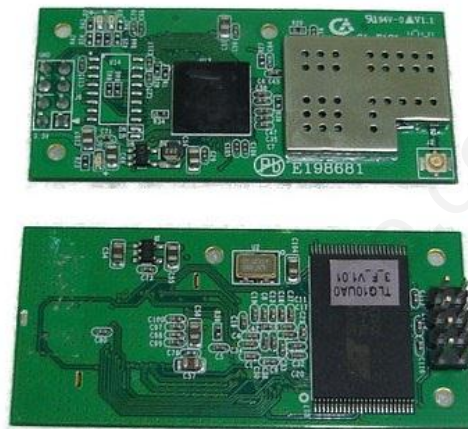


## UART-WIFI Webserver MODULE TEST

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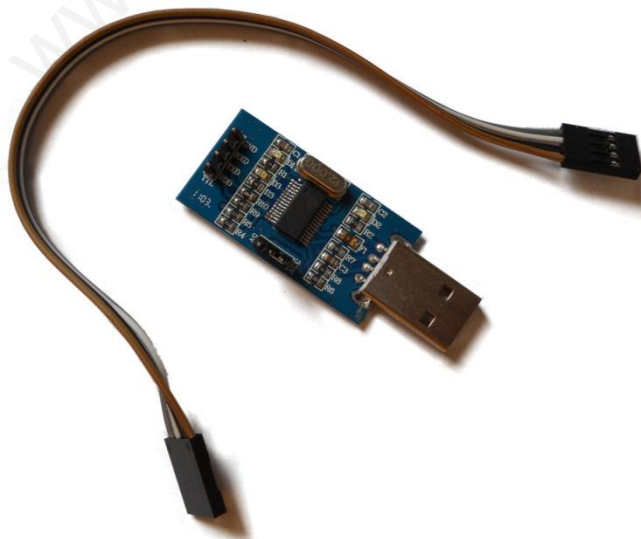
We have another WIFI module in our shop. That WIFI module communicates via SPI interface, which is not easy for some beginners. But it might be a little hard to use this module. The code is long and complicate. Interpreting the code is always hard and boring, especially for those who don't want to waste much time on this module.

So we supply another WIFI module here. It has UART interface. And it is more powerful, with more functions.



According to the manual, here we show how to connect it to network.

Along this module, you will get an USB-TTL module.



If you are Arduino users, we strongly recommend [Arduino WiFi Module Shield](#).



### Test Steps

#### Step 1

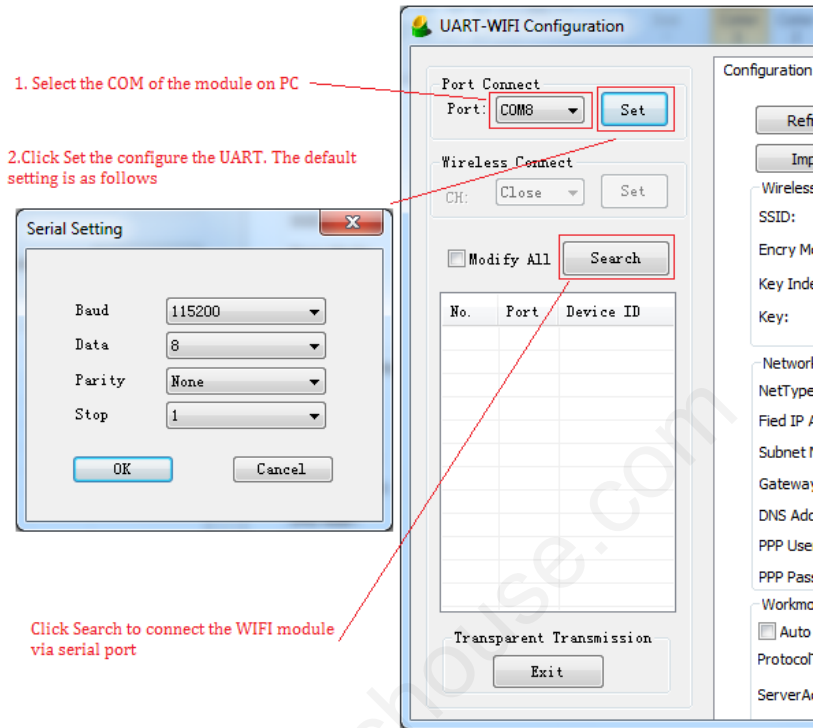
Connect WiFi module with PC via this module. Before you do it, make sure your WiFi module is connected to USB-TTL modules in the right way. Make sure you choose 3.3V on the USB-TTL board. Please be careful, do not reverse the wire connection, or the module might be damaged.



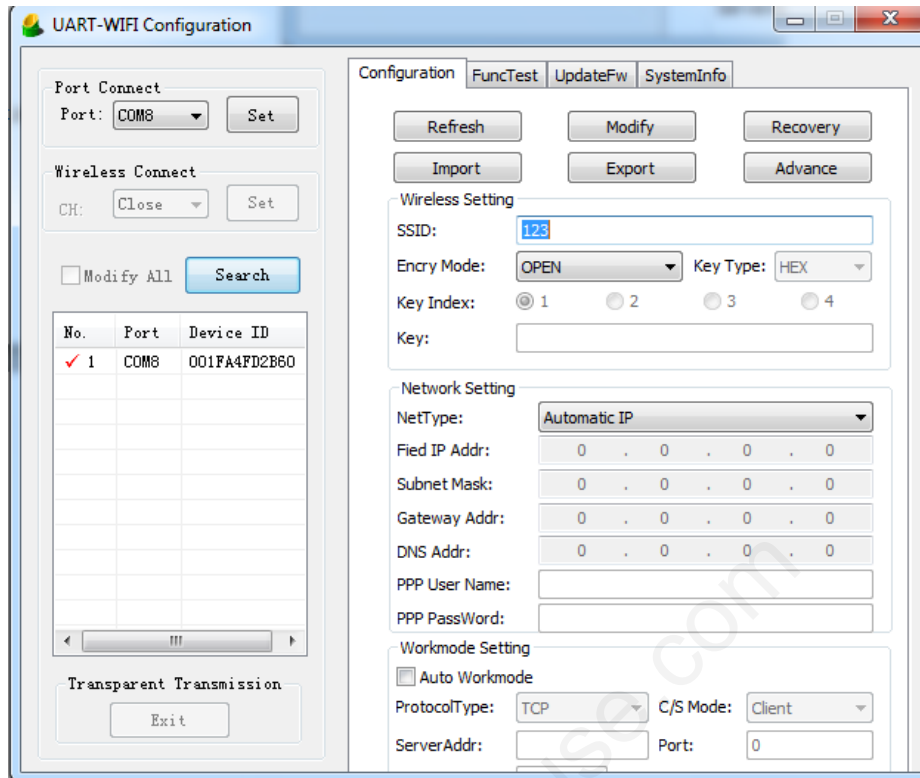
#### Step 2

If you use this module for the first time, please see Step 9 first.

Start the software UART-WIFI.exe and connect to the device.



If successful, you can get the following result:



*Sometimes the software will pop up a prompt reporting parameter error, please just ignore it.*

*If the software can't detect the device and you make sure your hardware connecting is right, this WiFi module might enter **Auto Workmode** in which all the data entered into it via UART will be sent wirelessly directly. You have to exit this mode first. Please refer to the last optional step, then repeat step 2 again.*

### **Step 3**

*Enter the SSID, Encry Mode, Key Type and Key parameters. Those parameters must match your wireless router. Here is the configuration of my wireless router:*

**Wireless Settings**

**SSID:**

**Region:**

**Warning:** Ensure you select a correct country to conform local law. Incorrect settings may cause interference.

**Channel:**

**Mode:**

**Channel Width:**

**Max Tx Rate:**

☒ Enable Wireless Router Radio

☒ Enable SSID Broadcast

☐ Enable WDS

**WPA-PSK/WPA2-PSK**

**Version:**

**Encryption:**

**PSK Password:**

(You can enter ASCII characters between 8 and 63 or Hexadecimal characters between 8 and 64.)

**Group Key Update Period:**  (in second, minimum is 30, 0 means no update)

Enter the Parameter:

UART-WIFI Configuration

**Port Connect**

Port:

**Wireless Connect**

CH:

☐ Modify All

No.	Port	Device ID
✓ 1	COM7	001FA4FD2B60

**Transparent Transmission**

Configuration    FuncTest    UpdateFw    SystemInfo

**Wireless Setting**

SSID:

Encry Mode:     Key Type:

Key Index: ☒ 1    ☐ 2    ☐ 3    ☐ 4

Key:

**Network Setting**

NetType:

Fied IP Addr:  .  .  .

Subnet Mask:  .  .  .

Gateway Addr:  .  .  .

DNS Addr:  .  .  .

PPP User Name:

PPP PassWord:

**Workmode Setting**

☒ Auto Workmode

ProtocolType:     C/S Mode:

ServerAddr:     Port:

Also you have to enter you're the NetType parameter. If you wireless router supports DHCP (most routers do), you can choose "Automatic IP". Or else you have to enter the IP and Gateway yourself. Here we enter a fixed IP.

Do not select **Auto Workmode**. You can learn more about **Auto Workmode** in the manual.

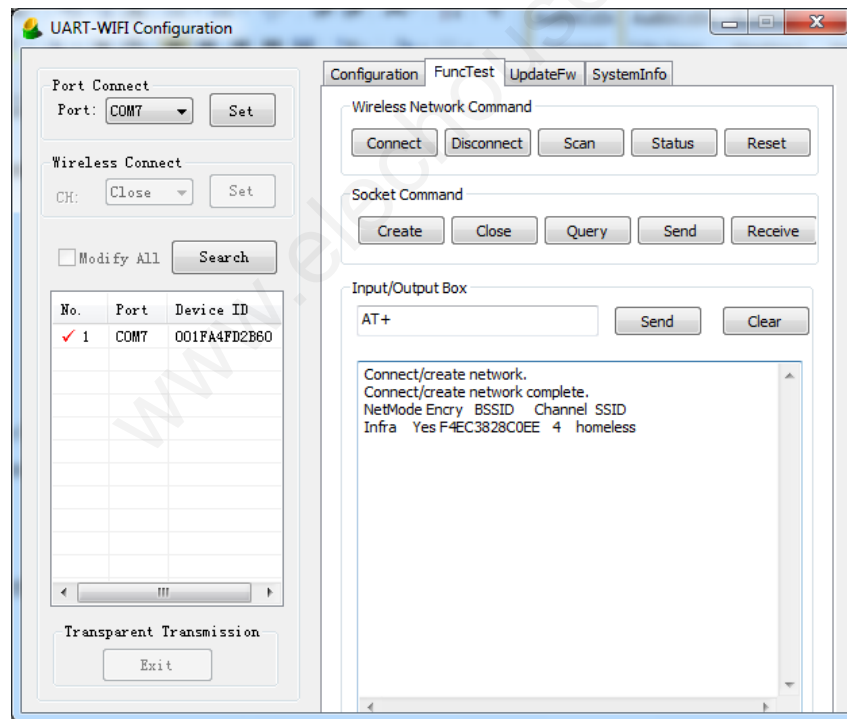
Click **Modify** the save the configuration:



Click the **Reset Now** to reset the module. Then close the software and restart it again. Search and connect to the device as described above.

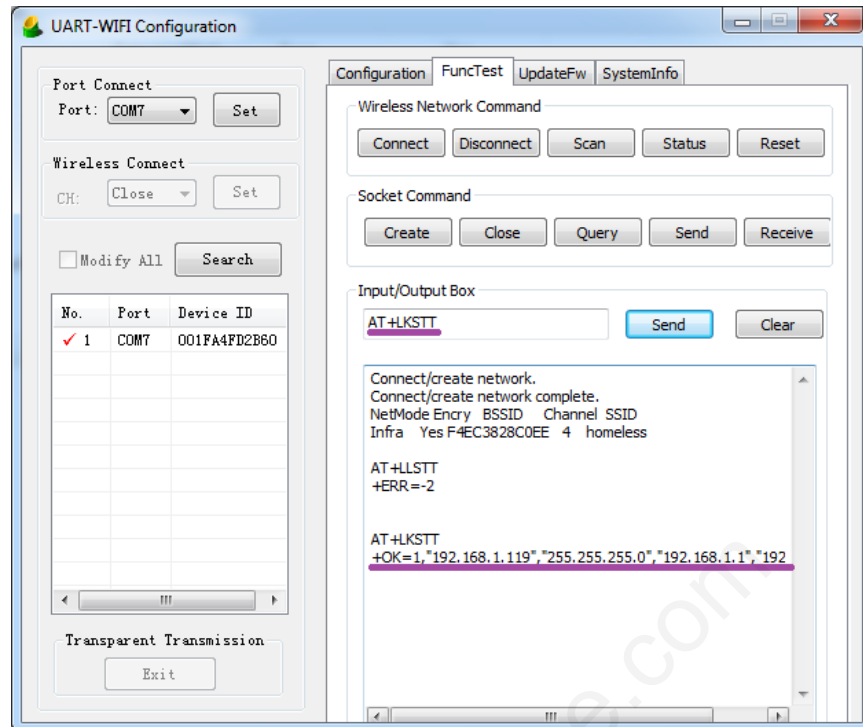
#### Step 4

Choose the **FuncTest** in the top menu, and click Connect. If successful, you will get:



#### Step 5 (optional)

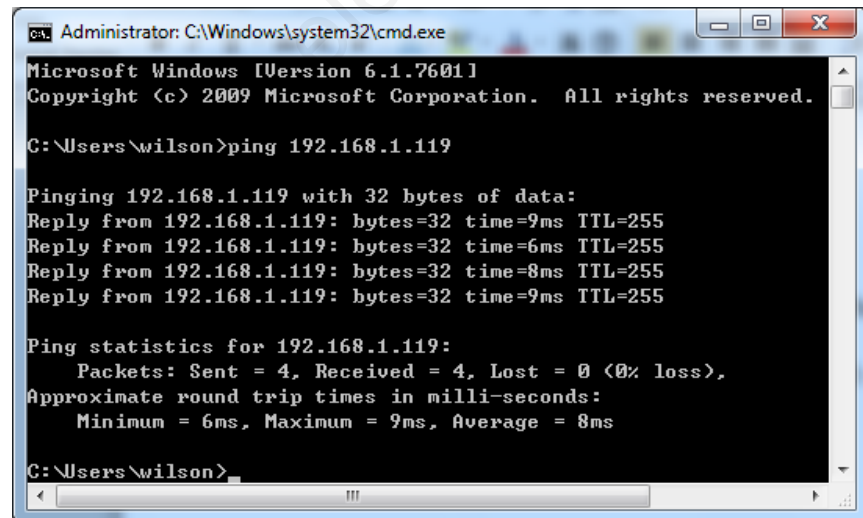
If you set a fixed IP for this module as we did above, you can skip this step. Or if you use DHCP, you have to do this step to get the IP information.



Please refer to AT+LKSTT command in the manual for more information.

## Step 6

Verify the connection. We will ping this module from PC and also visit the web-congify page of this module.



In your browser, visit <http://192.168.1.119>

In the windows, enter the following information:

User name: admin

Password: 000000

**Basic**

**Wireless Settings**

SSID : homeless

Encryption : WPA2-PSK(TKIP)

Key Format : ASCII

Key Index : ☐ 1 ☐ 2 ☐ 3 ☐ 4

Encryption Key : +8618903609780

**Network Settings**

☐ DHCP Enable

Fixed IP Address : 192.168.1.119

Subnet Mask : 255.255.255.0

Gateway Address : 192.168.1.1

### Step 7

To do further test, we have to change some configuration. We will enable Auto Mode. In Auto Mode, all the data sent to serial interface will be transmitted wirelessly, and all the data (above TCP) received from wireless network will be sent back via serial interface. If you want to configure the module via serial port, you have to exit Auto Mode first. Please refer to the last step to know how to exit Auto Mode.

At the end of the web-config page, do the following configuration.

**Auto Mode Settings**

☒ Auto Mode Enable

Protocol : TCP

C/S Mode : SERVER

Server Address : 0.0.0.0

Tcp Link TimeOut : 120 s (range <0 , 10000000>)

Port Number : 8090

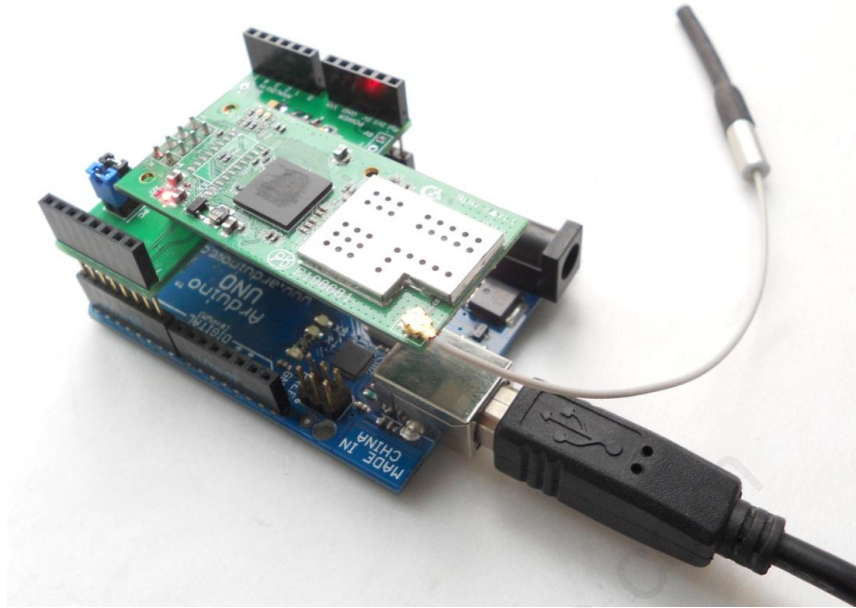
Click **Save** and the module will restart.

### Step 8

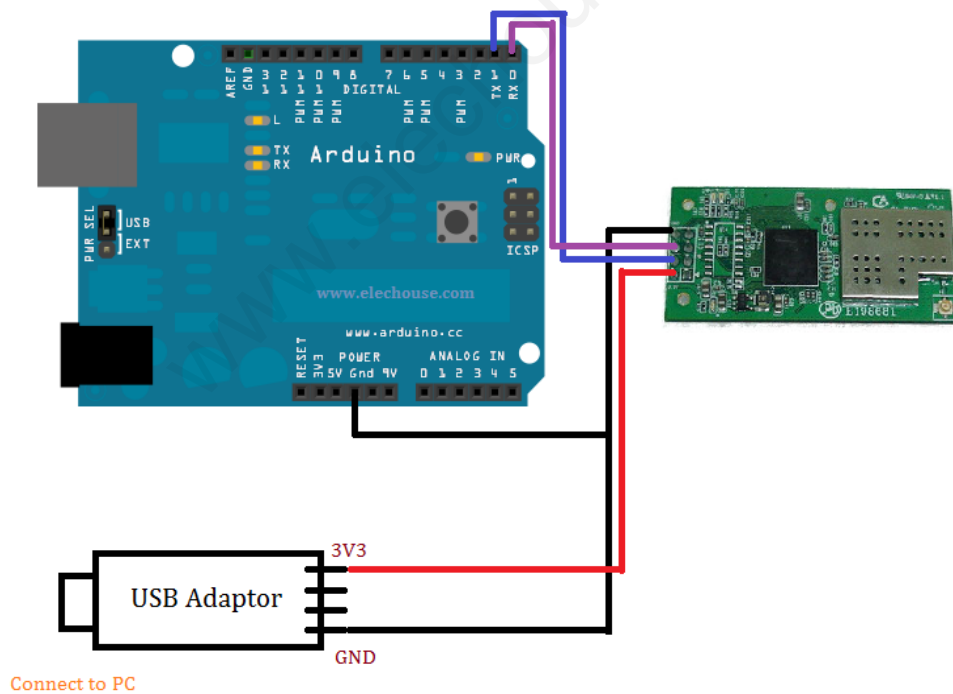
Connect this module with Arduino.



If you got an Arduino WiFi Module Shield, connection will be easier:



If you don't have the shield, you can connect with wires, as follows:



Note: you can't connect WiFi module's VCC pin to Arduino 3.3V pin. Because Arduino 3.3V pin can't supply enough current for WiFi module.

Please wait for some time. It will connect to network automatically. The read LED will flash if it gets into network.

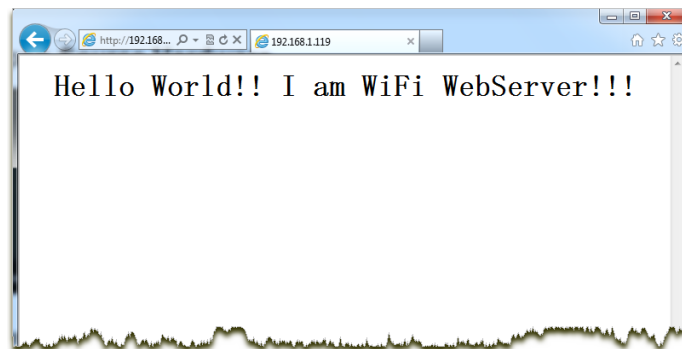
Then upload the following code to Arduino:

```
void setup()
{
    Serial.begin(115200);
}
void loop()
{
    boolean currentLineIsBlank = true;
    while(1){
        if (Serial.available()) {
            char c = Serial.read();
            // if you've gotten to the end of the line (received a newline
            // character) and the line is blank, the http request has ended,
            // so you can send a reply
            if (c == '\n' && currentLineIsBlank) {
                // send the webpage
                Serial.println("HTTP/1.1 200 OK\r\nContent-Type: text/html\r\n\r\n<center><h1>Hello World!! I am WiFi
WebServer!!!</h1></center>");
                break;
            }
            if (c == '\n') {
                // you're starting a new line
                currentLineIsBlank = true;
            }
            else if (c != '\r') {
                // you've gotten a character on the current line
                currentLineIsBlank = false;
            }
        }
    }
}
```

Note: in the code above, we initial serial interface at 115200bps. If you connect WiFi module with wires, we recommend you configure the interface at 9600bps. Of course you should modify the serial baud rate on WiFi module too. Please refer to latter information for more details.

From the code above, we can see that there is nothing with network thing (such as TCP/IP), which make much easier for those who know little about networks.

Visit <http://192.168.1.119:8090> in your browser.

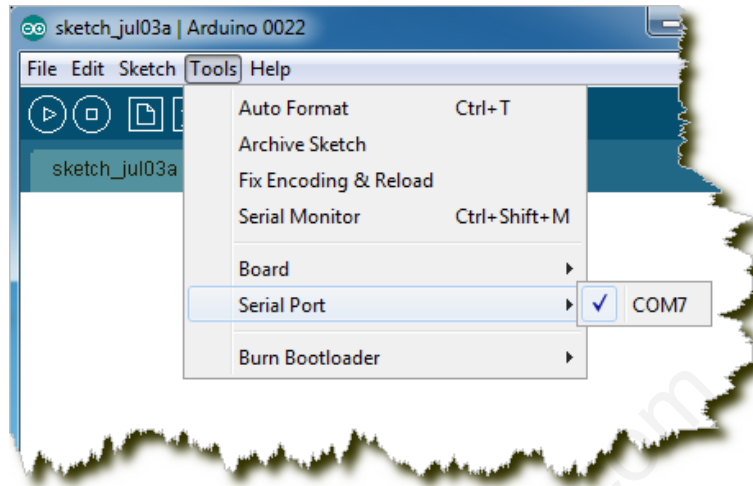


### Step 9 (optional)

If you can't access this module by UART-WIFI.exe, you may have to exit **Auto Workmode**.

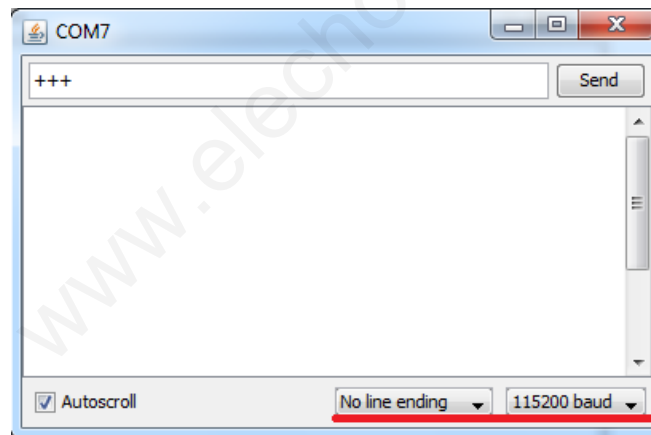
Please close the UART-WIFI.exe first and start some COM-config software. Here I use Arduino IDE serial monitor.

1. Select the COM first



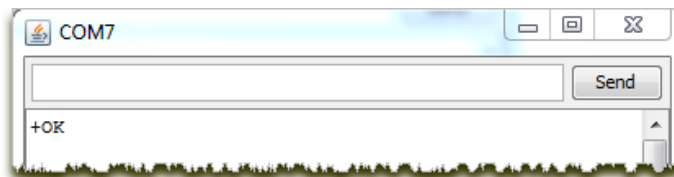
Please go to **Hardware Manager** in your PC if you do not know the COM number.

2. Open serial monitor and configure it

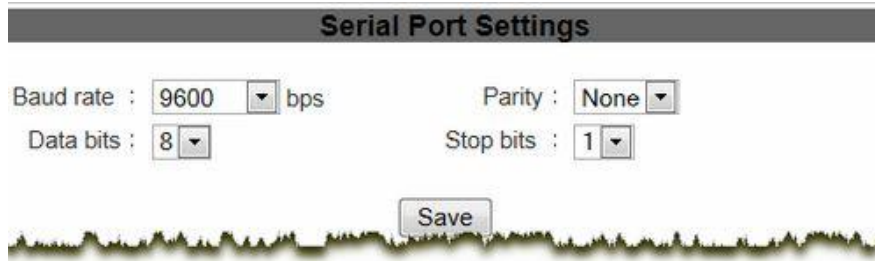


Please note that choose **No line ending** and the baud rate 115200.

3. Send "+++". If return "+OK", it means successful.



If you need to modify baud rate of WiFi module, In the Web-config page, click **Advanced** in the left-top menu, change the Baud rate in the **Serial Port Settings**:



The image shows a 'Serial Port Settings' dialog box. It has four dropdown menus: 'Baud rate' set to 9600 bps, 'Parity' set to None, 'Data bits' set to 8, and 'Stop bits' set to 1. There is a 'Save' button at the bottom right. The dialog box has a dark grey title bar and a light grey background.

Click **Save** and the module will restart.

### Known problems and Solution

1. If you use our [Arduino WiFi Module Shield](#), please use external power supply. Because the working module might be over 300mA, which might cause damage to your USB if your power supply comes from your USB adaptor.
2. If you use our [Arduino WiFi Module Shield](#), and the wifi module doesn't work while you connect it to Arduino and power it up, please erase the program in your Arduino. You can do it by burning the Blink example.
3. The power regulator chip might become very hot. This is because the current is large, over 300ma, and the drop voltage on the chip is large too if your external power is 9V. One solution is replacing 9V adaptor with 7V adaptor. Then the heat will reduce much.

### Disclaimer and Revisions

The information in this document may change without notice.

Revision History

Rev.	Date	Author	Description
A	May. 12 <sup>th</sup> , 2011	Wilson Shen	Initial version
B	Oct. 22 <sup>nd</sup> , 2011	Wilson Shen	Add WiFi shield part
C	Dec. 12 <sup>th</sup> , 2011	Wilson Shen	Add "Known problems and Solution"

Please visit [www.elechouse.com](http://www.elechouse.com) for any updated information.