Industrial WiFi Serial Server
E103-W02DTU
User Manual



Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Content

DISCLAIMER 2
1. OVERVIEW 3
1.1 INTRODUCTION 3
1.2 FEATURES 3
1.3 BASIC USAGE 4
1.4 PRODUCT PARAMETERS 4
2. BRIEF DESCRIPTION OF FUNCTIONS 6
2.1 PIN DEFINITION 6
2.2 CONNECTION METHOD 8
3. QUICK START 9
3.1 WIFI SERIAL SERVER AS AP ESTABLISH SERVER AND PC WIRELESS CONNECTION 10
3.2 WIFI SERIAL SERVER AS STA (STATION) TO CONNECT TO OTHER WIFI HOTSPOTS 18
3.3 REMOTE AT COMMAND 25
3.4 MODIFY SERIAL PORT BAUD RATE 25
3.5 WEB PAGE CONFIGURATION INSTRUCTIONS 26
4. NETWORKING INSTRUCTIONS 26
4.1 NETWORKING ROLES 26
4.2 NETWORKING MODEL 27
5. AT INSTRUCTION SET 28
6. RELATED MODELS 34
7. PRECAUTIONS FOR USE 34
8. IMPORTANT STATEMENT 35
ABOUT US 36

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Disclaimer

EBYTE reserves all rights to this document and the information contained herein. Products, names, logos and designs described herein may in whole or in part be subject to intellectual property rights. Reproduction, use, modification or disclosure to third parties of this document or any part thereof without the express permission of EBYTE is strictly prohibited.

The information contained herein is provided “as is” and EBYTE assumes no liability for the use of the information. No warranty, either express or implied, is given, including but not limited, with respect to the accuracy, correctness, reliability and fitness for a particular purpose of the information. This document may be revised by EBYTE at any time. For most recent documents, visit www.ebyte.com.

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1. Overview

1.1 Introduction

E103-W02-DTU is a transparent transmission serial port to WiFi server, which realizes two-way transparent transmission of RS232/RS485 serial port and WiFi data. It enables serial devices to immediately have TCP/IP network interface function, which greatly expands the communication distance of serial devices.

E103-W02-DTU is developed based on TI's CC3200 chip solution, and users can choose either RS232 or RS485 serial port for communication. The serial server integrates the pass-through function, plug-and-play, supports serial AT command set, users can achieve the function of network access through the serial port, which is widely used in industrial automation, home security, instrumentation, intelligent home appliances, remote control, electric power and other fields.

E103-W02-DTU supports standard IEEE802.11b/g/n protocol and complete TCP/IP protocol stack, STA/AP working mode, SmartConfig, serial port pass-through, power-on pass-through, etc. It is very convenient to realize network access function after simple configuration, which minimizes developers' work and project development time.

1.2 Features

★Supporting standard RS232 interface;

★supporting standard RS485 interface;

★support webpage configuration, you can access WiFi serial server through webpage and read or configure WiFi serial server parameters quickly;

★supporting power-on pass-through, automatically connecting to WiFi network on power-on, and then connecting to the target device through the protocol;

★ support disconnection auto reconnect, after the network connection is disconnected and restored, the WiFi serial server will automatically reconnect to the target;

★ support remote AT command, WiFi serial server can be configured remotely using AT command;

★ support for OneNet, the IoT development platform;

★ industrial-grade design, supporting long-time operation at -40℃～+85℃;

★Efficient watchdog, which will restart automatically in case of abnormality.

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

1.3 Basic usage

No	Usage	Description
0	WiFi serial server communicates with WiFi serial server	WiFi serial server No. 1 is set to AP mode and establish TCP or UDP server, WiFi serial server No. 2 is set to STATION mode and connect to AP No. 1, and communicate with WiFi serial server No. 1 through TCP or UDP Client mode
1	WiFi serial server and Server communication	WiFi serial server connects to the network through the wireless router and communicates with the server on the network (LAN or Internet) via TCP Client or UDP; If you need to connect to an Internet server, you need to configure the router with the appropriate port mapping.
2	WiFi serial server and Client communication	WiFi Serial Server connects to the network through a wireless router and establishes a TCP or UDP Server to listen for connection signals; Client communicates with WiFi Serial Server Server by connecting to it.
For more information on how to use it, please refer to the network instructions in Section 5.		

1.4 Product parameters

No	Parameter Name	Parameter Value	Note
System Parameters			
1	RF Chips	CC3200	TI
2	RAM	256KB	-
3	Flash	8Mbit	Winbond
WiFi parameters			
4	WiFi Version	802.11 b/g/n	-
5	Operating Frequency Band	2.412 ~ 2.484 GHz	-
6	Modulation method	OFDM/DSSS	-
7	Transmit power	20dBm	pprox. 100mW
8	Measured distance	约 300m	Clear and open environment, maximum power, antenna gain 3dBi, height 2m
9	Operating mode	AP/STA	Support AP working mode and STATION working mode
10	Encryption method	WEP/WPA2	-
11	Configuration method	AT/UDP/HTTP	Convenient configuration of the module via serial AT commands, remote UDP AT commands, and HTTP web pages
Basic parameters			
12	Production process	Machine paste, lead-free process	Wireless products must be machine labeled to ensure batch consistency and reliability
13	Interface Method	RS485：1*4*3.81mm RS232：DB9	Crimping method
14	Antenna Interface	SMA-K	Standard DB9, hole type

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

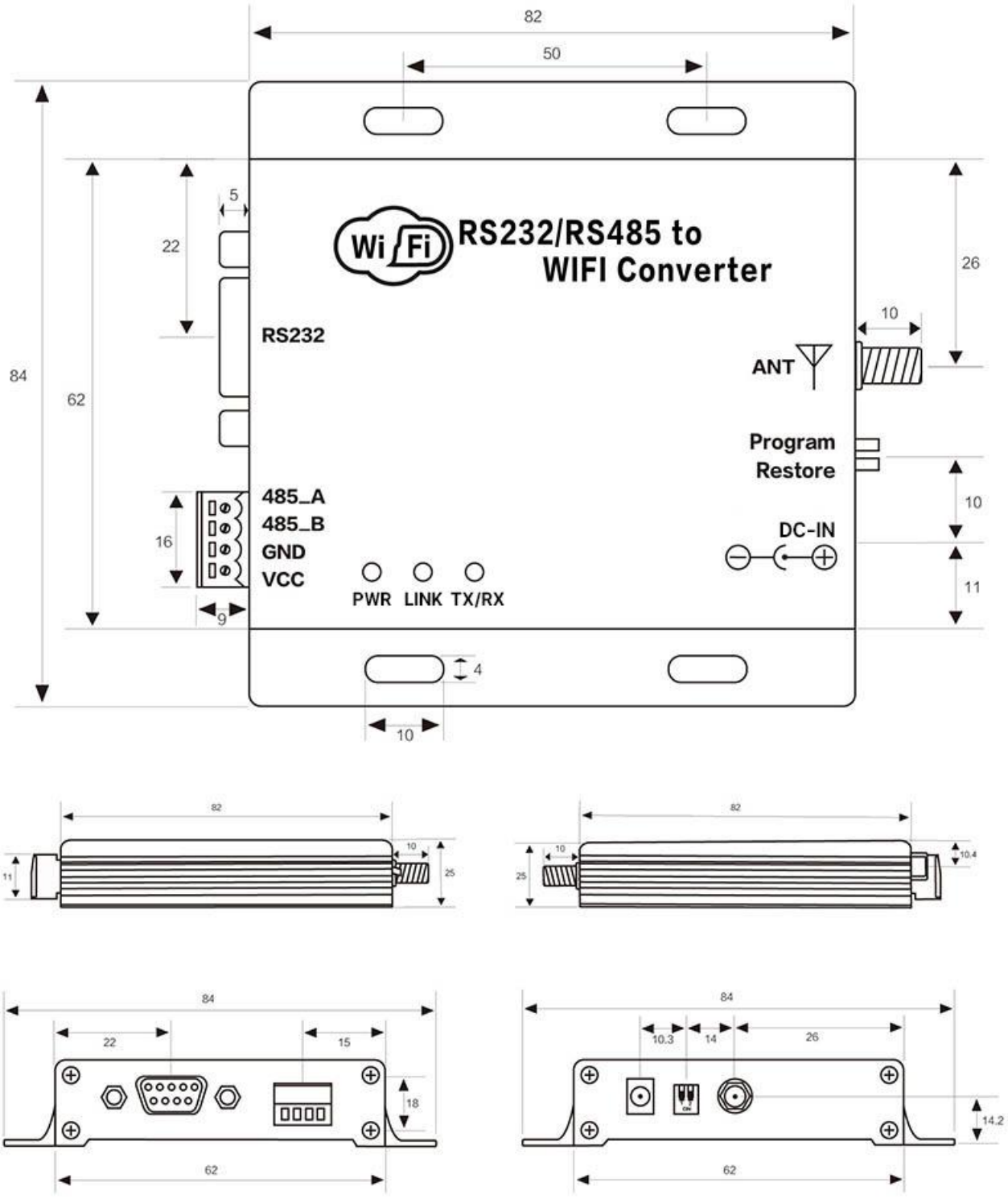
15	Communicati on interface	RS232/RS485	Male female thread, 50 ohm characteristic impedance
16	Serial port baud rate	RS232 interface 300~115200 bps	Support a variety of data bits, check bits, stop bits (factory default 115200,8N1), access to 120 Ω terminal resistance can reach 1M wave rate;
		RS485 interface 300~400000 bps	Support a variety of data bits, check bits, stop bits (factory default 115200,8N1), access to 120 Ω terminal resistance can reach 1M wave rate;
17	Power supply voltage	8 ~ 28V DC	Power adapter or crimp terminal VCC/GND (either can be selected), Note: Voltage higher than 28V will cause permanent damage to the module
18	Operating current	77mA	The power supply is 12V
19	Product Size	82*84*24mm	No antenna
20	Average weight	130g	No antenna
Temperature and humidity			
21	Working temperature	-40 ~ +85℃	Industrial grade
22	Working Humidity	10% ~ 90%	Relative humidity, non-condensing
23	Storage Temperature	-40 ~ +85℃	Industrial grade

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

2. Brief description of functions

2.1 Pin definition



Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

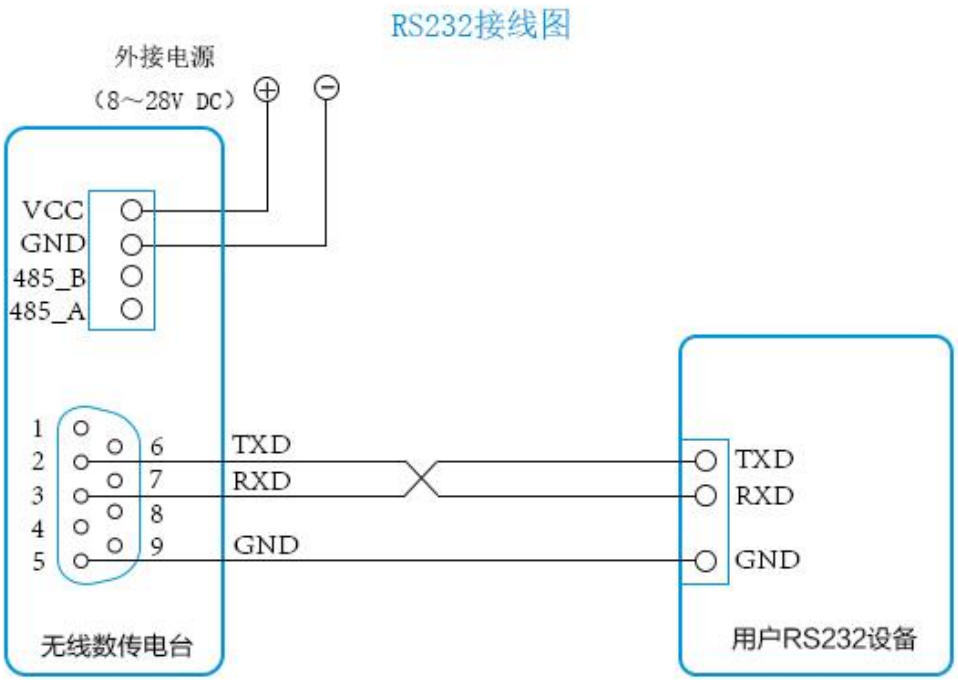
No	Name	Usage
1	RS232	Standard DB9, hole type
2	485_A	A terminal for external RS485 device
3	485_B	B terminal of external RS485 device
4	GND	Ground wire
5	VCC	Power supply, default power supply 8 to 28V (standard 5V version can be customized) (5 and 6 automatically select the high voltage end)
6	DC 8 ~ 28V	DC power supply interface (5.5*2.5), connected to DC8~28V power supply (standard 5V version can be customized)
7	ANT	Antenna connector (SMA-K male female threaded hole, 50Ω characteristic impedance)
8	PWR	Power indicator, power on indicator on, power off indicator off
9	LINK	Socket connection status indicator, LINK indicator on when connected successfully, disconnect indicator off, LINK light blinks three times when restoring factory
10	TX/RX	The indicator blinks when data is sent or received
11	(M0) Program	Burning emulation mode selection, default set to high; when you need to re-download the program, please set the dip switch to low
12	(M1) Restore	When you need to restore the factory settings, please set the dipswitch to low first, then power on and wait for the STAT indicator to blink off three times, then restore the factory settings. The module only detects this pin when it starts up, and setting the pin low after starting up cannot perform restoration action.

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

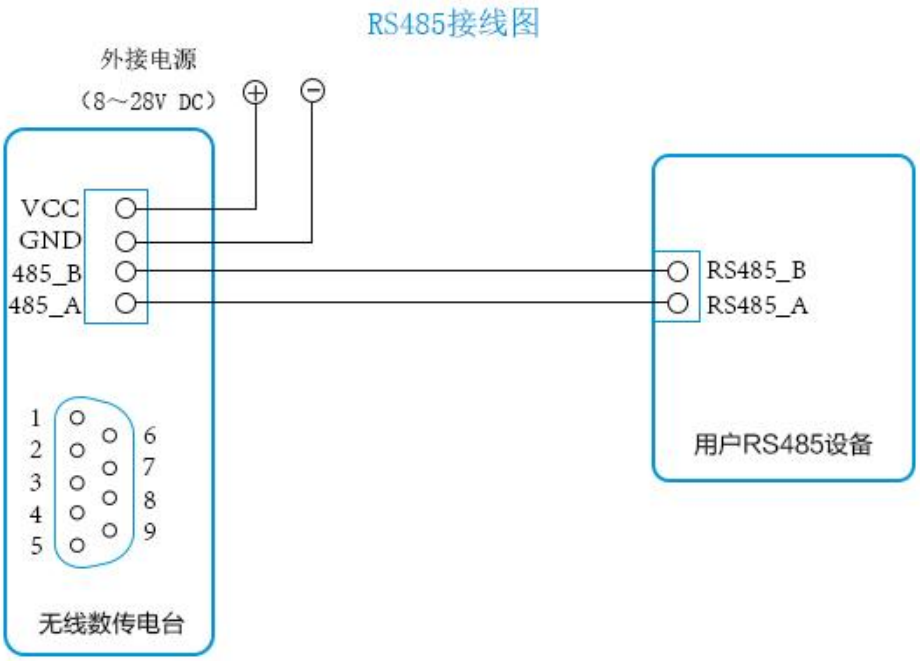
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

2.2 Connection method

RS232 connection method



RS485 connection method



Note: WiFi serial server can be powered by power adapter or crimp terminal VCC/GND (either one can be chosen).

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000





3. Quick Start

The E103-W02-DTU Serial Server is easy to use. In order to let users get familiar with it quickly, this section will guide users to realize the configuration and communication in various modes after simple settings.

The test process uses all AT commands, and for users to make quick connections, we have developed web HTTP for users to make quick configurations.

The tests in this section are conducted using the serial debugging assistant, and the WiFi serial server will display back the current commands issued, so that users can quickly understand the usage of AT commands. (Note: All AT commands need to be followed by a line break, except for the "++++" command, i.e., only the "++++" command does not need to be followed by a line break)

In addition, users can use external microcontrollers (MCU) directly connected to the WiFi serial server UART for AT instruction communication without using the backplane to achieve secondary development

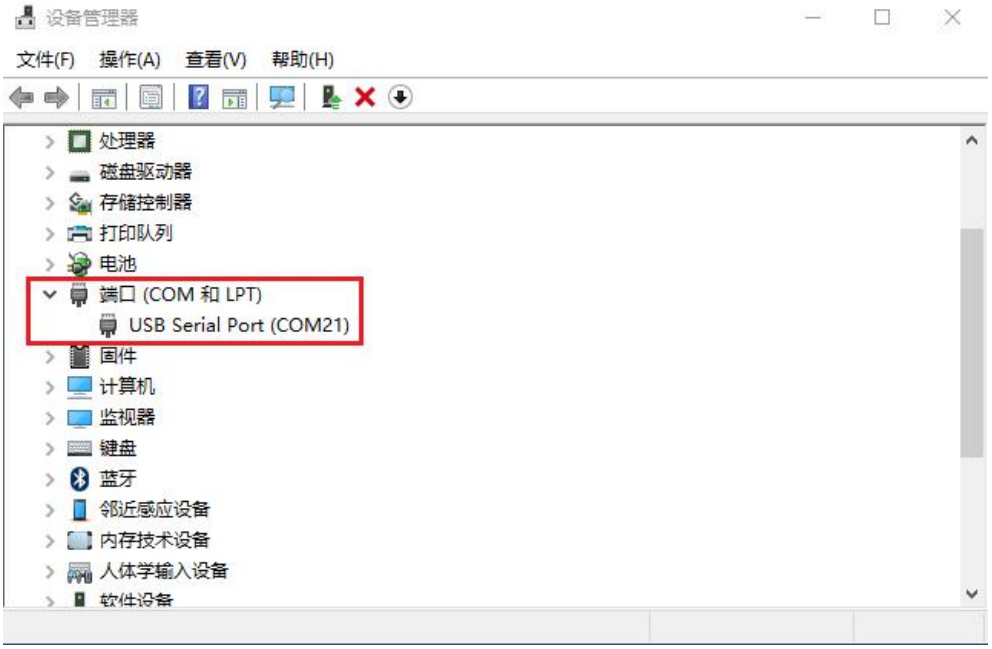
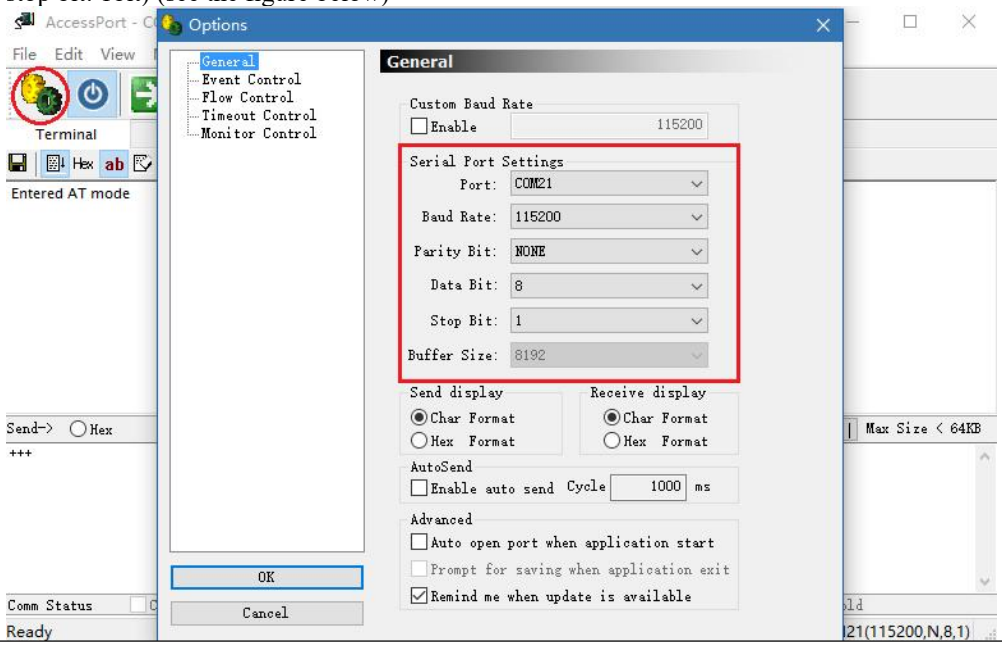
The hardware that will be used in this section:	
1	E103-W02DTU model WiFi serial server 1pc
2	1 computer with WiFi function
3	Router 1 (can be replaced by cell phone WiFi hotspot)
The software that will be used in this section (all can be downloaded from the official website)	
1	Serial port debugging assistant AccessPort
2	TCP & UDP test tool
3	SmartConfig (one-click configuration) mobile app "Wi-Fi Starter"



Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

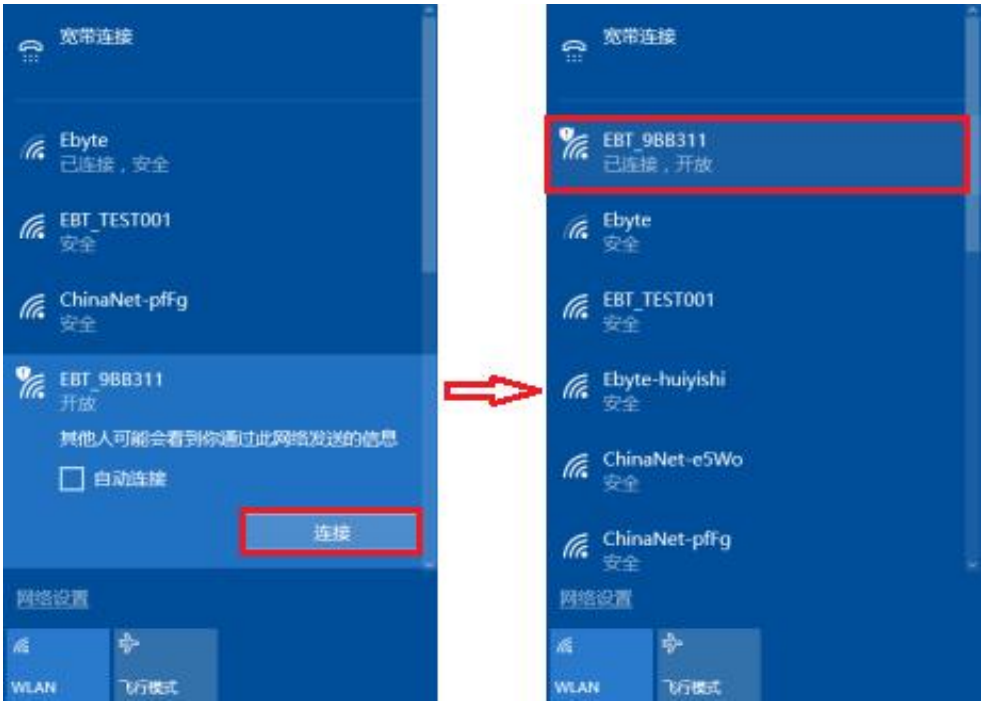
3.1 WiFi Serial Server as AP Establish SERVER and PC wireless connection

No	Remarks
1	[WiFi serial server as AP to establish connection with PC]: ① Connect the factory E103-W02-DTU base board to PC via Micro USB cable; ② Open the serial debugging assistant "AccessPort" and select the port number; if you are not sure about the port number, please check in the device manager (see the figure below).  ③ Set serial port debugging parameters (baud rate: 115200bps, data bit: 8bit, parity bit: no parity, stop bit: 1bit) (see the figure below) 

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

④ We open the wireless network on the PC, find the wireless network with SSID starting with "EBT" (e.g. EBT_9BB311), and click "Next" to connect.
<The "9BB311" here is the last 6 bits of the WiFi serial server MAC address, different WiFi serial servers have different MAC addresses, so different WiFi serial servers have different factory SSIDs>.



⑤ After successful connection, the WiFi connection status light on the WiFi serial server backplane is on and the PC shows successful connection, otherwise, please operate the above steps again.

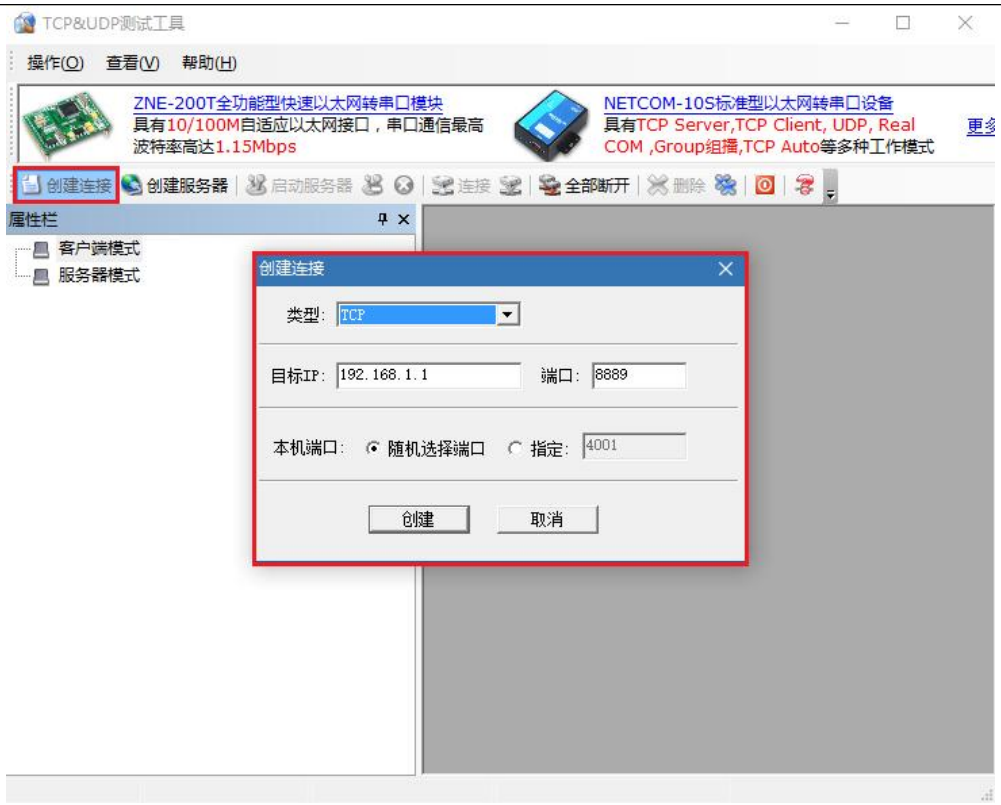
Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

	
2	[WiFi serial server as AP to establish TCP SERVER to communicate with PC]: ① Open the TCP & UDP test tool, create the connection and set the parameters (see the figure below).

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



② Click the "Create" button to complete the creation, and then click the "Connect" button.

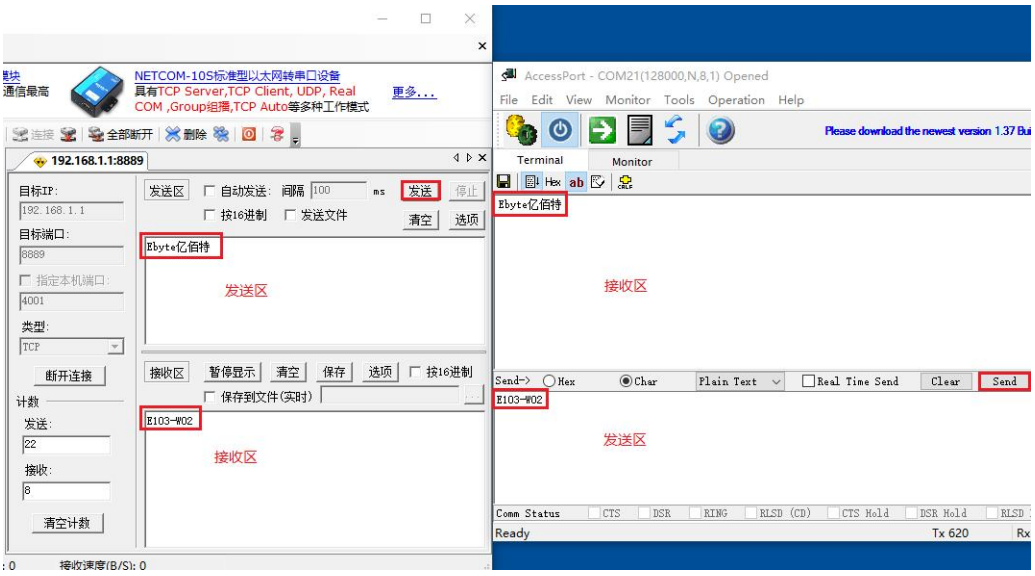


③ WiFi serial server backplane LINK indicator is on, indicating the completion of the connection, you can complete the bi-directional data transfer between PC and WiFi serial server (i.e. TCP & UDP test tool and serial debugging assistant bi-directional communication), otherwise, please operate the above steps again.

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000





④ You can also transfer files (preferably in TXT format) Oh, try it quickly.

3

[WiFi serial server as AP to establish UDP SERVER to communicate with PC]:

① Above serial number 2 completes the TCP communication, next we will establish UDP communication, which requires us to do simple configuration of WiFi serial server.

② Please complete serial number 1 before we enter AT command mode for simple

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

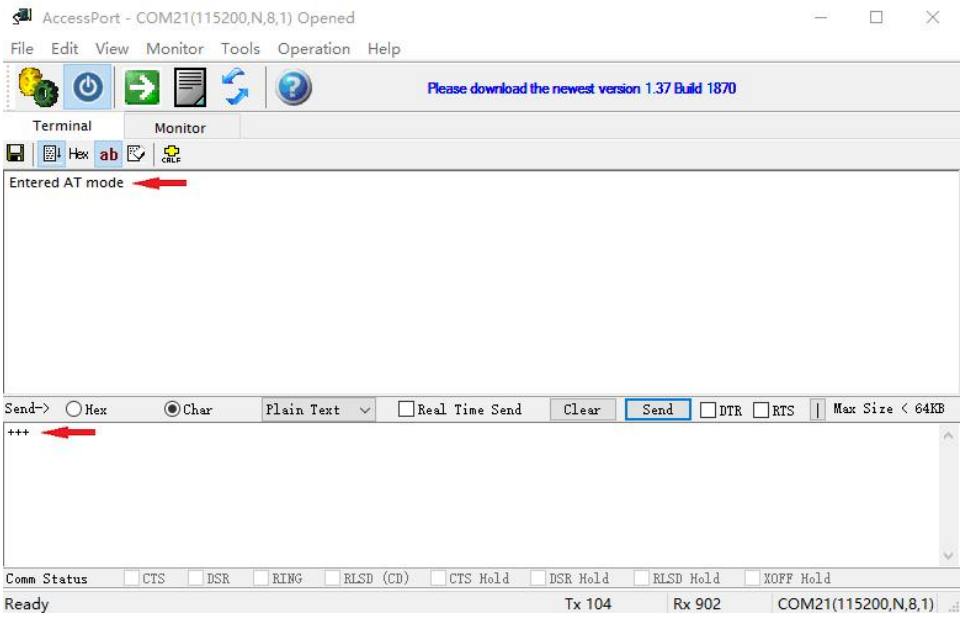
configuration. <Please be sure to complete serial number 1 first>

<Since we are sending commands, please turn off the Real Time Send function of the serial port for better debugging.

If the serial debugging assistant you are using does not have the Real Time Send function, please ignore this article>.

a. Start serial debugging, enter the command "+++" in the send text box (please do not add line break), click Send to start sending commands.

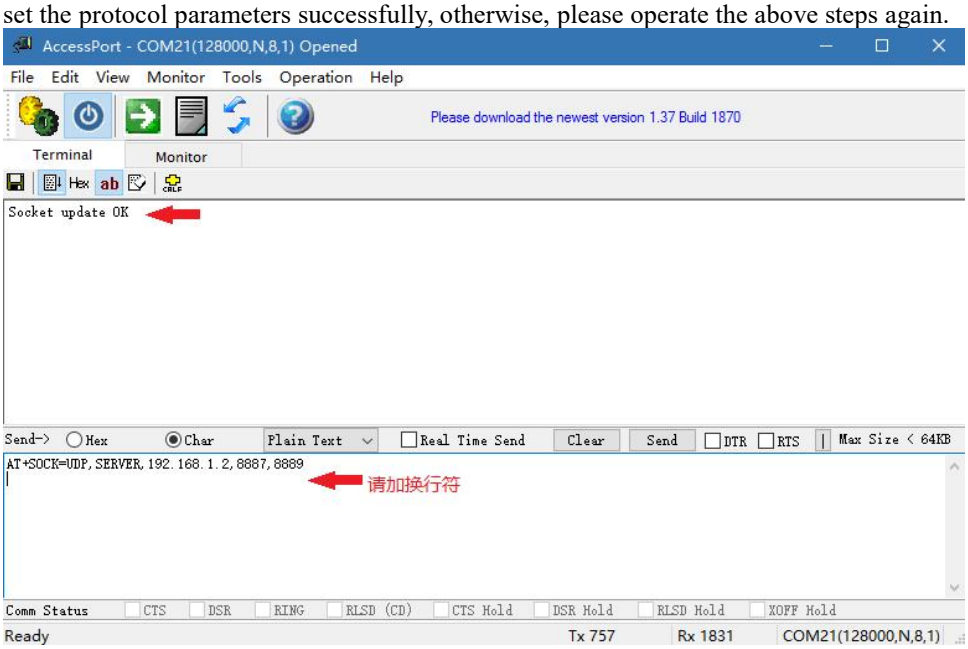
b. If the serial port returns "Entered AT mode" message, it indicates that it has entered AT command mode, otherwise, please operate the above steps again.



③ We have entered AT command mode by step ②, and we will start to configure the socket protocol.

A. Enter the command "AT+SOCK=UDP,SERVER,192.168.1.2,8887,8889" in the Send text box (please add a line break, i.e. after entering the command "AT+SOCK=UDP,SERVER,192.168.1.2,8887,8889" command followed by the Enter key), click Send to start sending commands.

B. If the serial port returns the message "Socket update OK", it indicates that the command has set the protocol parameters successfully, otherwise, please operate the above steps again.



Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

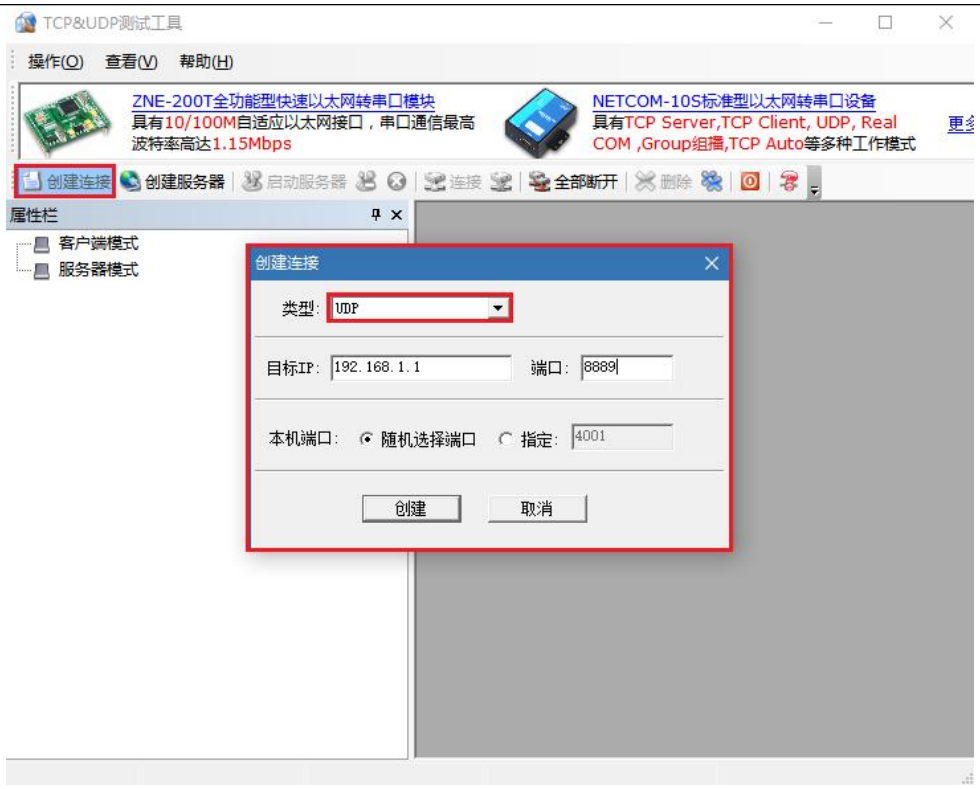
④ Please reset or power down and reboot after setting parameters to take effect; if there are other parameters not set, please reset or power down and reboot after setting other parameters. Because we only configure the socket protocol here, so we reset or power down and restart directly, and then the WiFi connection status indicator on the base board will be lit immediately, indicating that the UDP protocol is enabled.



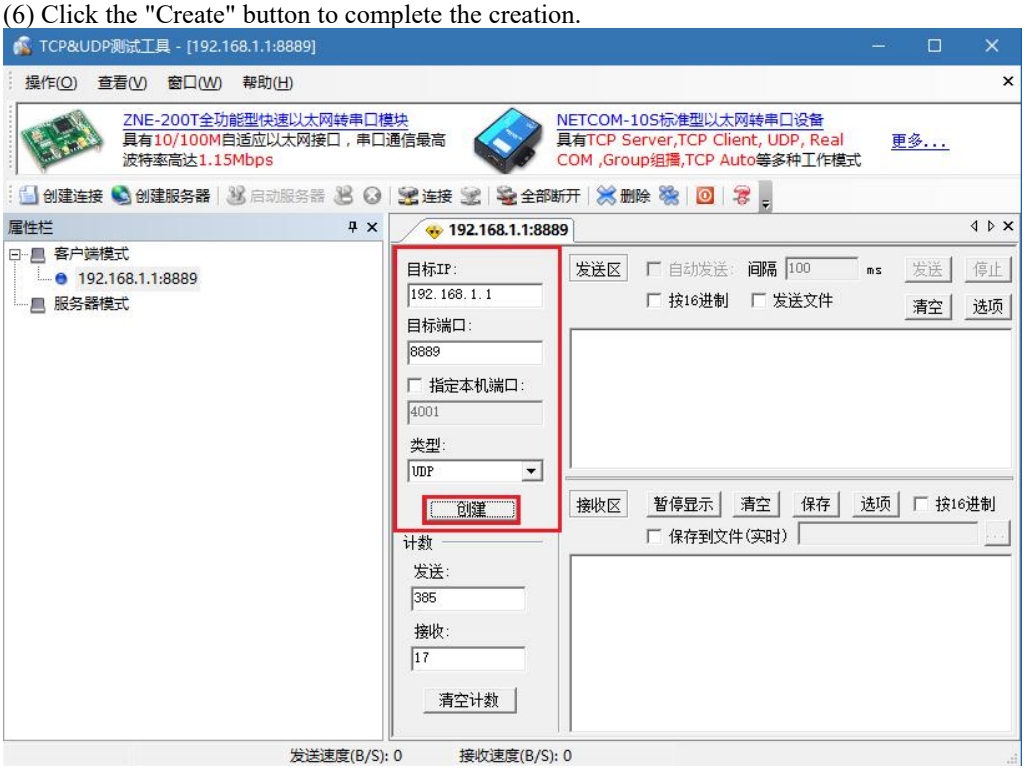
⑤ Open the TCP & UDP test tool, create a connection, and set the parameters (see the figure below).

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



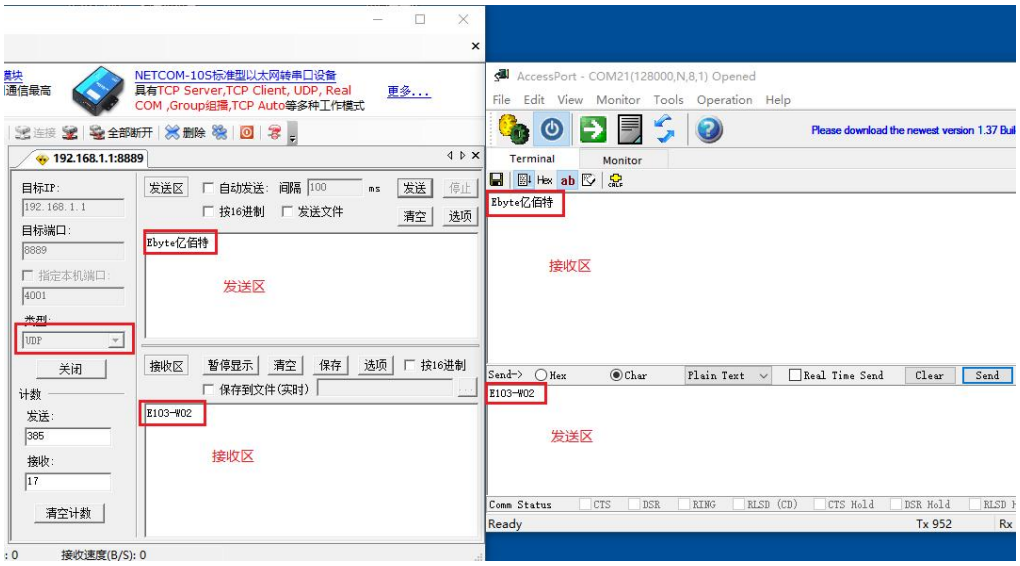
(6) Click the "Create" button to complete the creation.



(7) If the creation is successful, you can complete the bi-directional data transfer between PC and WiFi serial server (i.e. TCP & UDP test tool and serial debugging assistant bi-directional communication), otherwise, please operate the above steps again.

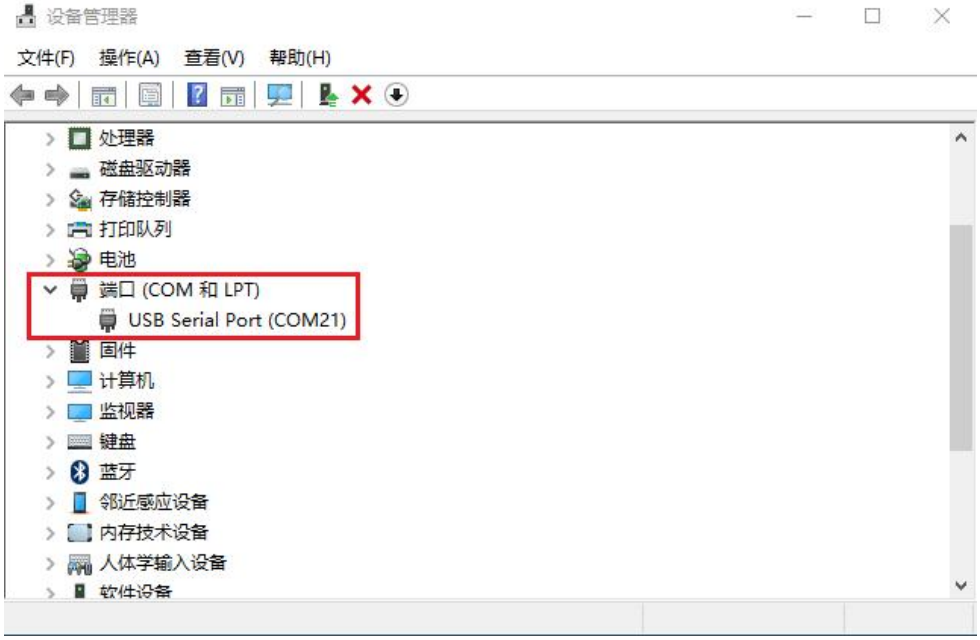
Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



⑧. You can also transfer files (preferably TXT format files) Oh , try it quickly.

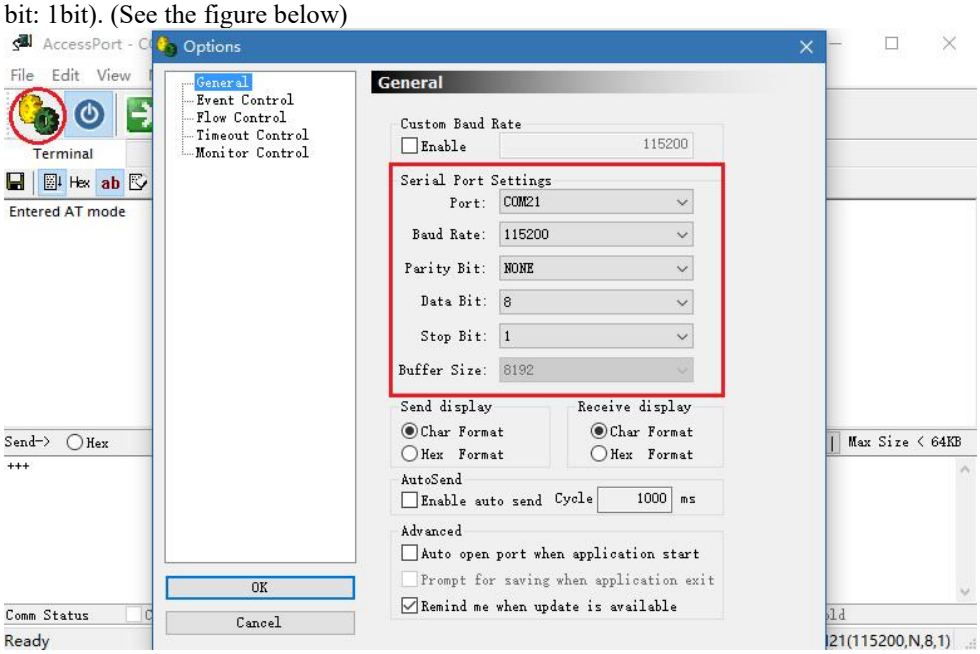
3.2 WiFi Serial Server as STA (Station) to connect to other WiFi hotspots

No	Remarks
1	[WiFi Serial Server as STA (Station) to connect to other WiFi hotspots] ① Connect the factory E103-W02-DTU base board to PC via Micro USB cable; ② Open the serial debugging assistant "AccessPort" and select the port number; if you are not sure about the port number, please check in the device manager (see the figure below). 

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

③ Set the serial debug parameters (Baud rate: 115200bps, data bit: 8bit, parity bit: no parity, stop bit: 1bit). (See the figure below)



④ Next, we enter AT command mode for simple configuration.

<Since we are sending commands, please turn off the Real Time Send function of serial port for better debugging.

If the serial debugging assistant you are using does not have the Real Time Send function, please ignore this article>.

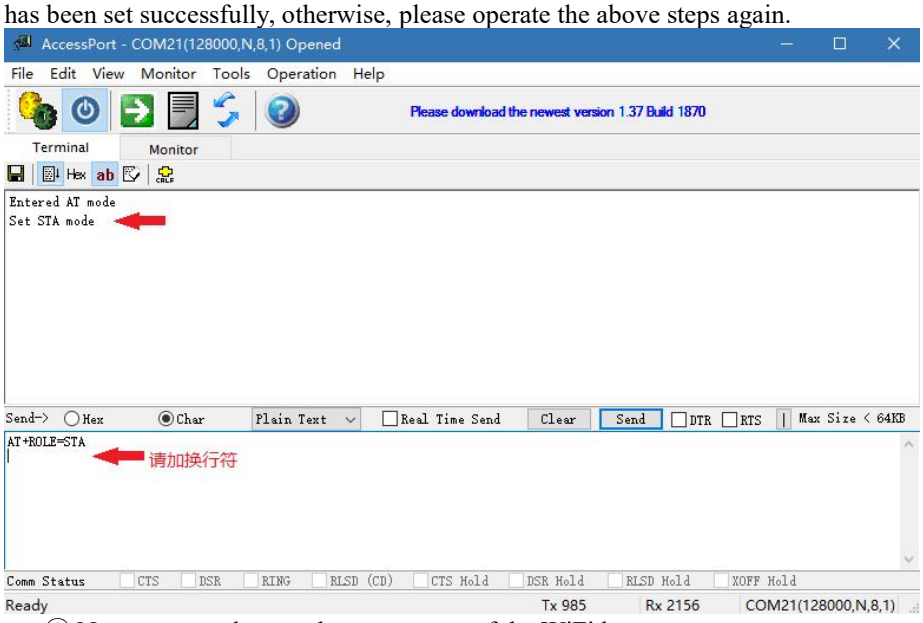
a. Start serial debugging, enter the command "+++" in the send text box (please do not add line break), click Send to start sending commands.

b. If the serial port returns the message "Entered AT mode", it indicates that it has entered AT command mode, otherwise reset and retry the above steps.

⑤ Now our WiFi serial port server is used as STA mode to connect to other APs, so we need to set the mode to STA mode first.

a. Enter the AT command "AT+ROLE=STA" in the Send text box of the serial debug assistant (please add a line break, i.e. add the Enter key after entering the command "AT+ROLE=STA") and click Send to send the command.

b. If the message "Set STA mode" is displayed on the serial port, it indicates that the STA mode has been set successfully, otherwise, please operate the above steps again.



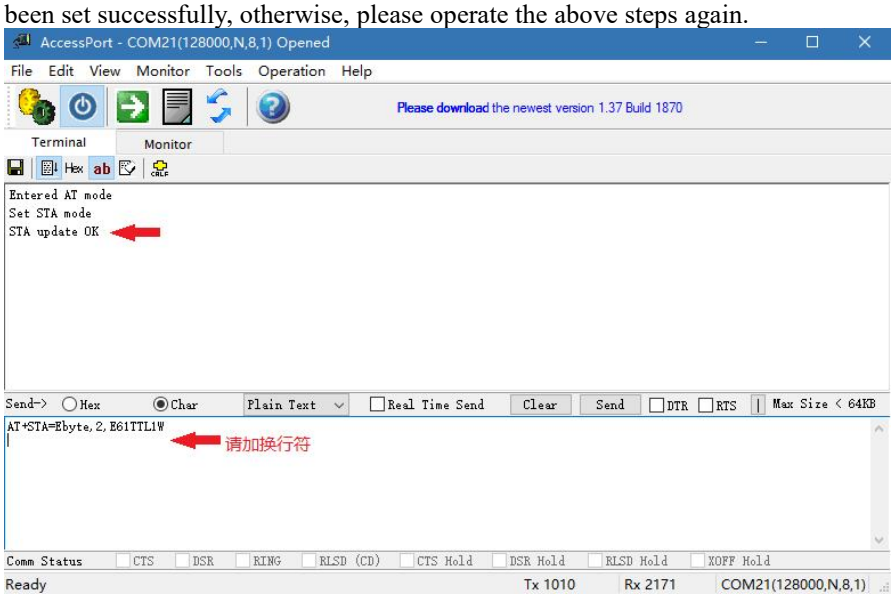
⑥ Next, you need to set the parameters of the WiFi hotspot we want to connect to (STA

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

parameters).
a. Enter the AT command "AT+STA=Ebyte,2,E61TTL1W" in the Send text box of the serial debugging assistant (please add a newline character, i.e. after entering "AT+STA=Ebyte,2,E61TTL1W After entering the command "AT+STA=Ebyte,2,E61TTL1W", add the Enter key and click Send to send the command. <Here you must set the WiFi hotspot according to the user's location; the "Ebyte" in the previous AT command is the SSID (i.e. WiFi name) of the WiFi hotspot, '2' is the encryption method WPA2 (if there is no password, the item is 0), "E61TTL1W" is the WiFi password (if no password, this item is empty)>

b. If the serial port returns "STA update OK" message, it indicates that the STA parameters have been set successfully, otherwise, please operate the above steps again.



⑦ Reset or power down to restart WiFi serial server, if WiFi serial server is far away from WiFi serial server, please connect the antenna.

⑧ If the WiFi connection status indicator is on, it indicates that the access to WiFi hotspot is successful.



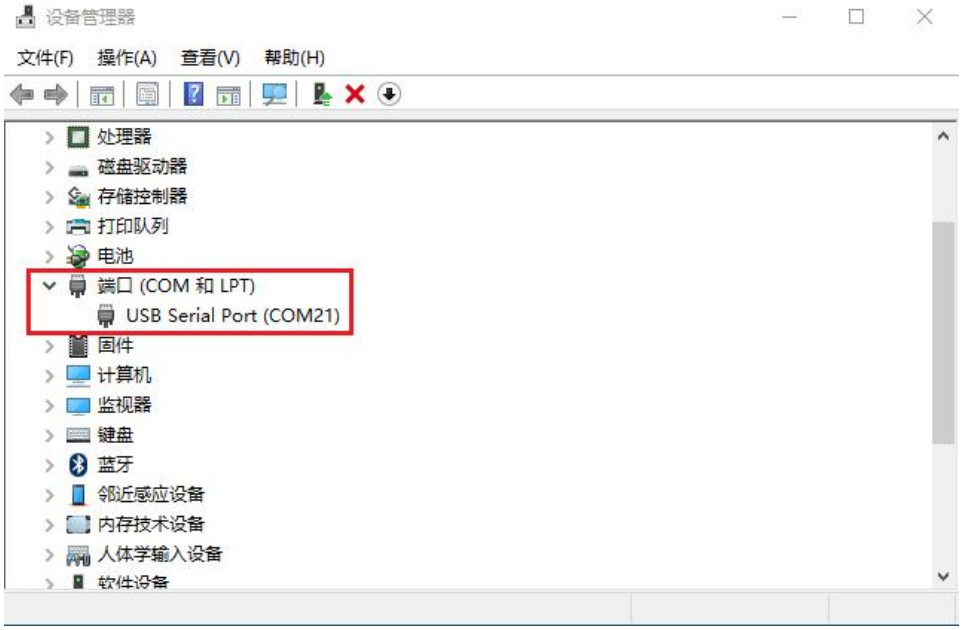
Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

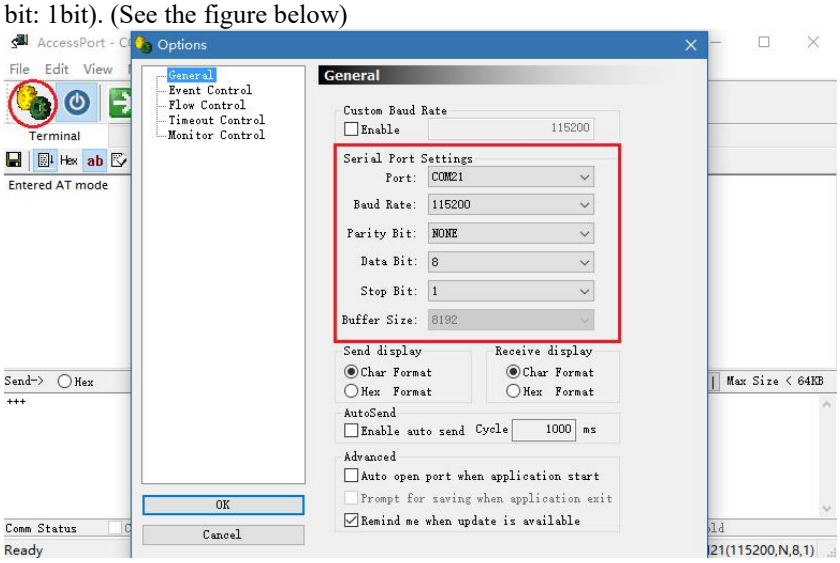
[WiFi Serial Server as STA (Station) to connect to other WiFi hotspots via SmartConfig (one-click configuration)]:

① Connect the factory E103-W02-DTU base board to PC via Micro USB cable.

② Open the serial debugging assistant "AccessPort" and select the port number; if you are not sure about the port number, please check in the device manager (see the figure below).



③ Set the serial debug parameters (Baud rate: 115200bps, data bit: 8bit, parity bit: no parity, stop bit: 1bit). (See the figure below)



④ Next, we enter AT command mode for simple configuration.

<Since we are sending commands, please turn off the Real Time Send function of serial port for better debugging.

If the serial debugging assistant you are using does not have the Real Time Send function, please ignore this article>.

a. Start serial debugging, enter the command "+++" in the send text box (please do not add line break), click Send to start sending commands.

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

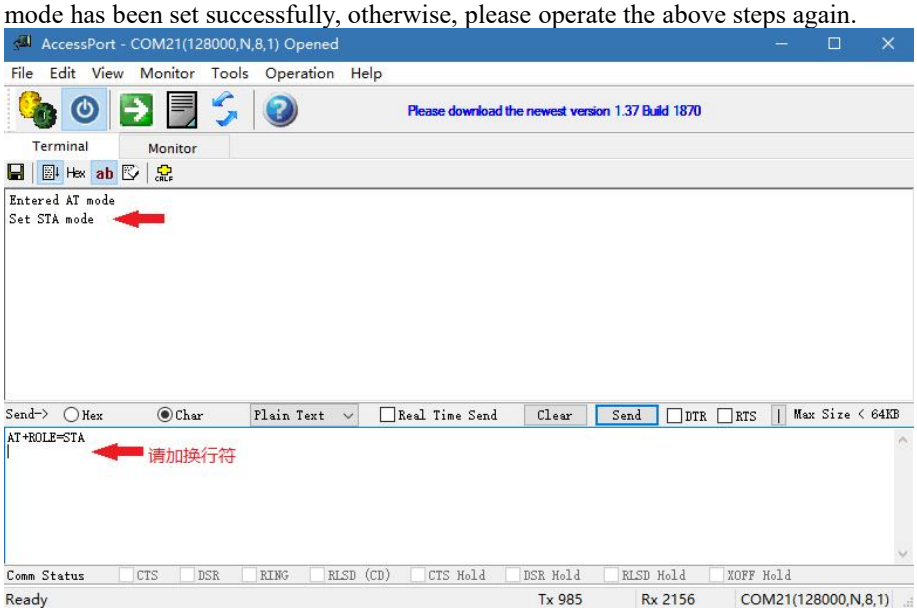
Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

b. If the serial port returns the message "Entered AT mode", it indicates that it has entered AT command mode, otherwise reset and retry the above steps.

⑤ First, set the mode to STA mode.

a. Enter the AT command "AT+ROLE=STA" (please add a line break, i.e. add the Enter key after entering the command "AT+ROLE=STA") in the Send text box of the serial debug assistant, and click Send to send the command.

b. If the message "Set STA mode" is displayed on the serial port, it indicates that the STA mode has been set successfully, otherwise, please operate the above steps again.



⑥ Reset or power down and reboot the WiFi serial server, repeat step ④.

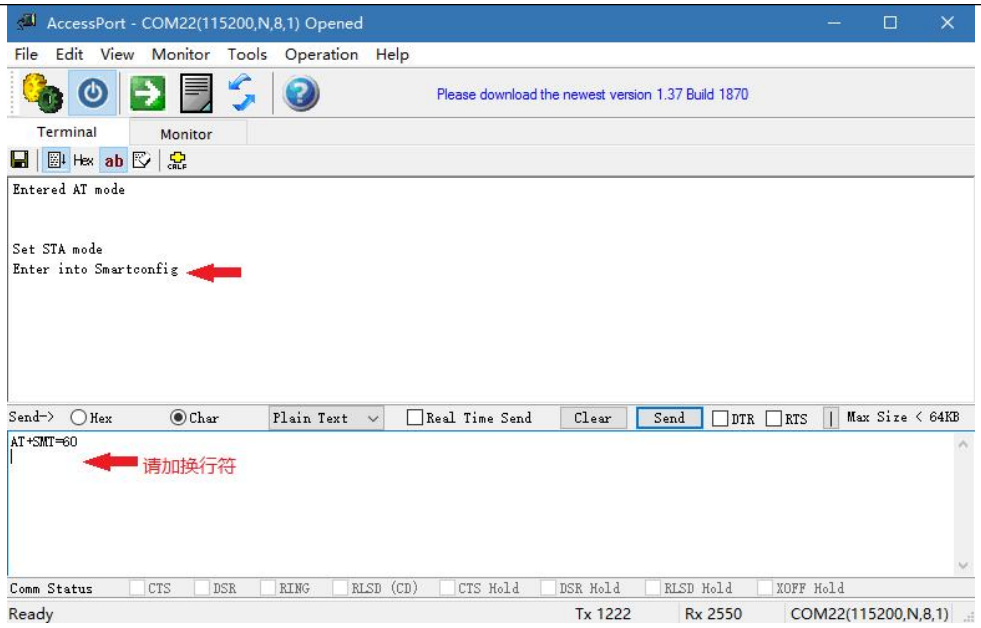
⑦ Next, we need to enter SmartConfig (one-click configuration) mode.

a. Enter the AT command "AT+SMT=60" in the Send text box of the serial debugging assistant (please add a line break, i.e. add the Enter key after entering the command "AT+SMT=60") and click Send to send the command. <The 60 in the AT command here means that the WiFi hotspot is not connected after 60S, it will time out to exit SmartConfig mode>.

b.. If the message "Enter into Smartconfig" is displayed on the serial port and the STAT indicator is lit, it indicates that the SmartConfig mode has been entered, otherwise, please retry the above steps.

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



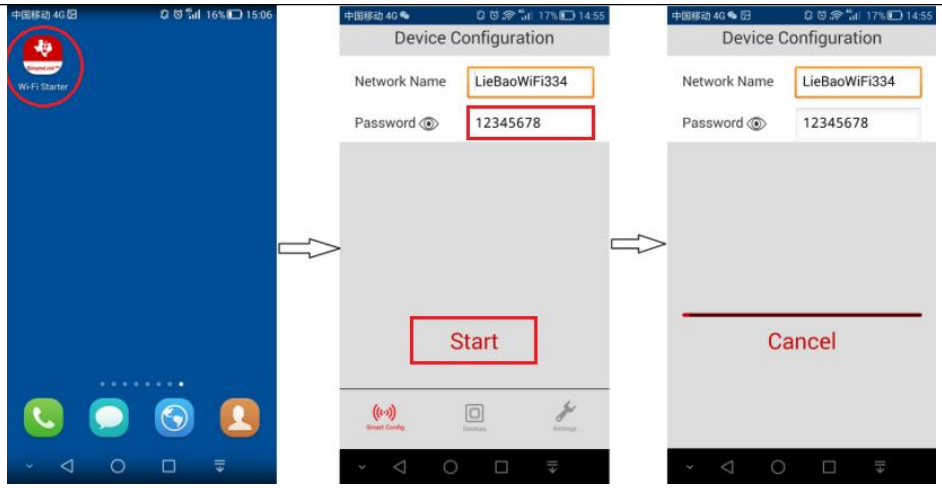


⑧. Turn on your phone WiFi and connect to a particular hotspot.

⑨. Install and open the mobile app software "Wi-Fi Starter", enter the WiFi hotspot password, and click "Start". (LINKwork Name is the name of the WiFi hotspot that your phone is connected to, the software will recognize it automatically, no need to input)

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



⑩. If the WiFi serial server is far away from the WiFi serial server, please connect the antenna. The base board WiFi connection status indicator is lit to indicate successful connection to WiFi hotspot, otherwise, please retry the above steps. <After successful connection, the WiFi serial server will remember the WiFi hotspot (including password) connected this time, and the next reset or reboot WiFi serial server will connect automatically>.



Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

3.3 Remote AT command

The E103-W02-DTU can use remote AT commands to send AT commands to WiFi serial server port 12476 using the UDP communication protocol. When using the remote AT command, there is no need to use "++++" for mode switching.



3.4 Modify serial port baud rate

No	Remarks
1	E103-W02-DTU WiFi serial server supports any serial port baud rate from 300-400000.
2	Users can modify the corresponding parameters of serial port by sending AT+UART command. For example: AT+UART=115200,8,0,1
3	Please refer to AT command set for specific commands.
Baud rate support	Access RS232:300~115200bps (default 115200) Note 1
	Access RS485:300~400000bps (default 115200) Note 1
Calibration bit support	NONE, no parity bit (default)
	EVEN, even parity
	ODD, odd parity
Data bits	5 bits
	6 bits
	7 bits
	8-bit
Stop Bits	1-bit
	2 bit

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

Note 1: The user can increase the port rate by accessing the 120 Ω terminal resistance.

3.5 Web page configuration instructions

Restore the factory setting state, connect to the WiFi serial server through your computer or cell phone, open the web browser and enter 192.168.1.1 to see the following configuration interface;
After the configuration is finished, pay attention to click the Save button, and click Reboot when all parameters are saved. The new parameters will take effect after restarting.



4. Networking instructions

4.1 Networking Roles

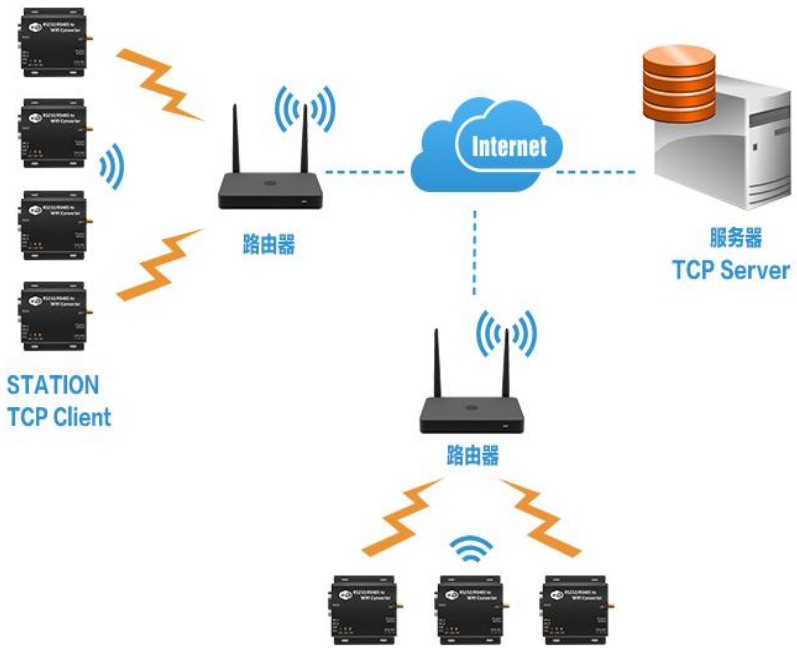
No	Remarks
1	E103-W02-DTU WiFi serial server supports AP mode (equivalent to router), STATION mode (equivalent to WiFi device) as physical connection role, and supports up to 1 WiFi device access in AP mode.

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

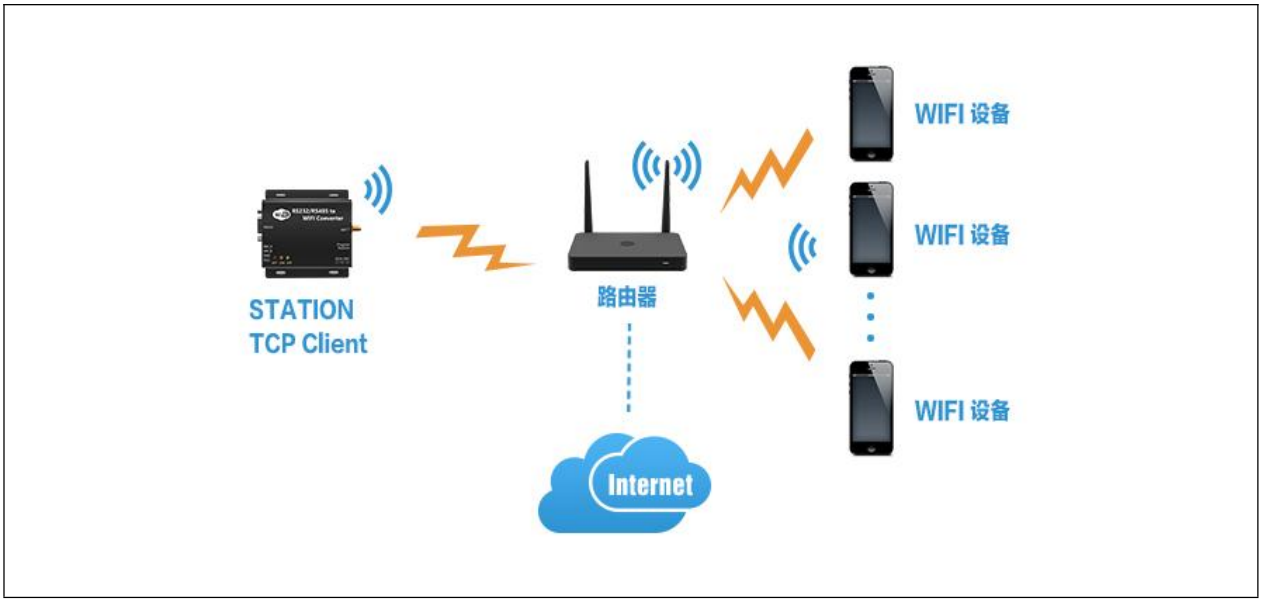
2	E103-W02-DTU WiFi Serial Server as Socket role includes TCP Server, TCP Client and UDP. based on TCP connection mechanism, please note that TCP heartbeat packet should be used if you need to be in connection state for a long time.

4.2 Networking model

WiFi serial server in STATION mode to establish TCP Client communication with remote server connection (typical application)
The networking model can meet the applications of home IOT, smart meter reading, real-time monitoring, etc. The WiFi serial server can exchange data with the web server in real time. Users can perform various operations on the WiFi serial server side in real time by interacting with the web server.

WiFi serial server in STATION mode to establish TCP Server communication with Wi-Fi device connection
This networking model is similar to the first one, except that the WiFi serial server is established in STATION mode as TCP Server instead of TCP Client. This model can support up to 5 remote device connections under networking conditions.

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000



5. AT instruction set

1	**+++Enter AT command mode**	
	+++	Parameter Description: No parameter Response: Entered AT Command mode
	Example：+++	
	Attention: 1. only after using this instruction to enter the AT instruction mode can the AT instruction be used for operation; 2. After entering AT instruction mode, only after exiting AT instruction mode, resetting or restarting, can you use this instruction to enter AT instruction mode again; 3、When writing this instruction, the serial debug assistant must be set to not send new lines; when writing other AT instructions, it must be set to send new lines.	
2	**AT+EXIT to exit AT command mode**	
	AT+EXIT	Parameter Description: No parameter Response: Exited AT Command mode
	Example: AT+EXIT	
	Note: 1. After exiting AT command mode, all AT commands are invalid	
3	**AT+RST start reset**	
	AT+RST	Parameter Description: No parameter Response: Module rebooting
	Example: AT+RST	
	Note: 1. Similar to pressing the reset button, it will exit AT command mode	
4	**AT+RESTORE to restore factory settings**	
	AT+RESTORE	Parameter Description: No parameter Response:

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

		Restore OK
	Example: AT+RESTORE	
	Note: 1. After using this AT command, please start reset or power down and restart to take effect	
5	**AT+ROLE setting mode (reboot effective)**	
	AT+ROLE=<mode>	Parameter Description: mode. Set to AP for Access Point, which provides wireless access service Set to STA for Station, similar to wireless terminal Response: Set AP mode or Set STA mode
	Example: AT+ROLE=AP	
	Note: 1. After setting a new mode, you need to reset or power down and restart	
6	**AT+ROLE=? Query serial port parameters**	
	AT+ROLE=?	Parameter Description: No parameter Response: Role=AP or Role=STA
	Example：AT+ROLE=?	
7	**AT+UART to set serial port parameters (reboot effective)**	
	AT+UART=<Baud>,<Databit>,<Parbit>,<Stopbit>	Parameter Description: Baud: Baud rate (300-115200bps to RS232 and 3 00-400000bps to RS485) Databit: Data bits Parbit: Parity bit Stopbit: Stop bit Response: Uart Update OK
	Example: AT+UART=115200,8,0,1	
	Note: 1. After setting new serial port parameters, you need to reset or power down and restart	
8	**AT+UART=? Query serial port parameters**	
	AT+UART=?	Parameter Description: No parameter Response: Baud:115200 Databit:8 Parbit:0 Stopbit:1
	Example：AT+UART=?	
9	**AT+AP set AP parameters (reboot effective)**	
	AT+AP=<SSID>,<SecType>,< Password>	Parameter Description: 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	
	Note: 1. When setting open AP, Sectype is 0 and Password is empty 2. When setting WEP encryption, the password must be 5 or 13 case-sensitive characters, or 10 or 26 hexadecimal characters. 3. After setting a new mode, you need to reset or power down and restart	
10	**AT+AP=? Query AP parameters**	
	AT+AP=?	Parameter Description: No parameter

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

		Response: SSID:E103-W02 SecType:2 Password:12345678
	Example：AT+AP=?	
11	**AT+STA sets the STATION parameter (reboot takes effect)**	
	AT+STA=<SSID>,<SecType>,<Password>	Parameter Description: SSID: Service Set Identifier <1~32Byte> SecType: encryption type Password: Password <8~63Byte> Response: STA Update OK
	Example：AT+STA=Ebyte,2,E61TTL1W	
	Note: 1. When setting open STA, Sectype is 0 and Password is empty	
12	**AT+STA=? Query STATION parameter**	
	AT+STA=?	Parameter Description: No parameter Response: SSID:Ebyte TYPE:2
	Example：AT+STA=?	
	Note: 1. For security reasons, the response will not show the Password parameter	
13	**AT+CHAN to set channel parameters (reboot effective)**	
	AT+CHAN=<Channel>	Parameter Description: Channel:Number of channels (1~11) Response: AP Channel Update OK
	Example：AT+CHAN=11	
14	**AT+CHAN=? Query channel parameters**	
	AT+CHAN=?	Parameter Description: No parameter Response: AP Channel:11
	Example：AT+CHAN=?	
15	**AT+APIP set the IP parameters in AP mode (reboot effective)**	
	AT+APIP=<APIP>,<Mask>,<Gateway>,<DNS>	Parameter Description: APIP: IP address in 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	**AT+APIP=? Query the IP parameters in AP mode**	
	AT+APIP=?	Parameter Description: 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	**AT+STAIP sets the IP parameters in STATION mode (reboot takes effect)**	
	AT+STAIP=<IPMode>,<STAIP>,<Mask>,<Gateway>,<DNS>	Parameter Description: IPMode: IP mode (DHCP or STATIC) STAIP: IP address in STA mode Mask: subnet mask Gateway: gateway address DNS: DNS server address Response: STAIP Update OK

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

<table>
<tr><td></td><td colspan="2">Example：AT+STAIP=DHCP,192.168.1.1,255.255.255.0,192.168.1.1,192.168.1.1</td></tr>
<tr><td rowspan="4">18</td><td colspan="2">AT+STAIP=? Query the IP parameters in STATION mode</td></tr>
<tr><td>AT+STAIP=?</td><td>Parameter Description:
No parameter
Response:
STAIP:192.168.1.1 Mask:0.0.0.0 Gateway:0.0.0.0 DNS:0.0.0.0
IPMode:DHCP</td></tr>
<tr><td colspan="2">Example：AT+STAIP=?</td></tr>
<tr><td colspan="2">Attention:
1. When IPMode is set to DHCP, setting Mask, Gateway and DNS are invalid, and their values are: 0.0.0.0</td></tr>
<tr><td rowspan="3">19</td><td colspan="2">AT+SOCK set protocol parameters (reboot effective)</td></tr>
<tr><td>AT+SOCK=<Protocol>,<CS>,<RemoteIP>
,< RemotePort>,< LocalPort ></td><td>Parameter Description:
Protocol: Protocol (TCP or UDP)
CS: (CLIENT or SERVER)
RemoteIP: Remote IP address
RemotePort: Remote port number
LocalPort: local port number

Response:
Socket Update OK</td></tr>
<tr><td colspan="2">Example: AT+SOCK=TCP,SERVER,192.168.1.2,8889,8887
Tip: The module can't actively detect whether the socket is disconnected or not, i.e. the module is still connected after the server is disconnected. When the user sends any data, the module can detect and change to disconnected state.</td></tr>
<tr><td rowspan="3">20</td><td colspan="2">AT+SOCK=? Query protocol parameters</td></tr>
<tr><td>AT+SOCK=?</td><td>Parameter Description:
No parameter
Response:
Protocol:TCP CS:SERVER RemoteIP:192.168.1.2
RemotePort:8889 LocalPort:8887</td></tr>
<tr><td colspan="2">Example：AT+SOCK=?</td></tr>
<tr><td rowspan="3">21</td><td colspan="2">AT+SMT to enter SmartConfig (one-touch configuration) mode</td></tr>
<tr><td>AT+SMT=<Timeout></td><td>Parameter description:
Timeout: timeout to exit this mode (can be 0~255; 0: never exit, 1~255: exit after 1~255 seconds)
Response:
Enter into Smartconfig</td></tr>
<tr><td colspan="2">Example：AT+SMT=20
Attention:
1, after entering SmartConfig (one-key configuration) mode, can use the cell phone APP to configure the module to quickly connect to the network;
2、Exit this mode, you need to wait for the timeout to exit automatically, reset or power down and restart.</td></tr>
<tr><td rowspan="3">22</td><td colspan="2">AT+STATUS=? Query the current module status</td></tr>
<tr><td>AT+STATUS=?</td><td>Parameter Description:
No parameter
Response:
WiFi Status: IP=192.168.1.1 , Gateway=0.0.0.0</td></tr>
<tr><td colspan="2">Example: AT+STATUS=?
AP mode: prints its own IP and gateway when not connected, and prints the IP and gateway of the connected device when connected.
STA mode: print disconnected when not connected, and print your own IP and gateway when connected.</td></tr>
<tr><td>23</td><td colspan="2">AT+PM sets the power consumption parameter (exiting command mode takes effect)</td></tr>
</table>

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

<table>
<tr><td rowspan="3"></td><td>• AT+PM=<Power Mode>,<Delay></td><td>Parameter Description:
Power Mode: power consumption mode: (can be 0,1,2,3)
Delay: the delay time to enter the low-power state after waking up (2~240S)
Response:
Power mode set OK</td></tr>
<tr><td colspan="2">Example：AT+PM=0,5</td></tr>
<tr><td colspan="2">Attention:
1. When Power Mode is set to 0, it enters normal power consumption mode.</td></tr>
<tr><td rowspan="3">24</td><td colspan="2">AT+PM=? Query power consumption parameters</td></tr>
<tr><td>AT+PM=?</td><td>Parameter Description:
No parameter
Response:
Power Mode:0 Set Delay:5</td></tr>
<tr><td colspan="2">Example：AT+PM=?</td></tr>
<tr><td rowspan="3">25</td><td colspan="2">AT+HTTP set whether to open the web HTTP function (reboot effective)</td></tr>
<tr><td>AT+HTTP=<Switch></td><td>Parameter Description:
Switch: 0 (off) or 1 (on)
Response:
Http status set OK</td></tr>
<tr><td colspan="2">Example：AT+HTTP=1</td></tr>
<tr><td rowspan="3">26</td><td colspan="2">AT+HTTP=? Check whether HTTP function of web page is on or not</td></tr>
<tr><td>AT+HTTP=?</td><td>Parameter Description:
No parameter
Response:
Http Status: 1</td></tr>
<tr><td colspan="2">Example：AT+HTTP=?</td></tr>
<tr><td rowspan="3">27</td><td colspan="2">AT+VER=? Query module version</td></tr>
<tr><td>AT+VER=?</td><td>Parameter Description:
No parameter
Response:
E103-W02 V1.1</td></tr>
<tr><td colspan="2">Example：AT+VER=?</td></tr>
<tr><td rowspan="3">28</td><td colspan="2">AT+MAC=? Query MAC address</td></tr>
<tr><td>AT+MAC=?</td><td>Parameter Description:
No parameter
Response:
MAC address</td></tr>
<tr><td colspan="2">Example: AT+MAC =?
Return: 7cec79378316</td></tr>
<tr><td rowspan="3">29</td><td colspan="2">AT+ONENETUNI OneNET device login parameters configuration (For OneNET, please refer to E103-W02 OneNET Cloud Transit User's Guide)</td></tr>
<tr><td>AT+ONENETUNI=<ON/OFF>,P_ID,A_Info,S_name</td><td>Parameter Description:
ON/OFF: ON(on) OFF(off) If OFF, the following parameters are invalid (default is OFF)
P_ID: OneNET product ID
A_Info: OneNET device authentication information
S_name: OneNET product script file name
Response:
OneNET Uni Set OK</td></tr>
<tr><td colspan="2">Example: AT+ONENETUNI=ON,97562,02,ebyte_lua or AT+ONENETUNI=OFF
Return: OneNET Uni Set OK</td></tr>
<tr><td rowspan="2">30</td><td colspan="2">AT+ONENETUNI=? OneNET device login parameters query</td></tr>
<tr><td>AT+ONENETUNI=?</td><td>Parameter Description:
No parameter
Response:</td></tr>
</table>

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

		status:ON P_ID:97562 AU_Info:02 S_Name:ebyte_lua
	Instance: AT+ONENETUNI=? Return: OneNET status:ON P_ID:97562 AU_Info:02 S_Name:ebyte_lua	
31	**AT+ONENETADD OneNET device receiving device added**	
	AT+ONENETADD=<index>,<deviceID>,<Apikey>	Parameter Description: Index: Add the device to the group index number (less than 20) deviceID: OneNET device ID of the receiving device Apikey: OneNET APIkey of the receiving device Response: Add Success
	Example: AT+ONENETADD=0,17502768,pyZVOnnBGhT=7X0Bl6oqoaEdh2I= Return: Add Success	
32	**AT+ONENETDEL Delete the current OneNET receiving device, after deletion, the corresponding device will not be able to receive the data sent by the current device**	
	AT+ONENETDEL=<index>	Parameter Description: Index: Add the device to the group index number (less than 20) Response: Delete Success
	Example: AT+ONENETDEL=0 Return: Delete Success	
33	**AT+ONENETSEL Query current index number receiving device information**	
	AT+ONENETSEL=<index>	Parameter Description: Index: Add the device to the group index number (less than 20) Response: Deviece ID: 17502768 APIKey: pyZVOnnBGhT=7X0Bl6oqoaEdh2I= (device exists) or Deviece ID: - APIKey: - (no information for this index)
	Instance: AT+ONENETSEL=0 Return: Deviece ID: 17502768 APIKey: pyZVOnnBGhT=7X0Bl6oqoaEdh2I=	
34	**AT+ONENETIPPORT Configure OneNE communication server address (users are advised not to change it arbitrarily)**	
	AT+ONENETIPPORT=< RemoteIP >,<RemotePort >	Parameter Description: RemoteIP: IP address RemotePort: Communication server port Response: OneNET RemoteIpPort set OK
	Example: AT+ONENETIPPORT=183.230.40.33,80 Return: OneNET RemoteIpPort set OK	
35	**AT+ONENETIPPORT=? Query OneNET communication server address**	
	AT+ONENETIPPORT=?	Parameter Description: No parameter Response: OneNET RemoteIP:183.230.40.33 RemotePort:80
	Example: AT+ONENETIPPORT=? Return: OneNET RemoteIP:183.230.40.33 RemotePort:80	
36	**AT+KEEPALIVE Configure the heartbeat packet information, when the device is a TCP client, no data is sent or received during the heartbeat cycle, the device will send the specified heartbeat packet to the server with which the connection is currently established. The content can only be Hex data (default is 01 02 03 04 05)**	
	AT+KEEPALIVE=<ON/OFF>,<Period>,<len><Info>	Parameter description: <ON/OFF>:ON(ON) OFF(OFF) If OFF, the following parameters are invalid (factory default is OFF) < Period >:heartbeat period in seconds (1~300) <Len>: the length of the heartbeat packet (1~31) <Info>: heartbeat packet content (length less than 32 hexadecimal digits) Response: Keepalive set OK

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

<table>
<tr><td></td><td colspan="2">Example: AT+KEEPALIVE=ON,50,5,0011223344 or AT+KEEPALIVE=OFF
Return: Keepalive set OK</td></tr>
<tr><td rowspan="3">37</td><td colspan="2">AT+KEEPALIVE=? Query heartbeat packet information</td></tr>
<tr><td>AT+KEEPALIVE=?</td><td>Parameter Description:
No parameter
Response:
Keepalive status: ON Period:50 InfoPkt:Ebyte_E103-W02</td></tr>
<tr><td colspan="2">Example: AT+KEEPALIVE=?
Return: Keepalive status: ON Period:50 Len:5 InfoPkt:0102030405</td></tr>
<tr><td rowspan="3">38</td><td colspan="2">AT+REGPKT Configure the registration packet information, when the device is a TCP client, after the registration packet is opened, the device sends the content of the registration packet to the server once immediately after the connection is established with the server. The content can only be Hex data (default is 0A 0B 0C 0D 0E)</td></tr>
<tr><td>AT+REGPKT=<ON/OFF>,<len>,<Info></td><td>Parameter description:
<ON/OFF>:ON (on) OFF (off) If OFF, the subsequent parameters are invalid (factory default is OFF)
<len>:The length of the registration packet set (1~31)
<Info>: registration packet content (length less than 32 hexadecimal digits)
Response:
RegPkt info set OK</td></tr>
<tr><td colspan="2">Example: AT+REGPKT=ON,5,0A0B0C0D0E or AT+REGPKT=OFF
Return: RegPkt info set OK</td></tr>
<tr><td rowspan="3">39</td><td colspan="2">AT+REGPKT=? Query registration package information</td></tr>
<tr><td>AT+REGPKT=?</td><td>Parameter Description:
No parameter
Response:
RegPkt status: ON RegPkt:www.cdebyte.com</td></tr>
<tr><td colspan="2">Example: AT+REGPKT=?
Return: RegPkt status: ON Len:5 RegPkt:0A0B0C0D0E</td></tr>
</table>

6. Related Models

Product Model	Interface	Chip Solutions	Frequency Hz	Power mW	Distance m	Product Size mm	Package form
E103-W02DTU	RS232 RS485	CC3200	2.4G	20	300	82*62*25	Pressure line/DB9
E103-W02	TTL	CC3200	2.4G	20	300	27*19	PCB/IPX
E103-W01	TTL	ESP8266EX	2.4G	20	100	16*24	PCB

7. Precautions for use

1. Please keep the warranty card of this equipment properly, the warranty card has the factory number of the equipment (and important technical parameters), which has important reference value for the user's future maintenance and new equipment.

2. Radio in the warranty period, if due to the quality of the product itself and not man-made damage or damage caused by

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

natural disasters such as lightning strikes, enjoy free warranty; please do not repair the user, the problem is to get in touch with our company, Yibai special to provide first-class after-sales service.

3. In some flammable places (such as coal mines) or explosive dangerous objects (such as detonators) nearby, do not operate this radio.

4. Use a suitable DC regulated power supply with strong anti-high frequency interference, small ripple, and sufficient carrying capacity; preferably with over-current, over-voltage protection and lightning protection to ensure the normal operation of the digital radio.

5. Do not use the digital radio in an environment that exceeds its environmental characteristics, such as high temperature, humidity, low temperature, strong electromagnetic field or dusty environment.

6. Do not keep the digital radio in a continuous full-load transmitting state, otherwise the transmitter may be burned out.

7. The ground of the digital radio should be well connected with the ground of external devices (such as PC, PLC, etc.) and the ground of the power supply, otherwise the communication interface will be burned easily; do not plug or unplug the serial port with electricity.

8. When testing the digital radio, you must connect a matching antenna or 50 ohm dummy load, otherwise it will easily damage the transmitter; if the antenna is connected, the human body should be more than 2 meters away from the antenna to avoid damage, and do not touch the antenna while transmitting.

9. Wireless digital radio often has different communication distances in different environments, and the communication distance is often affected by temperature, humidity, obstacle density, obstacle volume, and electromagnetic environment; in order to ensure stable communication, it is recommended to set aside more than 50% of the communication distance margin.

10. If the measured communication distance is not satisfactory, it is recommended to improve the communication distance by analyzing the antenna quality and the antenna installation method. Contact with us support@cdebyte.com, for help.

11. When choosing the power supply, in addition to the recommended 50% current margin, it should be noted that the ripple should not exceed 100mV.

8. Important Statement

EVERBEST reserves the right of final interpretation and modification of all contents in this manual.

Due to the continuous improvement of the hardware and software of the product, this manual may be subject to change without prior notice, and the latest version of the manual shall prevail.

Users of this product should visit the official website to pay attention to the product dynamic, so that users can get the latest information of this product in time.

Versions	Revision Notes	Maintaining people
1.0	Initial Version	Li
2.0	Content Revision	Li
2.1	Content Revision	Hao

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000

About us

Technical support: support@cdebyte.com

Documents and RF Setting download link: https://www.cdebyte.com

Thank you for using Ebyte products! Please contact us with any questions or suggestions: info@cdebyte.com

---

Web: https://www.cdebyte.com

Address: B5 Mould Industrial Park, 199# Xiqu Ave, High tech Zone, Chengdu, Sichuan, China

Chengdu Ebyte Electronic Technology Co.,Ltd.

Copyright ©2025, Chengdu Ebyte Electronic Technology Co.,Ltd.

Distribuída no Brasil pela LRI | vendas@lri.com.br | 51 2129-3000