

Modbus Gateway

WPC-232-Modbus

User Manual

Login Procedure

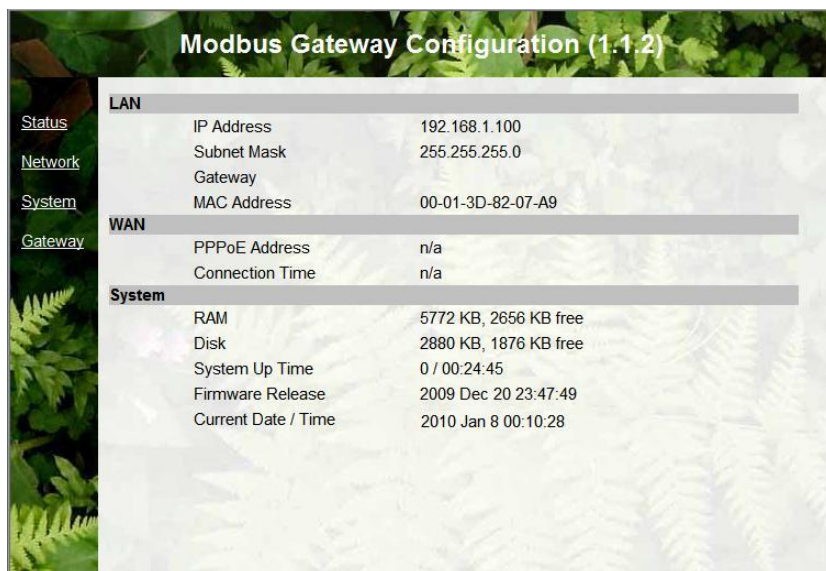
- A. First time to login the device, please search by <http://192.168.1.100>.
- B. For identifying authorization to key in user name and password and the default user name characters are “admin”. Password characters are “ ” (empty) and then just press “OK” button.
 - ※ If the webpage could not display, please refer to chapter 5 Network Troubleshooting

Gateway Configuration

After pass the authentication then “Modbus Gateway Configuration” will show up on the screen.

A. System Status:

Display current status and time of the system



The screenshot shows the 'System Status' page of the Modbus Gateway Configuration interface. The page title is 'Modbus Gateway Configuration (1.1.2)'. On the left, there is a navigation menu with links for 'Status', 'Network', 'System', and 'Gateway'. The main content area is divided into sections: LAN, WAN, and System. The LAN section shows IP Address (192.168.1.100), Subnet Mask (255.255.255.0), Gateway, and MAC Address (00-01-3D-82-07-A9). The WAN section shows PPPoE Address (n/a) and Connection Time (n/a). The System section shows RAM (5772 KB, 2656 KB free), Disk (2880 KB, 1876 KB free), System Up Time (0 / 00:24:45), Firmware Release (2009 Dec 20 23:47:49), and Current Date / Time (2010 Jan 8 00:10:28).

LAN		
IP Address		192.168.1.100
Subnet Mask		255.255.255.0
Gateway		
MAC Address		00-01-3D-82-07-A9

WAN		
PPPoE Address		n/a
Connection Time		n/a

System		
RAM		5772 KB, 2656 KB free
Disk		2880 KB, 1876 KB free
System Up Time		0 / 00:24:45
Firmware Release		2009 Dec 20 23:47:49
Current Date / Time		2010 Jan 8 00:10:28

B. Network:



The screenshot shows the 'Network' configuration page of the Modbus Gateway Configuration interface. The page title is 'Modbus Gateway Configuration (1.1.2)'. On the left, there is a navigation menu with links for 'Status', 'Network', 'System', and 'Gateway'. The main content area is divided into sections: LAN and PPPoE. The LAN section shows Network Link Speed (Auto), IP Address (192.168.1.100), Subnet Mask (255.255.255.0), Gateway, DNS Server (168.95.192.1), and DHCP Client (Disable). The PPPoE section shows Connection Mode (Disable), User, Password, and Service Name. A 'Save' button is located at the bottom of the form.

LAN		
Network Link Speed	Auto	▼
IP Address	192.168.1.100	
Subnet Mask	255.255.255.0	
Gateway		
DNS Server	168.95.192.1	
DHCP Client	Disable	▼

PPPoE		
Connection Mode	Disable	▼
User		
Password		
Service Name		

Display the device's network information. There are two items of LAN and PPPoE current detail status.

- LAN :
 1. Network Link Speed : default value is "Auto"
 2. IP Address : default value is "192.168.1.100"
 3. Subnet Mask : default value is "255.255.255.0"
 4. Gateway : default value is "blank"
 5. DNS Server : default value is "192.95.192.1" (Chunghwa Telecom, the DNS is assignable.)
 6. DHCP Client : Network configuration information automatically acquired , default value is "Disable"

- PPPoE:

Ethernet Point to Point Protocol Internet, through ADSL modem connected to the Internet.

1. Connection Mode : Disable, Always-on, Manual. Default Value is "disable"
2. User Name : ADSL dial-up account
3. Password : ADSL account password.
4. Service Name : definable

C. System

The screenshot displays the 'Modbus Gateway Configuration (1.1.2)' web interface. On the left, a vertical navigation menu includes 'Status', 'Network', 'System', and 'Gateway'. The main content area is organized into several sections:

- Administration:** Fields for 'Administrator' (admin) and 'Password' (masked with dots).
- Internet Service:** Settings for 'HTTP Server / Port' (Enable, 80), 'FTP Server' (Disable), and 'Telnet Server' (Enable).
- NTP (Network Time Protocol):** 'NTP Server' (Enable, optional) and 'Time Zone' (+480 minutes).
- DDNS (Dynamic Domain Name Server):** 'Service Provider' (Disable), and fields for 'User', 'Password', 'Host Name', and 'Domain Name'.
- System Tools:** Buttons for 'Firmware Backup' (Backup), 'Firmware Update' (Update), 'Restore Default Settings' (Default), and 'Reboot System' (Reboot).

A 'Save' button is located at the bottom center of the configuration area.

- Administration :
 1. Administrator: Do not use the Chinese language and symbols. the default value is admin.
 2. Password: self-changeable, the default value is admin.
- Internet Service:
 1. HTTP Server / Port : Enable/Disable, the port default is 80.
 2. FTP Server : Enable/Disable ,The default is off.
 3. Telnet Server: Allows the user to re-connect remotely using the telnet server Enable/Disable.
- NTP(Network Time Protocol):

This option can automatically update the system time

 1. NTP Server : Enable/Disable
 2. Time Zone: Taiwan is +8 hours or +480 minutes
- DDNS(Dynamic Domain Name Server):
 1. Service Provider : DNS service provider
 2. User: registered account
 3. Password: password of registered account
 4. Host Name : the URL
 5. Domain Name :
- System Tool:
 1. Firmware Backup : Users can follow the instructions to save the firmware data file.
 2. Firmware Update : Prepare the updated firmware first and upload the firmware accordingly to the instruction.
 3. Restore Default Settings:
 4. Reboot System :

After change parameters, please be sure to click “SAVE” button below to save the parameter.

D. Gateway:

Modbus Gateway Configuration (1.1.2)

GATEWAY

Gateway Type : TCP to RTU Slave
 Message Timeouts : 500 (ms)

SERIAL DEVICE FOR RTU OR ASCII

Device: RS485
 Baud Rate: 9600
 Parity: None
 Data Bits: 8
 Stop Bits: 1

TCP SLAVE

Listener Port : 502

- **Gateway:**

1. Gateway Type: RTU Slave to TCP Master, and etc. 4 modes are selectable.

Modbus Gateway Configuration (1.1.2)

GATEWAY

Gateway Type : RTU To TCP Slave
 Message Timeouts : (ms)

SERIAL DEVICE FOR RTU OR ASCII

Device:
 Baud Rate: 9600
 Parity: None
 Data Bits: 8
 Stop Bits: 1

TCP MASTER

No.	ID Start	ID End	IP[:Port] (ex: 192.168.1.100 or 192.168.1.100:502)
1	1	32	
2	33	64	
3	65	96	
4	97	128	
5	129	160	
6	161	192	
7	193	224	
8	225	255	

Save

2. If gateway type is selected as RTU to TCP Slave or ASCII to TCP Slave, Configuration interface of the table is as shown above :

3. Message Timeouts : default value is 500ms

- **Serial Device for RTU or ASCII :**

RTU or ASCII Asynchronous serial device settings

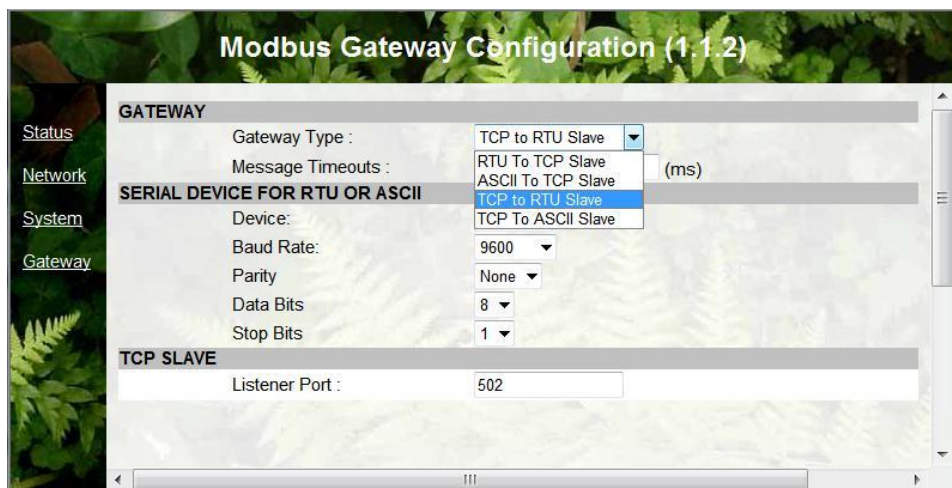
- a. Device : Asynchronous serial device type currently supports RS232, RS485, RS422

- b. Baud Rate: 960 , 19200 bps, and etc.
- c. Parity : None, Odd, Even
- d. Data Bits: 8, 7, 6, and etc.
- e. Stop Bits : The end of the signal bits of bytes

- **TCP Master :**

This system can assign 8 sets of IP, range of asynchronous serial device ID is 1~255. The assigned IP can assign the specified port according to your need. For instance:192.168.1.101:502 please use default set up “502” if not assign.

- Gateway Type is “TCP to RTU Slave” or “TCP to ASCII Slave”, Configuration interface is as shown below:



- **Serial Device for RTU or ASCII :**

RTU or ASCII Asynchronous serial device settings

- a. Device : Asynchronous serial device type currently supports RS232, RS485, RS422
- b. Baud Rate: 960 , 19200 bps, and etc.
- c. Parity : None, Odd, Even
- d. Data Bits: 8, 7, 6, and etc.
- e. Stop Bits : The end of the signal bits of bytes

- **TCP Slave:**

Port can be specified, if not specified will use the default value 502.

- **Example**

- Click **Gateway** to enter gateway options.
- Select “Gateway Type”e.g:

Gateway Type : ▾

- Select “Device”(Asynchronous serial device type)

ex: Device: ▾

- Please enter receiver’s IP to the corresponding asynchronous serial device ID, such as:

RS485 ID is 5, you have to set IP to the first group (1)

No	ID Start	ID End	IP[Port] (ex: 192.168.1.100 or 192.168.1.100:502)
1	1	32	192.168.1.101
2	33	64	

If ID is 18 , you have to set IP to the forth group (4)

No	ID Start	ID End	IP[Port] (ex: 192.168.1.100 or 192.168.1.100:502)
1	1	32	
2	33	64	
3	65	96	
4	97	128	192.168.1.101

- After set up OK, please be sure to click **Save** as shown below to save the parameter set up

E. Network Trouble Shooting

1. Please turn on the PC TCP / IP setup.
2. Change device IP to 192.168.1.XX (XX assign the the IP that no one uses), please set at same sub mask with 192.168.1.100 , to connect Modbus Gateway Home page.
3. After connecting, please refer to [Chapter 2. Network](#) to reassign IP for Modbus Gateway.

F. Frame Format Table

Modbus TCP Frame Format		
Name	Length	Function
Transaction Identifier	2 bytes	For synchronization between messages of server & client
Protocol Identifier	2 bytes	Zero for MODBUS/TCP
Length Field	2 bytes	Number of remaining bytes in this frame
Unit Identifier	1 byte	Slave Address (255 if not used)
Function code	1 byte	Function codes as in other variants
Data bytes	n bytes	Data as response or commands

Modbus RTU Frame Format		
Name	Length	Function
Start	3.5c idle	at least 3-1/2 character times of silence (MARK condition)
Address	8 bits	Station Address
Function	8 bits	Indicates the function codes like read coils / inputs
Data	n * 8 bits	Data + length will be filled depending on the message type
CRC Check	16 bits	Error checks
End	3.5c idle	at least 3-1/2 character times of silence between frames

Modbus ASCII Frame Format		
Name	Length	Function
Start	1 char	starts with colon (:) (ASCII value is 3A hex)
Address	2 chars	Station Address
Function	2 chars	Indicates the function codes like read coils / inputs
Data	n chars	Data +length will be filled depending on the message type
LRC Check	2 chars	Error checks
End	2 chars	carriage return – line feed(CRLF) pair (ASCII values of 0D & 0A hex)