE etc.development tools, provide Arduino development environment reference program
- 6.Onboard 1 channel 5V relay,output switch signal ,Suitable for



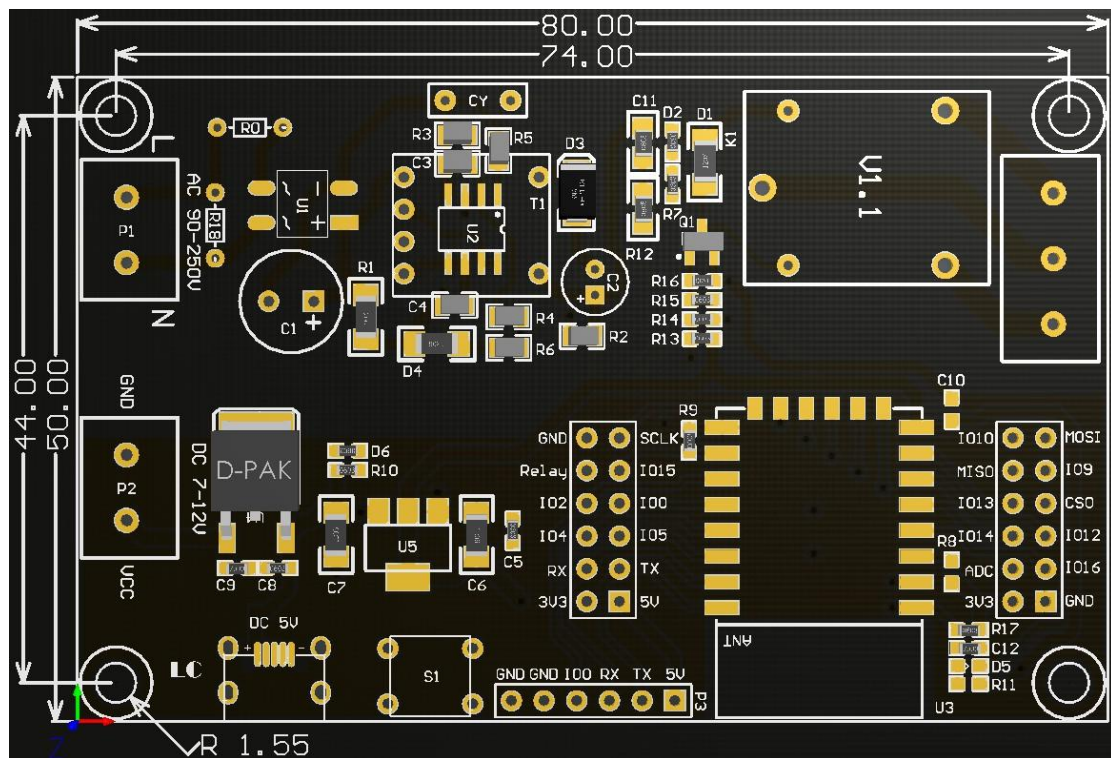
controlling and controlling the working voltage to be within the load of AC 250V/DC30V。

7. Onboard power indicator ,1 programmable LED and relay indicator.

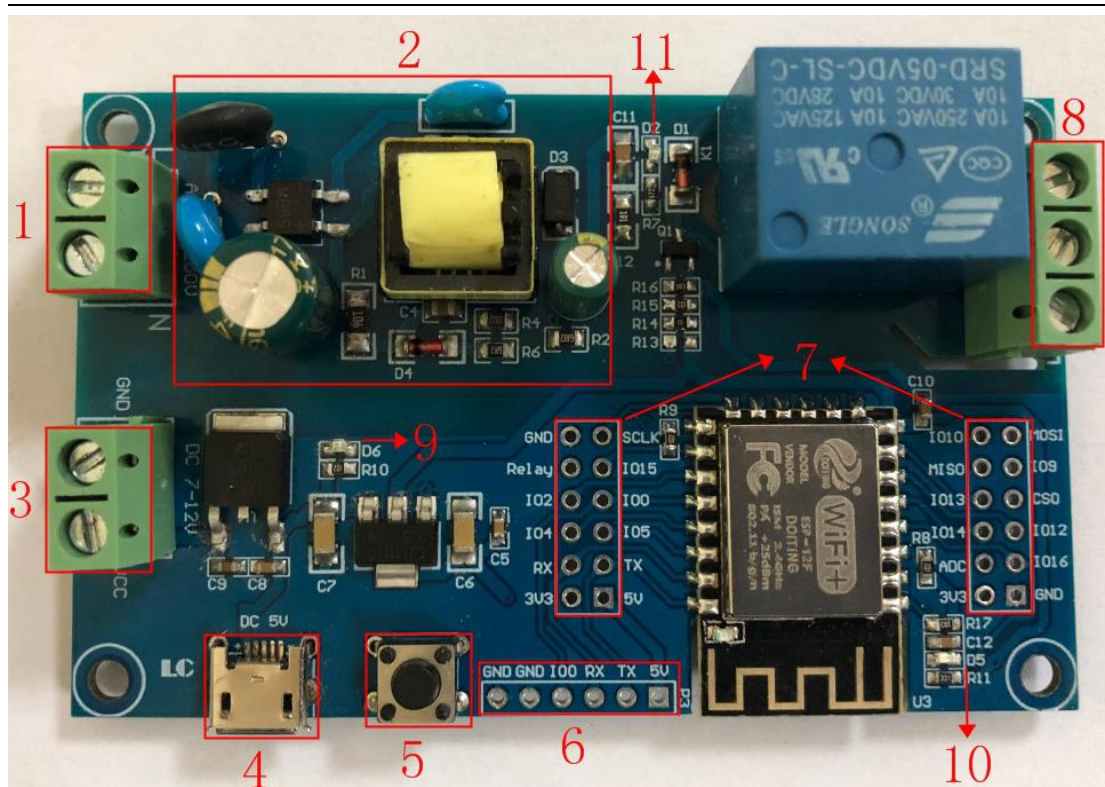
### Hardware introduction and description

1. board size : 80\*50mm

Weight :34g



### Introduce of interface



1, L, N: AC90-250V power supply

2, AC90-250V turn DC5V switch power supply (when adopt AC supply power please don't directly touch here by hand !!! )

3.VCC, GND: DC7-12V power supply

4.Micro USB: DC5V USB power supply

**Mark: AC90-250V, DC7-12V, DC5V USB Choose one of the three power supply methods.**

5. 6X6mm press button, ESP8266 reset button

6. UART Program download port: ESP8266 GND, RX, TX, 5V separately connect external TTL Serial module GND, TX, RX, 5V, IO0 need with GND connect when download .

7.GPIO Pinout port

8. relay output end:

NC: Normally close,the NC disconnect with COM when relay closed and connect with COM when relay released.

COM: Common end

NO: Normally open end,the NO disconnect with COM when relay released and connect with COM when relay closed.

9.Power indicator LED

10.programmable LED

11.Relay indicator LED.



## GPIO Pinout port introduce

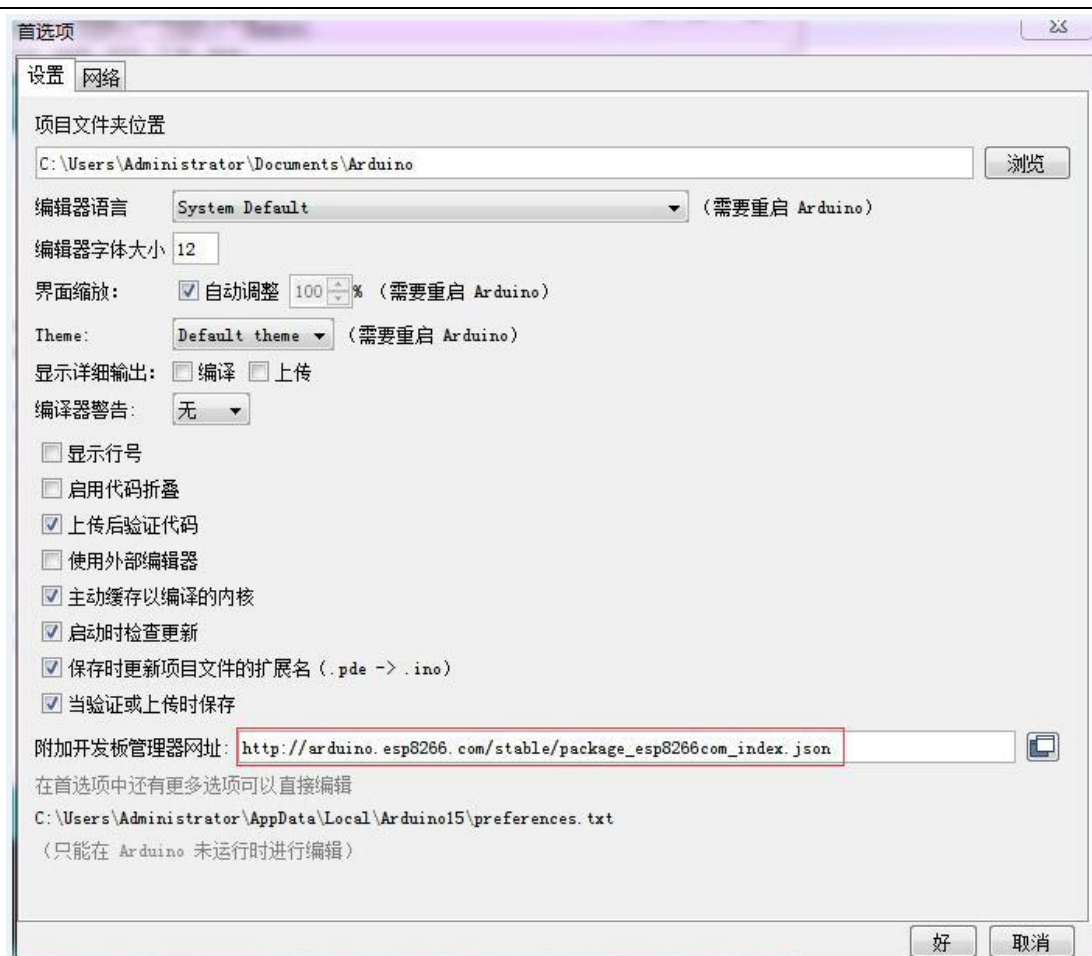
NO.	Name	Function	NO.	Name	Function
1	GND	Power ground	13	IO10	GPIO10
2	Relay	Relay drive port , using IO5 drive by default. If need use other I/O drive relay, please remove R14, then use the I/O connected to this relay pin.	14	MISO	Slave output master input
3	IO2	GPIO2; UART1_TXD	15	IO13	GPIO13; HSPI_MOSI; UART0_CTS
4	IO4	GPIO4	16	IO14	GPIO14; HSPI_CLK
5	RX	UART0_RXD; GPIO3	17	ADC	A/D Conversion result. Input voltage range 0~1V, ranging from 0 to 1024
6	3V3	3.3V power	18	3V3	3.3V power
7	SCLK	CLOCK	19	MOSI	Master output Slave input
8	IO15	GPIO15; MTDO; HSPICS; UART0_RTS	20	IO9	GPIO9
9	IO0	GPIO0	21	CS0	chip select
10	IO5	GPIO5	22	IO12	GPIO12; HSPI_MISO
11	TX	UART0_TXD; GPIO1	23	IO16	GPIO16
12	5V	5V power	24	GND	Power ground

## Arduino development environment building

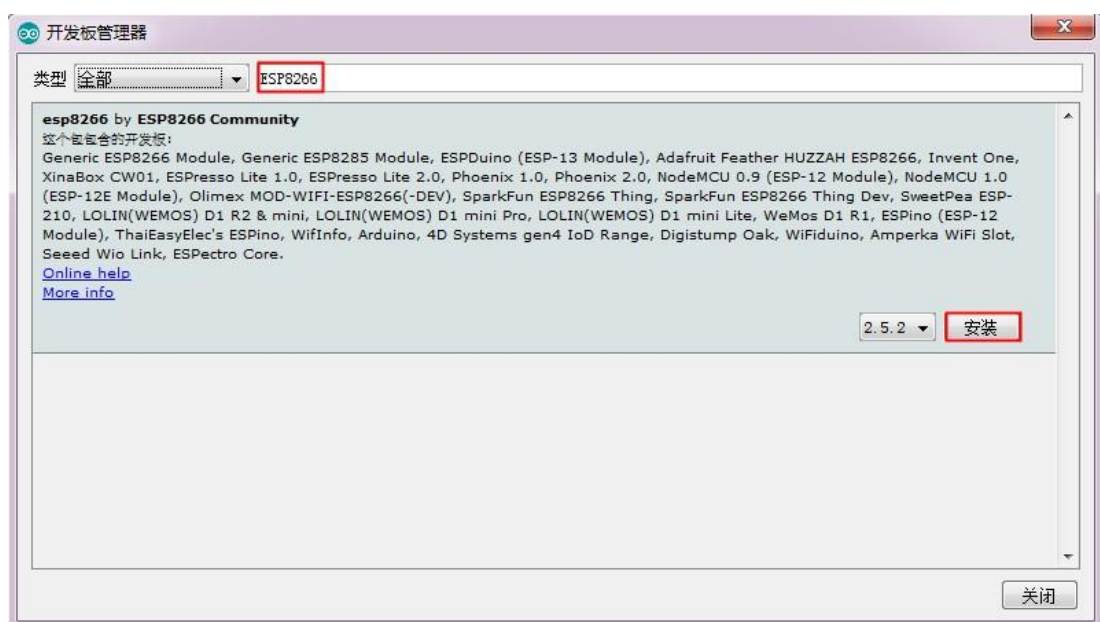
ESP8266 support Eclipse/Arduino IDE development tools, use Arduino will easy, Arduino development environment build way as below:

1. Install Arduino IDE 1.8.9 or latest version
2. Open Arduino IDE ,Click on File - Preferences in the menu bar,Click on Add URL in the "Additional Development Board Manager URL" after entering the preferences:

[http://arduino.esp8266.com/stable/package\\_esp8266com\\_index.json](http://arduino.esp8266.com/stable/package_esp8266com_index.json),



3.click menu's tool --development board -development manager, search for "ESP8266" to install Arduino support package for ESP8266 2.5.2 or the latest version







Note : because the download website is foreign, the access speed is slow. There may be a download error, please try again when you have good internet status.

**Program download:**

1. Use the jumper cap to connect the IO0 and GND pins, prepare one TTL serial module (such as : FT232) plug into computer USB, serial module and development board connecting way as below:

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

2. click menu bar tool--development board ,choose development board for ESPino (ESP-12 module)

3. open need download program, click menu bar's tool---interface Choose the correct port number

4. after click upload program will automatically compile and download to the development board, as below:

5. Finally cut IO0 with GND connect, the board can be powered up by pressing the power button again or by pressing the reset button.



```
LED_Relay | Arduino 1.8.9
文件 编辑 项目 工具 帮助

LED_Relay

/*
  文件名称: LED_Relay.ino
  功能: LED闪烁+继电器开启
*/

#define PIN_LED 16
#define PIN_RELAY 5

void setup()
{
  pinMode(PIN_LED, OUTPUT); //输出模式
  pinMode(PIN_RELAY, OUTPUT); //输出模式
  digitalWrite(PIN_LED, HIGH); //LED默认关闭
  digitalWrite(PIN_RELAY, HIGH); //继电器默认开启
}

void loop()
{
  digitalWrite(PIN_LED, LOW); //打开LED
  delay(1000); //延时1S
  digitalWrite(PIN_LED, HIGH); //关闭LED
  delay(1000); //延时1S
}

上传成功
Leaving...
Hard resetting via RTS pin...

3 ESPino (ESP-12 Module) 在 COM48
```

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