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Chengdu Ebyte Electronic Technology Co.,Ltd.

## E103-W02 Datasheet v1.0

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## 1. Introduction

E103-W02

### 1.1 Features

E103-W02



E103-W02 is a ultra low power UART to Wi-Fi module with small size SMT packing and embeded PCB antenna, operating at 2.4 ~ 2.484GHz. The module can transmit and receive data through UART, which makes it easier for wireless applications.

E103-W02 is developed based on the TI CC3200, by Chengdu Ebyte Electronic Technology Co.,Ltd. It is a transparent transmission module for network access through UART by AT command, it is widely used for wearable electronics, home automation, home security, personal care, smart home, accessories & remote controller, automobile, lighting, industrial internet, etc.

E103-W02 supports standard IEEE802.11b/g/n protocol and complete TCP/IP protocol stack, supports STA/AP mode, supports SmartConfig, UART transparent transmission, transparent transmission on power-up, etc. Network connection can be achieved after easy configuration, which saves the efforts and time of the user in developing.

No.	Feature	Description
1	Ultra-low power consumption	Can be configured to four power consumption modes, the standby power consumption is less than 5uA in the lowest power consumption mode.
2	High speed continuous transmission	The module supports 3Mbit high speed continuous transmission.
3	Configuration through webpage	The user can access the module through webpage to read and configure the parameters
4	Transparent transmission on power-up	The module can automatically connect to WIFI network upon power-up and connect with target server with transport protocol.
5	Automatic reconnect	In STATION mode, the module will automatically reconnect the lost connection.
6	SmartConfig	The user can use SmartConfig to connect network and configure the module quickly.
7	Remote AT command	The module supports remote AT command for easily configuring parameters.
See more details in related manual		

**1.2 Basic usage****E103-W02**

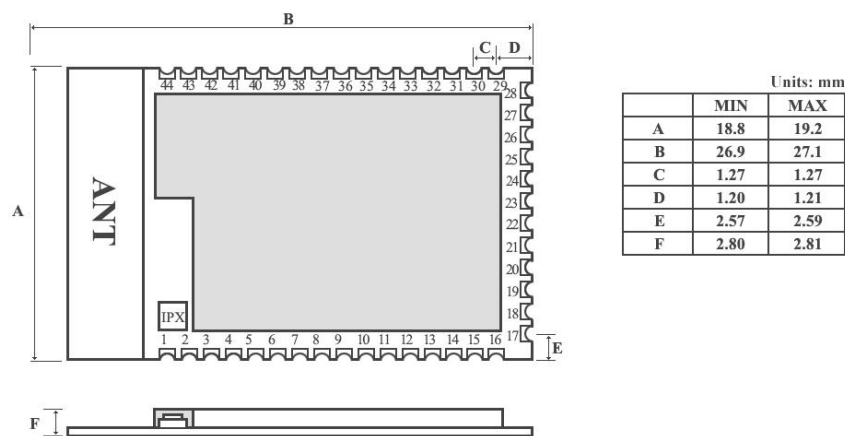
No	Usage	Description
0	Communication between modules	Set module A to AP mode and build TCP or UDP server. Set module B to STATION mode and connect with the AP of module A. Then module B can communicate with module A via TCP or UDP Client.
1	Communication between module and Server	Wi-Fi module connects to internet via wireless router, and communicate with server on the network (local area network or the Internet) via TCP Client or UDP. If it needs to be connected with internet server, user need to configure the corresponding port mapping.
2	Communication between module can Client	Wi-Fi module connects to internet via wireless router, and build TCP or UDP Server to listen to the connection signal. Client communicate with module by connect with its server.
Please see more details in Chapter 5.		

**1.3 Electrical parameter****E103-W02**

No.	Item	Parameter details	Description
1	RF IC	CC3200	TI
2	Size	27 * 19 * 1.0mm	With PCB antenna
3	Weight	-	With PCB antenna
4	PCB process	4-layer	Impedance debugging
5	Frequency band	2.4~2.484 GHz	-
6	Process	Lead-free, SMT	-
7	Connector	1.27mm	SMD
8	Supply voltage	2.4 ~ 3.6V DC	Note: the voltage higher than 3.6V is forbidden
9	Communication level	-	-
10	Operation distance	About 300m	Test condition: clear and open area, power: 20dBm, height: 2m
11	Transmitting power	20dBm	About 100mW
12	AT Support	Built-in intelligent processing	Can be read or set by AT command.
13	Wi-Fi version	802.11 b/g/n	-
14	Communication interface	UART	-
15	Antenna type	PCB antenna/IPX base	50Ω impedance, can be changed
16	Operating temperature	-40 ~ +85°C	Industrial grade (IC range, please modify according to the crystal parameters)
17	Operating humidity	10% ~ 90%	Relative humidity, no condensation
18	Storage temperature	-40 ~ +85°C	Industrial grade

**1.4 Electrical specification****E103-W02**

Parameters		Condition	Min	Typical	Max	Unit
Storage Temperature Range			-40	Normal	85	°C
Working Voltage Value			2.4	3.3	3.6	V
Any IO	VIL/VIH		-0.5/0.65VDD	-	0.35VDD/ VDD+0.5	V
	VOL/VOH		N/2.4	-	0.4/N	
	IMAX		-	-	3.5	mA

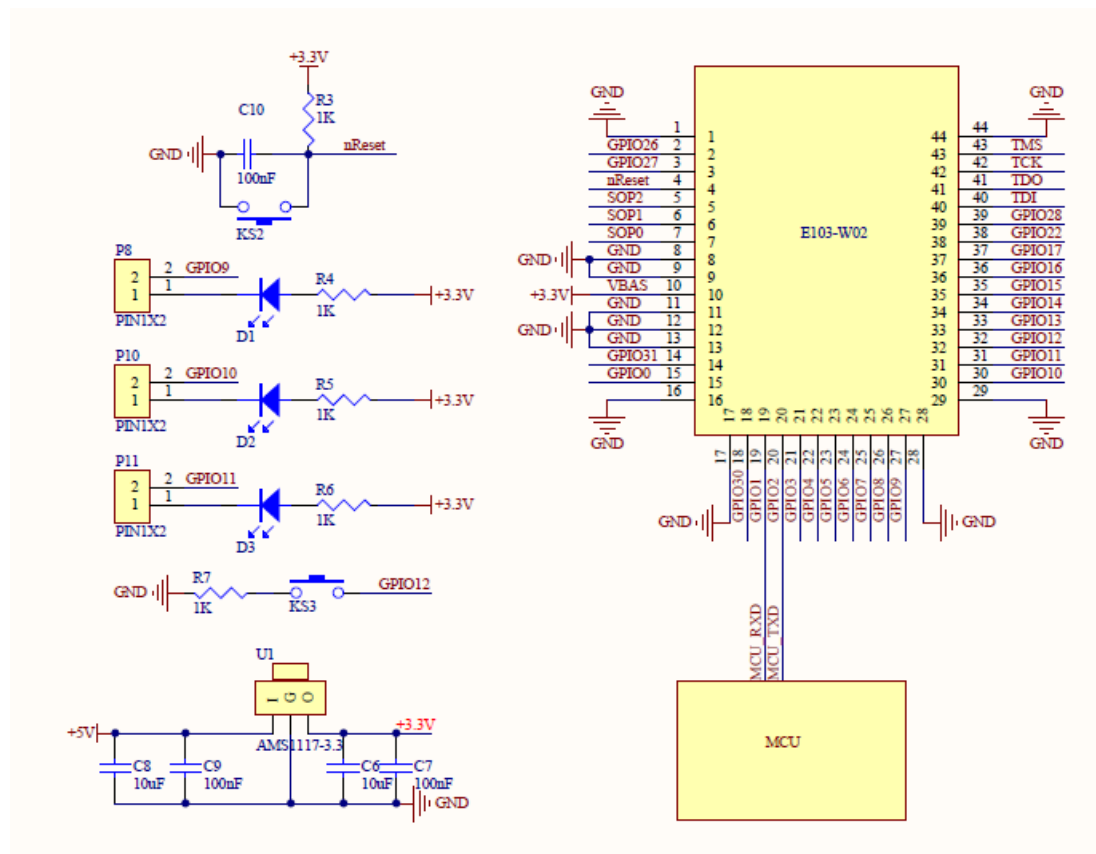
**2. Functional description****E103-W02****2.1 Pin definitions****E103-W02**

Pin	Name	I/O	Function
1、8、9、11、12、13、16、17、28、29、44	GND		Ground
2	GPIO26	IO	General IO
3	GPIO27	IO	General IO
4	RST	I	Reset pin, low level reset
5	SOP2	I	Boot mode selection
6	SOP1	I	Boot mode selection
7	SOP0	I	Boot mode selection
10	VCC		DC:3.0V—3.6V ( above 500mA )
14	GPIO31	IO	General IO
15	GPIO0	IO	General IO
18	GPIO30	IO	General IO
19	GPIO1	O	UART TX, support AT command
20	GPIO2	I	UART RX, support AT command
21	GPIO3	IO	General IO
22	GPIO4	IO	General IO
23	GPIO5	IO	General IO
24	GPIO6	IO	General IO
25	GPIO7	IO	General IO
26	GPIO8	IO	General IO

27	GPIO9	O	Wifi connection indicator, it outputs low level when connected and high level while not connected.
30	GPIO10	O	Network connection indicator, it outputs low level when connected and high level while not connected.
31	GPIO11	O	SmartConfig indicator, it indicates low when in SmartConfig state and high while not in the state.
32	GPIO12	I	Factory setting reset pin, keep it at lower level at power on and wait the indicator led flickers for 3 times to reset the parameters to factory default parameter. The module will detect this pin only powered on, if the pin is set to low after the module is powered on, the module will not reset.
33	GPIO13	IO	General IO
34	GPIO14	IO	General IO
35	GPIO15	IO	General IO
36	GPIO16	IO	General IO
37	GPIO17	IO	General IO
38	GPIO22	IO	General IO
39	GPIO28	IO	General IO
40	TDI	I	JTAG emulation pin
41	TDO	O	JTAG emulation pin
42	TCK	I	JTAG emulation pin
43	TMS	IO	JTAG emulation pin

## 2.3 Schematic diagram

E103-W02



Notes : supply voltage is 2.4V~3.6V, 500Ma LDO is recommended for steady operation of module

### 3. Quick start

E103-W02

E103-W02 is easy to use. In this chapter, we will introduce how to achieve a variety of configuration and communication under various modes by simple configuration

All the commands we use during testing are AT commands. We developed HTTP webpage for users to access the module and conduct quick configuration.

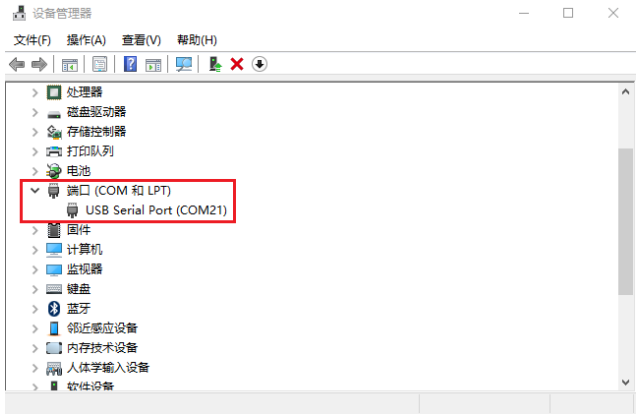
The tests in this chapter are conducted with AccessPort, the module will return the current commands so that the user could quickly learn the way to use AT commands. (Notes: all AT commands shall be followed with a line break except for "+++" commands)

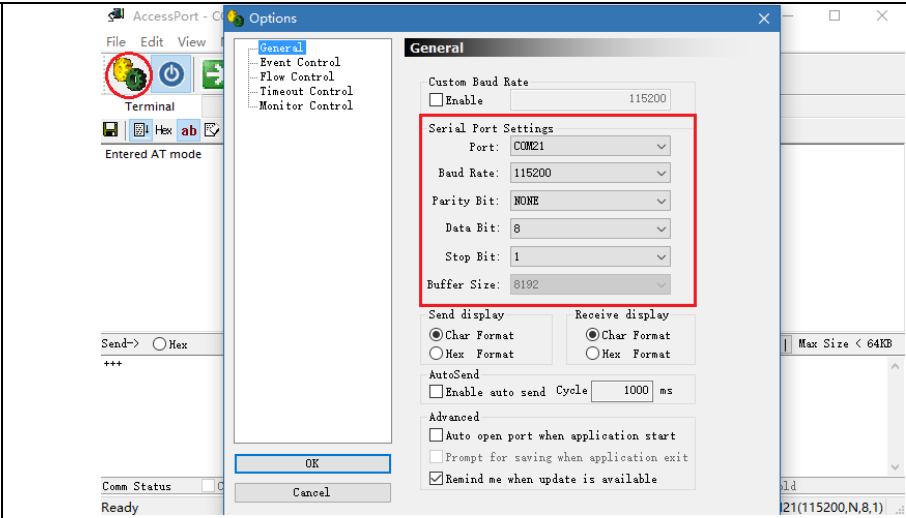
In addition, the user could use external MCU instead of baseboard to connect the UART of the module for AT commands communication to realize secondary development.

Hardware:	
1	E103-W02*1
2	E103-W02 baseboard*1
3	PC with Wi-Fi*1
4	Router*1 (or cellphone Wi-Fi hotspot)
Software (download from our website)	
1	AccessPort
2	TCP&UDP test tool
3	SmartConfig (one-key configuration) cellphone app "Wi-Fi Starter" .

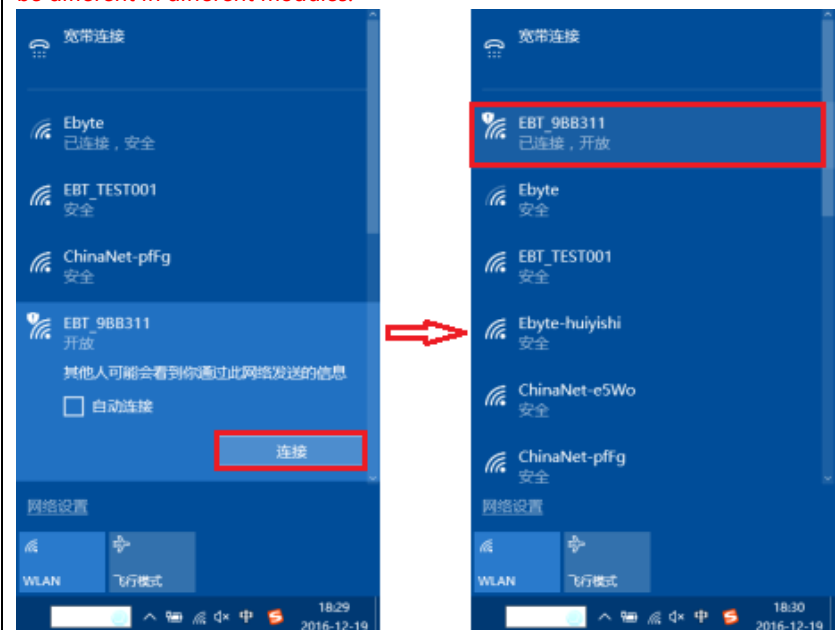
#### 3.1 Connect to server as AP and wirelessly connect with PC

E103-W02

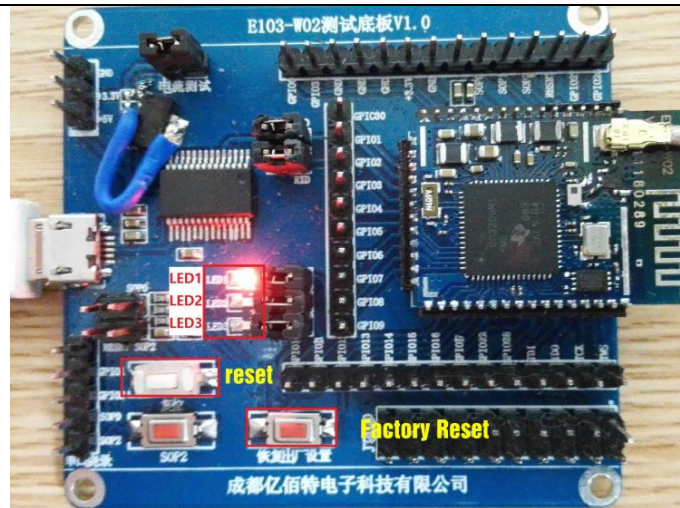
No	Remarks
1	<p>【Connect with PC as AP】:</p> <p>①. Connect the E103-W02 test board to PC with Micro USB data line.</p> <p>②. Open "AccessPort" and select port number, if you are not clear about the port number, please check in the Device Manager (refer to below picture).</p>  <p>③. Set port configuration parameters (baud rate: 115200bps, data bit: 8bits, parity bit: no, stop bit: 1bit). (refer to below picture)</p>



④. Open wireless network at PC, find the network with SSID starting with "EBT" (i.e. EBT\_9BB311), click on the "next" to connect. < "9BB311" here refers to the last 6 characters of the MAC address, the MAC addresses are different in different modules, so the SSID will also be different in different modules.>

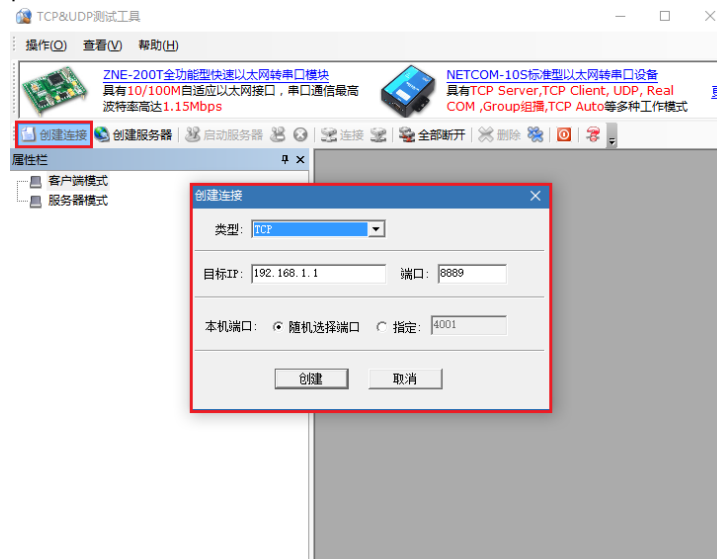


⑤. Once connected, the LED1 indicator on the baseboard of the module will be lit up and the PC indicates connection successful. If not, you need to redo above steps.



【Set the module as AP to set up TCP Server and communicate with PC】:

①. Open TCP & UDP testing tool, create connection and set parameters (refer to below picture).



2

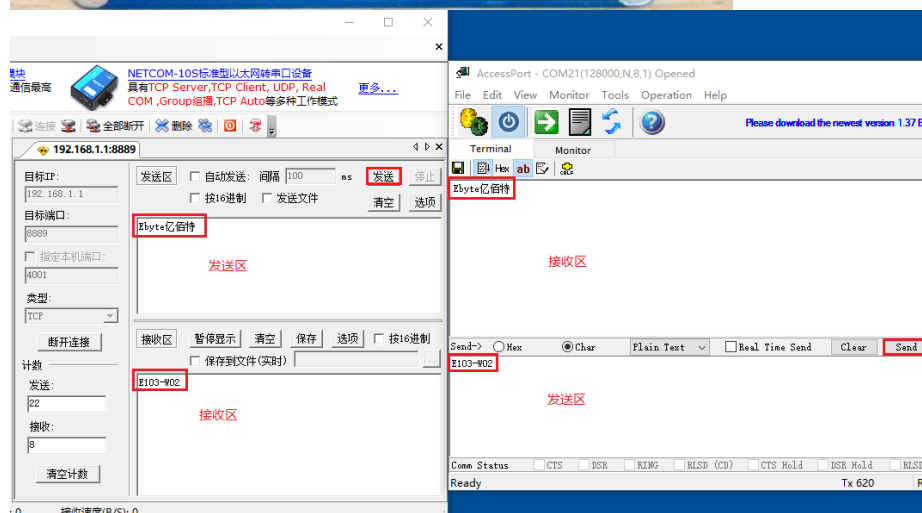
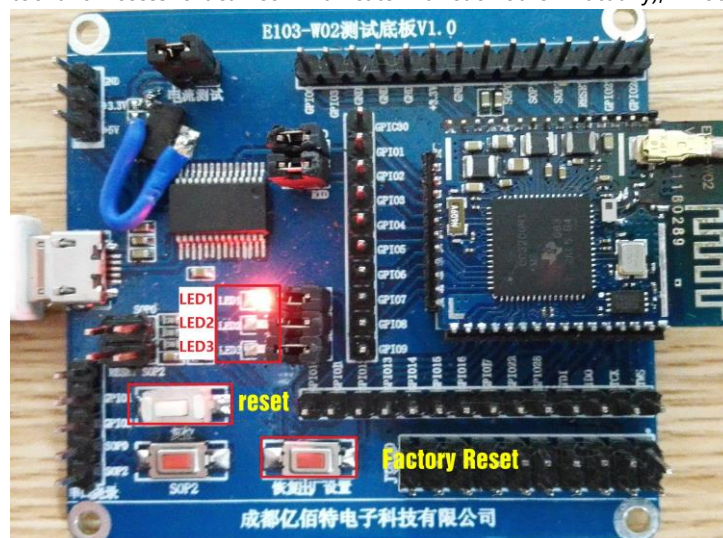
②. Click on the “create” button to complete creation, then click on “connect” button.



③. The LED2 indicator on the baseboard will be lit up, it means connection is completed, then



the PC and the module can communicate with each other mutually (it means TCP & UDP testing tool and AccessPort can communicate with each other mutually), if not, please redo above steps.



④. It can transmit documents (better in TXT format), just have a try.

3

**【Set the module as AP to set up UDP Server and communicate with PC】:**

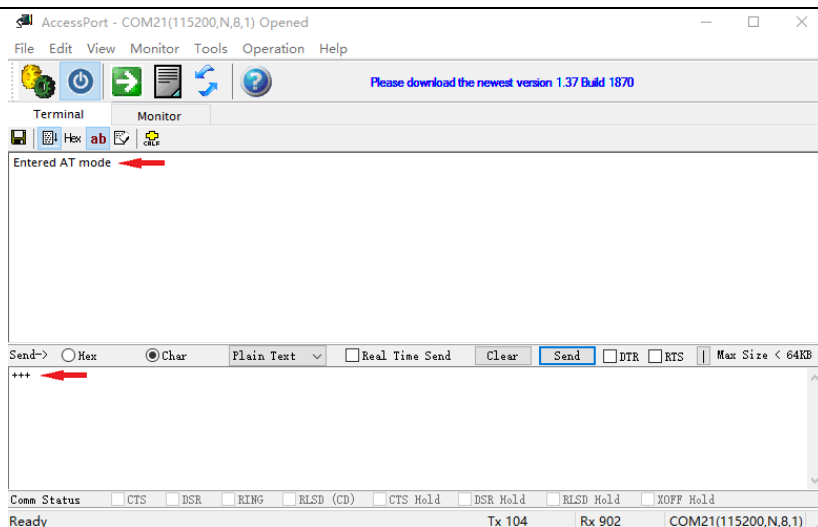
①. By test 2 as above, we completed the TCP communication, now let's try to set up UDP communication, which needs some simple configuration on the module.

②. Please complete the steps in test 1 as above, then we can enter AT commands mode to configure the module. <please complete the steps in test 1>

<Since it is sending commands, please turn off the Real Time Send function of the port in order to configure the module, if there is no Real Time Send function in your AccessPort, please ignore this notice>

a. Start to configure the port, input command "+++" in the sending textbox (please do not add line break), and click on Send button to start sending command.

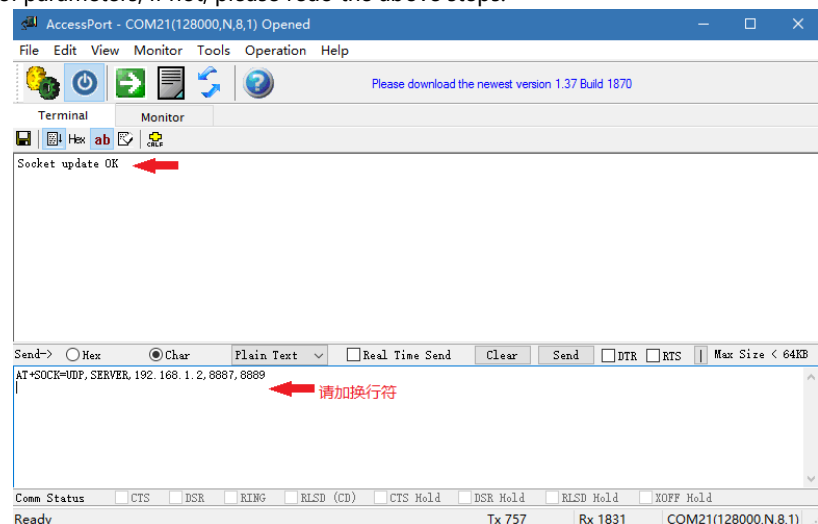
b. If the port returns "Entered AT mode", it means the module has entered AT command mode, if not, please redo the above steps.



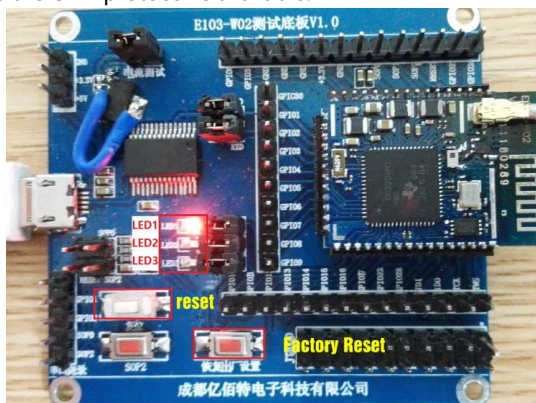
③. By step ②, we have entered AT command mode, now let 's start to configure Socket protocol.

a. Input "AT+SOCK=UDP,SERVER,192.168.1.2,8887,8889" in the sending textbox (please add line break, which means to press Enter after "AT+SOCK=UDP,SERVER,192.168.1.2,8887,8889" ), click on Send button to start sending.

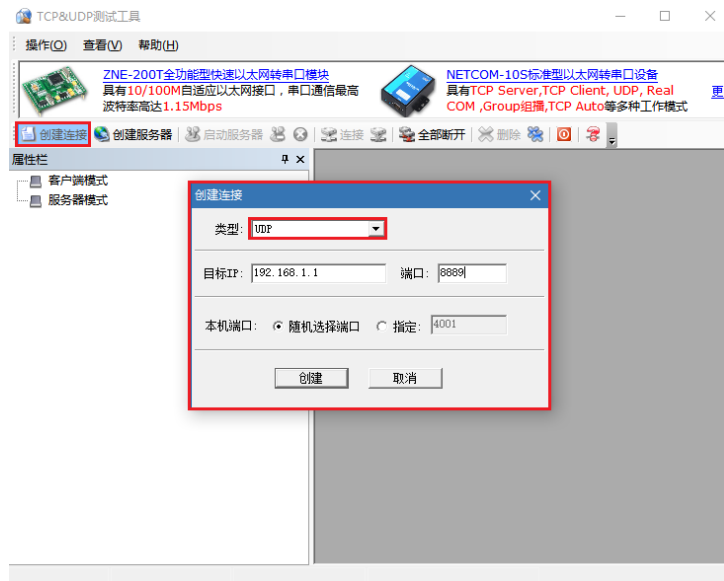
b. If the port returns "Socket update OK" , it means the command has successfully set the protocol parameters, if not, please redo the above steps.



④. Reset the module after setting parameters to validate the settings; If there are still other parameters to set, please complete the setting before reset or repower. Because we only configure Socket protocol, so just directly reset or repower, the LED2 will be lit up on the baseboard, it means the UDP protocol is available.



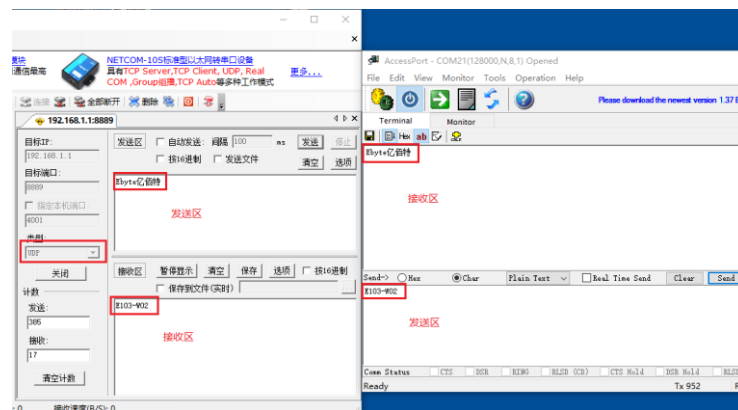
- ⑤. Open the TCP&UDP testing tools, create connection and set parameters (refer to below picture).



- ⑥. Click on the "Create" button to complete the creation.



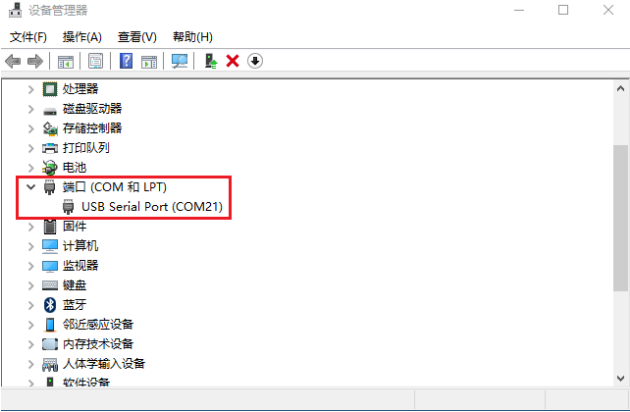
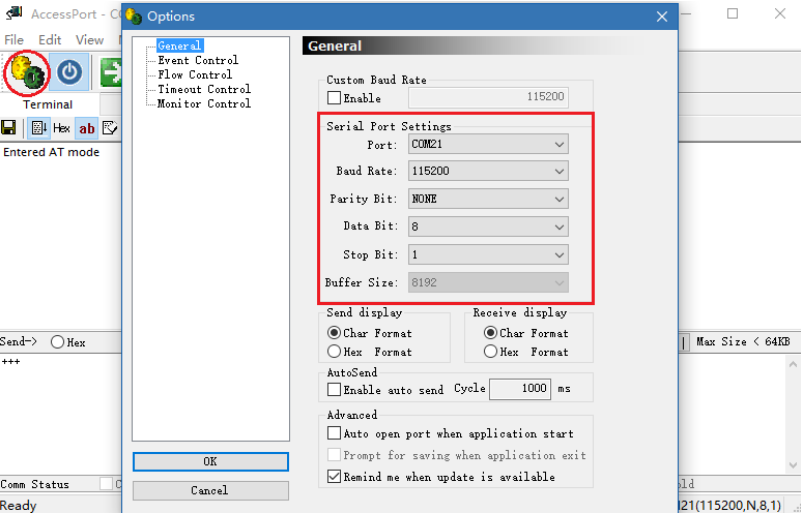
- ⑦. When creation is completed, it can realize two-way transmission between PC and module (it means transmission between TCP&UDP testing tool and AccessPort), if not, please redo above steps.

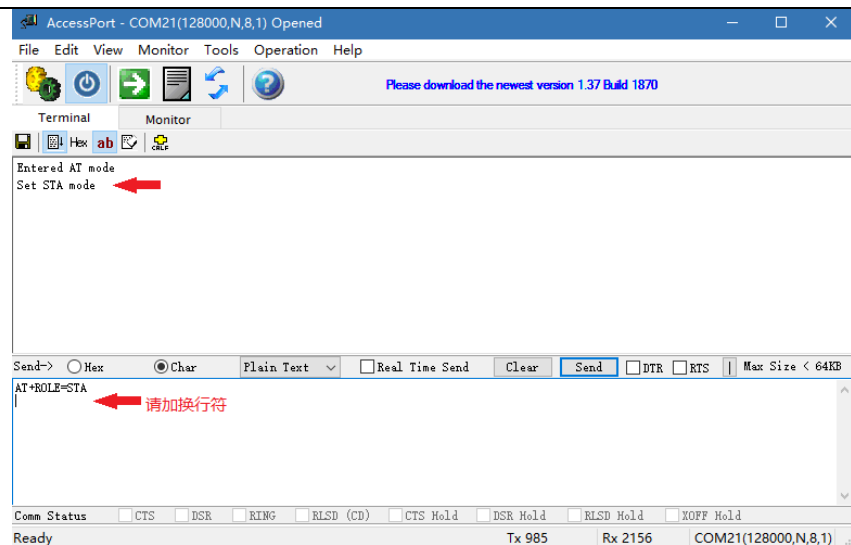


- ⑧. It can transmit document (it is better to be in TXT format), just have a try.

## 3.2 Set module as STA (Station) to connect other Wi-Fi hot spots

E103-W02

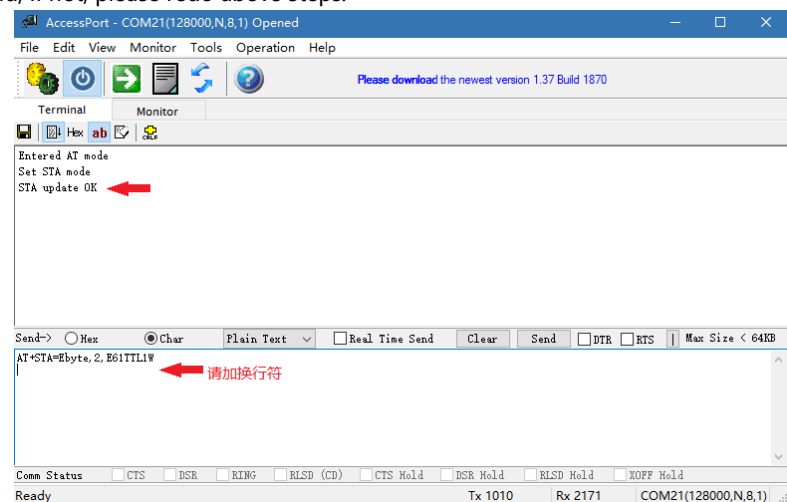
No	Remarks
1	<p><b>【Connect other Wi-Fi hot spots as STA (Station)】</b></p> <p>①.Connect the baseboard of E103-W02 and PC with Micro USB data line.</p> <p>②.Open AccessPort, select COM number; If you are not clear about the COM number, please check in your Device Manager (refer to below picture).</p>  <p>③.Set UART parameters (baud rate: 115200bps, databit: 8 bits, parity bit: none, stopbit: 1 bit). (refer to below picture)</p>  <p>④.Simple configuration by AT command.</p> <p>&lt;Since we are sending command, in order for better configuration, please turn off the Real Time Send function of the UART; If there is no Real Time Send function in you AccessPort, please ignore this notice&gt;</p> <p>a. Start UART configuration, input “+++” in the sending textbox (no line break), click on Send button to send command.</p> <p>b. If the UART returns “Entered AT mode” , it means the module has entered AT command mode, if not, please reset and redo above steps.</p> <p>⑤.Now our module is connecting other AP as STA, so please set the mode as STA mode.</p> <p>a. Input AT command “AT+ROLE=STA” in the sending textbox (with line break), which means pressing Enter after inputting “AT+ROLE=STA” ), and then click on Send button.</p> <p>b. If the UART returns “Set STA mode” , it means the module has been set as STA mode, if not, please redo above steps.</p>



⑥.Set Wi-Fi hot spot parameters (STA parameters)

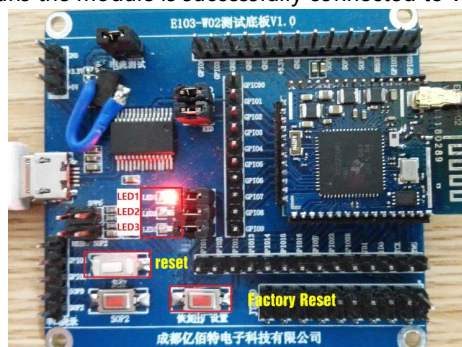
a. Input AT command "AT+STA=Ebyte,2,E61TTL1W" in the sending textbox of the AccessPort (with line break, which means pressing Enter after inputting "AT+STA=Ebyte,2,E61TTL1W" ), and then click on Send button to send the command. <The parameters must be set according to the user's Wi-Fi hot spot; the "Ebyte" in front of the AT command is the Wi-Fi hot spot SSID (Wi-Fi name), '2' is the encryption method WPA2 (if there is no password, it shall be "0" ), "E61TTL1W" is the password of the Wi-Fi (if there is no password, it shall be null)>

b. If the UART returns "STA update OK" , it means the STA parameters are set successfully by command, if not, please redo above steps.



⑦.Reset or repower the module, if the Wi-Fi modules are far from each other, please install antennas.

⑧.If LED1 is lit up, it means the module is successfully connected to Wi-Fi hot spot.

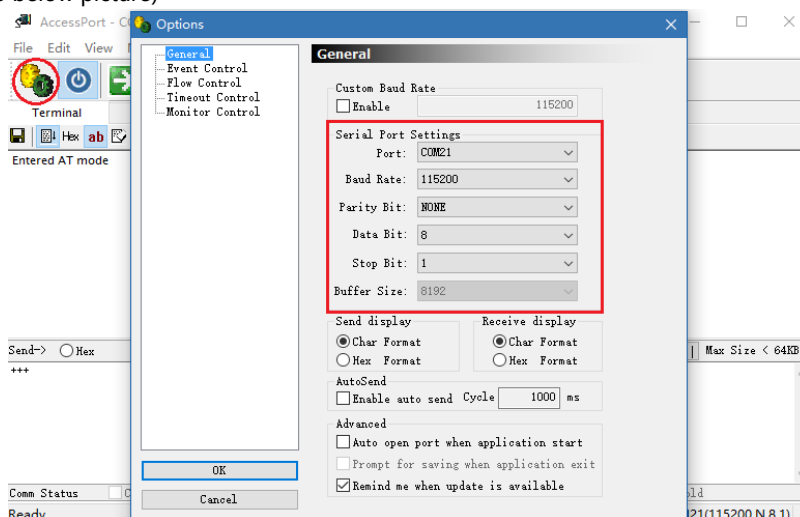


【Connect other Wi-Fi hot spots as STA (Station) through SmartConfig (one-click config.)】 :

- ①.Connect the E103-W02 baseboard and PC with Micro USB data line.
- ②.Open AccessPort, select COM number; if you are not clear about the COM number, please check in your Device Manager (refer to below picture).



- ③.Set UART parameters (baud rate: 115200bps, databit: 8 bits, parity bit: none, stopbit: 1 bit). (refer to below picture)



- ④.Simple configuration by AT command.

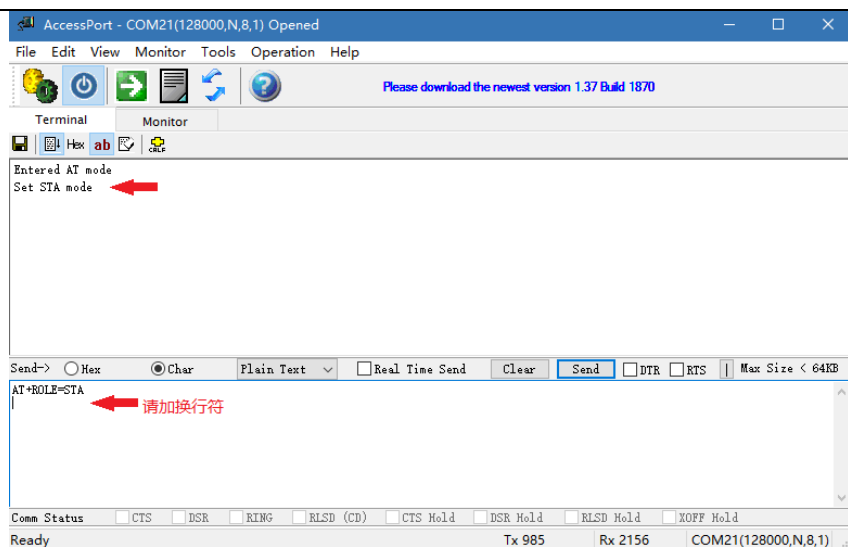
<Since we are sending command, in order for better configuration, please turn off the Real Time Send function of the UART. If there is no Real Time Send function in you AccessPort, please ignore this notice>

- a. Start UART configuration, input "+++" in the sending textbox (no line break), click on Send button to send command.
- b. If the UART returns "Entered AT mode" , it means the module has entered AT command mode, if not, please reset and redo above steps.

- ⑤.Please set the module as STA mode first.

- a. Input AT command "AT+ROLE=STA" in the sending textbox of the AccessPort (with line break, which means pressing Enter after inputting "AT+ROLE=STA" ), and then click on Send button to send command.
- b. If the UART returns "Set STA mode" , it means the module has entered STA mode successfully, if not, please redo above steps.



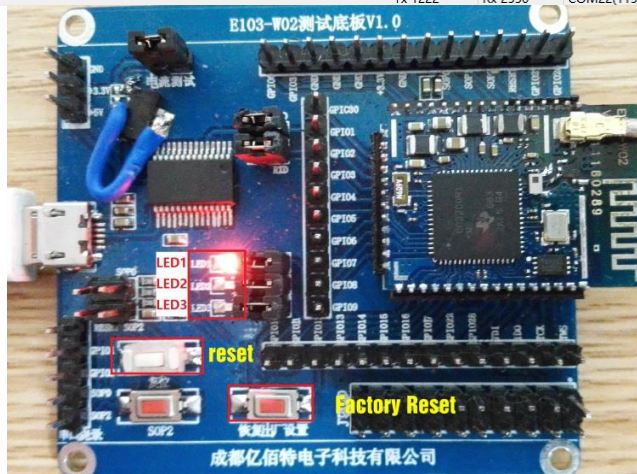
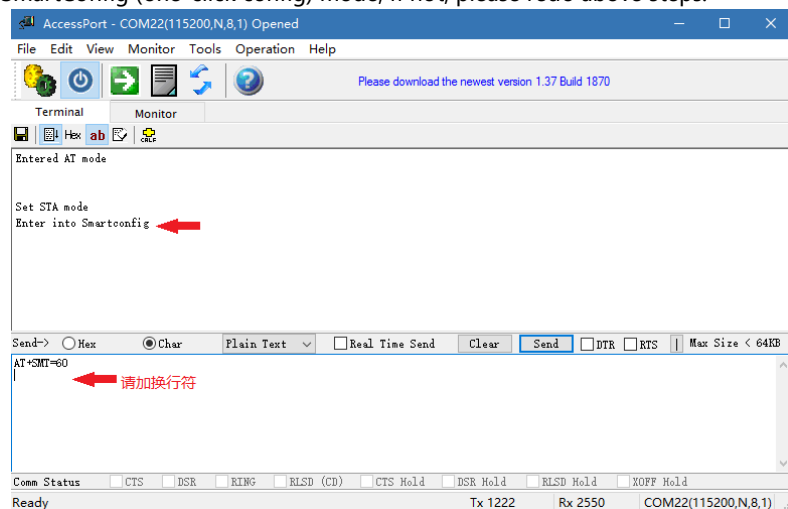


⑥. Rest or repower the module, and repeat the step ④.

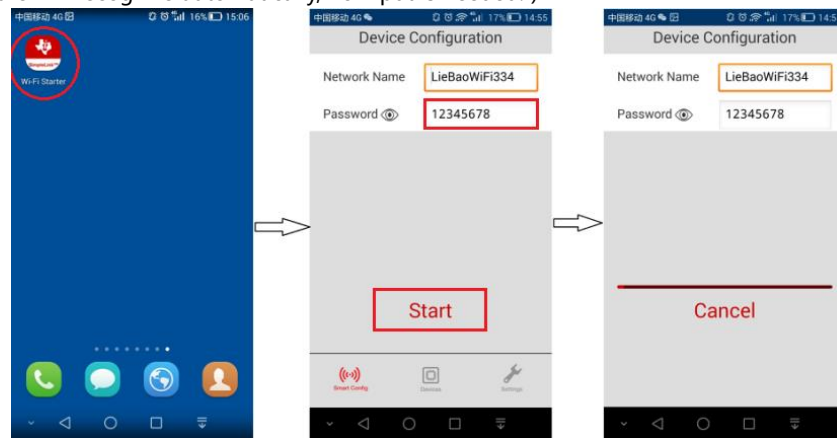
⑦. Enter SmartConfig (one-click config) mode.

a. Input AT command "AT+SMT=60" (with line break, which means pressing Enter after inputting "AT+SMT=60" ), and then click Send button to send command. <The 60 in the AT command means the module will exit SmartConfig (one-click config) mode if the module fails to connect the Wi-Fi hot spot after 60s>

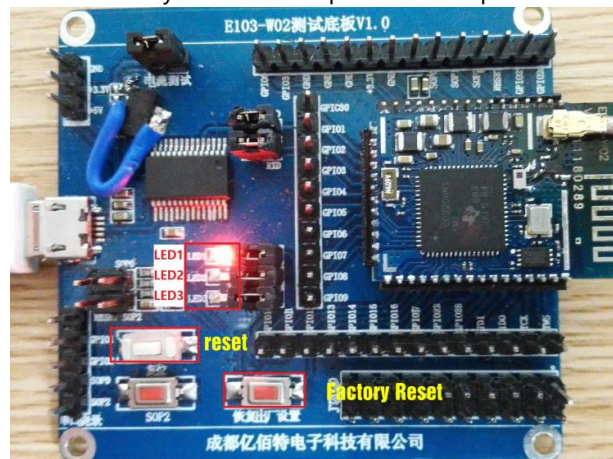
b. If the UART returns "Enter into SmartConfig", and LED3 is lit up, it means the module has entered SmartConfig (one-click config) mode, if not, please redo above steps.



- ⑧.Turn on cellphone Wi-Fi and connect to one hot spot.
- ⑨.Install and open APP “Wi-Fi Starter” , input Wi-Fi hot spot passwords, and click on “Start” . (Network Name is the name of the Wi-Fi hot spot your cellphone is connecting to, the software will recognize automatically, no input is needed. )



- ⑩.If the modules are far from each other, please install antennas. If the LED1 on baseboard is lit up, it means the module is successfully connected to Wi-Fi hot spot, if not, please redo above steps. <when successfully connected, the module will remember the Wi-Fi hot spot (including passwords), it will automatically connect to it upon reset or repower next time>



### 3.3 Change UART baud rate

E103-W02

No	Remark
1	E103-W02 Wi-Fi module supports 300 ~ 3000000bps UART baud rate.
2	By sending AT+UART command, the user can modify the UART parameters. For example: AT+UART=115200, 8, 0,1
3	Please refer to AT command set for detailed command.
Baud rate	
300 ~ 3000000bps (default: 115200bps)	
Parity bit support	
NONE (default)	
EVEN	
ODD	
Databit	
5 bits	
6 bits	
7 bits	
8 bits	
Stopbit	
1 bit	
2 bits	



**3.4 Low power consumption configuration description****E103-W02**

E103-W02 can be configured to four power consumption modes: **Active, Sleep, LPDS, Hibernate**. By sending AT+PM command, the user can configure the module to corresponding low power consumption mode. For example: AT+PM=1, 5.

√(Active)/× (OFF)	MCU					NET	WAKEUP		REF CURRENT	
	RTC	RAM	UART	GPIO	CPU		NET	RXD	AP	STATION
Active	√	√	√	√	√	√	-	-	71mA	18mA
Sleep	√	√	√	√	×	√	√	√	68mA	16mA
LPDS	√	√	×	×	×	√	√	√	63mA	4.5mA
Hibernate	√	×	×	×	×	×	×	√	4.6uA	4.5uA

**Mode 0: Active mode**

All external devices of the module work normally. It is normal working normal, at this time, the module works with best performance and quickest response.

**Mode 1: Sleep mode**

It can be woken up by UART or network data packet, GPIO keeps output, the module will continue to operate from the point of entering sleep mode, the response time of wake up is shorter than in deepsleep model. Wake up method: UART RXD, network.

**Mode 2: LPDS mode**

The module enters LPDS mode, and the network part keeps operating, the GPIO output of the module is in high resistance state. It can be woken up by UART or network data packet, the wake up data packet is transparently transmitted normally. At this time, a short data will be sent to wake up the module before normally sending the data packet. The network data as received will be output through UART. Wake up method: UART RXD, network.

**Mode 3: Hibernate mode**

The module enters hibernate mode, the network and MCU are all in sleep mode, GPIO output high resistance state, it can only be woken up by UART data. The module will restart and operate. The power consumption could be lower than 5uA. Wake up method: UART RXD.

**4. Specification for networking****E103-W02****4.1 Wi-Fi role****E103-W02**

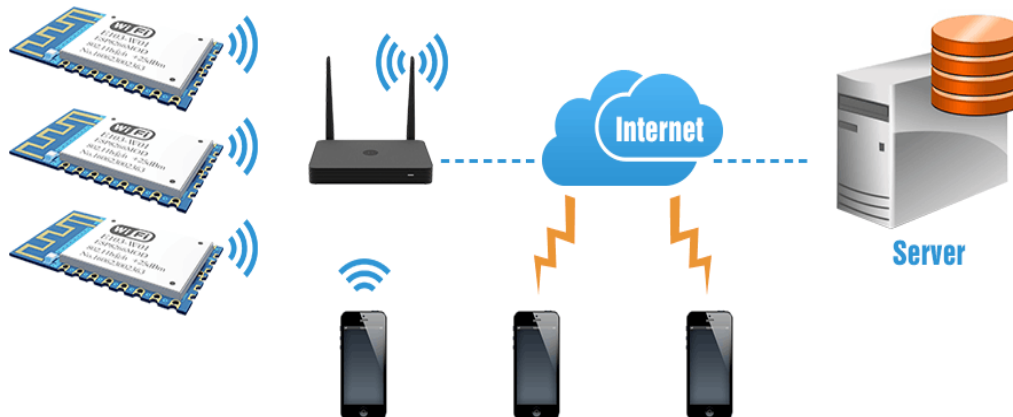
No	Remark
1	As physical connection, E103-W02 supports AP mode (router) and STATION (Wi-Fi device). At most 1 Wi-Fi device can be supported when module works at AP mode.
2	As Socket, E103-W02 includes TCP Server, TCP Client and UDP. Based on TCP connection mechanism, if long time connection is needed, please use TCP heartbeat bag.

## 4.2 Networking model

E103-W02

### Module builds TCP Client to connect with remote server when working at STATION mode (classic)

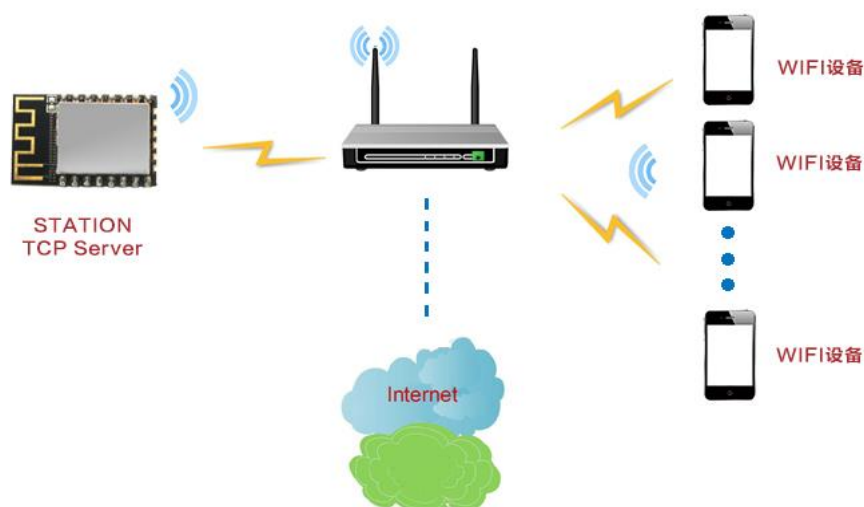
Can be used for home IoT, meter-reading, real-time monitoring etc.  
 Module can communicate with network server for real-time data.  
 User can operate module by real-time communication.



### Module builds TCP Server to connect with Wi-Fi device when working at STATION mode

The same as type one, only difference is module builds TCP Server instead of TCP Client when working at STATION mode.

At most 5 remote devices can be connected when module connects with network.



**5. AT command****E103-W02**

1	<b>+++ Enter AT command mode</b>	
	+++	Parameter specification: No parameter Response: Entered AT Command mode
	Example: +++	
	Notes: 1. Only by using such command to enter AT command mode, can we use AT command to operate. 2. After entering AT command mode, before we can use such command to enter AT command mode again, we have to exit AT command mode, reset or restart. 3. When writing in the command, the AccessPort must be set as not sending new line; while writing in other command, the AT command must be set as sending new line.	
2	<b>AT+EXIT Exit AT command mode</b>	
	AT+EXIT	Parameter specification: No parameter Response: Exited AT Command mode
	Example: AT+EXIT	
	Notes: 1. All AT commands will be invalid after exiting AT command mode.	
3	<b>AT+RST Reset</b>	
	AT+RST	Parameter specification: No parameter Response: Module rebooting
	Example: AT+RST	
	Notes: 1. It is similar to press rest button to exit AT command mode.	
4	<b>AT+RESTORE Restore factory settings</b>	
	AT+RESTORE	Parameter specification: No parameter Response: Restore OK
	Example: AT+RESTORE	
	Notes: 1. After using such AT command, please reset or power down to reboot to make the command into effect.	
5	<b>AT+ROLE Setting mode (valid after reboot)</b>	
	AT+ROLE=<mode>	Parameter specification: mode: Set as AP (Access Point), providing wireless access service Set as STA (Station), similar as wireless terminal Response:

	Set AP mode or Set STA mode	
	Example: AT+ROLE=AP	
	Notes: 1. After new mode set, it needs to be reset or repower.	
6	<b>AT+ROLE=? Inquire port parameters</b>	
	AT+ROLE=?	Parameter specification: No parameter Response: Role=AP or Role=STA
	Example: AT+ROLE=?	
7	<b>AT+UART Set port parameters (valid after reboot)</b>	
	AT+UART=<Baud>,<Databit>,<Parbit>,<Stopbit>	Parameter specification: Baud : baud rate (can be 300-3000000bps) Databit: databit Parbit: parity bit Stopbit: stopbit Response: Uart Update OK
	Example: AT+UART=115200,8,0,1	
	Notes: 1. After new parameters set, it needs to be reset or repower. 2. The databit shall be set as 8 to transmit Chinese character.	
8	<b>AT+UART=? Inquire port parameters</b>	
	AT+UART=?	Parameter specification: No parameter Response: Baud:115200 Databit:8 Parbit:0 Stopbit:1
	Example: AT+UART=?	
9	<b>AT+AP Set AP parameters (valid after reboot)</b>	
	AT+AP=<SSID>,<SecType>,< Password>	Parameter specification: SSID: Service set identifier <1~32Byte> SecType: Encryption type (0: no password, 1: WEP encryption, 2: WPA2 encryption) Password: password <8~63Byte> Response: AP Update OK
	Example: AT+AP=E103-W02,2,12345678	
	Notes: 1. When setting open AP, Sectype is 0, password is null. 2. When setting WEP encryption, password must be 5 or 13 upper/lower characters, or it can be 10 or 26 characters in HEX format. 3. After new mode, it needs to be rest or repower.	
10	<b>AT+AP=? Inquire AP parameters</b>	
	AT+AP=?	Parameter specification: No parameter Response: SSID:E103-W02 SecType:2 Password:12345678
	Example: AT+AP=?	

11	<b>AT+STA Set STATION parameters (valid after reboot)</b>	
	AT+STA=<SSID>,<SecType>,< Password>	Parameter specification: SSID: Service set identifier <1~32Byte> SecType: Encryption type Password: password <8~63Byte> Response: STA Update OK
	Example: AT+STA=Ebyte,2,E61TTL1W	
	Notes: 1. When setting open STA, Sectype is 0, Password is null.	
12	<b>AT+STA=? Inquire STATION parameters</b>	
	AT+STA=?	Parameter specification: No parameter Response: SSID: Ebyte TYPE:2
	Example: AT+STA=?	
	Notes: 1. For security, the password parameters will not be displayed by response.	
13	<b>AT+CHAN Set channel parameters (valid after reboot)</b>	
	AT+CHAN=<Channel>	Parameter specification: Channel: (1~12) Response: AP Channel Update OK
	Example: AT+CHAN=11	
14	<b>AT+CHAN? Inquire channel parameters</b>	
	AT+CHAN?	Parameter specification: No parameter Response: AP Channel:11
	Example: AT+CHAN?	
15	<b>AT+APIP Set IP parameters under AP mode (valid after reboot)</b>	
	AT+APIP=<APIP>,<Mask>,<Gateway>,<DNS> >	Parameter specification: APIP: IP address under AP mode Mask: Subnet mask Gateway: Gateway address DNS : DNS server address Response: APIP Update OK
	Example: AT+APIP=192.168.1.1,255.255.255.0,192.168.1.1,192.168.1.1	
16	<b>AT+APIP= ? Inquire IP parameters under AP mode</b>	
	AT+APIP=?	Parameter specification: No parameter Response: APIP: 192.168.1.1 Mask: 0.0.0.0 Gateway: 0.0.0.0 DNS: 0.0.0.0
	Example: AT+APIP=?	

17	<b>AT+STAIP Set IP parameters under STATION mode (valid after reboot)</b>	
	AT+STAIP=<IPMode>,<STAIP>,<Mask>,<Gateway>,<DNS>	Parameter specification: IPMode : IP mode (DHCP or STATIC) STAIP: IP address under STA mode Mask: Subnet mask Gateway: Gateway address DNS : DNS server address Response: STAIP Update OK
	Example: AT+STAIP=DHCP,192.168.1.1,255.255.255.0,192.168.1.1,192.168.1.1	
18	<b>AT+STAIP ? Inquire IP parameters under STATION mode</b>	
	AT+STAIP=?	Parameter specification: No parameter Response: STAIP: 192.168.1.1 Mask: 0.0.0.0 Gateway:0.0.0.0 DNS: 0.0.0.0 IP Mode: DHCP
	Example: AT+STAIP=?	
19	<b>AT+SOCK Set protocol parameters (valid after reboot)</b>	
	AT+SOCK=<Protocol>,<CS>,<RemoteIP>,<RemotePort>,<LocalPort>	Parameter specification: Protocol: (TCP or UDP) CS: (CLIENT or SERVER) Remote IP: Remote IP address Remote Port: Remote port number Local Port: Local port number Response: Socket Update OK
	Example: AT+SOCK=TCP,SERVER,192.168.1.2,8887,8889 Reminder: The module cannot proactively detect if the socket is disconnected, which means when the server is disconnected, the module is still in connected status. After the user send any data, the module will detect and change to disconnected status.	
20	<b>AT+SOCK= ? Inquire protocol parameters</b>	
	AT+SOCK=?	Parameter specification: No parameter Response: Protocol: TCP CS:SERVER RemoteIP:192.168.1.2 RemotePort:8887 LocalPort:8889
	实例 : AT+SOCK=?	
21	<b>AT+SMT Enter SmartConfig mode (one-click config.)</b>	
	AT+SMT=<Timeout>	Parameter specification: Timeout: Timeout and exit such mode (can be 0~255; 0: never exit, 1~255: exit after 1~255 seconds)

	Response: Enter into SmartConfig	
	Example: AT+SMT=20	
	Notes: 1. After entering SmartConfig mode (one-click config.), cellphone APP can be used to configure the module and connect it to network quickly. 2. In order to exit this mode, it needs to wait for timeout and automatically exit, reset or power down to reboot.	
22	<b>AT+STATUS=? Inquire the current status of the module</b>	
	AT+STATUS=?	Parameter specification: No parameter Response: Wi-Fi Status: IP=192.168.1.1, Gateway=0.0.0.0
	Example: AT+STATUS=? AP mode: Print the IP and gateway of itself when not connected, print the IP and gateway of the connected device when connected. STA mode: Print "disconnected" when not connected, print the IP and gateway of itself when connected.	
23	<b>AT+PM Set power consumption parameters (Exit command mode is valid)</b>	
	AT+PM=<Power Mode>,<Delay>	Parameter specification: Power Mode: Power consumption mode: (can be 0, 1, 2, 3) Delay: Wake up or enter low power consumption delay time: (2 ~ 240s) Response: Power mode set OK
	Example: AT+PM=0,5	
	Notes: 1. When Power Mode is set as 0, it will enter normal power consumption mode.	
24	<b>AT+PM= ? Inquire power consumption parameters</b>	
	AT+PM=?	Parameter specification: No parameter Response: Power Mode:0 Set Delay:5
	Example: AT+PM=?	
25	<b>AT+HTTP Set if turn on HTTP webpage function (valid after reboot)</b>	
	AT+HTTP=<Switch>	Parameter specification: Switch: 0 (turned off) or 1 (turned on) Response: Http status set OK
	Example: AT+HTTP=1	
26	<b>AT+HTTP= ? Inquire if HTTP webpage function is turned on</b>	
	AT+HTTP=?	Parameter specification: No parameter Response: Http Status: 1
	Example: AT+HTTP=?	

## 6. About us

**E103-W02**

Chengdu Ebyte Electronic Technology Co., Ltd., a high-tech company focusing on application of Internet of Things, owns a number of independently researched and developed products and obtains unanimous approvals from customers. With a powerful R&D team, perfect after-sales system, our company provides perfect solutions and technical assistance, shortens R&D period, reduces R&D cost and provides a strong platform for brand new ideas about product R&D.

Our products have been widely applied in various fields, such as consumer electronics, industrial control, healthcare, security alarm, field acquisition, smart home, expressway, property management, water and electricity meter reading, power monitoring, etc.



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