

6-Channel Wi-Fi Relay Module

General Description

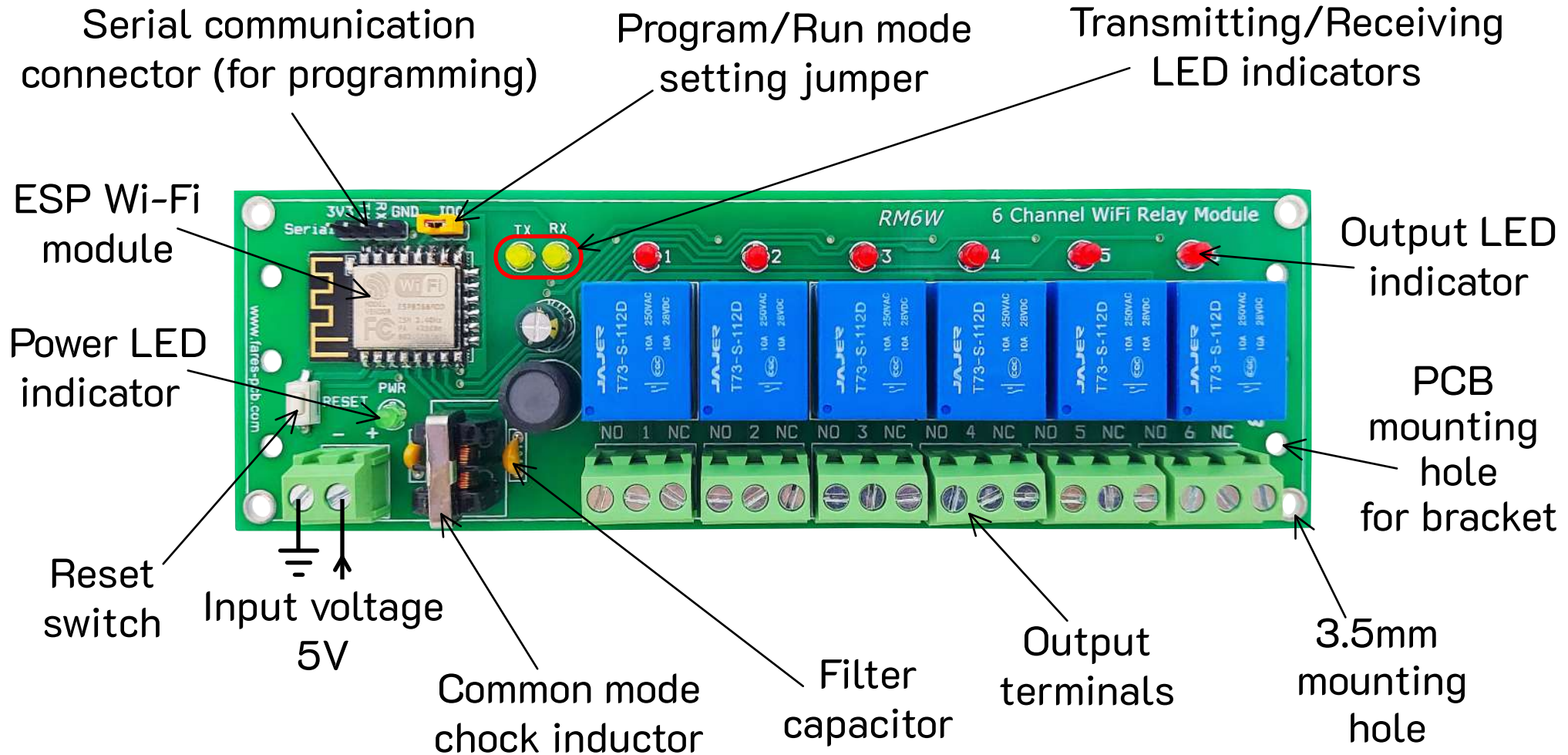
The RM6W is a 6-channel Wi-Fi module based on the ESP-12F module which is based on the ESP8266 chip from Espressif. The ESP-12F includes 4MB of flash and supports 802.11b/g/n Wi-Fi SOC. The ESP-12F can be programmed serially via the 4-pin header. The card is well-protected, filtered, and easy to install. The RM6W outputs can drive loads up to 10A (resistive load).

Features

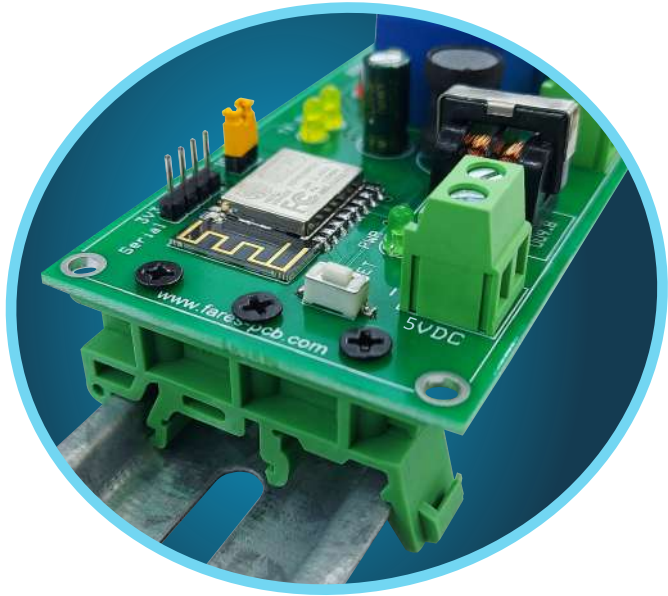
- Based on ESP-12F Wi-Fi module.
- On-board 3.3V regulator AMS1117-3.3V.
- Power input is filtered for noise reduction.
- Green LED for power indication.
- Operating voltage DC5V.
- Six output relays with red LED indicators.
- Both normal open and normal close terminals are available.
- Output terminals are available through 5mm 2-pin K128 screw clamp.
- Easy firmware uploading using 4-pin header (3.3V, Tx, Rx, GND).
- Reset push button switch is included.
- Two yellow LEDs for Tx and Rx signal indication.
- DIN Rail mountable.
- Four mounting holes for easy installation.



Board Details



DIN Rail Mounting Options



PCB Bracket



PCB Carrier

How to Program ?

To upload your code on (ESP) module, some hardware and software tools should be available.

Hardware requirements

- PC (personal computer), laptop or smart phone.
- USB/Serial converter.
- USB cable.

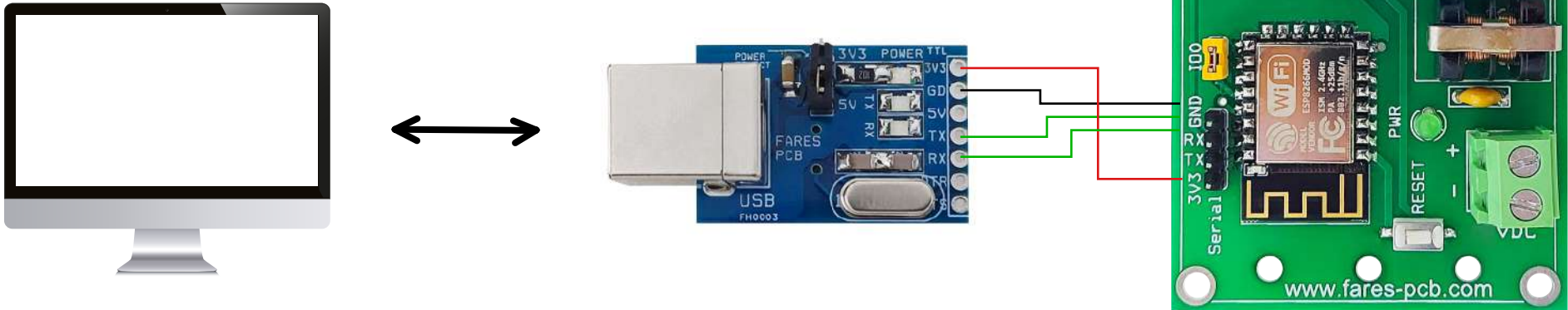
Software requirements

- Arduino IDE Tool.

Hardware preparing (programming mode)

1-Connect USB/Serial converter to PC.

2-Connect USB/Serial converter to RM6W module as shows below.



a-Connect GND (RM6W) to GND (USB/Serial converter).

b-Connect 3V3 (RM6W) to 3V3 (USB/Serial converter).

c-Connect RX (RM6W) to TX (USB/Serial converter).

d-Connect TX(RM6W) to RX (USB/Serial converter).

3-Connect 100 jumper (programming module).

4-Press **RESET** switch to initiate programming mode.

Upload your code

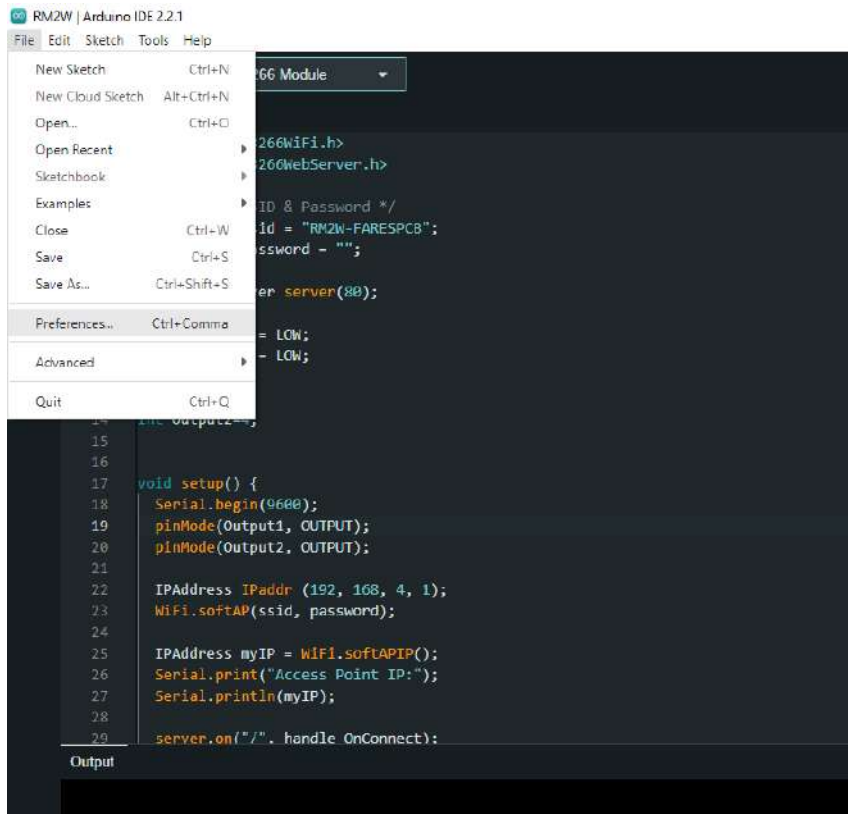
1-Download and install Arduino IED from the following link

<https://www.arduino.cc/en/software>

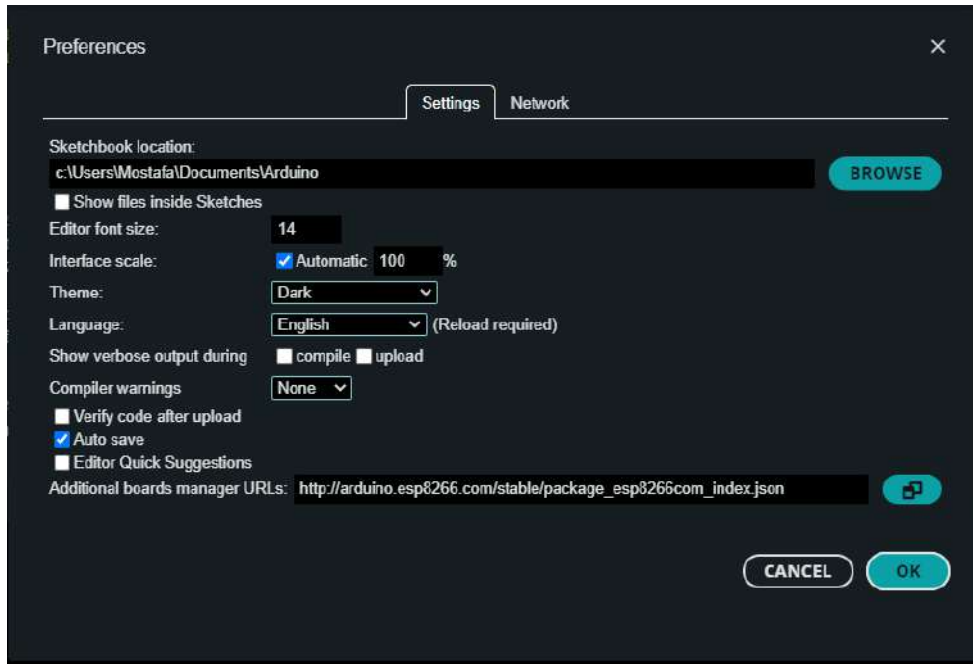
2-Open your Arduino .ino file.

3-GO to File > Preferences and copy the link below to boards manager URLs.

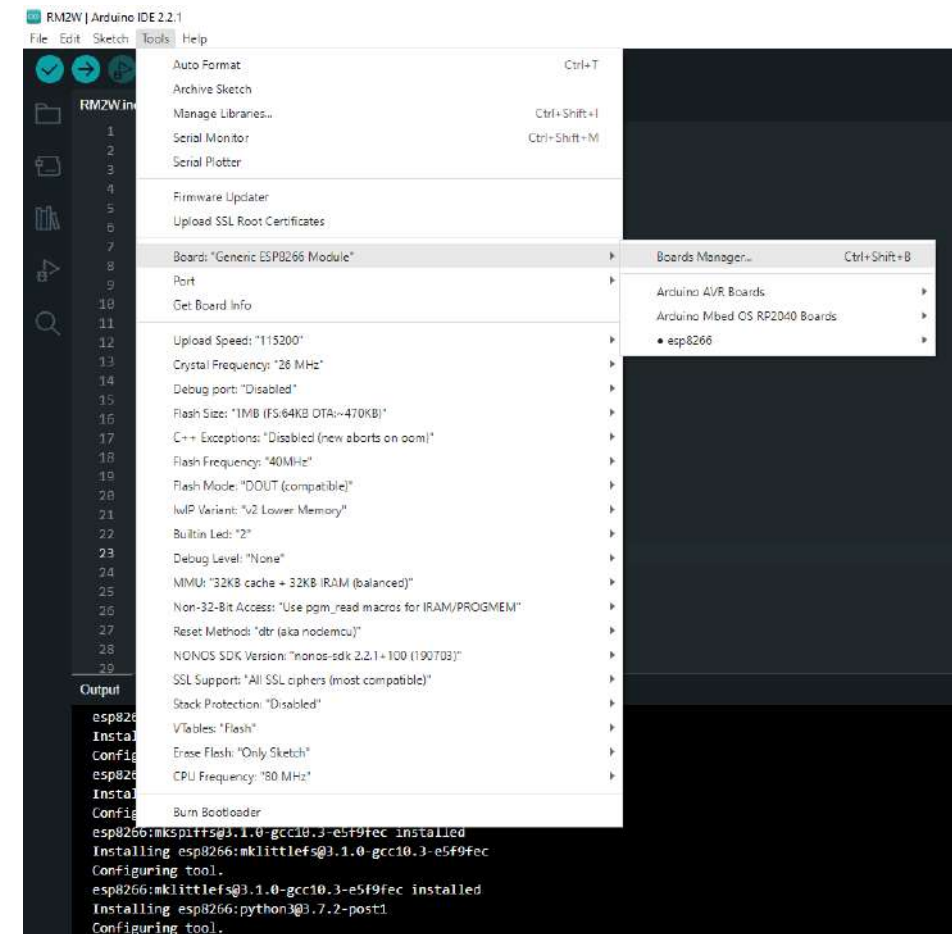
http://arduino.esp8266.com/stable/package_esp8266com_index.json



4-Click OK.



5-Go to Tools> Board> Board Manager.



6-Type esp8266 and click INSTALL.

RM2W | Arduino IDE 2.2.1

File Edit Sketch Tools Help

The screenshot shows the Arduino IDE interface. The 'BOARDS MANAGER' window is open, displaying a search for 'esp8266'. The 'Type' is set to 'All'. The search results show 'esp8266 by ESP8266 Community' with a version of 3.1.2 and an 'INSTALL' button. The main editor shows the 'RM2W.ino' file with the following code:

```
1 #include <ESP8266WiFi.h>
2 #include <ESP8266WebServer.h>
3
4 /* Put your SSID & Password */
5 const char* ssid = "RM2W-FARESPCB";
6 const char* password = "";
7
8 ESP8266WebServer server(80);
9
10 bool O1Status = LOW;
11 bool O2Status = LOW;
12
13 int Output1=5;
14 int Output2=4;
15
16
17 void setup() {
18   Serial.begin(9600);
19   pinMode(Output1, OUTPUT);
20   pinMode(Output2, OUTPUT);
21
22   IPAddress IPAddr (192, 168, 4, 1);
23   WiFi.softAP(ssid, password);
24
25   IPAddress myIP = WiFi.softAPIP();
26   Serial.print("Access Point IP:");
27   Serial.println(myIP);
28
29   server.on("/".handle OnConnect);
30 }
```

The status bar at the bottom indicates: 'Uninstalling esp8266:esp8266@3.1.2 Platform esp8266:esp8266@3.1.2 uninstalled'.

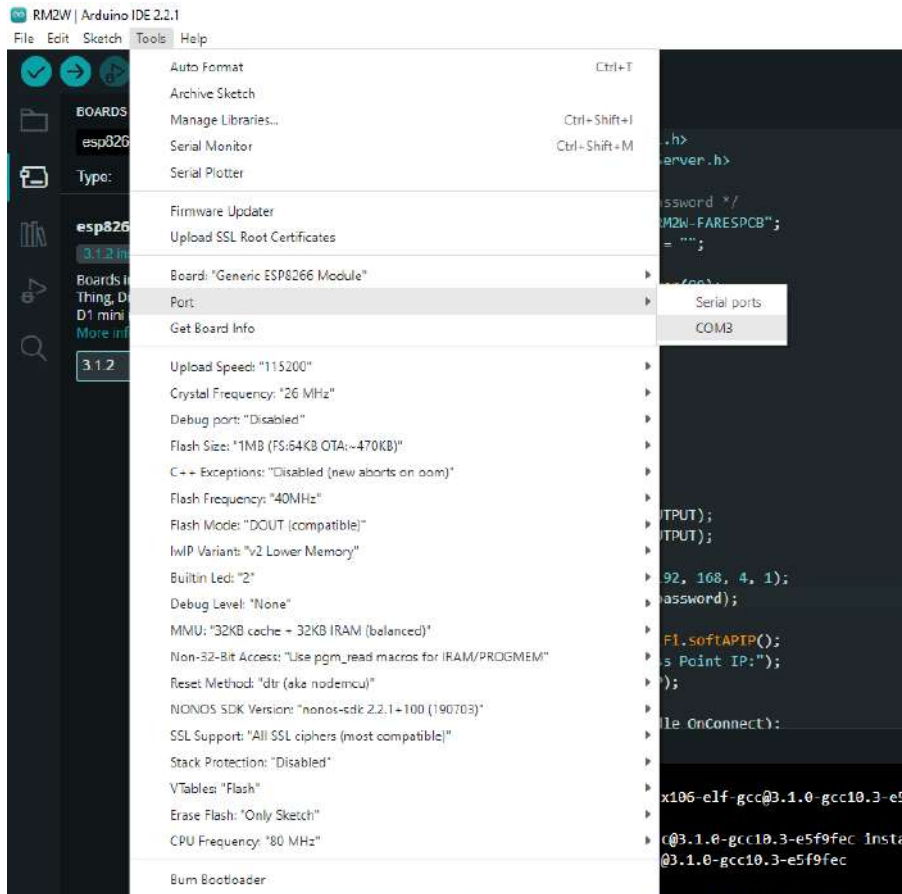
7- Go to Tools > Board > esp8266 > Generic ESP8266 Module.

RM2W | Arduino IDE 2.2.1

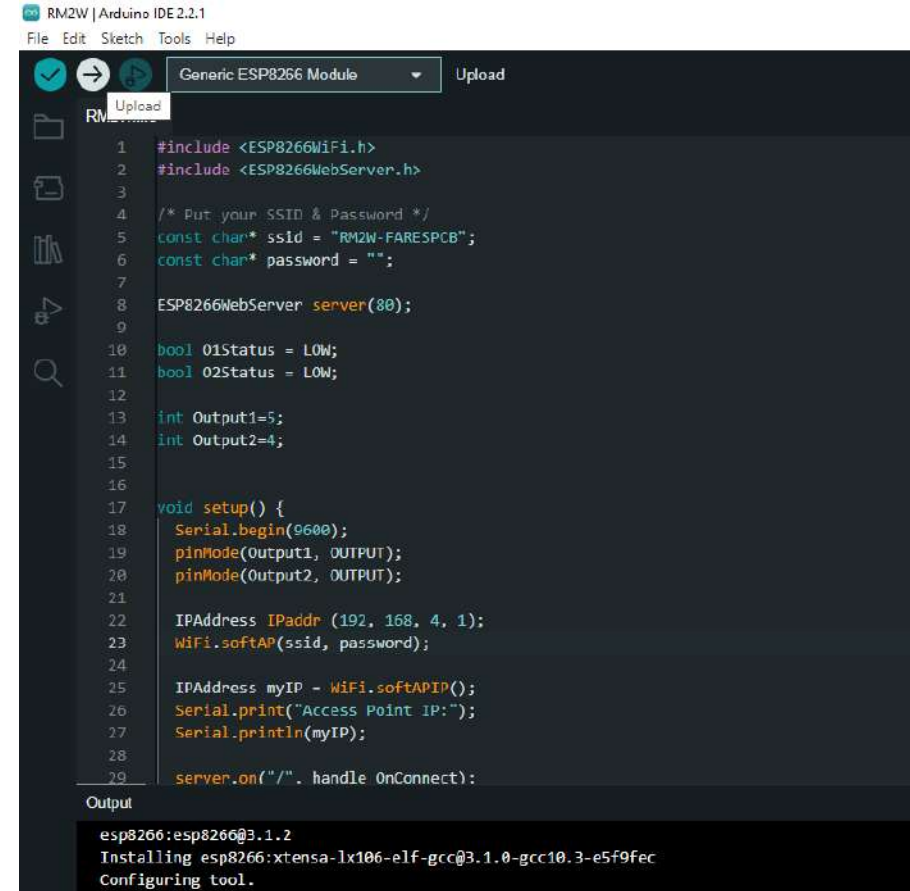
File Edit Sketch Tools Help

The screenshot shows the Arduino IDE interface with the 'Tools' menu open. The path 'Tools > Board > esp8266 > Generic ESP8266 Module' is highlighted. The 'Generic ESP8266 Module' is selected in the 'Boards Manager' window. The status bar at the bottom indicates: 'Platform esp8266:esp8266@3.1.2 installed'.

8- Go to Tools > Port > COM.



9-Click Upload icon to compile and upload your code.



How to test ?

RM6W module comes pre-programmed with a test code that can be used to apply control via any browser page.

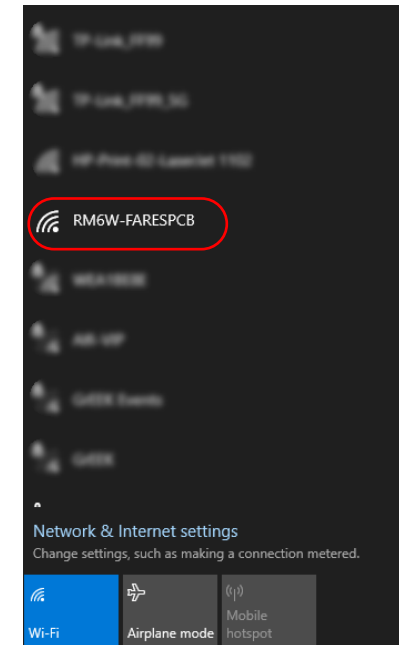
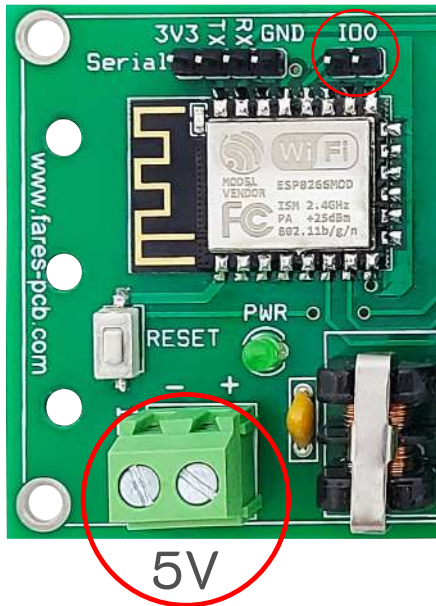
The code is available at this link: <https://fares-pcb.com/product/6-channel-wireless-relay-module-esp-12f-rm6w/>

Test Steps

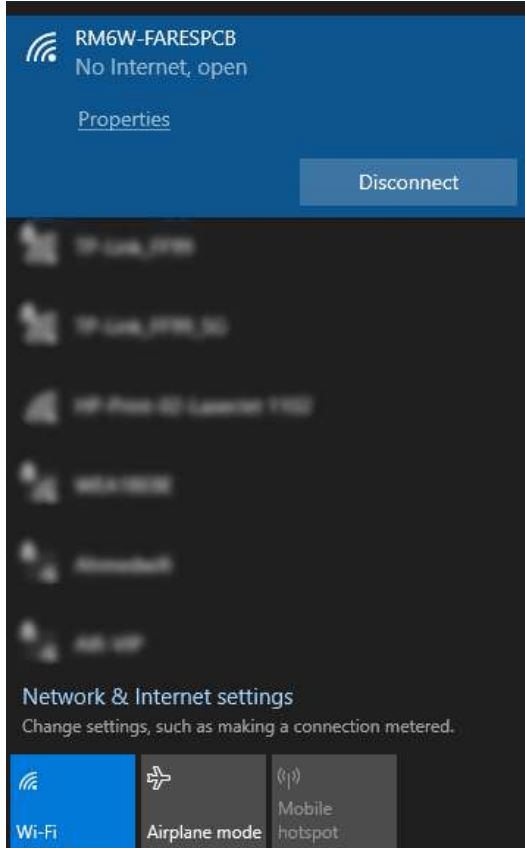
1-Ensure the I00 jumper is removed.

2-Connect power supply 5V.

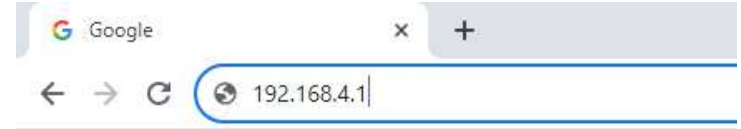
3-A Wi-Fi network signal will popup denoted by (RM6W-FARESPCB).



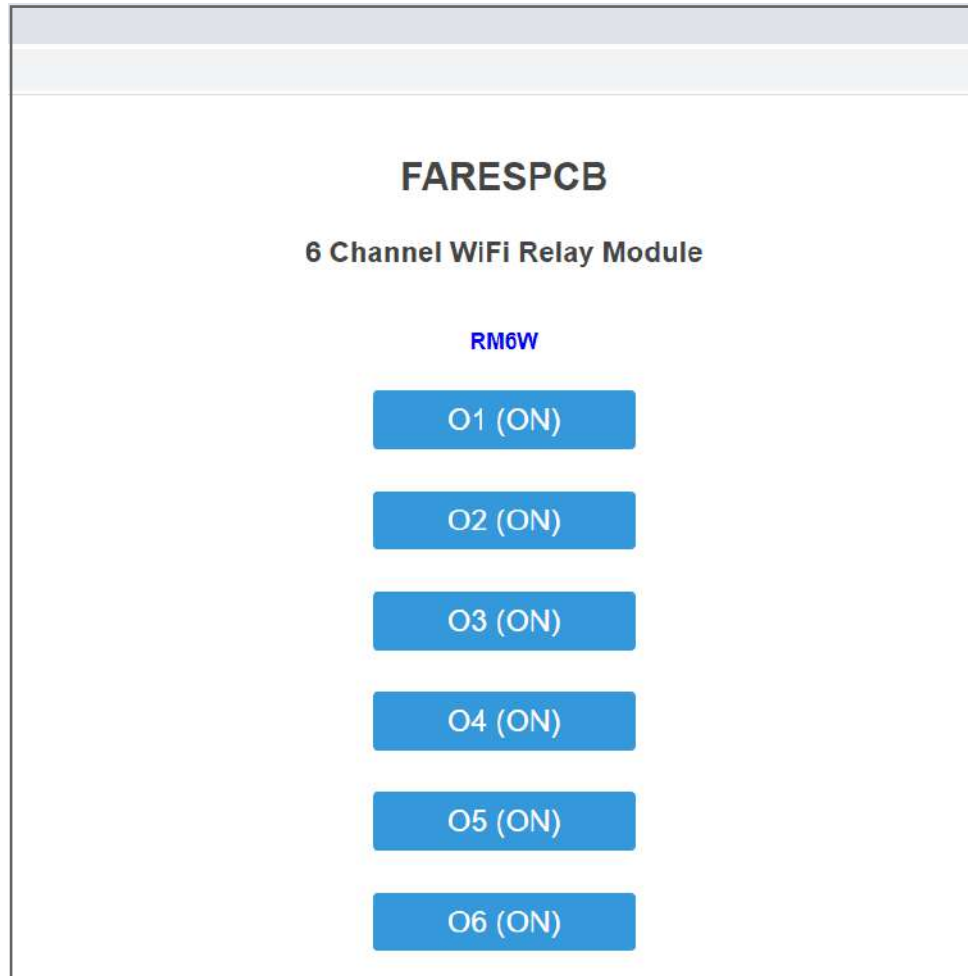
4- Connect using PC or Smart phone.



5-Open any web browser and input the default IP address “ 192.168.4.1 ”.



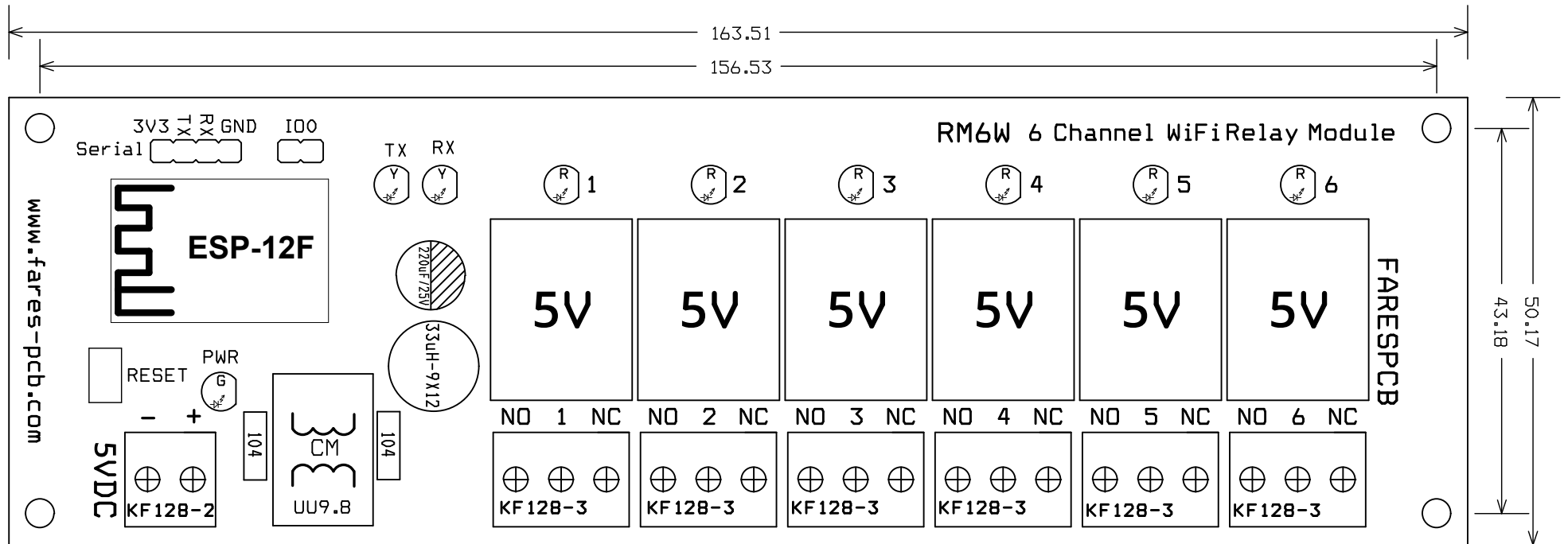
6-Control page will be loaded. Use **ON/OFF** buttons to control output relays.



Output relays are routed to ESP-12F GPIOs as shown in the table below

Output Relay	ESP-12F GPIO pin
Relay 1	GPIO5
Relay 2	GPIO4
Relay 3	GPIO13
Relay 4	GPIO12
Relay 5	GPIO14
Relay 6	GPIO16

Mechanical Dimensions Diagram



All Dimensions are in mm

For our full range of products, see our website at <http://www.fares-pcb.com>

If you have any technical questions about our products,
e-mail us at www.support@fares-pcb.com

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