

Modbus TCP / BACnet/IP Gateway GT200-BM-MT

User Manual

V 1.4

Rev A



SST Automation

Email: support@sstautomation.com

www.SSTAutomation.com



Important Information

Warning

The data and examples in this manual cannot be copied without authorization. SST Automation reserves the right to upgrade the product without notifying users.

The product has many applications. The users must make sure that all operations and results are in accordance with the safety of relevant fields, and the safety includes laws, rules, codes and standards.

Copyright

Copyright © 2026 by SST Automation. All rights reserved.

Trademark



is the registered trade mark of SST Automation.

Technical Support Contact Information

www.sstautomation.com

Email: support@sstautomation.com

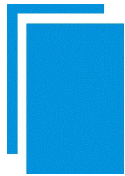


Table of Contents

1 Product Overview	1
1.1 Product Function	1
1.2 Product Features	1
1.3 Technical Specifications	1
1.4 Revision History	2
2 Hardware Descriptions	3
2.1 Product Appearance	3
2.2 LED Indicators	3
2.3 DIP Switch	4
2.4 Interfaces	4
2.4.1 Power Interface	4
2.4.2 Ethernet Interface	5
3 Hardware Installation	6
3.1 Mechanical Dimensions	6
3.2 Installation Method	7
4 Quick Start Guide	8
4.1 Hardware Connection	8
4.2 Software Configuration	8
5 Software Instructions	10
5.1 Notes before Configuration	10
5.2 User Interface	11
5.3 Operation of Devices View	13
5.3.1 Devices View Interface	13
5.3.2 Operation Method of Device View	13
5.3.3 Operation Types of Device View	13
5.4 Operation of Configuration View	14
5.4.1 BACnet/IP Server Configuration	14
5.4.2 Modbus TCP Client Configuration	16
5.4.3 Node Configuration	17
5.4.4 Command Configuration	17
5.4.5 Comment View	20
5.5 Tool	20
5.5.1 Search Equipment	21
5.5.2 Auto Assign	23
5.5.3 Export Excel	24
5.5.4 Upload Configuration	25
5.5.5 Download Configuration	26
5.5.6 Locate	27
5.5.7 Remote Reset	28



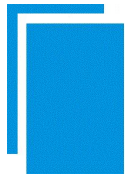
GT200-BM-MT
Modbus TCP/BACnet IP Gateway
User Manual

5.6 Save and Open Configuration 29

 5.6.1 Save Configuration Project 29

 5.6.2 Open Configuration Project 29

6 Typical Application 30



1 Product Overview

1.1 Product Function

The GT200-BM-MT is a gateway designed to exchange data between Modbus TCP servers and a BACnet/IP client. It connects multiple Modbus TCP servers to a BACnet/IP network and establishes a reliable communication channel between them.

1.2 Product Features

- Easy to Use: Users can refer to the product manual to quickly configure a data connection that meets their needs.
- Wide Applications: Any device with a Modbus TCP interface can be connected to a BACnet/IP network through the GT200-BM-MT gateway.
- Two 10/100 Mbps auto-negotiation Ethernet ports with built-in switch functionality, supporting daisy-chain topologies.
- Supports DHCP and static IP configuration.
- Supports device location and reset functions via the configuration software.
- Supports remote configuration via the software.
- Easy-to-use configuration software SST-BM-CFG.

1.3 Technical Specifications

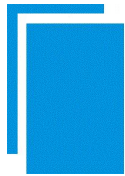
[1] Data communication between BACnet/IP and Modbus TCP.

[2] Supports up to 500 BACnet BIs, 300 BOs, 300 BVs, 500 AIs, 300AOs, 300 AVs, 500 MSIs and 100MSOs.

[3] Supported BACnet/IP services: Who Is, I Am, Who Has, I Have, Read Property, Write Property, Read Property Multiple.

[4] Supports 3 output modes: Change of Value, Cycle and Forbidden.

[5] Supports up to 36 Modbus TCP connections.



- [6] Supports up to 128 Modbus commands.
- [7] Supports modification of BACnet engineering units.
- [8] Power supply: 24VDC (11V - 30V), 90mA (24VDC).
- [9] Operating temperature: -4°F to 140°F (-20°C to 60 °C), relative humidity: 5% - 95% (non-condensing).
- [10] Dimensions (W x H x D): 1.33 in x 4.56 in x 4.21 in (34mm x 116mm x 107mm).
- [11] Mounting: 35mm DIN rail.
- [12] Protection class: IP20.
- [13] Test standard: EMC test standards.

1.4 Revision History

Revision	Date	Chapter	Description
V1.4 Rev A	3/16/2026	ALL	Optimize document descriptions
V1.4	8/1/2024	PART	New release for supporting modification of BACnet engineering units.
V1.2	12/15/2022	ALL	New release

2 Hardware Descriptions

2.1 Product Appearance



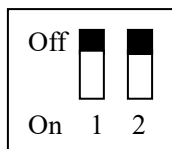
Note: This picture is for reference only. The actual product may vary.

2.2 LED Indicators

Indicators	State	Description
BIS	Green On	BACnet/IP data is being transmitted or received
	Red On	BACnet/IP data is not being transmitted or received
	Red Blinking	DHCP
MTS	Green On	At least one Modbus TCP connection has been established
	Green Blinking	Modbus TCP no connection
	Red Blinking (for 3 seconds)	Modbus TCP connection is disconnected
BIS&MTS Orange	Simultaneously on	Startup phase
	Blinking alternately	Configuration Mode
	Blinking alternately (5 seconds)	Device locate function activated
	BIS on, MTS off	Firmware update mode

2.3 DIP Switch

The configuration DIP switch is located on the bottom of the gateway. Bit 1 is the function bit, and Bit 2 is the mode bit.



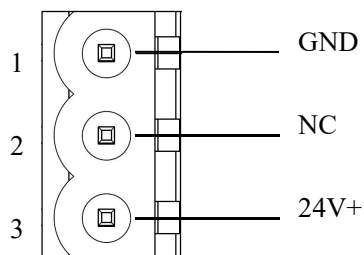
Function (Bit 1)	Mode (Bit 2)	Mode	Description
Off	Off	Run mode	Allows configuration and communication.
Off	On	Configuration mode	IP address is fixed at 192.168.0.10. Configuration is enabled, but communication is disabled.
On	Off	Run mode	Allows communication. Prohibits configuration.
On	On	Firmware update mode	IP address is fixed at 192.168.0.10. This mode can only update firmware.

Note: To apply mode switching, please restart the gateway.

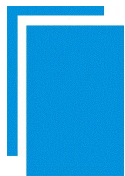
2.4 Interfaces

2.4.1 Power Interface

The GT200-BM-MT gateway uses a 24V DC power supply.

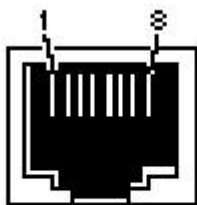


Pin	Description
1	GND
2	NC (Not Connected)
3	24V+, DC



2.4.2 Ethernet Interface

The Ethernet interface uses an RJ-45 connector and follows the IEEE802.3u 100BASE-T standard. Its pinout (standard Ethernet signal) is defined as below:



RJ-45 port

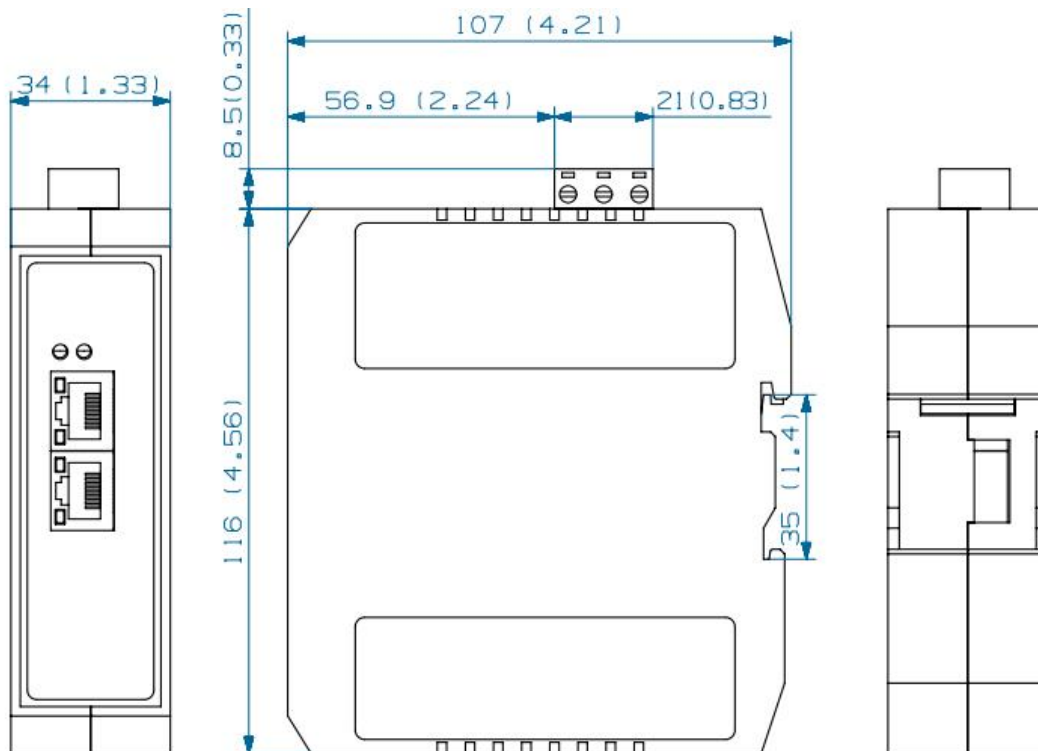
Pin	Description
S1	TXD+, Transceive Data+, Output
S2	TXD-, Transceive Data-, Output
S3	RXD+, Receive Data+, Input
S4	Bi-Directional Data+
S5	Bi-Directional Data-
S6	RXD-, Receive Data-, Input
S7	Bi-Directional Data+
S8	Bi-Directional Data-

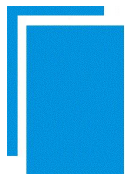
3 Hardware Installation

3.1 Mechanical Dimensions

Size (width x height x depth):

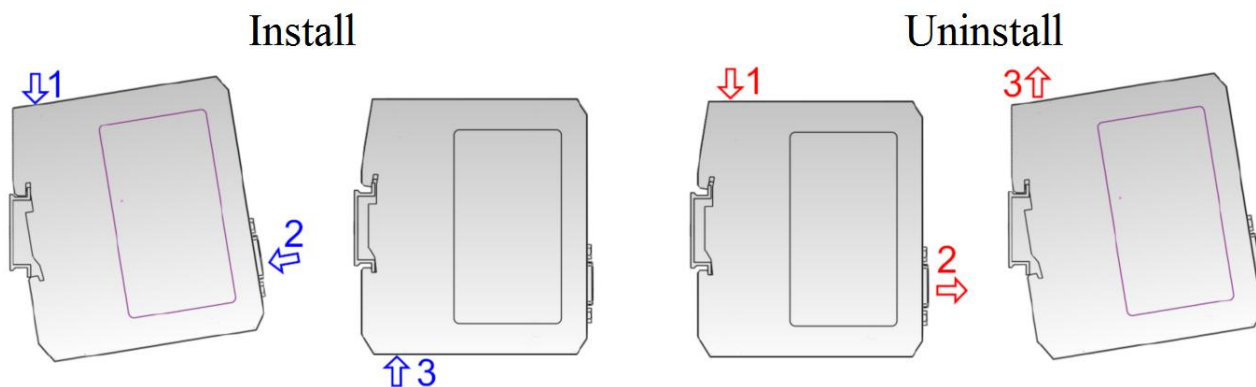
1.33 in x 4.56 in x 4.21 in (34 mm x 116 mm x 107 mm)

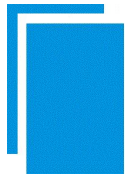




3.2 Installation Method

Using 1.4 in (35 mm) DIN RAIL.



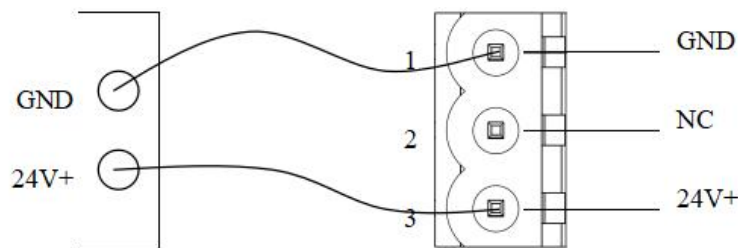


4 Quick Start Guide

4.1 Hardware Connection

1. Connect the power to the power supply.

Do not power on the device until all connections are securely made and verified.



2. Connect the GT200-BM-MT gateway with your computer via Ethernet cable.
3. With the configuration switches located on the bottom of the gateway, set both Bit 1 and Bit 2 to 0 (OFF).
4. Power on the GT200-BM-MT.

4.2 Software Configuration

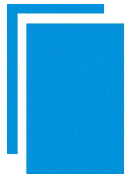
Download, install, and run the configuration software, SST-BM-CFG. For more details, see [Chapter 5](#) of the manual.

1. Upload the setting from the gateway by clicking "Search Equipment" on the left. Find the GT200-BM-MT gateway on the list, click it and click "Upload" on the left.

Note: If you cannot find the GT200-BM-MT gateway, check your Hardware configuration or your network configuration. Refer to the note [How to Use the Ping Command](#).

This is a default configuration created by SST Automation. If you would like to create a configuration from the beginning simply click "New".

2. Click "BACnet/IP Server" under the Device Window and configure the settings to your needs under the Configuration Window.
3. Click the "Modbus TCP" of choice under the Device window to configure the Modbus TCP Master. ([Chapter](#)



[5.3.2](#))

4. To add a node, right-click the target Modbus TCP Master and select "Add Node".

Then configure the node. ([Chapter 5.3.3](#))

5. To add a command, right-click the node you wish to add the command to and proceed to click the "Add Command" operation. Double-click on the commands you wish to add to the Node.

Configure the command ([Chapter 5.3.3](#))

6. Once configuration is complete, click "Download" to download your configuration into GT200-BM-MT gateway.

Note: To reset the GT200-BM-MT gateway, you can either disconnect it from power or remotely reset it in the SST-BM-CFG software: select it, and select Remote Reset.

7. Test the communication.

5 Software Instructions

Double-click the software application and install the configuration software SST-BM-CFG. Follow the prompts to complete the installation, then open the installed configuration software and begin to configure the GT200-BM-MT gateway.

Note: The factory network setting of GT200-BM-MT gateway is DHCP. If your network does not have a DHCP server, the DIP switch should be set to Configuration Mode (Bit 1 OFF, Bit 2 ON) and restart GT200-BM-MT gateway. Then the IP address of GT200-BM-MT gateway will be fixed at 192.168.0.10, the subnet mask will be 255.255.255.0 and the network gateway address will be 192.168.0.1.

5.1 Notes before Configuration

SST-BM-CFG is a Windows-based configuration software used to configure parameters of GT200-BM-RS , GT200-BM-2RS and GT200-BM-MT gateways.

Ensure your computer and the gateway are on the same network subnet before running the software.

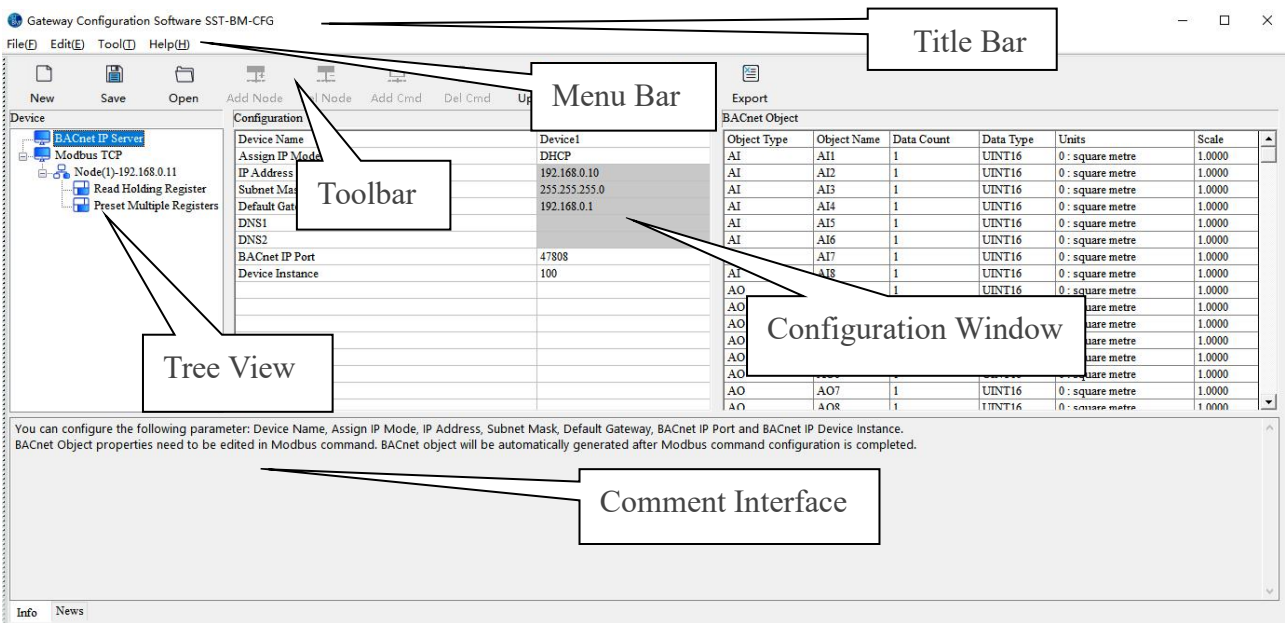
Double-click the icon to access the device selection interface:



5.2 User Interface

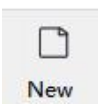
SST-BM-CFG interface includes: title bar, menu bar, toolbar, status bar, equipment section, configuration section and notes section.

Note: Grayed-out fields in the software are read-only.

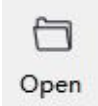


Tool bar interface is shown as below:



- 

New: Create a new configuration project.
- 

Save: Save the configuration project.
- 

Open: Open the configuration project.
- 

Add Node: Add a Modbus slave node.

GT200-BM-MT

Modbus TCP/BACnet IP Gateway

User Manual



Delete Node: Delete a Modbus slave node.



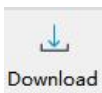
Add Command: Add a Modbus command.



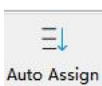
Delete Command: Delete a Modbus command.



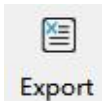
Upload: Read the configuration information from the module and shown in the software.



Download: Download the configuration file to the gateway.



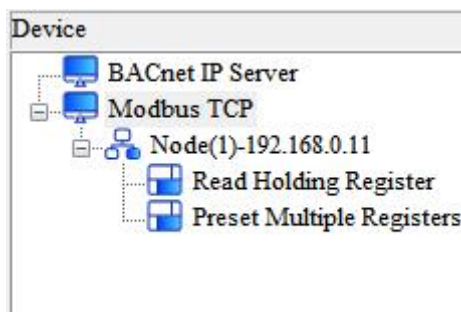
Auto Assign: Used to automatically assign the object name.



Export EXCEL: Export current configuration to the local hard disk, saved as .xls file.

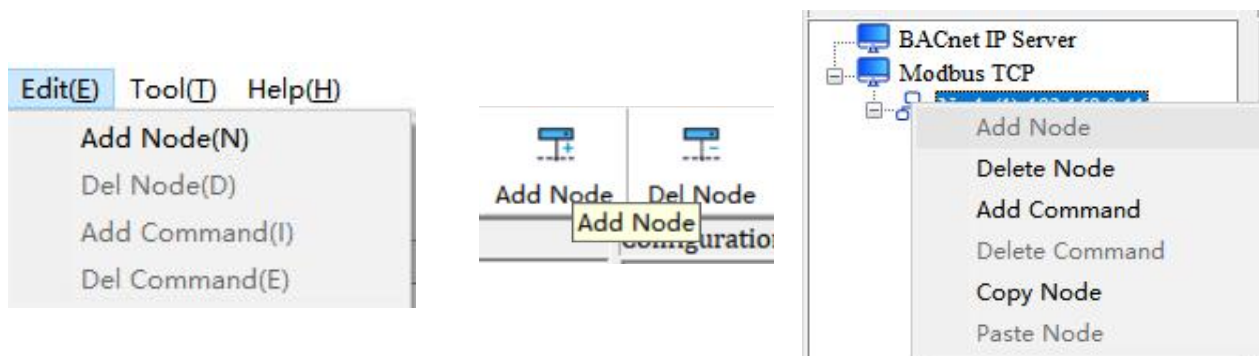
5.3 Operation of Devices View

5.3.1 Devices View Interface



5.3.2 Operation Method of Device View

The device view supports three operation methods: the Edit menu, the toolbar, and the right-click context menu.

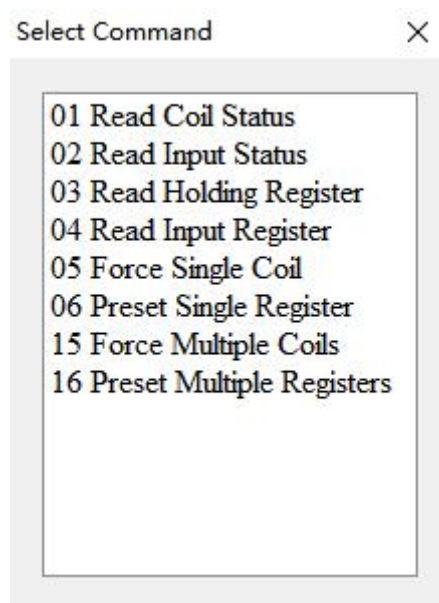


5.3.3 Operation Types of Device View

1. **Add node:** Right-click 'Modbus TCP' and select 'Add Node'. A new node named "Node(N)" will appear under the Modbus TCP branch.
2. **Delete node:** Right-click on the node to be deleted, and then perform the operation of deleting the node. The node and its all commands will be deleted.
3. **Add commands:** Right-click on the node, and then perform the operation of adding command to add a command for the node. The dialog box will be shown as follow:

Currently, it supports the commands: 01, 02, 03, 04, 05, 06, 15 and 16.

Select the command: Double-click the command



4. **Delete commands:** Right-click on the command and then perform the operation of deleting the command.
5. **Copy node:** Right-click an existing node and select Copy (this duplicates the node and all its commands).
6. **Paste node:** Select the Subnet or an existing node and paste the node. The pasted node has the same parameters with the copied node.

5.4 Operation of Configuration View

5.4.1 BACnet/IP Server Configuration

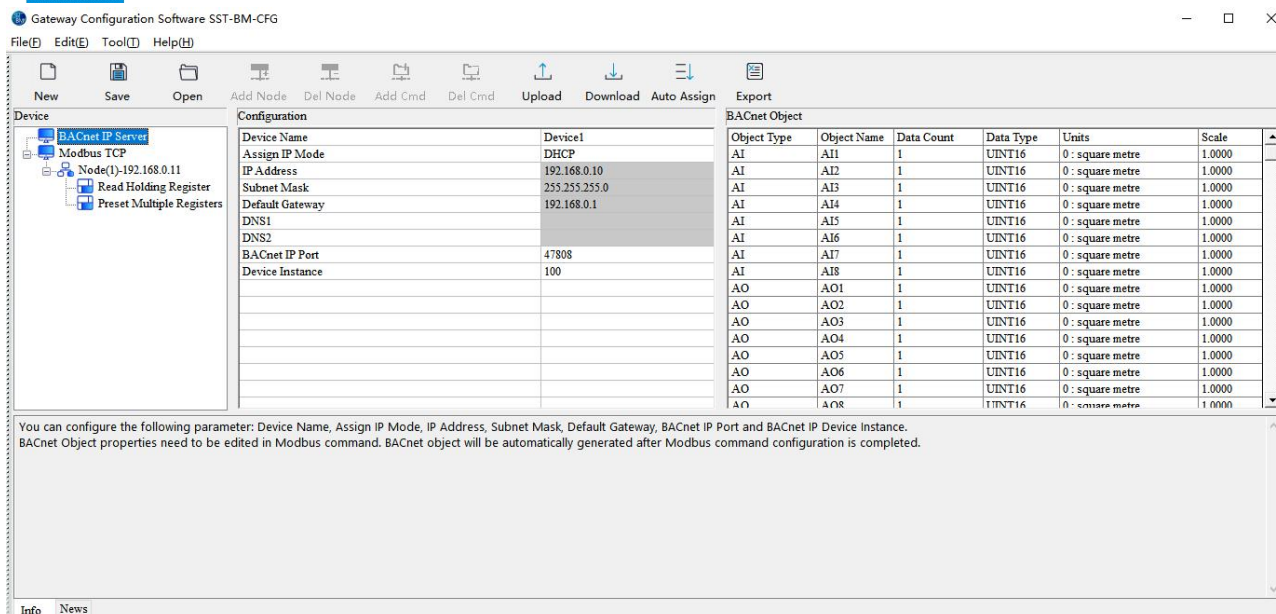
Select 'BACnet IP Server' in the Device View. The configuration interface will appear as follows:

Configurable items include: Device Name, Assign IP Mode, IP Address, Subnet Mask, Default Gateway , DNS1, DNS2, BACnet/IP Port, Device Instance.

GT200-BM-MT

Modbus TCP/BACnet IP Gateway

User Manual



Device Name: Enter a unique name to identify the device.

Note: The name cannot have spaces, up to 16 characters.

Assign IP Mode: Manually Assign and DHCP can be selected.

IP Address: Set the device IP address.

Subnet Mask: Set subnet mask of the device.

Gateway Address: Set gateway address.

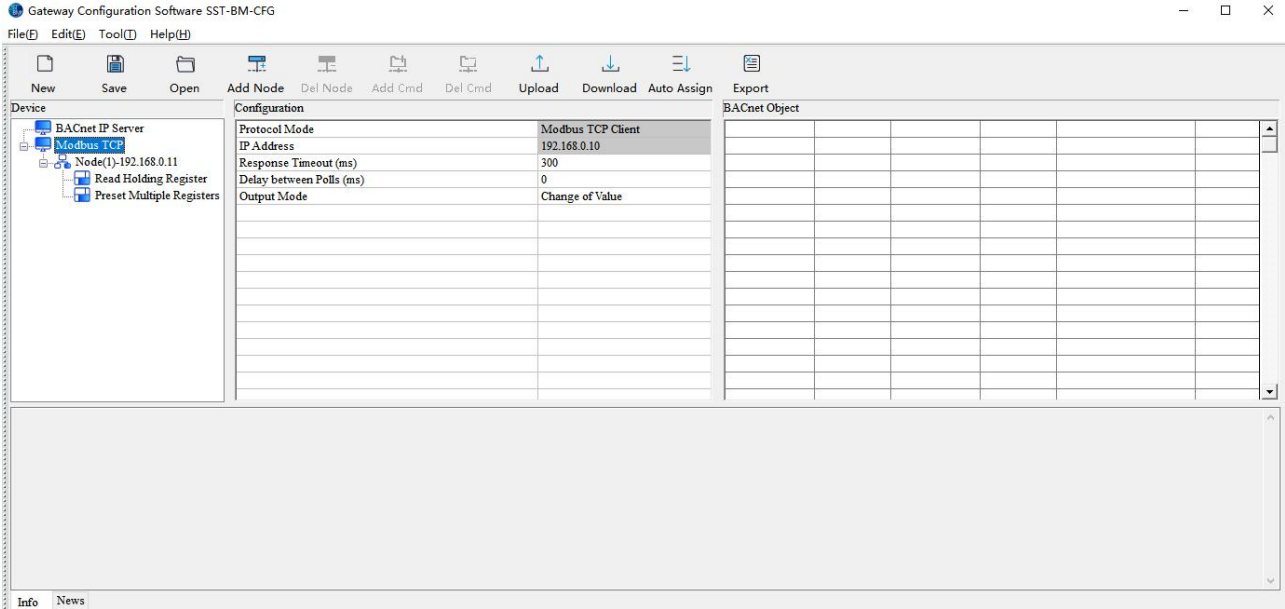
DNS1: Reserved.

DNS2: Reserved.

BACnet/IP Port: Set the BACnet/IP port number of the gateway. Range: 1 - 65535. Default value is 47808.

Device Instance: Set device instance number of the gateway. Range: 0 - 4194303. Default value is 100.

5.4.2 Modbus TCP Client Configuration



Protocol Mode: Modbus TCP Client station. As the Modbus TCP Client device, the gateway establishes communication with Modbus TCP server devices.

IP Address: The same IP Address with BACnet/IP Server.

Response Timeout(ms): After the Modbus TCP Client sends a command, it waits for a response up to this maximum time limit. Range: 300 - 60000ms. Default value is 300ms.

Delay between Polls(ms): Delay between polls means delay between a response has been received and sending next request. Range: 0 - 2500ms. Default value is 0ms.

Output Mode: Modbus write command output mode. There are three types of output:

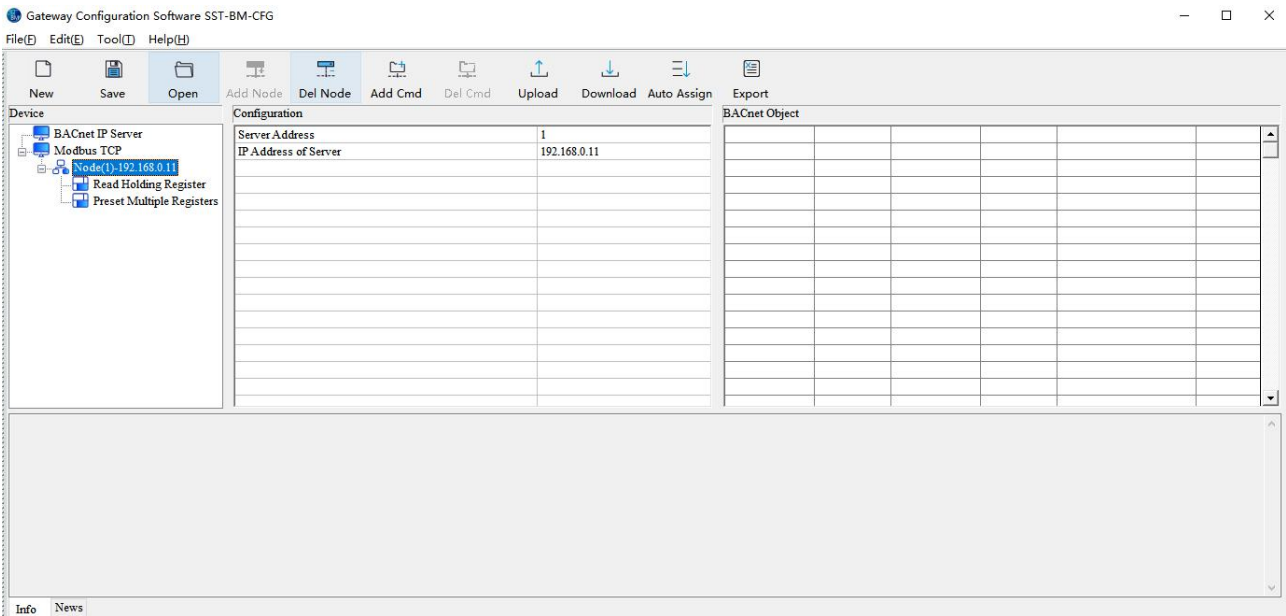
Change of Value: When the output data change, the write command will be sent.

Cycle: In the same way as the Modbus read command output, the write command is sent cyclically.

Forbidden: The gateway will not send write commands.

5.4.3 Node Configuration

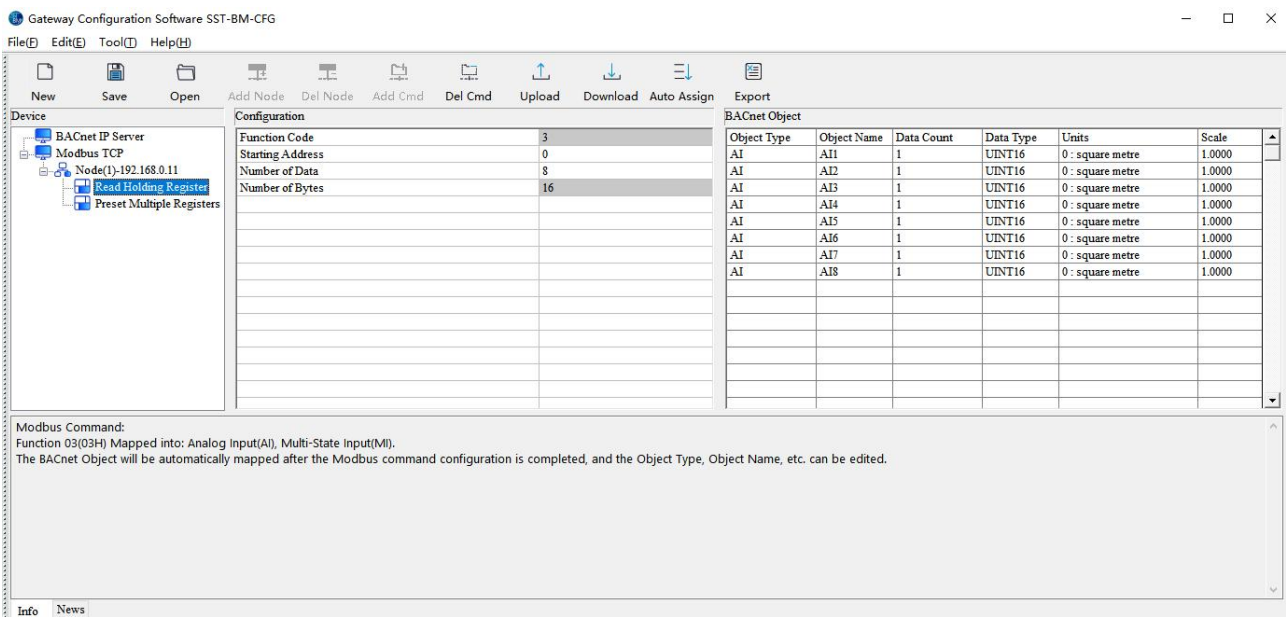
In the interface of device view, click a node and then configuration interface is shown as follows:



Server Address: Modbus TCP server address. Range: 1 - 247.

IP Address of Server: IP Address of Modbus TCP Server to access.

5.4.4 Command Configuration



GT200-BM-MT

Modbus TCP/BACnet IP Gateway

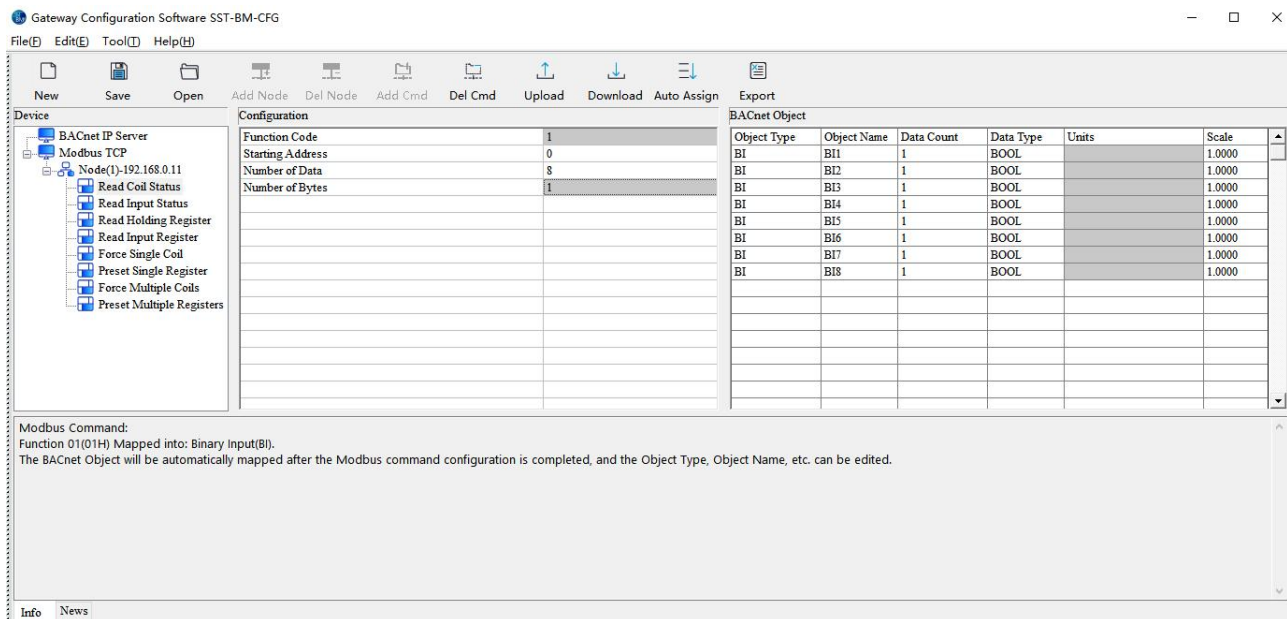
User Manual

Function Code: Modbus Function Code.

Starting Address: The starting address of the register, coil, or input in Modbus TCP slave. The range is 0-65535.

Number of Data: The number of registers, coils, or inputs to be accessed.

Number of Bytes: The total number of data bytes.



Read Coil Status: Fill in the number of data and automatically map to BACnet BI (Binary Input). Take the above picture as an example.

Read Input Status: Maps to BACnet BI (Binary Input).

Read Holding Register: Maps to BACnet AI (Analog Input) or MI (Multistate Input).

Read Input Register: Maps to BACnet AI (Analog Input) or MI (Multistate Input).

Force Single Coil: Maps to BACnet BO (Binary Output) or BV(Binary Value).

Preset Single Register: Maps to BACnet AO (Analog Output), AV (Analog Value) or MO (Multistate Output).

Force Multiple Coil: Maps to BACnet BO (Binary Output) or BV (Binary Value).

Preset Multiple Registers: Maps to BACnet AO (Analog Output), AV (Analog Value) or MO (Multistate Output).

GT200-BM-MT

Modbus TCP/BACnet IP Gateway

User Manual

BACnet Object					
Object Type	Object Name	Data Count	Data Type	Units	Scale
AI	AI1	1	UINT16	0 : square metre	1.0000
AI	AI2	1	UINT16	0 : square metre	1.0000
MI	AI3	1	UINT16	0 : square metre	1.0000
AI	AI4	1	UINT16	0 : square metre	1.0000
AI	AI5	1	UINT16	0 : square metre	1.0000
AI	AI6	1	UINT16	0 : square metre	1.0000
AI	AI7	1	UINT16	0 : square metre	1.0000
AI	AI8	1	UINT16	0 : square metre	1.0000

Object Type: Select AI or MI (Default: AI).

Object Name: Editable, the maximum data length supported is 12.

Data Count: Select 1 or 2 (Default: 1). Maps one Modbus register to a BACnet object.

Data Type: Selectable formats include:BOOL, INT16 (signed 16-bit integer data), UINT16 (unsigned 16-bit integer data), INT32 (signed 32-bit integer data), INT32V (INT32 Inverse, contrary to high and low word INT32), UINT32 (unsigned 32-bit integer data), UINT32V (UINT32 Inverse, contrary to high and low word of UINT32), Float, and FloatV (Float Inverse, contrary to high and low word of Float). (Display varies by BACnet object type).

Units: BACnet Engineering Units

Units(Range: 0-236. Default: 0 = square meters).

Scale: Editable (Range: 0.01 to 100. Default: 1.0).

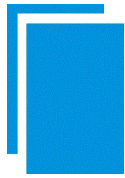
Read Input Register -- Maps to BACnet AI (Analog Input) or MI (Multistate Input).

Force Single Coil -- Maps to BACnet BO (Binary Output) or BV (Binary Value).

Preset Single Register -- Maps to BACnet AO(Analog Output), AV(Analog Value) or MO(Multistate Output).

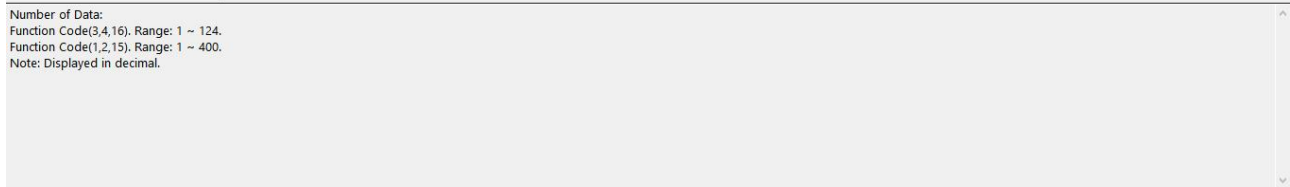
Force Multiple Coils -- Maps to BACnet BO(Binary Output) or BV(Binary Value).

Preset Multiple Registers -- Maps to BACnet AO(Analog Output), AV(Analog Value) or MO(Multistate Output).



5.4.5 Comment View

The comment view displays comments for the corresponding configuration item. For example, when configuring the number of data, the annotation view is displayed as follows:



5.5 Tool

The Tool tab on the menu bar contains the following functions:

- ◆ Auto assign
- ◆ Export Excel
- ◆ Upload configuration
- ◆ Download configuration

5.5.1 Search Equipment

Before configuring parameters, the user will need to search for the gateway using the software. The software provides two ways to search the gateway for the user.

Method 1: Search All Ethernet Devices

Click "Upload" or "Download" button of the main interface and the software will search for all available devices and list them in the main interface.

 Searching Device
✕

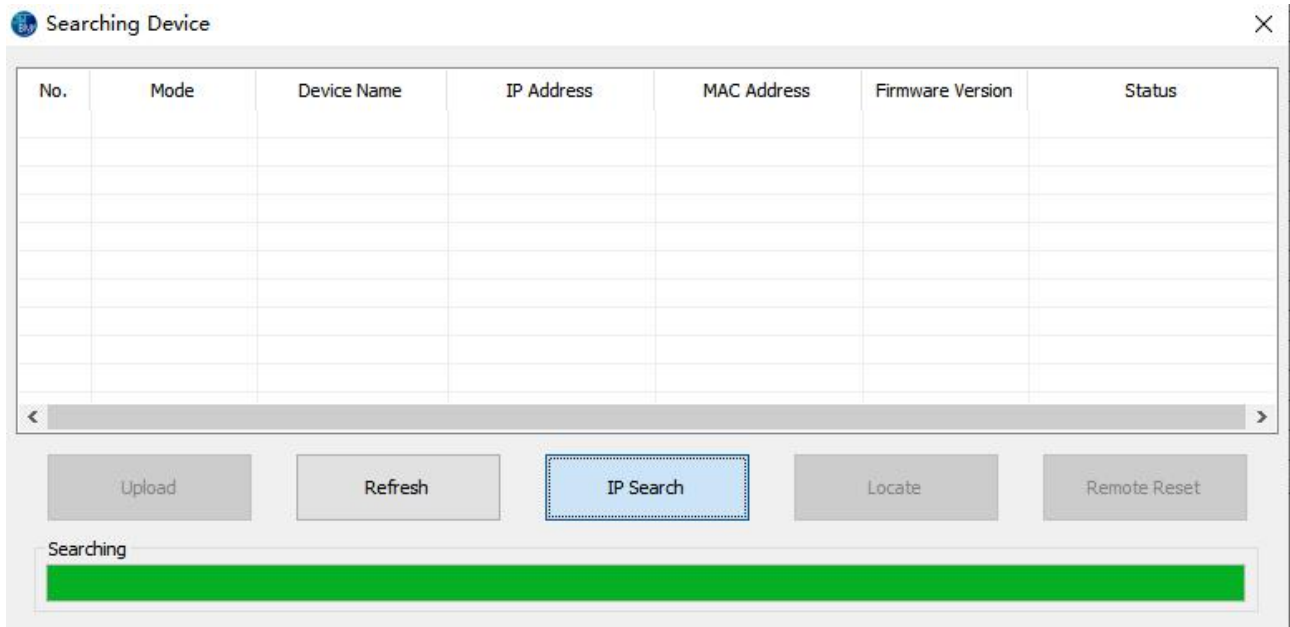
No.	Mode	Device Name	IP Address	MAC Address	Firmware Version	Status
1	GT200-BM-MT	Device 1	192.168.0.188	64-EA-C5-2B-00-58	1.4	Allow remote configurat

Upload
Refresh
IP Search
Locate
Remote Reset

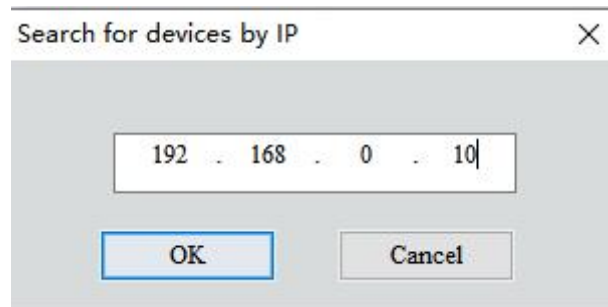
Searching

Method 2: IP Search

Click "IP Search" button of the main interface will pop up a dialog box, and user need to enter the IP address of the equipment.



Enter the correct IP address, the software will search the network for a GT200-BM-MT device with this IP address.

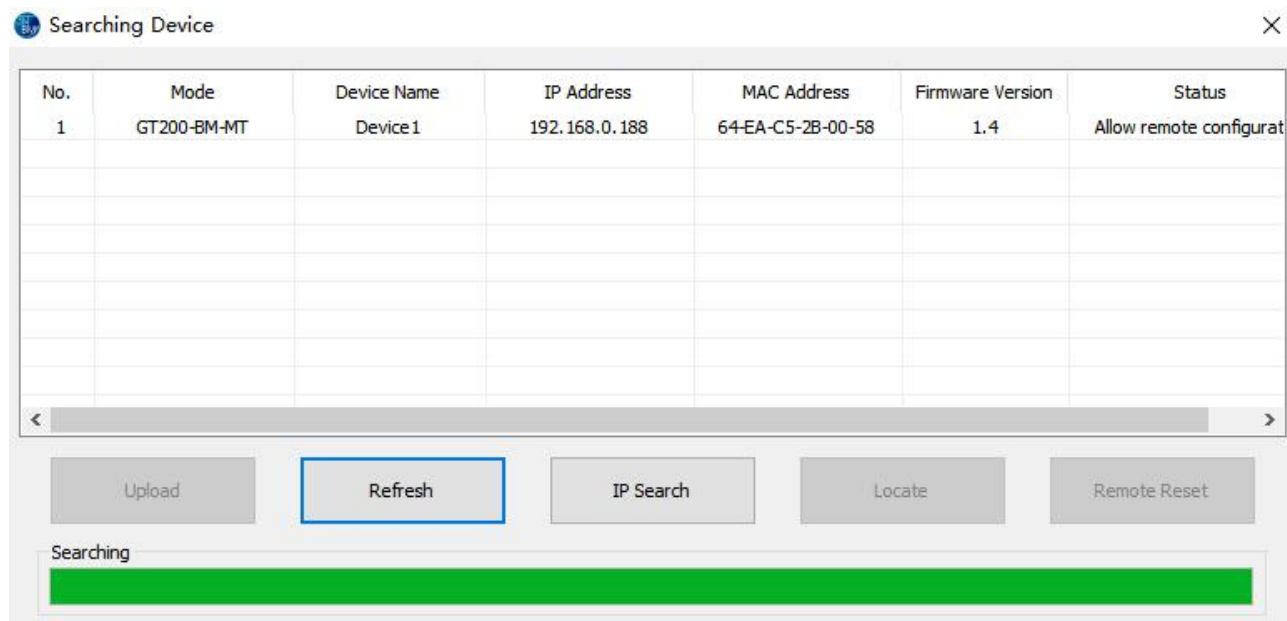


GT200-BM-MT

Modbus TCP/BACnet IP Gateway

User Manual

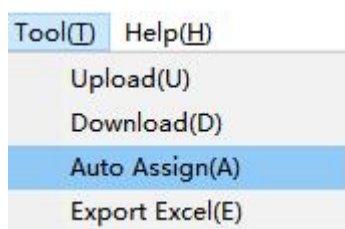
After finding the device, click OK, and list the information of the equipment in the main interface.



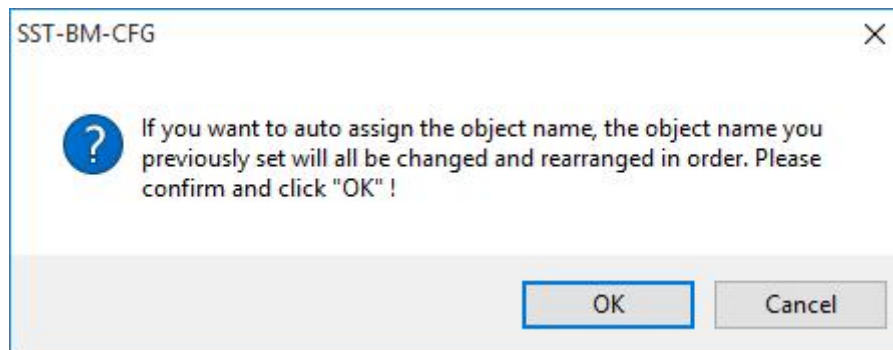
Note: If the users select the "IP search", users need to enter correct IP address. Otherwise, no devices will be found.

5.5.2 Auto Assign

The Auto Assign function automatically generates unique object names to prevent duplicate name errors during download.

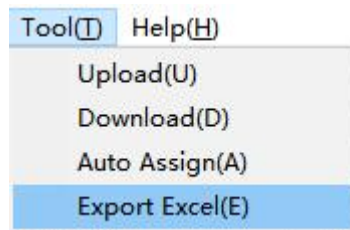


Click the "Auto Assign" button in the toolbar, and clicking OK, the object names will be automatically assigned.

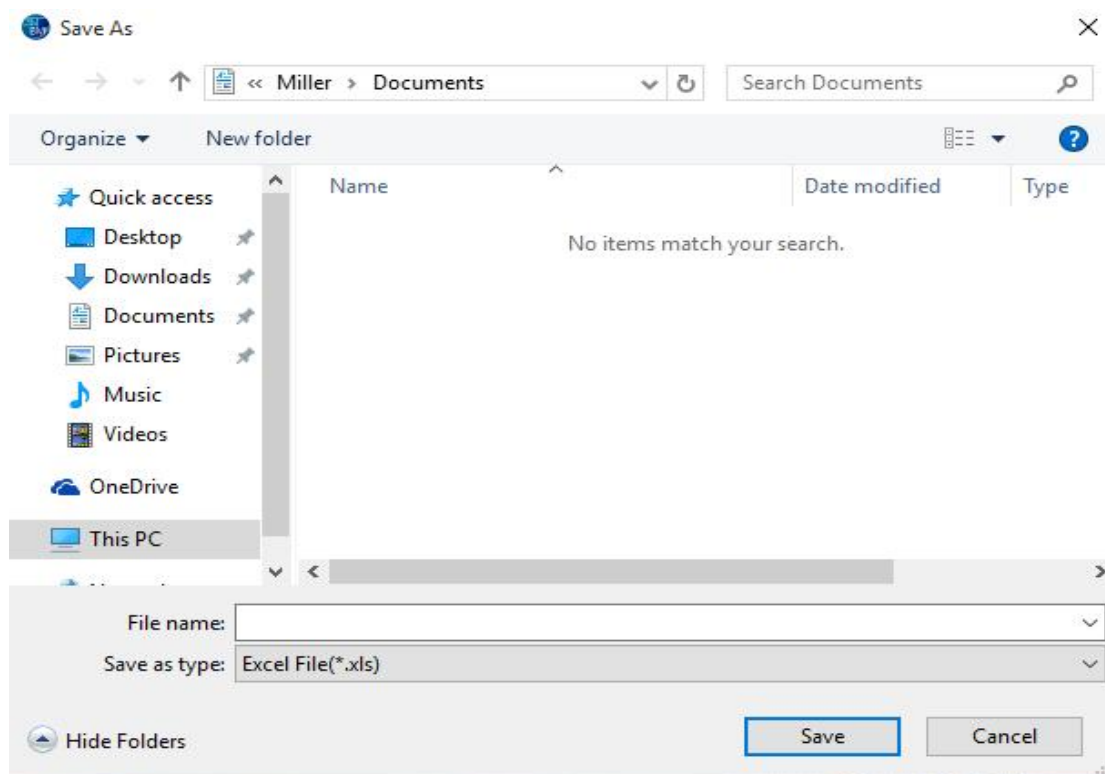


5.5.3 Export Excel

Excel document helps users to examine the configuration related. Save the configuration as excel document and choose the right path.

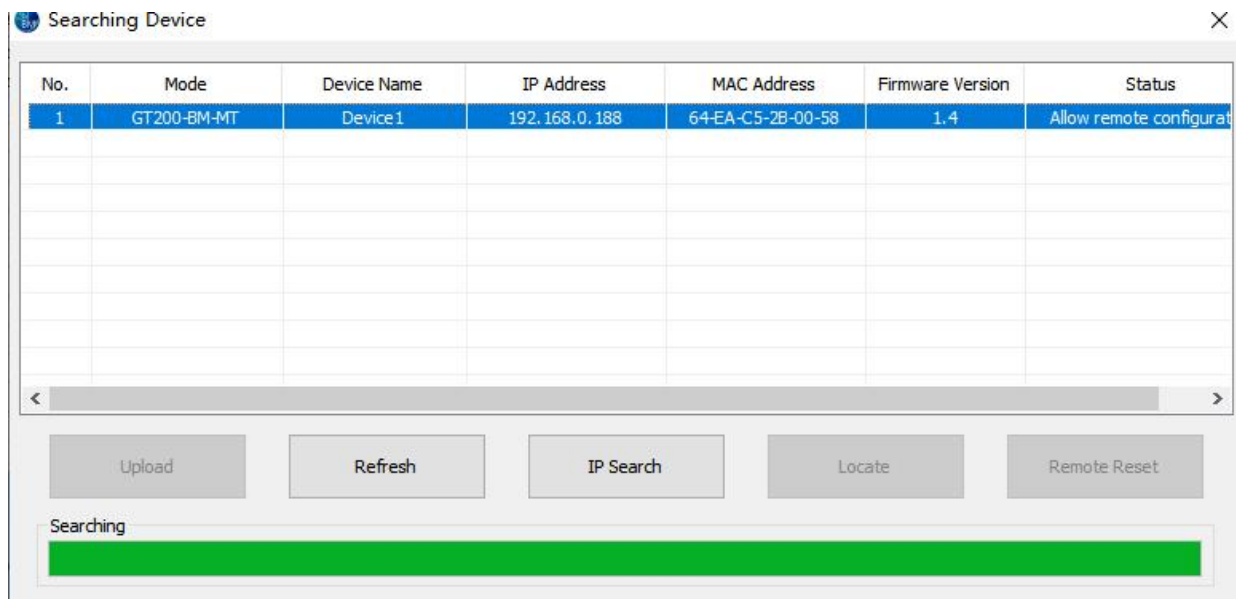


Click the "Export Excel" button, save the configuration as excel document and choose the right path.

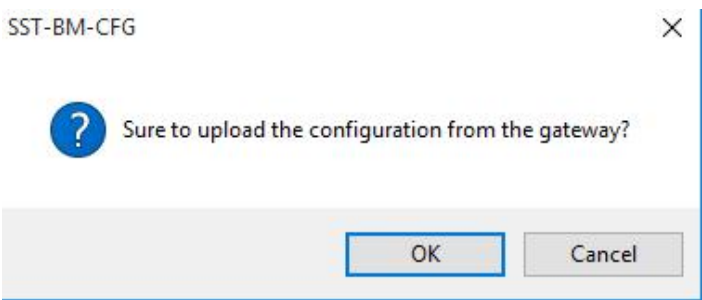


5.5.4 Upload Configuration

Click "Upload" from the toolbar or menu bar to upload the gateway configuration from the device to the software, and view the specific configuration information of the gateway.



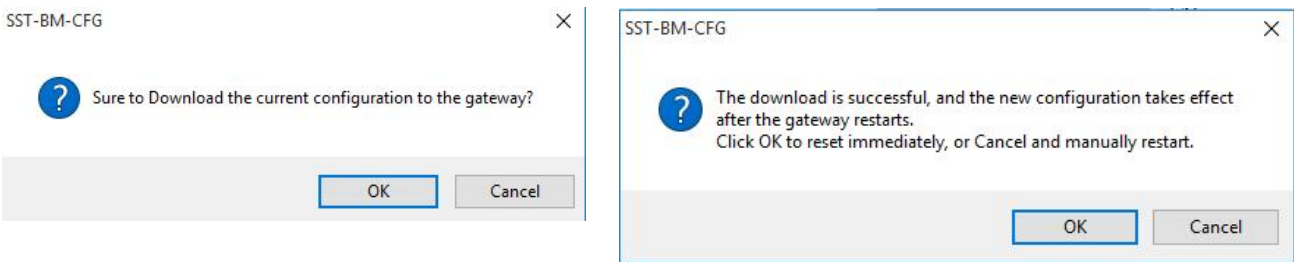
Select the device you want to configure and click "Upload". Gateway configuration will be uploaded to the software from the device. The pop-up window is as follows:



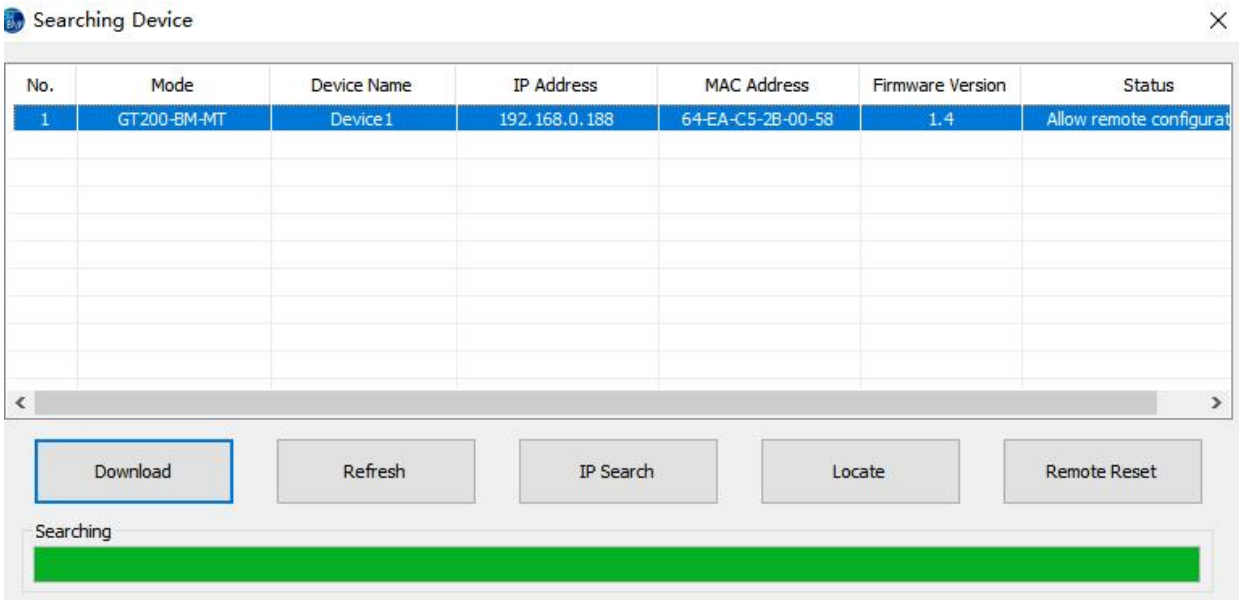
5.5.5 Download Configuration

Click "Download" from the toolbar or menu bar to download the gateway configuration from the software to the device.

Click "Download" and click OK, the gateway will automatically restart and the downloaded configuration will take effect.



Note: The default IP configuration method of the gateway is DHCP. After power-on or restart, the IP address is automatically obtained through DHCP, and the configuration software can search for the gateway device.



SST-BM-CFG



Notice! The current Assign IP Mode is DHCP, the IP address may change and cause the connection to be disconnected. Do you still need to use DHCP?

OK

Cancel

SST-BM-CFG



It has been configured to DHCP. When DHCP cannot obtain an IP address, the gateway IP address will be fixed to 192.168.0.10.

OK

Note: The network factory setting for GT200-BM-MT is DHCP. If DHCP fails, the gateway IP will revert back to 192.168.0.10.

5.5.6 Locate

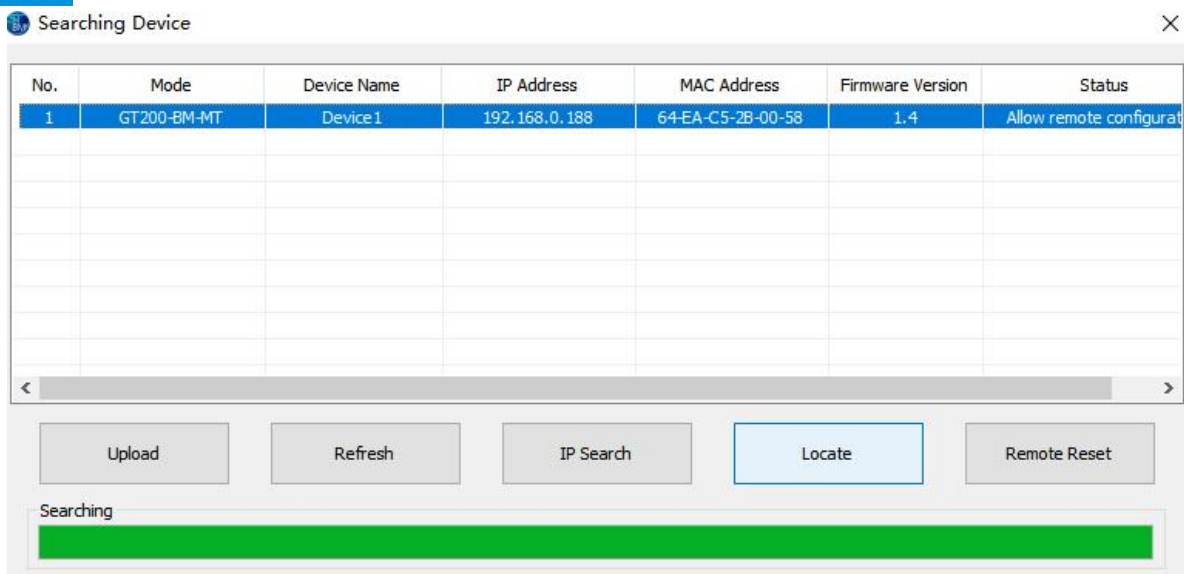
When users manage multiple GT200-BM-MT gateways, the "locate" function can be used to determine which device you are configuring.

Click the "Locate" button. If the device is on the network, its two orange indicators will blink alternately for a few seconds to help you visually identify it.

GT200-BM-MT

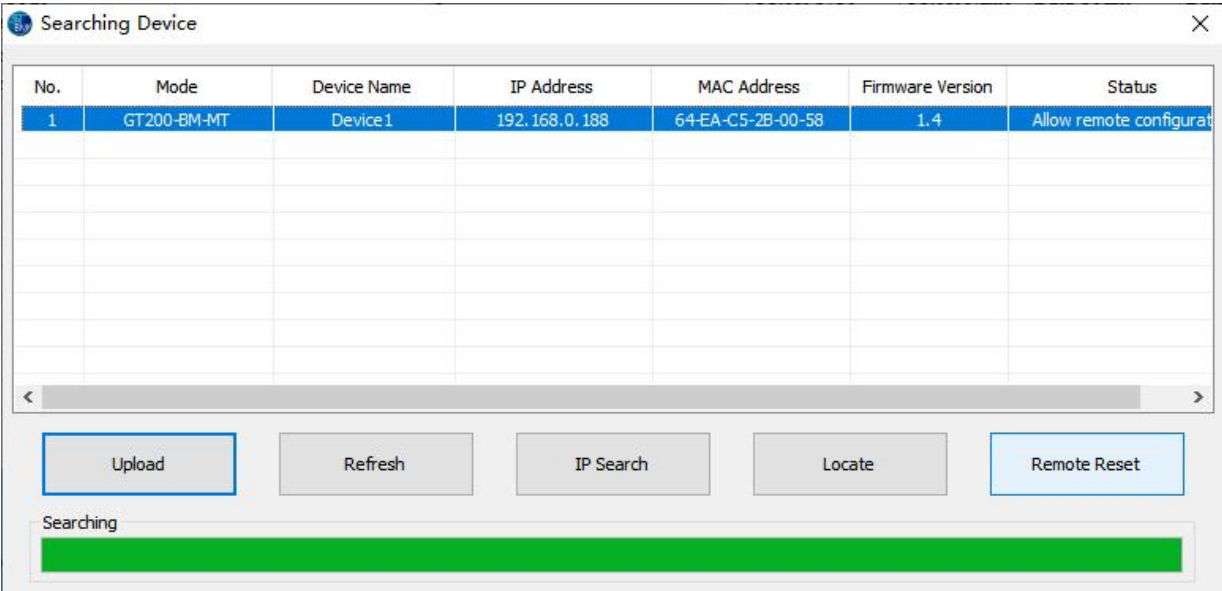
Modbus TCP/BACnet IP Gateway

User Manual



5.5.7 Remote Reset

The function of "remote reset" is restarting the selected device. Select the equipment in the list first, click "Remote reset" button, it will pop up a confirmation dialog, then click "OK" to complete the operation.

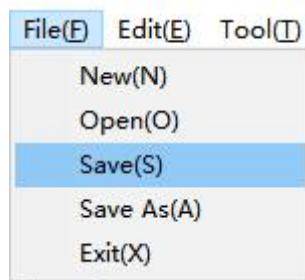




5.6 Save and Open Configuration

5.6.1 Save Configuration Project

Click the "Save" button on the menu bar or toolbar to save the configured project as .xml file.



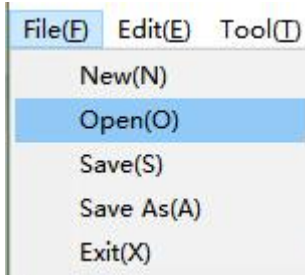
Menu bar



Toolbar

5.6.2 Open Configuration Project

Click the "Open" button on the menu bar or toolbar to open the saved.xml file.



Menu bar

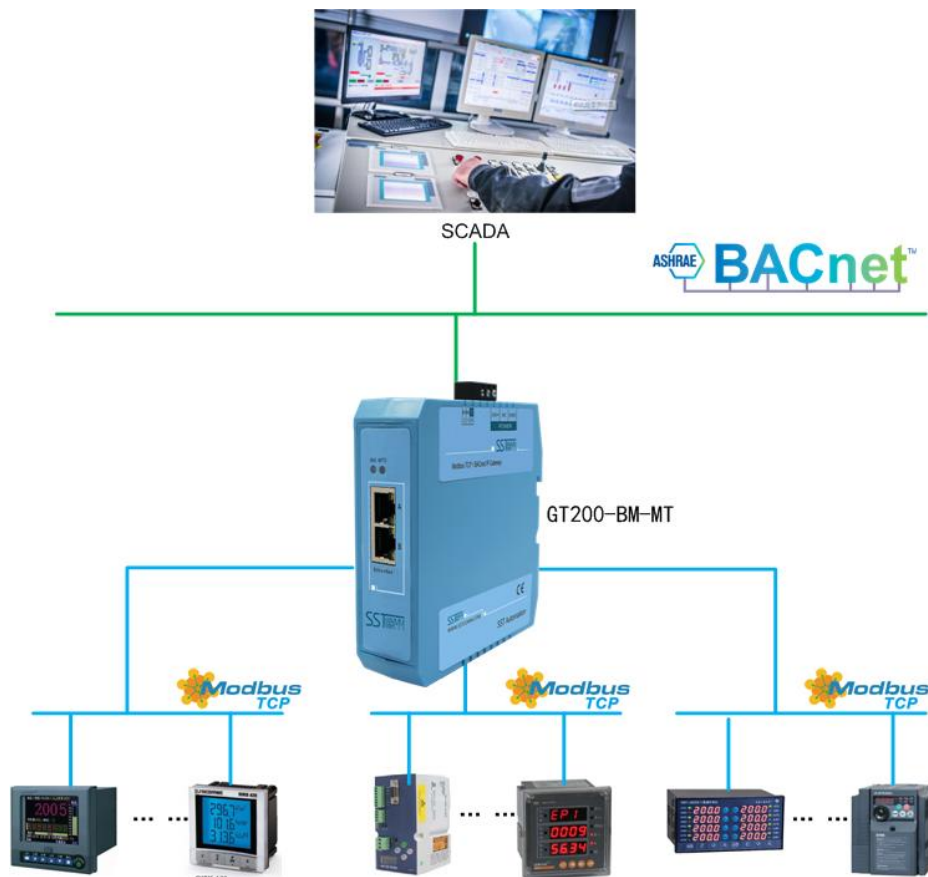


Toolbar

6 Typical Application

GT200-BM-MT gateway can connect Modbus TCP Server devices to BACnet/IP network. The GT200-BM-MT acts as a bridge, facilitating data exchange between BACnet/IP and Modbus TCP networks.

The following diagram illustrates a typical topology of a BACnet/IP Client connected to Modbus TCP Server.



In the diagram above, the multi-function energy meter features a Modbus TCP Server interface, the measurement of the current value is stored in the address 40001. In the SST-BM-CFG, configure the No.03 function code, start address is 0 (corresponds to the Modbus holding register 40001), and then the SST-BM-CFG will be automatically mapped to the BACnet object AnalogInput (analog input). On the BACnet master PC, the current value can be observed through corresponding AnalogInput.