ZLAN5142 User Manual

Modbus TCP & Modbus RTU (RS845/232) Converter

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Version Information

The History of the revision to this document:

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Date	Version	Document ID	Revising content
2012-12-29	Rev.1	ZL DUI 20121229.1.0	First release

Copyright information

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1. Summary

ZLAN5142 is a Modbus TCP to Modbus RTU (RS485/232) converter. It can convert Modbus TCP data from Ethernet to Modbus RTU (RS485/232) and vice versa. It provides an easy way to access your Modbus RTU device through Modbus TCP, with no need to change your hardware or software. ZLAN5142's firmware support full Modbus TCP and Modbus RTU protocol. It maps all current serial Modbus commands and registers to Ethernet Modbus TCP commands and register.

ZLAN5142 also support Ethernet to serial transparent data converting, like normal Serial Server Device. It can conveniently let your legend serial device connect to Ethernet and Internet, and upgrade the serial device with networking. It support virtual serial driver, and user's previous PC software using serial to communicating need not change.

Please refer to following part 2.2 of this document to find how to switch between Modbus TCP function and normal serial server function.

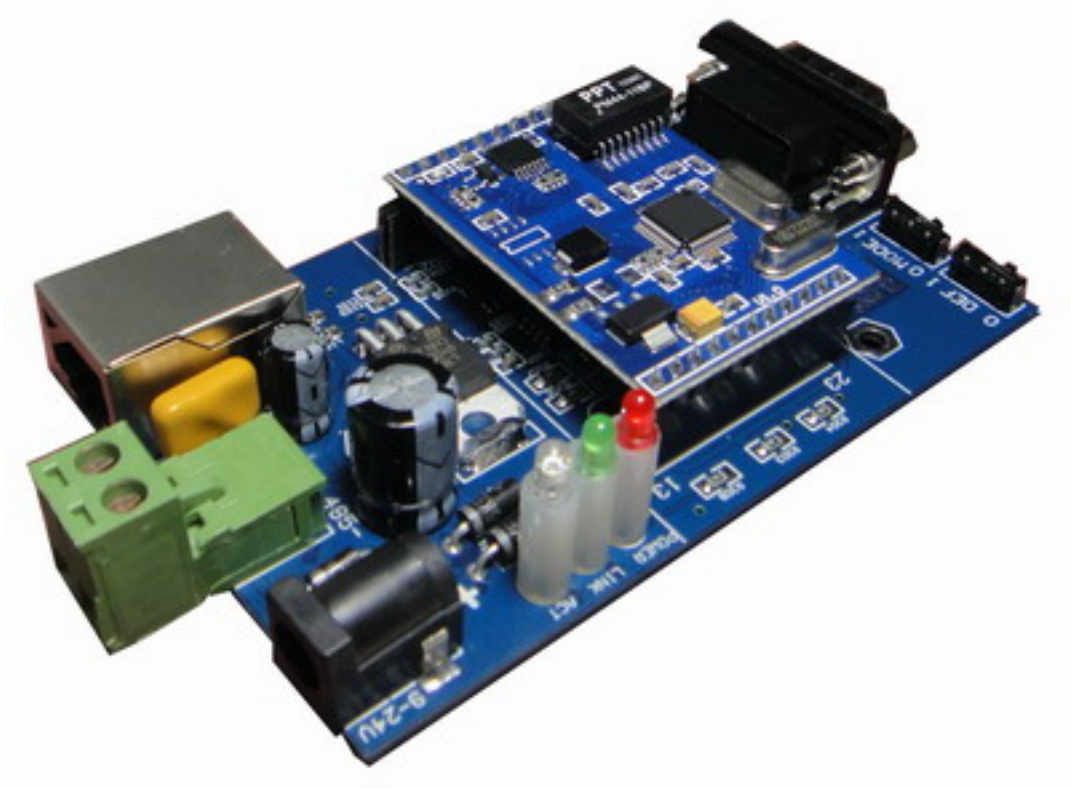


Figure 1 ZLAN5142 converter

It can be applied to:

- building/e-guard system/security system;
- bank/medical automation system;
- dealing in securities system;
- industry automation system;
- Point of Sells (POS) system;
- Information Appliance.

The typical application is slowed in Figure 2. The serial device is connected to ZLAN5142 serial port, and then connects ZLAN5142 to Ethernet.

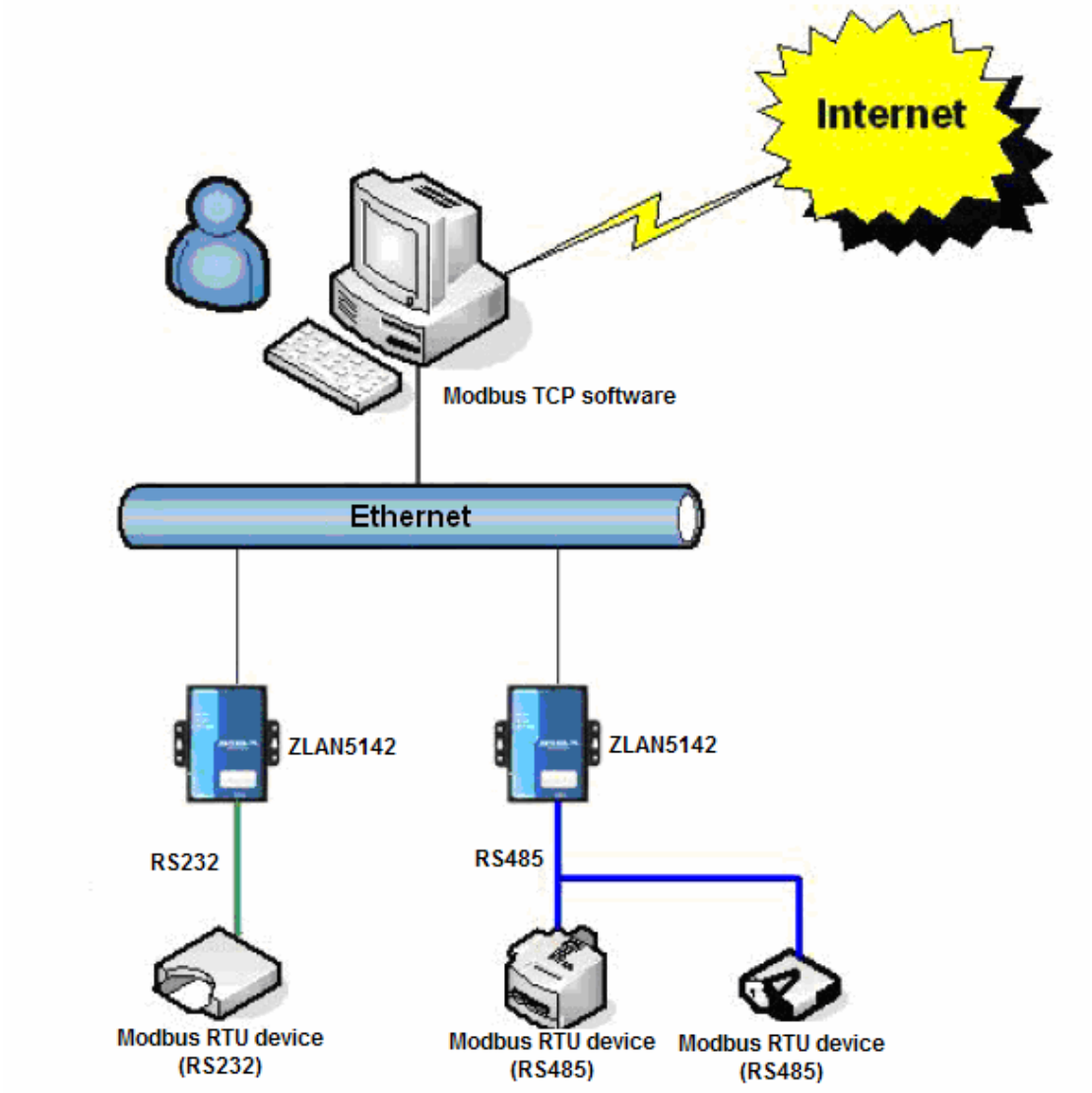


Figure 2

1.1. Feature

1. Suitable for Modbus RTU networking upgrading. It is compatible with the software of SCADA/HMI software of Beijing Sunway ForceControl Technology Co. Ltd; Also it support directly transform Modbus TCP to Modbus RTU.
2. Support full duplex, high speed converting, and no packet lost.
   ZLAN5142 is the first type of full duplex, continuous, and low cost serial server in industry. It support simultaneously converting between Ethernet &Serial with large bulk of data with no pause, and also no data is lost.
3. Hight cost performance.
   ZLAN5142 is designed by concept of intensification, after ensure the stability. It highly takes the cost of networking upgrading in count
4. Support TCP Server, TCP Client, UDP mode, and if communicating with ZLVirCom (our software), it automatically change to Real Com Driver Mode.
5. Support band rate 1200~460800bps, data size 5~8bits, parity of None, Odd, Even, Mark, Space. Support CTS/RTS hardware flow control.
6. Equipped freely with our Windows Virtual Serial & Device Management Tool ZLVirCom. It supports virtual serial and searching device or modifying parameters with ZLVircom.
7. Provide device management library (Window DLL library). It will help user to develop program with VC, VB, Delphi, C++ Builder. User need only use read() or write() function to communicate with ZLAN5142.
8. The innovative disconnecting detecting method. Whether it running in TCP Server mode or TCP Client mode, once network is disconnected by some reason, the disconnecting detecting method will detected it and reestablished the connecting.
9. With build-in Web server, its parameters can be modified by web browser.
10. Support DHCP, easy for IP management and solve IP confliction.
11. Support DNS. It fulfills the need of access data server through domain name.
12. Flexible serial data framing setting. It fulfills all kinds of serial data frame requirement.
13. UDP mode support dynamic destination address mode. It helps for multi-user

mange one serial server.

14. Real Com Driver mode support using the 9-th bit to facilitate communication with milt-device. (the 9-th bit being 0 means data frame and 1 means address frame).
15. Support searching serial servers and modifying parameters through Internet remotely
16. Support parameter modifying protection, preventing modifying by accident. Support running with default parameters.
17. Build-in 2 KV electrical plus protection in RJ45.
18. High protection of electromagnetic interference, with its high electromagnetic interference protection SECC external shell.

1.2. Technical Parameters

Figure			
Interface:	Serial:DB9 Male for RS232, 2 PIN terminal for RS485; RJ45 Networking connecter; Power plug-in or terminal		
Size:	L x W x H = 9.4cm x 6.5cm x 2.5cm		
Communicate interface			
Ethernet:	10M/100M, 2KV electrical plus protection		
Serial	RS485/RS232 x 1:RXD,TXD,GND		
Serial parameters			
Band rate:	1200~460800bps	Parity:	None, Odd, Even, Mark, Space
Data size:	5~9	Flow control:	CTS/RTS,DTR/DSR,XON/XOFF
Software			
protocol:	ETHERNET, IP, TCP, UDP, HTTP, ARP, ICMP, DHCP, DNS, Modbus TCP		
Setting method :	Socket, Modbus TCP , ZLVirCom, WEB browser, device management library		
Net communication method:	Socket, Virtual serial , device management library		

Work mode	
TCP server, TCP client, UDP, Real Com Driver	
Power	
Power:	9~24V DC.
Environment	
Running temperature:	-40~85℃
Storage temp:	-40~120℃
Humidity:	5~95%RH

1.3. Hardware description

The top view of ZLAN5142 is show in Figure 3.

Panel:

1. ACT: the ACT light indicates if there is data transform between serial and Ethernet.
2. LINK: LINK light indicates if Ethernet line is plug in.
3. POWER. power on.

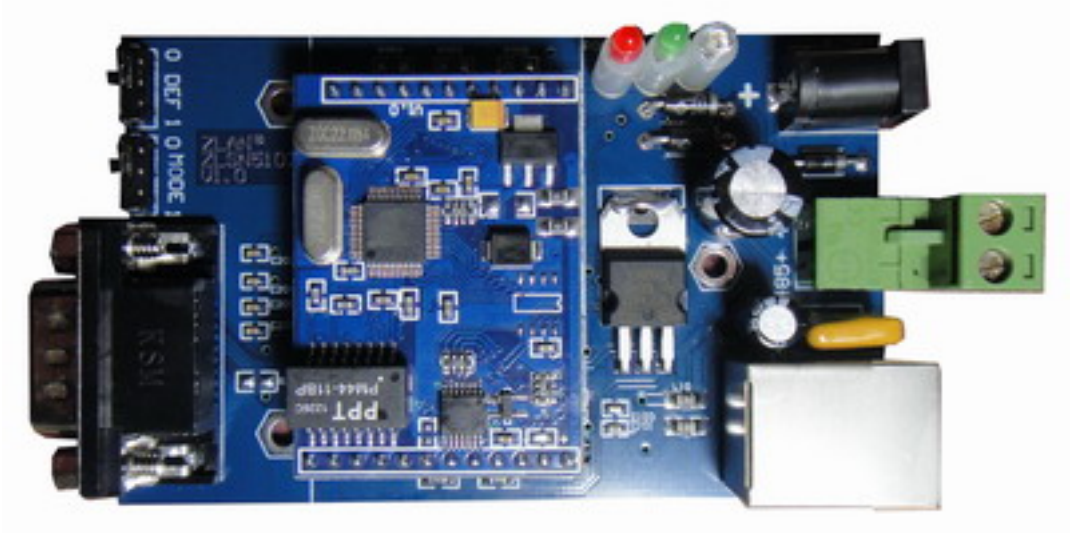


Figure 3

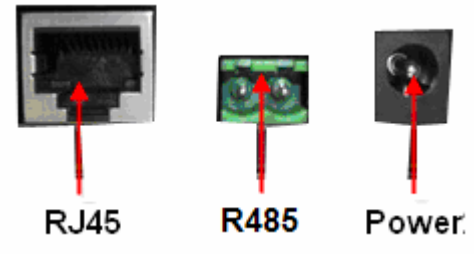


Figure 4

The front view is show in Figure 4.

1. RS845 is used to connect user RS485 device.
2. Power is a standard power plug-in (inner pin is positive).
3. RJ45 networking interface.

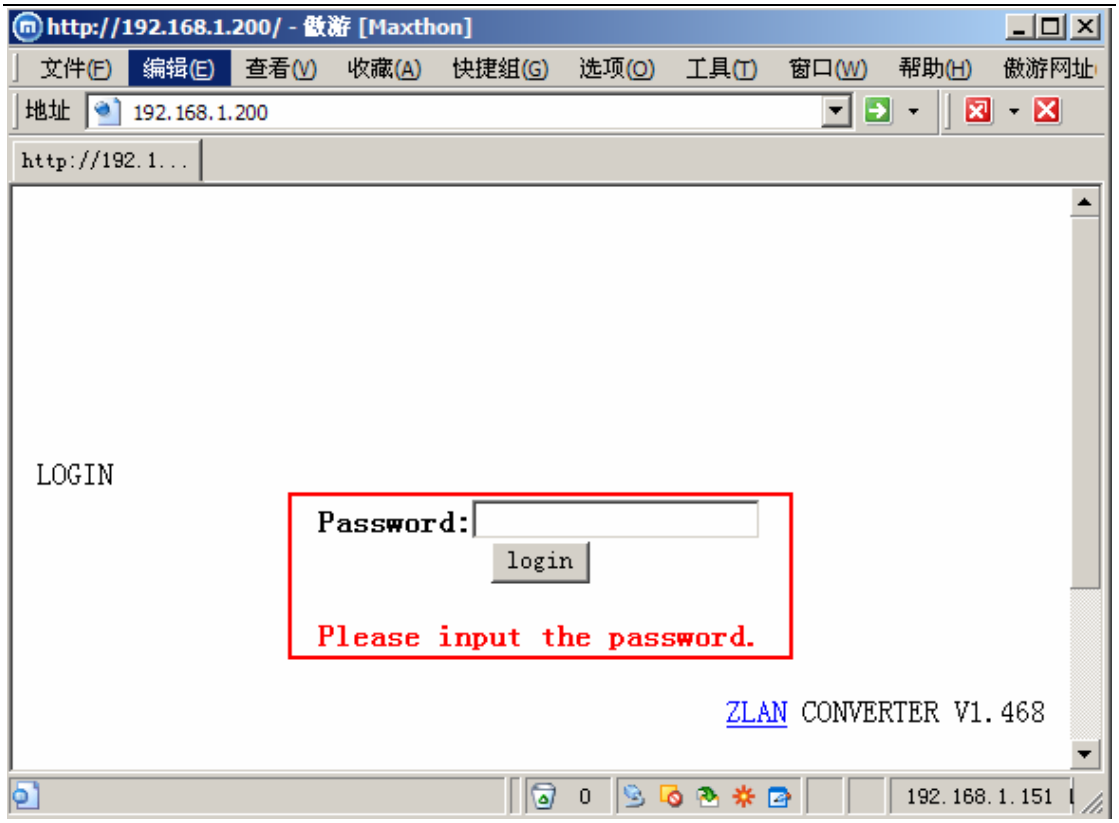
The back:

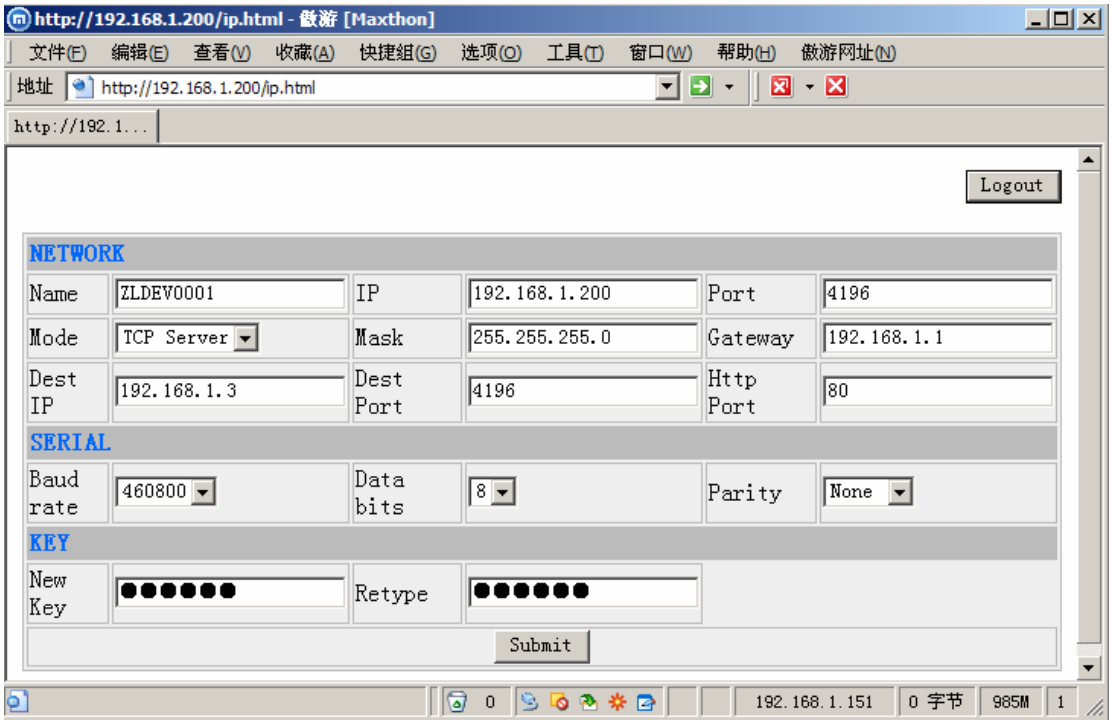
2. DEF switch: When DEF is push to 1, serial server will start with default parameter (default IP is 192.168.1.254)
3. RS232 port. DB9 mail interface.

4. Config

4.1. web configuration

Input the IP of ZLAN5142 in the web browser and open the login web. Input the password of 123456 and login. Then you open a configuration web and you can change IP, baud rate and so on.

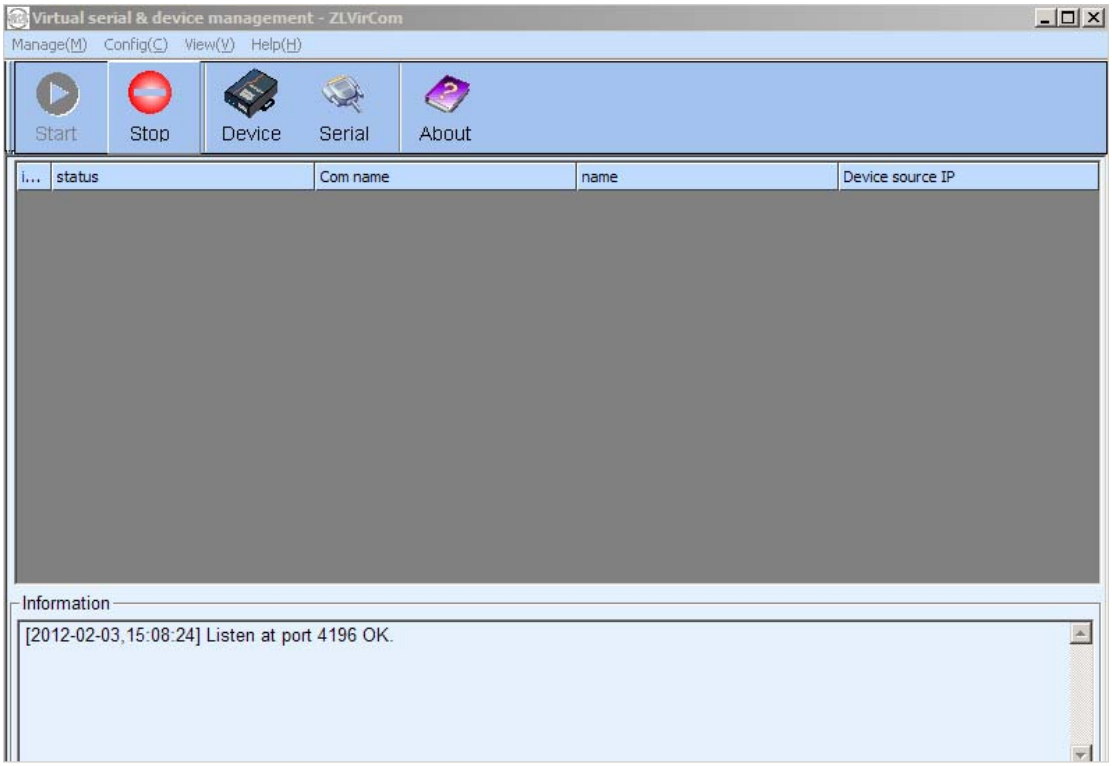

http://192.168.1.200/ - 傲游 [Maxthon]
文件(F) 编辑(E) 查看(V) 收藏(A) 快捷组(G) 选项(O) 工具(T) 窗口(W) 帮助(H) 傲游网址
地址 192.168.1.200
http://192.1...
LOGIN
Password:
login
Please input the password.
ZLAN CONVERTER V1.468
192.168.1.151

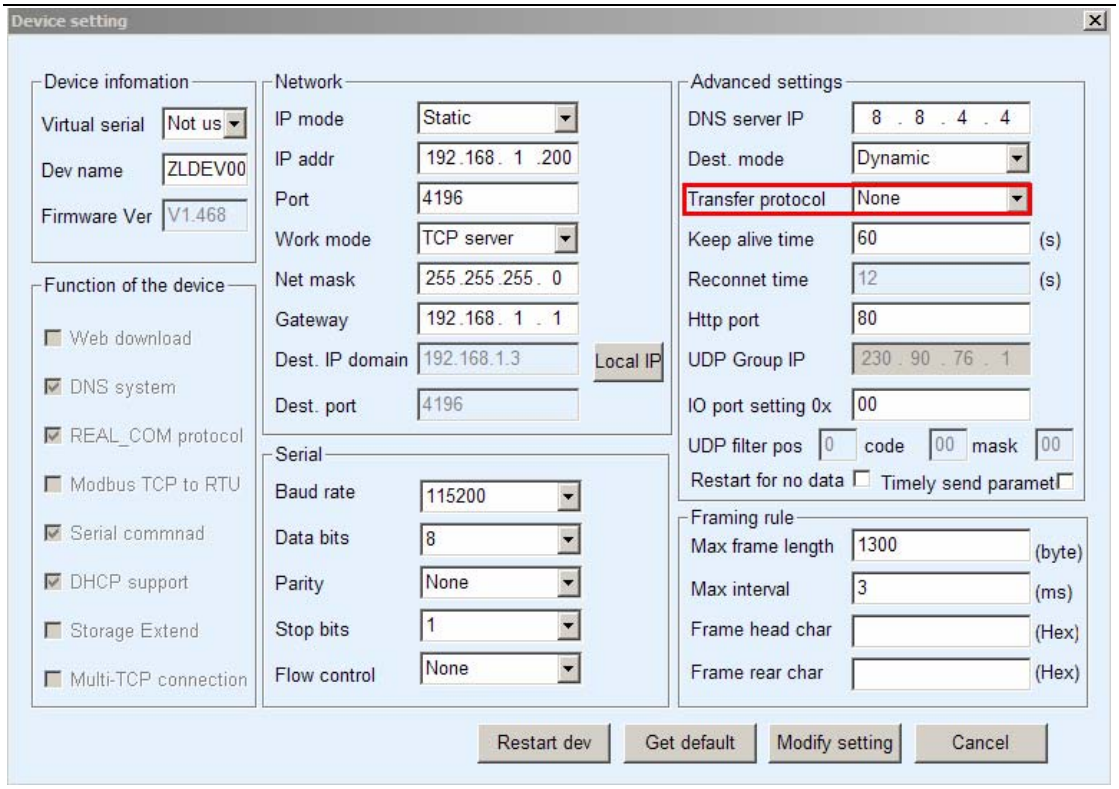

http://192.168.1.200/ip.html - 傲游 [Maxthon]
文件(F) 编辑(E) 查看(V) 收藏(A) 快捷组(G) 选项(O) 工具(T) 窗口(W) 帮助(H) 傲游网址(N)
地址 http://192.168.1.200/ip.html
http://192.1...
Logout
NETWORK
Name ZLDEV0001
IP 192.168.1.200
Port 4196
Mode TCP Server
Mask 255.255.255.0
Gateway 192.168.1.1
Dest IP 192.168.1.3
Dest Port 4196
Http Port 80
SERIAL
Baud rate 460800
Data bits 8
Parity None
KEY
New Key
Retype
Submit
192.168.1.151
0 字节
985M

4.2. windows tool config

Please run the English version of zlvircom software. Then press Device button. In the next press search button and find the device then press Edit button to edit this device.

In order to switch between Modbus TCP function and normal Serial Server function, please select the following “Transfer protocol” between “None” and “Modbus TCP”.





5. Support

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