ZLAN5G00A

User Manual

Rack 16 Ports Serial Device Server

16 Channels RS232/485/422 to TCP/IP Converter

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Version Information

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History

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2015-6-25	Rev.1	ZL DUI 20150625.1.0	Release
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Copyright information

Content

1. Summary

ZLAN5G00A Serial Device Server is a rack-mounted 16-port protocol converter between RS232/4485/422 and TCP/IP developed by Shanghai ZLAN. ZLAN5G00A support 16 channels RS232 serial port, 16 channels RS485 serial port, 16 channels RS422 serial port, and RS232 support flow control. The 16 channels can achieve to full-duplex work at the same time after connecting to ZLAN5G00A via a network cable, and the function of each serial port is same as single serial port server ZLAN2100/3100. Each channel serial port can be TCP client, UDP client, UDP-UDP multicast. ZLAN5G00A is the ideal choice for multi-serial port connecting to internet.

The ZLAN5G40A is a 16-port Modbus gateway with Modbus TCP to Modbus RTU function. As a Modbus gateway, each TCP port of the serial port can be configured as port 502, without modifying the existing Modbus host software port.

ZLAN5G00A-8, ZLAN5G40A-8 is rack 8-port serial device server, the same shape as ZLAN5G00A.

ZLAN can provide shells in both white and black colors.

Figure 1 ZLAN5G00A

2. Features:

1) All 16 channels support the three kind serial port RS232, RS485, RS422 (needs jumper setting), the serial port is in type of RJ45. RS232 support hardware flow control. When using RS232, can provide patch cord accessories for RJ45 to DB9 (male).

2) All 16 channels can full-duplex work independently and no-interference each other. Can be configured different baud rate.

3) Support network switch function of 4 Ethernet port, and can be used as switch meanwhile.

4) Abundant signal light, each serial port has independent indicator light for TCP connection and data activity.

5) Support power supply through cable----POE power supply (customization)

6) 220V AC power supply.

7) 19-inch standard 1U rack structure design, convenient installation. With rack installation accessories.

8) Patent products of Shanghai ZLAN with leading technology. Patent No. ZL 2014 2 0108890.3.

3. Technical Parameters

Figure	
Interface:	24 RJ45: 4 Ethernet port, 16 Serial ports, 4 for reservation.
Power Supply:	220V AC, 10W
Size:	19-inch standard size: L x W x H = 48cm×18cm×4.4cm
Communicate Interface	
Ethernet:	4 10M/100M, switch structure, connect anyone can work
Serial	16 serial ports, each include: RS485/RS232/RS422 (RS422 needs jumper setting)

Serial Parameters	
Baud rate:	1200~460800bps
Data size:	5～9
Software	
Protocol:	ETHERNET, IP, TCP, UDP, HTTP, ARP, ICMP, DHCP, DNS
Setting method :	ZLVirCom, WEB browser, device management library
Network communication method:	Socket, Virtual serial , device management library
Work Mode	
TCP server, TCP client, UDP, Real Com Driver	
Environment	
Running temperature:	Industrial Grade
Storage temp:	-65~165℃
Humidity:	5~95%RH

4. Hardware

4.1 Size and Structure

The front view of ZLAN5G00A is shown as FIG. 2.

Figure 2 ZLAN5G00A Front View

The size is standard 19 inches 1U chassis of L x W x H = 48cm × 18cm × 4.5cm. Power supply: 220V AC power supply, equipped with power line. There is a grounding point (left side of the power supply) in the shell, and it is not necessary to connect the ground wire if the ground wire of the power supply line is connected.

Figure 3 ZLAN5G00A Back Diagram

4.2 Indicator

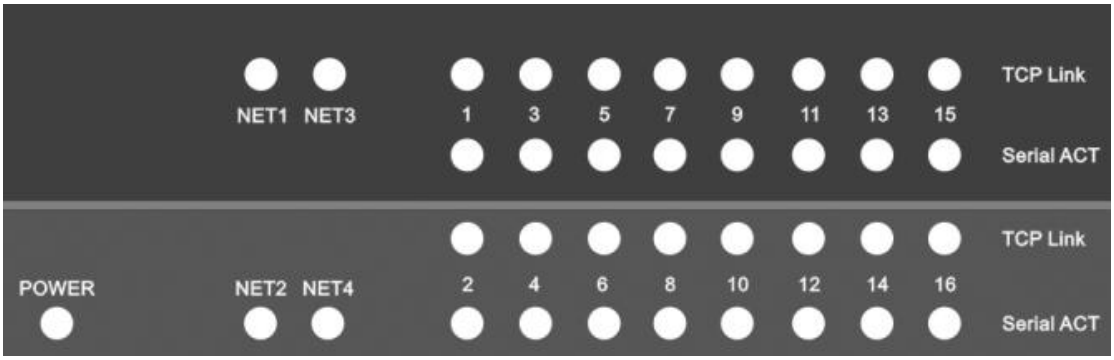

Figure 3 ZLAN5G00A Indicator

LED Light	**Function**	**Color**
POWER	Power Supply	RED
NET1～NET4	Network cable connection indicator, respectively corresponding to RJ45 network port of NET1 ~ NET4	ORANGE
1～16 TCP Link(the first and third row)	Respectively corresponding to the TCP connection establishment indicator of 1 to 16 serial ports. Only TCP connection established it can send and receive data.	GREEN
1～16 Serial ACT(the second and fourth row)	Respectively corresponding to the data transceiver indicator of 1 ~ 16 serial ports.	GREEN

4.3 Ethernet port

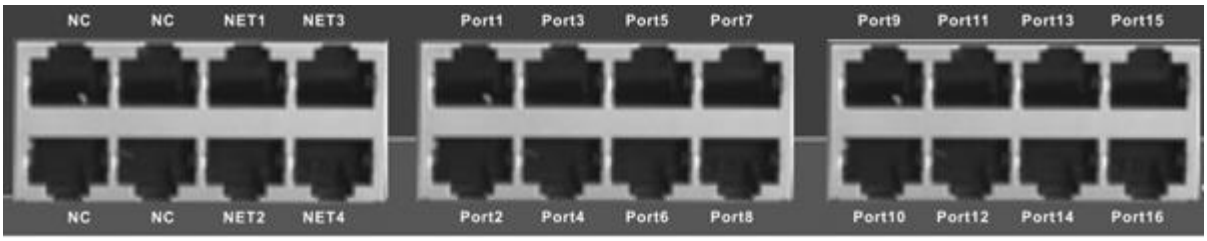

Figure 4 ZLAN5G00A Ethernet Ports and Serial Ports

RJ45 Interface	**Function**
NC	Reserved RJ45 interface, do not connect
NET1～NET4	the 4 Ethernet ports of switch function
Port1～Port16	1~16 serial ports, serial line sequence of lead corresponding refer to the follow-up section of this article

Users can connect ZLAN5G00A to the switch, the hub or directly connected to the computer network card through the NET1~NET4 Ethernet ports. Can also be used for ZLAN5G00A cascade, extended to 32, 64 serial server.

The ZLAN5G00A can support POE power supply via jumper adjustable, that is, by supplying power through two lines of pins 4,5 (GND) and pins 7, 8 (VCC) of the normal RJ45 port, the supply voltage is 5V, the default POE function is not turned on.

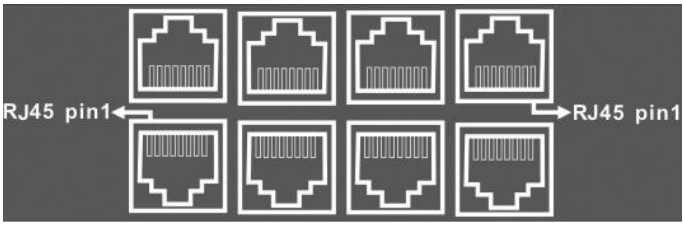

Figure 5 Network Cable Line Sequence

4.4 Serial port Line Sequence

RJ45 PIN	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Name	RTS	RXD	TXD	CTS(422-)	GND	485+	485-	422+

1) When as RS232, the needed pin are as below:

RJ45 PIN	Name	Instruction	The line sequence of corresponding RJ45 to DB9 accessories
2	RXD	The receiving pins of serial device server	2
3	TXD	The sending pins of serial device server	3
5	GND	Grounding	5
1	RTS	After the flow control is enabled, when the pin is 0, the serial device server can accept the data of the serial device.	6, 8
4	CTS	After the flow control is enabled, when the pin is 0, the serial device server can send the data of the serial device.	4, 7

Users can make their own crystal head to connect the RS232 device, or equipped with ZLAN RJ45 to DB9 line (male), the corresponding line sequence refer to the above table. The equipped DB9 line can be directly connected to RS232 DB9 female device.

2) When used as RS485, only need to connect pin6 (485A) and pin7 (485B). It is recommended that the user make the crystal head by own and connect it to the RS458 device via Category 5 shielded cable.

3) When used as RS422, you need to jumper inside the device, change the pin4 from flow control CTS of the RS232 to receive R- of RS422 to. Please contact ZLAN engineers for specific practices.

Item	422 line of ZLAN5G00A	The corresponding connection line to User RS422
6	T/R+（485A）	R+
7	T/R-（485B）	R-

8	R+	T+
4	R-	T-

ZLAN5G00A meet the RS485 standard, each ZLAN5G00A can be with 32 terminal 485 devices. The maximum communication distance is 1200 meter, the resistance of 485 terminal is 120 ohms, usually must use terminal resistance when wiring over 300m. Pay attention to the wiring, 485+ and 485- must be a twisted-pair, in order to reduce signal interference.

5. Usage

First install ZLAN ZLVircom, the software in the user CD. ZLVircom is responsible for configuring the virtual serial port and the device through the Ethernet port.

Put ZLAN5G00A power on, use network cable to connect any Ethernet port of ZLAN5G00A. At this point using “Device Manage” of ZLVircom software you can see interface as shown in Figure 6.

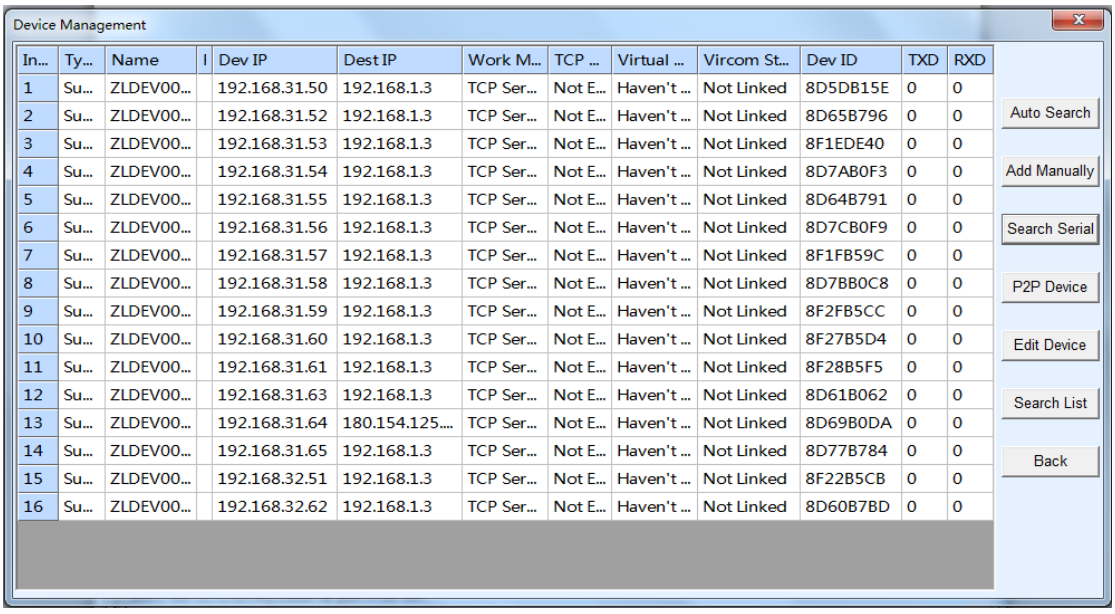

Figure 6 ZLAN5G00A searched by ZLVircom

The 16 lines here correspond to the 16 serial ports inside ZLAN5G00A, the factory IP address of the serial port 1 to serial port 16 of ZLAN5G00A correspond to 192.168.1.201 ~

192.168.1.216. Users can modify the IP when using, but it is recommended not to modify the device name, because the name is used to identify the serial number.

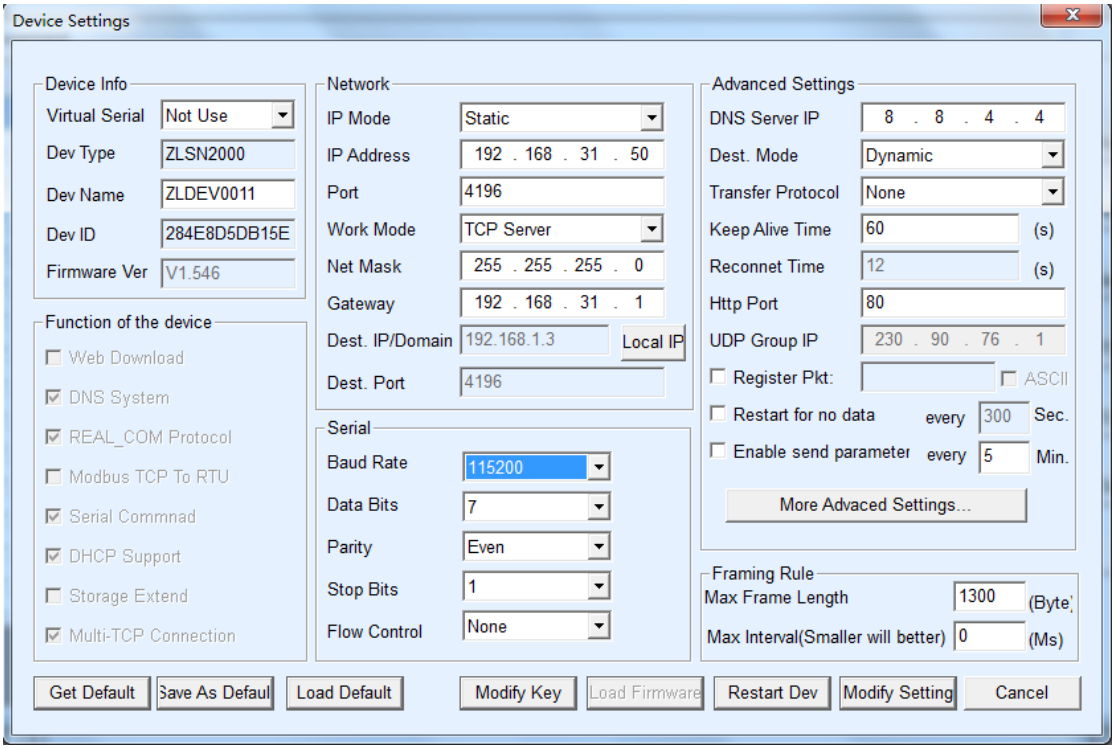

Figure 7 Configuration of each Port

Clicking any line can do separate configuration for one channel serial port, as shown in Figure 7. The usage of single serial port and the meaning of each parameter please refer to file <User Guide of Networking Products>.

6. Models

The below models can all choose color white or black.

Model	**Instruction**
ZLAN5G00A	16 Channels Serial Port Server
ZLAN5G40A	16 Channels Modbus TCP to RTU Converter
ZLAN5G00A-8	8 Channels Serial Port Server
ZLAN5G40A-8	8 Channels Modbus TCP to RTU Converter
RJ45 to DB9 cable accessory	RJ45 to DB9 cable (male)

7. Package

Figure 8 ZLAN5G00A Package

8. Support

Shanghai ZLAN Information Technology Co., Ltd.

Address: 12 floor, D building, No. 80 CaoBao road, Xuhui District, Shanghai, China

Phone: 021-64325189

Fax: 021-64325200

Web: http://www.zlmcu.com

Email: support@zlmcu.com