

USR-M511 Modbus command store and Modbus management

File Version: V1.0.0

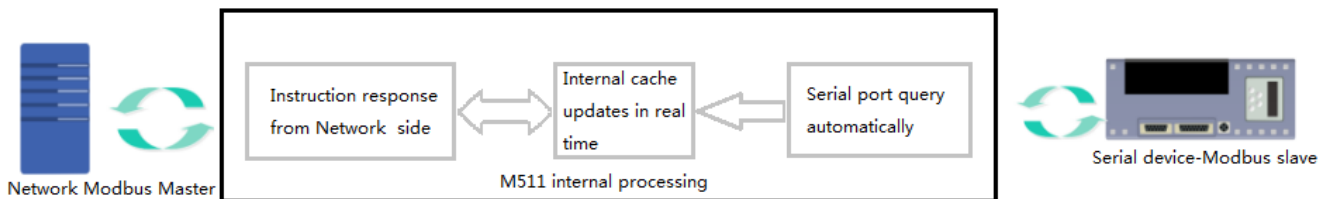
Overview

This manual introduces USR-M511 Modbus command store function and Modbus management function.

1. Modbus command store

1.1. Introduction

Enable Modbus command store function can accelerate query speed of network Modbus master and this function is suitable for multi-master query mode. The application diagram as follow:

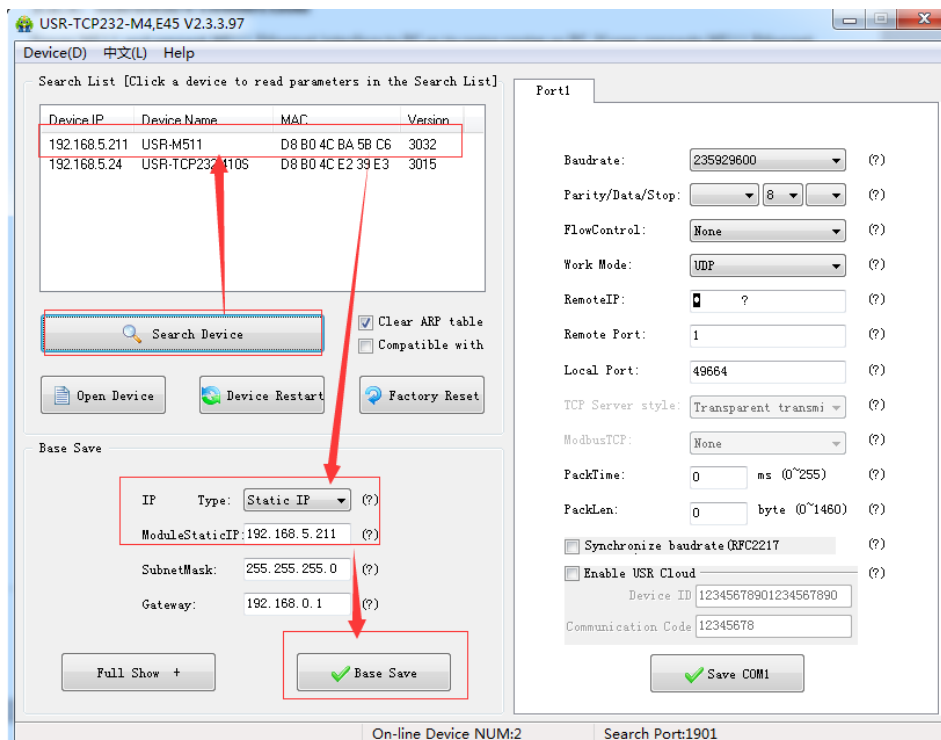


Application scenarios: Multiple masters query one slave or one master needs to query data frequently, enable this function can save serial port querying time and reduce timeout time.

1.2. Configuration

1.2.1. Hardware connection

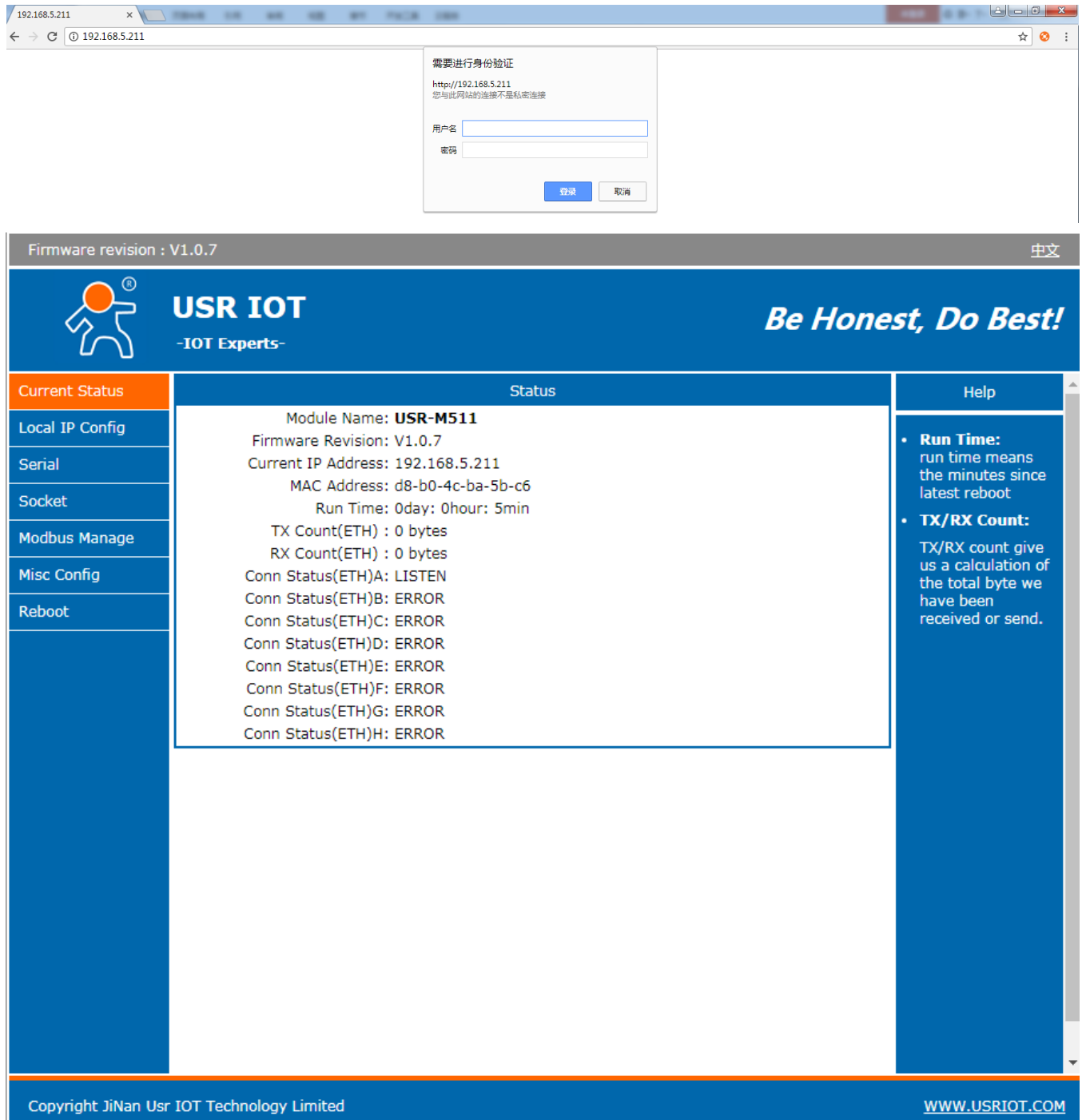
Power M511 and connect M511 Ethernet interface to PC or to same router as PC. If user connects M511 Ethernet interface to same router as PC, user should configure M511's static IP address to in same network segment as router as follow(192.168.5.1 is router gateway address in our test):



User should use setup software **USR-TCP232-M4K3-setup-V2.3.3.97.exe** to configure M511.

1.2.2. Configuration

Step 1: Open browser, type in M511 IP address(192.168.5.211 in our test) and log in with username and password both are admin(Default of username and password both are admin).



The screenshot shows a web browser window with the address bar set to 192.168.5.211. A login dialog box is displayed in the center, asking for a username and password. Below the login dialog, the main web interface is visible. The top bar includes the USR IOT logo, the slogan "Be Honest, Do Best!", and a language selector set to "中文". The left sidebar contains a menu with options: Current Status, Local IP Config, Serial, Socket, Modbus Manage, Misc Config, and Reboot. The main content area displays the "Status" page, which provides detailed information about the USR-M511 module, including its firmware version, IP address, MAC address, and run time. A "Help" section on the right explains the "Run Time" and "TX/RX Count" metrics. The footer contains the copyright information for Jinan Usr IOT Technology Limited and the website URL WWW.USRIOT.COM.

Current Status	Status	Help
Local IP Config	Module Name: USR-M511 Firmware Revision: V1.0.7 Current IP Address: 192.168.5.211 MAC Address: d8-b0-4c-ba-5b-c6 Run Time: 0day: 0hour: 5min TX Count(ETH) : 0 bytes RX Count(ETH) : 0 bytes Conn Status(ETH)A: LISTEN Conn Status(ETH)B: ERROR Conn Status(ETH)C: ERROR Conn Status(ETH)D: ERROR Conn Status(ETH)E: ERROR Conn Status(ETH)F: ERROR Conn Status(ETH)G: ERROR Conn Status(ETH)H: ERROR	Run Time: run time means the minutes since latest reboot TX/RX Count: TX/RX count give us a calculation of the total byte we have been received or send.

Step 2: Configure Modbus command store as follow(After configuration, please click 'Save' and restart module):

Current Status	Parameter																																													
Local IP Config	Baud Rate: 115200 bps(600~230400)bps																																													
Serial	Data Size/Parity/Stop Bits: 8bit None 1bit																																													
Socket	UART Packet Time/Length: 0 ms 0 chars																																													
Modbus Manage	Flow Control: None																																													
Misc Config	Sync Baudrate(RF2217 Similar): ☒																																													
Reboot	Enable Modbus Command store Function: ☒																																													
	Set to Upload Net Master: ☐																																													
	<table border="1"> <thead> <tr> <th>Number</th> <th>Device Address</th> <th>Command</th> <th>Register Address</th> <th>Quantity</th> </tr> </thead> <tbody> <tr><td>1</td><td>1</td><td>3</td><td>0</td><td>10</td></tr> <tr><td>2</td><td>2</td><td>3</td><td>10</td><td>20</td></tr> <tr><td>3</td><td>3</td><td>3</td><td>10</td><td>30</td></tr> <tr><td>4</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>5</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>6</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>7</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> <tr><td>8</td><td>0</td><td>0</td><td>0</td><td>0</td></tr> </tbody> </table>	Number	Device Address	Command	Register Address	Quantity	1	1	3	0	10	2	2	3	10	20	3	3	3	10	30	4	0	0	0	0	5	0	0	0	0	6	0	0	0	0	7	0	0	0	0	8	0	0	0	0
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6	0	0	0	0																																										
7	0	0	0	0																																										
8	0	0	0	0																																										
	Save Cancel																																													

- Store function can only works to Modbus slave
- Store function just query and update storage for command which be configured
- Stored command that be configured can only enable automatic query and store function after querying of network Modbus master
- The frequency of command query is related to serial baud rate. For example, baud rate is 9600, the query frequency of RTU protocol is about 400ms and the query frequency of ASCII protocol is about 800ms
- If query command of network master and query command that be configured have inclusion relation, response data from network will be the data from internal cache. For example, query command 1 is 01 03 00 00 0A C5 CD and query command 2 is 01 03 00 0A 00 14 65 C7, user can configure as follow:

Number	Device Address	Command	Register Address	Quantity
1	1	3	0	40

And any one command of above two commands query slave device, it will get fast and accurate response from internal cache.

Note: Quantity must less than 126(According to Modbus protocol)

2. Modbus management

2.1. Introduction

M511 can manage Modbus slave devices which is mainly applied to monitor data of specified device. And parameters configuration on Modbus management web page will take effect immediately. Modbus management is based on Websocket. So user needs to use browser which can support Websocket as follow:

Browser	Version
Chrome	Version 4+
Firefox	Version 4+
Internet Explorer	Version 10+
Opera	Version 10+
Safari	Version 5+

2.2. Configuration

Step 1: User can refer to **1.2.1.Hardware connection** and **1.2.2.Configuration Step 1** to enter M511 Web Server.

Step 2: Enable Modbus command store function and configure stored command as **1.2.2.Configuration Step 2**.

Step 3: Open Modbus management web page and set the command(Command must in range of stored command in Step 2).

Current Status
 Local IP Config
 Serial
 Socket
Modbus Manage
 Misc Config
 Reboot

Modbus Polling Command

SET the Command: ☒

Number	Slave ID	Function	Address	Quantity
1	1	3	0	10
2	2	3	0	10
3	3	3	0	10
4	4	3	0	10
5	5	3	0	10
6	6	3	0	10
7	7	3	0	10
8	8	3	0	10

Register Value

ID	address	0	1	2	3	4	5	6
温度	mark	湿度	寄存器	地址	开关	客厅	卧室	空调
0	value	0	0	0	0	0	0	0
address	7	8	9	10	11	12	13	14
mark	洗衣机	温度	温度	温度	温度	温度	温度	温度
value	0	0	0	0	0	0	0	0
address	15	16	17	18	19	20	21	22
mark	温度	温度	温度	温度	温度	湿度	寄存器	地址
value	0	0	0	0	0	0	0	0
address	23	24	25	26	27	28	29	30
mark	开关	客厅	卧室	空调	洗衣机	温度	温度	温度
value	0	0	0	0	0	0	0	0
address	31	32	33	34	35	36	37	38
mark	温度	温度	温度	温度	温度	温度	温度	温度
value	0	0	0	0	0	0	0	0
address	39	40	41	42	43	44	45	46
mark	温度	温度	温度	温度	温度	温度	温度	温度
value	0	0	0	0	0	0	0	0

Step 4: Click 'Save' and refresh web page. Configure remark parameters for convenience of reference(Remark only be allowed to use Chinese character, letter and number). Then user can monitor data.

3. Contact Us

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5. Update History

2018-04-18 V1.0.0 established.