CANSwitch-AN2S2 User Manual

High-Performance Dual-CAN to Ethernet Switch

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Category	Contents			
Keywords	Dual CAN Dual Ethernet Switch High Performance			
	The CANSwitch-AN2S2 high-performance dual-channel			
	CAN to Ethernet switch uses ZLG Electronics' advanced			
Description	CAN bus technologies and operating system technologies.			
	It has two conversion modes: Hub and Converter. It is			
	unique in ensuring data integrity and real time.			



User Manual

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Revision History

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1. Functions

1.1 Overview

The CANSwitch-AN2S2 is a high-performance industrial-grade Ethernet and CAN-bus data conversion device developed by Guangzhou ZLG Electronics Co., Ltd. It integrates two CAN-bus interfaces and two Ethernet interfaces, and provides a mature and stable TCP/IP protocol stack. It helps you easily interconnect CAN-bus network and Ethernet network, further expanding the scope of CAN-bus network. It can also be configured in hub mode for device cascading.

The CANSwitch-AN2S2 is an industrial-grade product and works in a temperature

range of -40°C to +85°C. It has two 10M/100M/1000M adaptive Ethernet interfaces, and

the maximum baud rate of two CAN-bus interfaces is 1 Mbps. The CANSwitch-AN2S has two modes: in the hub mode, it can realize cascading and automatic networking without configuration, as shown in Figure 1.1; in the converter mode, it has TCP Server, TCP Client, UDP, and other working modes. Each CAN port supports six IP segments to set a maximum of 200 TCP or UDP connections. By using the configuration software, you can flexibly set configuration.



Figure 1.1 Typical application in Hub mode





Figure 1.2 Typical application in Converter mode

1.1.1 Powerful Hardware

- Adopt TI Cortex-A8 800MHz high-performance processor;
- 10M/100M/1000M adaptive Ethernet interface, 2 kV electromagnetic isolation;
- Two CAN ports, 2.5 kVDC withstand voltage isolation;
- CAN port baud rate 5k-1,000kbps can be set arbitrarily;
- Embedded hardware watchdog;
- The rated power supply voltage range is 9-36 V DC ;
- The limit power supply voltage range is 7.5-40 V DC ;
- Operating temperature: -40°C to +85°C;
- Humidity: 5%-95% RH, no condensation;
- Rugged metal housing, SECC metal (1.1 mm);
- Specifically designed for industrial and military environments.

1.1.2 Perfect Functions

In Hub mode:

- Cascading is supported. A maximum of 32 levels can be cascaded;
- Each CAN port can be set to a different baud rate;
- Two-way transparent transmission of CAN data and Ethernet data (for the format, see Appendix A);
- Support the acceptance and filtering of CAN ports. You can select the ID range to be received, so as to filter unwanted CAN frames;
- Each CAN port can be configured into different working modes, which can be flexibly used in various fields;
- Each CAN port opens a diagnostic port, and the host computer can obtain the error status of the corresponding CAN port by connecting this port;
- You can use the Windows platform configuration software to configure operating parameters. The parameters can be imported and exported;
- Provide Windows configuration software function library for free, including easy-to-use API function library, which helps you write configuration software;
- Support local system firmware upgrade.

In Converter mode:

- Static or dynamic IP acquisition;
- Heartbeat and timeout disconnection;
- The working port is fixed, and the destination IP address and port can be set;
- After the network is disconnected, the connection resources are automatically restored, and the TCP connection is established reliably;
- TCP supports a maximum of 200 connections, which can satisfy six groups of users and manage one CAN port;
- In UDP mode, each CAN port supports six groups of target IP segments. Multiple users can manage a CAN device at the same time;
- Supported protocols include ETHERNET, ARP, IP, ICMP, UDP, DHCP, DNS, and



TCP;

- Compatible with SOCKET working methods (TCP Server, TCP Client, UDP, etc.). The writing of the host computer communication software follows the standard SOCKET rules;
- Each CAN port can be set to a different baud rate;
- Two-way transparent transmission of CAN data and Ethernet data (for the format, see Appendix A);
- The Ethernet receive buffer is adjustable. You can choose the most suitable balance between real time and large-capacity buffering;
- Flexible CAN port data framing settings meet various subcontracting needs;
- Support the acceptance and filtering of CAN ports. You can select the ID range to be received, so as to filter unwanted CAN frames;
- Each CAN port can be configured into different working modes, which can be flexibly used in various fields;
- Each CAN port opens a diagnostic port, and the host computer can obtain the error status of the corresponding CAN port by connecting this port;
- You can use the Windows platform configuration software to configure operating parameters. The parameters can be imported and exported;
- Provide Windows platform configuration software function library for free, including easy-to-use API function library, which helps users write their own configuration software;
- Support local system firmware upgrade.

1.2 Product Specifications

1.2.1 LAN

- Number of LAN ports: 2;
- Interface type: 10M/100M/1000M Ethernet, RJ45 interface, 2 kV electromagnetic isolation.

1.2.2 CAN

- Number of CAN ports: 2;
- Interface type: 2EDG, 90°, terminal, 2.5 kV electromagnetic isolation;
- Signal cable: CAN0H, CAN0L, CAN1H, CAN1L;
- Shielded wire: FGND;
- Terminal resistance wiring: R-, R+;
- Baud rate: 5 k-1000 kbps.

1.2.3 Power Interface

- Round hole socket: positive inside and negative outside;
- Terminal: OPEN2.



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1.2.4 Configuring the Interface

- RS232 interface;
- Two RJ45 Ethernet interfaces.

1.2.5 Software Features

- Supported TCP/IP protocols: ETHERNET, ARP, IP, ICMP, UDP, TCP, DHCP, DNS.
- Tool software: ZNetCom configuration software (version 2.95 or later), CANtest test tool, TCP/UDP test tool.
- Configuration method: Windows configuration software ZNetCom.

1.2.6 EMC Characteristics

- Electrostatic Discharge Immunity (ESD)
 - ♦ Contact discharge: +8KV Class A
 - ♦ Air discharge: +15KV Class A
- Electrical fast transient (EFT) burst immunity
 - ♦ Power port: +2 kV Class A
 - ♦ Signal port: +1 kV Class A
- Surge (impact) immunity
 - ♦ Power port (DC terminal): +1 kV Class A
 - ♦ Power port (adapter): +2 kV Class A
 - ♦ Signal port: +1 kV Class A

1.2.7 Electrical Parameters

Unless otherwise specified, the parameters listed in Table 1.1 refer to the values at Tamb=25°C.

Parameter Name	Symbol	Rating	Unit
Power voltage	VCC	+9~36V	V
Power consumption	PM	3350	mW
Operating ambient	Tamb	-40℃~85℃	°C
temperature			
Storage temperature	Tstg	-40°C~85°C	°C

Table 1.1 Electrical parameters



1.3 Mechanical Dimensions

To install CANSwitch-AN2S2, see the appearance and mechanical dimensions (unit: mm) provided in Figure 1.3. The figure specifies the length, width, height, and part of the mechanical structure of the product.



Figure 1.3 CANSwitch-AN2S2 installation mechanical dimensions



2. Hardware Interfaces

This section introduces the hardware interfaces of CANSwitch-AN2S2.

2.1 Appearance

Figure 2.1 shows the front appearance of the product. Figure 2.2 and Figure 2.3 show the side appearance.



Figure 2.1 CANSwitch-AN2S2 front appearance



Figure 2.2 CANSwitch-AN2S2 side appearance 1



Figure 2.3 CANSwitch-AN2S2 side appearance 2



2.2 Power Interface

CANSwitch-AN2S2 uses a 9-36 V DC power supply that is easily available at the industrial site, and is equipped with two wiring ports. One is a round hole socket and the other is a terminal block. Both interfaces support positive and negative connections, with no need to confirm the positive and negative poles. Figure 2.4 shows its interface.



Figure 2.4 Power Interface

2.3 RS232 Configuration Interface

As shown in Figure 2.5, this interface is specially used to configure the CANSwitch-AN2S2 device.





2.4 Reset Button, Default Restoration Button and Function Switch

As shown in Figure 2.6, RESET is used to reset the device manually. Press it for 1 second to reset the device; DEF is used to restore factory settings. Press it for 5-10 seconds and then the system SYS is off (the SYS indicator is green). The device will automatically reset factory settings. The CANSwitch-AN2S2 device has two functions: Hub (hub) and Converter (converter). When the function switch is set to the corresponding function, press the RESET key once for the function to take effect.



Figure 2.6 Reset button, default restoration button and function switch



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Tip: After default settings are restored, all current configurations will be lost. Operate with caution.

2.5 Ethernet Interface

Figure 2.7 shows the appearance of the Ethernet (RJ45) interface of CANSwitch-AN2S2, with four indicators. The Link indicator is green, indicating whether the Ethernet is physically connected. If it is connected to the Ethernet, the Link indicator is always on; the Active indicator is yellow, indicating whether there is data transmission. If the Ethernet has data transmission, the Active indicator flashes.



Figure 2.7 Ethernet interface and indicators

Figure 2.7 shows the pin order of the Ethernet interface. Table 2.1 shows the pin definitions.

Pin	Signal
1	Tx+
2	Tx-
3	Rx+
4	Bi+
5	Bi-
6	Rx-
7	Bi+
8	Bi-

2.6 CAN Port

The CANSwitch-AN2S2 device has two CAN ports. Figure 2.8 shows its appearance. It has two indicators: CAN0 and CAN1. When a device is connected, when there is data communication; Table 2.2 describes the pin definition.



Figure 2.8 CAN interface and indicators

Table 2.2 Definition of CANSwitch-AN2S2 CAN port pins

Introduction

Signal

CANL	CANL signal terminal of CAN				
FGND	Terminals for connecting the CAN channel to the				
	shielding layer				
CANH	CANH signal terminal of CAN				
R-	120-ohm termination resistor of CAN. Connecting				
	the wire to R+ means enabling the internal				
	termination resistor				
R+	120-ohm termination resistor for CAN. Connecting				
	the wire to R- means enabling the internal				
	termination resistor				

Tip: The terminal resistance can be configured if R- and R+ are short-circuited with wires.

2.7 LED Indicator

The CANSwitch-AN2S2 device has six indicators, PWR, SYS, LAN0, LAN1, CAN0, and CAN1, as shown in Figure 2.9.

LA	N0	LA •	N1	CAN0	CAN1	PWR	•
Active	L	Active	Link _	CANL FGND CANH R- R+	CANL FGND CANH R- R+ L	SYS	•

Figure 2.9 Indicators

Table 2.3 describes the indicators.

Table 2.3 Description of LED indicators

LED	Description				
PWR	The power indicator is always on after power on				
	System running indicator. When the device is not ready				
SYS	to start or fails, the red indicator is steady on; when it is				
	running properly, the green indicator flashes				
LAN0/LAN1	LAN working indicator flashes when data is sent and				
Active	received				
LAN0/LAN1	The LAN working indicator is steady on when Ethernet				
Link	is physically connected				
	Green indicator on or flashing: Data is sent or received				
	on the CAN port				
CAN0/CAN	Green indicator off: No data is sent or received on the				
CANU/CAN	CAN port				
I	Red indicator on: An error occurred on the CAN port				
	Red indicator off: No error has occurred on the CAN				
	port, or the error has been cleared				



3. Quick Use in Hub Mode (Hub Mode)

Devices in hub mode can implement automatic networking, and devices can be cascaded in hub mode. This document uses three CANSwitch-AN2S2 devices for cascading. As long as the device is configured, the CAN bus will be forwarded to the corresponding CAN port as required. You can network independently without using switches and other equipment.

3.1 Device Configuration Method

Turn the switch to Hub and press the reset button. After the device beeps twice, it enters Hub mode. For details, see Section 2.4.

3.1.1 Configuring the Device Using the Serial Port

CANSwitch-AN2S2 supports using the serial port to configure the device, as shown in Figure 3.1. The device can be configured as long as the dedicated RS232 configuration port is connected to the PC.



Figure 3.1 Dedicated configuration port

3.1.2 Configuring the Device Using the Network Port

CANSwitch-AN2S2 supports configuration using the LAN port. Just connect one of the network ports to the PC, as shown in Figure 3.2.



Figure 3.2 LAN port

3.2 System Block Diagram

This document uses three devices for cascading and meets the following design requirements. The CAN signal sent by user equipment 1 and user equipment 2 can be received by user equipment 3, user equipment 6 and user equipment 7; the CAN signal sent by user equipment 3 can be received by user equipment 4 and user equipment 5; the CAN signals sent by user equipment 4 and user equipment 5 can be received by all the equipment; the CAN signal sent by user equipment 3 and the user equipment 7; the CAN signal sent by user equipment 3 and the user equipment 7; the CAN signal sent by user equipment 3 and the user equipment 7; the CAN signal sent by user equipment 3 and the user equipment 7; the CAN signal sent by user equipment 3 and the user equipment 7; the CAN signal sent by user equipment 3 and the user equipment 7; the CAN signal sent by user equipment 4 and user equipment 1, user equipment 2, user





equipment 3 and user equipment 6. Figure 3.3 shows the overall system.

Figure 3.3 System block diagram in Hub mode

3.3 Configuring the Device

Search for devices. CANSwitch supports two ways to search for devices, search by Ethernet and search by serial port: when searching by Ethernet, you can search and configure devices even not in a network segment; when searching by serial port, the COM port must be selected correctly. See Figure 3.4.

搜索配置	×
─通讯链路选择 ● 以太网 ○	〕串口
串口酌置 COM	超时时间 2000
 确定	取消

Figure 3.4 Searching for devices

Note: For details about how to configure the device, see 5. ZNetCom software configuration.



Configure the three CANSwitch devices, as shown in Figure 3.5, Figure 3.6, and

属性栏	Р ×						
🔌 刷新 ា 提交更改	改 🔵 收缩/展开						
🗀 导入 🔡 导出							
□ 基本信息							
设备型号	CANSwitch-AN2S2						
设备固件版本	V1.00						
设备名称	CANSwitch-AN2S2						
□ 密码操作							
当前密码							
是否更改密码	否						
新密码							
确认新密码							
□ 组网信息							
设备编号	1						
组网设备数	3						
□ CAN0配置							
CAN波特率(kbps)) 500.0						
CAN0工作模式	正常						
CAN0_AF	禁用						
标准帧上限	7FF						
标准帧下限	00						
扩展帧上限	1FFFFFFF						
扩展帧下限	00						
□ CAN0转发配置	CAN0转发配置						
设备1CAN1	\checkmark						
设备2CAN0							
设备2CAN1							
设备3CAN0	\checkmark						
设备3CAN1	✓						
□ CAN1配置							
CAN波特率(kbps)							
CAN1工作模式	正常						
CAN1_AF	禁用						
标准帧上限	7FF						
标准帧下限	00						
扩展帧上限	1FFFFFF						
扩展帧下限	00						
□ CAN1转发配置	-						
设备1CAN0							
设备2CAN0							
设备2CAN1							
设备3CAN0							
设备3CAN1							

Be sure to submit the configuration modifications

The default password is 88888

A total of three devices are used for networking. Select 3 as the number of networking devices (a maximum of 32 devices are supported for cascading); this device is the first networking device, so select 1 as the device number

The baud rate should be 500K, which should be consistent with the CAN device connected to the CAN0 port.

The data of CAN0 port can only be forwarded to CAN1 port of device 1, CAN0 port of device 3 and CAN1 port of device 3

The baud rate should be 500K, which should be consistent with the CAN device connected to the CAN1 port.

The data of CAN1 port can only be forwarded to CAN0 port of device 2 and CAN1 port of device 2

Figure 3.5 Configuration of the first CANSwitch

Figure 3.7.



属性栏	ų ×
🔌 刷新 📦 提交更	圓改│ 🔵 收缩/展开
🗀 导入 🔛 导出	
· · · · · · · · · · · · · · · · · · ·	CANSwitch-AN2S2
设备固件版本	V1.00
设备名称	CANSwitch-AN2S2
□ 密码操作	
当前密码	****
是否更改密码	否
新密码	
确认新密码	
□ 组网信息	
设备编号	2
组网设备数	3
□ CAN0配置	
CAN波特率(kbp	os) 500.0
CAN0工作模式	正常
CAN0_AF	禁用
标准帧上限	7FF
标准帧下限	00
扩展帧上限	1FFFFFFF
扩展帧下限	00
□ CAN0转发配置	
设备1CAN0	\checkmark
设备1CAN1	\checkmark
设备2CAN1	\checkmark
设备3CAN0	\checkmark
设备3CAN1	\checkmark
□ CAN1配置	
CAN波特率(kbp	os) 500.0
CAN1工作模式	正常
CAN1_AF	禁用
标准帧上限	7FF
标准帧下限	00
扩展帧上限	1FFFFFFF
扩展帧下限	00
□ CAN1转发配置	
设备1CAN0	V
设备1CAN1	V
设备2CAN0	
设备3CAN0	
设备3CAN1	V

Be sure to submit the configuration modifications

The default password is 88888

A total of three devices are used for networking. Select 3 as the number of networking devices (a maximum of 32 devices are supported for cascading); this device is the second networking device, so select 2 as the device number

The baud rate should be 500K, which should be consistent with the CAN device connected to the CAN0 port.

The data of CAN0 port can only be forwarded to all CAN buses

The baud rate should be 500K, which should be consistent with the CAN device connected to the CAN1 port.

The data of CAN1 port can only be forwarded to all CAN buses

Figure 3.6 Configuration of the second CANSwitch



Hear	Manual	
USEI	wanuai	

属性栏	ч ×
🔌 刷新 ា 提交更	波│ 🔵 收缩/展开
🛅 导入 😼 导出	
□ 基本信息	
设备型号	CANSwitch-AN2S2
设备固件版本	V1.00
设备名称	CANSwitch-AN2S2
□ 密码操作	
当前密码	****
是否更改密码	否
新密码	
确认新密码	
□ 组网信息	
设备编号	3
组网设备数	3
□ CAN0配置	
CAN波特率(kbp	s) 500.0
CAN0工作模式	正常
CAN0_AF	禁用
标准帧上限	7FF
标准帧下限	00
扩展帧上限	1FFFFFFF
扩展帧下限	00
□ CAN0转发配置	
设备1CAN0	
设备1CAN1	
设备2CAN0	
设备2CAN1	
设备3CAN1	
□ CAN1配置	
CAN波特率(kbp	s) 500.0
CAN1工作模式	正常
CAN1_AF	禁用
标准帧上限	7FF
标准帧下限	00
扩展帧上限	1FFFFFFF
扩展帧下限	00
□ CAN1转发配置	
设备1CAN0	V
设备1CAN1	\checkmark
设备2CAN0	
设备2CAN1	
设备3CAN0	\checkmark

Be sure to submit the configuration modifications

The default password is 88888

A total of three devices are used for networking. Select 3 as the number of networking devices (a maximum of 32 devices are supported for cascading); this device is the third networking device, so select 3 as the device number

The baud rate should be 500K, which should be consistent with the CAN device connected to the CAN0 port.

The data of CAN0 port can only be forwarded to CAN0 port and CAN1 port of device 1; CAN1 port of device 3

The baud rate should be 500K, which should be consistent with the CAN device connected to the CAN1 port.

The data of CAN1 port can only be forwarded to CAN0 port and CAN1 port of device 1; CAN0 port of device 3

Figure 3.7 Configuration of the third CANSwitch

When the configuration is successful, it will beep twice. For details about how to use the ZNetCom software, refer to Section 5 ZNetCom software configuration.

3.4 CANTest Software Operation

We need a device equipped with a CAN port to demonstrate how the CANSwitch-AN2S2 device realizes bidirectional transparent conversion of CAN network data and Ethernet data. Here, select the USBCAN interface card, which is convenient to



use. Its related information is available at http://www.zlg.cn.

Note: For details about how to use the CANTest software, see ZLG Electronics CAN Test Software and Interface Function User Manual.

First, connect the CANSwitch-AN2S2 device to the PC by using a network cable, and connect the CANSwitch-AN2S2 device to the USBCAN interface card by using a twisted pair cable (CANH is connected, and CANL is connected. Configure a 120-ohm terminal resistance). Then, connect the USBCAN interface card with the PC by using a USB cable. Finally, connect power to the USBCAN interface card and the CANSwitch-AN2S2 device. Then run the CANtest software on the PC (as shown in Figure 3.8). The CANtest test software is available on http://www.zlg.cn/ (installation required).



Figure 3.8 Software used to test communication

After starting CANtest, select a device type. Here we use USBCAN-EU as an example. First, we select USBCAN-EU, as shown in Figure 3.9. Then, select the "Open Device" menu in the "Device Operation" main menu to display the device's parameter setting interface. Pay attention to the baud rate. Click OK and start CAN, as shown in Figure 3.10.

6	CANTest		
	· 通過选择设备 ▼ 帧ID显示力	元: 十六进制 ▼ 格式: 真实ID(ID靠右对齐) ▼	
	PCI5121		
	PCI9810		
	USBCAN1		
	USBCAN2		
	PCI9820		
	PCI5110		
	PC104-CAN		
	CANET-UDP		
	PCI9840		
	PC104-CAN2		
	PCI9820I		
	CANET-TCP		
	DCL 5010 U		
	USBCAN-E-U		
	USBCAN-ZE-U		
	PCI-5020-U		
	PCIE-9221		
	CANWIFI-TCP		
	CANWIFI-UDP	发送耗时(s): 0.001 发送帧数: 2	接收帧数:

Figure 3.9 Selecting a device type



打开设备 - USBCAN-E
- 设备参数
确定 确定并启动CAN

Figure 3.10 Setting device parameters

If the device is connected properly, there will be no prompt. If the connection is abnormal, an error message appears.

CANTest	- [USBCAN-E	U 设备:0 通道:0)			
选择设	备▼帧ID显示	示方式: 十六进制	▼ 格式: 真实	。 (ID靠右对齐)	-	继续显示 ┃
USBCAN-E		重:0 ×				4 ▷ 🗙
🕴 🌭 濾波设置	🗄 🔡 启动 🌡	🖁 停止 👗 关闭	🔈 定位 🎈 清空	🚽 保存 🛛 💼 设备操	離 🔹 🙋 接收时	间标识 • • • •
序号	传输方向	时间标识	帧ID	帧格式	帧类型	数据长度 数据 🔶
						-
•		I	I			P.
基本操作						
发送方式	式: 正常发送	▼ ● 每	欠发送单帧 〇	每次发送 10 🗰	ից 🗌 իզուրգ	每发送一帧递增
帧类组	型: 标准帧	一 巾贞	ID (HEX) : 00000000	数据(HEX): 00	01 02 03 04 05 0	6 07 发送
帧格3	式: 数据帧	▼ 发	送次数: 1	每次发送间隔	គួ(ms): 0	停止
基本操作	高级操作					
			发送耗时(s):	发送	帧数: 0	接收帧数:

Figure 3.11 Starting USBCAN-E-U successfully

On the tab page of any CANtest software, click the "Send" button. You can then receive the data you just sent on the tab page of another CANtest software.

3.5 Test Result

Open all six CAN cards, as shown in Figure 3.12.



User Manual

CANTest - [CANWIFI-TCP 设备:0 建造0] ■ ■ X	CANTest - (CANTest - (CANTest - (USBCAN2 安田) 建造() CANTest - (USBCAN2 安田) 建造()
i 通道 选择设备 · 触口显示方式: 十六进制 · 格式: 真实(D(ID素右对齐) · ·	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
CANWIFI-TCP 设备:0 通道:0 × 4 b ×	× CANET-TCP 提供の意識の x 1 b x USBCAN2 提供の意識の x 0
👒 建成设置 🕺 用助 送 停止 👗 关闭 👒 定位 📍 清空 🕌 保存 💼 设备操作。 🧔 建放时间标识。	📜 💊 16262 🖁 670 🦉 641 🗶 540 🖕 520 🖥 677 💼 69 264 - 🧿 260 31056 - 📜 💊 16262 🖁 670 32 641 🗶 540 🖕 540 🖕 540 467 💼 69 264 - 🗿 260 31056
第号 体験方向 計算時間 MED MARE NEW 加速K8^	▲ 序号 体描方向 計測時沢 MD 熱地式 NGH型 数量光度▲ 序号 体描方向 計測時沢 MD 松弛式 NGH型 数量光度
基本废作	基本操作
★注方式、正常发送 ● 毎次気送単純 ○ 毎次気送 □ 例 □ 解11時发送一報額	17 - 2111月1日 - 1111月1日 - 1111月1日 - 1111月1日 - 1111日 - 1111日 - 111日 - 1111日 - 11111日 - 111111日 - 111111100 - 11111100 - 1111100 - 1111100 - 1111100 - 1111100 - 1111100 - 1111100 - 1111100 - 1111100 - 1111100 - 1111100 - 111100 - 1111100 - 1111100 - 1111100 - 1111100 - 1111100 - 1111100 - 111100 - 111100 - 111100 - 111100 - 1111000 - 1111000 - 1111000 - 1111000 - 11110000 - 11110000 - 111100000000
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	84501 20051
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CANTest - (USBCAN2 设备:1 通道の)	
●●● 通帰设备 · 核D显示方式 十六进制 · 核式 真实D(D拿有对方) ·	📜 📷 医弹影骨 - 1800 显示方式 十八进制 - 161式 真实10(0条名对开) - 🚔 医感觉界 📄 医解剖骨 - 1800 显示方式 十八进制 - 161式 真实10(0条石对开) - 🚔 医感觉
USBCAN2 设备:1 通道:0 × 4 P ×	X CANET.TCP (200-0 200 X 4) X
🔍 建胶胶面 🛞 用印 🧏 停止 👗 关闭 🕞 定位 📍 清空 🔛 保存 📾 设备操作。 🧕 接收时间示记。	🎽 🕒 体质成量 🐰 自动 😹 停止 🛣 X8 🔍 地位 🛢 海空 🗋 保井 📾 段目录作 - 🧔 接处时间接用 🍟 🦄 体质设置 🐰 自动 😹 停止 🛣 X83 🔍 主位 🛢 清空 🗋 保护 📾 段目录作 - 🧔 接处时间接用
序号 传输方向 时间振识 帧ID 帧格式 帧类型 数据长8	* 17号 (H&D)响 时间研究 600 60%; 43英述 数据长展 * 17号 (H&D)响 时间研究 600 60%; 43英述 数据长
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r, • 81\$1	atan atan atan atan atan atan atan atan
	基本版作 基本版作
	基本操作 基本操作
次运方式: 正常发送 ▼ ● 毎次放送単純 ○ 毎次放送 □□ 執 □ 触□-●板送-●検討	■または「 またたえ」 第1日日
安正5元 正常友法 マ の 毎次友法学社 (毎次友法 (6 年) 一社の毎次法人 (4 年) 日本の表法 (4 年) (4 年) (4 年) (4 年) (4 + 1) (基本語作 基本語作 第二日二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二十二

Figure 3.12 Starting the device

The first CAN bus sends data, the second, fifth, and sixth CAN buses receive data, and the third and fourth CAN buses do not receive data, which conforms to the configuration of the first CANSwitch-AN2S2. See Figure 3.13.

CANTest - [CANWIF]-TCP 设备:0 读道:0] _	CANTest - [CANET-TCP 设施的 通道0]	■ CANTest - [USBCAN2 设治:0]
→ 通道探设备・ 帧ID显示方式: 十六进制 - 格式: 真实ID(ID最右对齐)	■ 送拝设备・ 秋田显示方式: 十大进制 ・ 格式: 真实ID(ID第名对并) ・ "	● 选择设备 · 秋ID显示方式: 十六进制 · 格式: 真实ID(ID批名对并) · · · · · · · · · · · · · · · · · · ·
CANWIFI-TCP 设施の通道の × 4 b ×	CANET-TCP 设备0 透溢0 × 4 b ×	USBCAN2 设备0 直道0 × 《 F ×
🔦 建液设置 🐰 用助 😸 停止 👗 关闭 🛸 走位 🌻 清空 🔓 保存 📾 设备操作。 🧔 橡放时间标识。 🍟	👒 建液管量 🕺 用物 🗏 停止 👗 关闭 🛸 走位 🍧 清空 🔓 保存 📾 保持监作。 🥝 接次时间标识。 🍟	🔍 建液设量 🕺 用的 🗏 停止 👗 关闭 🛸 定位 号 清空 🕌 保存 📾 设备操作。 🤨 振动时间标识。
序号 体能方向 計算知识 ●EID ●MS# ●HA 計算化度 数据(HEX) ^	序号 传媒方向 的复数用 MEID 新新式 新品型 数据长度 数据(HEX)	序号 传输方向 討能标识 NED NMS式 NGA型 数据长度 数据(HEX) ^
	00000000 \$98: * 0.00000001 \$5\$\$\$\$ 6\$\$\$\$ 0.01 01 01 01 01 01 01 01 01 01 01 01 01 0	
* * * * * * * * * * * * * * * * * * *	基本操作	蓝本操作
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发送耗时(s): 发送帧数: 1	发送转时(s): 发送转数: 0	发送耗时(s): 发送制款: 0
CANTest - [USBCAN2 设置:1 调算0]	● CANTest - (CANET-TCP 设备:0 通信:0)	CANTest - [USBCAN-E-U 投售/0 通道/0]
□回 选择设备 · 帧ID显示方式: 十六进制 · 格式: 真实ID(ID最右对齐) ·	□ 医肾炎素・ 軟D呈示方式: 十六进制 ・ 格式: 真实D(D靠在对方) · ● 建模显示	
USBCAN2 设施1 通道:0 × 4 b ×	CANET-TCP 设备:0 速盛0 × ↓ ↓ ×	USBCAN-E-U 设备:0 通道:0 × 《 》×
- 💊 編成設置 🕺 目的 🇏 停止 👗 失时 💊 定位 号 清空 🔓 保存 📾 没有操作。 🧑 現代計的研究。 🍃	💊 #2222 🕺 800 😕 1411 💥 1513 🕒 202 号 152 🕞 1614 🏥 12844. 🕈 10 1621 - 🚦	🔌 建波设置 🐰 Bin 😸 特比 👗 先日 😘 定位 📍 清空 🔛 保存 🖴 设备操作。 🧿 操改时间标识。 🍟
序号 体髓方向 时间标识 NUD NNE式 NSE型 数据长展 数据(HEX)	序号 传统方向 时间运进 Mato Mater MATE 数据(HEXO 1	序号 传输方向 封闭运日 MAD MART MH型 数据长度 数据(HEX) *
	00000000 睡着 光 0-00000001 故語時 初春秋 0-08 010101010101010101	0000000 ##C 1334-24537 0-00000001 85896 65896 0-08 01010101010101010
к. н. э	* * * * * * * * * * * * * * * * * * *	HARA
发送方式: 正常发送 ▼	安运方式: 正常发送 ■ 《 每次发送单帧 《 每次发送 20 例 □ 帧10每发送一帧的	
• 秋田 0#23): 00000004	64(齿型): 标准14 ▼ 64(11) 02(X): [00000005 余绪(80(X)): [05:05:05:05 05:05	aggggg: [标志社社] Aggg aggg ; [标志社社]] Aggg aggg ; [示在 Aggg agg agg agg agg agg agg agg agg ag
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基本操作 网络操作	基本授作 電振振作	基本级作 南极级作
发送耗时(s): 发送标题 0		发送畅时(s): 发送畅助 0

Figure 3.13 First CAN bus sending data

The second CAN bus sends data, the third and fourth CAN buses receive data, and the first, fifth, and sixth CAN buses do not receive data, which conforms with the configuration of the first CANSwitch-AN2S2. See Figure 3.14.



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CANTest - (CANWIFI-TCP 设备:0 演盪:0) ■ ■ X	CANTest - (CANET-TCP GR:0 (CR: 0)	CANTest - [USBCAN2 设备:0 演奏0] ■ ■ X
■ 建择设备。 触口显示方式 十六进制 · 格式 真实(D(ID素石对齐) ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
CANWIFI-TCP 225-0 30250 × 4 b ×	CANET-TCP 设备0 流量0 × 4 b ×	USBCAN2 12150 × 0.0200 × 0.0000
👒 建成设置 🧏 用加 送 停止 👗 关闭 🛸 定位 号 清空 🔄 保存 📾 设备操作。 🥥 液放时间标识。 🍟	👒 建波设置 🕺 形动 送 停止 👗 关闭 🛸 定位 号 清空 🔜 保存 📾 没有整作。 🥥 最效时间标识。 🍟	🔍 建液管量 🕺 用的 送 停止 👗 关闭 🛸 定位 🕈 清空 🔛 保存 📾 设备操作。 🤨 摄动时间标识。 🍃
序号 体髓方向 时间对识 PEID 电闭路式 PE接型 数据长展 数据(HEX) ^	序号 体输方向 时间标识 NED NHR式 NHA型 数据长展 数据(HEX)	序导 传输方向 討當玩归 参照 参照 参照 数据长度 数据(HEX) ^
00000000 送送 无 0x00000001 数据数 形数数 0x08 0101010101010101	00000000 FF/F 王 0.0000000 原始的 10年15 0.02 01 01 01 01 01 01 01 01 01 01 01 01 01	100000000 接枝 13:42:17.672 0×00000002 数量時 特別性核 0×08 02:02:02:02:02:02:02:02
基本操作	蓝本服作	基本操作
发送方式: 正常发送	发送方式: 正常发送 💌 @ 有次发送单辑 C 每次发送 10 种 🗆 触口每发送—W递	发进方式: 正常发送 ▼ ④ 每次发送单帧 ○ 每次发送 10 帧 □ 帧10每发送—单通
●11世紀日: 行流料 ・ ●1110 0月20: 00000000 #11月(1982): 01 01 01 01 01 01 01 01	(秋云型: 「怀定秋 ▼ (秋10 (MIX): 00000002 (秋福 (MIX): 000 02 02 02 02 02 02 02 02 02 02 02 02	林武章: 和道知 ・ 林田 (422): 20000003 数据 (422): 20 03 03 03 03 03 03 03
(始着式: 新規制 マ 安送次数: 1 毎次安送(新羅(ns):)	林松式: 許須約 ■ 定逆次批: 1 毎次定法可能(wa): 0	輸稿式: 該滑助 ▼ 岩底次数: 1
基本操作 医玻璃作	基本操作 治療操作	基本燃作 高级燃作
发送耗时(s): 发送转数: 1	发送耗时(s): 发送快致: 1	发送#E时(s): 发送积取: 0
CANTest - [USBCAN2 128:11 1820]	CANTest - [CANET-TCP 设备0 逆逆0] □ X	⊖ CANTest - [USBCAN-E-U 设备:0 直通:0]
●●● 読择设备 · 桃口显示方式: 十六进制 · 格式: 真实ID(ID意名对齐) ·	📷 法保设者・ 物口显示方式: 十六進制 - 権力: 真实10(10素右対方) - 📻 建筑显示	→回 送帰設备・ 朝口显示方式: 十六進制 ・ 格式: 頁实ID(IDな石対方) ・ ● 建築显示
US8CAN2 设备:1 通道:0 × 4 P ×	CANET-TCP 设备:0 連島0 × ↓ ↓ ×	USBCAN-E-U 设备:0 通道:0 × (I I ×
🔦 建汞设置 🕺 用的 送 停止 👗 关闭 争 定位 📍 清空 🕌 保存 📾 设备操作。 🔞 滚纹时间示只。	🔌 建放设置 🐰 ADD 😸 停止 👗 关闭 争 定位 🍍 清空 🚽 保存 💼 设备操作。 🧔 接收时间标识。 🍟	💊 建設设置 送 白い 送 停止 🐹 天坊 争 定位 🍧 満空 🕞 保存 💼 设备操作・ 🥝 接位町目标识・
	非导 传输方向时间标识 NED 校告式 校关型 数据长度 数据(HEX) ^	岸号 体筋方向 时间玩识 触口 被指式 被提型 数据长度 数据(HEX) 10000000 総位 13:40.52.717 0×00000001 数倍秒 55:6秒 0×08 01:01:01:01:01:01:01:01:01:01:01:01:01:0
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報格式: 頭接触 ▼ 変速次盤: 1 毎次変速節度(wa): 0	00指式: 数据轴 王 发运次数: 1 每次发运得福(ns): 0	68指式: 約指林 💌 发送火货: 1 局尖发进间隔(nu): 0
基本操作 高级操作	基本级作 高级级作	基本操作 南极操作
发送耗时(s): 发送耗数:0	設造統計(の) 設造統計 0	(3) 設送耗封(s): 設送核款: 0

Figure 3.14 Second CAN bus sending data

The third and fourth CAN buses send data, and all other CAN buses can receive data, which conforms with the configuration of the second CANSwitch-AN2S2. See Figure 3.15.



Figure 3.15 Third and fourth CAN buses sending data

The fifth and sixth CAN buses send data, respectively forwarding the first, second, and sixth CAN buses, and the first, second, and fifth CAN buses, which conforms with the configuration of the third CANSwitch-AN2S2. See Figure 3.16.



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● CANTest - [CANWIFI-TCP 设备0 调道0]	CANTest - [CANET-TCP 278:0 3620]	CANTest - (USBCAN2 设施0 調査0)
■ 送择设备・ 触口显示方式: 十六进制 ・ 格式: 真实(D(D素石对齐) ・	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·
CANWIFI-TCP 经登心通道:0 x 4 b x	CANET-TCP 经售点通道0 × 4 b ×	USBCAN2 设备0 透道0 × 《 F ×
👒 建成设置 🕺 用的 送 停止 👗 关闭 👒 定位 号 清空 🔜 保存 💼 设备操作。 🥥 建故时间标识。 🍟		🔍 建液管量 🛞 用的 送 停止 👗 关闭 🛸 定位 🍠 清空 🔛 保存 📾 设备操作。 🧿 摄放时间标识。 🚆
序号 (11歳55内) 21歳753月 0HD 05153元 0HH 20歳5年日 20歳(HEX) ^	序号 体验方向 时间标识 NED NASE NASE 数据(HEX)	序号 你能方向 时间标识 MID NN社 NH社 数据化版 数据(HEX) ヘ
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-	· · · · · · · · · · · · · · · · · · ·	
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	(株式型: 特定的は 一 株式の(MIX): 00000002 鉄橋の(MIX): 000 02 02 02 02 02 02 02 02 02 02 02 02	##菜型: 标准% ▼ ##ID (#EX): 00000003 新編(#22): 03 03 03 03 03 03 03
		••••••••••••••••••••••••••••••••••••
基本操作 電気操作 发送純明(c): 发送純数 0	2015年1日本の時代 2013年9月1日:2015年1日、2015年2月1日	基本操作 用级操作 发送转时(s) 0.002 发送转数: 1
e CANTest - IUSBCAN2 设备:1 演员() - · · · · ·	CANTest - (CANET-TCP IPRIO (0)EC() - X	CANTest - USBCAN-E-U 设备の通路の 正正正正正正正正正正正正正正正正正正正正正正正正正正正正正正正正正
CANTEST - [050CAN2 世話1 第回0] Imm 決得投合・ 他口見示力式・十六時利 ・ 権広 東京口口東方対抗 ・ "	● Califier (California California)	
KALLEN ALLEN ALLE	CANET-TCP 記録の進造の × d b ×	USBCAN-E-U 设备0 道道0 × (
		💊 建成设置 🐰 白巾 😹 停止 👗 光闭 😘 定位 🛢 清空 😡 保存 🎰 设备操作。 🥥 接收时间标识。 🗉
承受 保留方向 街道标识 NED NH NET NH 数据长度 数据(HEX)	序号 传输方向 时间标识 MID MINST MINE 数据长度 数据(HEX)	序号 传输方向 时间示识 帧ID 帧指式 帧类型 数据长度 数据(HEX)
00000000 18%7 14:56:27.949 0x00000003 20085 15:005 0x08 03 03 03 03 03 03 03 03 03 03 03 03 03	00000000 後次 无 0x0000003 数据数 标准机 标准机 0x08 03 03 03 03 03 03 03 03 03 03 03 03 03	00000000 接位 14-56-27.950 0x00000003 双短肢 玩曲校 0x08 03 03 03 03 03 03 03 03 03 03 03 03 03
	00000002 ADA 元 0x00000005 数据純 伝染的 0x08 05 05 05 05 05 05 05 05	00000002 #207 145511010100000000 #0515 10/201 0.00 05:05:05:05:05:05:05:05
		100000003 米油 无 0×00000006 2020年85 15-018 06 06 06 06 06 06 06 06 06 06 06 06 06
	· · · · · · · · · · · · · · · · · · ·	-
K		K T
※洋台ボー正常定後 ▼ ● 国家常常単純 ○ 国家常神 10 00 ■ 利田西常神一般漫	安运方式、正常发送 ▼ ● 再次发送单线 ● 再次发送 20 %3 □ 帧和用发送一线数	実施方式: 正常設法 ■ (中部次定法単純) (中部次定法 10 所) 「 執い可設法 - 他語 (0(55-22)、 (中華純 ■ (0(1) (2000)) (20000000 #1(# (0020)) (20 60 60 60 60 60 60 60 50 50)
##出版型: 福田市田	Q((会型): 标准1A ▼ Q(III 0533): [0000005 載調(2535): [05 05 05 05 05 05 05 05 05 05 05 05 05 0	
	Galagae 将走林 ▼ Gala Galagae (新聞 Galagae) (5 G G G G G G G G G G G G G G G G G G	Generating (1999年19月1日日日) (1999年19月1日日日) Generating (1999年19月1日日日) Generating (1999年19月1日日日)
株式出版: 括:前288		

Figure 3.16 Fifth and sixth CAN buses sending data



4. Quick Use in Converter Mode (Converter Mode)

4.1 Device Configuration Method

Turn the switch to Converter, and press the reset button to enter Converter mode. The device will beep twice if the configuration is successful.

4.1.1 Configuring the Device over the Serial Port

CANSwitch-AN2S2 supports using the serial port to configure the device, as shown in Figure 4.1. The device can be configured as long as the dedicated RS232 configuration port is connected to the PC.



Figure 4.1 Dedicated configuration port

4.1.2 Configuring the Device over the network port

CANSwitch-AN2S2 supports configuration using the LAN port. As shown in Figure 4.2, just connect one of the network ports to the PC.



Figure 4.2 LAN port

4.2 IP Address Operation

4.2.1 Default IP Address

The default IP address of CANSwitch-AN2S2 high-performance dual-channel CAN to Ethernet switch device is: 192.168.0.178.

4.2.2 Obtaining the Device IP address

When you forget the IP address of the device or the device uses the DHCP protocol to obtain the IP address automatically, the current IP address of the device can be obtained by using the ZNetCom software. The CANSwitch-AN2S2 device supports two IP address acquisition methods: "static acquisition" and "dynamic acquisition". "Static acquisition" indicates that the device uses the "IP address", "subnet mask" and "gateway" specified by the user; "Dynamic acquisition" indicates that the device obtains the IP address, subnet mask, and gateway information from the DHCP server on the network over DHCP.



The ZNetCom software is the configuration software of CANSwitch-AN2S2 device running on Windows. No matter what the current IP address of the CANSwitch-AN2S2 device is, you can obtain the current IP address of the CANSwitch-AN2S2 device by using ZNetCom software and configure it. The procedure for obtaining CANSwitch-AN2S2 device IP address using ZnetCom software is as follows:

- 1. Connect the device to a 9-36 V DC power supply. Use a crossover cable to connect the device's LAN port to the PC's network port.
- 2. Install ZNetCom (version 2.95 or later). For the installation method of ZNetCom software, see 5.1 Installation and Configuration Software.
- 3. Double-click to run the ZNetCom software (if the system is later than Windows 7, right-click it and run as administrator). The interface shown in Figure 4.3 appears.

**	ZNetCom V2.95						□ ×
	配置(S) 视图(V) 帮	时 (H) 测试(T) Languag	e				
I	🍌 搜索设备 🔍 指示	E捜索 📶 清空设备 🔪) 获耳	収信息 📄 复位设备	下载数据 🛛 💈 关于 💂		
-	性栏			序号 模块型号	MAC地址	IP地址	
X	刷新 📄 提交更改 🛛	● 收缩/展开			There are no item:	s to show.	
C	🗅 导入 🛃 导出						
⊡	基本信息		•				
	设备型号	ZNE-100TI					
	设备固件版本						
	设备名称						
⊡	密码操作						
	当前密码						
	是否更改密码	0	E				
	新密码						
	确认新密码						
0	IP地址信息						
	设备IP						
	设备子网掩码						
	设备网关IP						
	设备MAC地址						
	获取IP方式						
	DNS服务器						
	PPPOE参数						
	启用PPPOE						
	PPPOE IP						
	PPPOE 用户名						
	PPPOE 密码						
	网络参数						
	工作方式		-				
	T/F油口/法協造口、						
1							

Figure 4.1 ZNetCom running interface

- 4. Turn off the firewall and antivirus software of the PC.
- 5. Click ^{建索设备}. The interface shown in Figure 4.4 appears, and you can learn the IP address of the device.



瘰			×	
正在搜索网	正在搜索网络中的设备			
		剩余搜索时间:	9 秒	
序号	模块型号	MAC地址	IP地址	
0	CANSwitch	00:14:97:33:00:00	192.168.0.178	
・ 搜索到 1	个设备		停止	

Figure 3.4 Searching for devices by using the ZNetCom software

4.2.3 PC and Device Network Segment Detection

Before using the PC to communicate with the CANSwitch-AN2S2 device, ensure that there is an Ethernet card in the PC, and the PC and the CANSwitch-AN2S2 device must be on the same network segment.

The CANE device is set with a default IP address (192.168.0.178) and network mask (255.255.255.0) when it leaves the factory. Check whether the device is on the same network segment as the user's PC according to the process shown in Figure 4.5. If you are on the same network segment, you do not need to read the following content about the PC network settings. If different, the following PC network settings are very important for you.



Figure 4.5 Checking whether the IP address of the CANSwitch-AN2S2 device and the PC are on the same network segment

The following describes how to make the user's PC and CANSwitch-AN2S2 device be on the same network segment.

If you are using Windows 2000/XP/7, there are two ways. One is to add the local IP address, and the other is to modify the local IP address.

4.2.4 Adding the IP Address (Windows7 Used as an Example)

It is assumed that the IP address of the user's PC is 192.168.7.91, and the IP address of the CANSwitch-AN2S2 device is the default IP address 192.168.0.178.



In the operating system, right-click the Start button \rightarrow Control Panel \rightarrow Network and Sharing Center \rightarrow to modify the advanced sharing settings. The Network Connections window is displayed. Select the local connection icon (Note: The connection is a CANSwitch-AN2S2 device network connection. If you have multiple network cards, there may be multiple local connections), right-click the local connection \rightarrow properties. The window shown in Figure 4.6 appears.

₽ 本地连接 属性	x		
网络共享			
连接时使用:			
👰 Realtek FCIe GBE Family Controller			
酉 置 (C)			
此连接使用下列项目(0):			
	*		
 ✓ 鳥Microsoft 网络的文件和打印机共享 ✓ ▲ Internet 协议版本 6 (TCP/IPv6) 			
▼ Internet 协议版本 6 (UCF/IFv6) ▼ → Internet 协议版本 4 (TCF/IFv4)			
 ✓ Internet (新賀版本 + (101) II + 4) ✓ ▲ 链路层拓扑发现映射器 I/O 驱动程序 	=		
☑ ▲ 链路层拓扑发现响应程序	-		
<)			
安装 00) 卸载 00) 属性 (R)			
□ 描述			
允许您的计算机访问 Microsoft 网络上的资源。			
确定 取	消		

Figure 4.6 Local connection properties 1

Select "Internet Protocol Version 4 (TCP/Ipv4)" and click "Properties", as shown in Figure 4.7.

♀ 本地连接 属性
网络共享
连接时使用:
👰 Realtek PCIe GBE Family Controller
配置 (C)
此连接使用下列项目 (0):
☑ 📮 QoS 数据包计划程序
☑ ————————————————————————————————————
✓ <u>▲ Internet 协议版本 6 (TCP/IPv6)</u>
✓ ▲ Internet 协议版本 4 (TCP/IPv4)
✓ ▲ 链路层拓扑发现映射器 1/0 驱动程序
🗹 🔺 链路层拓扑发现响应程序
▲ III ▶
安装 (X) 卸载 (V) 属性 (R)
「 描述
TCP/IP。该协议是默认的广域网络协议,它提供在不同 的相互连接的网络上的通讯。
1.01日云(王)孫1.04324 工作 00厘 44 ×
确定取消



Figure 4.7Local connection properties 2

The "General" page displays the current IP address, subnet mask and default gateway and other information. Click "Advanced", as shown in Figure 4.8.

Internet 协议版本 4 (TCP/IPv4) 雇性			
常规			
如果网络支持此功能,则可以获取自动指派的 IP 设置。否则, 您需要从网络系统管理员处获得适当的 IP 设置。			
IP 地址(I):	192 .168 . 7 .91		
子网掩码(0):	255 .255 .255 .0		
默认网关 (0):	192 .168 . 7 .254		
● 自动获得 DWS 服务器地址(B)	73		
● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	E):		
首选 DNS 服务器(P):	192 .168 . 0 . 1		
备用 DNS 服务器(A):	· · ·		
🔲 退出时验证设置 (L)	高級(V)		
	确定 取消		

Figure 4.8 TCP/Ipv4 Properties

Click the "Add" button, as shown in Figure 4.9.

高级 TCP/IP 设置 ? — X —				
IP 设置 DNS W	INS			
_IP 地址(R) ———				
IP 地址		子网掩码		
192. 168. 7. 91		255, 255, 255, 0		
	添加(4)	编辑 (2)	刪除(V)	
网关		跃点数		
192. 168. 7. 254		自动		
	添加(0)	编辑(T)	删除(M)	
☑ 自动跃点(U) 接口跃点数(X):]		
		确定		

Figure 4.9 TCP/IP settings

Enter the IP address and subnet mask in this window. The IP address should be on the same network segment as CANSwitch-AN2S2, as shown in Figure 4.10.





Figure 4.10 Adding an IP address

Enter the content, and click the Add button. Press OK. Now you can communicate with the CANSwitch-AN2S2 device.

4.2.5 Modifying the Local IP Address

Enter the operating system, click the Start button \rightarrow Control Panel \rightarrow Network and sharing center to modify the advanced sharing settings, select the "Local Connection" corresponding to the network card connected to the CANSwitch-AN2S2 device, right-click and choose "Properties". In the displayed dialog box, select "Internet Protocol Version 4 (TCP/Ipv4)" and click "Properties". The page shown in Figure 4.11 is displayed. Select [Use the following IP address], and enter the IP address 192.168.0.22, the subnet mask 255.255.255.0, and the default gateway 192.168.0.1 (the DNS part can be left blank). Click "OK" on this page, and wait until the system is configured.

Internet 协议版本 4 (TCP/IPv4) 属性	?		
常规			
如果网络支持此功能,则可以获取自动指派的 IP 设置。否则,您需要从网络系统管理员处获得适当的 IP 设置。			
◎ 自动获得 IP 地址(0)			
─◎ 使用下面的 IP 地址(S):			
IP 地址(I):	192 .168 . 0 . 22		
子网掩码(U):	255 .255 .255 .0		
默认网关 (D):	192 .168 . 0 .254		
 ● 自动获得 DNS 服务器地址(B) ● 使用下面的 DNS 服务器地址(B): 			
	192.168.0.1		
备用 DNS 服务器(A):	· · ·		
🔲 退出时验证设置 (L)	高级(V)		
	一 確定 取消		

Figure 4.11 TCP/IP Properties window

Now you can communicate with the CANSwitch-AN2S2 device.

4.3 TCP Server Mode

4.3.1 System Block Diagram

In TCP Server mode, CANSwitch-AN2S2 will not actively connect with other devices. It always waits for the connection of the client (TCP Client), and can perform two-way data communication after establishing a TCP connection with the client. Figure 4.12 shows the process of establishing communication.







Figure 4.12 Communication in TCP Sever mode

Tip: In this mode, the client connects to the CANSwitch-AN2S2 device over the "working port (see Table 5.2)" corresponding to the CAN port.



4.3.2 Configuring the CANSwitch-AN2S2 Device

Figure 4.13 shows the configuration in TCP Server mode.

	t	ł×
➡ 提交更改 ● 收缩/展	展开 🛅 导入 😼 导出	
Ĵ.		-
	CANSwiter-AN2S2	
牛版本	V1.00	
尔	CANSwitch-AN2S2	
乍		
ß	****	
收密码	否	
密码		
言息		
	192.168.7.221	
网掩码	255.255.255.0	
 ξΙΡ	192.168.7.254	1
	192.168.0.1	
AC地址	00:14:97:2F:00:01	
定	静态获取	
谓		
设置所有CAN口配	置和此CAN口相同	
防式	TCP SERVER	1
定端口	固定	
](连接端口)	4001	
	6001	
开时间(10ms)	0	
司(10ms)	200	
持率(kbps)	1000.0	
「作模式	正常	
数 数	50	
	1	
NBuffer	- TCP连接时清空	
AF	启用	
	7FF	
	09	
上限	1FFFFFFF	
	05	
送援/中顿致(10顿) 送援/中策略		
送缓	❸ 中帧数(10帧) ❸ 中策略 次(UDP目的IP段个数)	钟策略 缓冲区满时丢弃新数据

Be sure to submit the configuration modifications

The default password is 88888

The IP address configuration should be correct, and the PC and the device should be on the same network segment

Selecting TCP Server mode

The baud rate should be 1000K, which should be consistent with the CAN device connected to the CAN0 port.

Filtering is set, only the frame ID sent from the CAN port to the Ethernet is filtered, and the frame ID sent from the Ethernet to the CAN port is not filtered.

Figure 4.13 Configuration in TCP Sever mode

4.3.3 TCP&UDP Software Operation

Install the TCP&UDP test software, as shown in Figure 4.14.



Figure 4.14 TCP&UDP test software

Double-click to run the TCP&UDP software, and click to create a connection, as shown in Figure 4.15.



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Figure 4.15 Open the TCP&UDP test tool

Select TCP mode in Type, enter the IP address and the working port number of CANSwitch-AN2S2, and click Create. See Figure 4.16.

创建连接		
类型: TCP 🔽		
目标IP: 192.168.7.221 端口: 4001		
本机端口: • 随机端口 · 指定: 4001		
□ 自动连接: 间隔 0 s		
🗖 自动连接上后自动发送: 间隔 🛛 👘 🐂		
□ 创建多个连接 创建个数 10		
▶ 目标IP递增 ▶ 目标端口递增 ▶ 本地端口递增		
创建取消		

Figure 4.16 Creating a connection

Click Connect to connect the CANSwitch-AN2S2 device. See Figure 4.17.



👔 TCP&UDP测试工具 - [192.168.7.	221:4001]		
· 操作(Q) 查看(V) 窗口(W) 帮	助任) Language ×		
ZNE-2001全功能型化速以大网结串口模块 具有10/100M自适应以大网接口,串口通信最高 波特率高达1.15Mbps NETCOM-105烷准型以大网结串口设备 具有TCP Server,TCP Client, UDP, Real COM, Group组版,TCP Auto等多种工作模式 更多			
🗄 🔄 创建连接 🔕 创建服务器 🐰 🛙	自动服务器 送 🕡 😫 连接 👔 🛸 全部断开 💥 删除 🎇 🔟 💈 💂		
属性栏 早 ×	(≩ 192.168.7.221:4001 ↓ ▷ ×		
日 唐 紹与器模式	目标II		
	发送速度(B/S): 0 接收速度(B/S): 0		

Figure 4.17 Opening connection

When the triangle below the client mode turns green, the connection is successful. See Figure 4.18.

👩 TCP&UDP测试工具 - [192.168.7	.221:40011		
·····································		×	
ZNE-2001全功能型快速以太网接串口模块 具有10/100M自适应以太网接口,串口通信最高 波特率高达1.15Mbps NETCOM-105标准型以太网接串口设备 具有TCP Server,TCP Client, UDP, Real COM ,Group组髓,TCP Auto等多种工作模式 更多			
🗄 创建连接 🔕 创建服务器 🔡)	自动服务器 😕 😣 😫 🤮	主接 😼 🛸 全部断开 💥 删除 🎇 🔟 😹 🥫	
属性栏 무 ×	192.168.7.221:4	001 (
日	目标IP 192.168.7.221 目标端口 4001 光定本地端口 4001 类型 TCP 二 自动连接 勾隅 0 s 「 自动连接 勾隅 0 s 近接上后自动发送 勾隅 数 发送 0 接收 「 清空	友送区 厂 自动发送 每隔 100 ms 发送 停止 ▼ 按十六进制「发送文件 「 发送操收到的刺握 清空 〕 途页 」 广播包发送选项 擦收区 暫停显示 〕 清空 〕 保存 〕 选项 「 十六进制 【線收区 〕 暫停显示 〕 清空 〕 保存 〕 选项 「 十六进制	
	发送速度	(B/S): 0 接收速度(B/S): 0	

Figure 4.18 Connection created



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4.3.4 CANTest Software Operation

Double-click the CANTest software icon to run the software, as shown in Figure 4.19.



Figure 4.19 CANTest software

Choose the correct device. Select USBCAN-E-U here, as shown in Figure 4.20.



Figure 4.20 Selecting a device

Select the correct baud rate, click OK, and start the CAN, as shown in Figure 4.21.

打开设备 - USBCAN-E	
设备参数 设备索引号: 0 ▼ 第几路CAN: 0 ▼ □ 选择所有CAN	
初始化参数 波特率: 1000K ▼ 模式: 正常模式 ▼ 自定义波特率寄存器:0x 60003 □ 自定义波特率	
确定 取消 确定并启动CAN	



Figure 4.21 Starting the device

After starting the device properly, the page appear, as shown in Figure 4.22.

● CANTest - [USBCAN-E-U 设备	:0 通道:0]	
远望选择设备▼ 帧ID显示方式:	+六进制 ▼ 格式: 真实ID(ID靠右对齐)	▼ 送续显示 ↓↓ [*]
USBCAN-E-U 设备:0 通道:0 ×		4 ▷ 🗙
🔜 🦄 濾波设置 🔡 启动 送 停止	👗 关闭 🛯 🔈 定位 🌻 清空 🕞 保存 🛛 霞 设备操(乍• 🙋 接收时间标识• 🙀
序号 传输方向 时间极	识 帧ID 帧格式 帧类型 数据	长度 数据(HEX)
۲.	III	
基本操作		
发送方式: 正常发送 🗾 💌	○ 每次发送单帧 ○ 每次发送 10 帧	□ 帧ID每发送一帧递增
帧类型: 标准帧 ▼	帧ID (HEX): 00000000 数据 (HEX): 00 0	1 02 03 04 05 06 07 发送
帧格式:数据帧 💆	发送次数: 1 每次发送间隔	(ms): 0 停止
基本操作 高级操作		
R	发送耗时(s): 发送机	·

Figure 4.22 Device started

For details about how to use the CANTest software, see the *ZLG Electronics CAN Test Software and Interface Function User Manual.*

4.3.5 Test Result

Send a CAN frame whose ID is 00000000 and data is 0001020304050607 by using the CANTest software over USBCAN. Since we set frame ID filtering, this frame should not happen to the receiving device, as shown in Figure 4.23.

● CANTest - [USBCAN-E-U 设备:	0 通道:0]	
▶ 顾 选择设备 • 帧ID显示方式: -	→ 格式: 真实ID(ID靠右对齐)	▼ 送续显示 】】 ^{**}
USBCAN-E-U 设备:0 通道:0 ×		4 ▷ 🗙
🔜 🦄 濾波设置 🔡 启动 送 停止 🏅	🐹 关闭 🛯 🔈 定位 🍧 清空 🕞 保存 🛛 📷 设备操	作• 🧔 接收时间标识• 💡
序号 传输方向 时间标识	帧ID 帧格式 帧类型 数据长期	度 数据(HEX)
00000000 发送 无	0x00000000 数据帧 标准帧 0x08	00 01 02 03 04 05 06 07
•		
基本操作		
42-4-1361 F		
发送方式:正常发送 🔽	• 每次发送单帧 • 每次发送 10 中	贞 □ 帧ID每发送一帧递增
帧类型: 标准帧 👤	帧ID (HEX): 00000000 数据(HEX): 00	01 02 03 04 05 06 07 发送
帧格式:数据帧 💌	发送次数: 1 每次发送间隔	[(ms): 0 停止
基本操作 高级操作		
	发送耗时(s): 0.001 发送	帧数: 1

Figure 4.23 USBCAN send data 1



Use the TCP&UDP test tool to receive data. Because the frame ID filter is set and ID00000000 is no longer in the receiving range, no data is received, as shown in Figure 4.24.

🚡 TCP&UDP测试工具 - [192.168.7.221:4001]		
· 操作(Q) 查看(V) 窗口(W) 帮助	(H) Language X	
ZNE-2007全功能型快速以太网接出口境块 具有10/100M自适应以太网接出,串口通信最高 波特率高达1.15Mbps NETCOM-105标准型以太网接出口设备 具有TCP Server,TCP Client, UDP, Real COM ,Group组播,TCP Auto等多种工作模式 更多		
🗄 创建连接 🖏 创建服务器 🕺 启动服务器 😕 🐼 😤 连接 🕱 👒 全部新开 候 删除 🎇 🔟 🛜 💂		
属性栏 平 ×	<u> </u>	
└ 昌 服务器模式	目标IP	
发送速度(B/S): 0 接收速度(B/S): 0		

Figure 4.24 PC receives data 1

The CAN frame with ID 00000009 and data 0001020304050607 is sent, and the ID is within the receiving range. The peer device can receive data correctly, as shown in Figure 4.25.


High-Performance Dual-CAN to Ethernet Switch User Manual

CANTest -	USBCAN-	·E-U 设备:0	通道:0]					_		x
选择设备	·▼ 帧ID显	示方式: 十	六进制 🚽	格式: <mark>真实</mark>	ID(ID靠右)	水 对齐)	-	📄 继续显	示 🔢	
USBCAN-E-L	」设备:0 通	道:0 ×								⊲ ⊳ ×
🐴 濾波设置	認启动	送 停止 👗	🕻 关闭 🛛 🔈 定位	🗧 清空	🔒 保存 🛛	💼 设备操作	• 🙋 接收	女时间标识·	•	++ 7
序号(传输方向	时间标识	帧ID	帧格式	帧类型	数据长度	数据(HEX))		_^
00000000 00000001			0x00000000 0x00000009		标准帧 标准帧	0x08 0x08	00 01 02 00 01 02			
•			m							+
✓ 基本操作										+ +
基本操作	正常发送		···· 每次发送单	щ C	每次发送	<u>10</u> 中贞	Фф	ID每发送一	帧递增	Þ
基本操作 发送方式:	- 正常发送	· · · ·				10				► ► 送
基本操作 发送方式: 帧类型:			 每次发送单 帧ID 0fEX): 	00000009	数据04	,	02 03 04 0			
基本操作 发送方式: 帧类型: 帧格式:	: 标准帧	-	 每次发送单 帧ID 0fEX): 	00000009	数据04	(EX): 00 01	02 03 04 0		发	

Figure 4.25 USBCAN send data 2

The device has received the data, as shown in Figure 4.26. For the format of the received data, see Appendix A.

👔 TCP&UDP测试工具 - [192.168.7	.221:4001]
· 操作(O) 查看(V) 窗口(W) 幕	開助(H) Language ×
	世快速以太网装串口模块 应以太网接口,串口通信最高 の NETCOM-105标准型以太网装串口设备 具有TCP Server,TCP Client, UDP, Real 更多 COM ,Group担語,TCP Auto等多种工作模式
🗄 创建连接 🔕 创建服务器 🛛 🕴	启动服务器 送 🐼 😒 连接 🛣 😒 🧟 全部断开 💥 删除 🍇 🔟 🛜 💡
属性栏 平 ×	▲ 192.168.7.221:4001 4 ▷ ×
日	目标:IP
	发送速度(B/S): 0 接收速度(B/S): 0

Figure 4.26 PC receiving data 2

Use the TCP&UDP test tool to send CAN frames, as shown in Figure 4.26. For the data format, see Appendix A.



User Manual

High-Performance	Dual-CAN to	Ethernet Switch	User Manual

🚯 TCP&UDP测试工具 - [192.168.7.221:4001]
· 操作(2) 查看(V) 窗口(W) 帮助(H) Language ×
ZNE-2001全功能型快速以太网链串口模块 具有10/100M自适应以太网接口,串口通信最高 波持军高达1.15Mbps NETCOM-105标准型以太网链串口设备 具有TCP Server,TCP Client, UDP, Real COM ,Group组盤,TCP Auto等多种工作模式
: 🚰 创建连接 😒 创建服务器 🐰 总动服务器 🗏 🐼 😒 注接 🕱 🗐 🧟 全部断开 💥 删除 🦓 🔟 🕏 💂
雇性栏 ♀× ③192.168.7.221:4001 4 ▷ ×
日本正 日本正 日本正 「 192.168.7.221:4001 日本 192.168.7.221:4001 日本 日本 192.168.7.221:4001 日本 日本 192.168.7.221:4001 日本 日本 192.168.7.221:4001 日本 日本 192.168.7.221:4001 日本 日本 192.168.7.221:4001 日本 日本 日本 192.168.7.221:4001 日本 192.168.7.221:4001 日本 日本 192.168.7.221:4001 日本 192.168.7.221:4001 192.168.7.221:4001 日本 日本 192.168.7.221:4001 日本 192.168.7.221:4001 192.168.7.221:4001 「指定本 日本 192.168.7.221:4001 日本 192.168.7.221:4001 192.02:03:04:05:06:07:08:00:00:00:09:01:02:03:04:05:06:07:08:00:00:00:09:01:02:03:04:05:06:07:08:00:00:00:00:00:00:00:00:00:00:00:00:
发送速度(B/S): 0 接收速度(B/S): 0

Figure 4.27 PC sending data 1

Because the preset frame ID filter only filters the frame ID sent from the CAN port to the Ethernet, and the frame ID sent from the Ethernet to the CAN port is not filtered, both frames of data USBCAN can be received properly as shown in Figure 4.28.

🖯 CANTest -	[USBCAN	-E-U 设备:0	通道:0]						X
选择设备	i▼ 帧ID显	显示方式: 十;	六进制 🚽	格式: 真实	ID(ID靠右)	以 对齐)	-	继续显示	II [
USBCAN-E-U	J 设备:0 通	道:0 ×							4 Þ 🗙
🕴 🔦 濾波设置	送 启动	送 停止 👗	🕻 关闭 ዄ 定位	号 清空	🔒 保存 📔	🖸 设备操作	• 🚺 接收时	间标识▼	;; ∓
序号(传输方向	时间标识	帧ID	帧格式	帧类型	数据长度	数据(HEX)		-
0000002 00000003	接收		0x0000000 0x0000009 0x00000001 0x00000009	数据帧 数据 数据帧 数据帧	标 标 使 使 使 板 使 帧	0x08 0x08 0x08 0x08 0x08	00 01 02 03 00 01 02 03 01 02 03 04 01 02 03 04	04 05 06 0 05 06 07 0	7 8
▲ 本 握 作									•
发送方式:	: 正常发送 : 标准帧 : 数据帧	< • [• •	 每次发送单种 帧ID()4EX(): 发送次数: 	00000009	数据 (H		02 03 04 05 0	9发送一帧递 6 07	趙増 发送 停止
基本操作「高	颛顼操作		发送耗	时(s): 0.0	01	发送帧	数: 2		

Figure 4.28 USBCAN receive data 1

4.4 TCP Client Mode

4.4.1 System Block Diagram

In TCP Client mode, CANSwitch-AN2S2 actively connects to the preset TCP server.



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If the connection fails, the client continuously tries to establish a connection with the TCP server based on the preset connection conditions. After establishing a TCP connection with the TCP server, two-way data communication can be carried out. Figure 4.29 shows the communication establishment process.



Figure 4.29 Communication in TCP Client mode

Tip: In this mode, the TCP server IP address is determined by "Destination IP (see Table 5.2)"; the TCP server port is determined by "Destination Port (see Table 5.2)". There are six groups of valid "Destination Port" and "Destination IP". The device will connect to the TCP server specified by the six groups of parameters in turn based on the preset number of connections until the connection is successful.



4.4.2 Configuring the CANSwitch-AN2S2 Device

Figure 4.30 shows the configuration in TCP CLIENT mode.

	性栏	Д	
X	🔊 刷新 🌘 提交更改 🔵 收缩/周		
	设备名称	CANSwitch-AN2S2	
Ξ	密码操作		
	当前密码	****	1
	是否更改密码	否	
	新密码		
	确认新密码		
-	IP地址信息		
	设备IP	192.168.7.221	
	设备子网掩码	255.255.255.0	
	设备网关IP	192.168.7.254	
	DNS	192.168.0.1	
	设备MAC地址	00:14:97:2F:00:01	1
	获取IP方式	静态获取	
-	CAN0配置		
	设置所有CAN口配	置和此CAN口相同	1
	TCP工作方式	TCP CLIENT	
	是否固定端口	固定	
	工作端口(连接端口)	4001	
	TCP通知端口	6001	
	超时断开时间(10ms)	0	
	心跳时间(10ms)	200	
	CAN波特率(kbps)	1000.0	
	CAN0工作模式	正常	
	分包帧数	50	
	分包时间间隔	1	
	清空CANBuffer	TCP连接时清空	Ì
	CAN0 AF	启用	
		7FF	
	标准帧下限	09	
	扩展帧上限	1FFFFFFF	
	扩展帧下限	05	
	CAN发送缓冲帧数(10帧)	65535	
	CAN发送缓冲策略	缓冲区满时丢弃新数据	
	TCP 连接数(UDP目的IP段个数)		l
	目标端口1	8001	1
	子网掩码1	255.255.255.0	
	起始地址	192.168.7.10	
	结束地址	192.168.7.244	

Be sure to submit the configuration modifications

The default password is 88888

The IP address configuration should be correct, and the PC and the device should be on the same network segment

Select TCP Client method

The baud rate should be 1000K, which should be consistent with the CAN device connected to the CAN0 port.

Filtering is set, only the frame ID sent from the CAN port to the Ethernet is filtered, and the frame ID sent from the Ethernet to the CAN port is not filtered.

Enter the server-side destination port number, subnet mask, and IP address. If there is only one server, set the start address and end address to the same IP address.

Figure 4.30 Configuration in TCP Clarinet mode

4.4.3 TCP&UDP Software Operation

Install the TCP&UDP test software, as shown in Figure 4.31.



Figure 4.31 TCP&UDP test software

Double-click the TCP&UDP software and click Create Server. If there are multiple network cards and you need to specify the server IP address, enter the server working port and click OK. See Figure 4.32.



l II auto - E	D = wf = week = week = a	DULL OANLAS		Out the let	1 I.a. a. a. N.A. a. a. a. a.	
HIGD-F	-enformance	Dual-CAN to	Ethernet	Switch	user Manua	11
i ngi i i	ononnanoo			Cunton	ooon manac	

Ag TCP&UDP测试工具		x
····操作(Q) 查看(V) 窗口(W) 帮助(H) Language		
波特室高达1.15Mbps COM ,Group组播,TCP Auto等多种工作模式	<u>更多</u>	
🗄 创建连接 💊 创建服务器 🐰 启动服务器 😕 🧭 😒 连接 😒 🗐 🗟 全部断开 💥 删除 🍓 🔟 🕏 💂		
■性性 ■ たい時程式 ■ 脱劣器模式		
		4

Figure 4.32 Creating a connection

Click Start Server to start the service. See Figure 4.33.

🧟 TCP&UDP测试工具	
·····································	
ZNE-2007全功能型快速以太网接串口模块 具有10/100M自适应以太网接口,串口通信最高 波持室高达1.15Mbps NETCOM-105标准型以太网接串口设备 具有TCP Server,TCP Client, UDP, Real COM ,Group组备,TCP Auto等多种工作模式	<u>更多</u>
🗄 创建连接 🗳 创建服务器 🧏 启动服务器 🧏 🚱 🔮 连接 😹 🛸 全部断开 💥 删除 🍇 🔟 🛜 💂	
属性栏 中 ×	
────────────────────────────────────	
Cocal(192.168.7.90):8001	

Figure 4.33 Opening a connection

When the triangle under the server mode turns green, the server is created successfully. See Figure 4.34.



👔 TCP&UDP测试工具 - [192.168.7	.221:4001]	
· 操作(O) 查看(V) 窗口(W) 幕	野助(<u>H</u>) Language	×
	则快速以太网转串口模块 应以太网接口,串口通信最 ips	高 NETCOM-105标准型以太网技串口设备 具有TCP Server,TCP Client, UDP, Real 更多 COM ,Group组播,TCP Auto等多种工作模式
🗄 🔛 创建连接 🔕 创建服务器 🛛 🕺	启动服务器 🚨 😡 😒 🤮	主接 😹 😪 🧏 全部断开 😹 删除 🎇 🔟 🕏 🖕
属性栏 平 ×	192.168.7.221:4	001 d b x
 ■ 各户铸模式 ■ 服务器模式 □ ※ Loca(192,168.7.90):8001 □ 192,168.7.221:4001 	目标IP [192.168.7.221 目标端口 4001 「話定本地端口 1001 英型 TCP 「自动连接 菊隔 「注接上后自动发送 菊隔 「加速 方送 「加速 方送 「加速 方送 「加速 方送 「加速 「加速 「加速 「加速 「四 「四 <td< th=""><th>发送区 厂 自动发送 每隔 100 ns: 发送 停止 Image: Second state 方 按十六进制 方 送 按 L 方 送 按 L Image: Second state 方 法 接收到的数据 清空 选 项 」 广播包发送选项</th></td<>	发送区 厂 自动发送 每隔 100 ns: 发送 停止 Image: Second state 方 按十六进制 方 送 按 L 方 送 按 L Image: Second state 方 法 接收到的数据 清空 选 项 」 广播包发送选项
< III >	发送速度	(B/S): 0 接收速度(B/S): 0

Figure 4.34 Connection created

4.4.4 CANTest Software Operation

Double-click the CANTest software icon to run the software, as shown in Figure 4.35.



Figure 4.35 CANTest software

Choose the correct device. Select USBCAN-E-U here, as shown in Figure 4.36.





Figure 4.36 Selecting a device

Select the correct baud rate, click OK, and start the CAN, as shown in Figure 4.37.

打开设备 - USBCAN-E
- 设备参数
初始化参数 波特案: 1000K ▼ 模式: 正常模式 ▼ 自定义波特案寄存器:0x 60003 □ 自定义波特率
确定 取消 确定并启动CAN

Figure 4.37 Starting the device

After starting the device properly, the page appear, as shown in Figure 4.38.



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● CANTest - [USBCAN-E-U 设备:0)通道:0]		<u> </u>
→ 読择设备 • 帧ID显示方式: 十	六进制 ▼ 格式: 真实ID(ID靠右对:	齐) 💽 💽 继续显	苏 📗 💡
USBCAN-E-U 设备:0 通道:0 ×			4 ▷ ×
🔜 建波设置 🔡 启动 送 停止 🤰	🕻 关闭 🔈 定位 🎈 清空 🌄 保存 🗃	设备操作 🕶 🧭 接收时间标识	ίτ <mark>"</mark> τ
序号 传输方向 时间标识	·····································	型数据长度数据(HEX)	^
	m		-
✓ 基本操作	m		
	₩ ○ 每次发送単帧 ○ 每次发送	帧 ┌ 帧ID每发送-	
基本操作 发送方式: 正常发送	○ 每次发送单帧 ○ 每次发送 1	00 01 02 03 04 05 06 07	
基本操作 发送方式: 顶类型: 标准帧	 ● 每次发送单帧 ○ 每次发送 1 • ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	00 01 02 03 04 05 06 07	发送

Figure 4.38 Device started

For details about how to use the CANTest software, see the ZLG Electronics CAN Test Software and Interface Function User Manual.

4.4.5 Test Result

Send a CAN frame whose ID is 00000000 and data is 0001020304050607 by using the CANTest software over USBCAN. Since we set frame ID filtering, this frame should not happen to the receiving device, as shown in Figure 4.39.

● CANTest - [USBCAN-E-U 设备:0 通道:0]	_ 0 <mark>_ X</mark>
→ 建築型 法择设备 • 帧ID显示方式: 十六进制 • 格式: 真实ID(ID靠右对齐) • • 📦 继续型	誌 📔 🍹
USBCAN-E-U 设备:0 通道:0 ×	4 ▷ ×
🔍 違波设置 🕺 启动 🔏 停止 义 关闭 🐚 定位 🍠 清空 🕞 保存 📑 设备操作 🔹 🧑 接收时间标识	- ¹
序号 传输方向 时间标识 帧ID 帧格式 帧类型 数据长度 数据(HEX)	<u>^</u>
00000000 发送 无 0x0000001 数据帧 标准帧 0x08 00 01 02 03 04	05 06 07
< III	
/	
发送方式: 正常发送 ▼	
帧类型: 标准帧 ▼	发送
帧格式: 数据帧 发送次数: 1 每次发送间隔 (ms): 0	停止
基本操作 高级操作 发送耗时(s): 0.001 发送帧数: 1	接收帧数:

Figure 4.39 USBCAN send data 1

Use the TCP&UDP test tool to receive data. Because the frame ID filter is set and



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ID00000000 is no longer in the receiving range, no data is received, as shown in Figure 4.40.

👔 TCP&UDP测试工具 - [192.168.7	.221:4001]	K						
· 操作(Q) 查看(V) 窗口(W) #	助(出) Language	×						
ZNE-2001全功能型快速以太网链串口模块 具有10/100M自适应以太网接口,串口通信最高 波持率高达1.15Mbps NETCOM-105标准型以太网链串口设备 具有TCP Server,TCP Client, UDP, Real COM ,Group组播,TCP Auto等多种工作模式								
🗄 创建连接 🔕 创建服务器 🔡	言动服务器 送 😡 📚 连接 🕱 🛸 🍣 全部断开 😹 删除 🎇 🔟 🛜 💂							
属性栏 平 ×	192.168.7.221:4001 4 D	> ×						
	目标IP 发送区 □ 自动发送 每隔 □00 ms 发送 停止 「92.168.7.221 反 按十六进制 发送文件 □ 发送操收到的数据 清空 选项 广播包发送选 目标端口 1001 び指定本地端口 1001 1001 マ 按十六进制 び 发送文件 □ 发送集 小 前 第6001 マ 大型 TCP ▼ 1 日前连接 毎隔 ○ s ご 注接上戶自动发送 1 場本 1 「 保存到文件 (決时) 1	[]]						
✓ ►								
	スムム出版(U/3); V 取収活度(D/3); V	- 41						

Figure 4.40 PC receives data 1

The CAN frame with ID 00000011 and data 0001020304050607 is sent, and the ID is within the receiving range. The peer device can receive data correctly, as shown in Figure 4.41.

😑 CANTest -	- [USBCAN-E	-U 设备:0 通	道:0]						x
远 选择设备	备▼ 帧ID显测	苏式: 十六)	进制 ▼ 格式:	真实ID(II	D靠右对齐)	🚽 📄 继续	東显示	•• ₹
USBCAN-E-	·U 设备:0 通道	道:0 ×							∢ ⊳ ×
🔜 滤波设置	🐰 启动 🌡	🖁 停止 👗 🛪	闭 🐚 定位 🎈	清空 😼 🕼	保存 💼 词	设备操作▼	🙋 接收时间标	祝★	•• ₹
序号(传输方向	时间标识	帧ID	帧格式	帧类型	数据长度	数据(HEX)		_
00000000	发送		0x00000000	数据帧	标准帧	0x08	00 01 02 03 (
00000001	发送		0x00000011	数据帧	标准帧	0x08	00 01 02 03 (04 05 06 07	
٠			III						
基本操作									
发送方式	: 正常发送	•	每次发送单帧	○ 每次	C发送 10	呐	□ 帧ID每发说	送一帧递增	
帧类型	』: 标准帧	•	ф∫ID (HEX): 0000	00011	数据(HEX):	00 01 02	03 04 05 06 07	发送	
±+2-+	: 数据帧	-	发送次数: 1		每次发送	Ě间隔(ms)∶	0	停止	
叩风作品。									
	高级操作								

Figure 4.41 USBCAN sending data 2



The device has received the data, as shown in Figure 4.42. For the format of the received data, see Appendix A.

👔 TCP&UDP测试工具 - [192.168.7.	221:4001]	
· 操作(Q) 查看(V) 窗口(W) 帮	助(<u>H</u>) Language	×
	快速以太网转串口模块 立以太网接口,串口通信最 ps	高 <u>NETCOM-105标准型以太网结串口设备</u> 具有TCP Server,TCP Client, UDP, Real <u>更多</u> COM ,Group组髓,TCP Auto等多种工作模式
🗄 创建连接 🔕 创建服务器 🛛 🕴 🕯	自动服务器 😕 🐼 😒 😒	註度 🕱 💁 🧏 全部断开 💢 删除 🎇 🔟 😹 🥫
属性栏 무 ×	192.168.7.221:4	001 4 b x
 ● 書户読模式 ● 服务器模式 □ ● 192.168.7.90):8001 ● 192.168.7.221:4001 	目标IP 192.168.7.221 目标端口 1901 ゲ 指定本地端口 1001 受型 TCP 回訪違擔 個隔 0 5 「自劫違擔 個隔 0 水 「計数 「注数 「加 「加 「加 「加 「加 「加	友送区 厂 自动发送 每隔 100 ms 发送 停止 I 技+六进事厂 发送文件 □ 发送 擦收到的姚娟 清空 选项 广播包发送选项 接收区 暫停显示 清空 保存 选项 厂 十六进制 [保存到文件 (采时))
4 111	发送速度	(B/S): 0 接收速度(B/S): 0

Figure 4.42 PC receiving data 2

Use the TCP&UDP test tool to send CAN frames, as shown in Figure 4.43. For the data format, see Appendix A.

🁔 TCP&UDP测试工具 - [192.168.7	7.221:4001]
· 操作(Q) 查看(V) 窗口(W) 幕	帮助任) Language ×
	<u>戦快速以大网装串口模块</u> 症以太网接口・串口通信最高 pps NETCOM-105标 <u>准型以大网铁串口设备</u> 具有TCP Server,TCP Client, UDP, Real <u>更多</u> COM ,Group组播,TCP Auto等多种工作模式
🗄 🚰 创建连接 🔕 创建服务器 🛛 🕺	启动服务器 😕 😡 😒 连接 📽 👒 🥸 全部断开 💥 删除 🦓 🔟 🛜 💂
雇性栏 早 ×	▲ ▷ ×
 ● 書户請提式 ● 服务器模式 ● 認 Local(192.168.7.90):8001 ● 192.168.7.221:4001 	目标IP 发送区 「自劫发送 每隔 100 ms 发线 停止 192.168.7.221 ダ 按十六进家 发送文件 「发送按供 」 发送换到的数据 清空 这项 广播包发送选项 目标端口 4001 「 指定本地端口 08 00 00 00 01 01 02 03 04 05 06 07 08 08 00 00 00 03 01 02 03 04 05 06 07 08 1001 ● 水型 「CP ▼ ● 1 自动连接 ● 毎隔 0 ** 「 自动连接 ● 毎隔 0 ** 「 自动连接 ● 毎隔 0 ** 「 保存到文件 (实时) ● ** 「 保存到文件 (实时) 08 00 00 00 11 00 01 02 03 04 05 06 07 ** 13 清空 第全
<	发送速度(B/S): 0 接收速度(B/S): 0 。
	(レ/5): 0 放火活法(D/5): 0

Figure 4.43 PC sending data 1

Because the preset frame ID filter only filters the frame ID sent from the CAN port to the Ethernet, and the frame ID sent from the Ethernet to the CAN port is not filtered, both



frames of data USBCAN can be received properly as shown in Figure 4.44.

CANTest	t - [USBCAI	N-E-U 设备:0 通道	Ì:0]							x
远 选择说	设备▼ 帧ID	显示方式:十六进	制 🔻 格式	: 真实ID(II	D靠右对齐)	-	继续显示	•	•• Ŧ
USBCAN-	-E-U 设备:0	通道:0 ×								4 Þ 🗙
🛛 🐴 濾波设	置 超启动) 送 停止 👗 关阔	团 💫 定位 🎈	清空 😼 🖗	幕 💼 🖥	设备操作▼	🙆 接收时	间标识▼		++ ∓
序号	传输方向	时间标识	帧ID	帧格式	帧类型	数据长度	数据(HEX))		-
00000000	发送	无	0x00000000	数据帧	标准帧	0x08	00 01 02	03 04 05	6 06 07	
00000001	发送		0x00000011	数据帧	标准帧	0x08	00 01 02	03 04 05	6 06 07	
00000002	接收	20:29:26.562	0x00000001	数据帧	标准帧	0x08	01 02 03	04 05 06	5 07 08	
0000003	接收	20:29:26.562	0x00000009	数据帧	标准帧	0x08	01 02 03	04 05 06	5 07 08	
0000003	接收	20:29:26.562	0x00000009 !!!	数据帧	标准帧	0x08	01 02 03	04 05 06	07 08	+
00000003	接收	20:29:26.562		数据帧	标准帧	0x08	01 02 03	04 05 06	07 08	÷
✓ 基本操作	接收 接收 i式: 正常发					0x08				•
✓ 基本操作 发送方		ж ж		○毎次	7发送 10	ф		政送一帧		•
✓ 基本操作 发送方 帧类	□式: □正常发	i i i i i i i i i i i i i i i i i i i	₩ 每次发送单帧	○毎次	□ 2 (10) (10) (10) (10) (10) (10) (10) (10)	ф	「 帧ID每 03 04 05 0	政送一帧	递增	
< 基本操作 发送方 帧类	ī式: │正常发 ^{後型:} 「标准帧	i i i i i i i i i i i i i i i i i i i	… 毎次发送单帧 帧ID 0fEX): [00000	○毎次	□ 2 (10) (10) (10) (10) (10) (10) (10) (10)	Фф 00 01 02	「 帧ID每 03 04 05 0	政送一帧	递增 发送	

Figure 4.44 USBCAN receive data 1

4.5 UDP Mode

4.5.1 System Block Diagram

In UDP mode, the UDP protocol is used for data communication. UDP is a non-connection-based communication method. It cannot guarantee that the data packets sent to the target host will be received correctly. Therefore, in the scenarios with high reliability requirements, the upper-layer communication protocol must be used to ensure that the data is correct; however, because UDP is a simple communication method, it will not increase too much additional communication volume, and can provide a higher communication speed than the TCP method to ensure the real-time transmission of data packets. In fact, when the network environment is simple and the network communication load is not too large, the UDP working method is not error prone. The devices working in this mode are equal, and there is no server and client. Figure 4.45 shows the communication process.



Figure 4.45 UDP mode communication



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Tip: In this mode,CANSwitch-AN2S2 uses "working port (see Table 5.2)" to receive UDP packets sent by user equipment; the data received by the CAN port of the CANSwitch-AN2S2 device will be sent to the "destination port (see Table 5.2)" of six groups of valid "destination IP (see Table 5.2)".



4.5.2 Configuring the CANSwitch-AN2S2 Device

Figure 4.46 shows the configuration in UDP mode.

厪	性栏	д	>
V	刷新 📻 提交更改 🔰 收缩/周	展开 🚞 导入 🛃 导出	
Ξ	基本信息		-
	设备型号	CANSwitch-AN2S2	
	设备固件版本	V1.00	
	设备名称	CANSwitch-AN2S2	
Ξ	密码操作		
	当前密码	*****	
	是否更改密码	否	
	新密码		
	确认新密码		
Ξ	IP地址信息		
	设备IP	192.168.7.178	
	设备子网掩码	255.255.255.0	
	设备网关IP	192.168.7.254	
	DNS	192.168.0.1	
	设备MAC地址	00:14:97:2F:00:01	
	获取IP方式	静态获取	
Ξ	CAN0配置		
	设置所有CAN口配	置和此CAN口相同	
	TCP工作方式	UDP	
	是否固定端口	不固定	
	工作端口(连接端口)	4001	
	TCP通知端口	6001	
	超时断开时间(10ms)	0	
	心跳时间(10ms)	200	
	CAN波特率(kbps)	1000.0	
	CAN0工作模式	正常	
	分包帧数	50	
	分包时间间隔	1	
	清空CANBuffer	TCP连接时清空	
	CAN0_AF	禁用	
	标准帧上限	7FF	
	标准帧下限	00	
	扩展帧上限	1FFFFFFF	
	扩展帧下限	00	
	CAN发送缓冲帧数(10帧)	65535	
	CAN发送缓冲策略	缓冲区满时丢弃新数据	
	TCP 连接数(UDP目的IP段个数)	1	
	目标端口1	8001	
	子网掩码1	255.255.255.0	
	起始地址	192.168.7.55	
	结束地址	192.168.7.200	
	目标端口2	0	
	子网掩码2	0.0.0.0	
	起始地址	0.0.0.0	
	结束地址	0.0.0.0	1

Be sure to submit the configuration modifications

The default password is 88888

The IP address configuration should be correct, and the PC and the device should be on the same network segment

Select UDP method

The baud rate should be 1000K, which should be consistent with the CAN device connected to the CAN0 port.

Filtering is set, only the frame ID sent from the CAN port to the Ethernet is filtered, and the frame ID sent from the Ethernet to the CAN port is not filtered.

Figure 4.46 Configuration in UDP mode

4.5.3 TCP&UDP Software Operation

Install the TCP&UDP test software, as shown in Figure 4.47.



Figure 4.47 TCP&UDP test software

Double-click to run the TCP&UDP software, and click to create a connection, as shown in Figure 4.48.



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Figure 4.48 Running the TCP&UDP test tool

Select UDP mode in Type, enter the IP address and the working port number of CANSwitch-AN2S2, and local port, and click Create. See Figure 4.49.

创建连接
类型: WDP ▼
目标IP: [192.168.7.178] 端口: [4001
本机端口: C 随机端口 @ 指定: 8001
□ 自动连接: 间隔 0 s
□ 自动连接上后自动发送: 间隔 ms
□ 创建多个连接 创建个数 10
🔽 目标IPI递增 🔲 目标端口递增 🔲 本地端口递增
创建

Figure 4.49 Creating a connection

Click Connect to connect the CANSwitch-AN2S2 device. See Figure 4.50.



☆ TCP&UDP测试工具 - [192.168.7.178:40	1]					
····操作(Q) 查看(V) 窗口(W) 帮助(H)	Language					×
ZNE-200T全功能型快速以 具有10/100M自适应以太 波特率高达1.15Mbps		A Lateration of the second	C <mark>OM-10S标准型以</mark> TCP Server,TCP C 1 ,Group组播,TCP /		<u>更多</u>	
🔄 创建连接 🗳 创建服务器 🛛 総 启动服务	* 28 OC 😒 🥳 🌶) 🗐 🗟 全部断	(开 💥 删除 🍇	0 😹 📮		
雇性栏 早 ×	192.168.7.178:4连接					4 ۵ ک
 ■ 服务器模式 目れ 「 (400 共3 (401 	166.7.178 和□ 4001 定本地端口 100P ▼ 助注接 6 5 接上后自动发送	☆十六进幕□ 发送		ms 发送 停止 始約期据 清空 送印 选项 □ 十六进制		

类型 100 r ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	接收区 暂停显示	_清空 <u>保存 遗顷</u> 「十; (实时)	六进制
发送速度	(B/S): 0	接收速度(B/S): 0	

Figure 4.50 Opening a connection

When the triangle below the client mode turns green, the connection is successful. See Figure 4.51.

👔 TCP&UDP测试工具 - [192.168.7.]	178:4001]							
· 操作(O) 查看(V) 窗口(W) 帮	助(H) Language X							
ZNE-2007全功能型快速以太网接用口模块 具有10/100M台适应以太网接口,串口通信最高 波特率高达1.15Mbps NETCOM-105标准型以太网接串口设备 具有TCP Server,TCP Client, UDP, Real COM ,Group组髓,TCP Auto等多种工作模式								
🗄 🚰 创建连接 🔕 创建服务器 🐸 🕫	自动服务器 🐸 🚱 😒 连接 😰 🛸 📚 全部断开 💥 删除 🎇 🔟 💈 🖕							
属性栏 早 ×	(≩ 192.168.7.178:4001							
日-目 客户送模式 192.168.7.178:4001 - 目 服务器模式	目标IF 送送区 「目却发送 每隔 00 ss 发送 停止 「 192.168.7.176 ✓ 技士六进制「发送文件 「发送掛映到的謝据 酒空 速项 广播包发送速项 日标端口 4001 ✓ 技士六进制「发送文件 「发送掛映到的謝据 酒空 速项 广播包发送速项 「指定本/世端口 4001 ✓ 技士六进制「发送文件 「发送掛映到的謝据 酒空 速项 广播包发送速项 「日本助生接 毎隔 9 s 「 注检上斥自动发送 項 ★型 100 r 「 注检上斤自动发送 ★回 → 満空 ★@ 100							
	发送速度(B/S): 0 接收速度(B/S): 0							

Figure 4.51 Connection created

4.5.4 CANTest Software Operation

Double-click the CANTest software icon to run the software, as shown in Figure 4.52.





Figure 4.52 CANTest software

Choose the correct device. Select USBCAN-E-U here, as shown in Figure 4.53.



Figure 4.53 Selecting a device

Select the correct baud rate, click OK, and start the CAN, as shown in Figure 4.54.

打开设备 - USBCAN-E	
设备参数 设备索引号: 0 ▼ 第几路CAN: 0 ▼	
□ 选择所有CAN	
初始化参数 波特率: 1000K ▼ 模式: 正常模式 ▼ 自定义波特率寄存器:0x 60003 □ 自定义波特率	
确定 取消 确定并启动CAN	

Figure 4.54 Starting the device

After starting the device properly, the page appear, as shown in Figure 4.55.



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● CANTest - [USBCAN-E-U 设备:()通道:0]	
→ 选择设备 • 帧ID显示方式: 十	-六进制 ▼ 格式: 真实ID(ID靠右对齐)	▼ 📄 继续显示 📗 🚆
USBCAN-E-U 设备:0 通道:0 ×		$\triangleleft \triangleright \mathbf{x}$
🔜 建波设置 🔡 启动 送 停止 🤰	🕺 关闭 🛯 🔈 定位 🎈 清空 😼 保存 🔤 设备	操作▼ 🧔 接收时间标识▼ 🦉
序号 传输方向 时间标识	只 帧ID 帧格式 帧类型 数	如据长度 数据(HEX)
		•
✓		•
 ✓ 基本操作 发送方式: 正常发送 ▼ 	₩ • 每次发送单帧 ○ 每次发送 10	▶ 「 帧Ⅱ 每发送一帧递增
发送方式: 正常发送 👤	 ○ 每次发送单帧 ○ 每次发送 10 	00 01 02 03 04 05 06 07 发送
发送方式: 正常发送 ▼ 帧类型: 标准帧 ▼	 ● 每次发送单帧 ● 每次发送 10 ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ● ●	00 01 02 03 04 05 06 07 发送

Figure 4.55 Device started

For details about how to use the CANTest software, see the ZLG Electronics CAN Test Software and Interface Function User Manual.

4.5.5 Test Result

Send a CAN frame whose ID is 00000000 and data is 0001020304050607 by using the CANTest software over USBCAN, as shown in Figure 4.56.

CANTest - [USBCAN-	E-U 设备:0 通道:0]				x
→ 选择设备 v 帧ID显	示方式:十六进制 🗸	格式: 真实ID(ID靠右双	対齐) 🔻	送续显示	•• ₹
USBCAN-E-U 设备:0 通	道:0 ×				4 ▷ ×
: 💊 濾波设置 🕺 启动	送 停止 👗 关闭 🛯 🔈 定位	2 🎅 清空 😼 保存 📔	🖥 设备操作 🔹 🧔	接收时间标识▼	++ ∓
序号 传输方向	时间标识 帧1	D 帧格式 帧类	型数据长度数据	(HEX)	^
00000000 发送	无 0x0000	0000 数据帧 标准	帧 0x08 000	1 02 03 04 05 06 07	
					-
•					۰.
基本操作					
发送方式: 正常发送	 ▼ ● 每次发送单 	帧 ○ 每次发送	10 帧 🗌	帧ID每发送一帧递增	
帧类型: 标准帧	• 内贞ID (HEX) :	00000000 数据00	XX): 00 01 02 03 0	4 05 06 07 发	<u>ن</u> ظ
帧格式: 数据帧	▼ 发送次数:	1 每次	发送间隔(ms): 0	fi	正
基本操作 高级操作					
	发送耒	師(s): 0.001	发送帧数: 1	接收帧	镂:

Figure 4.56 USBCAN sending data 1

Use the TCP&UDP test tool to receive data, as shown in Figure 4.57.



👔 TCP&UDP测试工具 - [192.168.7.:	178:4001]
· 操作(O) 查看(V) 窗口(W) 帮	助任) Language X
	<u>快速以太网链串口模块</u> 並以太网接口,串口通信最高 ps <u>NETCOM-105标准型以太网链串口设备</u> 具有TCP Server,TCP Client, UDP, Real <u>更多</u> COM ,Group组盤,TCP Auto等多种工作模式
🗄 创建连接 🔕 创建服务器 🐰 🕫	自动服务器 送 🐼 😤 连接 울 🗐 🧏 全部断开 😹 删除 🎇 🔟 🥏 🖕
属性栏 早 ×	(≩ 192.168.7.178:4001
	目标IP
	//发送速度(B/S): 0 接收速度(B/S): 0

Figure 4.57 PC receiving data 1

Send the CAN frame whose ID is 00000022 and data is 0001020304050607. The peer device can receive the data correctly, as shown in Figure 4.58.

😑 CANTest - [USBCAN-E-U 设备:() 通道:0]				
远择设备	▼ 帧ID显示方式: 十	→ () () () () () () () () () () () () ()	真实ID(ID靠右对齐	Ð	▼ ● 继续显示	₹ II 🧯
USBCAN-E-U	设备:0 通道:0 ×					4 Þ 🗙
! 🔌 濾波设置	🐰 启动 送 停止 🏅	🕺 关闭 🖾 定位 🎈 🤅	青空 Ы 保存 🛛 📷 i	设备操作 🕶 🤇	●接收时间标识▼	יי ד
序号 (輸方向 时间标	识 帧ID	帧格式 帧类型	数据长度 数	据(HEX)	^
0000000	发送 无		数据帧 标准帧	0x08 00	01 02 03 04 05	06 07
00000001	发送 无	0x00000022	数据帧 标准帧	0x08 00	01 02 03 04 05	06 07
基本操作						
SECONDOLOGI P						
发送方式:	正常发送 💌	◎ 每次发送单帧	C 每次发送 10	帧	□ 帧ID每发送一帧	前递增
帧类型:	标准帧 ▼	фID (HEX): 00000	DO22 数据(HEX)	: 00 01 02 03	04 05 06 07	发送
帧格式:	数据帧 ▼	发送次数: 1		送间隔(ms): 0		停止
基本操作高	级操作					
		发送耗时(s):	0.001	发送帧数:2	1	接收帧数:

Figure 4.58 USBCAN sending data 2

The device has received the data, as shown in Figure 4.59. For the format of the received data, see Appendix A.



👔 TCP&UDP测试工具 - [192.168.7.1	178:4001]	_ D _X
· 操作(Q) 查看(V) 窗口(W) 帮助	助(<u>H</u>) Language	×
		<u>更多</u>
🗄 🚰 创建连接 🔕 创建服务器 🛛 🕸 启	动服务器 送 😡 😒 连接 🕱 🛸 🛳 全部断开 😹 删除 🍓 🔟 寒 💂	
雇性栏 	(ga 192.168.7.178:4001	4 Þ 🗙
日-■ 客户续模式 ↓ ▶ 192.168.7.178:4001 ■ 服务器模式	目标IP 发送 停止 192.168.7.178 次送 停止 目标漏口 4001 「 技士六进客厂发送文件厂发送接收到的数据 清空 选项 「「描記本地端口 「 「 技士六进客厂发送文件厂发送接收到的数据 清空 选项 「 「 「 方 「 」 「 」 」 」	

Imp Imp P001 ★型 ★型 Imp Imp Imp ● ● ● ● ● ● ★ ● ● ● ★ ● ● ● ★ ● ● ● ★ ● ● ● ★ ● ● ●		02 03 04 05 06 07 08 00 00 00 22 0	
发送速度	(B/S): 0	接收速度(B/S): 0	

Figure 4.59 PC receiving data 2

Use the TCP&UDP test tool to send CAN frames, as shown in Figure 4.60. For the data format, see Appendix A.

👔 TCP&UDP测试工具 - [192.168.7.	178:4001]						
· 操作(O) 查看(V) 窗口(W) 帮	助(H) Language >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>						
ZNE-2007全功能型快速以大网接串口模块 具有10/100M自适应以大网接口,串口通信最高 波特率高达1.15Mbps NETCOM-105标准型以太网接串口设备 具有TCP Server,TCP Client, UDP, Real COM ,Group组播,TCP Auto等多种工作模式							
🗄 创建连接 🔕 创建服务器 🛛 🐰 🕫	計服务器 🐸 🐼 🗟 连接 🕱 🎕 🧟 全部断开 💢 删除 🎘 🔟 🛜 💂						
雇性栏 ₽×	(⊉ 192.168.7.178:4001 4 ▷ >						
日-昌 客户議模式 └ ▶ 192.168.7.178:4001 └ ■ 服务器模式	目标IP 发送区 自动发送 每隔 00 ns 发送 停止 192.168.7.176 「 技大元進事」 「 技大元進事」 「 法通 「 小						
	, 发送速度(B/S): 0 接收速度(B/S): 0						

Figure 4.60 PC sending data 1

Since there is no preset frame ID filtering, both frames of data USBCAN can be received properly, as shown in Figure 4.61.



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🖯 CANTest	- [USBCAN-	E-U 设备:0	通道:0]							. 🗆	×
选择设	备▼ 帧ID显	示方式: +	六进制	▼ 格式:	真实ID(II)靠右对齐	•)	•	()	継续显	示 📗	•• ₹
USBCAN-E	E-U 设备:0 通	道:0 ×										4 Þ 🗙
🕴 🍋 濾波设置	置 38 启动	送 停止 🏅	(关闭	🔈 定位 🎈 🤅	春空 🔒 🥼	art 💼 i	设备操作▼	2 15	設	际识,		
序号	传输方向	时间标	识	帧ID	帧格式	保存世	数据长度	数据(H	HEX)			<u>^</u>
00000000	发送	无		0x00000000	数据帧	标准帧	0x08	00 01	02 03	04 05	06 07	,
00000001	发送	无		0x00000022	数据帧	标准帧	0x08	00 01	02 03	04 05	06 07	1
00000002	接收	20:33:34	.878	0x00000000	数据帧	标准帧	0x08	00 01	02 03	04 05	06 07	'
0000002		00.00.04	070	0x00000033	数据帧	标准帧	0x08	00 01	02.02	04.05	06 07	,
00000003	接收	20:33:34	.878	0x0000033	900A92	100412			. 02 03	04 03	00 07	
	接收	20:33:34	.878		SUATI				. 02 03	04 03	0007	-
0000003	接收	20:33:34	.878						. 02 03	04 03	0007	•
00000003 (基本操作	接收 式:「正常发送					发送 10			. U2 U3			•
00000003 基本操作 发送方式			で毎	m	 ○ 每次 	发送 10			帧ID每)	发送—	帧递增	•
00000003 基本操作 发送方式 帧类	式:「正常发送		ⓒ 每3	… 次发送单帧	〇 每次 0022 g	发送 10 救据 0mgX)	Ф ф	03 04	帧ID每)	发送—	帧递增 发	•
00000003 < 基本操作 发送方5 - - - - - - - - - - - - -	式: 「正常发送 型: 「标准帧	· ·	ⓒ 每3	… 次友送单帧 ID (HEX): 000000	〇 每次 0022 g	发送 10 救据 0mgX)	Фф : 00 01 02	03 04	帧ID每)	发送—	帧递增 发	,

Figure 4.61 USBCAN receiving data 1



5. ZNetCom Software Configuration

The ZNetCom software is dedicated configuration software for CANSwitch-AN2S2 device running on Windows. You can obtain the IP address of the CANSwitch-AN2S2 device, view and change the device configuration parameters, and upgrade the device firmware by using the ZNetCom software.

5.1 Installing the Configuration Software

Insert the CD-ROM into the CD-ROM drive and open the CD-ROM (you can also download the latest ZnetCom software at http://www.zlg.cn/canbus/download.php). Double-click the ZNetCom2.95_Setup.exe file, as shown in Figure 5.1 (if the system is Windows 7 or later, right-click and run as administrator) to start installation.



The welcome window as shown in Figure 5.2 appears. Click [Next] to continue.

Figure 5.2 Welcome interface

The window shown in Figure 5.3 is displayed, asking for the installation path (the default path is C:\Program Files\ZNetCom Utility). To change the installation path, click the [Browse] button.



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🕗 ZNetCom Utility 2.95 安装
选择安装位置 选择"ZNetCom Utility 2.95"的安装文件夹。
Setup 将安装 ZWetCom Utility 2.95 在下列文件夹。要安装到不同文件夹,单击 [浏览(8)] 并选择其他的文件夹。 单击 [安装(1)] 开始安装进程。
目标文件夹 <mark>C:\Program Files (x86)\ZNetCom Utility</mark>
所需空间: 18.4MB 可用空间: 24.3GB
ZHIYUAN ELECTRONICS (上一步 ଫ) 安装 Œ) 取消 Œ)

Figure 5.3 Selecting an installation path

Click [Install] to copy the files to the installation path. If the dialog box shown in Figure 5.4 appears, select Yes.

Microsoft Visual C++ 2005 SP1 可再发行组件包	x
请仔细阅读以下许可协议。按 PAGE DOWN 键可查阅协议的余下部分。	
MICROSOFT软件许可条款	*
MICROSOFT VISUAL C++ 2005 RUNTIME LIBRARIES	=
本许可条款是 Microsoft Corporation (或您所在地的 Microsoft Corporation 关联公司) 与您之间达成的协议。请阅 读本条款的内容。本条款适用于上述,其中包括您用来接收该软 件的媒体 (若有)。本条款也适用于Microsoft: * 更新、 * 私充、 * 基于 Internet 的服务和 * 支持服务	
为此软件提供的(除非下述内容附带有其他条款)。如果确实附	Ŧ
是否接受本许可协议所列的全部条款?如果选择"否",安装程序 将自动关闭。要安装此软件,必须接受本协议。	;
是(1) 否(11)	

Figure 5.4 Installing the runtime library

After the installation is complete, the window for successful installation as shown in Figure 5.5 will appear. Click [Finish] to exit the installation software.



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Figure 5.5 Installation completed

The configuration software is installed.

5.2 Obtaining Device Configurations

Before obtaining the configuration information, check whether the RS232 configuration serial port has been connected to the computer or the CANSwitch-AN2S2 device and the PC network card have been connected with a network cable.

Run the ZNetCom software (if the system is later than Windows 7, right-click it and run as administrator). The interface shown in Figure 5.6 appears.



🎢 ZNetCom V2.95						
		_				
配置(S) 视图(V) 帮助						
🔒 搜索设备 🔍 指定	搜索 📶 清空设备 🔪	15	観信息 🔳 复位设备 🤦	下载数据 🛜 关于 💂		
属性栏			序号 模块型号	MAC地址	IP地址	
🐚 刷新 ា 提交更改 🔵	收缩/展开			There are no item	is to show.	
🗀 导入 🚽 导出						
□ 基本信息		-				
设备型号	ZNE-100TI					
设备固件版本						
设备名称						
□ 密码操作						
当前密码						
是否更改密码	0	E				
新密码						
确认新密码						
□ IP地址信息						
设备IP						
设备子网掩码		-				
设备网关IP						
设备MAC地址						
获取IP方式						
DNS服务器						
■ PPPOE参数		-				
启用PPPOE						
PPPOE IP						
PPPOE 用户名						
PPPOE 密码 回 网络参数		-				
 回 网络参数 工作方式 						
		-				
设备型号						

Figure 5.6 ZNetCom running interface

Click Lick L

CANSwitch-AN2S2 allows you to configure the device over Ethernet or serial ports . Which method you choose depends on how you connect the device to the PC. If you use the LAN port to connect to the PC, choose Ethernet; if you use the RS232 configuration serial port to connect to the PC, choose the serial port. If you choose the serial port, you should select the correct port number. See Figure 5.7.

搜索	配置			×
	─通讯链路选择─── ○ 以太网	● 串口		
	-串口配置 COM COM4	•	超时时间	2000
	确定		取	消

Figure 5.7 Searching configuration

Click OK. The ZNetCom configuration software starts to search for the CANSwitch-AN2S2 device connected to the PC, as shown in Figure 5.8. In the search window, we can see the searched device, and the corresponding MAC address and IP address. The search window closes automatically after 10 seconds. You can also click the [Stop] button to close it.



搜	索			×
	正在搜索	网络中的设备 📘		
			剩余搜索时间:	9 秒
	序号	模块型号	MAC地址	IP地址
	0	CANSwitch	00:14:97:33:00:00	192.168.0.178
				佐山
	搜索到	1 个设备		停止

Figure 5.8 Searching for devices by using the ZNetCom software

After the search is completed, the searched devices appear in the device list of the ZNetCom software, as shown in Figure 5.9.

8	ZNetCom V2.95							
	配置(S) 视图(V) 帮助	b(H) 测 试(T) Lang	Jage					
	🕦 搜索设备 🔍 指定	搜索 📠 清空设备	V () a	斑信息	🗧 复位设备 💁 下調	裁姻 🛜 关于 💂		
厚	11日本 11日本 11日本 11日本 11日本 11日本 11日本 11日本		Ψ×	序号	模块型号	MAC地址	IP地址	
	실 刷新 ា 提交更改 🧲	收缩/展开		0	CANSwitch-AN2S2(Hub) 00:14:97:33:00:00	192.168.0.178	
Í	🔄 导入 🔛 导出							
E	基本信息		•					
	设备型号	CANSwiter-AN2S2			evice list			
	设备固件版本				evice list			
	设备名称							
E	密码操作							
	当前密码							
	是否更改密码	否						
	新密码		E					
	确认新密码							
E	组网信息							
	设备编号							
	组网设备数							
E	CAN0配置							
	CAN波特率(kbps)							
	CAN0工作模式							
	CAN0_AF							
	标准帧上限							
	标准帧下限							
	扩展帧上限							
	扩展帧下限							
E	CAN0转发配置							
	设备1CAN1							
	设备2CAN0		-					
F	2720CANI	-						
				,				

Figure 5.9 Obtaining CANSwitch-AN2S2 device configuration properties

Double-click the device item in the device list; or after selecting the device item, click in the toolbar or in the property bar. The "Get Device Information" dialog box appears, as shown in Figure 5.10.



正在获取设备信息,请稍候	×
取消	

Figure 5.10 Obtaining configuration data

When the "Get Device Information" dialog box disappears, you can see the CANSwitch-AN2S2 device configurations as shown in Figure 5.11 and Figure 5.12 from the property column.

1	ZNetCom V2.95								
	配置(S) 视图(V) 帮助	b(H) 测试(T) Langu	age						
	👠 搜索设备 🔍 指定指	电索 🔓 洁容设备	VA a	中取信自	■ 复位设备	▲ 下載数据	⁄		
						- I MANAN	124	TO BE LU	
11	暑性栏		4 X	序号	模块型号		MAC地址	IP地址	
	🔌 刷新 📦 提交更改 🛛 🧲)收缩/展开		0	CANSwite	n-AN2S2(Hub)	00:14:97:33:00:00	192.168.0.178	
	🛅 导入 🌄 导出								
E	基本信息			1					
	设备型号	CANSwiter-AN2S2							
	设备固件版本	V1.00							
	设备名称	CANSwitch-AN2S2							
E	3 密码操作								
	当前密码								
	是否更改密码	否							
	新密码		=						
	确认新密码								
E	组网信息								
	设备编号	1							
	组网设备数	2							
E	CAN0配置								
	CAN波特率(kbps)	1000.0							
	CAN0工作模式	正常							
	CAN0_AF	禁用							
	标准帧上限	7FF							
	标准帧下限	00							
	扩展帧上限	1FFFFFF							
	扩展帧下限	00	_						
E	CAN0转发配置								
	设备1CAN1								
	设备2CAN0		-						
F,	新密码	<u> </u>		1					
	WT42049 设置的密码最大有效长度为	910							

Figure 5.11 CANSwitch-AN2S2 device configuration hub (Hub) mode



-						_ 0 _ X _
👷 ZI	NetCom V2.95					
۵۵ (置(S) 视图(V) 帮助	助(H) 测试(T) Language				
	搜索设备 🔍 指定	搜索 🛛 📶 清空设备 🛛 🔌 药	取信息	🗧 复位设备 🗐 🖳 下载数据 🛛 📚 :	关于 _I	
属性	Ĕ	Ψ×	序号	模块型号	MAC地址	IP地址
VQ R	副新 🛸 提交更改 🛛 🌑	收缩/展开	0	CANSwitch-AN2S2(Converter)	00:14:97:33:00:00	192.168.0.178
6	寻入 😼 导出					
日基	本信息	*				
设	· 备型号	CANSwiter-AN2S2				
设	备固件版本	V1.00				
设	备名称	CANSwitch-AN2S2				
日密	码操作					
当	前密码					
是	否更改密码	否				
新	密码					
确	认新密码					
	地址信息					
设	备IP	192.168.0.178				
设	备子网掩码	255.255.255.0				
设	备网关IP	192.168.0.254				
D	NS	192.168.0.1				
设	备MAC地址	00:14:97:33:00:00				
获	取IP方式	静态获取				
E C/	ANO配置					
	设置所有CAN口配	置和此CAN口相同				
тс	P工作方式	TCP SERVER				
是	否固定端口	不固定				
I	作端囗(连接端囗)	4001				
ТС	P通知端口	6001				
超	时断开时间(10ms)	0				
A	Piketial(10mc)	200				
			1			

Figure 5.12 CANSwitch-AN2S2 device configuration information converter (Converter) mode



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5.3 Modifying Device Configurations

When you modify the CANSwitch-AN2S2 device configurations by using the ZNetCom software, the device configuration password (the default value is "88888") is required. After you modify the device configurations in the property column, enter the device configuration password in the current password, click to complete the device configuration modification. See Figure 5.13.

V	🐚 刷新 📦 提交更改 🔵 收缩/展开							
C	🔁 导入 😼 导出							
Ξ	基本信息		*					
	设备型号	CANSwiter-AN2S2						
	设备固件版本	V1.00						
	设备名称	CANSwitch-AN2S2	=					
Ξ	密码操作							
	当前密码	****						
	是否更改密码	否						
	新密码							
	确认新密码							
⊡	IP地址信息							
	设备IP	192.168.0.178						
	设备子网掩码	255.255.255.0						
	设备网关IP	192.168.0.254						
	DNS	192.168.0.1						
	设备MAC地址	00:14:97:33:00:00						
	获取IP方式	静态获取						
Ξ	CAN0配置							
	设置所有CAN口配	置和此CAN口相同						
	TCP工作方式	TCP SERVER						
	是否固定端口	不固定						
	工作端口(连接端口)	4001						
	TCP通知端口	6001						
	超时断开时间(10ms)	0						
	NRKRTIEI(10mme)	200	*					

Figure 5.13 Modifying CANSwitch-AN2S2 device configuration

properties



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5.4 Configuring Parameters

5.4.1 Configuration in Hub Mode (Hub Mode)

Table 5.1 describes the default settings in the CANSwitch-AN2S2 device hub mode.

Table 5.1 Description of "Property column" ite	ems in hub mode
--	-----------------

Category	Name	Default	Description
	Device model	CANSwitch-AN2S2	This item cannot be changed.
	Device firmware	It is related to the	Display the latest firmware version
	version	device delivery time.	number of the device.
Basic information	Equipment name	CANSwitch-AN2S2	The value can be changed and contains a maximum of 15 characters, consisting of a to z, A to Z, 0 to 9. Modifying this value is very useful for users to identify multiple CANSwitch-AN2S2 devices on the same network.
	Current password	"88888"	Before changing other items, you must enter the correct password. The password contains a maximum of 10 characters, including a to z, A to Z, 0 to 9.
	Whether to		You can set "New Password" and
	change the	No	"Confirm Password" only if you select
	password		"Yes".
Password operation	New password	None	If "Whether to change the password" is "No", the password cannot be changed. Used to enter a new password. The password contains a maximum of 10 characters. For the character range, see the description in the "Current Password" column.
	Confirm the new password	None	If "Whether to change the password" is "No", the password cannot be changed. Used to confirm the new password. It must be the same as "New Password".
Network information	Device No.	1	The range is 1-32. In the cascade, it is used to select the position of the device in the cascade and associate it with the CAN forwarding configuration. For example, device 2 in device 2CAN0 refers to the device number filled here.
	Number of networking	2	The range is 2-32. It is used to select how many devices are required to be
	devices		cascaded.



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	CAN baud rate		You can also onter any baud rate. The
		1000.0	You can also enter any baud rate. The
	(kbps)		minimum resolution is 0.1 kbps.
			Normal: The CAN port can respond to
			the received CAN frame properly;
			Listen only: The CAN port works in
	CAN working	Normal	listening mode and does not respond;
	mode	Normai	Self-test: The CAN port works in
			self-transmitting and self-receiving
			mode. This is used to check whether if it
CAN0			can properly and whether it is damaged.
configurati	CAN_AF	Disabled	CAN interface acceptance filter
on			enabling After enabling, enter the upper
			and lower limits of the standard frame
			ID and the upper and lower limits of the
			extended frame ID to be received in the
			following four items.
	Upper limit of the	7FF (HEX)	After CAN_AF is enabled, the upper
	standard frame	(FF (HEA)	and lower limits of the receiving
	Lauran Brecht af tha		standard frame ID set by the user
	Lower limit of the	00 (HEX)	together determine the range of the
	standard frame		standard frame ID to be received.



		Continued	
Category	Name	Default	Description
CANO	Upper limit of the extended frame	1FFFFFF (HEX)	After CAN_AF is enabled, the upper and lower limit values of the received extended frame ID set by the user
configuration	Lower limit of the extended frame	00 (HEX)	together determine the range of the extended frame ID to be received.
	Device 1CAN1	Deselected	If it is selected, the data of CAN0 port
	Device 2CAN0	Deselected	will be forwarded to the corresponding
CAN0	Device 2CAN1	Deselected	CAN bus. It is deselected by default. A
forwarding configuration	Device 3-32CAN0	Deselected	maximum of 63 CAN buses can be forwarded.
	Device 3-32CAN1	Deselected	

Except for the working port, destination port and destination IP address, the default parameter values of CAN1 are exactly the same; the meaning of each parameter is the same as that of each parameter of CAN0.

5.4.2 Configuration in Converter Mode (Converter Mode)

Table 5.2 describes the device configuration in converter mode.

Category	Name	Default	Description
	Device model	CANSwitch-AN2S2	This item cannot be changed.
Basic	Device firmware version	It is related to the device delivery time.	Display the latest firmware version number of the device.
on	Equipment name	CANSwitch-AN2S2	The value can be changed and contains a maximum of 15 characters, consisting of a to z, A to Z, 0 to 9. Modifying this value is very useful for users to identify multiple CANSwitch-AN2S2 devices on the same network.
Passwor	Current password	"88888"	Before changing other items, you must enter the correct password. The password contains a maximum of 10 characters, including a to z, A to Z, 0 to 9.
operation	Whether to change the password	No	You can set "New Password" and "Confirm Password" only if you select "Yes".

Table 5.2 Description of "Properties column" items in Converter mode



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	New password	None	If "Whether to change the password" is "No", the password cannot be changed. Used to enter a new password. The password contains a maximum of 10 characters. For the character range, see the description in the "Current Password" column.
	Confirm the new password	None	If "Whether to change the password" is "No", the password cannot be changed. Used to confirm the new password. It must be the same as "New Password".
IP	Device IP address	192.168.0.178	X.X.X.0 or X.X.X.255 cannot be filled. An IP address is an address on a network assigned by a network device (such as a PC and CANSwitch-AN2S2). It is unique on the same network.
address informati on operation	Device subnet mask	255.255.255.0	The subnet mask is very important to the network. Within the same network, the IP address and subnet mask are the same value. So set the "IP address" and "Subnet mask" correctly. Two input methods are used: dotted method (such as 255.255.255.0); number notation (range 0-32; for example, 255.255.255.0 indicates 24)



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Continued				
Category	Name	Default	Description	
IP address informati on operation	Device Gateway IP address	192.168.0.254	Enter the IP address of the gateway within the network or the IP address of the router.	
	DNS	192.168.0.1	Domain name access server. The current version is invalid.	
	Device MAC address	The value is different for each module	This item cannot be changed.	
	How to get an IP address	Static acquisition (Static)	You can also select "Dynamic acquisition". Static acquisition means that you directly enters the "IP address", "Subnet mask", and "Gateway". Dynamic acquisition means that the CANSwitch-AN2S2 module uses the DHCP protocol to obtain the IP address, subnet mask and gateway information allocated by the DHCP server on the network. Note: The function of dynamic acquisition can only be used when there is a DHCP server on the network. Usually, the router can also serve as a DHCP server.	
CAN configura tion	Set all CAN configurations to be the same as this CAN port	-	This setting button is used for quick configuration. For example, when the CAN0 configuration is completed, click this button above CAN0. CAN1 is copied according to the same configuration (except the port), which saves the configuration time.	

Continued

	How TCP works	TCP Sever	Refers to the communication mode used. 1. The default is TCP Sever. You can also choose working modes such as TCP Client and UDP. When TCP is used, a connection is established before data can be transferred. TCP Sever mode is to wait for client connection; 2. TCP Client is the CANSwitch-AN2S2 device actively connecting to the destination IP and port. Among the two CANSwitch-AN2S2s, one is set as TCP Sever, and the other is set as TCP Client to connect to each other to send and receive data; 3. The UDP protocol itself does not require a connection. Therefore, when the UDP protocol is used for transmission, the data is sent and received only to the destination IP address and port. When the device works in UDP mode, by setting the destination IP address, the device can communicate with multiple network
	Whether the port is fixed	Not fixed	devices with different IP addresses at the same time. When the working mode is TCP Client, the working port corresponding to CANSwitch-AN2S2 is allowed to increase or not when reconnection is allowed, so as to avoid the limitation of the connected device Windows system. It is not fixed by default. For example, the port initiated by the first connection is 37650, and the port initiated by the second connection is 37651 If you choose Fixed, any connected port will be its working port, for example, port 4001 for CAN0
	Working port	4001/4002	The working port of CAN communication can be modified. CAN0 uses port 4001 by default; CAN1 uses port 4002 by default. Because some are occupied by other network protocols, it is recommended not to be less than 1,000. The working port transmits CAN frames in the format of 13 bytes/frame. See Appendix A for the specific format.



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	Continued		
Category	Name	Default	Description
CAN configura tion	TCP notification port	6001/6002	Refers to the CAN status information port, which cannot be modified. CAN0 uses port 6001; CAN1 uses port 6002. Cannot be modified arbitrarily, because some are occupied by other network protocols. The notification port is used to feed back the status of the CAN port. Once connected, a warning is generated when an error occurs on the corresponding CAN interface. For details, see Appendix B.
	Timeout disconnect time (10 ms)	0	The values that can be filled are 0 and 100-65525. This item is meaningful only when the TCP protocol is used for communication. Time (in 10 ms) that the CAN or Ethernet interface delays from receiving the last data after the TCP connection is established. If no data is received before the timeout period expires, the TCP connection is disconnected. "0" indicates it will not be disconnected all the time.
	Heartbeat time (10 ms)	200	The values that can be filled are 0 and 100-65525. This item is meaningful only when the TCP protocol is used for communication. When the TCP connection is established, a "heartbeat packet" (non-application data will not be forwarded to the working port) will be sent every time interval filled in this item. The CANSwitch-AN2S2 will disconnect the connection if the other party does not respond to three consecutive heartbeat packet" will not be sent.
	CAN baud rate (kbps)	1000.0	You can also enter any baud rate. The precision is 0.1 kbps.
	CAN working mode	Normal	Normal: The CAN port can respond to the received CAN frame properly; Listen only: The CAN port works in listening mode and does not respond; Self-test: The CAN port works in self-transmitting and self-receiving mode. This is used to check whether if it can properly and whether it is damaged.



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	The value ranges from 1 to 50. When the CAN
	port continuously receives data (the interval is
	less than the sub-packet time interval), and the
	number of received CAN frames reaches the
	"number of sub-packet frames", the received
	data is encapsulated into an Ethernet packet
	and sent to the network port. Packet Frames
	refers to the maximum number of frames in a
	packet.If the number of packet frames is not
	reached during the receiving process, and the
Packet frames 50	frame interval exceeds the packet time interval,
	the received data is also encapsulated into an
	Ethernet packet and sent. If the number of
	packetized frames is set to 1, it means no
	packetization.Each CAN frame is sent as a
	separate Ethernet packet, and the real-time
	performance is the best at this time, but the
	network load is the highest; If the number of
	sub-packet frames is set to 50, the channel
	traffic is the largest and the network load is the
	smallest.
	The value ranges from 1 to 254. When the
	CAN port does not receive a new data frame
	within the time defined by the "packet time
Packet time	interval" (unit: ms), and the number of packet
interval (ms)	frames has not been reached, all data frames
	that have been received and have not been
	sent will be encapsulated into an Ethernet
	packet and sent to the network port.


Continued							
Category	Name	Default	Description				
	Clear CANBuffer	Cleared on TCP connection	This option is only valid in TCP working mode. It determines whether to clear the data in the CAN port Buffer after the connection is established. If it is not empty, the data in the Buffer will be sent after the connection is established. If it is cleared when TCP connection is selected, the saved CAN buffer will be cleared when the TCP connection is established.				
CAN configura tion	CAN_AF	Disabled	CAN interface acceptance filter enabling After enabling, enter the upper and lower limits of the standard frame ID and the upper and lower limits of the extended frame ID to be received in the following four items. Only the frame ID sent from the CAN port to the Ethernet is filtered, and the frame ID sent from the Ethernet to the CAN port is not filtered.				
	Upper limit of the standard frame	7FF(HEX)	After CAN_AF is enabled, the upper and lower limits of the receiving standard frame ID set by the user together determine the range of the				
	Lower limit of the standard frame	00 (HEX)	standard frame ID to be received.				
	Upper limit of the extended frame	1FFFFFFF (HEX)	After CAN_AF is enabled, the upper and lower limit values of the received extended frame ID set by the user together determine the range of				
	Lower limit of the extended frame	00 (HEX)	the extended frame ID to be received.				



	I	T
CAN send buffer number (10 frames)	65535	CAN interface transmit buffer size. The default value is 65535x10 frames. You can set the buffer size to adjust the balance between the real-time performance of the CAN port and the large-capacity buffer. Because the speed of Ethernet is much higher than the transmission speed of CAN, the CAN needs to buffer transmission if the amount of data received by the Ethernet is too large. This ensures that no frames are dropped, but such a large buffer may lead to poor real-time performance. That is, the data currently sent by the Ethernet needs to wait for a certain period of time to be sent out from the CAN interface. In this case, either the client controls the transmission speed of the Ethernet to match the transmission speed of the CAN port; or the buffer is changed to a smaller size and the frame is dropped appropriately to ensure real-time performance.
CAN transmit buffer policy	Discard new data when buffer is full	Policy when the CAN interface transmit buffer is full: discard new data when the buffer is full and discard old data when the buffer is full
Number of TCP connections (number of UDP destination IP segments)	1	When CANSwitch-AN2S2 works in TCP Sever, each CAN port can have a maximum of 200 TCP connections by default without configuration; When working in TCP Client mode, this item is used to define the number of connection IP segments allowed to be established during communication with the corresponding CAN port. The maximum value is 6. When working in UDP mode, this item is used to define the number of IP segments where the network device communicating with the corresponding CAN port is located. The maximum value is 6.



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Continued						
Category	Name	Default	Description			
			Available values are 1 to 65535. Only valid in			
			TCP Client and UDP working modes. Used to			
			define the port of the network device that			
			communicates with the CANSwitch-AN2S2			
	Destination		device. Only the network data sent through this			
		8001/8002	port can be received by the CANSwitch-AN2S2			
	port 1		device, and the data frame received by the			
			CAN port of the CANSwitch-AN2S2 device will			
			also be sent to this port through Ethernet. The			
			default CAN0 destination port 1 is 8001, and			
			the default CAN1 destination port 1 is 8002.			
			The subnet mask determines whether the host			
			number of the network and whether the host			
		255.255.255.0	number is legal, such as the network segment			
	Subnet mask 1		192.168.1.x. If the subnet mask is			
			255.255.255.0, the IP 192.168.1.255 is a			
			broadcast address and cannot be used to			
			represent a host.But if the subnet mask is			
CAN			255.255.0.0, 192.168.1.255 is an illegitimate			
configura			device address			
tion			Only valid in TCP Client and UDP working			
			modes. It is used to define the destination IP			
	Start address	102 168 0 55	address; that is, the port IP address of the			
	1	192.168.0.55	network device that communicates with the			
			CANSwitch-AN2S2 device (it can also be the			
			starting IP address in the IP address segment).			
			Only valid in TCP Client and UDP working			
			modes. Used to define the end IP address in			
			the IP address segment. If there is only one			
			destination address, the end address can be			
			the same as the start address.			
			Note: If the IP address segment is filled in the			
	End address 1	192.168.0.55	end address, multiple network devices will			
			communicate with CANSwitch-AN2S2 at the			
			same time. The first three bytes of the IP			
			address segment must conform to the subnet			
			mask 1 limit, and the fourth byte of the ending			
			address must be greater than or equal to the			
			fourth byte of the starting IP address.			



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Destination ports 2-6	0	The value ranges from 1 to 65535. The function is the same as the destination port 1. To enable it, set the number of TCP connections.
Subnet masks 2-6	0.0.0.0	Used for shielding. To enable it, set the number of TCP connections
Start addresses 2-6	0.0.0.0	The function is the same as the starting address 1. To enable it, set the number of TCP connections
End addresses 2-6	0.0.0.0	The function is the same as the starting address 1. To enable it, set the number of TCP connections

Except for the working port, destination port and destination IP address, the default parameter values of CAN1 are exactly the same; the meaning of each parameter is the same as that of each parameter of CAN0.



5.5 Saving Restored Settings

To help users modify the configurations of the CANSwitch-AN2S2 device in batches, the ZNetCom software provides the function of importing/exporting configurations. The Import/Export function button is located on the property column, as shown in Figure 5.14.

属性栏	Ψ×
🔌 刷新 🚔 提交更改 🔵 收缩/展开	
🚍 春久 🎦 春田	
□ 基本信息	

Figure 5.14 Device configurations import/export

5.5.1 Saving Settings

Click 显导出. In the "Save As" dialog box (as shown in Figure 5.15), select the save path, enter the file name, and click [Save]. Device configurations will be saved in XML format.

1 另存为						X																			
COO V K ZNet	Con	n Utility 🕨 language	✓ ⁴ y	搜索 language		Q																			
组织 ▼ 新建文件邦	ŧ					0																			
	*	名称	修改日期	类型	大小																				
库		chinesegb.xml	2015/10/13 17:09	XML 文档	26 k	B																			
- 视频		chinesegb2.89.xml	2015/6/10 10:47	XML 文档	20 K	B																			
■ 图片																					chinesegb2.91.xml	2015/7/17 17:14	XML 文档	21 K	В
📄 文档	=	chinesegb2.92.xml	2015/7/22 15:57	XML 文档	26 k	В																			
→ 音乐		english.xml	2015/10/13 17:09	XML 文档	22 k	B																			
		english2.89.xml	2015/6/10 10:47	XML 文档	20 k	В																			
🜉 计算机		english2.91.xml	2015/7/17 17:14	XML 文档	21 K	В																			
🏭 本地磁盘 (C:)	-	english2.92.xml	2015/7/22 15:22	XML 文档	21 K	В																			
文件名(N): C	ANS	witch-AN2S2				-																			
保存类型(T): XI	ML F	ile (*.xml)				•																			
▲ 隐藏文件夹				保存(S)	取消																				

Figure 5.15 Saving device configurations

5.5.2 Restoring Settings

Click ^도. In the "Open" dialog box (as shown in Figure 5.16), select the saved device configuration file, and click the [Open] button. The ZNetCom software imports the settings saved in the file.



🔐 打开					×
🔾 🖉 🖉 🖉 🖉	tCon	n Utility 🕨 language	▼ 4 搜	索 language	م
组织 ▼ 新建文件	夹			:== :==	- 🗌 🔞
■ 桌面	^	名称	修改日期	类型	大小
🗐 最近访问的位置		CANSwitch-AN2S2.xml	2015/10/26 0:14	XML 文档	9 KB
		chinesegb.xml	2015/10/13 17:09	XML 文档	26 KB
⊿ 🧊 库		chinesegb2.89.xml	2015/6/10 10:47	XML 文档	20 KB
> 📑 视频	=	chinesegb2.91.xml	2015/7/17 17:14	XML 文档	21 KB
▷ 🔤 图片		chinesegb2.92.xml	2015/7/22 15:57	XML 文档	26 KB
> 📑 文档		english.xml	2015/10/13 17:09	XML 文档	22 KB
> 🎝 音乐		english2.89.xml	2015/6/10 10:47	XML 文档	20 KB
		english2.91.xml	2015/7/17 17:14	XML 文档	21 KB
⊿ 🜉 计算机		english2.92.xml	2015/7/22 15:22	XML 文档	21 KB
▶ 🎎 杰地磁盘 (C:)	-				
2	文件名	(N): CANSwitch-AN2S2.xml	- XMI	File (*.xml)	•
			打	开(0)	取消

Figure 5.16 Opening device configuration information

5.6 Upgrading the Firmware

CANSwitch-AN2S2 series devices support local firmware upgrade. When you upgrade the CANSwitch-AN2S2 device by using the ZNetCom software, the PC and the CANSwitch-AN2S2 device must be on the same network segment (refer to 4.2 PC and device network segment detection). The firmware upgrade procedure is as follows:

1. In the device list column of ZNetCom software, select the device to be upgraded in the list item, and right-click the mouse. The menu items appear, as shown in Figure 5.17.

ZNetCom V2.81						
配置(S) 视图(V)	帮助(H) 测试(T) Lan	guage				
🍌 搜索设备 🔍 排	記定搜索 📃 清空设备	联 💋	取信息 🗧 复	立设备 🖳 下載器	据 🛛 🛜 关于 💂	
性栏		4 х	序… 模块型号	MAC地址	IP地址	
🕽 刷新 🚔 提交更改	🔵 收缩/展开		0 CANET-2E	-U 00:14:97:02:0.	192.168.0.178	
🗅 导入 🛃 导出		[绑定网卡	
标准帧上限	7FF			S	搜索设备(B)	
标准帧下限	00				指定IP搜索设备(S)	
扩展帧上限	1FFFFFFF			<u>a</u>	清空设备列表(C)	
扩展帧下限	00			(i)	获取设备详细信息(G)	
CAN发送缓冲帧数 (10乾 65535	=			指定IP获取设备详细信息(P)	
CAN发送缓冲策略	缓冲区满时丢弃新	汉 -			指定IP复位	-
TCP 连接数(UDP目的	ŊIPÉ 1				复位设备(R)	
目标端口1	8001					-
子网掩码1	255.255.255.0					
起始地址	192.168.0.55				升级固件(U)	
结束地址	192.168.0.55				搜系开纵模式反面(<u>M</u>)	
目标端口2	0	-			读取密钥(E)	
AN发送缓冲策略					恢复出厂设置(F)	1
					退出(X)	1
						1

Figure 5.17 Firmware upgrade menu

2. Click [Upgrade Firmware]. On the firmware upgrade interface shown in Figure 5.18, enter the password (the default password is 88888), select the upgrade file, and click "Open".



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级固件			
设备型号:	CANET-2E-U	IP: 192.168.0.178	密码: *****
升级文件:	C:\Documents	and Settings\xiaobir	sg\桌面\wifican. in
		升级固件	

況 打开							×
查找范围(I):	🔒 CANET-4E-U		•	🔶 🖪] 💣 ▼		
C	名称	^			修改日期		1
最近访问的位 贵	📗 手册				2014/5/3	22:59	3
置	canet_upd	ate_20140317.bin			2014/3/17	22:09	E
	canet_upd	ate_20140318.bin			2014/3/18	21:13	E
桌面	anet_upd	ate_20140319.bin			2014/3/19	16:58	ł
了 库							
《 》 计算机							
	•	m					F
H-1-1	文件名(17):	canet_update_2014	0319. bin		$\Box \subset$	打开(0)	
	文件类型(I):	BIN file			•	取消	

Figure 5.18 Firmware upgrade

3. Click <u>升级固件</u>. The device starts firmware upgrade, as shown in Figure 5.19.



Figure	5.19	Firmware	upgrade	in	progress
			apgraao		p. 0 g. 000

4. After about 1 minute, the firmware can be upgraded, as shown in Figure 5.20. Wait about 30 seconds until the system is initialized and starts.





Figure 5.20 Firmware upgraded

If the upgrade fails due to an accident (such as power failure and network cable disconnection), power on the device, and perform search and upgrade again.



6. Disclaimer

Based on the principle of providing better service for users, Guangzhou ZLG Electronics Co., Ltd. ("ZLG Electronics") will try to present detailed and accurate product information in this manual. However, due to the effectiveness of this manual within a particular period of time, ZLG Electronics does not guarantee the applicability of this document at any time. ZLG Electronics shall reserve the right to update this manual without prior notice. To get the latest version, please visit the official website of ZLG Electronics regularly or contact ZLG Electronics. Thank you!



Appendix A LAN port working port data conversion format





I loor	Manual
User	Manual
0301	manual

以下例子是一个扩展数据帧,ID为0x12345678,包含8个字节 数据(11h, 22h, 33h, 44h, 55h, 66h, 77h, 88h)的帧的表示方式												
88h	12h	34h	56h	78h	11h	22h	33h	44h	55h	66h	77h	88h
以下例子是一个标准数据帧, ID为0x3ff, 包含6个字节数据 (11h, 22h, 33h, 44h, 55h, 66h)的帧的表示方式												
06h	00h	00h	03h	FFh	11h	22h	33h	44h	55h	66h	00h	00h

When you send UDP frames on the PC, the number of CAN frames contained in each UDP frame cannot be greater than 50 frames! It is recommended that the sending speed of UDP frames should not exceed 400 packets per second. There is another condition. If the user has 400 packets of UDP frames per second, and each UDP frame contains 50 CAN frames, you can calculate that it is equivalent to 20,000 CAN frames per second. Even with a baud rate of 1,000 kbps, the CAN cannot send it so fast. Therefore, it is recommended that you should not send more than 400 UDP frames per second, and should not convert more than 4000 frames per second into CAN frames.



Appendix B Data Conversion Format of TCP Notification Port

in CAN Port State

某路CAN对应的TCP通知端口被连接后,如果此路CAN发生错误,通知端口将向主机定时发出状态警告,TCP包数据段格式如下:

AAh OOh CMD Time1 Time2 Time3 Time4 55h

固定格式。包头AAh 00h,包尾55h

CMD 状态码

Timel Time2 Time3 Time4 错误计数(32bit),高字节在前,即Time1为高字节

CMD Value	Status Description (All Are CANSwitch-AN2S2 Devices)	Time Error Count Value	Notification Period (s)
00h	Ethernet send buffer is about to overflow	0	2s
01h	Ethernet send buffer has overflowed	0	0.5s
02h	Ethernet receive buffer is about to overflow	0	2s
03h	Ethernet receive buffer has overflowed	0	0.5s
04h	The CAN controller sends an error alarm (send error counter > 96)	Number of occurrences	2s
05h	The CAN controller receives an error alarm (receive error counter > 96)	Number of occurrences	2s
06h	CAN controller transmit error passive (transmit error counter > 127)	Number of occurrences	2s
07h	CAN controller receive error passive (receive error counter > 127)	Number of occurrences	2s
08h	CAN controller receive overflow error (overload)	Number of occurrences	2s
09h	CAN controller bus off (bus off)	Number of occurrences	2s
0Ah	CAN controller arbitration loss (bus congestion)	Number of occurrences	2s



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0Bh	CAN controller bus error (as long as there is an error)	Number of occurrences	2s
0Ch	Other errors	Number of occurrences	2s



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