Modbus RTU/ASCII to Modbus TCP

Protocol Converter

ODOT Series Gateways

ODOT-S4E2 User Manual



ODOT Automation System Co., Ltd.

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Version information

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1. Product Overview

1.1 Product Functions

ODOT-S4E2, developed by Sichuan ODOT Automation System Co., Ltd., is a Modbus RTU to Modbus TCP/IP protocol converter based on market demand and years of experience.

By applying ODOT-S4E2, all the Modbus RTU/ASCII slave devices with RS485/RS422/RS232 port could connect to Modbus TCP/IP network and communicate with TCP clients. It could realize high speed data transmission by connecting the low speed serial device to the high-speed Ethernet. This protocol converter provides two working modes of transparent transmission and mapping mode, which could achieve the maximum system compatibility.

1.2 Main features

- ◆9-36V wide range voltage input, anti-reverse connection protection.
- ◆Communication terminal isolation processing, 1500V isolation voltage
- ◆ Dual Ethernet port, with switch function, support cascading.

◆2 kV network port isolation protection, 10/100Mbps auto-negotiation and Auto-MDI /MDIX.

- ◆ Support address mapping mode, realize fast response to TCP client request.
- ◆Connect up to 5 clients request.
- Mapping mode supports function code:0x01,0x02,0x03,0x04,0x05,0x06,0x0F,0x10.
- ◆ Transmission mode supports all public function code and customized function code.
- ◆ 10KB huge data buffer area, larger data transmission capacity.
- ◆4*RS485 serial ports real time refresh, short scan period, better loading capability.
- ◆RTU and ASCII master and slave is optional, with stronger adaptability.
- Watchdog could be enabled, watchdog time could be set.

• Supports IAP download, and it could update and upgrade firmware program in product through network port.

- •Built-in terminal resistance and bias circuit, strong stability.
- ◆ The data packet sending interval could be adjusted freely, and the use is more flexible.
- ◆ The device carries with powerful diagnostic function to monitor the communication

status of the slave device in real time.

- Support one key reset function to restore factory Settings.
- ♦35mm standard DIN-rail.
- ◆EMC complies EN 55022:2010 & EN55024:2010 international standard.

1.3 Technical parameters

The relevant technical parameters of this product are shown in Table 1. Please use this product within the parameters of this product in order to obtain better performance.

Environment Parameter	
Operating temperature	-40~85°C
Storage temperature	-55~125°C
Humidity	5%~95% (no condensing)
Power parameter	
Number of power terminal	1 way
Power range	9~36VDC
Consumption	Max.200mA@24V

Table1 Technical Parameters

Ethernet parameter	
Working mode	Transparent transmission mode and address mapping mode is optional
Number of ethernet terminal	2RJ45, 10M/100M auto-adaption with router function
Networking protocols	ETHERNET, ARP, IP, TCP and ICMP
Number of TCP connection	Max. 5
Serial parameter	
Number of serial port	4*RS485/RS232 or 2*RS422
Serial Communication mode	RTU mode & ASCII mode is optional
Baud rate	1200~115200 bps
Checking mode	None, odd, even
Number of slave supported	Max.124 (without relay)
Mapping mode protocol	0x01, 0x02, 0x03, 0x04, 0x05, 0x06, 0x0F, 0x10
Function code	
Modbus buffer area	0xxxx area (coil) : 8192 Bit1xxxx area (discrete magnitude input) : 8192 Bit3xxxx area (input register) : 2048 Word4xxxx area (hold register) : 2048 Word3xxxx area (system diagnose zone) : 263 Word

2. Hardware description

2.1 Product appearance



2.2 LED indicator description

There are total 6 LED status indicators. The symbol definition and status description are shown in "Table 2".

Symbol	Definition	Status	Description
PWR	Power supply indicators	ON	Power is supplied to the unit
		OFF	No power is supplied to the unit
		ON	TCP gateway communication error
ETH	Network fault indicators	OFF	TCP gateway communication normal
CO1	Series port 1sending & receiving indicator	Flashing	Series port 1 is sending & receiving data
	C C	ON	Series port 1 is not sending & receiving data
CO2	Series port 2sending	Flashing	Series port 2 is sending & receiving data
	& receiving indicator	ON	Series port 2 is not sending & receiving data
CO3	Series port 5sending	Flashing	Series port 3 is sending & receiving data
	& receiving indicator	ON	Series port 3 is not sending & receiving data
CO4	Series port 4sending & receiving indicator	Flashing	Series port 4 is sending & receiving data
	& receiving indicator	ON	Series port 4 is not sending & receiving data

Table 2 LED indicator description

Note: * ——In normal communication, the status of the ODOT-S4E2 gateway indicator

2.3 Terminal definition

1. The equipment wiring adopts 16Pin 3.81mm pitch plug-in terminal. The terminal definition of RS485/RS232/RS422 interface is shown in "Table 3".

		RS485	RS232		RS422
No ·	Symbol	Wiring Definition	Wiring Definition	V	Viring Definition
1	1RT-	Serial Port1 RS485-	Serial Port1 RS232_RX		RS422 Sending Negative Terminal
2	1TT+	Serial Port1 RS485+	Serial Port1 RS232_TX		RS422 Sending Positive Terminal
3	SGND	Signal Grounded	Signal Grounded	lel1	Signal Grounded
4	PE	Shield Earthing	Shield Earthing	hann	Shield Earthing
5	2RR-	Serial Port2 RS485-	Serial Port2 RS232_RX	RS422Channel1	RS422 Receiving Negative Terminal
6	2TR+	Serial Port2 RS485+	Serial Port2 RS232_TX	RS	RS422 Receiving Positive Terminal
7	SGND	Signal Grounded	Signal Grounded		Signal Grounded
8	PE	Shield Earthing	Shield Earthing		Shield Earthing
9	3RT-	Serial Port3 RS485-	Serial Port3 RS232_RX		RS422 Sending Negative Terminal
10	3TT+	Serial Port3 RS485+	Serial Port3 RS232_TX	5	RS422 Sending Positive Terminal
11	SGND	Signal Grounded	Signal Grounded	unnel	Signal Grounded
12	PE	Shield Earthing	Shield Earthing	Che	Shield Earthing
13	4RR-	Serial Port4 RS485-	Serial Port4 RS232_RX	RS422 Channel 2	RS422 Receiving Negative Terminal
14	4TR+	Serial Port4 RS485+	Serial Port4 RS232_TX		RS422 Receiving Positive Terminal
15	SGND	Signal Grounded	Signal Grounded		Signal Grounded
16	PE	Shield Earthing	Shield Earthing		Shield Earthing

Table 3 Terminal definition

2. Power terminals are defined as follows

No.	Symbol	Definition
1	PE	Grounding terminal
2	V-	Power Input Negative
3	V+	Power Input Positive

2.4 Reset button



The device has a system RESET button (RESET). When the user forgets the IP address and configured port number of the device and cannot connect to the gateway, the RESET button can be triggered. System parameters will be restored to factory Settings and the device will be restarted. Click the reset button with a paper clip, and all the indicator lights will shine once to indicate successful reset. So the gateway reset is successful. The technical parameters of the gateway are as follows:

	Parameter Name	Defaults				
	Protocol converter IP	192.168.1.254				
	Subnet mask	255.255.255.0				
	LAN gateway IP	192.168.1.1				
Ethernet	Modbus TCP data port	502				
Side	Configure the port	1024				
	Modbus-TCP watchdog time	308				
	The enabling of Modbus-TCP watch dog	enabling				

	Gateway work mode	Transparent transmission Mode
	Gateway station Number	247
	Serial port mode	Master station mode
	Protocol type of Modbus	Modbus RTU
	Serial port baud rate	9600bps
	Check digit	No check
Carial mont	Data bits	8bit
Serial port side	Stop bit	1bit
	Receive character interval	3.5t
	Message sent?	0
	Timeout processing	Data retention
	Slave response timeout	500ms

2.5 External terminal resistance

According to the site situation, the gateway serial port side needs an external 120 Ω terminal resistance. The RS485 bus supports a maximum of 32 nodes without relay,

The "daisy chain" connection is used between nodes, and terminal resistors are required at both ends of the communication cable, and their resistance is required to be approximately equal to the characteristic impedance of the transmission cable. In short-distance transmission, no terminating resistor is required, that means no terminating resistor is generally required below 300 meters. The terminating resistor is connected to the two ends of the transmission cable.

When the gateway is used in the site, if the site RS485 bus is far away and the site interference is large, so it is necessary to add 120Ω terminal resistance at both ends of the RS485 bus to prevent the reflection of the serial signal.

Note: 120 Ω resistance attached to the package, please check.



2.6 Installation dimension



3. HOW TO USE THE PROTOCOL CONVERTER

3.1. The description of protocol converter

3.1.1. Serial working mode

There are two types of working modes: Master mode and slave mode.

When the serial port works in master mode, the serial port can connect up to 31 Modbus RTU/ASCII slave devices without relaying. This mode is mainly used for data communication between Modbus TCP master and Modbus RTU/ASCII Slaves

When the serial port works in slave mode, the serial port can connect to one Modbus RTU/ASCII master device. This mode can be applied as follows:

(1)Data communication Between Modbus TCP Client and Modbus RTU/ASCII Master;

(2)Data communication between Modbus RTU/ASCII master;

(3)Modbus TCP client and Modbus RTU/ASCII master could communicate with one Modbus RTU/ASCII slave at the same time.

3.1.2. Gateway working mode

There are two types of working modes: transparent mode and mapping mode, and the "Transparent" mode is the factory setting. The "Transparent" mode is without data cache and no need for editing the address mapping table. The gateway directly sends the instructions of the TCP/IP clients to Modbus RTU/ASCII slave equipment, and it waits for the slave station devices response after getting the instructions from the Modbus TCP/IP clients. After the response of the slave, the data will directly be sent back to the TCP clients.

"Mapping" mode adopts the way of data cache and it need for editing the station address mapping table. The gateway polls each of the slave after powered on, and stores the data in the buffer cache. The gateway will read the data directly from the data buffer, and then send

it back to the TCP clients after receiving Modbus TCP/IP clients instructions. This method can greatly reduce the waiting time for the client to access to the station and improves the refresh rate.

3.1.3. Data storage area

Data storage is divided into five parts.

Part 1. "Coil" (DO) storage area, 8192 points in total.

Part 2. "Discrete magnitude input" (DI) storage area,8192 points in total.

Part 3. "Input register" (AI)storage area, 2048 points in total.

Part 4. "Hold register"(AO) storage area, 2048 points in total.

Part 5. "System diagnostic" (DO) storage area, it stores the station equipment working status, 263 points in total. And it could access to the "system diagnostic" area and obtain the slave information. This could be used for setting the disconnection alarm.

The distribution of the data storage area and the scope of the address coding are shown in below.

Item	Storage type	Description	Storage capability	Address range
1	Area 0	Coil	8192 Bit	0x0000~0x1FFF
2	Area 1	Discrete magnitude input	8192 Bit	0x0000~0x1FFF
3	Area 3	Input register	2048 Word	0x0000~0x07FF
4	Area 4	Hold register	2048 Word	0x0000~0x07FF
5	Area 3	System diagnostic	263 Word	0x2000~0x2106

Table 3.1 Data store address table

3.1.4 System diagnostic area

The diagnosis system is divided into two parts. For the first part: The address 0x2000-0x200F is in total of 16 words that is 256 bits as the "slave error indicator area". The number 1-247 are respectively corresponding to slave 1-247 and 248-256 are reserved. When the error occurs from the station communication, the corresponding bit of the station address is set to 1. The corresponding error indicator bit will have zero clearing automatically after the slave is back to normal. Its data encoding format is shown in Table 3.2.

Table 5.2 Slave error indicating area encoding format									
BIT	Bit15	Bit14	Bit13	Bit12	Bit11	Bit10	Bit9	Bit8	
Bit Number	16	15	14	13	12	11	10	9	
BIT	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	
Bit Number	8	7	6	5	4	3	2	1	
BIT	Bit15	Bit14	Bit13	Bit12	Bit11	Bit10	Bit9	Bit8	
Bit Number	32	31	30	29	28	27	26	25	
BIT	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0	
Bit Number	24	23	22	21	20	19	18	17	
BIT	Bit15	Bit14	Bit13	Bit12	Bit11	Bit10	Bit9	Bit8	
	BIT Bit Number BIT Bit Number BIT Bit Number	BIT Bit15 Bit Number Bit7 BIT Bit7 Bit 8 BIT Bit15 Bit 32 BIT Bit7 Bit 24 Number 24	BITBit 15Bit 14Bit Number1615BITBit 7Bit 6Bit Number87BITBit 15Bit 14Bit Number3231BITBit 7Bit 6Bit Number2423Bit Number11	BITBit15Bit14Bit13Bit Number161514BITBit7Bit6Bit5Bit Number876BITBit15Bit14Bit13Bit Number323130BITBit7Bit6Bit5Bit Number242322III <t< td=""><td>BITBit15Bit14Bit13Bit12Bit Number16151413BITBit7Bit6Bit5Bit4Bit Number8765BITBit15Bit14Bit13Bit12BITBit15Bit14Bit13Bit12Bit Number32313029BITBit7Bit6Bit5Bit4Bit Number24232221IIIIIIIIIIIIIIIIIIIIIIII</td><td>BITBit 15Bit 14Bit 13Bit 12Bit 11Bit Number1615141312BITBit 7Bit 6Bit 5Bit 4Bit 3Bit Number87654BITBit 15Bit 14Bit 13Bit 12Bit 11Bit Number3231302928BITBit 7Bit 6Bit 5Bit 4Bit 3Bit Number2423222120III<td< td=""><td>BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 16 15 14 13 12 11 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit Number 8 7 6 5 4 3 BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit Number 32 31 30 29 28 27 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit Number 24 23 22 21 20 19 Interval Interval Interval Interval Interval Interval Interval Interval Interval Interval Interval Interval</td><td>BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 9 Bit 16 15 14 13 12 11 10 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit Number 8 7 6 5 4 3 2 BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 9 BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 9 Bit Number 32 31 30 29 28 27 26 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit Number 24 23 22 21 20 19 18 Image: Number Image: New Nu</td></td<></td></t<>	BITBit15Bit14Bit13Bit12Bit Number16151413BITBit7Bit6Bit5Bit4Bit Number8765BITBit15Bit14Bit13Bit12BITBit15Bit14Bit13Bit12Bit Number32313029BITBit7Bit6Bit5Bit4Bit Number24232221IIIIIIIIIIIIIIIIIIIIIIII	BITBit 15Bit 14Bit 13Bit 12Bit 11Bit Number1615141312BITBit 7Bit 6Bit 5Bit 4Bit 3Bit Number87654BITBit 15Bit 14Bit 13Bit 12Bit 11Bit Number3231302928BITBit 7Bit 6Bit 5Bit 4Bit 3Bit Number2423222120III <td< td=""><td>BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 16 15 14 13 12 11 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit Number 8 7 6 5 4 3 BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit Number 32 31 30 29 28 27 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit Number 24 23 22 21 20 19 Interval Interval Interval Interval Interval Interval Interval Interval Interval Interval Interval Interval</td><td>BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 9 Bit 16 15 14 13 12 11 10 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit Number 8 7 6 5 4 3 2 BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 9 BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 9 Bit Number 32 31 30 29 28 27 26 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit Number 24 23 22 21 20 19 18 Image: Number Image: New Nu</td></td<>	BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 16 15 14 13 12 11 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit Number 8 7 6 5 4 3 BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit Number 32 31 30 29 28 27 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit Number 24 23 22 21 20 19 Interval Interval Interval Interval Interval Interval Interval Interval Interval Interval Interval Interval	BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 9 Bit 16 15 14 13 12 11 10 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit Number 8 7 6 5 4 3 2 BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 9 BIT Bit 15 Bit 14 Bit 13 Bit 12 Bit 11 Bit 10 Bit 9 Bit Number 32 31 30 29 28 27 26 BIT Bit 7 Bit 6 Bit 5 Bit 4 Bit 3 Bit 2 Bit 1 Bit Number 24 23 22 21 20 19 18 Image: Number Image: New Nu	

 Table 3.2 Slave error indicating area encoding format

	Bit Number	х	х	х	х	x	х	х	х
Address 0x200F	BIT	Bit7	Bit6	Bit5	Bit4	Bit3	Bit2	Bit1	Bit0
	Bit Number	х	247	246	245	244	243	242	241

The second part :Address 0x2010-0x2106 Word ,total 247 words, as " the slave status indicator" area. Reading the area could obtain the slave current working status, the data encoding format is as shown in Table 3.3.

Address	Slave 1	Byte1	Byte0
0x2010		Function code	Error code
Address	Slave 2	Byte1	Byte0
0x2011		Function Code	Error code
Address0x	Slave 247	Byte1	Byte0
2106		Function Code	Error code

Table 3.3 Slave status indicating area encoding format

Each Word is divided into high and low bytes, Byte1 is the high byte, indicating the currently executed function code mapped to the slave. Byte0 is the low byte, indicating the current error code of the salve communication. The specific meaning of the error code of the slave is as shown in table 3.4.

Table 3.4 Slave error code description

Error code	Error Description	Troubleshooting method
0x00	Slave stations operates normally	No
0x01	Illegal function code	The device does not support the current function code, please refer to the slave manual to select the corresponding function code module
0x02	Illegal data address	The device data exceeds its address range, please refer to the slave manual to modify the data start address or data length
0x03	Illegal data value	The data length is wrong, the data

		length exceeds the maximum allowable value of 125 (Word) or 2000 (Bit), it needs to modify the length
0x04	Data processing error	Check whether the data value range meets the requirements of the slave
0x05	Application layer length does not match	Increase the receiving character interval and check the communication parameter settings
0x06	Protocol ID error	Check the sender message
0x07	Buffer address error	Device internal error
0x08	Bit offset error	Device internal error
0x09	The slave ID number does not match	Increase the timeout period, check the hardware connection status, and check the communication parameter settings
0x0A	CRC check error	CRC error, check the communication line
0x0B	LRC error	LRC error, check the communication line
0x0C	Response function code does not match	Check hardware connection status
0x0D	Response address does not match	Check hardware connection status
0x0E	Response data length does not match	Check hardware connection status
0x0F	Communication timeout	Increase the timeout period, check the hardware connection status, and check the communication parameter settings
0x10	ASCII mode start character error	':' Colon start character error
0x11	ASCII mode ending character error	CR/LF carriage return and line feed terminator error
0x12	ASCII mode non-character	The data contains non-hexadecimal ASCII codes
0x13	Wrong number of characters in ASCII mode	Slave response length error

3.2. Default parameters

The default factory configuration of the gateway is as follows:

Table 3.5 The default factory configuration

Parameter name		Defaults	
	Protocol converter IP	192.168.1.254	
	Subnet mask	253.253.253.0	
de	LAN gateway IP	192.168.1.1	
Ethernet Side	Modbus TCP data port	502	
Etherr	Configure the port	1024	
	Modbus-TCP watchdog time	30S	
	The enabling of Modbus-TCP watch dog	Enabling	
	Gateway working mode	Transparent mode	
	Gateway station number	247	

	Serial operating mode	Master mode
	Modbus protocol type	Modbus RTU/ASCII
	Serial baud rate	9600bps
side	Check digit	No check
Serial Port side	Data bits	8bit
Serial	Stop bit	1bit
	Receive character interval	3.5t
	Message sent	0
	Timeout processing	Data retention
	Slave response timeout	500ms

Note: The gateway is factory-set to work in transparent transmission mode and can be used without configuration. At this time, all request data of the TCP client is sent to the serial port 1. To configure the parameters of the gateway, please use the software "ODOT MGCC Config" for configuration.

3.3 Gateway IP address modification

First, powering 24VDC to the gateway, connect the network cable to the gateway and the computer, change the computer's local network card IP address to the 192.168.1.* network segment, then open the configuration software MGCC Config, click upload gateway configuration, and ensure normal communication with the gateway (can be normal Upload and download gateway configuration).

网络连接	
	Internet 协议版本 4 (TCP/IPv4) 属性
网络 共享 连接时使用:	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,你需要从网 络系统管理员处获得适当的 IP 设置。
配置(C) 此连接使用下列项目(O): 「「「」」Microsoft 网络客户端 「」「」」Microsoft 网络的文件和打印机共享 「」「」OS 数据包计划程序 「」」Internet 协议版本 4 (TCP/IPv4) 」 Microsoft 网络适配器多路传送器协议 「」 PROFINET IO protocol (DCP/LLDP)	 ● 自动获得 IP 地址(O) ● 使用下面的 IP 地址(S): IP 地址(I): 192.168.1.50 子网掩码(U): 255.255.255.0 默认网关(D): .
 ✓ Microsoft LLDP 协议驱动程序 ✓ SIMATIC Industrial Ethernet (ISO) ✓ SIMATIC Industrial Ethernet (ISO) ✓ ✓ 安装(N) 卸載(U) 雇性(R) / /<td> 自动获得 DNS 服务器地址(B) ●使用下面的 DNS 服务器地址(E): 首选 DNS 服务器(P): ▲ 备用 DNS 服务器(A): ▲ 通出时验证设置(L) 高级(V) </td>	 自动获得 DNS 服务器地址(B) ●使用下面的 DNS 服务器地址(E): 首选 DNS 服务器(P): ▲ 备用 DNS 服务器(A): ▲ 通出时验证设置(L) 高级(V)
确定取消	确定 取消

☞~ 串口转以太网网关通用配置软件			– 🗆 X
以太阿配置 MODBUS阿美IP 子阿掩码 局域阿阿美IP DNS服务器IP DNS服务器备用IP	uage 关于 192.168.1.254 255.255.255.0 192.168.1.1 114.114.114 223.6.6.6 502 1024 30 ✓	串口敵置 ■- 중 ODOT-S4E2	
上载网关配置	下载网关配置	导入配置文件	导出配置文件
🔴 网关连接状态 阿 当前工作模	式:透传 🎆 设备版本:无信息		上载成功

Modify the gateway IP address of the configuration software interface to:

192.168.10.12 (cross-network segment), and the LAN gateway IP to: 192.168.10.1. After the modification is completed, click to download the gateway configuration directly, and a warning box will pop up to confirm whether to modify the IP address. Click OK, you can see the download is successful in the lower right corner.



☞~ 串口转以太网网关通用配置软件			– 🗆 X
以太阿配置 MODBUS阿美IP 子阿掩码 局域阿阿美IP DNS服务器IP DNS服务器备用IP	uage 关于 192.168.10.12 255.255.255.0 192.168.10.1 114.114.114 223.6.6.6 502 1024 30 ✓	串口配置 IB- III ODOT-S4E2	
		导入配置文件	导出電置文件
🛑 网天连接状态 🍯 当前工作模:	式:透传 🎆 设备版本:无信息		下载成功

After the IP address is successfully modified, you need to change the computer's IP address to: 192.168.10.* network segment.

网络 共享	internet 协议版本 4 (TCP/IPv4) 属性
连接时使用:	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,你需要从网 格系统管理员处获得适当的 IP 设置。
配置(C) 此连接使用下列项目(O):	 ● 自动获得 IP 地址(O) ● 使用下面的 IP 地址(S): IP 地址(I): 192 . 168 . 10 · . 50 子网掩码(U): 255 . 255 . 255 . 0 默认网关(D): . ● 自动获得 DNS 服务器地址(B)
安装(N) 卸载(U) 属性(R) 描述 传输控制协议/Internet 协议。该协议是默认的广域网络协议,用 于在不同的相互连接的网络上通信。	 ●使用下面的 DNS 服务器地址(E): 首选 DNS 服务器(P): ・ ・

Click Upload Gateway Configuration on the configuration software MGCC Config interface. After the upload is successful, you can see the upload success in the lower right

corner.

☞~ 串口转以太网网关通用配置软件			– 🗆 X
- 以太网配置 MODBUS网关IP 子网掩码 局域网网关IP DNS服务器IP DNS服务器备用IP	uage 关于 192.168.10.12 255.255.255.0 192.168.10.1 114.114.114 223.6.6.6 502 1024 30	串口敵置 ■- Total ODOT-S4E2	
上载网关配置	下载网关配置	导入配置文件	导出配置文件
🛑 网关连接状态 顲 当前工作模	式:透传 🎆 设备版本:无信	息	上载成功

3.4 Typical application description

3.4.1 Realize communication between Modbus TCP client and Modbus RTU/ASCII slave

PIC1 Modbus-TCP/IP Ethernet ODOT-S2E2/S4E2 Modbus-RTU/ASCII I/O Electric Instrument Frequency Transformer Other Devices

3.4.1.1Application topology

3.4.1.2 Transparent transmission mode configuration

3.4.1.2.1. Open the software configuration software "odot MGCC Config", right-click the slave configuration page and select "Add Device", and add "ODOT-S4E2".

Ethernet configuration		Slave configuration	
IP Address	192.168.1.254		
Subnet mask	255.255.255.0		
Gateway	192.168.1.1	Add gateway	- ODOT SEET
Modbus-TCP数据通讯端口 moubus-Ter port	502		ODOT-S2E2 ODOT-S4E2
Download port	1024		MG-S1EX
Nodbus-TCP watchdog time (s)	30		
Modbus-TCP watchdog enable 🖵	3		
Upload	Download	Import	Export

3.4.1.2.2.Double-click ''ODOT-S4E2'' or right-click ''ODOT-S4E2'', Select "common device attributes", Set the gateway working mode to Transparent in the popup page.

∞ Modbus RTU/ASCII—Modbus TCP gateway config	- D X
File Communication Advanced configuration	n About
Ethernet configuration	Slave configuration
IP Address 192.168.1.254 Subnet mask 255.255.255.0 Cotomon attribute Modbus-TCP数据通	Delete current device
Down Getway working mode: Transmi Modbus-TCP watchdog Getway address: 247	ssion transparent
Modbus-TCP watch	Cancel
Upload Download	Import Export
🔴 Connection status 阿 Current mode : Transmission	n transparent No download .:

3.4.1.2.3.Double-click "COM1", "COM2", "COM3", "COM4"or right-click "COM1", "COM2", "COM3", "COM4" and click "Serial Properties", then "Serial Settings" window is popped up. After setting the communication parameters, click the "OK" button to save and return. Take COM1 as an example.

The meaning of each parameter is as follows:

Operating mode:

It is used to set up gateway as master or slave in the network.

Default is master mode.

Modbus protocol type:

It is used to set up the gateway's protocol type of the network between the communication of the serial port and other connected devices. It can choose Modbus-RTU or Modbus-ASCII. Please set this parameter to be consistent with the device to which the serial port is connected.

Baud rate:

Serial port baud rate: optional range is 1200~115200bps and default is 9600bps, please set this parameter to be consistent the device that is connected to the serial port.

Check Digit:

It could select none, odd, even parity, and none is set as default. Please set this parameter to be consistent with the device to which the serial port is connected.

Stop bit:

It could choose stop bit 1 or stop bit 2. And default is stop bit 1. Please set this parameter to be consistent with the device to which the serial port is connected.

Receive character interval:

When receiving message the frame interval detection time can be chose from 1.5t to 200t. Default is 3.5t. (T is the transmission time of a single character, and it is related with baud rate). In general, there is no need to change this parameter.

Packet transmission interval:

Interval time for sending Modbus commands (Delayed time from receiving the slave response message to sending the next command) can be set from 0ms-65535ms. Default is 0ms. It is recommended to set 100ms and this could prevent connected devices from communication failure due to slow response.

Timeout processing:

Read data from slave station. Data processing mode can choose "data clear" or "data retention" when slave station response is timeout. Default is "Data Hold mode". This parameter is only valid for Modbus read command. Please set this value according to actual needs.

File Communication	Advanced configu	uration A	bout		
Ethernet configuration			Slave configuration		
IP (Subr Modbus-1 Downlc	OM1 configuration Serial port working mode y Communication protocol y Baud rate s Check 1 Data bits 4 Stop bits 3 Receive delay 3	ModBus RTU - 9600 - None parity - 8 - 1 -	COM COM COM COM COM COM	E2 Add slave Configure serial Copy slaves (Ctrl Paste (Ctrl+V)	+C)
Modbus-TCP watchdog t: Modbus-TCP watchdog	Send delay(ms) [Timeout mode] OK	0			
Upload	Download		Import		Export

3.4.1.2.4.Select "COM1" , "COM2" , "COM3" , "COM4".Take COM1 as an example .

Right click to select Add Slave, input "Slave Name", fill in "Slave Number" and slave "Response Timeout" time, click "Confirm" to return. The station number of the slave cannot be the same with each other and the device itself too. Range of the slave address should be between 1 and 247 and the name of slave cannot be the same under the same serial port too. The "Response timeout" time needs to be checked from the manual of the device. It is recommended to set up above 500ms and click "Confirm".

∞ Modbus RTU/ASCII—Modbus TCP gateway config	- 🗆 X
File Communication Advanced configuration A Ethernet configuration	bout Slave configuration
COM1_1#'s parameters	■ © ODOT-S4E2
Slave Name COM1_1#	C Add slave
Slave Address 1	Configure serial Copy slaves (Ctrl+C)
Slave response 500 timeout (ms)	Paste (Ctrl+V)
Modbus-1 OK Cancel	
Modbus-TCP watchdog enable 🗹	
Upload Download	Import Export
🔴 Connection status 🌍 Current mode : Transmission tran	nsparent No download:

3.4.1.2.5.Configure the Ethernet parameters of the gateway by configuring the "Ethernet Configuration" on the left half of the software.

Some of the parameters are as follows:

Modbus gateway IP: The gateway IP address; ?设备还是网关?

Subnet mask: Subnet mask of the gateway;

LAN gateway IP: Gateway IP address of the network where the device resides;

Modbus-TCP data communication port: Generally it is 502;

Configure the port: The configuration software could be used for downloading the configuration to the device through this port of the device;

Modbus-TCP watchdog time: The time interval from when the gateway receives the last Modbus TCP packet to the automatic restart;

Note: Automatic restart of the gateway can release connection resources that have not been used for a long time in time;

Modbus-TCP watchdog enable: Whether the watchdog function is enabled.

Modbus RTU/ASCII—Modbus TCP gateway config		- 🗆 X
File Communication Advanced configuration Ethernet configuration IP Address 192.168.1.254 Subnet mask 255.255.255.0 Gateway 192.168.1.1 Modbus-TCP数据通讯端口 mounous-report 502 Download port 1024 Modbus-TCP watchdog time (s) 30 Modbus-TCP watchdog enable Image: Communication of the second seco	About Slave configuration COM1 COM2 COM3 COM4	
Upload Download	Import	Export No download

3.4.1.2.6.Set the target gateway address that you want to download.

And it could set the download communication port number through

"Communication" \rightarrow "Configure communication channel" too. The gateway factory default IP is 192.168.1.254 and port number is 1024.

od•t Mod	bus RTU/ASCII—Modbus 1	CP gateway config		- 🗆 🗙
	Download Upload	y 192.168.1.1 t 502 t 1024) 30	About Slave configuration ODOT-S4E2 COM1 COM2 COM3 COM4	
Conne	Vpload ection status 🎒 Currer	Download at mode : Transmission t	Import	Export No download

3.4.1.2.7. Click the button "Download Gateway Configuration " to. download configuration parameters to the gateway.

After the download is successful, the "Download successful" prompt appears in the Status Bar at the lower right. After the download is successful, the gateway restarts automatically and then the it goes into running state.

If the download fails, please check out whether the computer IP address and gateway IP address are in the same network segment. Then check whether the gateway IP address is set correctly. If the gateway IP address is lost, please reset the gateway through the reset button. After reset, the gateway IP address will be the factory default IP address.

Click "Import Profile" and "Export Profile" and it could import or save the configuration file to the local disk. Click "Upload Gateway Configuration" and it could upload the current gateway configuration to the software.

Note: When downloading and uploading, please ensure that the computer and the gateway are in the same network segment.

⊶t Modbus RTU/ASCII—Modbus TCP g	ateway config		- 🗆 🗙
File Communication Advan Ethernet configuration IP Address Subnet mask Gateway Modbus-TCP port Download port Modbus-TCP watchdog time (s) Modbus-TCP watchdog enable	192. 168. 1. 254 255. 255. 255. 0 192. 168. 1. 1 502 1024 30	About Slave configuration COM1 COM2 COM3 COM4	
Vpload	Download	Import	Export
🔴 Connection status 🍯 Current mo	de : Transmission tra	ansparent	No download,

3.4.1.2.8. After completing the above settings, it could operate as fellow.

After the settings are completed, the Modbus TCP client can use the Modbus TCP protocol to access the slave device 16DI which the station number is 1 though the gateway IP address 192.168.1.254, the Modbus data communication port 502 and the slave number 1.?

3.4.1.3 Mapping mode configuration

3.4.1.3.1. Open the configuration software "ODOT MGCC Config". Right-click on the configuration page of slave and select "Add Device" ,then add "ODOT-S4E2".

∞ Modbus RTU/ASCII—Modbus TCP g	ateway config		- X
File Communication Advan Ethernet configuration	ced configuration	About Slave configuration	
IP Address	192.168.1.254	Add gateway	ODOT-S2E1
Subnet mask Gateway	255. 255. 255. 0 192. 168. 1. 1		ODOT-S2E2 ODOT-S4E2
Modbus-TCP port	502		MG-S1EX
Download port	1024		
Modbus-TCP watchdog time (s)	30		
Modbus-TCP watchdog enable 🖂	3		
Upload	Download	Import	Export
Connection status			No download,

3.4.1.3.2.Double-click ''ODOT-S4E2'', or right-click ''ODOT-S4E2'', and select ''Common attribute''.

It could set the gateway working mode to "Mapping Mode" in the popup setting

page.

🚧 Modbus RTU/ASCII—Modbus TCP gateway config		-	
File Communication Advanced configuration A	About		
Ethernet configuration	Slave configuration		
IP Address 192.168.1.254	Delete current device		
Common attribute	Common attribute		
	Change device	•	
Getway working mode: Mapping model	•		
Getway address: 247			
Modbu OK Cancel			
Modous-itr watchdog enable 🖂			
Upload Download	Import	Export	
🔴 Connection status 🤔 Current mode : Mapping model		N	o download "

3.4.1.3.3.Double-click "COM1", "COM2", "COM3" "COM4" or right-click "COM1", "COM2", "COM3" "COM4".

And click "Serial Properties" to bring up the "Configure serial" window. Set up the communication parameters, then click the "OK" to save and return.

The meaning of each parameter is as follows:

Operating mode:

It is used to set up gateway as master station or slave station in the network. Default is set as master mode.

Modbus protocol type:

It is used to set up the gateway protocol type of the network between the communication of the serial port and other connected devices.

It can choose either Modbus-RTU or Modbus-ASCII. Please set this parameter to be consistent with the device to which the serial port is connected.

Baud rate:

Serial port baud rate: optional range is 1200~115200bps and default is 9600bps. Please set this parameter to be consistent with the device to which the serial port is connected.

Check Digit:

It could choose none, odd, even and default is set as none. Please set this parameter to be consistent with the device to which the serial port is connected.

Stop bit:

It can choose stop bit 1 or stop bit 2. The default is set as stop bit 1. Please set this parameter to be consistent with the device to which the serial port is connected.

Receive character interval:

When receiving message the frame interval detection time can be chose from 1.5t to 200t. Default is 3.5t. (T is the transmission time of a single character, and it is related with baud

rate). In general, there is no need to change this parameter.

Packet transmission interval:

Interval time for sending Modbus commands (Delayed time from receiving the slave response message to sending the next command) can be set from 0ms-65535ms. Default is 0ms. It is recommended to set 100ms and this can prevent connected devices from communication failure due to slow response.

Timeout processing:

Read data from slave station. Data processing mode can choose "data clear" or "data retention" when slave station response is timeout. Default is "Data Hold mode". This parameter is only valid for Modbus read command. Please set this value according to actual needs.



3.4.1.3.4.Select "COM1" or "COM2", and right-click to select "Add Slave".

It could then input "Slave name" and fill in "slave station number". Then it could configure Modbus function code, start address of slave data, number of data, start address of gateway mapping area and response timeout time and if "event output" (only when the data changes, the gateway will execute this command once, this parameter is only valid for write commands) according to the communication manual of slave equipment. Under the same

serial port, the station number of the slave cannot be the same with each other and the device itself too. Range of the slave station address is between 1 and 247. Under the same serial port the slave name cannot be the same. After completing the settings, click "Save Current Mapping Table Edit". ?编译需要英文截图

le Communication		y config				
	Advanced o	configuration	About			
nernet configuration	1		Slave configuratio	on		
IP .	Address 19	92.168.1.254				
Subn	et mask 25	55.255.255.0		Add slave		
	Gateway 🔤	192.168.1.1	C(Configure serial Copy slaves (Ctr	I+C)	
Modbus-T	CP port	502] <u>~</u> > C(_	Paste (Ctrl+V)		
Downlo	ad port	1024				
lbus-TCP watchdog ti	me(s)	30				
Upload	Down	load	Import	t	Export	
onnection status 🤔	Current mode :	Mapping model			No do	wnl
从站地址映射表*						
站名称 : <mark>16DI</mark>	Ж	站站号(1-247):1				
Modbus功能码	从站数据起始地址	数据个数	网关映射区起始地 址	响应超时时间(ms)		1
		16	0	500		
02 读1区 读离散输入 💌	II 0			000		1

3.4.1.3.5.Configuring the Ethernet parameters of the gateway by the "Ethernet Configuration" on the left of the software.

Some of the parameters are as follows:

Modbus gateway IP: The gateway IP address; ?? 网关还是设备的 IP?

Subnet mask: Subnet mask of the device;

LAN gateway IP: Gateway IP address of the network where the device resides;

Modbus-TCP data communication port: Generally it is 502;

Configure the port: The configuration software could be used for downloading the configuration to the device through this port of the device;

Modbus-TCP watchdog time: The time interval from when the gateway receives the last Modbus TCP packet to the automatic restart.

Note: The automatic restart of the gateway can release connection resources that have not been used for a long time in time;

Modbus-TCP watchdog enable: Whether the watchdog function is enabled.

∞ Modbus RTU/ASCII—Modbus TCP g	ateway config		_		X
File Communication Advan	ced configuration	About			
Ethernet configuration		Slave configuration			
IP Address	192.168.1.254	□ ■ T ODOT-S4E2			
Subnet mask	255.255.255.0	COM1			
Gateway	192.168.1.1	COM2			
Modbus-TCP port	502	COM4			
Download port	1024				
Modbus-TCP watchdog time (s)	30				
Modbus-TCP watchdog enable 🖂]				
Upload	Download	Import	Expor	t	
Connection status 🎒 Current mo	de : Mapping model			No down	load

3.4.1.3.6.Set the target gateway address that you want to download.

And it could set the download communication port number through

"Communication" \rightarrow "Configure communication channel" too. The gateway factory default IP is 192.168.1.254 and port number is 1024.

∞-t Mod	bus RTU/ASCII—Modbus T	CP gateway config					(
File	Communication Ac	lvanced configu	ration Abo	out			
Ethern	Download			Slave configuration			
	Upload			B- S ODOT-S4E2			
	Configure commu	Contraction of the Contraction o	si i				
	Gatewa Modbus-TCP por Download por	g Configuration t IP Address: t Port:	for communic 192. 168. 1. 25				
	TCP watchdog time (s) bus-TCP watchdog enabl	1		Cancel			
e Conn	Vpload ection status 🍄 Curren	Download t mode : Mapping	model	Import	Expor	t No download	ł:;

3.4.1.3.7. Click the button "Download Gateway Configuration " to. download configuration parameters to the gateway.

After the download is successful, the "Download successful" prompt appears in the Status Bar at the lower right. After the download is successful, the gateway restarts automatically and then the it goes into running state.

If the download fails, please check out whether the computer IP address and gateway IP address are in the same network segment. Then check whether the gateway IP address is set correctly. If the gateway IP address is lost, please reset the gateway through the reset button. After reset, the gateway IP address will be the factory default IP address.

Click "Import Profile" and "Export Profile" and it could import or save the configuration file to the local disk. Click "Upload Gateway Configuration" and it could upload the current gateway configuration to the software.

Note: When downloading and uploading, please ensure that the computer and the gateway are in the same network segment.

File Communication Advan	ced configuration	About	
Ethernet configuration		Slave configuration	
IP Address	192.168.1.254	■ The ODOT-S4E2	
Subnet mask	255.255.255.0		
Gateway	192.168.1.1		
Modbus-TCP port	502		
Download port	1024		
Nodbus-TCP watchdog time (s)	30		
Modbus-TCP watchdog enable 🖓	3		
Upload	Download	Import	Export

3.4.1.3.8. After completing the above settings, it could operate as fellow.

After the settings are completed, the Modbus TCP client can use the Modbus TCP protocol to access the slave device 16DI which the station number is 1 though the gateway IP address 192.168.1.254, the Modbus data communication port 502 and the slave number X(0 < X < 248 and X cannot be the device station number of the gateway).

3.4.2 Simple configuration

3.4.2 .1. Open the configuration software "ODOT MGCC Config".

Right-click on the configuration page of slave and select "Add Device", then add "ODOT-S4E2".

	192. 168. 1. 254 255. 255. 255. 0 192. 168. 1. 1 502 1024 30	Slave configuration Add gateway	ODOT-S2E1 ODOT-S2E2 ODOT-S4E2 MG-S1EX
Upload Do	rnload	Import	Export

3.4.2 .2.Double-click "ODOT-S4E2" or right-click "ODOT-S4E2", Select "Common attribute".

It could set the gateway working mode to "Mapping Mode" in the popup setting

page.

と件 通讯 高级 关子 + 日本男		中 D 和 男	
↓太网配置 **********	192.168.1.254	串口配置	
MODBUS网关I	192.108.1.204	添加设备 >	ODOT-S2E1
子网撞码	255. 255. 255. 0		ODOT-S2E2
	mmon attribute		ODOT-S4E2
局域网网			
			MG-S1EX
Modbus-TCP数据通讯 (etway working mode: Mappi	ng model •	MG-S1EX
Modbus-TCP数据通讯 (配置	etway working mode: Mappi Getway address: 247	ing model	MG-S1EX
		ing model •	MG-S1EX
歐置		ng model • Cancel	MG-S1EX
配置 Modbus-TCP看门狗时间	Getway address: 247		MG-S1EX

3.4.2.3.Double-click "COM1", "COM2", or right-click "COM1", "COM2".

And click "Serial Properties" to bring up the "Configure serial" window. Set up the communication parameters, then click the "OK" to save and return. (For this example, it selects COM1 as master mode).

The meaning of each parameter is as follows:

Operating mode:

It is used to set up gateway as master station or slave station in the network. Default is set as master mode.

Modbus protocol type:

It is used to set up the gateway protocol type of the network between the communication of the serial port and other connected devices.

It can choose either Modbus-RTU or Modbus-ASCII. Please set this parameter to be consistent with the device to which the serial port is connected.

Baud rate:

Serial port baud rate: optional range is 1200~115200bps and default is 9600bps. Please set this parameter to be consistent with the device to which the serial port is connected.

Check Digit:

It could choose none, odd, even and default is set as none. Please set this parameter to be consistent with the device to which the serial port is connected.

Stop bit:

It can choose stop bit 1 or stop bit 2. The default is set as stop bit 1. Please set this parameter to be consistent with the device to which the serial port is connected.

Receive character interval:

When receiving message the frame interval detection time can be chose from 1.5t to 200t. Default is 3.5t. (T is the transmission time of a single character, and it is related with baud rate). In general, there is no need to change this parameter.

Packet transmission interval:

Interval time for sending Modbus commands (Delayed time from receiving the slave response message to sending the next command) can be set from 0ms-65535ms. Default is 0ms. It is recommended to set 100ms and this can prevent connected devices from communication failure due to slow response.

Timeout processing:

Read data from slave station. Data processing mode can choose "data clear" or "data retention" when slave station response is timeout. Default is "Data Hold mode". This parameter is only valid for Modbus read command. Please set this value according to actual needs.

Serial port working mode Communication protocol		•				
Communication protocol	W. JP PTH		configuration			
	WOODAZ VIO	•	ODOT-S4E2			
Baud rate	9600	•	🍗 🍉 COM1			
Check	None parity	-	COM2			
Data bits	8	•	COM4			
Stop bits	1	•				
Receive delay	3.5t	•				
Send delay(ms)	0					
Timeout mode	Data holding	•				
OK	Cancel		Import Ex	port		
	Data bits Stop bits Receive delay Send delay(ms) Timeout mode OK	Timeout mode Data holding OK Cancel	Data bits 8 • • Stop bits 1 • Receive delay 3.5t • Send delay(ms) 0 Timeout mode Data holding • OK Cancel	Check Mone parity Check Mone parity Data bits 8 COM3 COM4 COM4 Com5 Com5 Com5 Com5 Com5 Com5 Com5 Com5	Check Mone parity Check Mone parity Check Mone parity COM3 COM4 COM4 COM4 COM4 COM4 COM4 COM4 COM4	Check None parity Comparing Comparison Compa

??需要重新截图 为映射

3.4.2.4.Select "COM1" or "COM2" (In this example, it is COM1), and right-click to select "Add Slave".

It could then input "Slave name" and fill in "slave station number". Then it could configure Modbus function code, start address of slave data, number of data, start address of gateway mapping area and response timeout time and if "event output"(only when the data changes, the gateway will execute this command once, this parameter is only valid for write commands) according to the communication manual of slave equipment. Under the same serial port, the station number of the slave cannot be the same with each other and the device itself too. Range of the slave station address is between 1 and 247. Under the same serial port the slave name cannot be the same. After completing the settings, click "Save Current Mapping Table Edit". ?编译需要英文截图

	Function code Slave register start address			1	Number of data Gateway register start address			Slave response timeout		When data changes the command is valid				
	03 Re	ad 4xx	хх Re	_	0		10		0		500	I		
				\sim							500			
_				_	_									
											Save		Close	e

3.4.2.5.Double-click "COM2", or right-click "COM2".

And click "Serial Properties" to bring up the "Configure serial" window. Set up the communication parameters. And it sets the serial port working mode as slave mode, then click the "OK" to save and return. (For this example, it selects COM2).

The meaning of each parameter is as follows:

Operating mode:

It is used to set up gateway as master station or slave station in the network.

Default is set as master mode.

In this example, it is set as slave mode.

Modbus protocol type:

It is used to set up the gateway protocol type of the network between the communication of the serial port and other connected devices.

It can choose either Modbus-RTU or Modbus-ASCII. Please set this parameter to be consistent with the device to which the serial port is connected.

Baud rate:

Serial port baud rate: optional range is 1200~115200bps and default is 9600bps. Please set this parameter to be consistent with the device to which the serial port is connected.

Check Digit:

It could choose none, odd, even and default is set as none. Please set this parameter to be consistent with the device to which the serial port is connected.

Stop bit:

It can choose stop bit 1 or stop bit 2. The default is set as stop bit 1. Please set this parameter to be consistent with the device to which the serial port is connected.

Receive character interval:

When receiving message the frame interval detection time can be chose from 1.5t to 200t. Default is 3.5t. (T is the transmission time of a single character, and it is related with baud rate). In general, there is no need to change this parameter.

Timeout processing: The gateway serves as the Modbus RTU/ASCII slave. And it is the time interval between receiving a message from the master and sending a reply message. This is related to the master performance.

boM **	COM2 configuration				-	
File Ether	Serial port working mode Communication protocol		•	e configuration © ODOT-S4E2		
	Baud rate Check	9600 None parity	•	COM1 COM2		
	Data bits Stop bits		•	COM3		
Modbus	Receive delay	3.5t	•			
Mod	Slave respond delay(ms)	0				
	OK	Cancel		Import	Export	
Conne	ection status 🤔 Current mode : M	apping model			No	download .::

3.4.2.6.Configuring the Ethernet parameters of the gateway by the ''Ethernet Configuration'' on the left of the software.

Some of the parameters are as follows:

Modbus gateway IP: The gateway IP address; ?? 网关还是设备的 IP?

Subnet mask: Subnet mask of the device;

LAN gateway IP: Gateway IP address of the network where the device resides;

Modbus-TCP data communication port: Generally it is 502;

Configure the port: The configuration software could be used for downloading the configuration to the device through this port of the device;

Modbus-TCP watchdog time: The time interval from when the gateway receives the last Modbus TCP packet to the automatic restart.

Note: The automatic restart of the gateway can release connection resources that have not been used for a long time in time;

Modbus-TCP watchdog enable: Whether the watchdog function is enabled.

3.4.2. 7.Set the target gateway address that you want to download. And it could set the download communication port number through "Communication"→"Configure communication channel" too. The gateway factory default IP is 192.168.1.254 and port number is 1024.

3.4.2.8.Click the button "Download Gateway Configuration " to. download configuration parameters to the gateway.

After the download is successful, the "Download successful" prompt appears in the Status Bar at the lower right. After the download is successful, the gateway restarts automatically and then the it goes into running state.

If the download fails, please check out whether the computer IP address and gateway IP address are in the same network segment. Then check whether the gateway IP address is set correctly. If the gateway IP address is lost, please reset the gateway through the reset button. After reset, the gateway IP address will be the factory default IP address.

Click "Import Profile" and "Export Profile" and it could import or save the configuration file to the local disk. Click "Upload Gateway Configuration" and it could upload the current gateway configuration to the software.

Note: When downloading and uploading, please ensure that the computer and the gateway are in the same network segment.

3.4.2.9.In this example, after the above setup is completed.

It could connect the Modbus RTU/ASCII slave to COM1, and connect the Modbus RTU/ASCII master to COM2.

Then it could connect the Modbus TCP client to the gateway via Ethernet. The gateway will automatically refresh the underlying Modbus RTU/ASCII slave data from COM1, and the Modbus RTU/ASCII master and Modbus TCP clients indirectly access the Modbus RTU/ASCII slave by accessing the internal data store area of the gateway.

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