

Elfin-EW1X

RS232/RS485 to Wi-Fi

Operation Guide

V 1.1

 <p>Elfin-EW10 RS232 ↓ Wi-Fi</p> <p>CMIT ID: 2018DP1893 Input: 5-18VDC@5W</p> <p>1. 1 2. 2 3. 3 4. Reload 5. TXD 6. RXD 7. VCC 8. GND</p>	Elfin-EW10
 <p>Elfin-EW11 RS485 ↓ Wi-Fi</p> <p>CMIT ID: 2018DP1893 Input: 5-18VDC@5W</p> <p>1. 1 2. 2 3. 3 4. Reload 5. TXD 6. RXD 7. VCC 8. GND</p>	Elfin-EW11

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1. ELFIN-EW1X EVK

Elfin-EW10 is RS232 interface and Elfin-EW11 is RS485 interface. The EVK include the following attachment.

- Elfin-E1X product
- Screw driver
- RJ45 to Terminal Transform(4PIN or 8PIN)



1.1. Elfin-EW10 4PIN Connector



1.2. Elfin-EW11 4PIN Connector



1.3. Elfin-EW10 8PIN Connector

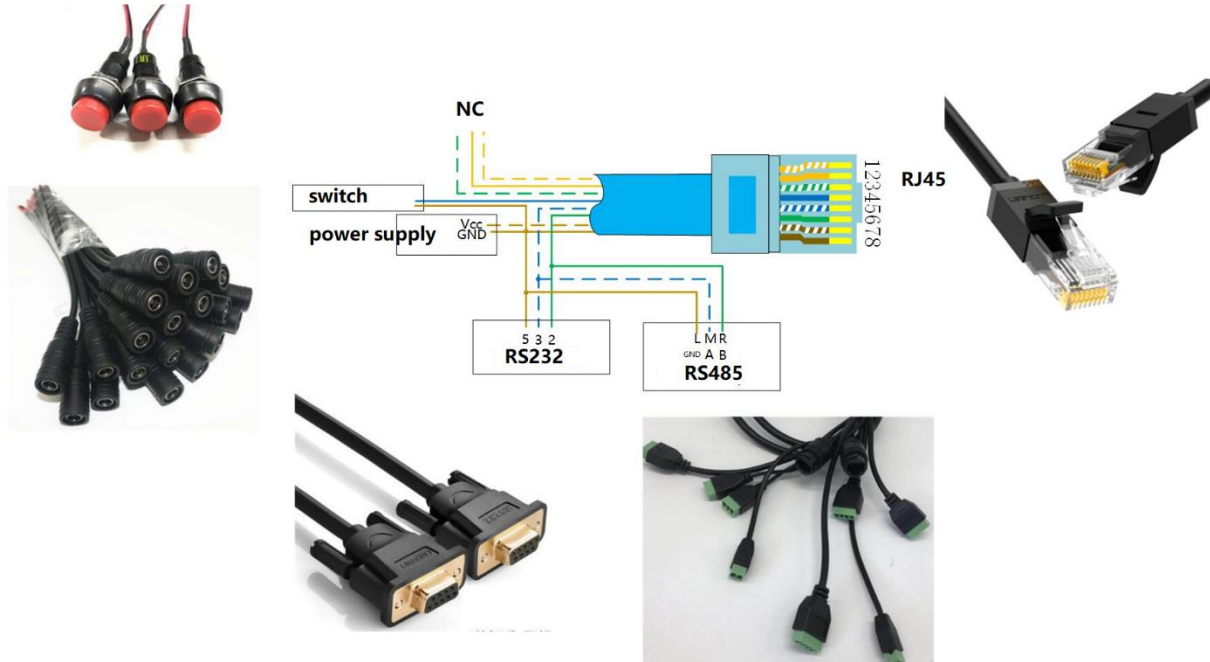


1.4. Elfin-EW11 8PIN Connector



1.5. Elfin RJ45 Cable

The RJ45 cable can be done as following picture.



1.6. EW10 Interface Conversion Cable




1.7. EW11 Interface Conversion Cable

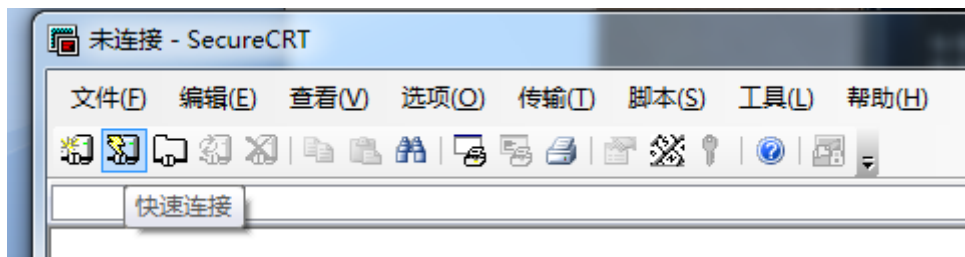


2. SERIAL SETTING

2.1. Serial Tool SecureCRT

Download address: http://www.hi-flying.com/index.php?route=download/category&path=1_4

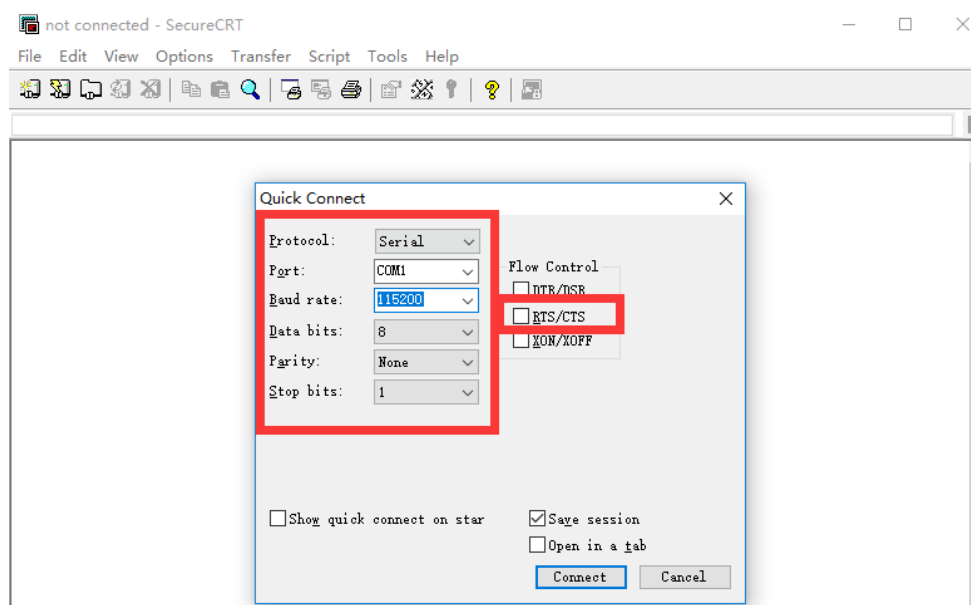
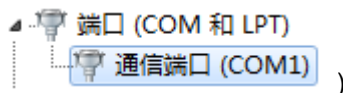
Decompress file and find executable program, then open. Click quick start button  to create connection.



2.2. Configure Serial Parameter

Protocol: Serial

Port: Actual connection port(search by "My PC"->"Device Manager"->"Port(COM and LPT)". As figure:



Notes: Elfin-EW1X the default serial data is as above and user can modify device working parameter by IOTService.

3. TEST EXAMPLE

Elfin-EW1X use TCP/IP protocol for communication. There is two main parameters one for IP address and another for port number.

3.1. AP Wireless Networking

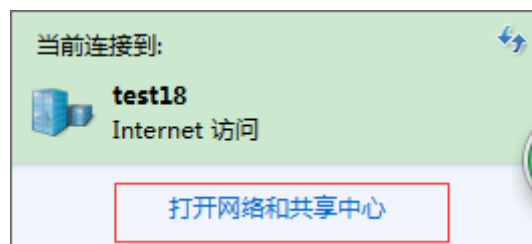
Product works in AP mode. All other STA devices connect to product AP. (Product AP does not support route function, so the STA can not transfer data to each other) The structure is t shown as below:



Step 1: The product default AP SSID is "EW1X_+MAC(last 4 characters)". It can also search by cli "show" command. Figure is as below:


```
===WIFI Status===  
Mode:STA  
AP SSID:EW10_C69A  
Hide AP SSID:Off  
Disconnected  
  
STA SSID:Upd  
Connected,7C:B5:40:4F:B2:CD  
EPORT>
```

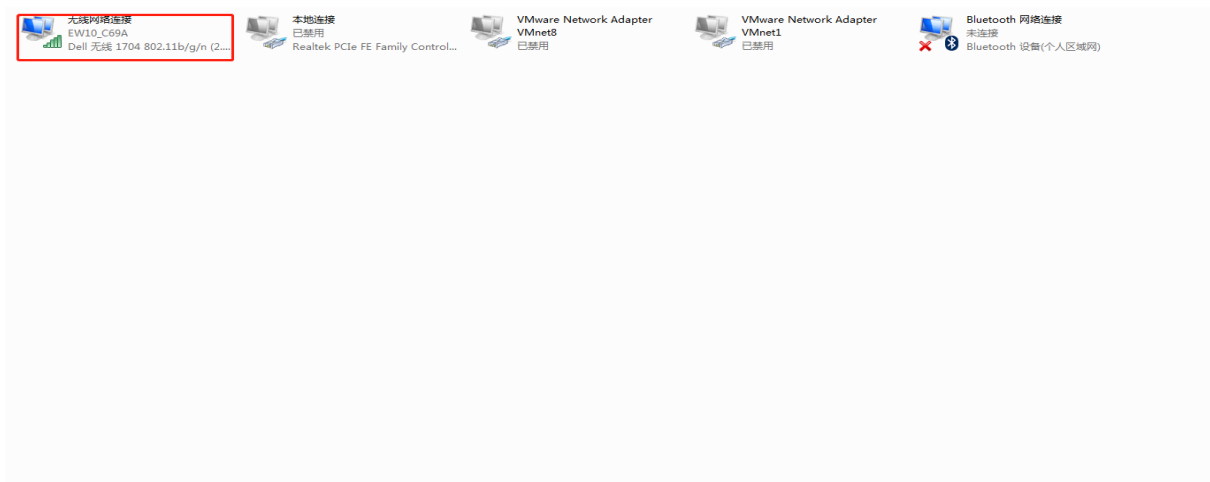
Step 2: PC connect to product AP as following picture.



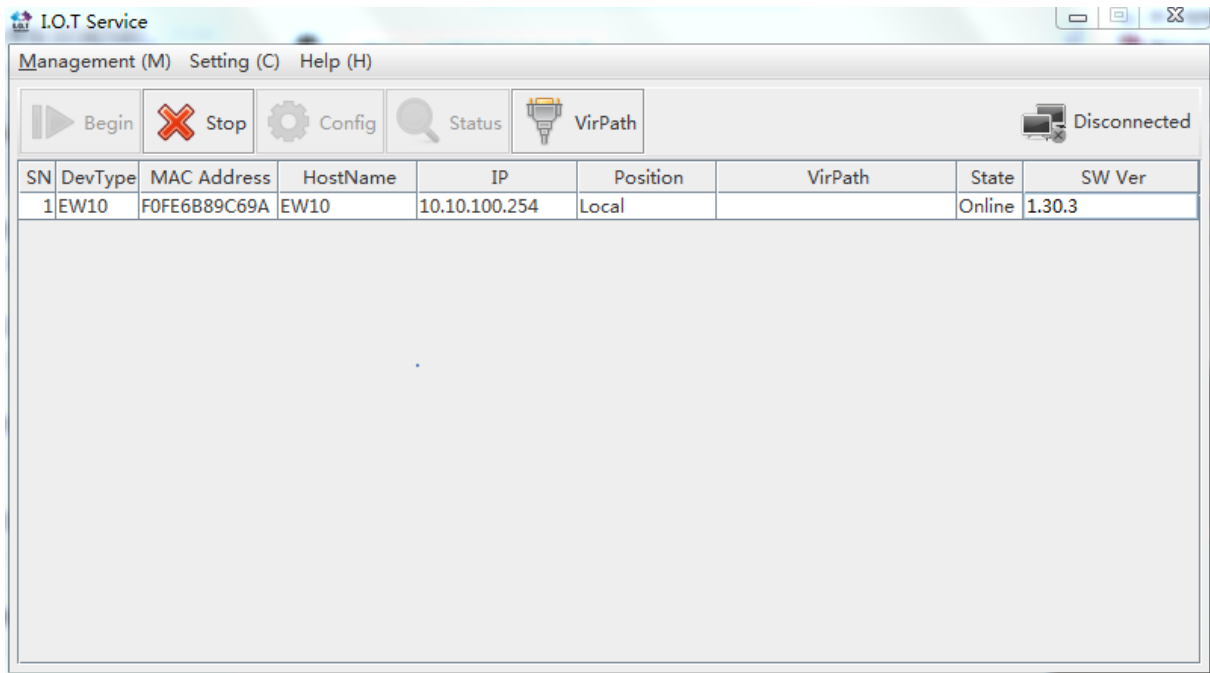
Step 3: Open network connection and connect to Elfin-EW1XAP from Step 1.



Step 4: Forbidden other network card and only remain the current Wi-Fi network card.



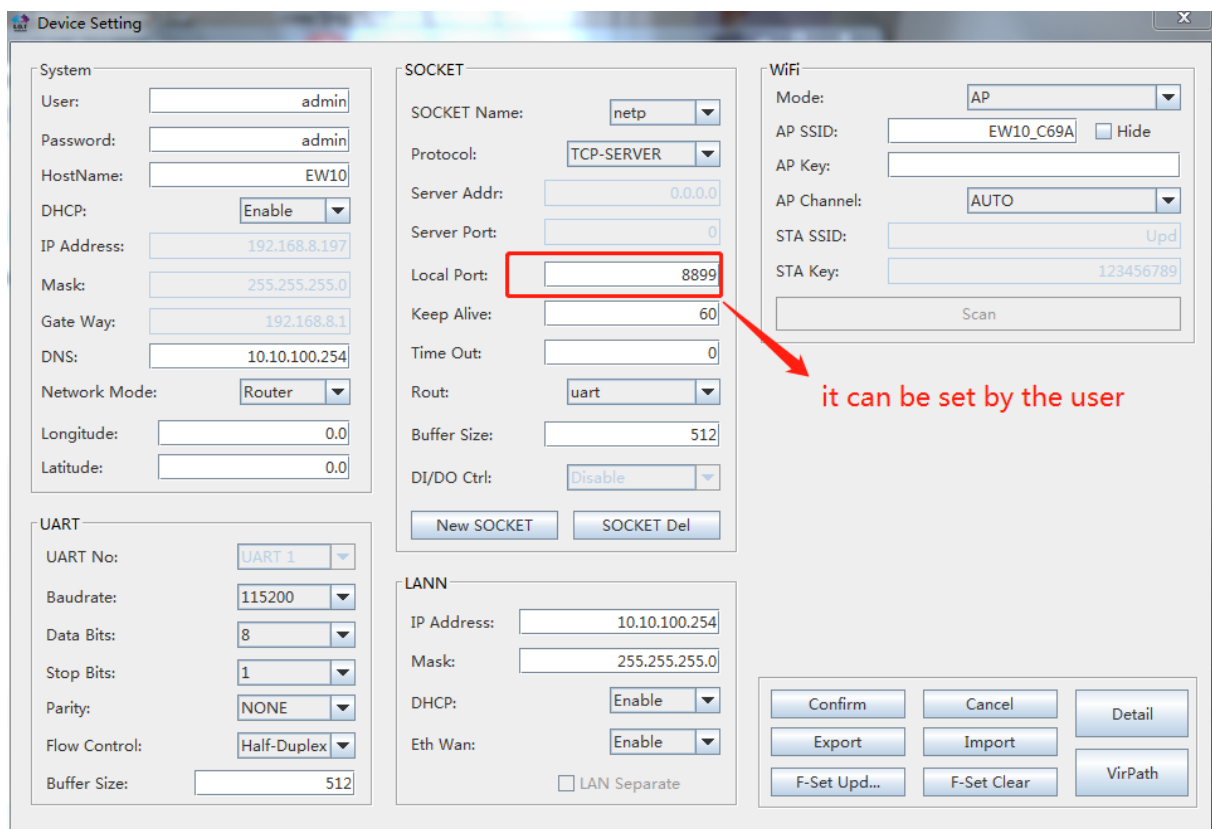
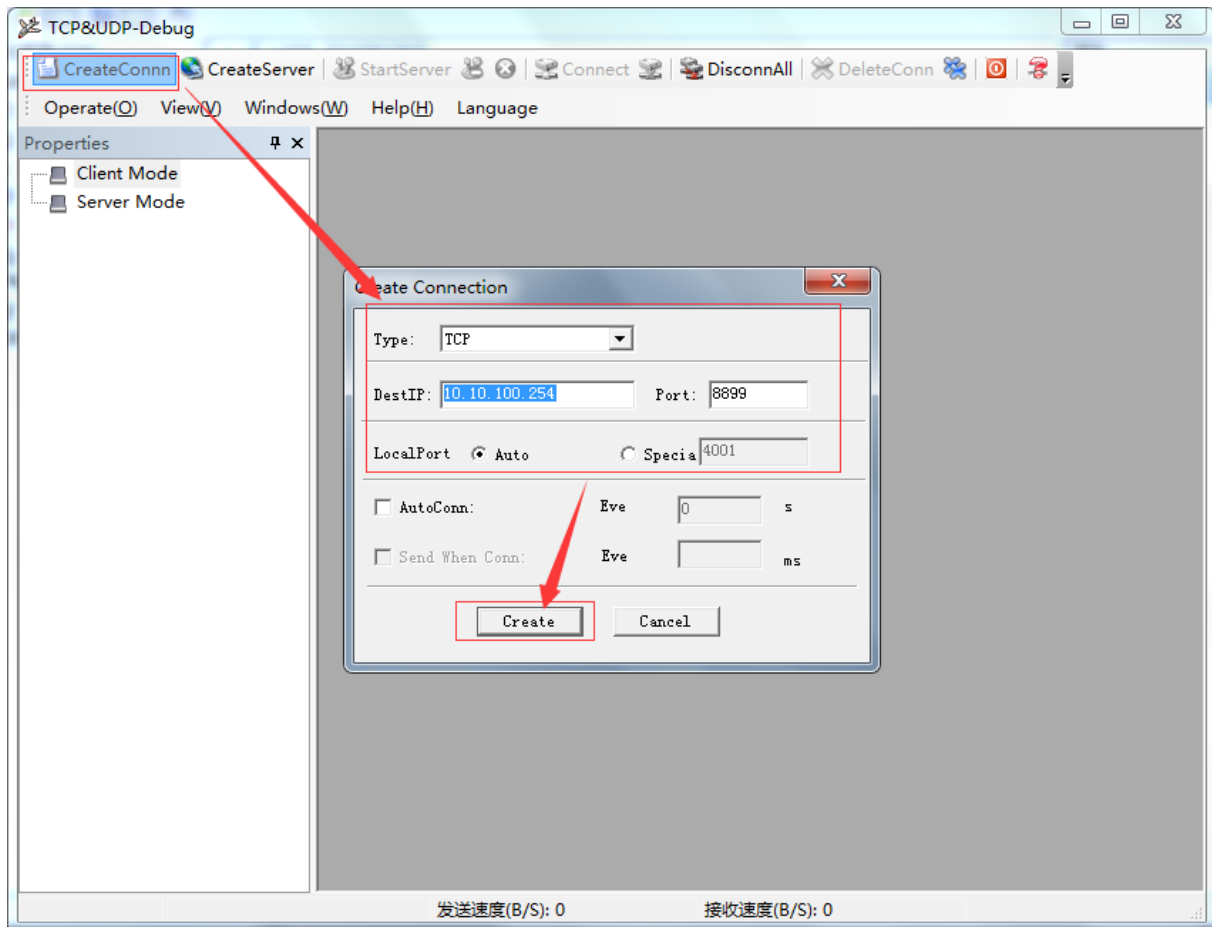
Step 5: Open IOTService and find the device. The device will allocate IP address to the STA connected. STA device IP address will be like 10.10.100.XXX.



3.2. TCP Server Test in AP Mode

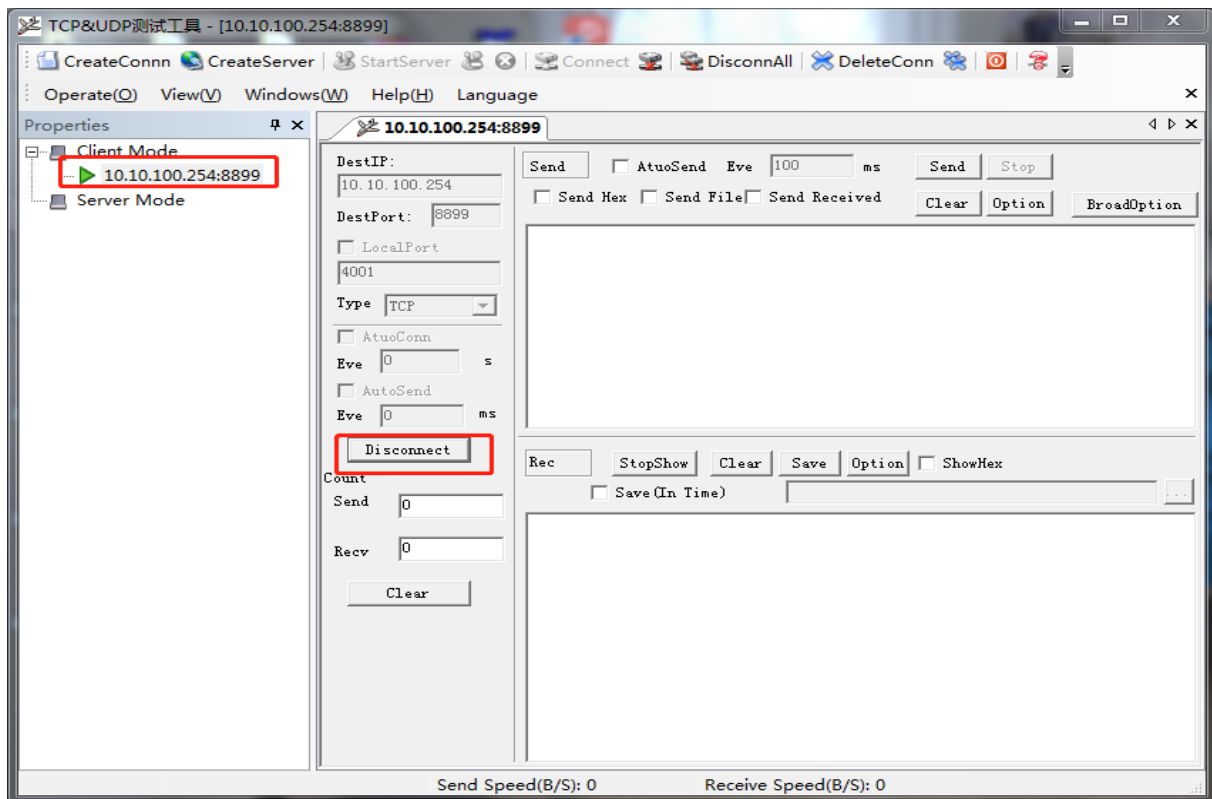
Step 1: Open TCP&UDP test tool and generate TCP connection as following steps. Device has already created a TCP Server (port 8899) for use. TCP&UDP test tool can be downloaded from our website:

- DestIP: IP address of device which can be found by IOTService.
- Port: Port of TCP Server which can be found by IOTService or set by users own.

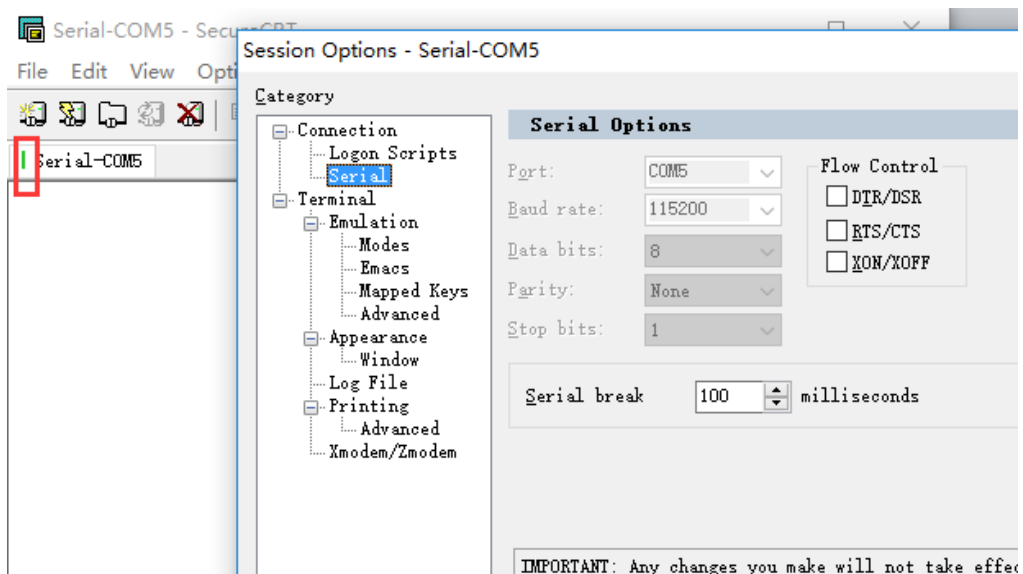


Step 2: Click Connection to generate TCP connection

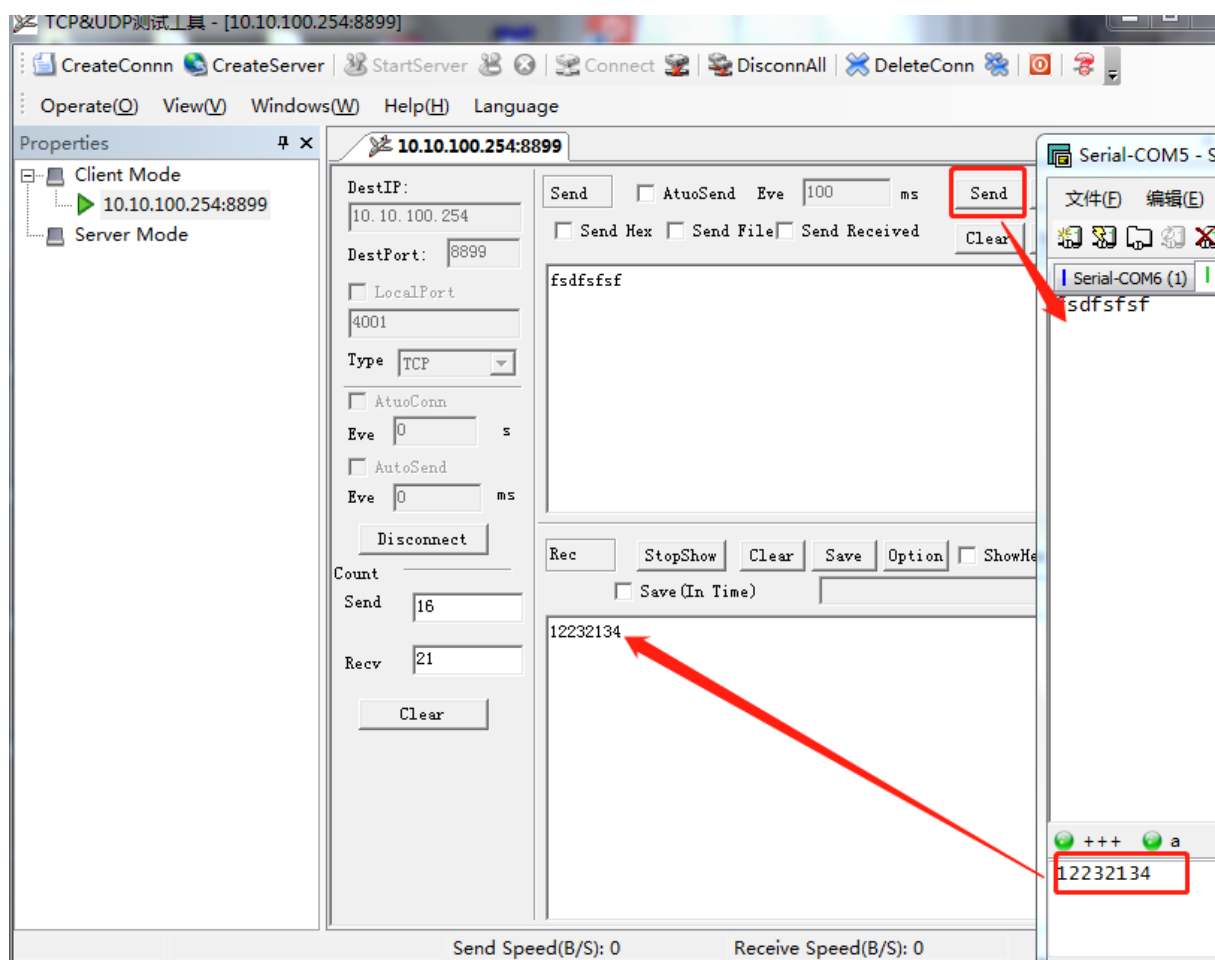
- After successful connection, the left turns to be green arrow, yellow if fails.



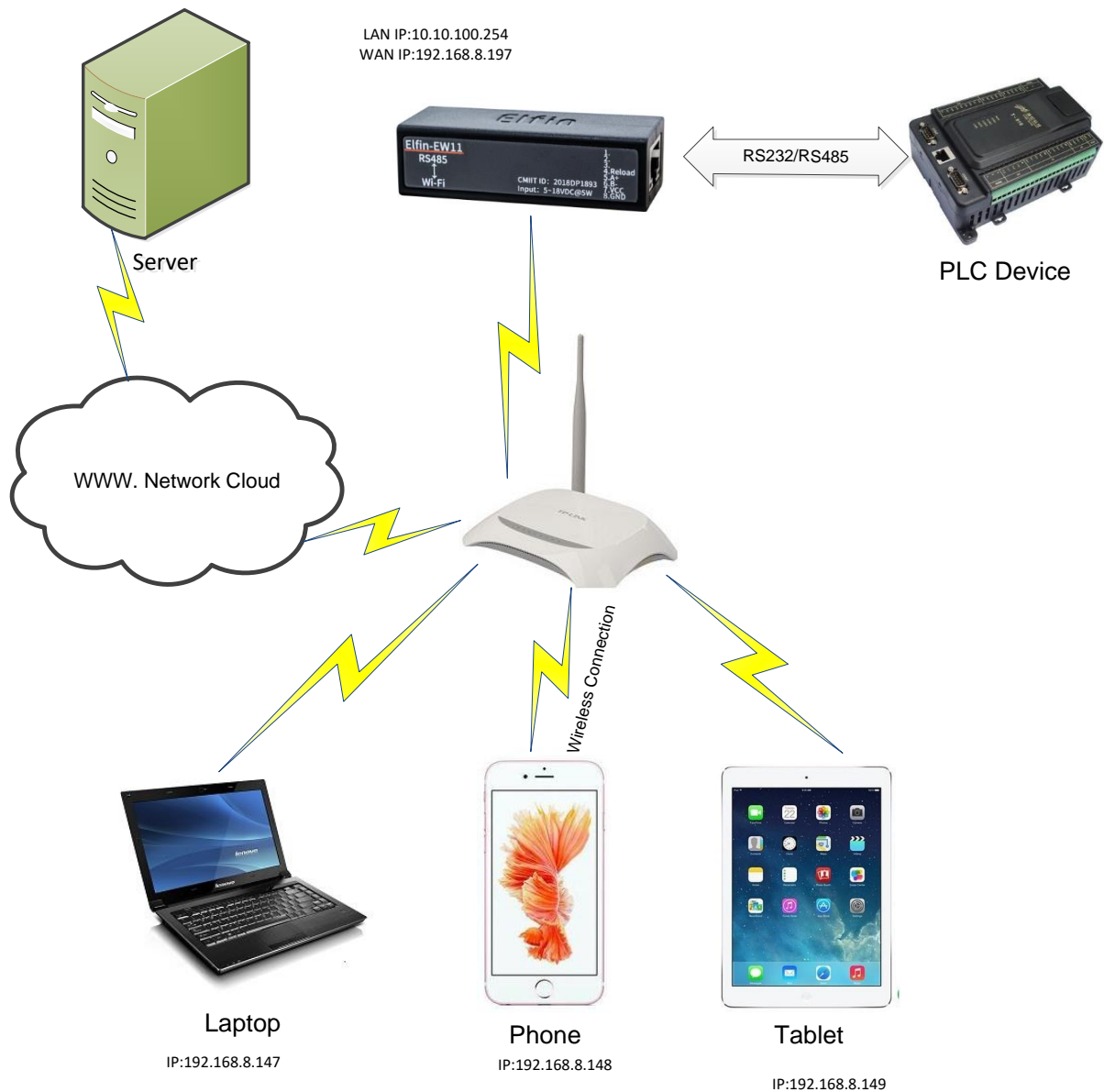
Step 3: Open serial tool according to following parameters(115200 baud rate as default)



Step 4: Data transmission between TCP and UART is as following.

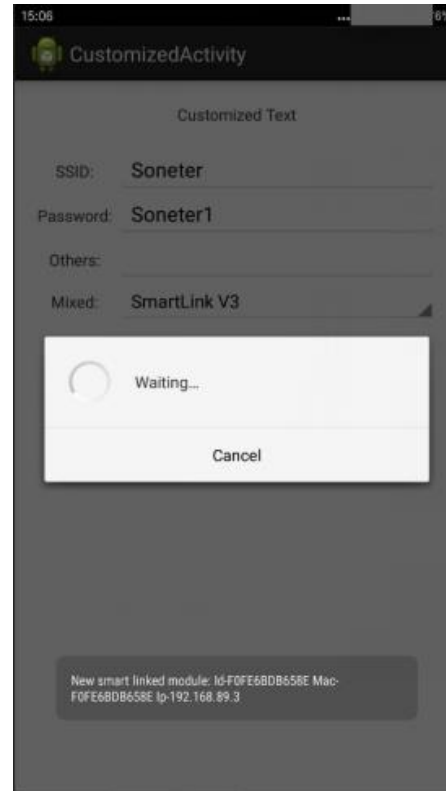
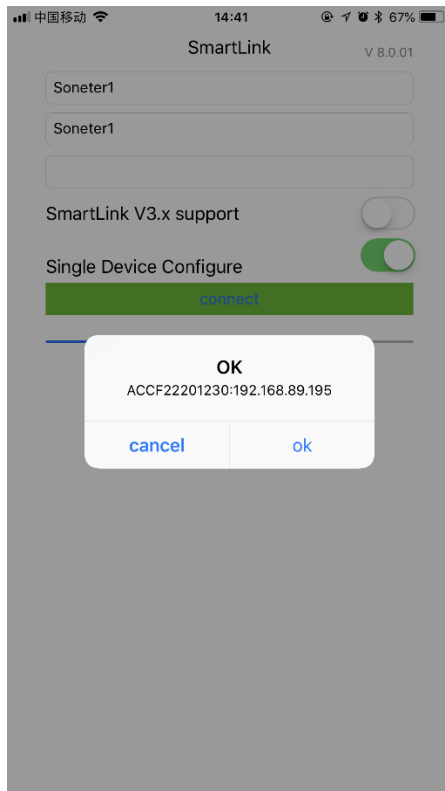


3.3. STA Wireless Networking



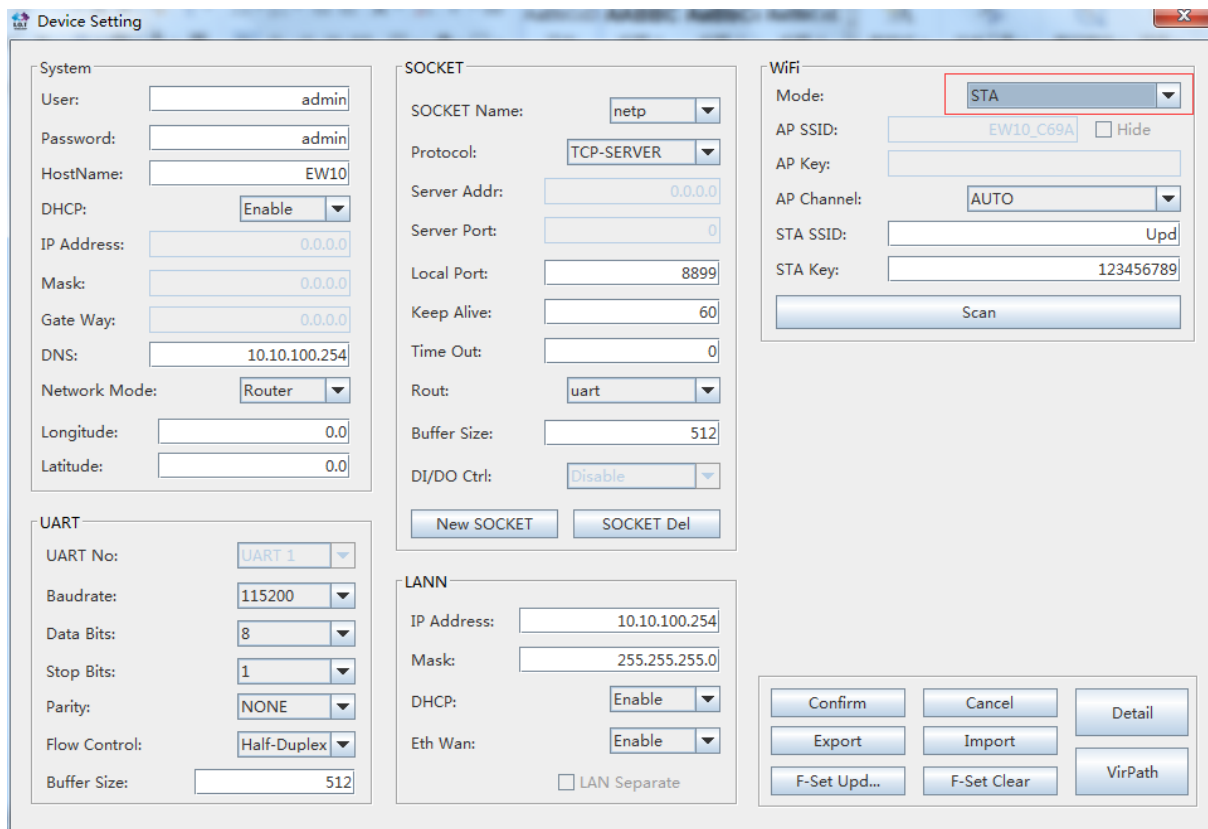
Step 1: Elfin-EW1X is AP mode by default. If need to work in STA mode connecting to router. There are following ways:

Method A: Smart Phone connect to Router. Set product nReload pin to low for some time ($0.2s < \text{time} < 1.5s$) to make it in Smartlink config mode. See appendix Smartlink V8 APP for detail. The following is the final device find step for IOS and Android. After the Smartlink config succeeded, the product works in STA mode and connect to router.



Method Two: PC connect to product AP, and use IOTService tools. The steps are as following

- Set to STA mode.

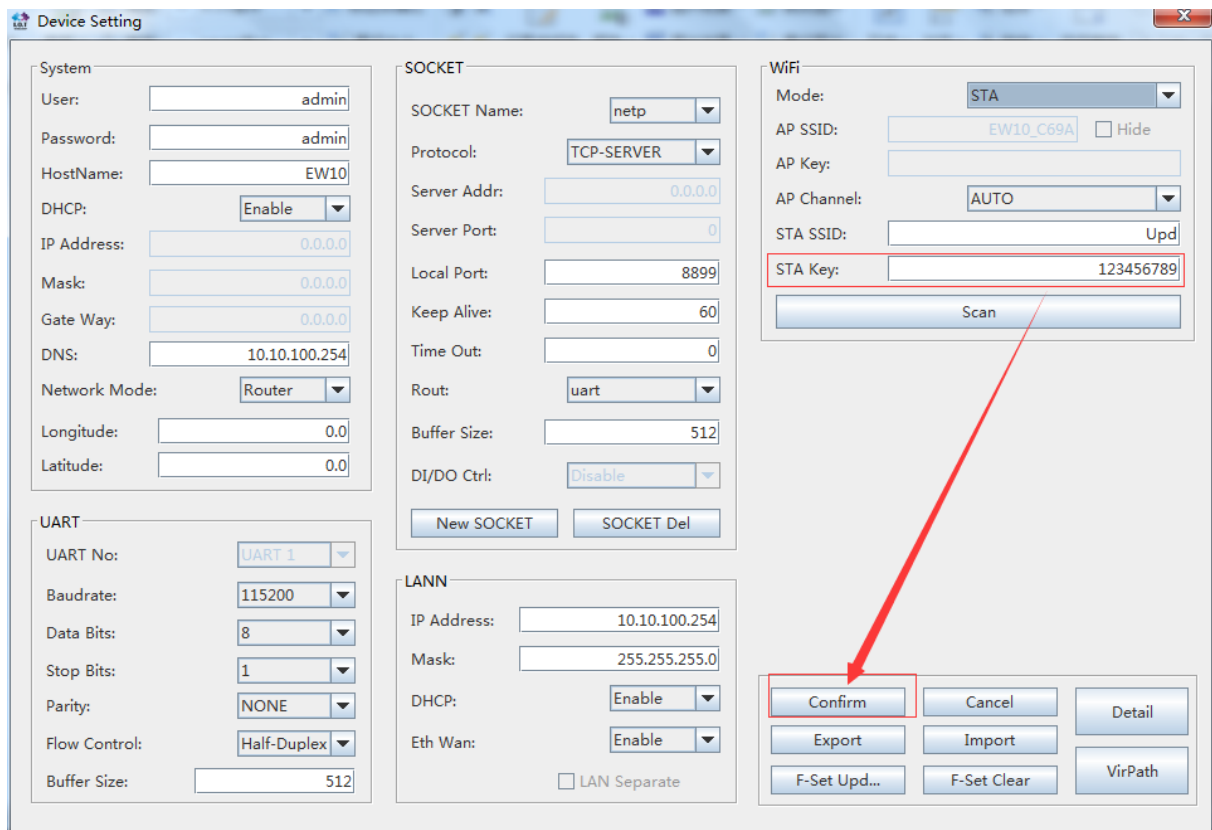


- Scan and choose one AP need to connect and input the key.

The screenshot shows the 'Device Setting' window with the 'WiFi' tab selected. The 'Mode' is set to 'STA'. The 'AP SSID' is 'EW10_C69A' and the 'AP Key' is '123456789'. The 'Scan' button is highlighted with a red box.

The screenshot shows the 'Device Setting' window with the 'WiFi' tab selected. A 'Scan' dialog box is open, displaying a table of available APs. The 'Confirm' button is highlighted with a red box.

Select	Channel	SSID	MAC Address	RSSI	Has Key
<input checked="" type="radio"/>	7	Upd	7C:B5:40:4F:B2:CD	100	No
<input type="radio"/>	7	LBLINK	3C:33:00:A8:35:2C	100	No
<input type="radio"/>	11	UPGRADE-AP	F4:28:53:3E:59:F4	96	No
<input type="radio"/>	5	UPGRADE-AP_aaaa	C8:3A:35:54:B3:70	94	No
<input type="radio"/>	6	HF2211_6970	F0:FE:6B:53:69:70	90	No
<input type="radio"/>	6	Soneter1	10:BF:48:E6:F3:98	90	No
<input type="radio"/>	11	ChinaNet-xuanyin	78:44:FD:AB:73:76	84	No
<input type="radio"/>	4	HF-LPT120	AC:C9:23:E1:EC:43	84	No
<input type="radio"/>	1	wzd	34:96:12:19:4C:6F	78	No
<input type="radio"/>	10	hope	14:75:9C:B5:BE:3A	78	No

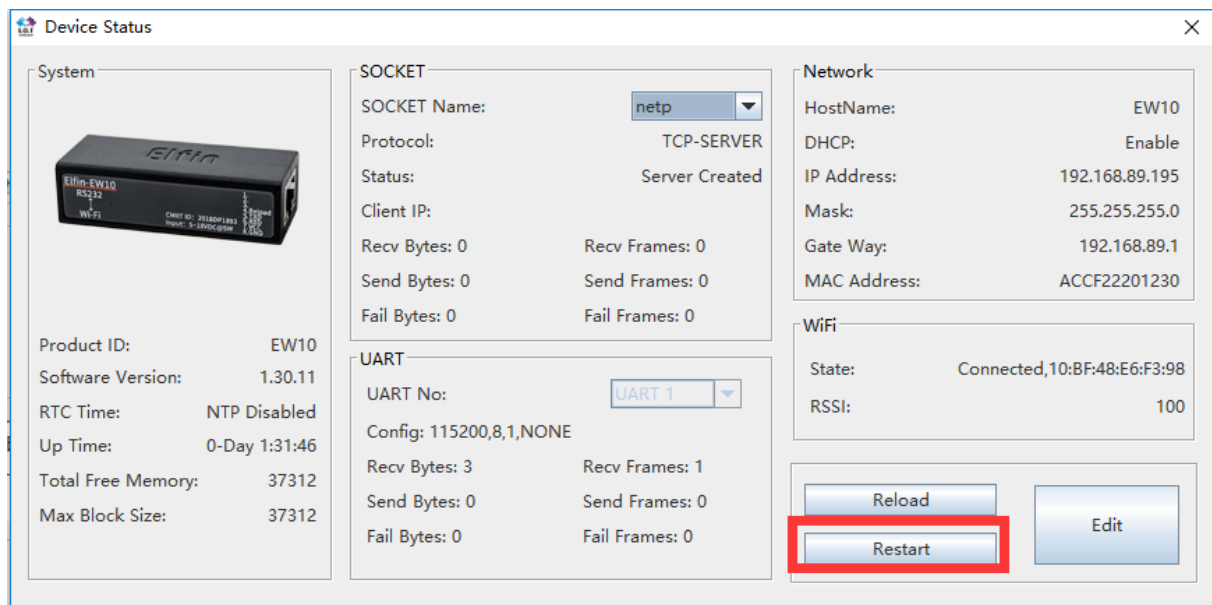


The 'Device Setting' window is divided into several sections:

- System:** User (admin), Password (admin), HostName (EW10), DHCP (Enable), IP Address (0.0.0.0), Mask (0.0.0.0), Gate Way (0.0.0.0), DNS (10.10.100.254), Network Mode (Router), Longitude (0.0), Latitude (0.0).
- SOCKET:** SOCKET Name (netp), Protocol (TCP-SERVER), Server Addr (0.0.0.0), Server Port (0), Local Port (8899), Keep Alive (60), Time Out (0), Rout (uart), Buffer Size (512), DI/DO Ctrl (Disable). Buttons: New SOCKET, SOCKET Del.
- WiFi:** Mode (STA), AP SSID (EW10_C69A), AP Key, AP Channel (AUTO), STA SSID (Upd), STA Key (123456789). Button: Scan.
- UART:** UART No (UART 1), Baudrate (115200), Data Bits (8), Stop Bits (1), Parity (NONE), Flow Control (Half-Duplex), Buffer Size (512).
- LANN:** IP Address (10.10.100.254), Mask (255.255.255.0), DHCP (Enable), Eth Wan (Enable), LAN Separate (unchecked).

At the bottom right, there are buttons: Confirm, Cancel, Detail, Export, Import, F-Set Upd..., F-Set Clear, and VirPath. A red arrow points from the 'STA Key' field to the 'Confirm' button.

- Do restart operation. And then PC connect to the router and check the product STA connection. The following show product Wi-Fi connection is OK.



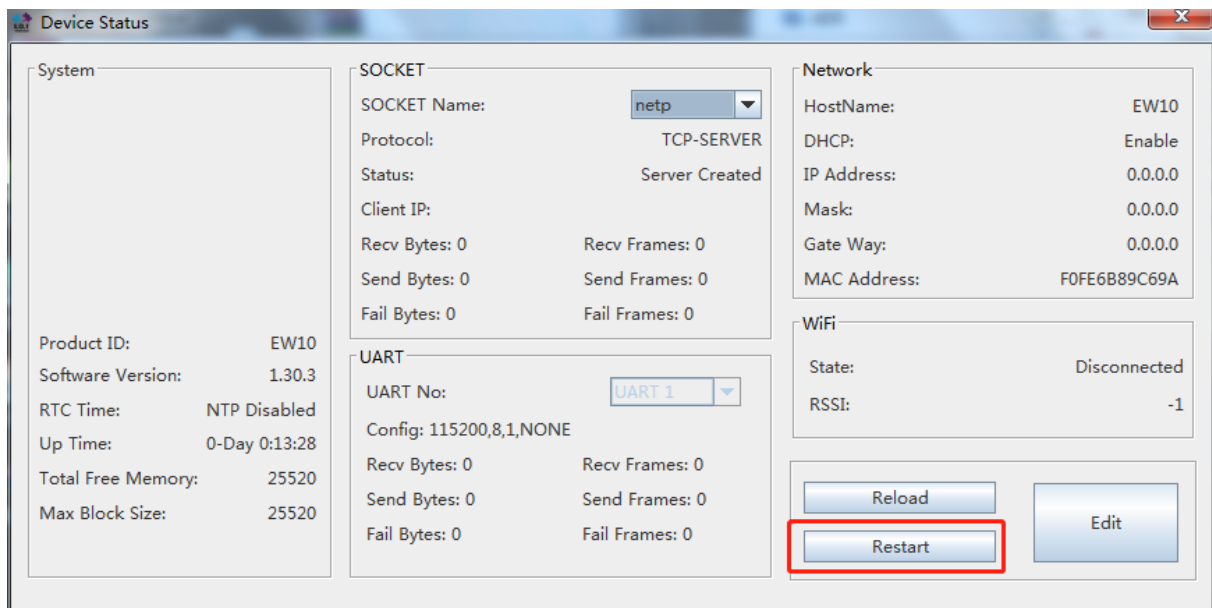
The 'Device Status' window displays the following information:

- System:** Product ID (EW10), Software Version (1.30.11), RTC Time (NTP Disabled), Up Time (0-Day 1:31:46), Total Free Memory (37312), Max Block Size (37312).
- SOCKET:** SOCKET Name (netp), Protocol (TCP-SERVER), Status (Server Created), Client IP, Recv Bytes/Frames (0/0), Send Bytes/Frames (0/0), Fail Bytes/Frames (0/0).
- UART:** UART No (UART 1), Config (115200,8,1,NONE), Recv Bytes/Frames (3/1), Send Bytes/Frames (0/0), Fail Bytes/Frames (0/0).
- Network:** HostName (EW10), DHCP (Enable), IP Address (192.168.89.195), Mask (255.255.255.0), Gate Way (192.168.89.1), MAC Address (ACCF22201230).
- WiFi:** State (Connected, 10:BF:48:E6:F3:98), RSSI (100).

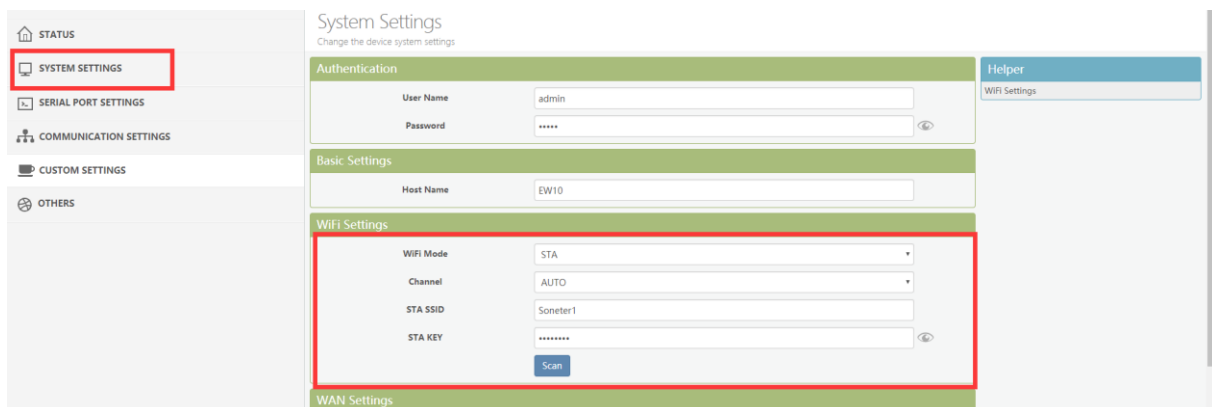
At the bottom right, there are buttons: Reload, Restart, and Edit. The 'Restart' button is highlighted with a red box.

Note:

If change product network mode, it needs restart to be valid.



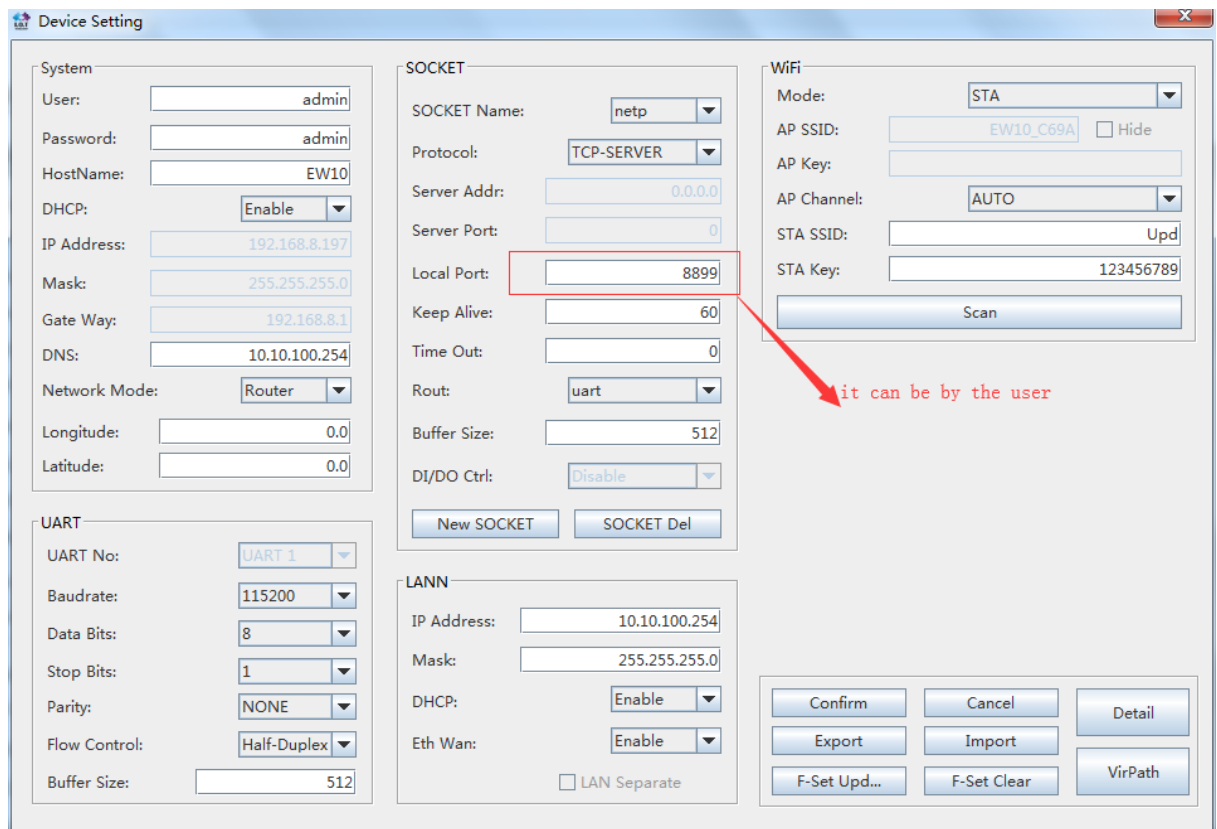
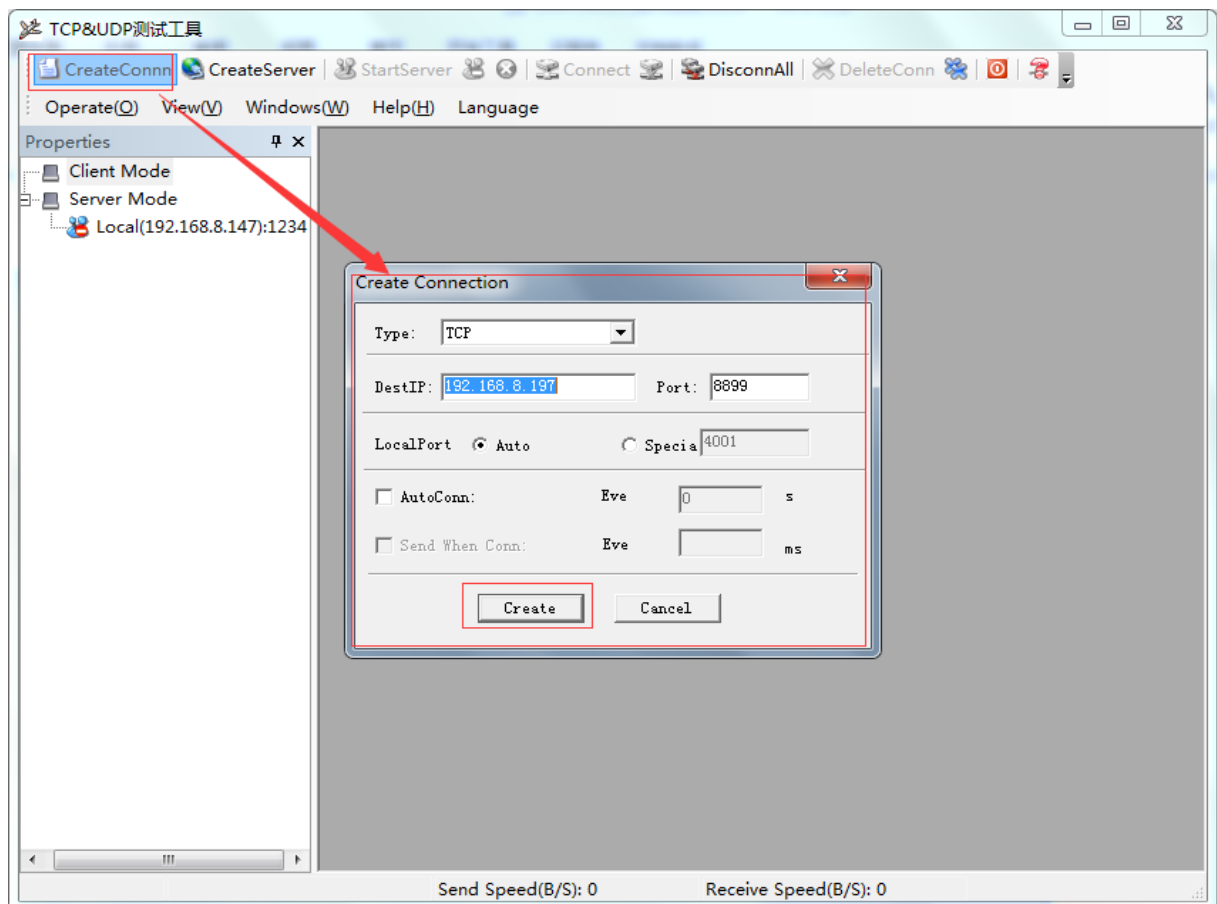
Method Three: PC connect to product AP, and open product webpage with default IP: 10.10.100.254. and change the following setting.



3.4. TCP Server Test in STA Mode

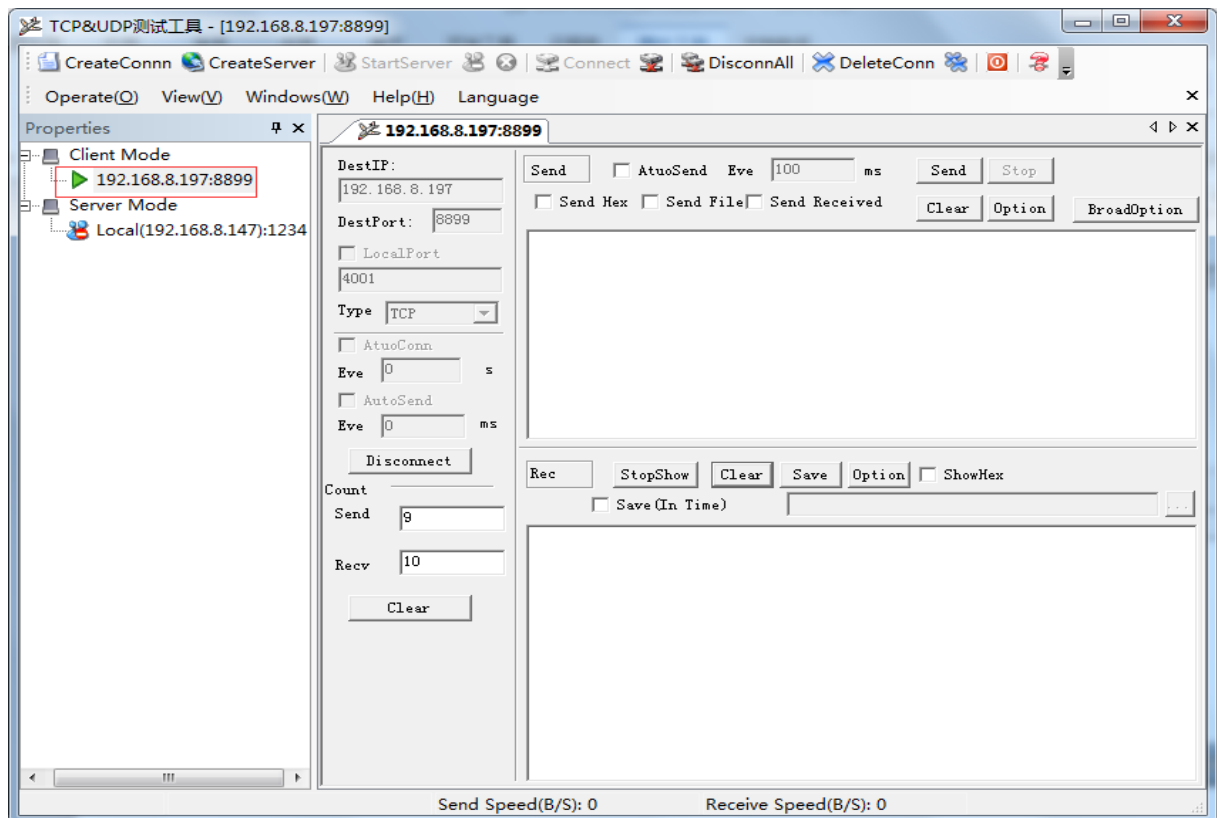
Step 1: Open TCP&UDP test tool and generate TCP connection as following steps. Device has already created a TCP Server(port 8899) for use. TCP&UDP test tool can be downloaded from the website:

- DestIP: Destination IP address.
- Port: Destination Port.

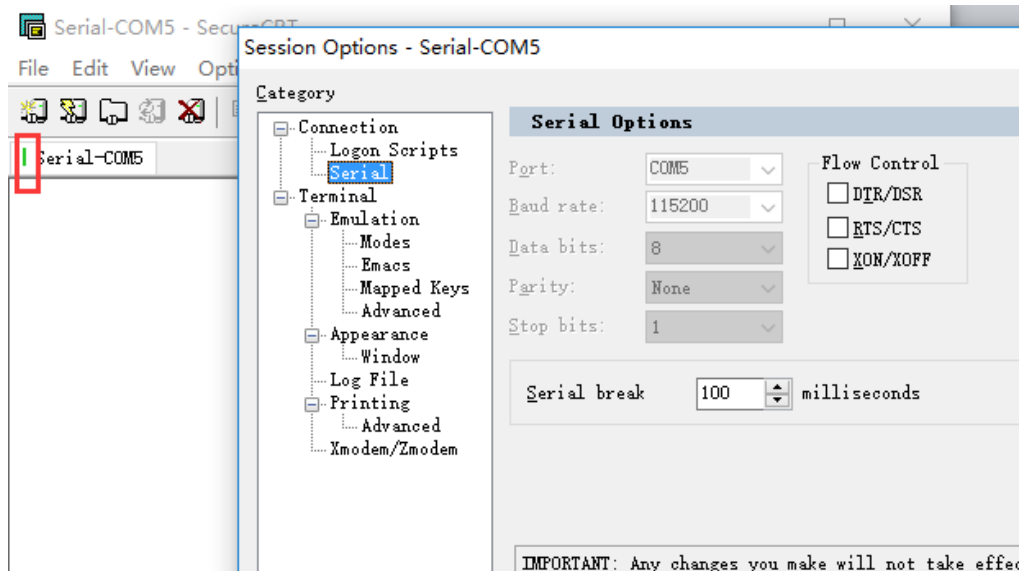


Step 2: Click Connect to create TCP connection

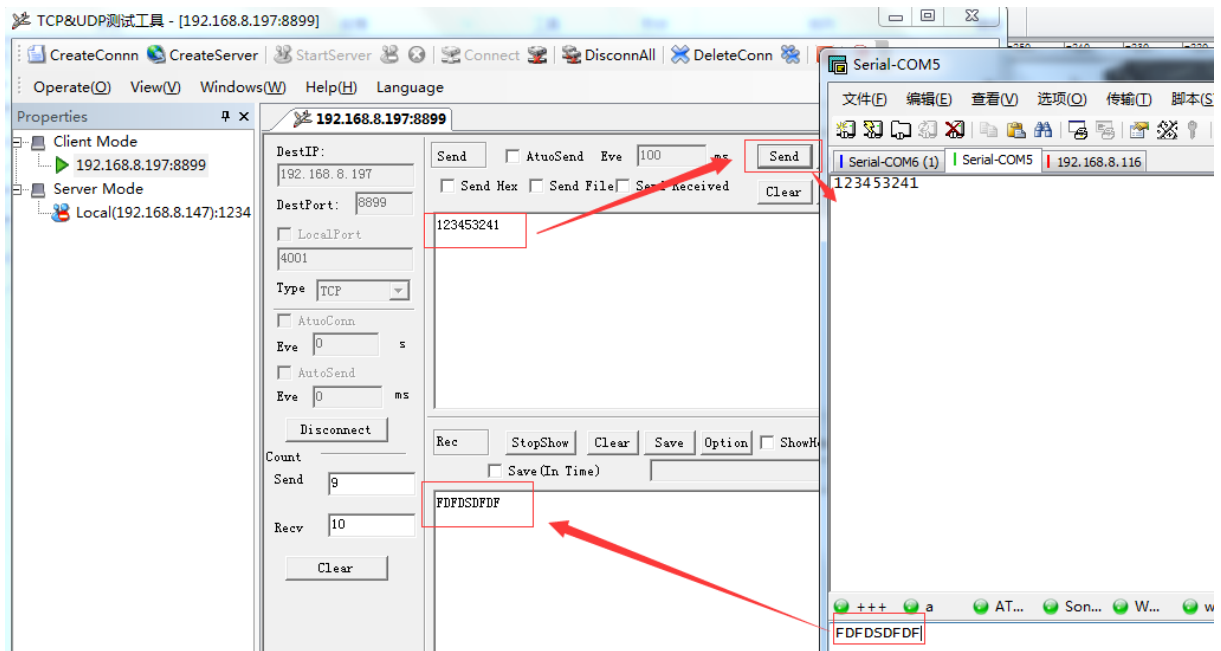
- After successful connection, the left turns to be green arrow.



Step 3: Open serial tool according to following parameters (115200 baud rate as default)



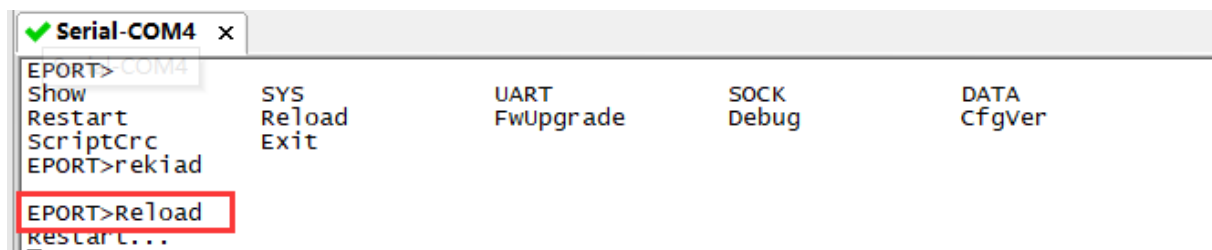
Step 4: Mutual data transmission between TCP and serial port.



3.5. Restore to Factory Setting

If device works in STA mode and not yet connect to router AP, do the following operation to recover and reconfig.

1. UART Cli command to reload



2. nReload button to restore or reconfig with SmartLink V8 APP.

nReload Pin (Button) function:

1. After module is powered up, short press this button (0.2s < "Low" < 1.5s) and loose to make the module go into "SmartLink" config mode, waiting for APP to set password and other information. (See Appendix to download SmartLink APP).
2. After module is powered up, long press this button ("Low" > 4s) and loose to make the module recover to factory setting.

APPENDIX A:REFERENCES

A.1. Test Tools

IOTService Configure Software:

http://www.hi-flying.com/index.php?route=download/category&path=1_4

A.2. Smartlink V8

<http://www.hi-flying.com/download-center-1/applications-1/download-item-smartlink-v8>

A.3. More Application

<http://www.hi-flying.com/download-center-1/application-notes-1/download-item-industry-products-application-manual-20180415>