



Serial port ⇒ Ethernet pin

module

NT1 / NT1-R

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1. Product Introduction

NT1/NT1-B is a module to realize serial port data *⇒* Ethernet data transmission (also known as super network port). The product comes with RJ45 interface and pin encapsulation. It can meet the networking function of various TTL level serial port devices and MCU.



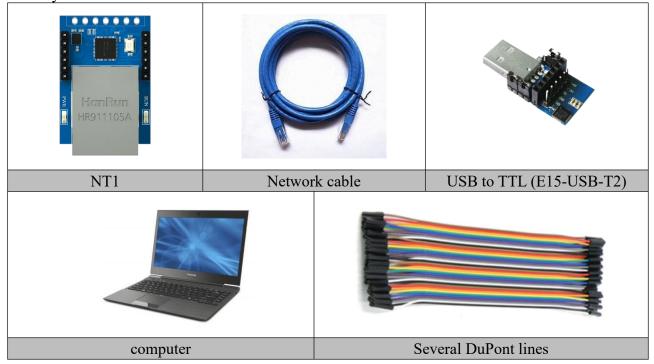
- RJ45 supports 10M Ethernet interface;
- Support multiple working modes (TCP Server, TCP Client, UDP Server, UDP Client, HTTPC, MQTTC);
- Support configuration tools, web pages and AT commands;
- The server mode supports multiple socket connections;
- Support multiple baud rates;
- Support multiple verification (None, Odd, Even, Mark, Space) and flow control;
- Support DHCP function;
- DNS (domain name resolution) is supported, and the domain name resolution server can be customized;
- DNS server address customization;
- Support multiple Modbus gateways (simple protocol conversion, multi-host mode, storage gateway, configurable gateway);
- Support fast access to Alibaba Cloud, Baidu Cloud, OneNET, Huawei Cloud, and version 3.1 standard MQTT servers;
- Support HTTP protocol (GET/POST request);
- Support virtual serial port;
- Support timeout restart function and customize the restart time;
- Support the short connection function and customize the short connection interval;
- Support heartbeat package and registration package functions;
- Support cache cleaning function;
- Support access to the Internet and LAN;
- Support hardware restoration to factory settings;
- Support online upgrade function.



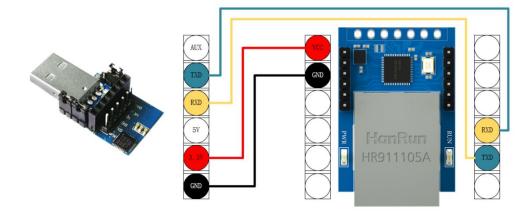
2. Quick get start

2.1. Preparation for use

Before using the super network port NT1/NT1-B (hereinafter referred to as "the device"), it is necessary to prepare the network cable, computer, USB to serial converter and other relevant auxiliary materials. The details are as follows:

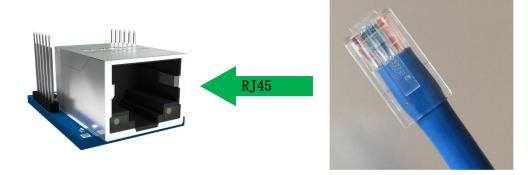


2.2. Equipment wiring



Step 1: connect the USB to serial port to provide power and serial port data conversion for the device. The TXD of the conversion tool is connected to the RXD of the device, and the RXD of the conversion tool is connected to the TXD of the device, and the GND is connected accordingly (GND connection cannot be omitted);

Step 2: connect RJ45, the device is in the detection network cable mode when the network cable is connected, and does not enter the working state;



2.3. Software settings

2.3.1. Network test environment

To avoid the server search failure and the inability to open the web page and other related problems in the actual application process, it is recommended to check the relevant settings of the computer first.

- (1) Turn off the firewall and antivirus software of the computer;
- (2) Configure the network card connected to the device;

(3) This case is for the test of equipment directly connected to the computer. The computer needs to be configured as static IP (the computer is directly connected to the equipment, there is no router to assign it, and the computer cannot obtain the IP address). The use of a switch or router needs to ensure that the equipment and the computer are on the same network end (for example, 192.168.3.

xxx);

(4) The static IP of the computer is 192.168.3.4 (the same network segment as the device), the subnet mask is 255.255.255.0, and the default gateway is 192.168.3.1.

以太网		
TXSYB-PD 2 无 Internet		相关设置 更改适配器选项
y internet	 ○ 以太网 歴性 ○ 以太网 歴生 ○ 四次母 4 (TCP/IPv4) 歴生 ※ ○ 四次母 1P 地址() ○ 自动获得 1P 地址(S): □ P 地址(1): □ 192 - 168 - 3 - 4 1 子网境码(U): ② 55 - 255 - 0 ② 默认网关(D): ○ 使用下面的 DNS 服务器地址(E): ○ 使用下面的 DNS 服务器地址(E): ○ 使用下面的 DNS 服务器地址(E): ○ 面式 服务器(A): 	BRICHER (ABLE) - □ × - □ × - ○
	□ 退出时验证设置(L) 高级(V) 确定 取消	

2.3.2. Default parameters

project	Default parameters
IP address	192.168.3.7
Default local port	8887
Subnet mask	255.255.255.0
Default gateway	192.168.3.1
Default working mode	TCP Server
Serial baud rate	115200
Serial port parameters	8 / None / 1

2.3.3. Data transmission test

After the above operation steps, follow the factory default parameters of the equipment and perform the following operations to realize the transparent data transmission test.

The operation steps are as follows:

(1) Open the test TCP/IP debugging assistant software;

(2) In the "Network Settings" area, select the TCP Client mode. The remote host address corresponds to the device's default local IP: 192.168.3.7. The remote host port corresponds to the device's factory local port 8887. Click Connect;

(3) Wait for the computer to connect to the serial port server. After the connection is completed, the LED2 pin of the module outputs low level;



(4) Open the serial port assistant, set the serial port baud rate to 115200, set the serial port parameter to 1/8/None, and click to open the serial port;

ХСОМ V2.6	<u></u> -		×
	串口选择		
	COM8: USB	-SERIAL CH34	4C ~
	波特率	115200	
	停止位	1	
	数据位	8	
	校验位	None	
	串口操作		₽⊓
	保存窗口	1	收
		显示 DTR	/n.4
	□ RTS □ 时间戳	自动 1	1朱子 m s
单条发送 多条发送 协议传输 帮助			10.2
		^ 发送	
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] 定时发送 周期: 1 ms 打	开文件 发送文件	停止发油	Ĕ
	爆全网】正点原子DS10	0手持示波器。	Ŀл
	燥至网】正只原于JST0 CD=0 当前时间 10:2		ş.

(5) For data transmission test, the serial port assistant (serial port end) sends the test data, and the network debugging assistant (network end) receives the test data. The network debugging assistant (network side) sends the test data, and the serial port assistant (serial port side) receives the test data. Realize duplex communication (that is, two-way data transmission from local to network).

<u>⊪</u> •∕(网络调试助手	× 🗆 - 🖉	XCOM V2.6	– 🗆 ×
	#XHELE [2022-12-24 11:33:14.999]# SEMD ASCID. TEST TEST TEST TEST [2022-12-24 11:33:16.269]# SEMD ASCID. TEST TEST TEST TEST [2022-12-24 11:33:16.269]# SEMD ASCID. TEST TEST TEST TEST TEST TEST TEST TEST [2022-12-24 11:33:16.269]# SEMD ASCID. TEST TEST TEST TEST TEST TEST TEST TEST [2022-12-24 11:33:16.263]# SEMD ASCID. TEST TEST TEST TEST [2022-12-24 11:33:18.263]# SEMD ASCID. TEST TEST TEST TEST TEST	NetAssist V5.0.1 🗇 📿	2002-12-04 11:33:15:114] HX: TEST TEST TEST TEST Ex:TEST TEST TEST TEST TEST Ex:TEST TEST TEST TEST TEST Ex:TEST TEST TEST TEST TEST Ex:TEST TEST TEST TEST TEST TEST Ex:TEST TEST TEST TEST TEST TEST Ex:TEST TEST TEST TEST TEST TEST TEST Ex:TEST TEST TEST TEST TEST TEST TEST TEST	串口透择 COM7.VSB-SERIAL CH34C ◇ 液特率 115200 ◇ 停止位 1 ◇ 軟規位 8 ◇ 税給位 8 ◇ 和口操作 ● 关闭串口 保存面口 満時推測 日は逆制型示 DTA 目は送到型示 DTA 100 ns
	款据发送 TEST TEST TEST TEST	√ - 清除 七 清除 - 发送	単系发送 多条发送 协议传输 報助 TEST TEST TEST TEST TEST □ 定时发送 風明:1000 ms 17开文件 □ 16进制发送 □ 发送新行 04 【火爆全网	发送 清除发送 发送文件 停止发送 正点原子Inston手持示波器上市
★ 就绪!	3/3 RX:90	TX:90 夏位计数	vww.openedv.com S:90 R:90 CTS=0 DSR=0 DCD=0	当前时间 11:33:20 .

3. Product Overview

3.1. Product specification

Product model	product type	Socket Number of connections	Working mode	working voltage	Product size (mm)
NS1	Chip module	6-way	TCP Server	3.0~5.5V(DC)	17×19×4
NT1 NT1-B	In-line module	6-way	TCP Client UDP Server UDP Client	3.0~5.5V(DC)	35×22×30
NA111 NA111-A	DTU	6-way	MQTT Client HTTP Client	8~28V(DC) 85~265V(AC)	110×66×30
NB114	DTU	6-way	niir Chent	8~28V(DC)	102×84×25



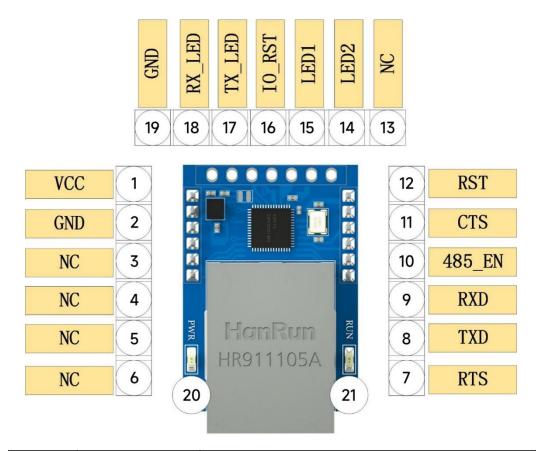


3.2. Technical parameter

project	explain	
working voltage	3.0~5.5V (DC)	
Working current	20mA @ 5V	
Interface	Serial port (RS485), network port (RJ45)	
Serial port level	3.3V TTL level, if 5V is required, external conversion circuit is required	
Working mode	TCP Server (default), TCP Client, UDP Server, UDP Client, HTTP Client, MQTT Client	
Socket connection	TCP server supports 6-way client connections	
Network protocol	TCP/UDP、MQTT、HTTP、IPv4、DHCP、DNS	
IP acquisition method	Static IP (default), DHCP	
DNS domain name resolution	support	
Domain name resolution server	114.114.114 (customizable)	
collocation method	Web page, parameter configuration tool, AT command	
IP address	192.168.3.7 (customizable)	
user name	Admin (customizable)	
password	Admin (customizable)	
Local Port	8887 (customizable)	
Subnet mask	255.255.255.0 (customizable)	
gateway	192.168.3.1 (customizable)	
Serial port cache	1024 Byte	
Packaging mechanism	512 Byte	
Serial baud rate	1200~230400 bps (115200 by default)	
Data bits	5. 6, 7, 8 (default)	
Stop bit	1 (default), 2	
Check bit	None (default), Odd, Even, Mark, Space	
Flow control	NONE (default), RTS/CTS, DSR/DTR, XON/XOFF	
Product sizethirty-five \times twenty-two \times 19mm (NT1, L \times W \times H) thirty-five \times twenty-two \times 24mm (NT1-B, L \times W \times H		
Product weight		
Working		
temperature and humidity	-40~+85 °C, 5%~95% RH (no condensation)	
Storage	-40~+105 °C, 5%~95% RH (no condensation)	

temperature and	
humidity	

3.3. Indicator and interface description



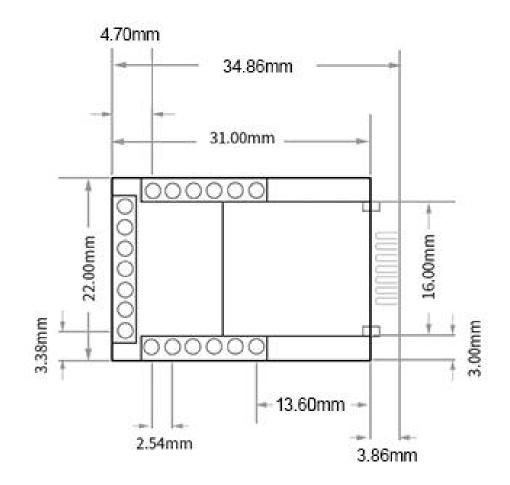
Serial	Pin	function
number		
1	VCC	Positive power input, supporting 3~5.5V input;
2	GND	Common grounding terminal, power supply
2	UND	negative terminal input;
3-6	NC	Default hanging;
7	RTS	Modem output signal of serial data, requesting
/	K15	transmission;
		Serial port sends data, TTL level communication
8	TXD	voltage only supports 3.3V, if connected to 5V,
		level conversion is required;
		The serial port receives data. The TTL level
9	RXD	communication voltage only supports 3.3V. If
		connected to 5V, level conversion is required;
10	0 485_EN	RS485 enable control pin, set high when the
10		serial port sends data, and set low in normal state;

		1
11	CTS	Modem input signal of serial data, clear transmission;
12	RST	External reset input, effective at low level;
13	NC	Default hanging;
14	LED2	Network interface link indicator output, Output 4Hz square wave within 3 seconds after power-on High level is output by default, low level is output after successful connection under TCP protocol, and low level is output by default under UDP protocol;
15	LED1	Running indicator foot 4hz square wave output within 3 seconds after power-on The network cable is not connected: output 5hz square wave Network cable connected: but not connected: output 1hz square wave Network connection succeeded: output 0.33hz square wave When the serial port has data receiving and sending, output 60ms pulse low level
16	IO_RST	Restore the factory pin and pull it down for 5s to take effect;
17	TX_LED	Serial port transmission indicator; Output 4Hz square wave within 3s after power-on After 3 seconds, the low level of the network cable is not detected, and the high level is output when the network cable is detected, After the network cable detection is completed, the low level square wave signal is output when there is data output, and the low level square wave signal is output with a period of 80ms when there is data continuously;
18	RX_LED	Output 4Hz square wave within 3s after power-on After 3 seconds, the low level of the network cable is not detected, and the high level is output when the network cable is detected, After the network cable detection is completed, the low level square wave signal is output when there is data input, and the output period is 80ms when there is continuous data, and the low level square wave signal is 20ms;
19	GND	Common grounding terminal, power supply
1/		

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		negative terminal input;
20	PWR	Power access indicator;
21	RUN	 4hz square wave output within 3 seconds after power-on The network cable is not connected: output 5hz square wave Network cable connected: but not connected: output 1hz square wave Network connection succeeded: output 0.33hz square wave When the serial port has data receiving and sending, output 60ms pulse low level

3.4. Dimensional drawing



4. Product function

4.1. Network parameters

4.1.1. IP address type

The IP address is the identification of the module in the LAN, which is unique in the LAN. Therefore, it cannot be duplicated with other devices in the same LAN. The IP address of the module can be obtained by static IP and DHCP.

(1) Static IP: The static IP needs to be set manually by the user. In the process of setting, pay attention to writing the IP, subnet mask and gateway at the same time. The static IP is suitable for the scenario where the IP and device need to be counted and corresponding one by one.

Advantages: access to devices that cannot be assigned IP addresses can be searched through the full-segment broadcast mode, which is convenient for unified management;

Disadvantages: Different intranet segments in different LANs lead to the failure of normal TCP/UDP communication.

(2) Dynamic DHCP: DHCP is mainly used to dynamically obtain IP address, gateway address, DNS server address and other information from the gateway host, thus eliminating the tedious steps of setting IP address. It is applicable to scenarios where there is no requirement for IP and no requirement for one-to-one correspondence between IP and modules.

Advantages: The access router and other devices with DHCP server can communicate directly, reducing the trouble of setting IP address gateway and subnet mask.

Disadvantages: If the module is connected to a network without a DHCP server, for example, if it is directly connected to a computer, the module will not work properly.

The subnet mask is mainly used to determine the network number and host number of the IP address, indicate the number of subnets, and determine whether the module is in the subnet.

The subnet mask must be set. Our commonly used Class C subnet mask is 255.255.255.0, the network number is the first 24 digits, the host number is the last 8 digits, the number of subnets is 255, and the module IP is within the range of 255, then the module IP is considered to be in the subnet.

Gateway refers to the network number of the network where the module's current IP address is

located. If the router and other devices are accessed when connecting to the external network, the gateway is the router.

4.1.2. Domain name resolution (DNS)

Domain name resolution converts the domain name into an IP address recognized by the network through the domain name resolution (DNS) server. The domain name resolution (DNS) server address of the serial port server supports user customization. It can achieve domain name resolution through the customized domain name resolution server in case of domain name server exception. The device will report the resolution request to the customized domain name resolution (DNS) server during domain name resolution, and return the device connection parameters (generally IP address) after the resolution is completed.

In DHCP mode, the domain name resolution (DNS) server address is automatically obtained (synchronous router domain name resolution address) and cannot be modified.

In the static IP mode, the default address of the domain name resolution (DNS) server is 114.114.114.114.

4.1.3. Intranet access port

The default intranet access port is 80.

[Note] If the port number is modified, the port number should be added in the address input column. For example, to modify the web page access port to 8080, you need to enter 192.168.3.7:8080 in the address column to connect to the web page configuration.

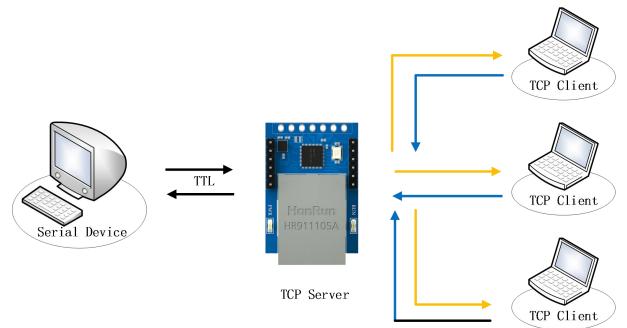


4.2. Network operation mode

4.2.1. TCP server mode

TCP Server is a TCP server. In the TCP Server mode, the device listens to the local port, accepts the connection request of the client and establishes a connection for data communication, which is usually used for communication with TCP clients in the LAN.

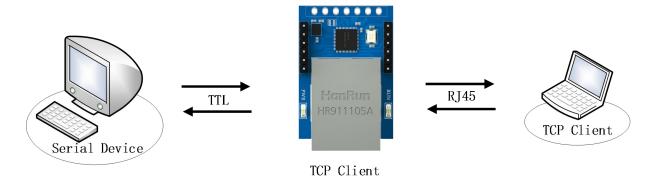
When the Modbus gateway function is turned off, the device will send the data received by the serial port to all the client devices that have established a connection with the device. At most, it can connect 6 clients. After the Modbus gateway function is enabled, the non-Modbus data will be cleared and will not be forwarded.



4.2.2. TCP client mode

TCP Client is the TCP client. When the device works, it will actively send a connection request to the server and establish a connection to realize the interaction between serial port data and server data.

To use the client, you need to configure the IP address/domain name and target port of the target accurately.



4.2.3. UDP server mode

UDP Server means that the device does not verify the data source IP address when communicating with UDP protocol. After receiving a UDP packet, it saves the source IP address and source port of the packet and sets it as the target IP address and port. Therefore, the data sent by the device only sends the data packet to the source IP address and port of the last time the device received the data.

This mode is usually used in scenarios where multiple network devices communicate with this device, and the frequency is high, and TCP Server cannot meet the conditions.

Using UDP Server requires remote UDP devices to send data first, otherwise data cannot be sent normally.

[Note] In UDP mode, the data sent by the network to the device should be less than 512Bit per packet, otherwise it will cause data loss.

4.2.4. UDP client mode

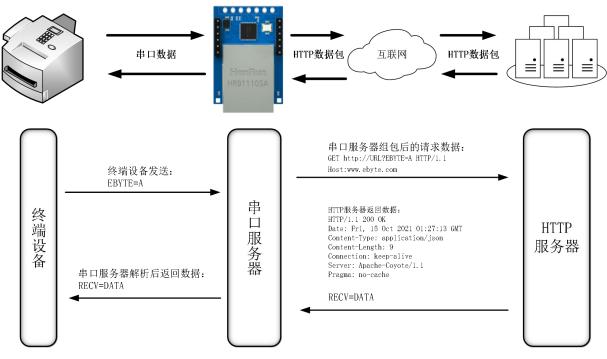
UDP Client is a connectionless transport protocol that provides simple and unreliable transaction-oriented information transmission services. There is no connection establishment and disconnection. You only need to configure the destination IP and destination port to send data to each other. Usually used in data transmission scenarios where there is no requirement for packet loss rate, the data packet is small and the transmission frequency is fast, and the data is to be transmitted to the specified IP.

In UDP Client mode, the device will only communicate with the configured (target IP and target port) remote UDP device.

In this mode, the target address is set to 255.255.255.255, and the transmitted data will be broadcast in the whole network segment, but the receiving and transmitting equipment needs to ensure the port consistency, and the equipment can also receive the broadcast data.

4.2.5. HTTP client mode

This mode can realize the HTTP packet grouping function, and provides two modes: GET and POST. The customer can configure parameters such as URL, Header, and send packets by the device (serial port server) to realize the fast communication between the serial port device and the HTTP server. The HTTP client mode is recommended to use the random port and open a short connection to save the HTTP server resources.



1. GET

Use the HTTP mode of OneNET multi-protocol access to test the HTTP-GET request of the device, as shown in the following figure.

(1) Return data configuration with header:

1	或都们	Z佰特电子科技有	限公	司	基本参数			-		
设备信息					IP地址类型	动态IP	×	SN码	S120074S	
设备型号 NA111-A		设备SN码 S120074S		Language 中文 🗸	网页登录账号	admin		网页访问端口	80	4
固件版本 9013-2-13		登录账号 admin		登录密码	网关	192.168.3 .1		DNO		
路设置			_		网大	192.108.3 .1		0.00		
IP模式 动态	*	工作模式 HTTP客户绘	~	模块MAC 84-C2-E4-36-05-3A	本地IP地址	192.168.3 .7		本地端口	0	
设备IP 192.168.3.7		设备端口 0		周页访问编口 8080	网络工作模式	HTTP 客户端	×	子网掩码	255, 255, 255, 0	
子间掩码 255.255.255.0		岡 关 192.168.3.1		首选DNS 114 114 114 114						
目的IP/域名 192.168.3.3				E636	目标IP/域名	192.168.3.3		目标端口	8888	
2000 2005 2005	¥	数据位 8	v	校验位 NONE Y	MQTT参数	HTTP参数				
停止位 1	~	#23第12 0 連控 NONE	-	txtautu NUNE			_			
ITTP功能设置					HTTP请求方式	GET	\sim	不返回包头数据	天团	~
HTTP请求方式 GET 🗸					HTTP URL路径	/1. php?				
URL路径: /1.php?					- HTTP包头					
Oser-Agent: Mozilla/5.0				and some states		Mozilla/5.0				
HTTP包头:				□ 不返回HTTP包头	USEI-Agent:	mozilla/5.0				
1ODBUS网关功能				(A)						
MODBUS TCP錄RTU 美闭	~	Modbus 指令配置参数	0	[第2]						
MODBUS 网关模式 ^{第用}		MODBUS 500		(余可配置指令 49)						

Data return test:

# XCOM V2.6			-	o x
[2022-01-05 17:17:50.657] TX: datastream_id=char [2022-01-05 17:17:51.783] RX: HTTP/1.1 200 0K	char 2021-12-31 14:28:	:54		CH34C ~
Date: Wed, 05 Jan 2022 09:17:50 GMT Content-Type: application/json Content-Length: 134 Connection: keep-alive Server: Apache-Coyote/1.1 Pragma: no-cache	28			
{"errno":0, "data":{"count":1, "datastr 31 14:28:54.492", "value":28}], "id":"c		″at″:″2021-12-	保存窗口 16进制显示 RTS V时间戳	清除接收
单条发送 多条发送 协议传输 帮助				
datastream_id=char			~ ~	发送
□ 定时发送 周期:100 ms □ 16进制发送 □ 发送新行		打开文件 0% 【火爆全网】正	发送文件 5 5 5 5 5 5 5 5 5 5 5 5 5	停止发送 持示波器上市
🔅 🗸 www.openedv.com S:18	R:312 CTS=0	0 DSR=0 DCD=0 当i	前时间 17:17:52	2 .::

(2) Return data configuration without header:

	F.	成都亿	佰特电子科技有	限公司	司	网络参数	串口参数	高级参数	Modł	ous参数		
设备信息	20 					基本参数			_			
设备型号	NA111-A		设备SN码 S1200745		Language 中文 🗸	IP地址类型	动态IP		~	SN码	S120074S	
	9013-2-13		登录账号 admin		登录密码	网页登录账号	admin		_	网页访问端口	80	•
网络设置 IP模式	潮さ	~	工作模式 HTTP客户端		模块MAC 84-02-E4-36-05-3A	网关	192.168.	3.1		DNC	114 114 114 114	
设备IP	192.168.3.7		设备端口 0		阿页访问端口 8080	本地IP地址	192,168.	3.7		本地端口	0	
子网掩码 目的IP/域名	255 255 255 0 192 168 3 3		阅关 192.168.3.1		普选DNS 114.114.114 目的端口 8698	网络工作模式	HTTP 客戶	当端	~	丁阿迪山	200, 200, 200, 0	
串口设置						目标IP/域名	192, 168,	3, 3		目标端口	8888	
停止位	1	× ×	数据位 8 漉控 NONE	*	校验位 NONE V	MQTT参数	HTTP参数					-1
HTTP功能设置 HTTP请求方式						ITTP请求方式	GET		\sim	不返回包头数据	开启	~
URL路径:	/1.php?					ITTP URL路径	/1. php?					
HTTP包头:	User-Agent: Mozilla/5.0				四 不返回HTTP包头	HTTP包头 User-Agent:	Mozilla/5	i. 0				
	HUNE SHOW											
MODBUS TCP转RTU MODBUS 网关模式		✓¥8	Modbus 指令配置参数 MODBUS 500 海间隔时间 范围 0-65535ms		修命可配置指令 49 1 03 00 00 00 A X							-

Data return test:

ATK EDI	XCOM V2.6	-	o x
TX: [202 RX: [{~a	22-01-05 17:09:10.892] datastream_id=char 22-01-05 17:09:11.970] {"errno":0, "data": {"count":1, "datastreams":[{"datapoints": at": "2021-12-31 28:54.492", "value":28}], "id": "char"}]}, "error": "succ"} char 2021-12-31 14:28:54	 串口选择 COM4:USB- 波特率 停止位 数据位 校验位 串口操作 	SERIAL CH34C 〜 115200 〜 1 〜 8 〜 None 〜 美闭串口
	28	保存窗口 16进制 RTS ビ时间戳	显示 DTR 日动保存
单条	发送 多条发送 协议传输 帮助		
dat	tastream_id=char		★ 发送 清除发送
_	定时发送 周期:100 ms 打开文件 16进制发送 □ 发送新行	发送文件 F占原子DS10	
\$			

2. POST

Use the HTTP mode of OneNET multi-protocol access to test the HTTP-POST request of the device, as shown in the following figure.

(1) Return data configuration with header:

1						
IP模式	动态	✓ 工作模式 HTTP客,	户端	✓ 模块M/	84-C2-E4-36-05-3A	
设备IF	192.168.3.7	设备端口 0		网页访问端	80	
子网掩码	255.255.255.0	网关 192.168	.3.1	首选DN	IS 114.114.114.114	
目的IP/域名	api.heclouds.com			目的端	80	
口设置						
波特率	115200	✓ 数据位 8		✓ 校验		~
停止位	1	✓ 流控 NONE		~		
TTP功能设置						
HTTP请求方式	POST 🗸					
URL路径	devices/863876867/datapoin	S]	
HTTP包头	api-key: 1 and 7 bes and Host:api.heclouds.com				□ 不返回HTTP包头	
IODBUS网关	い能					
MODBUS TCP转RTU	 [关闭	✓ Modbus 指令	配置参数		添加清空	1
		MODBUS 500		剩余可配置指令	49	ſ
MODBUS 网关模式	, <u>(禁用</u>	✓ 轮询间隔时间 范围:0-0	65535ms	01 03 00 00 00	West .	
Modbus	; 1000]范围:0-65535ms	Modbus 10 指令存储时间 范围:0-;	2554			
	(XX XX XX XX"; 性制数,XX与"XX"之间加入- i令	-个空格				
断网重连时间	7	断网重连次数 5		超时重	启 1800	
	关闭:0;范围:/-255s	范围:1-0	60次		关闭:0;范围:60-65535s	i
心跳包周期	0 关闭:0;范围:1-65535s	短连接 关闭:0;5	范围:2-255s	网络连接清空串口缓		~
心跳包模式	串口心跳包	✓ 自定义心跳包 keepaliv	e message		Hex	
注册包模式	关闭注册包模式	✓ 自定义注册包 register i	message		Hex	
			message		O Hex	
网络参数 串口			message		Hex	
网络参数 串口: 基本参数	参数 高级参数 Modbus	参数		regen pr	Hex	
网络参数 串口 基本参数 8地址类型	参数 高级参数 Modbus 动态IP		รหลี	TELEs x	Hex	
网络参数 串口 基本参数 P地址类型 1页登录账号	参数 高級参数 Modbus 动态IP admin	参数	SN码 网页访问端口	80	O Hex	
网络参数 串口: 基本参数 ®地址类型	参数 高级参数 Modbus 动态IP admin 192.168.3 .1	参数	SN码 网页访问端口 DNS	80 114. 114. 114. 114	• Hex	
网络参数 串口: 基本参数 F地址类型 研究登录账号 引关 S地IP地址	参数 高级参数 Modbus 动态IP admin 192.168.3 .1 192.168.3 .7	参数	SM码 网页访问端口 DMS 本地端口	80 114.114.114.114 0	O Hex	
网络参数 串口 基本参数 P地址类型 预登录账号 3 关 S地IP地址 路工作模式	参数 高级参数 Modbus 动态IP admin 192.168.3 .1 192.168.3 .7 HTIP 客户端	参数	SN码 网页访问端口 DNS 本地端口 子网掩码	80 114. 114. 114. 114 0 255. 255. 255. 0	• Hex	t
 第4参数 串ロ 基本参数 地址类型 页登录账号 1)关 (地IP地址 3)络工作模式 14, IP/域名 	参数 高级参数 Modbus 动态IP admin 192.168.3 .1 192.168.3 .7 HTTP 客户端 api.heclouds.com	参数	SM码 网页访问端口 DMS 本地端口	80 114.114.114.114 0	• Hex	t
 网络参数 串口: 基本参数 P地址类型 列页登录账号 列() 登录账号 3) 第 5) 地IP地址 3) 3) 3) 3) 3) 3) 3) 3) 3) 3) 3) 3) 3) 3	参数 高級参数 Modbus 动态IP admin 192.168.3 .1 192.168.3 .7 HTTP 客户端 api.heolouds.com 参数	参数	SX码 网页访问端口 DXS 本地端口 子网掩码 目标端口	80 114. 114. 114. 114 0 255. 255. 255. 0 80	• Hex	
 网络参数 串口 基本参数 P地址类型 网页登录账号 网关 S本UIP地址 网络工作模式 国际IP/顶名 	参数 高级参数 Modbus 动态IP admin 192.168.3 .1 192.168.3 .7 HTTP 客户端 api.heclouds.com	参数 	SN码 网页访问端口 DNS 本地端口 子网掩码	80 114. 114. 114. 114 0 255. 255. 255. 0	• Hex	t

Data return test:

XCOM V2.6				—		×
[[2022-01-05 17:24:35.508] TX: {~datastreams~:[{~id~:~char~,	"datapoints" : [{"value" !	501111		串口选择 COM4:USB-3	SERIAL CH	34C ~
[2022-01-05 17:24:36.593] RX: HTTP/1.1 200 0K Date: Wed, 05 Jan 2022 09:24:35 0				波特率	115200	~
Content-Type: application/json Content-Length: 26 Connection: keep-alive				数据位	8	~
Server: Apache-Coyote/1.1 Pragma: no-cache	char			校验位 串口操作	None ● 关闭	~
{"errno":0, "error":"succ"}	2022-01-05 17:24:35			保存窗口	清除打 見示□ DTB	
	50			□ RTS □ 时间戳	27、 1000	
」 单条发送 多条发送 协议传输 帮助						
{"datastreams":[{"id":"char","d	atapoints":[{"value":50}]}]}		^	发送	
			+7 77	451% 25 14	清除发	~~~
 □ 定时发送 周期: 100 ms □ 16进制发送 □ 发送新行 		0%	打开文件 【火爆全网】]	发送文件 正点原子DS100	停止发 手持示波器	
🔅 🗸 www.openedv.com 🛛 S:59	R:203 C	TS=0 DSR=	0 DCD=0 ≝	前时间 17:24:	:40	

(2) Return data configuration without header:

网络设置				
IP模式	「动态 ~	工作模式 HTTP客户端 V	模块MAC	84-C2-E4-36-05-3A
设备IP	192.168.3.7	设备端口 0	网页访问端口	80
子网掩码	255.255.255.0	网关 192.168.3.1	首选DNS	114.114.114.114
目的IP/域名	api.heclouds.com		目的端口	80
串口设置				
波特率	115200 🗸	数据位 8 🗸 🗸 🗸	校验位	NONE
停止位	1 ~	流控 NONE V)	
HTTP功能设置				0.00
HTTP请求方式	POST V			
URL路径:	/devices/863876867/datapoints			
HTTP包头:	api-kay: 10 the second second Host:api.heclouds.com			☑ 不返回HTTP包头
MODBUS网关				
MODBUS TCP转RTU	(关闭 🗸 🗸	Modbus 指令配置参数		添加清空
MODBUS 网关模式	禁用 🗸 🗸	MODBUS 500 轮询间隔时间 范围:0-65535ms	剩余可配置指令 01 03 00 00 00 0/	49
Modbus 指令超时时间	1000 范围:0-65535ms	Modbus 10 指令存储时间 范围:0-255s	01 03 00 00 00 0	
指令格式: "XX XX 其中:"XX":2位16进 最多可配置50条指	制数,XX与"XX"之间加入一个	空格		
高级设置				
断网重连时间	7 关闭:0;范围:7-255s	断网重连次数 5 范围:1-60次	超时重启	1800 关闭:0;范围:60-65535s
		2 运连接 关闭:0;范围:2-255s	网络连接后 清空串口缓存	[启用 ~
心跳包模式	□串口心跳包 ~	自定义心跳包 keepalive message		□ Hex
注册包模式	关闭注册包模式 🗸 🗸	自定义注册包 register message		Hex

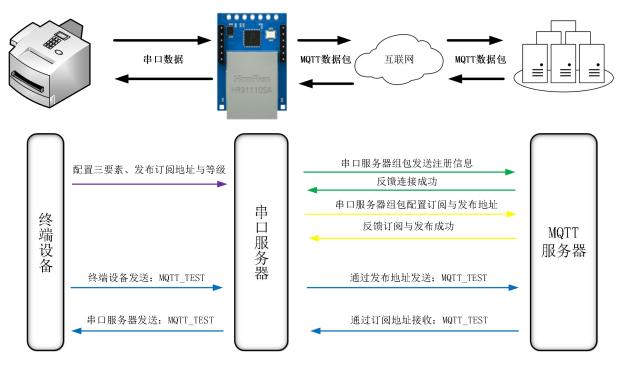
IP地址类型	动态IP	~	SN码	TIME	
网页登录账号	admin		网页访问端口	80	
网关	192, 168, 3 . 1		DNS	114. 114. 114. 114	
本地IP地址	192, 168, 3, 7		本地端口	0	<u> </u>
网络工作模式	HTTP 客户端	~	子网掩码	255. 255. 255. 0	
目标IP/域名	api. heclouds. com		目标i開口	80	
MQTT参数 HTT	P参数				
HTTP请求方式	POST	~	不返回包头数据	开启	~
HTTP URL路径 - HTTP包头	/devices/863876867/datapoints				
api-key: •b • Host:api.heclo	uds. com				

Data return test:

		-		×
[2022-01-05 17:30:47,416]		串口选择		
TX: {"datastreams":[{"id":"char", "datapoints":[{"value":25}	1111	COM4:USB-	SERIAL CH34	c ~
[2022-01-05 17:30:48.481] RX: {"errno":0, "error": "succ"} 寸		波特率	115200	~
		停止位	1	\sim
		数据位	8	\sim
char		校验位	None	\sim
2022-01-05 17:30:47		串口操作	🛞 关闭肆	30
		保存窗口	清除接	枚
05		🗌 16进制县	显示 DTR	
25		RTS	🗌 自动的	保存
		☑ 时间戳	1000	ms
单条发送 多条发送 协议传输 帮助				
["datastreams":[{"id":"char", "datapoints":[{"value":25}]}]	}	1	发送	
			清除发送	ž
□ 定时发送 周期: 100 ms	打开文件	发送文件	停止发送	ž
□ 16进制发送 □ 发送新行	0% 【火爆全网】]	E点原子DS100	手持示波器」	上市
🔅 🗸 www.openedv.com S:59 R:29 CTS=	=0 DSR=0 DCD=0 当	前时间 17:30	49	:

4.2.6. MQTT client mode

The serial server supports the fast access standard MQTT3.1 protocol server (OneNET, Baidu Cloud, Huawei Cloud, user-built and other server types) and Alibaba Cloud server, supports the quality of service level configuration (Qos 0, Qos 1), supports the ultra-long text configuration, and facilitates better access to network service operators (server address, three elements, subscription and publishing address support the configuration of up to 128 characters).



【注】根据平台配置的规则引擎进行数据转发,此处以回传为例说明

1. Standard MQTT3.1.1

Here, the standard MQTT3.1.1 connection takes Tencent's standard MQTT3.1.1 server as an example. The "three elements" described in the standard can be obtained from Tencent server as shown in the following figure:

Client ID	ELD0ERCUKDDEV01 复制	
MQTT Username	ELD0ERCUKDDEV01;12010126;ED6M4;1677376303 复制	
MQTT Password	b7	269899;hmacsha256 复制

Parameter configuration (upper computer and web page) is described as follows:

IP									
	模式 动态	\$	~		客户端	✓ 模块MA	C 84-C2-E4-36-05-3A	۱.	
设行	备IP 192	2.168.3.7		设备端口 0		网页访问端口	80		
		5.255.255.0		网关 192.1	68.3.1		S 114.114.114.114		-
目的IP/t	或名 192	2.168.3.3				目的端口	8888		
串口设置							•		
	時率 115 止位 1	200	✓✓	数据位 8 流控 NONE		✓ 校验(~
MQTT功能	and the second second		●]	MUT		•			
		建MQTT3.1.1	~	keepAlive: 120	范围:30-1200	S			
设备 (Client	名: test	t-iot							
用户	3名:	47-0							
(Device nar	me)	34/all							
(Device sec	密码: ret) 123	456789							
Prduct	Key 123	3456							
		00000009000000944					Qos等级: 0	~	_
订阅	主题 all/(000000090000000944	411/sub				Qos等级: 0	~	5
基本参数									
		动态IP		~	SN码	S120074S			
IP地址类型	1	动态IP admin		~	SN码 网页访问端口	S120074S			\$
IP地址类型 网页登录账号	1 7			~	an a		14		
IP地址类型 网页登录账号 网关	17	admin		~]	网页访问端口	80	14		_ € €
重平型型 IP地址类型 网页登录账号 网关 本地IP地址 网络工作模式		admin 192.168.3 .1		× ×	网页访问端口 DNS	80 114.114.114.1	14		
IP地址类型 网页登录账号 网关 本地IP地址		admin 192.168.3 .1 192.168.3 .7		~	网页访问端口 DMS 本地端口	80 114, 114, 114, 1 0	14		
IP地址类型 网页登录账号 网关 本地IP地址 网络工作模式		admin 192.168.3 .1 192.168.3 .1 MQTT 客户端 192.168.3.3		~	网页访问端口 DMS 本地端口 子网掩码	80 114, 114, 114, 1 0 255, 255, 255, 0	14		
IP地址类型 网页登录账号 网关 本地IP地址 网络工作模式 目标IP/域名	ţ	admin 192.168.3 .1 192.168.3 .1 MQTT 客户端 192.168.3.3	7	~	网页访问端口 DMS 本地端口 子网掩码	80 114, 114, 114, 1 0 255, 255, 255, 0	14		
IP地址类型 网页登录账号 网关 本地IP地址 网络工作模式 目标IP/域名 MQTT参数	ţ	admin 192.168.3 .1 192.168.3 .1 192.168.3 .1 MQTT 客户端 192.168.3.3	7	 	网页访问端口 DNS 本地端口 子网掩码 目标端口	80 114, 114, 114, 1 0 255, 255, 255, 0 8888	14		\$ \$
1P地址类型 网页登录账号 网关 本地IP地址 网络工作模式 目标IP/域名 MQTT参数 平台选择	ţ	admin 192.168.3 .1 192.168.3 .1 MQTT 客户端 192.168.3.3 参数 标准 MQTT 3.	7	 	网页访问端口 DNS 本地端口 子网掩码 目标端口	80 114, 114, 114, 1 0 255, 255, 255, 0 8888	14		_ € _ €
IP地址类型 网页登录账号 网关 本地IP地址 网络工作模式 目标IP/域名 MQTT参数 平台选择 ClientID UserName	ţ	admin 192.168.3 .1 192.168.3 .1 192.168.3 .1 192.168.3.3 参数 标准 MQTT 3. test-iot	7	× ×	网页访问端口 DNS 本地端口 子网掩码 目标端口	80 114, 114, 114, 1 0 255, 255, 255, 0 8888	14		\$ \$
IP地址类型 网页登录账号 网关 本地IP地址 网络工作模式 目标IP/域名 MQTT参数 平台选择 ClientID UserName	ţ	admin 192.168.3 .1 192.168.3 .1 192.168.3 .3 加QTT 客户端 192.168.3.3 参数 标准 MQTT 3. test-iot 1234/all	7		网页访问端口 DNS 本地端口 子网掩码 目标端口	80 114, 114, 114, 1 0 255, 255, 255, 0 8888	14		\$ \$
IP地址类型 网页登录账号 网关 本地IP地址 网络工作模式 目标IP/域名 MQTT参数 平台选择 ClientID	ţ	admin 192.168.3 .1 192.168.3 .1 192.168.3 .3 MQTT 客户端 192.168.3.3 参数 标准 MQTT 3. test-iot 1234/all 123456789	1.1	~	网页访问端口 DNS 本地端口 子网掩码 目标端口	80 114, 114, 114, 1 0 255, 255, 255, 0 8888	14 14 Qos等级		_ € _ €

Configure the corresponding subscription publishing address, and use the platform online debugging to send data for communication test:

	权限列表 仅在开发调试阶段使	用此功能,若设备	设备影子 記正式投入使用,	设备模拟器	会影响您的正	常业务			
下发消息									
在线状态	在线					实时日志			
Topic *	ELD0ERCUKD/E	DEV01/SUB		¥		类型	时间	内容	
	topic不能为空					云端下发消息	2021-10-21 16:22:26	EBYTE_MQTT_TESE	
QoS *	00 01					📛 XCOM V2.6			- 0 :
消息内容★	EBYTE_MQTT_	TESE				[2021-10-21 16:22:26.8 RX: EBYTE_MQTT_TESE	366]		串口选择 COM8:USB-SERIAL CH340 波特率 115200
						单条发送 多条发送 十	办议传输 帮助		/#.L/-
	消息内容不能为空,	长度不大于16K	В						↑ 发送 ↓ 清除发送
发送消	息					□ 定时发送 周期: □ 16进制发送 □ 发送		打开文f	牛 发送文件 停止发送 网】正点原子DS100手持示波器」

2. Alibaba Cloud

Support the use of Alibaba Cloud's "three elements" to directly connect to the server and obtain the "three elements" required to connect to Alibaba Cloud, as shown in the figure:

- DEV	04 在线					-		
× GG	EBYTE 查看					De	eviceSecret	******** 查看
roductKey	a1GIhuTU1y	N 复制						
设备信息	Topic 列表	物模型数据	设备影子	文件管理	日志服务	在线调试	分组	

Configure Topic for communication test:

物联网平台 / 设	备管理 / 产品 /	产品详情	0				
← EBYT	E						
ProductKey 设备数	a1GlhuTU1yN 🖠 4 前往管理	夏制		0		ProductSecret	******** 查看
产品信息	Topic 类列表	功能定义	数据解析	服务端订阅	设备开发		
基础通信 Top	ic 物物型通信	Topic 自	定义 Topic			3	
定义 Topic 类							
自定义 Topic					操作权限	Ī	迷
/a1GlhuTU1yN/	{deviceName}/user/	1234			发布和订阅		

Select the corresponding product, select the customized topic under the topic class list (see Alibaba Cloud Document Description for details), click to define the topic class, configure the name 1234, and grant publish and subscribe permissions (for data retrieval).

Configure the device connection parameters, as shown in the following figure:

{

"ProductKey": "a1GlhuTU1yN",

"DeviceName": "DEV04",

"DeviceSecret": "xxxxxxxxxxxxxxxxxxxxxxxxxxx

}

Alibaba Cloud server address: ProductKey. iot-as-mqtt.cn-shanghai. aliyuncs. com: 1883 Topic of subscription and publication:/a1GlhuTU1yN/DEV04/user/1234

网络设置						
IP模式 动态	<u>\$</u>	工作模式MC	TT客户端	✓ 模块MAG	84-C2-E4-36-0	5-3A
设备IP 192		设备端口 0		网页访问端口	1	
子网掩码 255		网关 192	2.168.3.1		5 114.114.114.11	4
CHILDREN CO.	ilhuTU1yN.iot-as-mqtt.cn-shangh	ai.aliyuncs.com		目的端口	1883	
串口设置 波特率 1152	200 🗸	数据位 8		✓ 校验(
停止位 1	×	流控	NE	 ✓ ✓ 		
MQTT功能设置						
平台选则: 阿里		keepAlive: 120	范围:30-1200) s		
设备名: (Client ID)	/04					
用户名: (Device name)	/04]		
密码:	3b1xxxxxxxxxxxxxxxxxxxxxxxxb954f75					
(Device secret)		2				
	BihuTU1yN/DEV04/user/1234				Qos等级: 0	~
订阅主题 /a10	GlhuTU1yN/DEV04/user/1234]	Qos等级: 0	~
IP地址类型	动态IP	~	SN码	S120074S		
IP地址类型	动态IP	~	SN码	S120074S		
网页登录账号	admin		网页访问端口	80		•
网关	192.168.3 .1		DNS	114.114.114.	114	
本地IP地址	192.168.3 .7		本地端口	0		•
网络工作模式	MQTT 客户端	~	子网掩码	255. 255. 255.	0	
目标IP/域名	t.cn-shanghai.a	liyuncs.com	目标端口	1883		•
MQTT参数 H	HTTP参数					
平台选择	阿里云	~	心跳包周期	120秒		•
	test-iot					
DeviceName	DEV04					
DeviceSecret	cfdf3b1xxxxxxx	xxxxxxxxxfb	954f75			
PrductKey	a1GlhuTU1yN					
订阅主题	/a1GIhuTU1yN/DE	W04/user/123	34		Qos等级	0 ~
发布主题	/a1GIhuTU1yN/DE	W04/user/123	34		Qos等级	0 ~

Alibaba Cloud MQTT platform communication test:

TCOM V2.6	TV	
[2021-10-22 09:11:09,498] TX: EBYTE_ALIYUNN_MQT7 [2021-10-22 09:11:09.669] RX: EBYTE_ALIYUNN_MQTT	RX	

3. Baidu Cloud

Support the use of Baidu Cloud's "three elements" to directly connect to the server and obtain the "three elements" needed to connect to Baidu Cloud, as shown in the figure:

				0	◎ 全局	
				88	く 返回设备列表	
				*	设备信息 设备影子 模	約设备
		EB < EBYTE举例		\$ \$	基础信息	
百度智能云	◎ 全局	> 名称: EBYTEM# 2回 描述: ☑	N 🖸	ß	名称: 描述:	Dome - 🖂
88 83	实例列表	· 09953 •	+ ##22#			
产品服务 >	+ 创建IoT Core	 ○ ○	设备名称	认证方式	▲ 连接席息 3 4 连接所	所需的"三要素"
 20 物联网核心资件 ▲ 2009時 首者包 	8%/D EEVTE®# 1 amkinjs 1 社入对应的实	- 機板	∞∞ 2 世入对应的设		loTCoreld: DeviceKey: DeviceSecret: 級時調問证:	amkinjs ① DOME ① ····································
< EBYTE举例 名称: EBYTE举例	3		创建时间: 2021-07-20 13:13:02			接入痘: amkinjs.iot.gz.baidubce.com
描述: 🖂						
设备管理 ^	+ *****			服条器他址	端口使用1883	请能入名称
	设备名称	认证方式 描述		创建时间		操作
- 横板	DOME	密明认证		2021-07-20 13:13:55		859

Configure the device connection parameters, as shown in the following figure:

IP模式	动态	~	工作模式	MQTT客户端	~	模块MAC	84-C2-E4-36-05-3	3A
设备IP	192.168.3.7		设备端口	0		网页访问端口	1 80	
子网掩码	255.255.255.0		网关	192.168.3.1		首选DNS	114.114.114.114	
目的IP/域名	id.iot.gz.baidubce.com					目的端口	1883	
口设置								
波特率	115200	~	数据位	8	~	校验位		
停止位	1	~	流控	NONE	~			
QTT功能设置								
平台选则:	百度云	V	keepAlive:	120 范围:	30-1200 s			
设备名: (Client ID)	DeviceKey							
用户名: (Device name)	IoTCoreld/DeviceKey							
密码: (Device secret)								
PrductKey	a1GlhuTU1yN							
发布主题	\$iot/{deviceName}/events						Qos等级: 0	~
订阅主题	\$iot/{deviceName}/msg						Qos等级: 0	~

网络参数	串口参数 高级参数 Modbus	;参数		
基本参数				
IP地址类型	动态IP	SN码	S120074S	
网页登录账号	admin	网页访问端口	80	\$
网关	192.168.3 .1	DNS	114. 114. 114. 114	
本地IP地址	192.168.3 .7	本地端口	0	
网络工作模式	MQTT 客户端	子网掩码	255. 255. 255. 0	
目标IP/域名	id.iot.gz.baidubce.com	目标端口	1883	\$
MQTT参数	HTTP参数			
平台选择	百度云	心跳包周期	120秒	•
ClientID	DeviceKey			
UserName	loTCoreld/DeviceKey			
Password	DeviceSecret			
	123456			
订阅主题	<pre>\$iot/{deviceName}/events</pre>		Qos等级	0 ~

Subscription and publishing require the establishment of a rule engine to achieve data retrieval. First, a message template needs to be established, as shown in the following figure:

$\hat{\mathbf{O}}$	◎ 全局	ę
		添加模板 ×
88	く EBYTE举例	2 配置模板名称
>	名称: EBYTE举例 🛛	* 模板名称: TEST ?
認	描述: 🛛	
¢		
٢	设备管理 ^ 十 添加模板 🔍 🕫	点击添加模板
æ	• 设备列表 模板名称/ID	主题
	• 模板 TEST	\$iot/(deviceName)/events
	• 应用权限 t85m0rw2	\$iot/(deviceName)/msg

Create a rule engine for data retrieval, as shown in the following figure:

▶ ② 全局	数据输入 2 配置设备	备的发布地址为数据来源
吕 < EBYTE举例	*数据来源: Slot/DOME/events	topic機板
> 名称: EBYTE举例 ☑ 描述: ☑		
◎ ② ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎ ◎	↓数据目的地入规则名称"back"	
● 设备列表		配置设备订阅地址为数据目的地
- 橫板 □ back - 应用权限 8ezj9b16djdwkse30hpgzdqaq2p03	进型 bn6	值 IoT Core: amkinjs
规则引擎 •	MQTT主题	101 Core, amkings 主题: Siot/DOME/msg Qos: 1
• 规则列表		

Enable the rule engine, restart the device (re-subscribe and publish), and the communication test is as follows:

Ж ХСОМ V2.6	
[2021-10-22 09:56:25.191] TX: EBYTE_BAIDU_MQTT [2021-10-22 09:56:25.369], RX: EBYTE_BAIDU_MQTT	RX

4. OneNET

Support the use of OneNET "three elements" to directly connect to the server and obtain the "three elements" required to connect to OneNET, as shown in the figure:

\odot	COOneNET MC	QTT物联网套件			O COOneNET	MQTT物IK网套件	l i	l l
ŵ i	△品概況	产品概况》			📅 ABAR	设备列表 2		
	段藝列表				= 12471#	设备数量(个) 💿 在日	和设备数(个)	
	DECENT	EBYTE举例		产品ロ	N 550.005	1	0	
	的合化理	其它 编辑 详情			© ADHEITON	设备列表 数3	次列表	
	10095198		当前在线设备		omeran 🖸	在核状态(全部) 、	设备名称 ~ (1965)/1010	Q 搜索
	的 一	e e e e e e e e e e e e e e e e e e e	0	1		设备10 设备名称	0	设备状态
	应用管理	设备接入总数(台)	今日新增设备	数384元总数 (条)	<u>三</u> 日本教授	749264669 DOME		RIE
	日志查询	1	0	0		共1項		-< 1

Configure the device connection parameters, as shown in the following figure:

网络设置					
IP模式	动态 🗸	工作模式MQT	「客户端	· 模块MAC	84-C2-E4-36-05-3A
设备IP	192.168.3.7	设备端口 0		网页访问端口	80
	255.255.255.0	网关 192.1	68.3.1		114.114.114
	mqtt.heclouds.com			目的端口	6002
串口设置 波特率	115200	数据位 8		校验位	NONE
停止位		流控 NON	E V	-	NONE
MQTT功能设置				-	
	OneNET T	keepAlive: 120	范围:30-1200	S	
设备名: (Client ID)	Device ID				
用户名: (Device name)					
索石.					
(Device secret)	Device name/user password]	
发布主题	a1GlhuTU1yN				Qos等级: 0 ✔
订阅主题					Qos等级: 0 V Qos等级: 0 V
网络参数	串口参数 高级参	数 Modbus;	sti -		
基本参数		6			
IP地址类型	动态IP	~	SN码	S120074S	
网页登录账·	号 admin		网页访问端口	80	•
网关	192.168.3 .1		DNS	114, 114, 114,	114
本地IP地址	192.168.3 .7		本地端口	0	
网络工作模	式 MQTT 客户端	~	子网掩码	255, 255, 255,	0
目标IP/域名	<u>a</u> mqtt.heclouds.c	om	目标端口	6002	
MQTT参数	HTTP参数				
平台选择	OneNET	~	心跳包周期	120秒	•
ClientID	Device ID				
UserName	Product ID				
Password	Device name/use	r password			
	123456				
订阅主题	testsub				Qos等级 0 ~
发布主题	testsub				Qos等级 0 V

Server address: 183.230.40.39:6002

Device name: fill in the device ID of OneNET;

User name: fill in the product ID of OneNET;

Password: fill in the device name (MQTTS) and the user-defined key (MQTT for multi-protocol access);

OneNET supports automatic generation of topics with subscription and publication attributes. Only the same address of subscription and publication is needed to realize data transmission. Communication test: ((())) EBYTE Chengdu Ebyte Electronic Technology Co., Ltd. NT1/NT1-B User Manual XCOM V2.6 MQTT物联网套件 **CO**OneNET $\widehat{}$ 产品概况 设备列表 - 设备详情 [DOME]? [2021-09-13 13:37:46.651] TX: EBYTE-OneNET-TEST 设备列表 在线记录 设备详情 数据流展示 [2021-09-13 13:37:47.081] RX: EBYTE-OneNET-TEST 数据流模板 发送 收到服务器返回 编辑 DOME 消息代理

4.3. Serial port parameters

Serial port parameters include baud rate, data bit, check bit and stop bit.

Baud rate: serial communication rate, 1200, 2400, 4800, 9600, 14400, 19200, 38400, 57600,

115200, 230400bps can be configured.

Data bit: length of data bit, range 5, 6, 7, 8.

Check bit: the check bit of data communication. It supports five verification methods: None,

Odd, Even, Mark and Space. By setting the serial port parameters, keeping the serial port parameters consistent with the serial port parameters of the equipment connected to the serial port, the normal operation of the communication can be guaranteed.

Stop bit: range 1 and 2 can be set.

Flow control: only NS1 and NT1 can be used.

网络参数	串口参数	高级参数 Modbus		:参数		
串口设置						
波特率	115200		\sim	数据位	8	~
校验位	NONE		~	停止位	1	~
流控	NONE		\sim			

4.4. Advanced parameters

4.4.1. Disconnection and reconnection function

In the client mode, after the device is disconnected from the network, it tries to actively connect to the server at the specified time. If the request times out and the set number of reconnections has

not been successfully reconnected, the device will restart to prevent the network from being unable to recover after the device is disconnected.

Disconnection and reconnection time: the time interval between each attempt of the device to reestablish the network.

Reconnect times: the number of times the device attempts to reestablish the network. The cumulative number of requests reaches the preset value. If the connection is not successful, the device will automatically restart.

The actual time to restart is the period of disconnection and reconnection times. It is recommended to use the factory default parameters if there is no special requirement.

4.4.2. Timeout restart function

The timeout restart function (default: 300 seconds) is supported. This function is mainly used to ensure the long-term stable operation of the equipment. If data transmission and reception are not performed within the set timeout restart time, the equipment will restart to avoid the impact of abnormal conditions on communication.

When the timeout restart function is turned on, the timeout restart time setting parameter range is (60-65535) seconds.

4.4.3. Short connection function

In the client mode, the network short connection is supported (the function is turned off by default). TCP short connection is mainly used to save server resource costs, and is generally used in multi-point (multi-client) to one-point (server) scenarios.

The TCP short connection function is applied in the TCP Client mode. After the short connection function is enabled, the device will only request to connect with the server when sending information. After the connection is successful, the serial port does not receive data or the network port does not receive data within the set time, and the device will automatically disconnect.

When the short connection function is turned on, the short connection time setting parameter range is (2-255) seconds.

4.4.4. Connection emptying cache function

The device is in the client mode. When the TCP connection is not established, the data received by the serial port will be placed in the cache area. The serial port receive cache is 1024 bytes, and the

data received earlier will be overwritten by more than 1024 bytes. After the network connection is successful, you can choose to clear the serial port cache or send the cache through the network through configuration.

Enable: The device does not save the data received by the serial port before the connection is established.

Disable: After the connection is established, the network will receive the data cached by the serial port.

4.4.5. Heartbeat packet function

In the client mode, users can choose to send heartbeat packets and customize the heartbeat packet time. The heartbeat packet can be selected from two modes: network heartbeat packet and serial heartbeat packet. It supports sending in hexadecimal and ASCII code. This heartbeat packet is not MQTT heartbeat. It needs to be turned off in MQTT client mode. MQTT heartbeat only needs to be configured in "MQTT mode". It is recommended not to configure the heartbeat packet cycle time less than 60s. For example, 120s is recommended in Alibaba Cloud manual.

Heartbeat packet sending mode:

(1) The default is to turn off heartbeat packet mode.

(2) Serial heartbeat packet ->The device sends heartbeat content to the serial bus according to the set heartbeat interval.

(3) Network interface heartbeat packet ->The device sends heartbeat content to the network interface bus according to the set heartbeat time interval.

Custom heartbeat packet content (up to 40 bytes (ASCII) data, 20 bytes (HEX) data).

Customize the heartbeat packet sending interval. If the setting value is greater than zero, the heartbeat packet function will be turned on. When it is turned on, the range can be set: (1-65536) seconds, and when it is turned off, it is 0.

4.4.6. Registration package function

In the client mode, users can choose to send the registration package, customize the time of the registration package, and customize the content of the registration package (up to 40 bytes (ASCII) data, 20 bytes (HEX) data).

The registration package supports the following modes:

- (1) Send MAC address when the network establishes a connection with the device
- (2) Send the data of the custom registration package when the network establishes a

connection with the device

(3) After the connection between the network and the device is established, each packet of

data sent by the device to the network is preceded by a MAC address

After the connection between the network and the device is established, each packet of data sent by the device to the network is preceded by the user-defined registration packet data

4.5. Modbus gateway

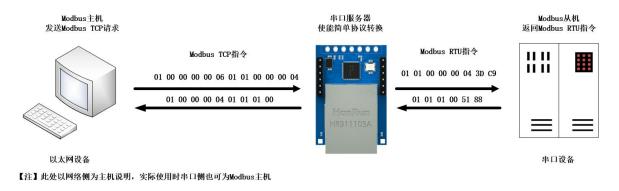
4.5.1. Simple protocol conversion mode

Modbus 参数	目口参数 高级参数 Modbus参数			
MODBUS网关	简单协议转化	~	TCP转RTU 开启	~
指令超时时间	1000毫秒	\$	指令存储时间 10秒	14
轮询间隔时间	500毫秒	\$		
预配置指令列表 , , , , ,				添加 删除
1 01, 03, 00, 0				

On: the Modbus RTU protocol and Modbus TCP protocol are converted to each other, and non-Modbus data (RTU/TCP) is discarded without conversion.

Off: Modbus data is verified without protocol conversion, and non-Modbus data (RTU/TCP) is discarded.

Simple protocol conversion can work in any mode (TCP client, TCP server, UDP client, UDP server, MQTT client, HTTP client). No matter what mode it works in, there can only be one Modbus master station.



Upper computer/web page configuration:

(((*))) EBYTE Chengdu Ebyte Electronic Technology Co., Ltd.

网络参数 F 基本参数	串口参数 高级参数 Modbus参	5 X 2						
IP地址类型	静态IP		~	SN码	Sxxxxxx	(X		
网页登录账号	admin		网页	页访问端口	80			*
网关	192.168.4 .1			DNS	192.168.	4.1		
本地IP地址	192.168.4 .164		2	本地端口	8886			\$
网络工作模式	TCP 服务端			子网掩码	255. 255.	255.0		
网络参数	串口参数 高级参数 Modbus参	未迷行						
串口设置		> XX						
波特率	115200		~	数据位	8			~
校验位	NONE			停止位	1			~
流控	NONE		~	11 11 12				
	串口参数 高级参数 Modbus参	参数						
Modbus 参数 - MODBUS网关	简单协议转化		~ т	CP转RTU	开启			~
modbusmy 天 指令超时时间				令存储时间				\$
轮询间隔时间			÷ 18	之小于唯心问	1049			.
预配置指令列制								
网络设置								
	試 静态 ~		TCP服务	器	~	模块MAC	84-C2-E4-36-0)5-E7
设备	IP 192.168.4.164	设备端口	8886			网页访问端口	80	
子网报	8码 255.255.255.0	网关	192.168.4	l.1		首选DNS	192.168.4.1	
SV20465 A 11	招 192.168.3.3					目的端口	8888	
口设置			-					
	▶ 115200 ~	数据位			~	校验位	NONE	
		流控	NONE		~			
		Modi	bus 指令面	記置参数			×	添加 清空
MODB 网关格	US	MODBUS 轮询间隔时间	500			剩余可配置指令	49	
Modk	ous 1000 前前范围:0-65535ms	和 Modbus 指令存储时间	10			01 03 00 00 00 0	AX	
音令格式:"XX	XX XX XX XX XX"; 6进制数,XX与"XX"之间加入一个		78回.0-2					

Modbus Poll and Modbus Slave software debugging: Software connection settings:

	< 🗂 県 畠 几 05 06 15 16 17 22 23 TC Connection Setup	원 🖻 왕 🥅 ×	D 📽 🖬 🎒 🛅 💆	Connection Setup	
= 1296: Err connection	Connection Modbus TCP/IP Serial Settings USB-SERIAL CH340 (COM4) 115200 Baud 8 Data bits None Parity 1 Stop Bit Advanced	OK Cancel Mode © RTU O ASCII Response Timeout 1000 [ms] Delay Between Polls 20 [ms]	No connection 1 2 3 4 5 6 7	Connection Serial Port USB-SERIAL CH340 (COM11) I15200 Baud ® RTU Q ASCII Row Control None Parity I Sop Bit I final RTS disable delay	
lelp, press F	Remote Modbus Server IP Address or Node Name 192.168.4.164 Server Port Connect Timeout 8886 3000 [ms]	 ✓ ✓	8	TCP/IP Server IP Address 192.168.3.3 Any Address Ignore Unit ID IPv6	Port 8886

Software register reading and simulation configuration:

Poll n	nenu,	select	\rightarrow	Setupl	Read	l/W	rite	Dei	finition	L
--------	-------	--------	---------------	--------	------	-----	------	-----	----------	---

Read/Write	Definition				×
Slave ID:	1			[ОК
Function:	03 Read H	Iolding Reg	isters (4x)	~	Cancel
Address:	0	PLC add	dress = 4000	1	
Quantity:	5		Poll		
Scan Rate:	1000	[ms]	FUI		Apply
	Vrite Disable on error	ed		Read	/Write Once
View Rows 10	O 20 (50 0	100 O Fit t	o Quant	ity
Hide Al	lias C <mark>o</mark> lumns is in Cell	i.	PLC Addr Enron/Da		
Request					
RTU 0	1 03 00 00	00 05 85	09		
ASCII 3	A 30 31 30	33 30 30	30 30 30 30 3	30 35 46	5 37 0D 0A

Select SetupSlave Definition from the \rightarrow Slave menu

Slave Definition		
Slave ID: 1		ОК
Function: 03 Holding Register (4	łx) ∨	Cancel
Address mode		
Address: 0 PLC addr	ess = 40001	
Quantity: 5		
View Rows 10 20 50 1	00 O Fit to Q	uantity
Hide Name Columns	PLC Addresse	es (Base 1)
Error Simulation		
Skip response	Insert CRC/ (Not when	LRC error using TCP/IP)
0 [ms] Response Delay	Return exce	eption 06, Busy

Communication demonstration:

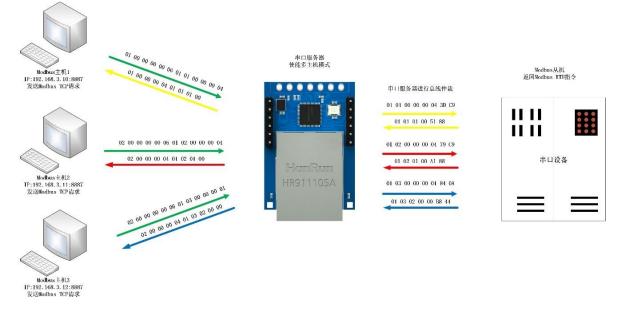
웹 Modbus Poll - Mbpoll1						- 🗆 X
File Edit Connection Setup Functions Dis	nlay View Window	v. Holp				H (3)
			Ø N2			
	15 16 17 22 23	ι n n l ∎ l	8 77			
💬 Mbpoll1 🗖 🔍 🖾	Communication	Traffic				×
Tx = 368; Err = 0; ID = 1; F = 03; SR = 10						
	Exit	Continue	Clear	Save	Copy Log	Stop on Error Time stamp
Alias 00000 ^	Rx:000113-01	7E 00 00	00 0D 01 0	03 0A 00 01	00 02 00 03 00 04 00	05
0 1	Tx:000114-01	7F 00 00	00 06 01 0	03 00 00 00	05	
1 2					00 02 00 03 00 04 00	05
2 3	Tx:000116-01					0.5
	Tx:000118-01				00 02 00 03 00 04 00	05
3 4					00 02 00 03 00 04 00	0.05
	Tx:000120-01					
	Rx:000121-01	82 00 00	00 0D 01 0	03 0A 00 01	00 02 00 03 00 04 00	05
	Tx:000122-01	83 00 00	00 06 01 0	03 00 00 00	05	
					00 02 00 03 00 04 00	05
	Tx:000124-01					
	Rx:000125-01 Tx:000126-01				00 02 00 03 00 04 00	0.05
					00 02 00 03 00 04 00	0.05
24						1000 COLOR
Modbus Slave - Mbslave1						- 🗆 X
File Edit Connection Setup Display View	/ Window Help					
□ ☞ 🖬 🚳 🗂 🖳 🏛 🤋 🕺	Communicatio	n Traffic				×
Mbslave1			in the second			
ID = 1: F = 03	Exit C	ontinue	Clear	Save Cop	y Log Time stam	p
10 1.1 00	Tx:000091-01	03 0A 00	01 00 02	00 03 00 04	4 00 05 CF 24	^
Name 00000 ^	Rx:000092-01	03 00 00	00 05 85	C9		
	Tx:000093-01	03 0A 00	01 00 02	00 03 00 04	4 00 05 CF 24	
0 1	Rx:000094-01					
	Tx:000095-01	03 0A 00	01 00 02		4 00 05 CF 24	
1 2						
2 3	Rx:000096-01				4 00 05 CF 24	
	Tx:000097-01	03 0A 00	01 00 02	00 03 00 04	4 00 05 CF 24	
2 3 3 4	Tx:000097-01 Rx:000098-01	03 0A 00 03 00 00	01 00 02 00 05 85	00 03 00 04 C9	4 00 05 CF 24 4 00 05 CF 24	
2 3	Tx:000097-01 Rx:000098-01	03 0A 00 03 00 00 03 0A 00	01 00 02 00 05 85 01 00 02	00 03 00 04 C9 00 03 00 04		
2 3 3 4 4 5	Tx:000097-01 Rx:000098-01 Tx:000099-01 Rx:000100-01 Tx:000101-01	03 0A 00 03 00 00 03 0A 00 03 00 00 03 0A 00	01 00 02 00 05 85 01 00 02 00 05 85 01 00 02	00 03 00 04 C9 00 03 00 04 C9 00 03 00 04		
2 3 3 4 4 5	Tx:000097-01 Rx:000098-01 Tx:000099-01 Rx:000100-01 Tx:000101-01 Rx:000102-01	03 0A 00 03 00 00 03 0A 00 03 00 00 03 0A 00 03 0A 00 03 00 00	01 00 02 00 05 85 01 00 02 00 05 85 01 00 02 00 05 85	00 03 00 04 C9 00 03 00 04 C9 00 03 00 04 C9	4 00 05 CF 24	

4.5.2. Multi-host mode

The multi-host mode can handle up to 6 Modbus TCP hosts. When multiple Modbus hosts

access the Modbus gateway at the same time, the bus occupation scheduling will be carried out (RS-485 bus can only process one request at a time, while the multi-host mode will sort and process according to the TCP request sequence, and other links will wait), so as to solve the bus conflict problem (currently only supports 6-host connection), and only supports working in the TCP server mode, The slave can only be on the serial port, otherwise it cannot work normally.

It is recommended to configure it as "simple protocol conversion" when there is no multi-channel host.



【注】此处以三路主机为例实际使用时最多可以连接6路主机

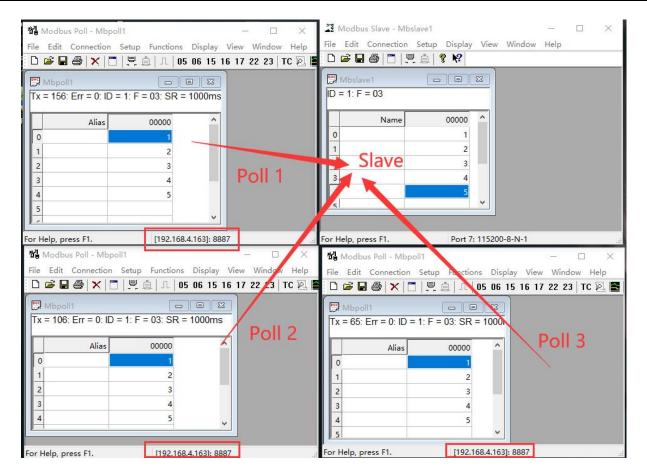
Upper computer/web page configuration:

基本参数					
IP地址类型	静态IP	~	SN码	Sxxxxxxx	
网页登录账号	admin		网页访问端口	80	ß
网关	192.168.4 .1		DNS	192.168.4 .1	
本地IP地址 192.168.4 .163			本地端口	8887	
网络工作模式	TCP 服务端	~	子网掩码	255. 255. 255. 0	
网络参数	串口参数 高级参数 Modbus参数				
串口设置					
波特率	115200	×	数据位	8	~
校验位	NONE	~	停止位	1	~
流控	NONE	~			

网络参数 串口	1参数 高级参数 Mode	us参数						
Modbus 参数								
MODBUS网关	多主机模式			✓ TCP转RTU	开启			~
指令超时时间 1	000毫秒			指令存储时间	10秒			
轮询间隔时间	00毫秒			\$				
预配置指令列表								
, , , ,							添加	删除
1 01,03,00,00,0	00, 0A							
网络设置								
IP模式	む 静态	~	工作模式	TCP服务器	~	模块MAC	84-C2-E4-36-05-E	7
设备	P 192.168.4.163		设备端口	8887		网页访问端口	80	
子网掩码	255.255.255.0		网关	192.168.4.1		首选DNS	192.168.4.1	
目的IP/域名	1 92.168.3.3					目的端口	8888	
串口设置								
波特率	☑ 115200	~	数据位	8	~	校验位	NONE	~
停止伯	Ż ∫1	~	流控	NONE	~			
MODBUS网关	 中 功 能							
MODBU TCP转RTI	S J 打开	~	Mode	ous 指令配置参数			添加	清空
MODBU 网关模式		~	MODBUS 轮询间隔时间	500 范围:0-65535ms		剩余可配置指令 01 03 00 00 00 0/	49 A X	
Modbu 指令超时时间	s 1000 夏范围:0-65535ms		Modbus 指令存储时间				•	
	X XX XX XX XX"; 进制数,XX与"XX"之间加入· 督令	一个空格						

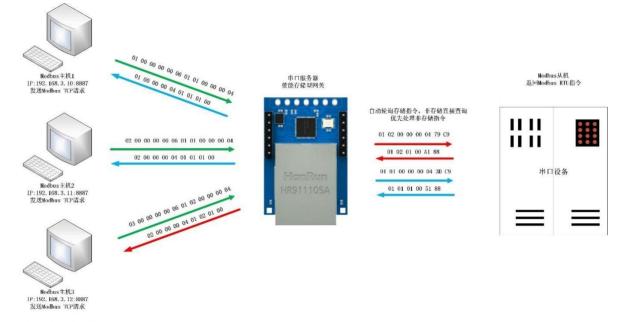
Modbus Poll and Modbus Slave software debugging:

Refer to "Simple Protocol Conversion" for software configuration and register configuration. Start multiple Modbus Poll software at the same time (for example, 3 channels can be supported up to 6 channels).



4.5.3. Storage gateway

The storage gateway not only arbitrates the bus data, but also stores the repeated read instructions. When different hosts request the same data, the gateway does not need to query the register status of RTU device many times, but directly returns the cached data in the storage area, which greatly improves the multi-host request processing capability of the gateway, and also reduces the time consumed by the entire request process. Users can customize the instruction polling interval and instruction storage time of the storage area according to their needs.



【注】此处以三路主机为例实际使用时最多可以连接6路主机

As the optimization of multi-host request performance, the storage gateway can only work in the TCP server mode, which improves the response speed on the network side.

characteristic:

- (1) The gateway has a 5K cache for storing instructions and returned results (taking reading 10 holding registers as an example, 189 instructions and returned results can be stored);
- (2) RTU response timeout automatically clears the cache to ensure the real-time and authenticity of data;
- (3) The polling interval can be customized, 0-65535ms;
- (4) The gateway will poll the RTU device according to the instruction storage time used for configuration. If the MODBUS host does not query the instruction again during the storage time, the gateway will automatically delete the storage instruction and release the cache;
- (5) The first command and control command (05, 06, 0F, 10 function code) will directly access RTU equipment;
- (6) Only 01, 02, 03 and 04 Modbus function code query results can be stored;

Storage gateway host computer and web page configuration:

网络参数	串口参数 高级参数 Modbus参数				
基本参数					
IP地址类型	静态IP	~	SN码	Sxxxxxxx	
网页登录账号	admin		网页访问端口	80	•
网关	192.168.4 .1		DNS	192.168.4 .1	
本地IP地址	192.168.4 .163		本地端口	8887	•
网络工作模式	TCP 服务端	~	子网掩码	255. 255. 255. 0	

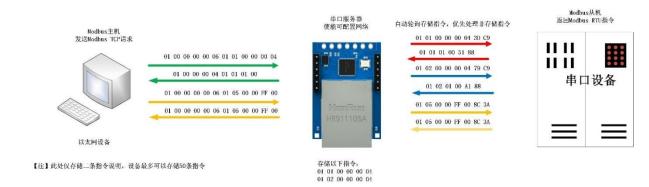
(((•)))						
EBYTE	Chengdu	Ebyte	Electronic	Technology	Со.,	Ltd.

网络参数	串口参数	高级参数	Modbus参数				
串口设置							
波特率	115200			~	数据位	8	~
校验位	NONE			~	停止位	1	~
流控	NONE			~			

网络参数 串口	参数 高级参数	Modbus参数					
Modbus 参数							
MODBUS网关 有	F储型网关			✓ TCP转RTU	开启		~
指令超时时间 10	000毫秒			指令存储时间	10秒		\$
轮询间隔时间 50	00毫秒			•			
预配置指令列表							
							添加 删除
1 01, 03, 00, 00, 0	0, 0A						
网络设置 IP模式		~	工作描式	TCP服务器	~	横地MAC	84-C2-E4-36-05-E7
	192.168.4.163		设备端口			网页访问端口	
	255.255.255.0		网关	192.168.4.1		百选DNS	192.168.4.1
目的IP/域名	192.168.3.3					目的端口	8888
串口设置							
波特率	115200	~	数据位	8	~	校验位	NONE 🗸
停止位	1	~	流控	NONE	~		
MODBUS网关	功能						
MODBUS TCP转RTU	打开	~	Modb	ous 指令配置参数			添加清空
MODBUS 网关模式	存储型网关	~	MODBUS 轮询间隔时间	⁵⁰⁰ 范围:0-65535ms		剩余可配置指令 01 03 00 00 00 0.	49 A X
Modbus 指令超时时间	1000 范围:0-65535ms		Modbus 指令存储时间				
指令格式:"XX XX 其中:"XX":2位16进 最多可配置50条指	制数,XX与"XX"之间,	加入一个空格					

4.5.4. Configurable gateway

The gateway automatically polls the RTU device register according to the preconfigured MODBUS instruction (only supports the configuration of MODBUS read instruction), and the instruction in the non-storage table will directly operate the RTU device. The frequently read instructions can be stored in the gateway in advance to shorten the response time (query the configured instructions). Because of the above characteristics, the serial port side of the configurable gateway can only connect to the Modbus slave station.



Instruction storage description (add, instruction error and format error cannot be added):

	可配置网关		 TCP转RTU 	开启	
指令超时时间	1000毫秒		指令存储时间	10秒	
轮询间隔时间	500毫秒		€		
预配置指令列制	ŧ /				
01, 03, 00, 00,	00, 02				添加
1 01, 03, 00, 0					
2 01,03,00,0	0, 00, 02				
-					
	刚关功能				
MODE TCP转F	BUS 打开	~ Modbu	指令配置参数		01 03 00 00 00 01 / 添加 清
MODE 网关标	す。 可配置网关	MODBUS 50 × 轮询间隔时间 范			剩余可配置指令 49
	bus 1000	Modbus 10			01 03 00 00 00 01 ×
	时间 范围:0-65535ms	指令存储时间 范			
旧今他的中	記画:U-00000ms				
	XX XX XX XX XX XX";				
音令格式: "XX 其中:"XX":2位1	XX XX XX XX XX XX"; 6进制数,XX与"XX"之间;				
音令格式: "XX 其中:"XX":2位1	XX XX XX XX XX XX"; 6进制数,XX与"XX"之间;				
會令格式:"XX 其中:"XX":2位1 多可配置50第	XX XX XX XX XX XX"; 6进制数,XX与"XX"之间, 条指令	加入一个空格			
會令格式:"XX 其中:"XX":2位1 多可配置50第	xx xx xx xx xx xx"; 6进制数,xx与"xx"之间, 条指令 orage descriptio	加入一个空格 on (delete):			
會令格式:"XX 其中:"XX":2位1 多可配置50第	xx xx xx xx xx xx"; 6进制数,xx与"xx"之间, 系指令 orage descriptio	加入一个空格			
谷格式: "XX 中:"XX":2位1 多可配置50约 uction st	XX XX XX XX XX XX"; 6进制数,XX与"XX"之间, 条指令 orage descriptio 串口参数 高级参数	加入一个空格 on (delete):			
谷令格式: "XX 中:"XX":2位1 多可配置50 uction st 网络参数	XX XX XX XX XX XX"; 6进制数,XX与"XX"之间, 条指令 orage descriptio 串口参数 高级参数	加入一个空格 on (delete):	✓ TCP转RTU	开启	
 会格式: "XX 中:"XX":2位1 多可配置50第 uction st 网络参数 Modbus 参数 	XX XX XX XX XX"; (6进制数,XX与"XX"之间, 我指令 orage descriptio 串口参数 高级参数	加入一个空格 on (delete):			
令格式: "XX 中:"XX":2位 多可配置50分 uction st 网络参数 Modbus 参数 Modbus 参数	XX XX XX XX XX XX"; (6进制数,XX与"XX"之间, 兵指令 orage descriptio 串口参数 高级参数 「可配置网关 1000毫秒	加入一个空格 on (delete):	✓ TCP转RTU		
 会格式: "XX":2位1 会可配置50 uction st 网络参数 Modbus 参数 Modbus 参数 MODBUS网关 指令超时时前 	XX XX XX XX XX XX"; 6进制数,XX与"XX"之间, 条指令 orage descriptio 車口参数 高级参数 で可配置网关 可配置网关 1000毫秒	加入一个空格 on (delete):	 ✓ TCP转RTU 		2
会格式: "XX 使中:"XX":2位1 多可配置50分 のの結参数 Modbus 参数 Modbus 参数 MoDBUS网关 指令超时时间 轮询间隔时间 预配置指令列	XX XX XX XX XX XX"; 6进制数,XX与"XX"之间, 条指令 orage descriptio 串口参数 高级参数 1000毫秒 1000毫秒 1000毫秒	加入一个空格 on (delete):	 ✓ TCP转RTU 		2 添加 册
会格式: "XX 中:"XX":2位1 多可配置50分 UCTION ST 网络参数 Nodbus 参数 Nodbus 参数 NodBUS网关 指令超时时间 轮询间隔时间 预配置指令列 01,03,00,0	XX XX XX XX XX XX"; 6进制数,XX与"XX"之间, 条指令 orage descriptio 車口参数 高级参数 可配置网关 可配置网关 司 1000毫秒 う500毫秒 动表 0,00,02	加入一个空格 on (delete):	 ✓ TCP转RTU 		
合格式: "XX 其中:"XX":2位1 多可配置50分 でuction st 网络参数 Modbus 参数 Modbus 参数 MoDBUS网关 指令超时时间 轮询间隔时间 预配置指令列	XX XX XX XX XX XX"; 6进制数,XX与"XX"之间, 条指令 orage descriptio 串口参数 高级参数 「可配置网关 可配置网关 」1000毫秒 同 <u>500毫秒</u> 同表 0,00,02	加入一个空格 on (delete):	 ✓ TCP转RTU 		

MODBUS网关功能		
MODBUS TCP转RTU	Modbus 指令配置参数	01 03 00 00 00 01 添加 清空
MODBUS 网关模式	MODBUS 500 轮询间隔时间 范围:0-65535ms	剩余可配置指令 49 01 03 00 00 00 01 ×
Modbus 1000 指令超时时间 范围:0-65535ms	Modbus 10 指令存储时间 范围:0-255s	
指令格式:"XX XX XX XX XX XX"; 其中:"XX":2位16进制数,XX与"XX"之间加入一个雪 最多可配置50条指令	空格	

Upper computer/web page configuration:

网络参数 昌	日口参数 高级参数 Modbus参数	۲.					
-Modbus 参数-							
MODBUS网关	可配置网关	~	TCP转RTU	开启			~
指令超时时间	1000毫秒	\$	指令存储时间	10秒			
轮询间隔时间	500毫秒						
预配置指令列表	5						
01, 03, 00, 00,	00, 02					添加	删除
1 01, 03, 00, 0 2 01, 03, 00, 0 MODBUS	0, 00, 02						
MODB TCP转R		Modbus 指	令配置参数		01 03 00 00 00 01	添加	清空
MODB 网关模		MODBUS 500 轮询间隔时间 范围:	0-65535ms		剩余可配置指令 01 03 00 00 00 01	49 X	
	us 1000 间 范围:0-65535ms	Modbus 10 指令存储时间 范围::	0-255s				
	XX XX XX XX XX"; 进制数,XX与"XX"之间加入一个空 指令	格					

4.5.5. Automatic upload

In the client mode (TCP client, UDP client, MQTT client, HTTP client), the gateway will automatically poll the instructions in the storage instruction table and upload them to the server. The feedback format (Modbus RTU format or Modbus TCP format) and the instruction polling interval (0-65535ms) can be selected according to the demand.

Refer to "Configurable Gateway - Instruction Storage Description" for instruction pre-storage, and automatically upload the upper computer/web page configuration:

	回参数 高级参数	数 Modbus参数								
基本参数						-				
	•态IP ,,			~	SN码	Sxxxxxx	X			
	dmin			64	列页访问端口 5 Ma	80				\$
	92.168.4 .1			_	DNS 	192.168.	4.1			\$
	92.168.4 .163				本地端口 乙國	0	0FF 0			•
	CP 客户端			~	子网掩码 日标端口	255. 255.	200.0			¢
	92.168.4.100				目标端口	8886				
网络参数 串口 串口设置	参数 高级参数	数 Modbus参数								
	15200			~	数据位	8				~
校验位 N	ONE			~	停止位	1				~
	ONE			~						
预配置指令列表 ,, 1 01,03,00,00,] 添加	1	删除
▲ 络设置 IP模式	静态	~	工作模式	TCPS	白健	~	模块MAC	84-C2-E4-3	36-05-E7	
					310					
	192.168.4.163		设备端口]	网页访问端口			
	255.255.255.0]	网关	192.168	3.4.1			192.168.4.	1	
	192.168.4.100						目的端口	8886		
口设置				20			N	15		
波特率	115200	~	数据位	8		~	校验位	NONE		
停止位	1	~	流控	NONE		~				
ODBUS网关										
MODBUS TCP转RTU	关闭	~	Mode	bus 指令	配置参数		01 03 00 00 00 01		添加	清空
MODBUS 网关模式	自动上传	~	MODBUS 轮询间隔时间	范围:0-	-65535ms		剩余可配置指令 01 03 00 00 00 0	49 1 X		
	范围:0-65535n		Modbus 指令存储时间		-255s					
令格式: "XX XX 中:"XX":2位16进 多可配置50条指	制数,XX与"XX"	; '之间加入一个空相	各							

TCP client presentation (Modbus RTU format):

网络设置	数据日志	NetAssist	V5.0.2 @ 🗘 🗒 Fi	e Edit Connectio	n Setup Displa	y View Window	w Help _ a
(1)协议类型					≜ ? №		
TCP Server	[2022-01-08 13:5 192.168.4.163 :6		HEX FROM	: F = 03			
(2)本地主机地址	01 03 02 00 01 7						
192.168.4.100 💌	[2022-01-08 13:5		HEX FROM	Name	00000	Name	00010
(3)本地主机端口	192.168.4.163 :6 01 03 02 00 01 7		0		1		0
8886	01 00 02 00 01 1		1		0		0
美闭			2		0		0
			3		0		0
演 收设置			4		0		0
⊂ ASCII (• HEX			5		0		0
▶ 按日志模式显示	<		6		0		0
□ 接收区自动换行			7		0		0
□ 接收数据不显示 □ 接收保存到文件	HB.		8		0		0
自动滚屏 清除接收			9		0		0
自动波进。直然接收			<u> </u>	1		0	
发送设置							
☞ 转义符指令解析 ①			~				
「 自动发送附加位	数据发送 ◆ 6	₩开 🗸	青除 1 清除				
□ 打开文件数据源 □ 循环周期 300 ms	01234567\r\n						
循环周期 300 ms 快捷指令 历史发送			发送				
▶ 就剑 9/0		TX:0					

TCP client presentation (Modbus TCP format):

	网络调试助手	(上) (L) (L) (L) (L) (L) (L) (L) (L) (L) (L	II Modb	ous Slave - [Mbsla	ave1]		– 🗆 X
网络设置 (1)协议类型 TCP Server ▼ (2)本地主机地址	192.168.4.163 :44508	Construction of the second s		861312		ay View Windo	w Help _ &
192.168.4.100	00 00 00 00 00 00 05 01			Name	00000	Name	00010
(3)本地主机端口	192. 168. 4. 163 : 44508	Contract and and and a state of a	0		1		0
8886	00 00 00 00 00 05 01 [2022-01-08 14:04:10		1		0		0
- 美闭	192.168.4.163 :44508		2		0		0
	00 00 00 00 00 05 01	03 02 00 01	3		0		0
接收设置			4		0		0
C ASCII @ HEX			5		0	1	0
☑ 按日志模式显示 ☑ 接收区自动换行			6		0		0
F 接收数据不显示			7		0		0
□ 接收保存到文件			8		0		0
自动滚屏 清除接收			9		0		0
 发送设置 ☞ ASCII ○ HEX ☞ 转义符指令解析 ① □ 自动发送附加位 □ 打开文件数据源 □ 循环周期 ③ 300 ms 快捷指令 历史发送 	数据发送 _ ← 断开 01234567\r\n	↓ 「 清除 大 清除 大 清除 大 清除 大 清除 大 清除	٢				,
☞ 发过 76/0	RX:3532	TX:0 复位计数 //	For Help, p	oress F1.	Port 7: 1	15200-8-N-1	

4.6. Introduction to basic functions

4.6.1. Web page configuration

The device has a built-in web server, which is convenient for users to set and query parameters through web pages.

The port of the Web server can be customized (2-65535). The default is 80.

Operation mode (Microsoft Edge version 94.0.992.50 as an example, Google Kernel Browser is

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recommended, IE Kernel Browser is not supported):

• Open the browser and enter the IP address of the device in the address bar. The default is 192.168.3.7 (the IP address and the computer need to be kept in the same network segment). Forget that the local IP address can be queried through the AT command and configuration software;



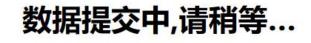


• Click Login, the default account is admin, and the default password is admin (entered, you can click Login directly);

设备信息							
设备型号		设备SN码	S120074S		Language	中文	~
固件版本	9013-2-13	登录账号	admin		登录密码	*****	
网络设置							
IP模式	静态、	✓ 工作模式	TCP服务器	~	模块MAC	84-C2-E4-36-05-3A	
设备IP	192.168.3.7	设备端口	8887		网页访问端口	80	
子网掩码	255.255.255.0	网关	192.168.3.1		首选DNS	114.114.114.114	
目的IP/域名	192.168.3.3				目的端口	8888	
口设置							
波特率	115200	数据位	8	~	校验位	NONE	、
停止位	1	/ 流控	NONE	~			
IODBUS网关	功能						
MODBUS TCP转RTU	关闭	Mode	ous 指令配置参数			添加	腔
MODBUS 网关模式	禁用	MODBUS 轮询间隔时间	500 范围:0-65535ms		剩余可配置指令 01 03 00 00 00 0/	49	
Modbus 指令超时时间	1000 范围:0-65535ms	Modbus 指令存储时间	10		01 03 00 00 00 00 0		
指令超时时间 指令格式: "XX XX	范围:0-65535ms XX XX XX XX"; 制数,XX与"XX"之间加入一	指令存储时间					

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- The main interface pops up on the webpage, where you can query and set relevant parameters;
- Click Submit to save the configuration parameters;
- The progress bar prompts the configuration progress. Do not refresh the web page again after the configuration is completed (refresh the web page and enter the configuration mode again. You can enter the communication mode by restarting the device or submitting again).



4.6.2. Restore factory settings

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IO of device_RST pin can be pulled down for 5s and then released to restore the factory configuration.

4.6.3. AT instruction configuration

The query and modification of the relevant parameters of the equipment can be completed through the AT command configuration. For specific AT instructions, please refer to "NA11x&NB114&NS1&NT1-AT Instruction Set".

4.6.4. Configuration tool software settings

Open the configuration tool software, search for the device, double-click the identified device, and the parameter query configuration interface will pop up. Relevant parameters can be customized and modified as required, and then the configuration can be saved, and the equipment can be restarted to complete the parameter modification.

[Note]:

Do not use multiple upper computers in the same LAN environment. The industrial control computer with multiple network cards should be temporarily disabled without using network cards, otherwise the upper computer will be abnormal (the same device will display multiple times, and the device cannot be found)

The upper computer shields the wireless network card, so the upper computer must be connected to the network cable. The wireless network card can be configured through the web page.

4.6.5. Random native port

TCP client, UDP client, HTTP client and MQTT client can configure the local port to 0 (use random local port). The server mode cannot use random port, otherwise the client cannot establish a connection correctly.

Using random port connection can quickly re-establish the connection when the device accidentally disconnects the server, to prevent the server from refusing the connection due to four incomplete waves. It is recommended to use random port in client mode.

The device will automatically enable random ports when configuring TCP client, HTTP client and MQTT client modes.

4.6.6. Remote upgrade

In order to facilitate later maintenance and upgrade functions and replace different firmware, serial servers (NA11x series, NB114, NS1, NT1, etc.) support online upgrade. Users can upgrade or replace the current firmware through the upper computer through the upgrade firmware provided by our company.

Network upgrade firmware operation steps:

Step 1: download the upper computer and "product firmware" at the corresponding location on the official website;

工具软件	
【参数配置】 亿佰特网络配置工具_以太网 🕓	
【产品固件】 🕓	
[ХСОМ工具] ХСОМ 🛂	
【网络调试助手】 🕒	
【虚拟串口】 🕒	

Step 2: Open the upper computer, click "Menu", and select "Device Upgrade Assistant";

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□ 设备升级助手 串□升级助手			📿 搜索设备
打开文件	IP	版本	MAC地址
日志:			✓ 清空日志

Step 3: In the pop-up "Device Network Upgrade Assistant" dialog box, click "Search Device" (the computer and device should be in the same network segment), and click "Stop Search" after finding the device;

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Step 4: Click "Select Firmware", select the corresponding firmware, and then click "Open";

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Step 5: Select the equipment to be upgraded, click "Upgrade", the progress bar will start to change, and wait for the upgrade to complete.

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Operating steps for serial port firmware upgrade:

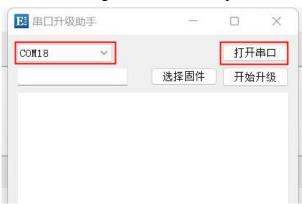
Step 1: download the upper computer and "product firmware" at the corresponding location on the official website;

工具软件	
【参数配置】 亿佰特网络配置工具_以太网 🎴	
【产品固件】 🛃	
【ХСОМ工具】 ХСОМ 🚺	
【网络调试助手】 🕒	
【虚拟串口】 💽	

Step 2: Open the upper computer, click "Menu", and select "Serial port upgrade assistant";

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设备升级助手 Ⅰ_升级助手			📿 搜索设备
打开文件	IP	版本	MAC地址
			✓ 清空日志
志:			◎ / 有工口志

Step 3: First connect the USB port of the computer, select the corresponding port number in the pop-up "Serial Port Upgrade Assistant" dialog box, and click "Open Serial Port";



Step 4: Click "Select Firmware", select the corresponding firmware, and then click "Open";

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Step 5: Click "Start upgrading", the progress bar will start to change, and wait for the upgrade to complete.

[Note] Power on again to trigger the upgrade.

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usart->TX:1	.06		
usart->TX:1	.07		
usart->TX:1	.08		
usart->TX:1	.09		
usart->TX:1	.10		100

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Revision History

edition	Revision date	Revision description	Maintainer
1.0	2021-06-28	Initial version	LC
1.3	2021-10-22	Product upgrade and	
1. 0	2021-10-22	content revision	LC
1.4	0001 10 00	Adapt "9013-2-10"	
1.4	2021-10-22	firmware	LC
1.5	2022-07-29	Change manual layout	LC
1.0	0000 10 00	Match "9013-2-13"	
1.6	2022-12-28	firmware	LL

About us

