

Model: UT-680X-GW Series Modbus Gateway WEB User Manual

Version: V1.2



Conventions Used in this Manual

This manual adopts the following conventions.

GUI Conventions	Description
Explanation	Provides additional information and explanations for the operational steps.
Caution	Highlights important points to be observed during operations; improper actions may result in data loss or device damage.



Preface

Target Audience

This manual is intended for installation personnel and system administrators responsible for setting up, configuring, or maintaining networks. It assumes familiarity with transmission and management protocols used in networks.

The manual also assumes a solid understanding of networking equipment, protocols, interface terminology, theoretical principles, practical skills, and specialized knowledge related to networking. Additionally, experience with graphical user interfaces, Simple Network Management Protocol (SNMP), and web browsers is required.

This manual serves as a general guide for all Modbus gateways, and the specific functional modules discussed here may vary based on the purchased Modbus gateway's actual features.

1. Overview

1.1 Product Introduction

The UT-680X-GW series is a Modbus gateway that serves as a Modbus protocol converter between asynchronous serial ports (RS232/422/485) and Ethernet. It is an independent intelligent device with a CPU, embedded OS, and a complete TCP/IP protocol stack. This gateway allows immediate network connectivity for RS232/422/485 serial Modbus RTU devices.

Product Features: Supports Dynamic Host Configuration Protocol (DHCP) and Static IP, facilitates Modbus RTU to Modbus TCP conversion, and functions as a storage-type Modbus gateway. It can transmit data over the Internet, enabling communication conversion between Modbus RTU Slave, Modbus RTU Master, Modbus TCP Master, and Modbus TCP Slave. It integrates protocols like ARP, DHCP, TCP, IP, HTTP, ICMP, and Modbus. Basic computer skills are sufficient for usage.

1.2 Product Features

Hardware Features

- Includes a Reset button for restoring factory default settings.
- Equipped with a 10/100M industrial-grade auto-adaptive Ethernet port.
- Serial ports provide 5 signals: RXD, TXD, RTS, CTS, GND, supporting RS232/485/422 interfaces.
- Independent indicators for Ethernet and power, providing clear operational status.
- Wide power input range (12~57.6VDC) for versatile field power supply methods.

> Software Features

- Supports protocols such as ARP, DHCP, TCP, IP, HTTP, ICMP, and Modbus.
- Accommodates a wide baud rate range of 300-921600bps (standard baud rates) for diverse device applications.



- Two operational modes can be set on the Serial Port page: Modbus RTU Master and Modbus RTU Slave.
- Supports firmware upgrades via the web, convenient for specialized applications.
- Modbus proxy mode, storage-based, ensuring faster response and enhanced stability.

2. Hardware Description

2.1 Power Interface Terminal Definitions

The UT-680X-GW front panel provides DC and 3PIN 5.08 power terminal for power input, accepting a range of 12-57.6VDC. It's recommended to use a DC adapter with inner diameter of 2.5mm and outer diameter of 5.5mm.



Terminal	Power Interface
Connections	
1	Power Positive V+
2	Connect to Ground (PGND)
3	Power Negative V-

2.2 Ethernet RJ45 Interface Definitions

The UT-680X-GW supports 1 Ethernet port and multiple RS-232/485/422 serial ports.

10Base-T/100Base-TX Ethernet Interface

The 10/100BaseT(X) Ethernet interface is located on the front panel and uses an RJ45 connector. The pinout for the RJ45 port is defined in the diagram, and it supports both Unshielded Twisted Pair (UTP) and Shielded Twisted Pair (STP) cables with a maximum distance of 100m. 100Mbps connection uses Category 5 cables with 100 Ω impedance, while 10Mbps connection uses Category 3, 4, or 5 cables with 100 Ω impedance.



The RJ45 port supports automatic MDI/MDI-X operation, allowing direct connection to a PC or server with a straight-through cable, or to other switches or hubs with a crossover cable. The pin definitions for 10Base-T/100Base-TX in MDI/MDI-X applications are provided in the table.

Pin No. MDI Signal	MDI-X Signal
--------------------	--------------

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1	TX+	RX+
2	TX-	RX-
3	RX+	TX+
 6	RX-	TX-
4. 5. 7. 8	—	—

Note: "TX±" stands for Transmit Data ±, "RX±" stands for Receive Data ±, "—" indicates unused.

MDI (Straight-Through):



MDI-X (Crossover):



The MDI/MDI-X auto-adaptive function allows users of the UT-680X-GW series 10/100BaseT(X) Ethernet interface to connect with devices using either a crossover cable or a straight-through cable, eliminating the need to consider the type of Ethernet cable.

2.3 Serial Port Definitions

The UT-680XMT-GW series serial ports provide a 4-pin industrial terminal with a spacing of 3.81mm. The pin definitions are as shown in the table below:

2	2	5	0
A	A	A	囚
1	2	3	4

3.81 Terminal block	RS-485	RS-422	Description
1	T/R+	TX+	Send / receive positive
2	T/R-	TX-	Send / receive negative
3		RX+	receive positive
4		RX-	receive negative



UT-680X-GW Series Serial Port Pin Definitions:

Ť	Ť	Ť	Ť	Ť	Ť	Ť	ï
1	ł	ł	1	1	ł	ł	8

RJ45	RS-232	RS-485 HALF	RS-485 FULL	RS-422
1	TxD	DATA+	TxD+	TxD+
2	RxD	DATA-	TxD-	TxD-
3	RTS		RxD+	RxD+
4	CTS		RxD-	RxD-
5				
6	GND	GND	GND	GND
7				
8				2 S

2.3 Indicator Lights

The UT-680X-GW offers LED indicator lights to monitor operational status, simplifying troubleshooting. The detailed status of each indicator light is shown in the table below:

Defined Name	Light Color	Function	Status
PWR	Red	Power Indicator Light	Solid On
LINK	Green	Network Indicator Light	Solid On
Serial Data Light	Green	Serial Data Transmit/Receive	Blinking on data transmission, Off on
		Indicator Light	no data
RUN	Green	Operation Indicator Light	0.5s On, 0.5s Off alternating blink

2.4 Device Installation

Before installation, ensure the device's operating environment: power voltage, installation space, and mounting method. Please carefully review the following installation requirements:

- Check if the necessary cables and connectors for installation are available.
- Verify cable placement according to reasonable configuration requirements.
- The product does not provide installation components; users must prepare components for the selected installation type: screws, nuts, tools, etc., to ensure reliable installation.
- Power requirement: 12-57.6VAC.
- Environmental requirement: Operating temperature -40~85°C, operating humidity 5%~95% (non-condensing).
- Mounting method: Wall-mounted installation.

2.5 Cable Routing

Cable routing must adhere to the following conditions:

 Verify that cable specifications, models, and quantities match the requirements before laying cables.

- Check cables for damage and ensure they have manufacturing records and quality assurance certificates before laying.
- The specifications, quantity, routing, and placement of the required cables meet construction requirements, and the laying length should be determined based on actual positioning.
- There should be no breaks or connectors in the middle of the laid cables.
- Cables in pathways should be neatly and evenly laid out, with smooth and uniform turns.
- In cable troughs, cables should be laid straight without protruding to avoid blocking other entry and exit holes. Secure and fasten cables at the exit points or bends.
- User cables should be separated from power lines. Cables, power lines, and ground wires should not overlap or mix when laid in the same trough. If cables are too long, place them neatly in the middle of cable trays, avoiding pressure on other cables.
- Both ends of the cables should be appropriately labeled with concise and clear content for maintenance purposes.

3. Web Management

Before configuring the UT-680X-GW series Modbus gateway device, ensure you have installed necessary software on your computer and have properly configured the network.

3.1 Network Settings

The default IP address of the UT-680X-GW Modbus gateway device is: 192.168.1.125, subnet mask: 255.255.255.0. When accessing the UT-680X-GW Modbus gateway device via the web, the IP of the gateway device and the computer must be within the same local network. You can modify the computer's IP address or the Modbus gateway device's IP address to ensure they are on the same local network. Refer to the steps of Method 1 or Method 2 for specific operations.

Method 1: Modify the computer's IP address.

- Click Start -> Control Panel -> Network Connections -> Local Connection -> Properties -> Internet Protocol (TCP/IP) and set the PC's IP address to: 192.168.1.X (X is any value between 2 and 253, excluding 254).
- > After clicking OK, the IP address will be successfully modified.
- > The specific steps for various Windows systems are shown in Figure 3.1:

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Local Area Connection 2 Properties	83	me this connection Change settings of	this connec
Networking Authentication Sharing	Internet Protocol Version 4 (TCP,	IPv4) Properties	
Connect using:	General		
Realtek USB FE Family Controller	You can get IP settings assigned this capability. Otherwise, you n	automatically if your network supports eed to ask your network administrator	
This connection uses the following items:	Obtain an IP address autor	natically	
Client for Microsoft Networks	• Use the following IP addres	s:	
Second Contraction of the second seco	IP address:	192 . 168 . 1 . 164	
Internet Protocol Version 6 (TCP/IPv6)	Subnet mask:	255 . 255 . 255 . 0	
Internet Protocol Version 4 (TCP/IPV4) A Link-Layer Topology Discovery Mapper I/I	Default gateway:	192.168.1.	
Link-Layer Lopology Discovery Responde	🔵 Obtain DNS server address	automatically	
Install Uninstall	• Use the following DNS serv	er addresses:	
Description	Preferred DNS server:		
Transmission Control Protocol/Internet Protocol. wide area network protocol that provides commu- across diverse interconnected networks.	Alternate DNS server:		
	🔲 Validate settings upon exit	Advanced	
	L	OK Cancel	

(Figure 3.1)

3.2 Function Menu

The main menu includes: Serial Port Settings, Ethernet Settings, System Management, Modbus Settings, User Settings, and these items will be introduced and configured in this chapter respectively.

Menu Items	Page Functions
Serial Port Settings	Configure basic parameters for serial ports
Ethernet Settings	Configure basic parameters for Ethernet ports
System Management	Perform operations like factory reset and firmware upgrade
Modbus Settings	Configure basic parameters for Modbus
Modbus Routing Settings	Configure TCP port routing parameters
Connection Status	Display TCP connection status
User Settings	Support user password modification
Save Settings	Perform save operation

3.3 Logging into the Web Interface

Before accessing the Modbus gateway device via Google Chrome, ensure that the PC and the target device are on the same local network.

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Steps:

1. Right-click on Google Chrome, choose Properties, and clear temporary files and browsing history.

2. Open Google Chrome, enter the IP address of the UT-680X-GW Modbus gateway device in the address bar, press Enter, and access the username and password confirmation page as shown in Figure 3.1.

Luser		
password		
	Login	

(Figure 3.1)

3. Enter the username and password, press Enter, and access the UT-680X-GW Modbus gateway device interface as shown in Figure 3.2.

The Web configuration page is divided into three parts: Menu Bar, Operation Area, and English/Chinese toggle. Clicking on a menu item in the menu bar takes you to the corresponding interface, and the configuration area displays device status information and allows configuration.

	Serial Port			
letwork Port Settings				
Nodbus Settings	Serial Port:	① 1 ○ 2 ○ 3 ○ 4 ③ 1 ○ 2 ○ 3 ○ 4 ④ 1 □ □ 1 □	0506	0708
	Serial Port Para	neters		
lodbus Kouting Settings				
onnection Status	Interface:	RS485	~	
ystem Management	Baud Rate:	9600	*	(300-921600)
ser Settings	Data Bits:	8	~	
ve Settings	Stop Bits:	1	~	
	Parity:	None	~	
Menu bar	Timeout Time:	100		(0-5000ms)
	Working Mode:	ModbusRTUSIave	~	This mode refers to the gateway serial port as the RTU master station, and the terminal device as the RTU sla station
Operation area	Apply To All Serial:			

 $(\, {\rm Figure} \ {\rm 3.2}\,)$



If the username or password is entered incorrectly, the interface displays "Username or Password is Incorrect" as shown in Figure 3.3, and you must re-enter the correct credentials.



(Figure 3.3)

3.3.1 Serial Port Settings

Access the Web interface of the UT-680X-GW Modbus gateway device, as shown in Figure 3.4.

	Sorial Port Sott	inge				
Serial Port Settings	Senai Port Sett	Senar Fort Settings				
Natural Dark Sattings	Serial Port					
Heavier Fort Settings	Serial Port:	arial Port: @ 1 0 2 0 3 0 4 0 5 0 6 0 7 0 8				
Modbus Settings						
Modbus Routing Settings	Serial Port Param	eters				
	Interface	PS485				
Connection Status	intenace.	10403				
System Management	Baud Rate:	9600	✓ (300-921600)			
Hear Sattings	Data Bits:	8	v			
User Settings						
Save Settings	Stop Bits:	1	v			
	Parity:	None	v			
	Timeout Time:	100	(0-5000ms)			
	Working Mode:	ModbusRTUSlave	 This mode refers to the gateway serial port as the RTU master station, and the terminal device as the RTU slave station 			
	Apply To All Serial:					
	Cancel Se	tting				

(Figure	3.4)
· ·	1 12 01 0	.	/

Select Serial Port	Default to the First Serial Port
Interface Type	RS-485/422/232, default RS485
Baud Rate	300-921600, default 9600
Data Bits	5, 6, 7, 8; default 8
Stop Bits	1, 1.5, 2; default 1
Parity	None, odd, even; default none
Timeout	Device Reply Timeout, range 0-5000ms
Operating Mode	ModbusRTU Slave (default), ModbusRTU Master
Apply to All Serial Ports	Check to apply current serial port parameters to all serial ports.



3.3.2 Ethernet Settings

Access the Web interface of the UT-680X-GW Modbus gateway device, as shown in Figure 3.5.

Serial Port Settings	Network Port Settings Network Port Parameters			
Network Port Settings				
Modbus Settings	IP Address:	192.168.1.125		
Modbus Routing Settings	Subnet Mask:	255 255 255 0		
Connection Status	Gateway:	192.168.1.1		
System Management	DNS Server1:	0.0.0.0		
User Settings	DNS Server2:	0.0.0.0		
Save Settings	DHCP:	Disabled	~	
	Cancel	Setting		

	(Figure 3.5)
IP Address	An address of 32 bits in length assigned to devices connected to the Internet. An IP address
	consists of two fields: the network number field (net-id) and the host number field (host-id).
	IP address format: X.X.X.X, default display: 192.168.1.125.
Subnet Mask	A mask corresponds to a 32-bit number associated with an IP address, where some bits are
	set to 1 and others to 0. The mask divides the IP address into two parts: the subnet address
	and the host address. The parts of the IP address that correspond to the bits set to 1 in the
	mask are the subnet address. Mask format: X.X.X.X, default display: 255.255.255.0.
Gateway	The default gateway within a host is often referred to as the default route. The default route
	is the route selected by a router when no other routes for the destination address of an IP
	packet are found in the router's routing table. The default route is used for all packets whose
	destination is not in the router's routing table. Gateway format: X.X.X.X, default display:
	192.168.1.1.
DNS	DNS, short for Domain Name Server, translates user-friendly domain names into IP addresses
	that the Internet can recognize. If a device needs to access a hostname, it requires the DNS
	server to resolve it into an IP address. DNS address format: X.X.X.X, default display: 0.0.0.0.
Ethernet	Set the interface speed to Auto Negotiation, 10M Half Duplex, 10M Full Duplex, 100M Half
Speed	Duplex, or 100M Full Duplex. Enable or disable DHCP.
DHCP	An address of 32 bits in length assigned to devices connected to the Internet. An IP address
	consists of two fields: the network number field (net-id) and the host number field (host-id).
	IP address format: X.X.X.X, default display: 192.168.1.125.

3.3.3 System Management

Access the Web interface of the UT-680X-GW Modbus gateway device, as shown in Figure 3.6.



Serial Port Settings	System management
Network Port Settings	System Information
Modbus Settings	Device Model: UT-6808MT-GW
Modbus Routing Settings	Firmware Version: V1.0.11
Connection Status	Hardware Version: 41041032
System Management	Load Factory Default
User Settings	
Save Settings	Load Factory Default settings: Load Factory Default
	Upgrade Firmware
	Select The Firmware And Upgrade: Select File Upgrade

(Figure 3.6)

Device Model	Device Name Description
Firmware Version	Software Version Number
Hardware Version	Hardware Version Number
Factory Reset	Factory reset settings, parameter initialization, default IP: 192.168.1.125
Firmware Upgrade	Upgrade firmware program, reboot required after upgrade.

3.3.4 Modbus Settings

Access the Web interface of the UT-680X Modbus gateway device, as shown in Figure 3.7.

Serial Port Settings	Modbus Setting	<u>js</u>				
Network Port Settings	Listening Port:	502	(1-65535)			
Modbus Settings	Collection Interval:	100	(0-10000ms)			
Modbus Routing Settings	Exception Handling:	Enable	•			
Connection Status	Address translatio	n settings				
System Management		Index	Туре	Slave ID Mapping (Virtual<=>Real)	Destination	Operation
User Settings				No Data		
Save Settings	Save					
	Add address trans	lation rules				
	Type:	Serial Port	~			
	Slave ID From:		to			
	Slave ID Offset:					
	Destination:	Serial1	~			
	Add					

(Figure 3.7)

Listening Port	Default is 502, connecting to the device port on the TCP side, range
	1-65535.
Polling Interval	Polling interval for each Modbus RTU command, range 0-10000ms, default
	100.
Address Conversion Settings	Query address conversion table, maximum of 15 address conversion
	entries.
Exception Handling	Enabled by default, which reports "Gateway target device failed to
	respond" error code OB on timeout. Disabled means no response.
Index	Maximum of 15 address entries.
Туре	Two types available: Serial Port (Slave) and TCP Address (Master). The



	same serial port cannot use both modes simultaneously.		
Slave Address Conversion	Virtual <=> Real, real address converted to virtual address.		
Add	Click "Add" after setting parameters, then save and restart settings.		
Slave addresses range from	ID number setting, range 1-247.		
Slave Conversion Address Incremental range from -254 to 254, can be negative, added to the I			
Increment	range for address calculation.		
Destination	Serial1 or IP address + port, corresponding to the serial port or service IP +		
	port of the address conversion entry.		

3.3.4.1 Mode 1 (Multi-Master Multi-Slave)

UT-680X-GW supports multi-master multi-slave configuration, enabling the conversion between Modbus TCP and Modbus RTU protocols. It can accommodate up to 5 TCP master/client devices (on the same serial port) or connect to 5 TCP slave/server devices. UT-680X-GW gateway offers an easy way to integrate Modbus TCP and RTU networks, providing a simpler and customizable network integration solution.

For Modbus deployment, the UT-680X-GW gateway efficiently connects a large number of Modbus nodes to the same network. It can manage up to 16 serial port slave nodes (devices), with IDs ranging from 1 to 247 (as defined in the Modbus standard). Each RS-232/422/485 serial port can be configured with different operating commands and baud rates for each Modbus RTU, allowing the integration of two types of Modbus networks into a Modbus TCP network through a single gateway.



3.3.4.2 Mode 2

The Modbus gateway connects multiple Ethernet slave servers using a Modbus serial master device with only one serial interface. To access Modbus TCP slave devices, configure the gateway's



web page to work in ModbusRTU master mode, and then configure up to five Modbus TCP slave connection parameters (on the same serial port) on the page.



3.3.4.3 Mode 3

TCP master devices can establish connections with different Modbus slave devices. Each serial port of the gateway can be configured for a specific environment. After configuring the ID mapping settings, the TCP server network communication protocol accesses Modbus serial devices through the gateway.

Each serial port can manage up to 16 serial port slave nodes (devices). For example, under RS-485 connection, up to 16 slave devices can be managed, with ID range from 1 to 247 (as defined in the Modbus standard).

3.3.5 Modbus Routing Settings

Access the Web interface of the UT-680X Modbus gateway device, as shown in Figure 3.8. This routing feature is used in specific application scenarios and is not enabled by default.

Note: After enabling Modbus IP routing, the IP specified for a designated serial port is only accessible from the IP addresses set in this configuration. Other non-target IP connections will be unavailable and will not receive a response.

Serial Port Settings	Modbus Routing Settings						
	Index		Туре	IP / Port	Destination	Operation	
Network Port Settings		1	TCP Port	503	Serial1	Delete	
Modbus Settings							
Modbus Routing Settings	Save						
Connection Status	Add routing rules						
System Management							
User Settings	Type:	TCP Port	~				
Save Sattings	Port:						
Save Security	Destination:		~				
	Add						
				(3.8)			

Routing Settings	Maximum 15 address entries by index, default no data, the same serial port cannot
	use both modes.
Save	Save configuration, add routing rules first, then click Save, restart to take effect on
	the Save Settings page.
Туре	Choose between TCP Port and IP Address.
Port	Default none, connect to the TCP side port, range 1-65535.
Destination	Default none, select a specific serial port.

3.3.5.1 TCP Port

This type corresponds to the ModbusRTUSIave operating mode. It is not available if the current serial port operating mode is ModbusRTUMaster.

When Modbus routing port is not enabled, in ModbusRTUSIave mode, the PC acts as a client to actively connect to the UT-680X Modbus gateway device. However, only one TCP port (default 502) is available for use. Multiple serial ports on the gateway device share the same TCP port for serial port polling, resulting in lower efficiency and longer polling times.

Enabling Modbus routing port will enhance the efficiency of polling for multiple serial ports. Each serial port will have a corresponding configurable TCP port.

An example of port routing scenario is shown in Figure 3.9.

1. Open Serial Port Settings and set the serial port operating mode that requires the use of Modbus routing port to ModbusRTUSlave, as shown in the web page (Figure 4.0).

Serial Port Settings	Serial Port Set	tings	
Network Port Settings	Serial Port		
	Serial Port:	1 0 2 0 3 0 4 0 1	05 06 07 08
Modbus Settings	Serial Port Param	ieters	
Modbus Routing Settings			
Connection Status	Interface:	RS485	v
Surtem Management	Baud Rate:	9600	✓ (300-921600)
System management			
User Settings	Data Bits:	8	v
Save Settings	Stop Bits:	1	v
	Parity:	None	v
	Timeout Time:	100	(0-5000ms)
	Working Mode:	ModbusRTUSIave	 This mode refers to the gateway serial port as the RTU master station, and the terminal device as the RTU slave station
	Apply To All Serial:		
	Cancel	etting	

(4.0)

2. Open Modbus Settings, configure the address and relevant parameters for the serial port, as shown in the web page (Figure 4.1).

Serial Port Settings	Modbus Setting	gs				
Network Port Settings	Listening Port:	502	(1-65535)			
Modbus Settings	Collection Interval:	100	(0-10000ms)			
Modbus Routing Settings	Exception Handling:	Enable	~			
Connection Status	Address translatio	on settings				
System Management		Index	Туре	Slave ID Mapping (Virtual <=>Real)	Destination	Operation
User Settings				No Data		
Save Settings	Save Add address trans	slation rules				
	Type: Slave ID From: Slave ID Offset:	Serial Port	to			
	Destination: Add	Sorial1	` (Д	1)		

3. Open Modbus Routing Settings, based on the configuration from the previous step, create a TCP Port within the specified range by setting the port, as shown in the web page (Figure 4.2).

Serial Port Settings	Modbus Routing Settings				
Natural Rest Cations	Index	Туре	IP / Port	Destination	Operation
Network Port Settings	i	TCP Port	503	Serial1	Delete
Modbus Settings					
Modbus Routing Settings	Save				
Connection Status	Add routing rules				
System Management					
User Settings	Type: TCP Port	*			
	Port:				
Save Settings	Destination:	~			
	Add				
	Add	(1	7)		

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4. Open the Modbus debugging tool, separately configure the upper computer parameters for the two serial ports of UT-680X-GW. For ModbusRTU Slave operating mode, refer to Example A for upper computer debugging steps. Establish port communication as shown in Figure 4.3.

Modbus Poll - [Mbpoll1]	- 🗆 🗙 Modbu	is Slave - [Mbslave1] - 🗆 🗙
📅 File Edit Connection Setup Functions Display View Windo	w Help - 5 × 📅 File E	dit Connection Setup Display View Window Help
🗋 🖆 🖶 🎒 🗙 🛅 🗒 🏨 🔔 🕮 05 06 15 16 17 22 23 TC	2 🗏 🤋 🕅	ATUAN
Tx = 2829: Err = 0: ID = 101: F = 03: SR = 1000ms	ID = 1: F =	03
	10 - 1.1 -	
Name 00000		Name 00000
0 0		
1 0		
2 0		
3 0	2	
4 0	3	0
5 0	4	0
6 0	5	0
7	6	0
· · · · · · · · · · · · · · · · · · ·	7	0
0	8	0
9 0	9	0
For Help, press F1. [192.168.1.125]: 5002 For Help, p	ress F1. Port 3: 9600-8-N-1
For Help, press F1.	192.168.1.125]: 5002	ress F1. Port 3: 9600-8-N-1
For Help, press F1.	192.168.1.125]: 5002 For Help, p	ess F1. Port 3: 9600-8-N-1
For Help, press F1. [] 3 Modbus Poll - [Mbpoll1] [] File Edit Connection Setup Functions Display View Wind D ⇒ D → D → D → D → D → D → D → D → D →	192.168.1.125): 5002 For Help, p - X 3 Modbus 5 ow Help X 11 File Edit	ess F1. Port 3: 9600-8-N-1
For Help, press F1. [행 Modbus Poll - [Mbpoll1] [File Edit Connection Setup Functions Display View Wind D 같 글 같 것 [문 요리 도 다 주 400 00 15 16 17 22 23]	192.168.1.125): 5002 For Help, p → X 23 Modbus 5 ow Help 8 7 19 File Edit C 2 8 7 19 19 10 10 10 10 10 10 10 10 10 10 10 10 10	ees FI. Port 3: 9600-8-№1
For Help, press F1. [] ₱ Modbus Poll - [Mbpoll1] □ <td>992-168.1125): 5002 -</td> <td>ess F1. Port 3: 9600-8-№-1 Jave - [Mbdiave1] × Connection Setup Display View Window Help - * * 03</td>	992-168.1125): 5002 -	ess F1. Port 3: 9600-8-№-1 Jave - [Mbdiave1] × Connection Setup Display View Window Help - * * 03
For Help, press F1.	192.168.1.125): 5002 For Help, p → X 23 Modbus 5 ow Help - a X 27 File Edit D = 101: F = D = 101: F =	ees F1. Port 3: 9600-8-N-1 lave - [Mbslave1]
For Help, press F1. [] 10 Modbus Poll - [Mbpoll1] [] IF lie Edit Connection Setup Functions Display View Wind ID 20 III III IIII IIIIIIIIIIIIIIIIIIIII	192.168.1125): 5002 — □ X 21 Modbur 5 row Help	Port 3: 9600-8-N-1 lave - [Mbslave1] X Connection Setup Display View Window Help X 01 X 03 X
For Help, press F1. [992-168.1125): 5002 -	ees F1. Port 3: 9600-8-№-1
For Help, press F1. [] 1 0 1 0 0 0 0 0 0 0	192.168.1125): 5002 For Help, p → X 23 Modburs 5 ow Help - # X 10 File Edd C 22 22 10 File Edd D = 101: F = 0 1	ees F1. Port 3: 9600-8-N-1 lave - [Mbslave1]
For Help, press F1. [Image: State of the state of	192.168.1125): 5002 For Help. p. → ★ 23 Modbus 5 www. Help B B K? D B 101; F = 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 1 2 0 0 1 2 0 0 0 0 0 0 0 0 0 0 0 0 0	Port 3: 9600-8-N-1 Port 3: 9600-8-N-1 lave - [Mbdlave1] - Connection Setup Display View Window Help - Image: Image
For Help, press F1. [] PB Modbus Poll - [Mbpoll1] [] IP He Edit Connection Stup Functions Display View Wind IP I I I I I I I I I I I I I I I I I I	992.168.1125): 5002 -	ress F1. Port 3: 9600-8-N-1 Jave - [Mbslave1] × Connection Setup Display View Window Help × S S Name 00000 0 0 0 0 0 0 0 0
For Help, press F1. [] ** Modbus Poll - [Mbpoll1] IP He Edit Connection Stup Functions Display View Wind IP III E III N III III IIII IIII IIII IIIII IIIII IIIII IIIIII	192.168.1125): 5002 -	ees F1. Port 3: 9600-8-N-1 lave - [Mbslave1]
For Help, press F1. [] PB Modbus Poll - [Mbpoll1] [] IF He Edit Connection Stup Functions Display View Wind IF a Edit Connection Stup Functions Display View Wind IF a Edit Connection Stup Functions Display View Wind IF a Edit Connection Stup Functions Display View Wind IF a Edit Connection Stup Functions Display View Wind IF a Edit Connection Stup Functions IF a Edit Connection Stup Function Stup Funce Function Stup	992-168.1125): 5002 -	ees F1. Port 3: 9600-8-№-1 Jave - [Molave1] × Connection Setup Display View Window Help 03 Name 0 0 0 0 0 0 0 0 0
For Help, press F1. [992.168.1125): 5002 -	ees F1. Port 3: 9600-8-N-1 Jave - [Mbdlave1]
For Help, press F1. [] Image: State of the st	992.168.1125): 5002 -	Port 3: 9600-8-N-1
For Help, press F1. [PB Moduse Foll - [Mbpol1] Image: The Edit Connection Setup Functions Display View Wind Image: Transmission of the Edit Connection Setup Functions Display View Wind Image: Transmission of the Edit Connection Setup Functions Image: Transmission of the Edit Connection Setup Fu	992-168.1125): 5002 -	ees F1. Port 3: 9600-8-№1X Connection Setup Display View Window HelpX Connection Setup Display View Window HelpX 03 Name00
For Help, press F1. [Image: Second secon	992.168.1125): 5002 -	Port 3: 9600-8-№1 Jave - [Mbdlave1] Connection Setup Display View Window Help Image: Im

(4.3)

5. The above steps outline the TCP Port debugging process within Modbus Routing Settings.

3.3.5.2 IP Address

This type corresponds to the ModbusRTUS ave operating mode. It is not available if the current serial port operating mode is ModbusRTUMaster.

When Modbus IP routing is enabled, in ModbusRTUSlave mode, the PC acts as a TCP client connecting to the gateway's IP and listening port. After enabling this function, only data packets corresponding to the designated target IP will be forwarded.

Upon configuring this parameter, for the same serial port, data packets will not be forwarded for IP addresses that are not the designated target IP. The connection status will indicate as connected, but the serial port will not forward.

This functionality is applicable in scenarios with a multi-serial port gateway, where each serial port's destination needs to correspond to a different IP for forwarding to a specific IP address. Only one corresponding address can be allocated for the same serial port.

IP routing scenario is illustrated in Figure 4.4.

To use Modbus routing port, set the serial port operating mode that requires it to ModbusRTUSlave, as shown in the web page (Figure 4.5).

Excil Boot Setting	
Serial Port Settings	
Serial Port Network Port Settings	
Serial Port:	
Serial Port Parameters Modbus Routing Settings	
Connection Status Interface: RS485	
System Management Baud Rate: 9600 V (300-921600)	
User Settings Data Bits: 8	
Save Settings Stop Bits 1	
Parity: None V	
Timeout Time: 100 (0-5000ms)	
Working Mode: ModbusRTUSIave V This mode refers to the gateway serial port as the RTU master station, and the terminal device as the RTU slave station	
Acoly To All Seriat	
Cancel Setting	

(4.5)

1. Open Modbus Settings, configure the serial port's address and relevant parameter settings, as shown in the web page (Figure 4.6).

Serial Port Settings	Modbus Setting	gs				
Network Port Settings	Listening Port:	502	(1-65535)			
Modbus Settings	Collection Interval:	100	(0-10000ms)			
Modbus Routing Settings	Exception Handling:	Enable	~			
Connection Status	Address translatio	on settings				
System Management		Index	Туре	Slave ID Mapping (Virtual<=>Real)	Destination	Operation
User Settings				No Data		
	Save Add address trans	slation rules				
	Туре:	Serial Port	~			
	Slave ID From:		to			
	Slave ID Offset:					
	Destination:	Serial1	¥			

(4.6)

2. Open Modbus Routing Settings, based on the previous configuration, create an IP Address corresponding to the IP address that needs forwarding. Set the port within the specified range, as shown in the web page (Figure 4.7).

Serial Port Settings	Modbus Routir	ng Settings				
		Index	Туре	IP / Port	Destination	o
Network Port Settings		1	TCP Port	503	Serial 1	
Modbus Settings						
Modbus Routing Settings	Save					
Connection Status	Add routing rules	É.				
System Management						
User Settings	Type:	TCP Port	~			
	Port:					
Save Settings	Destination:		v			
	Add					

(4.7)

3. Open the Modbus debugging tool, separately configure the upper computer parameters for the two serial ports of UT-680X-GW. Detailed steps for upper computer debugging in ModbusRTU Slave mode can be found in Example A. Establish port communication as shown in Figure 4.8.

Image: State of the state	Mbslave1] ection Setup Display Vi 뜻 습 ? K?	- C X ew Window Help - & x	11 Moo File Help Tx = 87:	dbus Poll - [Mbpo Edit Connectio	1] n Setup Function 및 白 八 05 (: F = 03: SR = 100(Uindow 23 TC 2 5
Alias	00000			Alias	00000		
0	0		0		0		
1	0		1		0		
2	0		2		0		
3	0		3		0		
4	55	1	4		55		
5	0		5		0		
6	0		6		0		
7	0		7		0		
8	0		8		0		
9	0		9		0		
For Help, press F1.	Port 54: 9600-	8-N-1	For Help	press F1.	[172.16.14.2	200]: 502	

(4.8)

3.3.6 Connection Status

Access the Web interface of the UT-680X-GW Modbus gateway device, as shown in Figure 4.9.

Serial Port Settings	Connection Status			
Network Port Settings	Connection Status			
Modbus Settings	Index	Туре	IP	Port
Modbus Routing Settings		No Dat	a	
Connection Status				
System Management				
User Settings				
Save Settings				

(4	9)
~			/

Index	Starts from 1, displays up to 15 address entries
Туре	Divided into Server and Client, displaying the current TCP connection type
IP	Displays the connected IP address
Port	Connection port number of the peer

3.3.7 User Settings

Access the Web interface of the UT-680X-GW Modbus gateway device, as shown in Figure 5.0.

Serial Port Settings	User Settings
Network Port Settings	Logout
Modbus Settings	Log out of current login: Logout
Modbus Routing Settings	Change Password
Connection Status	
System Management	Original Password:
User Settings	New Password:
Save Settings	Confirm Password:
	Cancel Setting

(Figure 5.0)

Log Out	Exit the current interface and return to the login page
Current Password	Enter your current original password
New Password	Change your login password to a new one
Confirm Password	Enter the password again to confirm it matches the new password
Set	Click "Set" and restart for the changes to take effect

3.3.8 Save Settings

Access the Web interface of the UT-680X-GW Modbus gateway device, as shown in Figure 5.1.

Serial Port Settings Network Port Settings Modbus Settings Modbus Routing Settings Connection Status System Management User Settings	Save Setting Save And Restart Please check all Settings and press the restart button to take effect Restart
Save Settings	

(Figure 5.1)

After clicking "Restart," a prompt box will appear, as shown in the image below:

192.168.1.125

System restart successfully

4. Example

a. ModbusRTU Master

1. In this mode, the gateway's serial port operates as a ModbusRTU slave, and the terminal device functions as a ModbusRTU master. Generally, devices connected to the Ethernet port can act as ModbusTCP client devices that actively poll the serial port. Upon successful connection, you can observe the TCP connection type as "Server" on the Connection Status page. Verify that the parameters in the serial port configuration correspond to the devices connected.

	Serial Port Set	ttings						
Serial Port Settings	Senarrortse							
Network Port Settings	Serial Port	Serial Port						
Modbus Settings	Serial Port:	Serial Port:						
Modbus Pouting Settings	Serial Port Para	Serial Port Parameters						
mousus nouting settings								
Connection Status	Interface:	RS485	v					
System Management	Baud Rate:	9600	✓ (300-921600)					
User Settings	Data Bits:	8	v					
Save Settings	Stop Bits:	1	·					
	Parity:	None	ν.					
	Timeout Time:	100	(0-5000ms)					
	Working Mode:	ModbusRTUMaster	This mode refers to the gateway serial port as the RTU slave station, and the terminal device as the RTU master station					
	Apply To All Serial:							
	Cancel	Setting						

2. Open the Modbus settings page and configure the address conversion rules, where virtual addresses are mapped from real addresses. Configuration is as follows:

								(
Serial Port Settings	Modbus Setting	js						
Network Port Settings	Listening Port:	502		(1-65535)				
Modbus Settings	Collection Interval:	100		(0-10000ms)				
Modbus Routing Settings	Exception Handling:	Enable	~					
Connection Status	Address translatio	on settings						
System Management		Index		Туре	Slave ID I	/lapping (Virtual<=>Real)	Destination	Operation
User Settings					No Dat	3		
Save Settings								
	Save							
	Add address trans	lation rules						
	Type:	Serial Port	~					
	Slave ID From:			to				
	Slave ID Offset:							
	Destination:	Serial1	~					
	Add							

Open two debugging tools on the upper computer (Modbus Poll and Slave).

3. Modbus Slave tool configuration page as shown below, input the PC's IP and corresponding TCP port.

🖻 🖬 🎒 🛅	Connection Setur					
1: F = 03 onnection		D = 6: F = 03				
Alias	Modbus TCP/IP V	Slave Definition X				
	Serial Settings	0 Slave ID: 0K				
	WCH PCI Express-SERIAL (COM54)	1 Function: 03 Holding Register (4x)				
	9600 Baud BTU ASCI	2 Address: 0				
	8 Data bits	3 Quantity: 18				
	None Parity	4 View				
	1 Stop Bit [ms] RTS disable delay	5 0 10 20 50 100 Fit to Quantity				
	TCP/IP Server	6 Hide Alias Columns PLC Addresses (Base 1)				
	IP Address Port -					
	172.16.14.122 5001	8 Error Simulation				

Continue configuring specific connection parameters, on this page, configure the slave ID (real address) for the master station address (e.g., ID = 6, which corresponds to the master station ID 0x06). Some common configurations are as follows:

Function: Configure the appropriate function code to correspond with the slave's configuration, e.g., F=03 for function code 03 (Holding Registers).

Address: Configure the starting register address.

Quantity: Configure the length for reading or writing registers, ensuring it matches the slave's configuration.

Poll settings: Configure as shown in the diagram, where the virtual address (ID=1) corresponds to the slave ID (0x06) through the gateway's mapping.

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훱 Modbus Poll - [Mbpoll1] —		👪 Modbus Poll - [Mb	ppoll1] – 🗆 🗙
File Edit Con	nection Setup Functions Display View W	indow	🛒 File Edit Conne	ction Setup Functions Display View Window
Help		- 8 ×	Help	_ 8 ×
🗅 😂 🖬 🎒 🗙	(一二) 🗏 🚊 🕮 05 06 15 16 17 22 23	TC E 8		🗂 🗏 📋 🔍 05 06 15 16 17 22 23 TC 🖳 🙎
Tx = 82: Err = 0: ID) = 1: F = 03: SR = 1000ms	网天	Tx = 139: Frr = 0: ID =	= 1: F = 03: SB = 1000ms
No connection	Connection Setup	×		Read Multic Deficition
Alia	Connection		Aller	Read/write Definition
0	Serial Port	OK	Allas	Slave ID: 0K
1		Cancel		Function: 03 Bead Holding Begisters (4x) × Cancel
2	Serial Settings		1	
-	WCH PCI Express-SERIAL (COM54)	Mode	2	Address: 0 Protocol address. E.g. 40011 -> 10
3	9600 Baud 🗸	RTU () ASCII	3	Quantity: 10
4	8 Data bite	Response Timeout	4	Soan Pater 1000 [me]
5	o Data bito	1000 [ms]	5	Diashla
6	None Parity 🗸	Delau Between Polls		Read/Write Disabled
7	1 Stop Bit 🗸 Advanced	20 [ms]	6 6 7	Disable on error Read/Write Once
8	Bemote Modbus Server			View
9	IP Address or Node Name		0	
	172 16 14 200	~	9	
For Help, press F1.	Server Port Connect Timeout	(i) IDut		Hide Alias Columns PLC Addresses (Base 1)
	502 3000 [ms]	© IF¥4	For Help, press F1.	Address in Cell Enron/Daniel Mode

After establishing the connection between the master and slave stations, you can observe a successful TCP connection on the web page's Connection Status, as shown below.

Serial Port Settings	Connection Status			
Network Port Settings	Connection Status			
Modbus Settings	Index	Туре	IP	Port
Modbus Routing Settings		No	Data	
Connection Status				
System Management				
User Settings				
Save Settings				
Save Settings				
File Edit Connection Se ID ID	tup Display View Window Help - PH He	Pile Edit Connection Setup Functions Dis Imp Imp Imp Imp Imp Imp Dis Dis	play View Window - 8 × 16 17 22 23 TC 22 ?	
6 0 7 0 8 0	6 7 8	0		
9 0	9	0		
For Help, press F1.	[172.16.14.122]: 5001	Help, press F1. Port 54: 9600-8-N		

To create multiple paired entries, click on the "New" button under "File" and configure the corresponding ID numbers, as shown below.

b. ModbusRTU Slave

1. In this mode, the gateway's serial port operates as a ModbusRTU master, and the terminal device functions as a ModbusRTU slave. Devices connected to the Ethernet port can act as ModbusTCP client devices that actively poll the serial port. Upon successful connection, you can observe the TCP connection type as "Client" on the Connection Status page. Verify that the parameters in the serial port configuration correspond to the devices connected.

Serial Port Settings	Serial Port Sett	ings								
Network Port Settings	Serial Port									
Hetwork Port Settings	Serial Port:	ierial Port:								
Modbus Settings	Serial Port Param	Serial Port Parameters								
Modbus Routing Settings										
Connection Status	Interface:	R5485	•							
System Management	Baud Rate:	9600	✓ (300-921600)							
User Settings	Data Bits:	8	•							
Save Settings	Stop Bits:	1	×							
	Parity:	None	×							
	Timeout Time:	100	(0-5000ms)							
	Working Mode:	ModbusRTUSIave	 This mode refers to the gateway serial port as the RTU master station, and the terminal device as the RTU slave station 							
	Apply To All Serial:									
	Cancel	tting								

2. Open the Modbus settings page and configure the address conversion rules, where virtual addresses are mapped from real addresses. Note that the same serial port can only enable one working mode. Configure the type as "Serial Port" and set the address range and increment, with the target set to the corresponding serial port.

Serial Port Settings	Modbus Setting	js				
Network Port Settings	Listening Port:	502	(1-65535)			
Modbus Settings	Collection Interval:	100	(0-10000ms)			
Modbus Routing Settings	Exception Handling:	Enable	~			
Connection Status	Address translatio	on settings				
System Management		Index	Туре	Slave ID Mapping (Virtual<=>Real)	Destination	Operation
User Settings				No Data		
Save Settings	Save					
	Add address trans	lation rules				
	Туре:	Serial Port	~			
	Slave ID From:		to			
	Slave ID Offset:					
	Destination:	Serial1	~			
	Add					

Up to 15 slave address conversion entries can be set, and Modbus TCP can connect up to 5 different TCP servers.

3. Open two debugging tools on the upper computer (Modbus Poll and Slave), as shown in the images below.

Modbus Slave - [M File Edit Connec	bslave1] - ロ × 标题 tion Setup Display View Window Help - F × ^{Seria Por}	2 File Edit Connec Help 1 C C C C C C C C C C C C C C C C C C C	.tion Setup Functions Display View Window 	~ × 20. ?
) 🗃 🖬 🎒 🛅 🚦		Tx = 363: Err = 316: IE No connection	D = 1: F = 03: SR = 1000ms	
connection	Connection Setup X		Connection Setup	
00000	Connection OK	00000	Connection Modeus TCP/IP	ОК
0	Serial Settings	1 0	Serial Settings	Cancel
0	WCH PCI Express-SERIAL (COM54)		WCH PCI Express-SERIAL (COM54)	Mode
0	9600 Baud V Mode	4 55	9600 Baud 🔍	● RTU ○ ASCII
0	8 Data bits Flow Control	5 0	8 Data bits 💫 🖂	Response Timeout
0	None Parity V DSR CTS RTS Toggle	6 0	None Parity 😪	
0	1 Stop Bit 1 [ms] RTS disable delay	7 0		Delay Between Polls
-		8 0	1 Stop Bit Advanced	[20 [ms]
	TCP/IP Server	9 0	Remote Modbus Server	
0	IP Address Port		IP Address or Node Name	
Help, press F1,	1/2.16.14.122 5001	For Help, press F1.	172.16.14.200	~
1 12-11 八			Server Port Connect Timeout	IPv4

4. Configure slave address, function code, and check the starting address and length of bytes for read/write operations in the Setup->Read/Write Definition page. After a successful connection, it will appear as shown in the figure below:

📓 Modbus Slav	e - [Mbslave1]	- 🗆 ×	M M	odbus Poll - [Mbpoll1]					×
File Edit C	onnection Setup Display View	Window Help _	Fi Help	le Edit Connection	Setup Functions	Display V	fiew V	Vindow -	E X
D 📽 🖬 🚳	🗂 🖳 👜 💡 📢			- 🖬 🕘 🗙 🗂 🗏	! 👜 📖 05 06	15 16 17	22 23	3 тс 1	0 9
ID = 6: F = 03			Tx = 4	: Err = 0: ID = 1: F = 0	3: SR = 1000ms				
000	000			00000					
0	0		1 0	0					
1	0		1	0					
2	0		2	0					
3	0		. 3	0					
4	55		4	55					
5	0		5	0					
6	0		6	0					
7	0		7	0					
8	0		8	0					
9	0		9	0					
 For Help, press F1	. Port 54: 9600-8-N	4-1	For He	lp, press F1.	[172.16.14.20	0]: 502			

After connecting both tools to the RTU and TCP sides respectively, if "Err" displays as 0, it indicates normal operation. An increasing "Err" value suggests issues such as no response or response timeouts from the slave station.

c. Setting Real and Virtual IDs

1. Suppose there are 9 RTU slave devices that need to be connected to the gateway to achieve multi-master and multi-slave communication. The IDs for these RTU slave devices are 121-129. The serial port operates in ModbusRTU Slave mode. The following is a debugging example for RTU slave device ID: 121.

Note: Different environments may have some RTU slave device IDs converted based on hexadecimal values. For instance, the decimal value 121 corresponds to the hexadecimal value 79. Make sure to consider this when setting ID addresses. All parameters related to setting ID addresses in the web page are configured in decimal values. If hexadecimal conversion is required, calculate the decimal ID address first.

	Serial Port Settings							
Serial Port Settings	Jenar o c Jecunga							
Network Port Settings	Serial Port							
Modbus Settings	Serial Port: @ 1 0 2 0 3 0 4 0 5 0 6 0 7 0 8							
	Serial Port Parameters							
Modbus Routing Settings								
Connection Status	Interface:	RS485						
System Management	Baud Rate:	9600 ~	(300-921600)					
User Settings	Data Bits:	8						
Save Settings	Stop Bits:	1						
	Parity:	None						
	Timeout Time:	100	(0-5000ms)					
	Working Mode:	ModbusRTUSIave	This mode refers to the gateway serial port as the RTU master station, and the terminal device as the RTU slave station					
	Apply To All Serial:							
	Cancel Setti	ng						

2. Configure the Modbus settings to correspond with the address rules. Set the slave address from 1 to 9, with an increment of 120. Configure virtual IDs from 1 to 9, and set the corresponding real IDs as 121-129. The real ID represents the RTU device ID. Due to the gateway's proxy and storage characteristics, direct communication does not occur between the RTU and TCP sides. Instead, data is communicated separately and mapped through stored polling data, facilitating communication between the RTU and TCP networks.

istening Port:	502	(1-65535)			
Collection Interval:	100	(0-10000ms)			
xception Handling:	Enable	~			
Address translatio	on settings				
	Index	Туре	Slave ID Mapping (Virtual<=>Real)	Destination	Operation
Save			No Data		
Save Add address trans	slation rules		No Data		
Save Add address tran: ype:	slation rules Serial Port	v	No Data		
Save Add address tran: ype: lave ID From:	Serial Port	▼ to 9	No Data		
Save Add address trans ype: lave ID From: lave ID Offset:	Serial Port 1 120	to 9	No Data		

Debugging communication diagram as shown below:

A Modbus Slave - [Mb	slave1]	- 🗆 🗙	형 Modbus Poll - [Mb	poli1]	- 🗆 ×
File Edit Connecti	on Setup Display View Window Help	- & ×	📅 File Edit Conne	ction Setup Function	s Display View Window Help 🛛 🖉 🛪
0 📽 🖬 🕾 🛅 🛤	. @ % ₩ ?		D 📽 🖬 🕾 🗙	🗂 🗒 🎰 J. 05 (06 15 16 17 22 23 TC 🖭 🔋 🏘
ID = 121: F = 03			Tx = 38: Err = 8: ID =	1: F = 03: SR = 1000r	ns
00000			Alias	00000	Scan time
0 0	Real ID address(RTU)		0	0	
1 0			1	0	Virtual ID address(RTU)
2 0	X		2	0	
3 0			3	0	
4 55	The function codes need to match		4	55	The function codes need to metab
5 0			5	0	The function codes need to match
6 0			6	0	
7 0			7	0	
8 0			8	0	
9 0			9	0	
	The baud rate is the same as the	ie RTU		The client ac	tively connects to the IP and port
	~				¥
or Help, press F1.	Port 54: 9600-8-N-1	- di	For Help, press F1.		[192.168.1.125]: 503

Debugging communication diagram for multi-master polling as shown below:

		www.szutek.com
Z Modbus Slave - [Mbslave1] - 🗆 🗙	Modbus Poll - [Mbpoll1] -	X 🕅 Modbus Poll - [Mbpoll1] - 🗆 X
💬 File Edit Connection Setup Display View Window Help 💷 🖉 🛪	File Edit Connection Setup Functions Display View Win	dow 📴 File Edit Connection Setup Functions Display View Window
□ ☞ ■ 吾 □ 및 ☆ ? ₩	Help -	. 8 × Help _ 5 ×
ID = 121: F = 03	🗋 🖻 🖨 🔗 🗙 🛅 🗒 🚊 🕮 05 06 15 16 17 22 23	TC 🛛 🗋 🖨 🗮 🗂 📜 📋 💷 🕮 05 06 15 16 17 22 23 TC 🖄 🤶
	Tx = 101: Err = 0: ID = 1: F = 03: SR = 1000ms	Tx = 905: Err = 0: ID = 1: F = 03: SR = 1000ms
00000		
0 0	Alias 00000	Alias 00000
1 0	0 0	0 0
2 0	1 0	1 0
3 0	2 0	2 0
4 55	3 0	3 0
5 0	4 55	4 55
6 0	5 0	5 0
7 0	6 0	6 0
8 0	7 0	7 0
9 0 1 Modbus Poll - [Mbpoll11 -	8 0	8 0
File Edit Connection Setup Functions	9 0	9 0
View Window Help		East Hale array 51 (102 169 1 125) 502
D 😂 🖬 🖨 🗙 🗂 🗒 🛕 Л. 05 06	15 16 17 Window Help	B x Lat the cut connection Setup functions Display
Tx = 260: Err = 0: ID = 1: F = 03: SR = 1000m	18 🛛 🖻 🖬 🎒 🗙 🗂 💆 🏦 💷 05 06 15 16 13	
	Tx = 114: Err = 0: ID = 1: F = 03: SR = 1000ms	Ty = 91' Err = 0' ID = 1' E = 03' SB = 1000me
00000		1X - 31. Ell - 0. 15 - 1.1 - 03. 01(- 1000113
0 0	Alias 00000	00000
1 0	0 0	
2 0	1 0	
3 0	2 0	
4 55	3 0	
5 0	4 55	
6 0	5 0	4 55
7 0	6 0	5 0
8 0	7 0	6 0
9 0	8 0	
	9 0	8 0
For Help, press F1. [192.168.1.125	5]: 502	9 0
For Help, press F1. Port 54: 9600-8-N-1	For Help, press F1. [192.168.1.125]: 502	For Help, press F1. [192.168.1.125]: 502

5. Troubleshooting Guide

a. Unable to Locate Gateway IP Address or Access Web Configuration Page

 Firstly, check if the physical connections are normal, including Ethernet cables (distinguishing between crossover and straight-through cables) and power supply. Observe power indicator lights, RUN lights, and ACT lights (ACT light only lights up for 100M network, not 10M).

2. Verify that the host network card is functional and can communicate with other local hosts. Ensure that the IP address corresponds to the device's IP and that there are no conflicting devices with the same IP on the same local network.

3. Disable any tools and software that might block broadcast packets (except for the system's built-in firewall).

4. If the network can be pinged successfully but you can't access the web interface, try using a different browser. Google Chrome is recommended.

b. Master Mode Communication Issue

1. Ensure the physical serial port connection is correct, check the wiring sequence. In this mode, the RTU side acts as a master station, and the conversion type should be set to TCP Address.

2. Make sure the target corresponds to the current serial port number. Verify whether virtual and real IDs are correct.

3. Check if the listening port is occupied.

c. Slave Mode Communication Issue

1. Ensure the physical serial port connection is correct, check the wiring sequence. In this mode, the RTU side acts as a slave station, and the conversion type should be set to Serial Port.

2. Make sure the target corresponds to the current serial port number. Verify whether virtual and real IDs are correct.

3. Check if the listening port is occupied. The default is 502; you can try changing the port number and

then reconnect.

d. Forgot Previously Set Password

1. Press and hold the "reset" button for 5 seconds, then release it. The device will be restored to the factory settings. After the reset is complete, you can log in to the system using the default admin account and password: admin/admin. The factory IP address is 192.168.1.125.

e. Data Transmission/Reception Shows Gibberish

1. Check if the wiring is correct, particularly for RS-485 devices, proper wiring is crucial.

2. Verify if the distance between wires exceeds the standard limit or if there are issues with the quality of the wires. You can use extended cables or optical isolators.

3. Ensure the serial port parameters (baud rate, data bits, stop bits, parity, etc.) match the settings of the connected devices.

f. Receiving OB Error Code or Experiencing Timeouts

1. If you receive a response failure, check if the abnormal handling is enabled on the web page. Incorrect serial communication parameters with enabled handling will continuously result in response failures. Disabling the handling will result in no response.

2. For timeouts, if it's intermittent, adjust the polling and timeout times within a reasonable range. Persistent timeouts indicate that the RTU device has not responded or can't be connected within the specified time. Check the network connection.

6. Maintenance and Services

From the date of product shipment, our company offers a five-year product warranty. According to our company's product specifications, during the warranty period, if the product experiences any malfunctions or operational failures, our company will provide free repair or replacement of the product for the user. However, the above commitment does not cover damages caused by improper use, accidents, natural disasters, incorrect operation, or improper installation.

To ensure that consumers benefit from our company's management series serial port server products, assistance and issue resolution can be obtained through the following methods:

6.1 Internet Services

More useful information and usage tips can be accessed through our company's website: http://www.szutek.com

6.2 Technical Support Services

Users of our company's products can call our technical support office, where professional technical engineers will answer your questions and help you promptly resolve any product-related or usage issues. Free service hotline: 400-1144-149

6.3 Product Repair or Replacement

For product repairs, replacements, or returns, confirmation should first be obtained from the company's technical personnel. Afterward, contact the company's sales personnel to address the issue. The above process should be followed according to the company's procedures, coordinating with the company's technical personnel and sales staff to complete the process of product repair, replacement, or return.