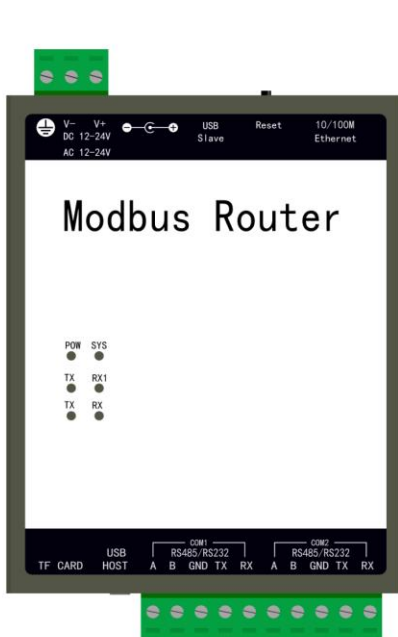
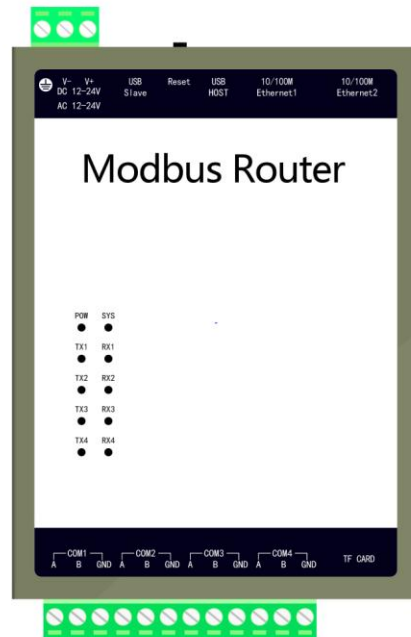


Modbus Router User Manual



MB1002-ARM



MB2004-A9

Table of Contents

1 Introduction	1
1.1 Statement.....	1
1.2 Technical Support.....	1
2 Overview	1
3 Procedure	2
3.1 Web Login.....	2
3.2 Download Instructions and OPC Server.....	3
3.3 User Admin	4
3.4 Network	4
3.5 Router Settings	5
3.6 Time Settings.....	5
3.7 Firmware Information	6
3.8 Memory Information.....	6
3.9 Log Message	7
4 Modbus Client Test	8
5 OPC Modbus Server Access Router	8
6 Modbus Router Hardware Parameters.....	9

1 Introduction

1.1 Statement

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1.2 Technical Support

- Technical Support E-mail: support@opcmaster.com
- Technical support hotline: +86-021-58776098
- URL: <http://www.opcmaster.com> or <http://www.bacnetchina.com>

2 Overview

- This description is applicable to two models of MB1002-ARM and MB2004-A9. The former can carry two Modbus RTU buses while the latter can carry four Modbus RTU buses.
- How it works: Modbus RTU of serial port can be converted into Modbus TCP or Modbus UDP of Ethernet port by the way of "penetrate" without setting up point in Modbus router. Buses of Modbus Router work in parallel without affecting each other. Different Routers can be distinguished by Modbus TCP/UDP client software through IP address, different buses can be distinguished through port numbers, different devices can be distinguished through station Numbers.

- Web Configuration: Login to the webpage built into the Modbus router and set communication parameters, port number and other parameters.
- OPC Server Software: If the user needs to transfer the Modbus TCP of the Modbus Router to the OPC server for the third-party configuration software, we also provide free OPC server software. Users can download the software directly in the gateway's web page. Software X2OPC has passed the CTT test of OPC foundation, and the software is reliable and stable.

3 Procedure

Modbus Router is configured through Web Page, the default IP address is 192.168.1.88, Users need to connect the PC and the gateway with a cable, modify the IP address of the PC to the same network segment of gateway, such as 192.168.1.55. Then enter the IP address 192.168.1.88 in the browser, login to the Router's built-in web page.

3.1 Web Login

Input IP address of the gateway 192.168.1.88 in the browser, as shown 3-1-1

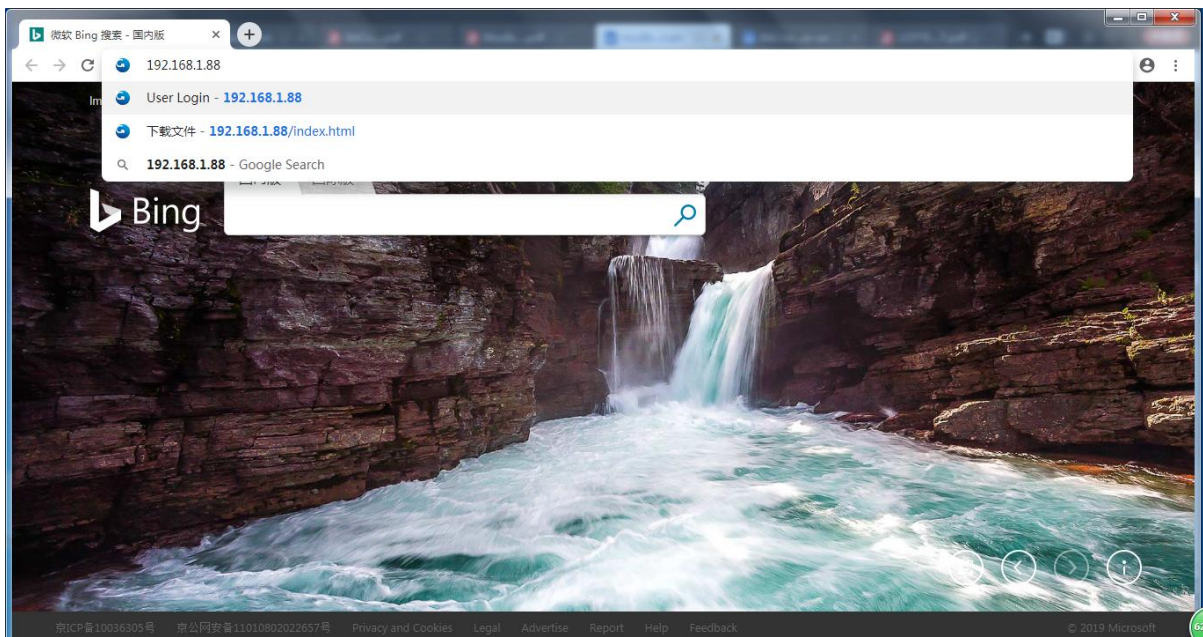


Figure 3-1-1 Web login

Input the user name and password in the pop-up window , as shown 3-1-2.

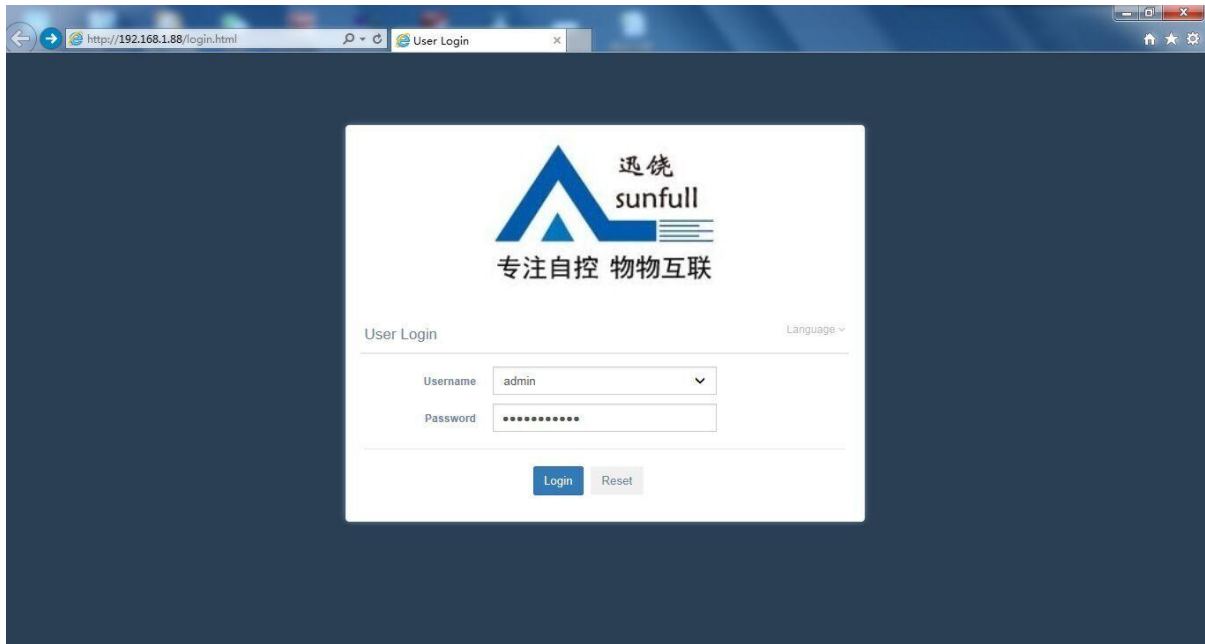


Figure 3-1-2 User login

Note that the default user name is "admin", password is "admin123456".

3.2 Download Instructions and OPC Server

Download: Download instructions of Modbus Router or software X2OPC, as shown 3-2-1.

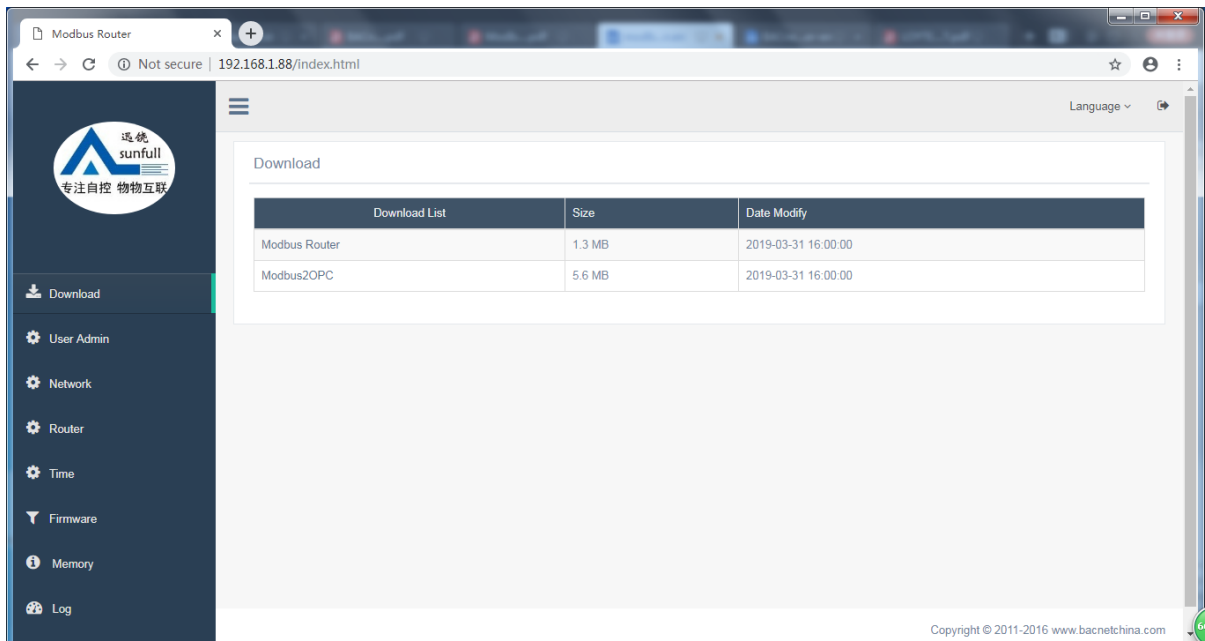


Figure 3-2-1 Download file

3.3 User Admin

Users can manage their login account such as add, modify, delete and other ways, as shown 3-3-1.

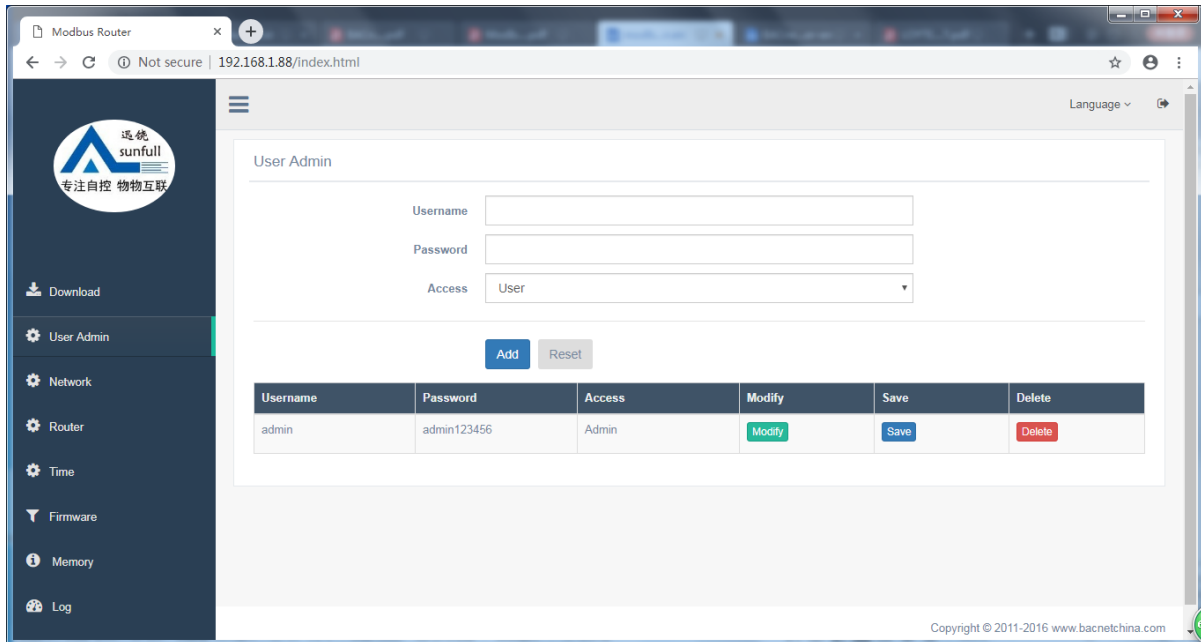


Figure 3-3-1 User Management

3.4 Network

Set network interface IP address of Router, as shown 3-4-1.

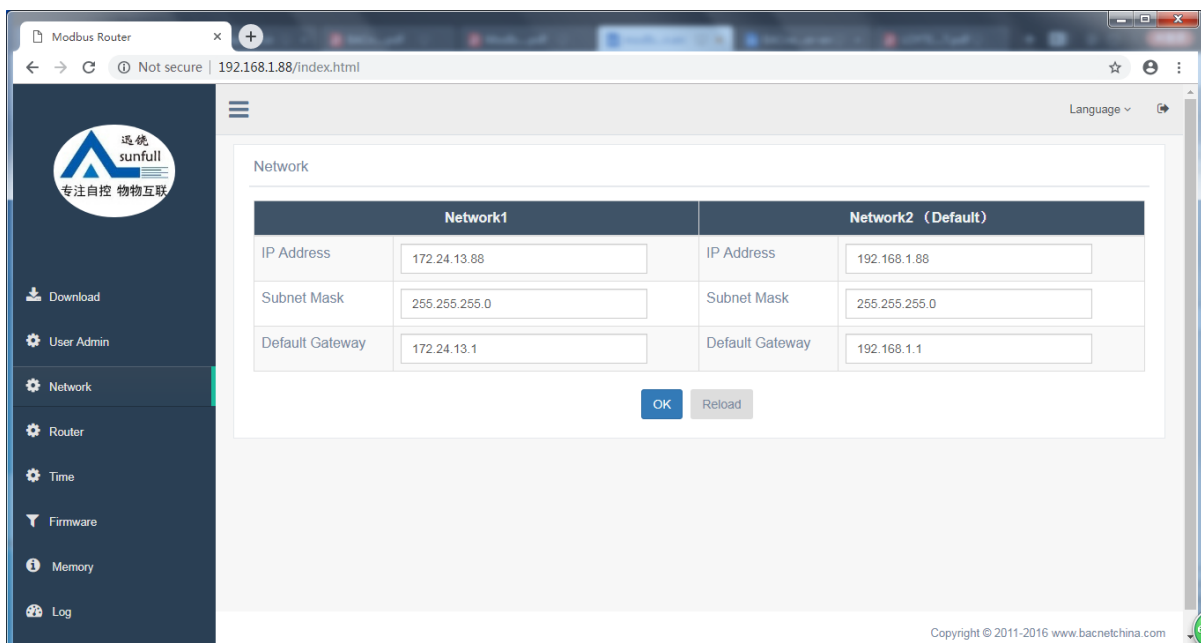


Figure 3-4-1 Ethernet port settings

Note that the MB2004-A9 model has two ports that can be accessed by two

Modbus TCP clients of different network segments, while the MB1002-ARM model only has one port.

3.5 Router Settings

Setting parameter of Modbus Router, as shown 3-5-1.

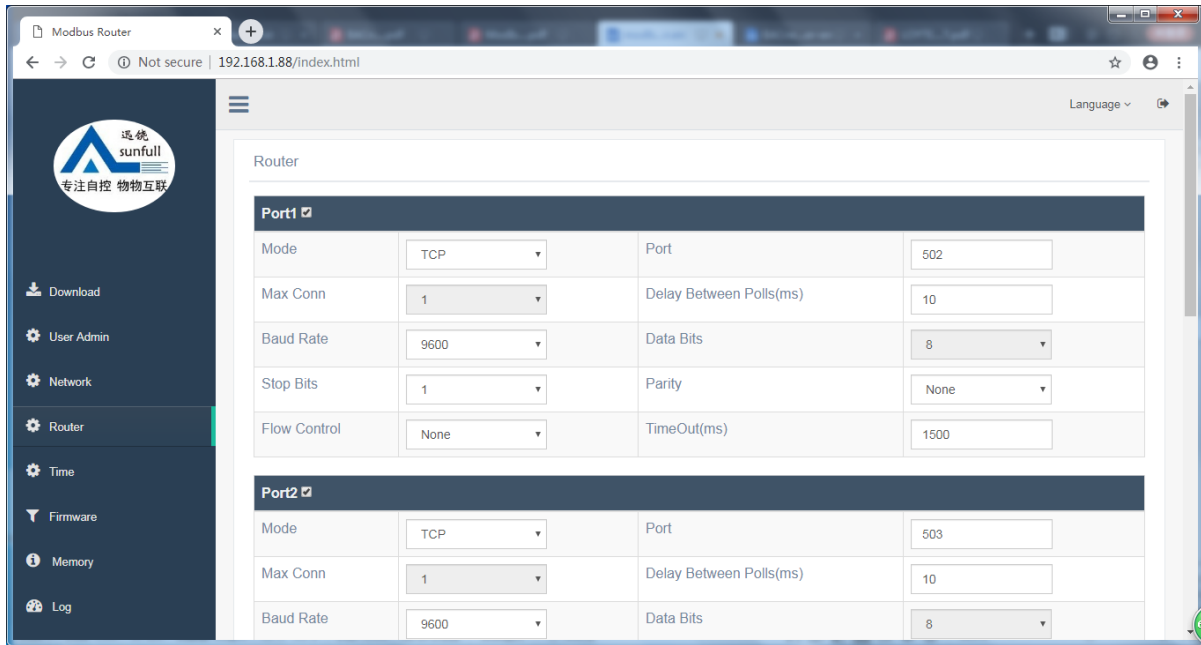


Figure 3-5-1 Router settings

Note:

1, Each serial port of Router corresponds to a port number, so the port number can not be repeated.

2, Different serial ports can set different baud rate. Baud rates available 300, 600, 1200, 2400, 4800, 9600, 19200, 38400, 56000, 57600, 115200.

3.6 Time Settings

Set system time of Router, as shown 3-6-1.

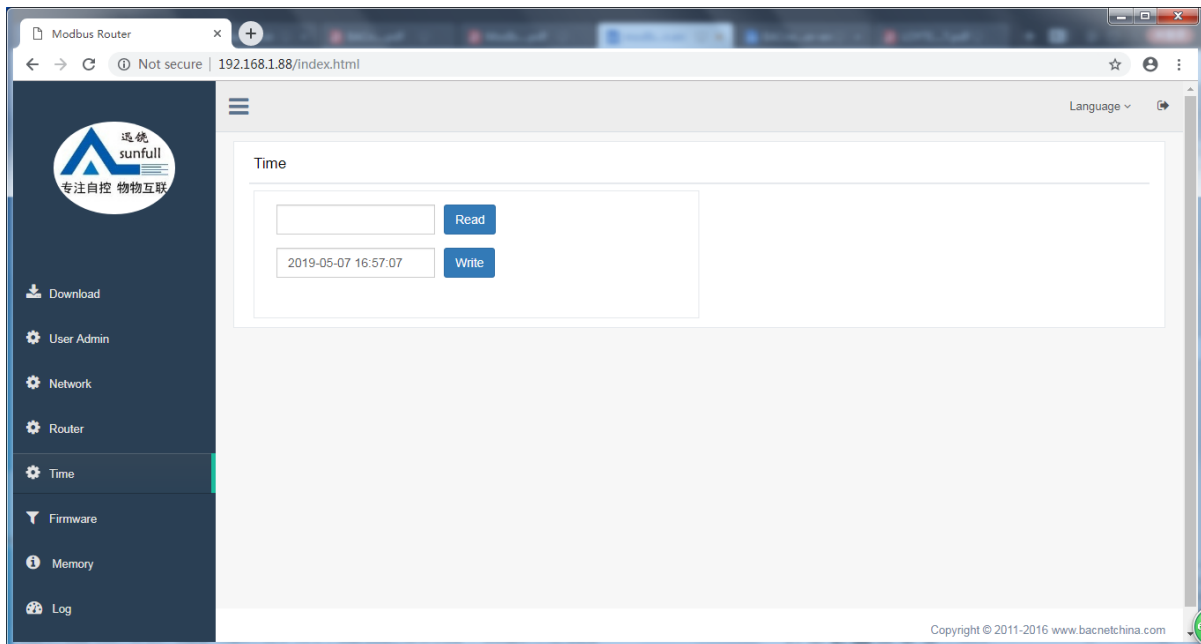


Figure 3-6-1 Time Settings

3.7 Firmware Information

Firmware information refers to the firmware version, machine code and registration code of Router, as Figure 3-7-1.

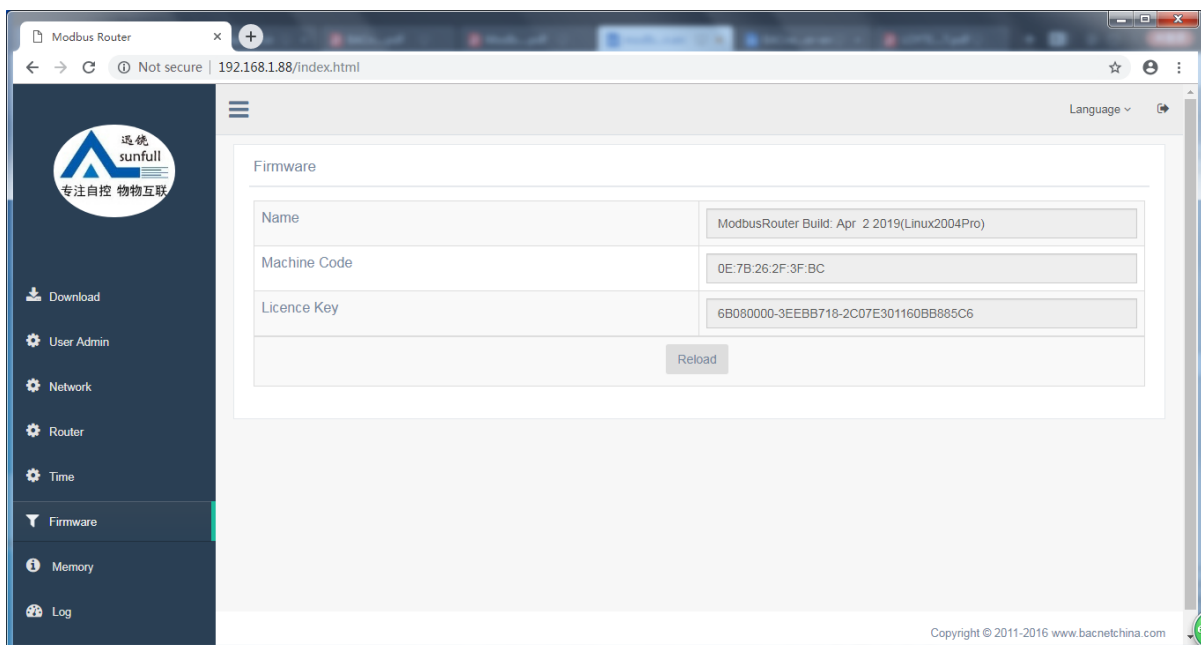


Figure 3-7-1 Firmware information

3.8 Memory Information

You can view the memory usage of the gateway and restart the gateway, as

shown 3-8-1.

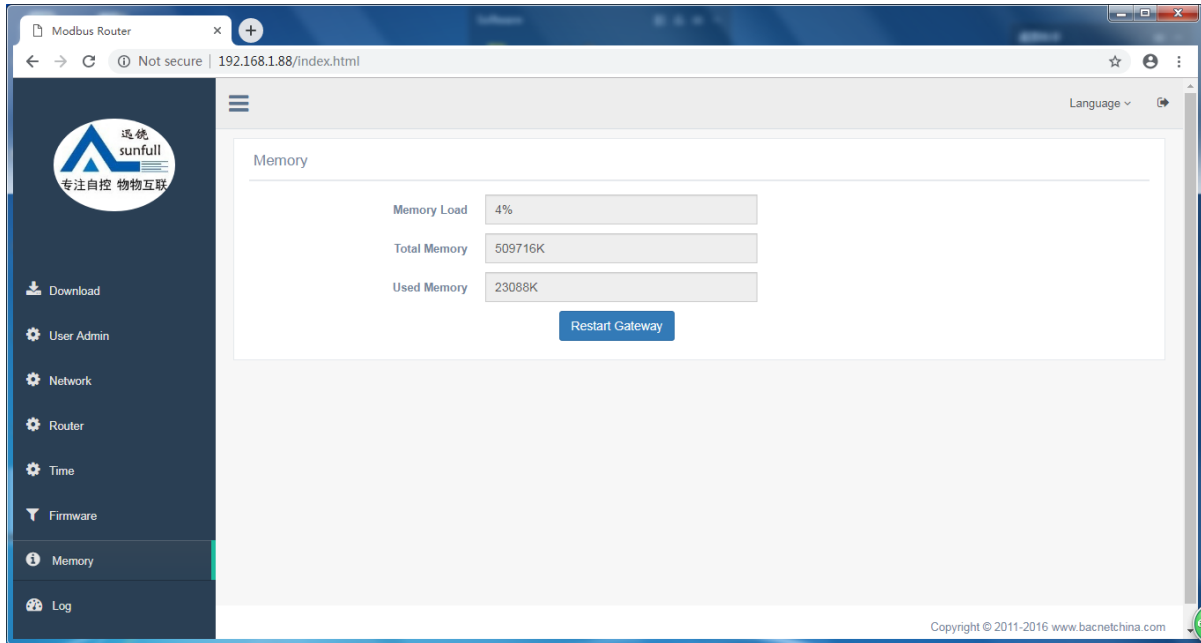


Figure 3-8-1 System information

3.9 Log Message

View the log messages prompted by the system, as shown 3-9-1.

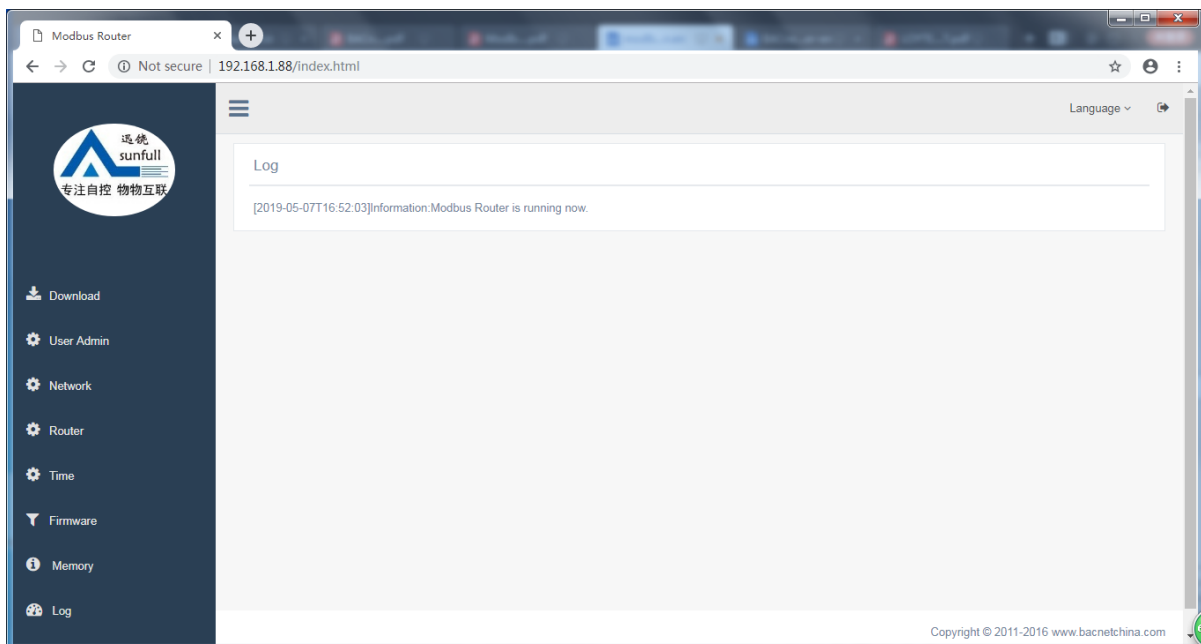


Figure 3-9-1 Log messages

4 Modbus Client Test

Modbus Poll reads the data of Modbus RTU devices under Modbus Router through Modbus TCP client as shown below 4-1

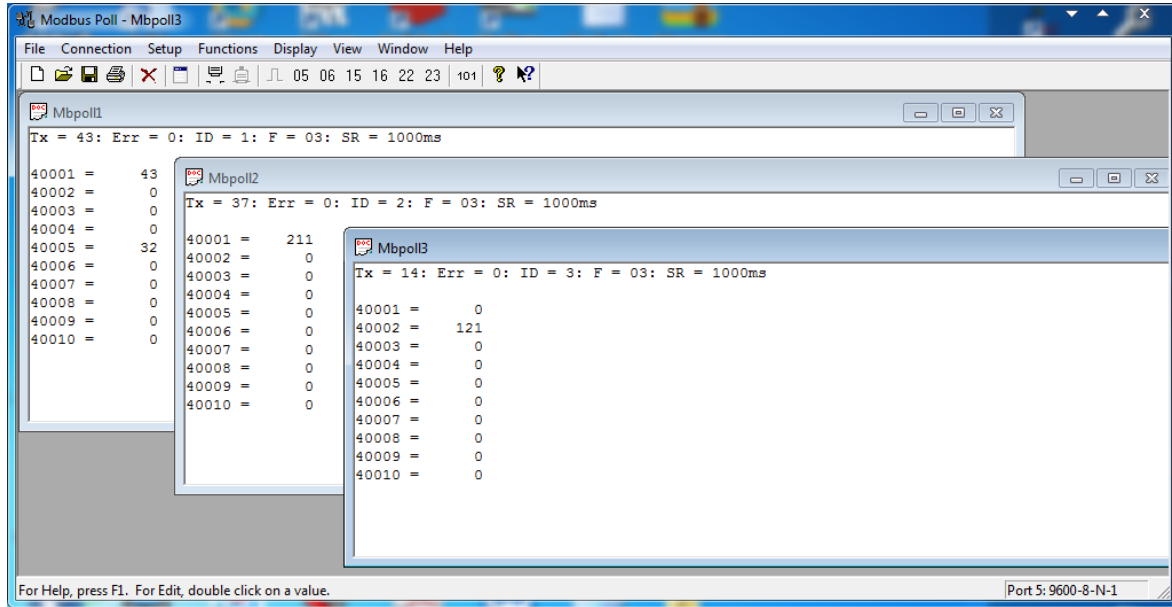


Figure 4-1 Modbus Poll Reads Data

5 OPC Modbus Server Access Router

If the data of Modbus TCP is eventually collected to Kingview, WinCC and other configuration software, users can also use X2OPC server software to facilitate the establishment of tags. X2OPC reads Modbus RTU devices data under Modbus Router through Modbus TCP protocol as shown below:

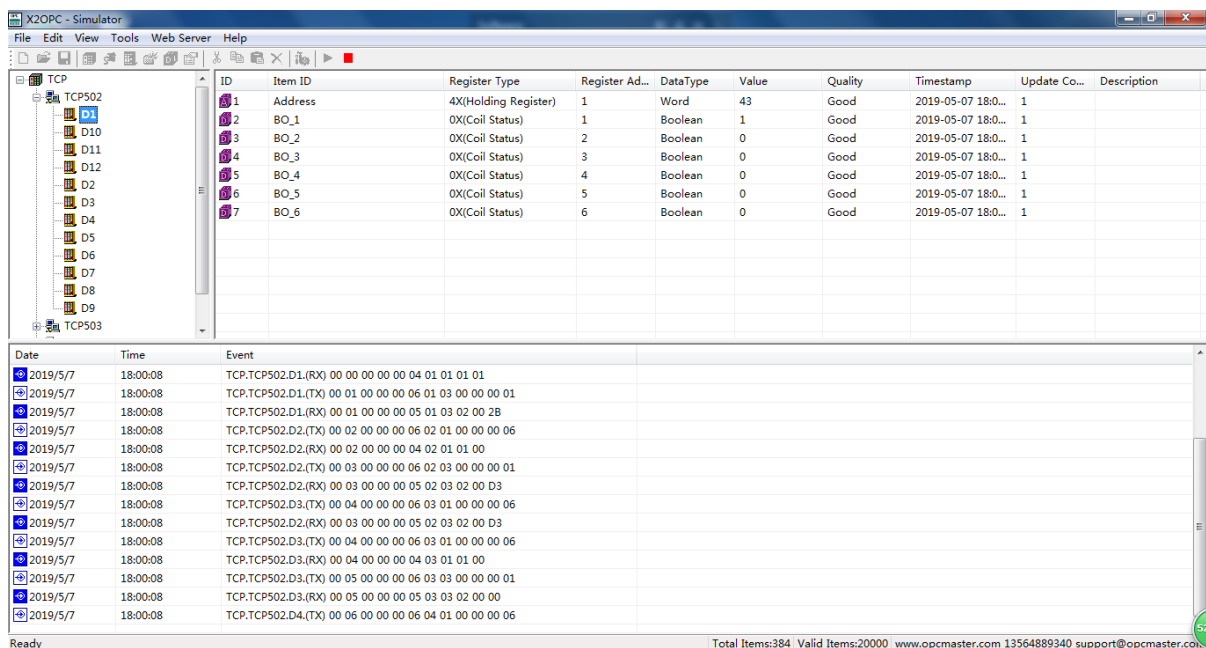


Figure 5-1 X2OPC Reads Data

6 Modbus Router Hardware Parameters

6.1 Hardware Performance Table

Hardware performance as shown in Table 6-1.

Parameter	MB2004-A9	MB1002-ARM
CPU	4-core, 1.4GHz	1-core, 300MHz
RAM	512M DDR2	64M DDR2
Memory	8GB Flash	128M
OS	Linux	
Ethernet Interface	2 independent 10M / 100M Ethernet interface	1 10M / 100M Ethernet interface
USB interface	1	
TF card slot	1	
Mounting	DIN-Rail Mounting	
Power supply	AC/DC 24V	
RTC clock	Internal integrated real-time clock, an on-board battery CR2032 (can last three years)	
Serial communication port	4 fully isolated RS485 interface (TX/RX LED)	2 fully isolated RS485 / 232 interface (TX/RX LED)

Table 6-1 Hardware Performance Table

6.2 Electrical Specifications and Work Environment Table

Electrical specifications and working environments as shown below.

Parameter	MB2004-A9	MB1002-ARM
Rated power	8W	6W
Rated voltage	AC/DC 24V , works: 12V ~ 24V.	
Power protection	Adopt isolated power module, equipped with lightning stroke and surge protection.	
Allowed to lose electric	<5 ms	
CE & ROHS	Compliance with EN55032:2015, EN55035:2017 standard, in line with ROHS Lightning surge $\pm 4\text{KV}$, group pulse $\pm 4\text{KV}$; contacting electrostatic 4K, 8K Air discharge	
Operating temperature	-20 ~ 70 °C	
Storage temperature	-40 ~ 80 °C	
Working humidity	20% to 90% non-condensing	
Storage humidity	15% to 95% non-condensing	
Aseismicity	10 ~ 25 Hz (X, Y, Z direction 2G / 30 min)	
Cooling mode	Natural air cooling	
Protection class	The front panel meet IP65 (flat mating enclosure installed), the shell meet IP20, whole machine passed the 48-hour salt spray test	

Mechanical structure	Aluminum alloy	Zinc plated carbon steel
Overall size	142mm x 91mm x 35mm	109mm x 86mm x 34mm
Total Weight	250g	350g

Table 6-2 Electrical Specifications, and Working Environment Parameters

6.3 Power Interface

Mainboard power input adopts standard 3PIN 5.08mm spacing connector, and the definition of input pin is shown in table 6-3. Power input supports 12V ~ 24V AC/DC input, over current and lightning protection, and reverse connection protection.

Port Definition	Instructions	Note
V +	Positive of DC, live wire of AC	
V-	Negative of DC , earth line of AC	
Earth	Rack earth	Connect the earth

Table 6-3 Power Interface Parameters

6.4 RS485 interface parameters

RS485 interface adopts the standard 12PIN 5.08mm spacing connector, and the pin definition is shown in table 6-4.

No.	Gateway port	MB2004-A9	MB1002-ARM	Note
1	A1 (+)	RS485 interface 1 (COM1)	RS485 / RS232 multiplexing interface 1 (COM1)	Full electrically isolated RS485 interface, maximum isolation voltage is 2000V
2	B1 (-)			
3	GND			
4	A2 (+)	RS485 interface2 (COM2)	RS485 / RS232 multiplexing interface 1 (COM2)	Full electrically isolated RS485 interface, maximum isolation voltage is 2000V
5	B2 (-)			
6	GND			
7	A3 (+)	RS485 interface 3 (COM3)		Full electrically isolated RS485 interface, maximum isolation voltage is 2000V
8	B3 (-)			
9	GND			
10	A4 (+)	RS485 interface 4 (COM4)		Full electrically isolated RS485 interface, maximum isolation voltage is 2000V
11	B4 (-)			
12	GND			

Table 6-4 RS485 interface parameters