

CAN / EtherNet/IP Gateway GT200-EI-CA

User Manual

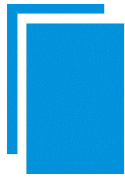
V2.2



SST Automation

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Important Information

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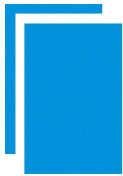
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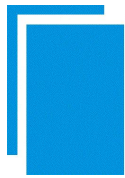
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1 Product Overview

1.1 Product Function

GT200-EI-CA is a gateway that can realize mutual conversion between CAN protocol and EtherNet/IP protocol, and supports CAN2.0A/CAN2.0B devices to connect to EtherNet/IP Scanner for data communication.

1.2 Product Features

- 1.Supports one CAN interface.
- 2.CAN interface: 3KV photoelectric isolation.
- 3.CAN Advanced Mode supports filtering functions.

1.3 Technical Specifications

[1] Ethernet Side

- Supports ODVA standard EtherNet/IP communication protocol.
- Maximum data size: 500 bytes each for input and output.
- Supports 10M / 100M (auto-negotiating).

[2] CAN Side

- Supports CAN2.0A and CAN2.0B.
- CAN Baud rate supports 1M, 500K, 250K, 125K, 100K, 50K, 20K, 10Kbps.

[3] Basic Mode

- Supports mask group filtering.
- The sending buffer can cache 85 CAN frames.
- The receiving buffer can cache 85 CAN frames.

[4] Advance Mode

- Support Producer Frames, Producer Frames and Query&Response Frames, with a maximum of 64 consumer frames.
- The sending buffer can cache 300 CAN frames.
- The receiving buffer can cache 150 CAN frames.
- Producer Frame Cyclic Transmission Rate : 0~60000ms.
- Query&Response Timeout (ms): 0~60000ms, default 100ms.
- Query Interval (ms):0~60000ms, default 10ms.

- Query&Response Request Trigger Mode: change of value, cyclic.
- Timeout Action for Query&Response frames: Clear, Hold.
- Clear Timeout(ms): Range: 0 - 60000ms, If this parameter is 0, the gateway will not clear the corresponding data buffer.
- Status Message and Control Message.

[5] Operating environment:

- REL Humidity: 5% to 95% (non-condensing).
- Operating temperature: -40°F-158°F (-40°C-70°C).
- The altitude of the installation site does not exceed 2000 meters.
- Pollution level: class 3.

[6] Power: 24 VDC (9~30 VDC), 80mA(24VDC).

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

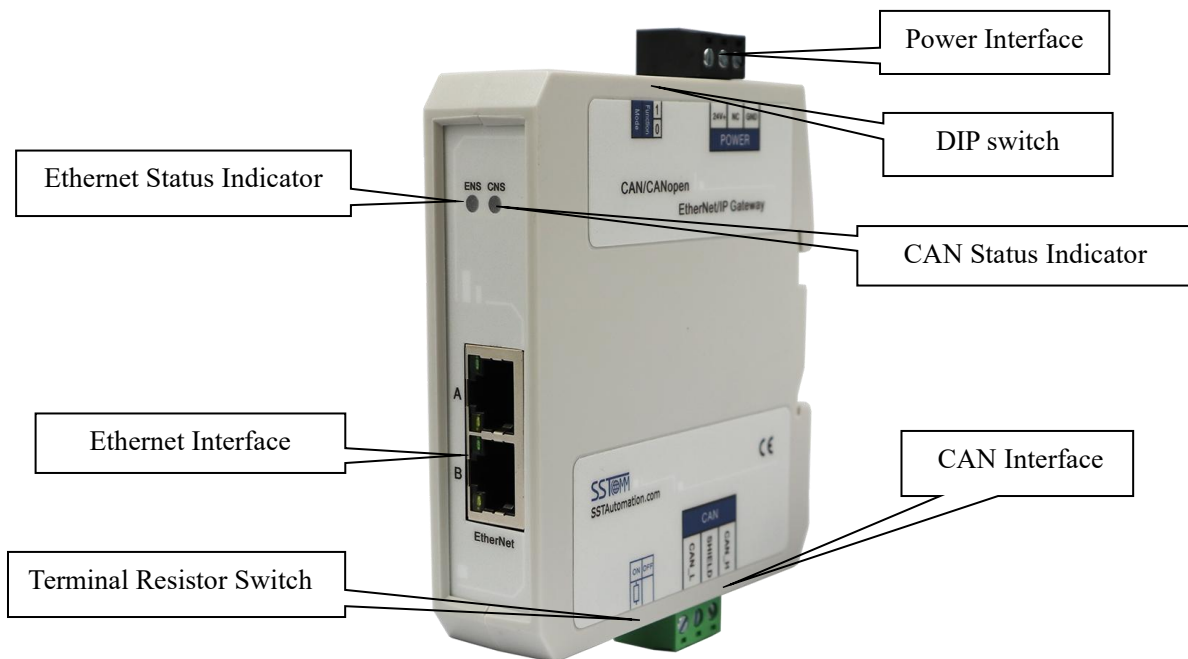
[8] Installation: 1.4 in (35 mm) DIN RAIL.

1.4 Revision History

Revision	Date	Chapter	Description
V2.2	6/26/2024	Chapter1.3	Add CAN filter
V2.1	2/9/2023	Chapter 6.2, 6.3, 6.4	Fixed the description of Byte 2 in Chapter 6.3 and the Input Instance size in Chapter 6.2
V1.2	1/9/2023	ALL	New release

2 Hardware Descriptions

2.1 Product Appearance



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

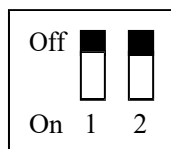
2.2 Indicators

The indicator light is shown in the following table:

Indicators	Status	Descriptions
ENS	Green	EtherNet/IP connection has been established.
	Green blinking	EtherNet/IP connection has not been established.
	Orange light on once	Startup status
CNS	Green	CAN network normal
	Red	CAN network error
	Orange light on once	Startup status
ENS (Orange) and SNS (Orange) (Orange: Red and green light on at the same time)	Blink alternately	Configuration Mode
ENS (Red) and SNS (Red)	Flashes 3 times simultaneously	localization function

2.3 DIP Switch

The configuration DIP switch is used to set the operating mode of the GT200-EI-CA and is located on the top of the gateway. Bit 1 is the Function Bit, and Bit 2 is the Mode Bit.

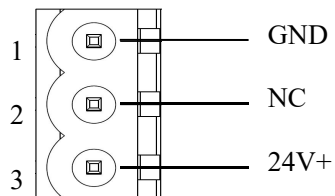


Function (Bit 1)	Mode (Bit 2)	Description
OFF	OFF	Run mode: allow data exchange and upload/download configuration.
ON	OFF	Run mode: only perform data exchange, but cannot be configured.
OFF	ON	Configuration mode: IP address is 192.168.0.10 (fixed). Only allow upload/download configuration.
ON	ON	BootLoader mode, with fixed IP address 192.168.0.10

Note: After re-configuring DIP switch, you must restart the gateway GT200-EI-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 "1(ON)1(OFF)" (Run mode: only perform data exchange, but cannot be configured).

2.4 Interface

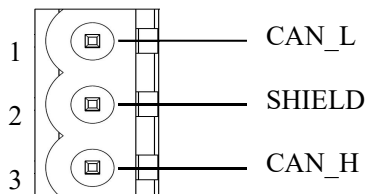
2.4.1 Power Interface



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

2.4.2 CAN Interface

CAN side connector:



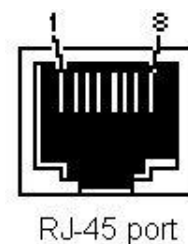
Pin	Wiring
Pin 1	CAN_L
Pin 2	SHIELD
Pin 3	CAN_H

Notes: In this gateway, the optional connection is blocked. Both CAN-L and CAN-H must be connected. There is a 120ohm terminal resistor toggle switch next to the terminal, when the switch is on, the terminal resistor is connected. when the switch is off, the terminal resistor is disconnected.

2.4.3 Ethernet Interface

Ethernet interface uses RJ45 connector and follows the IEEE802.3u 100BASE-T standard. Its pin (standard Ethernet signal) is defined as below:

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



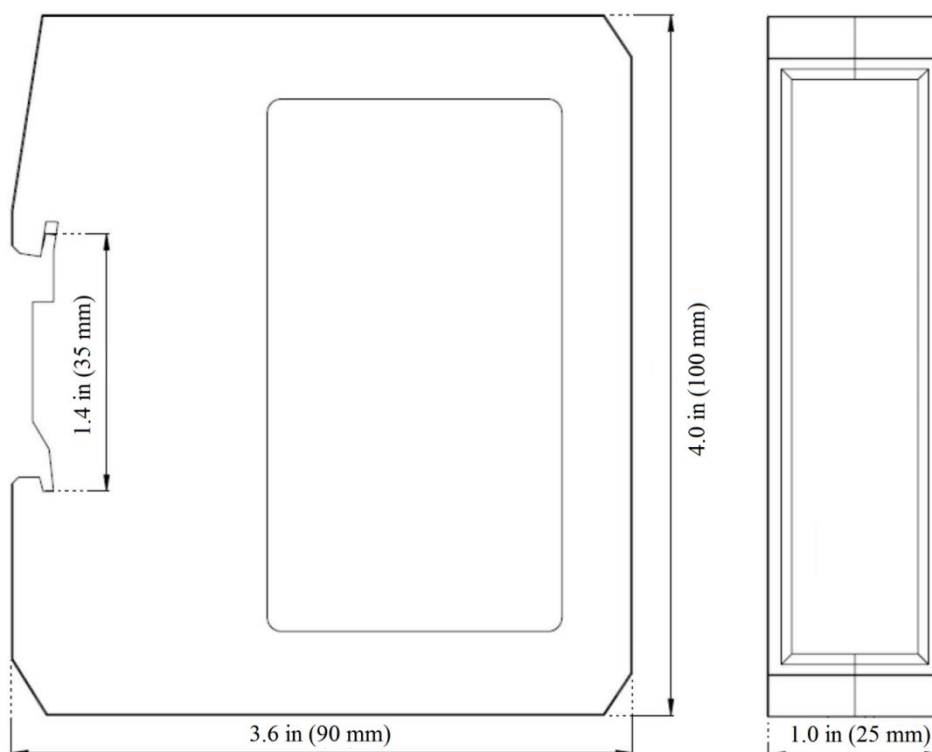
RJ-45 port

3 Hardware Installation

3.1 Mechanical Dimension

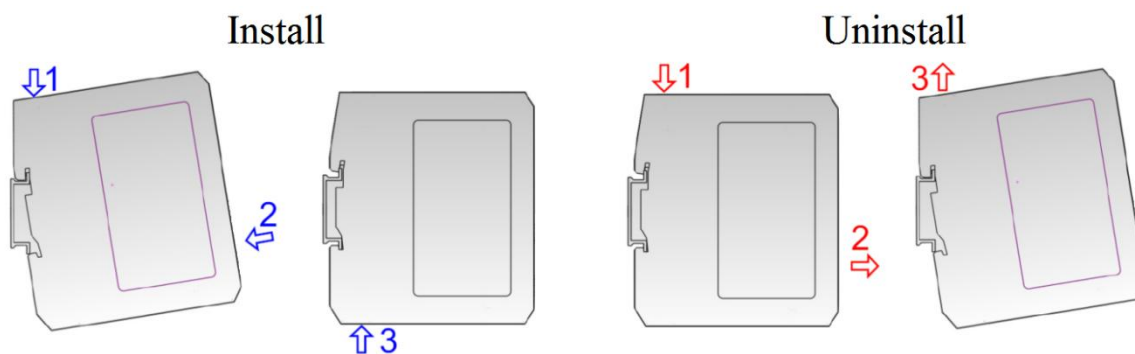
Size (width * height * depth):

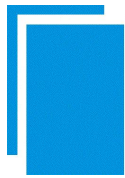
1.0 in * 4.0 in * 3.6 in (25 mm * 100 mm * 90 mm)



3.2 Installation Method

Using 1.4 in (35mm) DIN RAIL.





4 Quick Start Guide

4.1 Gateway Configuration

1. Use an Ethernet cable to connect the GT200-EI-CA to the PC.
2. Set DIP Switch to "1(OFF), 2(ON)".
3. In configuration mode, use SST-EC-CFG configuration software to set parameters such as IP address and CAN baud rate (see Chapter 5 for details).
4. After the gateway has been configured, set the configuration DIP switch to "1(OFF), 2(OFF)". Power on again and the module will go into run mode.

4.2 Connection

1. According to the RJ45 port instructions in [Chapter 2.4.2](#), properly wires every pin of 5-pin terminal.
2. According to the CAN interface instructions in [Chapter 2.4.2](#), properly wires pin 1 and 3.
3. Check whether the wiring complies with the instruction manual.
4. Power on the module to enter the run mode.

5 Software Instructions

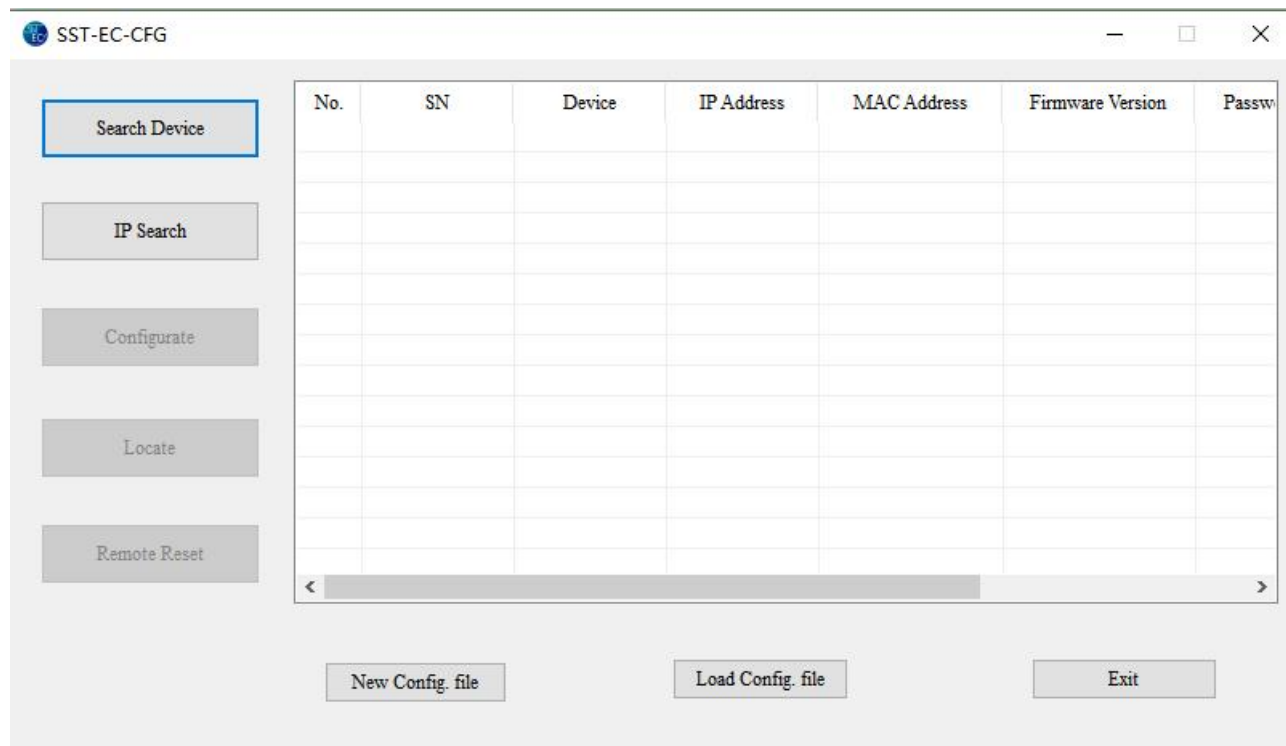
5.1 Precautions

1. Please set the DIP Switch (1) to OFF, (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

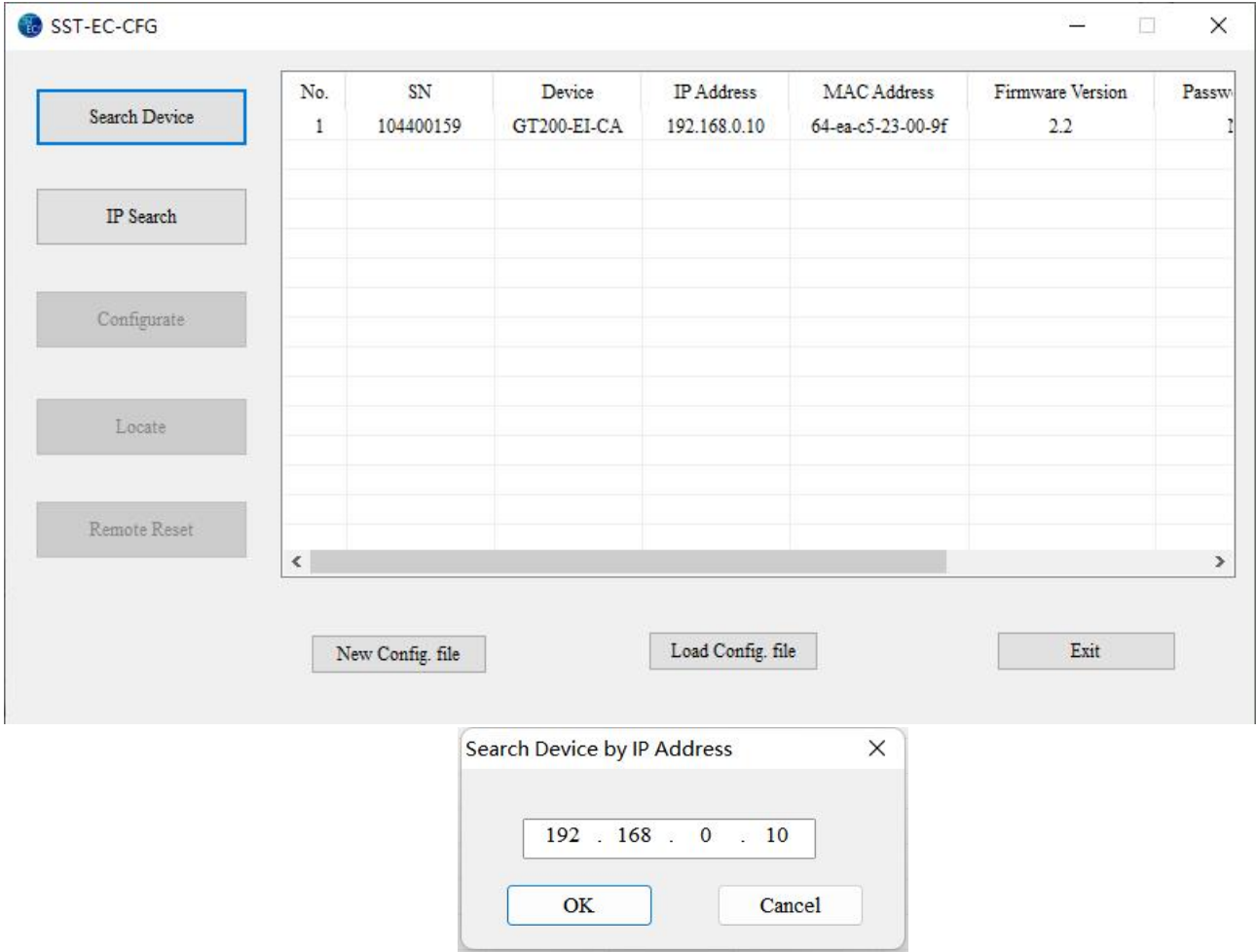
Double-click "SST-EC-CFG" to access the main interface:



[illegible]

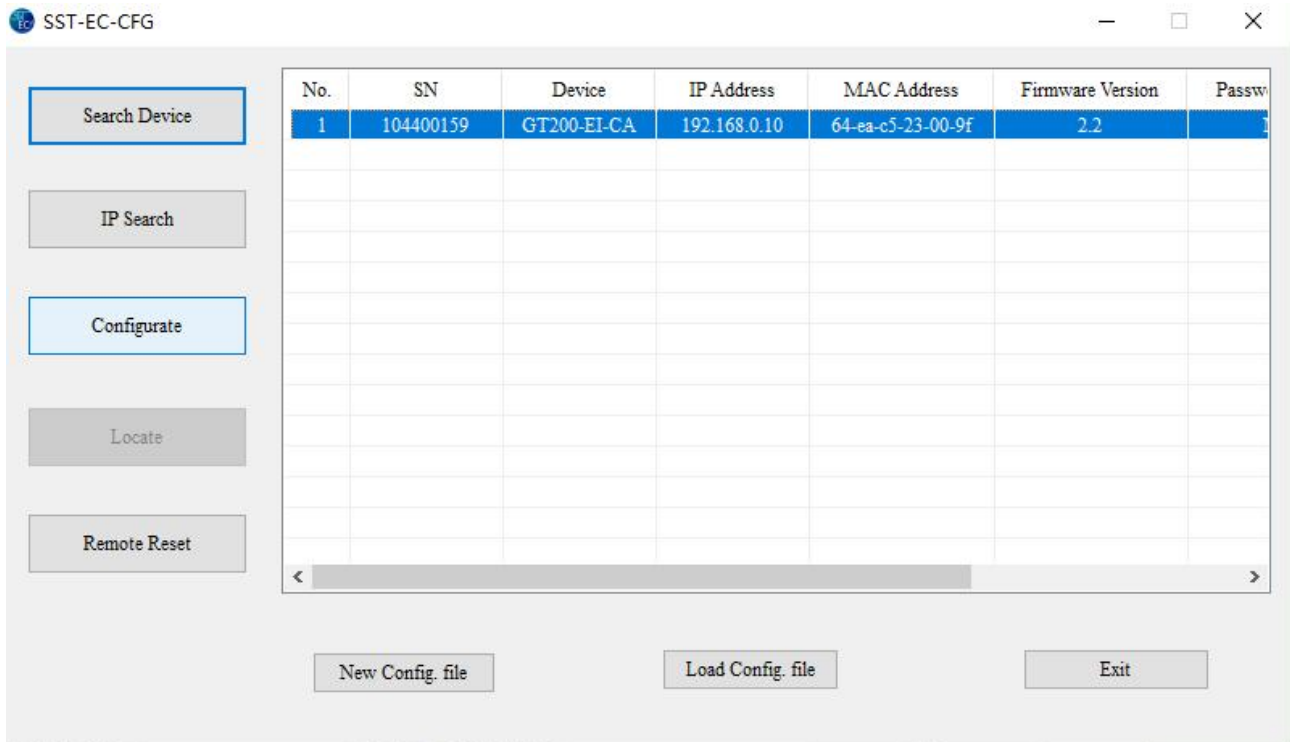
5.2.3 IP Search

"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.

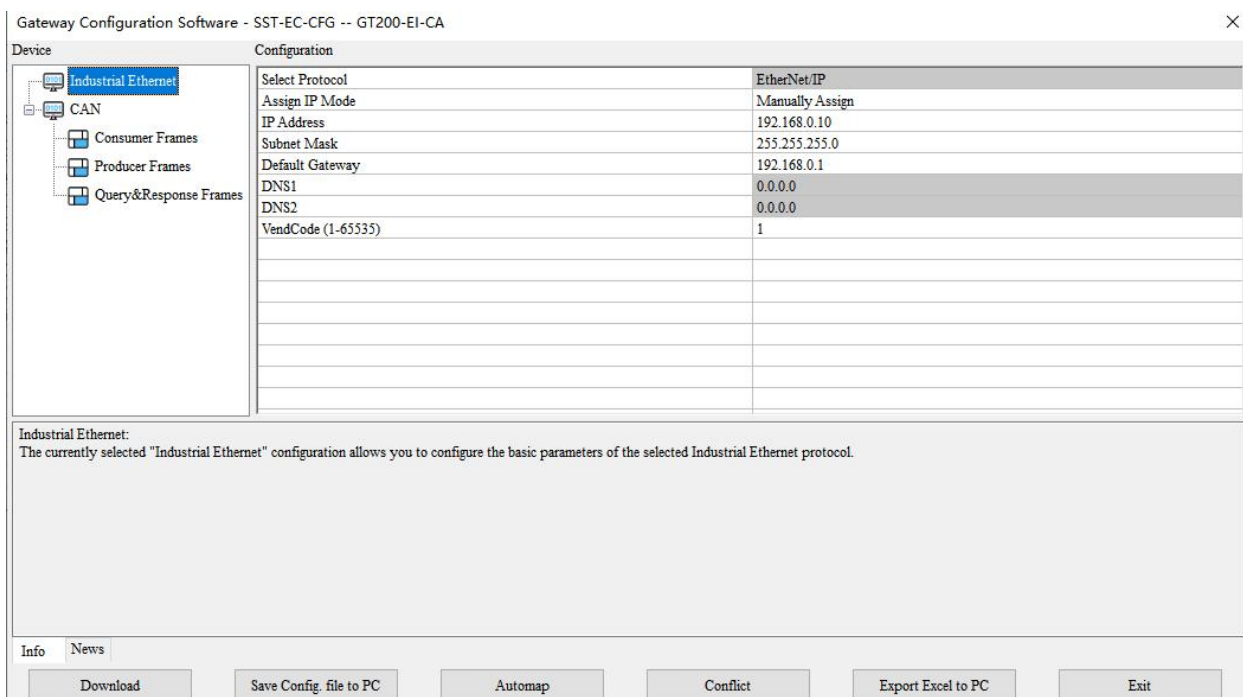


5.2.4 Configuration

Select a device in the list, then the "Configure" and "Remote Reset" become available, "Locate" reserved.



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



5.2.5 Industrial Ethernet

Configure Ethernet parameters including "Select Protocol", "Assign IP Mode", "IP Address", "Subnet Mask", "Gateway Address", "DNS1", "DNS2", and "VendCode".

Device	Configuration
Industrial Ethernet	Select Protocol: EtherNet/IP
CAN	Assign IP Mode: Manually Assign
Consumer Frames	IP Address: 192.168.0.10
Producer Frames	Subnet Mask: 255.255.255.0
Query&Response Frames	Default Gateway: 192.168.0.1
	DNS1: 0.0.0.0
	DNS2: 0.0.0.0
	VendCode (1-65535): 1

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

The parameters that can be configured are 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).

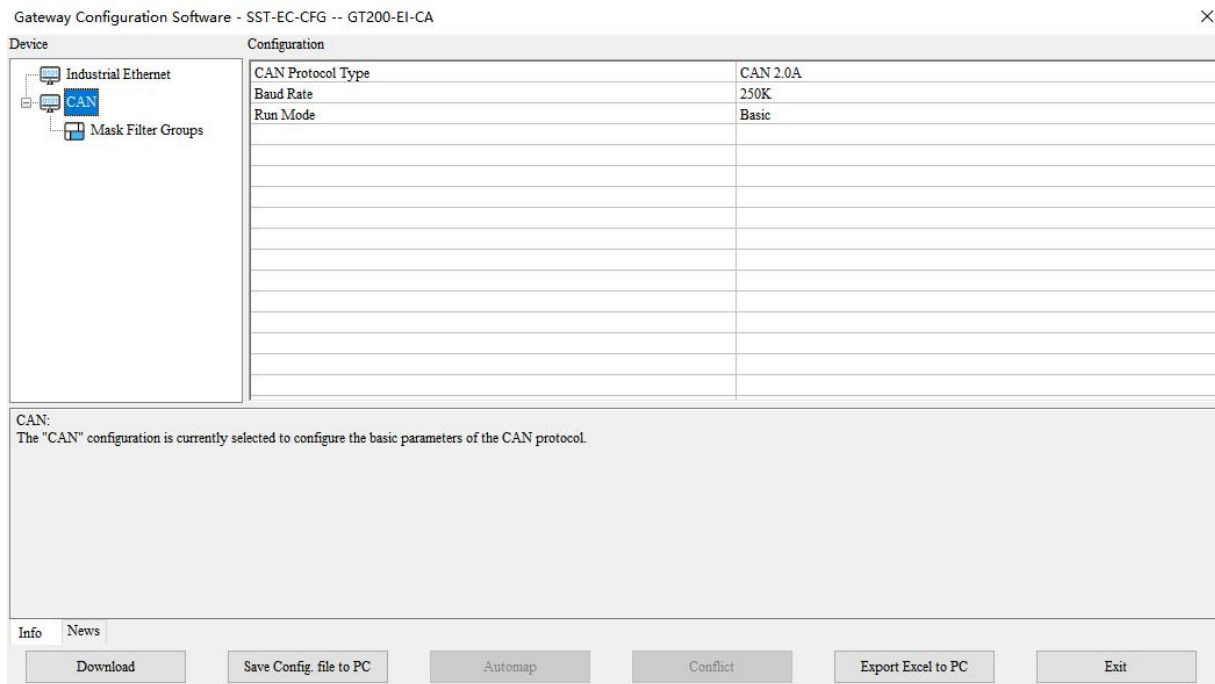
DNS2: Secondary domain name server.

VendCode: The input range is 1 to 65535.

5.2.6 CAN (Basic Mode)

Configure CAN parameters including "CAN Protocol Type", "Baud Rate" and "Run Mode".

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

Baud Rate: 10K-1Mbps

Run Mode: Setting defines the CAN filtering mode. The two options available are Basic or Advanced.

— The basic mode uses 16-byte communication mode, and the advanced mode can fill in different CAN ID.

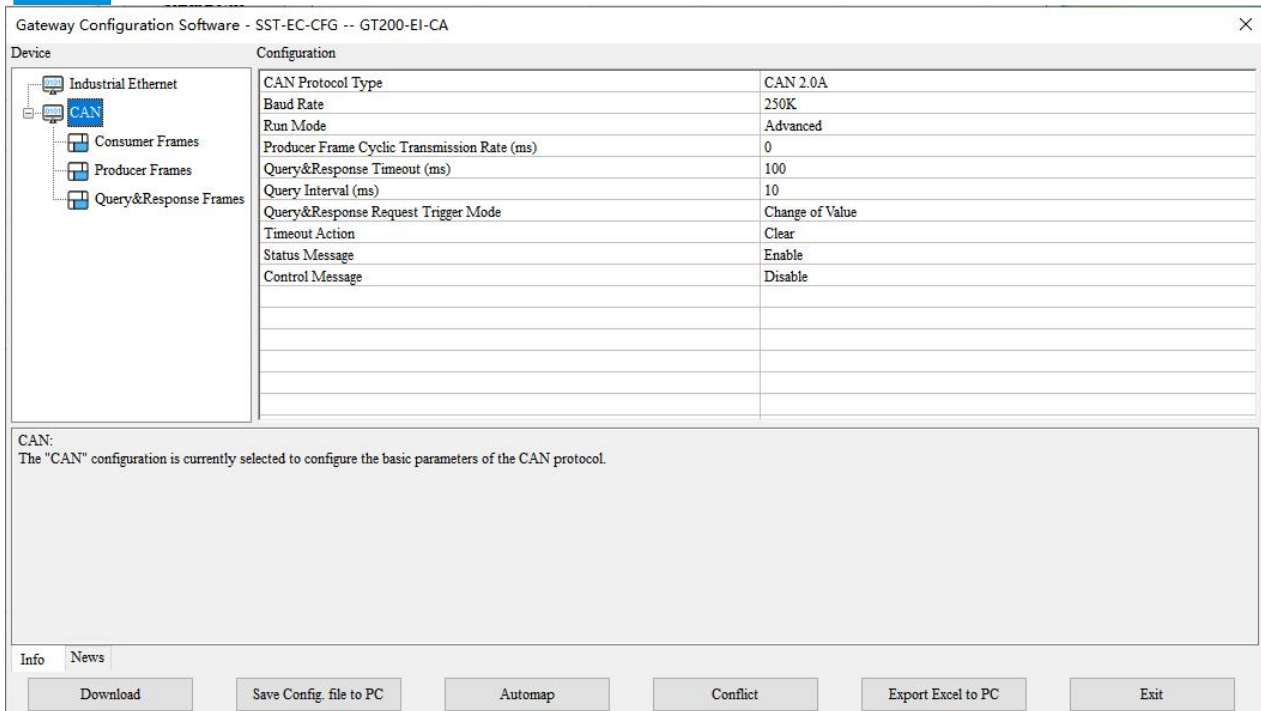
5.2.7 CAN (Advance Mode)

Configure CAN parameters including "CAN Protocol Type", "Baud Rate", "Run Mode", "Producer Frame Cyclic Transmission Rate (ms)", "Query&Response Timeout (ms)", "Query Interval (ms)", "Query&Response Request Trigger Mode", "Timeout Action", "Status Message" and "Control Message".

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

Baud Rate: 10K-1Mbps

Run Mode: Setting defines the CAN filtering mode. The two options available are Basic or Advanced.

— The basic mode uses 16-byte communication mode, and the advanced mode can fill in different CAN ID.

Producer Frame Cyclic Transmission Rate (ms): The amount of time, measured in milliseconds (ms), to periodically send Producer CAN frame messages automatically. When this parameter is set to zero, cyclic transmission will be disabled, and the transmission update trigger mode will be set to Change of Value. In Change of Value mode, a Producer CAN message will only be sent whenever there is a change in the message. Default Value: 0. Range: 0-60000ms.

Query&Response Timeout (ms): The amount of time, measured in milliseconds (ms), that the gateway should wait before issuing a response timeout for a Query&Response CAN frame message. Range: 0-60000ms. Default Value: 100ms.

Query Interval (ms): The amount of time, in milliseconds (ms), that the gateway will wait before sending the next Query&Response request message after a receiving the previous response message. Range: 0-60000ms. Default Value: 10ms.

Query&Response Request Trigger Mode: Change of Value or cyclic options.

In Change of Value mode, a Query request CAN message will only be sent whenever there is a change in the message.

In Cyclic mode, all Query request CAN messages will be automatically sent periodically at the interval specified by the "Polling Interval" parameter.

Timeout Action: The action the gateway will take after receiving a response timeout.

Clear: Set the data to zero.

Hold: Keep the data unchanged.

Status Message: Disable or enable options.

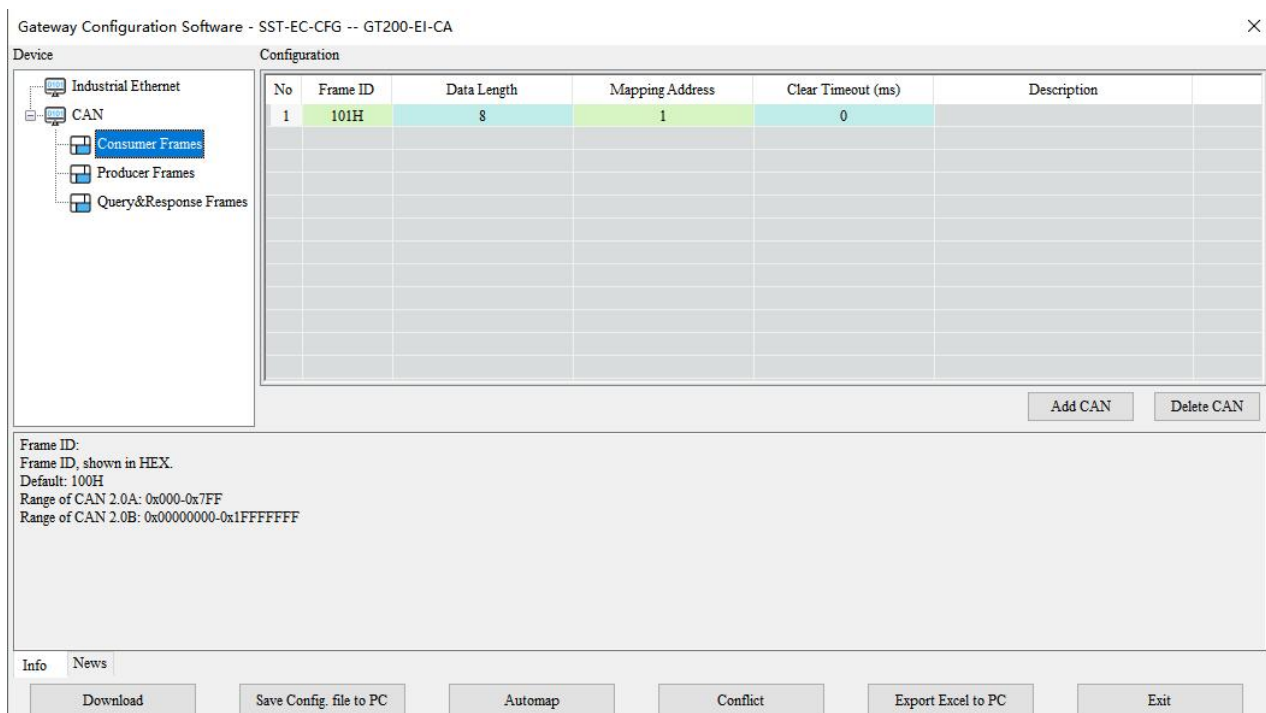
When the CAN status message feature is enabled, a CAN status message will be added to the beginning of the input data that is read on EtherNet/IP.

Within the CAN status message, each Consumer CAN frame and Response CAN frame will have one bit to indicate the execution status of the CAN frame.

Control Message: Disable or enable options. Default: "Disable".

5.2.8 Consumer Frame in Advanced Mode

Configure CAN consumer frames, including "Frame ID", "Data Length" and "Mapping address".



Click "Add CAN " to add a consumer frame.

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

Data Length: The number of bytes of the CAN receive data in the consumer frame.

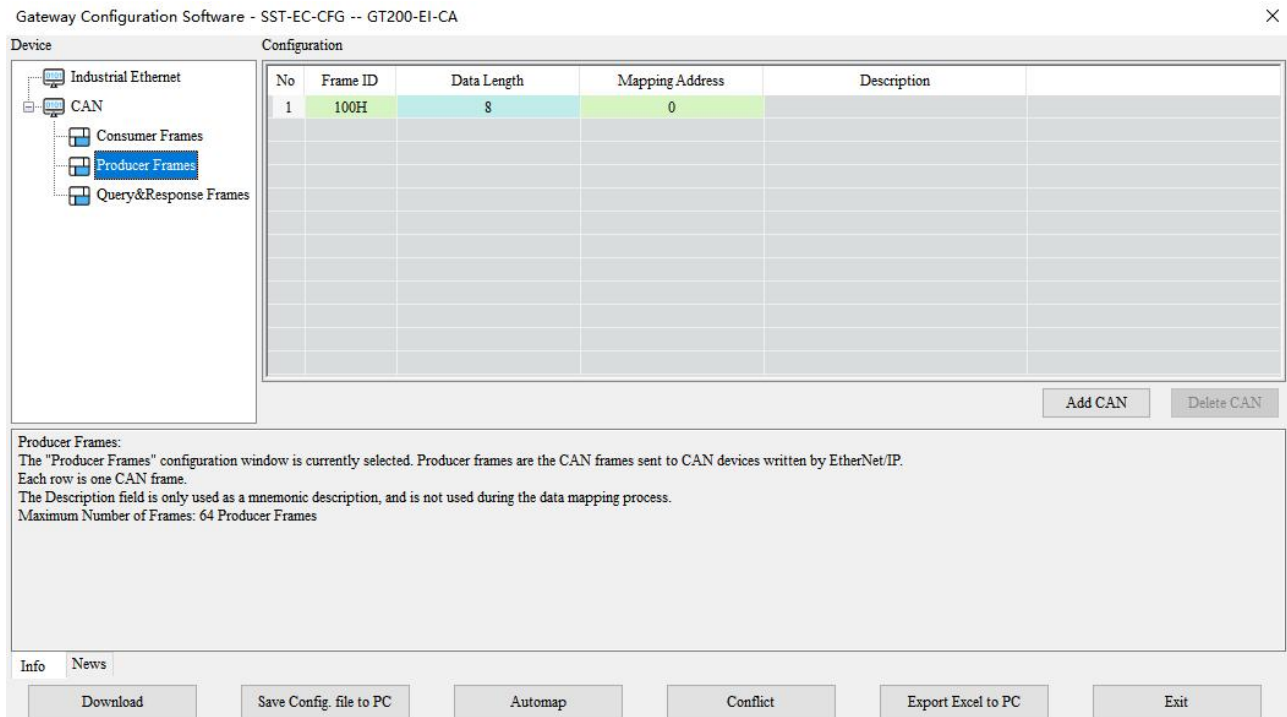
Mapping Address : The memory mapping address of the internal memory buffer of the gateway, shown in decimal. Range: 0-509.

Clear Timeout(ms): The amount of time, measured in milliseconds (ms), that the gateway should wait before issuing a response timeout and clearing the data buffer for the corresponding CAN frame message.

Range: 0-60000ms.Default Value: 10ms.

5.2.9 Producer Frame in Advanced Mode

Configure CAN consumer frames, including "Frame ID", "Data Length" and "Mapping address".



Click "Add CAN " to add a producer frame.

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

Data Length: The number of bytes of the CAN send data in the producer frame.

Mapping Address : The memory mapping address of the internal memory buffer of the gateway, shown in decimal. Range: 0-509.

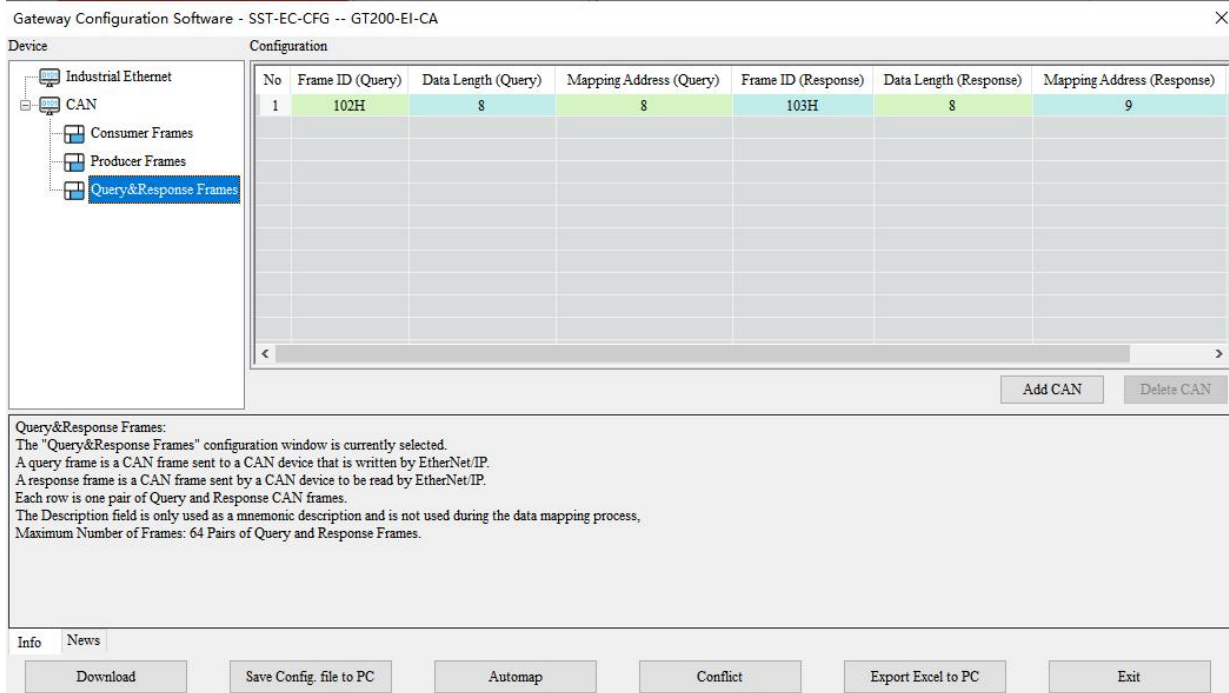
Clear Timeout(ms): The amount of time, measured in milliseconds (ms), that the gateway should wait before issuing a response timeout and clearing the data buffer for the corresponding CAN frame message.

Range: 0-60000ms.Default Value: 10ms.

5.2.10 Query&Response Frames in Advanced Mode

Configure CAN consumer frames, including "Frame ID (Query)", "Data Length (Query)", "Mapping address (Query)", "Frame ID (Response)", "Data Length (Response)" and "Mapping address (Response)".

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Click "Add CAN " to add a query&response frames.

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

Data Length (Query): The number of bytes of the CAN send data in the query&response frame.

Mapping address (Query):The memory mapping address of the internal memory buffer of the gateway, shown in decimal. Range: 0-509.

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

Data Length (Response): The number of bytes of the CAN receive data in the query&response frame.

5.2.11 Save/Open Configuration

Load Config.file-Open and display the configuration data saved in the computer.

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CAN/EtherNet/IP Gateway

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SST-EC-CFG

Search Device

IP Search

Configure

Locate

Remote Reset

No.	SN	Device	IP Address	MAC Address	Firmware Version	Password
1	104400159	GT200-EI-CA	192.168.0.10	64-ea-c5-23-00-9f	2.2	

New Config. file Load Config. file Exit

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Save Config. File to PC: Save the configuration parameters to the computer (.chg) for later viewing, pay attention to save this file.

Export Excel to PC: Save configuration parameters to computer (xls).

Select the device in the list, click the "Save Config. File to PC" or "Export Excel to PC" button, and select the path to complete the operation.

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

Device	Configuration	
 Consumer Frames Producer Frames Query&Response Frames	CAN Protocol Type	CAN 2.0A
	Baud Rate	250K
	Run Mode	Advanced
	Producer Frame Cyclic Transmission Rate (ms)	0
	Query&Response Timeout (ms)	100
	Query Interval (ms)	10
	Query&Response Request Trigger Mode	Change of Value
	Timeout Action	Clear
	Status Message	Enable
	Control Message	Disable
Control Message: Options: "Disable" and "Enable". Default: "Disable".		

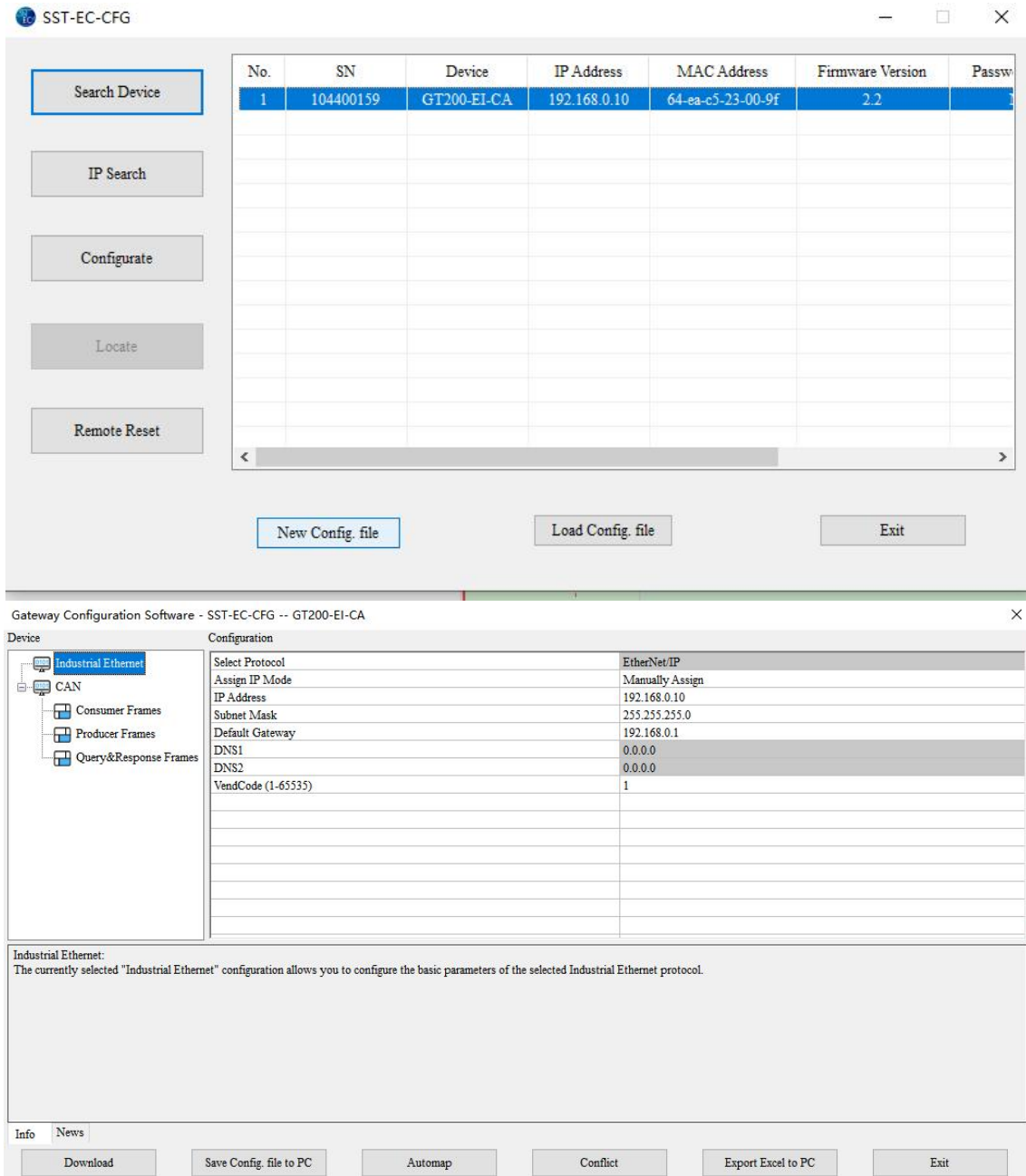
Info News

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5.2.12 New

Click the "New Config.file" button. Open the configuration interface after the parameters was initialized:

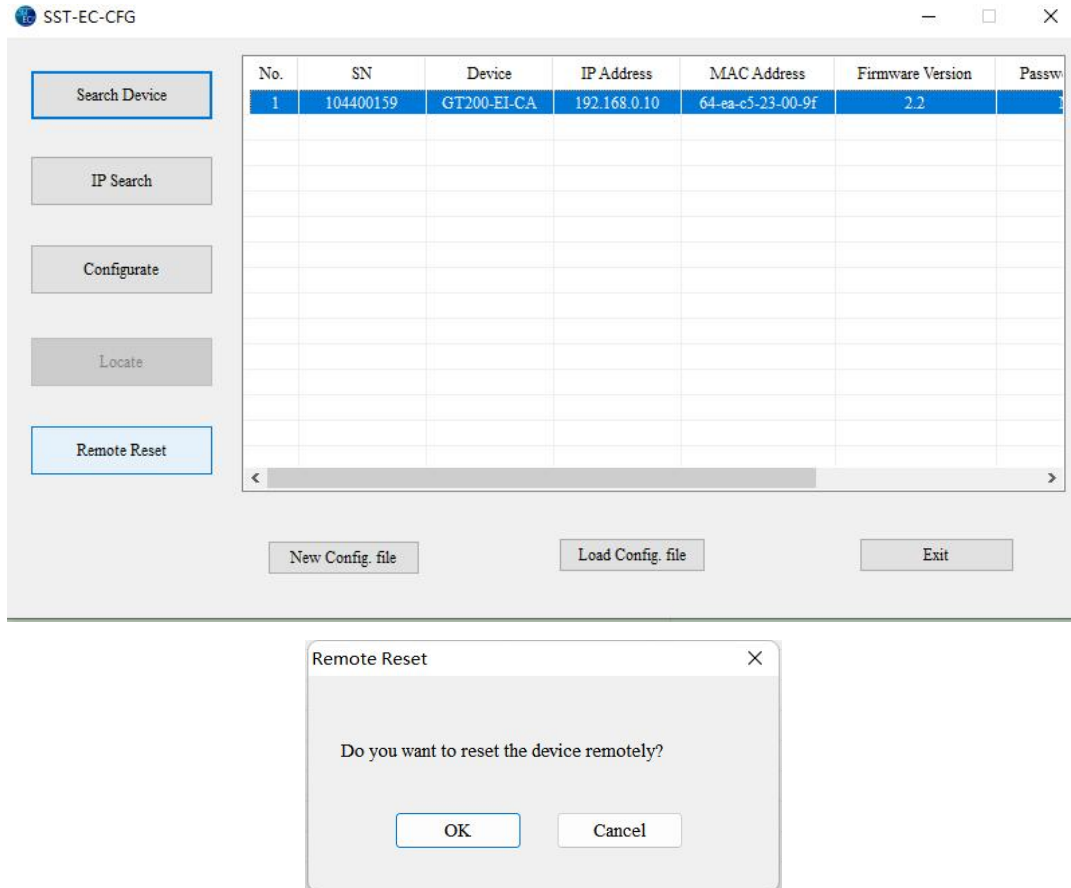


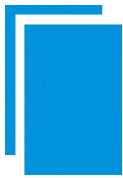
Note: The "New Config.file" function is mainly used for off-line configuration. Namely: Configuration interface can also be opened without device in initialization parameters.

5.2.13 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.

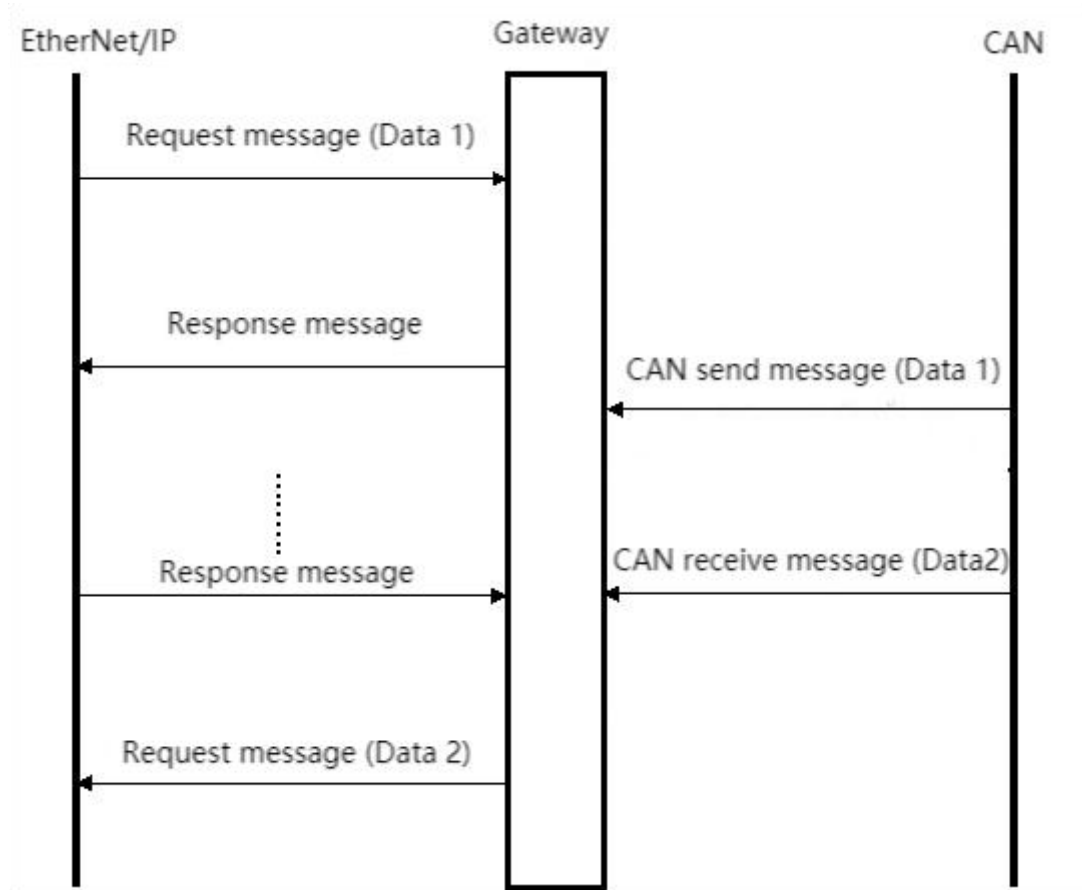




6 Working Principle

6.1 Data Exchange Mode

The communication mode between CAN and EtherNet/IP is asynchronous, as shown in the figure below:



"Data 1" shows the data transmission process from EtherNet/IP to CAN. "Data 2" shows the data transmission process from CAN to EtherNet/IP.

An EtherNet/IP I/O output can carry 1 CAN frames. After the gateway receives the CAN frame, it sends out the CAN frame, and then packs the received CAN response frame into I/O input and sends it to the EtherNet IP master.

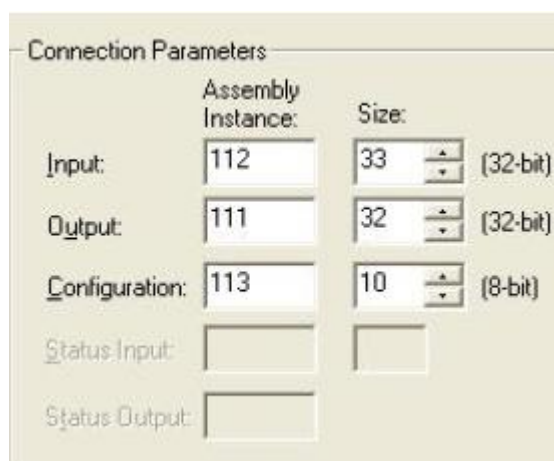
6.2 EtherNet/IP Connection Parameters

The combination of connection parameters provided by the gateway is as follows:

Number	Input Instance	Output Instance	Configuration Instance
1	102 (20 Bytes)	101 (16 Bytes)	103 (10 Bytes)
2	111(132 Bytes)	112 (128Bytes)	113(10 Bytes)
3	121(260Bytes)	122 (256Bytes)	123(10 Bytes)
4	131(68 Bytes)	132 (64 Bytes)	133(10 Bytes)
5	141(36 Bytes)	142(32 Bytes)	143(10 Bytes)
6	151(20Bytes)	152 (16 Bytes)	153 (10 Bytes)
7	161(12 Bytes)	162 (8Bytes)	163 (10Bytes)
8	171(504 Bytes)	172(500Bytes)	173 (10Bytes)

Note: The input is 4 bytes more than the output since it uses the first 4 bytes to show the status of the GT200-EI-CA.

An example of parameter configuration in RSLogix5000 is as follows:



6.3 Instance 101 Data Byte Definition (Basic Mode)

Data direction: EtherNet/IP -> CAN

The corresponding meaning of 16 bytes is as follows: 16 bytes can only contain one CAN frame.

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

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. If you want to switch from single transmission mode to repeated transmission mode, the sequence number needs to be increased by 1, and the bytes 0 is a non-zero value; if you want to switch from repeated transmission mode to single transmission mode, the sequence number needs to be increased 1, and the bytes 0 is 0.

✧ 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 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 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.

6.4 Instance 102 Data Byte Definition

Data direction: CAN -> EtherNet/IP

The first 4 bytes of the EtherNet/IP message are the status bytes of the GT200-EI-CA. The next 16 bytes are used to show information about the CAN frame message.

The corresponding meaning of those 16 bytes is as follows:

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-EI-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.

For example:

Send a CAN frame, the sequence number is 10, the data frame in CAN2.0A working mode, ID=0x123, and the data is 01 02 03 04 05 06 07 08. Single shot. Then the output format is as follows (Hex):

FF 08|0A|00|00 00 01 23|01 02 03 04 05 06 07 08

Note:

The default initial value of a single send is 0, so the corresponding byte is 0.

ID=0x123, right-aligned, zero-padded in front, so the corresponding binary is 0000 0000 0000 0000 0000 0001 0010 0011.

6.5 Terminal Resistor

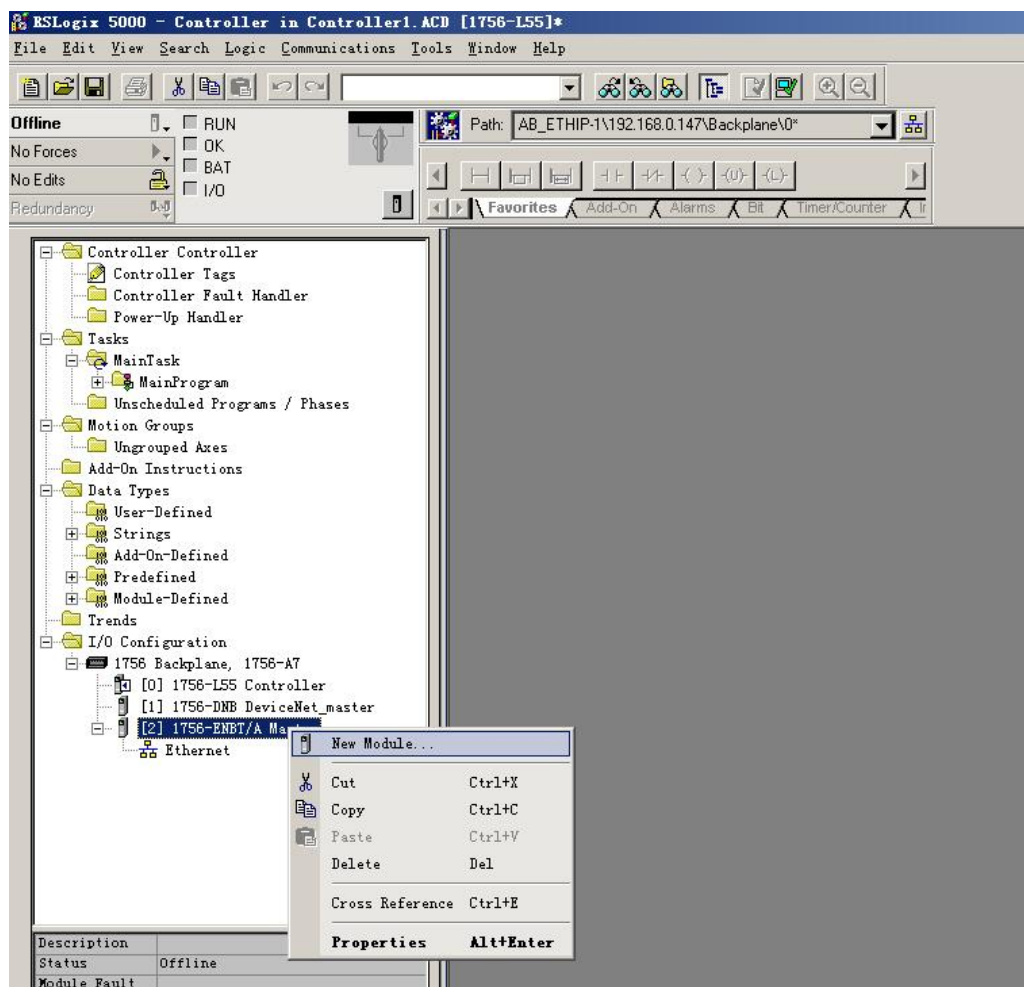
Under high baud rates (1M, 500k) situation, CAN network require each of two endpoints in the farthest networks to connect terminal resistor of 120ohm.

7 How to Read/Write I/O Data

The following RSLogix 5000 example will describe how to read/write I/O data.

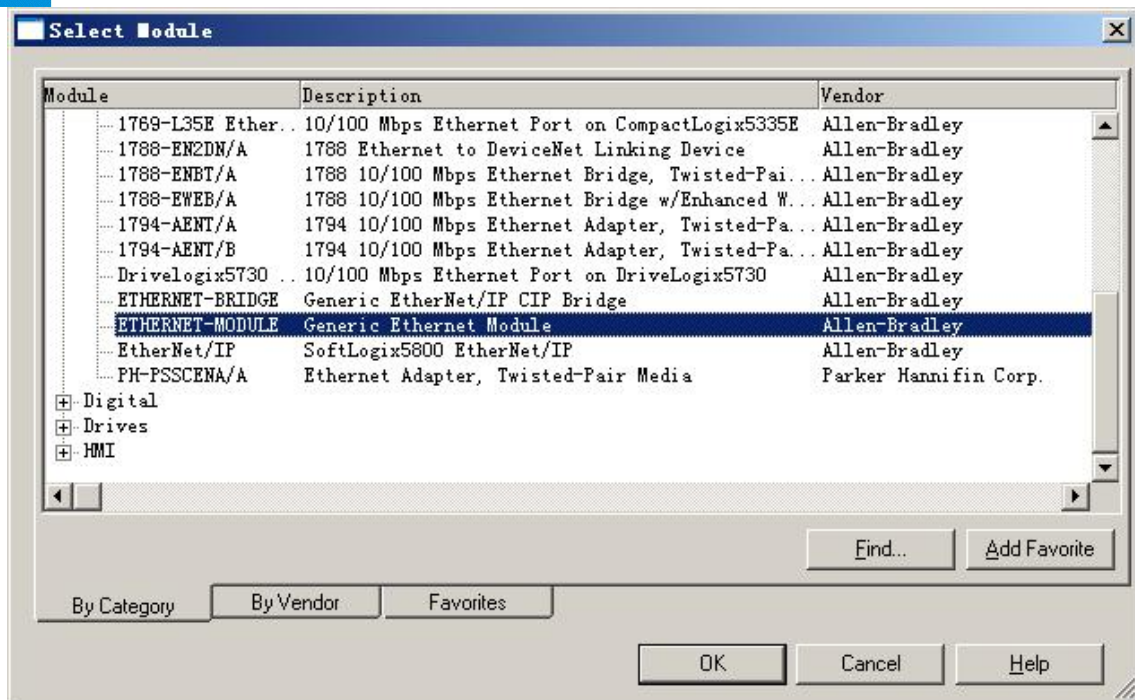
7.1 Read/Write Data by IO Messaging (Recommended)

Right click on EtherNet/IP scanner module, click "New Module", as shown below:

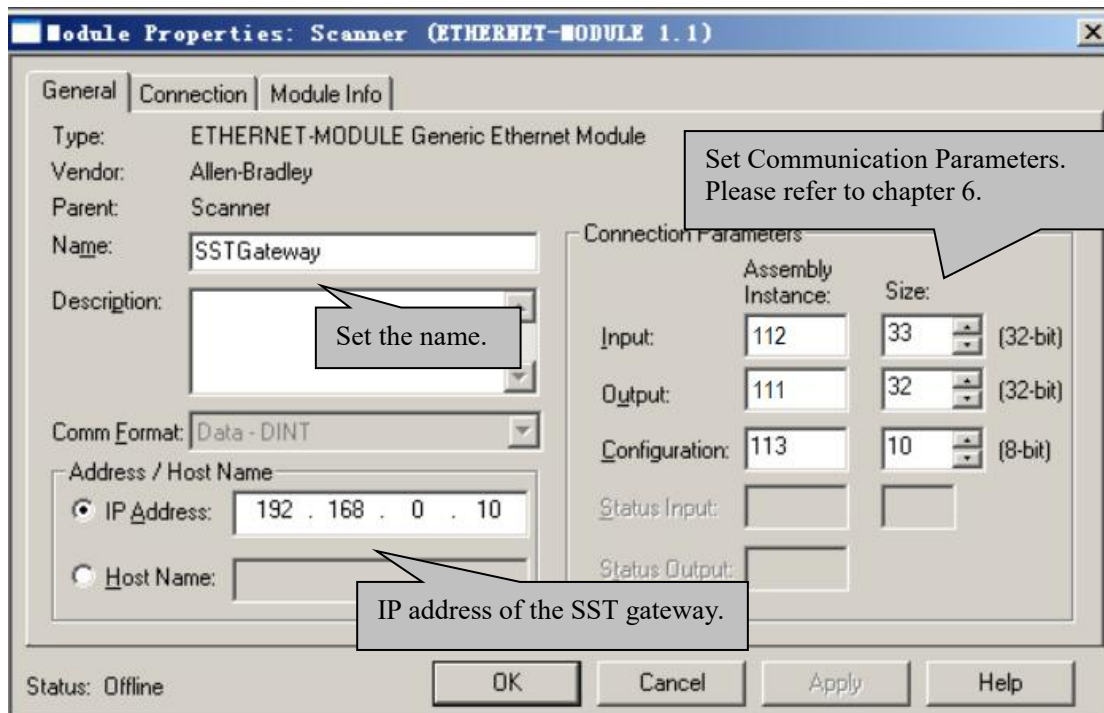


In the pop-up dialog box, unfold "+" before "Communications", choose "ETHERNET-MODULE", click "OK", as shown below:

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Configure relevant information in the pop-up window, as shown below:



In the above picture, the module information needs to be configured includes:

Name: Name the added EtherNet/IP adapter module

Comm Format: Configure data types. Users can choose data types as DINT, INT, SINT and REAL, etc. After confirmation, this cannot be changed. If you want to change data types, you can create a new module.

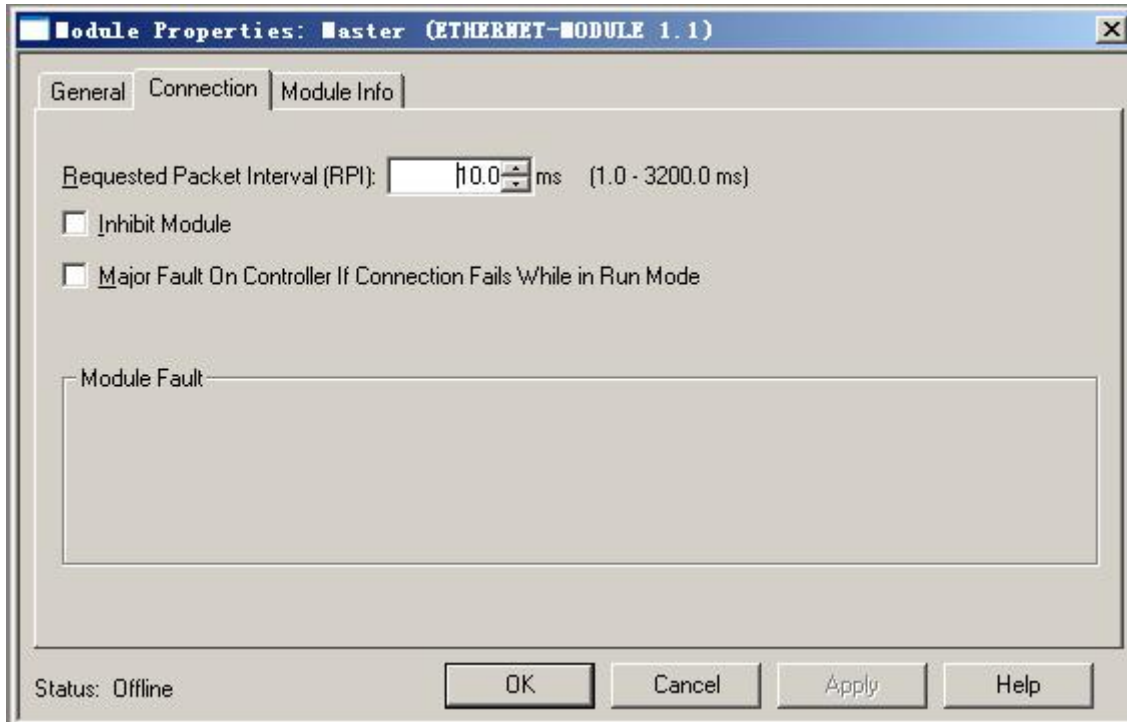
IP Address: Set the IP address of the EtherNet/IP adapter module (IP address of GT200-EI-CA, configured by the software SST-EC-CFG)

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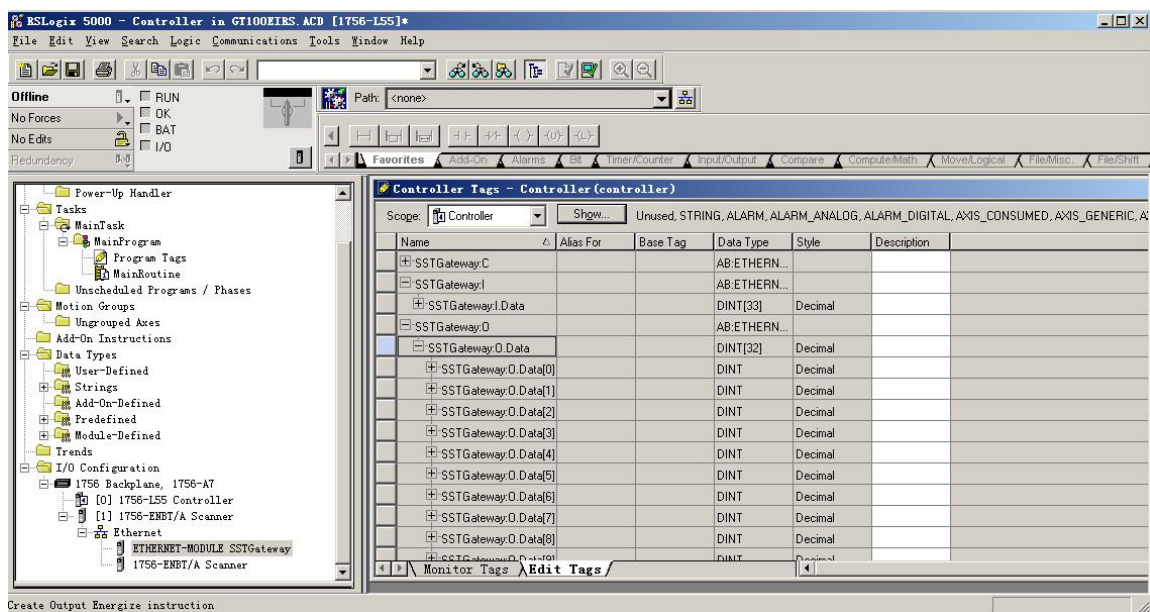
Connection Parameters: Set Connection parameters during communication. Please refer to [chapter 6](#)

Note: "Size" (configured bytes) in the above picture should be consistent with the relevant input and output bytes of Instance in the above chapter.

Click "OK", set the scanner polling time interval in the pop-up dialog box, the default is 10ms, as shown below:



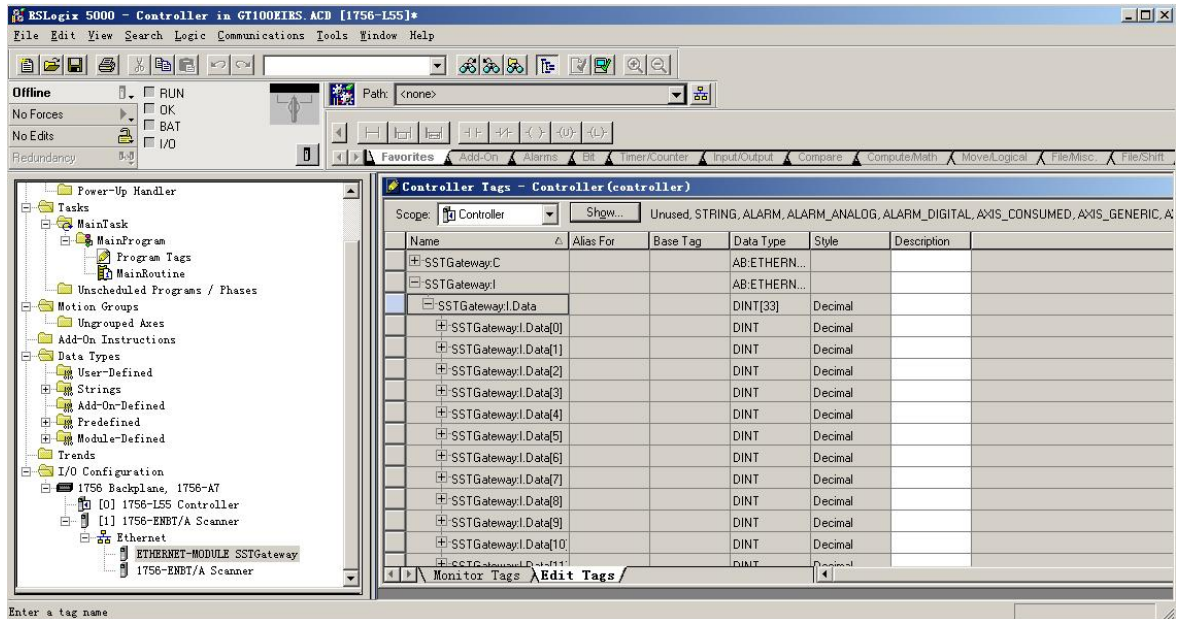
After setting this interval, click "OK" to save. Double click "Controller Tags", unfold "SSTGateway: O", as shown below:



In the picture above, SSTGateway:O.Data [0] ~SSTGateway:O.Data [31] is the corresponding output data address of the SST Gateway module in scanner.

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Unfold "SSTGateway: I", as shown below:



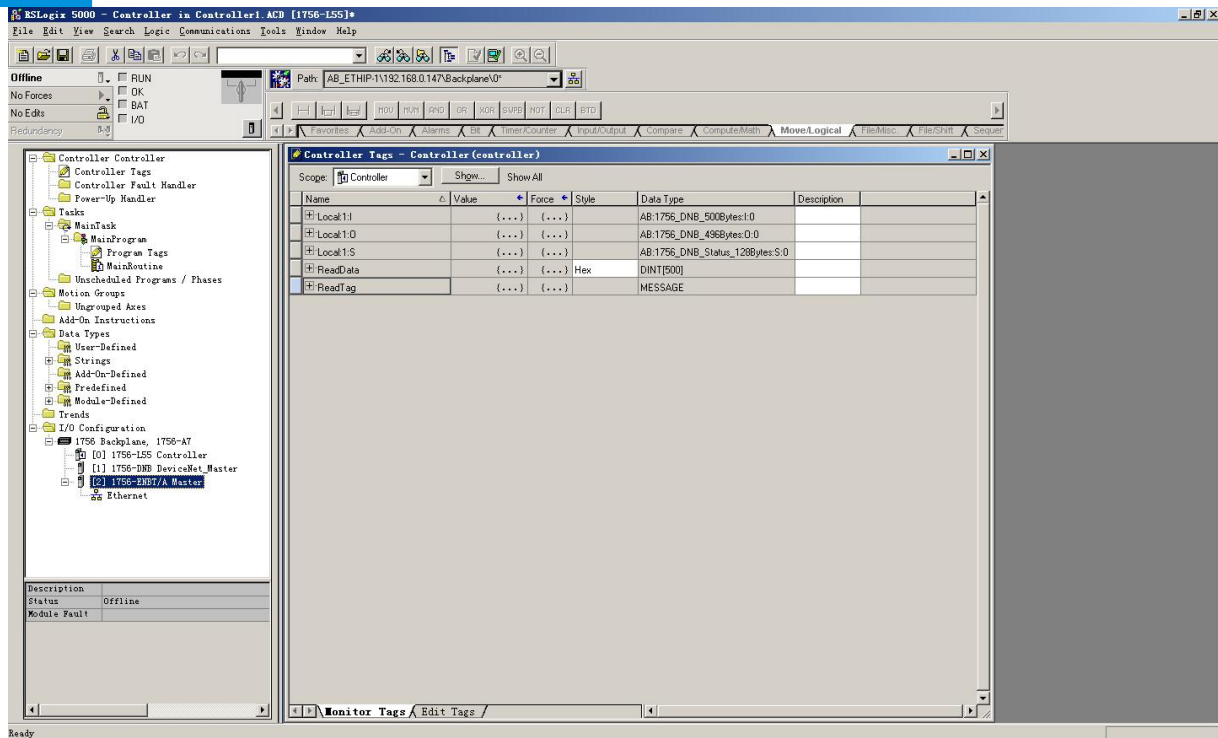
In the above picture, the first 4 bytes of SSTGateway: I. Data [0] are the status bytes. SSTGateway:I.Data [1] ~SSTGateway: I. Data [32] are the input data from the SST Gateway.

7.2 Read/Write Data by MSG

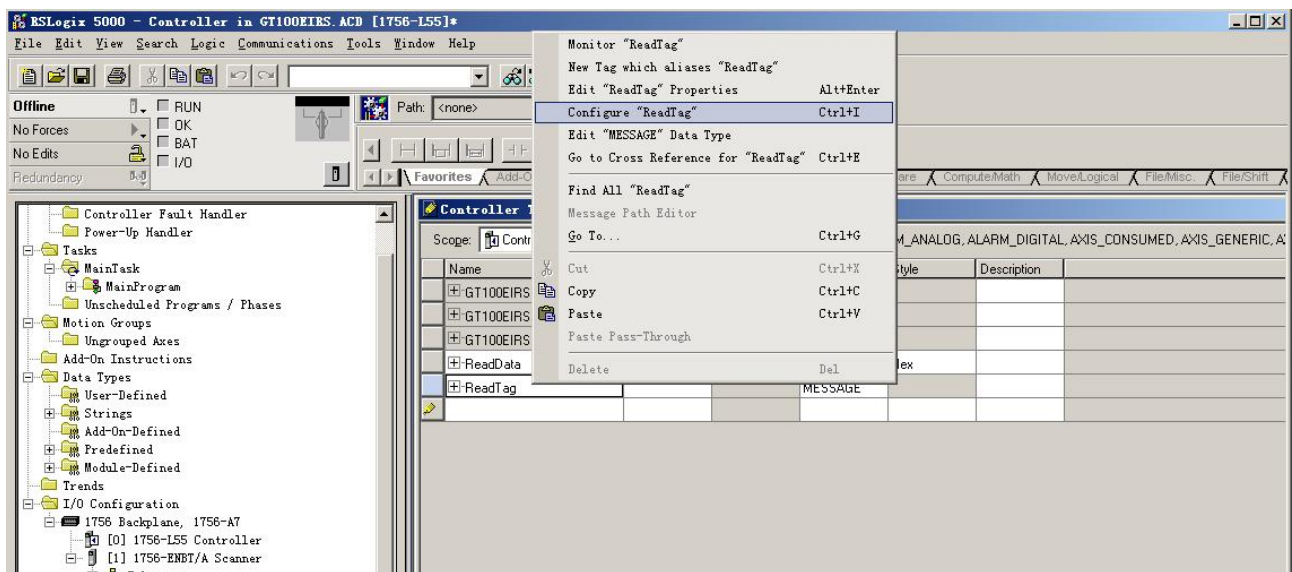
7.2.1 Read Data

Create a new project. Ensure it is in the "Offline" mode. Add two new tags "ReadTag" and "ReadData" under the "Controller Tags" and set the type of "ReadTag" as "MESSAGE" and "ReadData" as "DINT [500]".

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Right click "ReadTag", select "Configure "ReadTag":



In the new pop-up window, some parameters need to be set as below:

- **Message Type:** CIP Generic
- **Service Type:** Select "Get Attribute Single", now, relevant service code will become "e (Hex)"
- **Class:** 4 (Hex)
- **Instance:** Please refer to [chapter 6 EtherNet/IP Connection Parameters](#)
- **Attribute:** 3 (Hex)
- **Destination:** Select "ReadData" label, now, the data that has been received will be saved in this tag

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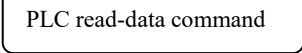
The screenshot shows the 'Message Configuration - ReadTag' dialog box with the 'Communication' tab selected. The 'Message Type' is set to 'CIP Generic'. The 'Service Type' is 'Get Attribute Single'. The 'Service Code' is 'e' (Hex), 'Class' is '4' (Hex), and 'Instance' is '112'. The 'Attribute' is '3' (Hex). The 'Source Element' is empty, 'Source Length' is '0' (Bytes), and 'Destination' is 'ReadData'. There is a 'New Tag...' button. At the bottom, there are radio buttons for 'Enable', 'Enable Waiting', 'Start', and 'Done', with 'Done' selected. There are also fields for 'Error Code' (set to 'Extended Error') and a 'Timed Out' checkbox.

Choose "Communication" label, input the relevant path of connecting EtherNet/IP adapter in the blank space behind the Path, the path format is: EthetNet IP hostname, EtherNet/IP scanner slot No., IP address of EtherNet/IP adapter, after setting the path, click "Apply", "Confirm". As is shown below:

In this instance, EtherNet/IP hostname is "Scanner", EtherNet/IP scanner slot No. Is "2", EtherNet/IP adapter is "192.168.0.10". IP address of SST Gateway is the address which is configured by the configuration software.

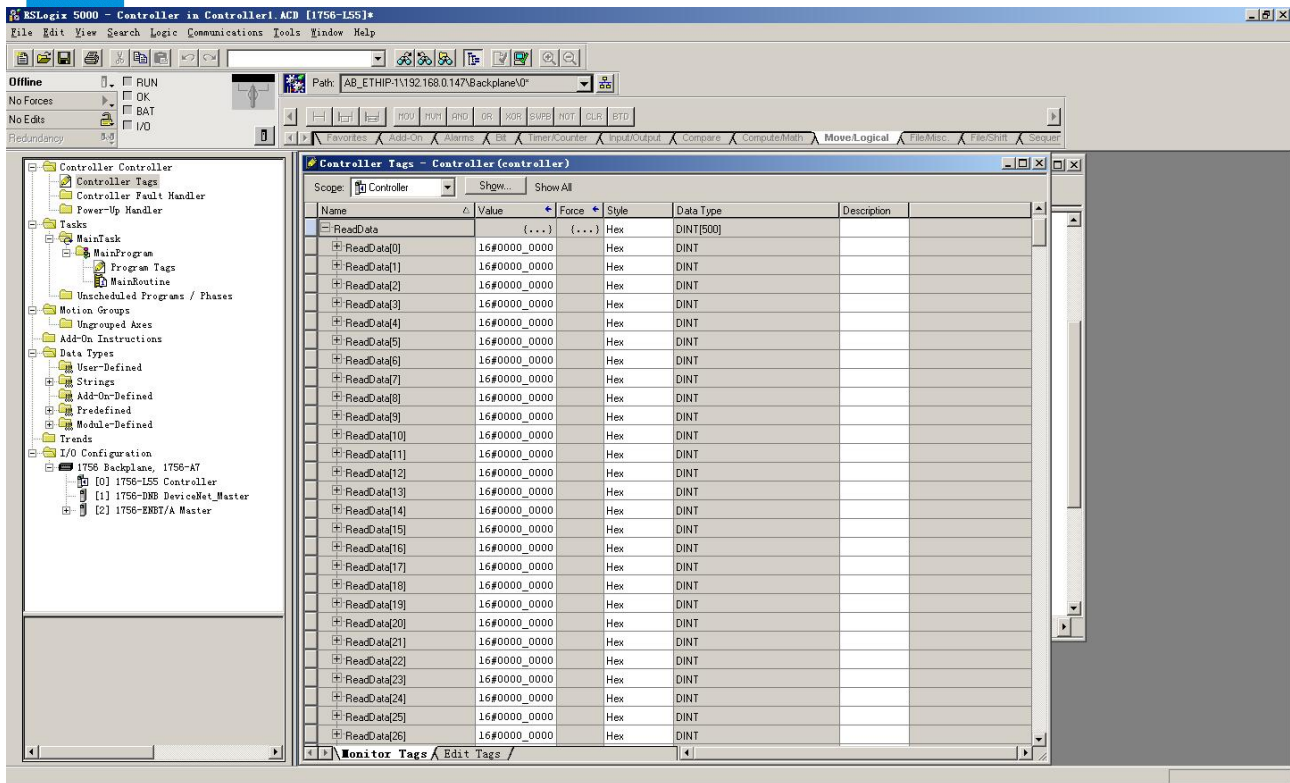
The screenshot shows the 'Message Configuration - ReadTag' dialog box with the 'Communication' tab selected. The 'Path' field is filled with 'Scanner,2,192.168.0.10'. There is a 'Browse...' button next to it. Below the path field, the 'Communication Method' section has 'CIP' selected. The 'Channel' is empty, 'Destination Link' is '0', 'Source Link' is '0', and 'Destination Node' is '0' (Total). There is a 'Connected' checkbox and a 'Cache Connections' checkbox. At the bottom, there are radio buttons for 'Enable', 'Enable Waiting', 'Start', and 'Done', with 'Done' selected. There are also fields for 'Error Code' (set to 'Extended Error') and a 'Timed Out' checkbox.

Add a "MSG" command in "MainRoutine" under the "MainProgram" and choose "ReadTag" as "Message Control", as shown below:



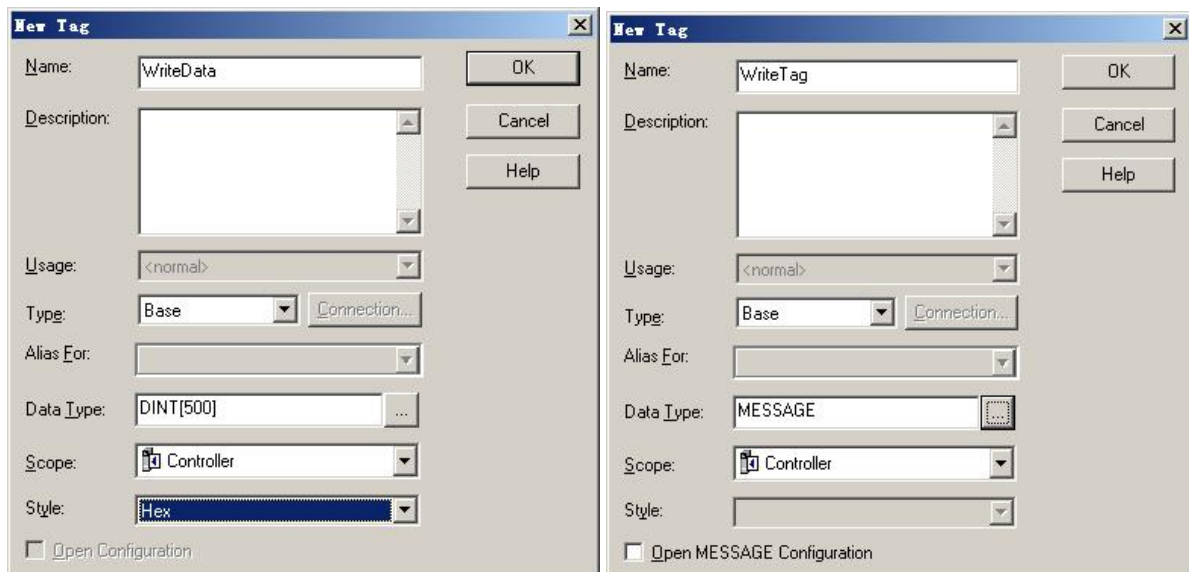
Download the program to the PLC and set PLC into the "Online" state.

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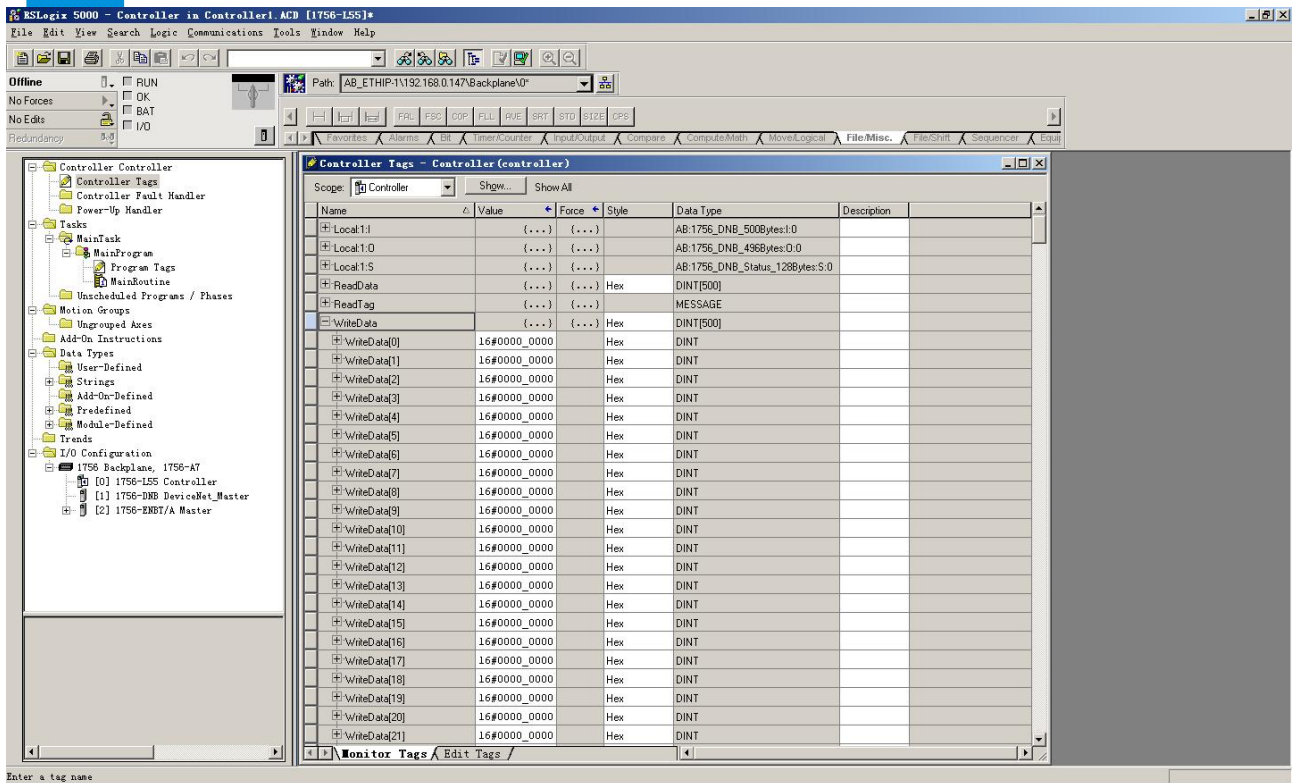


7.2.2 Write Data

Enter the "Offline" mode, add two new tags "WriteTag" and "WriteData" under the "Controller Tags". Define the type of "WriteTag" as "MESSAGE" and "WriteData" as "DINT [500]":



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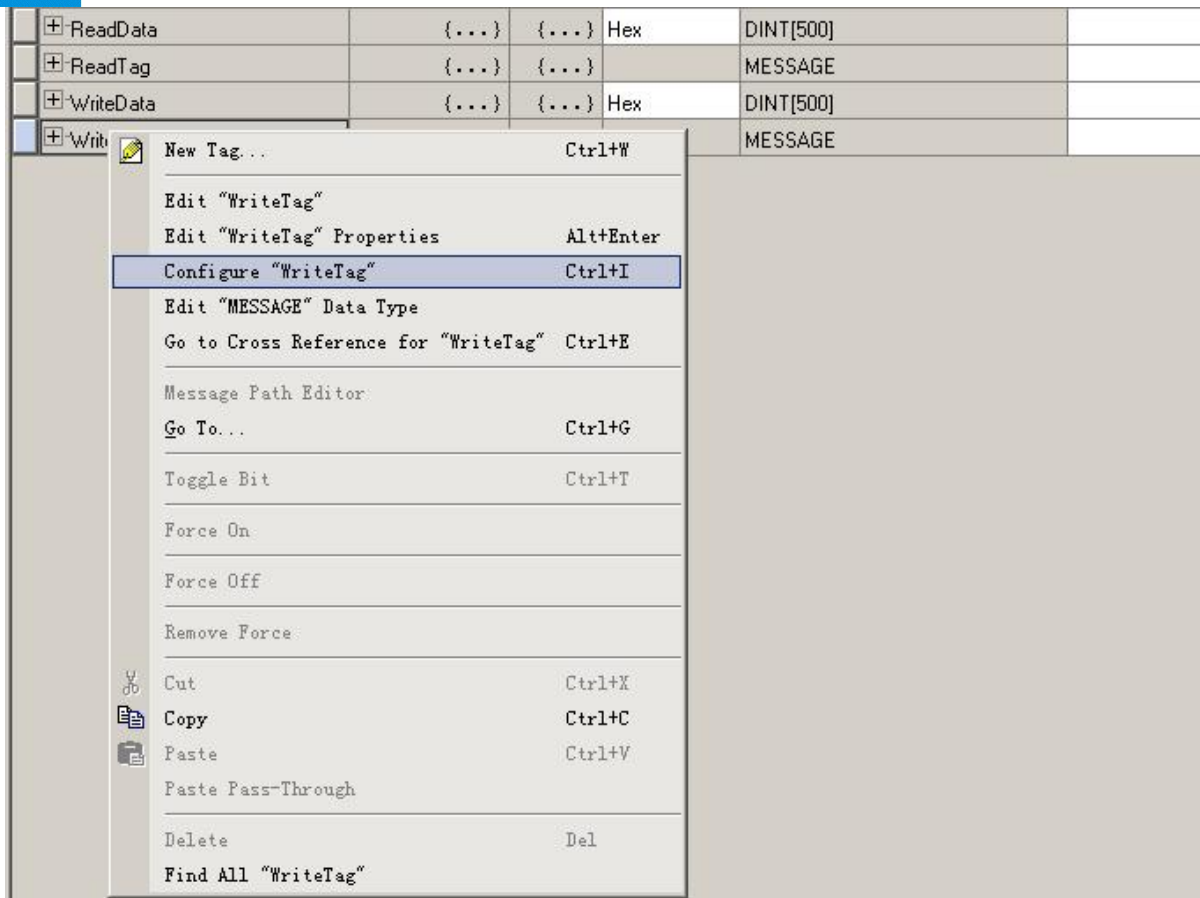


Enter the "Monitor Tags" interface. input some data beginning from address WriteData[0] in the "WriteData" tag. There, data will be outputted to SST Gateway.
Right click "WriteTag", select "Configure "WriteTag"":

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In the new pop-up window, there are variables that need configuration as shown below:

- **Message Type:** CIP Generic
- **Service Type:** Select "Set Attribute Single", now, relevant Service Code will become "10 (Hex)"
- **Class:** 4 (Hex)
- **Instance:** Please refer to [chapter 6 EtherNet/IP Connection Parameters](#)
- **Attribute:** 3 (Hex)
- **Source Element:** Select "WriteData" tag, it indicates the data in the "WriteData" tag will become the data PLC outputs
- **Source Length:** Use byte as unit, this value should be less than or equal to the current selecting bytes which Instance represents

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The screenshot shows the 'Message Configuration - WriteTag' dialog box with the 'Configuration' tab selected. The 'Message Type' is set to 'CIP Generic'. The 'Service Type' is 'Set Attribute Single', 'Source Element' is 'WriteData', and 'Source Length' is '128 (Bytes)'. The 'Service Code' is '10 (Hex)', 'Class' is '4 (Hex)', 'Instance' is '111', and 'Attribute' is '3 (Hex)'. The 'Destination' field is empty. There is a 'New Tag...' button. At the bottom, there are radio buttons for 'Enable', 'Enable Waiting', 'Start', and 'Done', with 'Done' selected. There are also checkboxes for 'Error Code', 'Extended Error', and 'Timed Out'.

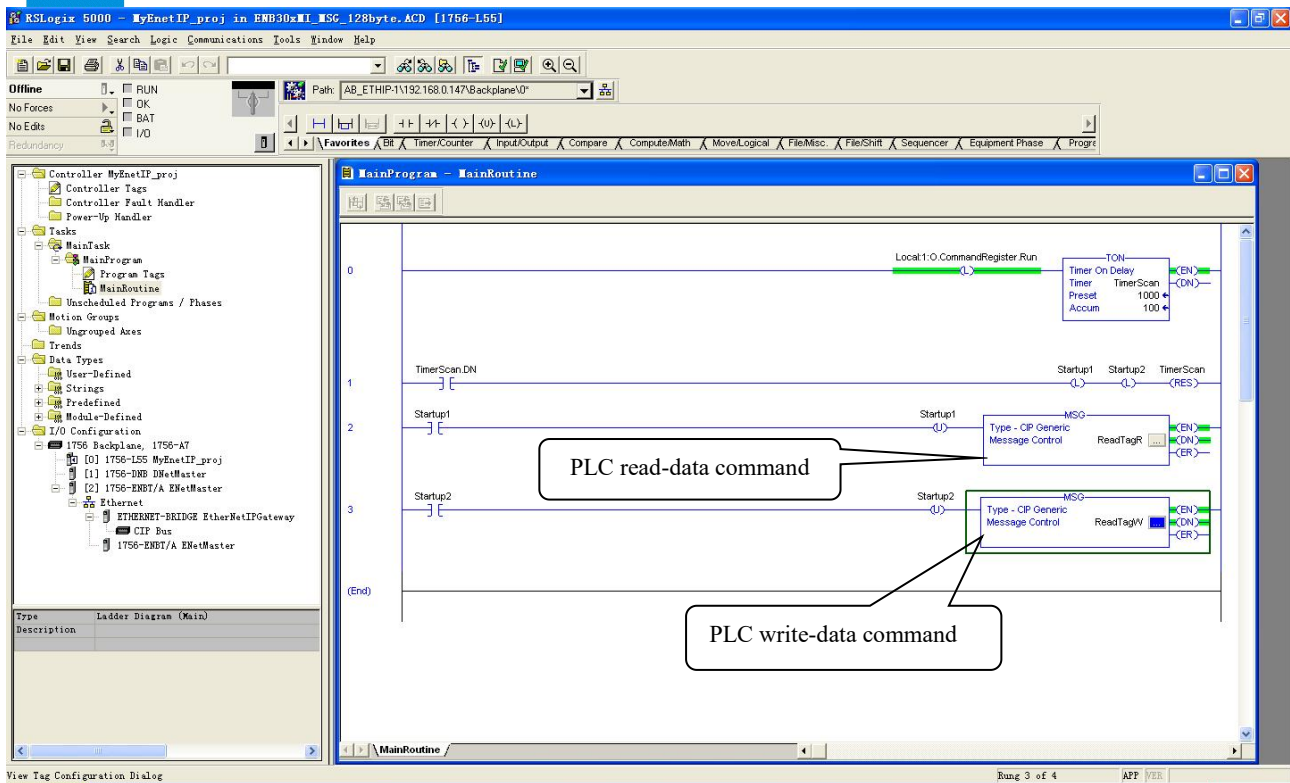
Choose "Communication" label, input the relevant path of connecting EtherNet/IP adapter in the blank space behind the Path, the path format is: EthetNet IP hostname, EtherNet/IP scanner slot No., IP address of EtherNet/IP adapter, after setting the path, click "Apply", "Confirm". As is shown below:

The screenshot shows the 'Message Configuration - WriteTag' dialog box with the 'Communication' tab selected. The 'Path' field contains 'Scanner,2,192.168.0.10'. The 'Communication Method' section has 'CIP' selected, with 'Channel' set to '0'. The 'Destination Link' is '0' and 'Destination Node' is '0 (Octal)'. There are checkboxes for 'Connected' and 'Cache Connections'. At the bottom, there are radio buttons for 'Enable', 'Enable Waiting', 'Start', and 'Done', with 'Done' selected. There are also checkboxes for 'Error Code', 'Extended Error', and 'Timed Out'.

In this instance, EtherNet/IP hostname is "Scanner", EtherNet/IP scanner slot No. Is "2", EtherNet/IP adapter (SST Gateway) is "192.168.0.10". IP address of SST Gateway is the address which is configured by the configuration software.

Add a "MSG" command in the "MainRoutine" under the "MainProgram" and choose "WriteTag" as the "Message Control", as shown below:

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Download the PLC program to the PLC and set PLC to the "Online" state, the data in the "WriteData" will be outputted to EtherNet/IP adapter (SST Gateway).