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USR-PX530

User Manual

Industrial Protocol Converter



V2.0

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1. Introduction

The USR-PX530 is a Profinet-to-Modbus industrial fieldbus protocol converter developed by Yousheng for industrial applications. This product features high-speed transmission, low latency, stable performance, user-friendly operation, and excellent cost-effectiveness. Functioning as a Profinet slave device, it provides two Profinet slave network ports, one RS485 port, and one standard 10/100M Ethernet port. The USR-PX530 protocol converter includes a configuration tool for upper-level computers, enabling flexible setup of related functions to easily integrate Modbus slave devices from industrial field systems into Profinet master station devices.

This product adheres to industrial-grade design standards, operating within a wide temperature range of-20°C to 70°C and a DC voltage range of 9-36V. Its robust hardware protection and rigorous environmental testing ensure stable performance across various industrial scenarios, even in harsh conditions. Featuring intuitive configuration parameters for host computer software, it offers user-friendly operation. The built-in guide rails enable quick and easy installation, making it suitable for diverse industrial applications.

1.1. Features

- Aluminum alloy shell, IP40 protection: reduce dust impact;
- Industrial-grade wide temperature design from-20℃ to +70℃, unafraid of extreme temperatures;
- Wide voltage input DC 9-36V, with power reversal protection;
- EMC National Standard 3B hardware with high protection rating, specifically designed for harsh industrial environments;
- Provide standard 35mm rail mounting method;
- 2*Profinet, featuring a switch function, supports multiple network topologies;
- Built-in 120Ω terminal resistor, enabling direct configuration via host computer software;
- Supports Profinet slave-to-ModbusRTU master and ModbusTCP master conversion.
- Provides dedicated GSDML files for seamless integration with Siemens PLC configuration software.
- PROFINET supports up to 16 slots, with a maximum input and output capacity of 1400 bytes each.
- Supports edge computing with up to 2000 data points;
- ModbusRTU supports up to 32 slave stations, while ModbusTCP supports up to 8 slave stations.

1.2. Parameters table

Table 1. Specification

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Catalog	Parameters	Value
Power Supply	Power Input	9-36V DC, 12V/1A is recommended
	Working Current	Idle: 158mA/12V (avg), 163mA/12V (max); Full load: 162mA/12V (avg), 165mA/12V (max)
	Connector	5.08×2P pluggable terminal block with anti-reverse and screw lock
RS485 Interface	Connector	3.81×3P pluggable terminal block with screw lock
	Pin	A (RS485 A), B (RS485 B), G (GND)
	Baud Rate	600~230.4K bps
	Data bits	8
	Stop bit	1, 2
	Parity bit	None, Odd, Even
Ethernet Port	PROFINET	2× PROFINET (P1, P2), 10/100Mbps auto-negotiation, integrated switch function
	Ethernet	1× RJ45 port (10/100Mbps, auto MDI/MDIX), for parameters configuration
	Default IP	192.168.0.7
	Gateway IP	192.168.0.1
Other Interface	Indicators	PWR, WORK, 485, PN
	Reload Button	Press for 3-15s to restore factory settings
	Type-C	Debugging interface for troubleshooting
Physical Parameters	EMC Protection	IEC 61000-4-2(ESD): 6kV contact, 8kV air IEC 61000-4-5(Surge): 2kV common mode, 1kV differential mode for power; 2kV for Ethernet/RS485 IEC 61000-4-4(EFT): 2kV for power, 1kV for Ethernet/RS485
	Isolation	Isolation for both serial, Ethernet, CAN, and power
	Dimension	120×85×30mm (without terminals/rail); 137.3×30×109.3mm (with terminals/rail)
	Installation	DIN rail mounting, aluminum housing
	Operating Temperature	-20°C to +70°C
	Storage Temperature	-40°C to +105°C (non-condensing)
	Operating Humidity	5%-95% (non-condensing)
Software	Protocol	PROFINET slave to Modbus RTU/TCP master
	PROFINET protocol	Supports 16 slots, up to 1400 input/output bytes
	Modbus protocol	Edge data collection and computation for up to 2000 data points

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	Setup	PX Tool

2. Hardware parameters

2.1. Size Description

Product dimensions: 137.3*30*109.3mm (L*W*H, including terminals and rails)

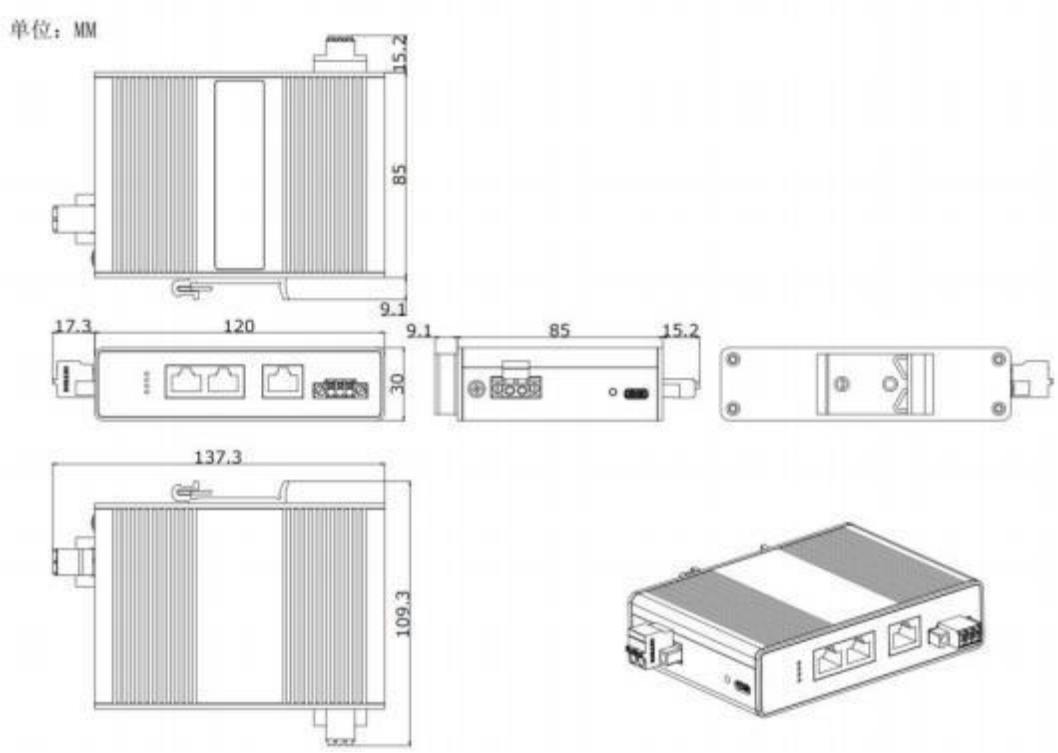


Figure 1. Schematic diagram of USR-PX530 size

2.2. Interface Description

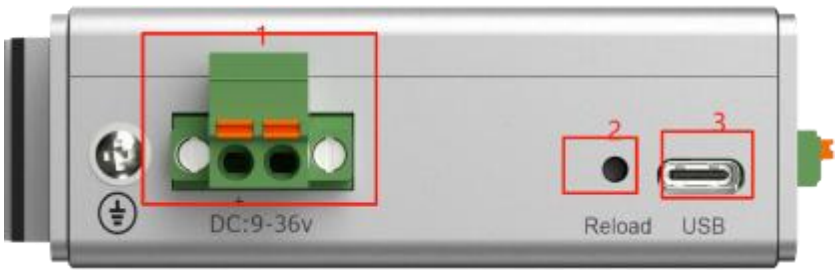


Figure 2. Schematic of the top interface

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Figure 3. Front interface diagram

Table 2. Interface Definition

No.	Interface name	Function declaration
1	DC 9-36V +	Power supply interface, DC 9-36V positive terminal
	DC 9-36V -	Power supply interface, DC 9-36V negative terminal
2	Reload	Restore device to factory settings button
3	Type-C	Debugging interface for troubleshooting and log capture
4	P1	Profinet Interface 1 operates in switch mode with P2
	P2	Profinet Interface 2 operates in switch mode, unlike P1 which functions as a hub.
5	Ethernet port	Supports standard 10/100M Ethernet communication
6	485A	Isolate RS485_A signal line
	485B	Isolate RS485_B signal lines
	RGND	Isolate RS485 ground

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2.3. Indicator Light Description

The USRP PX530 features four indicator lights: PWR, WORK, 485, and PN. These lights help users easily monitor the device's status. The definitions are as follows.

Table 3. Indicator light rules

Indicator	pigment	function declaration
PWR	red	Always on when powered on, off when powered off
WORK	green	Flash: Device is running normally
485	Green/red	The green light is flashing: data is being received from the serial port The red light is flashing: data is being sent through the serial port
PN	Green/red	Green light on: Profinet connection established Red light on: Profinet initialization failed Red light flashing: Profinet is ready, but no PLC connection established

2.4. Terminal Resistance

The USRP PX530 series protocol converter features a 120Ω termination resistor in its RS485 communication port by default, which is not connected to the bus. Users can configure this setting through host computer software, as shown in Figure 4. This design allows users to independently decide whether to connect the termination resistor to the bus, thereby eliminating the need for external resistor connections or disconnections.

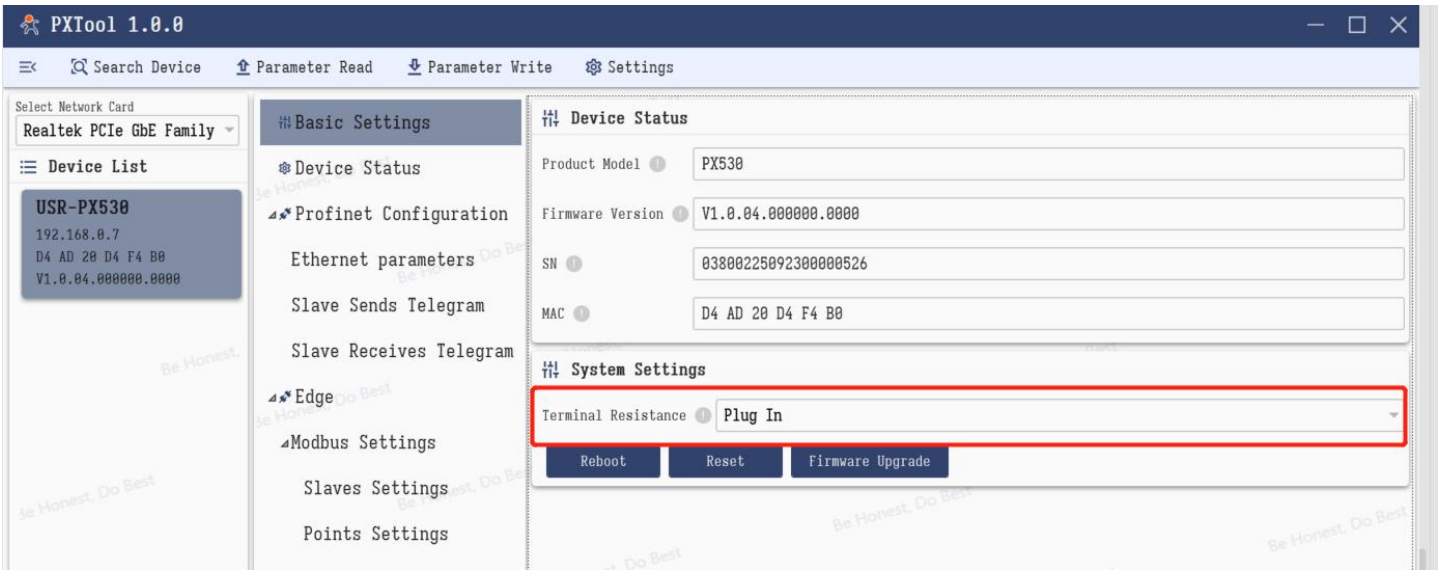


Figure 4. Terminal resistor settings

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3. How to Use

The USRP PX530 series protocol converter can be configured and used as follows. The operation steps are divided into the following steps:

1. Install PXTool PC configuration software and Bocore software on the PC.

2. Connect the corresponding power supply to the DC: 9-36V terminals on the device's side. Use a 12V/1A adapter. After proper power-up, plug the network cable into the "NET" port.

Configure the network port to connect the USR-PX530 protocol converter to the PC.

3. Launch the PXTool host computer configuration tool, configure the settings as required (refer to Section 4), and deploy the configuration to the USR-PX530 protocol converter device.

4. Connect the main station device to the "P1" port on the USR-PX530 protocol converter using a network cable.

5. Conduct data exchange and interaction.

3.1. PXTool Configuration Software

3.1.1. Configure software download and installation

All USRP PX530 series protocol converters are configured using PXTool software. You can access the software by searching for 'PXTool' on our official website (www.pusr.com) and downloading it. After downloading, double-click the PXTool installation package to start the installation. The installation process will begin as shown in the figure below.

Download link: **https://www.pusr.com/support/download/Setup-Software-USR-PX520-PX530-Setup-Software.html**

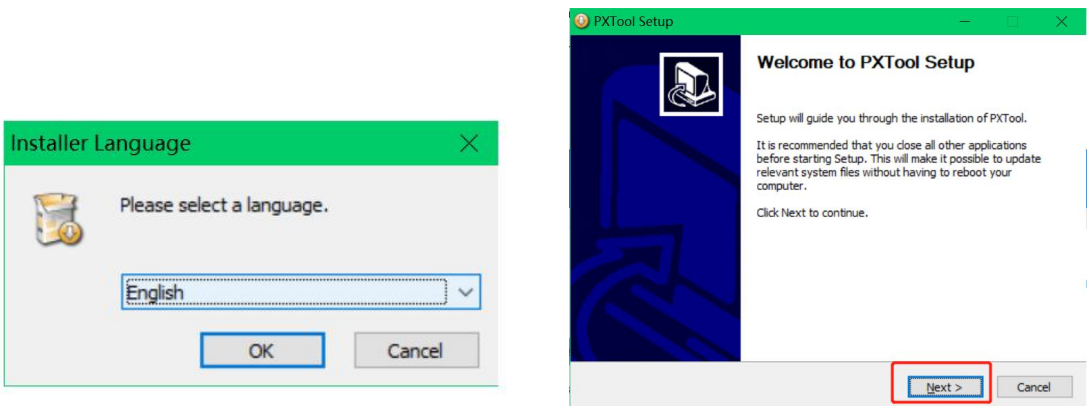


Figure 5. Installation processing

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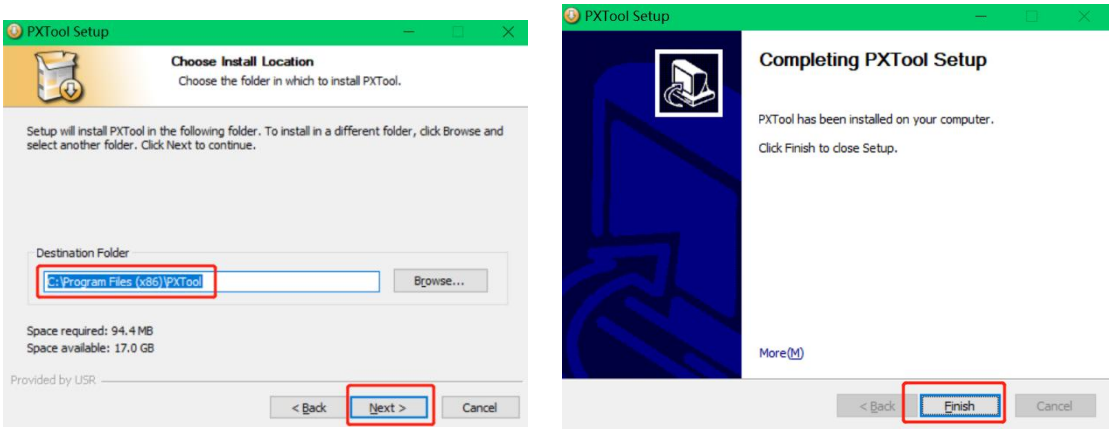


Figure 6. Installation finished

3.1.2. Search device

1> Run the configuration software and select the real network adapter first.



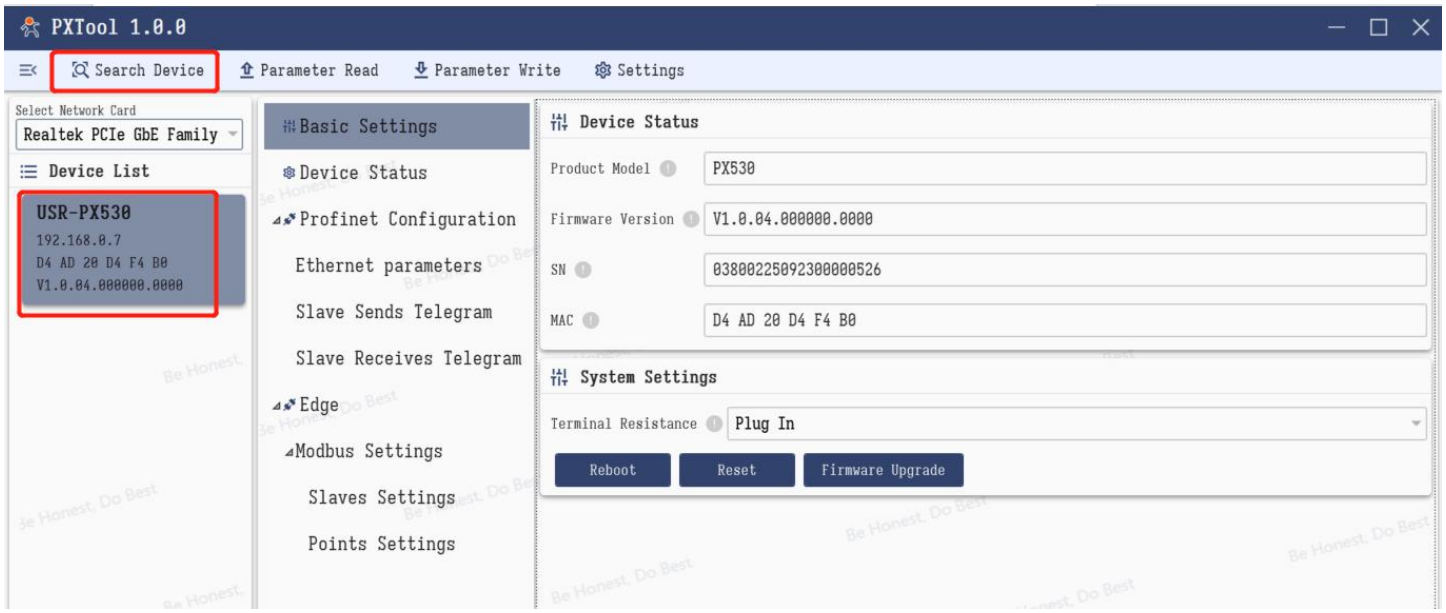
Figure 7. Select network adapter

2> Power on the USR-PX530, and connect the USR-PX530 and the PC to the same local network via network cable.

3> Click “search device”

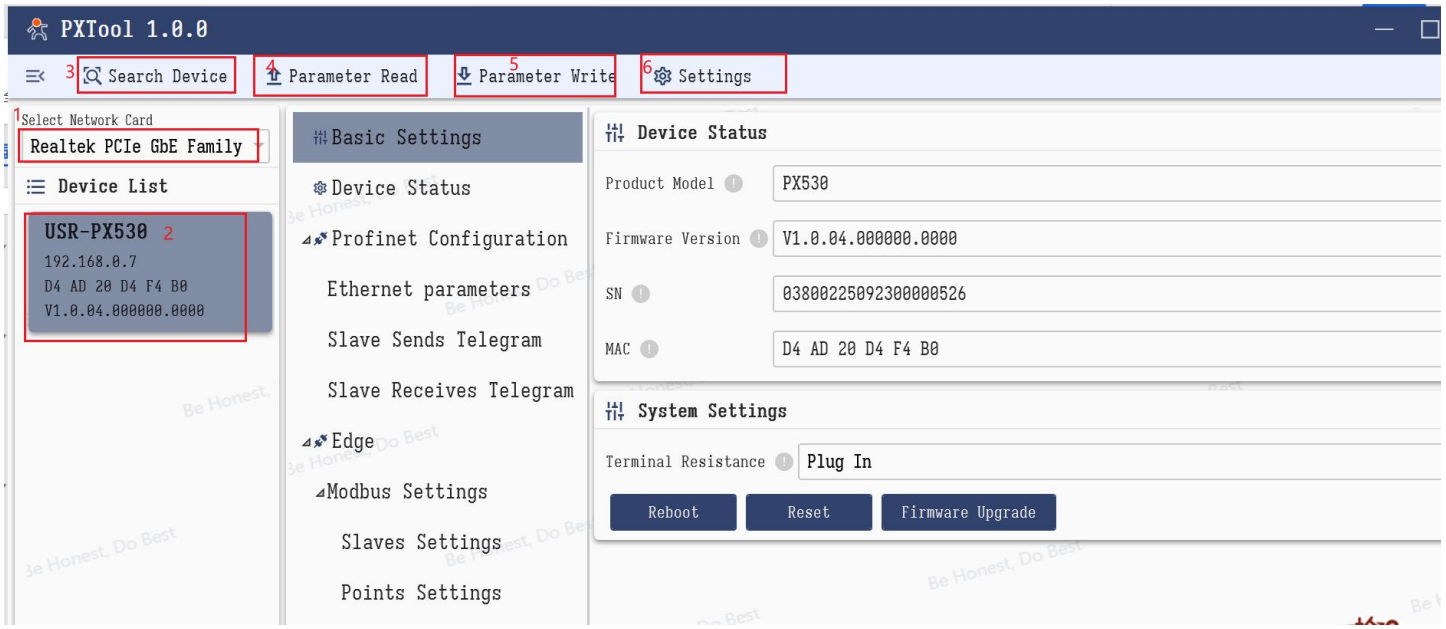
If the computer's IP address does not match the device address, a prompt will appear to add a virtual IP. Click OK.

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3.1.3. Config interface of the software

The left side of the PXTool interface displays device information for PX series products, including "Select Network Card" and "Device List". The top of the interface features a menu bar with buttons such as [Scan Device], [Read Parameters], [Write Parameters], and [System Settings].



1. Select the network card

Click [Select Network Card] to choose your computer's real network card and scan the device.

2. Device list

The device list displays scanned device information, including default IP, MAC, and firmware version.

3. Scan device

Click the [Scan Devices] button. PXTool will search for all PX series devices in the local network and display

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the target board's IP address and firmware version in the Device List dropdown. After selecting the correct device in the Device List dropdown, you can configure the PX series devices.

4. Parameter reading

After selecting the device, click the [Parameter Read] button to retrieve parameters from the PX device using PXTool. You can modify the imported configuration or directly write it to the device.

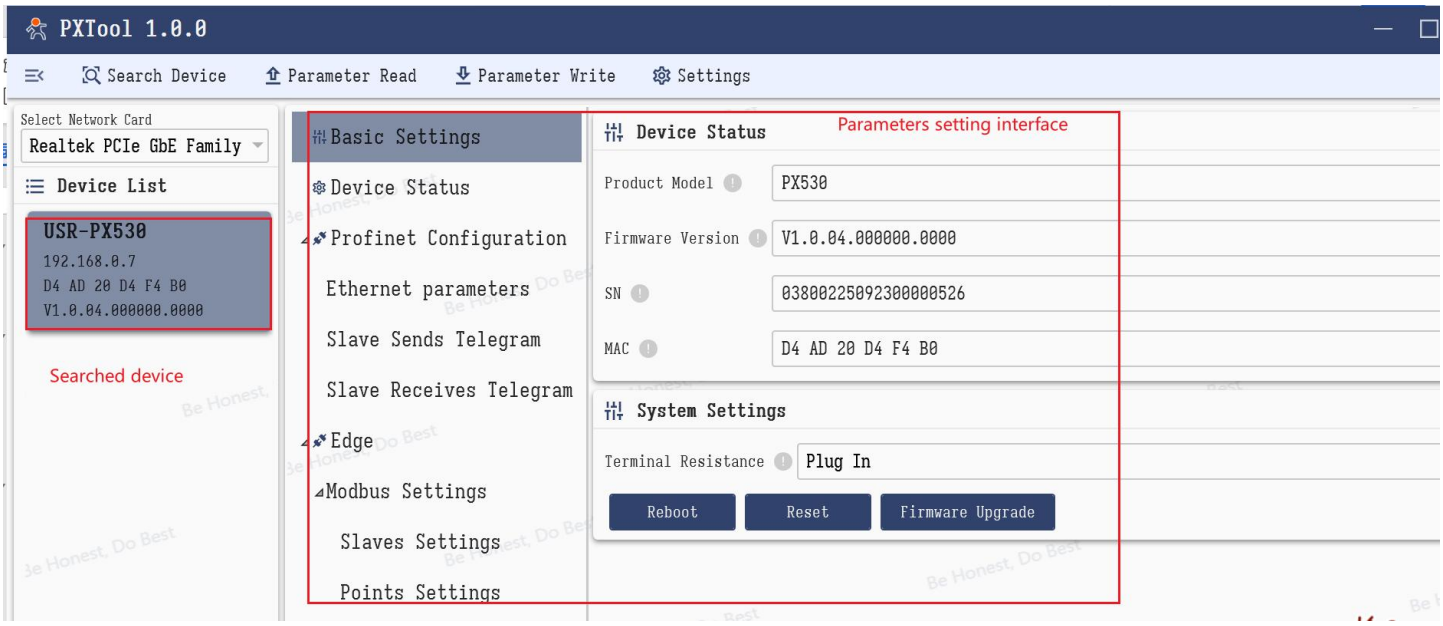
5. Write parameters

After selecting the device, click the [Write Parameters] button to save the configured parameters to the PX device.

6. System Settings

Currently, users can choose the relevant language, the main language is Chinese or English.

Select the device to scan from the device list to access the device configuration interface.



3.2. PLC Parameter Settings

This article demonstrates adding a USR-PX530 protocol converter using the Siemens 1200PLC and TIA Portal V16 software. If your master station is not a Siemens 1200 PLC, refer to the master station's equipment manual to import GSDML files and add a USR-PX530 Profinet slave station.

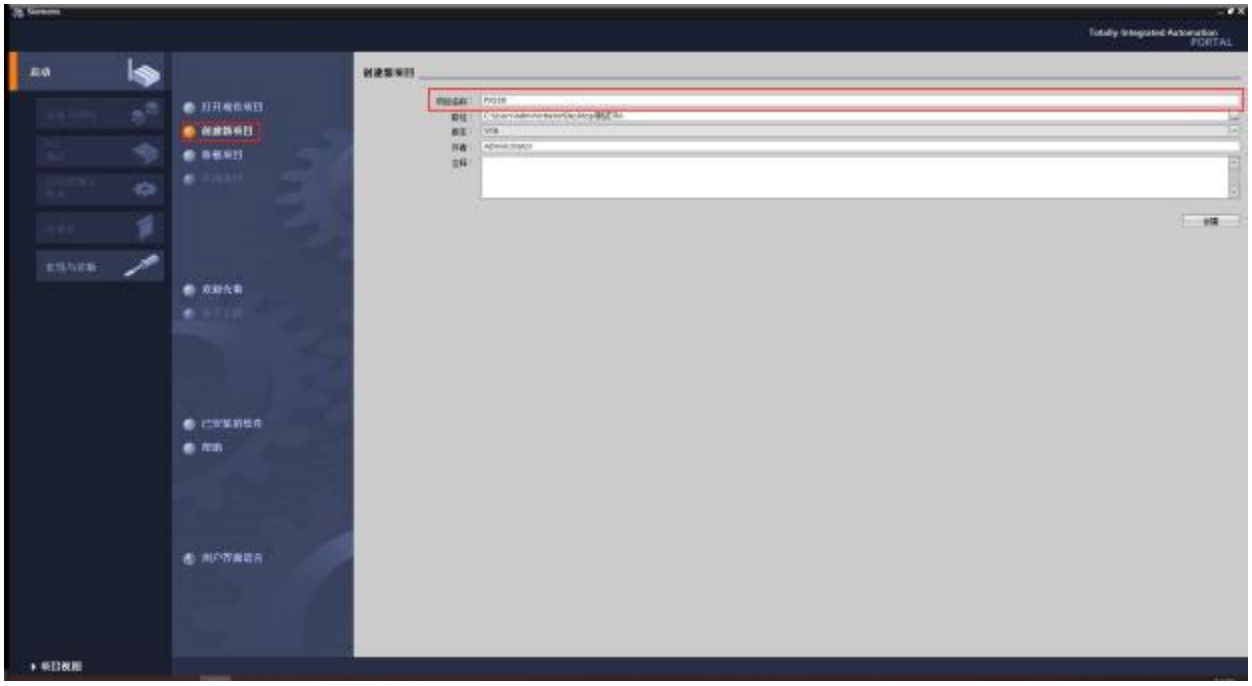
GSDML file link: **https://www.pusr.com/support/download/GSDML-USR-PX530-GSDML.html**

3.2.1. Siemens TIA portal Software Device Configuration

1. New projects

a. Launch the TIA Portal V16 software, click "Create New Project", and click the "Create" button after completing all information input, as shown in the following picture.

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◆ Project name: Custom, can be kept as default.

◆ Path: The project retains its path, which can be kept as the default.

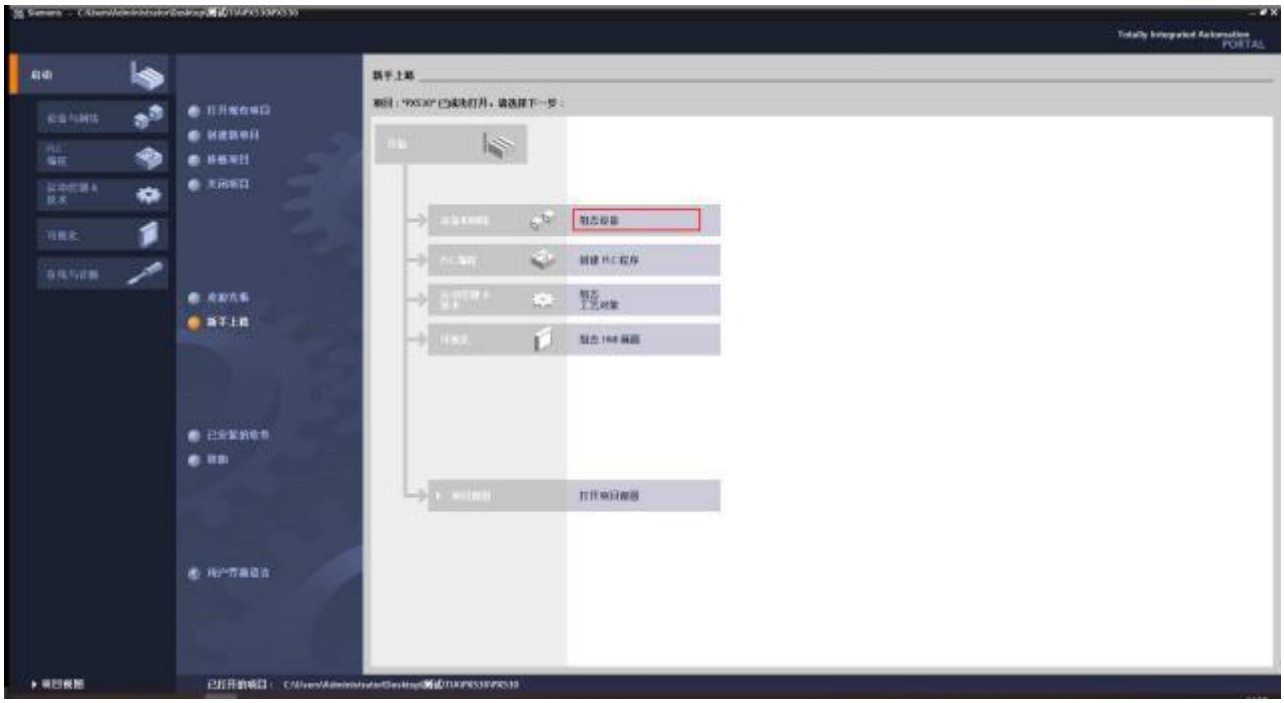
◆ Version: Can remain default.

◆ Author: Keep default.

◆ Note: Custom, not required.

2. Add PLC controller

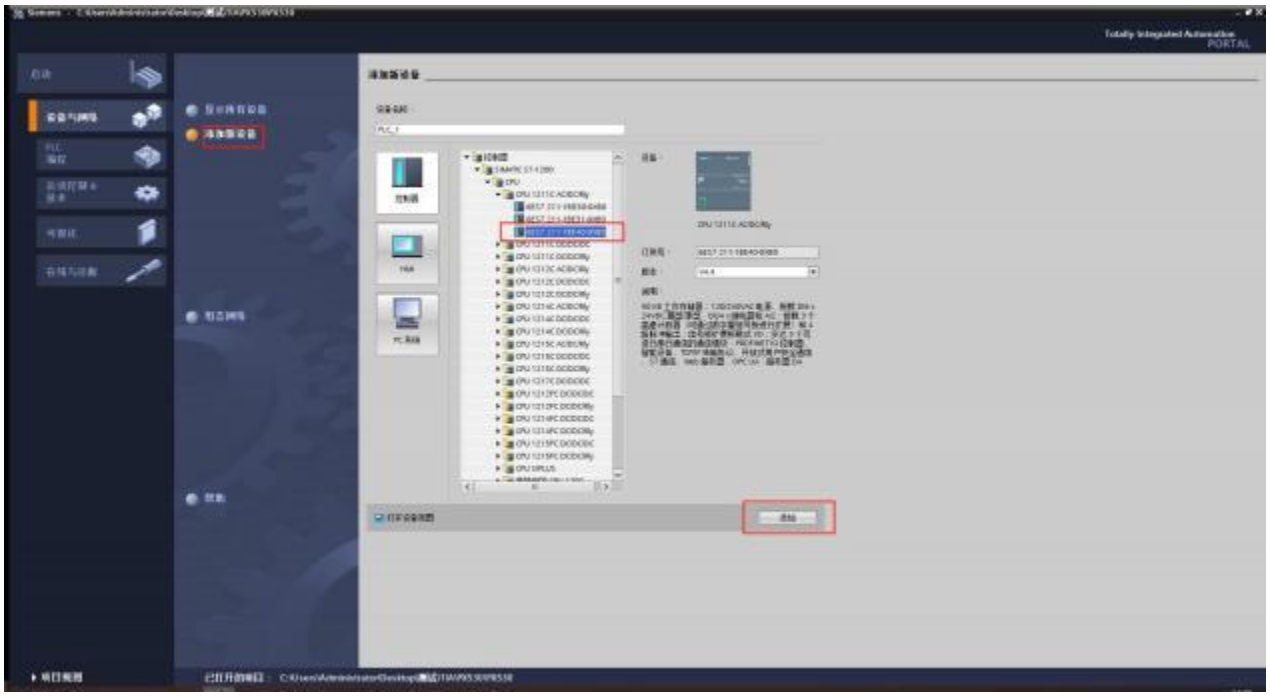
a. Click Configure Device, as shown in the following picture.



b. Click Add New Device, select the PLC model in use, and click Add. After adding, you can see the PLC is

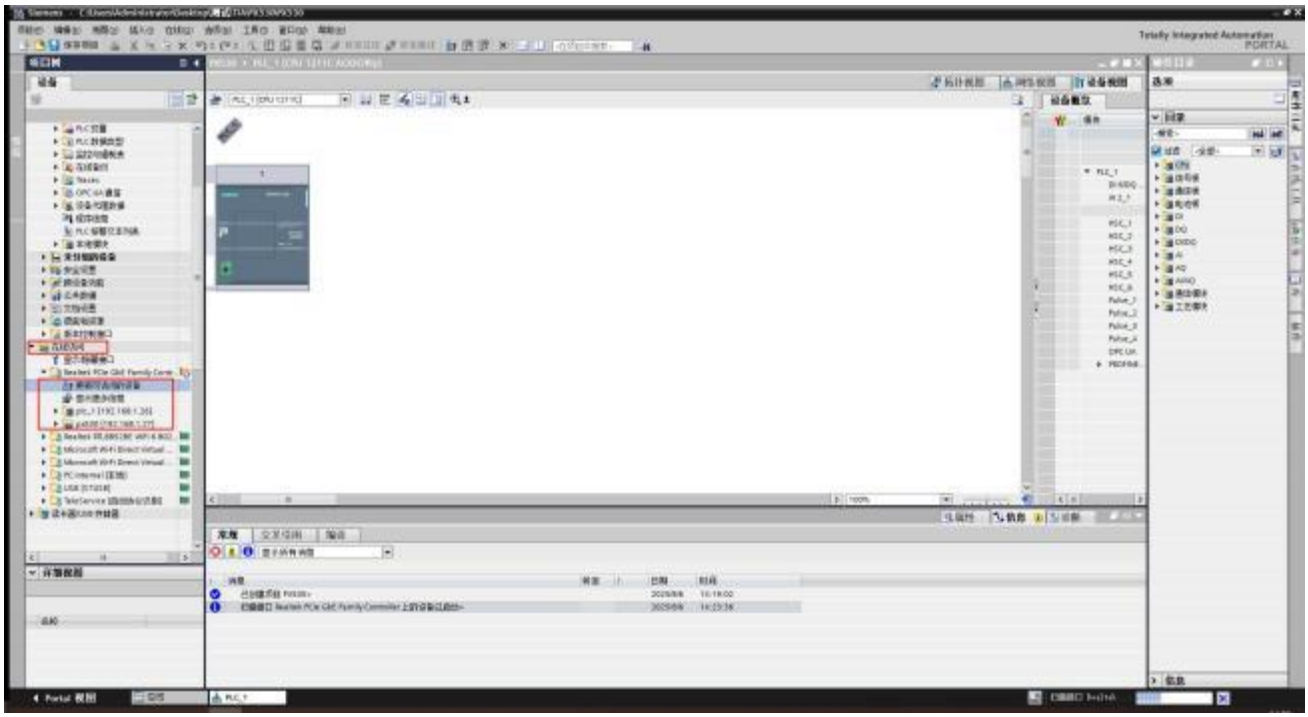
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added to the device navigation tree.



3. Scan connected devices

a. Click the left navigation tree "Online Access-> Update Accessible Devices" as shown in the figure below. After updating, connected slave device information will be displayed.

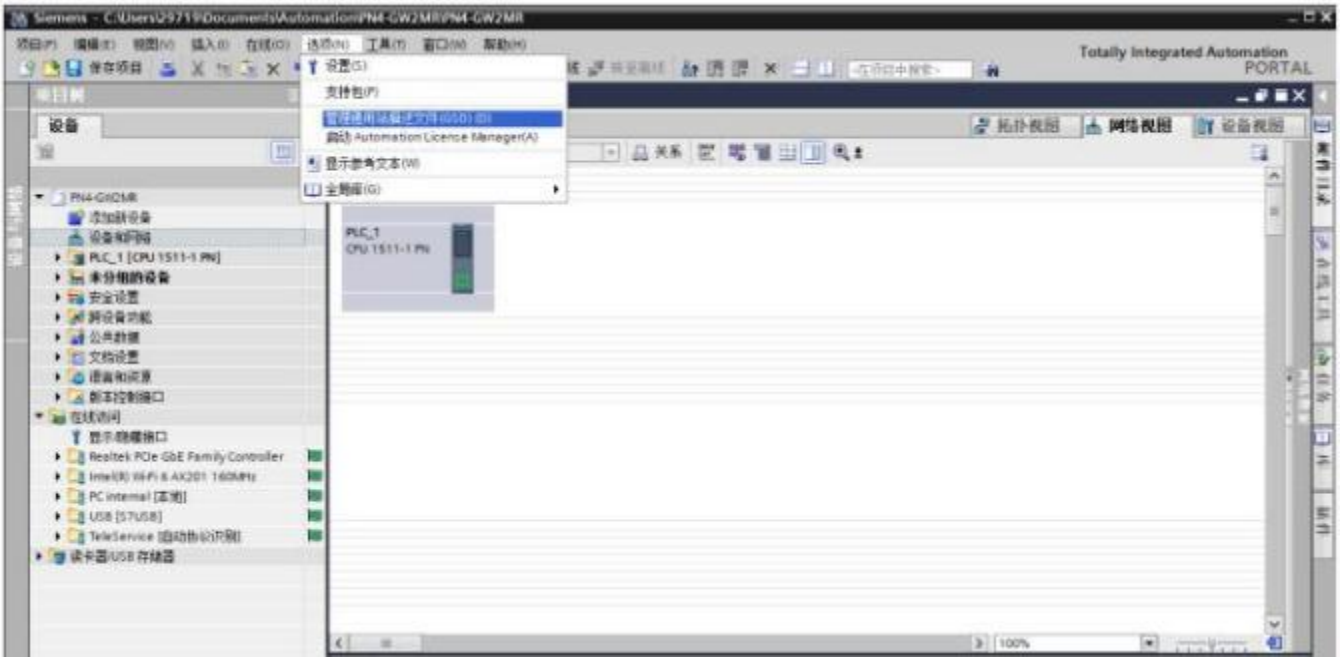


The computer's IP address must be in the same subnet as the PLC. If not, modify the computer's IP address and repeat the steps above.

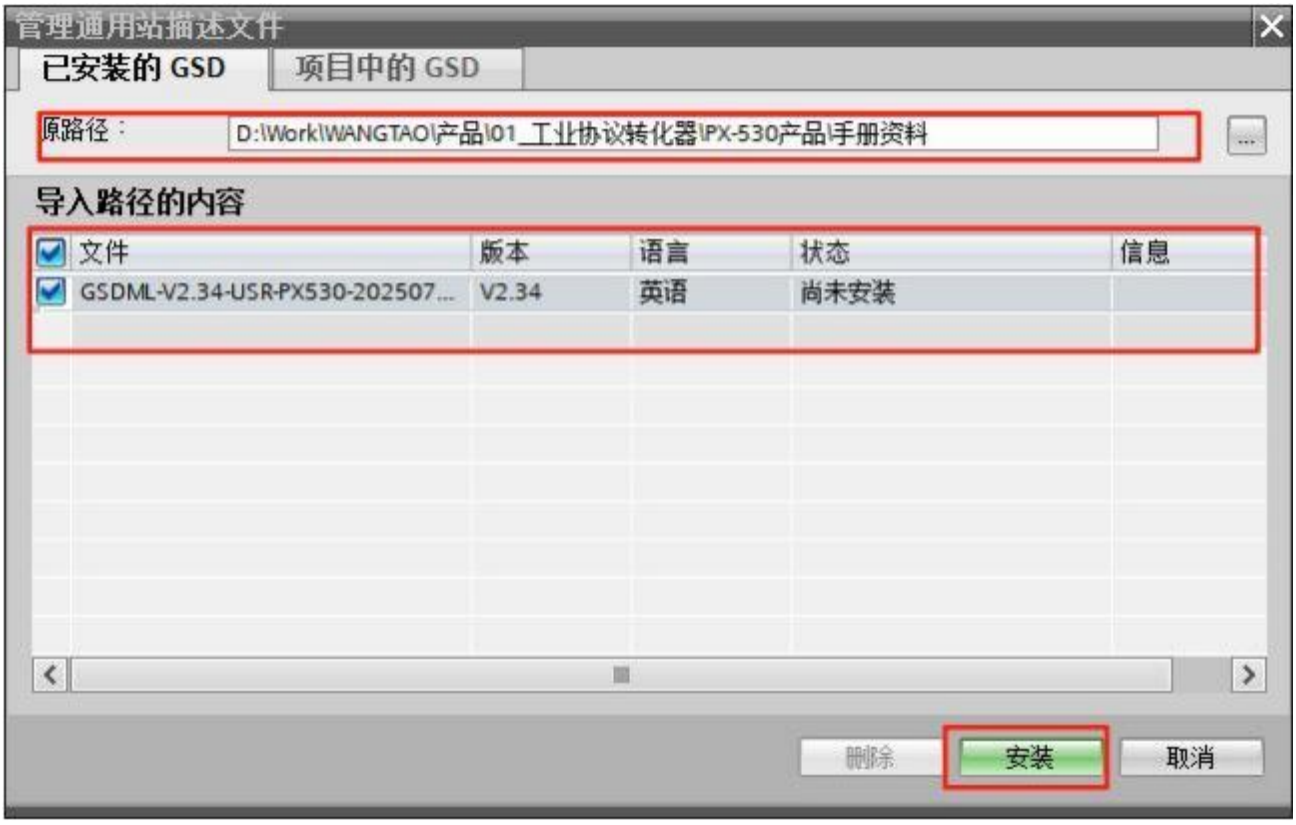
4. Add GSD configuration file

a. In the menu bar, select "Options-> Manage General Station Description Files (GSDML)" (D).

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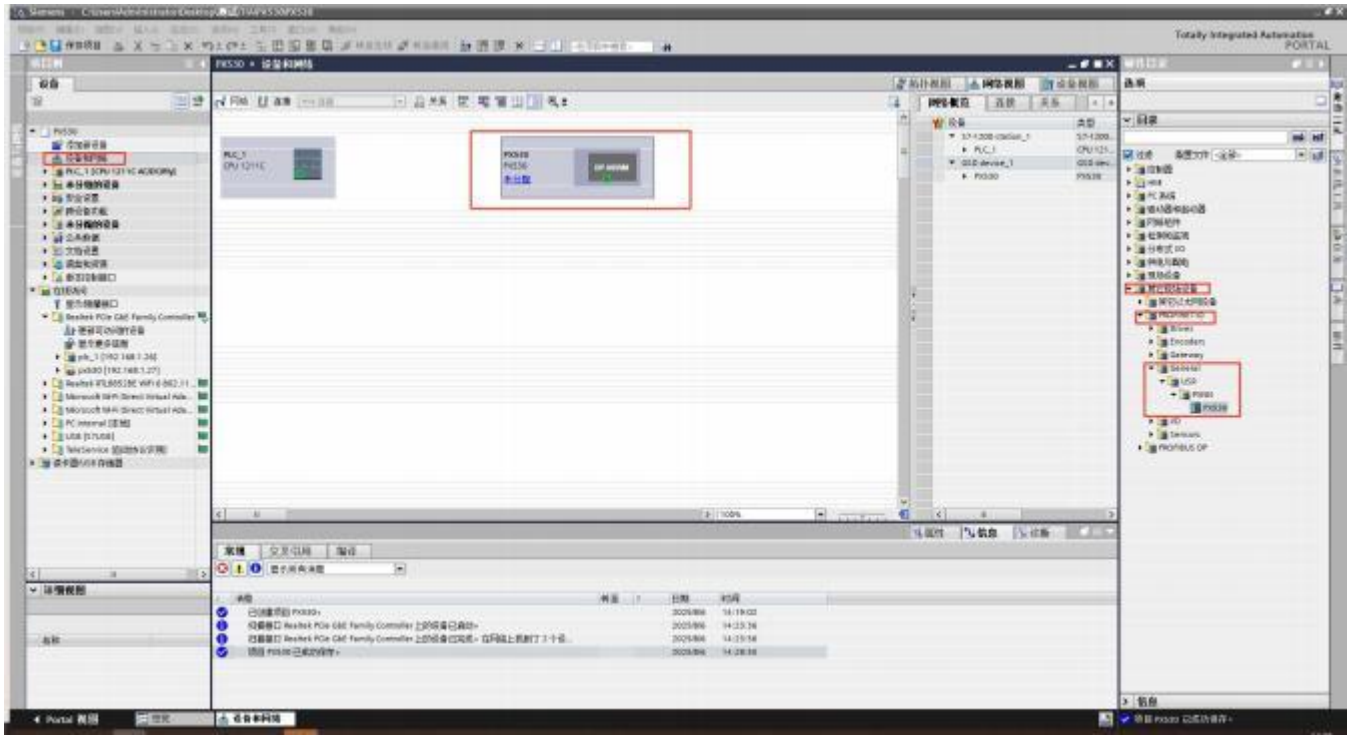
b. Click Source Path to select a folder. Check if the GSD file to be added is not installed. If not installed, click Install. If already installed, click Cancel to skip the installation step.



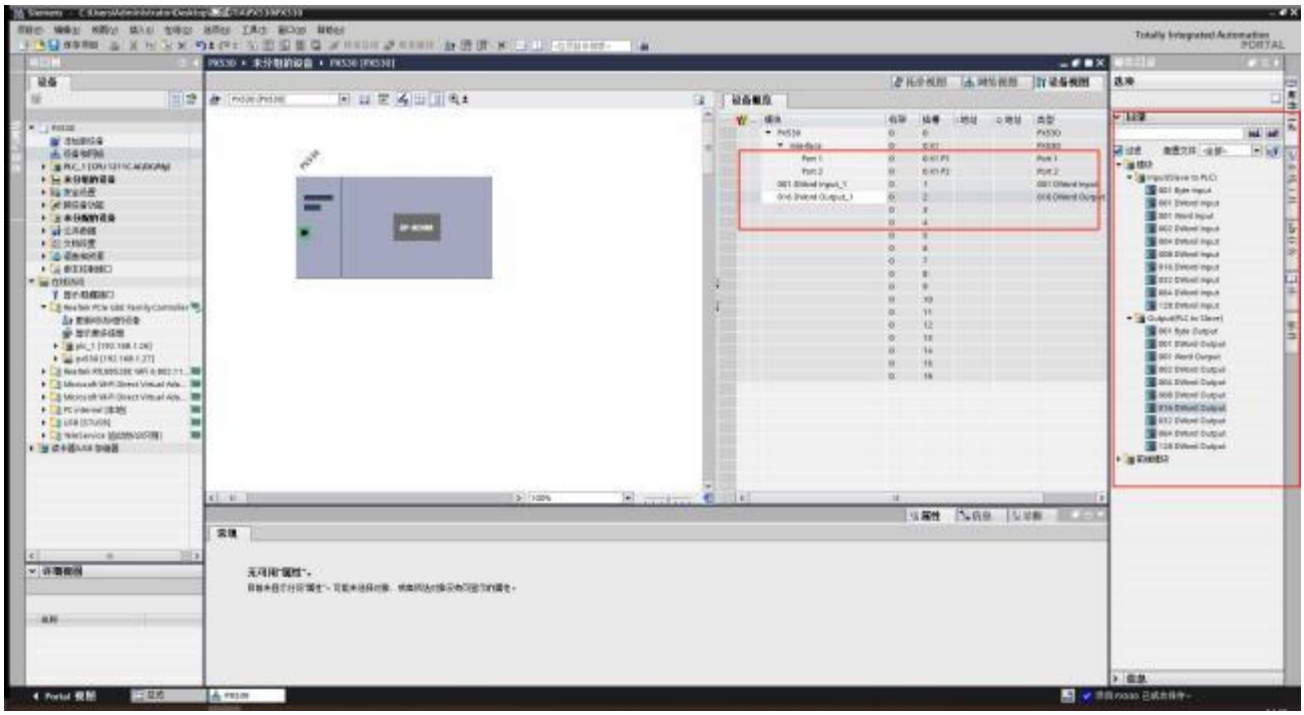
5. Add gateway module

a. Double-click the "Devices and Networks" section in the left navigation bar, then click the vertical button on the right side to expand the "Hardware Directory". Select "Other field devices-> PROFINET IO-> General-> USR-> PXNN-> PX530", then drag or double-click PX530 to the "Network View" section.

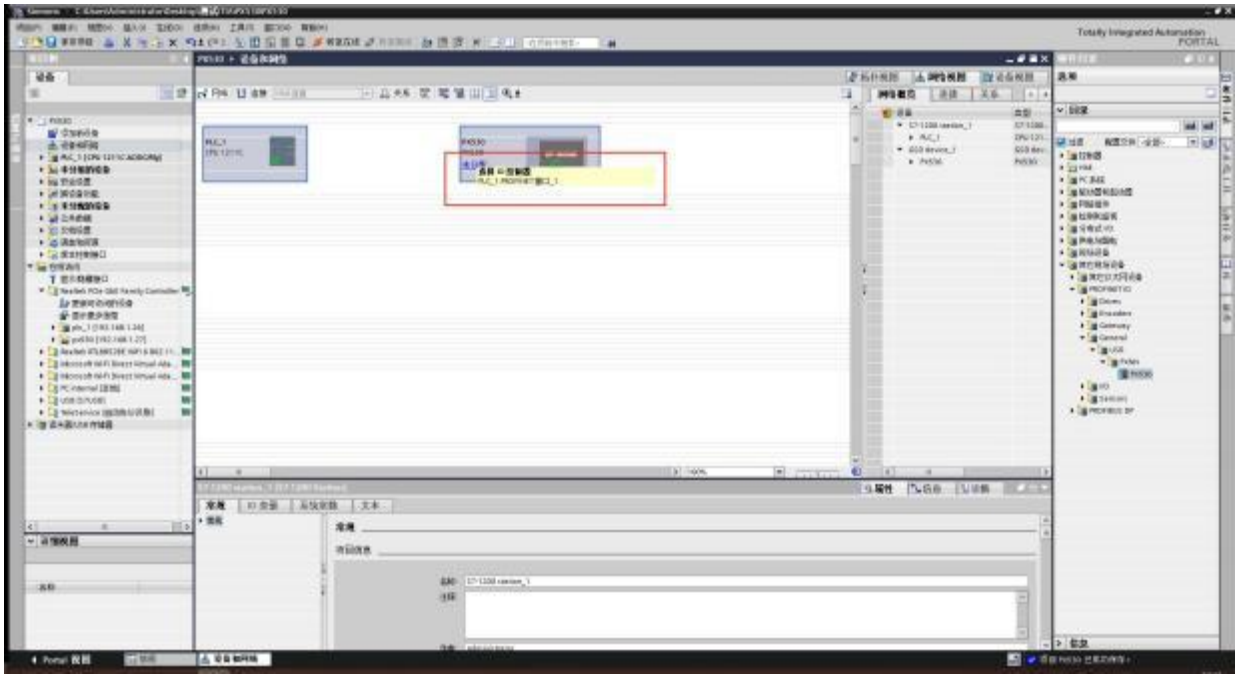
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b. Select the gateway module, switch to the device view, and under the hardware directory, double-click or drag the Input modules / Output modules to add input/output bytes.



c. Switch to network view, click the gateway module, then select "Unassigned (blue font)" on the remote station device, and choose "PLC_1.PROFINETinterface_1" as shown in the figure below.



d. After the connection is completed.

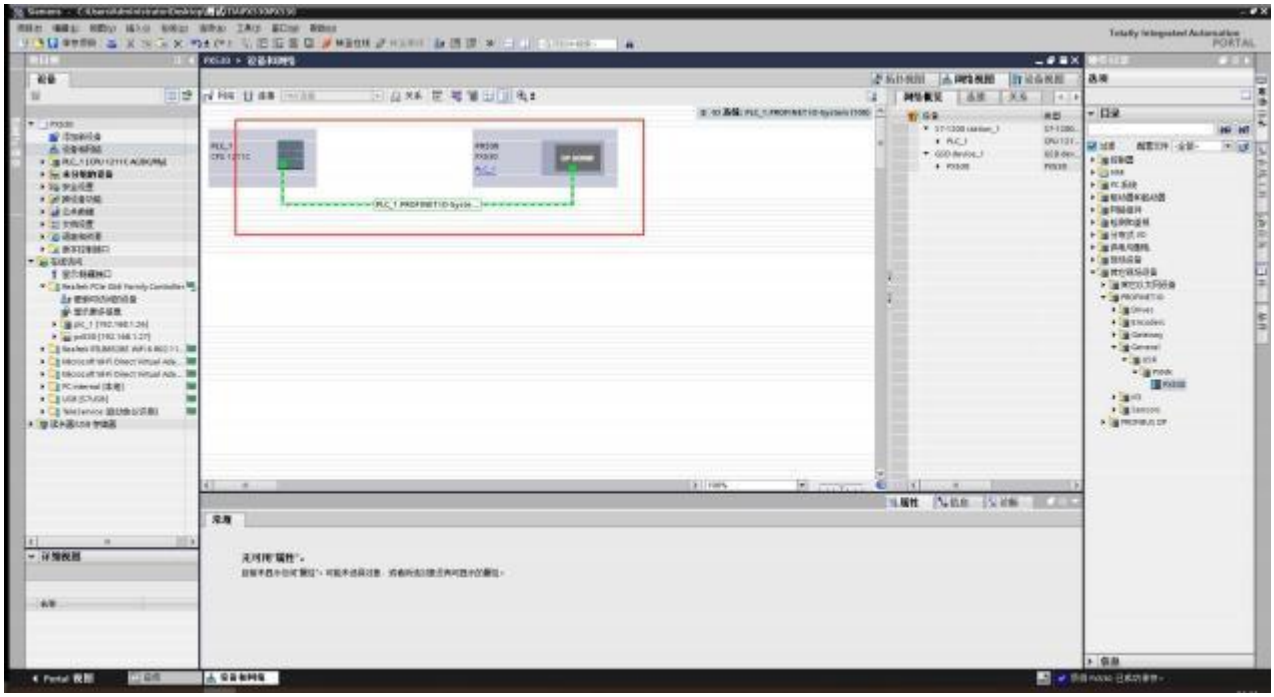


Figure 8. Successful PLC connection interface

6. Assign device name

a. In the network view, right-click the connection line between the PLC and gateway module, then select "Assign Device Name".

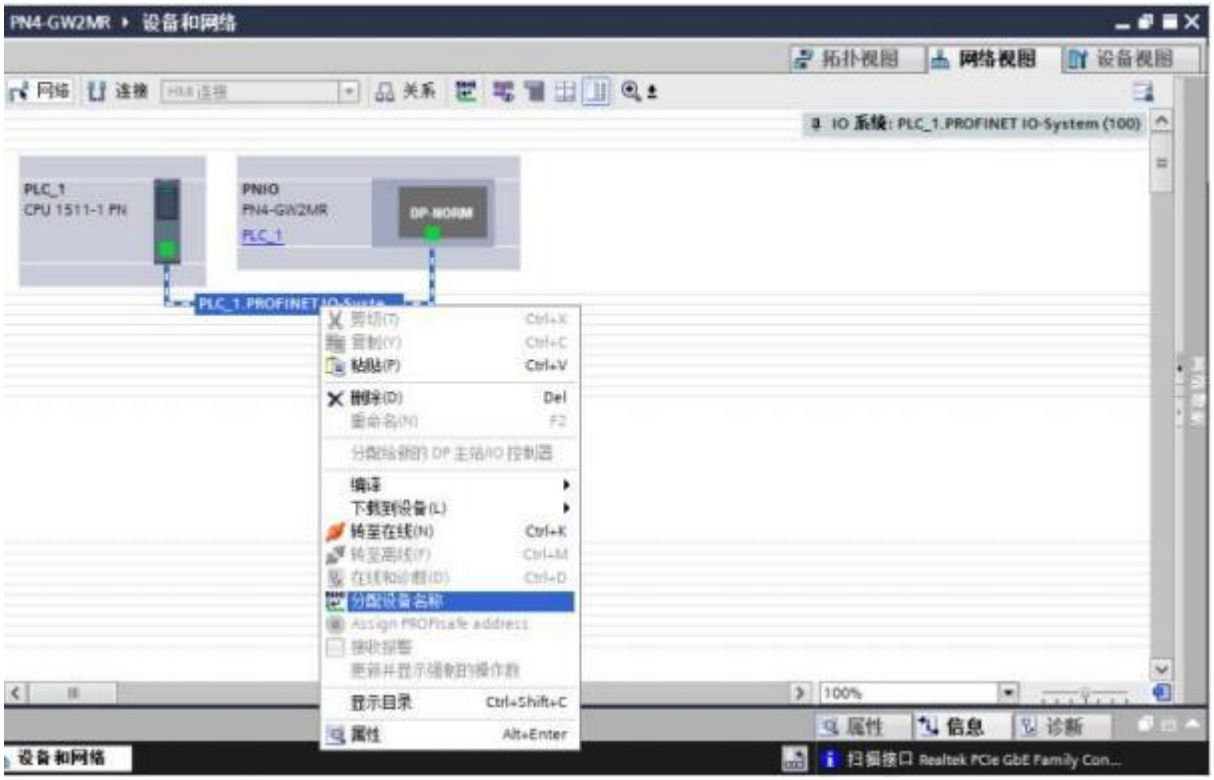


Figure 9. Device name allocation interface

b. The "Assign PROFINET Device Name" window will pop up.

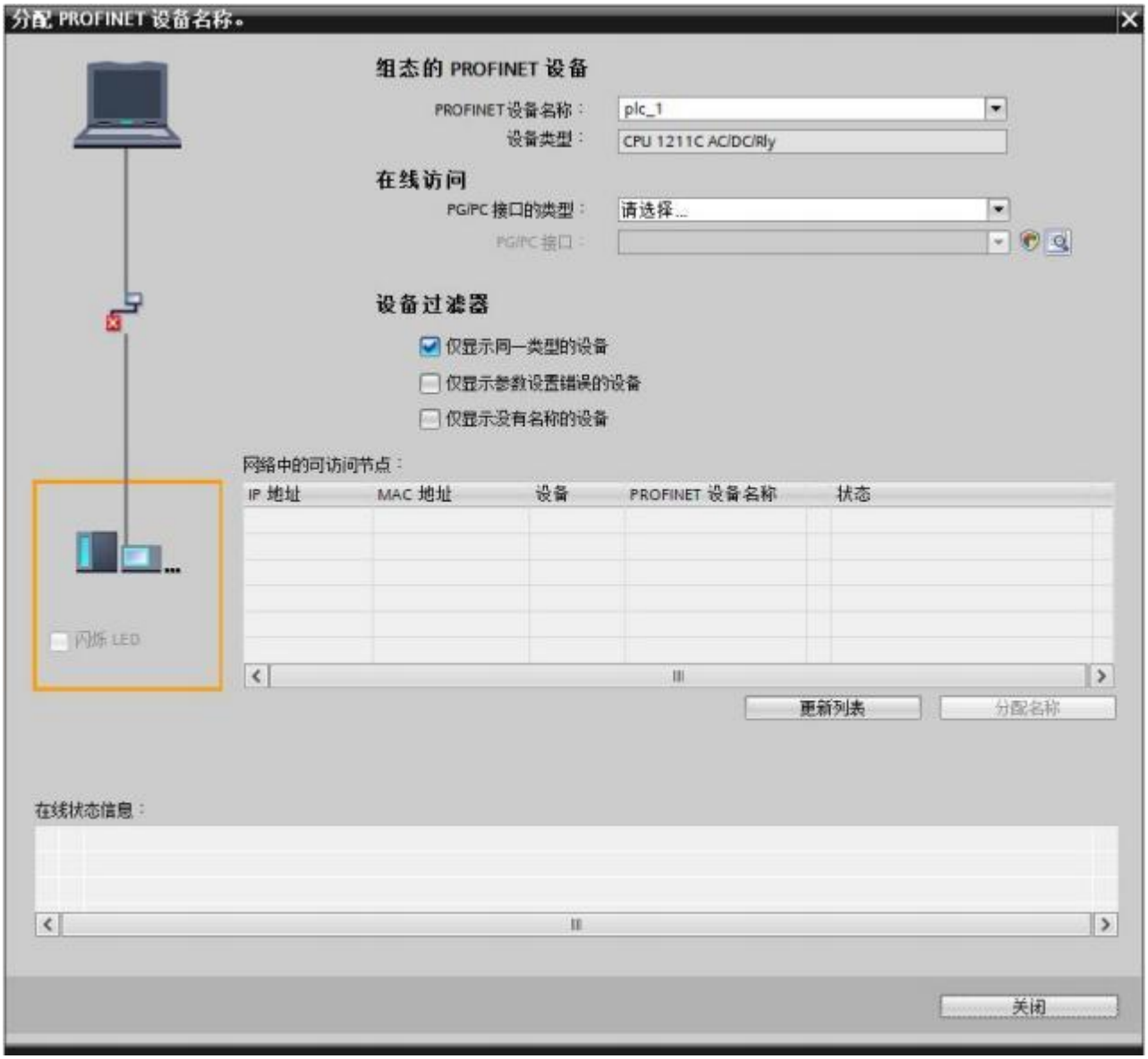


Figure 10. Device name allocation interface

C. Select PLC for device name and click Update List. After updating, check if the node status in Accessible Nodes is confirmed. If not, select the device and click Assign Name.

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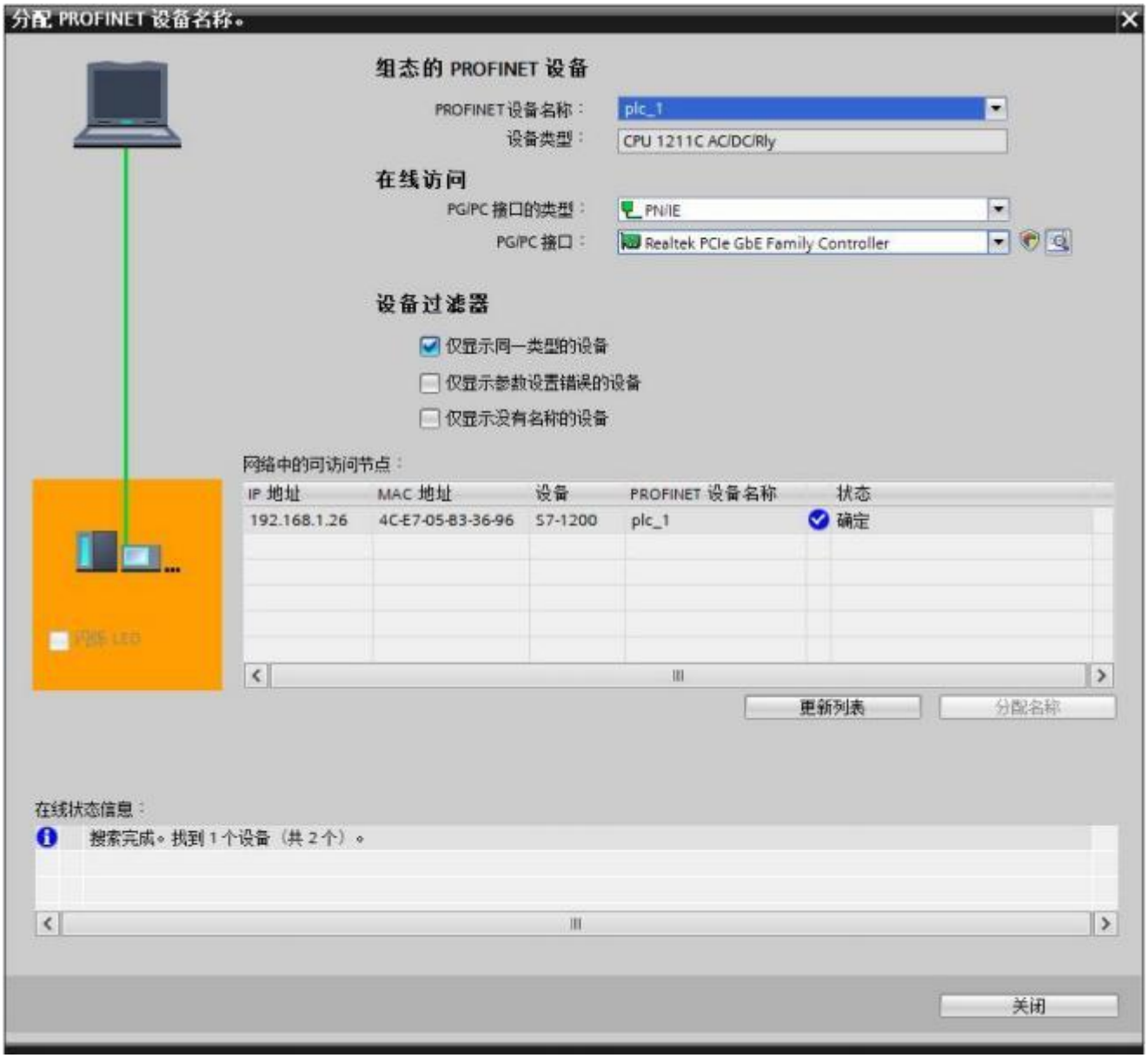


Figure 11. PLC Name Assignment Interface

D. Select the gateway module in the device name field, click "Update List", and assign names using the same method.

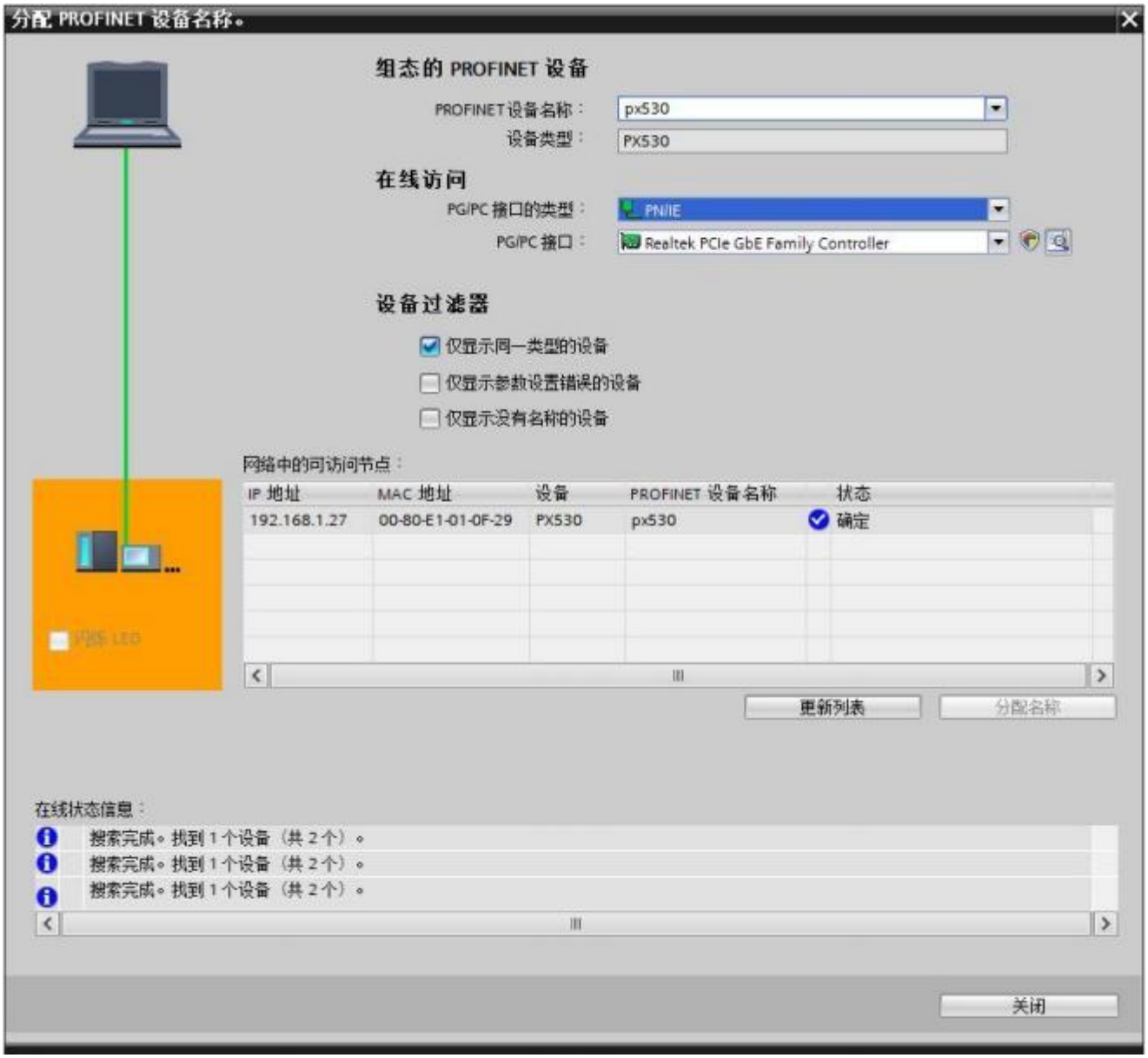


Figure 12. Gateway name allocation interface

e. Check if the module's MAC address matches the assigned device name's MAC address. Click Close.

7. Download configuration

a. In the network view, select PLC. First click the compile button in the menu bar, then click the download button to download the current configuration to the PLC.

b. In the "Download to Device" dialog box.

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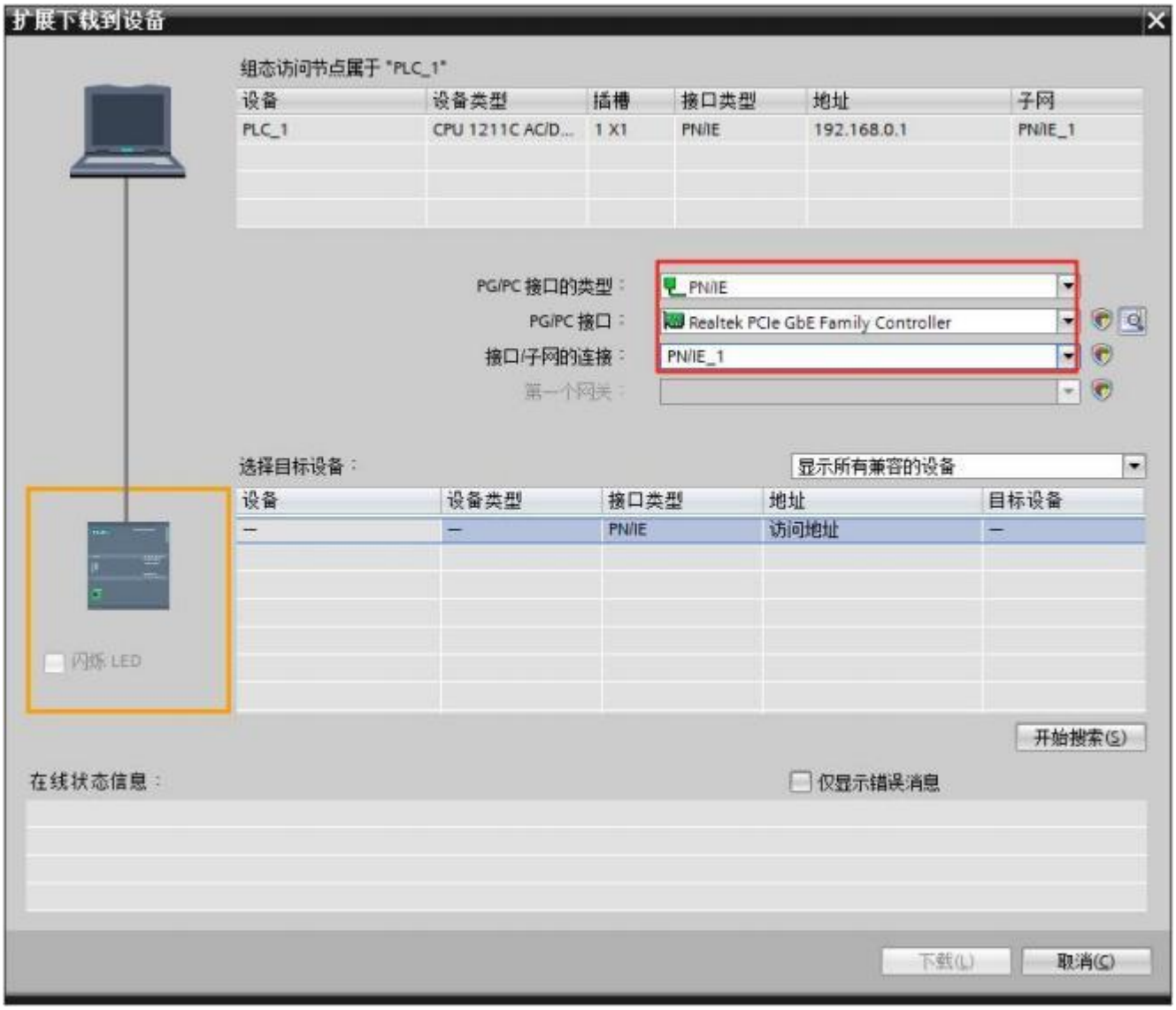
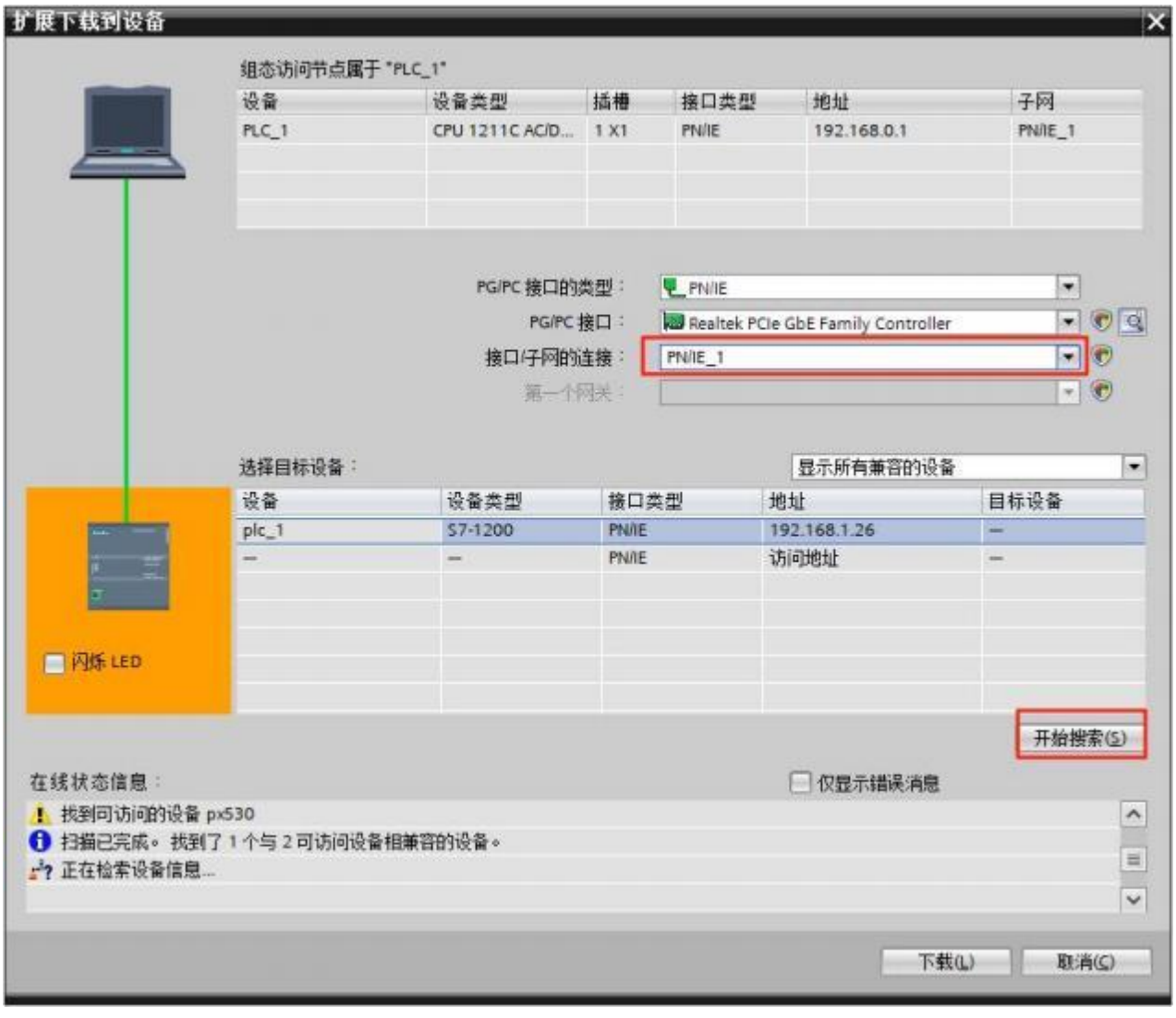


Figure 13. Configuration Download Interface

c. Click the "Start Search" button, as shown in the figure below.

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d. Click Download to open the download preview window.



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Figure 14. Configuration Download Interface

e. Click Load.

f. Click Finish.

g. Reboot the device.

8. Communication Connection

a. Click the "Start CPU" button in the menu bar, then click the "Go Online" button. The icons will turn green, indicating successful connection.

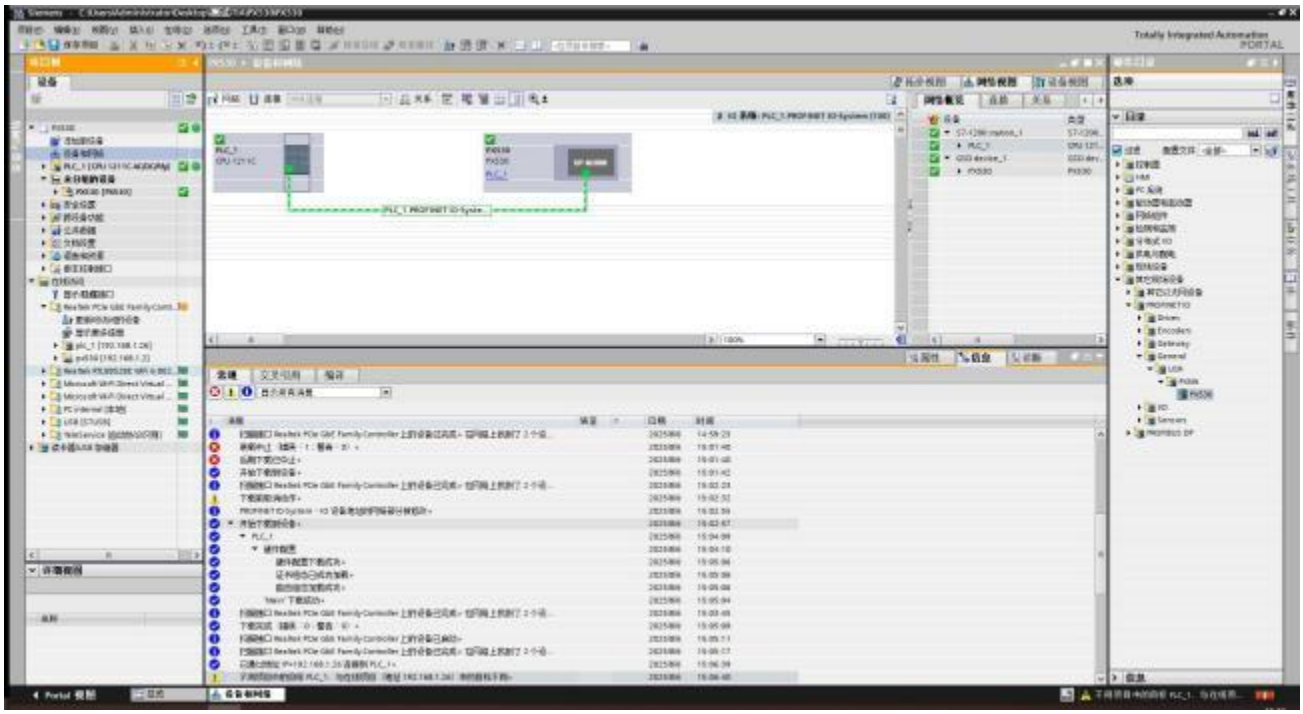


Figure 15. Device online interface

9. Function Verification

a. Expand the left-side item navigation, select "Monitoring and Enforcement Table", double-click "Add New Monitoring Table" to create a new monitoring table.

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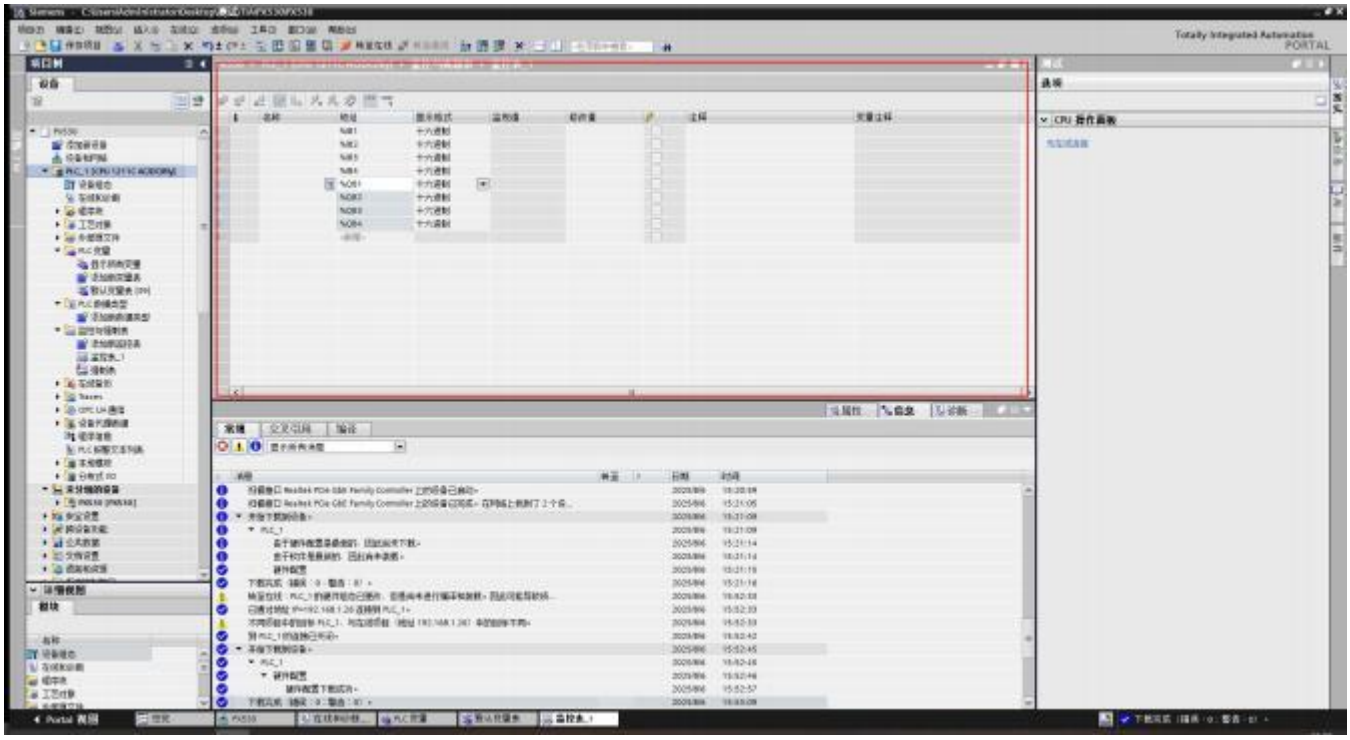


Figure 16. Monitoring interface

b. Open the "Device View" to check the channel I address (input signal channel address) and Q address (output signal channel address) of the module in the device overview. For example, the module's "I address" ranges from 1 to 4, and its "Q address" ranges from 1 to 4.

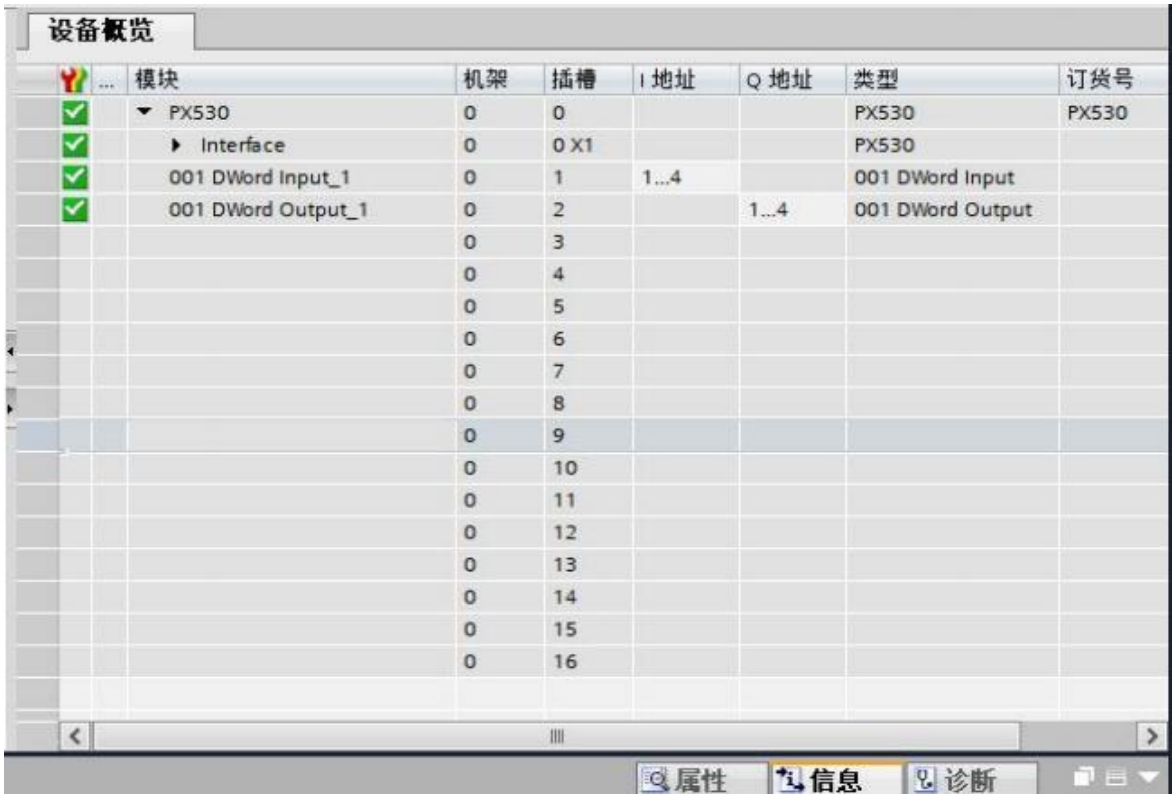


Figure 17. Device view interface

c. Enter the input/output channel addresses in the address cells of the monitoring table, such as writing "IW1" to "IW4" and "QW1" to "QW4", then press Enter to complete the input.

After completing the writing, click the button  to monitor the data.

3.2.2. Example Explanation

1. PLC side module parameter configuration

As specified in Section 3.2.1, configure the gateway module parameters in Botor software. Set the input/output parameters of the gateway module as shown in the figure, and add 002 Dword Input and 002 Dword Output.

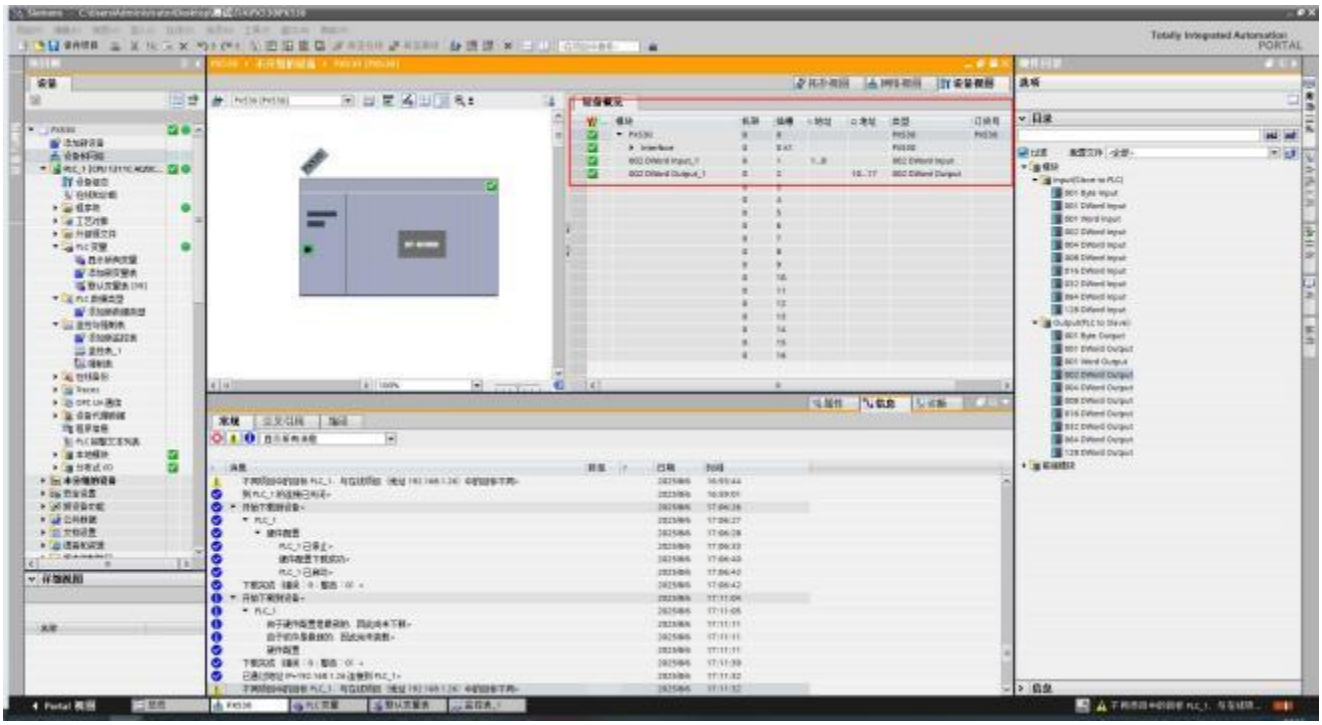


Figure 18. TIA Gateway Data Configuration

2. Configure the gateway module on the host computer

Use the higher-level software PXTool to configure the gateway module's Modbus-side data. For gateway Modbus parameter configuration, refer to 4.4.1Modbus Configuration, and set up the Modbus point table in the point table configuration section.

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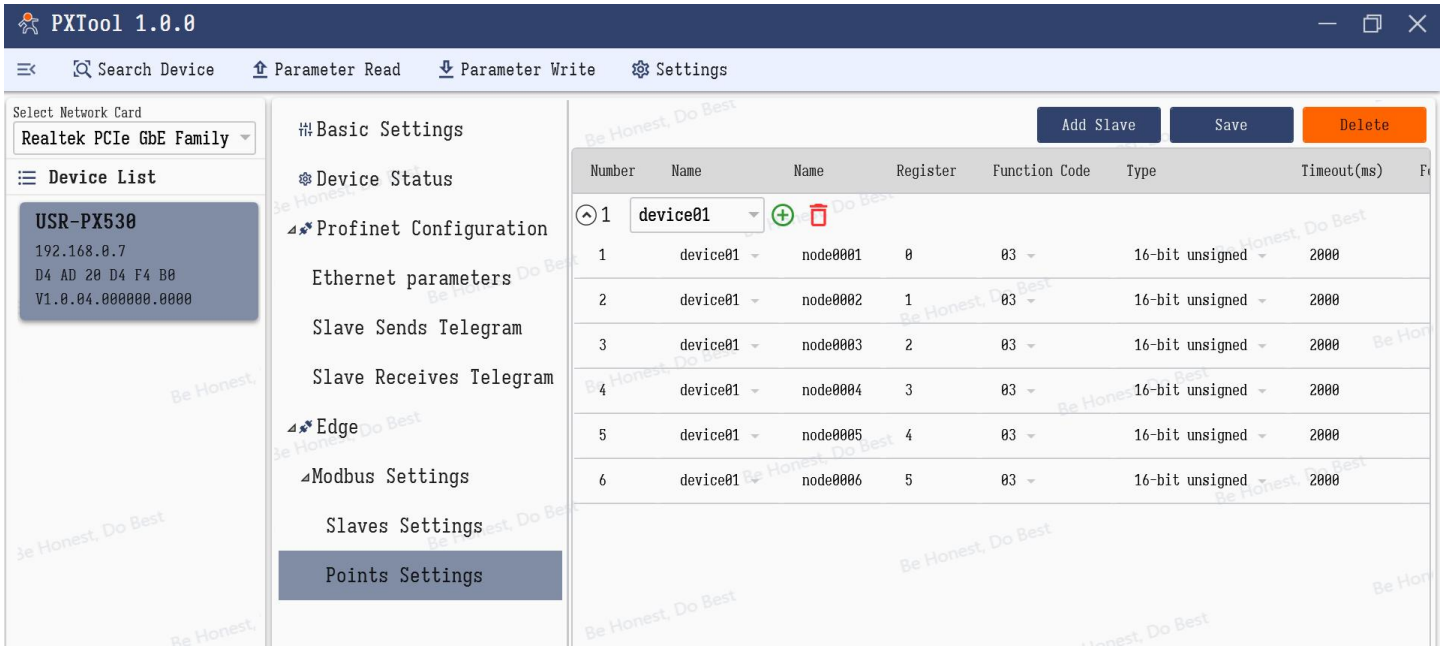


Figure 19. Data point table configuration

Configure the slave station to send messages in the Profient parameter settings.

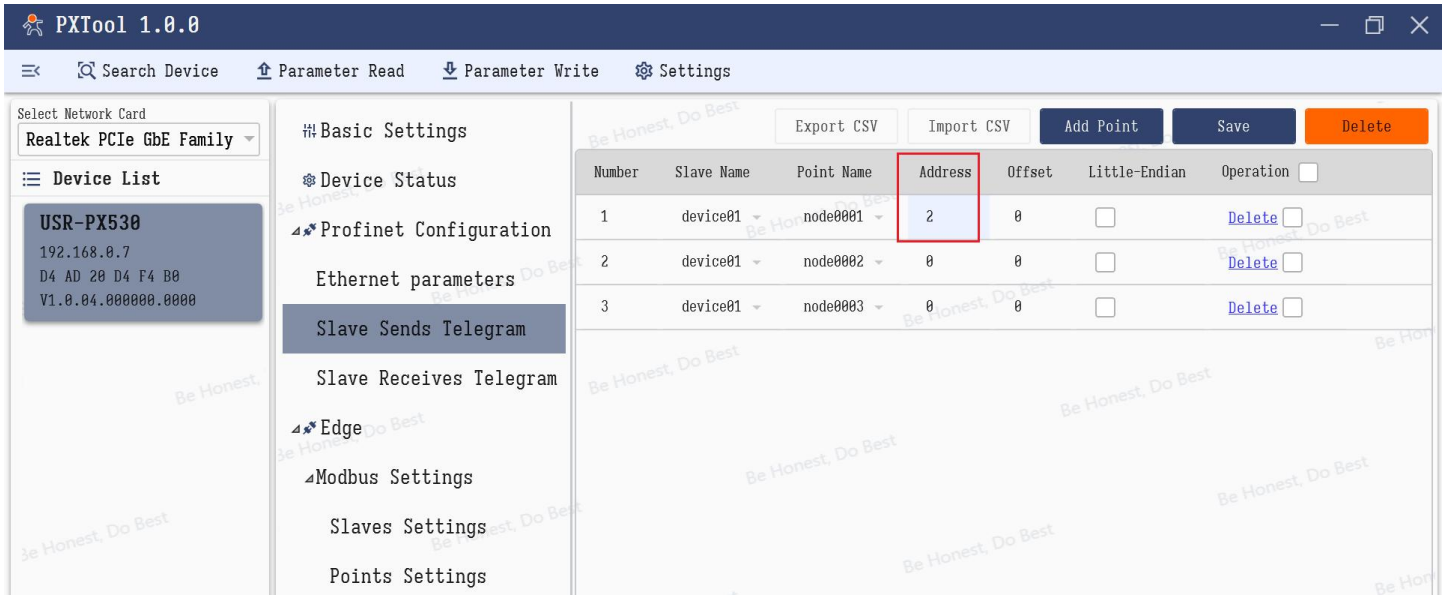


Figure 20. Slave sends message

The memory mapping address of data point node0001 is set to 2, as shown in the following for the TIA portal software data.

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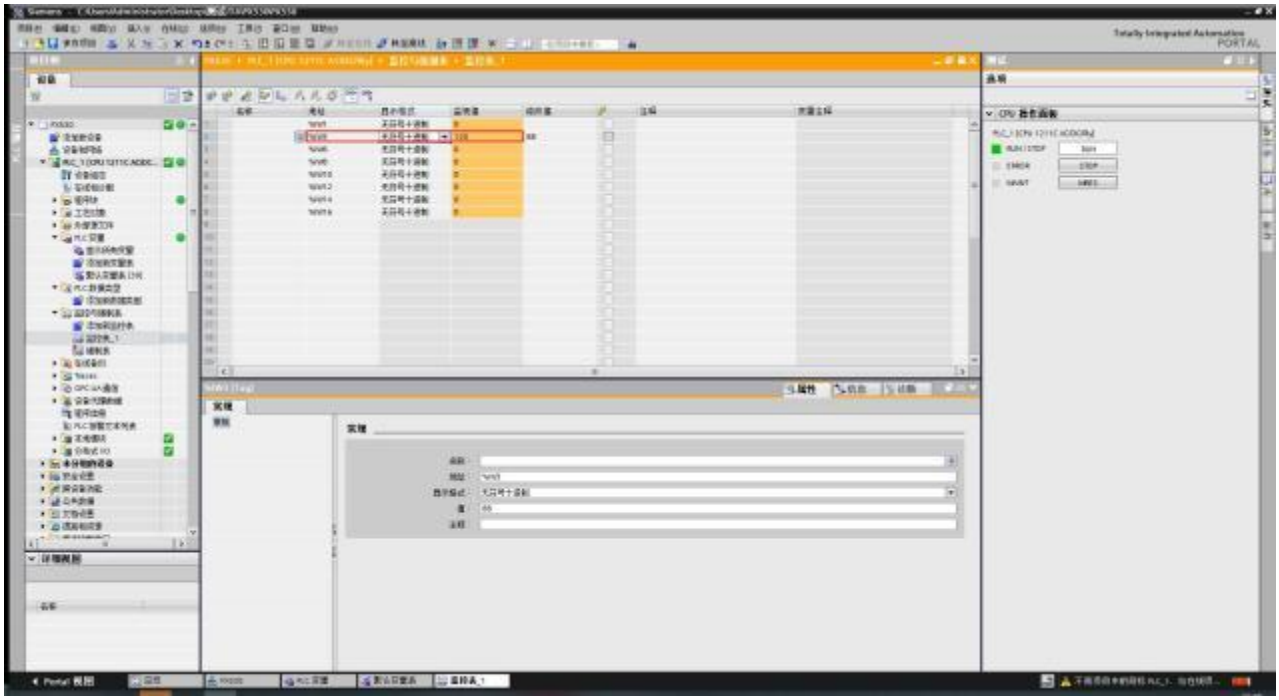


Figure 21. TIA portal data Monitoring Interface

Note: The PLC input addresses are 1 to 8. In this configuration, the memory mapping address is set to 2, the register address is 0, and the corresponding BOD mapping address is IW3.

	模块	机架	插槽	I 地址	Q 地址	类型	订货号
✓	PX530	0	0			PX530	PX530
✓	Interface	0	0 X1			PX530	
✓	002 DWord Input_1	0	1	1...8		002 DWord Input	
✓	002 DWord Output_1	0	2		10...17	002 DWord Output	
		0	3				
		0	4				
		0	5				
		0	6				
		0	7				
		0	8				
		0	9				
		0	10				
		0	11				
		0	12				
		0	13				
		0	14				
		0	15				
		0	16				

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Figure 22. PLC Address Mapping

3. Communication test

Using the ModbusSlave debugging software at the station to write data, the data in the TIA portal monitoring interface changes.

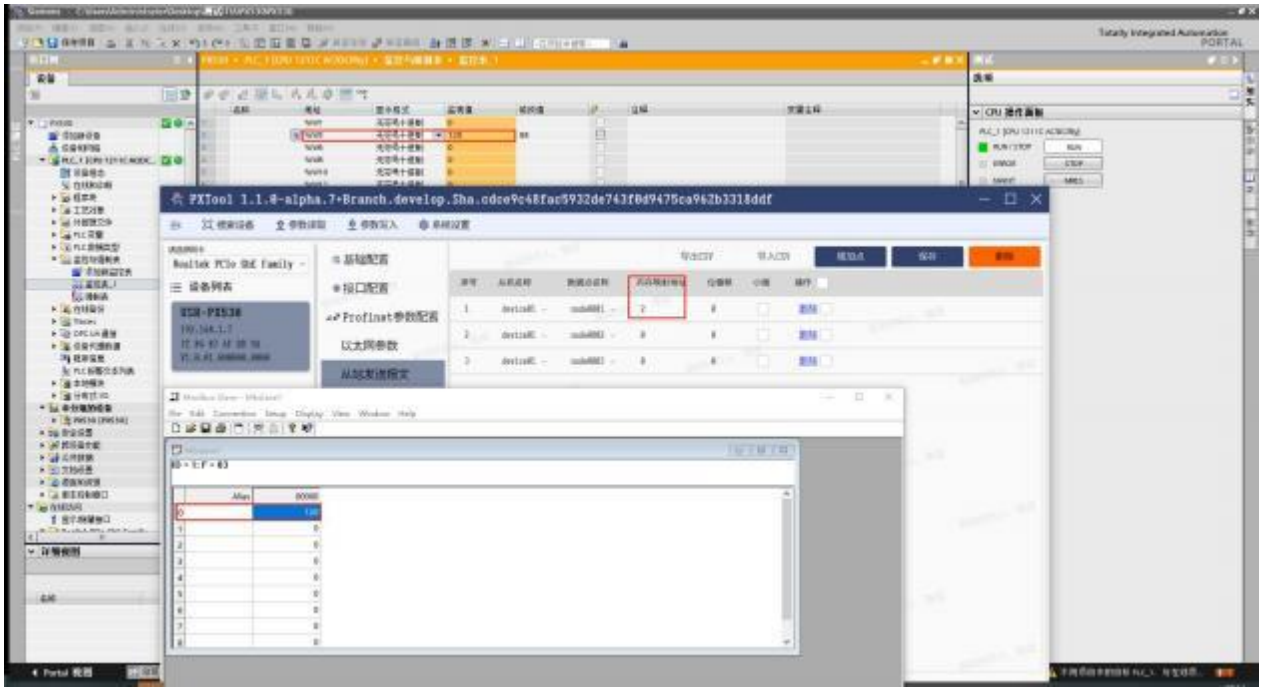


Figure 23. Communication test

4. Product Features

4.1. Basic Configuration

After connecting the device, the configuration software interface displays the basic configuration interface, including [Device Status] and [System Settings].

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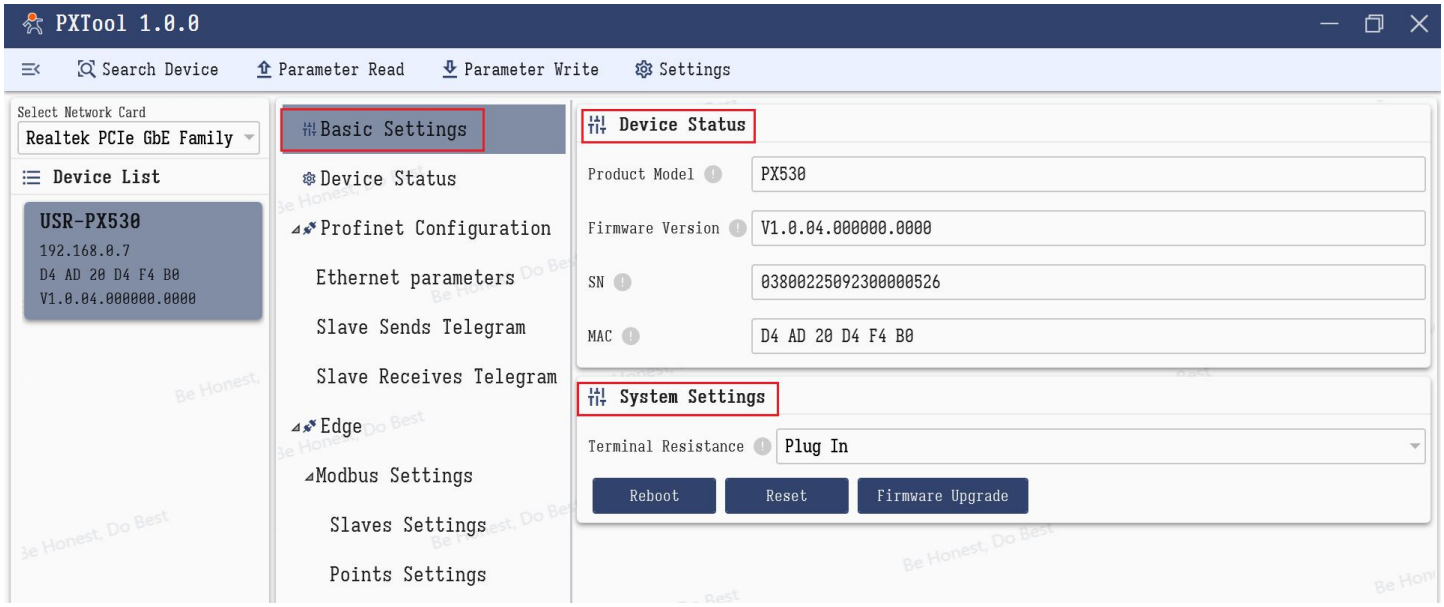


Figure 24. Basic configuration interface

- Device status: Displays key information about the connected device, including product model, firmware version, SN, and MAC
- Terminal resistance: The PX series features built-in terminal resistors that can be configured to connect or disconnect through software. By default, the resistors are disconnected.
- Restart: Power on the device to restart
- Restore factory settings: Restore the device's default parameters, including the default IP address and port.You can also restore factory settings through hardware. After powering on, press and hold the Reload button for 3-15 seconds to restore factory settings.
- Firmware upgrade: The device can be upgraded directly through the host computer software.

4.2. Interface Configuration

The interface configuration includes Ethernet configuration and serial port configuration.

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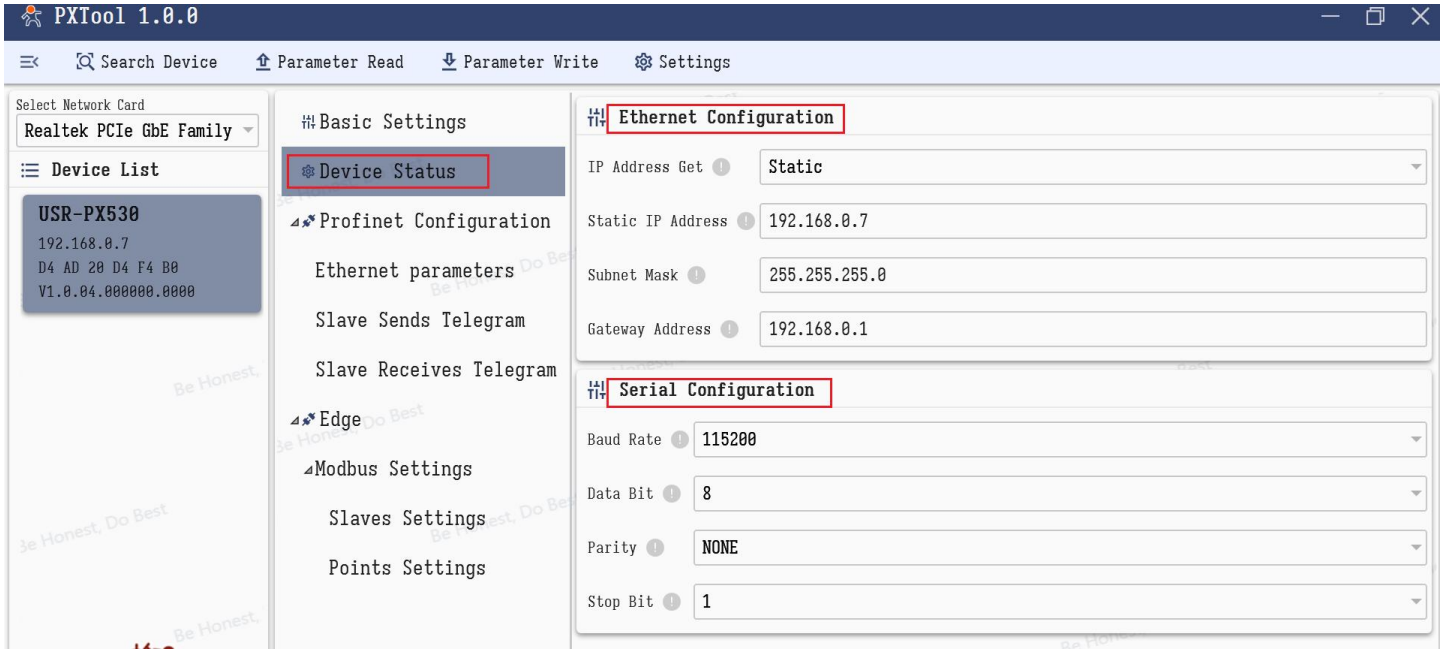


Figure 25. Interface configuration interface

4.2.1. Ethernet Configuration

1. IP Address Get:

The IP address is the identity of the module in the local area network (LAN) and must be unique within the LAN, so it cannot be duplicated with other devices in the same LAN. The PX520's IP address can be obtained via Static IP or DHCP.

●Static IP

A static IP needs to be set manually by the user. During setup, pay attention to setting the IP, Subnet Mask, and Gateway simultaneously. Static IP is suitable for scenarios where IP addresses and devices need to be tracked and correspond one-to-one.

Advantages: Devices that cannot assign IP addresses can be discovered via full network segment broadcast mode.

Disadvantages: Different network segments in different LANs may prevent normal TCP/UDP communication.

●DHCP

DHCP's main function is to dynamically obtain the IP address, Gateway address, DNS server address, and other information from the gateway host, thus eliminating the tedious steps of setting the IP address. It is suitable for scenarios where there are no specific requirements for the IP address and a strict one-to-one correspondence between the IP and the module is not necessary.

Advantages: Reduces the hassle of setting IP addresses, gateway addresses, and subnet masks when

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connecting to devices with a DHCP Server, like routers.

Disadvantages: If connected to a network without a DHCP Server, such as a direct connection to a computer, the PX520 will not function properly.

2. Subnet Mask

The subnet mask is a 32-bit address used to mask part of the IP address to distinguish the network identifier from the host identifier, and to indicate whether the IP address is on the local area network or a remote network. The subnet mask cannot exist alone; it must be used together with the IP address. The commonly used Class C subnet mask is 255.255.255.0, which allows for 2 to the power of 8 minus 2 IP addresses within the subnet, i.e., 256-2=254 addresses. Generally, host addresses with all 0s or all 1s (in binary) have special purposes.

3. Gateway Address

The gateway address refers to the network number of the network where the module's current IP address resides. If connecting to the external network through a device like a router, the gateway is the router's IP address. If set incorrectly, it cannot correctly access the external network. If such devices are not connected, it does not need to be set; the default is sufficient.

4.2.2. Serial Configuration

Baud Rate: Supports multiple baud rates from 600 to 230400. The slave's baud rate must match after configuration.

Data Bits: Default is 8.

Parity Bit: none, even, or odd can be configured. The slave's data bits must match after configuration.

Stop Bits: 1 or 2 can be configured. The slave's stop bits must match after configuration.

4.3. Profinet parameter configuration

As shown in the following picture, the Profinet parameter configuration interface includes Ethernet parameter configuration, slave station message sending, and slave station message receiving.

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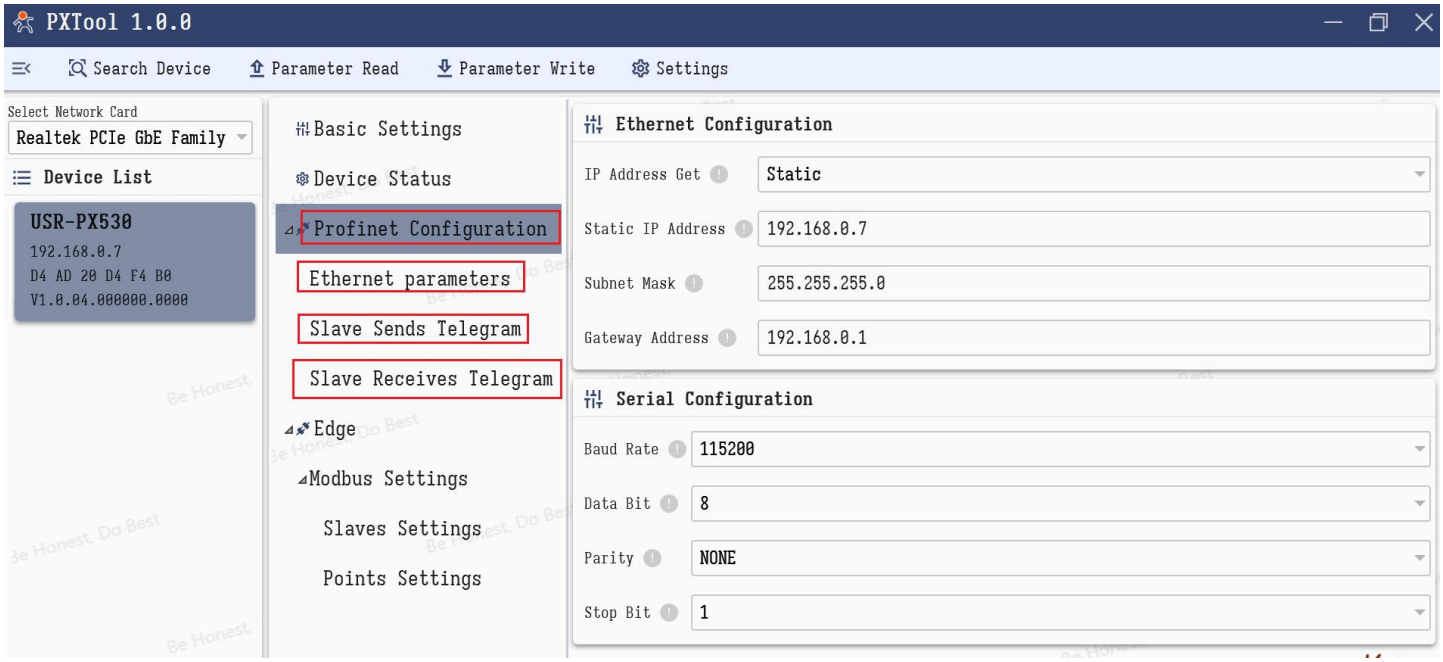


Figure 26. Profinet parameter configuration interface

4.3.1. Ethernet parameters settings

Ethernet configuration: Set the IP address, subnet mask, and gateway address for the PX530Profinet slave station. Factory default settings: IP address 192.168.1.27, subnet mask 255.255.255.0.

Gateway address 192.168.1.27.

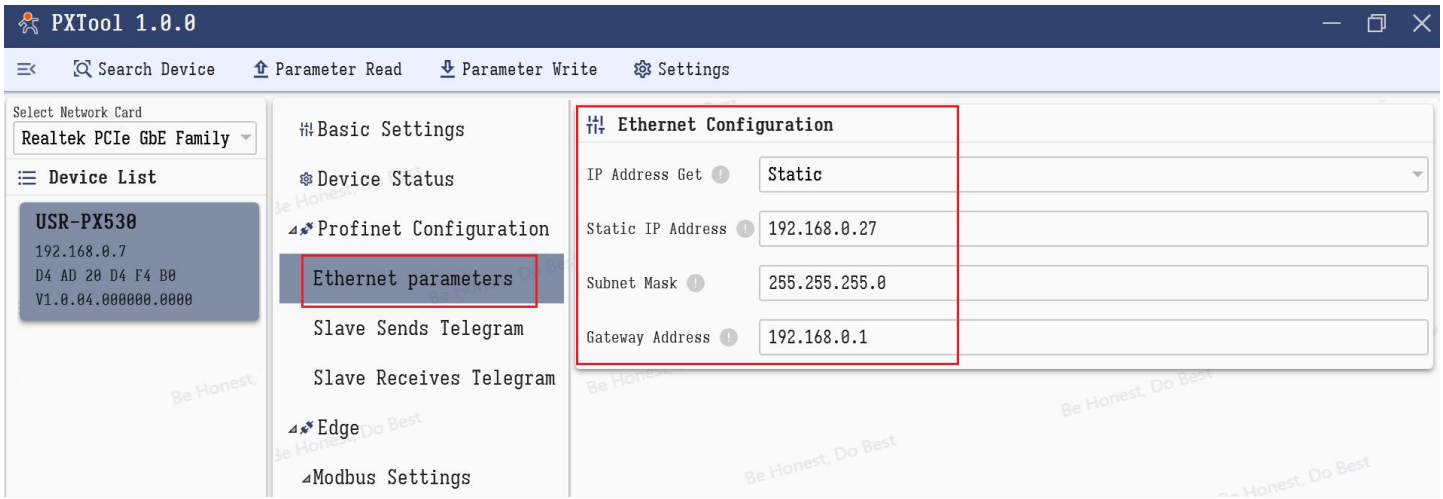
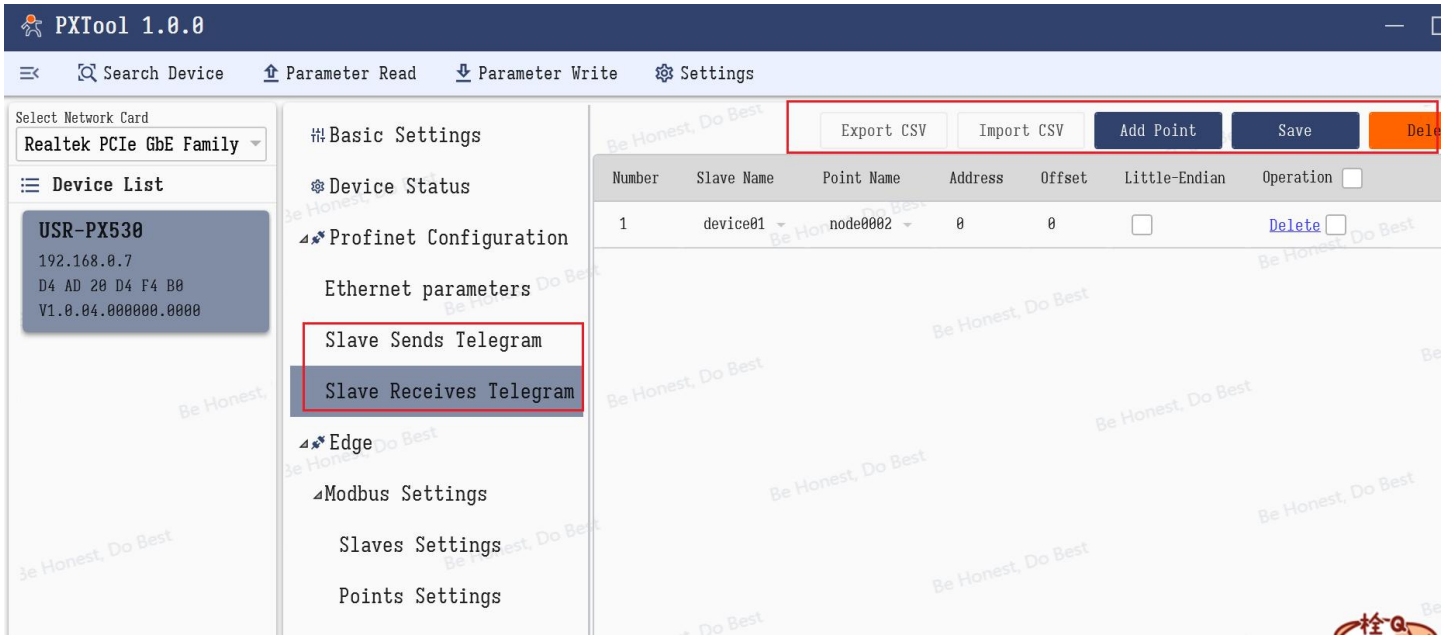


Figure 27. Ethernet configuration

4.3.2. Slave send/receive telegram

In the Profinet parameter configuration interface, both the slave station's sending and receiving messages can be linked to the edge computing Modbus point table configuration by adding points, or configured quickly through direct import/export of CSV files.

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Slave station message: From the slave station's perspective, the data transmitted to the master station is termed a slave station message, corresponding to the PLC's input data.

Import/Export CSV: When configuring a large number of data points, you can export the default data collection configuration as a.csv file, edit it in batches using software like WPS, and then import it to the device for quick configuration.

◆ Export: Click the [Export CSV] button to export the slave station's sent and received messages configured in the current Profinet device configuration as a.csv file.

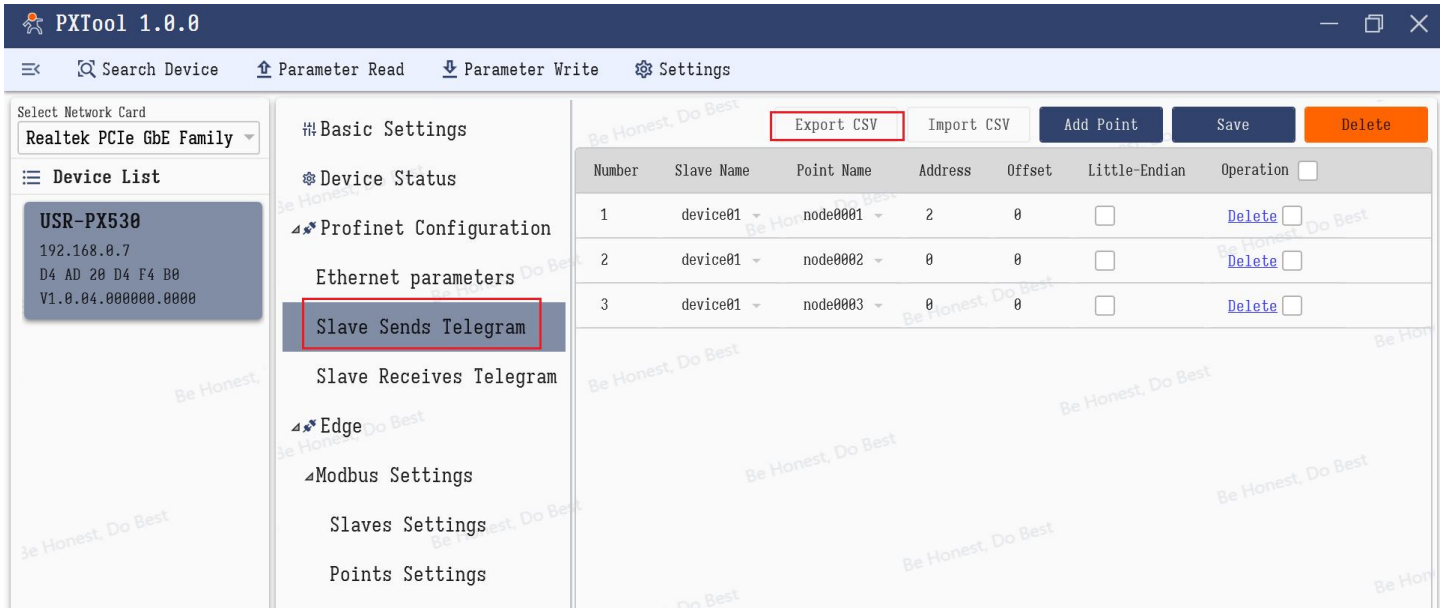


Figure 28. CSV Export

	A	B	C	D	E	F	G	H	I	J
	V	V1.0	PXNN;							
	R	NULL	NULL	device01	node0002	0	0	0	0	;
	T	NULL	NULL	device01	node0001	2	0	0	0	;
	T	NULL	NULL	device01	node0002	0	0	0	0	;
	T	NULL	NULL	device01	node0003	0	0	0	0	;

Figure 29. Exported CSV file

◆ Editing: Open the.csv file, add the following data points according to actual requirements in the original format, and save the file.

A1 fx V

	A	B	C	D	E	F	G	H	I	J
1	V	V1.0	PXNN;							
2	R	NULL	NULL	device01	node0002	0	0	0	0	;
3	T	NULL	NULL	device01	node0001	2	0	0	0	;
4	T	NULL	NULL	device01	node0002	0	0	0	0	;
5	T	NULL	NULL	device01	node0003	0	0	0	0	;
6	T	NULL	NULL	device01	node0004	0	0	0	0	;
7	T	NULL	NULL	device01	node0005	0	0	0	0	;
8	T	NULL	NULL	device01	node0006	0	0	0	0	;
9										

Figure 30. Data point addition

◆ Import: Click the [Import CSV] button, select the modified CSV file. After successful import, the interface will directly display the added, deleted, and modified slave devices and data points from the configuration file.

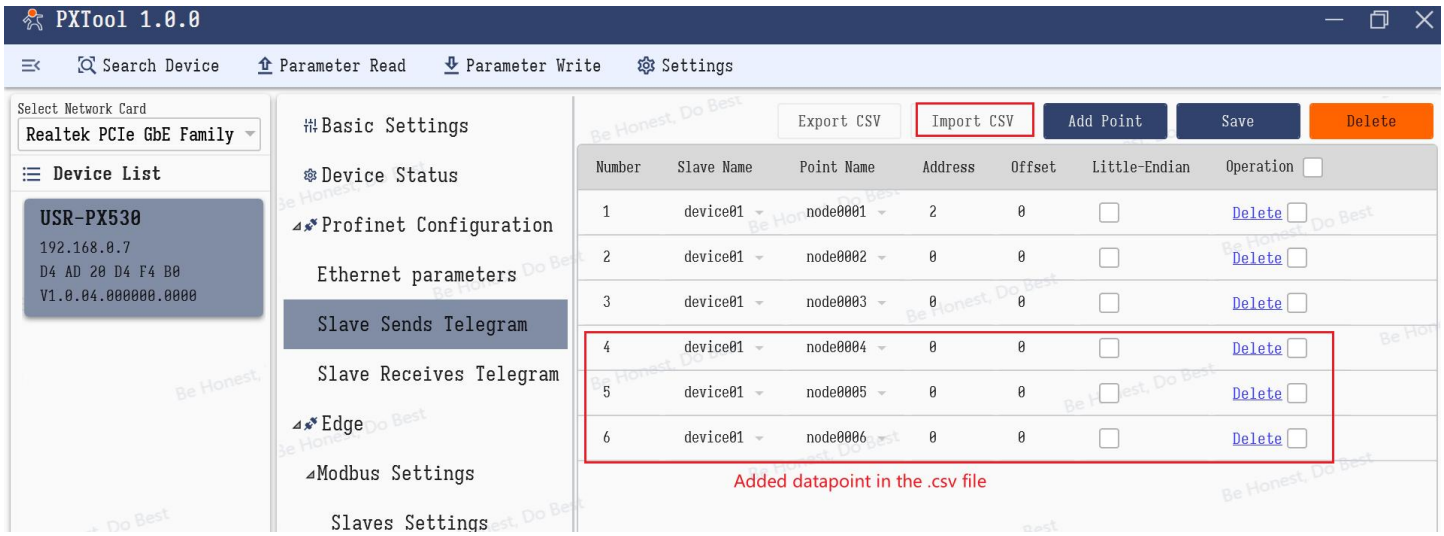


Figure 31. File Import

Note:

1. Exported point table files from English pages can only be imported in Chinese interface, and vice versa.

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2. Data point names must be unique across the table.

3. If the import fails, check whether the modified parameter types and values in the configuration file exceed the normal range.

Add point: Click to add message data sent from the station

Save: Save the current modified data. The parameters will be saved in the configuration software when you open it again.

Delete: Select multiple subordinate stations to delete their message data in one operation.

Table 4. Parameter description

Name	Description	Range
Slave name	The slave name set in Modbus configuration, users can select the name.	The configuration must be added in advance in the slave device configuration.
Point Name	The point name set in the table configuration, users can select the name.	Configure the point table in advance.
Address	The address mapped to Profinet, the input and output address of the modules assigned from the PLC configuration software.	Range: 0 to 1400, Default: 0
Offset	Profinet position offset, applies only to bool type.	Range: 0-1 Default : 0
Little-Endian	Byte order configuration.	Big-endian: ABCD little-endian: DCBA Default: big-endian

4.3.3. Slave send telegram description

From the slave station's perspective, the messages it transmits to the master station are called slave station messages, which correspond to the PLC's input data.

Configure of sending telegram from the station:

(1) Click [Slave sends telegram] and use the [Add Point] button in the upper right corner of the interface.

(2) Select the slave device name and configure the slave station under Slave Configuration. The slave station must be configured in advance under Edge Computing → Modbus Configuration → Slave Configuration. For details, refer to the Edge Computing Modbus Configuration section.

(3) Select the data point name from the point table configuration. Ensure the names are pre-configured in

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Edge Computing → Modbus Configuration → Point Table Configuration. Refer to the Edge Computing Modbus Configuration section for details.

(4) Configure the corresponding Profinet mapping address at the memory mapping address, with the configuration range as shown in the Table 4.

(5) Configure the corresponding Profinet bit offset at the specified offset position, which applies only to the bool type. Refer to the Table 4 for the configuration range.

(6) By configuring the byte order (default big-endian), you can enable little-endian configuration.

Note: The total number of data points can be up to 1000.

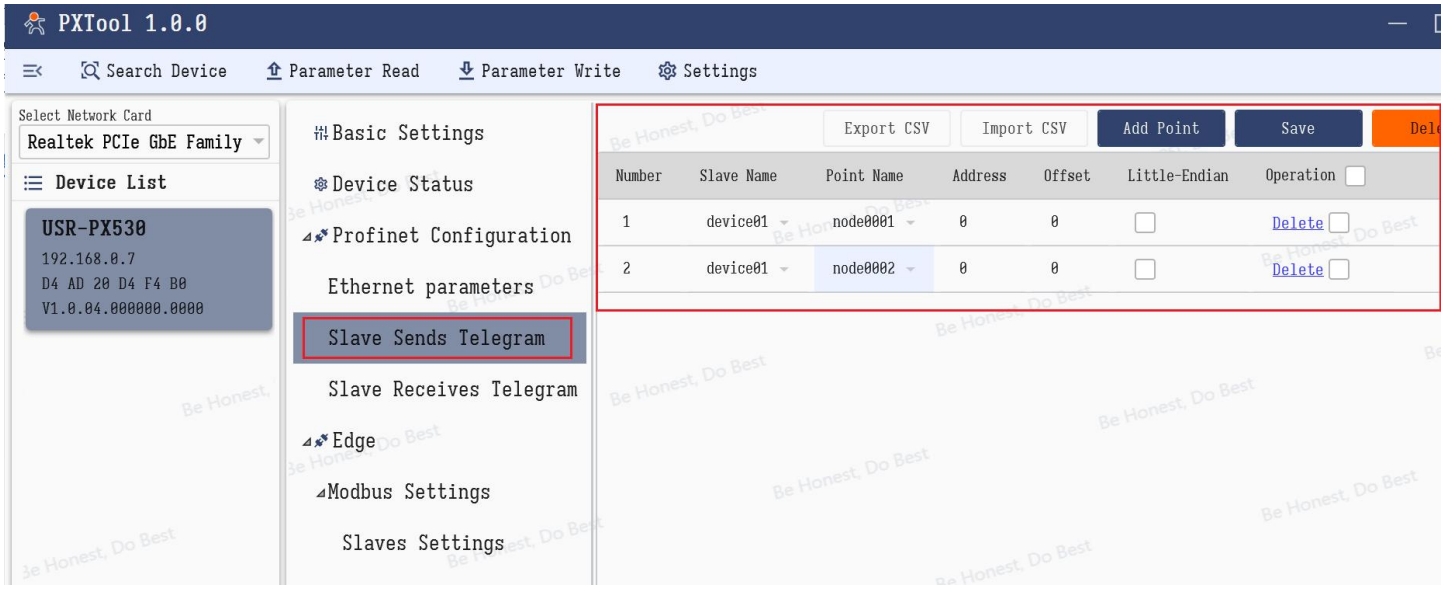


Figure 32. Slave send telegram configuration

4.3.4. Slave receive telegram description

From the slave station's perspective, the message sent by the master station is called the slave station's received message, which corresponds to the PLC's output data.

Configure of receiving telegram from the station:

(1) Click [Slave Receive Telegram] and use the [Add Point] button in the upper right corner of the interface.

(2) Select the slave device name and configure the slave station under Slave Configuration. This must be done in advance under Edge Computing → Modbus Configuration → Slave Configuration. For details, refer to the Edge Computing Modbus Configuration section.

(3) Select the data point name from the point table configuration. The names must be pre-configured under Edge Computing → Modbus Configuration → Point Table Configuration. For details, refer to the Edge Computing Modbus Configuration section.

(4) Configure the corresponding Profinet mapping address at the memory mapping address, with the

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configuration range as shown in Table 4

(5) Configure the corresponding Profinet bit offset at the specified offset position, which applies only to the bool type. Refer to Table 4 for the configuration range.

(6) By configuring byte order (default big-endian), you can enable little-endian configuration.

Note: The total number of data points can be up to 1000.

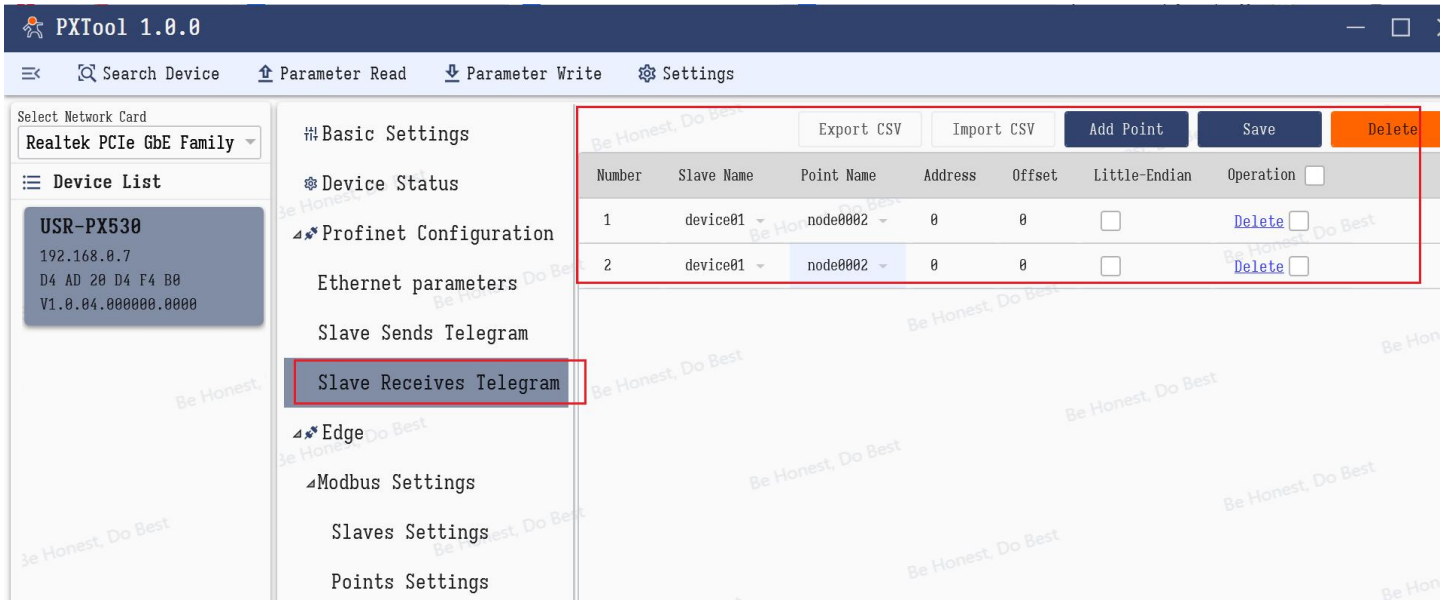


Figure 33. Slave send telegram configuration

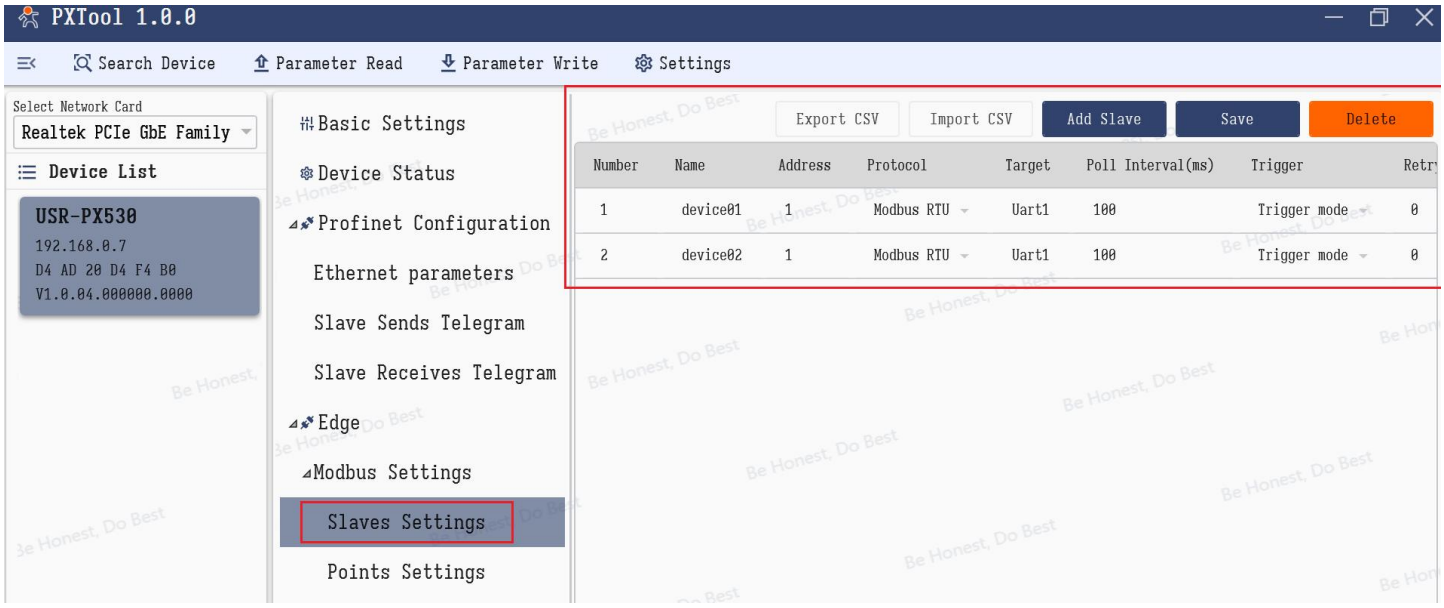
4.4. Edge computing

Edge computing mainly involves edge data acquisition, users configure the specific settings, and the PX530 will send the acquisition command to the slave device auto. it supports Modbus RTU and ModbusTCP industrial bus protocols. For Modbus protocol, users need configure the slave device parameters and the data points parameters. We will introduce it detail.

4.4.1. Slave configuration

In the following figure, Modbus Settings--add slave, users can edit the slave device in the relevant rows.

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Export/import CSV: When a large number of data points need to be configured, the default data collection configuration can be exported in the format of a.csv file, edited in software like Office in batches, and then imported into the device to achieve rapid configuration.

Add slave: add Modbus slave device.

Save: Save the current modified data.

Delete: delete the slave station in single or in batch.

Table 5. Parameters detail of slave device

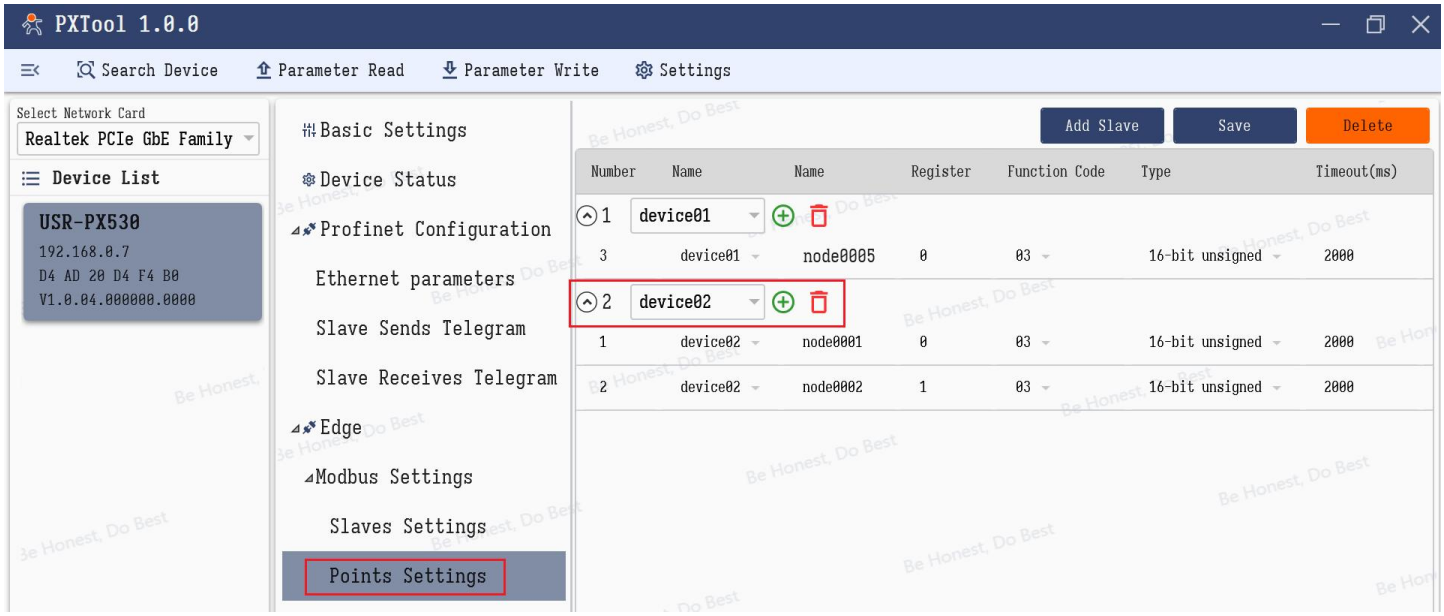
Name	Description	Range	Value in CSV file
Name	Name of slave device	Less than 16 characters	Combination of [0-9], [A-Z], [a-z]
Address	ID/Address of slave device	1-255, Default: 1	1-255
Protocol	Protocol type of Modbus	Modbus RTU/TCP	Modbus RTU: 1 Modbus TCP: 2
Target	Identification of the slave device	For modbus RTU, it is Uart1, and can't be codified. For modbus TCP, it is the IP and port of the slave device.	Modbus RTU: URT1 Modbus TCP: IP:Port
Poll interval	The interval for polling this slave device	100-65536ms, Default: 100ms	100-65536
Trigger	Trigger mode for collecting data	Polling mode / trigger mode	Polling mode: 0

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	from the slave station	Default: Trigger mode	Trigger mode: 1
Retry time	Set the number of retry attempts after fail to collect the slave device data	0-5 Default: 0	0-5
Failed data policy	If fail to collect the slave device data this time, how to handle the current data of the relevant function code	Remain / Clear Default: Remain	Remain: 0 Clear: 1
Merge collection	If there are discontinuous register addresses, combine them into a single acquisition instruction.	Close / Open Default: close	Close: 0 Open: 1

4.4.2. Data points configuration

Configure the data points of the slave station.



Add slave: add Modbus slave device.

Save: Save the current modified data.

Delete: delete the slave station in single or in batch.

Table 6. Parameters detail of data point

Name	Description	Range
Slave name	Name of slave device, users can select the relevant slave device	Up to 200 modbus slaves

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Data name	The only identification of the data point in the data table. Combination of [0-9], [A-Z], [a-z], don't support pure number.	Up to 16 characters
Register	Register address of the Modbus slave	0-65534
Function code	Function code	01, 02, 03, 04, 05, 06, 15, 16
Data type		8-bit unsigned, 8-bit signed, 16-bit unsigned, 16-bit signed, 32-bit unsigned(ABCD), 32-bit unsigned(CDAB), 32-bit signed(ABCD), 32-bit signed(CDAB), 32-bit floating-point number(ABCD), 32-bit floating-point number(CDAB), 64-bit floating-point number
Timeout	The maximum waiting response time when polling this data point	100-65535ms
Formula	Perform simple arithmetic operations on the collected data points	+, -, *, /, ()

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