

Ethernet/CAN Gateway GT200-MT-CA

User Manual

V3.1



SST Automation

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Important Information

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Technical Support

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Safety Information

Read this section carefully before installing or operating the GT200-MT-CA gateway.

NOTICE: WARNING — General Safety: This product must be installed and maintained by qualified personnel familiar with industrial automation equipment. Read the entire user manual before installation, configuration, or operation. Disconnect all power sources before wiring or performing maintenance. Failure to follow these instructions may result in equipment damage, personal injury, or voiding of the warranty.

NOTICE: CAUTION — Electrical Safety: The GT200-MT-CA gateway operates on 24V DC power only. Do not connect to AC mains or any voltage exceeding the rated specification. Ensure correct polarity when connecting the power supply: 24V+ → positive terminal; GND → ground terminal; NC → no connection (spare). Use a regulated 24V DC power supply with adequate current rating. An unstable or under-rated power supply may cause erratic operation or damage. The gateway does NOT include a power switch. Install an external disconnect device (circuit breaker or switch) within easy reach. Do not operate the device if the power cable or connector is damaged.

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NOTICE: CAUTION — Installation Safety: Mount the gateway on a standard 35 mm DIN rail in a clean, dry, and well-ventilated environment. Ensure adequate airflow around the device. Do not block ventilation openings. Operating humidity: 5% to 95% RH (non-condensing). Operating temperature: -40 °C to 70 °C (-40 °F to 158 °F). Avoid installation near heat sources or in direct sunlight. Secure all cables to prevent accidental disconnection and strain on connectors. Do not install the device in explosive atmospheres or corrosive environments.

NOTICE: CAUTION — Operation Safety: Do not connect or disconnect cables or power while the gateway is in operation (hot-plugging may cause data loss or damage). Ensure the device is properly grounded to prevent electrical noise and surge damage. In areas prone to lightning or power surges, install external surge protection devices. During firmware updates or configuration downloads, do not power off the device. Interrupting power during these operations may cause permanent damage.

NOTICE: CAUTION — Electrostatic Discharge (ESD): The GT200-MT-CA contains static-sensitive electronic components. Before handling the device, discharge any accumulated static electricity by touching a grounded metal surface. Handle the device by its enclosure edges only. Avoid touching exposed connectors or circuit boards. Store and transport the device in anti-static packaging when not installed.

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1 Product Overview

1.1 Product Function

The gateway enables monitoring of CAN network data via Modbus TCP, TCP Server, TCP Client, and UDP protocols.

1.2 Technical Specifications

[1] Modbus TCP/CAN

➤ Ethernet Side

- ① Two adaptive Ethernet ports, supporting half-duplex and full-duplex modes.
- ② Supports Modbus TCP protocol, as server (Modbus TCP Server).
- ③ supports Function Codes 03, 04, 06, and 16.
- ④ Supports manual IP assignment and DHCP. The default IP address is 192.168.0.10, which is automatically assigned after DHCP times out (30 s).

➤ CAN Side

- ① Supports CAN 2.0A and CAN 2.0B.
- ② CAN Baud rate supports 1 Mbps, 500 kbps, 250 kbps, 125 kbps, 100 kbps, 50 kbps, 20 kbps, 10 kbps.

➤ Basic Mode

- ① Input register start address is 0, supports 04 function code.
- ② Output register start address is 0, supports 03, 06, 16 function codes.
- ③ Every 8 registers (16 bytes) constitute one CAN frame.
- ④ Each Modbus TCP command packet contains up to 15 CAN frames.
- ⑤ The send buffer can cache up to 300 CAN frames (in the non-periodic transmission mode) and 50
- ⑥ CAN frames (in the periodic transmission mode). The receive buffer can cache up to 150 frames.

➤ Advanced Mode

- ① Supports Consumer Frames, Producer Frames, and Query & Response Frames
- ② The maximum number of data input/output is 512 bytes.
- ③ The send buffer can cache up to 300 CAN frames.
- ④ The receive buffer can cache up to 150 frames.
- ⑤ The starting address of the input register (input data) can be set, range: 0-65023.
- ⑥ The starting address of the output register (output data) can be set, range: 0-65023.
- ⑦ The cycle for Producer transmission, range: 0-60000ms. A value of zero enables change-of-value output.
- ⑧ The response timeout setting for Query/Response frames, range is 0-60000ms and the default value is 100ms.
- ⑨ The Polling Delay Time for Query/Response frames, range is 0-60000ms and the default value is 10s.
- ⑩ Query/Response request command type: Change of Value, Cyclic.

- ⑪ The Error Process for Query/Response frames: Clear, Hold.
- ⑫ Clear Timeout(ms): Range: 0 - 60000ms, If this parameter is 0, the gateway will not clear the

corresponding data buffer.

[2] TCP Server/CAN

➤ Ethernet Side

- ⑦ Two adaptive Ethernet ports, half-duplex, full-duplex.
- ⑧ Supports TCP protocol, as a TCP Server.
- ⑨ Supports up to 4 client connections.
- ⑩ Supports forwarding CAN frame data to 4 TCP Clients and CAN frame data from 4 clients.
- ⑪ The gateway can cache up to 200 CAN frames from TCP Clients.
- ⑫ Supports static IP address configuration (manual allocation) and DHCP automatically assigns an IP address.
- ⑬ Supports local port configuration.
- ⑭ Supports keep-alive for automatic detection of TCP connection status.

➤ CAN Side

- ⑬ Supports CAN 2.0A and CAN 2.0B.
- ⑭ CAN Baud rate supports 1 Mbps, 500 kbps, 250 kbps, 125 kbps, 100 kbps, 50 kbps, 20 kbps, 10 kbps.
- ⑮ The gateway can cache up to 150 CAN frames from CAN devices.
- ⑯ Supports timestamp (requires configuration).
- ⑰ Supports configuring Ethernet packets containing CAN frames.
- ⑱ Supports configuring waiting time between Ethernet packets.
- ⑲ Supports remote requests.

[3] TCP Client/CAN

➤ Ethernet Side

- ① Two adaptive Ethernet ports, half-duplex, full-duplex.
- ② Supports TCP protocol, as a TCP Client.
- ③ Continuously attempts to connect to the server until a connection is established.
- ④ The gateway can cache up to 200 CAN frames from the TCP Server.
- ⑤ Supports static IP address configuration (manual allocation) and DHCP automatically assigns IP

addresses.

- ⑥ Supports local port configuration.
- ⑦ Supports keep-alive, automatic detection of TCP connection.
- ⑧ Supports visiting remote UDP device (IP address and port number).

➤ CAN Side

- ① Supports CAN 2.0A and CAN 2.0B.
- ② CAN Baud rate supports 1 Mbps, 500 kbps, 250 kbps, 125 kbps, 100 kbps, 50 kbps, 20 kbps, 10 kbps.
- ③ The gateway can cache up to 150 CAN frames from CAN devices.
- ④ Supports timestamp (requires configuration).

- ⑤ Supports configuring CAN frames number per Ethernet packet.
- ⑥ Supports configuring waiting time between Ethernet packets.
- ⑦ Supports remote requests.

[4] UDP/CAN

➤ Ethernet Side

- ① Two adaptive Ethernet ports, supporting half-duplex and full-duplex modes.
- ② Supports UDP protocol.
- ③ Forwards data between CAN and Ethernet networks.
- ④ Supports static IP address configuration (manual allocation) and DHCP automatically assigns an IP address.
- ⑤ Supports local port configuration.
- ⑥ Supports visiting remote UDP device (IP address and port number).

➤ CAN Side

- ① Supports CAN 2.0A and CAN 2.0B.
- ② CAN Baud rate supports 1 Mbps, 500 kbps, 250 kbps, 125 kbps, 100 kbps, 50 kbps, 20 kbps, 10 kbps.
- ③ Supports timestamp (requires configuration).
- ④ Supports configuring CAN frames number per Ethernet packet.
- ⑤ Supports configuring waiting time between Ethernet packets.
- ⑥ Supports remote requests.

[5] Power: 24 VDC (9-30 VDC), 80 mA (24 VDC).

[6] Operating temperature: -40°F-158°F (-40°C-70°C). Humidity: 5%-95% (non-condensing).

[7] Dimensions (W*H*D): 1.0 in * 4.0 in * 3.6 in (25 mm * 100 mm * 90 mm).

[8] Installation: 35 mm DIN rail.

Class of pollution: ≤ Level 3.

1.3 Related Products

The related products include: GT200-EI-CA, GT200-EI-CO, GT200-PN-CO, GT200-MT-CO etc.

To get more information about these products, please visit SST Automation's website: www.sstautomation.com.

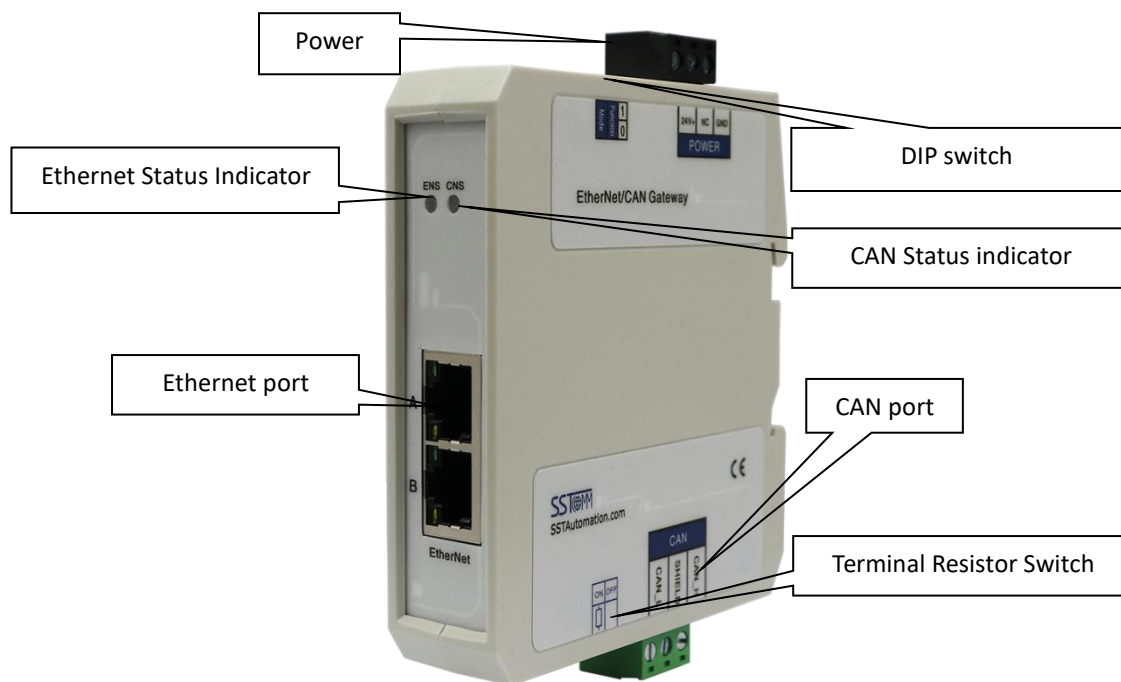


1.4 Revision History

Revision	Date	Chapter	Description
V3.1	8/2/2026	ALL	Optimize document descriptions and add new chapters
V3.0	6/28/2024	PART	Modify the CAN Interface from 5 pin to 3pin
V1.7	1/30/2024	PART	Add CAN ID filtering function in the Modbus TCP Server mode
V1.2, Rev A	1/30/2022	PART	Added support for 06 function code
V1.0, Rev A	12/28/2021	ALL	Update the format Modified Chapter 4.2

2 Hardware Descriptions

2.1 Product Appearance



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

2.2 Indicators

2.2.1 Modbus TCP

The indicator light states are shown in the table below:

Indicators	Status	Descriptions
ENS (Ethernet status indicator)	Green	Modbus TCP connection has been established.
	Green blinking	Modbus TCP connection has not been established.
	Red	DHCP status
	Red blinking three times	Modbus TCP connection has been lost.
CNS	Red	CAN network error
	Green	CAN network normal
ENS (Orange) and CNS (Orange) (Orange: Red and green are on at the same time)	Blinking alternately	Configuration Mode
ENS (red), CNS (red)	Blinking three times	Using locate function

Configuration Mode: After power-on, the ENS and CNS orange indicators blink alternately, indicating the gateway is in configuration mode.

Run Mode: After power-on, ENS and CNS orange indicators illuminate simultaneously for about 100ms (initialization), ENS red light blinks briefly before switching to green blinking, the CNS turns solid green. It indicates Modbus TCP connection has not been established, while the CAN network is normal. When the Modbus TCP connection is established, ENS and CNS green lights remain on.

2.2.2 TCP Server

The indicator light is shown as the following table:

Indicators	Status	Descriptions
ENS (Ethernet status indicator)	Green	At least one Client connection has been established.
	Green blinking	Connection has not been established.
	Red	DHCP status
	Red blinking three times	When multiple client connections exist and one disconnects, the red indicator blinks three times. (The last Client disconnected, indicated by green light flashing)
CNS	Red	CAN network error
	Green	CAN network normal
ENS (Orange) and CNS (Orange) (Orange: Red and green indicators illuminate simultaneously)	Blinking alternately	Configuration Mode
ENS red, CNS red	Blinking three times	Using locate function

Configuration Mode: After power-on, the ENS and CNS orange indicators illuminate simultaneously, and then blinks alternately, indicating that the gateway is in the state of configuration.

Run Mode: After power-on, ENS and CNS orange indicators illuminate simultaneously, and then the ENS red indicator blinks briefly, then switches to green blinking, the CNS turns solid green. It indicates TCP Server connection has not been established, while the CAN network is normal. When the Client connection has been established, the ENS and CNS indicators are solid green.

2.2.3 TCP Client

The indicator light shows the following table:

Indicators	Status	Descriptions
ENS (Ethernet status indicator)	Green	Connection with the server has been established.
	Green blinking	Connection with the server has not been established.
	Red on	DHCP status
CNS	Red blinking three times	CAN network error
	Green	CAN network normal
ENS (Orange) and CNS (Orange) (Orange: Red and green indicators illuminate simultaneously)	Blinking alternately	Configuration Mode
ENS (red), CNS (red)	Blinking three times	Using locate function

Configuration Mode: After power-on, the ENS and CNS orange indicators illuminate, and then blinks alternately, indicating that the gateway is in configuration mode.

Run Mode: After power-on, ENS and CNS orange indicators illuminate simultaneously, the ENS red indicator blinks briefly, then switches to green blinking, CNS turns to green on. It indicates TCP Client connection has not been established, while the CAN network is normal. When the Client has successfully connected to the Server, the ENS and CNS indicators are solid green.

2.2.4 UDP

The indicator description is shown in the following table:

Indicators	Status	Descriptions
ENS (Ethernet status indicator)	Green	UDP normal
	Red	DHCP status
CNS	Red	CAN network error
	Green	CAN network normal
ENS (Orange) and CNS (Orange) (Orange: Red and green indicators illuminate simultaneously)	Blinking alternately	Configuration Mode

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Indicators	Status	Descriptions
ENS (red), CNS (red)	Blinking three times	Using locate function

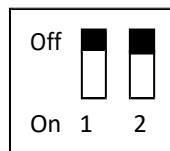
Configuration Mode: After power-on, ENS and CNS orange indicators illuminate simultaneously, and then begin blinking alternately, indicating that the gateway is in configuration mode.

Run Mode: After power-on, ENS and CNS orange indicators illuminate simultaneously, and then become green. It indicates UDP initialization is complete, while the CAN network is normal.

2.3 DIP Switch

Two modes: The run mode and configuration mode.

Usage: DIP switch is located below the product, bit 2 is mode bit. bit 1 is the function bit.



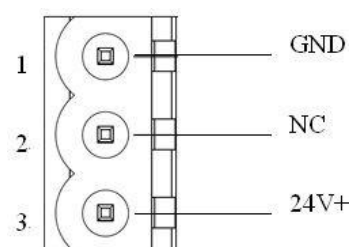
Mode (bit 2)	Function (bit 1)	Description
OFF	OFF	Run mode: allowing reading and writing of configuration data.
OFF	ON	Run mode: Only performs data exchange; configuration is not
ON	OFF	Configuration mode: IP address is 192.168.0.10 (fixed). Only allows configuration upload/download.
ON	ON	Reserved

Notes: After changing the DIP switch settings, you must restart the gateway GT200-MT-CA (power off and power on) for the configuration to take effect. After configuration is done, it is recommended to set the DIP switch to "2(OFF)1(ON)" (Run mode: Only performs data exchange; configuration is not allowed).

2.4 Interface

2.4.1 Power Interface

Pin	Function
1	Power GND
2	NC (Not connected)
3	24V+ DC



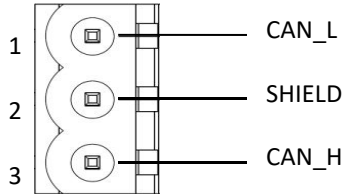
GT200-MT-CA

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2.4.2 CAN Interface

CAN Side connector:



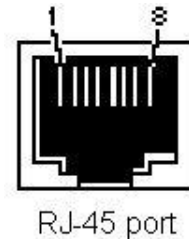
Pin	Wiring
Pin 1	CAN_L
Pin 2	SHIELD
Pin 3	CAN_H

Notes: On this gateway, the optional connection terminal is reserved (not used). Both CAN-L and CAN-H must be properly connected. There is a 120ohm terminating resistor toggle switch next to the terminal, when the switch is on, the terminating resistor is connected. When the switch is off, the terminating resistor is disconnected.

2.4.3 Ethernet Interface

The Ethernet interface uses an RJ45 connector and complies with the IEEE 802.3u 100BASE-T standard. Its pins (standard Ethernet signals) are defined as follows:

Pin	Description
S1	TXD+, Transmit Data+
S2	TXD-, Transmit Data-
S3	RXD+, Receive Data+
S6	RXD-, Receive Data-
S4,5,7,8	Reserved

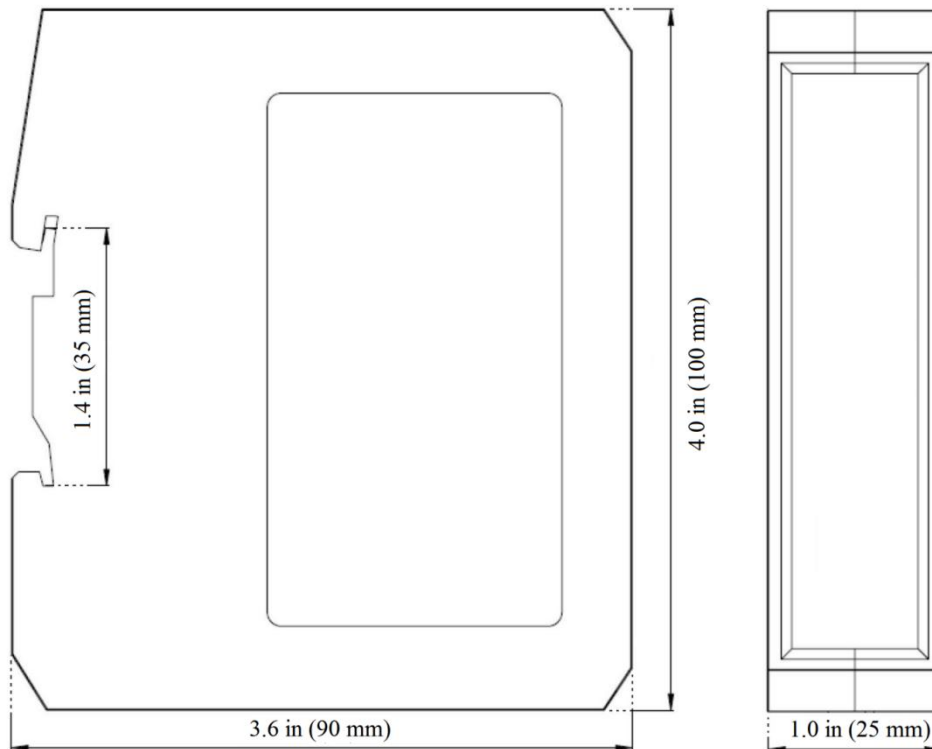


3 Hardware Installation

3.1 Mechanical Dimensions

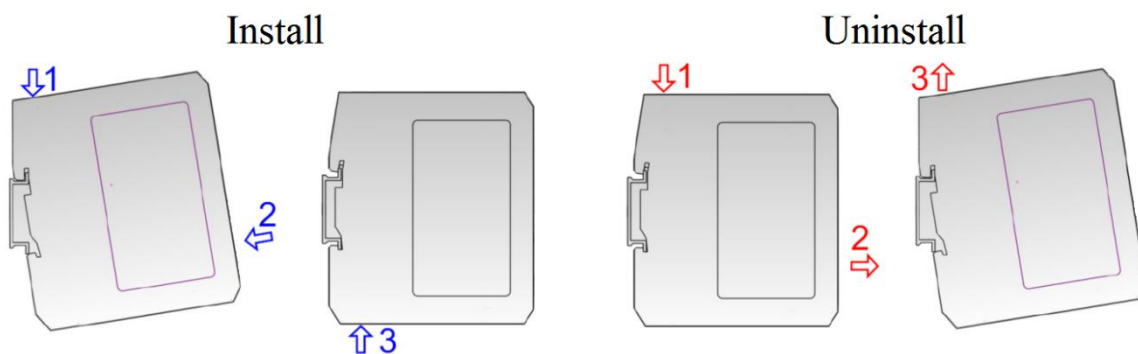
Size (width * height * depth):

1.0 in * 4.0 in * 3.6 in (25 mm * 100 mm * 90 mm)



3.2 Installation Method

Mounts on a 35 mm DIN rail.

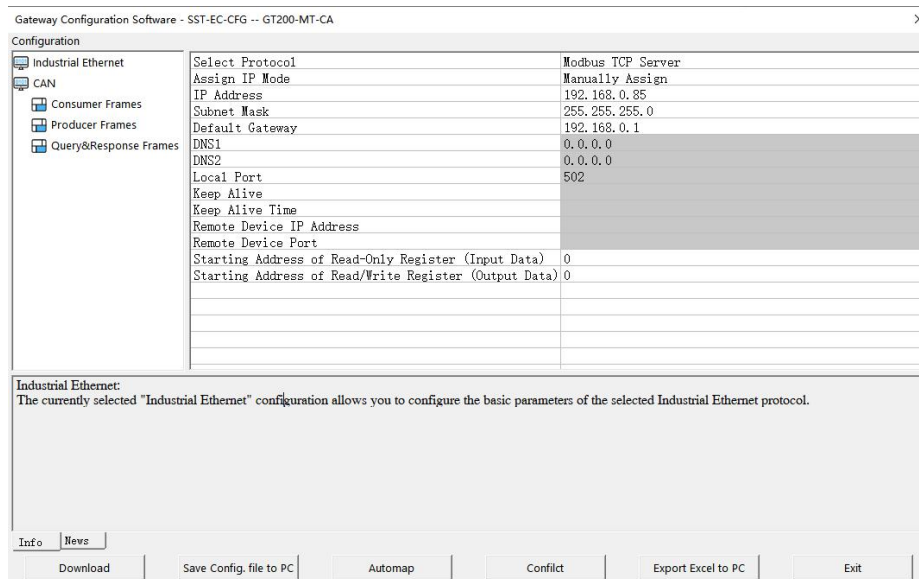


GT200-MT-CA

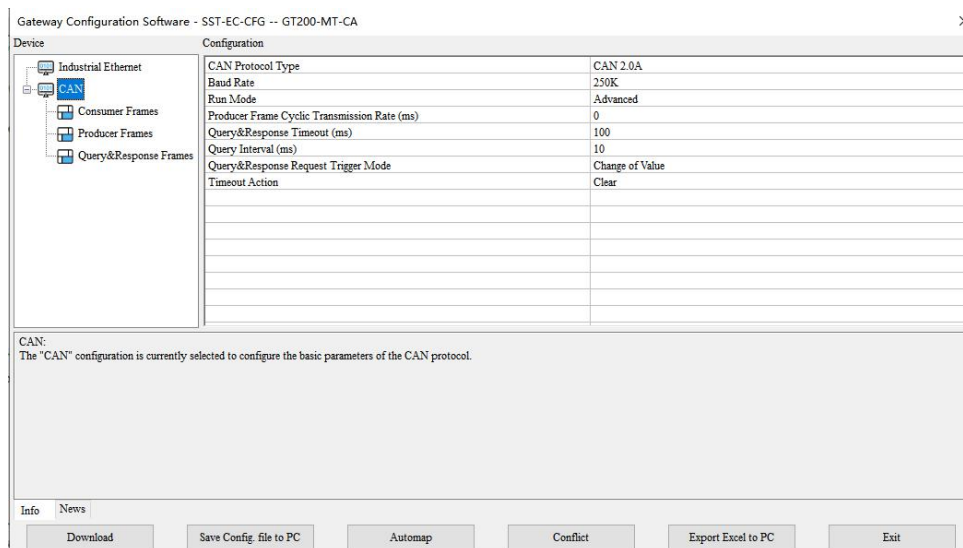
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are displayed as follows:



4. Click "Industrial Ethernet" in the tree view on the left, in the "Select Protocol" item, you can select Modbus TCP Server, TCP Server, TCP Client, or UDP. Configure the gateway IP address and other parameters as required.
5. Click the "CAN" on the left, configure the parameters as below:



Note: Depending on the selected protocol, the CAN interface offers different configuration parameters.

6. Click the "download" button, select the gateway you want to download to and click "OK".
7. Set the DIP switch to "2(OFF) , 1(OFF)" (Run mode) and restart the gateway. The new configuration will take effect after restart.

Tips: You can click the ["Remote Reset"](#) button to restart the gateway. Alternatively, power cycle the gateway.

5 Software Instructions

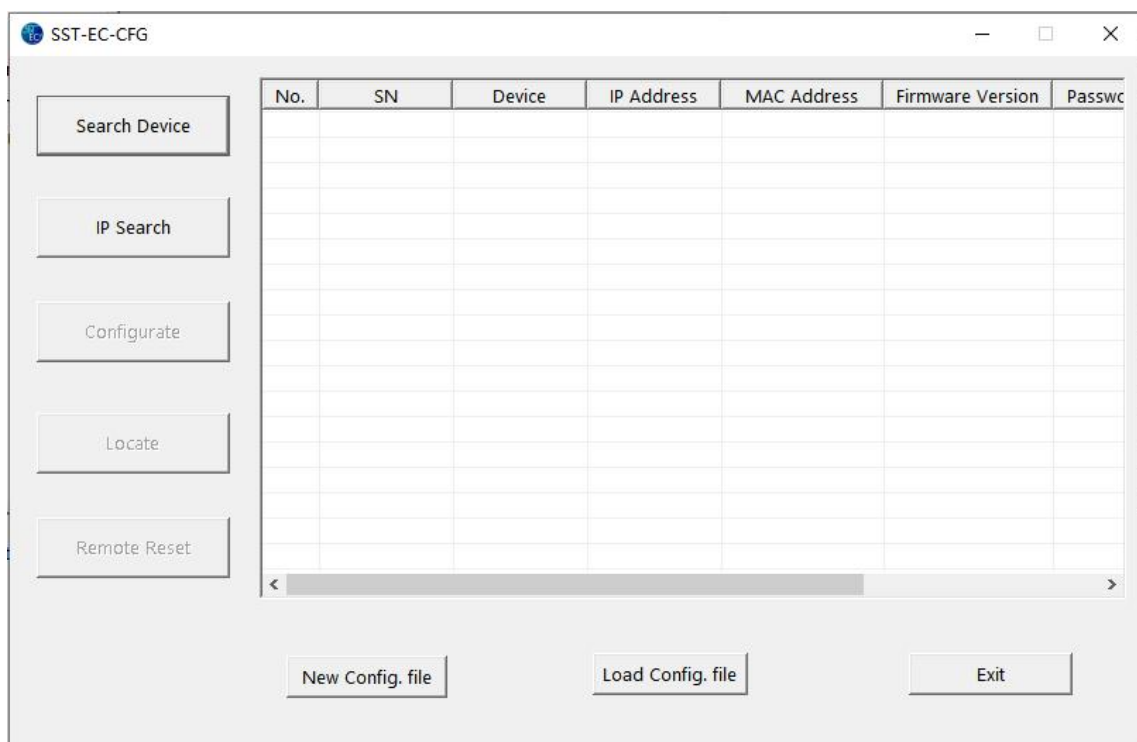
5.1 Precautions

1. The default network setting for the GT200-MT-CA is DHCP. If DHCP fails, the gateway IP address will revert to 192.168.0.10 after 30 seconds. Please check whether the computer and gateway are on the same network segment.
2. Open the configuration software SST-EC-CFG, search for the current gateway, and set the IP assignment mode to Manual.

5.2 Software Functions

5.2.1 Search Interface

Double-click “SST-EC-CFG” to access the main interface:

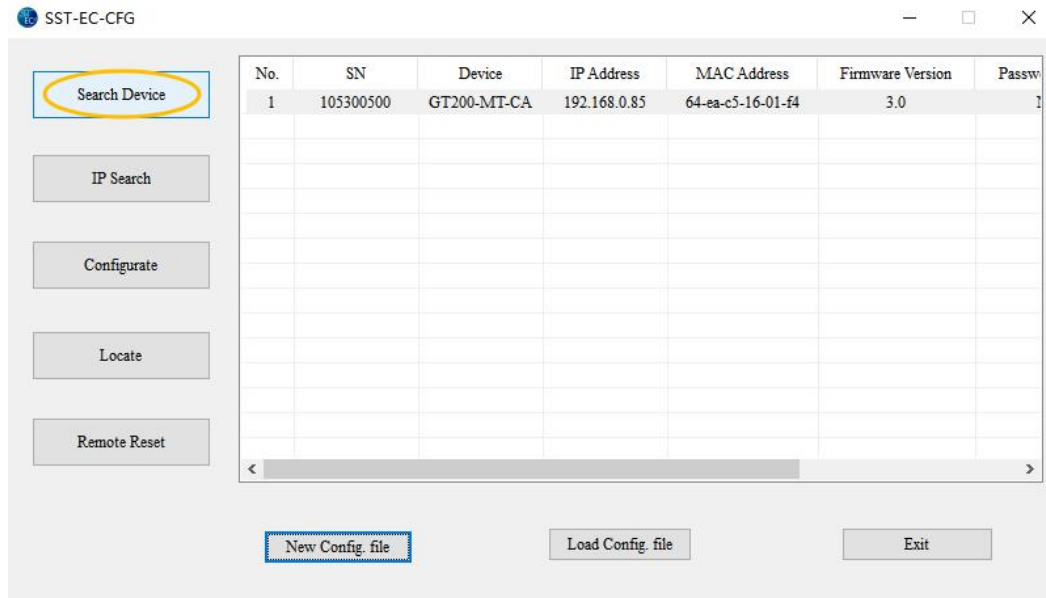


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5.2.2 Search Device

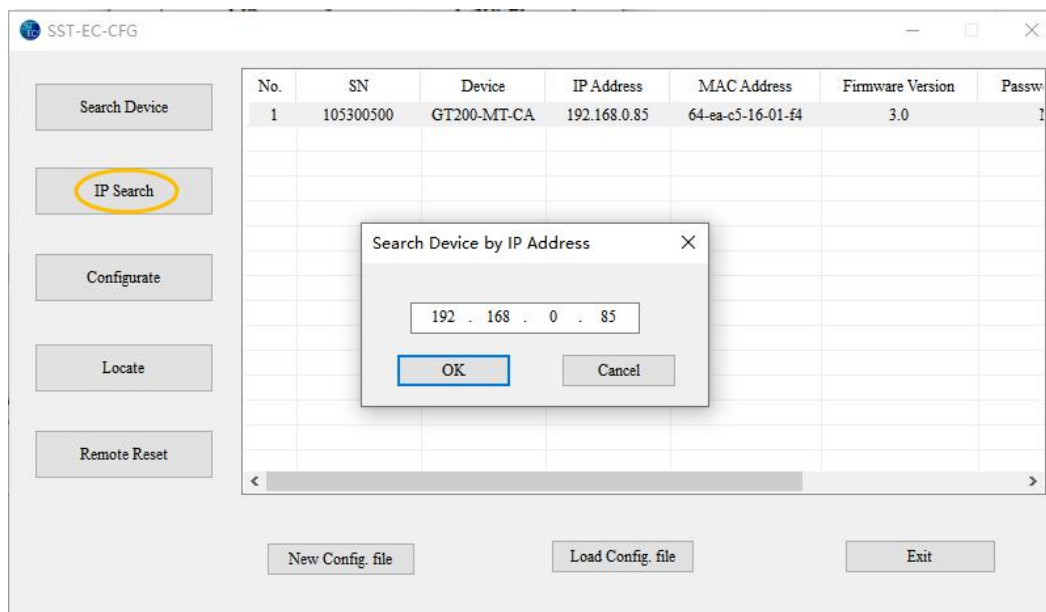
Click “Search Device” you can search all devices on the network.



Select a device in the list, then the “Configure”, “Locate” and “Remote Reset” become available, otherwise disabled.

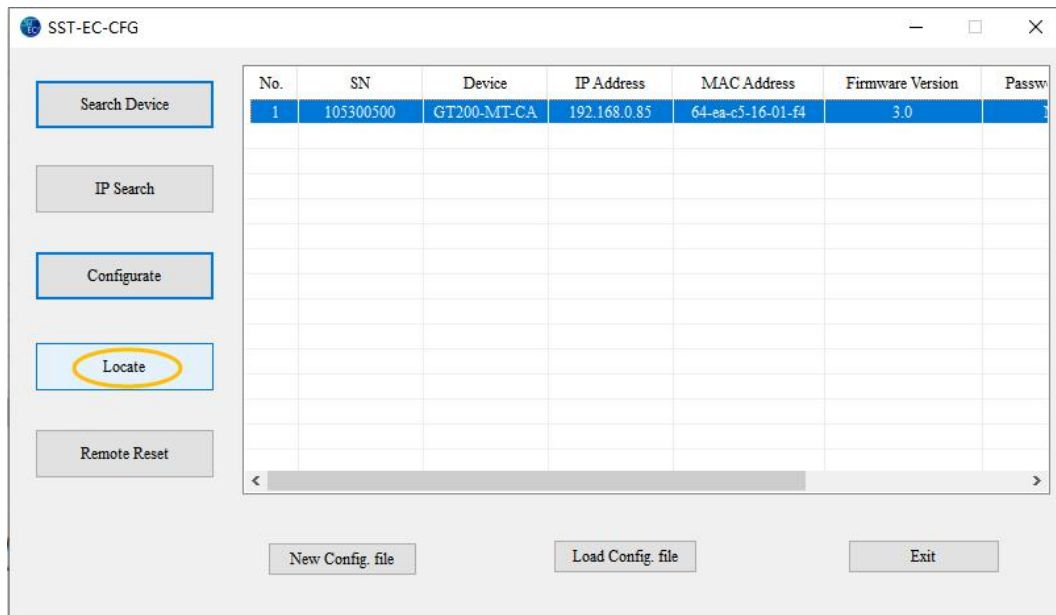
5.2.3 IP Search

“IP Search” can search specified device by IP address, thereby configure this device. Only the device matching the specified IP address will be listed.



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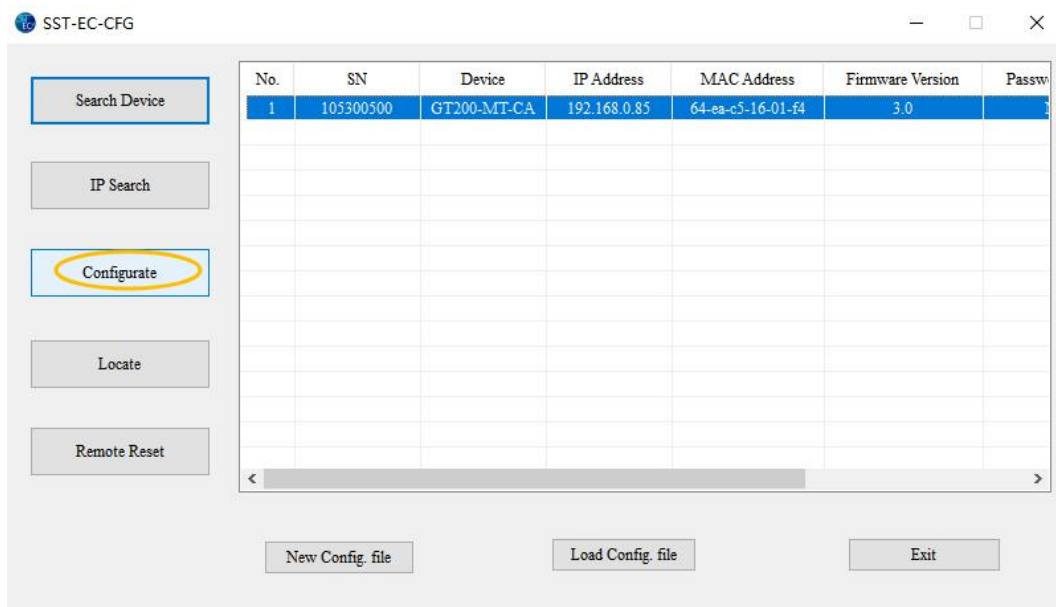
5.2.4 Locate



When selecting a device, the Locate function is available; otherwise, it is disabled. Click “Locate”, then ENS and CNS red indicators will blink three times to locate the currently selected GT200-MT-CA device.

5.2.5 Configure

Click the “Configure” button or double-click the selected device. The configuration window opens as shown below:



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5.2.6 Configure Industrial Ethernet

Gateway Configuration Software - SST-EC-CFG -- GT200-MT-CA

Configuration

Industrial Ethernet

CAN

Consumer Frames

Producer Frames

Query&Response Frames

Select Protocol	Modbus TCP Server
Assign IP Mode	Manually Assign
IP Address	192.168.0.85
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
DNS1	0.0.0.0
DNS2	0.0.0.0
Local Port	502
Keep Alive	
Keep Alive Time	
Remote Device IP Address	
Remote Device Port	
Starting Address of Read-Only Register (Input Data)	0
Starting Address of Read/Write Register (Output Data)	0

Industrial Ethernet:
The currently selected "Industrial Ethernet" configuration allows you to configure the basic parameters of the selected Industrial Ethernet protocol.

Info News

Download Save Config. file to PC Automap Conflict Export Excel to PC Exit

Ethernet Interface protocol type: Modbus TCP Server, TCP Server, TCP Client, UDP.

Gateway Configuration Software - SST-EC-CFG -- GT200-MT-CA

Configuration

Industrial Ethernet

CAN

Consumer Frames

Producer Frames

Query&Response Frames

Select Protocol	Modbus TCP Server
Assign IP Mode	Manually Assign
IP Address	192.168.0.85
Subnet Mask	255.255.255.0
Default Gateway	192.168.0.1
DNS1	0.0.0.0
DNS2	0.0.0.0
Local Port	502
Keep Alive	
Keep Alive Time	
Remote Device IP Address	
Remote Device Port	
Starting Address of Read-Only Register (Input Data)	0
Starting Address of Read/Write Register (Output Data)	0

Industrial Ethernet:
The currently selected "Industrial Ethernet" configuration allows you to configure the basic parameters of the selected Industrial Ethernet protocol.

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Configure the parameters as follows:

Select Protocol:Modbus TCP Server, TCP Server, TCP Client, UDP.

IP Assignment Mode: Manual or DHCP.

IP Address: Set the IP address of the device.

Subnet Mask: Set the subnet mask of the device.

Gateway Address: Set the gateway address of the device.

DNS1: Primary DNS server (optional in LAN environments).

DNS2: Secondary domain name server.

Local Port: The network port used by GT200-MT-CA. Range: 1-65535.

Modbus TCP Server Port: Default 502.

Keep Alive: When enabled, a Keep-Alive message is sent after the TCP connection idle time reaches the configured keep-alive interval. When Keep Alive is set to Disable, the TCP connection will be actively disconnected (valid in TCP mode).

Keep Alive Time: The interval at which TCP verifies the connection. Range: 1-60000s. The default value is 6s.

Remote Device IP Address: IP address of the remote device to which the GT200-MT-CA connects.

Remote Device Port: The access port of the remote device that GT200-MT-CA connects with. Range: 0-65535.

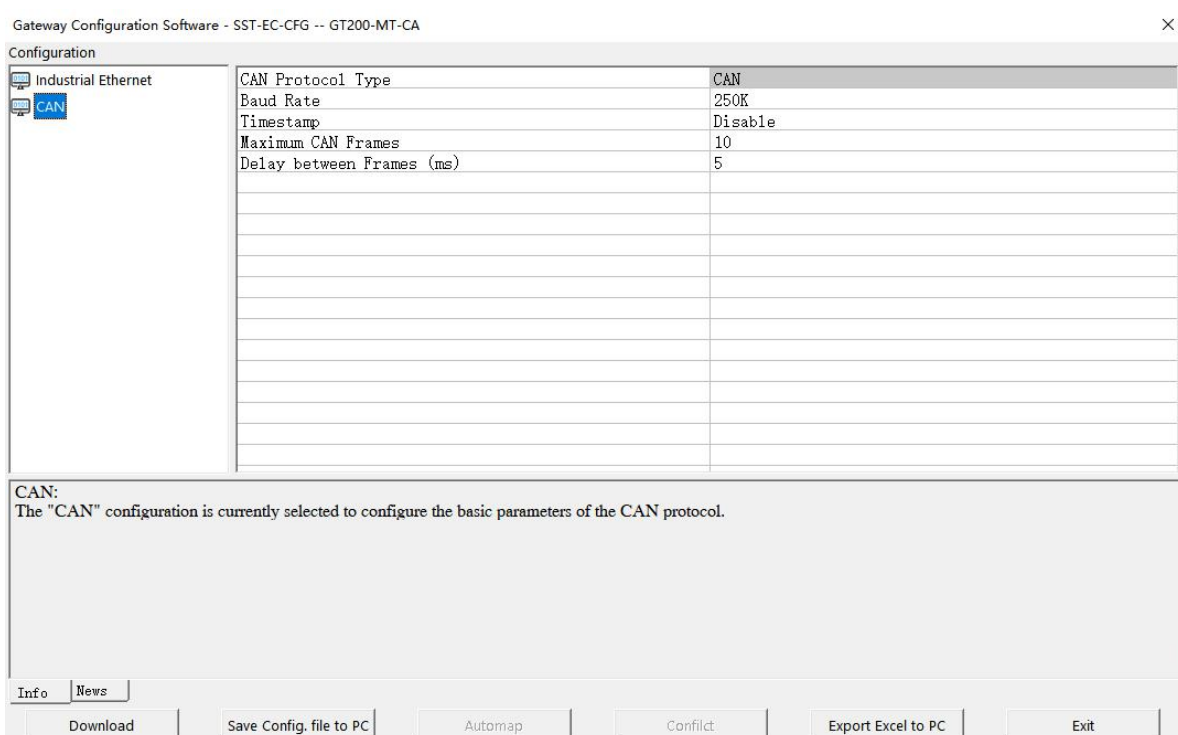
Starting Address of Read-Only Register (Input Data): Range: 0-65023, default 0. This parameter is available only when CAN Advanced Mode is enabled.

When operating as a Modbus TCP Server, the gateway supports client reads of the starting address of the input data using the 04 function code.

Starting Address of Read/Write Register (Output Data): Range: 0-65023, default 0. This parameter is available only when CAN Advanced Mode is enabled.

The gateway operates as a Modbus TCP Server; client writes use the starting address of the output data using Function Codes 06 or 16. Function Code 03 reads the starting address of the output data.

5.2.7 Configure CAN Parameters



Configure the parameters as follows:

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CAN Protocol Type: CAN 2.0 A and CAN 2.0 B.

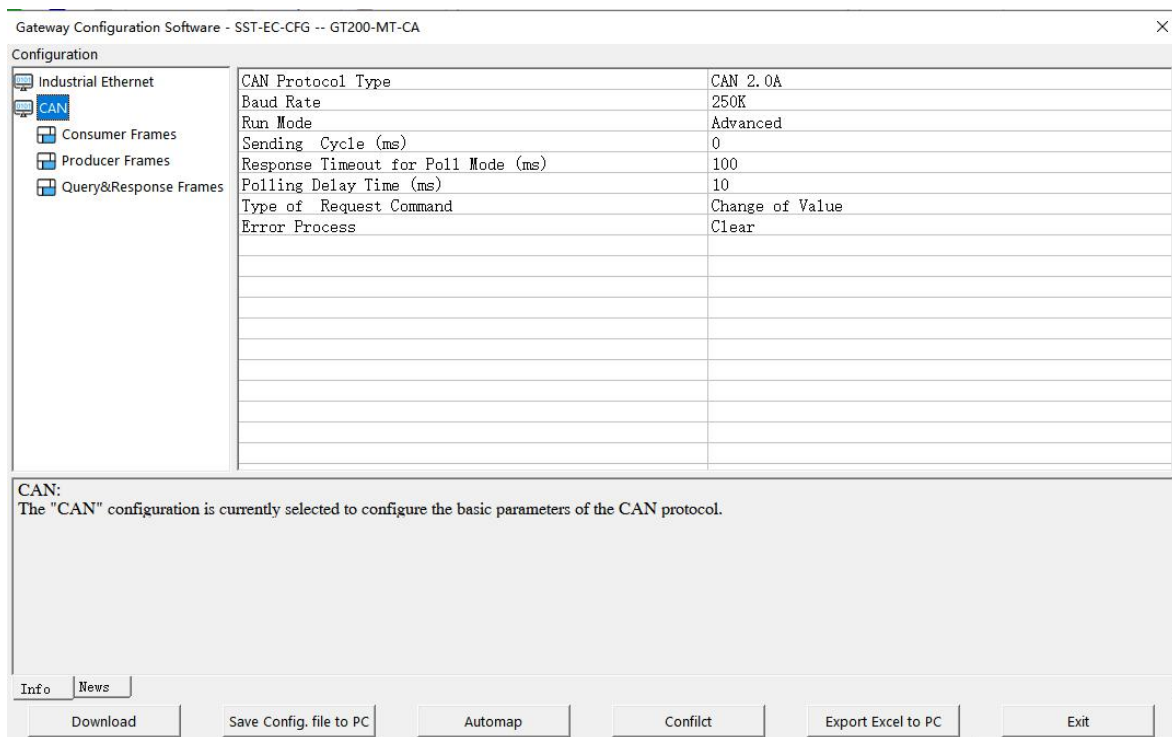
Baud Rate: 10K-1M bps. The default is 250K.

timestamp: The timestamp of when the GT200-MT-CA receives a CAN frame. If disable, it will transmit 13-byte frame without timestamp. If enable, it will transmit 17-byte frame with the first 4-bit timestamp.

Maximum CAN Frames: The maximum numbers of CAN frames in one TCP/UDP frame. Range: 0-85.

Delay between Frames (ms): Maximum delay time between TCP/UDP frames. Range: 1-1000ms.

5.2.8 Configure Advanced Mode in Modbus TCP Server parameters



Run Mode: Filtering mode, basic or advanced optional. Advanced Mode is the CAN frame filtering function for CAN ID.

Sending Cycle (ms):The cycle for Producer transmission, is based on 1ms. Zero means to use the mode of change of value output; non-zero means to send all CAN frames according to the cycle.

Sending cycle equals setting value, the default value is 0. The range: 0-60000.

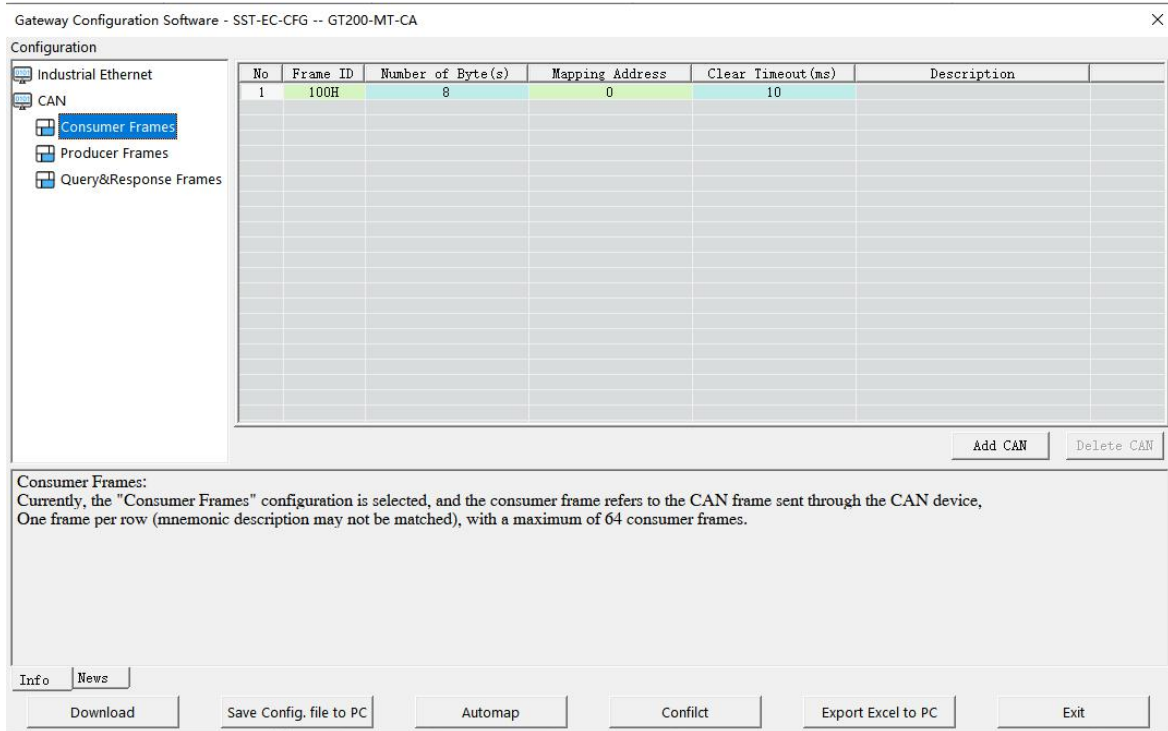
Response Timeout for Poll Mode (ms):The response timeout for Query/Response commands. Based on ms. The range is 0-60000ms and the default value is 100ms.

Polling Delay Time (ms):the gateway waits for the configured delay after receiving a response, before sending the next request. Range: 0-60000ms, default: 10ms.

Type of Request Command: Change of Value or Cyclic.

Error Process: Keep the data unchanged or set to zero after responses timeout. Clear and Hold optional.

5.2.9 Consumer Frames in Modbus TCP Server Advanced Mode



Click “Add CAN” to add a Consumer Frame.

Frame ID: The frame ID of the CAN received data in the consumer frame.

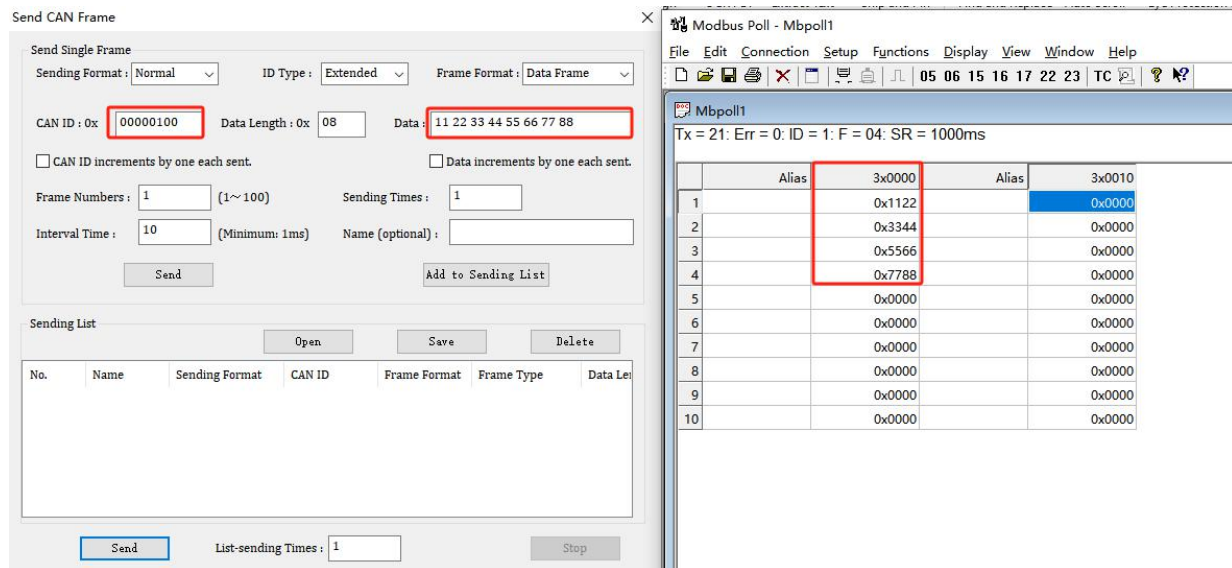
Number of bytes: The number of bytes of CAN received data in the consumer frame.

Mapping Address: The gateway address where CAN data from the consumer frame is mapped.

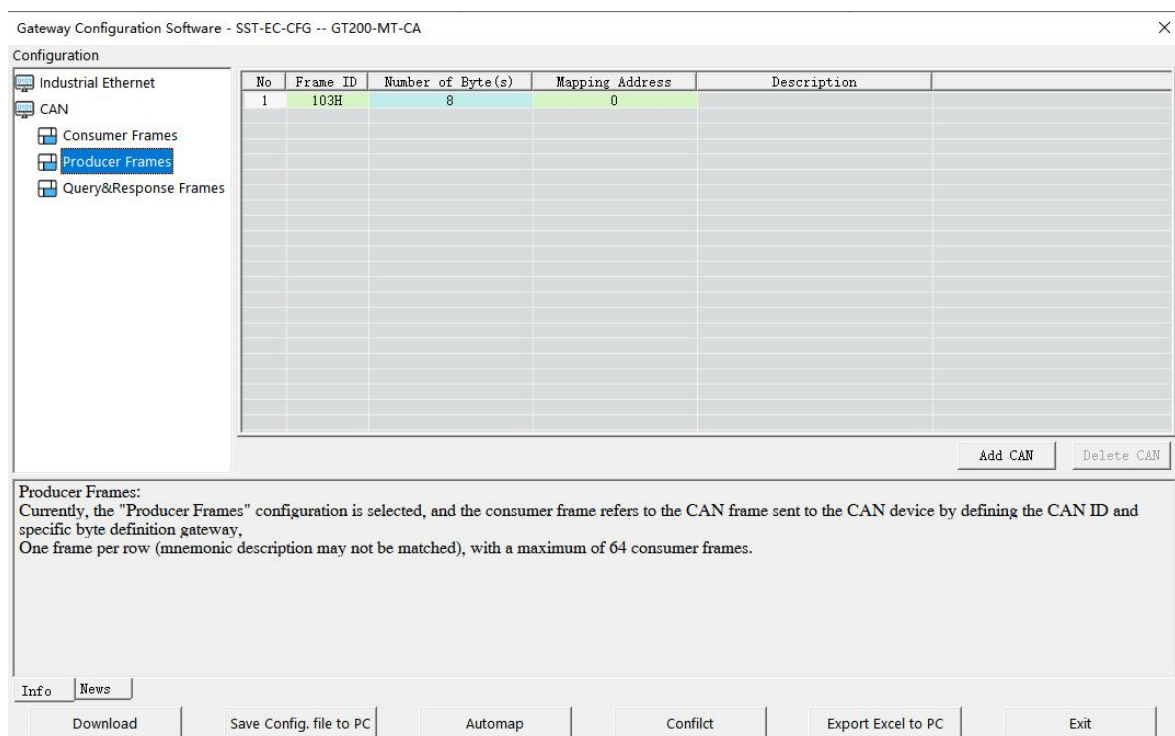
Clear Timeout(ms):The gateway clears the data buffer upon timeout. Range: 0 - 60000ms. The default value is 10ms. If this parameter is 0, the gateway will not clear the corresponding data buffer.

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The GT200-MT-CA consumes only CAN frames with Frame ID 100 from the CAN bus and forwards the data to the Modbus Poll client.



5.2.10 Producer Frames in Modbus TCP Server Advanced Mode



Click "Add CAN" to add a Producer Frame.

Frame ID: The frame ID of the CAN sent data in the producer frame.

Number of bytes: The number of bytes of CAN sent data in the producer frame.

Mapping Address:The mapping address in the gateway for CAN data sent in the producer frame.

GT200-MT-CA

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The GT200-MT-CA transmits data received from the Modbus Poll client to the CAN bus using Frame ID 0x103.

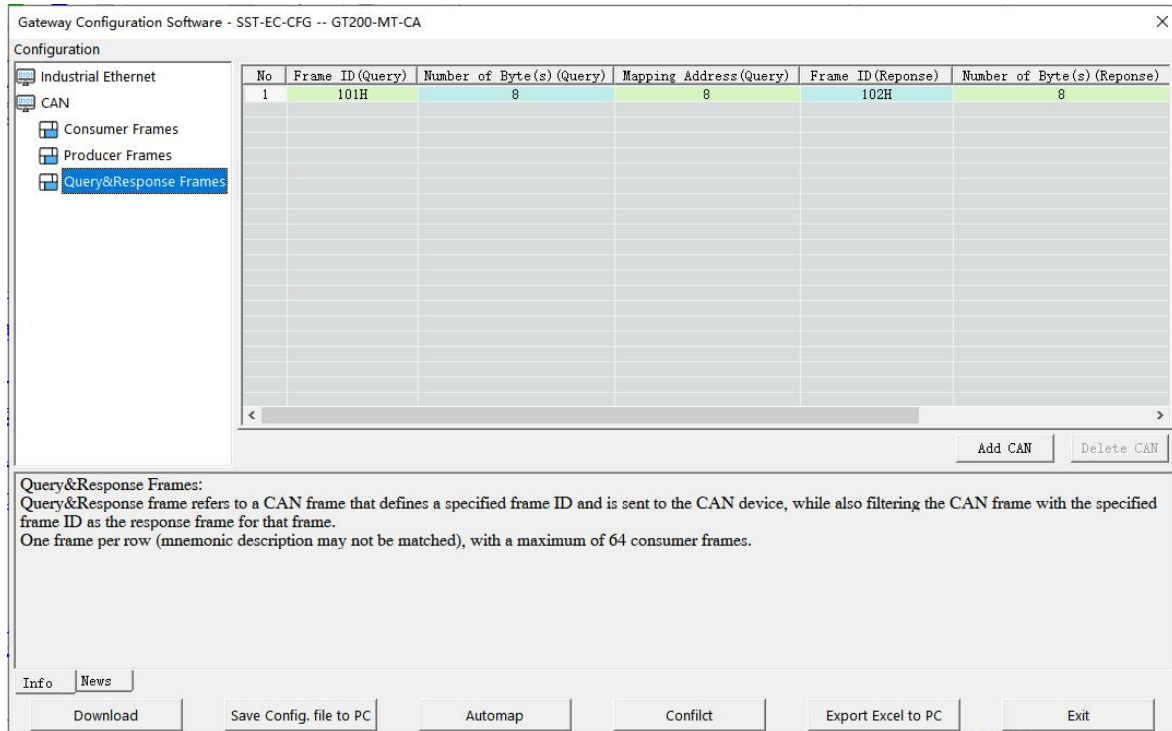
The image displays two software windows. The top window, 'Modbus Poll - Mbpoll1', shows a table of 10 data points. A red box highlights the first four rows, with the value '0x0708' in the fourth row (index 4) highlighted in blue. The bottom window, 'CanMon - Untitled', shows a table of CAN bus data. The first row of data is highlighted in blue, showing a receive frame with CAN ID 103 and data 01 02 03 04 05 06 07 08.

	Alias		Alias
		4x0000	4x0010
1		0x0102	0x0000
2		0x0304	0x0000
3		0x0506	0x0000
4		0x0708	0x0000
5		0x0000	0x0000
6		0x0000	0x0000
7		0x0000	0x0000
8		0x0000	0x0000
9		0x0000	0x0000
10		0x0000	0x0000

No.	Transmission Direction	Time Stamp	CAN ID	Format	ID Type	Data Length	Data
154	Receive	58.648	103	Data Frame	Standard	8	01 02 03 04 05 06 07 08

5.2.11 Query/Response Frames in Modbus TCP Server Advanced Mode

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Click “Add CAN” to add a Query/Response Frame.

Frame ID(Query): The frame ID of the CAN sent data in the query&response frame.

Number of bytes(Query): The number of bytes of CAN sent data in the query&response frame.

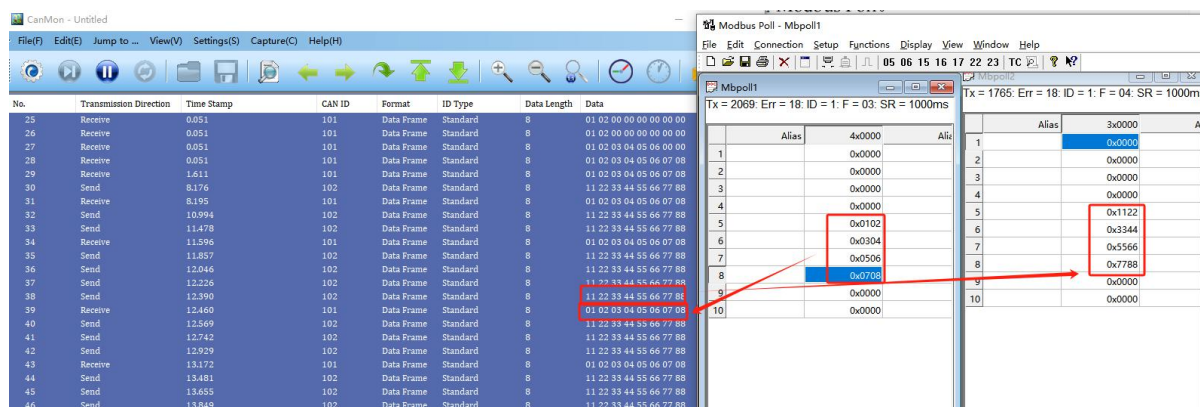
Mapping Address(Query): The mapping address of the CAN sending data in the query&response frame in the gateway.

Frame ID (Response): The frame ID of the CAN received data in the query&response frame.

Number of bytes (Response) - The number of bytes of CAN received data in the query&response frame.

Mapping address(Response) - The mapping address of the CAN received data in the query&response frame in the gateway.

The GT200-MT-CA assigns Frame ID 101 to the data received from the Modbus Poll client and transmits it as a CAN query frame. Simultaneously, the GT200-MT-CA receives the corresponding response frame from the CAN network and forwards the data with Frame ID 102 to Modbus Poll within the specified response timeout.



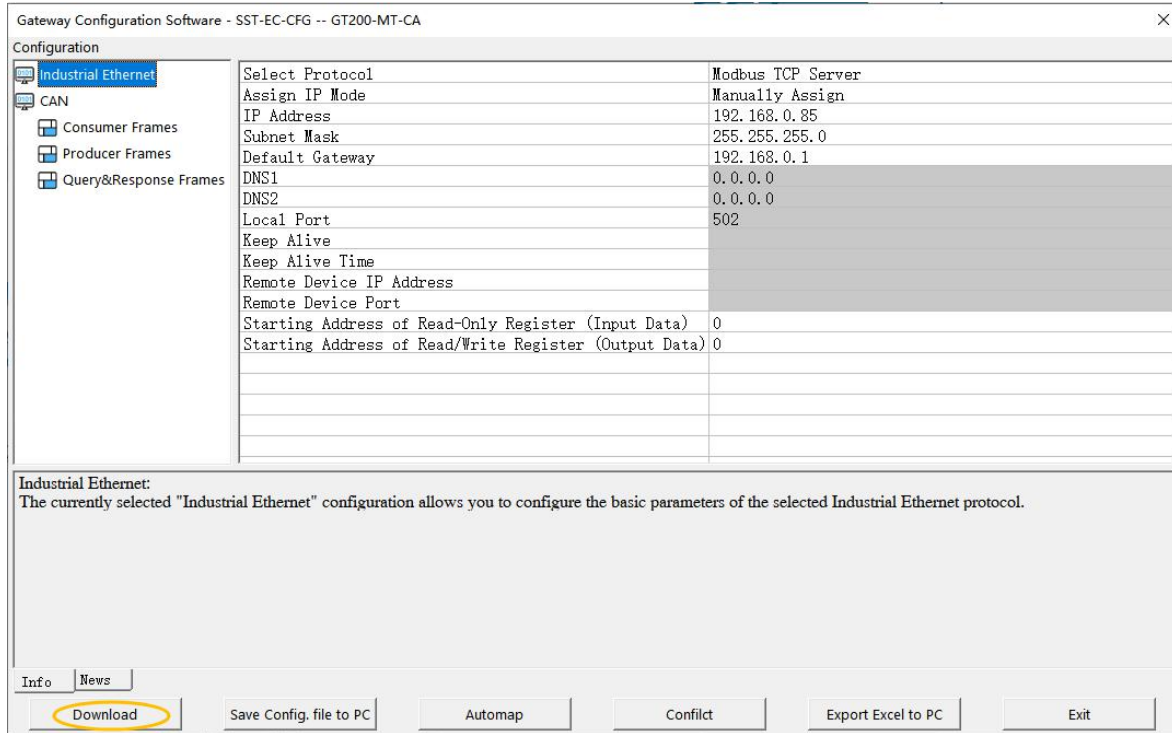
GT200-MT-CA

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5.2.12 Download

Click “Download” button in the configuration interface to download the configuration into the GT200-MT-CA.



Notes:

- ① Confirm that the device is in [running](#) or [configuration](#) mode before downloading.
- ② After downloading the configuration to the gateway, you must click the “[Remote Reset](#)” button or restart the gateway to make the newly downloaded configuration take effect.

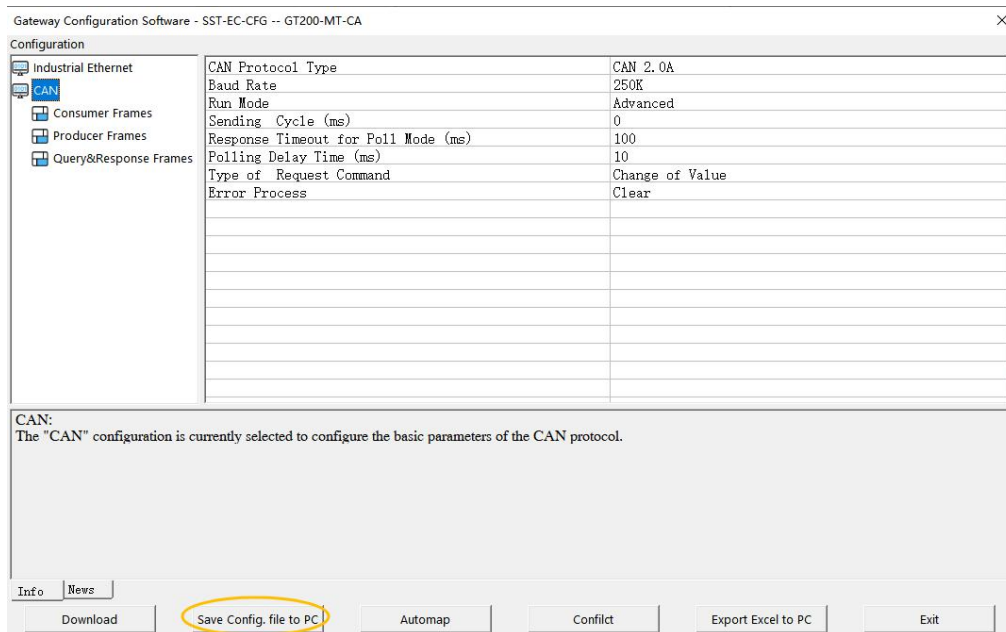
5.2.13 Save

Click “Save Config File to PC” button in the configuration interface to save the project.

GT200-MT-CA

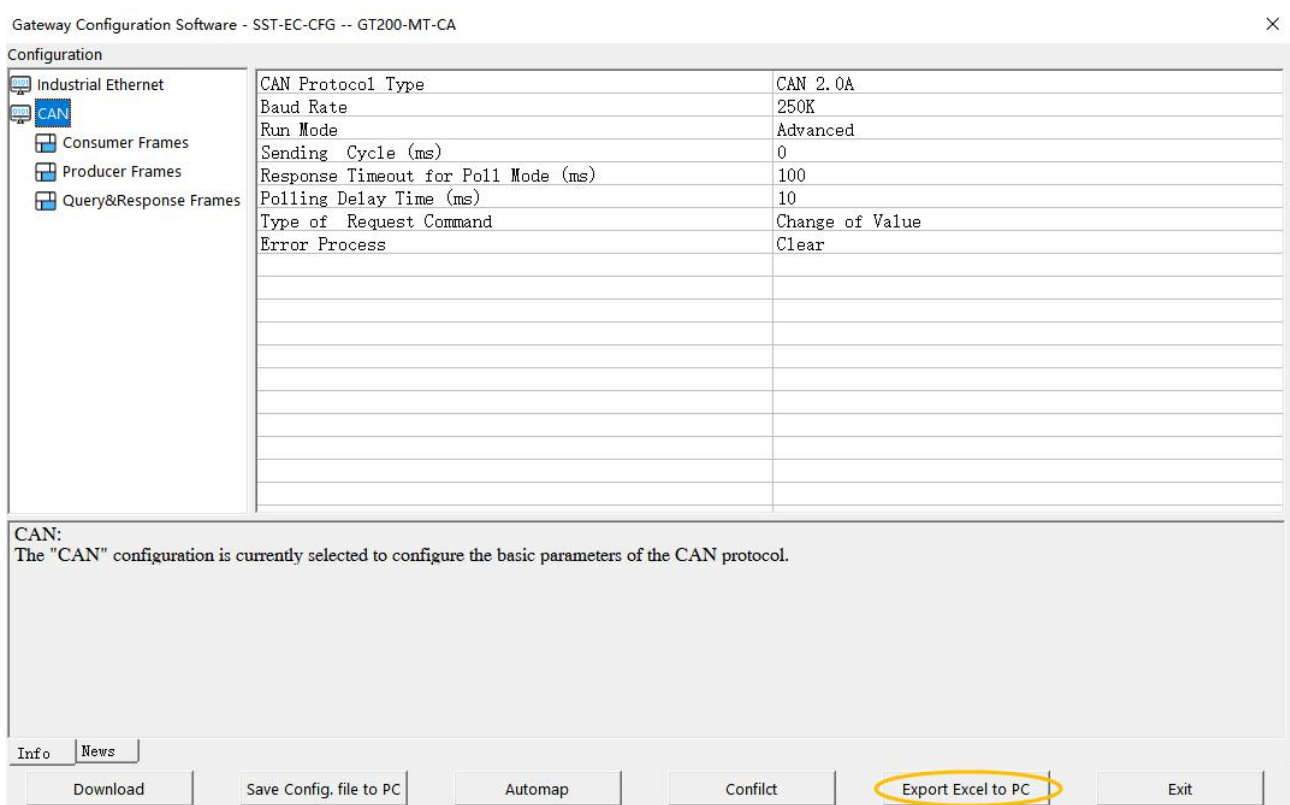
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5.2.14 Export

Click "Export Excel to PC" in the configuration interface. The configuration parameters are exported as an Excel spreadsheet.



GT200-MT-CA

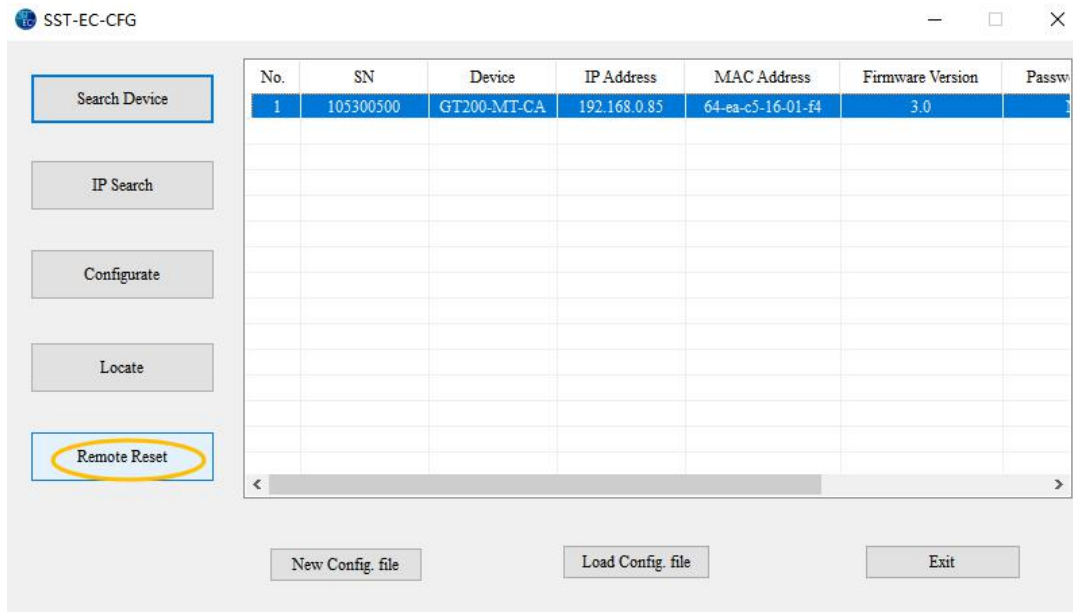
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5.2.15 Remote Reset

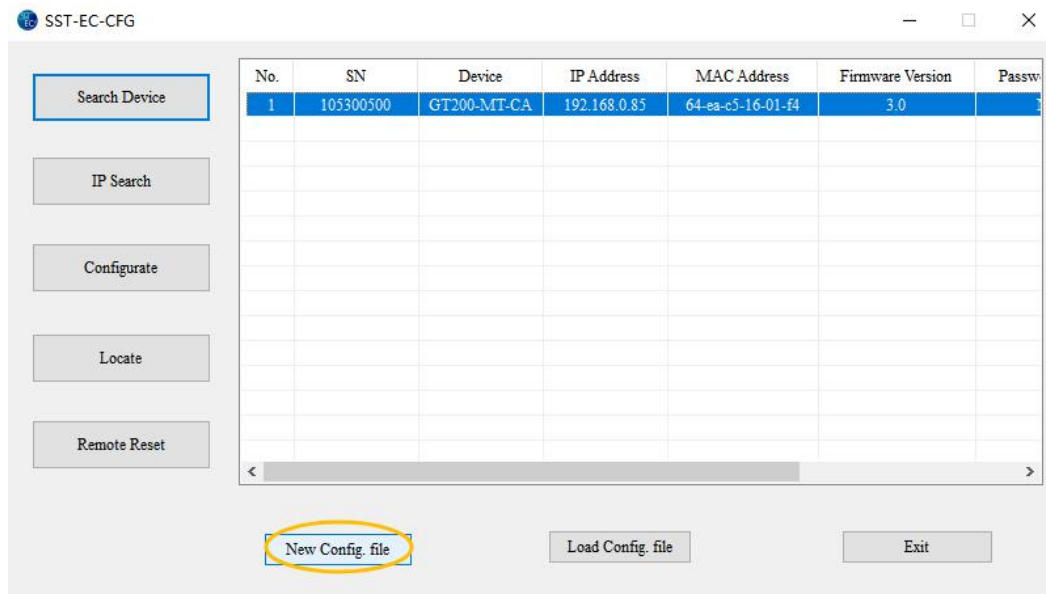
Click the “Remote Reset” button, as shown in the pop-up interface as follows.

Click on “OK”, then execute remote reset operation, the gateway will restart (power off and power on). Click on “Cancel”, and then cancel the reset operation.



5.2.16 New Config File

Click the “New Config File” button. The configuration interface opens with the initialized parameters:



Note: The “New Config File” function is mainly used for off-line configuration. This allows offline configuration. You can open the configuration interface without a connected device.

The screenshot displays the SST-EC-CFG application window. On the left side, there are five vertically stacked buttons: "Search Device", "IP Search", "Configure", "Locate", and "Remote Reset". The main area contains a table with the following columns: No., SN, Device, IP Address, MAC Address, Firmware Version, and Password. Two rows of device information are visible:

No.	SN	Device	IP Address	MAC Address	Firmware Version	Password
1	105300500	GT200-MT-CA	192.168.0.85	64-ea-c5-16-01-...	3.0	N
2	104400129	GT200-EI-CA	192.168.0.10	64-ea-c5-23-00-...	2.1	M

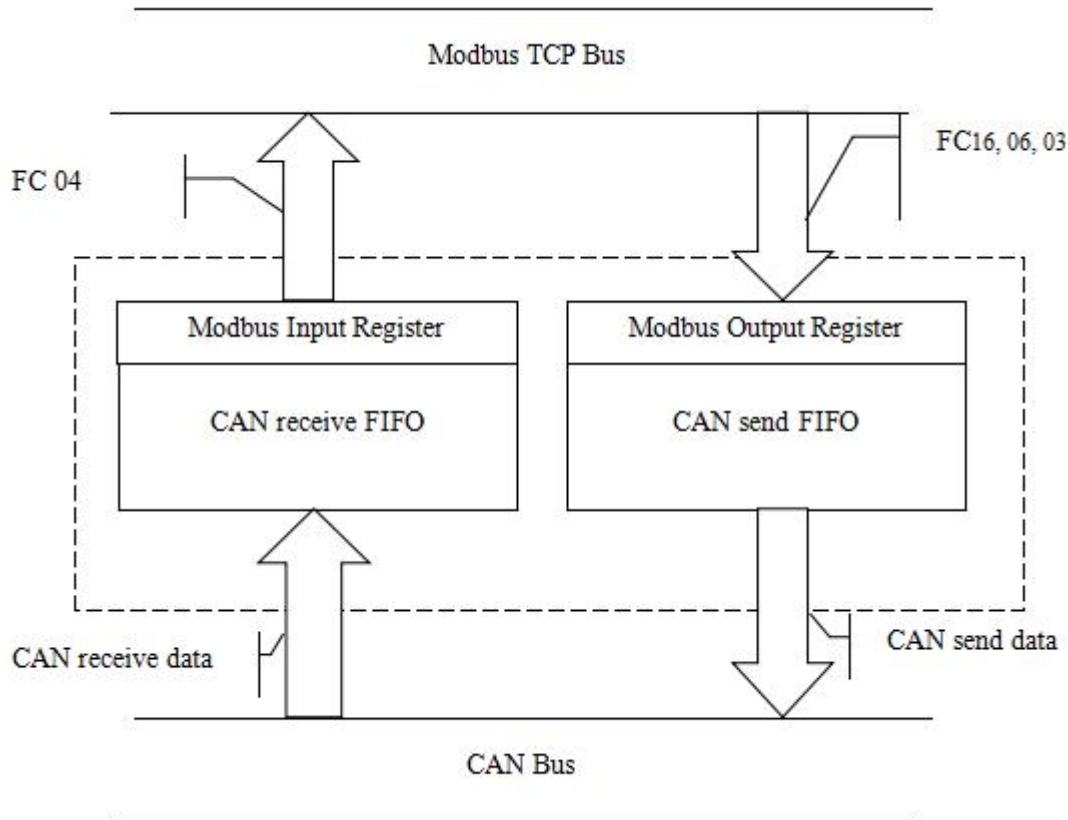
At the bottom of the window, there are three buttons: "New Config. file", "Load Config. file" (which is circled in yellow), and "Exit".

6 Working Principle

6.1 Modbus TCP/CAN

1. Data Exchange

CAN frames are sent and received in FIFO (First In, First Out) Order.



2. The Relationship between Them

The following describes how a CAN frame is encapsulated into 16 bytes (8 registers):

6.1.1 Input Register Format (Read)

Use function code 04 to read the Modbus input register, which represents CAN receive data.

The starting address is 0.

Each read operation must read 8 registers (16 bytes), or it will return Modbus exception response.

Byte	0	1	2	3	4-7	8-15
Meaning	0xFF	The data number of CAN frame	Sequence Number	Reserved	Frame header and CAN frame mode control	CAN frame data

When the GT200-MT-CA receives a CAN frame from the CAN network, the input frame sequence number increments by 1. Users can determine whether to process these CAN frames based on their application requirements.

6.1.2 Output Register Format (Write)

Use function code 16 to write the data to Modbus output register of GT200-MT-CA, that is the CAN frame needs to send.

When using the function code 06, first prepare the 15 bytes except the sequence number, and finally send the CAN frame by modifying the sequence number (sequence number add 1).

The starting address is 0.

Every frame must include 8 registers (16 bytes), or it will return Modbus exception response.

Byte	0	1	2	3	4-7	8-15
Meaning	Single/Repeat control	The data number of CAN frame	Sequence Number	Reserved	Frame header and CAN frame mode control	CAN frame data

6.1.3 Byte Definitions

Bytes 0 through 3 are control bytes

Byte 0: A value of 0 sends the CAN frame once. A non-zero value enables periodic transmission at $N \times 10$ ms, where N is the byte value. For example, if the value of byte 0 is 10, the period of transmission is 100ms, meaning the frame is transmitted once every 100ms.

Byte 1: Number of CAN data bytes. Range: 0 to 8.

Byte 2: Sequence number. The initial value of sequence number in output frame is non-zero (any value except zero), if the mode is single transmission mode, the number must be incremented by 1 when sending a new frame, the gateway will recognize that it is single transmission data, if the number reaches 255, the number will be 0 when adding 1. The current frame sequence number must differ from the entire CAN frame sequence number sent last time, or it won't do any operation to current CAN frame.

Bytes 4 through 7 contain the CAN frame header and frame mode control (29-bit CAN ID). If the CAN ID of the current frame matches an existing frame in the transmission cycle, the existing frame is replaced and the current frame is stored in the buffer.

The format of byte 4 is as follows:

Bit	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Meaning	Reserved	RTR	Reserved	The top five bits of frame header				

Bit 6 of byte 4: RTR, 0 indicates a data frame; 1 indicates a remote frame.

Bit 0 to 4 of byte 4 to byte 7, CAN 2.0A/2.0B frame header.

Byte 5:

Bit	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Meaning	The second high 8 bits of frame header							

Byte 6:

Bit	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Meaning	The second low 8 bits of frame header							

Byte 7:

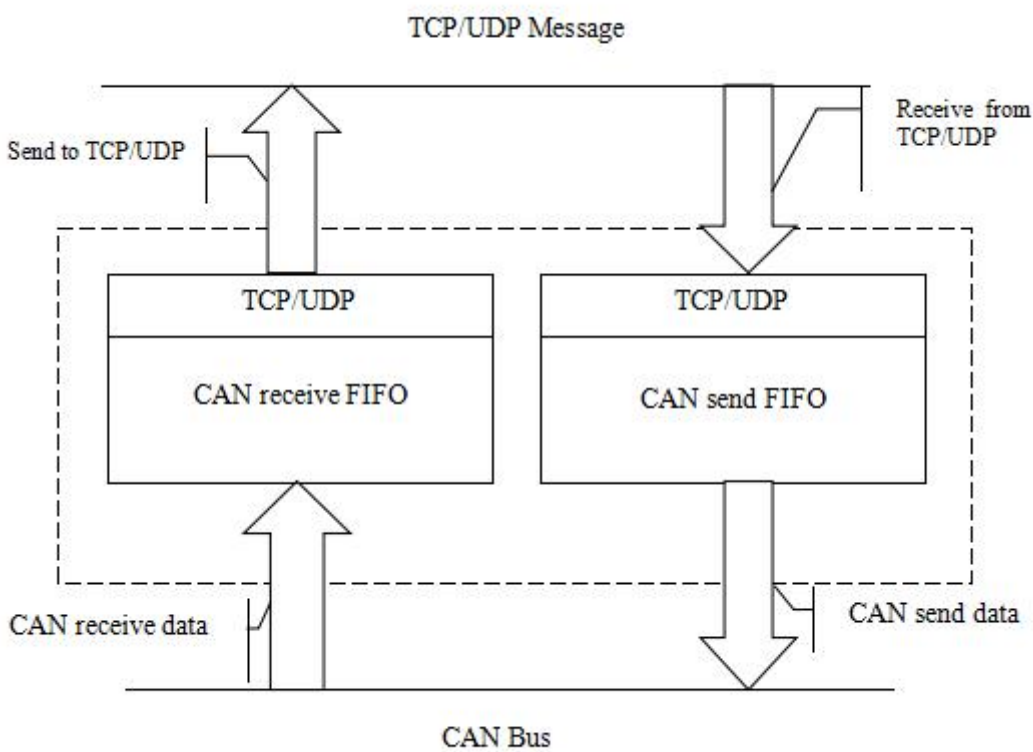
Bit	Bit 7	Bit 6	Bit 5	Bit 4	Bit 3	Bit 2	Bit 1	Bit 0
Meaning	The lowest 8 bits of frame header							

Bytes 8 through 15 contain the CAN frame data. If the CAN frame contains fewer than 8 data bytes, the remaining bytes are set to 0.

6.2 TCP Server/TCP Client/UDP to CAN

1. Data Exchange

CAN frames are processed in FIFO order (First In, First Out).



2. The Relationship between Them

Mutual conversion between TCP / UDP data and CAN data uses the following format.

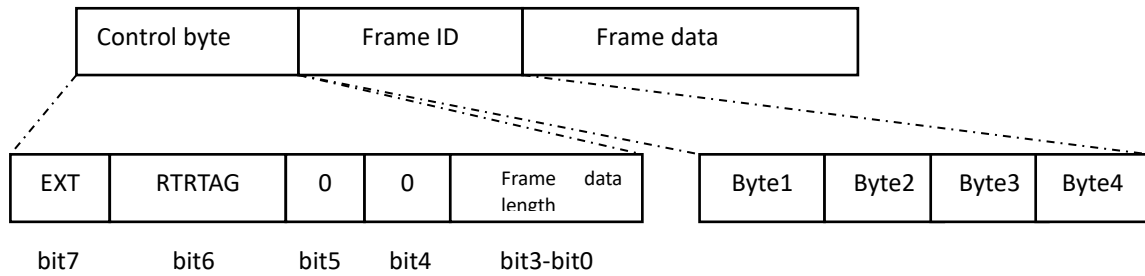
One frame TCP / UDP data can contain several CAN frames, the maximum CAN frame can be set by software SST-EC-CFG.

TCP / UDP data (send / receive) format:

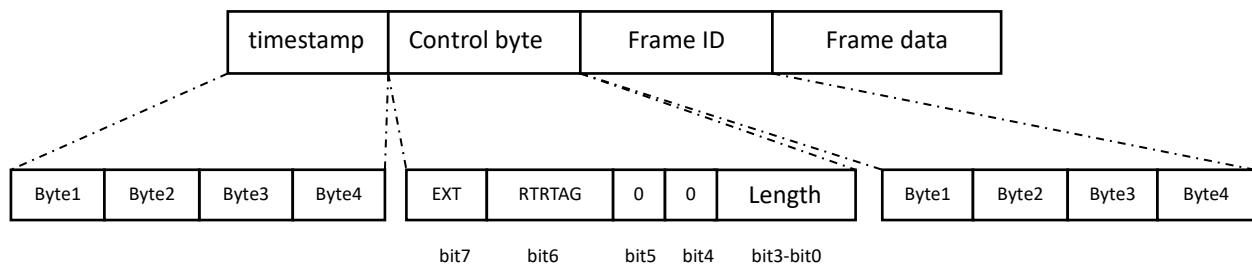
CAN frame	CAN frame	CAN frame	CAN frame		CAN frame
-----------	-----------	-----------	-----------	-------	-----------

GT200-MT-CA supports two CAN frame formats, as follows:

CAN frame without timestamp: A CAN frame occupies13 bytes; the format is as follows:



CAN frame with a timestamp: A CAN frame occupies 17 bytes; the format is as follows:



Timestamp: The time that GT200-MT-CA received CAN frame from the CAN port.

(Explanation: Only if the timestamp function is enabled in SST-EC-CFG GT200-MT-CA automatically appends the receiving time of CAN frame to CAN frame header automatically. At this point, the CAN frame that GT200-MT-CA forwarded to Ethernet is a 17-byte frame with timestamp. Additionally, GT200-MT-CA uses a 13-byte CAN frame without timestamp)

Control byte: Occupies one byte and includes the extended frame flag, remote frame flag, and data length.

EXT: Extended frame flag, 0 indicates the standard frame, 1 indicates the extension frame.

RTRTAG: Remote frame flag, 0 indicates that the data frame, 1 indicates the Remote frame.

Frame data length: the range is 0-8.

Standard frame ID:

	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
Byte1	0	0	0	0	0	0	0	0
Byte2	0	0	0	0	0	0	0	0
Byte3	0	0	0	0	0	ID10	ID9	ID8
Byte4	ID7	ID6	ID5	ID4	ID3	ID2	ID1	ID0

Extended frame ID:

	bit 7	bit 6	bit 5	bit 4	bit 3	bit 2	bit 1	bit 0
Byte1	0	0	0	ID28	ID27	ID26	ID25	ID24
Byte2	ID23	ID22	ID21	ID20	ID19	ID18	ID17	ID16
Byte3	ID15	ID14	ID13	ID12	ID11	ID10	ID9	ID8
Byte4	ID7	ID6	ID5	ID4	ID3	ID2	ID1	ID0

Frame data: Occupy 8 bytes, the effective length of the frame is controlled by low four bits, pad with zeros when fewer than 8 data bytes are present

Such as data string 12H, 34H, 56H, 78H, in the following format:



12H	34H	56H	78H	00H	00H	00H	00H
-----	-----	-----	-----	-----	-----	-----	-----

6.3 Terminating Resistor

Under high baud rate conditions (1 Mbps, 500 kbps), the CAN network requires each of the two endpoints at the farthest endpoints to have a 120 ohm terminating resistor.

7 Troubleshooting

This chapter lists common issues encountered during installation and operation of the GT200-MT-CA gateway. For each issue, the possible cause and recommended solution are provided.

Symptom	Possible Cause	Solution
Modbus TCP ENS LED: Blinking Green	Modbus TCP / TCP connection not established	The gateway is acting as a TCP Server or Modbus TCP Server, and the Modbus TCP or TCP connection has not been established.
Modbus TCP ENS LED: Solid Red	DHCP status	The gateway is currently in DHCP status (attempting to acquire an IP address).
Modbus TCP ENS LED: Blinking Red 3 times	Node disconnected under Modbus TCP Client mode	A connection has dropped while the Modbus TCP Client was in an active/connected state.
CAN CNS LED: Solid Red	CAN bus error	Verify that the CAN baud rate is set correctly, check the CAN wiring connections, and ensure the terminating resistor is enabled/switched on.
CAN CNS LED: Alternating Red/Green Blinking	CAN Bus Error / Heavy Traffic	Check if the CAN baud rate is set too high. Consider lowering the baud rate or verifying whether the terminating resistors are enabled at both ends of the bus network.
Modbus TCP cannot communicate	DHCP server unavailable	If no DHCP server exists, wait 30 seconds after power-on for the fallback IP (192.168.0.10) to be assigned, or configure a static IP via SST-EC-CFG.
Cannot search/discover gateway	PC NIC not on the same network	In SST-EC-CFG, select the correct network adapter that is connected to the same LAN as the gateway. Click "Refresh" to re-scan.
Modbus TCP Client reads all 0s	Incorrect Modbus function code selection	Use Function Code 04 (Read Input Registers) for data retrieval

8 Frequently Asked Questions

Q1: Why is SST-EC-CFG unable to discover the gateway's IP address?

A: There are two possible scenarios:

1) New gateway: By default, the gateway operates in DHCP mode. If it cannot obtain an IP address from the local network within 30 seconds, it will automatically default to 192.168.0.10. Simply set your PC's IP address to the 192.168.0.x subnet to discover the gateway.

2) Previously configured but IP forgotten: Set the DIP switches to 2-ON / 1-OFF, then power-cycle the gateway to apply settings. The gateway will default to 192.168.0.10. Set your PC's IP address to the 192.168.0.x subnet to discover it.

Q2: The CAN bus indicator light is solid red. What does this mean?

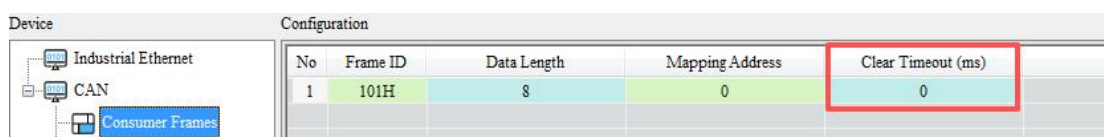
A: This indicates a CAN bus error. Check the following:

- Verify CAN H and CAN L wires are not reversed.
- If the CAN interface termination resistor is not enabled, enable it.
- Verify the CAN baud rate in SST-EC-CFG matches the actual device baud rate. If mismatched, align them.

Q3: Both ENS and CNS indicator lights are solid green, but the Modbus TCP Client receives no data (all values show 0). What could be the cause?

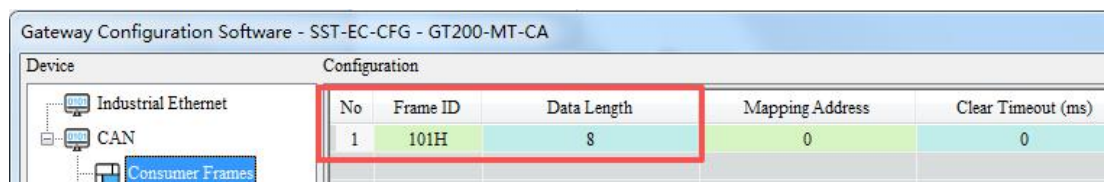
A: Check the following:

- Verify the receive frame configuration's 'clear Timeout (ms)' setting. Keeping the default value of 0 is recommended.



No	Frame ID	Data Length	Mapping Address	Clear Timeout (ms)
1	101H	8	0	0

- Verify that the Frame ID and Data Length match the device's actual transmission. Update if mismatched.



No	Frame ID	Data Length	Mapping Address	Clear Timeout (ms)
1	101H	8	0	0

Q4: I don't have a Modbus TCP Client. How can I debug a CAN device using the GT200-MT-CA gateway?

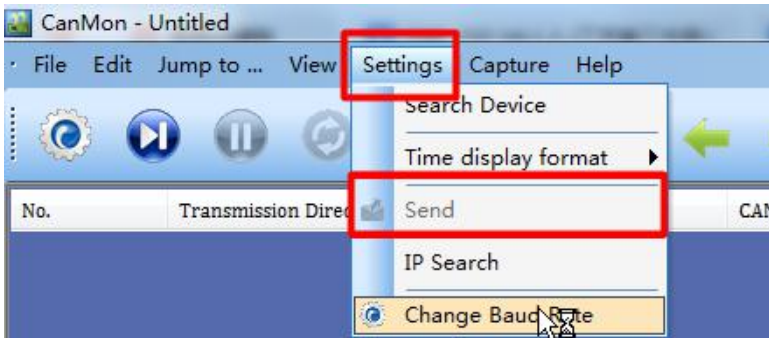
A: Follow these steps:

1. Use SST-EC-CFG to configure the gateway in TCP Server mode.

GT200-MT-CA EtherNet to CAN Gateway User Manual

2. Download and install CanMon software. Click Start-Capturing to scan for the device, select it, and connect to receive CAN data.

3. To send CAN frame data: go to Settings > Send.



Q5: When configured as a Modbus TCP Server, how should I read the starting addresses of the Modbus registers?

A: To read register starting addresses, use Function Code 04. The starting address begins at 30001.

For write operations to register starting addresses, use Function Code 16. The starting address begins at 40001.

Q6: If all LED indicators are normal and data is being transmitted, but the values do not match the actual values on the CAN device, what could be the cause?

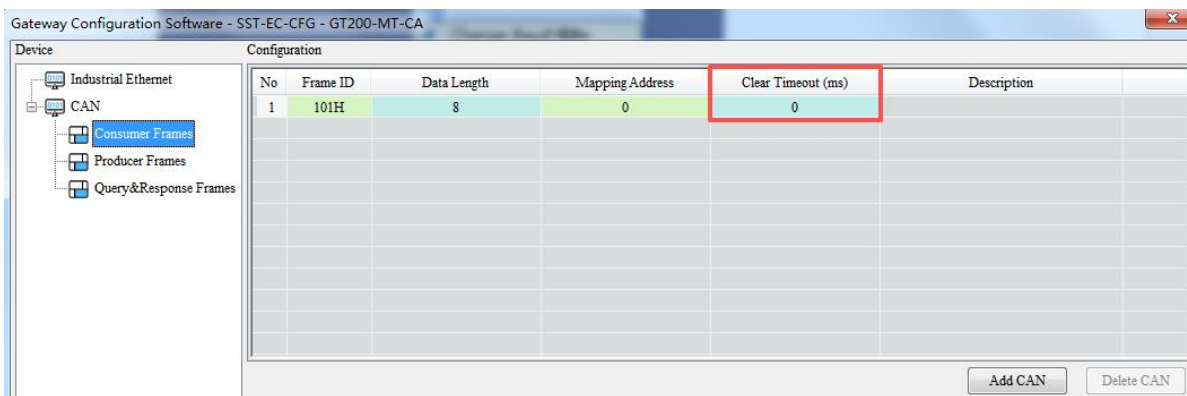
A:

1. Byte or Word Swapping issue: The data format/endianness expected by the target device does not match the gateway configuration.

2. Incorrect mapping sequence: The CAN ID configuration sequence in SST-EC-CFG does not match the data structure defined on the PLC side.

Q7: Under Modbus TCP Server mode, why does the data remain present and unchanged even after the CAN device is powered off?

A: This is because the "Data Hold" (Hold Last Value) feature is enabled in SST-EC-CFG. As long as the Modbus TCP connection remains active, the gateway will retain and display the last successfully received data from the CAN device, even if the CAN device itself disconnects. For instance, setting the "Clear Timeout (ms)" parameter to 0 configures the gateway to "Hold" the data.



Q8: What protocol modes does the gateway support?

The GT200-MT-CA supports four operation modes on the Ethernet side:

Mode	Description
Modbus TCP Server (Slave)	The gateway responds to read/write requests from Modbus TCP Client (Master) controllers.
TCP Server	The gateway responds to read/write requests from TCP Client (Master) controllers.
TCP Client	The gateway actively initiates a connection to target TCP Server devices to transmit and retrieve data based on user-configured trigger conditions.
UDP	The gateway uses connectionless UDP protocol to achieve high-speed, low-overhead data transmission, supporting multicast, broadcast, or unicast messaging with target network nodes.

9 Device Maintenance

9.1 Firmware Update

This section describes how to update the firmware of the GT200-MT-CA gateway.

Step 1: Download the latest firmware file from the SST Automation website: www.sstautomation.com.

Step 2: Open the configuration software SST-EC-CFG on your PC.

Step 3: Set the DIP switch to "2(ON), 1(OFF)" (Configuration mode) and power on the gateway. The gateway IP address will be fixed at 192.168.0.10.

Step 4: Set the PC Ethernet IP address to the 192.168.0.x subnet (e.g., 192.168.0.20).

Step 5: In SST-EC-CFG, search for the gateway and select it.

Step 6: Click the firmware update function in the software and select the firmware file.

Step 7: Start the update. Do not power off the gateway or disconnect the network during the update.

Step 8: After the update completes, the gateway will restart automatically. Set the DIP switch back to "2(OFF), 1(OFF)" or "2(OFF), 1(ON)" for normal operation.

WARNING: Interrupting power during firmware update may cause permanent damage to the device.

9.2 Restore Factory Configuration

The GT200-MT-CA can be restored to factory default configuration through the DIP switch or the configuration software.

Method 1 — DIP Switch:

Set the DIP switch to "2(ON), 1(OFF)" (Configuration mode). In this mode, the gateway IP address is fixed at 192.168.0.10, and all configuration parameters revert to their factory defaults after a new configuration is downloaded.

Method 2 — Configuration Software:

1. Open SST-EC-CFG and search for the gateway.
2. Click "New Config File" to create a new configuration with default parameters.

3. Download the default configuration to the gateway.
4. Restart the gateway for the default configuration to take effect.

After factory reset, the network mode returns to DHCP. If no DHCP server is available within 30 seconds, the gateway falls back to 192.168.0.10.

9.3 Daily Maintenance

- Protect the module from heavy pressure to avoid enclosure damage.
- Avoid impact, which may damage internal electronic components.
- Keep the supply voltage within the specified range (9-30 VDC).
- Prevent water ingress. Water may cause abnormal operation or permanent damage.
- Before power-on, check all wiring for incorrect connections or short circuits.
- Ensure adequate ventilation around the device. Do not block ventilation openings.
- Periodically inspect cables and connectors for signs of wear or looseness.
- Clean the device with a dry, soft cloth. Do not use liquid cleaners or solvents.

10 Typical Applications

The GT200-MT-CA Ethernet/CAN Gateway is suitable for a wide range of industrial automation and data acquisition applications. Typical scenarios include:

Automotive CAN Bus Monitoring:

Connect the GT200-MT-CA to a vehicle CAN bus network. Use the Modbus TCP interface to monitor vehicle diagnostic data, sensor readings, and actuator status from a PLC or SCADA system in real time.

Industrial Equipment Data Collection:

Integrate CAN-based sensors, motor drives, and controllers into a Modbus TCP-based factory automation system. The gateway bridges CAN fieldbus data to the central PLC or DCS for unified monitoring and control.

Remote CAN Network Access:

Deploy the gateway in TCP Server or TCP Client mode to remotely access CAN network data over an IP network. This enables remote diagnostics, data logging, and firmware updates for CAN devices distributed across different locations.

Building Automation Integration:

Use the gateway to connect CAN-based HVAC controllers, lighting systems, or energy meters to a Modbus TCP building management system (BMS) for centralized building automation.

Laboratory Test and Measurement:

Utilize the high-speed UDP mode for low-latency CAN data acquisition in laboratory testing environments. Stream CAN bus data directly to a PC-based analysis software for real-time visualization and post-processing.

Multi-Protocol Hybrid Systems:

Configure the gateway to simultaneously communicate with Modbus TCP Clients while forwarding selected CAN frames. Apply CAN ID filtering in Advanced Mode to optimize bandwidth and reduce unnecessary traffic.

11 Appendix

11.1 Complete Technical Parameters

The following table summarizes the complete technical specifications of the GT200-MT-CA gateway:

Category	Parameter	Specification
Ethernet	Ports	2 x RJ45, 10/100 Mbps adaptive, half/full duplex
Ethernet	Protocols	Modbus TCP Server, TCP Server, TCP Client, UDP
Ethernet	Modbus Function Codes	03, 04, 06, 16
Ethernet	IP Assignment	Manual or DHCP (fallback: 192.168.0.10 after 30 s)
Ethernet	TCP Connections	Up to 4 clients (TCP Server mode)
Ethernet	Local Port Range	1-65535
CAN	Protocol	CAN 2.0A and CAN 2.0B
CAN	Baud Rates	1 Mbps, 500 kbps, 250 kbps, 125 kbps, 100 kbps, 50 kbps, 20 kbps, 10 kbps
CAN	terminating resistor	120 Ω , switchable
CAN	Basic Mode	8 registers (16 bytes) per CAN frame; up to 15 frames per Modbus command
CAN	Advanced Mode	Consumer/Producer/Query & Response frames; CAN ID filtering
CAN	Max Data Size	512 bytes input/output
Buffers	Send Buffer (Basic)	300 frames (non-periodic) / 50 frames (periodic)
Buffers	Send Buffer (Advanced)	300 frames
Buffers	Receive Buffer	150 frames
Power	Supply Voltage	24 VDC (9-30 VDC)
Power	Current Consumption	80 mA at 24 VDC
Environmental	Operating Temperature	-40°C to 70°C (-40°F to 158°F)
Environmental	Humidity	5% to 95% RH, non-condensing
Environmental	Pollution Degree	≤ Level 3
Mechanical	Dimensions (WxHxD)	25 mm x 100 mm x 90 mm (1.0 in x 4.0 in x 3.6 in)
Mechanical	Mounting	35 mm DIN rail
Mechanical	Weight	Approx. 120 g

11.2 Glossary

Term	Definition
CAN (Controller Area Network)	A robust vehicle bus standard designed to allow microcontrollers and devices to communicate without a host computer. Supports CAN 2.0A (11-bit ID) and CAN 2.0B (29-bit ID).
Modbus TCP	An industrial communication protocol that encapsulates standard Modbus frames within TCP/IP packets. Uses function codes for reading/writing registers and coils.
TCP Server	A network socket that listens for incoming TCP connections from clients. The GT200-MT-CA acts as a TCP Server, accepting up to 4 concurrent client connections.
TCP Client	A network socket that actively initiates a TCP connection to a remote server. In this mode, the gateway connects to a specified remote IP address and port.

Term	Definition
UDP (User Datagram Protocol)	A connectionless transport layer protocol that provides low-latency data transmission without the overhead of connection establishment and acknowledgments.
DIP Switch	A manual electric switch packaged in a Dual In-line Package. Used on the GT200-MT-CA to select between Run mode and Configuration mode.
FIFO (First In, First Out)	A data queueing method where the first data item entered is the first to be processed. CAN frames are transmitted and received in FIFO order.
Consumer Frame	In Advanced Mode, a Consumer Frame defines a CAN frame that the gateway receives from the CAN bus and forwards to the Modbus TCP Client. Filtered by CAN ID.
Producer Frame	In Advanced Mode, a Producer Frame defines a CAN frame that the gateway transmits to the CAN bus based on data received from the Modbus TCP Client.
Query & Response Frame	In Advanced Mode, a paired frame configuration where the gateway sends a query CAN frame and expects a corresponding response frame within a timeout period.
Sequence Number	A control byte in the CAN-to-Modbus frame format used to identify new frames. Incremented by 1 for each new transmission to signal data change.
terminating resistor	A 120 Ω resistor connected at each end of a CAN bus to prevent signal reflections. The GT200-MT-CA has a built-in switchable terminating resistor.
SST-EC-CFG	The Windows-based configuration software used to configure, monitor, and manage GT200 series gateways. Available from www.sstautomation.com .

11.3 Modbus TCP Function Codes & Mapping

Function Code	Modbus Data Type	Address Range	Mapping Address (HEX)	Max Data Count
03	Read Holding Registers	40001–4xxxx	0x0000–0x0593	127
04	Read Input Registers	30001–3xxxx	0x0000–0x0593	127
06	Write Single Register	40001–4xxxx	0x0000–0x0593	1
16	Write Multiple Registers	40001–4xxxx	0x0000–0x0593	127

Note: Mapping address range for read commands is 0x0000–0x0511. Write commands can use 0x4000–0x4511.

Application Note: Exchanging Data Between Modbus TCP and CAN Bus via GT200-MT-CA Gateway

Step-by-Step Guide for Modbus Poll to CAN Network Integration | SST Automation GT200-MT-CA

1. Network & Device Parameters

This document outlines the procedure for configuring the SST Automation GT200-MT-CA gateway to map CAN frame payloads to Modbus TCP holding/input registers. In this demonstration setup, Modbus Poll acts as the Modbus TCP Client (Master), and PCAN-View acts as the physical CAN bus node/simulator.

Table 1.1: CAN Bus & Frame Specifications

Direction	CAN ID (Hex)	Frame Format	Data Length (DLC)
Read (CAN -> Modbus)	0x1234567	Extended (29-bit / CAN 2.0B)	8 Bytes
Read (CAN -> Modbus)	0x1801234	Extended (29-bit / CAN 2.0B)	8 Bytes
Write (Modbus -> CAN)	0x1801567	Extended (29-bit / CAN 2.0B)	8 Bytes
Write (Modbus -> CAN)	0x1802678	Extended (29-bit / CAN 2.0B)	8 Bytes

CAN BUS PARAMETER: Baud Rate on the CAN network is set to 250 kbps. Ensure all bus nodes share the identical baud rate and bus termination (120 Ω resistors at both physical ends).

2. GT200-MT-CA Gateway Configuration

Step 1: Install Configuration Utility

Download and install the SST-EC-CFG configuration software (v3.2.1 or later) from the official SST Automation website (<https://www.sstautomation.com>).

GT200-MT-CA EtherNet to CAN Gateway User Manual

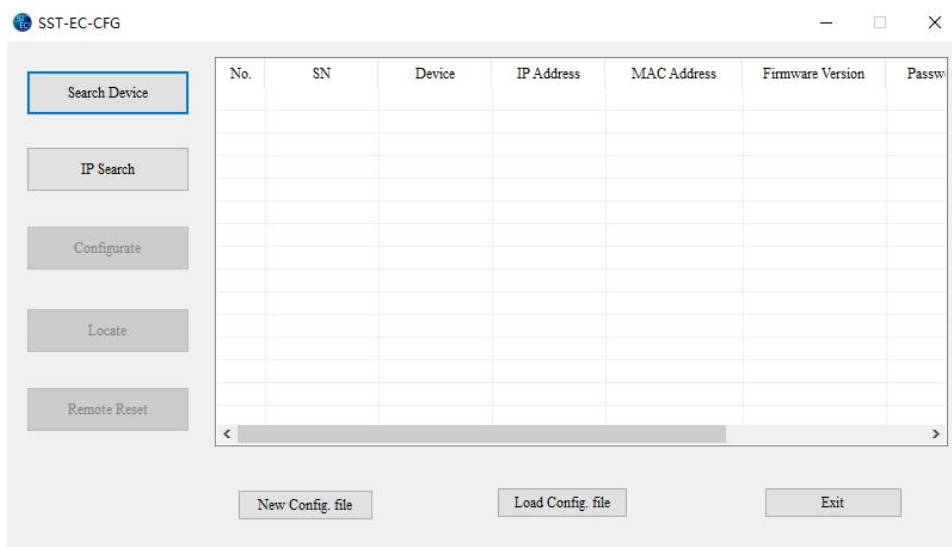
Part Number: GT200-MT-CA

Version: 1.0

Search

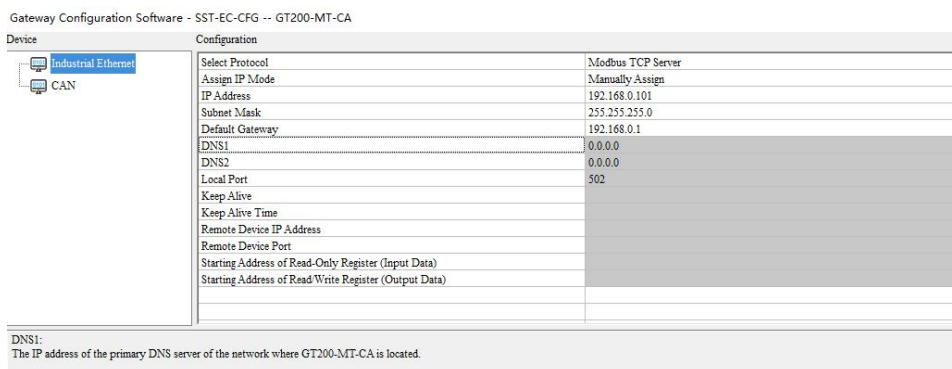
GT200-MT-CA

File	Type	Time	Download
User Manual V3.1	Manual	06/04/2026	
Datasheet	Datasheet	05/06/2021	
SST-EC-CFG V3.2.1	Software	12/05/2025	
CanMon V1.1.5	Software	08/11/2025	



Step 2: Connect and Configure IP Network Settings

Connect the PC to the GT200-MT-CA gateway using an Ethernet cable. Launch SST-EC-CFG and scan for the device. Configure the gateway's IP address to match your Modbus TCP network subnet. In this example, set the Gateway IP Address to 192.168.0.101, Subnet Mask to 255.255.255.0, Default Gateway to 192.168.0.1, and Local Port to 502 (Modbus TCP Standard Port).



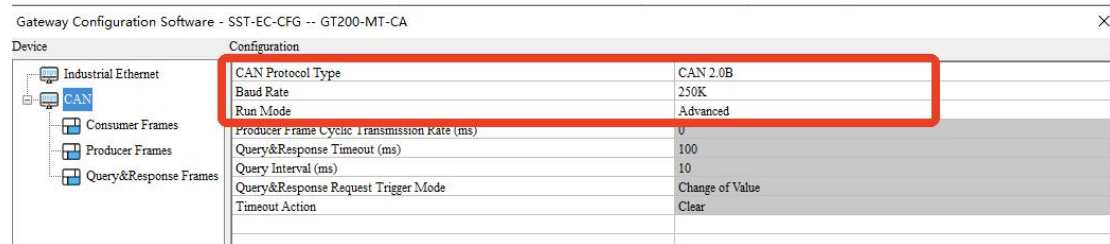
Step 3: Configure CAN Physical Layer Settings

In the left tree view, select the CAN node. Set CAN Protocol Type to 'CAN 2.0B' (Extended 29-bit Identifier), Baud Rate to '250K', and Run Mode to 'Advanced'. (Note: If your system uses standard 11-bit IDs, select CAN 2.0A).

GT200-MT-CA

EtherNet to CAN Gateway

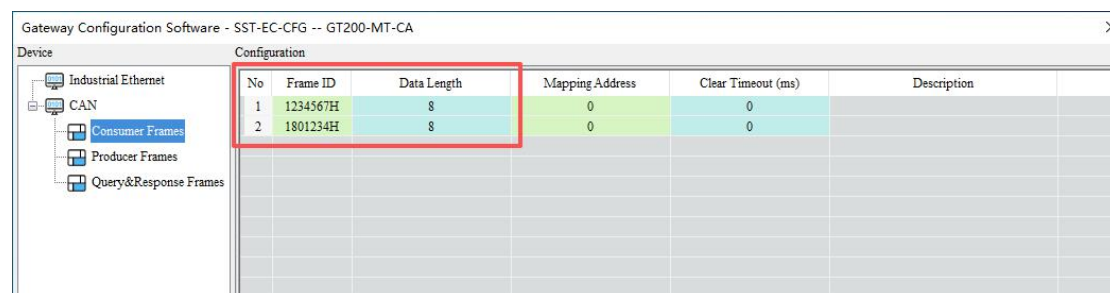
User Manual



Step 4: Configure Incoming CAN Frames (Consumer Frames / Read Operations)

In the left navigation panel, select Consumer Frames (data received from CAN bus and mapped into Modbus Input Registers):

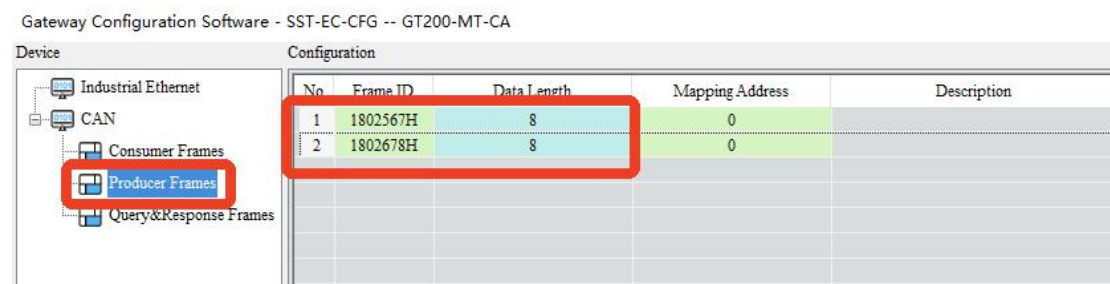
- Row 1: Frame ID = 1234567H | Data Length = 8 Bytes | Mapping Address = 0
- Row 2: Frame ID = 1801234H | Data Length = 8 Bytes | Mapping Address = 8



Step 5: Configure Outgoing CAN Frames (Producer Frames / Write Operations)

In the left navigation panel, select Producer Frames (data written from Modbus Holding Registers and transmitted onto the CAN bus):

- Row 1: Frame ID = 1801567H | Data Length = 8 Bytes | Mapping Address = 0
- Row 2: Frame ID = 1802678H | Data Length = 8 Bytes | Mapping Address = 8



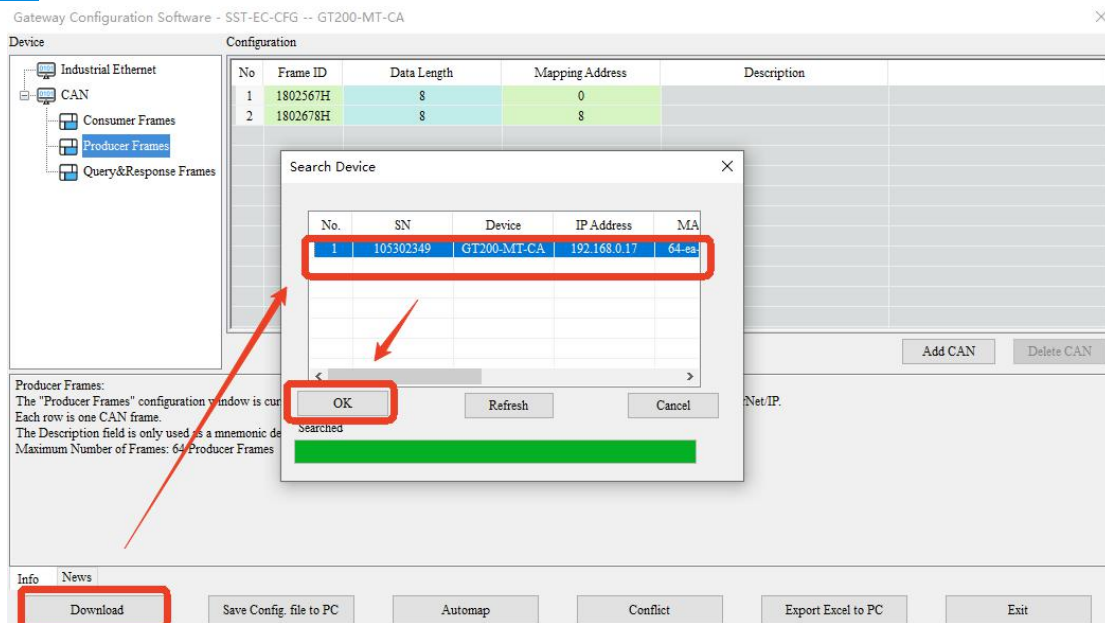
Step 6: Download Configuration to Gateway

Click Download at the bottom toolbar. Select the target GT200-MT-CA device from the popup list and click OK. The configuration will download, and the gateway will automatically reboot to apply the new settings.

GT200-MT-CA

EtherNet to CAN Gateway

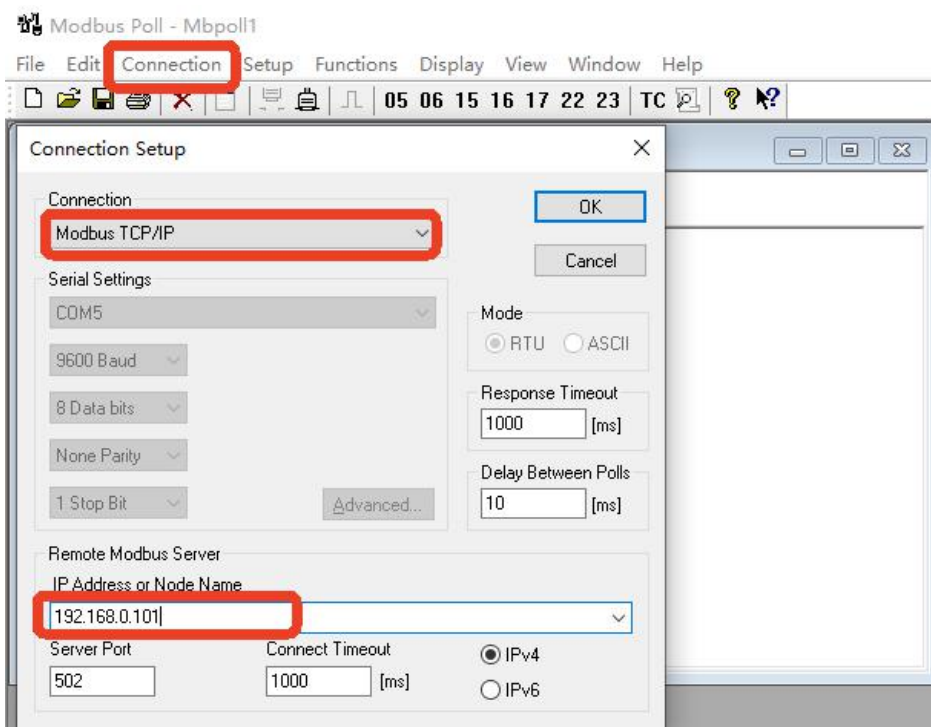
User Manual



3. Modbus Poll Client Setup

Open Modbus Poll on your PC to establish connection and monitor registers:

- **Connection Setup:** Navigate to Connection -> Connect... Select Modbus TCP/IP. Enter Remote Modbus Server IP Address: 192.168.0.101 and Server Port: 502.

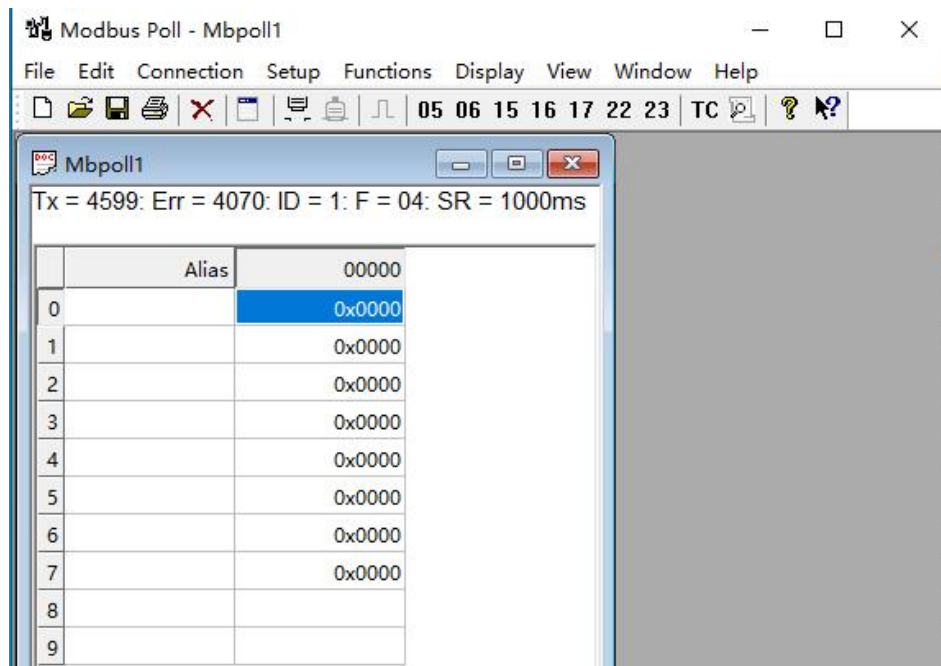


- **Read Window Setup (Input Registers):** Configure Read Definition using Function Code 04 (Read Input Registers). Set Address = 0 (corresponding to register addresses 30001 to 30008, totaling 8 Words / 16 Bytes).

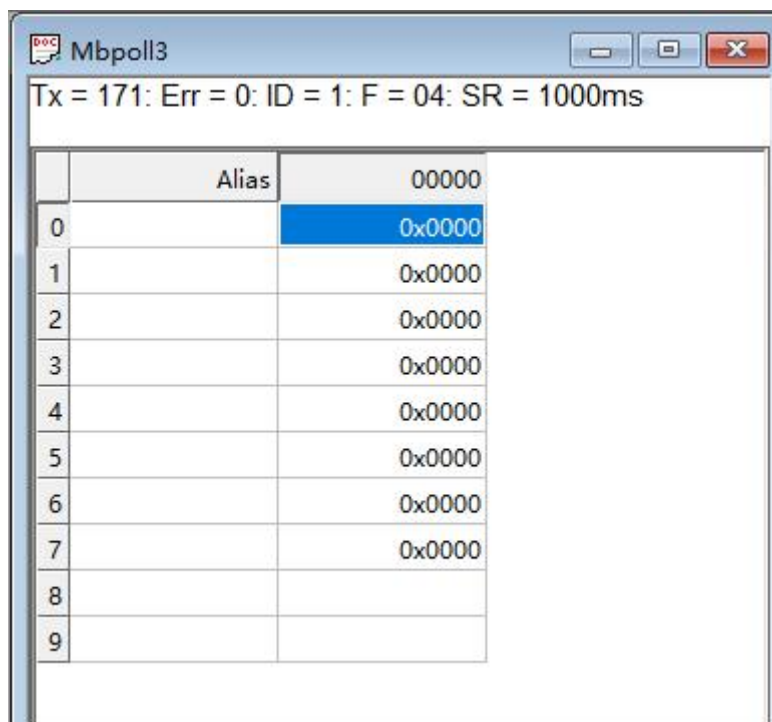
GT200-MT-CA

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- **Write Window Setup (Holding Registers):** Configure Write Definition using Function Code 03 / 16 (Preset/Write Multiple Holding Registers). Set Address = 0 (corresponding to register addresses 40001 to 40008, totaling 8 Words / 16 Bytes).



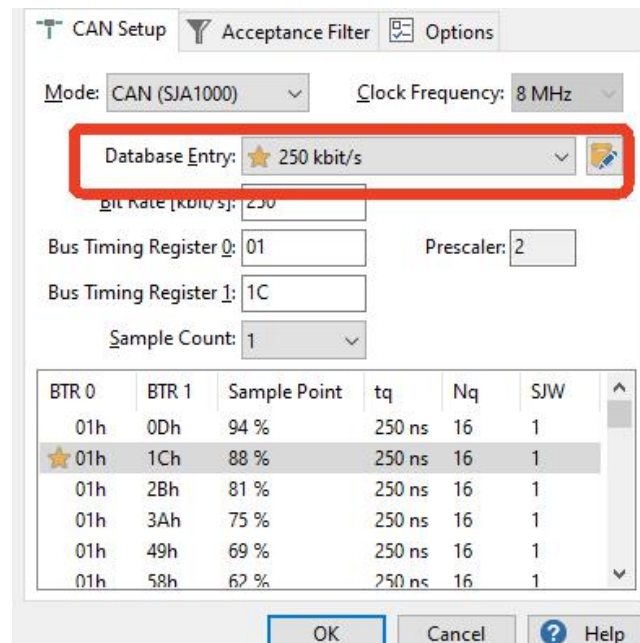
4. Data Verification & End-to-End Simulation

Connect a PCAN USB adapter to the CAN bus and launch PCAN-View. Set the bit rate to 250 kbit/s.

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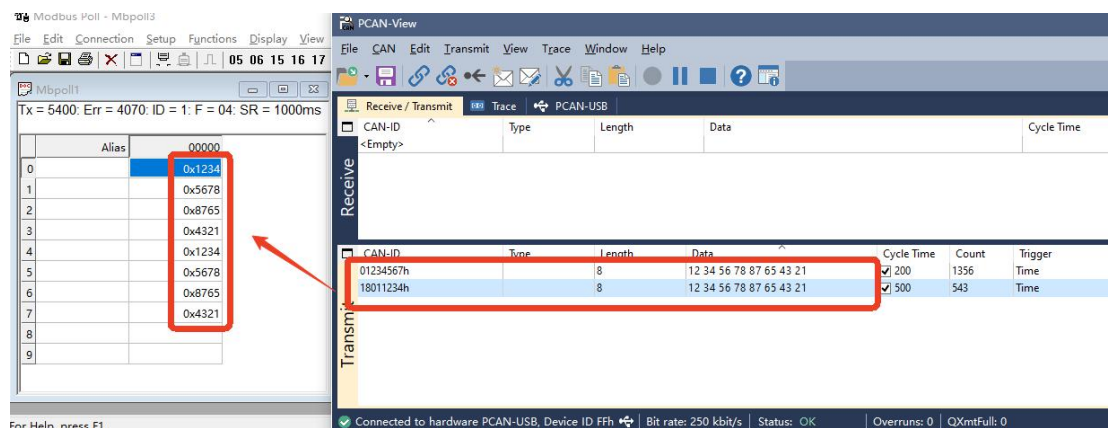
Test Case A: CAN Transmit -> Modbus Read Verification

In PCAN-View (Transmit tab), transmit the following two CAN messages periodically:

1. CAN ID: 0x1234567 | DLC: 8 | Payload: 12 34 56 78 87 65 43 21
2. CAN ID: 0x1801234 | DLC: 8 | Payload: 12 34 56 78 87 65 43 21

Expected Result in Modbus Poll (Input Registers 30001 - 30008):

- Reg 30001 - 30004 (CAN ID 0x1234567): 0x1234, 0x5678, 0x8765, 0x4321
- Reg 30005 - 30008 (CAN ID 0x1801234): 0x1234, 0x5678, 0x8765, 0x4321



Test Case B: Modbus Write -> CAN Receive Verification

In Modbus Poll (Holding Registers 40001 - 40008), write the following 16-byte hex sequence across 8 registers:

- Reg 40001 - 40004: 0x1234, 0x2345, 0x3456, 0x5678
- Reg 40005 - 40008: 0x1111, 0x2222, 0x3333, 0x4444

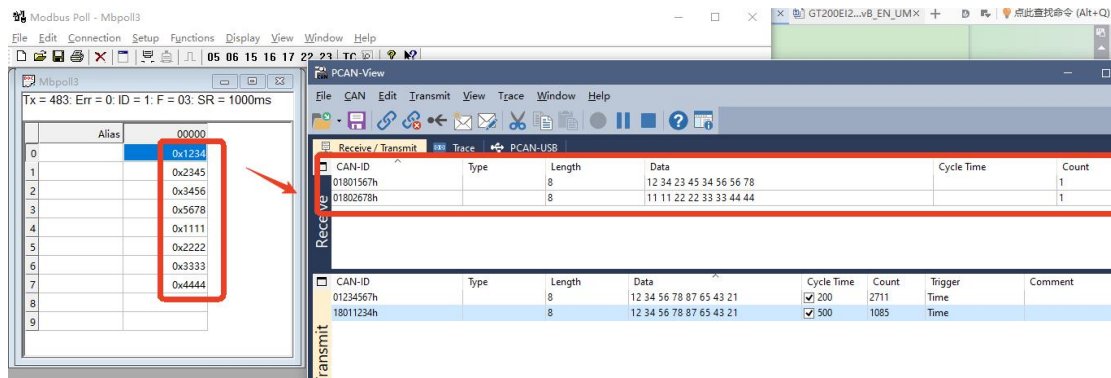
(Total Byte Stream: 12 34 23 45 34 56 56 78 11 22 33 44 55 66 77 88)

Expected Result in PCAN-View (Receive tab):

- Frame 1 -> CAN ID: 0x1801567 | DLC: 8 | Payload: 12 34 23 45 34 56 56 78

GT200-MT-CA EtherNet to CAN Gateway User Manual

- Frame 2 -> CAN ID: 0x1802678 | DLC: 8 | Payload: 11 22 33 44 55 66 77 88



ENGINEERING NOTE: When mapping 16-bit Modbus registers to 8-bit CAN payloads, verify byte order (endianness) configurations between the Modbus Master and CAN network endpoints if multi-byte numerical values are transferred.