ZLAN8308M/8308MN

Din-rail 4G CAT1 DTU

RS485 to 4G

Modbus RTU to 4G Modbus TCP

RS485 to MQTT

DLT-645/RTU to Cloud/to platform JSON

Version Information

The History of the revision to this document:

Copyright information

CATALOGUE

1. Summary

ZLAN8308M is a new cost-effective guide CAT1 4G DTU from Shanghai ZLAN, and supports 2G GPRS mode. It can realize RS485 to 4G, CAT1 4G transmission speed up to 5Mbps upstream, 10Mbps downstream. It can realize RS485 data transfer to 4G, using guideway installation, easy installation. Compared with the traditional desktop 4G DTU, the width is reduced to about 1/4 of the original, and the size is small. Adopt terminal type power supply access, adopt 9 ~ 24V wide voltage input. The shell is made of high temperature and flame retardant alloy plastic, which meets the requirements of fire prevention in industrial field.

ZLAN8308MN adds P2P and M2M functions on the basis of 8308M, which can forward data through the cloud without the need for users to build their own servers. P2P is suitable for Intranet computers to monitor various serial devices through 4G, and M2M is suitable for communication between serial PLC and serial devices through 4G network.

ZLAN8308M not only has the function of registering messages, heartbeat packets, but also the relatively new MQTT, Modbus RTU to JSON to connect to the cloud server. It has the features of high-speed transmission, low latency, support for new technologies and so on.

Figure 1 ZLAN8308M appearance

The ZLAN8308M allows you to configure devices, upgrade firmware, and configure MQTT/JSON through the serial port. In addition, a large number of distributed devices can be managed remotely and centrally through a server. You can configure, view, and upgrade programs remotely. With the cooperation of public cloud or Zhuolanyun, it can realize Web terminal device management and Web terminal data viewing and remote control.

The collected data can be uploaded in JSON format for automatic data collection. Data collection supports Modbus RTU, 645 instrument version 97, 645 instrument version 07, and various non-standard RS485 protocols. ZLVircom allows users to configure uploaded data formats and JSON keywords. Upload can support MQTT protocol, HTTP POST protocol, HTTP GET protocol, transparent transport protocol, all kinds of non-standard network protocols. The ZLAN5407M has a reset button to reset parameters in case of incorrect JSON format.

Support edge computing functions, including: data overrun alarm, data translation and scaling, data change upload, equipment offline alarm, equipment independent acquisition, equipment automatic connection and other functions. This feature is usually used in conjunction with the JSON feature.

ZLAN8308M has specially designed watchdog circuit, which can guarantee the

stable operation of 4G module for a long time. Products support -40 ℃ ~85 ℃ industrial temperature range. Pass electromagnetic compatibility test such as static electricity.
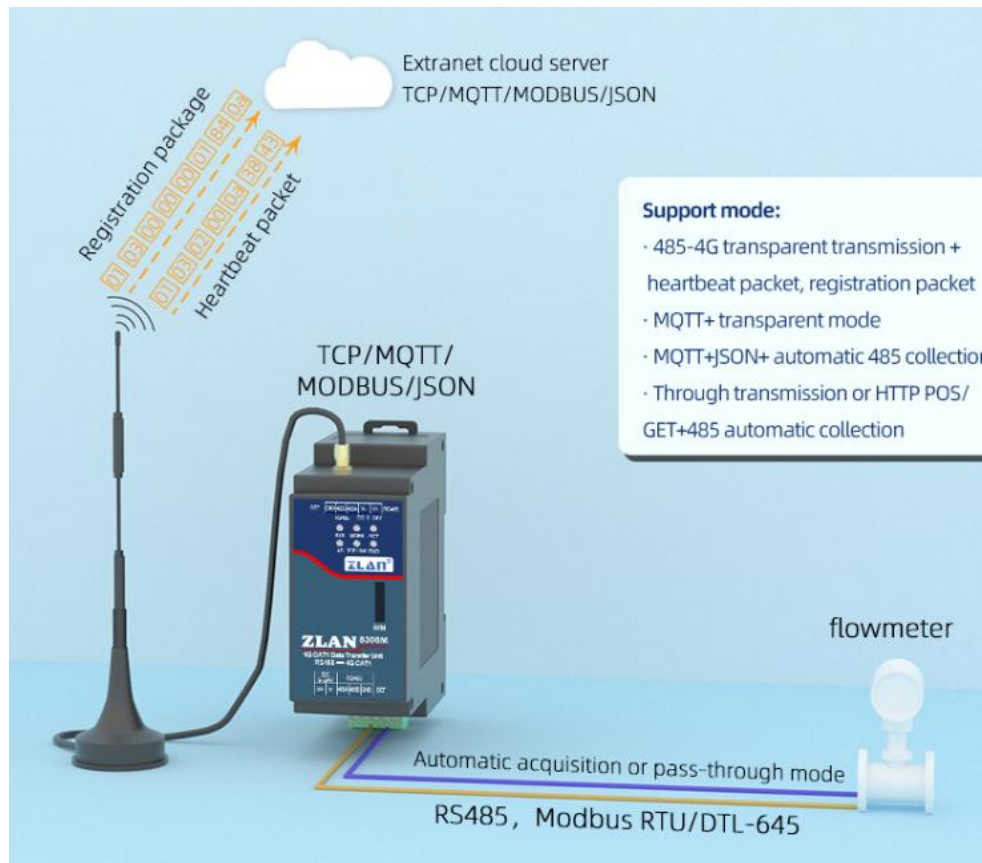

Figure 2 Application environment diagram

ZLAN8308M Applications：

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

2. Power data acquisition and monitoring.

3. Access control and security.

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

5. Intelligent transportation, vehicle-mounted data acquisition.

2. Function

Special function

1. Supports custom conversion from Modbus/DLT-645 to JSON

2. The MQTT+JSON and HTTP+JSON modes can be used to interconnect with various public clouds

3. Supports the MQTT gateway function. MQTT SSL encrypted transmission can be supported

4. Support edge computing functions: including data overrun alarm, data translation and scaling calculation, data change upload, equipment offline alarm, etc.

5. Support device cloud management: Online device monitoring, remote device configuration modification, and remote device upgrade can be achieved through ZLAN device cloud or user-built cloud.

6. Supports offline data storage.

Ordinary Function

1. Support 3 modes，TD-LTE/ FDD-LTE/ GSM，

including Unicom, 4G，2G，

mobile

4G，2G and telecom 4G.Shanghai ZLAN Information Technology Co., Ltd

http://www.zlmcu.com

2. Support TCP client, UDP mode.

3. Serial port support 300~921600 baud rate, support 5~8 data bits, support no check, odd check, even check, support 1~2 stop bit.

4. Support serial port（RS232/485）To 4G.

5. Support serial port transparent transmission, 8308 supports Modbus RTU to Modbus TCP, MQTT protocol.

6. Support serial port AT command configuration, support ZLVIROM software to view some parameters.

7. Support for serial port configuration of MQTT parameters.

8. Support DTL-645/Modbus RTU automatic collection and conversion to cloud platform JSON format.

9. The 8308M firmware can be updated on the device through the serial port, and the firmware can be updated on the server side through the ZLvircom software.

10. Support server side remote device management, device configuration, device upgrade

3. Technical parameters

Outside Interface	
Serial interface：	RS485：3.5mm terminal
Serial port number：	ONE，RS485（485A、485B、GND）
Power supply：	3.5mm terminal
Reset：	Push-button one-button reset factory Settings
Shell material：	Alloy flame retardant plastics
Signal light：	SYS, WORK, 4G LINK, TCP LINK, TXD, RXD
SIM card	Voltage：3V，1.8V；Size：Micro Sim（none Nano SIM):Size is 12x15mm×0.8mm
Antenna interface	50Ω/SMA Female stick antenna or suction cup antenna (default suction cup)
Size：	L x W x H：37.6 x 83.6 x 89.2mm
Equipment：	35mm Din rail mounted
Communication Interface	
Wireless mode：	4G CAT1 support 3 modes： B1/B3/B5/B8@FDD LTE B34/B38/B39/B40/B41@TDD-LTE B3/B8@GSM Including Unicom4G，2G，Mobile 4G，2G and telecom 4G net.

4G transmission speed	LTE：Max 10Mbps（download）/Max 5 Mbps（upload） GPRS：85.6Kbps（download）/Max85.6Kbps（upload）		
Serial port parameter			
Baud rate：	300~921.6Kbps ，customized baud rate	Check bit：	None, odd check, even check
Digit bit：	5～8 bits	Stop bit：	1～2 bits
Software			
Working mode：	TCP Client side、UDP		
Transformer protocol：	Modbus TCP、MQTT、JSON		
Modbus gateway：	Modbus TCP to RTU、Pre-configured table (ZLMB) schema		
JSON gateway：	Device side support Modbus RTU、DLT-645； Server support HTTP POST/GET、MQTT、transparent transmit、customized protocol； Translation and scaling, off-line alarm, out-of-limit alarm, change upload, data format conversion；		
SSL：	Support SSL encryption		
Off-line storage：	256K		
Address resolution：	Support DNS resolution		
Interconnection mode：	connect server 、8308MMN support P2P mode 、8308MMN supportM2M mode		
Configuration：	ZLVirCOM tool、serial port AT instruction configuration、Equipment cloud Management (Zhuo Lanyun)		
Other software functions：	User-defined registration packet Heartbeat packet, NTP, built-in TCP heartbeat, and FOTA upgrade		
Hardware			

input voltage：	9～24V DC
input current：	Dial up /4G communication 50mA@12V, idle 25mA@12V
EMC Electromagnetic compatibility：	Static electricity（GB/T17626.6-2018）：contact 8KV、non-contact 15KV； Fast group pulse（GB/T17626.4-2018）：power supply±4KV，signal ±2KV； wave surge（GB/T 17626.5-2008）：power supply±4KV，signal ±2KV。
Environment	
operating temperature, humidity：	-40~85℃ 5~95% RH
storage temperature, humidity：	-45~100℃ 5~95% RH

4. Hardware

ZLAN8308M front view is same as Figure 3.

Figure 3 ZLAN8308M Front view

The 8308M is mounted on a guide rail. The antenna can be sucker antenna (default) or glue stick antenna.

Panel lights：

Signal	Color	Name	Specifications
SYS	Green	power	The device is powered on and the system is running
WORK	Green	working light	Indicates the internal running status of the device and is used for debugging. Users do not need to pay attention to it
TXD	Green	serial port send digital lights	Indicates that the serial port has data output
4G	Blue	4G connect	If the indicator is steady on, the 4G dial is successful

TCP LINK	Blue	TCP connection	Indicates that a TCP connection is established with the server
RXD	Blue	Serial port receiving data indicator	Indicates that data is received over the serial port. The indicator blinks for a short time
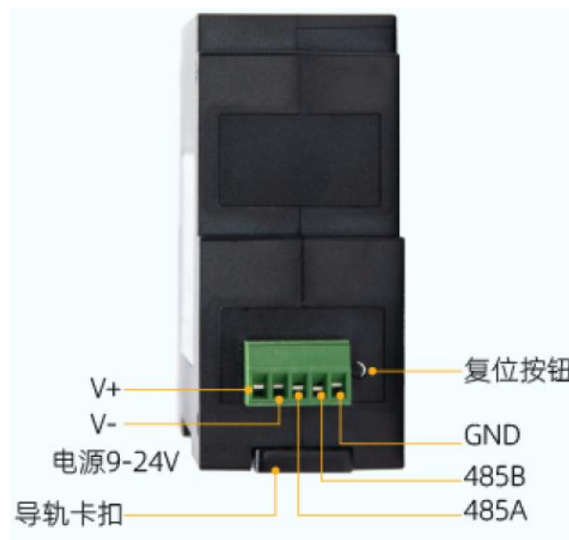
Figure 4interface

ZLAN8308M interface Figure 4：

1．power input：The interface is a 3.5mm terminal. The input voltage is DC+9V to +24VDC，and the power must be at least 3W. 12V1A power adapter is recommended.

2．RS485 interface：RS485 signal input，don't mix up.

3．Reset：If you press a key for more than 3 seconds, the device resets to default parameters. If an incorrect configuration file is downloaded, you can also skip the configuration file by pressing a key and powering on the device.

ZLAN8308M size picture is same as Figure 5：

Figure 5Size picture

4.antenna：8308 antenna interface using 50Ω/SMA (female head), external antenna must be suitable for 4G working band antenna. ZLAN can provide glue stick or suction cup antenna, the suction cup can be sucked to the metal housing of the chassis (the default suction cup antenna lead is 1.5 meters long).

5.SIM Card installed：When installing the SIM card, ensure that the device is not powered on. Using a pen tip and a screwdriver, push the SIM card slot out and push the SIM metal face down into the slot。

5. Configuration

The device can be configured through the serial port. After connecting to the remote server, you can also install the configuration software on the remote server for remote configuration.

5.1 Serial port AT instruction configuration

Download   ZLVircomconfiguration   tool

（http://www.zlmcu.com/download/ZLVirCom.zip），This software can be configured through the serial port of 8308M

　　Connect the USB to RS232 line to the serial port of 8308, power on 8308, open ZLvircom (hereinafter referred to as configuration tool), and enter the main interface of the configuration tool as shown in Figure 6.

　　Click Device Management to select serial port search, as shown in Chart 7, and the serial port parameter selection interface appears, as shown in Chart 8. Select the serial port number, here is COM15, and the baud rate is 115200. 115200 is the factory default setting, and if the user previously set 8308 to other baud rate (such as 9600), it can also be searched.
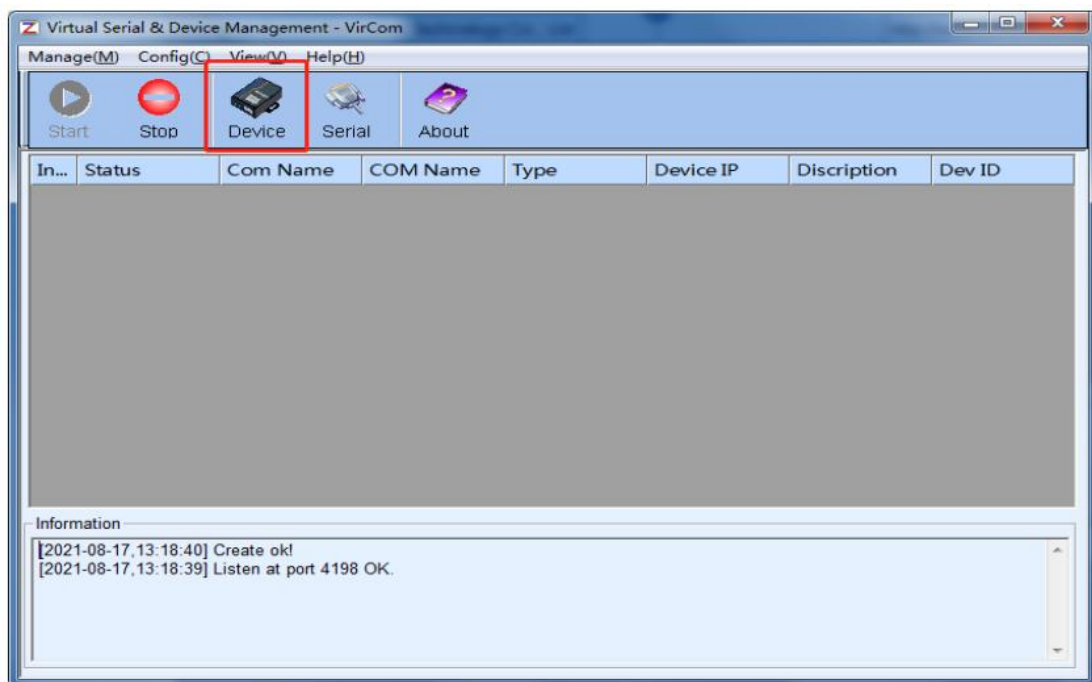
Figure 6 Configuration main page
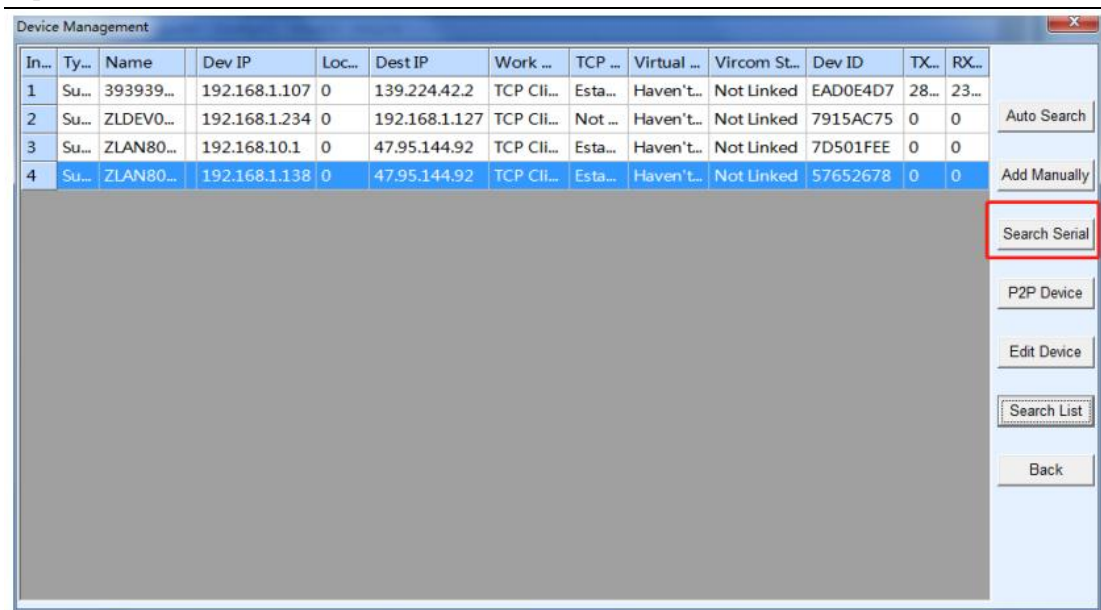
Figure 7 Serial port search interface
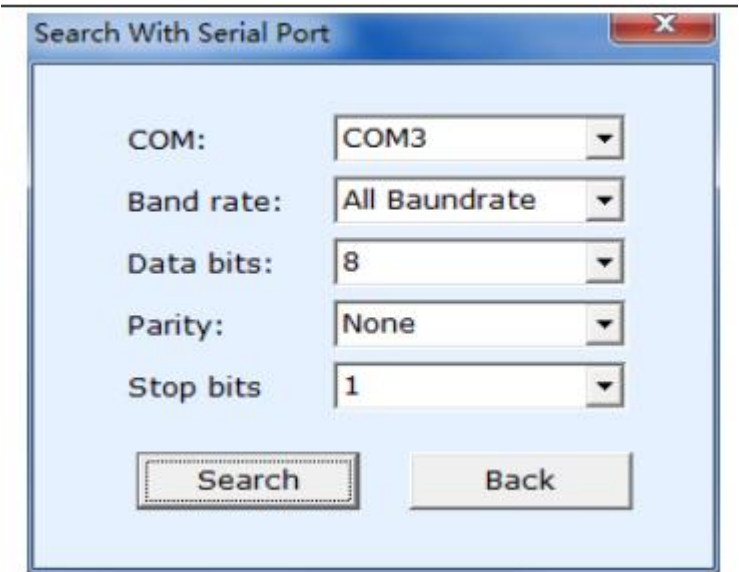
Chart 8 Serial port parameter setting

After power on, wait for 15 seconds, that is, after the dial light starts flashing, select and click the "Search" serial port. At this time, the configuration tool will attempt to communicate with the device. If successful, it will enter the Conftool interface. See Chart 9 below：

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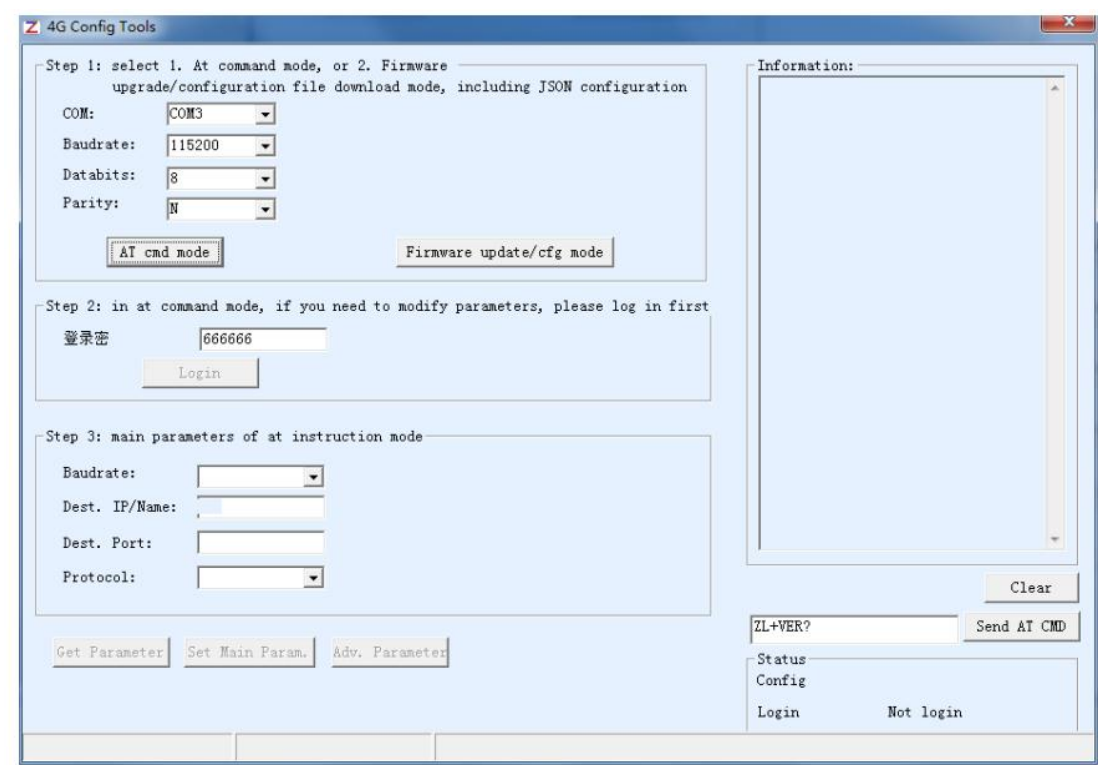
Chart 9 ConfTool Page

Click to enter the AT command mode, and the configuration tool will attempt to communicate with the device. After successful communication, the return information of AT command will be displayed on the right side, and the configuration mode will be shown as having entered the configuration mode, as shown in Chart 10 below：
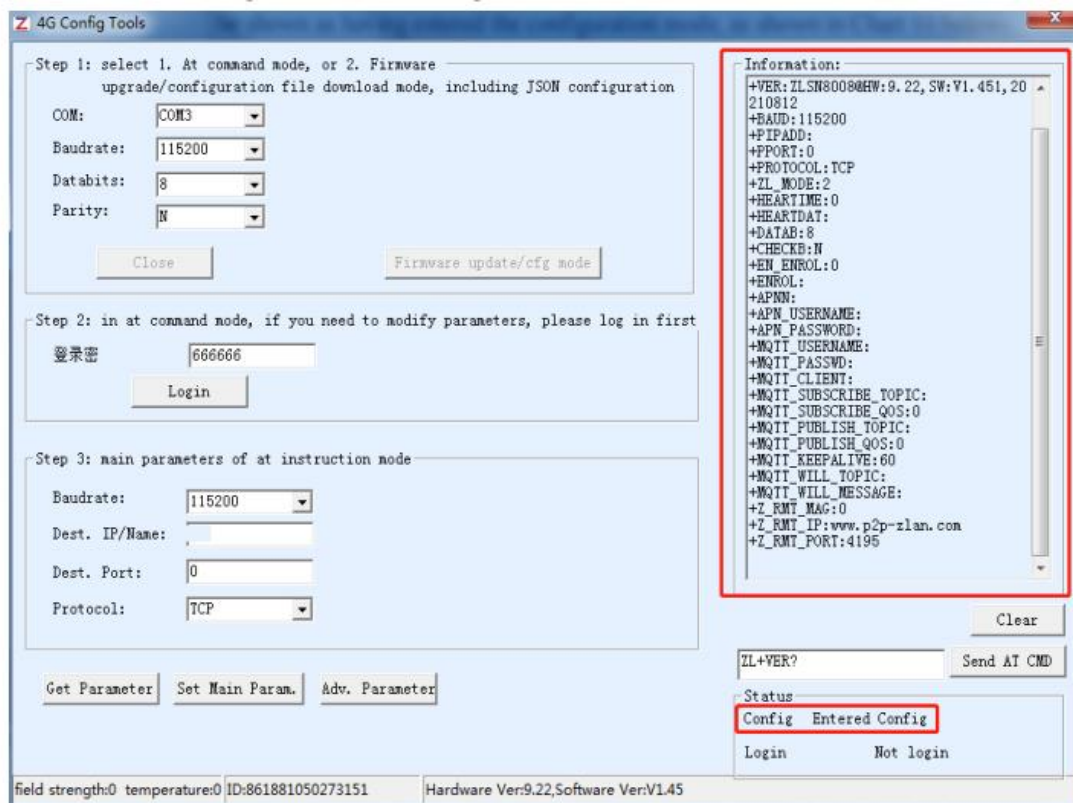
Figure 10Enter the configuration mode interface

The default login password is 666666. Before clicking "Login", the parameters are read-only and cannot be set or modified. Click the "Login button":

You can see that after logging in, the LOGIN status changes to "Login" and the message "+ Login OK" appears on the right side, as shown in Chart 11.
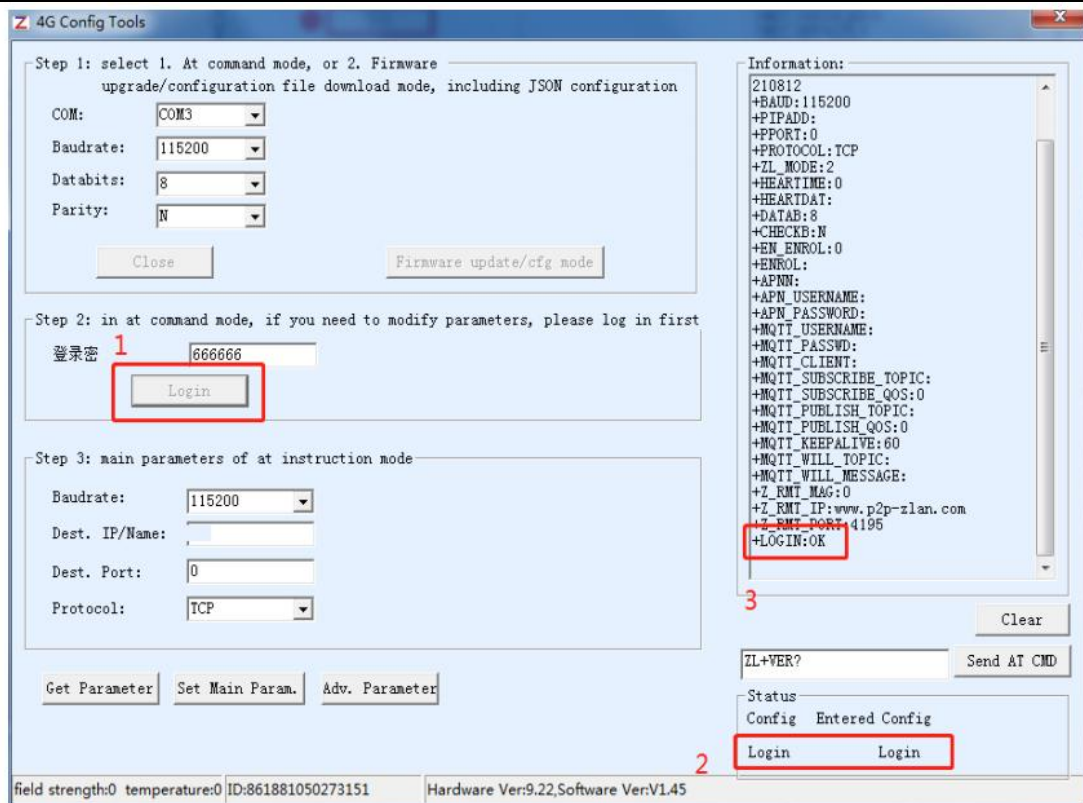
Chart 11 Login page

The main parameters of the AT instruction mode include baud rate, destination IP, destination port, and protocol. Protocol support TCP or UDP protocol. After modifying the corresponding parameters, click "Set Parameters" to set the new parameters to the device. At the same time, the device will return the parameters successfully set, as shown in Figure 12.
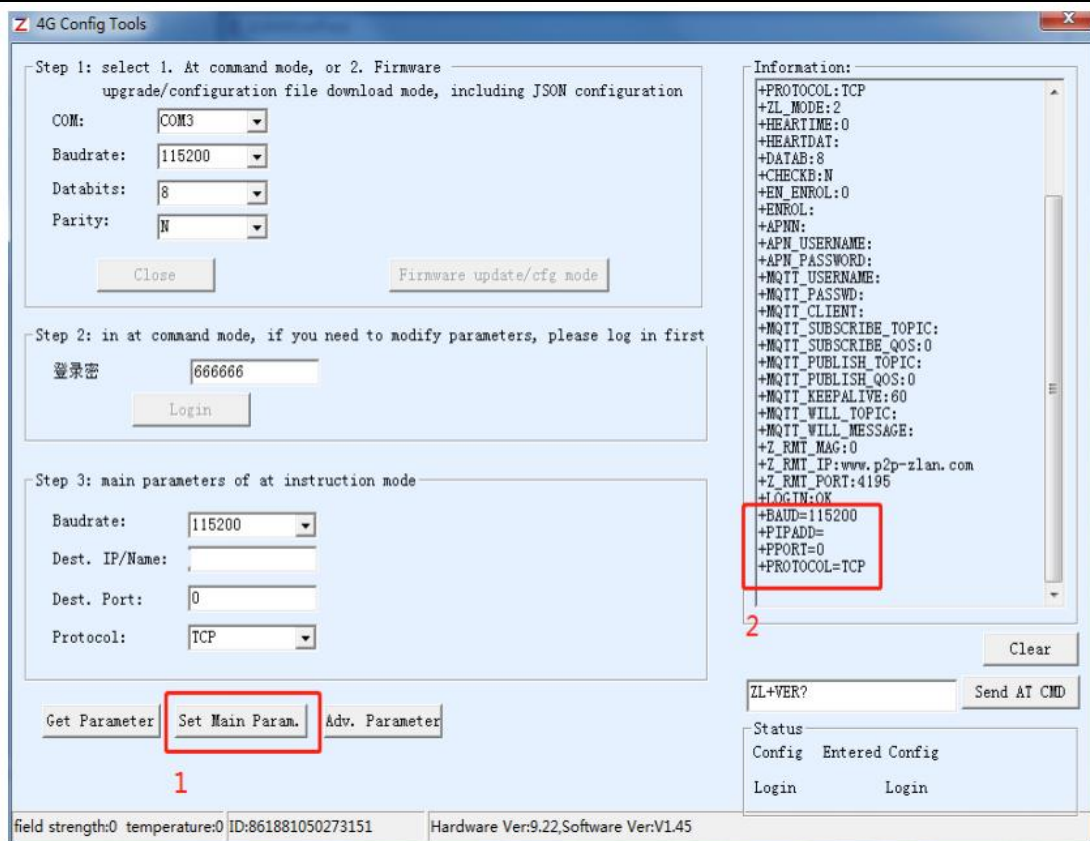
Figure 12   Set the parameters

"The "get parameters" button can get the parameters of the current device. The get parameters are obtained by sending the AT instruction. The data returned by the AT instruction is listed on the right. Refer to the other sections of this article for the AT directive. Since the "Get Parameters" button will be automatically executed once the "Open" is successful, there is generally no need to click the "Get Parameters" button。

Click "Advanced Parameters", and the advanced parameters box is shown in Chart 13. The commonly used parameters are：

1. Heartbeat interval：You can set heartbeat packets with an interval of 15 seconds

2. Heartbeat content：Sets the contents of the heartbeat packet

3. Serial port data bits

4. Serial port check bit

5. Enable the registration package: Enable the registration package

6. Registered package content: The content of the registered package sent afterconnecting to the server

7. APN：APN Name of access point。

8. APN User name

9. APN password

10. MQTT data：Used to set the parameters to access the MQTT server

11. Device remote management: it is used for devices with remote management function to access the remote server

After selecting the parameters, click the "Effective Advanced Parameters" button, and observe the information bar on the right to see whether the Settings information returned by the device is consistent with the information filled in, as shown in Chart 14。

Figure 13 Advanced data

Figure 14 Set advanced parameters to return information

5.1 Firmware/profile mode

After entering the Conftool interface, click the firmware/configuration file mode button, as shown in chart. 15, and jump to the firmware/configuration file interface as shown in chart. 16. First, create the root directory of the local configuration page to store the configuration file, click MQTT configuration to input the information of connecting to the MQTT server, and click Save MQTT configuration, as shown in chart. 17. Click the JSON configuration for JSON up-post configuration and save the JSON configuration, as shown in chart 18. Click the "Download" button and the configuration software will download all the files in the directory to the 8308 device. After successful download, the interface will pop up to complete transmission and the device will automatically restart, as shown in chart. 19.
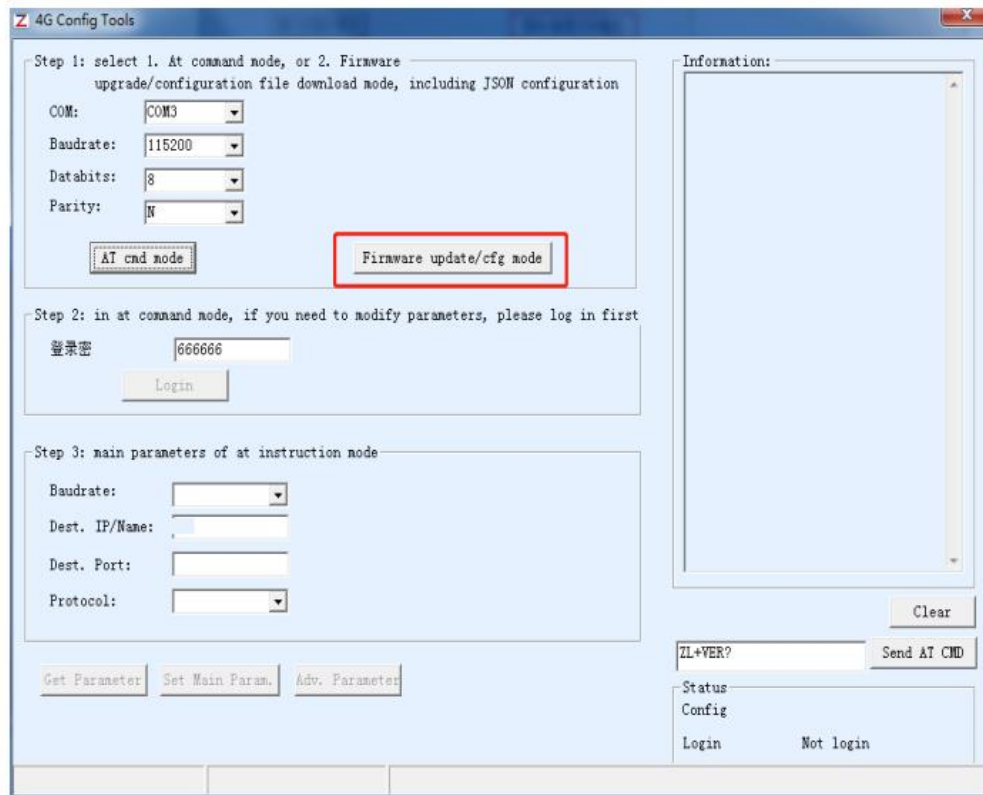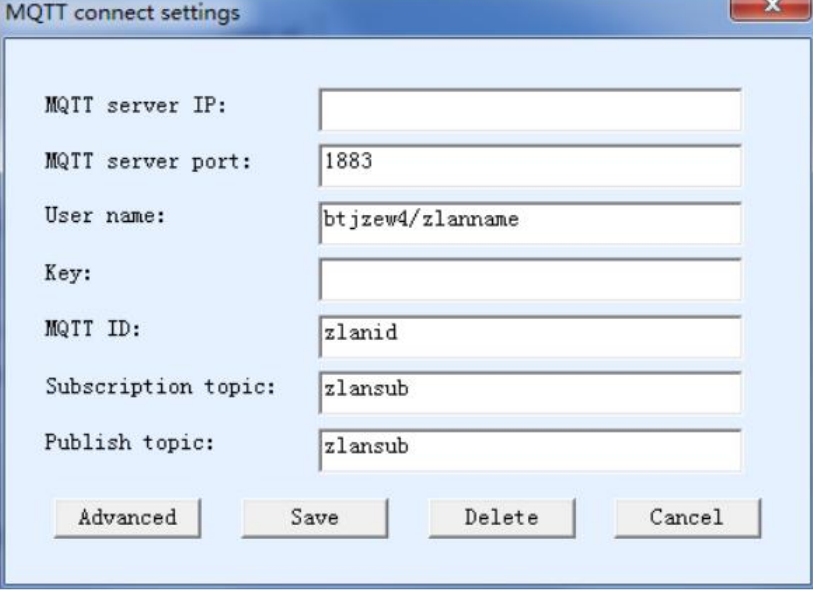
Figure 15　Configuration page
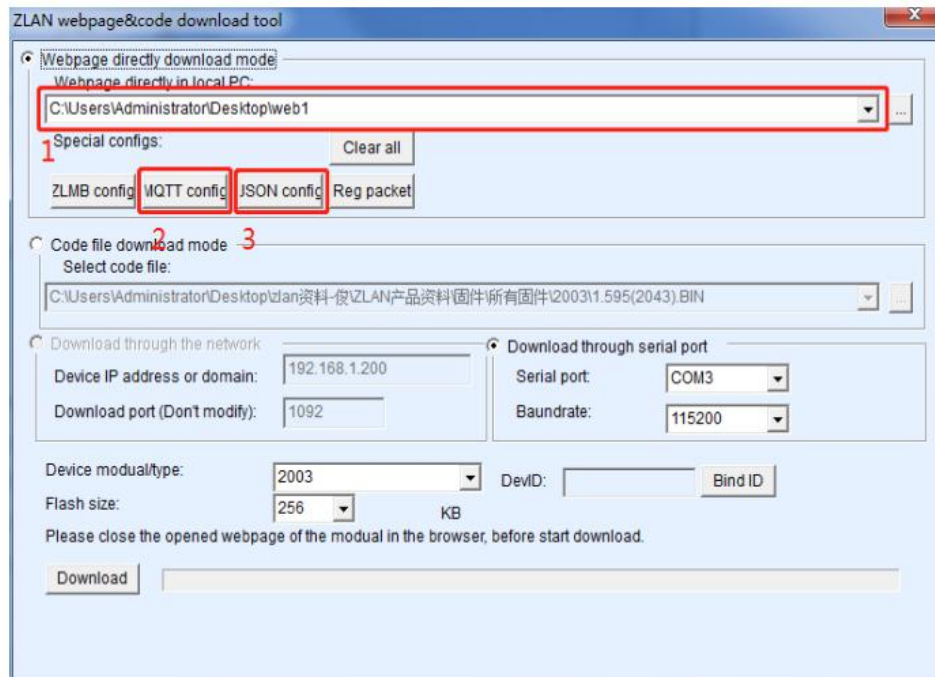
Figure 16 Firmware/configuration file page

Figure 17　MQTT Configuration page

Figure 18　JSON configuration page

Figure 19 download page

6.Device Function

6.1. Communication test

6.1.1   Server Transparent Transmission Test

Assuming the following networking structure as shown in the following figure, 8305 is configured to connect to the server ***.***.***.***.***. For details, see section "Serial Port Configuration". After the configuration is complete, it takes 20 to 40 seconds to connect to the server

Figure 20 Connection map

We run the TCP tool SocketDlgTest on the server （http://www.zlmcu.com/document/tcp_debug_tools.html）。

Figure 21 Server side tool

As shown in the figure, select the local port as 4196 (note that if you run the ZLVircom tool, you need to change the port), and then click the "Open" button. When The 8308M device is connected to the server, the information will be "The NO... is accepted!"

Now connect the serial port of the 8308M device to the USB to 485 serial cable, and   open   the   serial   debugging   tool （http://www.zlmcu.com/document/com_debug_tools.html），then open com interface correctly

Now the serial port sends data, the server will reply to the corresponding data, and the device receives the reply message from the server through the serial port output, the serial port tool receives the same data here. This demonstrates the bidirectional communication from serial port to 4G network, as shown in Figure 22 below：
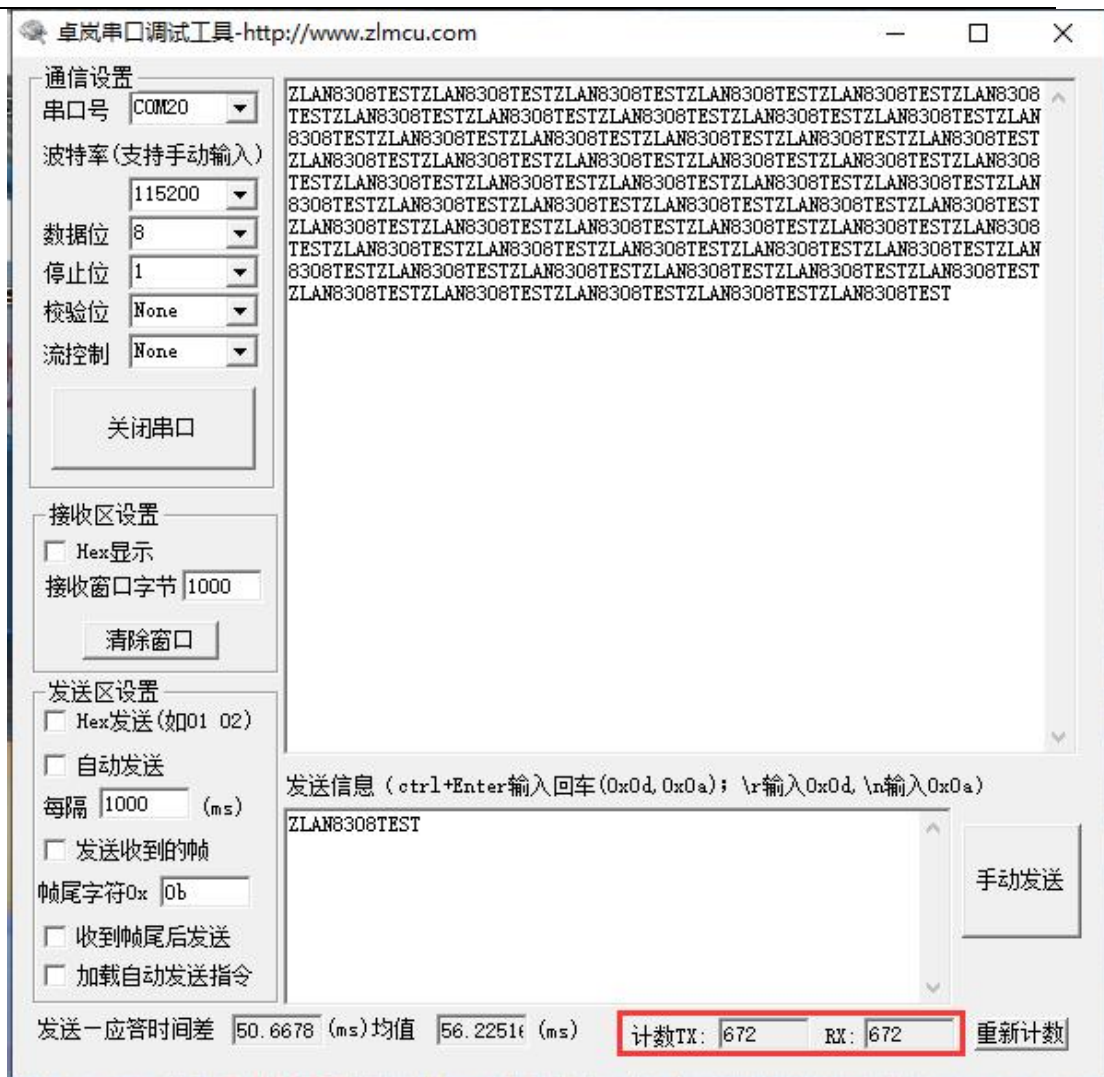
Figure 22 Serial port debugging tool on the device

6.1.2 Modbus protocol transfer testing

The configuration parameters are basically the same as those of the non-protocol transparent test. You only need to change the conversion protocol to MODBUS. The MODBUS RTU protocol over the serial port can be converted into the MODBUS TCP protocol over the network, and the MODBUS TCP protocol over the network can be converted into the MODBUS RTU protocol over the serial port.
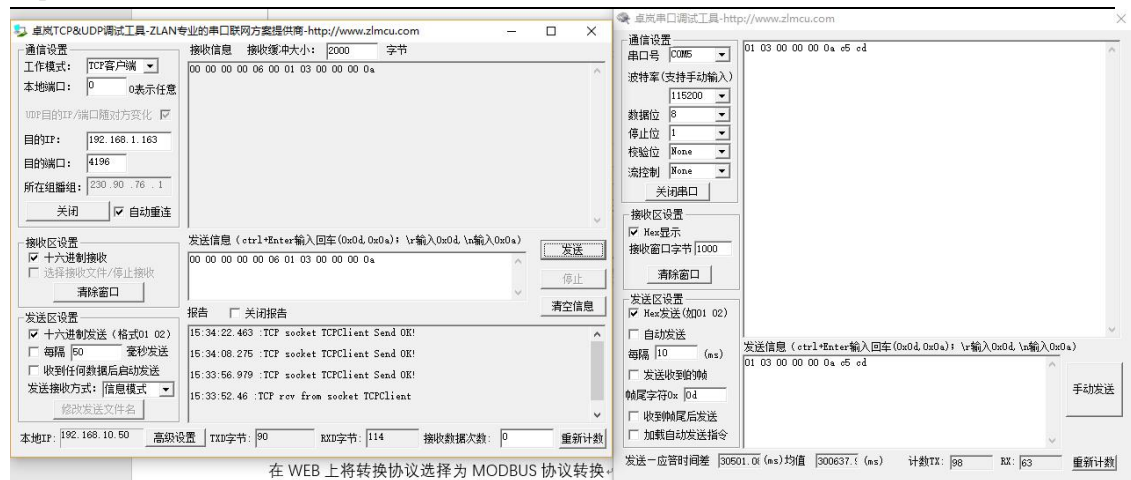
Figure 23 Modbus protocol transfer testing

6.1.3　MQTT protocol testing

Figure 24 MQTT Connection map

This test is for connecting Ali Cloud. Create a new subscription topic named zlan_test and a publishing topic named zlan_1 on Alibaba Cloud, as shown in Figure 25. According to the configuration instructions of the fifth step, first fill in the IP and port configurations of the MQTT server and save the parameters, as shown in Figure 26. On the page of advanced parameters, the ID, user name and password of MQTT, including the subject of subscription publishing, and the keepalive time, are entered, as shown in Figure 27. Note that the working mode is selected as MQTT mode.

自定义 Topic	操作权限	描述
/a1WSVHlXkDh/${deviceName}/user/zlan_test	订阅	-
/a1WSVHlXkDh/${deviceName}/user/zlan_1	发布	-

Figure 25 Ali Cloud add theme

Figure 26 Ali Cloud IP and interface

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http://www.zlmcu.com

Figure 27 Ali Clould MQTT Configuration

After the setting, open the Ali Cloud device management interface and enter the log service page to view the information sent from the device, as shown in Figure 28. Data is sent through the serial port of the device, and a message (" ZLAN8308MTEST ") is sent to the MQTT server of Alibaba Cloud through the theme of zlan_1. The data received by Alibaba Cloud is shown in Figure 29. The server of Alibaba Cloud sends a message (" ALI_send ") to the serial port of the device through the theme of zlan_test. As shown in Figure 30, this completes the MQTT sending and receiving test.
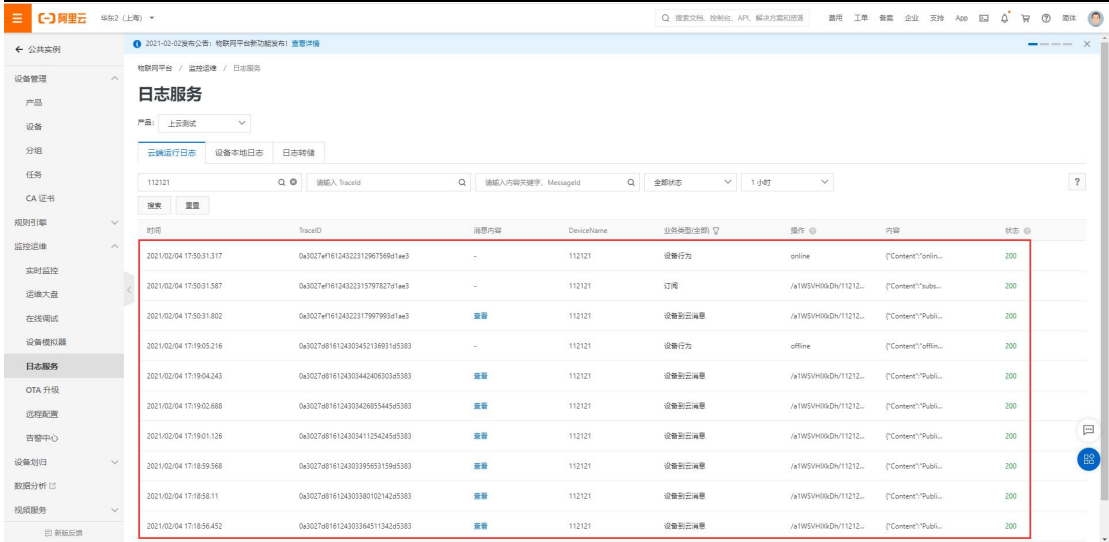
Figure 28 Ali Cloud log service
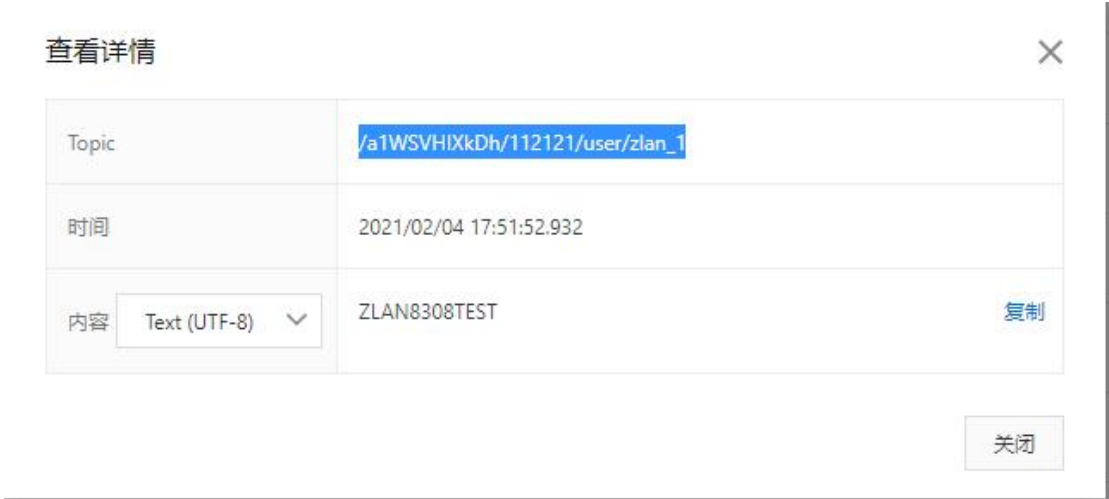
Figure 29 Ali Cloud receive serial port data
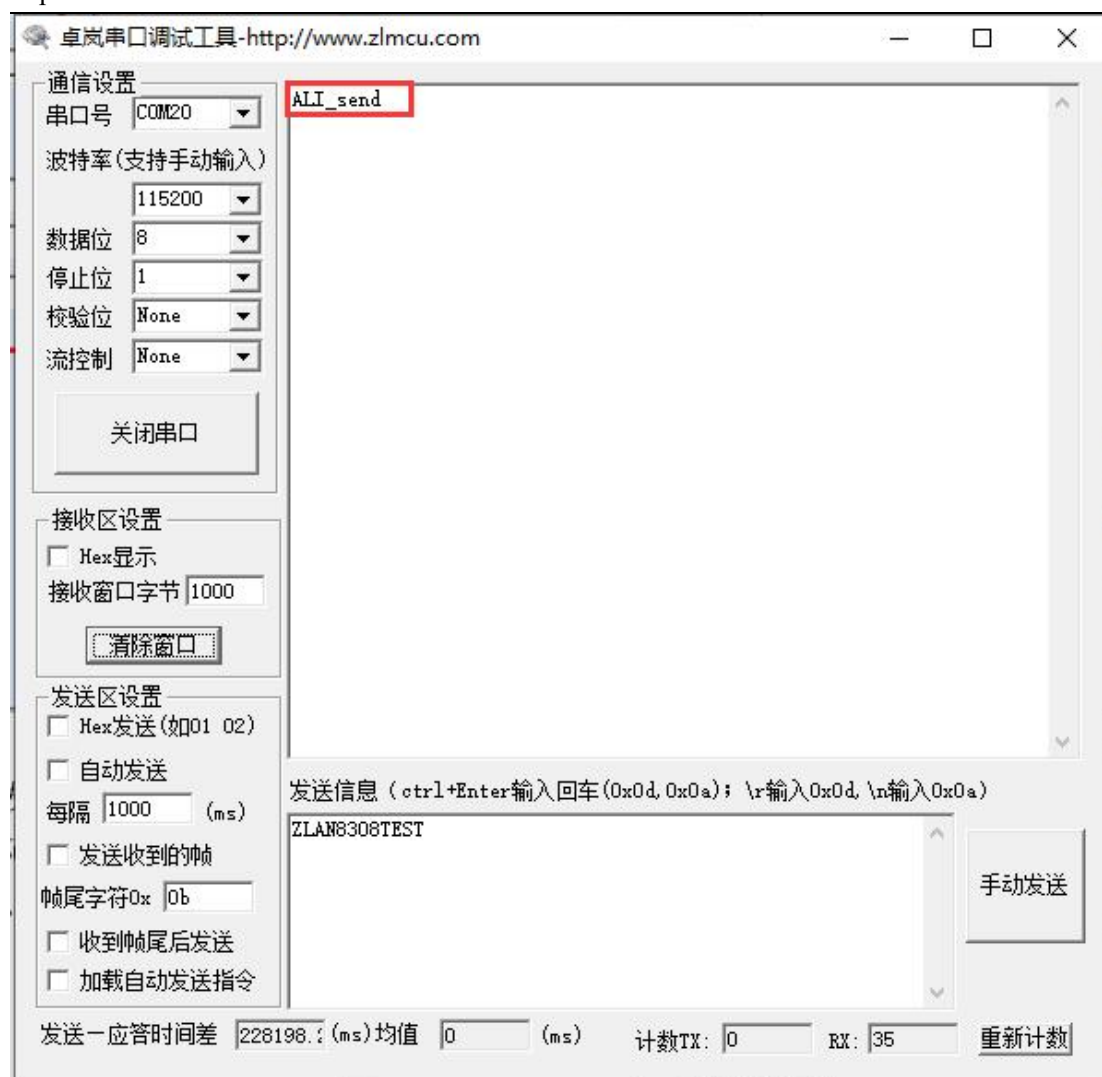
Figure 30 serial port receive Ali Cloud data

6.2. MODBUS RTU to JSON test

Figure 31 JSON Drawing

6.2.1 JSON upload configuration

Through the above part: Modbus protocol conversion test, configure a simple JSON upload template. The configuration process is shown in FIG. 32, 33, 34 and 35, and the data of some MODBUS nodes is collected and converted into JSON format for upload.

Figure 32 JSON upload configuration

Figure 33 Configurate and collect keywords, register address and interval time

Figure 34 Once finished configuration, save and log out

Figure 35 save JSON configuration, browse JSON format

6.2.2   Configurate MODBUS RTU analog device

Modbus Slave software is used to simulate the MODEBUS Slave device, connect the ZLAN8308M device to the computer through the serial cable, and open the connection of Modbus Slave. The Modbus Slave configuration is shown in Figure 36.
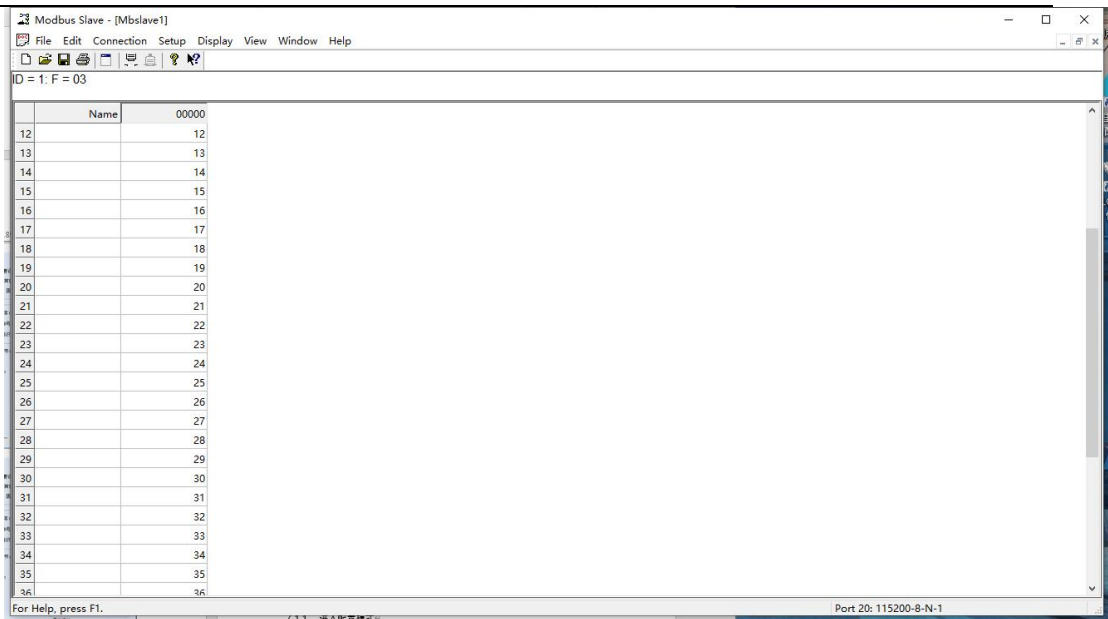
Figure 36 Modbus Slave Fill in simulation data

6.2.3 Check upload JSON

By checking the sent JSON data through Alibaba Cloud log service, it can be observed that the collected data is consistent with the data configured by Modbus Slave, which completes a simple MODBUS to JSON test.
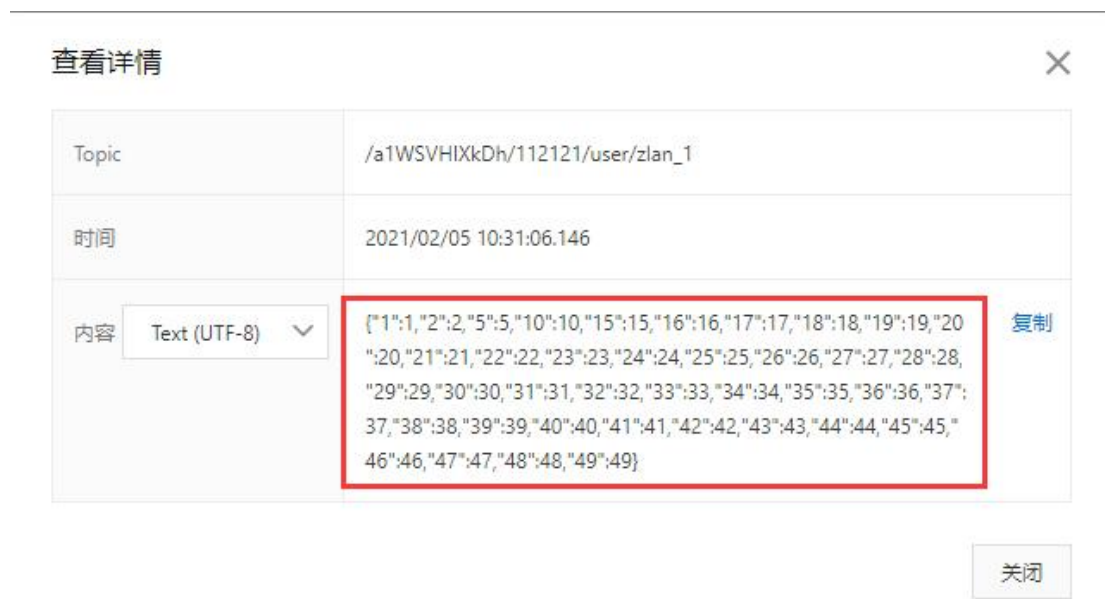
Figure 37 The serial port receives Ali Cloud data

6.3   P2P and M2M Usage

ZLAN8308MN This model integrates ZLAN's P2P technology, which can solve the inconvenience of ordinary DTU requiring "port mapping" and "dynamic domain name". At the beginning of communication, ZLVircom, the P2P software on the user's computer, first communicates with Zolan P2P server. At the same time, 8308M can also communicate with Zolan P2P server, and after the two parties have negotiated, direct communication between 8308M and ZLVircom can be established (no need to forward through P2P server). The software on the user computer can communicate through the virtual serial port or TCP analog port provided by ZLVircom. When used, users only need to enter the serial number of 8308M to be monitored in ZLVircom software, that is, P2P connection can be established. P2P mode enables users to get rid of the trouble of "port mapping" and "dynamic domain name", and there is no need to rent a public IP server, which truly realizes the convenient monitoring anytime and anywhere

Figure 38 P2P Usage

For details, see the P2P Product User Guide
（http://www.zlmcu.com/download/p2p_manual.pdf）.

If the host monitored is a serial device, such as a PLC with RS485 interface, rather than a computer. At this time, ZLVircom software cannot be installed on the PLC, and M2M function is used here.

The M2M server forwards data between different devices. Register packages to identify different devices. The M2M service is free to use for a long time.
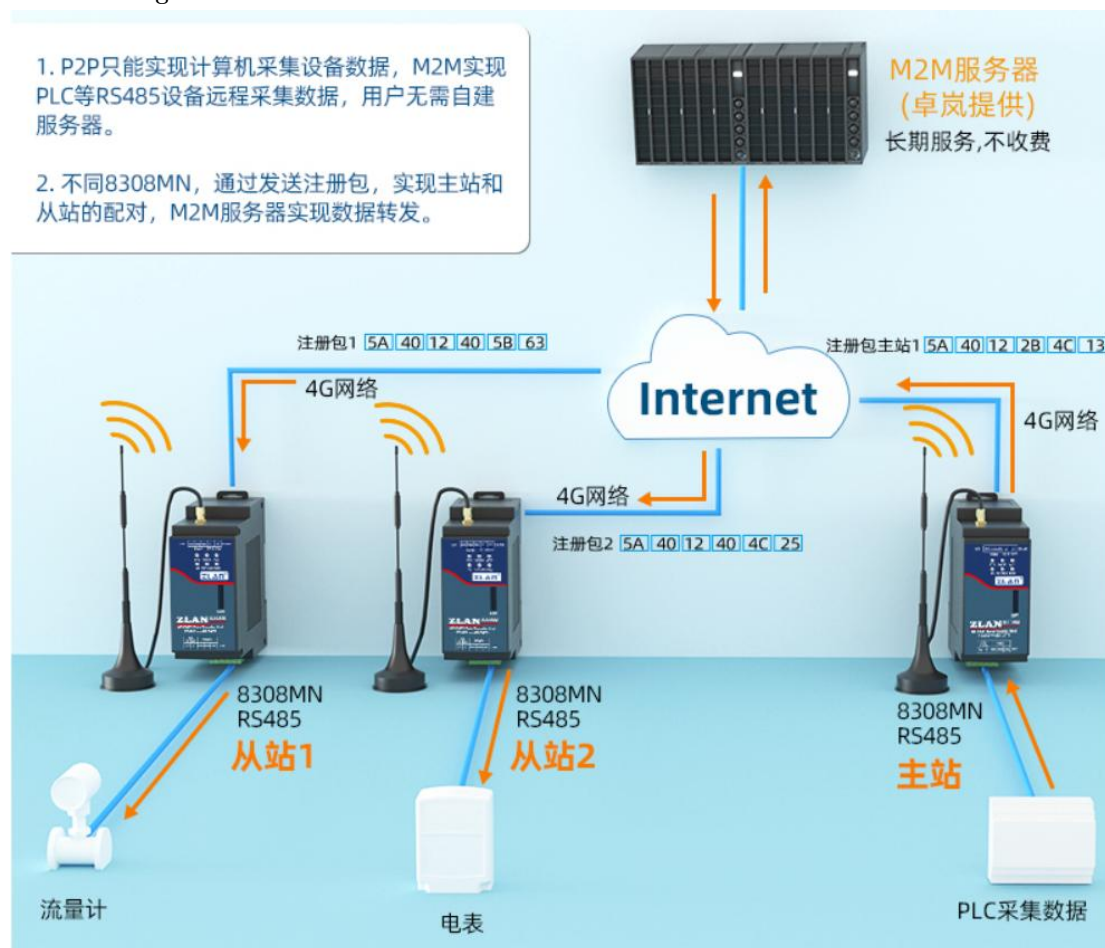
Figure 39 M2M Usage

6.3　Offline storage usage

6.2.4　Introduction

Figure 40 Offline storage Usage

After the offline data storage function is enabled on the device, when the data fails to be sent on the network exception (mobile network disconnection, server connection failure), the data sent to the TCP/UDP server or MQTT will be saved in the device (not lost after power failure and restart). The time information of each piece of data can be added through the Json function. Used to distinguish the time of each piece of data. When the network recovers, the previously saved data is sent to the TCP/UDP server or MQTT server without any modification, without adding the time information. The sending interval of each piece of data can be configured. The size of the saved data is fixed. Different devices can save different data sizes. If the storage size is exceeded, the

earliest data is discarded and the latest data is saved.

Eg 1：

The function of converting Modbus to Json is configured, and data
is sent every 10s in the format of data：

{"time":"2021-07-08 17:09:15","1":0}

If the device is disconnected unexpectedly, the device will save the
data to be sent. If the network is restored 5 minutes later, the server
will continue to receive the saved data：

{"time":"2021-07-08 17:09:15","1":0}

{"time":"2021-07-08 17:09:25","1":0}

{"time":"2021-07-08 17:09:35","1":0}

·········

{"time":"2021-07-08 17:14:05","1":0}

{"time":"2021-07-08 17:14:15","1":0}

The interval of each packet is a fixed and configurable interval for
sending data.

Eg 2：

The device transparently transmits data：

When the device is abnormally disconnected, the serial port receives
the following five pieces of data：

{"a":"1","1":0}

{"b":"1","2":0}

{"c":"1","3":0}

{"d":"1","4":0}

{"e":"1","5":0}

When the network is restored, the server receives five consecutive
packets of data：

{"a":"1","1":0}

{"b":"1","2":0}

{"c":"1","3":0}

{"d":"1","4":0}

{"e":"1","5":0}

　The interval of each packet is a fixed and configurable interval for sending data.

6.2.5　Configuration method

Example Query the offline data store function：ZL+DATA_STORAGE_EN?\r\n

　　Device reply：ZL+DATA_STORAGE_EN=1/0\r\n

　　　1 indicates that the offline data store function is enabled, 0 indicates that the offline data store function is disabled

The offline data store function was enabled or disabled：ZL+DATA_STORAGE_EN=1/0\r\n

　　Device reply：ZL+DATA_STORAGE_EN=1/0\r\n

　　　1 indicates that the offline data store function is enabled, 0 indicates that the offline data store function is disabled.

Figure 41 ZLAN8305 Background login interface

Example Query the interval for sending data：ZL+DATA_STORAGE_SPAN?\r\n

Device reply：ZL+DATA_STORAGE_SPAN=XXX\r\n

XXX indicates the interval for sending data, in ms.

Set the interval for sending data：ZL+DATA_STORAGE_SPAN=XXX\r\n

Device reply：ZL+DATA_STORAGE_SPAN=XXX\r\n

XXX indicates the interval for sending data, in ms.

You are advised to set the time between 100 and 1000.
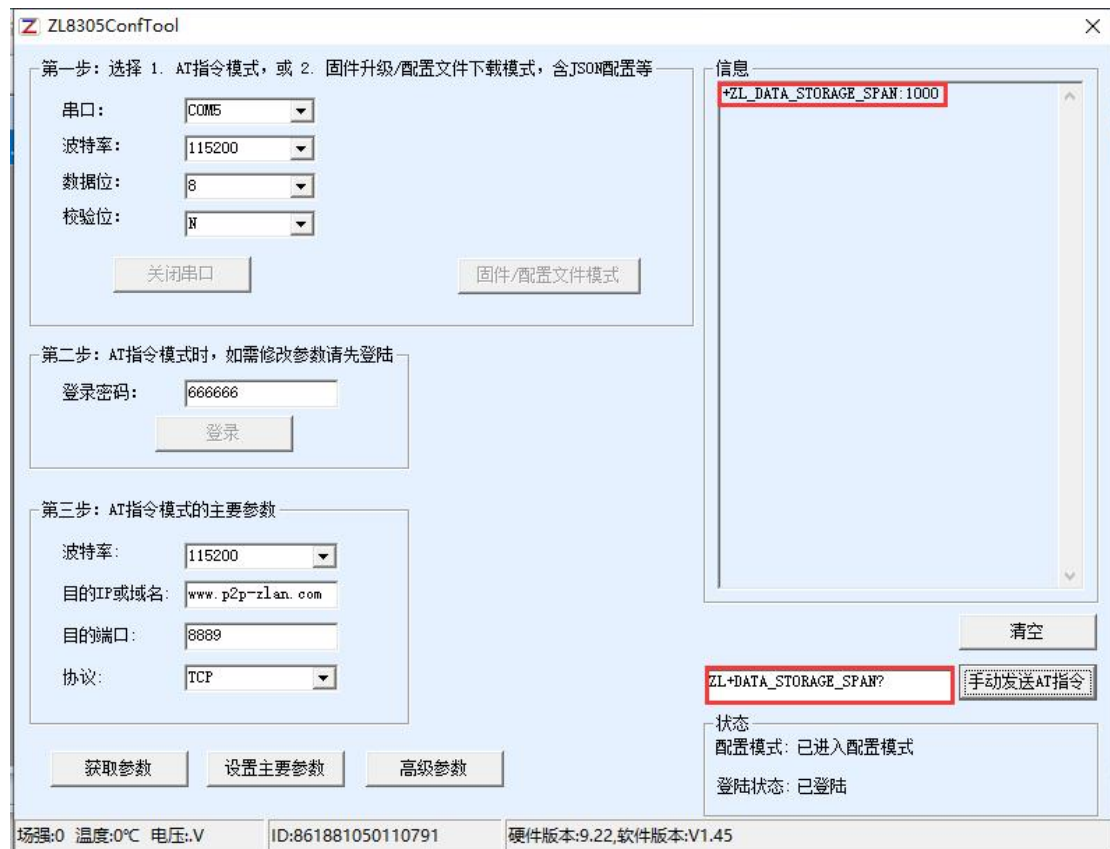
Figure 42ZLAN8305 Background login interface

6. AT Instructions

7.1. Login in and configuration

7.1.1. Enter configuration mode

Instructions：REQUEST CFG MODE

Function ：Enter the configuration mode. In the device startup phase, send this

command. After the device is started, it can enter the configuration mode.

Return：CFG MODE\r。

7.1.2. Login in

Instructions：ZL+LOGIN=666666\r\n

Function：login in，Device parameters can be modified only after you log in.

Return：+LOGIN:OK\r\n(Success) or +LOGIN:NG\r\n(failure)

7.1.3. Obtaining device status

Instructions：ZL+STAT?\r\n

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

Return：+STAT：strength，temperature，voltage\r\n

7.2. Serial port parameter

7.2.1. Obtains serial port parameter

Instructions：ZL+BAUD?\r\n

Function：obtain baud rate

Return：+BAUD:n\r\n，n indicates the specific baud rate

7.2.2. Obtain check bits

Instructions：ZL+CHECKB?\r\n

Function：obtain check bits

Return：+CHECKB:N/O/E\r\n

      N: none

      O: Even check

      E: Odd

7.2.3. Obtain digit bits

Instructions：ZL+DATAB?\r\n

Function：Obtain digit bits

Return：+DATAB:5/6/7/8\r\n

7.2.4.　Set up serial port parameter

Instructions：ZL+BAUD=n\r\n

Function：set up baud rate, n indicates value

Return：+BAUD:n\r\n

7.2.5.　Set up check bit

Instructions：ZL+CHECKB= N/O/E \r\n

Function：set up check bit

Return：+CHECKB:N/O/E\r\n

      N: none

      O: Odd

      E: Even

7.2.6.　Set up digit bit

Instructions：ZL+DATAB=5/6/7/8\r\n

Function：set up digit bit

Return：+DATAB:5/6/7/8\r\n

7.3.　Network parameter

7.3.1.　Obtain destination IP or domain name

Instructions：ZL+PIPADD?\r\n

Function：Obtain destination IP or domain name

Return：+PIPADD=ip\r\n

7.3.2.　Obtain destination interface

Instructions：ZL+PPORT?\r\n

Function：Obtain destination interface

Return：+PPORT=n\r\n

7.3.3.　Obtain device working mode

Instructions：ZL+PROTOCOL?\r\n

Function：Obtain device working mode

Return：+PROTOCOL=TCP/UDP\r\n

7.3.4. Obtain DNS server IP

Instructions：ZL+PDNS?\r\n

Function：Obtain DNS server IP address

Return：+PDNS=ip\r\n

7.3.5. Set up destination IP or domain name

Instructions：ZL+PIPADD=ip\r\n

Function：set up destination IP or domain name

Return：+PIPADD=ip\r\n

7.3.6. Set up destination interface

Instructions：ZL+PPORT=n\r\n

Function：set up destination interface

Return：+PPORT:n\r\n

7.3.7. Set up working mode

Instructions：ZL+PROTOCOL=TCP/UDP \r\n

Function：set up working mode

Return：+PROTOCOL=TCP/UDP\r\n

7.3.8. Set up DNS server IP

Instructions：ZL+PDNS=ip\r\n

Function：set up DNS server IP address

Return：+PDNS=ip\r\n

7.4. Register packet and heartbeat packet

7.4.1. Check register packet contents

Instructions：ZL+ENROL?\r\n

Query the contents of the registration package (The default registration package is hexadecimal)

Return：+ENROL:1234567890\r\n

7.4.2.　Enable or disable for register packet

Instructions：ZL+EN_ENROL?\r\n

Querying whether the registration package is enabled (1 enabled, 0 disabled)

Return：+EN_ENROL:1\r\n

7.4.3.　Set up register packet contents

Instructions：ZL+ENROL=123456\r\n

Set the content of the registration package (The default registration package is hexadecimal) 0X12 0X34 0X56

Return：+ENROL:123456\r\n

7.4.4.　Enable or disable for register packet

Instructions：ZL+EN_ENROL=1\r\n

Enable/disable registration package. 1 indicates enable and 0 indicates disabled

Return: +EN_ENROL:1\r\n

7.5.　Remote management function

7.5.1　Querying the Remote Management Function

Instructions：ZL+Z_RMT_MAG?\r\n

Example Query whether the remote management function is enabled. 1 indicates that the remote management function is enabled and 0 indicates that the remote management function is disabled

Return：＋ZL+Z_RMT_MAG:1\r\n

7.5.2　Enabling the Remote Management Function

Instructions：ZL+Z_RMT_MAG=1\r\n

The remote management function is enabled or disabled. 1 indicates that the remote management function is enabled and 0 indicates that the remote management function

is disabled

Return：＋ZL+Z_RMT_MAG:1\r\n

7.5.3 Example Query the remote management server IP

Instructions：ZL+Z_RMT_IP ?\r\n

Example Query the remote management server IP ***********

Return：＋ZL+Z_RMT_IP =***********\r\n

7.5.4 Example Query the port of the remote management server

Instructions：ZL+ Z_RMT_PORT ?\r\n

Example Query the port of the remote management server****

Return：＋ZL+ Z_RMT_PORT =****\r\n

7.5.5 Set the remote management server IP

Instructions：ZL+Z_RMT_IP =**********\r\n

Set the IP address of the remote management server

Return：＋ZL+Z_RMT_IP:**********\r\n

7.5.6 Set the port of the remote management server

Instructions：ZL+ Z_RMT_PORT =****\r\n

Set the port of the remote management server

Return：＋ZL+ Z_RMT_PORT:**** \r\n

7.6. MQTT parameter

7.6.1 Set up MQTT User name

Instructions：ZL+ MQTT_USERNAME =****\r\n

Set up MQTT Username

Return：＋ZL+ MQTT_USERNAME:**** \r\n

7.6.2 Set up MQTT password

Instructions：ZL+ MQTT_PASSWD =****\r\n

Set up MQTT password

Return：＋ZL+ MQTT_PASSWD:**** \r\n

7.6.3 Set up MQTT client ID

Instructions：ZL+ MQTT_CLIENT =****\r\n

Set up MQTT client ID

Return：+ ZL+ MQTT_CLIENT:**** \r\n

7.6.4 Set up MQTT publish theme

Instructions：ZL+ MQTT_PUBLISH_TOPIC =****\r\n

Set up MQTT publish theme

Return：+ ZL+ MQTT_PUBLISH_TOPIC:**** \r\n

7.6.5 Set up MQTT subscribe theme

Instructions：ZL+ MQTT_SUBSCRIBE_TOPIC =****\r\n

set up MQTT subscribe theme

Return：+ ZL+ MQTT_SUBSCRIBE_TOPIC:**** \r\n

7.6.6 Set up MQTT Subscription quality

Instructions：ZL+ MQTT_SUBSCRIBE_QOS =1\0\r\n

set up MQTT Subscription quality 1\0

Return：+ ZL+ MQTT_SUBSCRIBE_QOS: 1\0\r\n

7.6.7 Set up MQTT publish quality

Instructions：ZL+ MQTT_PUBLISH_QOS =1\0\r\n

Set up MQTT publish quality 1\0

Return：+ ZL+ MQTT_PUBLISH_QOS: 1\0\r\n

7.6.8 Set up MQTT keep alive time

Instructions：ZL+MQTT_KEEPALIVE =****\r\n

Set up MQTT keep alive time

Return：+ ZL+ MQTT_ KEEPALIVE:**** \r\n

7.6.9 Set up MQTT unfulfilled theme

Instructions：ZL+ MQTT_WILL_TOPIC =****\r\n

Set up MQTT unfulfilled theme

Return：+ ZL+ MQTT_WILL_TOPIC:**** \r\n

7.6.10 Set up MQTT unfulfilled info

Instructions：ZL+ MQTT_WILL_MESSAGE =****\r\n

Set up MQTT unfulfilled info

Return：＋ZL＋MQTT_WILL_MESSAGE:**** \r\n

7. Accessory Options

1、 Item No selection：

Model No.	Function	Specifications
ZLAN8308M	4G to serial port	
ZLAN8308MN	4G to serial port，support P2P and M2M	

2、 Antenna selection：
You can choose a glue stick antenna or a suction cup antenna. The default suction cup antenna is 1.5M. You can customize 2M or 3M antennas.

3、 Power supply input：Default device excludes power supply

8. After sales service and support

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