

Technical Note

SSTCOMM PROFINET Gateway

Siemens TIA Portal Modeling with S7-1500 PLC

V1.0



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1 Overview

1.1 Introduction

Through this technical note, you can finish the TIA Portal modeling with S7-1500 PLC on PROFINET. The user manual, configuration software and more documentation can be found and downloaded at www.sstautomation.com.

1.2 Revision History

Revision	Date	Chapter	Description
V1.0	9/28/2022	ALL	New release

2 TIA Portal Modeling

1. Create project



1.1 Double-click the icon to open the TIA Portal V17 software. After entering the software, click "Create New Project" on the left. After setting the project name, save path and other information, click "Create", as shown in Figure 1.

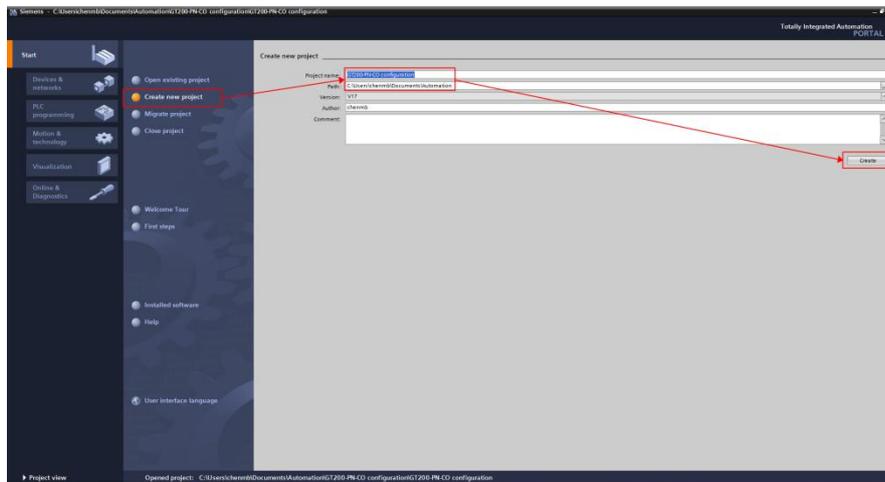


Figure 1: Create New Project

1.2 After the creation is complete, click "Configure a Device", as shown in Figure 2.

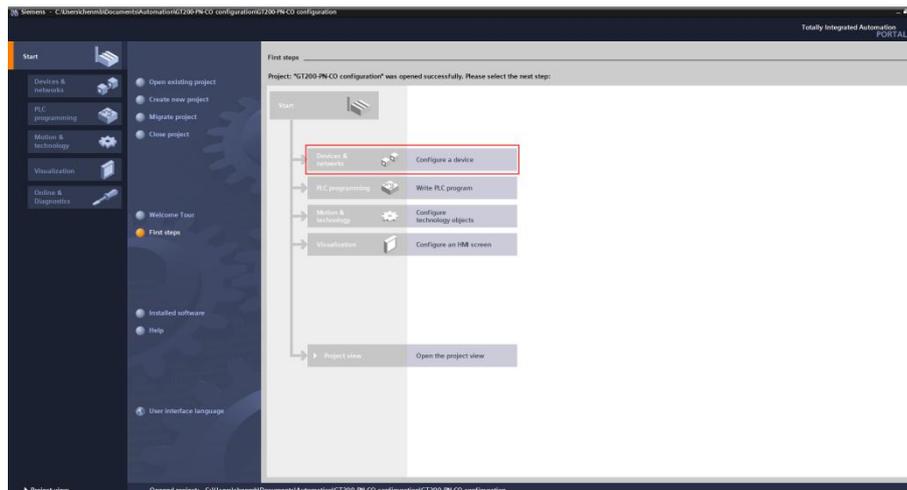


Figure 2: Configure a Device

1.4 After entering the new interface, click "Add New Device" on the left, Select the PLC device model in the device selection menu, take S7-1511 as an example, set the CPU type, and select the corresponding order number, Controllers>SIMATIC S7-1500>CPU>CPU1511-1PN>6ES7 511-1AK02-0AB0 as shown in Figure 3.

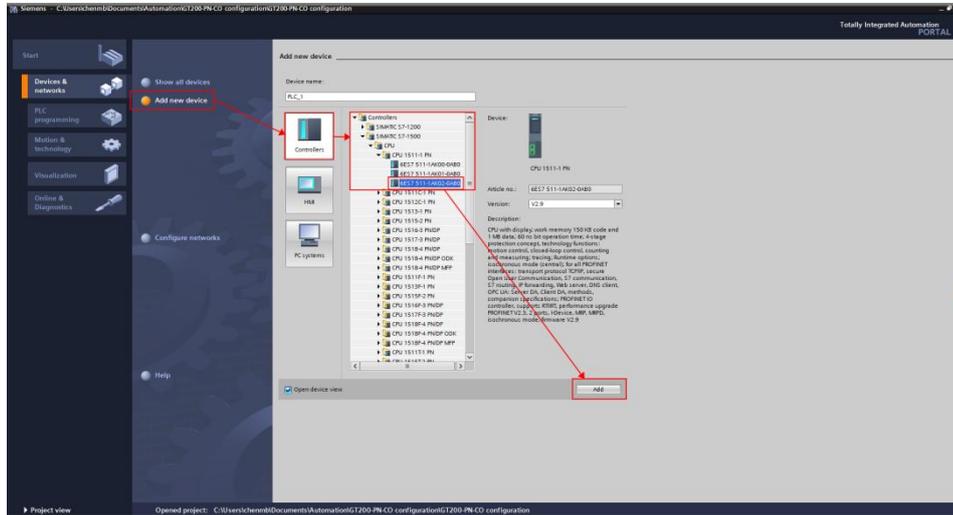


Figure 3: Add CPU model

1.5 Click "Add" in the lower right corner, and double-click "Devices & Networks", the interface is shown in Figure 4.

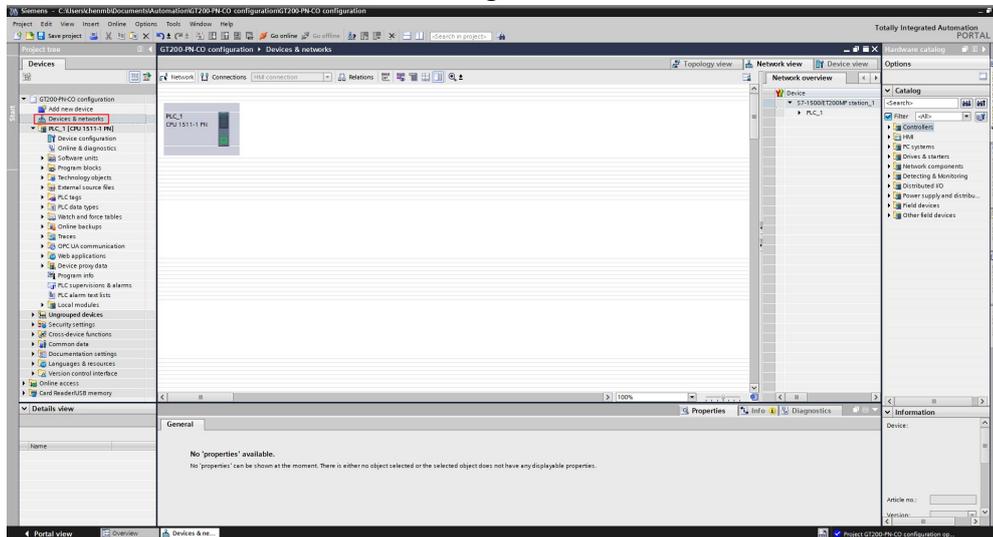


Figure 4: Devices & Networks

2. Load the GSDML File

2.1 Menu Options -> Manage GSD, as shown in Figure 5.

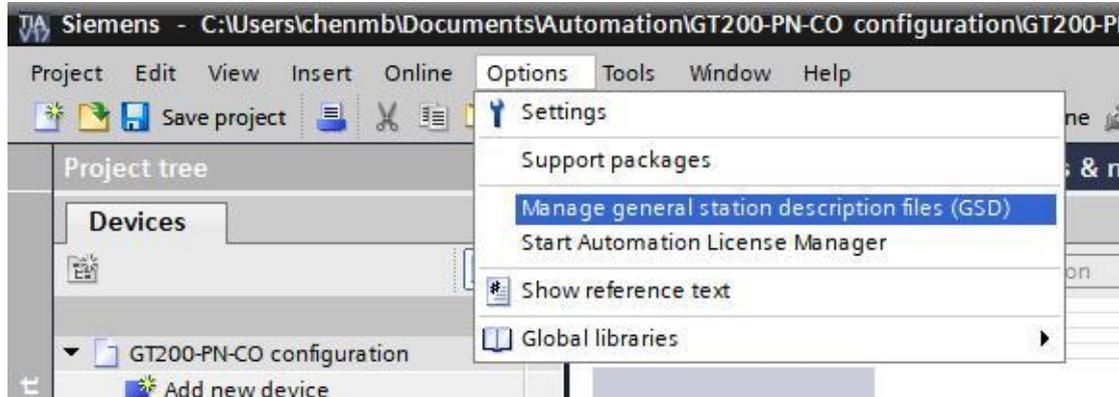


Figure 5: Load the GSDML file

2.2 Click  in the pop-up window and select the folder where the decompressed GT200-PN-CO GSD file (.xml file) is located, and check the GSD file to be installed and click the install button at the bottom right to start the installation, as shown in Figure 6.

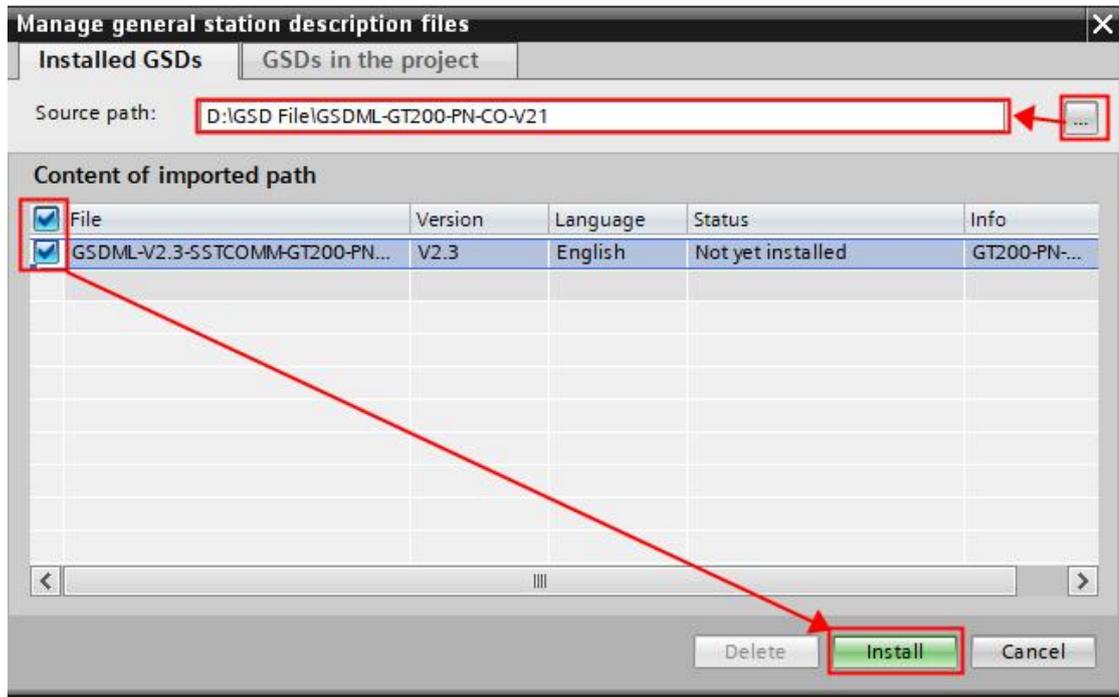


Figure 6: Select GSD file path and install

2.3 After the installation is complete, the pop-up window will display the installation result as shown in Figure 7. Please keep the installation file on hand since it needs to be used to delete the GSD.

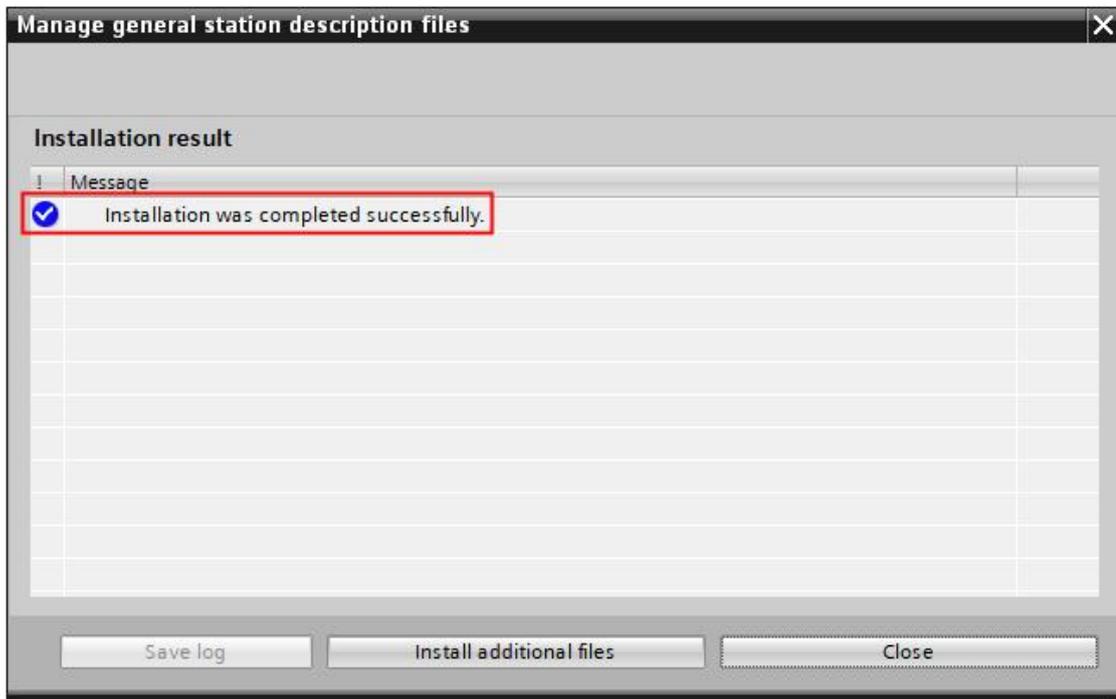


Figure 7: GSD file installation completed

2.4 To delete GSD files, just select the files to be deleted and click "Delete", as shown in Figure 8.

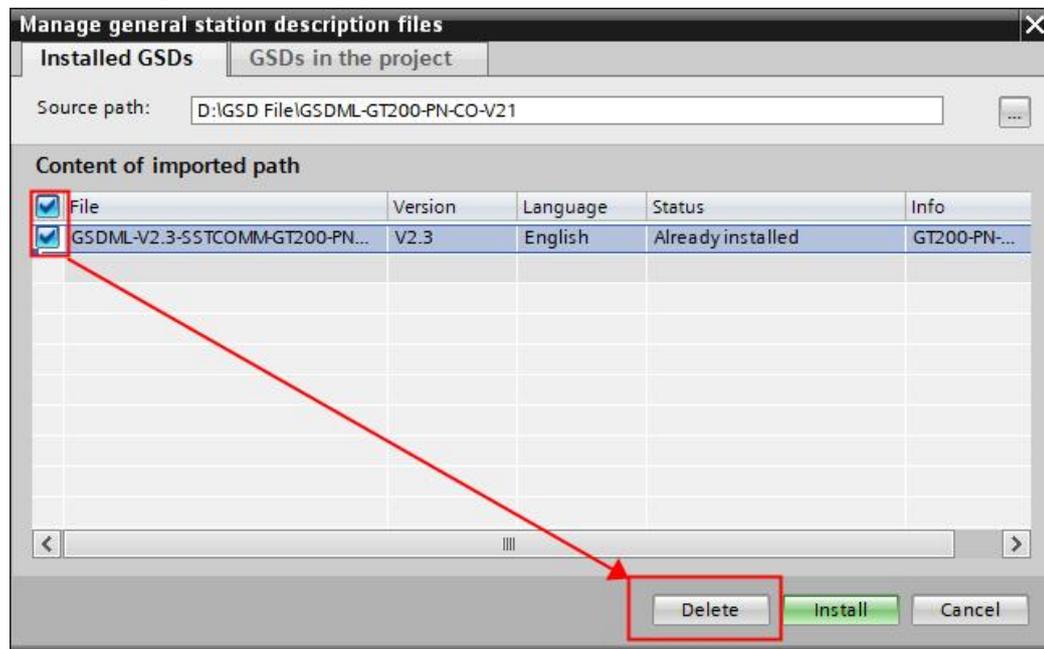


Figure 8: Delete GSD files

3. Hardware Configuration Settings

3.1 Open the GT200-PN-CO configuration software SST-CANopen-COM, click the  configuration button, then click "Assign Ethernet Parameters" in the drop-down menu of the Tool. Click "Browse" to search for the gateway IP address and device name, and click OK after modification, as shown in Figure 9.

Note: For GT200-PN-RS/3RS or other products, click "Tool"->"Assign Ethernet Parameters" in SST-TS-CFG or other configuration software to access the following interface.

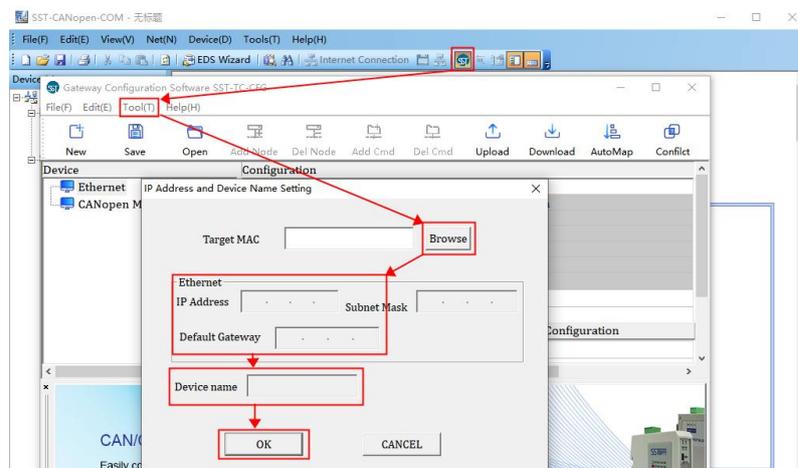


Figure 9: Configure the IP address and device name for the gateway

3.2 Click the "Configuration" button in "Ethernet" to configure the required byte type and length. After the configuration is complete, download the gateway configuration, as shown in Figure 10.

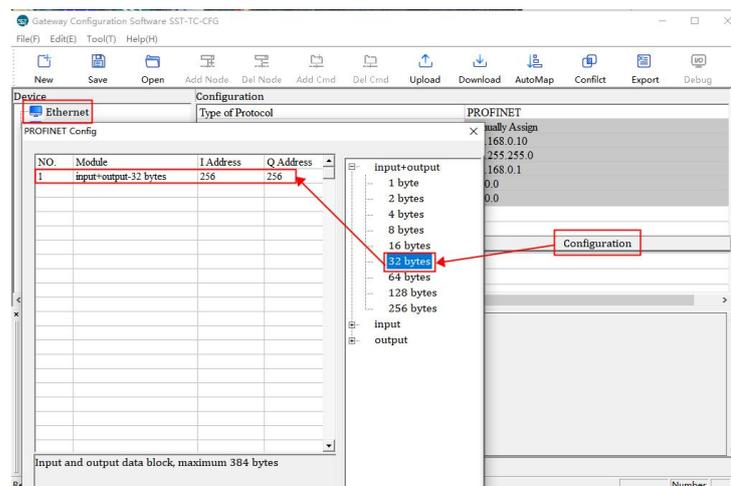


Figure 10: Configuring Ethernet Input/Output Modules for the Gateway

3.3 Return to the TIA Portal software, double-click "Devices & Networks", search for "GT200-PN-CO" in the "Hardware Catalog" search bar, select the device and drag it into the "Network View" interface, as shown in Figure 11.

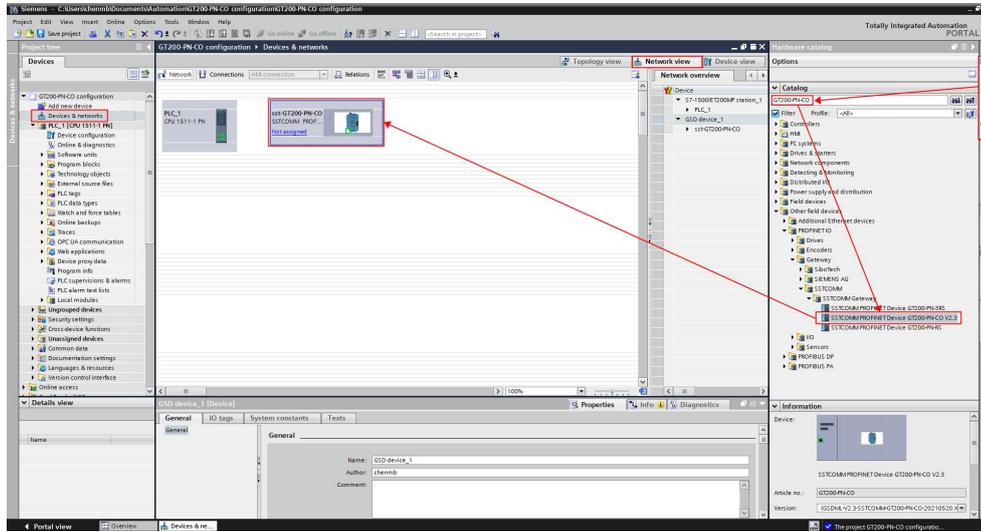


Figure 11: Drag the GT200-PN-CO into the network

3.4 Double-click the GT200-PN-CO device, turn it to "Device View", select the same data block as in Step 3.2 in the "Module" in the directory on the right, and double-click to put it into the slot (the length of the data block and the positions must be the same), as shown in Figure 12.

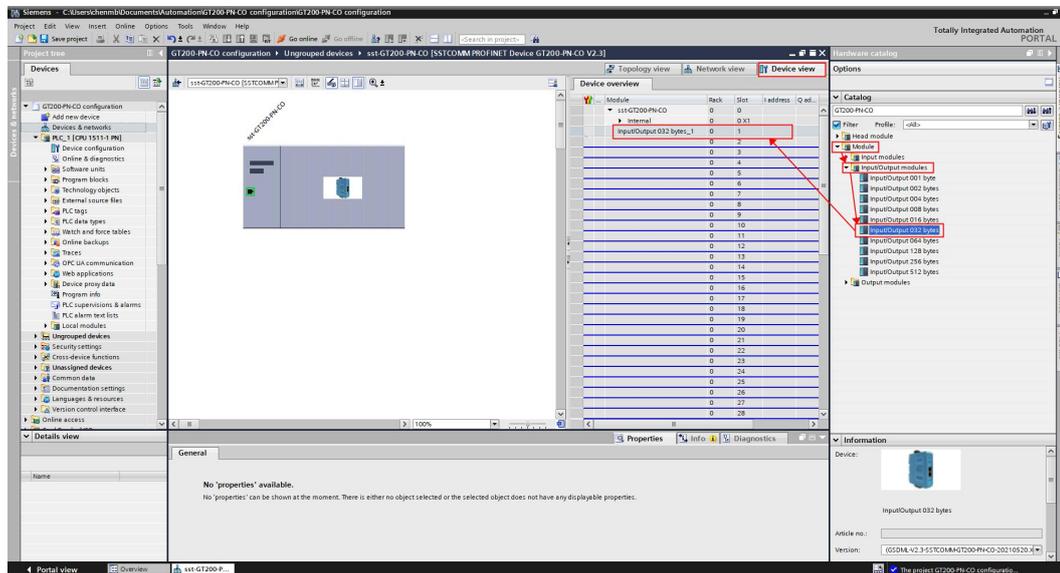


Figure 12: Configure GT200-PN-CO input/output data blocks

3.5 Double-click the device and click the general bar below - PROFINET interface [×1] to change the gateway IP address and device name must be consistent with the software configuration in Step 3.1, as shown in Figure 13.

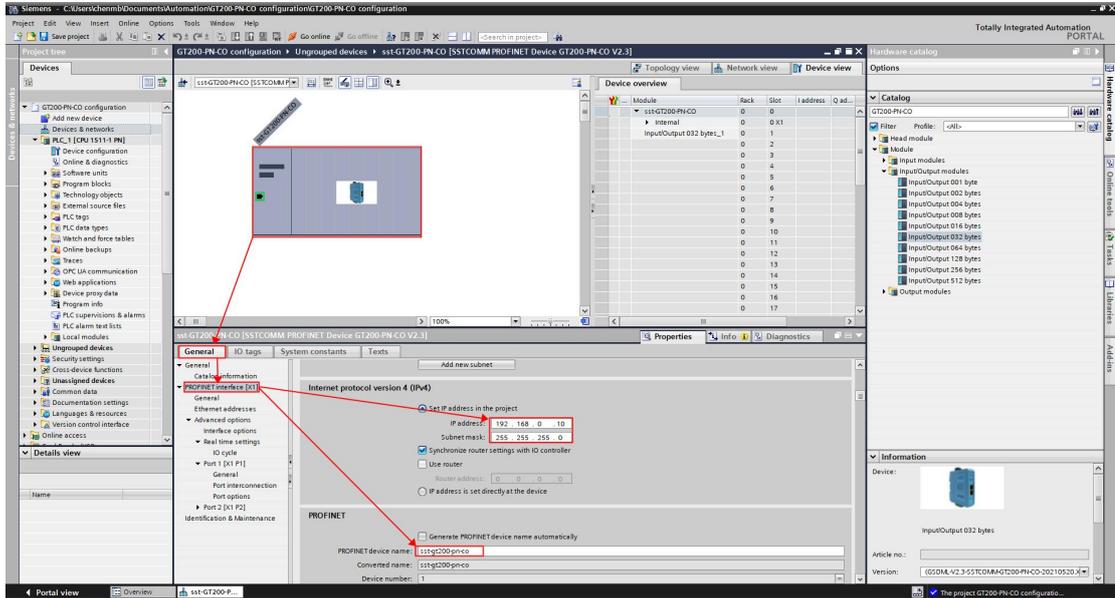


Figure 13: Configure the GT200-PN-CO device name and IP address

3.6 Switch the interface to "Network View", right-click on the small green box of "PLC_1" and add "I/O System" as shown in Figure 14.

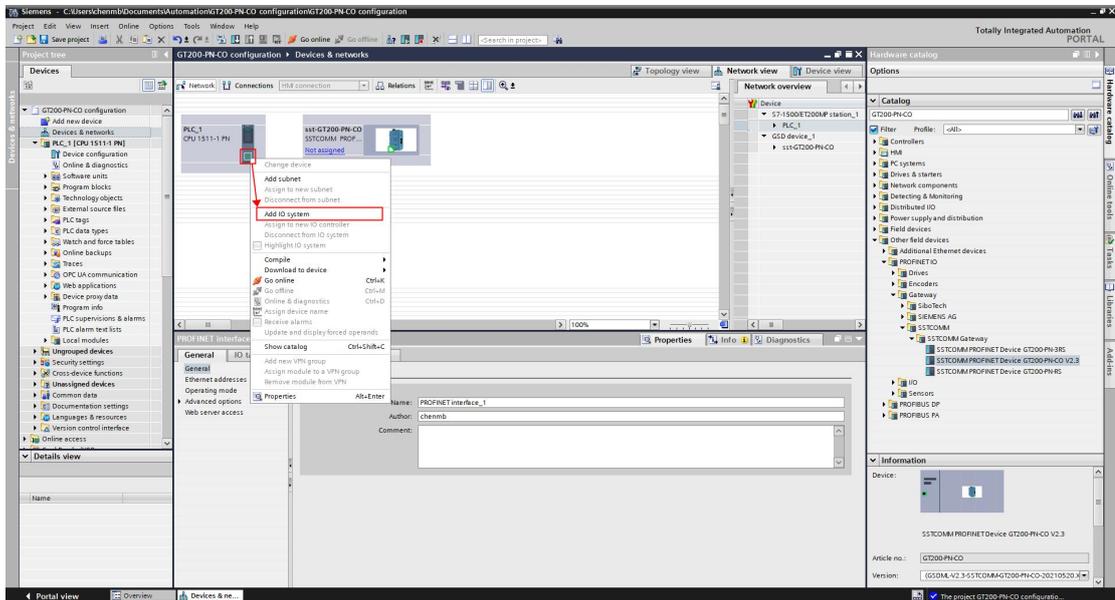


Figure 14: Add "I/O System"

3.7 Click "Not assigned" in "sst-GT200-PN-CO", select "PLC_1.PROFINET interface_1" to connect it to the PROFINET bus of PLC, as shown in Figure 15.

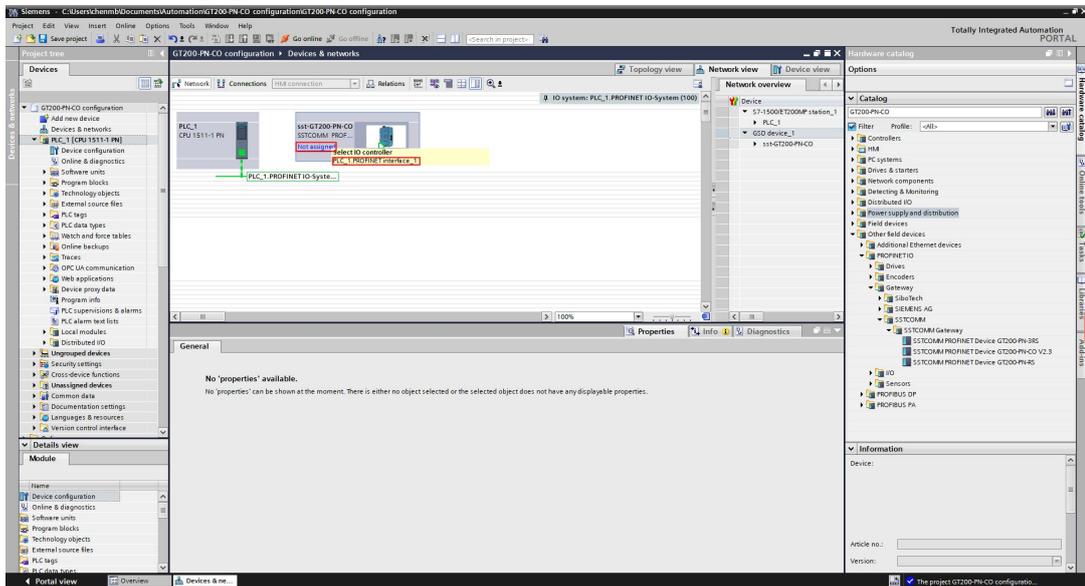


Figure 15: Connect GT200-PN-CO to PROFINET bus

3.8 After all is completed, select "PLC_1[CPU1511-1PN]" on the left and click "Compile" at the top. If there is no error in "Compile", click "Download" at the top, as shown in Figure 16.

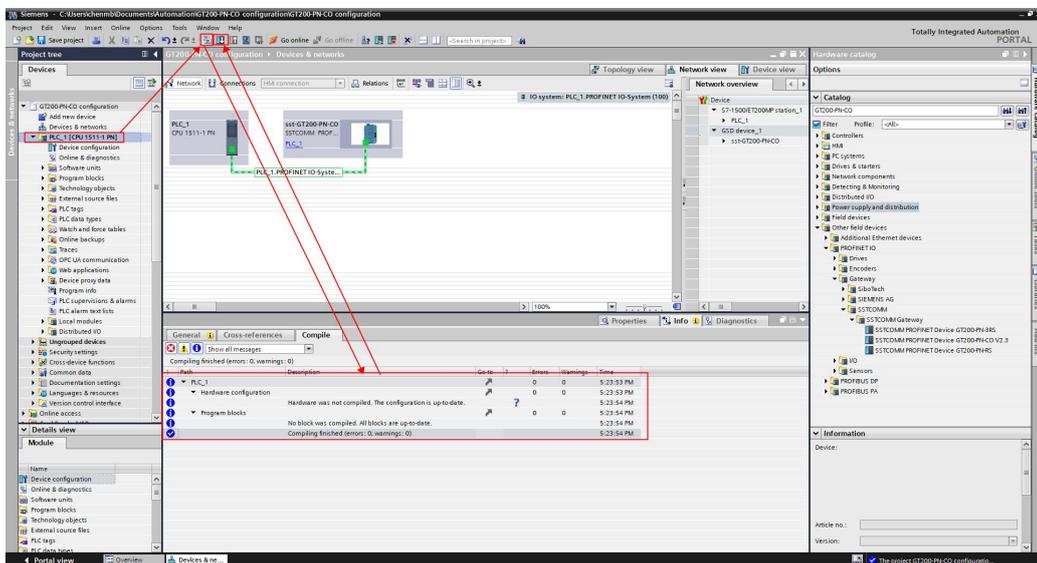


Figure 16: Compile the project file

3.9 After the PLC is connected to the device, you can double-click "PLC_1[CPU1511-1PN]>Watch and force tables>Watch table_1 on the left, and click "Go Online" above, add the data address to be monitored, and monitor the detailed data information. As shown in Figure 17.

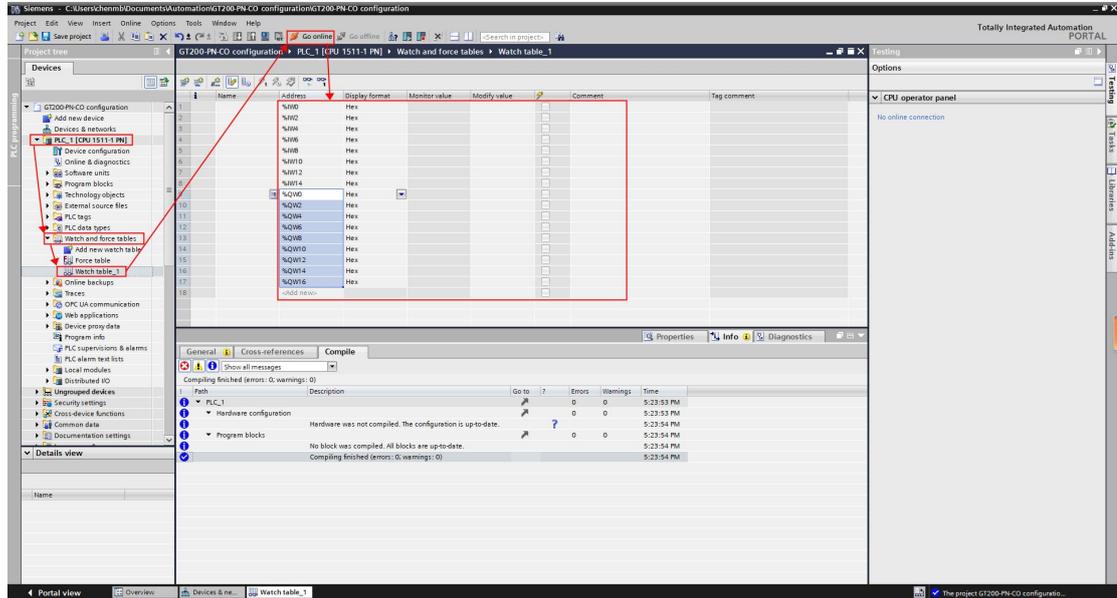


Figure 17: Monitor PLC data