ZLAN8305/ZLAN8305L/

ZLAN8305LN

2G/3G/4G Serial Server

RS232/485 to 4G/Ethernet

Modbus RTU to 4G Modbus TCP

RS232/485 to MQTT

Information

The following changes have been made to this document:

			Modification Record
date	version number	Document Number	Modifications
2018-02-14	Rev.1	ZL DUI 20180214.1.0	release version
2019-04-29	Rev.2	ZL DUI 20180214.2.0	A modified version
2021-11-1	Rev.3	ZL DUI 20180214.3.0	Increase8305LN

Ownership Information

Table of contents

1.Overview

ZLAN8305/ZLAN8305L/ZLAN8305LNIt is a new high-cost-effective product launched by Shanghai Zhuolan 4G DTU/4GRouter. The sub-models differ as follows:

1. ZLAN 8305:supportRS232/485change4G, does not support Ethernet port. Supports serial port configuration.

2. ZLAN 8305L:support4Gand Ethernet port, supporting in wired modeRS232/485Switch to wired network. 4GSupport in routing modeRS232/485change4G, and can also be used as4GUsed for routers. Supports serial port configuration, WebConfiguration,ZLVircomLocal area network configuration. SupportMQTT.

3. ZLAN8305LN:exist8305LBasic supportP2PandN2NFunctional products support serial port remote monitoring and network port remote monitoring. For details, please refer to the "P2P Product User Guide" document (http://www.zlmcu.com/download/p2p_manual.pdf).

picture1 ZLAN8305Appearance

8305/8305LAdopting the latest4GThe chipset can achieve a low price while ensuring powerful functions and stability, and has a high cost performance.7The model is of full network standard and supports all cards of China Telecom, China Mobile and China Unicom.8305/8305LsupportMQTTProtocol andModbus TCPchangeRTUprotocol,
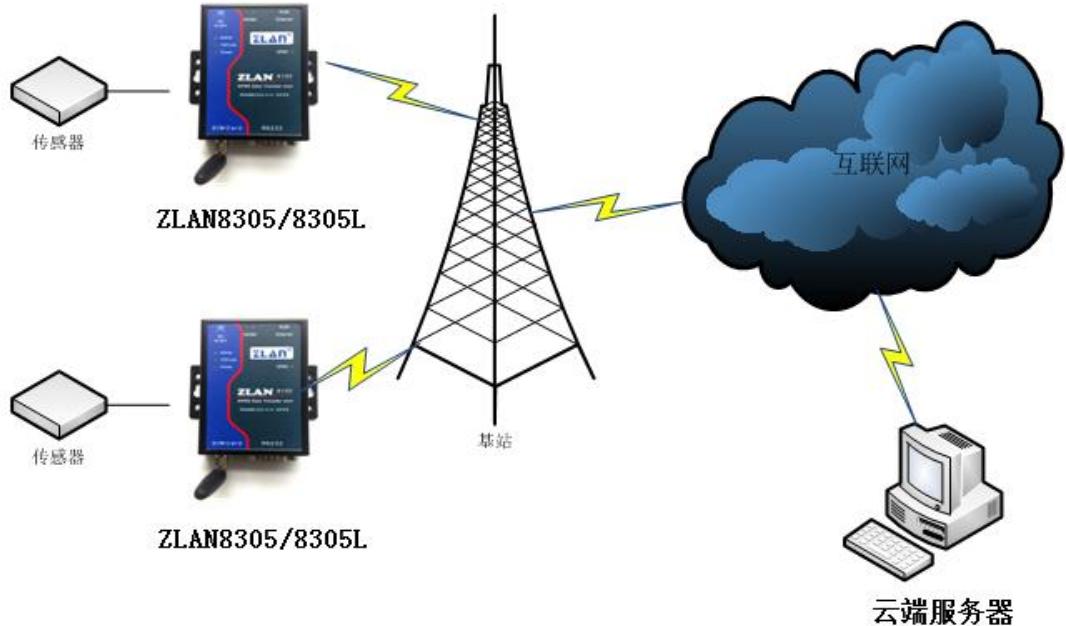
support645protocol,modbusRTUProtocol Transferjson.support-45~85Industrial temperature range. Supports custom registration

package and heartbeat package. Supports remote program upgrade or configuration change on the server side.

in addition8305/8305LIt can also be customized to meet various special needs, including local storage of tens of megabytes of data when

the network is down, and uploading it to the server when the network is connected.

default8305/8305LEquipped with suction cup4GThe antenna can be equipped with rail accessories. At the same time, the power supply can provide two

power supply methods: power socket and terminal (selected at the time of delivery).

8305/8305LSuitable for the following application areas:

1.Data collection in the fields of industrial Internet and industrial automation.

2.Power data collection and monitoring.

3.Access control and security.

4.Collection and monitoring of hydrological, meteorological and environmental data.

5.Intelligent transportation, vehicle-mounted data collection.

picture2Application environment diagram

2.Features

1.support7Type of mode,TD-LTE/ FDD-LTE/ WCDMA/ TD-SCDMA/ GSM/

EVDO/CDMA2000, including China Unicom 4G, 3G, 2G, China Mobile 4G, 3G, 2G and China Telecom 4G, 3G, 2G networks.

2. 8305LSupport in wired modeTCPServer,TCPClient,UDPMode. Support multiple TCPThe client's connection.

3.Serial port support1200~460800Baud rate, support5~8Data bit, support no check, odd check, even check, support1~2Stop bit, supports no flow control, hard flow control, and soft flow control.

4.Support serial port conversion4G,8305LSupport serial port to network port and4GRouter application, supportDHCP SERVER.

5.Support serial port transparent transmission, supportModbus RTUchangeModbus TCP,MQTTAgreement and645 protocol,modbusRTUProtocol Transferjson.

6.Support serial portATCommand configuration,8305LsupportWEBConfiguration, supportZLViromSoftware configuration.

7.Supports custom registration packages and custom heartbeat packages.

8. 8305Lable to passWEBTo update the firmware of the device, all models can be updated throughZLVircom The software updates the device firmware on the server side.

9.supportTCPConnect to a separate channel for remote management, upgrade firmware and configuration, and connect to the ZLAN cloud platform for remote

management. For details, please refer to the "ZLAN Equipment Cloud Management" document

3.Technical Parameters

Main parameters of the product		
parameter name	parameter	Remark
Support Mode	support7Modes: B1/B3/B5/B8@FDD LTE B34/B38/B39/B40/B41@TDD-LTE:B41Frequency range 2555-2655 B1/B8 @WCDMA B34/B39@TD-SCDMA BC0@CDMA2000 1X/EVDO B3/B8@GSM Including China Unicom4G,3G,2G,China Mobile4G,3G,2Gas well as China Telecom4G,3G,2Gnetwork.	
Transmission rate	LTE-FDD:Max 150Mbps(Downward)/Max 50 Mbps(Up) LTE-TDD:Max130Mbps(Downward)/Max 30 Mbps(Up) WCDMA:384Kbps(Downward)/Max384Kbps(Up) TD-SCDMA:Max 4.2Mbps(Downward)/Max 2.2 Mbps(Up) EDGE:296Kbps(Downward)/Max236.8Kbps(Up) GPRS:107Kbps(Downward)/Max85.6Kbps(Up)	
SIMCard	Voltage:3V,1.8V; Size: Large card (small card can be purchased with card holder)	
Antenna interface	50Ω/SMAGlue stick antenna or suction cup antenna optional	
Serial port type	RS232/RS485	
Serial port parameters	Baud rate:1200~460800bps; Data bits:5~8Bit; Stop Bit:1~2 bit; flow control: hard flow control, soft flow control; check bit: none, even, odd, mark, Space.	
Power interface	Q2.1Socket, can be customized as power terminal input.	
Input voltage	DC9V~24V	

Working current	90mA@12V(When dialing150mA@12V)	
Operating temperature	- 40Degree~85Spend	
Storage temperature	- 40Degree~120Spend	
Humidity range	0~95%Non-condensing	
Product Size	Length × width × height =9.4cm×6.5cm×2.5cm	

4.Hardware Description

ZLAN8305The front view of3shown.

picture3 ZLAN8305Front view

8305It adopts radiation-resistant metal casing and has two mounting ears on both sides, which can be fixed with screws; it can also be equipped with guide rail accessories.

Panel Light:

Indicator Lights	green	blue
4GIndicator Lights	Power indicator	Flashing blue means4GAfter dialing, the system is powered on40 Seconds to start dialing, generally10You can dial in seconds. Solid blue means4GConnectivity status
LinkIndicator Lights	System operation light, each1minute Change status once	Solid blue meansTCPConnection established
ActiveIndicator Lights	The network sends data to the serial port	Serial port sends data to the network
Network port light (only8305L)	Yellow light indicates the network cable is connected	/

picture4Interface Diagram1

ZLAN8305The front interface is as shown in the figure4As shown:

1．Power input: Interface typeQ2.1socket,DC+9V~ +24VDC, power required3WAbove. Default

　　The adapter provided is12V. Can be customized as power terminal input. 2．RS485

Signal input. Be careful not to connect to the power supply.

3．RJ45Interface, Ethernet access port. Only8305LThe network port is valid.

ZLAN8303The rear interface is as shown in the figure5As shown:

picture5Interface Diagram2

4.antenna:8305The antenna interface adopts50Ω/SMA(female), external antennas must use a suitable4G

　　Antennas with working bands. ZLAN can provide rubber stick antennas and suction cup antennas that can be sucked onto metal

　　casings (default2meters in length).

5．SIMCard Installation: InstallationSIMMake sure the device is not powered on when inserting the card. Use a pen or screwdriver toSIM

　　The card slot is pushed out.SIMPush the metal side down into the card slot.

6．DB9:RS232signal input.
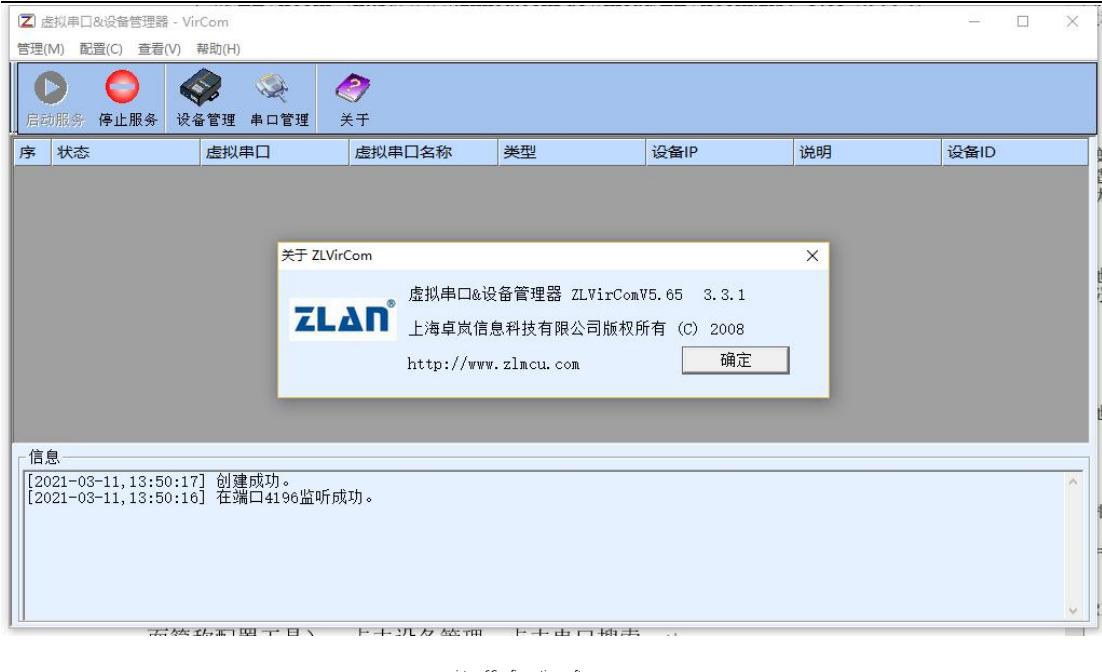
5.Configuration

　　The device can be configured via the serial port and the network.ZLAN8305Without network port, usually only serial

port configuration is used.ZLAN8305LWith network port, it can be used in addition to serial port configurationWeb

Configuration and ZlVircom WindowsTool network search configuration.

5.1. ZLVircomSerial port configuration
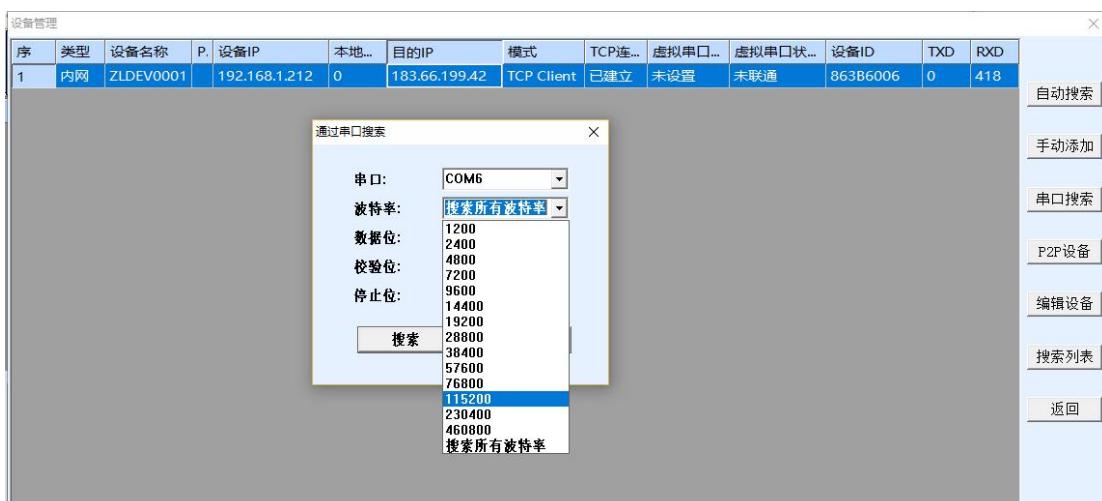
　　Serial port configuration applies to8305and8305L,because8305There is no network port, so configuration is mainly done through

the serial port.

　　downloadZLVircom（http://www.zlmcu.com/download/ZLVircom.zip）5.65And above versions, this

software can be configured through the serial port8305/8305L.

picture6Configuration software
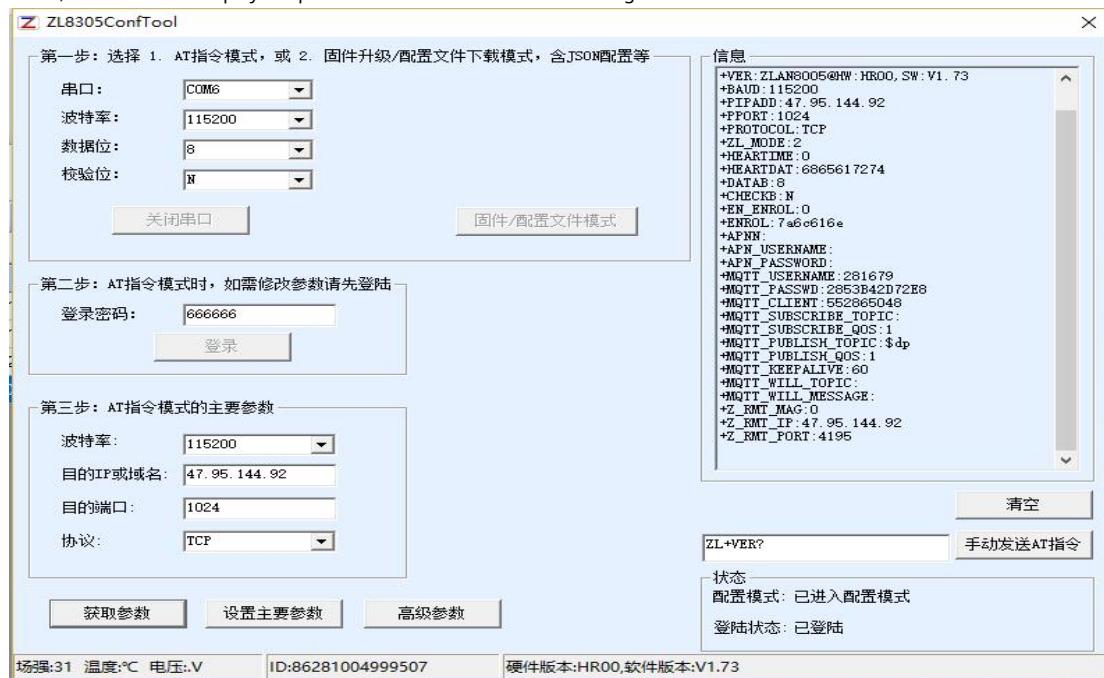
WillUSBchangeRS232Connect to8305The serial port, give8305Power on, turn onZLVircom(Hereinafter referred to as configuration tool). Click Device Management, then click Serial Port Search.

picture7Serial port configuration tool

Select the serial port number, here isCOM6, the baud rate is115200,here115200This is the factory default setting. If the user has previously set8305Set to other baud rates (such as9600), then the actual device baud rate needs to be used here. If you forget the serial port baud rate, you can select Search All Baud Rates, or Open the case, power on and wait20Short-circuit twoDEFReset the hole to default parameters.

Wait after power on20After the dial light starts flashing, click "Search". The configuration tool will try to communicate with the device. If successful, a pop-up window will appear.8305Configuration interface, and then click to enterATIn command mode, the device will display the parameter information read on the right.

picture8Serial port configuration interface

The default login password is666666Before clicking "Login", the parameters are read-only and cannot be set or modified. That is, you can click "Get Parameters" but cannot "Set Parameters". Now click the "Login Button":

Can set serial port parameters and network parameters

picture9Configuration Tool2

You can see that after logging in, the login status changes to "Logged in" and a "+LOGIN OK" Information.

TCP/IPThe main parameters are set in the column, including baud rate, destinationIP, destination port and protocol. Protocol supportTCPorUDPAfter modifying the corresponding parameters, click the "Set Main Parameters" button to set the new parameters to the device. After the settings are completed, close this interface, the device will restart the software, exit the configuration mode, and connect according to the parameters.

The "Get Parameters" button can get the parameters of the current device. Getting parameters is done by sendingATInstructions to obtain parameters, listed on the right areATThe return data of the instruction.ATFor instructions, please refer to this articleAT Instructions section. Since the "Get Parameters" will be automatically executed once the "Open" is successful, you generally do not need to click the "Get Parameters" button.

Click "Advanced Parameters"

picture10Configuration Tool

The meanings of common parameters are:

1.Working mode: You can choose two-way transparent transmission (transparent transmission between the serial port and the network without changing the data content), MQTTmodel(MQTTparameters will take effect) andMODBUSProtocol conversion (serial portmodbusRTU With the network modbusTCPMutual conversion)

2.Heartbeat interval: You can select according to your needs.15Incremental seconds, maximum300Second.

3.Heartbeat content: This is the heartbeat packet content.

4.Enable Registration Package: Enable or disable the registration package.

5.Registration package content: The default registration package content sent after connecting to the server16Base.

　　　MQTTParameters only selectmqttAfter enabling remote device management, the device will beTCPClient connects to remote serveripWith the port, it can connect to the ZhuoLan cloud platform and support

Software for the LANSHAN remote management protocol.

After selecting the parameters, click the "Effective Advanced Parameters" button and return to the main interface. At this time, you do not need to click

the "Set Main Parameters" button on the main interface.

5.1.1Serial port downloadjsonConfiguration Files

Enter8305After configuring the interface, select "Firmware/Configuration File Mode" and the following interface will pop up

picture11Firmware/Configuration File Mode

The serial port can be used to download firmware andjsonConfiguration file to achieve serial port upgrade, andmodbusRTUorDTL645

changejsonAdvanced features such asjsonFor more information on how to configure the upload, please refer to "Zhuo LanMQTTand

JSONchangeModbusAdvanced Tutorial on Gateway Usage

5.1.2Serial port firmware upgrade

First, make sure the device serial port parameters are the default parameters, baud rate115200,81 data bit, no checksum. If not, please modify it to

the default parameters first. The serial port upgrade steps are as follows:

First click on the serial port search, then click on search to enter8305Serial port configuration interface

picture12Serial port upgrade1

Then click on "Firmware/Profile Mode"
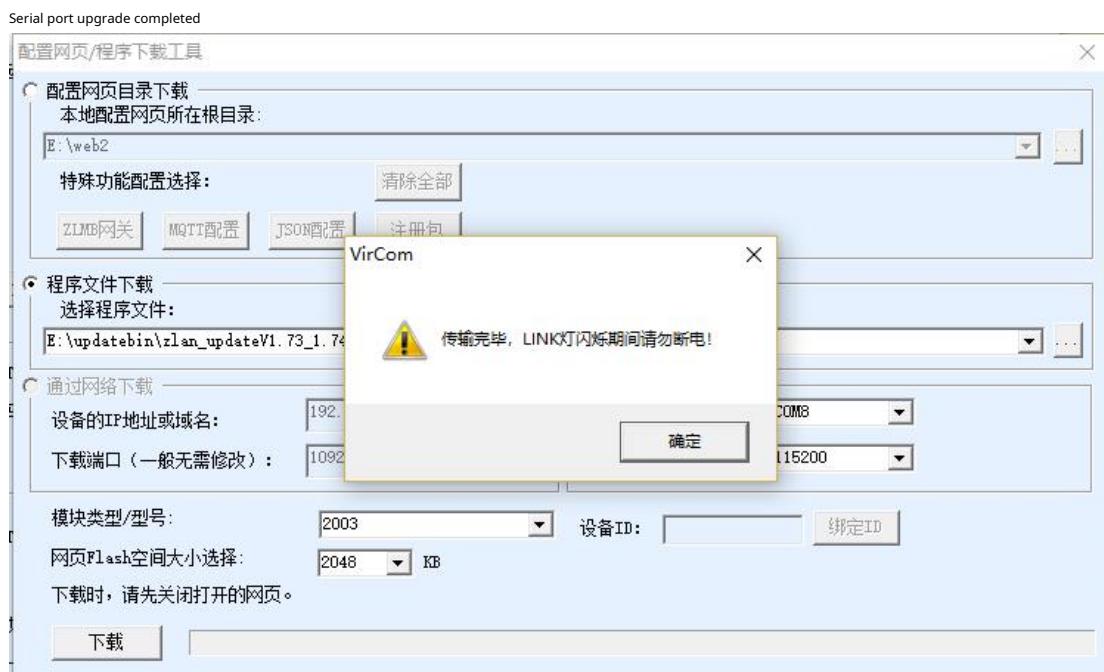
picture13Serial port upgrade2

Check "Program File Download", then select the firmware and click Download.

picture14Serial port upgrade3

Serial port upgrade completed

picture15Serial port upgrade5

5.2. ZLVircomNetwork port configuration

passZLVircomThe tool can realize the local area network to search for devices through the network, upgrade the firmware, and

manage the devices and upgrade the firmware through the cloud.ZLVircomCan be used to create a virtual serial port,

If you do not need the virtual serial port function, you can download the free installation version.

download link:http://www.zlmcu.com/download.htm

surface1 ZLVircomVersion

name of software	illustrate
ZLVircomDevice Management Tool (Non-installation version)	The non-installation version does not include the virtual serial port function.
ZLVircom-Device Management Tool (Installation Version)	Installation version, which containsZLVircom_x64.msi and ZLVircom_x86.msi.641-bit operating system installationx64, 321-bit operating system installationx86Version.
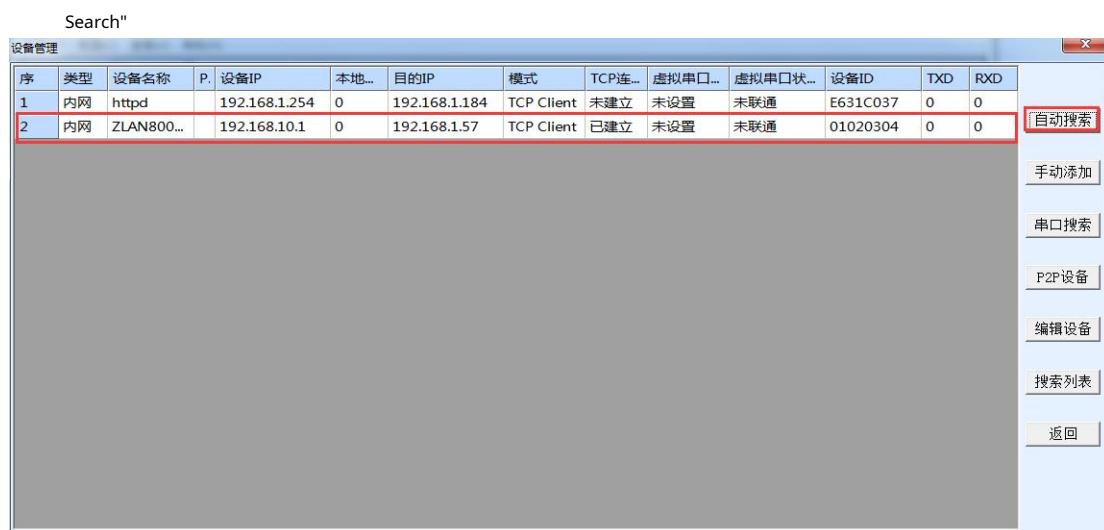
ZLVircomWhen installing, just follow the default prompts. After installation, it will start every time the computer starts

zlvir.com, used to create a virtual serial port when booting.

5.2.1LAN Management

First, we will introduce the usage of local area network. This usage is only used for8305Lversion, because8305No Ethernet port.
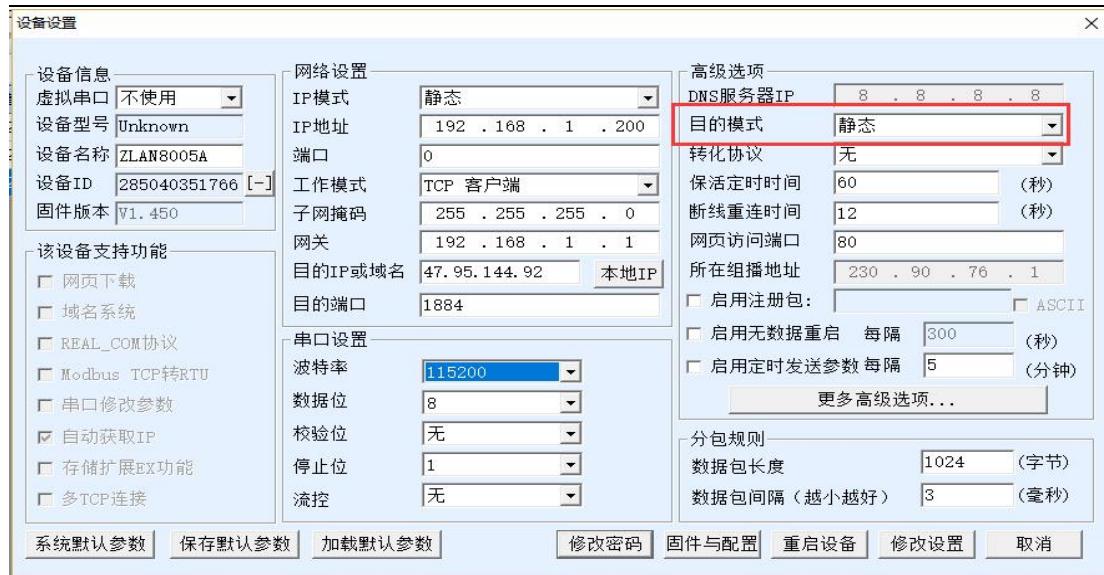
Assuming installationZLVircomComputers and8305LThe network ports of the two devices are in the same LAN.

ClickZLVircomClick "Device Management" on the main interface, enter the device management dialog box, and then click "Auto

Search"

picture16LAN Search

You can now view the device configuration information and configure it.4GThe mode

selection is "Destination Mode". If the destination mode is static, it is wired mode. If the

destination mode is dynamic, it is4Gmode, where4GModeipThe default is

192.168.10.1, but it can be modified later.

picture17 vircomConfiguration

Can be configured through the configuration fileMQTTParameters andjsonTo upgrade the firmware via LAN, click

"Firmware and Configuration"
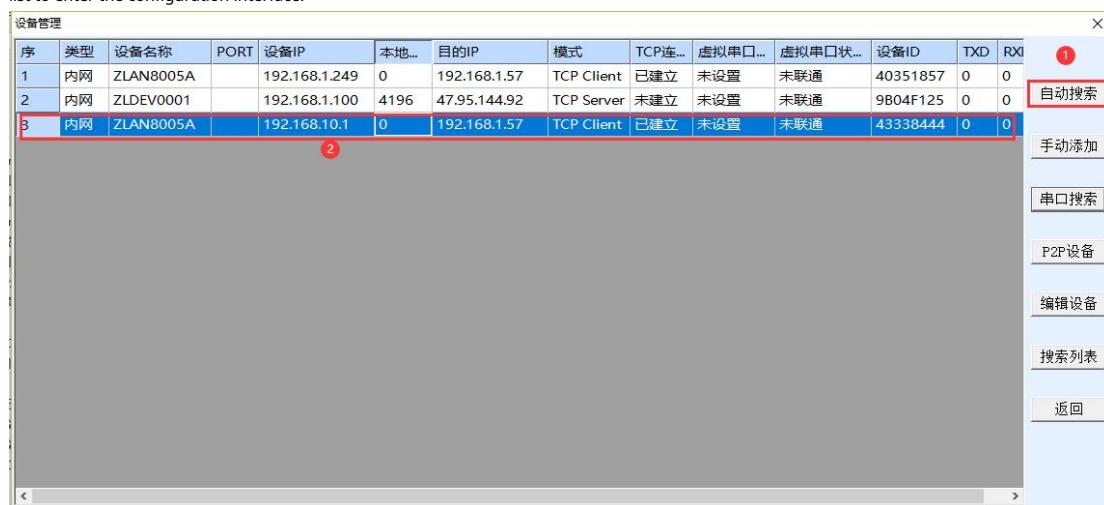
picture18Download configuration file via network port

picture19 MQTTConfiguration
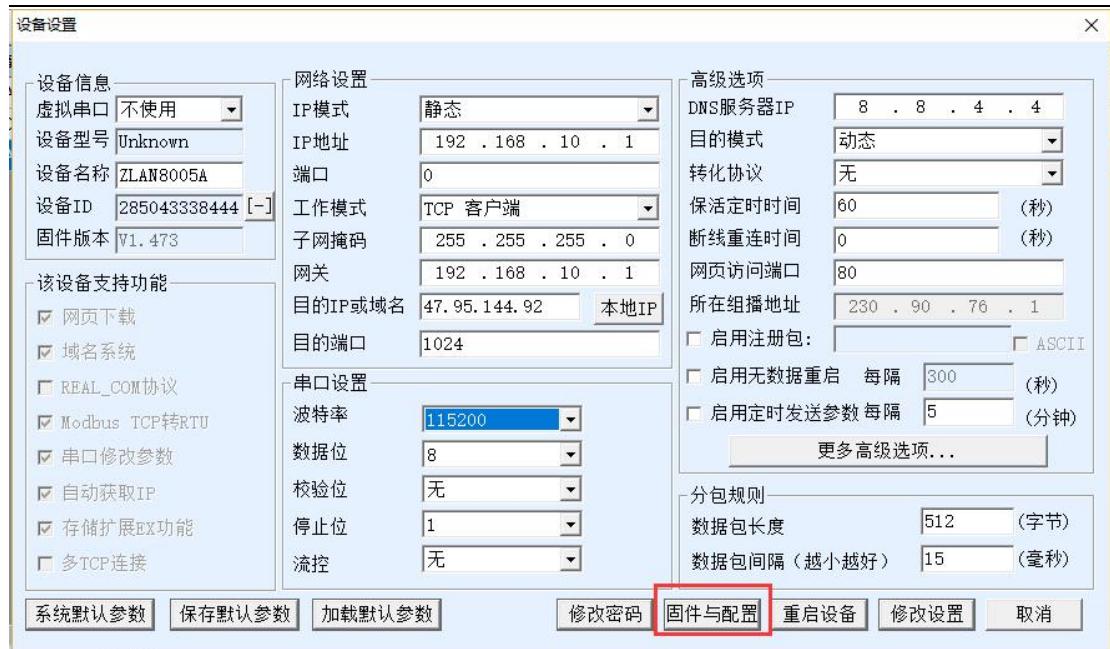
5.2.2Upgrade firmware via network port

You can alsovircomTo upgrade the firmware through the network port, the device and the computer must be in the same network

segment. If not, please modify the device or computer to change it to the same network segment. First, click Auto Search, and then double-click the

list to enter the configuration interface.
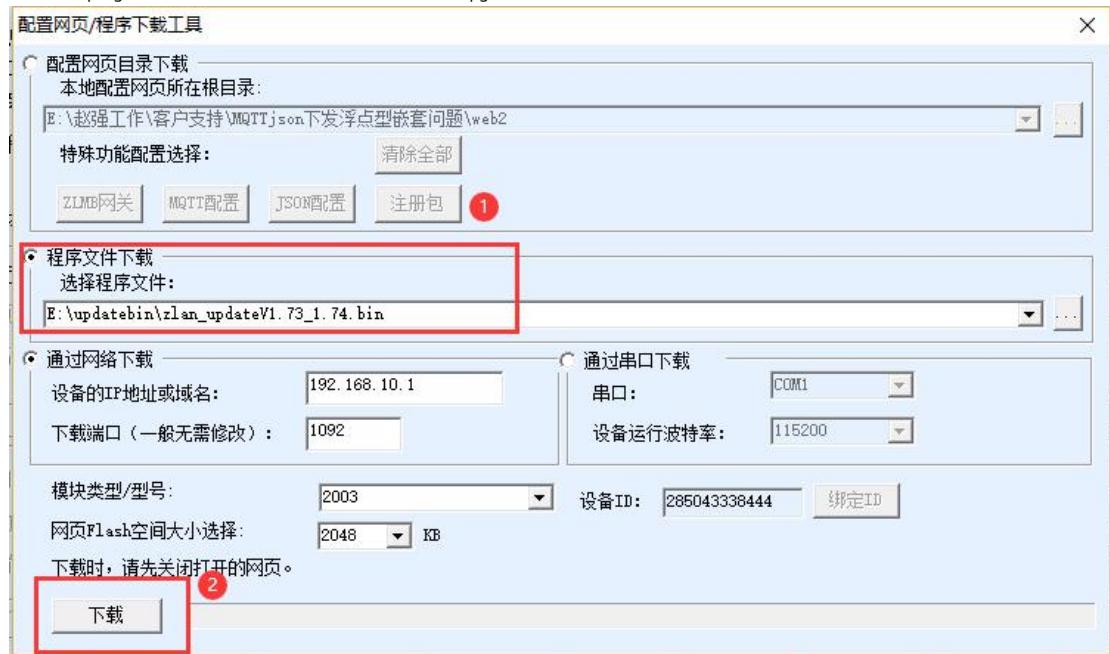
picture20Network port upgrade1

Then click on "Firmware and Configuration"
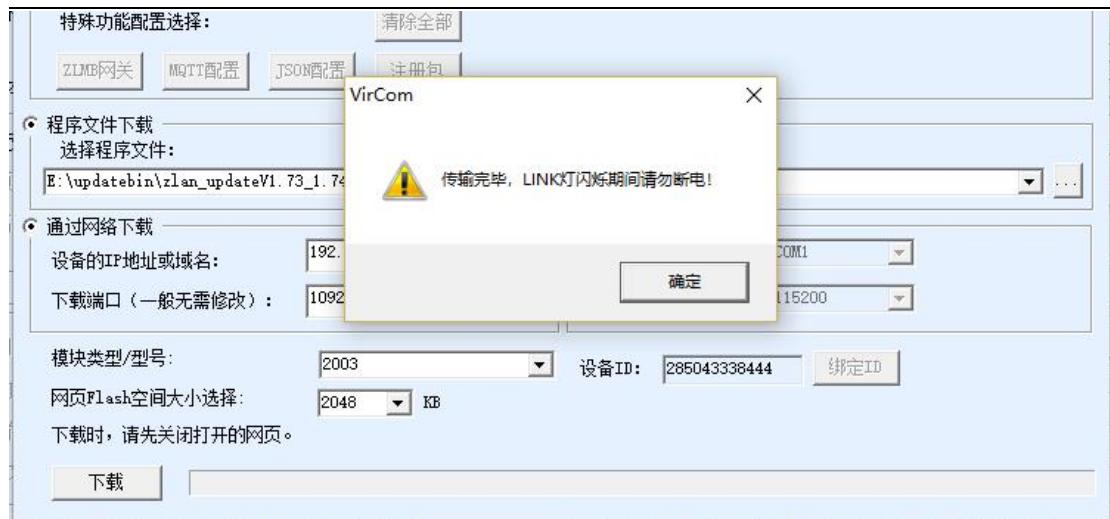
picturetwenty oneNetwork port upgrade2

Check the program file download, select the firmware to be upgraded, and then click Download


picturetwenty twoNetwork port upgrade3
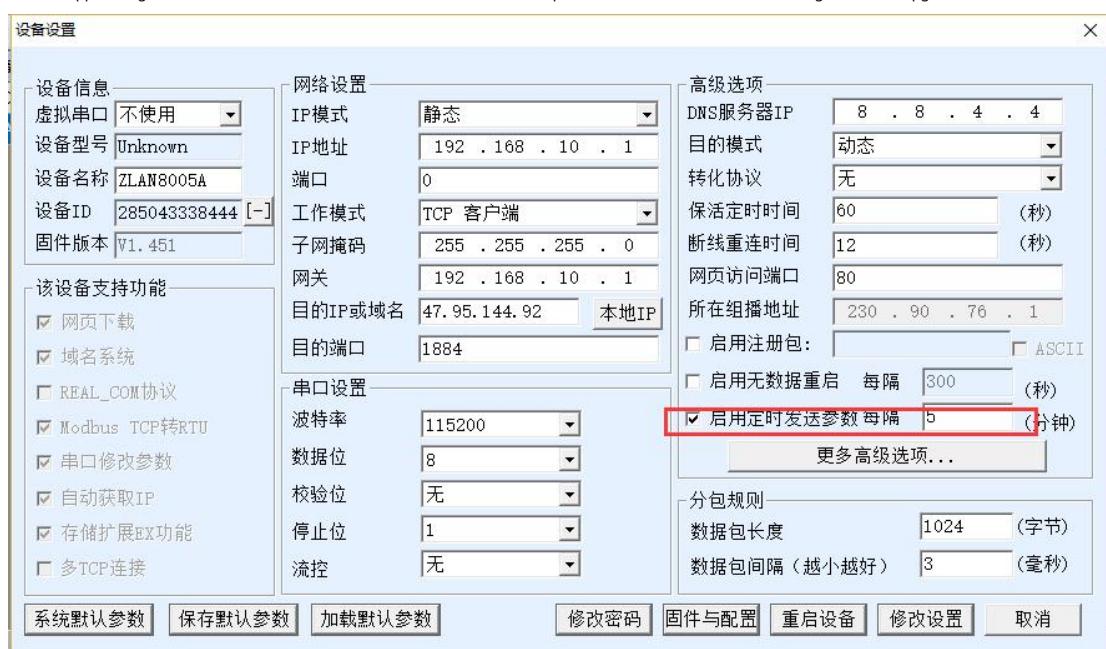
Download completed

picturetwenty threeNetwork port upgrade4

5.2.2 TCPRemote Management

8305Support single channelTCPConnection is used to connect to the remote public networkIPRealize remote management and upgrade.

picturetwentyturnetc2p4FartcPrductienPrugram Management

Enable scheduled sending parameters (this option is in8305LTop is openTCPRemote Management Channel), then click

More Advanced Options, Multi-PurposeipAnd the first line of port settings is filled in the serverip, fill in the port4195.

5. tctpcpFar Tube

picturetwenty two／tctpcpFar EnglishLingtwenty two

Just run the serverZLUseDevMange.exe(Default listening port4195), or software monitoring that supports the management protocol 4195The device will communicate with the server.4195Port establishmentTCPConnect. After the connection is established, you can configure or upgrade the firmware

5.3. WebWeb page configuration

onlyZLAN8305LbringLVersion supportLANMouth andWebConfigure the function.8305LDevice DefaultIPfor 192.168.10.1If you do not know the deviceIPAddress, which can be accessed throughZLVircomSoftware Search Device IP.

ComputerIPChange to the same network segment as the device, for example192.168.10.2If it is a direct network connection, it can also be obtained dynamicallyIP(If it is not a direct connection, you may getIPNot really8305LIn the browser, enter the deviceIPaddress, you can enter the login interface, the default password666666.

picture26 WebLog in

Log in to the main interface to display the current status of the device, working mode,IPThe device can

have two working modes:

1．4GRouter mode: At this time4G, Ethernet are both open, the serial port can be4GInternet, while

Ethernet port asWANThe port can be used by other devices to access the Internet.

2．Wired Mode (off4G):No4GFunction, only serial port to wired network function. Different device information will

be displayed according to different modes.4GThe system status in routing mode is shown as follows:

picture27Device Information

Click Device Configuration:

picture28Working mode configuration

Working mode: You can choose4GRouter Mode and Wired Mode. Click

Communication Settings.
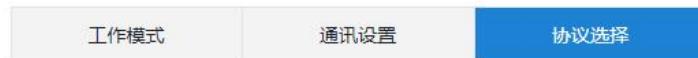
picture29Communication Settings

Here you can configure the serial port parameters.8305Work on the client or server, purposeIPAnd port. Set heartbeat packet and registration packet, etc.

Click on the protocol to select:

picture30Conversion Protocol

Here you can choose:

1.No protocol: At this time, the serial port andTCPIt is transparent transmission.

2. ModbusProtocol: At this time, the serial port isModbus RTUProtocol, network isModbus TCPprotocol.

3. MQTTProtocol: The network isMQTTprotocol, and the serial port data will be used asMQTTThe payload is sent, you

can fill inMQTTSome related parameters. Click "MQTTClick the "Advanced Parameters" button to select the

configuration of advanced parameters.

picture31 ModbusAdvanced Parameters

Click Device Management:

picture32Device Management
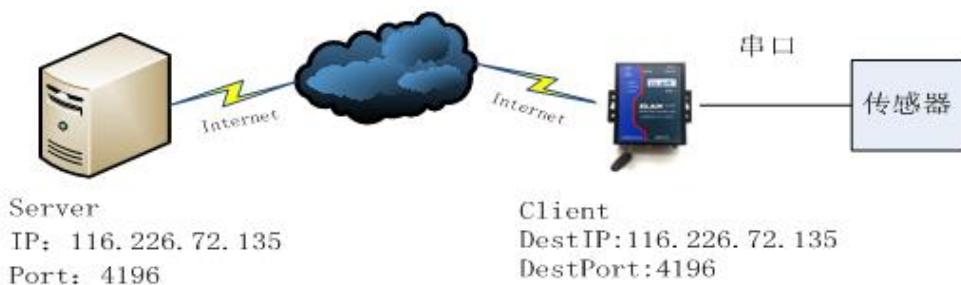
Here you can update the firmware, reboot the device, and change the password.

6.Communication test

6.1.Server and device communication

This test is suitable for8305and8305L. Assume that there is the following network structure as shown below,8305
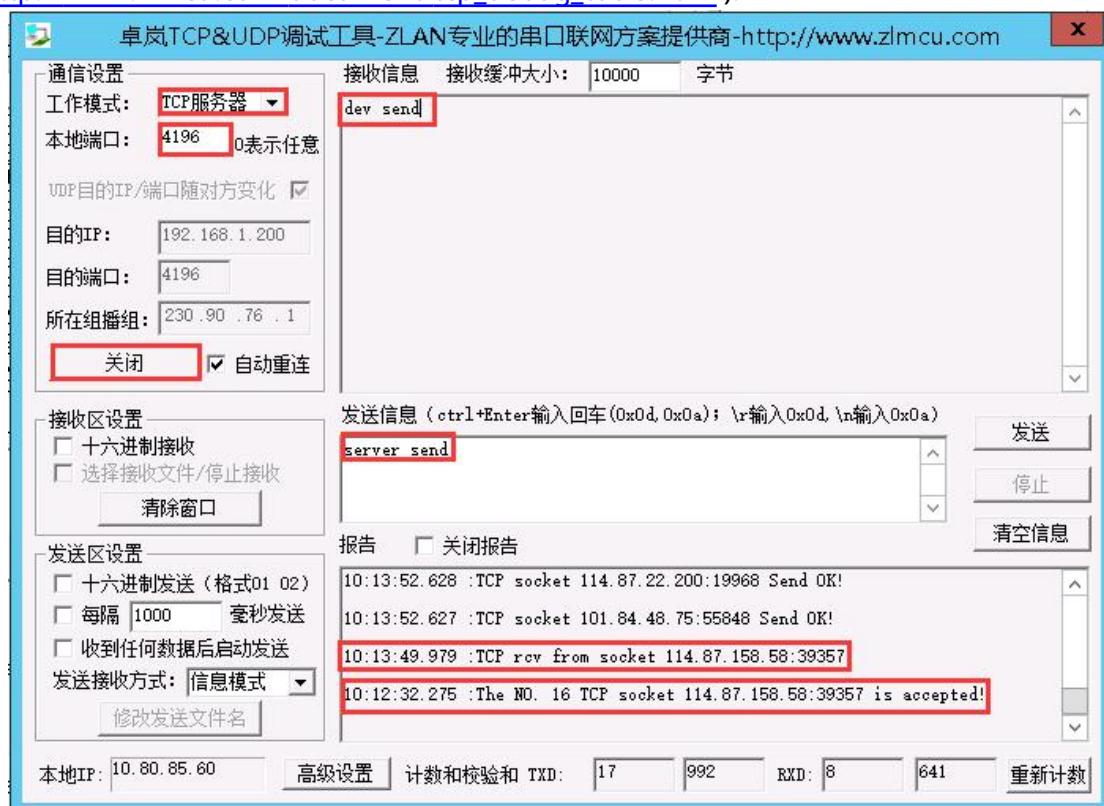
Configure to connect to the server116.226.72.135of 4196Please configure it according to the method in the "Serial Port

Configuration" section. After the configuration is completed, power on again.40~50seconds to connect to the server.

picture33Network structure diagram

We run on the serverSocketDlgTestthisTCPtool
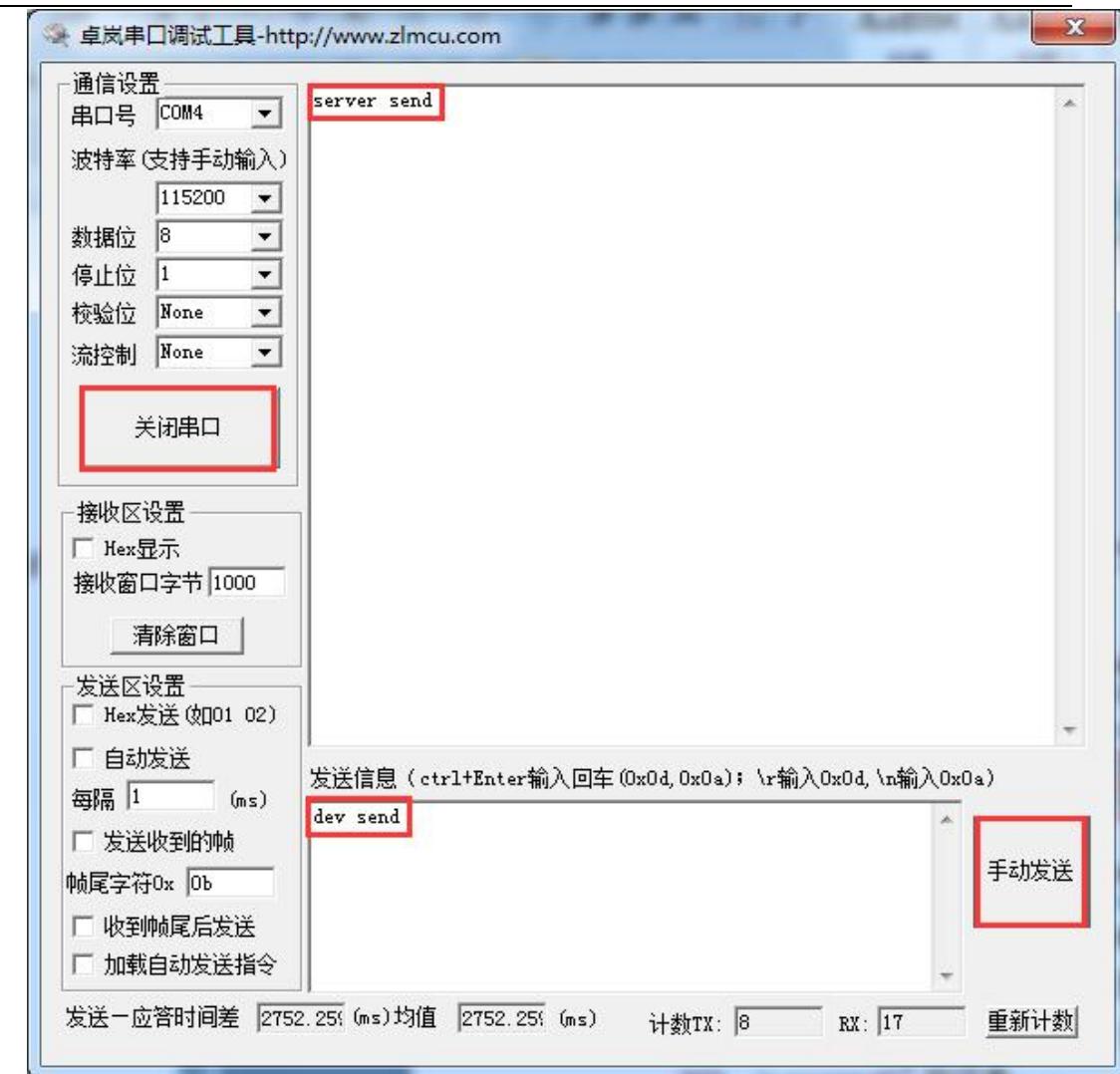
(http://www.zlmcu.com/document/tcp_debug_tools.html).

picture34Server-side tools

Select the local port as shown in the figure4196(Note that if you runZLVircomtools, you need to change a port), and then click the "Open" button.8305After connecting to the server, it will display "The NO... is　accepted!"Information.

Now will8305Serial port connectionUSBchange232Serial line, and open the serial debugging tool (http://www.zlmcu.com/document/com_debug_tools.html), and open the correctcom As shown below:

picture35Device serial port debugging tool

Now the serial port sends data, and the server will receive the corresponding data.dev send, also send data on the server side"server send"The same data is received in the serial port tool.4GTwo-way communication on the network.
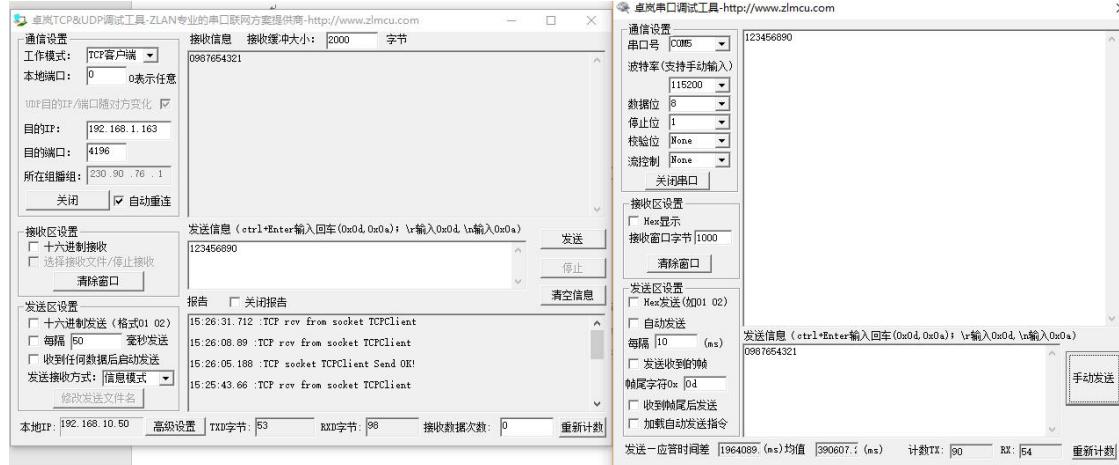
6.2.8305Ltest

The following tests are suitable for8305Lmodel.

6.1.1Transparent transmission test

Connect the computer serial cable to the device.WEBSet the device to wired mode. TCPServer mode, local port4196. Select No Protocol for the Conversion Protocol.
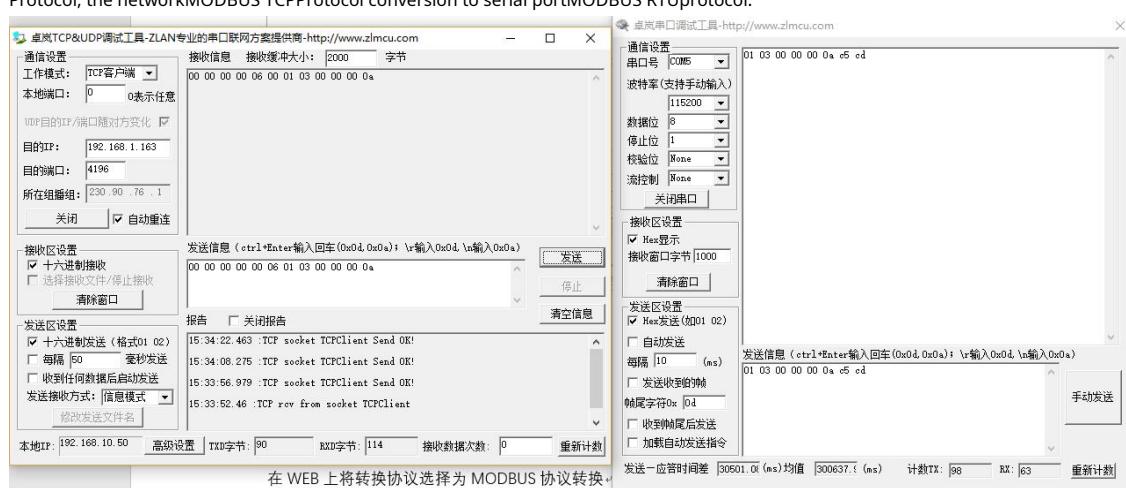
OpenSocketTestNetwork debugging software andComdebugSerial port debugging software.SocketTest Set to client mode, purposeIPSet as DeviceIP, the destination port is the local port of the device4196, click to open the connected device. ComdebugThe software's serial port parameters are set to be consistent with the device's serial port parameters. Comdebugas well asSocketTestThe software can communicate bidirectionally through the device.

picture36Transparent transmission test

6.1.2ModbusProtocol conversion test

The configuration parameters are basically the same as those for the non-protocol transparent transmission test. You only need to change the conversion protocol toMODBUS The serial port can be realizedMODBUS RTUProtocol conversion to networkMODBUS TCP Protocol, the networkMODBUS TCPProtocol conversion to serial portMODBUS RTUprotocol.

picture37 ModbusProtocol conversion test

6.1.3MQTTProtocol testing

This test is to connect to Baidu Cloud. Create a new account namedzlansubTheme of,
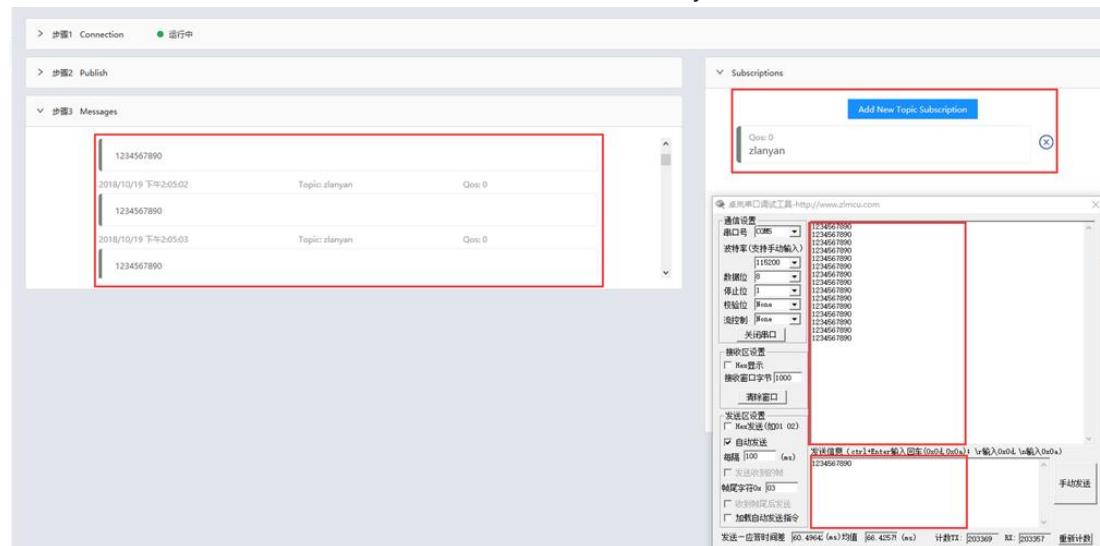
Allows publishing and subscription. Configure the device to connect to Baidu Cloud in client modeIPas well as1883Port, select the conversion protocol asmqttprotocol.

　　WillMQTTofID, username, and password. Because the publish and subscribe topics on Baidu Cloud arezlansub, so the publish and subscribe topics configured by the device are alsozlanusb.MQTTThe advanced parameters are not configured in this test and are actually configured as required.

picture38 MQTTset up
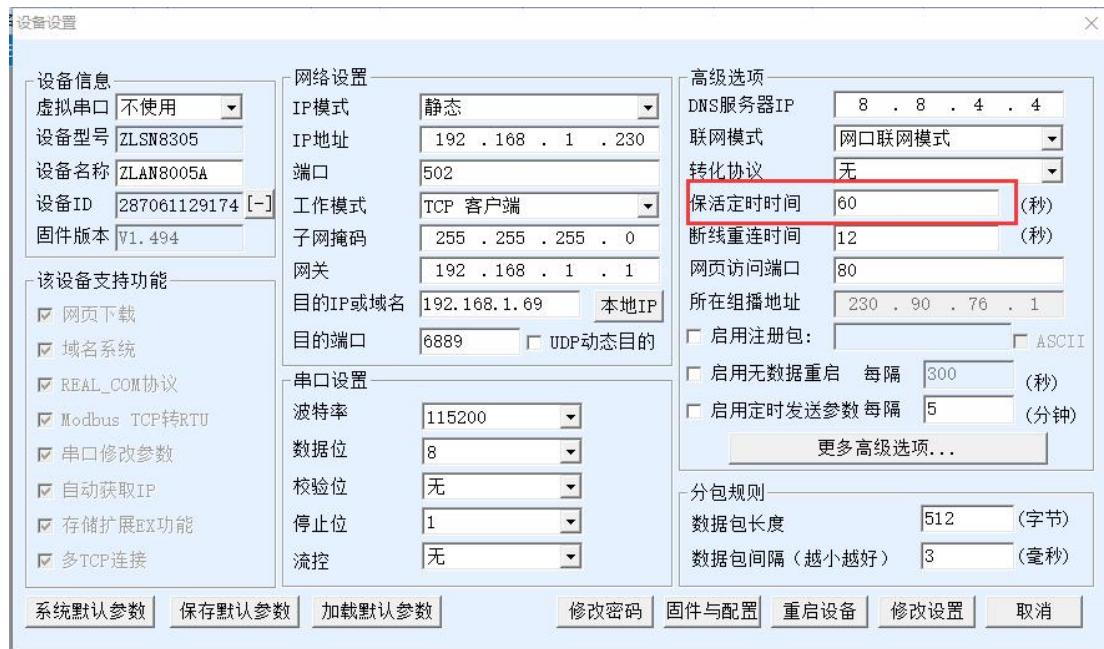
　　Send data from the serial port of the device throughzlansubThe topic is published to Baidu CloudMQTTServer, and because the device subscribes tozlansubThe theme, soMQTTAfter receiving the information published by the device, the server sends the information to the device, thus forming a serial port self-transmission and self-reception test.zlansubSo Baidu Cloud can also receive it.zlansubThe data of the subject.

picture39 MQTTtest

7.special function

7.1.Timely to the goalIPsendUDPParameter Pack
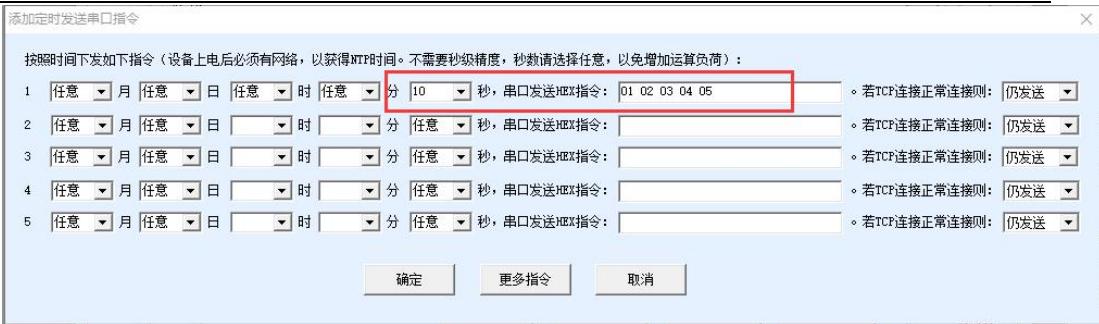
picture40Heartbeat packet sendingUDPParameter Pack

As shown40, when the keep-alive timer is changed to an odd number, the device is connectedTCPAfter that, every60swill move towards the goal (i.e. the purpose of settingIP, port, as shown in the figure40middle192.168.1.69,port6889) Sends information with its own parametersUDPParameter package, this function allows customers to open the remotezlvir.com found8305,certainly,zlvir.comofIPThe listening port needs and the purpose of the deviceIP, port. However, opening it will increase the communication data flow.

7.2.Send data regularly

8305Supports sending data to the serial port at a fixed time.JSONIn "Configuration", click "Scheduled Delivery":

picture41Scheduled delivery

As shown41As shown, you can specify a certain month, day, time, and second to send any16Binary data, for example, the

data in the figure represents the10Seconds to send to the serial port01 02 03 04 05This string of data.

It should be noted that the scheduled delivery function requires the device to be able to connect to the Internet and obtain the time normally.

MQTTClientID\Publish a topic to automatically add devicesID

8305Support in configurationmqttParameters, automatically on the clientIDOr add the unique device after publishing the topicID

Number to facilitate customer identification and testing:
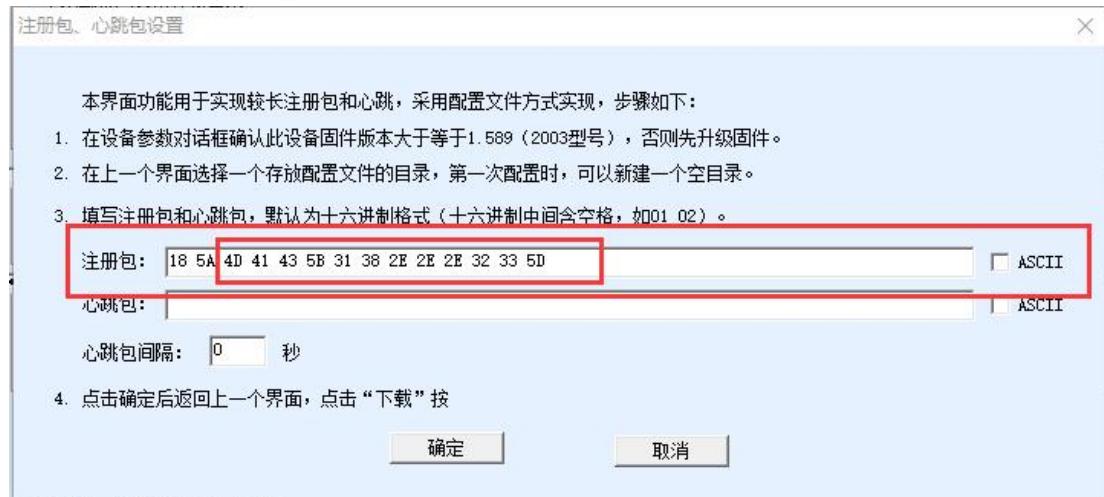
picture42 mqttAutomatically add equipmentID

As shown42As shown, check the "Add device at the end"ID, you can set up the clientIDOr add

the device after the topicID, to ensure uniqueness.

7.4.Register package to add deviceMAC
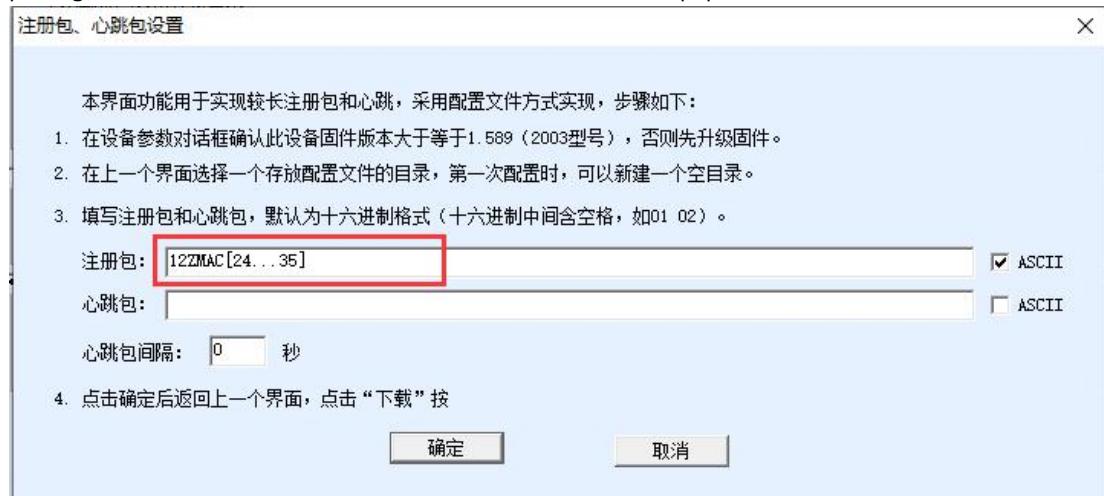
8305Support adding devices at any position in the registration packageMACAddress, in Firmware and Configuration

In the Registration Package settings:

picture43Register package to add deviceMAC（1）

　　As shown43As shown,16Base mode:4D 41 43 5B 31 38 2E 2E 2E 32 33 5D, add this string, the program will automatically replace them with6Bit16Base number deviceID, the final registration package is18 54 28 70 61 12 91 74,in28 70 61 12 91 74It's the equipmentMACaddress.

picture44Register package to add deviceMAC（2）

　　As shown44As shown, checkASCLmodel,ASCLIn string form:MAC[24...35], the program will automatically replace them with12device ofIDstring, the final registration package is 12Z287061129174, in287061129174It's the equipmentMACThe address as a string.

8.CommonATinstruction

8.1.Login and Configuration

8.1.1Enter configuration mode

instruction:REQUEST CFG MODE Function: Enter the configuration mode. During the device startup phase, send this command and the device can enter the configuration mode after the startup is complete.

return:CFG MODE\r.

8.1.2Login

instruction:ZL+LOGIN=666666\r\n Function: Login, modifying device

parameters requires login status to be successful. Return: +LOGIN:OK\r\n(

Success) or +LOGIN:NG\r\n(fail)

8.1.3Setting login password

instruction:ZL+LOGIN_PW=666666\r\n Function: Change

password. You need to be logged in to succeed.

Returns: +LOGIN_PW=666666\r\n

8.1.4Get device status

instruction:ZL+STAT?\r\n

Function: Query the signal strength, temperature, and voltage of the device

Returns: +STAT: Intensity, temperature, voltage\r\n

8.1.5ObtainICCID

instruction:ZL+ICCID?\r\n

Function: GetICCID

Returns: +ICCID:ID\r\n

8.1.6ObtainIMSI

instruction:ZL+ IMSI?\r\n

8.1.7ObtainSIMCard Status

instruction:ZL+ SIM?\r\n

8.1.8Get network dial-up status

instruction:ZL+NETSTATE?\r\n

8.2.Serial port parameters

8.2.1Get serial port parameters

instruction:ZL+BAUD?\r\n

Function: Get baud rate

Returns: +BAUD:n\r\n,nIndicates the specific baud rate

8.2.2Get the check digit

instruction:ZL+CHECKB?\r\n

Function: Get the check digit

Returns: +CHECKB:N/O/E\r\n

        N:No verification

        O:Even parity

        E:Odd parity

8.2.3Get data bits

instruction:ZL+DATAB?\r\n

Function: Get data bit

Returns: +DATAB:5/6/7/8\r\n

8.2.4Set serial port parameters

instruction:ZL+BAUD=n\r\n

Function: Set the baud rate,nIndicates the value to be set

Returns: +BAUD:n\r\n

8.2.5Setting the check digit

instruction:ZL+CHECKB= N/O/E \r\n

Function: Set the check digit

Returns: +CHECKB:N/O/E\r\n

N:No verification

O:Even parity

E:Odd parity

8.2.6Setting Data Bits

instruction:ZL+DATAB=5/6/7/8\r\n

Function: Set data bit

Returns: +DATAB:5/6/7/8\r\n

8.3.Network parameters

8.3.1Purpose of acquisitionIPor domain name

instruction:ZL+PIPADD?\r\n

Function: Get the purposeIPor domain name

Returns: +PIPADD=ip\r\n

8.3.2Get the destination port

instruction:ZL+PPORT?\r\n

Function: Get the destination port

Returns: +PPORT=n\r\n

8.3.3Get the device working mode

instruction:ZL+PROTOCOL?\r\n

Function: Get the device working mode

Returns: +PROTOCOL=TCP/UDP\r\n

8.3.4ObtainDNSserverIP

instruction:ZL+PDNS?\r\n

Function: GetDNSserverIPAddress

returned: +PDNS=ip\r\n

8.3.5Setting PurposeIPor domain name

instruction:ZL+PIPADD=ip\r\n

Function: Setting purposeIPor domain name

Returns: +PIPADD=ip\r\n

8.3.6Set the destination port

instruction:ZL+PPORT=n\r\n

Function: Set the destination port

Returns: +PPORT=n\r\n

8.3.7Set the working mode

instruction:ZL+PROTOCOL=TCP/UDP \r\n

Function: Set the working mode

Returns: +PROTOCOL=TCP/UDP\r\n

8.3.8set upDNSserverIP

instruction:ZL+PDNS=ip\r\n

Function: SettingDNSserverIPAddress

returned: +PDNS=ip\r\n

8.4.Registration packet and heartbeat packet

8.4.1Check the registration package contents

instruction:ZL+ENROL?\r\n

Query the registration package content (default registration package16Hexadecimal system

Returns: +ENROL:1234567890\r\n

8.4.2Whether to enable the registration package

instruction:ZL+EN_ENROL?\r\n

Check whether the registration package is enabled (1Enable0

Disability) Return: +EN_ENROL:1\r\n

8.4.3Set the registration package content

instruction:ZL+ENROL=123456\r\n Set the registration package content (default registration package16

The actual registration package is0X12 0X34 0X56 Returns: +ENROL:123456\r\n

8.4.4Enable/disable registration package

instruction:ZL+EN_ENROL=1\r\n

Enable/disable registration package

Returns: +EN_ENROL:1\r\n

8.5. TCPRemote Management

8.5.1EnableTCPRemote Management

instruction:ZL+Z_RMT_MAG:1\r\n

Enable/DisableTCPRemote Management

Returns: +Z_RMT_MAG:1\r\n

8.5.2set upTCPRemote management purposeIP

instruction:ZL+Z_RMT_IP:47.95.144.92\r\n

Function: SettingTCPRemote management

purposeIP Returns: +Z_RMT_IP:47.95.144.92\r\n

8.5.3set upTCPRemote management destination port

instruction:ZL+Z_RMT_PORT:4195\r\n Function:

SettingTCPRemote management destination port

Returns: +Z_RMT_PORT:4195\r\n

8.6.Software Restart

instruction:ZL+RESTART\r\n

Function: After entering the configuration mode, you need to restart to exit the configuration mode

　　　Here are just some of the commonly used parametersATInstruction configuration instructions,MQTTFor more advanced parameters, please consult after-sales

technical staff

8.7.examineTCPConnection Status

This command does not need to be used firstREQUEST CFG MODE,EnterATCommand status. Send directly"

ZL+TCPCONECT=?",receive"ZL+TCPCONNECT=1\r"Indicates that the connection has been established and received

ZL+TCPCONNECT=0\r"Indicates that the connection is not established.

8.8.Set network standard

instruction:ZL+SET_NETMODEL=3\r\n Function: Setting4GThe network standard

of mode dialing, the standard list is as follows:

Standard name	ATCommand value	illustrate
AUTO	0	automatically choose
GSM	1	China Mobile/China Unicom2G
WCDMA	2	Telecom/Unicom3G
LTE	3	Telecom/Mobile/Unicom4G
TD-SCDMA	4	move3G
UMTS	5	/
CDMA	6	telecommunications2G
HDR	7	/
CDMAAND HDR	8	/

Returns: +NETMODEL=3\r\n

8.9.Set up base station location queryAPIport

instruction:ZL+BS_POSITION_APIPORT=82\r\n Function:

Set the base station location queryAPIport

Returns: +API_PORT=82\r\n

8.10.Hexadecimal command set

This method can use the hexadecimal prefix to identify read and write commands. Get the status of the device. ZLVircom

All parameters that can be displayed and set can be realized by this command, and there is no need to send it before sending

REQUEST CFG MODEFor details, please refer to "Serial port parameter modification and hardwareTCP/IPProtocol Stack".

Now list several commonly used commands:

1.getTCPConnection status: Sendinged f2 a3 56 ca db 91 84 b0 d7 00 3d 01,return0

Indicates that the connection is not established and returns1Indicates that the connection has been established.

2．Get the current networking mode. The networking mode uses the "Serial port modification parameters and hardwareTCP/IPprotocol

The dynamic destination parameter in the stack is0, "4GNetworking method is1.

a)Get: Sended f2 a3 56 ca db 91 84 b0 d7 00 3a 01return0If it is network port mode, return1for4GWay.

b)Settings: Sended f2 a3 56 ca db 91 84 b0 d7 01 3a 01 00Set to network port mode, sended f2 a3 56 ca db 91 84 b0 d7 01 3a 01 01Set as4Gmode. After the setting command is sent, the internal program of the device will be automatically restarted. The program restart time is less than10seconds.

9.Accessories

1、 Model selection:

model	Function	illustrate
ZLAN8305	4GConvert to Serial Port	No Ethernet port
ZLAN8305L	4GSerial to Serial, Ethernet to Serial, 4Grouter	With Ethernet port

2、 Antenna selection:

You can choose glue stick antenna or suction cup antenna. The suction cup antenna is the default.2M,customizable3Mantenna.

3, power input:

Default is plug typeQ2.1The socket can be customized as a terminal block type power input.

4, You can choose rail mounting accessories.

10.After-sales service and technical support

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