EtherNet / CAN Gateway
GT200-MT-CA

User Manual

V1.2

Rev B

SST Automation

Email: support@sstautomation.com

www.SSTAutomation.com
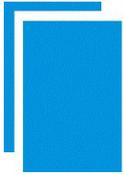
Important Information

Warning

The data and examples in this manual cannot be copied without authorization. SSTCOMM 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.

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GT200-MT-CA
EtherNet/CAN Gateway
User Manual

Catalog

SST

1 Product Overview

1.1 Product Function

It can monitor data on the CAN network through Modbus TCP, TCP Server, TCP Client and UDP protocols, etc.

1.2 Technical Specifications

[1]   Modbus TCP/CAN

➢   Ethernet Side

① Two 10M / 100M adaptive Ethernet port, half-duplex, full-duplex.

② Supports Modbus TCP protocol, as server (Modbus TCP server).

③ Supports 03, 04, 06, 16 function codes.

④ Input register start address is 0, support 04 function code.

⑤ Output register start address is 0, support 03, 06, 16 function codes.

⑥ Each 8 registers (16 bytes) constitute 1 CAN frame.

⑦ Each Modbus TCP command packet contains up to 15 CAN frame.

⑧ Send buffer can cache up to 300 CAN frame (in the non-periodic transmission mode) and 50 CAN frames (in the periodic transmission mode).

⑨ Receive buffer can cache up to 150 frame.

⑩ Supports DHCP.

➢   CAN Side

① Supports CAN2.0A and CAN2.0B.

② CAN Baud rate supports 1M, 500K, 250K, 125K, 100K, 50K, 20K, 10K bps.

[2]   TCP Server/CAN

➢   Ethernet Side

① Two 10M / 100M adaptive Ethernet port, half-duplex, full-duplex.

② Supports TCP protocol, as TCP server.

③ Supports 4 Client connections.

④ Supports forwarding CAN frame data to 4 TCP client and CAN frame data from 4 Client.

⑤ Gateway can cache up to 200 CAN frame data from TCP Client.

⑥ Supports static IP address configuration (manual allocation) and DHCP automatically assigns IP address.

⑦ Supports local port configuration.

⑧ Support for keep-alive, automatic detection of the presence of TCP connection.

➢ CAN Side

① Supports CAN2.0A and CAN2.0B.

② CAN Baud rate support 1M, 500K, 250K, 125K, 100K, 50K, 20K, 10K bps.

③ Gateway can cache up to 150 CAN frame data from CAN device.

④ Supports time stamp (need to configure).

⑤ Supports configuring Ethernet packet contain CAN frames.

⑥ Supports configuring waiting time between Ethernet packet.

⑦ Supports for remote requests.

[3] TCP Client/CAN

➢ Ethernet Side

① Two 10M / 100M adaptive Ethernet port, half-duplex, full-duplex.

② Support TCP protocol, as TCP Client.

③ Constantly tries to connect the server until the success.

④ Gateway can cache up to 200 CAN frame data from TCP server.

⑤ Supports static IP address configuration (manual allocation) and DHCP automatically assigns IP addresses.

⑥ Supports local port configuration.

⑦ Supports for keep-alive, automatic detection of TCP connection.

⑧ Supports visiting remote device (TCP Server) (IP address and port number).

➢ CAN Side

① Supports CAN2.0A and CAN2.0B.

② CAN Baud rate support 1M, 500K, 250K, 125K, 100K, 50K, 20K, 10K bps.

③ Gateway can cache up to 150 CAN frame data from CAN device.

④ Supports time stamp (need to configure).

⑤ Supports configuring CAN frames NOs in Ethernet packet.

⑥ Supports configuring waiting time between Ethernet packet.

⑦ Supports for remote requests.

[4] UDP/CAN

➢ Ethernet Side

① Two 10M / 100M adaptive Ethernet port, half-duplex, full-duplex.

② Support UDP protocol.

③ Forward data to CAN and Ethernet network.

④ Supports static IP address configuration (manual allocation) and DHCP automatically assigns IP address.

⑤ Supports local port configuration.

⑥ Supports visiting remote device (TCP Server) (IP address and port number).

➢ CAN side

    ① Supports CAN2.0A and CAN2.0B.

    ② CAN Baud rate support 1M, 500K, 250K, 125K, 100K,50K, 20K, 10K bps.

    ③ Supports time stamp (need to configure).

    ④ Supports configuring CAN frames NOs in Ethernet packet.

    ⑤ Supports configuring waiting time between Ethernet packet.

    ⑥ Supports for remote requests.

[5] Power: 24 VDC (11~30 VDC), 80mA(24VDC).

[6] Operating temperature: -4°F~140°F (-20°C~60°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: 1.4 in (35 mm) DIN RAIL.

[9] Class of pollution: ≤ Level 3.

1.3 Related Products

The related products include: GT200-DP-RS, GT200-DN-RS, GT200-DP-CA, GT200-MT-CO etc.

To get more information about related products, please visit SSTCOMM website: www.sstautomation.com.

1.4 Revision History

Revision	Date	Chapter	Description
V1.2, Rev B	9/30/202	PART	Updated configuration software screenshot.
V1.2, Rev A	1/30/2022	PART	Added support for 06 function code.
V1.0, Rev A	12/28/2021	ALL	Updated the format and modified Chapter 4.2.

2 Hardware Descriptions

2.1 Product Appearance

Power Interface		DIP switch
Ethernet Status Indicator		
		CAN Status Indicator
		Ethernet Interface
CAN Interface		

Notes: This picture is for reference only. The product appearance is subject to the actual product.

2.2 Indicators

2.2.1 Modbus TCP

The indicator light is shown in the following table:

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 is disconnected.
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, ENS and CNS orange indicator blinks alternately, showing the gateway is in configuration status.

Run Mode: After power on, ENS and CNS orange indicator are on simultaneously for about 100ms (initialization), ENS red light blinks in a short period then turns to green light blinking, CNS turns to green on. 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 light 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	During more than one Client connection, there is disconnected. (The last Client disconnected, showing green light flashing)
CNS	Red	CAN network error
	Green	CAN network normal
ENS (Orange) and CNS (Orange) (Orange: Red and green light 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 light on simultaneously, and then blinks alternately, showing the gateway is in the state of configuration.

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

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
	Red	CAN network normal
ENS (Orange) and CNS (Orange) (Orange: Red and green light 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 ENC and CNS orange light on, and then blinks alternately, showing the gateway is in the configuration mode.

Run Mode: After power on, ENS and CNS orange indicators are on simultaneously, ENS red light blinks a while then becomes 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 succeeded in connecting Server, ENS and CNS green light are on.

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 light on at the same time)	Blinking alternately	Configuration Mode
ENS (red), CNS (red)	Blinking three times	Using locate function

Configuration Mode: After power on, ENS and CNS orange indicators are on simultaneously, and then turn to blinking alternately, and showing the gateway is in configuration mode.

Run Mode: After power on, ENS and CNS orange indicators are on simultaneously, and then become green. It indicates UDP initialization is completed, 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.
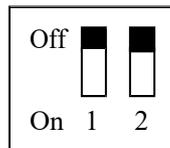
Mode (bit 2)	Function (bit 1)	Description
OFF	OFF	Run mode: allow data exchange and upload/download configuration.
OFF	ON	Run mode: only perform data exchange, but cannot be configured.
ON	OFF	Configuration mode: IP address is 192.168.0.10 (fixed). Only allow upload/download configuration.
ON	ON	Reserved

Notes: After re-configuring DIP switch, you must restart the gateway GT200-MT-CA (power off and power on) to let the configuration take effect! After configuration is done, it is suggested to set the DIP switch to "2(OFF)1(ON)"(Run mode: only perform data exchange, but cannot be configured).

2.4 Interface

2.4.1 Power Interface

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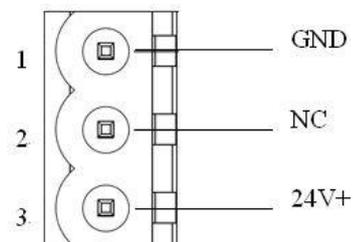
2.4.2 CAN Interface

CAN side connector:

Pin	Wiring
Pin 1	V+(optional)
Pin 2	CAN-H
Pin 3	Shield (optional)
Pin 4	CAN-L
Pin 5	GND, GND of 24V (optional)
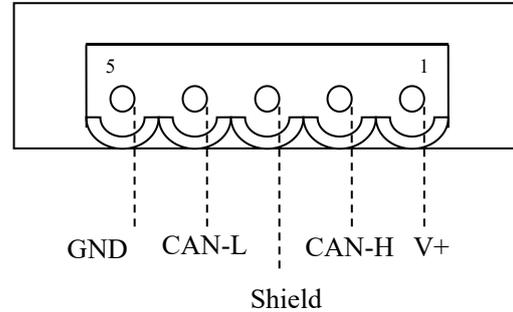
Notes: Here, shield port is optional. The CAN-L and CAN-H must be connected. Here pin 1 and 5 are connected to the pin 3 and pin 1 of power port internally.

Attention: Here only one interface of 24V interface and power interface is required to connect, but should not be connected simultaneously.

2.4.3 Ethernet Interface

The Ethernet interface uses RJ45 interface, follows the IEEE802.3u 100BASE-T standard, 10/100M adaptive,. its pin (standard Ethernet signal) is defined as below:

Pin	Description
S1	TXD+, Transmit Data+
S2	TXD-, Transmit Data-
S3	RXD+, Receive Data+
S4	Bi-directional Data+
S5	Bi-directional Data-
S6	RXD-, Receive Data-
S7	Bi-directional Data+
S8	Bi-directional Data-
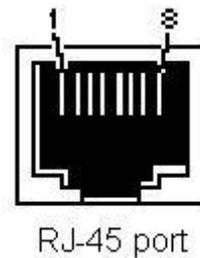
3 Hardware Installation

3.1 Mechanical Dimension

Size (width * height * depth):

1.0 in * 4.0 in * 3.6 in (25 mm * 100 mm * 90 mm)
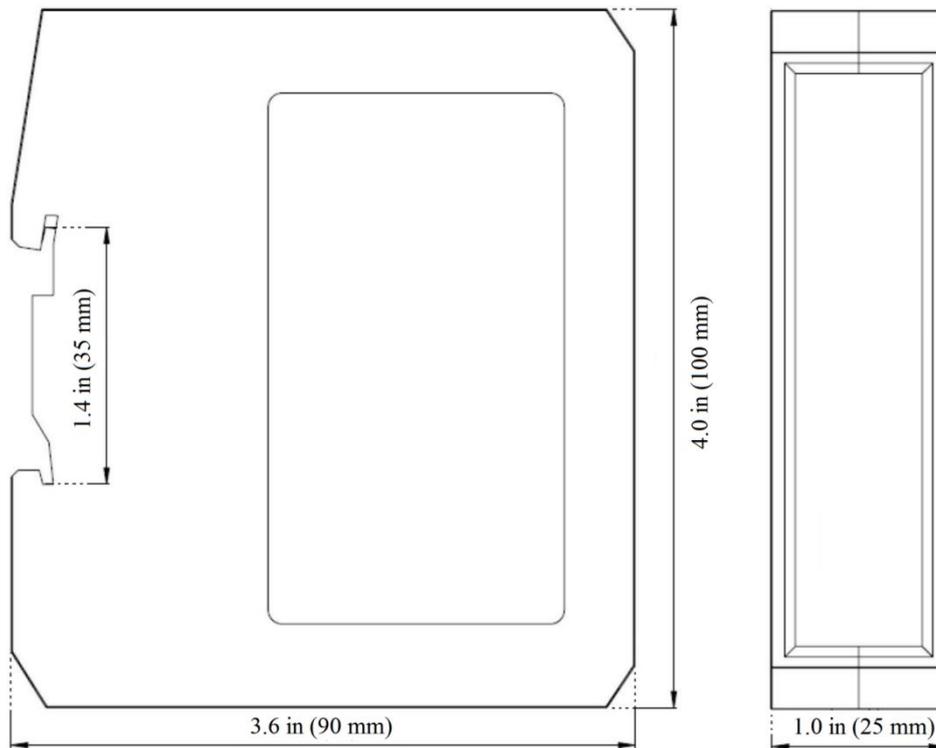
3.2 Installation Method

Using 1.4 in (35mm) DIN RAIL.
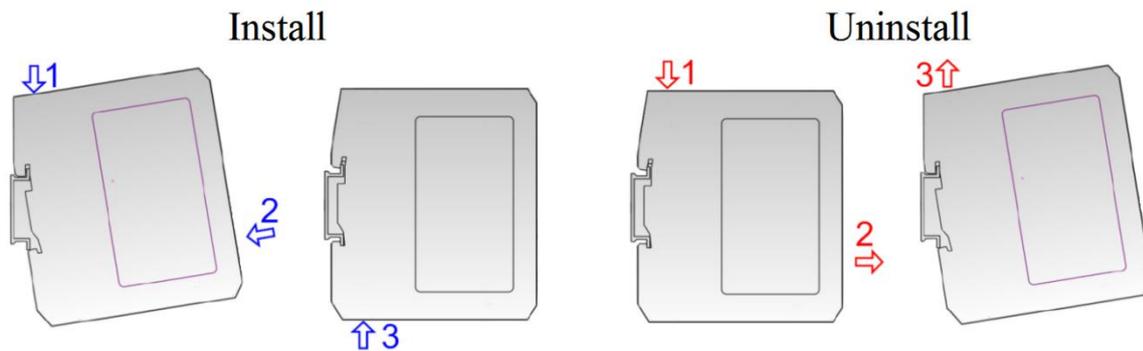
4 Quick Start Guide

4.1 Connection

1.   According to the RJ45 port instructions in Chapter 2.4.3, properly wires every pin of 5-pin terminal.

2.   According to the CAN interface instructions in Chapter 2.4.2, properly wires at least pin 2 and 4. Noted it is not the right time to power on.

3.   Set DIP Switch to "2(ON) , 1(OFF)".

4.   Power on the module, enter into the configuration mode. Now the IP address of the gateway is fixed: 192.168.0.10 and it is configurable.

Notes other settings and functions of DIP switch:

①   DIP Switch-"2(OFF) , 1(OFF)": The gateway can be used for both upload/download operations and data exchange.

②   DIP Switch-"2(OFF) , 1(ON)": The gateway can only perform data exchange and cannot be configured.

③   Make sure that the GT200-MT-CA and your computer are in the same network segment.

④   If you can't discover any gateways, please test the network connection first. Please refer to the note "How to Use the Ping Command" located on our Support page on the sstautomation.com website.

4.2 Configuration

Please download the configuration software SST-EC-CFG on our website:

www.sstautomation.com/Download1/

For more details of the software SST-EC-CFG, please refer to Chapter 5.

1.   Open the SST-EC-CFG software installed on your computer.

2.   Click "Search Device" you can search all devices on the network.
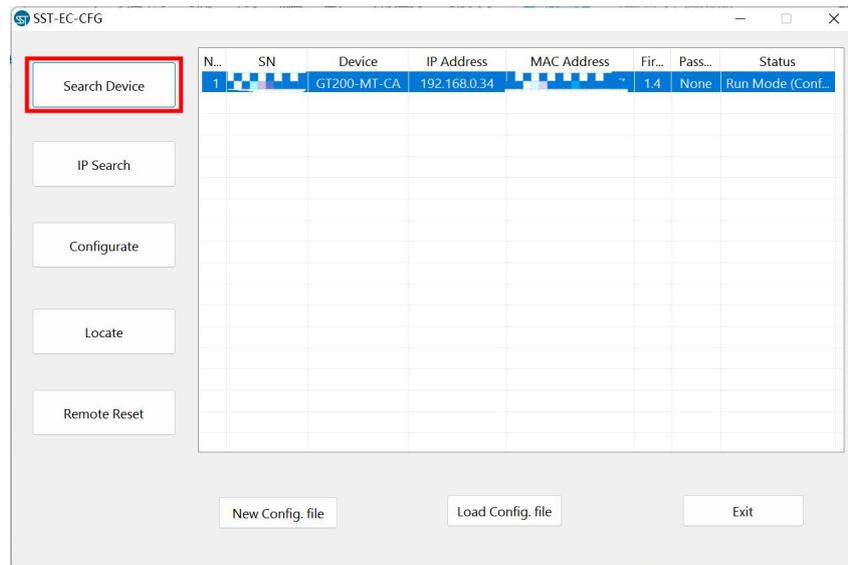
3. Select the device and click the "Configure" button, or double-click the selected device. You will see the configuration settings are shown below:
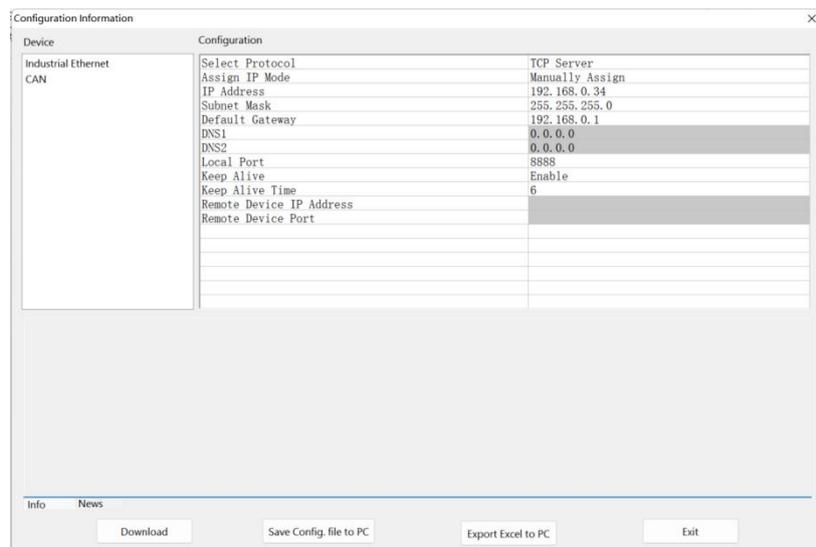
4. Click "Industrial Ethernet" in the tree view on the left, in the "Select Protocol" item, you can select Modbus TCP Server, TCP Server, TCP Client, or UDP. Please configure an IP address and other parameters of the gateway according to actual needs.

5. Click the "CAN" on the left, configure the parameters as below:

Note: The setting protocol is different, the "CAN" interface can be configured with different parameters.

6.   Click the "download" button, select the gateway you want to download to and click "OK".

7.   Set DIP Switch to "2(OFF) , 1(OFF)"(Run mode) and reboot the gateway. Make the configuration effective.

Tips: You can click the "Remote Reset" button to reboot the gateway. Or power off and power up the gateway again.

5 Software Instructions

5.1 Precautions

1. Please set the DIP Switch (2) to ON as the product is used for the first time, and configure the parameters in the static configuration. Noted the IP conflict will cause the start-up failure of the product.
2. Users can upload/download configuration in the static configuration, the product cannot communicate with the devices in this process.

5.2 Software Functions

5.2.1 Search Interface

Double-click "SST-EC-CFG" to access the main interface:
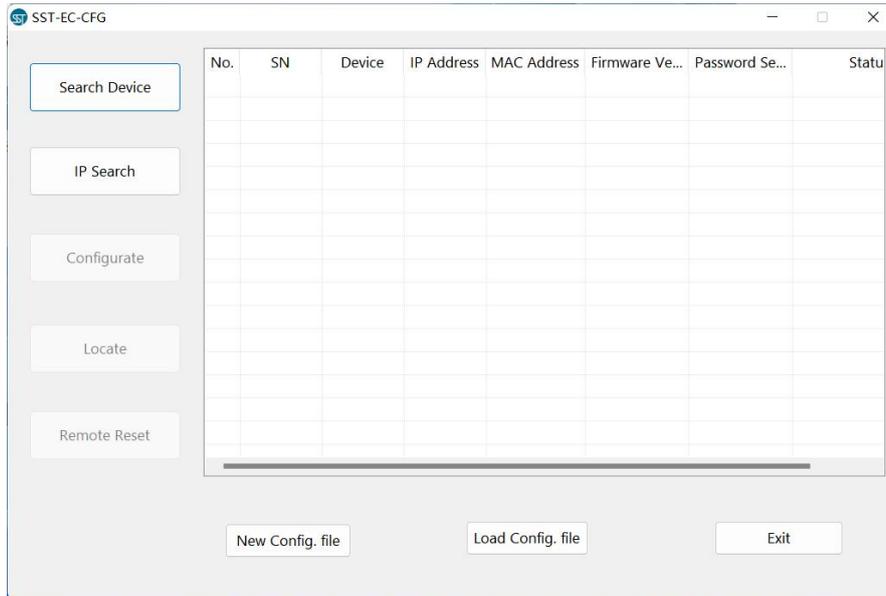
5.2.2 Search Device

Click "Search Device" you can search all devices on the network.
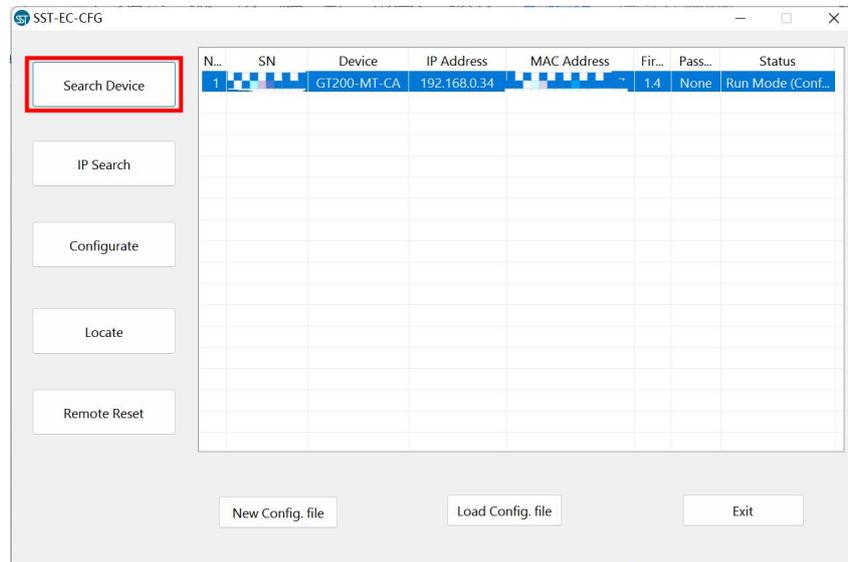
Select a device in the list, then the "Configure", "Locate" and "Remote Reset" become available, otherwise disabled.

5.2.3 IP Search

"IP Search" can search specified device by IP address, thereby configure this device. At this time, it only lists the device using the IP address.
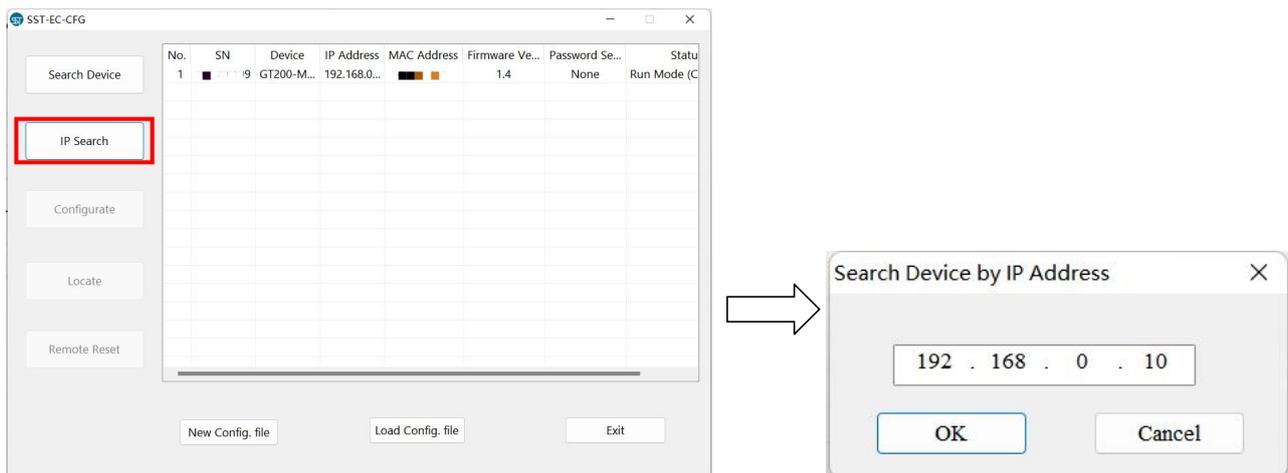
5.2.4 Locate
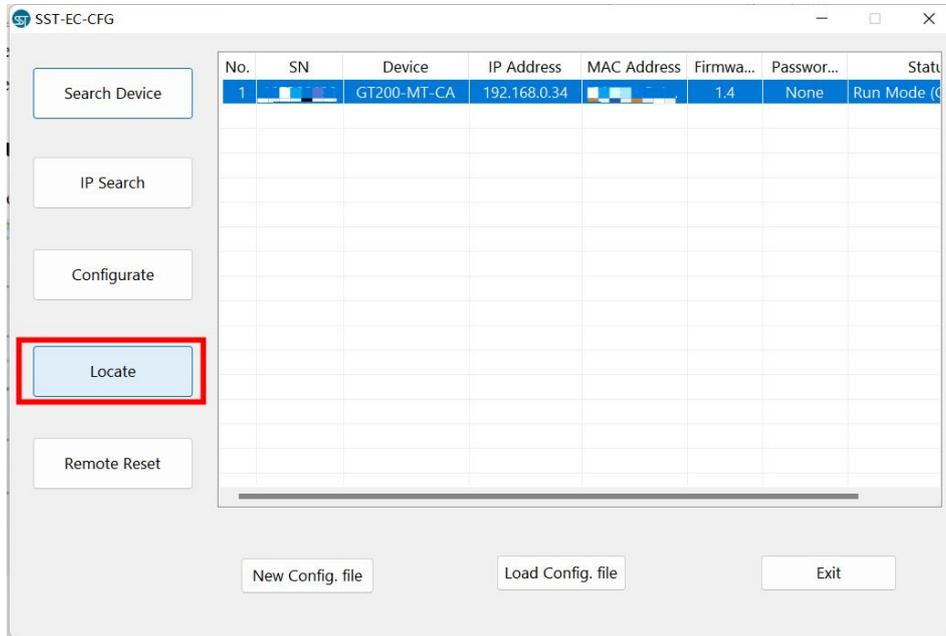
When selecting a device, locate function is available (otherwise disabled), click "Locate", then ENS and CNS red lights will blink three seconds to locate the currently selected GT200-MT-CA equipment.

5.2.5 Configure

Click the "Configure" button or double-click the selected device, a window will pop up as follows:
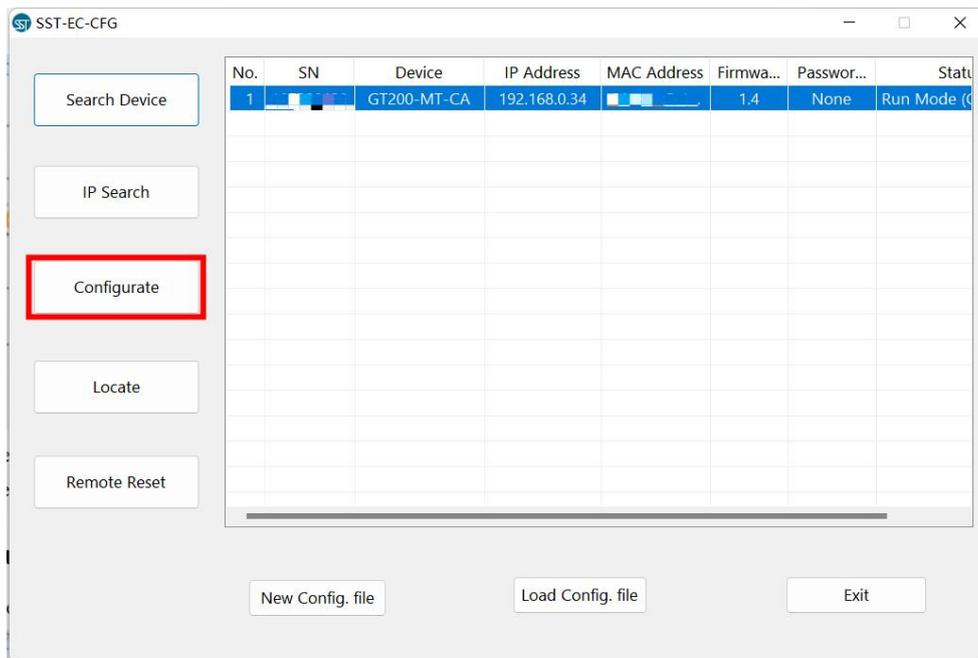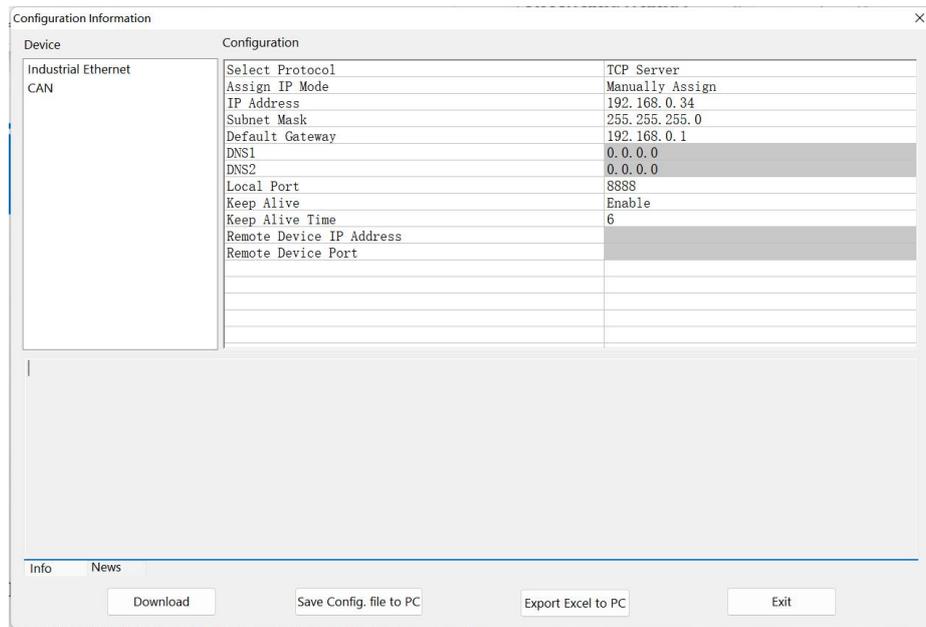
1. Industrial Ethernet

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

● **Protocol: Modbus TCP Server**
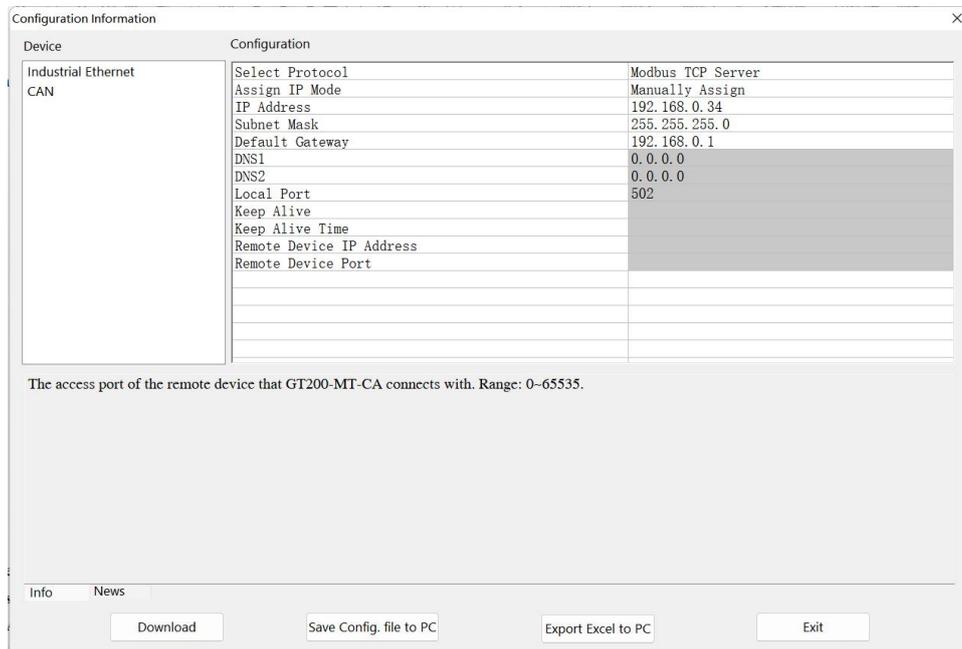
The parameters that can be configured as follows:

Assign IP Mode: Supports Manual Assign and 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 Domain name server (may not be set in LAN).

DNS2: Secondary domain name server.

Local Port: 502.

● **Protocol: TCP Client**

Assign IP Mode: Supports Manual Assign and 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 Domain name server (may not be set in LAN).

DNS2: Secondary domain name server.

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

Keep Alive: Two options: Disable, Enable.

Keep Alive Time: The interval time that TCP tries to verify the connection. Range: 1~60000s. The default value is 6s.

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

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

● **Protocol: TCP Server**

The parameters that can be configured as follows:

Assign IP Mode: Supports Manual Assign and 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 Domain name server (may not be set in LAN).

DNS2: Secondary domain name server.

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

Keep Alive: Two options: Disable, Enable.

Keep Alive Time: The interval time that TCP tries to verify the connection. Range: 1~60000s. The default value is 6s.

● **Protocol: UDP**

The parameters that can be configured as follows:

Assign IP Mode: Supports Manual Assign and 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 Domain name server (may not be set in LAN).

DNS2: Secondary domain name server.

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

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

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

2. CAN

- **Protocol: Modbus TCP Server**

The parameters that can be configured as follows:

CAN Protocol Type: CAN2.0 A and CAN2.0 B.

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

● **Protocol: TCP Client & TCP Server & UDP**
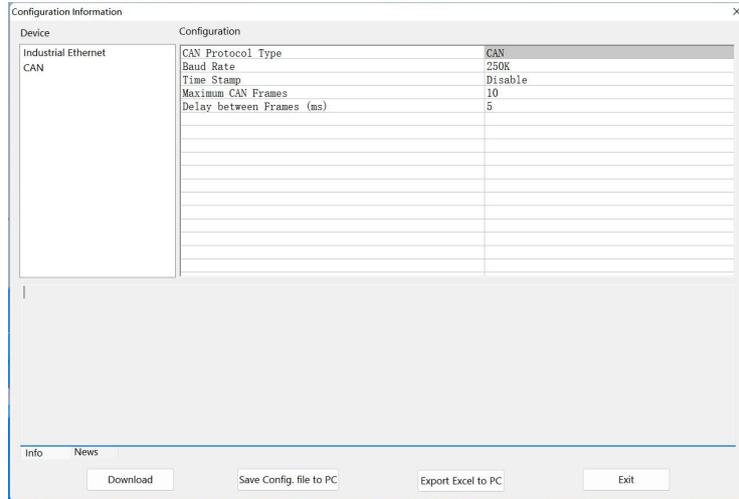
CAN Protocol Type: CAN.

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

Time Stamp: The time when GT200-MT-CA receives the CAN frame. If disable, it will transmit 13-bit frame without time stamp. If enable, it will transmit 17-bit frame with the first 4-bit time stamp.

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.

3. Download

Click "Download" button in the configuration interface to download the configuration into the GT200-MT-CA.
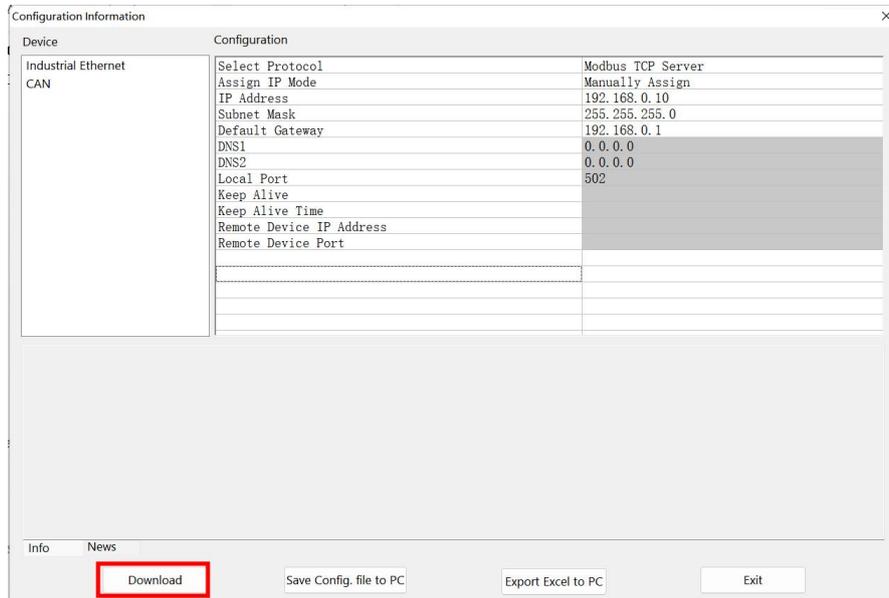
Search a device and click "OK" to download:
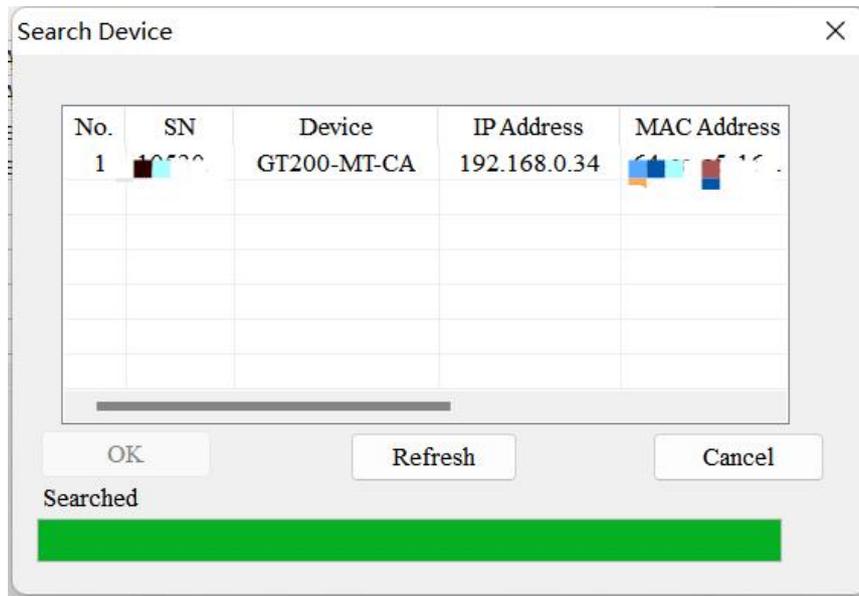
Notes:

① Confirm that the device is in running or configuration mode before downloading.

② When users download the current configuration to the gateway, and exit, it requests to click the "Remote Reset" button or restart the gateway to make the newly downloaded configuration take effect.

4. Save

Click "Save" button in the configuration interface to save the project.
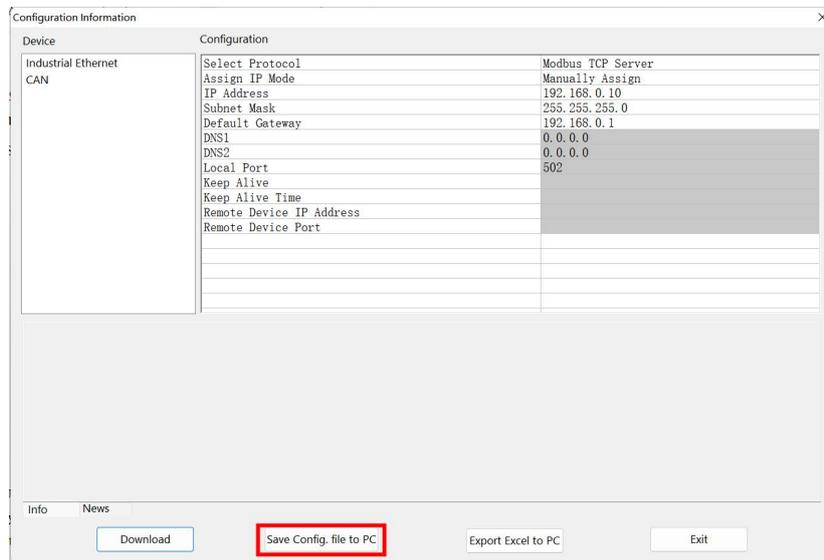
Note: User can change configuration data, after that users can save the parameters into file, but please ensure the accuracy of the data. Otherwise incorrect data will be processed according to the default values. Please do not change the data in a keyword, and do not add spaces.

5. Export

Click "Export" in the configuration interface. The configuration parameters will be exported as an excel table.
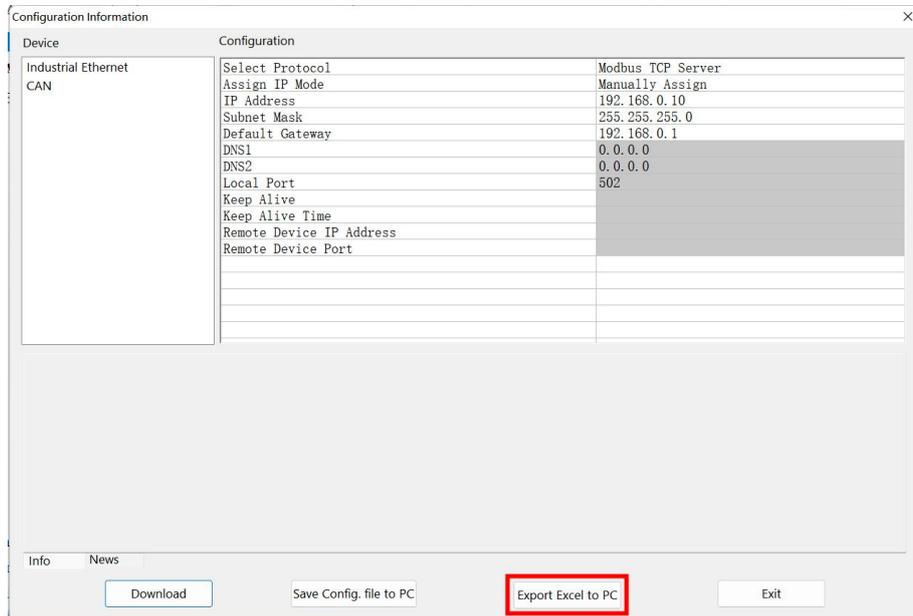
5.2.6 Remote Reset

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.
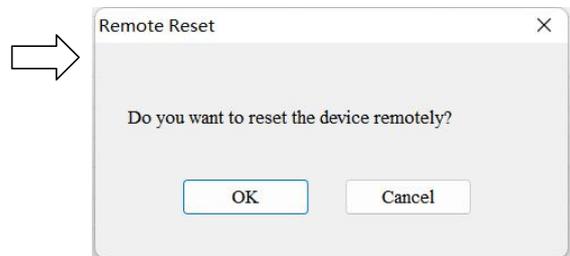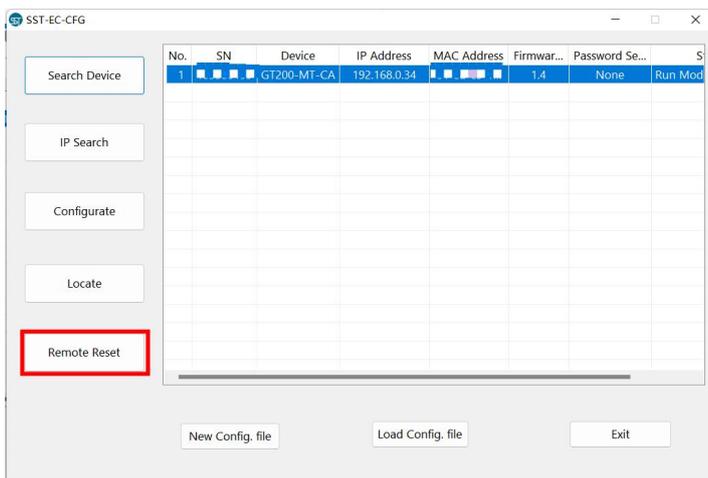
5.2.7 New

Click the "New" button.Open the configuration interface after the parameters was initialized:
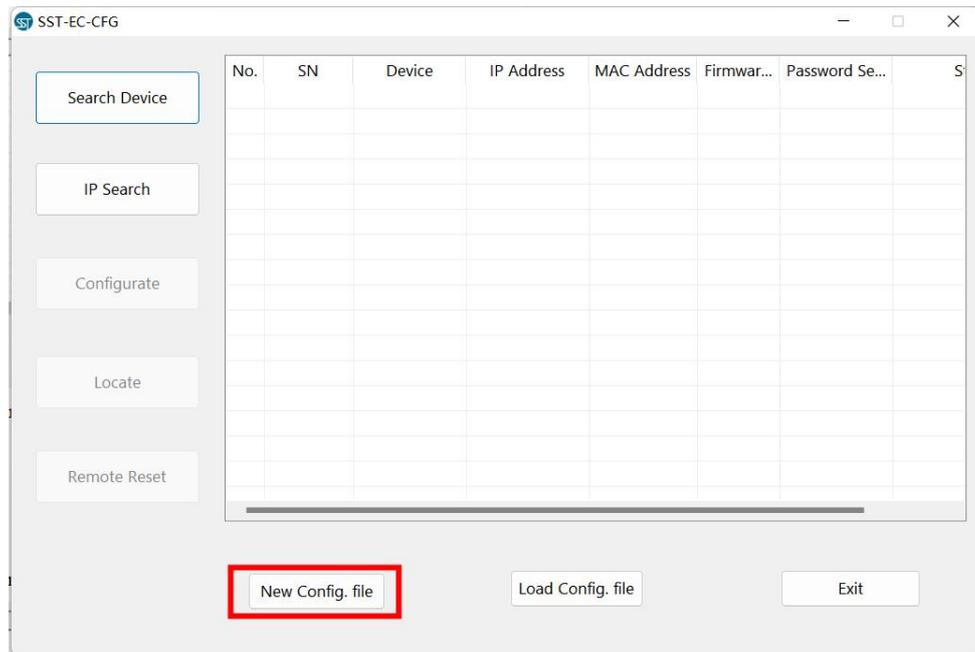
Note: The "New" function is mainly used for off-line configuration. Namely: Configuration interface can also be opened without device in initialization parameters.

5.2.8 Open

Click the "Open" button. Open and display the configuration data which is saved before:
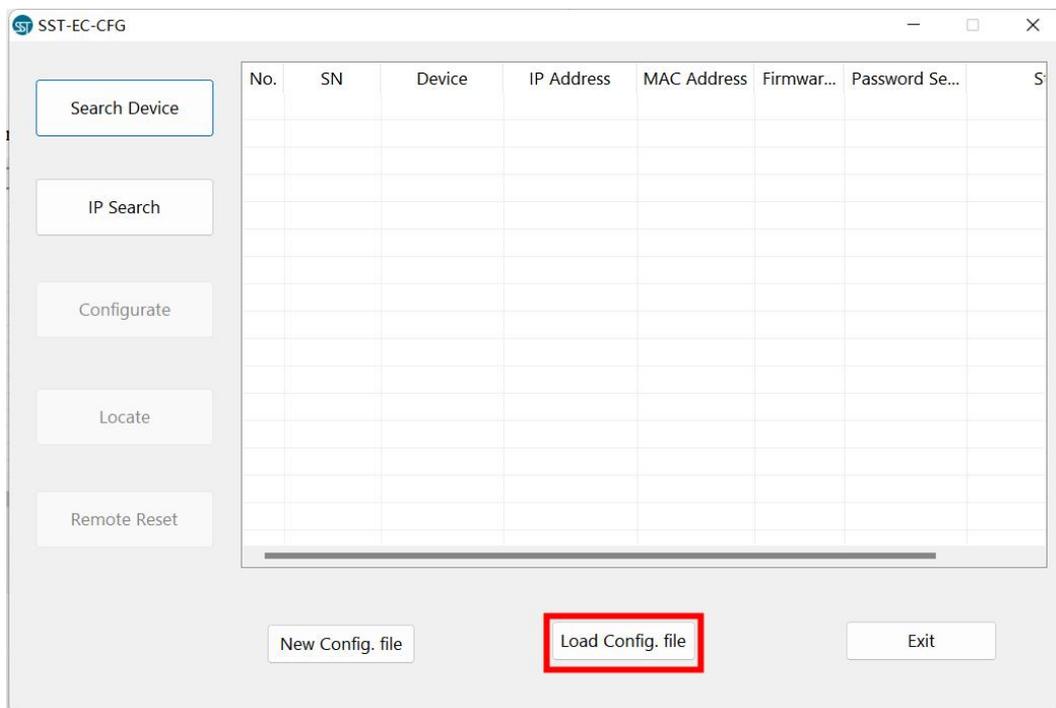
6 Working Principle

6.1 Modbus TCP/CAN

1. Data Exchange

The receiving and sending of CAN frame is FIFO.
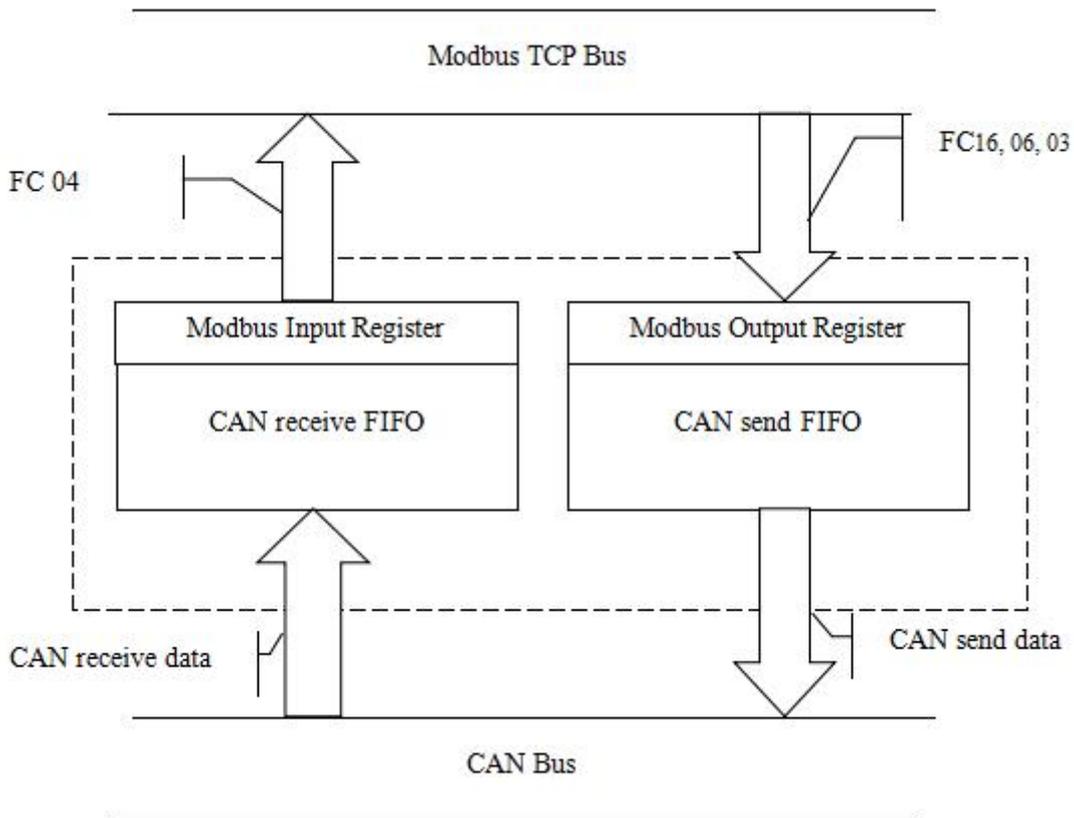
2. The Relationship between Them

The following is how to encapsulate a CAN frame with 16-byte (8 registers) .

a) Modbus TCP input register

Use function code 04 to read the Modbus input register, that is CAN receive data.

The starting address is 0.

Every frame has to 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

If GT200-MT-CA received CAN frame on CAN network, the sequence number of input frame will add 1. Users decide whether to use these CAN frame according to the needs.

b) Modbus TCP output register

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 register (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

c) Bytes Definition

✧ Byte 0 to 3 are controlling bytes

Byte 0: It indicates sending this sequence number of CAN frame once if it is zero, and it indicates sending this sequence number of CAN frame periodically if it is non-zero, the cycle value is decided by this byte value: period of transmission=the value of byte 0 * 10ms. For example, if the value of byte 0 is 10, the period of transmission is 100ms, that is to say sending the frame one time every 100ms.

Byte 1: Indicates the data number of CAN frame, the range is 0~8.

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 add 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. CAN frame sequence number sends now must be different with the entire CAN frame sequence number sent last time, or it won't do any operation to current CAN frame.

✧ Byte 4 to 7 are CAN frame header and CAN frame mode control (29 bit CAN ID). If the current CAN ID of CAN frame is same with one in a cycle of transmission, the latter is removed, the current CAN is frame kept into the buffer.

The format of byte 4 is as follow:

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 stands for data frame, 1 stands for remote frame.

Bit 0 to 4 of byte 4 to byte 7, CAN2.0A/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							

✧ Byte 8 to 15 are the CAN frame data, if the data number of CAN frame is less than 8 bytes, then it is 0.

6.2 TCP Server/TCP Client/UDP to CAN

1. Data Exchange

The receiving and sending of CAN frame is FIFO.
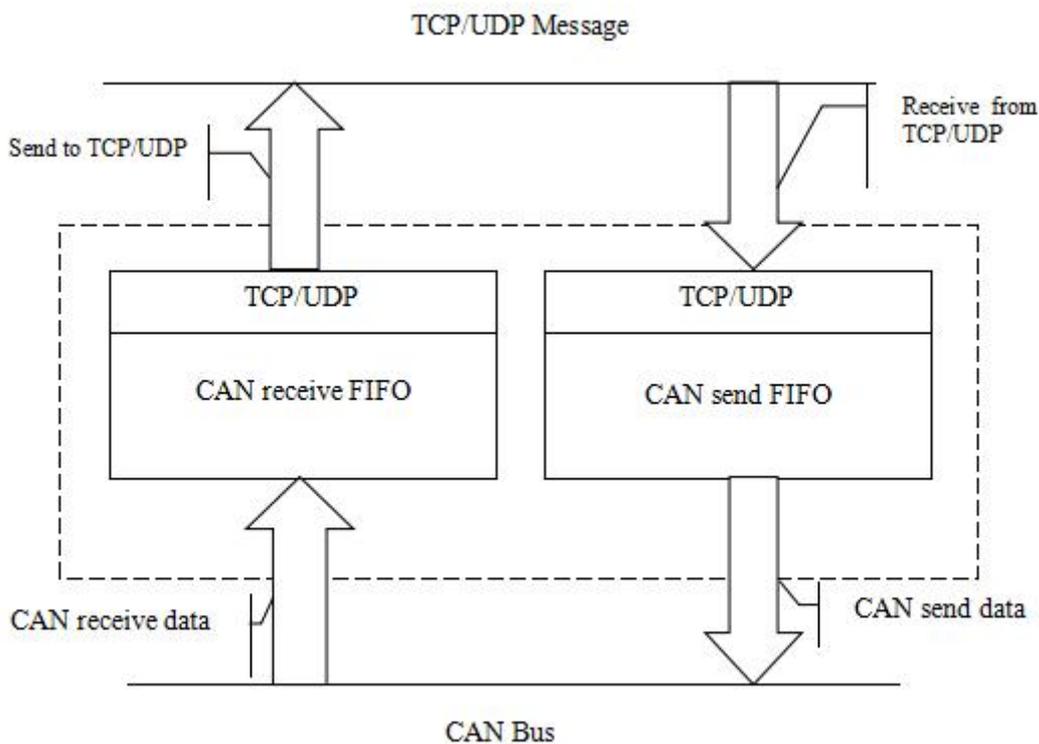
2. The Relationship between Them

Mutual conversion between TCP / UDP data and CAD data is required to use the format below.

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
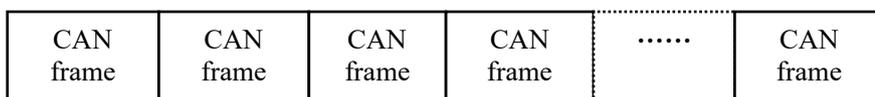
GT200-MT-CA applies two CAN frame format, as follows:

CAN frame without time stamp: A CAN frame occupies13 bytes, the format is as follows:

Control byte	Frame ID	Frame data

EXT	RTRTAG	0	0	Frame data length		Byte1	Byte2	Byte3	Byte4

bit7   bit6   bit5 bit4 bit3~bit0
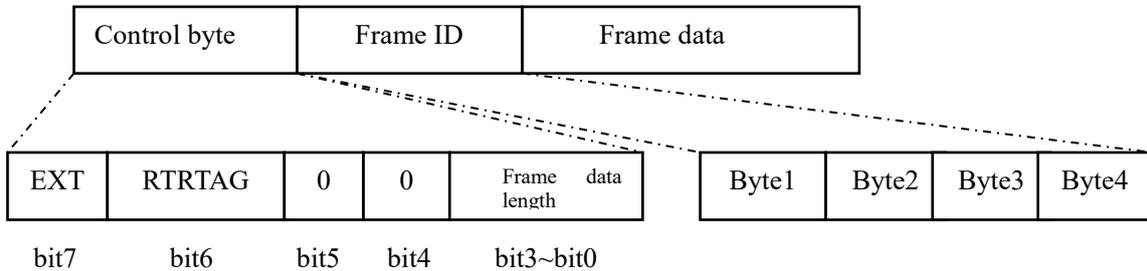
CAN frame with a time stamp: A CAN frame occupies 17 bytes, the format is as follows:

timestamp	Control byte	Frame ID	Frame data

Byte1	Byte2	Byte3	Byte4		EXT	RTRTAG	0	0	Length		Byte1	Byte2	Byte3	Byte4

bit7   bit6   bit5 bit4 bit3~bit0
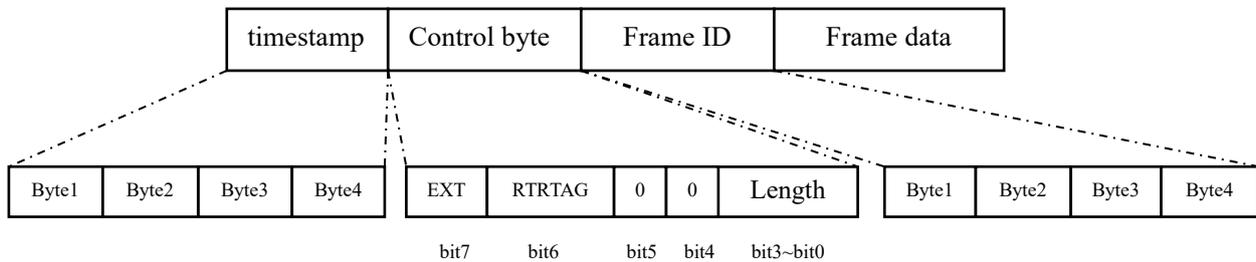
Time stamp: The time that GT200-MT-CA received CAN frame from the CAN port.

(Explanation: Only if the time stamp function is enabled in SST-EC-CFG will GT200-MT-CA adds the receiving time of CAN frame to CAN frame header automatically. At this point, the CAN frame that GT200-MT-CA forwarding to Ethernet is 17 bytes long frame with time stamp. Additionally, GT200-MT-CA applies 13 bytes long CAN frame without times tamp)

Control byte: Occupies one byte including the extended frame signs, remote frame flag and the frame 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, supplement with 0
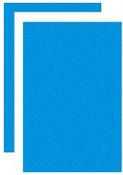
when data lacks 8 bytes.

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

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

6.3 Terminal Resistor

Under high baud rates (1M, 500k) situation, CAN network require each of two endpoints in the farthest networks to connect terminal resistor of 120ohm.