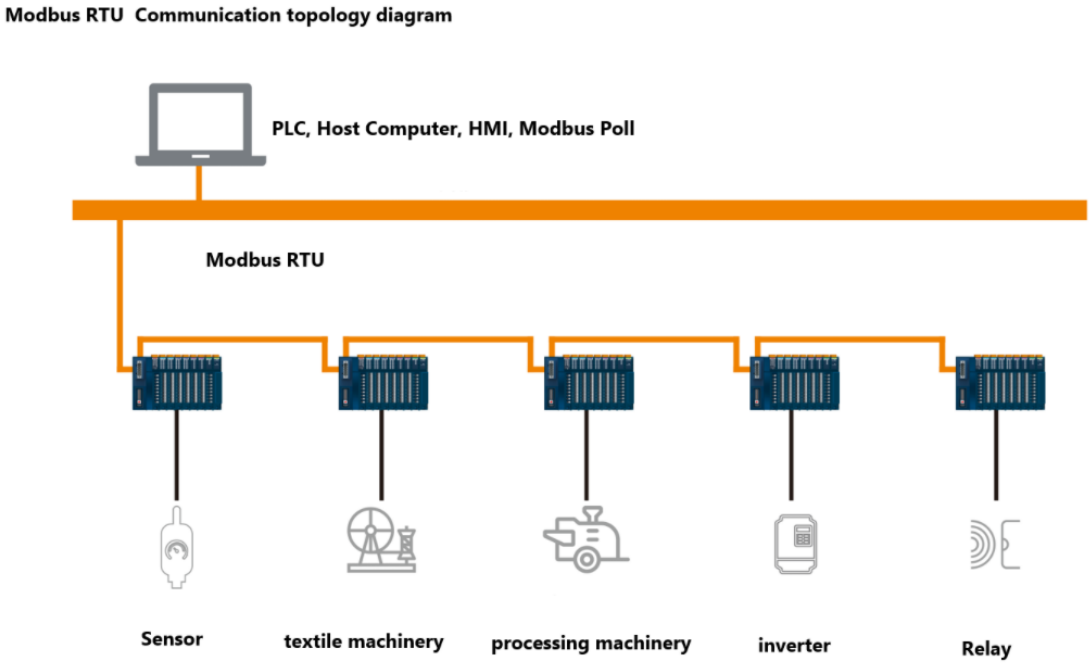
# Example of communication

# Example of communication for the CN-8011 module

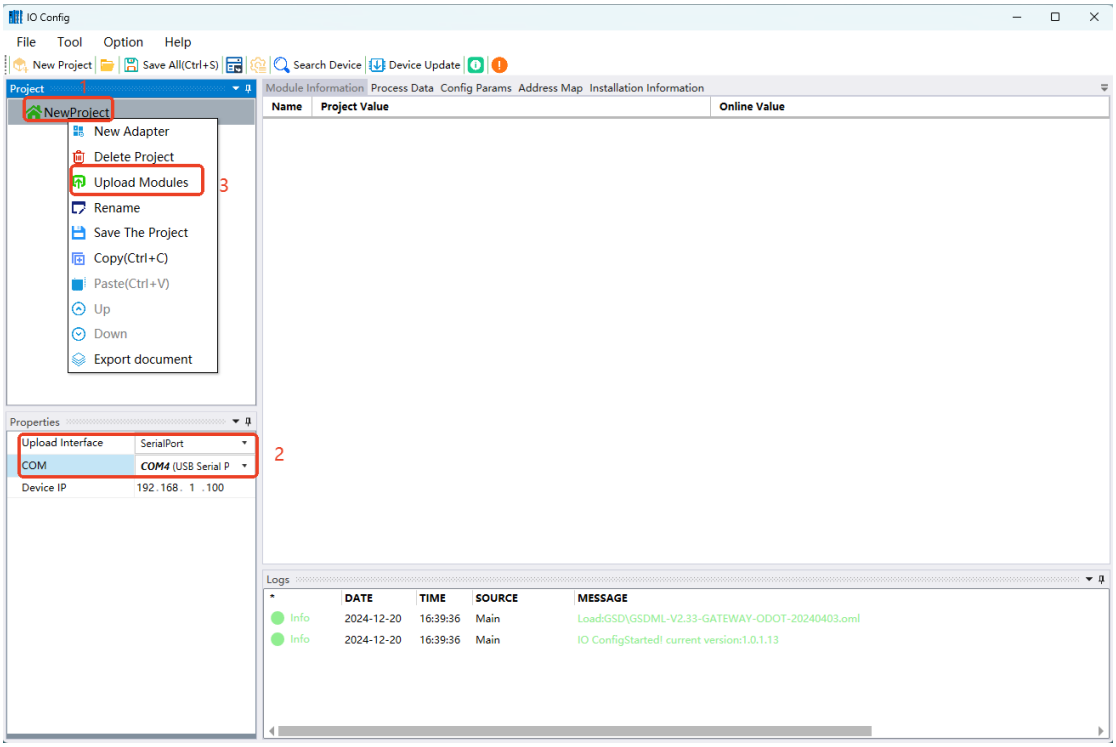
## 1 Topology



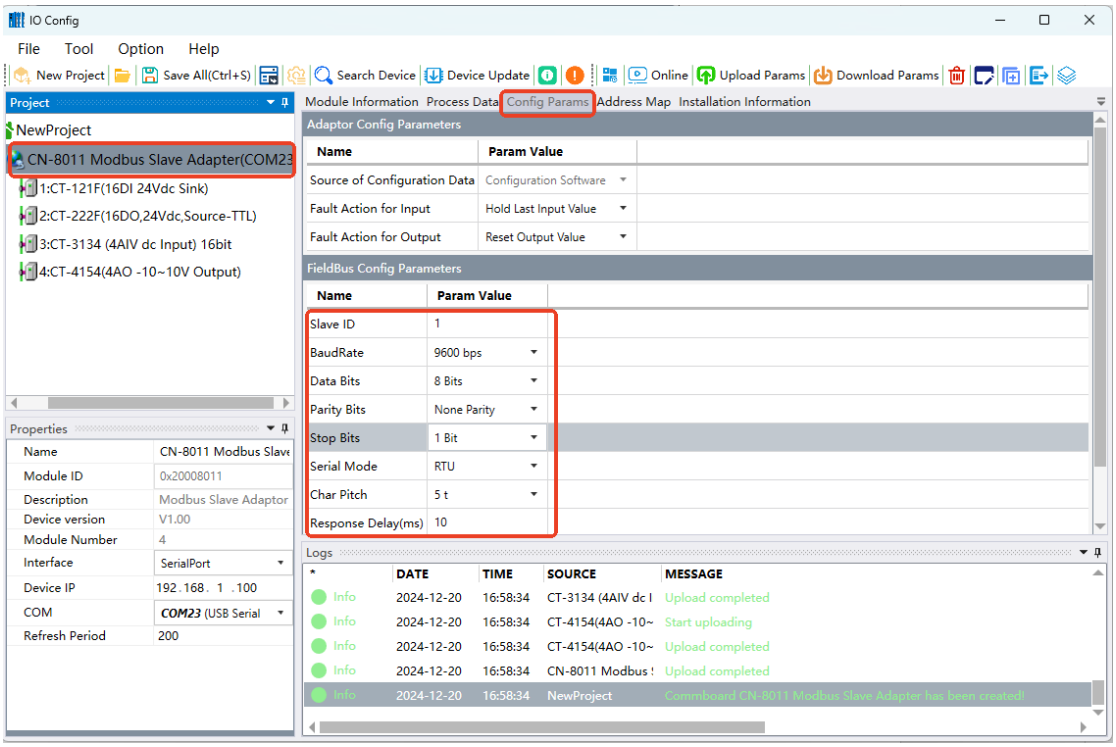

## 2 Example of Modbus Poll software and CN-8011 module communication

The CN-8011 module is powered to the 24VDC system power supply and the field power supply, and the IO modules are hung behind. USB to 485 converter is used, connected to the serial port terminal of CN-8011, and the USB interface is connected to the USB interface of PC.

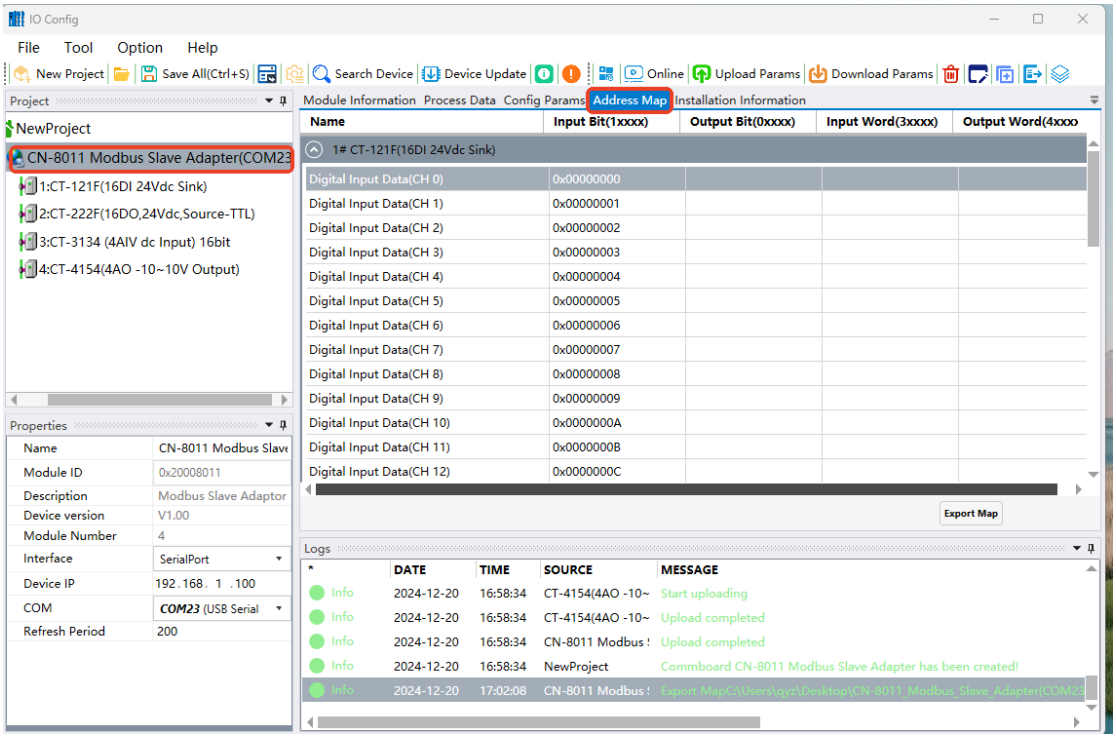
Open the IO Config software and use a Micro USB cable to connect the CN-8011 and the IO Config software. Create a new project, select the serial port and serial port, and right-click the project to upload the I/O module.



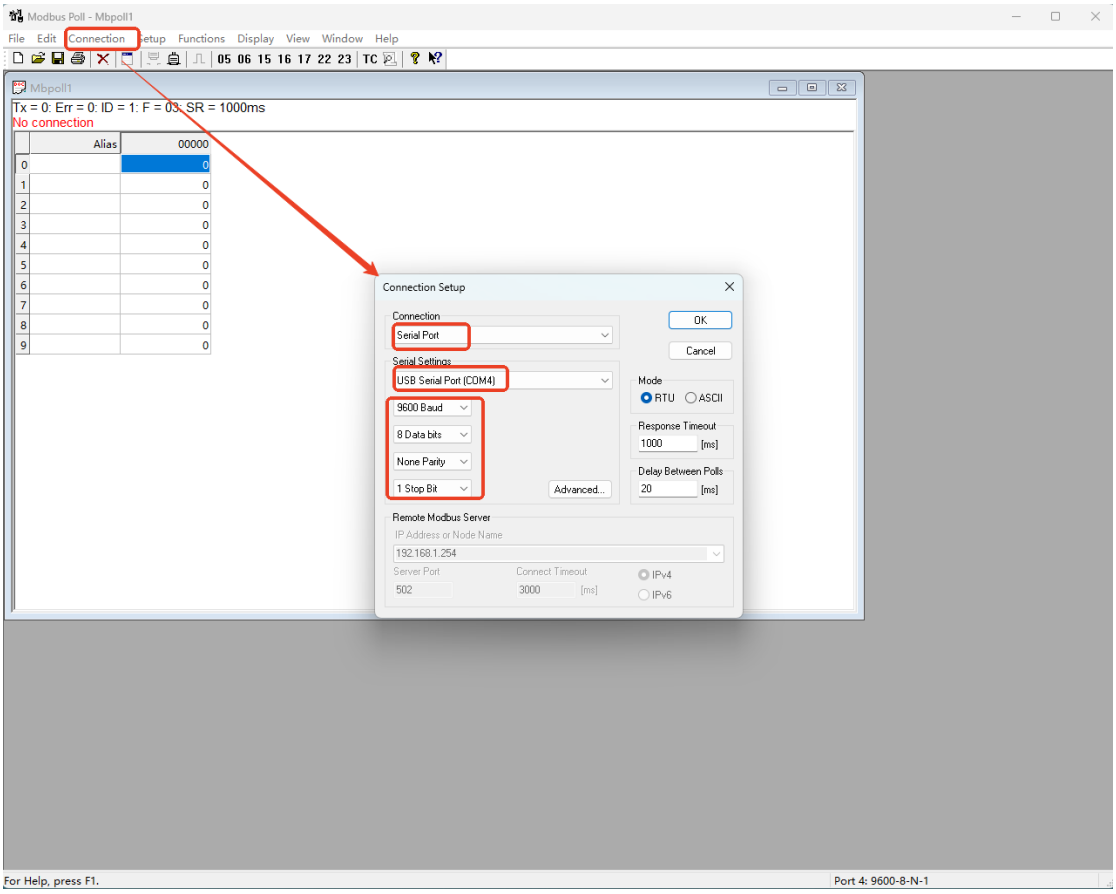

After the upload is completed, it can view the default parameters of the CN-8011 module in the IO Config software. Modbus RTU parameters: ID=1,9600bps, N 8 1.




View the address table of the I/O module.

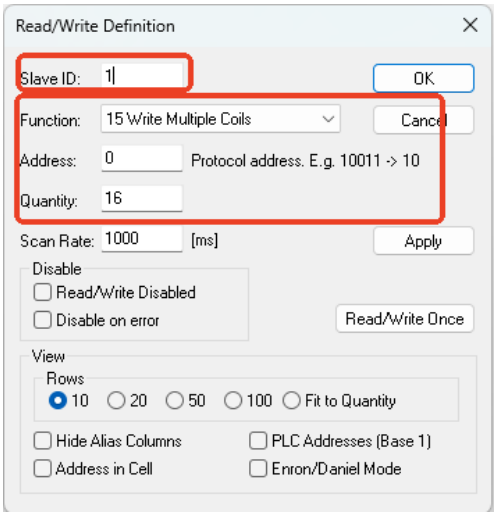


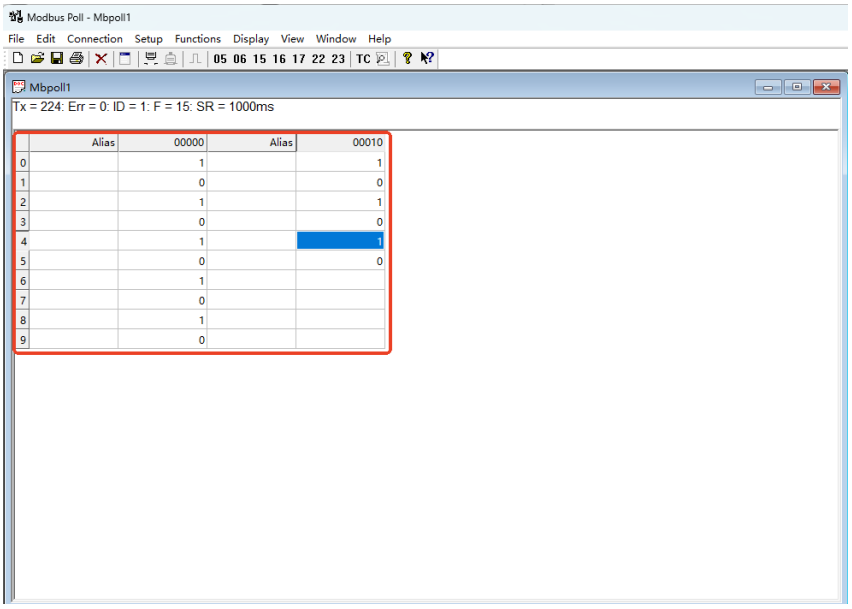

Open the Modbus Poll software, click the Connection, select the Serial Port and COM4,9600bps N81.

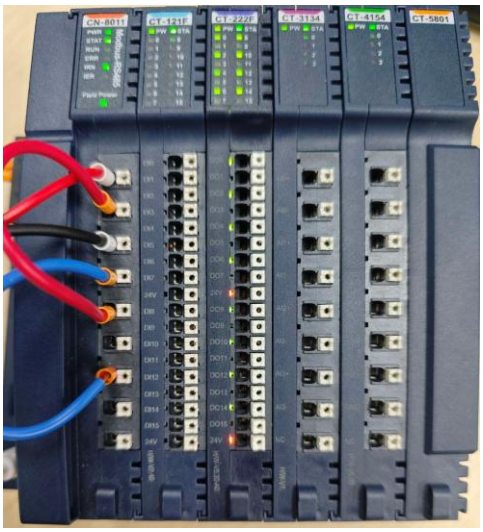



Click Setup—Read/Write Definition, select the function code of the I/O module for

testing.

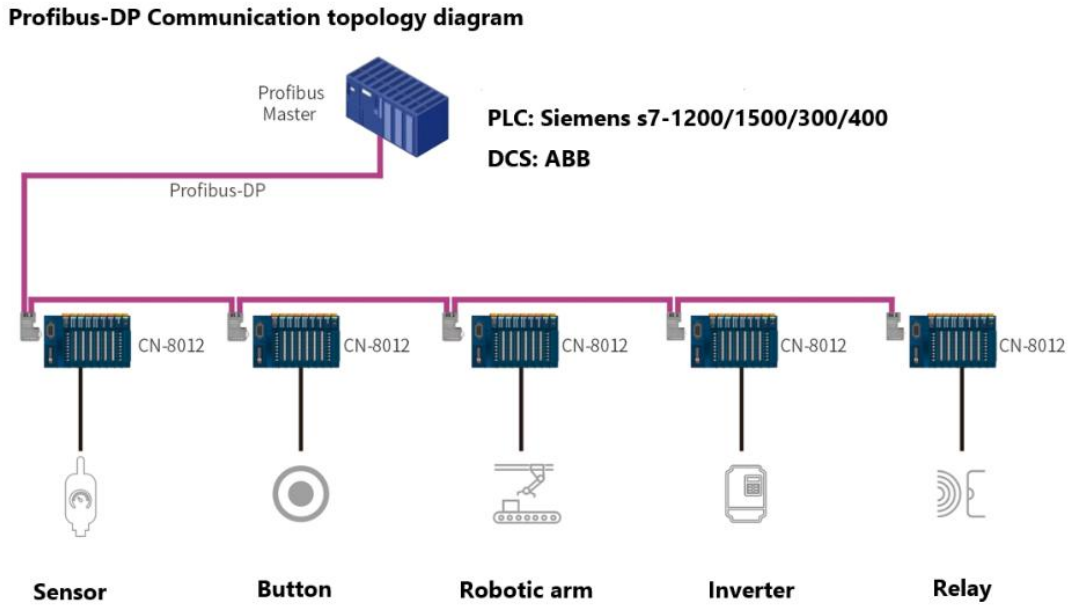

Read/Write Definition
Slave ID: 1
OK
Function: 15 Write Multiple Coils
Cancel
Address: 0
Protocol address. E.g. 10011 -> 10
Quantity: 16
Scan Rate: 1000 [ms]
Apply
Disable
Read/Write Disabled
Disable on error
Read/Write Once
View
Rows
10 20 50 100 Fit to Quantity
Hide Alias Columns
PLC Addresses (Base 1)
Address in Cell
Enron/Daniel Mode


Modbus Poll - Mbpoll1
File Edit Connection Setup Functions Display View Window Help
Mbpoll1
Tx = 224: Err = 0: ID = 1: F = 15: SR = 1000ms
Alias 00000 Alias 00010



# Example of communication for the CN-8012 module

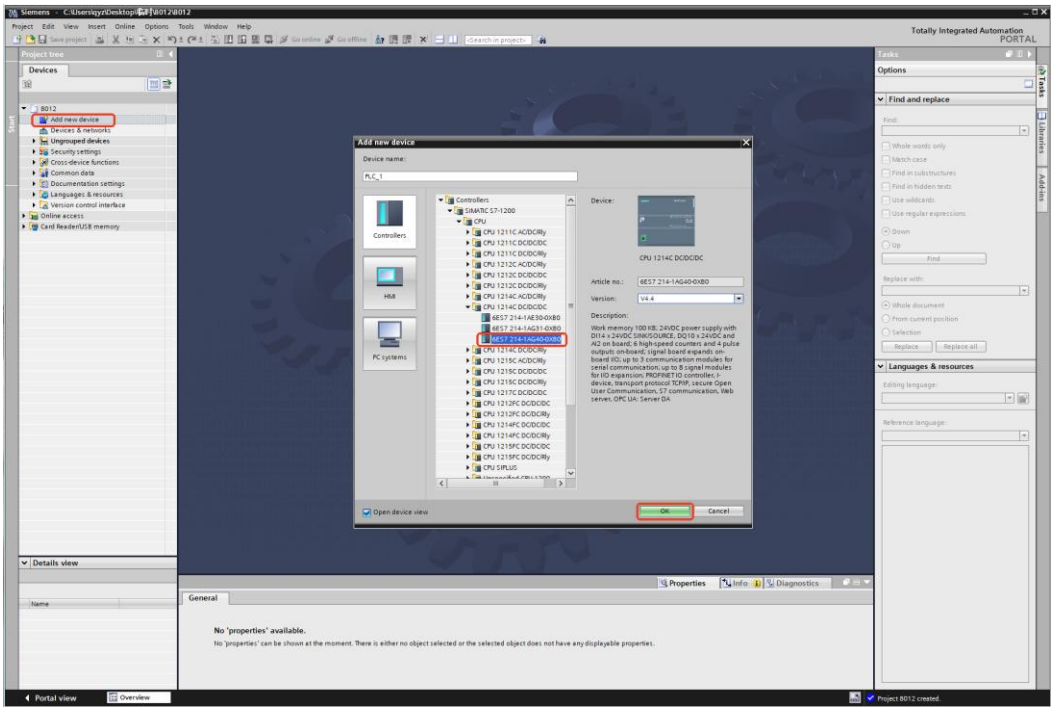
## 1 Topology



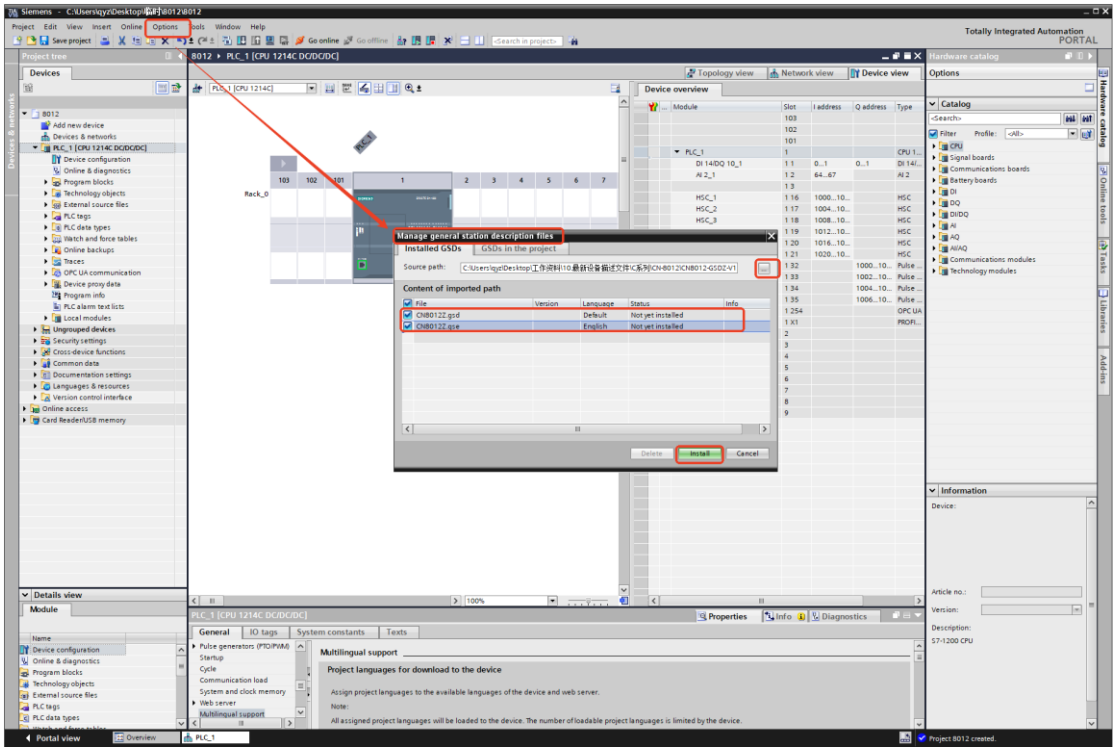

## 2 Example of communication between Siemens S7-1200 (TIA V14) and module

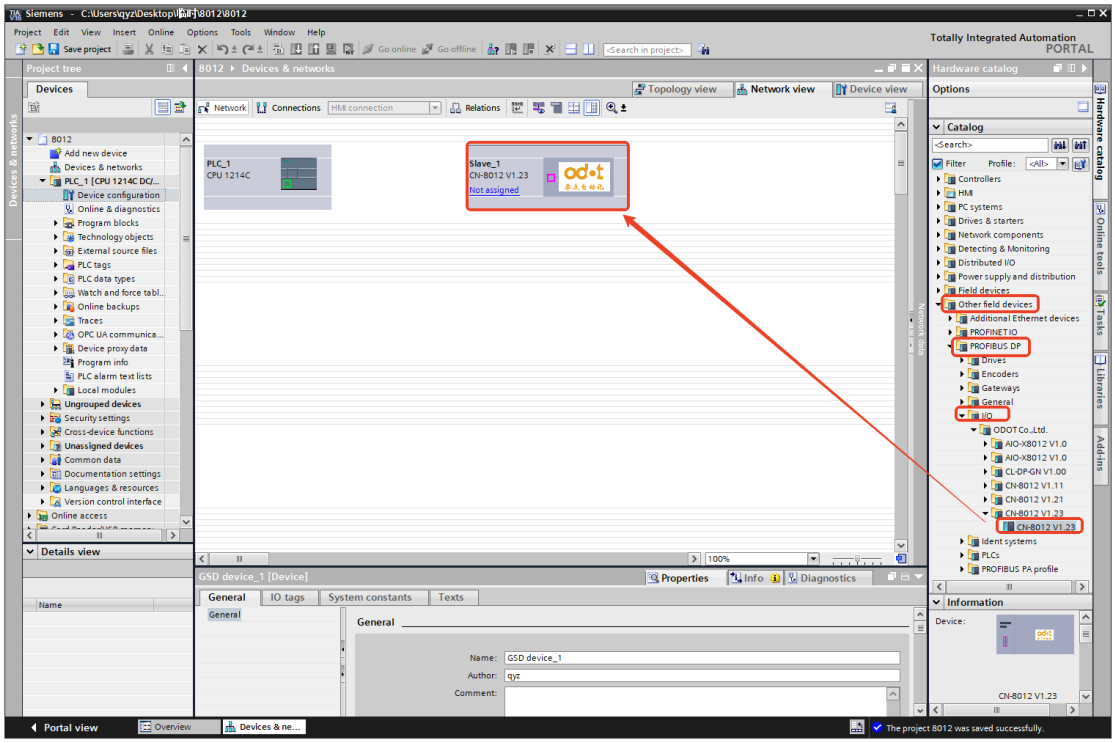
The CN-8012 module is powered to the 24VDC system power supply and the field power supply, and the IO modules are hung on the back. Power on the S7-1214C DC/DC/DC and connect the network cable to the PC.

Open the Siemens TIA V16 software. New project "8012". Enter the project view, click Add New Device in the Device column of the Project tree. Select CPU 1214C DC/DC/DC (6ES7 214-1AG40-0XB0), click OK.

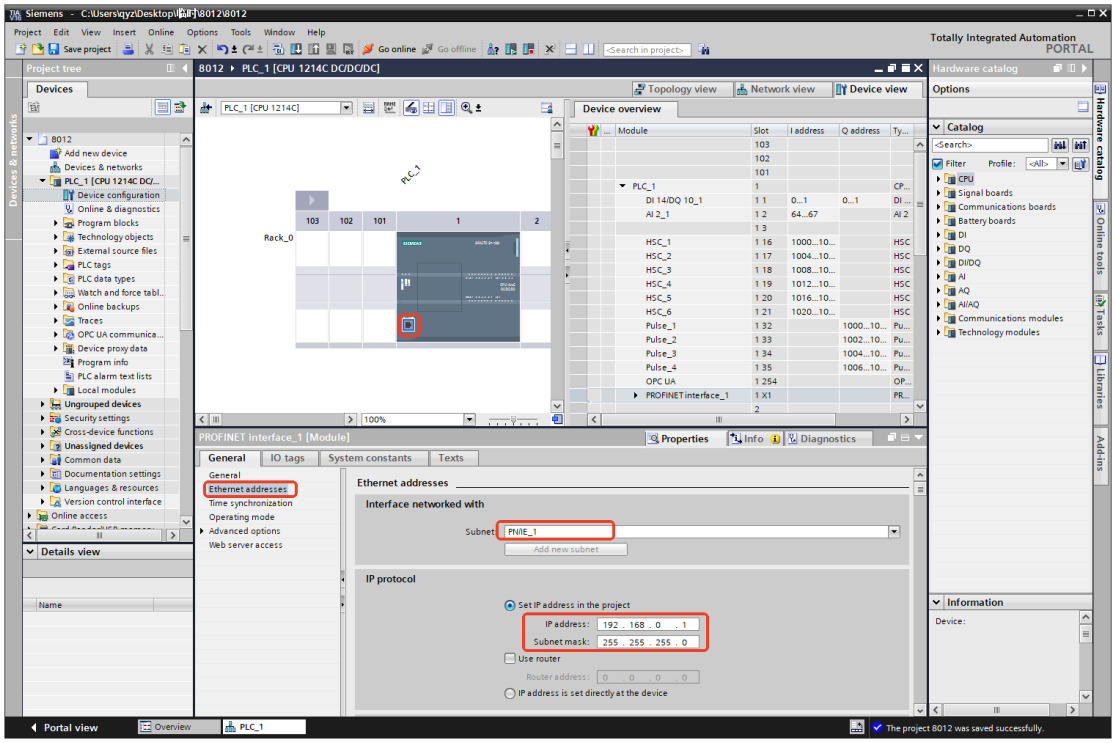


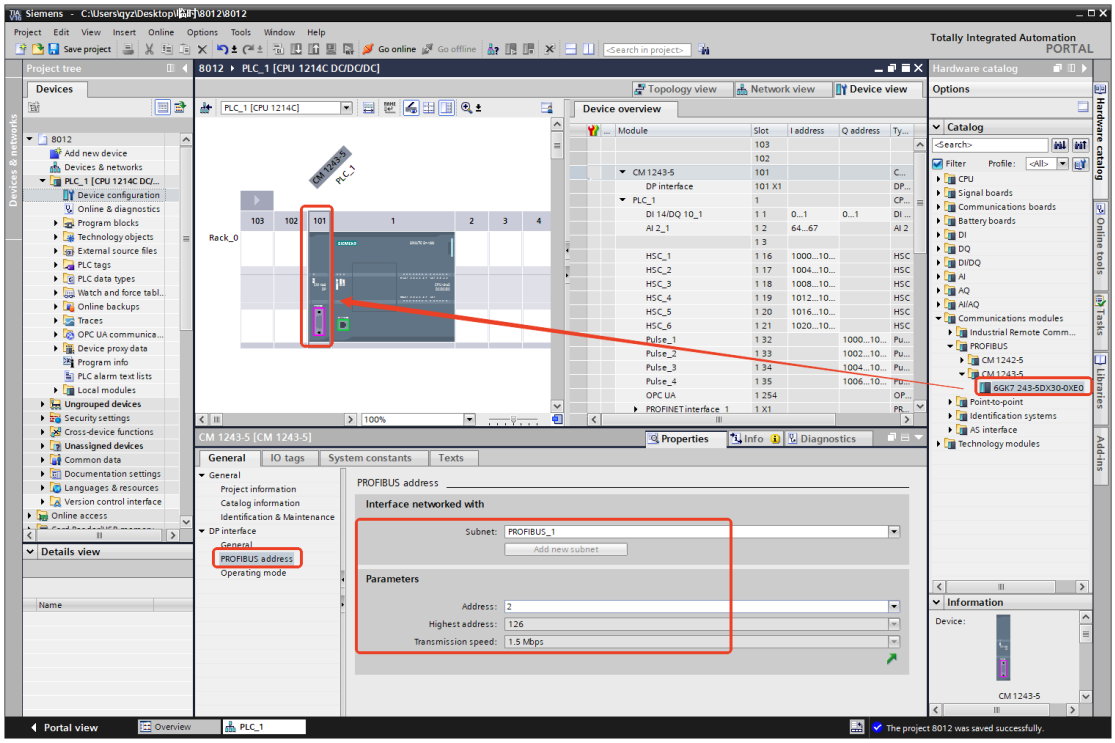
2. Click "Options" - "Manage general station description files ", in the pop-up dialog box, find the location of the GSD file of CN-8012, select the GSD file, click Install, after the installation is completed, the hardware directory will be automatically updated, and other field devices can be found in the hardware catalog—PROFIBUS DP—IO—CN-8012.



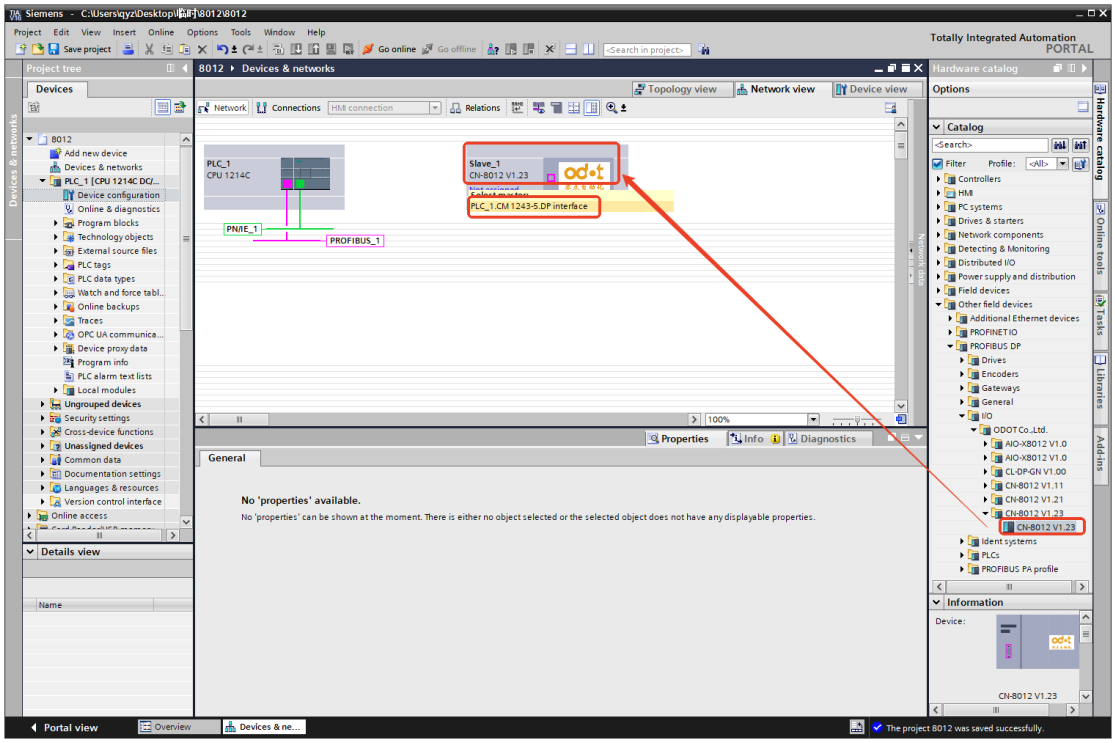


3. In the device view, select the PLC network port and set the network port parameters. Add the PROFIBUS DP communication module CM-1243-5 and set the PLC PROFIBUS-DP interface parameters.

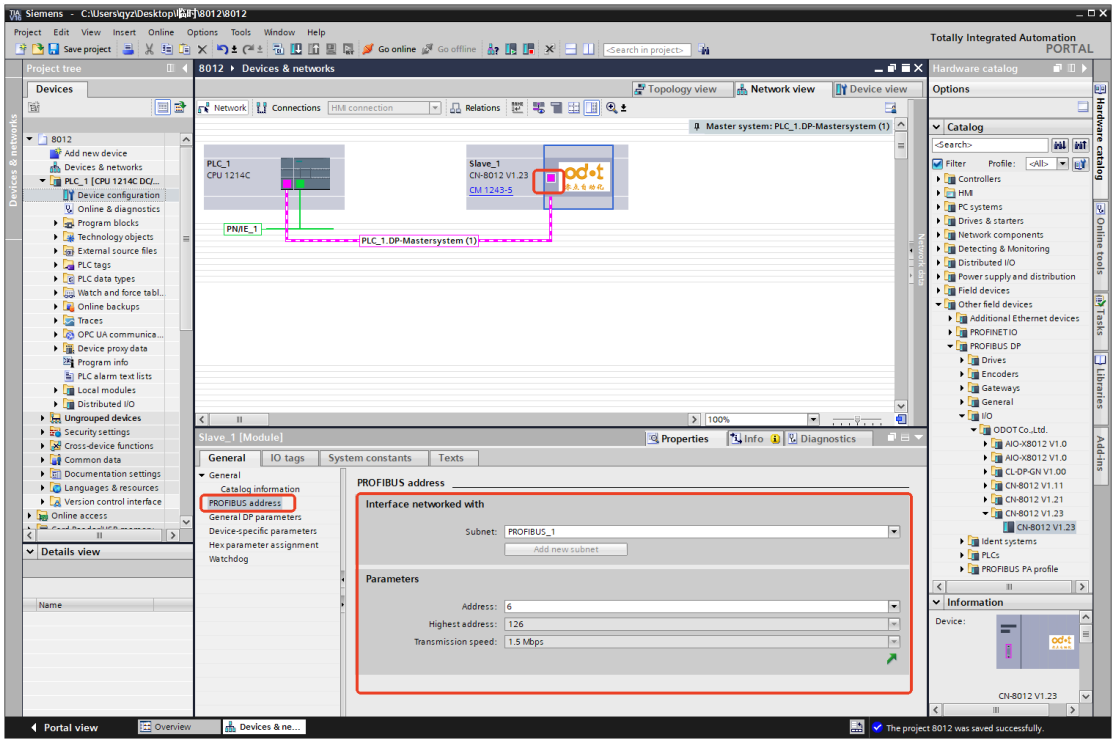




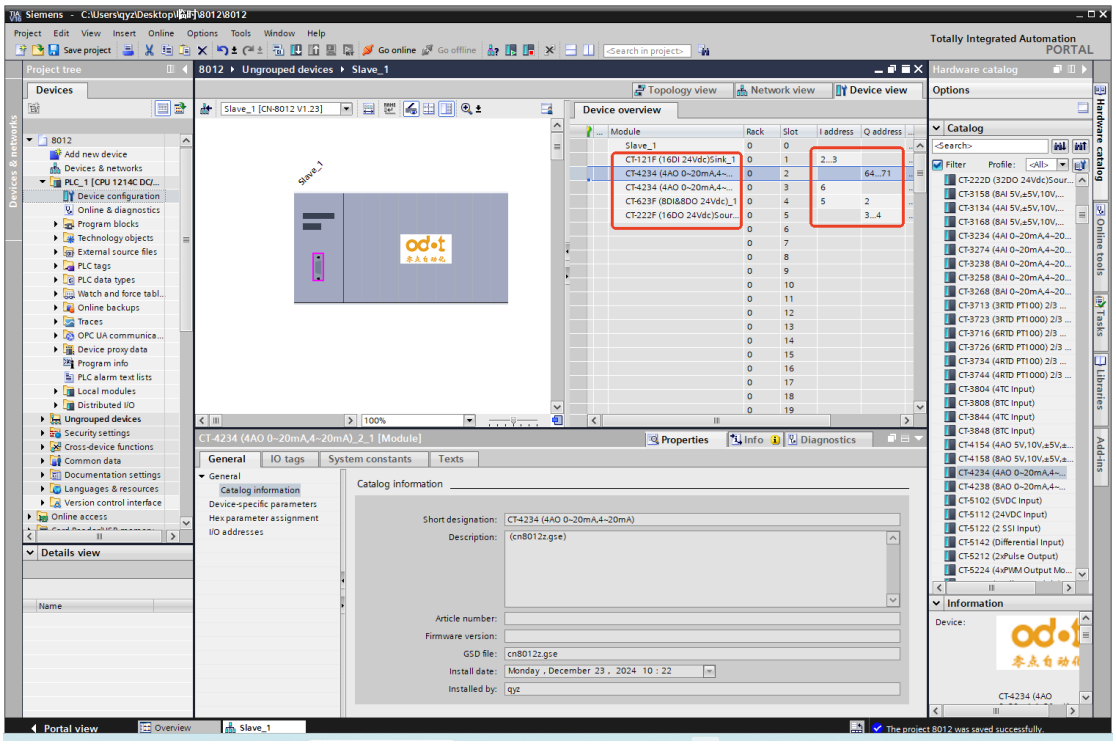

4. In the network view, first drag and drop the CN-8012 module into the network view, and assign the DP master system to the module.




Select the DP interface of the module to set the address parameter, which is set according to the hardware DIP ID on the module.

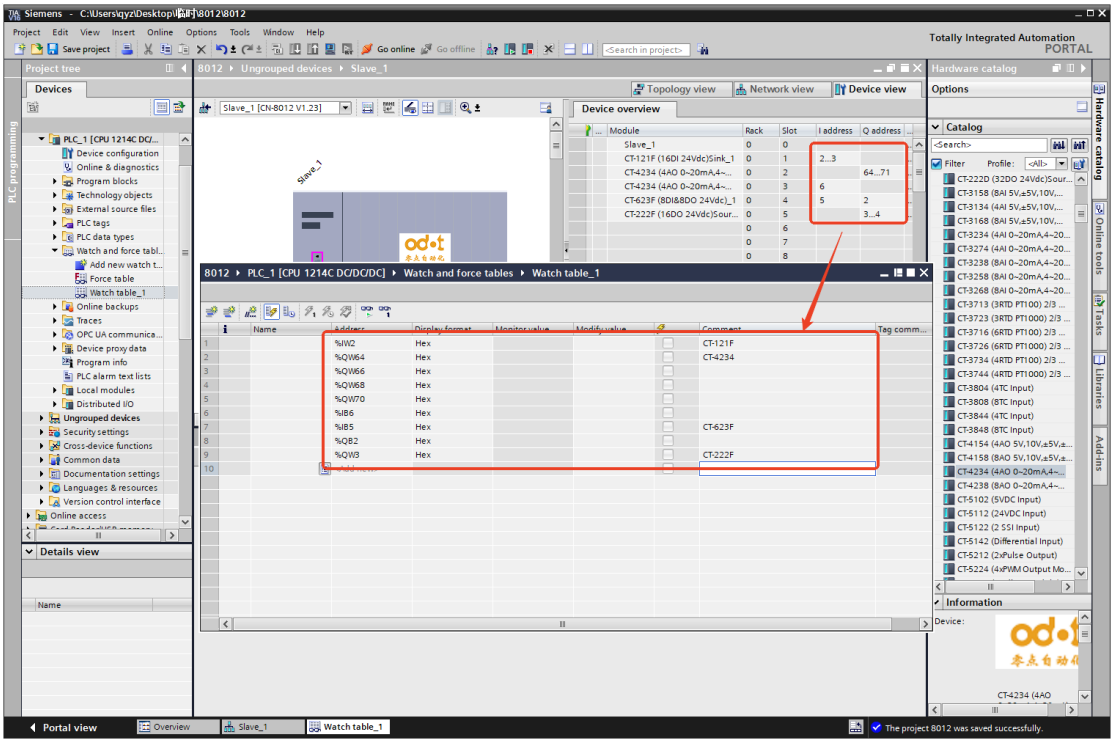


5. Double-click the adapter icon to enter the "Device View", and add the extended IO module in the "Device view": CT-121F, CT-4234, CT-623F, CT-222F.



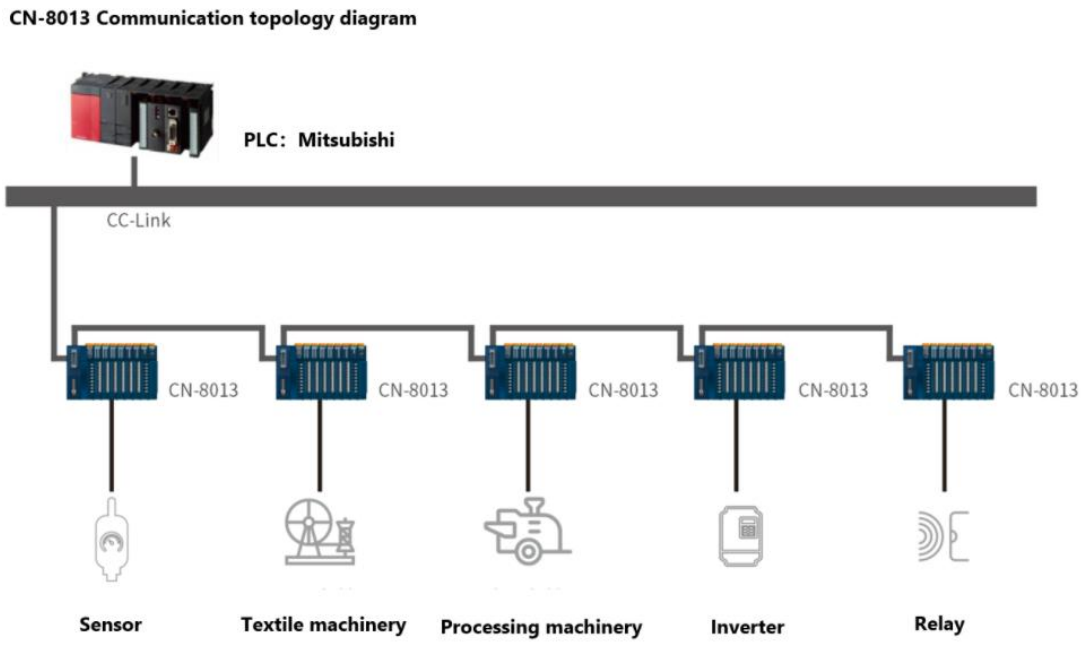

6.After the hardware configuration is completed, it is saved, compiled, and downloaded. Click "Go Online". At the same time, it can add a new monitoring table

and monitor the on-site I/O value online on the monitoring table.



# Example of communication for the CN-8013 module

## 1 Topology

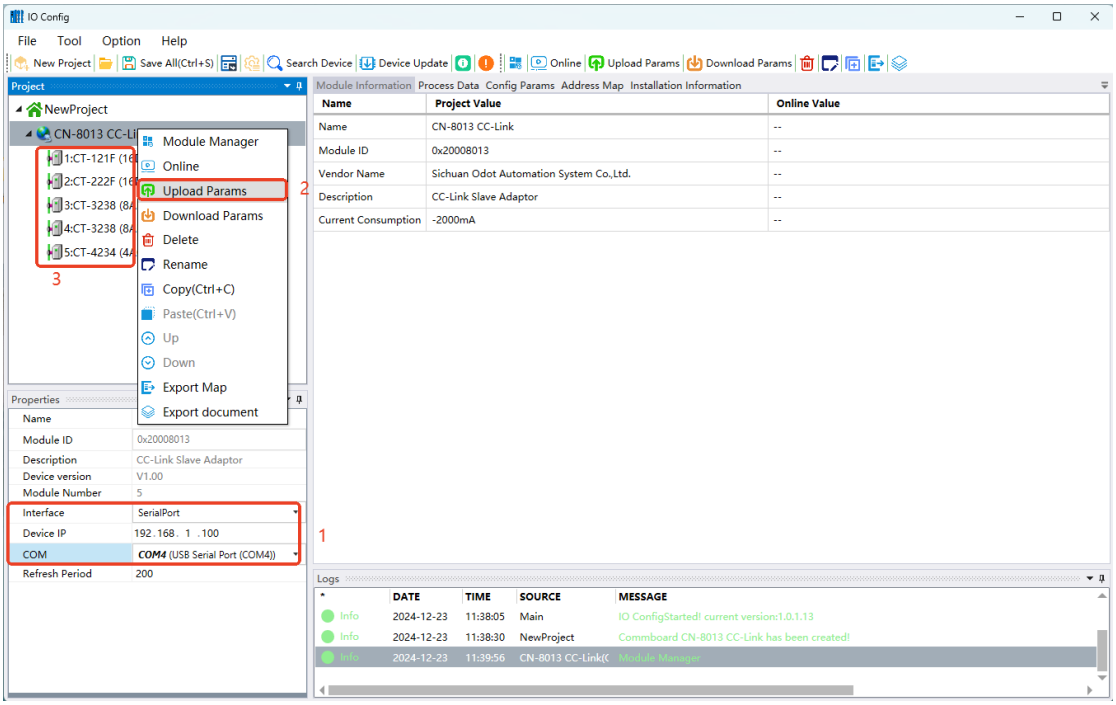



## 2 Example of communication between Mitsubishi Q series PLC and the module

1. The hardware composition of the IO modules are as follows, the system power and field power supply to the CN-8013 module is 24VDC, and the power supply is 220VAC to the Mitsubishi PLC, and the communication with the CN-8013 is communicated through the QJ61BT11N.

2. The PC is connected to the configuration interface of CN-8013 through MicroUSB, open the IO Config software, create a new project, select the serial port, right-click on

the project and click Upload Module.

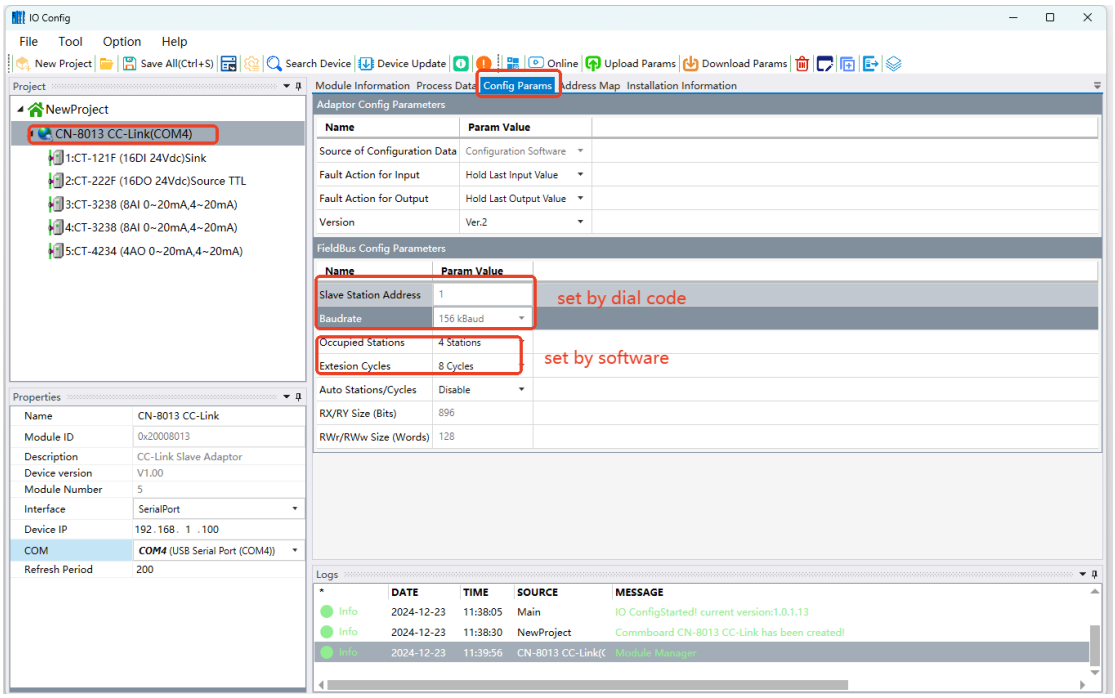



Set the communication parameters of the adapter.

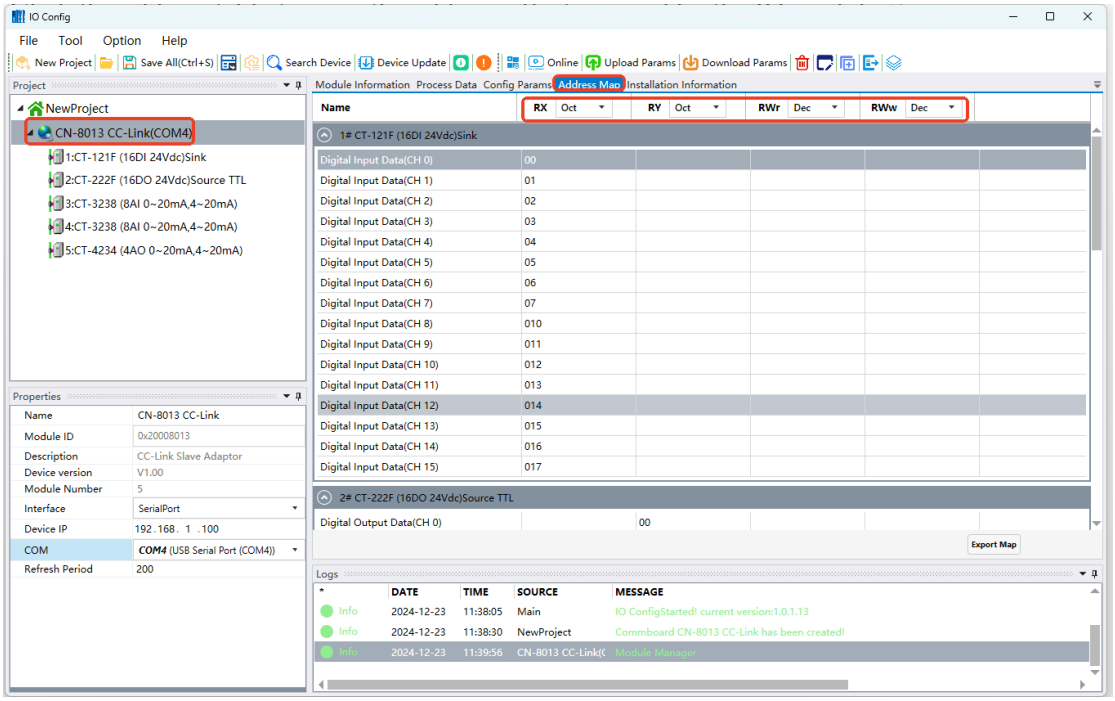
The slave address and baud rate are set by the adapter dial code, and the slave address and baud rate can be uploaded through the software.

It can set the number of occupied logic stations and the expansion cycle settings, and adjust the capacity of RX/RY and RWr/RWw.

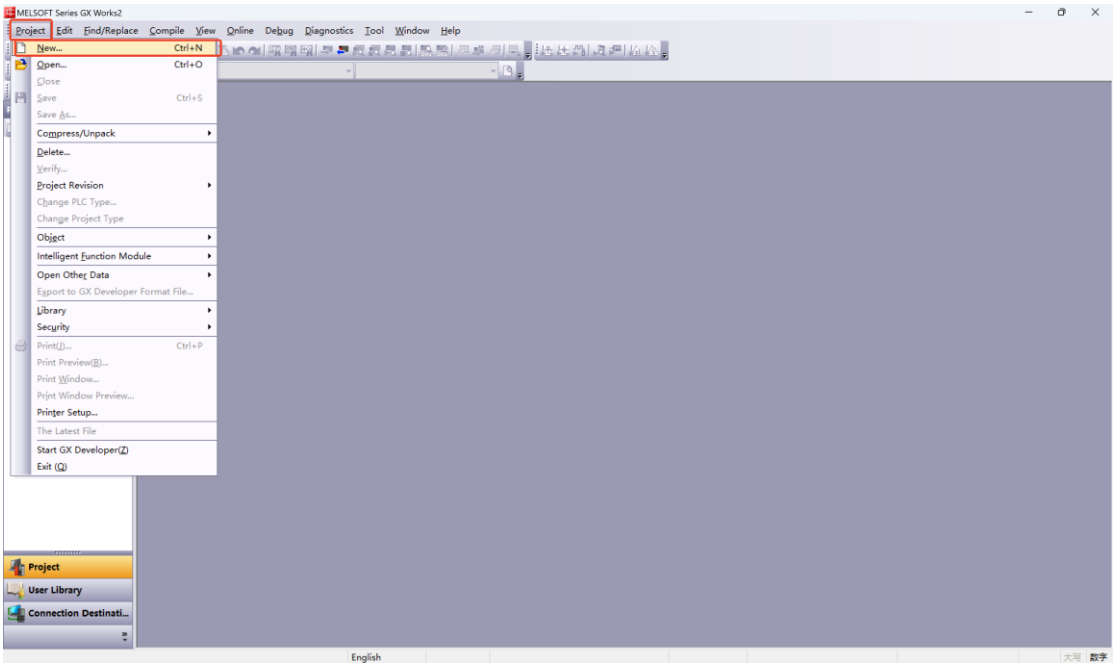
If select Enable, the minimum number of stations and the multiple of extended cycles can be automatically calculated by downloading and uploading configurations.

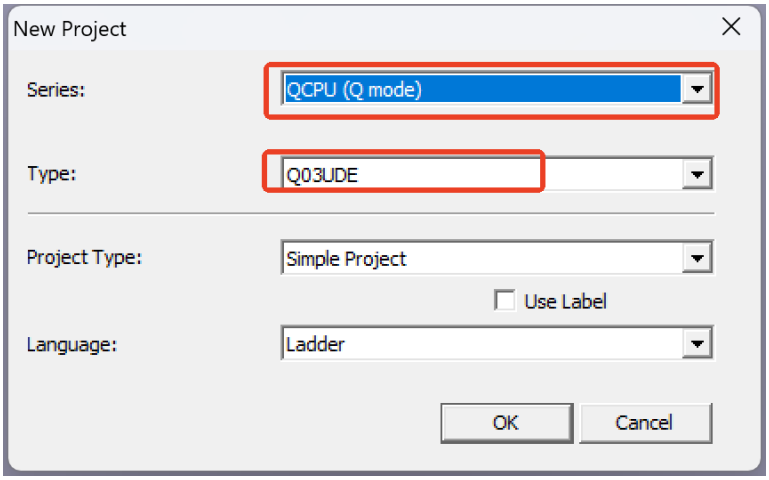



Click the address table to view the address offset mapped by the IO modules.

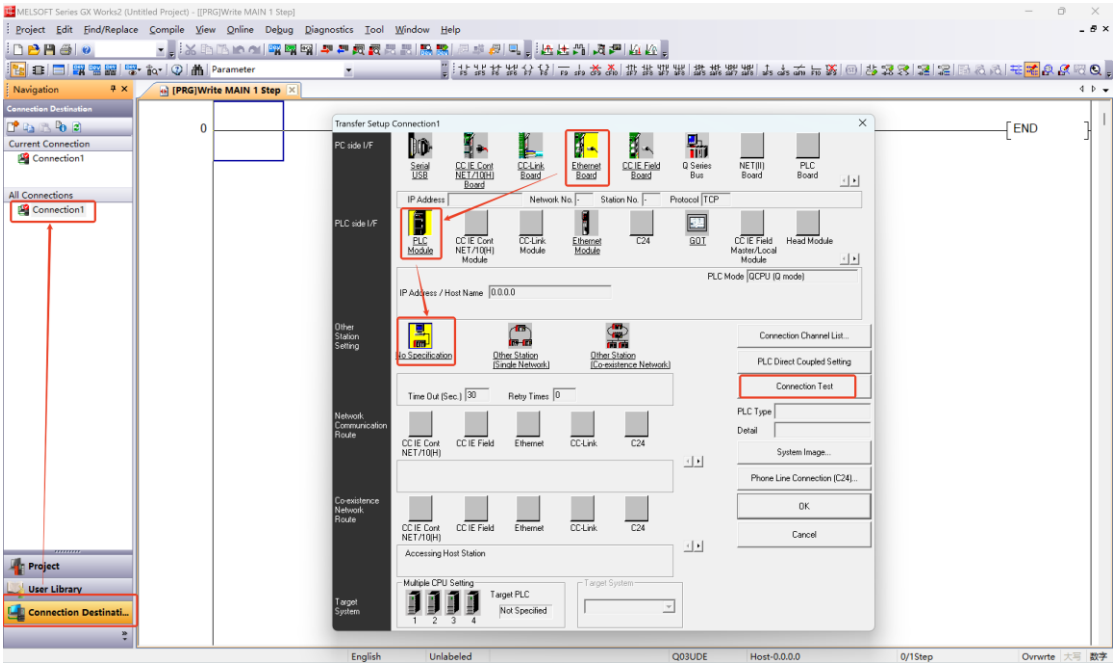



3. Open the GX Works2 software, create a new project, and select the CPU series and model.




Click on the connection target, double-click Connection1, select the Ethernet board, and click Communication Test.




Click Parameters - Network Parameters - Double-click CC-Link in the project tree on the left to configure CC-Link communication parameters.

Number of module blocks: 1

Type: Master,

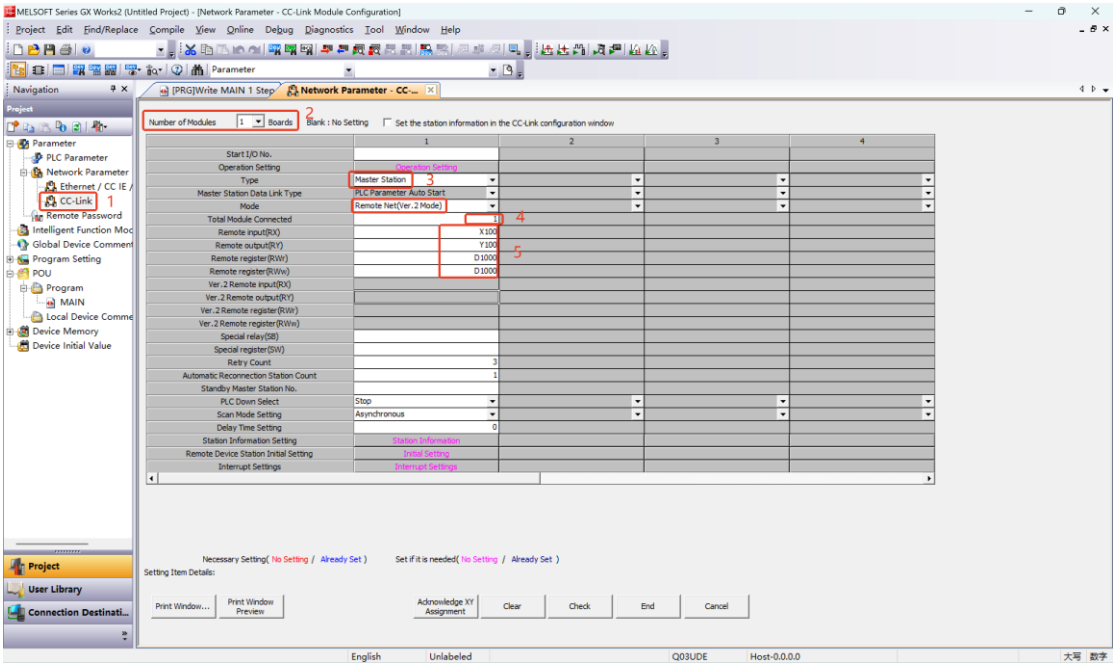
Mode setting: Remote network (Ver 2 mode)

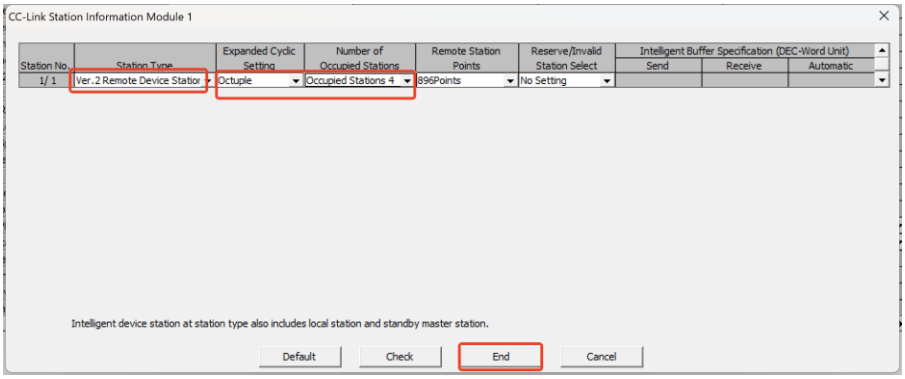
Total number of connections: 1

Remote Register (RWr): Set to D1000 (programmatically definable)

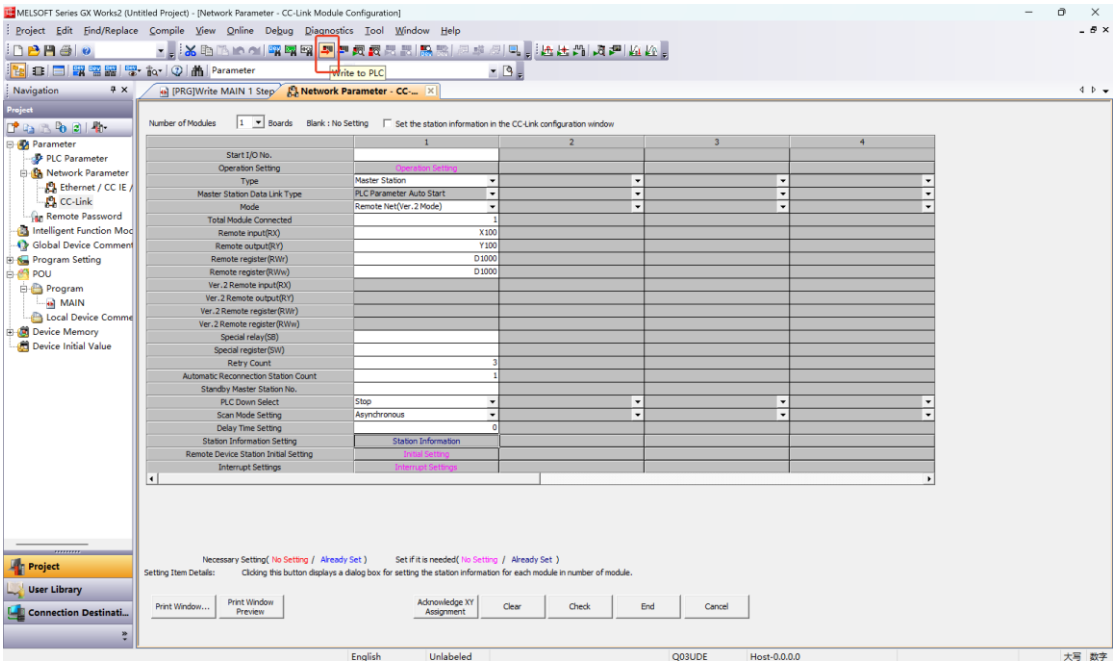
Remote Register (RWw): Set to D2000 (programmatically definable)

Station information: Ver.2 remote equipment station, 8 times the setting, 4 stations occupied.

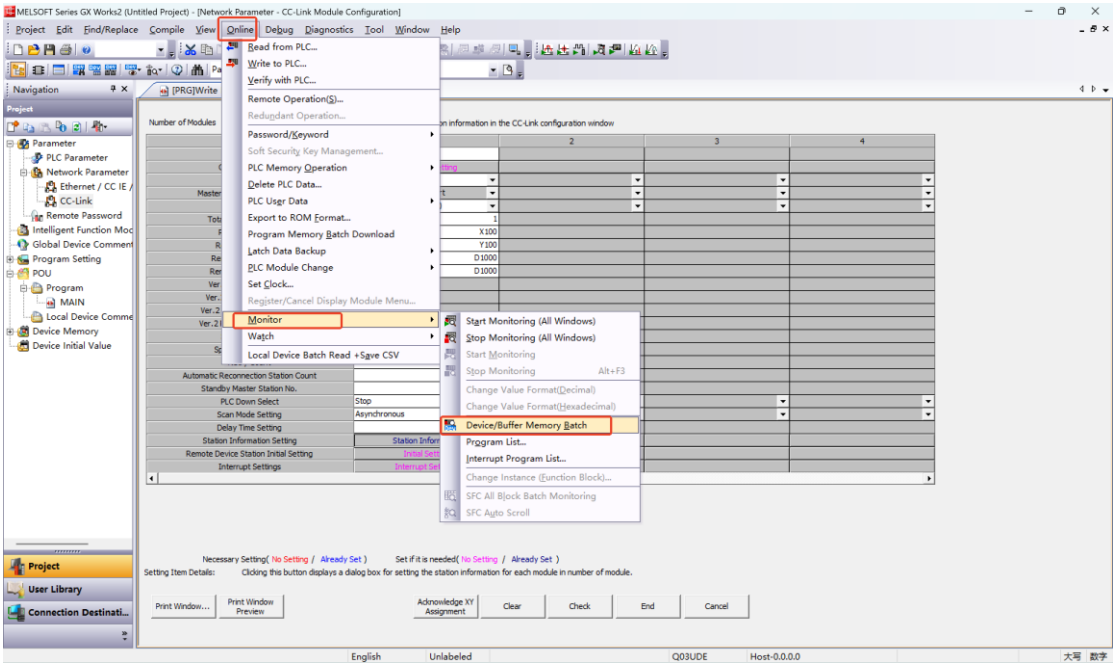


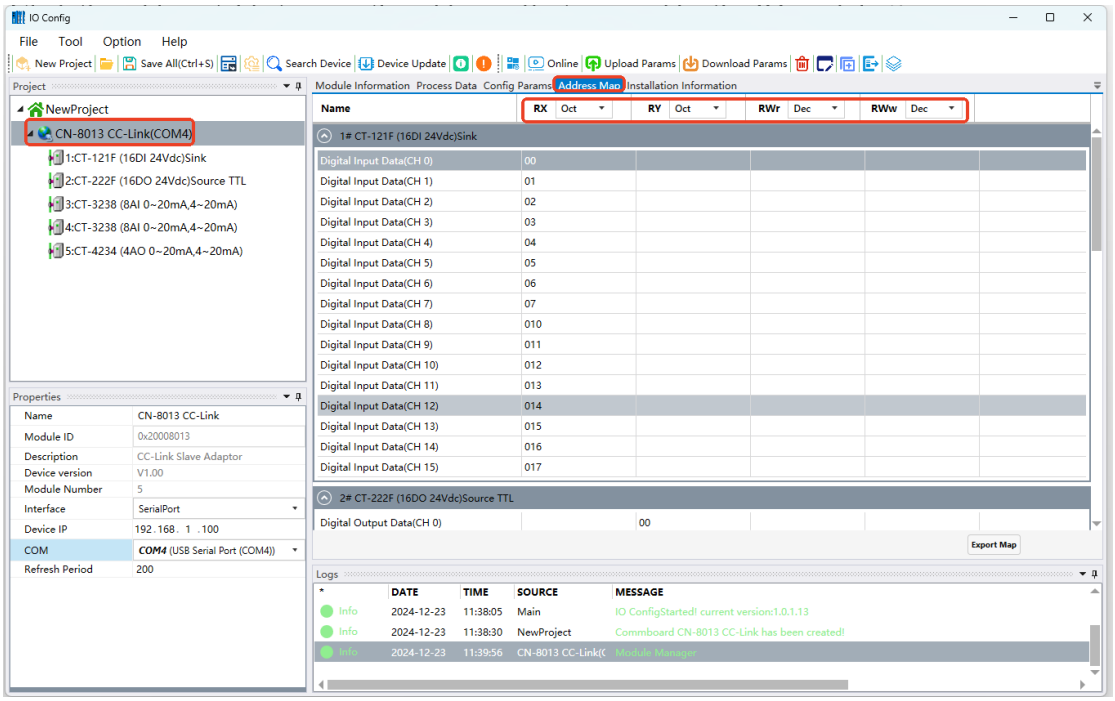

After the configuration is complete, click Download to PLC in the menu bar.



Click "Online" in the toolbar, and "Monitoring" in the drop-down menu, then "Software/Buffer Memory Batch Monitoring" in the drop-down menu.




For the correspondence of the address table, please refer to the corresponding RX, RY, RWr, and RWw values of each IO module in the IO Config software, which is an address offset, that is, the specific channel address of the IO module corresponds to the corresponding offset values in X100, Y100, D1000, and D2000.



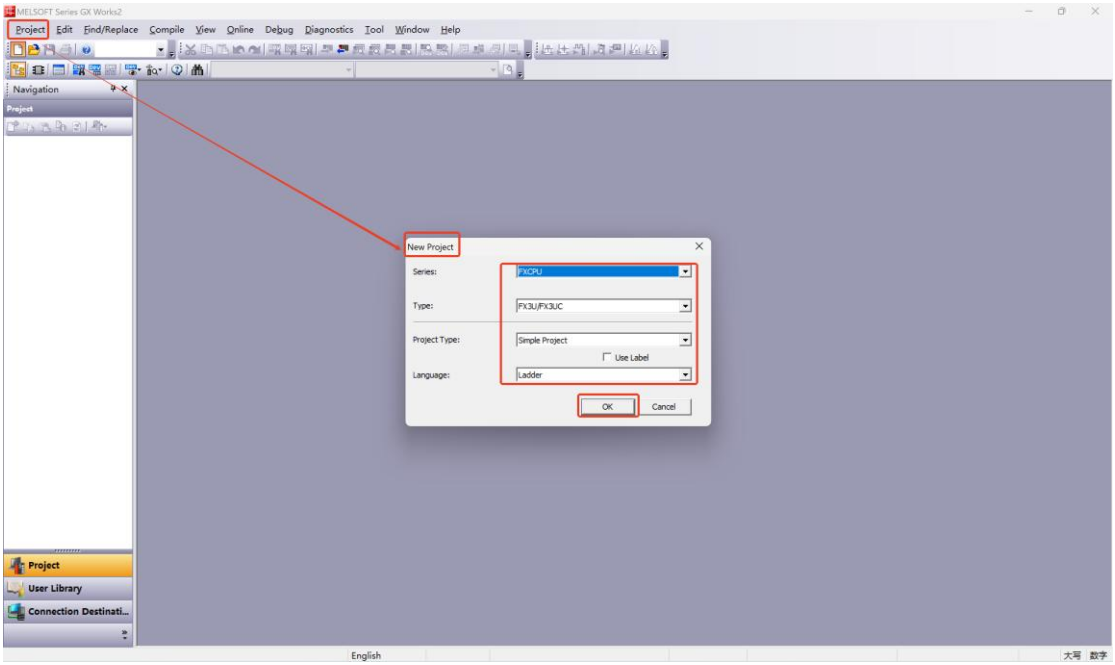

For the CT-222F, the Y100 corresponds to the 16-bit digital output of the CT-222F.

For CT-4234, D2000 corresponds to CT-4234 channel 0, D2001 corresponds to CT-4234 channel 1, and D2002 corresponds to CT-4234 channel 2. D2003 corresponds to CT-4234 channel 3.

# 3 Example of communication for CN-8013 with FX3U

1 Create a project

◆ Open the GX Works2 programming software, select the FX3U/3UC model, and create a new project.




2. Set the communication parameters of the CC-link master

Master module dial code:

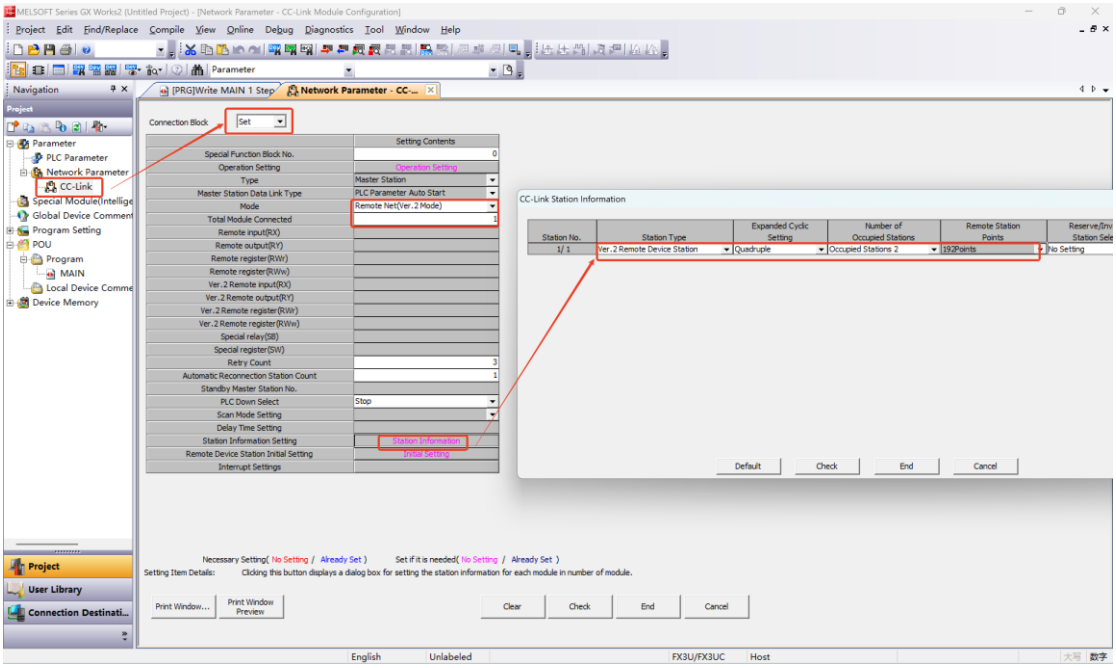
STAION NO is the master station number dial code, please do not conflict with the slave number, generally dial 0.

COM SETTING The correspondence between the baud rate of communication is as follows: (the baud rate of the master and slave must be the same)

| DIP value | Communication baud rate (bps) |
|---|---|
| 0 | 156k |
| 1 | 625k |
| 2 | 2.5M |
| 3 | 5M |
| 4 | 10M |

Software communication parameter setting:

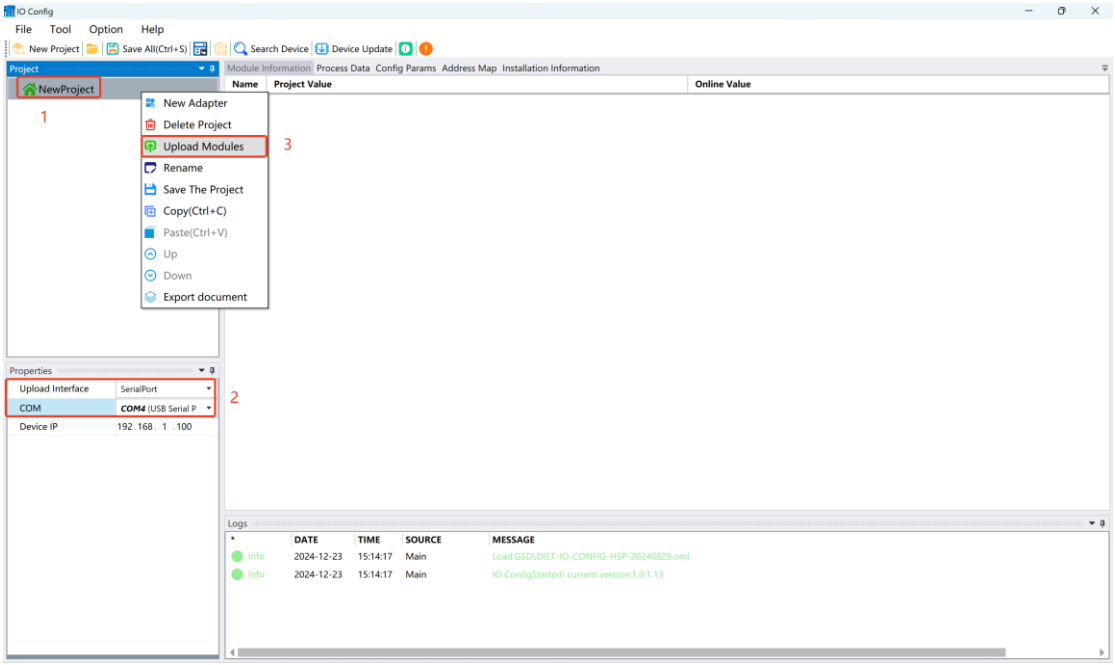
The Mitsubishi FX3U model has a PLC remote I/O that can be connected to up to 8 stations (each station occupies a total of 32 bits of PLC actual input and output, and the total number of 8 stations is 256 bits), so the total number of "remote sites" must be within 256 points.



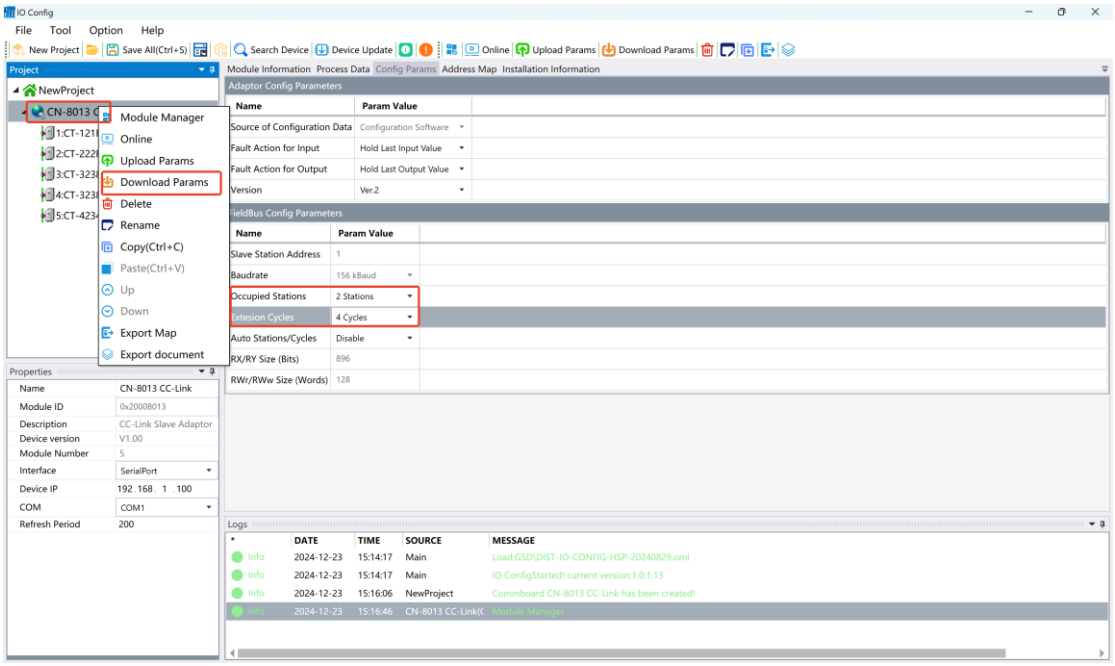

(Note: The above figure allocates 192 points of input and output space to slave 1, because 192 points are greater than 32 points of a station, so the parameter "occupy 2 stations" indicates that the space that should be allocated to slave 2 is occupied, so the CC-link network does not allow slaves with dial code 2 to appear.) 〉

3. Set the communication parameters of CC-link slaves

Open the IO Config software, create a new project, and then upload the module configuration to the software by selecting the serial port automatically recognized by the computer.




The configuration uploaded to the software is modified for communication parameters and then downloaded to the CN-8013 communication module.




CN-8013 module configuration parameters:

Slave address: The slave station number is consistent with the programming software through the DIP code.

Baud rate: the same as the dial code of the master module (the same baud rate).

Number of Occupied Logical Stations: Consistent with the slave parameter settings in the programming software.

Extended Cycle Settings: Same as the slave parameter settings in the programming software.

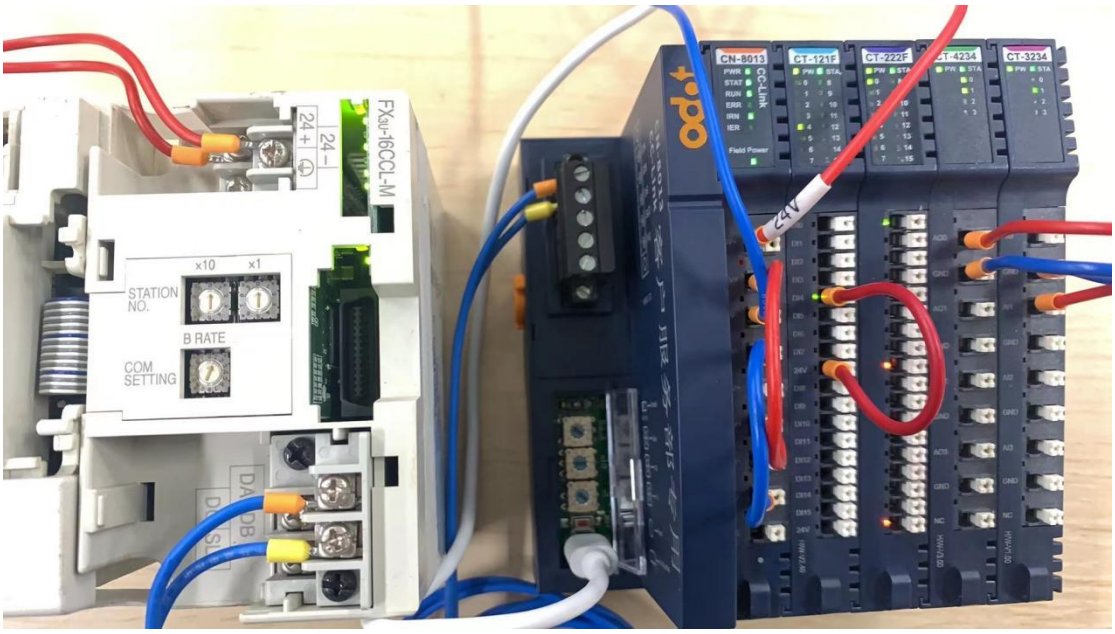
Note: If the parameter modification is successful, download and then upload it to check whether the parameter is modified

4 Programming

1. Use the FROM command to read the input value of the remote IO into the register of the PLC.

2. Use the TO command to write the value of the PLC register to the remote IO.

In this example, the remote I/O modules are:



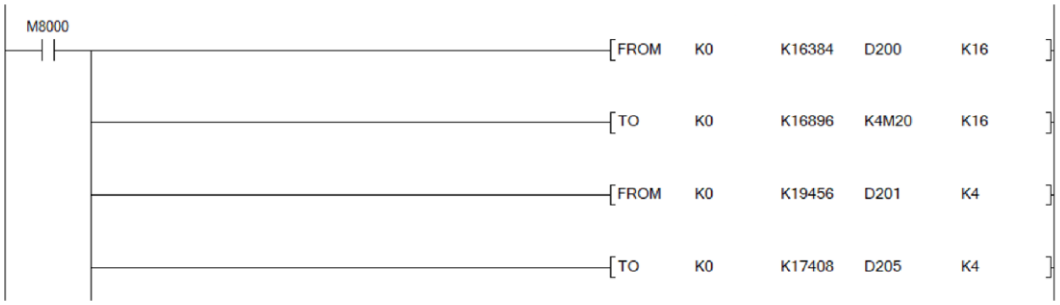

CT-121F: 16-bit digital input module.

CT-222F: 16-bit digital output module.

CT-4234: 4 Words analogue output module.

CT-3234: 4 Words analog input module.

The program is written as follows:

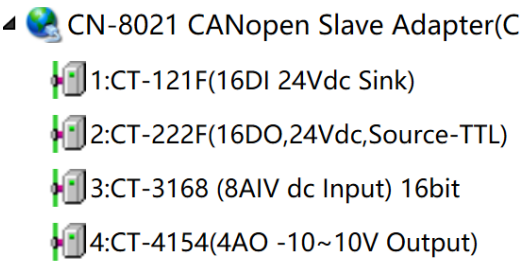


# Communication example of the CN-8021 module

## 1 Example of communication between Schneider and module

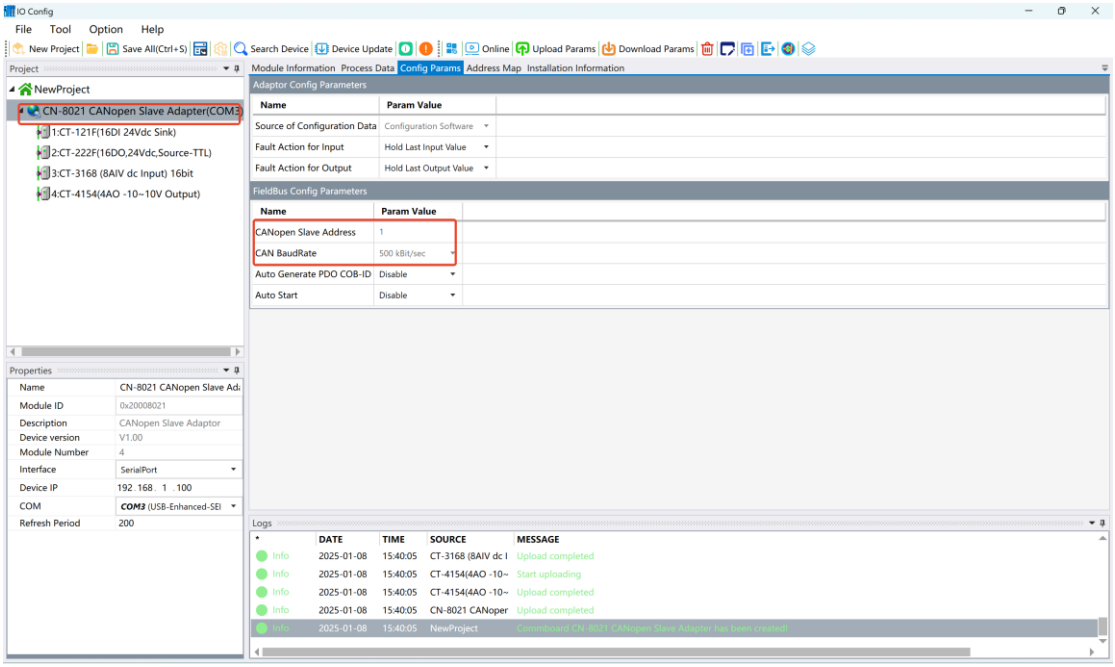
This application uses Schneider SoMAChine V4.3 software, and Schneider PLC TM251MESC is connected to CN-8021 CANopen adapter as the CANopen master for test demonstration.

The hardware configuration of the IO module is as follows:



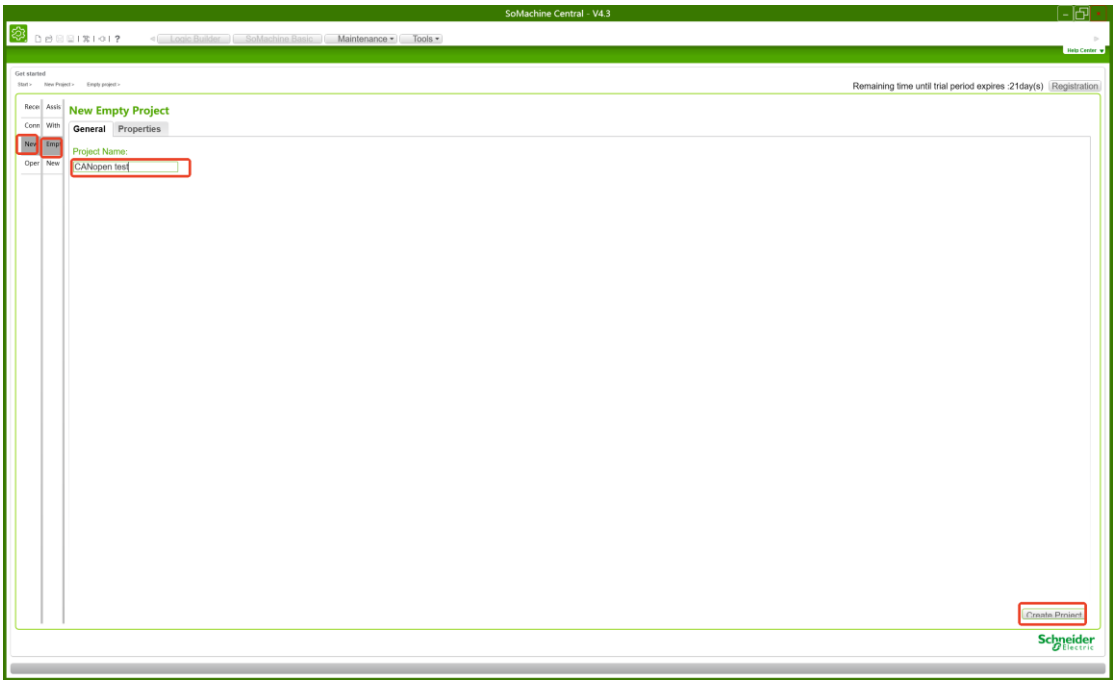

1. The IO Config software sets the CN-8021 parameters.

Use a Micro USB cable to connect the PC to the CN-8021 configuration interface, and the com port will be generated in the computer device manager. Open the IO Config software to set the station address and baud rate of the CN-8021 module.

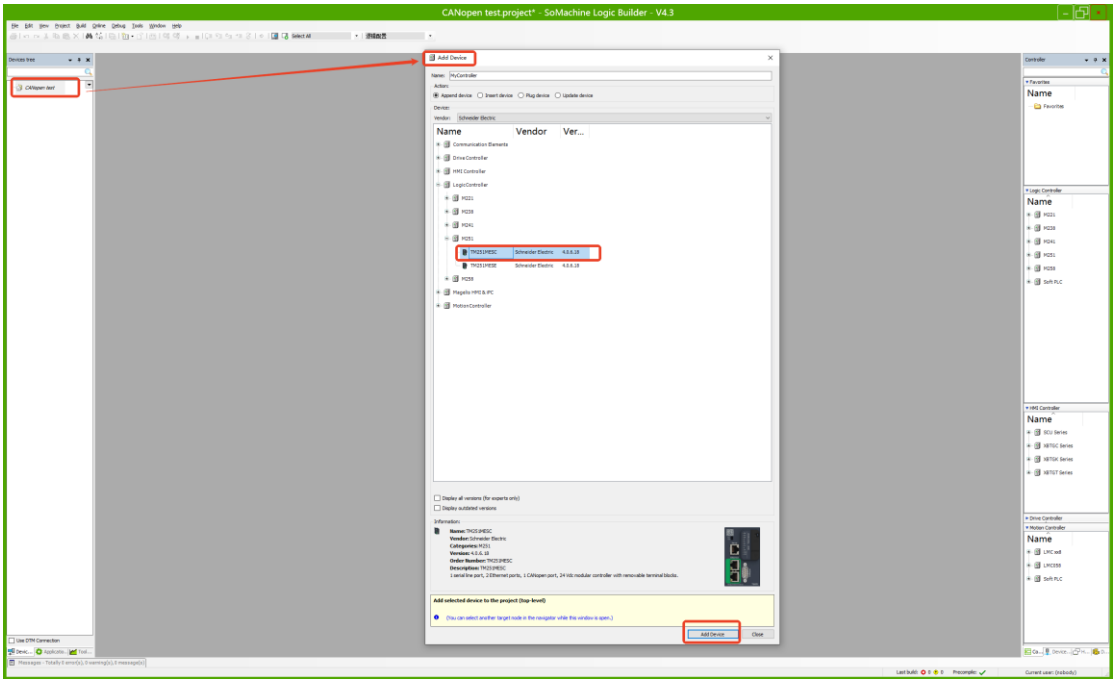



2. Use Schneider PLC to connect to CN-8021 module

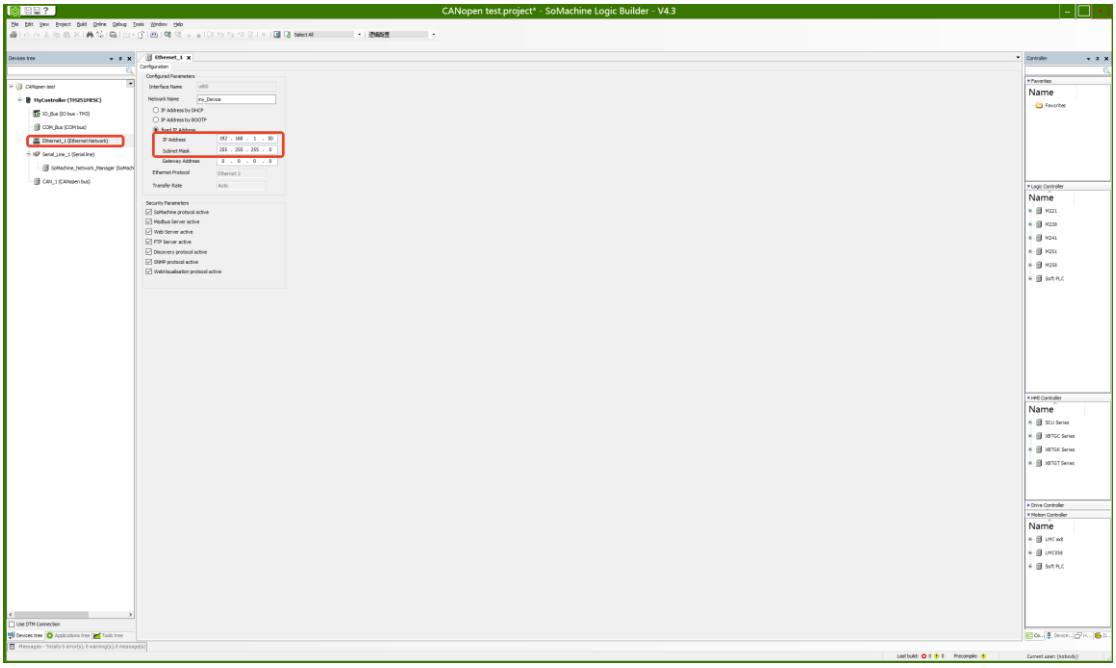
Open SoMAChine V4.3, click New Project - Empty Project, Project Name "CANopen Test", and click Create Project.



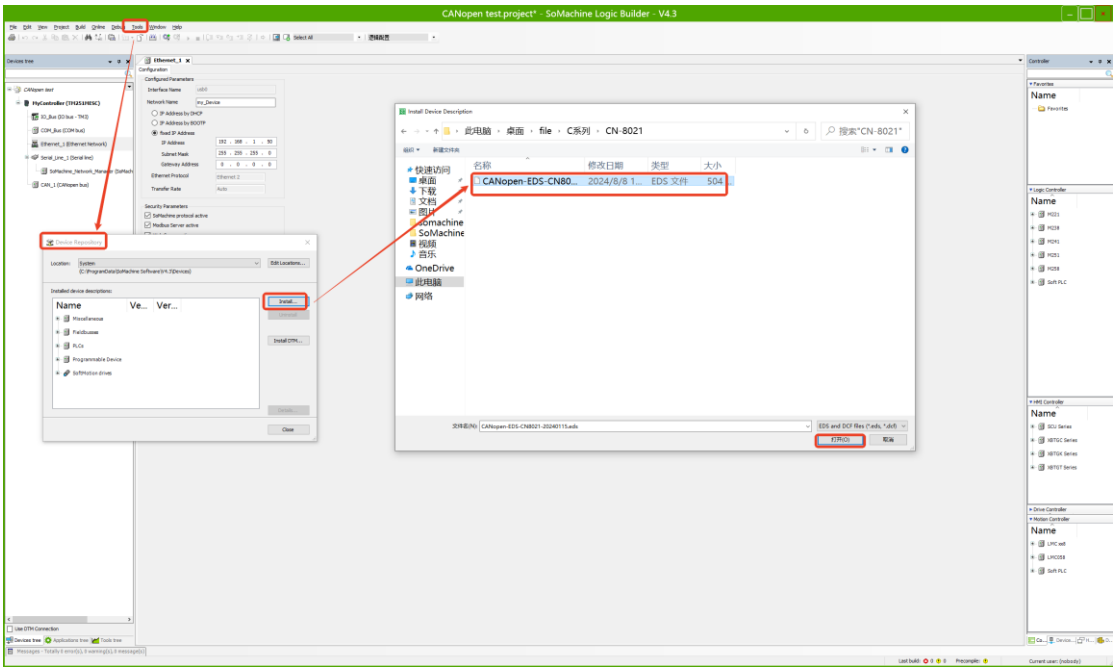

Right-click on the project and click Add Device, find the PLC, and click Add Device.



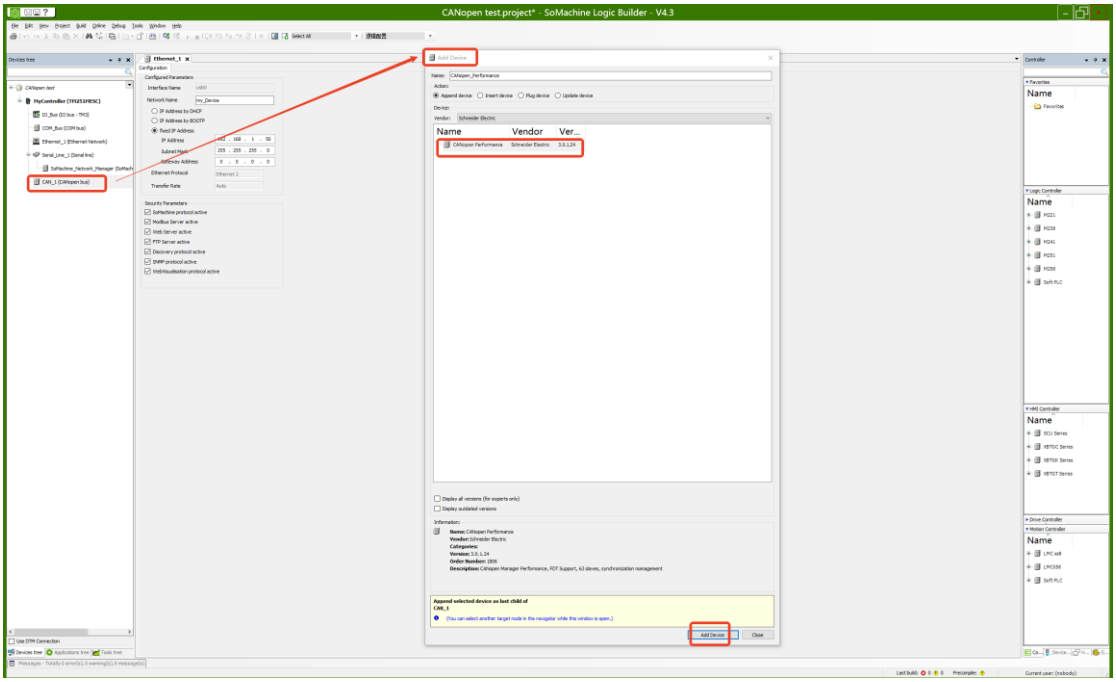

After the installation is complete, select the Ethernet port and set the IP address of the PLC.



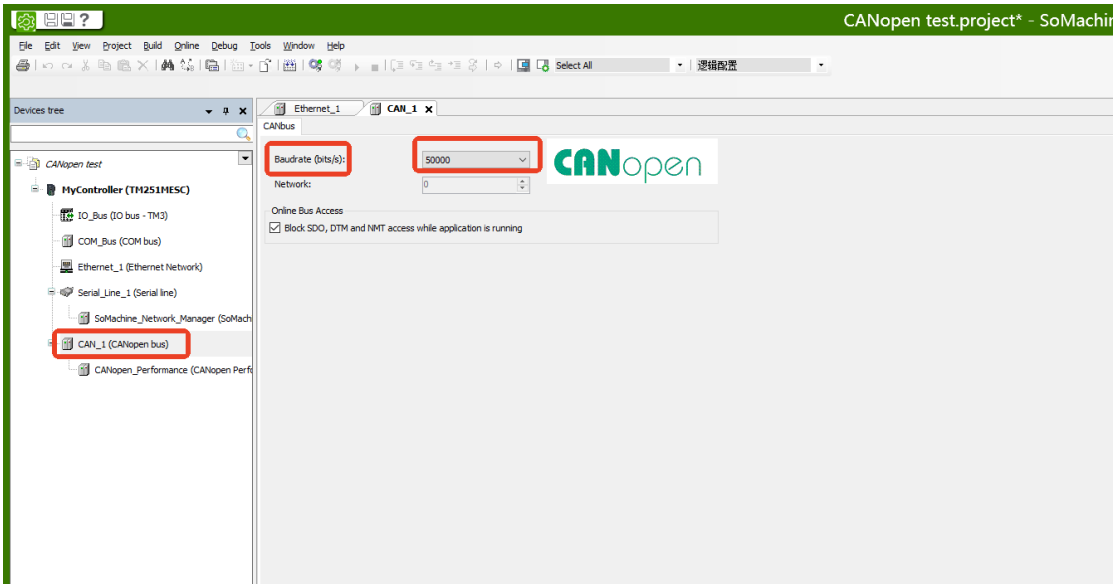

Click Tools - Device Repository, click Install the selected EDS file of CN-8021 in the pop-up window, and click Open to complete the installation of the EDS file.



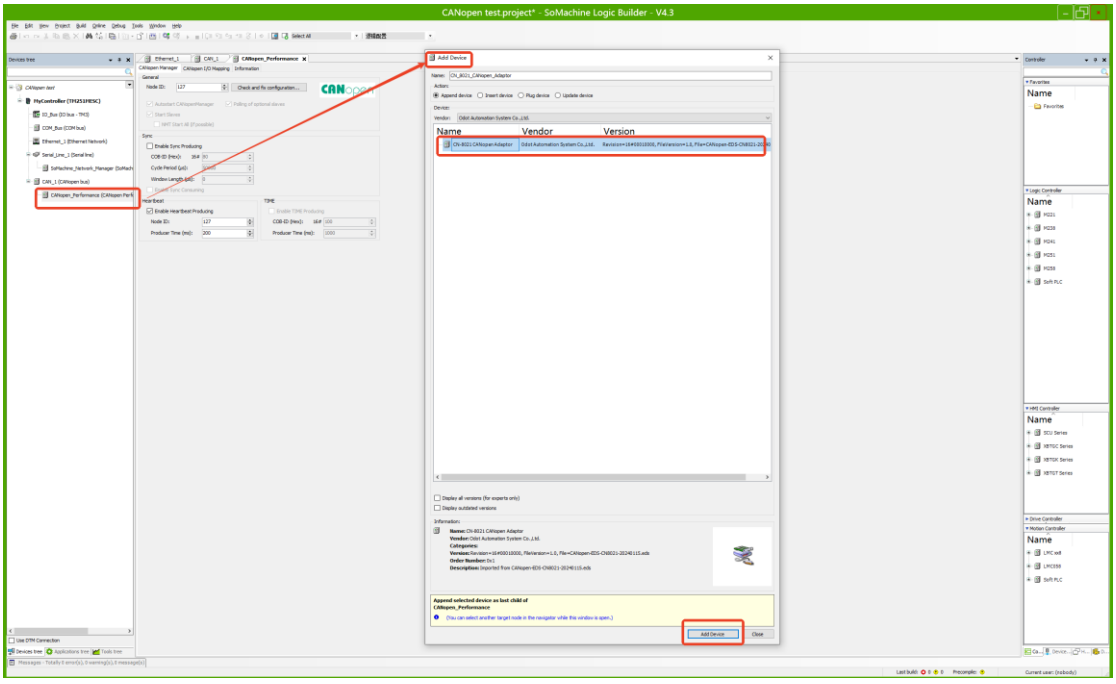

Right-click the CAN interface, add a device, select CANopen Performance, and click Add Device.



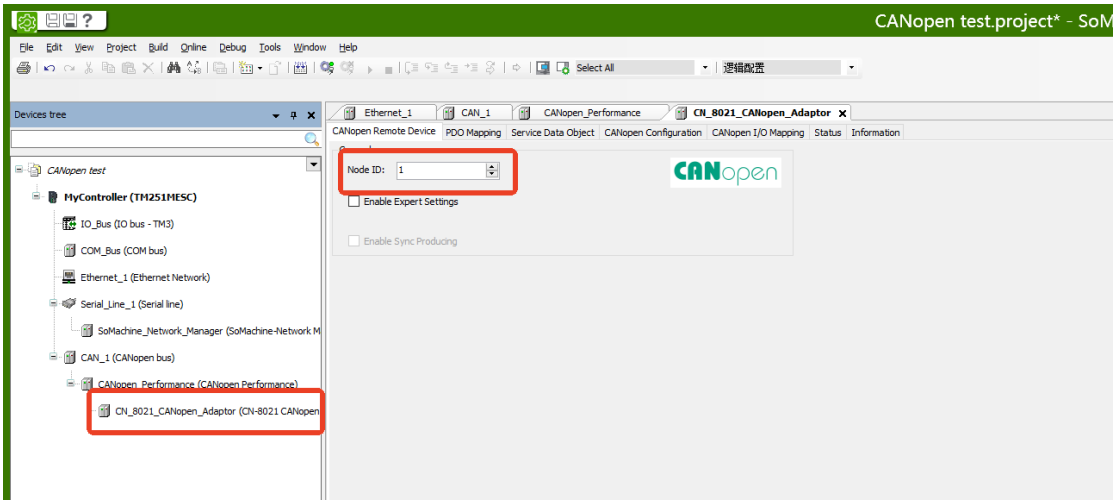

Double-click the CAN_1 to set the baud rate of the CAN bus.



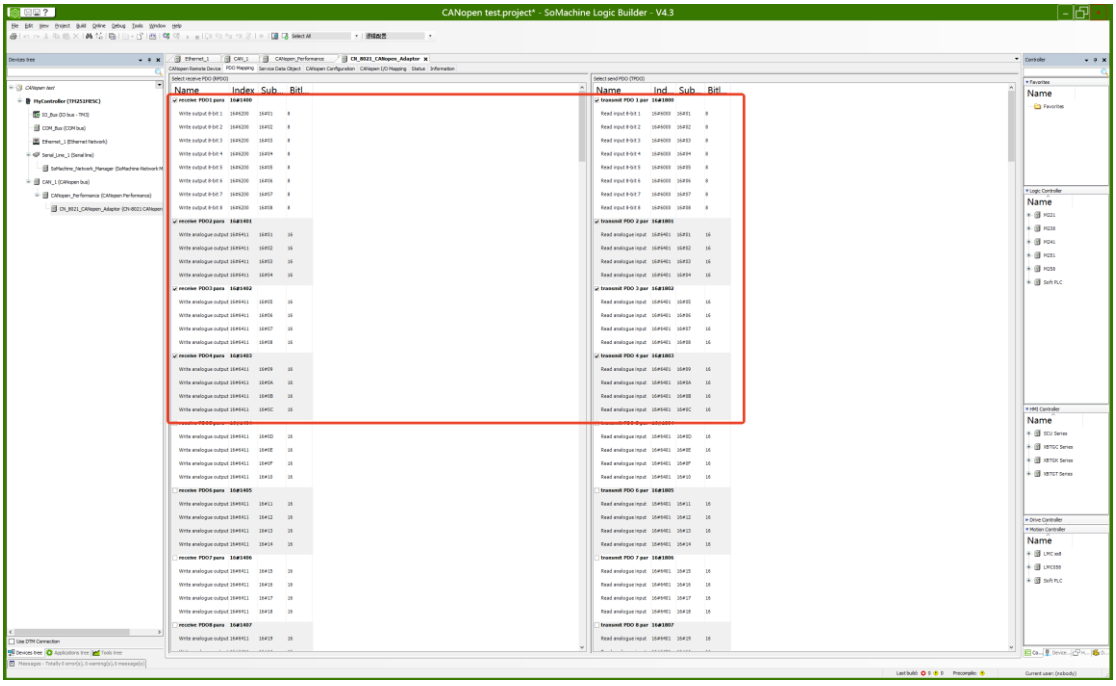

Right-click CANopen Performance, click Add Device, select CN-8021, and click Add Device.



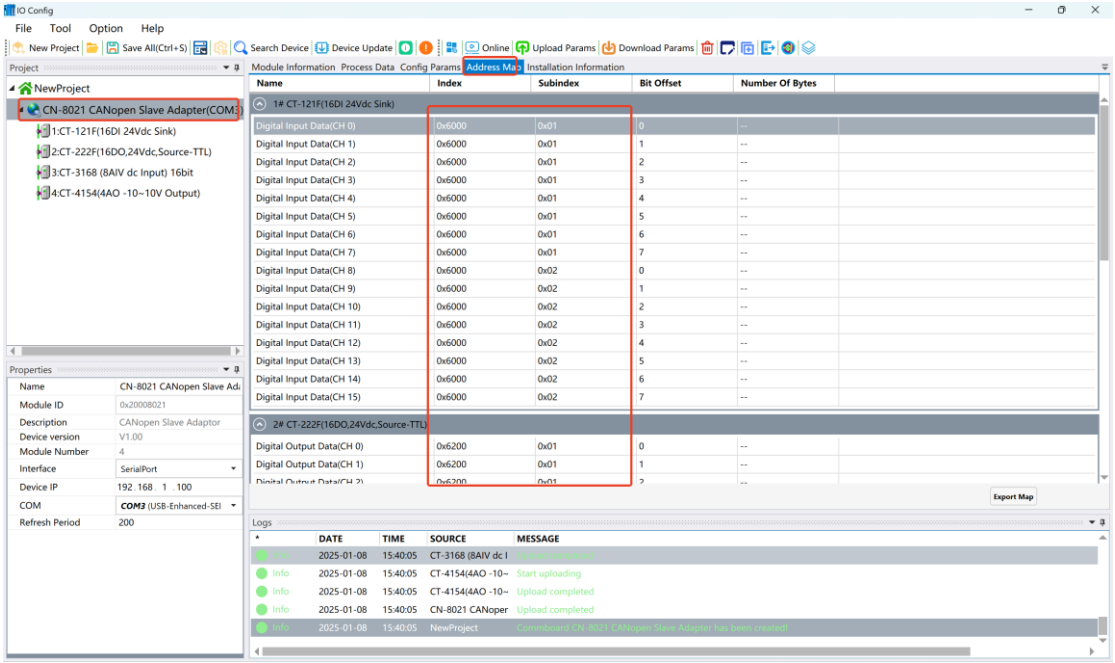

Double-click CN-8021, node address setting, default 1.




After the setup is complete, log in to the PLC and download the configuration. Click on the PDO mapping of CN-8021. By default, EDS files come with four RPDOs and four TPDOs.

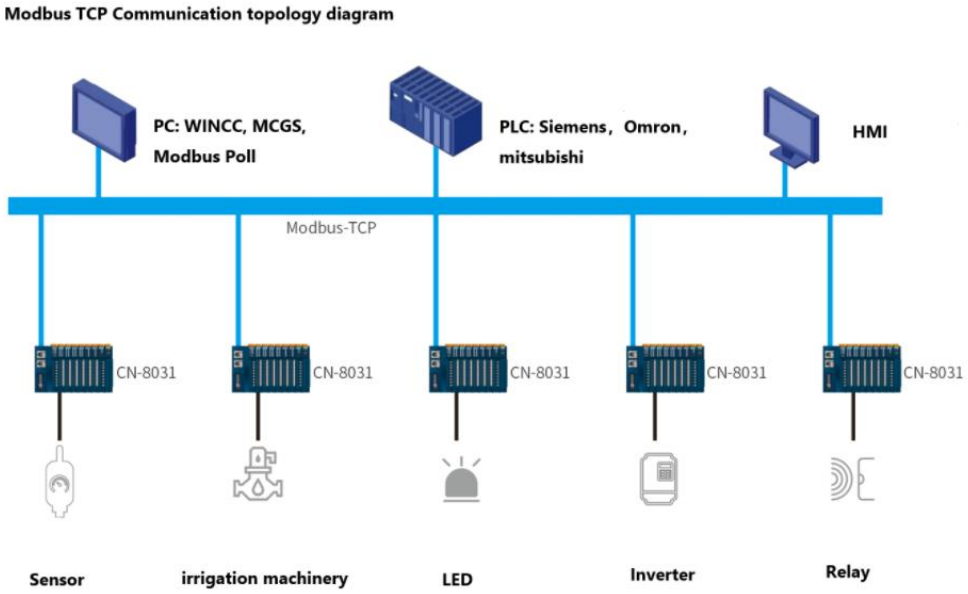



Compare the address table interface of the IO Config software. It can view the data correspondence.



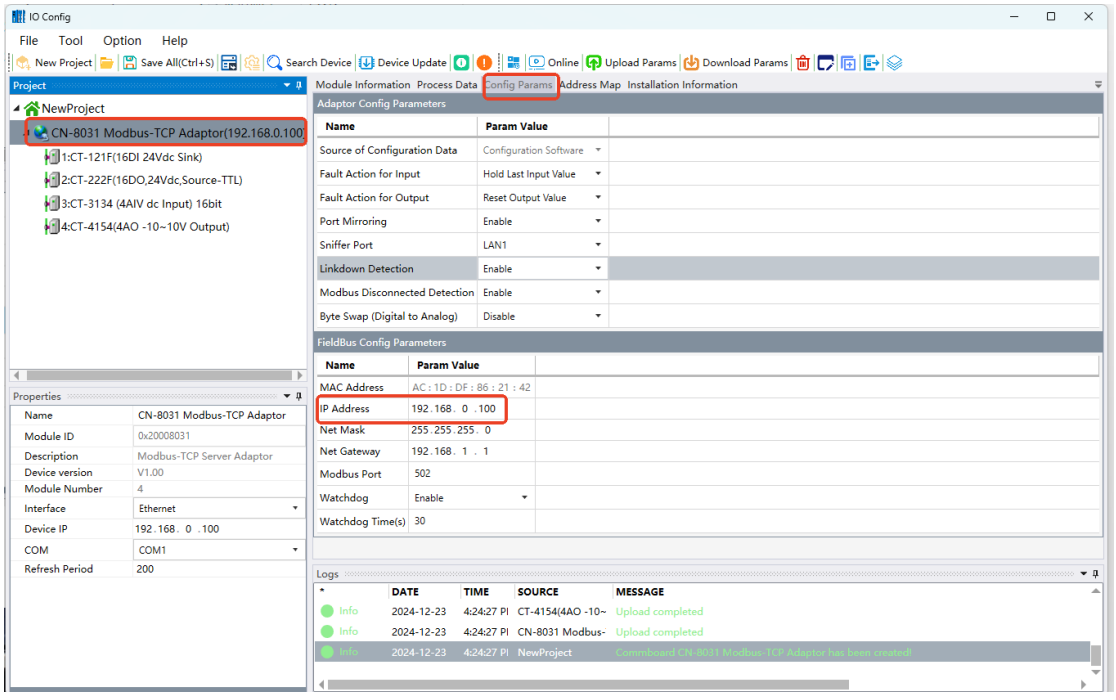
# Example of communication for the CN-8031 module

## 1 Topology




## 2 Example of communication for Modbus Poll software with module

1. In IO Config software, it can view the default parameters of CN-8031 module, Modbus TCP parameters: IP address (192.168.0.100).



2. Use IO Config software to monitor CN-8031 and the address table of the attached IO module online.

Note: After the IO module is fixed in order, its Modbus address is fixed.

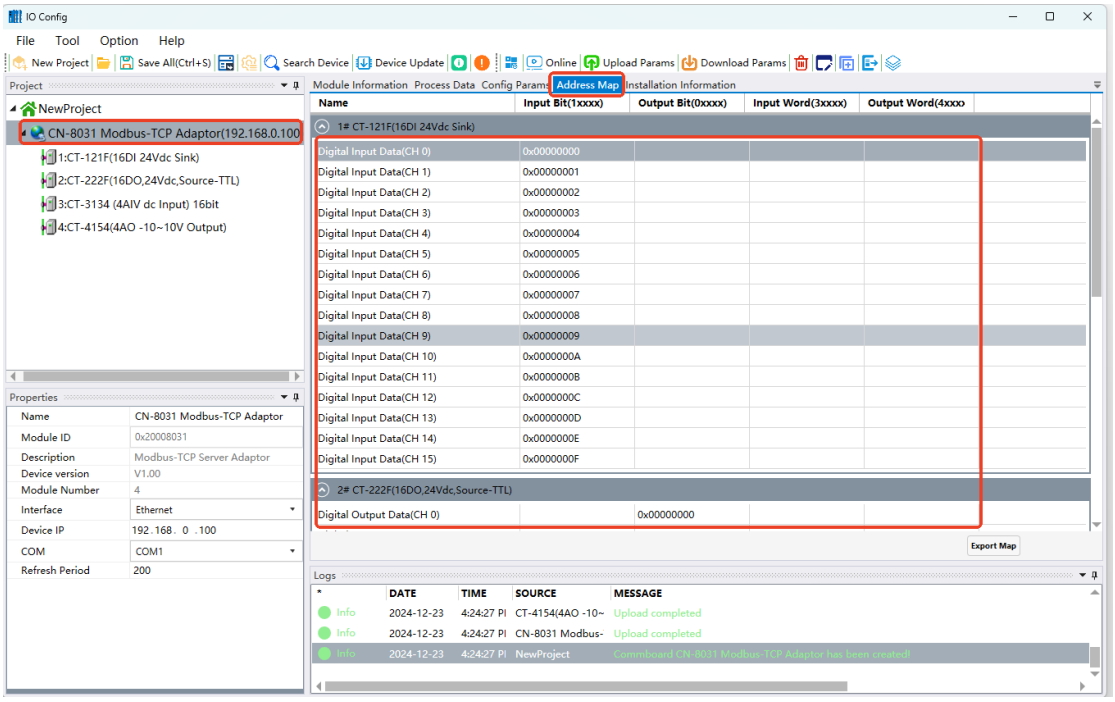
For example, the address table of the I/O modules is as follows:

The address area corresponding to CT-121F is:10000~10015,

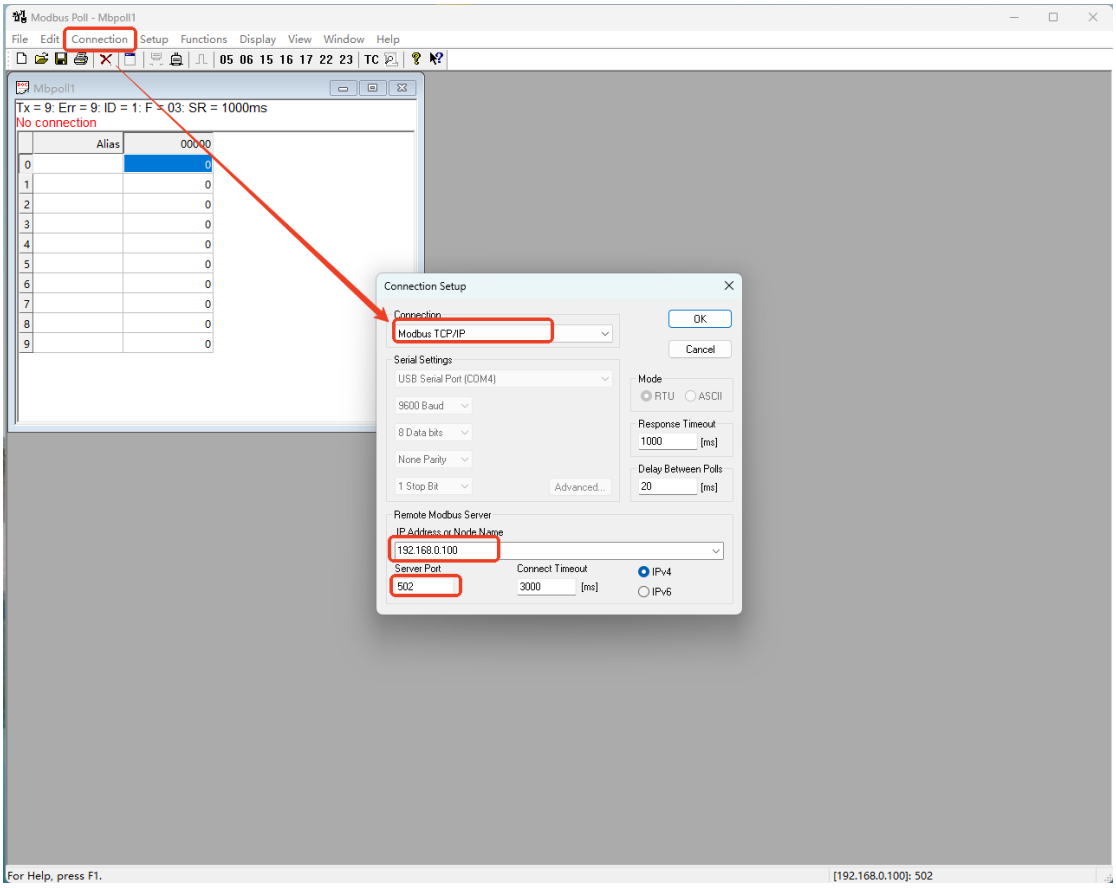
The address area corresponding to CT-222F is:00000~00015,

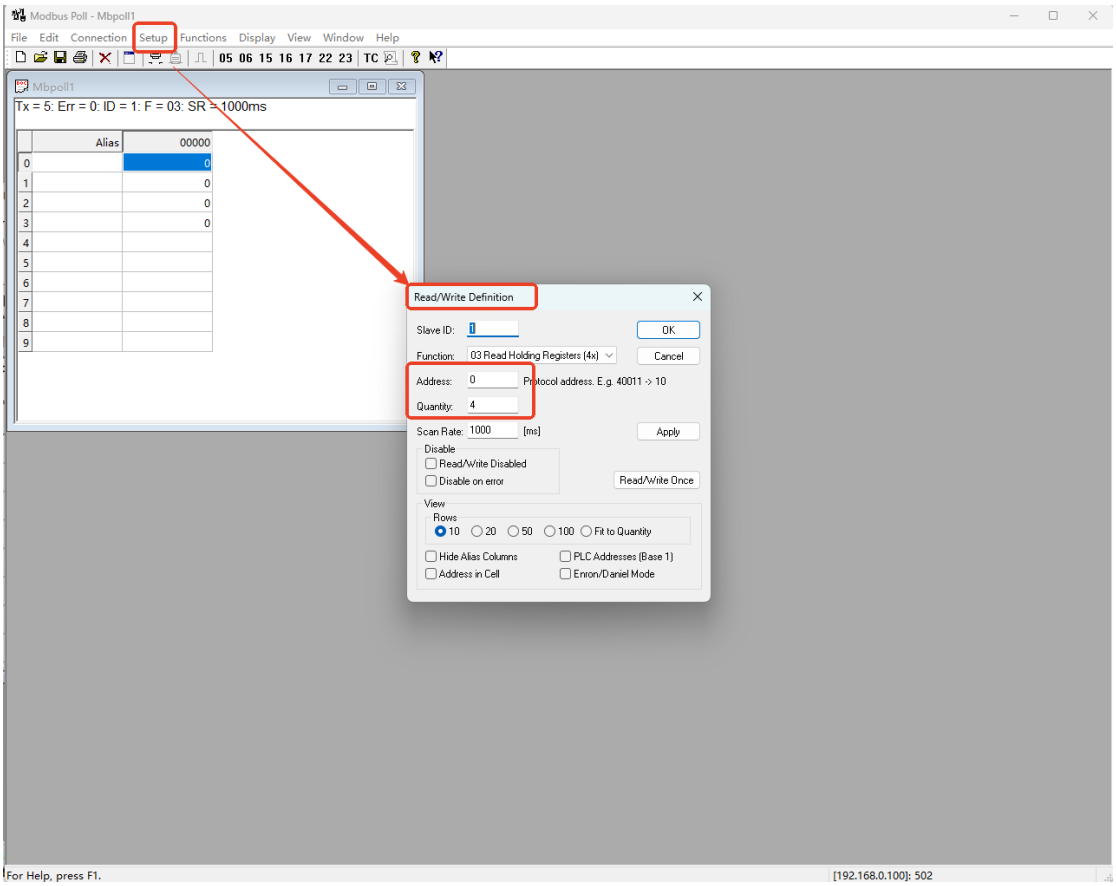
The address area corresponding to CT-3134 is:30000~30003,

The address area corresponding to CT-4234 is:40000~40003.

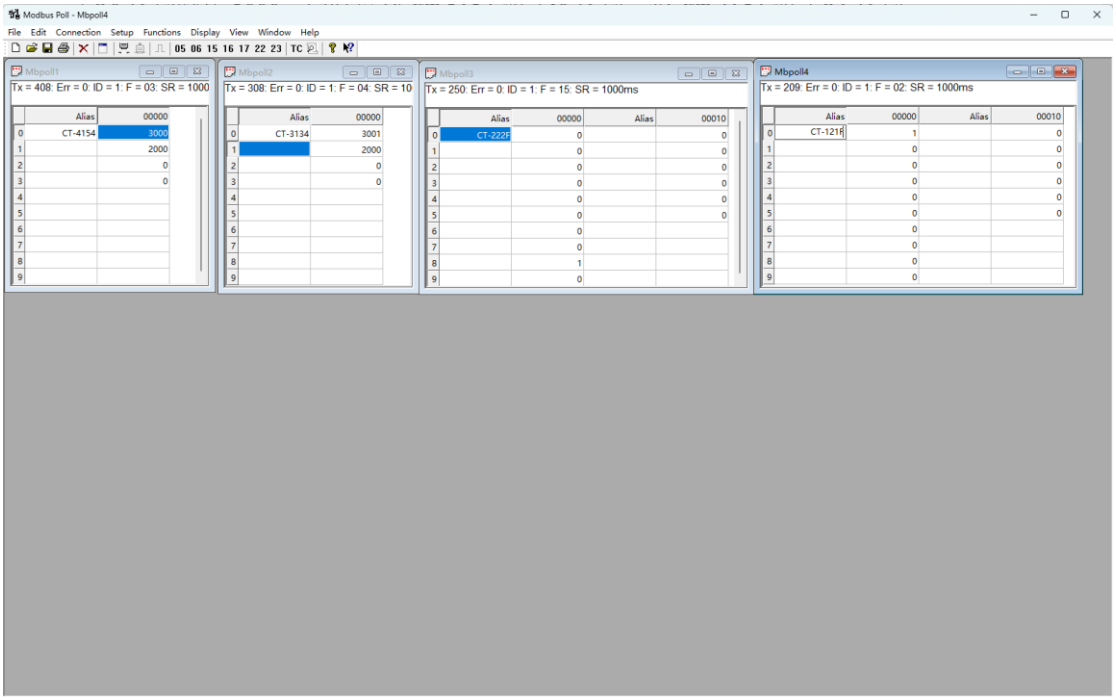



3.Open the Modbus Poll software, click connection, select the MODBUS TCP, and the IP Address is 192.168.0.100, 502, click OK. Click Setup-Read/Write Define, select the function code, start address, and data length to monitor the value of the I/O module.


Modbus Poll - Mbpoll1
File Edit Connection Setup Functions Display View Window Help
Mbpoll1
Tx = 9: Err = 9: ID = 1: F = 03: SR = 1000ms
No connection
Alias
00000
Connection Setup
Connection
Modbus TCP/IP
OK
Cancel
Serial Settings
USB Serial Port (COM4)
9600 Baud
8 Data bits
None Parity
1 Stop Bit
Advanced...
Mode
RTU ASCII
Response Timeout
1000 [ms]
Delay Between Polls
20 [ms]
Remote Modbus Server
IP Address or Node Name
192.168.0.100
Server Port
502
Connect Timeout
3000 [ms]
IPv4
IPv6
For Help, press F1.
[192.168.0.100]: 502

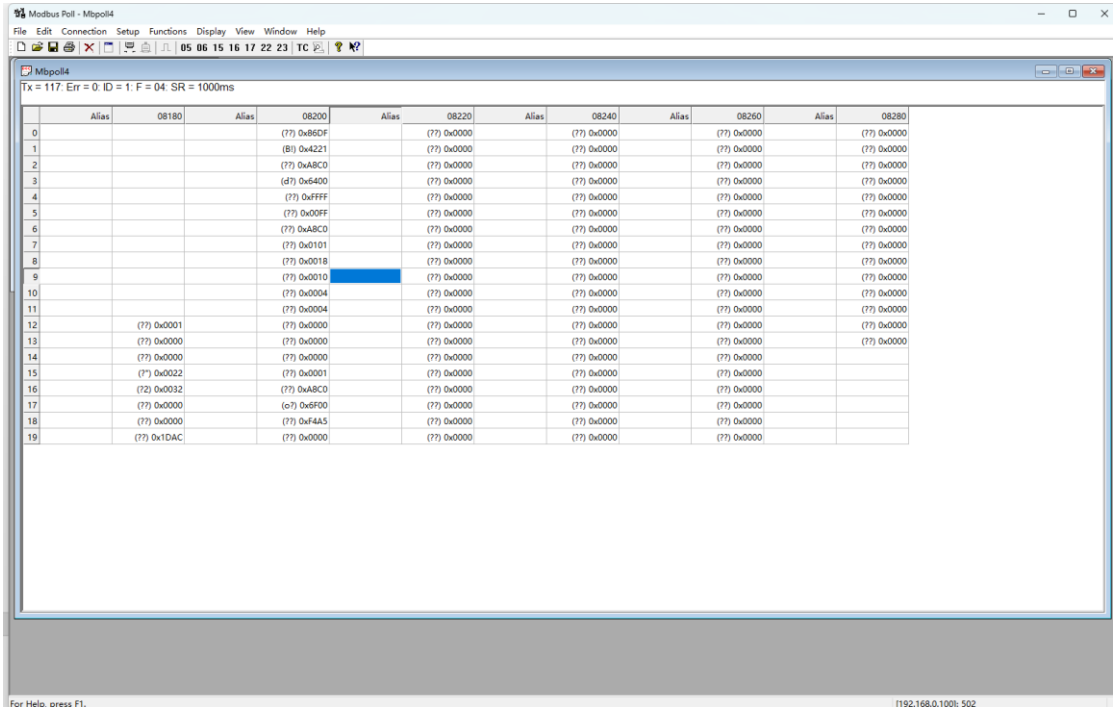

Modbus Poll - Mbpoll1
File Edit Connection Setup Functions Display View Window Help
Mbpoll1
Tx = 5: Err = 0: ID = 1: F = 03: SR = 1000ms
Alias
00000
Read/Write Definition
Slave ID: 1
OK
Function: 03 Read Holding Registers (4x)
Cancel
Address: 0
Protocol address. E.g. 40011 -> 10
Quantity: 4
Scan Rate: 1000 [ms]
Apply
Disable
Read/Write Disabled
Disable on error
Read/Write Once
View
Rows
10 20 50 100 Fit to Quantity
Hide Alias Columns
PLC Addresses (Base 1)
Address in Cell
Enron/Daniel Mode
For Help, press F1.
[192.168.0.100]: 502

Power the DI0 of the CT-121F to 24V, assign 1 to the DO8 of the CT-222F, assign the AO0 channel of the CT-4154 to 3000, and connect the AI0 channel of the CT-3134 to the AO1 channel of the CT-4154 to 2000, and connect the AI1 channel of the CT-3134 at the same time.




4. Online diagnosis

On the interface of the Modbus poll software, use the Modbus 04 function code to capture the status input of the module as shown in the following figure:




It can see from the screenshot:

There is no DIP on the lower left side of the hardware, and the DIP value is 0 by default.

Module IP address 192.168.0.100.

The size of the input and output data of the module.

There is a value for the configuration port, that is, the online connection of the configuration software is configured.

The MODBUS TCP client has 1 connection here.

# 3 Example of communication between Siemens S7-1200 (TIA V16) and module

This application uses Siemens TIAV16 software, and Siemens PLC S7-1214C DC/DC/DC is used as a Modbus TCP client to connect to CN-8031 Modbus TCP adapter for test and demonstration.

Note: After the IO module is fixed in order, its Modbus address is fixed.

For example, the address table of the I/O modules is as follows:

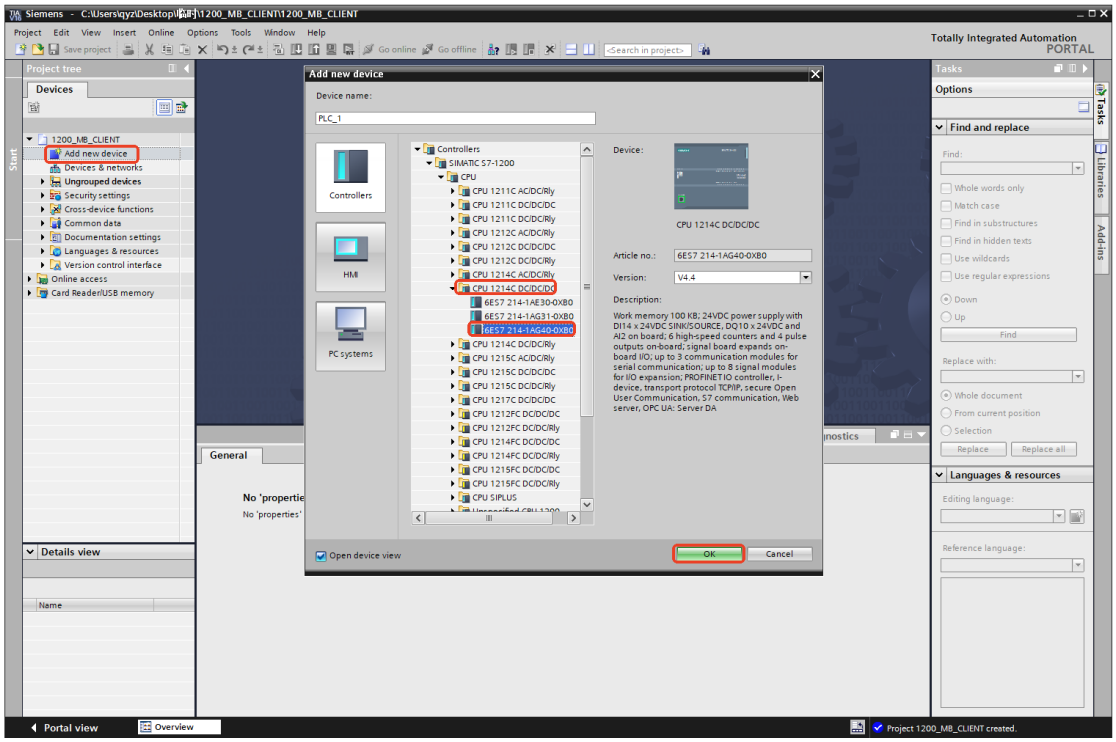
The address area corresponding to CT-121F is:10000~10015,

The address area corresponding to CT-222F is:00000~00015,

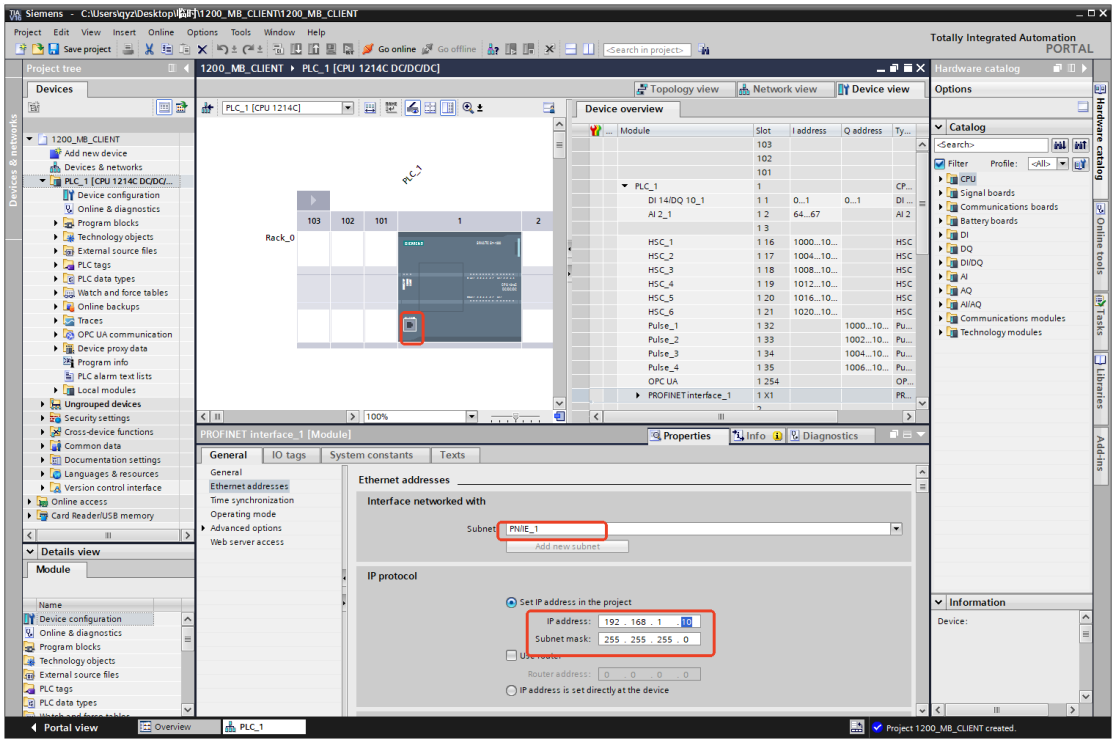
The address area corresponding to CT-3168 is:30000~30007,

The address area corresponding to CT-4154 is:40000~40003,

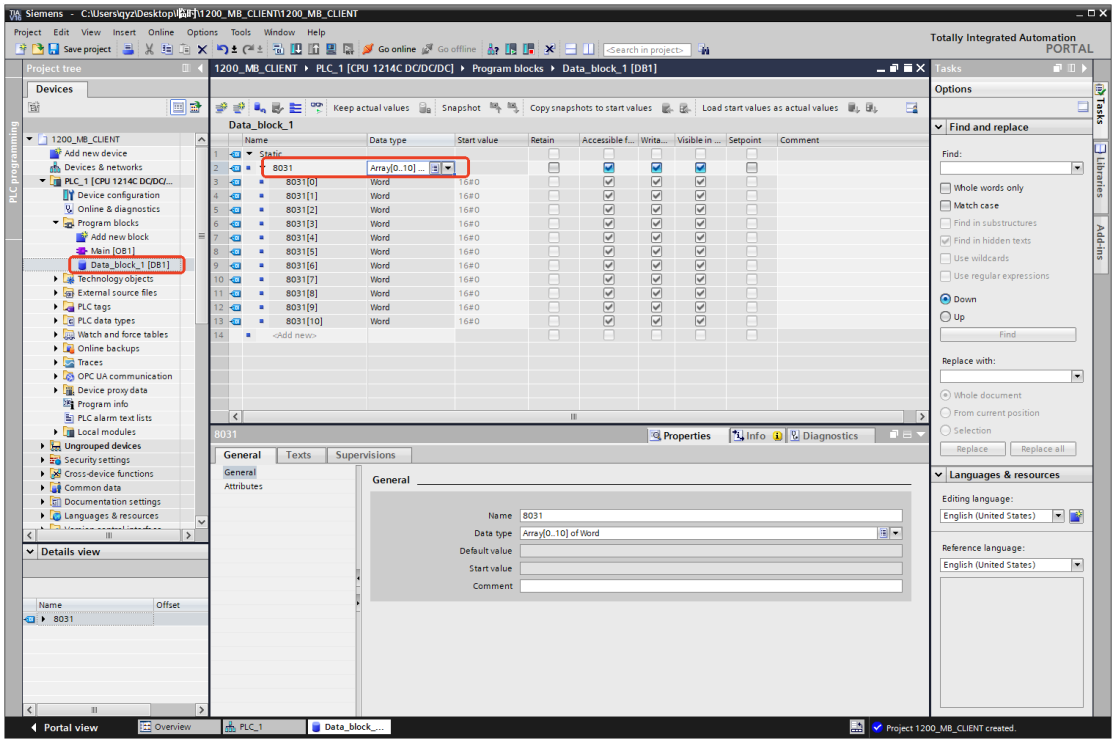
1. Open the TIA software and create a new project 1200_MB_CLIENT.Click Add New Device - Select 6ES7 214-1AG4040-0XB0 - Click OK.

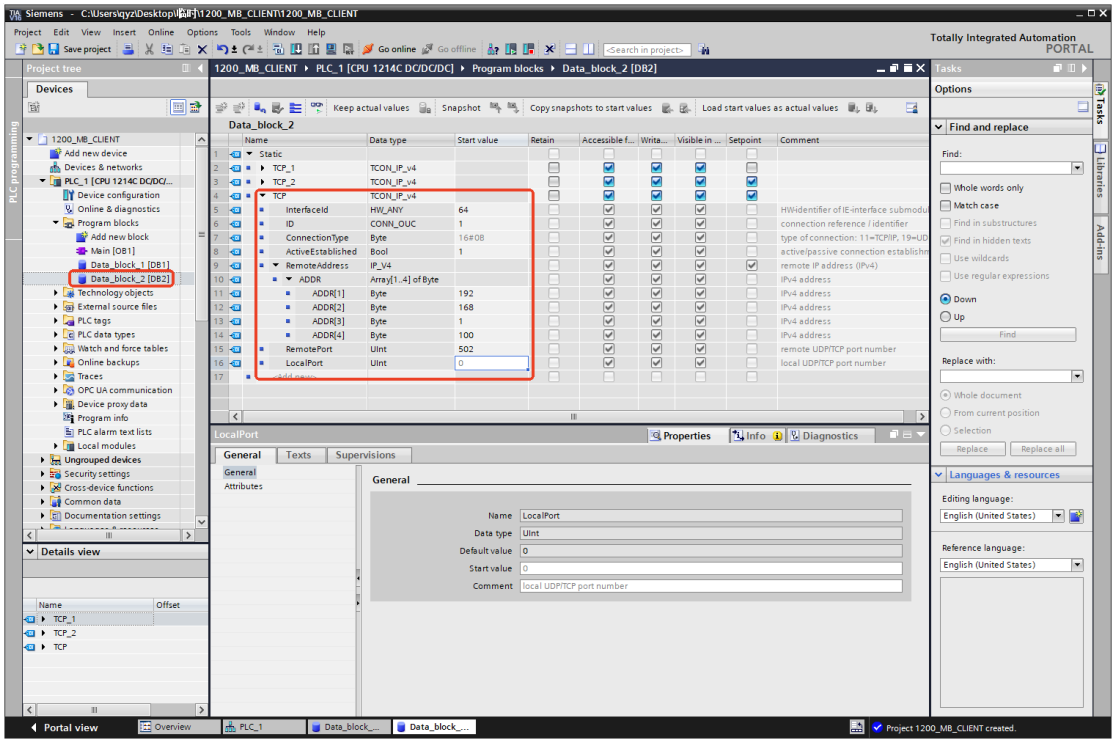



2. Select the PLC network port in the pop-up interface, set the Ethernet address parameters, add a new subnet PN/IE_1, and set the IP address 192.168.1.10 in the project.

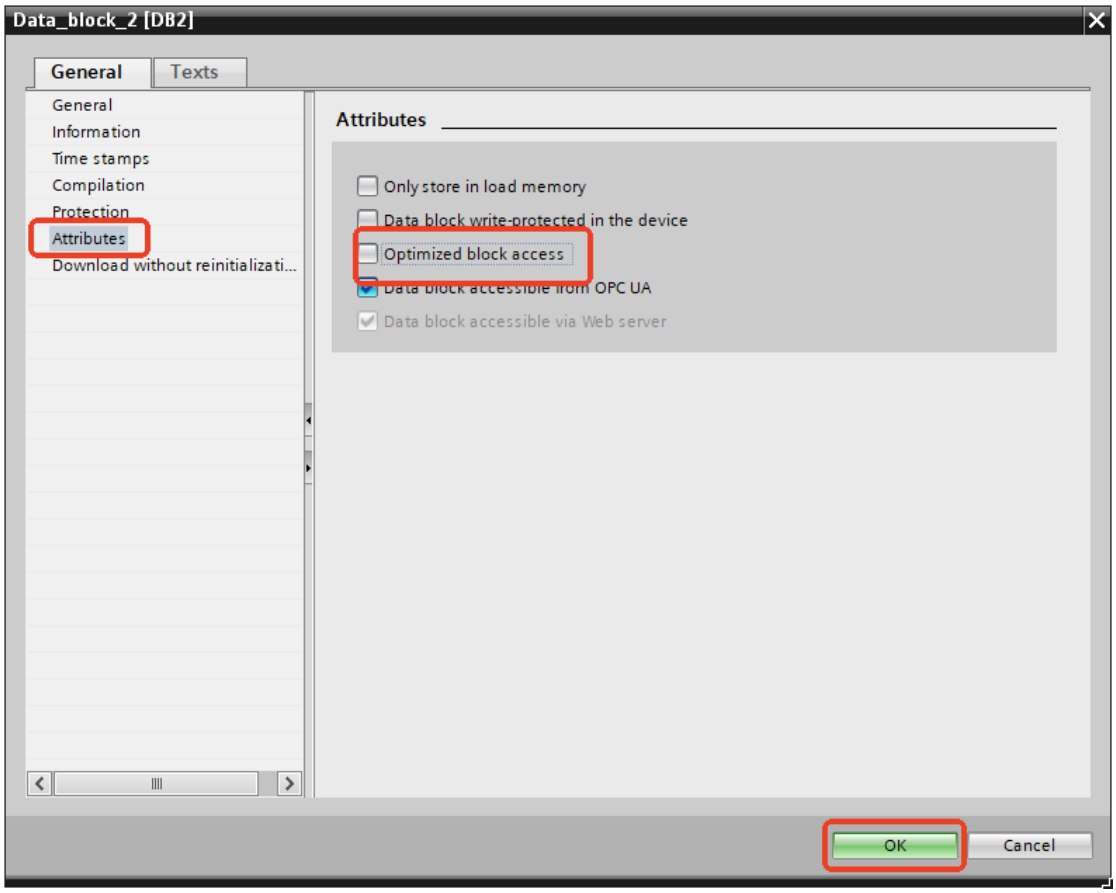



3. Add a new block in the block drop-down menu, and add data blocks DB1 and DB2. DB1 is used to store read and write data, and DB2 is used to establish a connection between S7-1200 and CN-8031 (IP address of CN-8031: 192.168.1.100, configure software configuration).



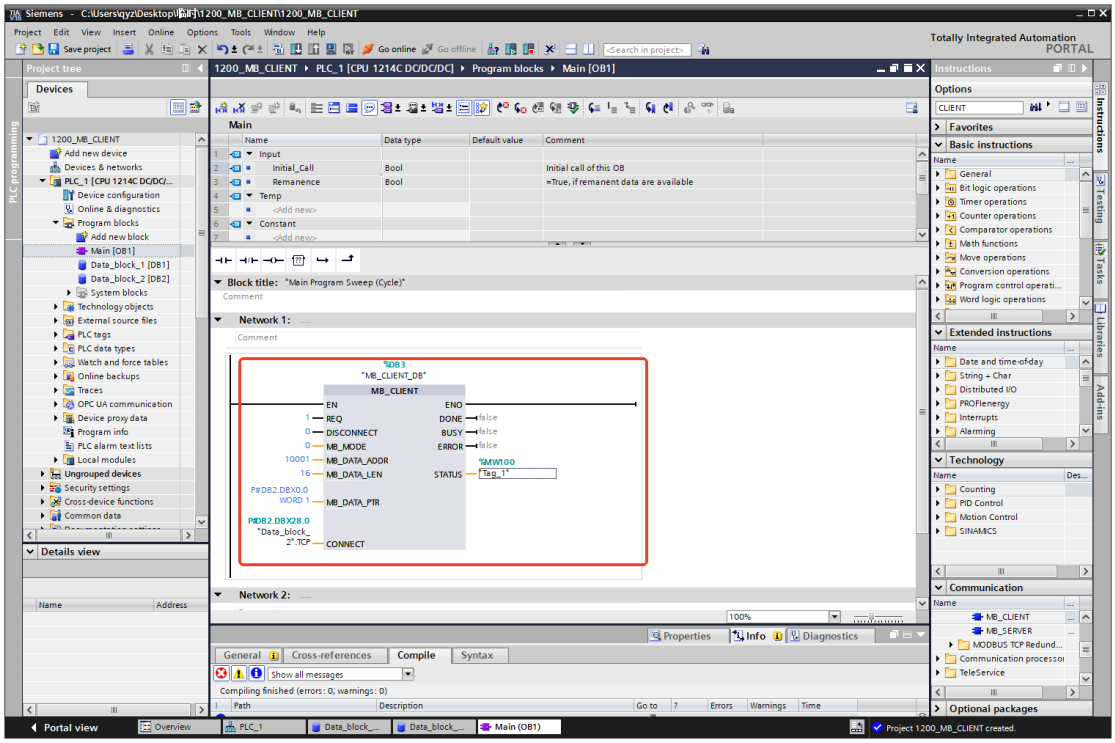


Note: right-click DB1 and DB2 to select the properties, remove the √ before optimized block access.

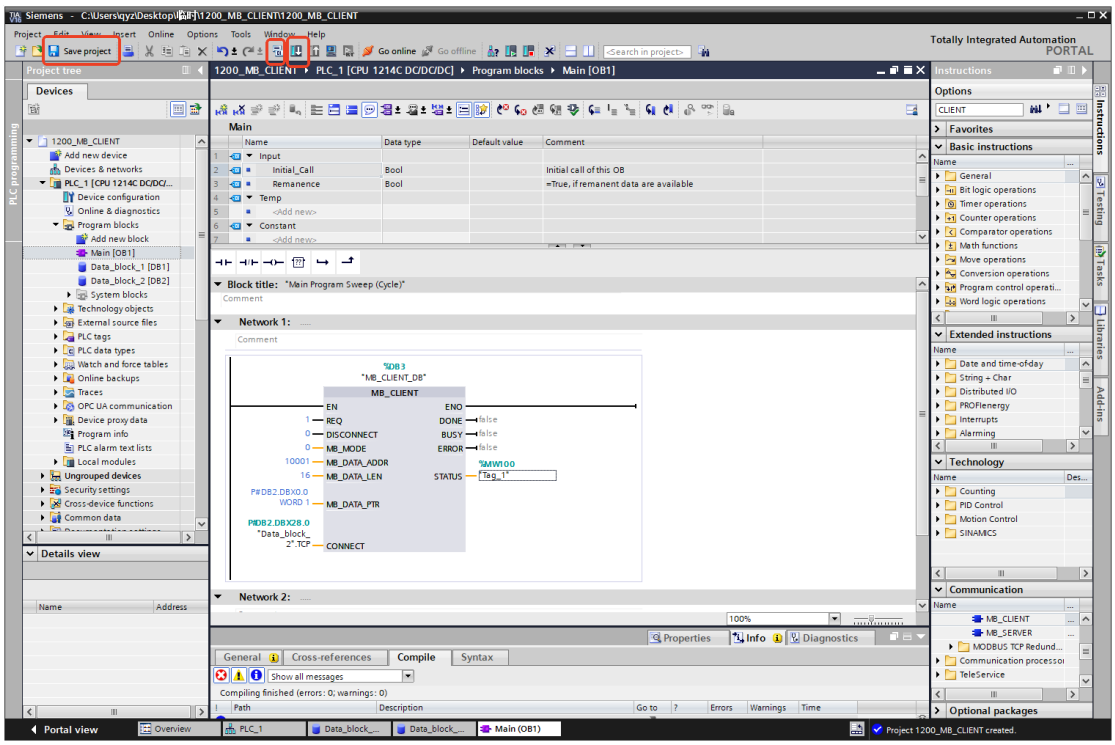



4. In the program block drop-down menu, double-click Mian [OB1], find the

command on the right MB_CLIENT drag it to program section 1. Modify the parameters as shown in the figure.

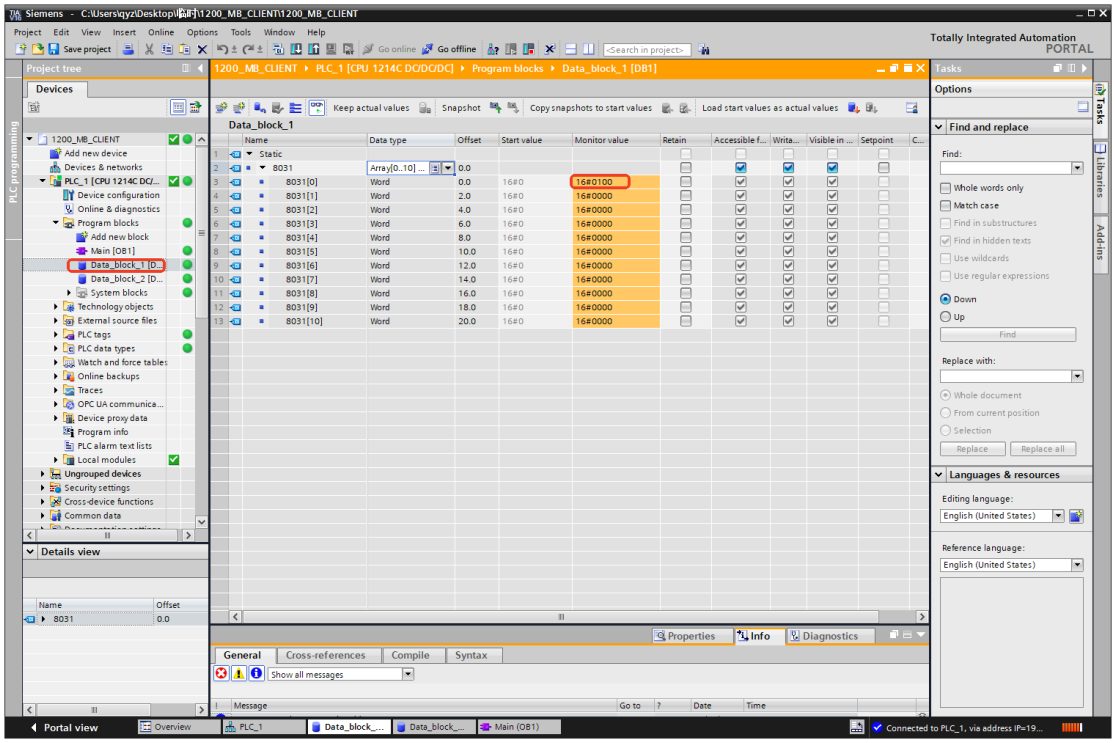



5. After the setting is completed, save, compile and download.

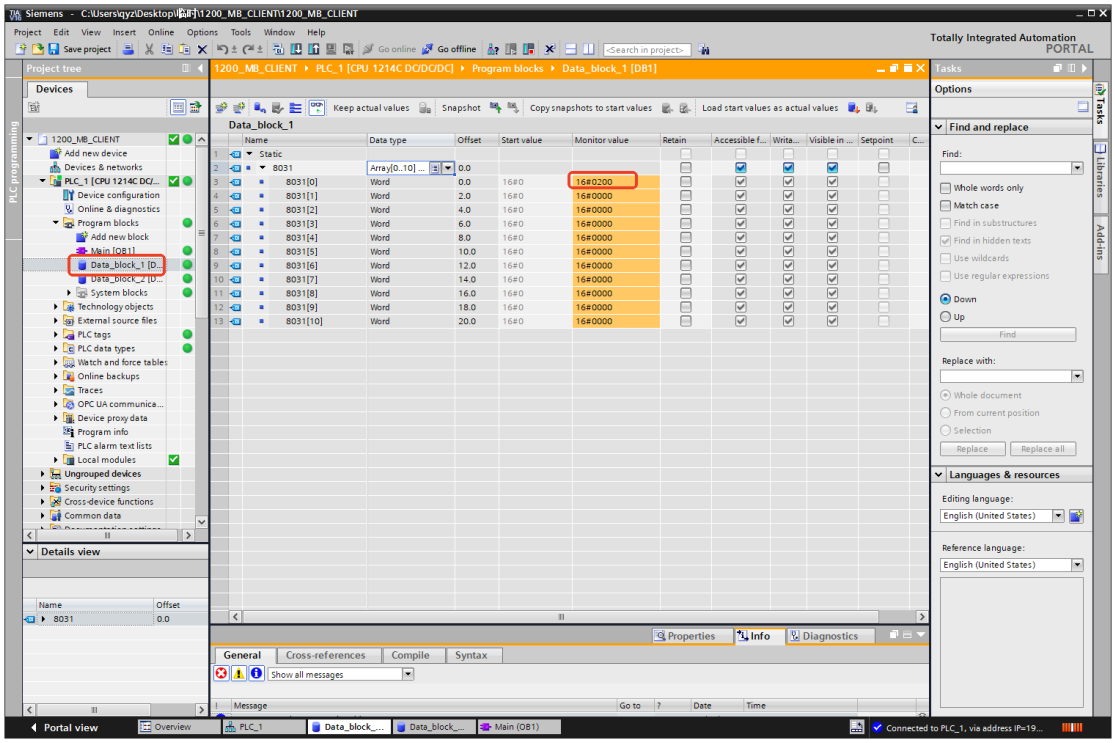



6. Online monitoring of DB1 value. The first input channel of the CT-121F, DI0, is connected to a 24V power supply through an external wiring and the corresponding

value can be monitored on DB1.



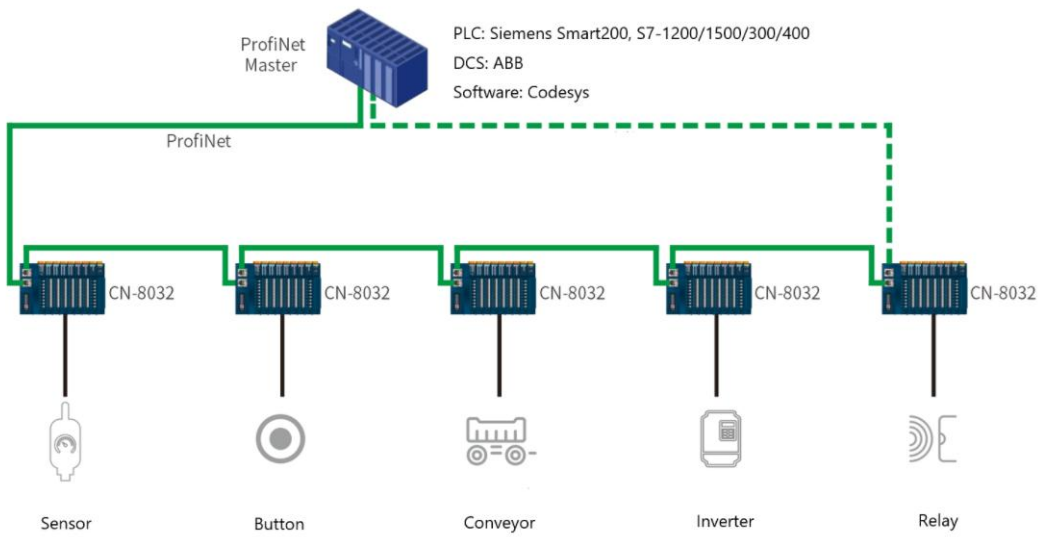
The second input channel of the CT-121F, DI1, is connected to a 24V power supply through an external wiring, and the corresponding value can be monitored on DB1.



# Communication example of the CN-8032-L module

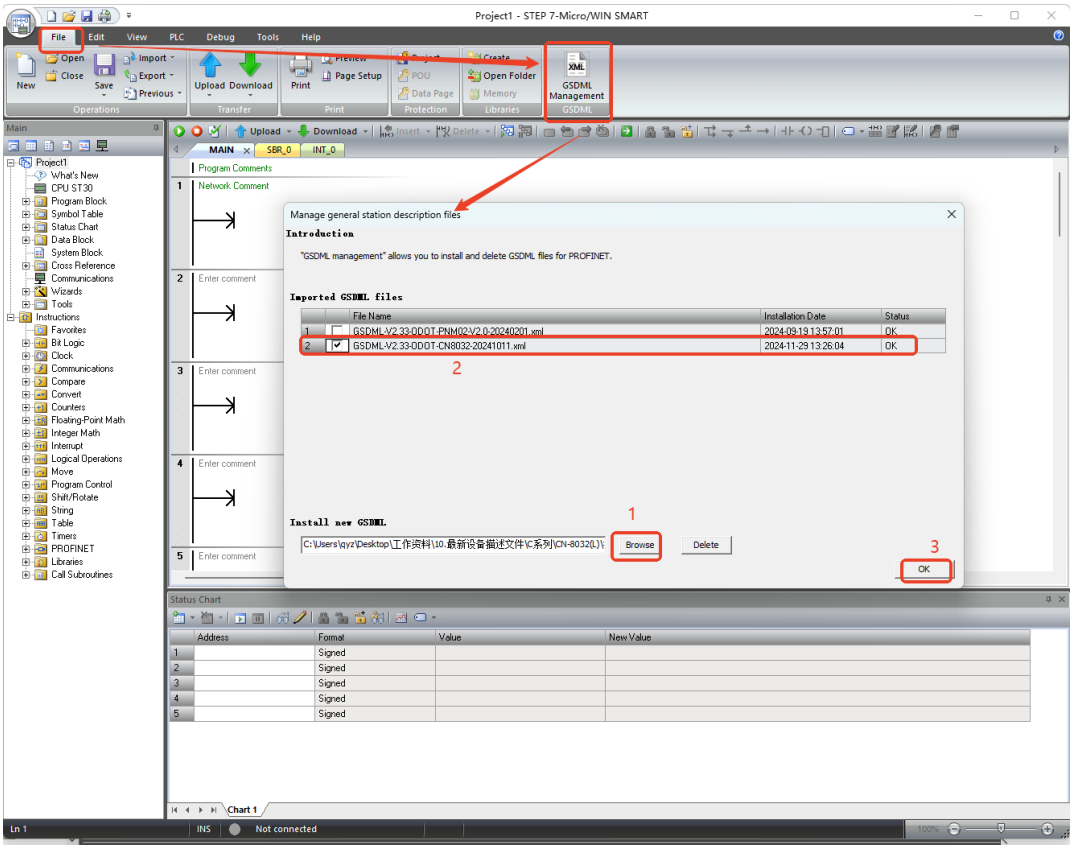
## 1 Topology

**ProfiNet Master Communication topology diagram**

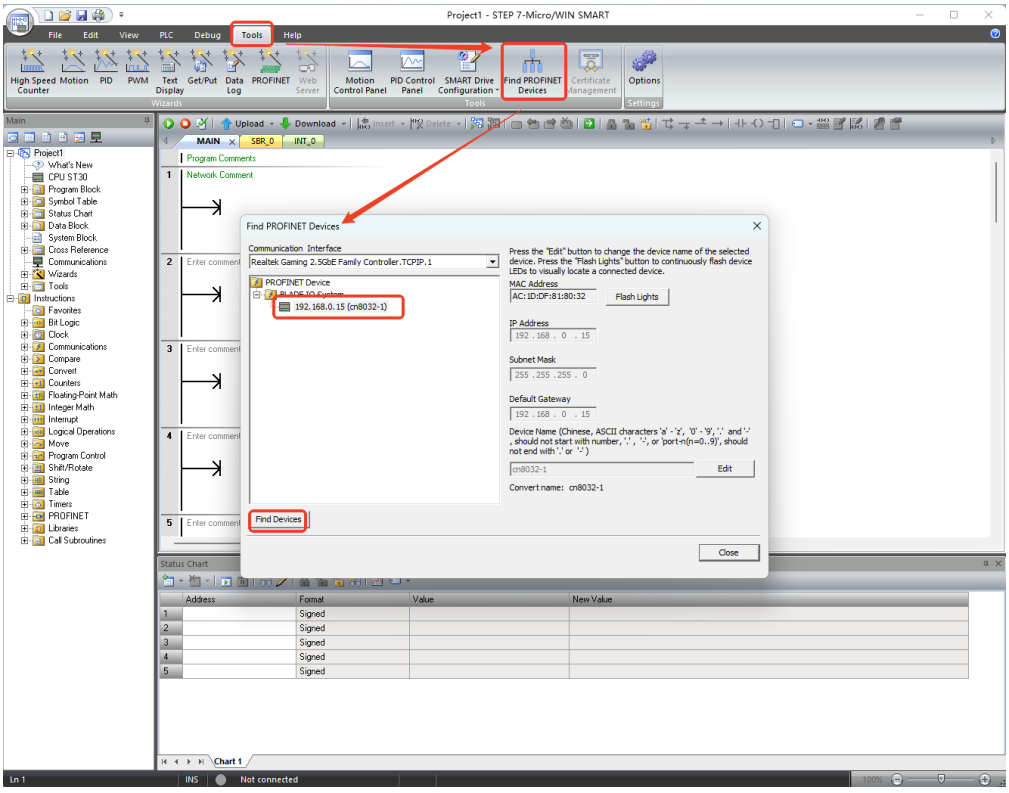



## 2 Example of communication with S7-200SMART（STEP 7-MicroWIN SMART）

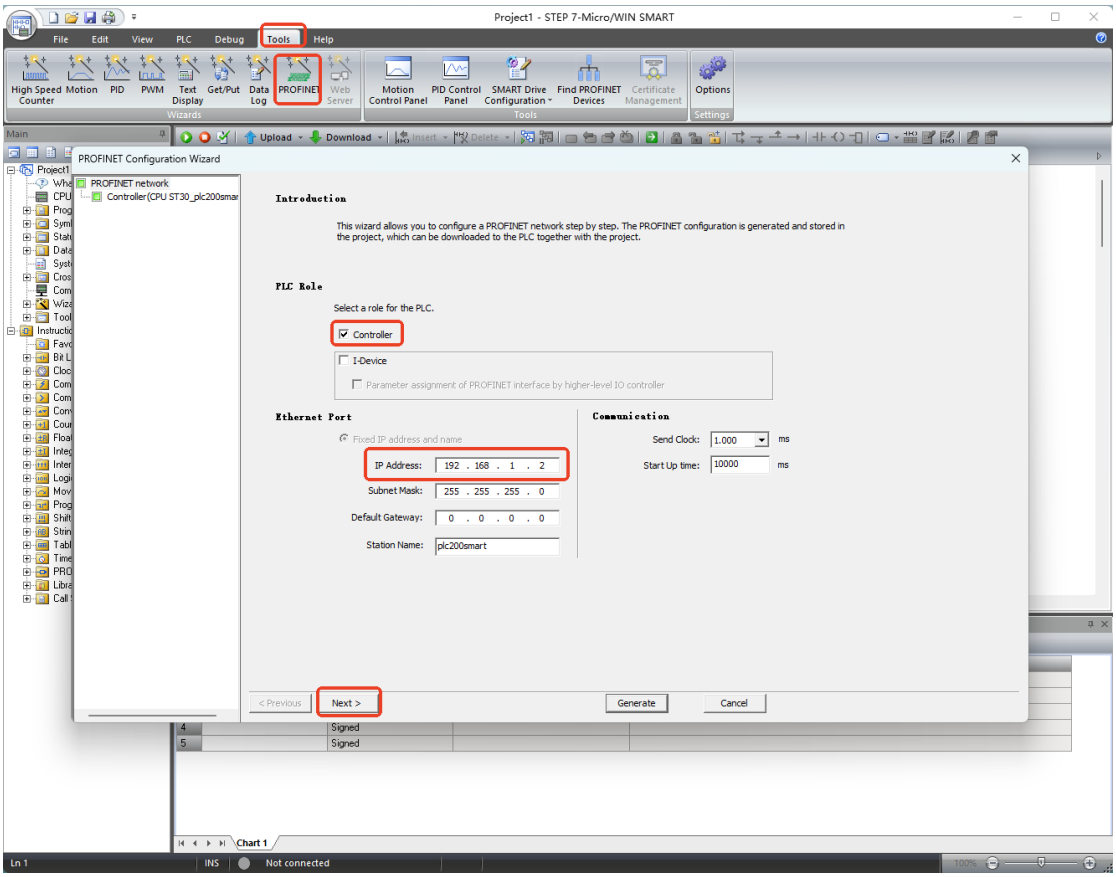
1. Power on the module and S7-200SMART, and connect the network port to the PC. Open Siemens STEP 7-MicroWIN SMART software. Click GSDML Management, in the pop-up window, click Browse to find the GSD file of CN-8032-L, click Open, and complete the installation of the GSD file.



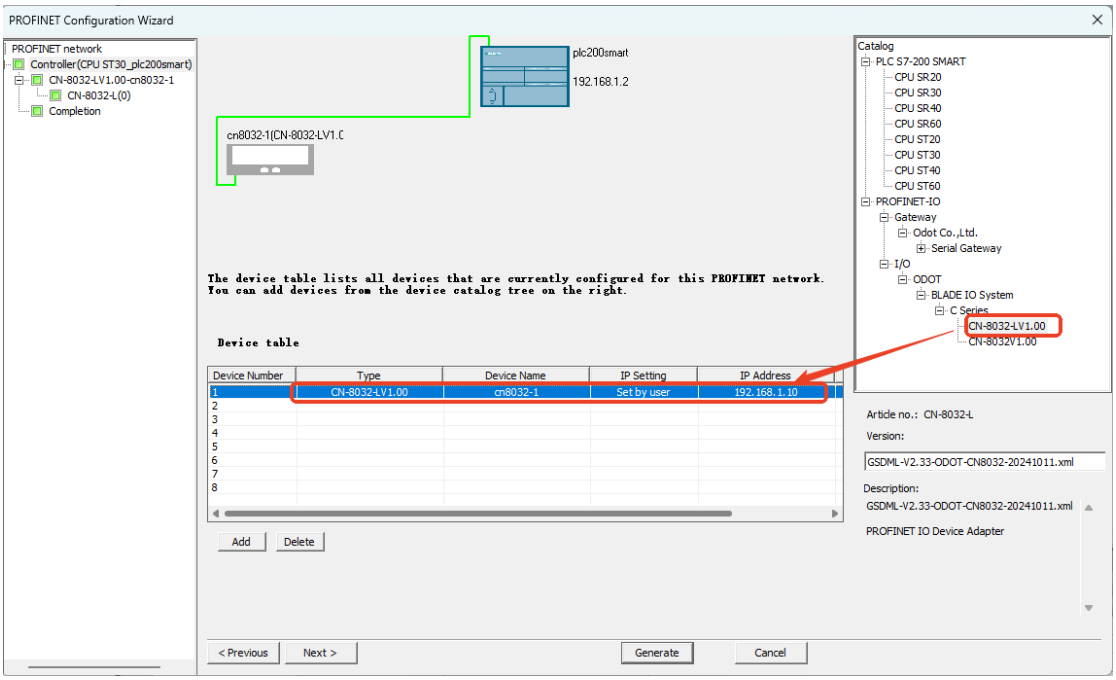

Click Tools-- Find PROFINET Device, click Find Devices, and the module device name is cn8032-1. (The name of the device needs to be the same as this name when configuring)



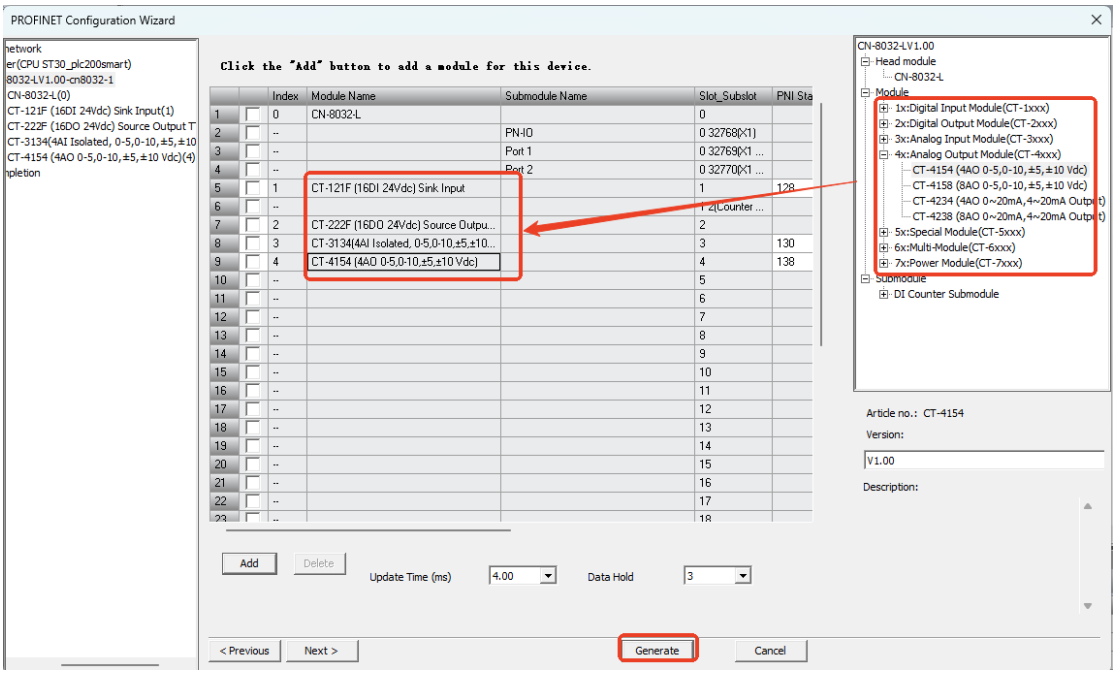
Click on Tools, click on PROFINET. Select the controller, modify the IP address of the PLC, and click Next.



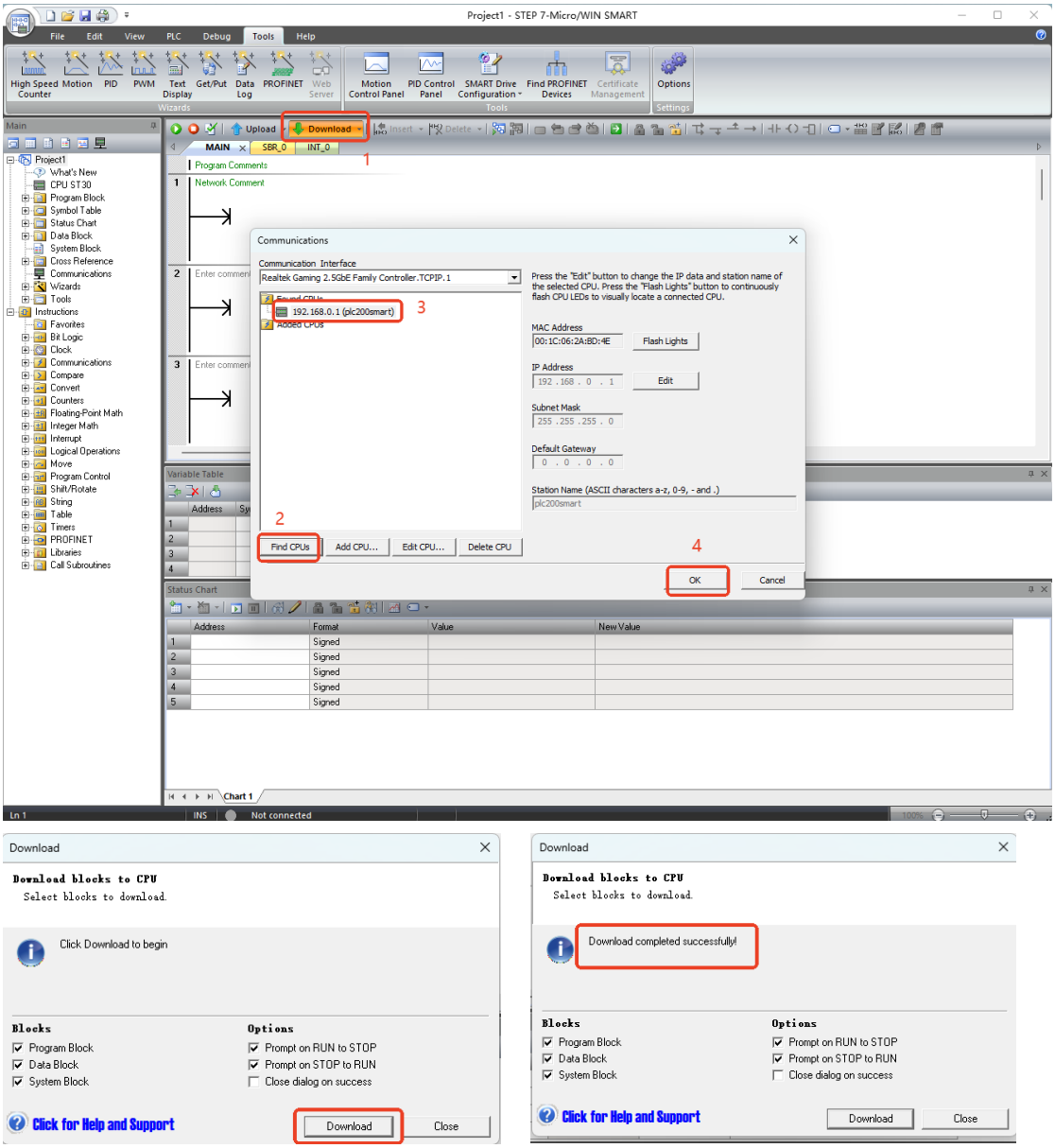

Find CN-8032-L in the hardware directory, add it to the device list, change the device name to cn8032-1 (key communication parameters), and assign the IP address to module 192.168.1.10. Click Next.



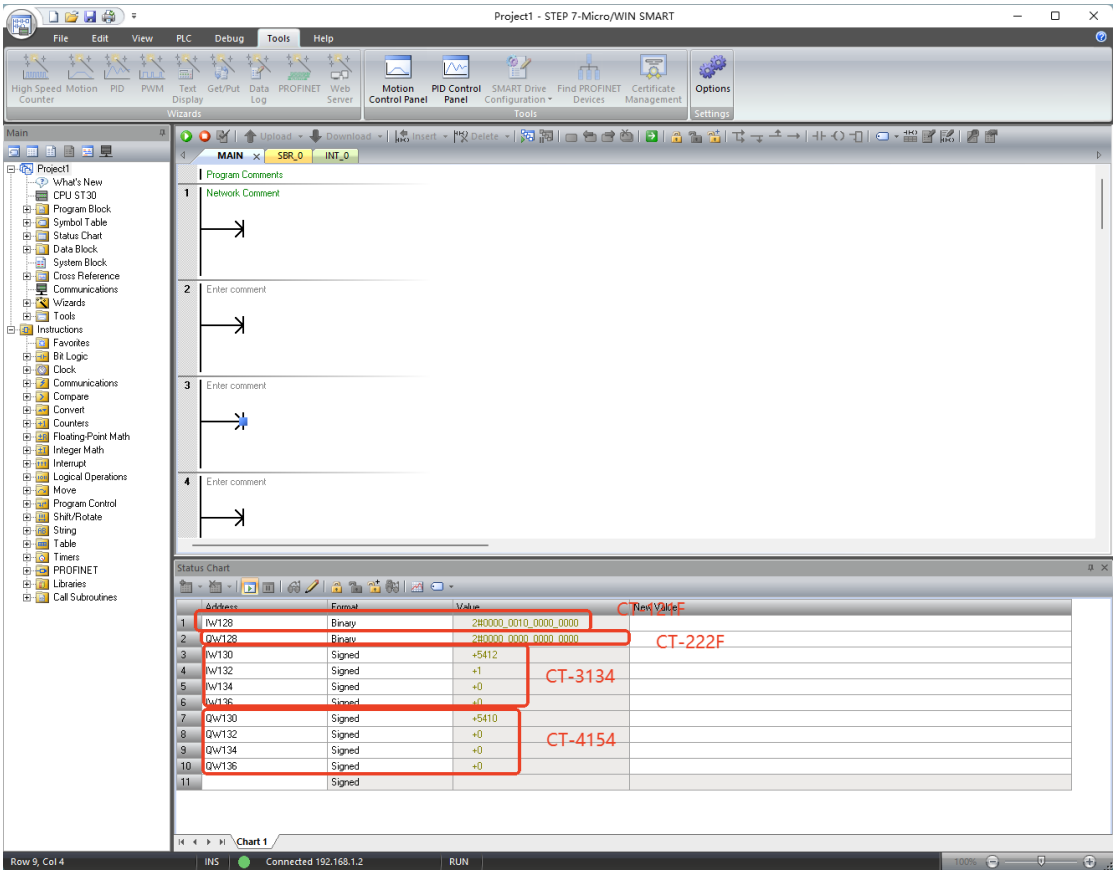

Configure the IO modules according to the model of the IO modules hung behind CN-8032-L. Click Generate.




Click Download, find the PLC in the pop-up window, click OK, click Download.

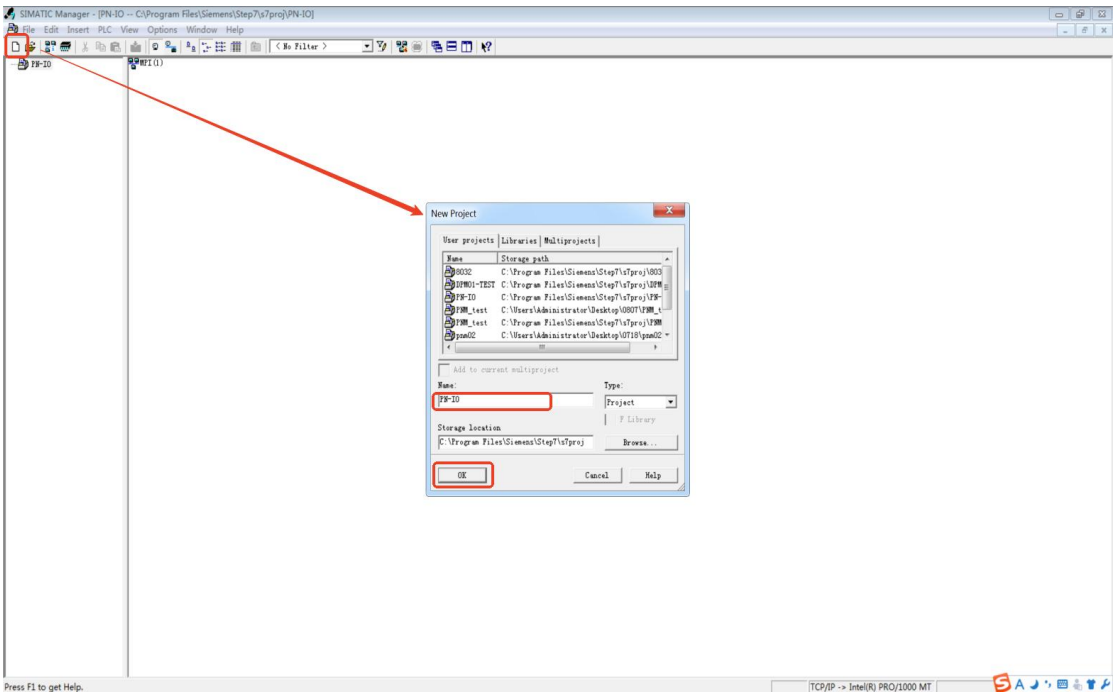


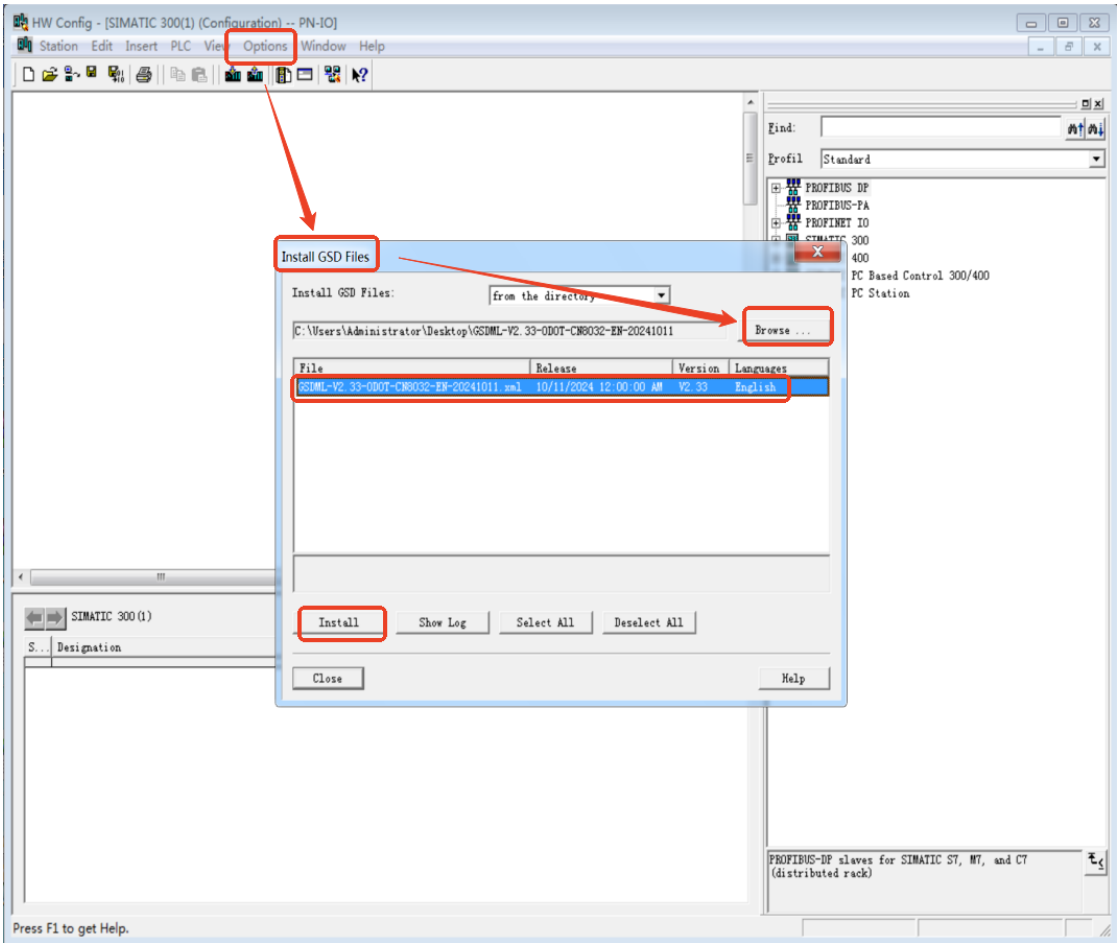

After the download is successful, open the status chart and monitor the channel value of the I/O module.


Project1 - STEP 7-Micro/WIN SMART
CT-222F
CT-3134
CT-4154

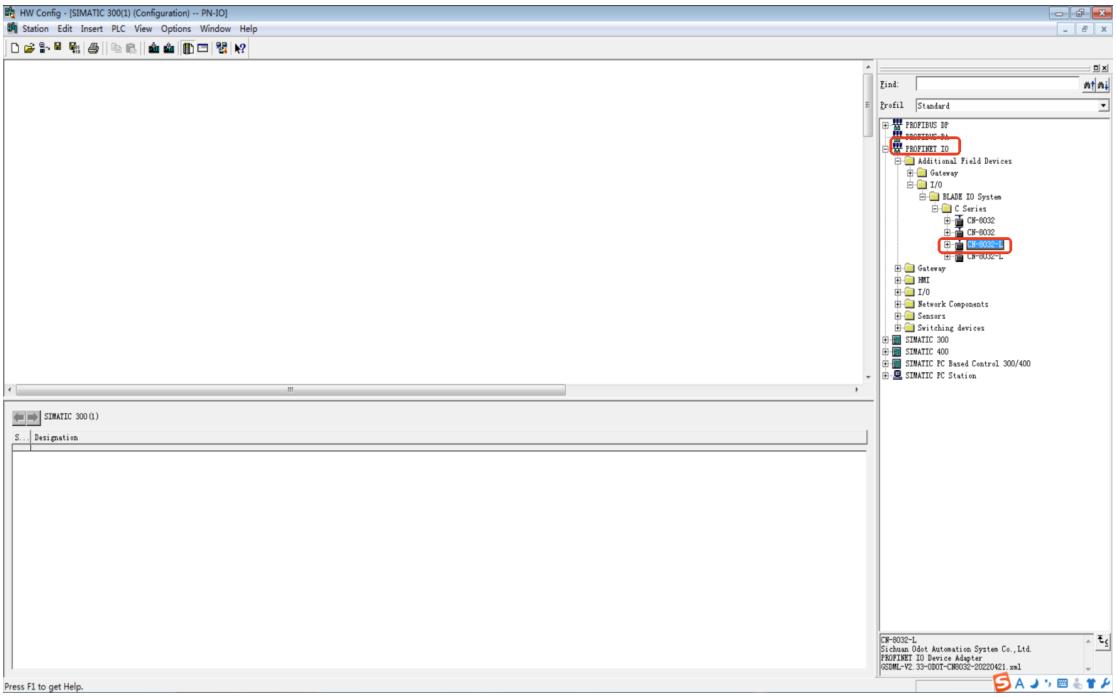
# 3 Example of communication between the Siemens S7-300 (STEP 7) and the module

1. Power on the module and S7-315 2 PN/DP, and connect the network cable to the PC. Open the Siemens STEP 7 software. New project "PN-IO". Insert New Object"——"SIMATIC 300 Station" —— double-click Hardware to open the hardware configuration page. Click "Options" - "Install GSD File", find the location of the GSD file of CN-8032-L in the pop-up interface, select and click "Install".



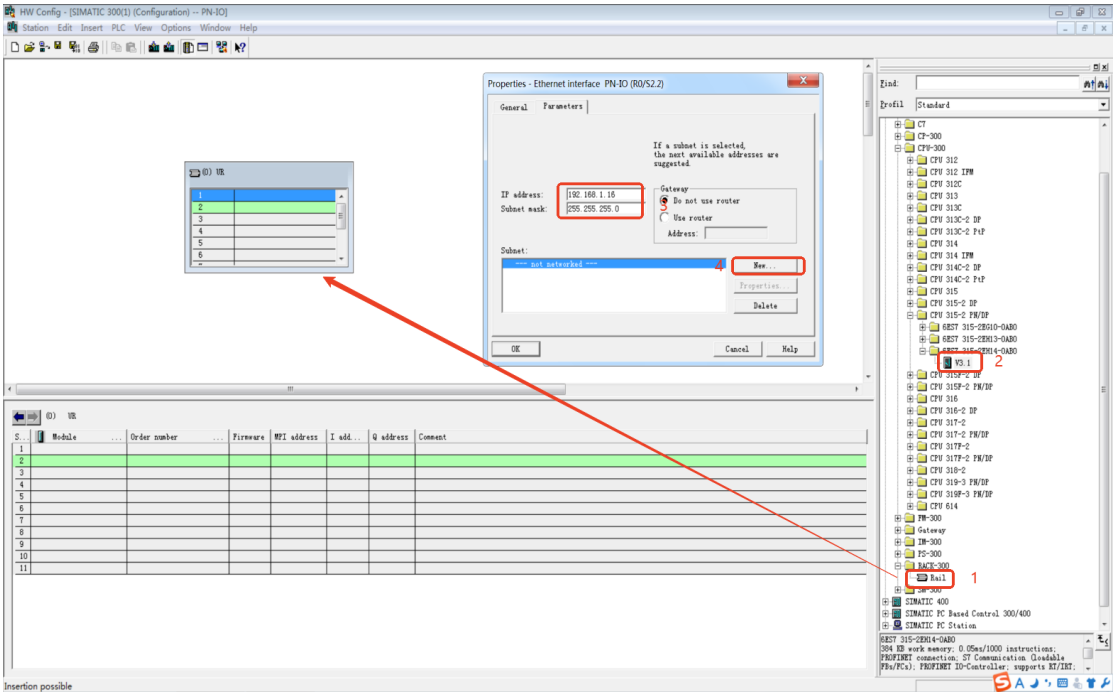


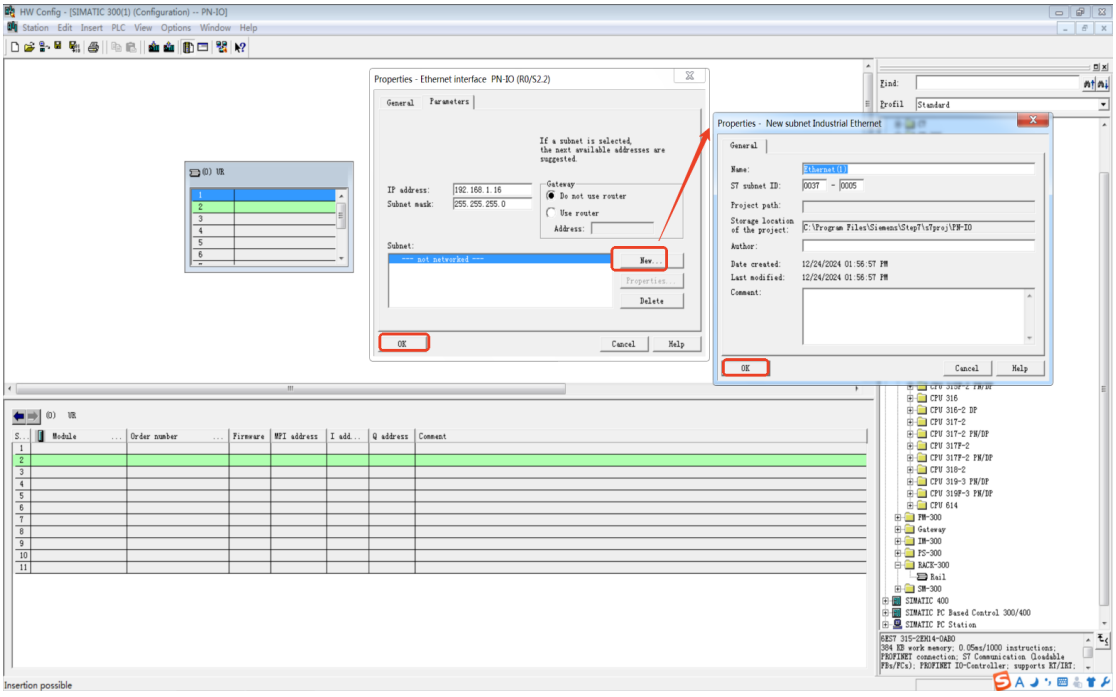

2. After the installation is completed, it can find the CN-8032-L in the Profinet IO drop-down menu on the right side of the directory.



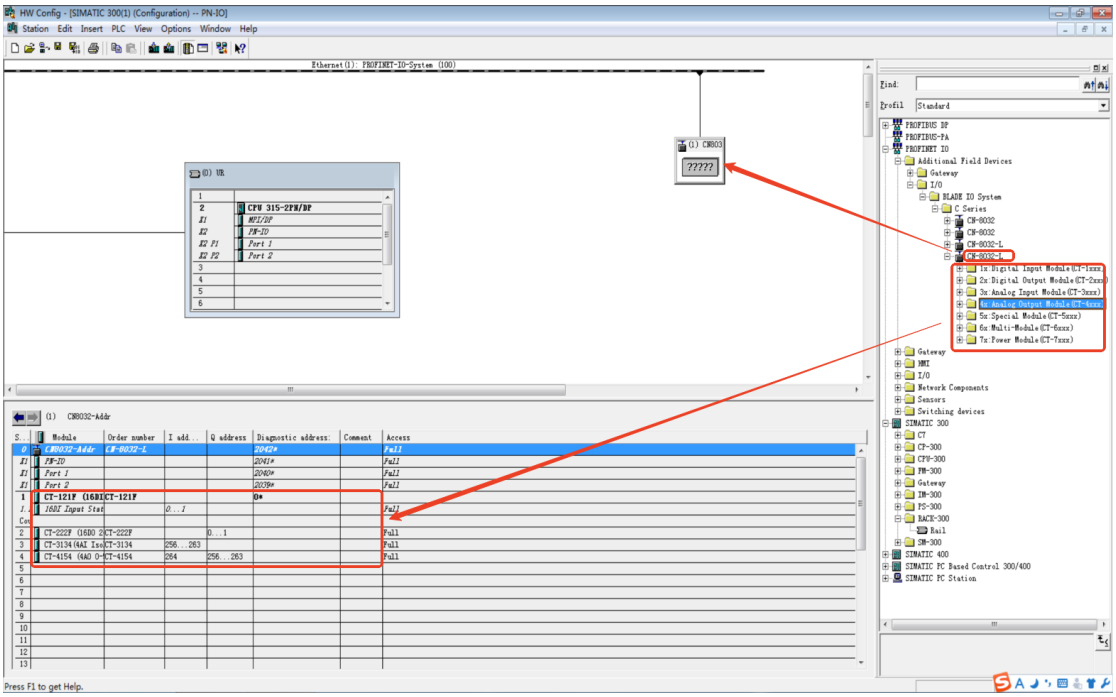
3. Drag the backplane "rail" - drag "S7-315 2 PN/DP V3.1" to the left side, configure

the network port parameters, IP address: 192.168.1.16. Click "New", "OK", "OK".

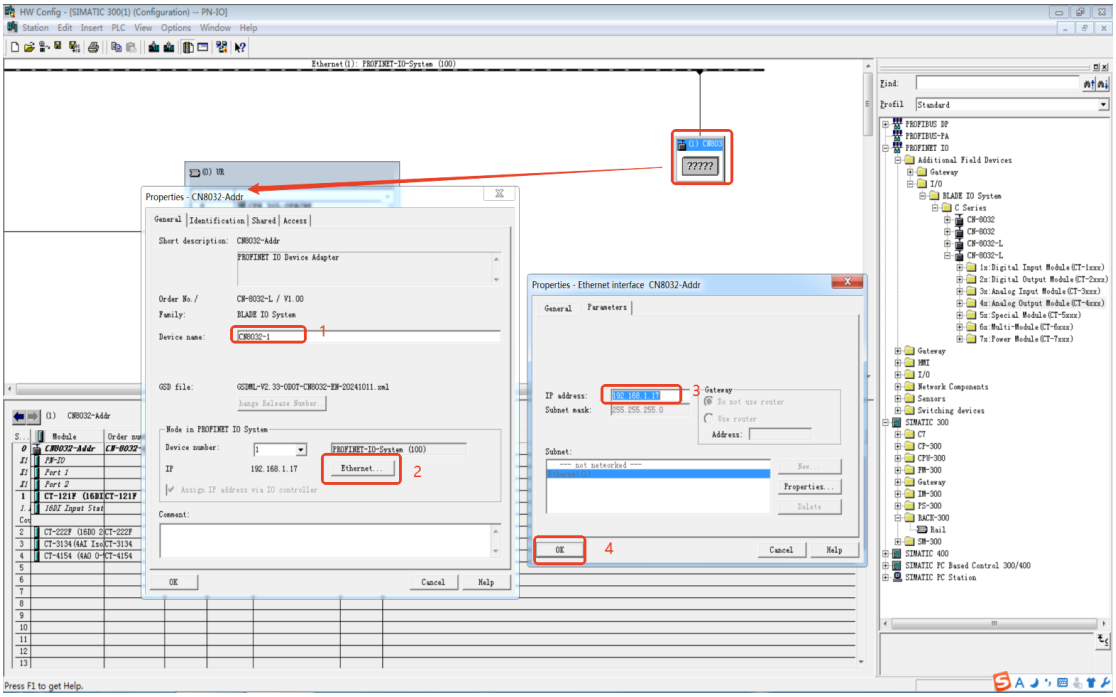


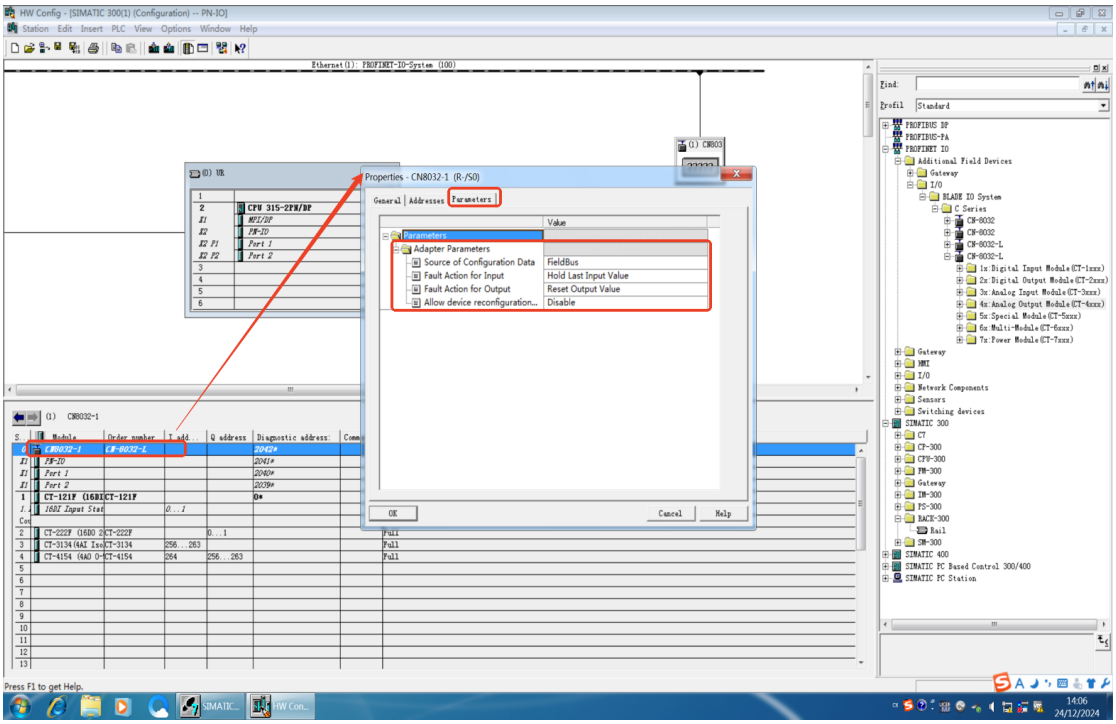

4. Drag and drop the CN-8032-L from the hardware catalog to the Profinet-IO-System bus system. Manually add an extended I/O module based on the model of the I/O module attached to the right side of the module (or upload the I/O module based on the IO Config software and manually add an extended I/O module).



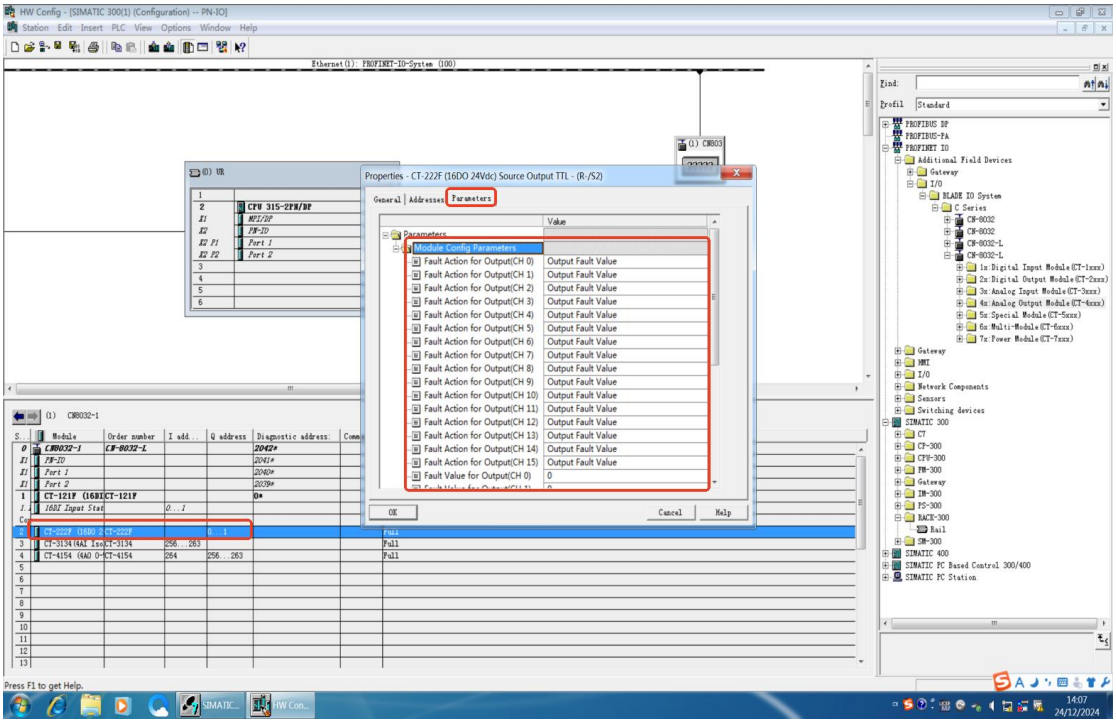
5. Double-click CN-8032-L, change the device name to CN8032-1 (device name setting), click Ethernet, and manually assign the IP address: 192.168.1.17. Click OK.



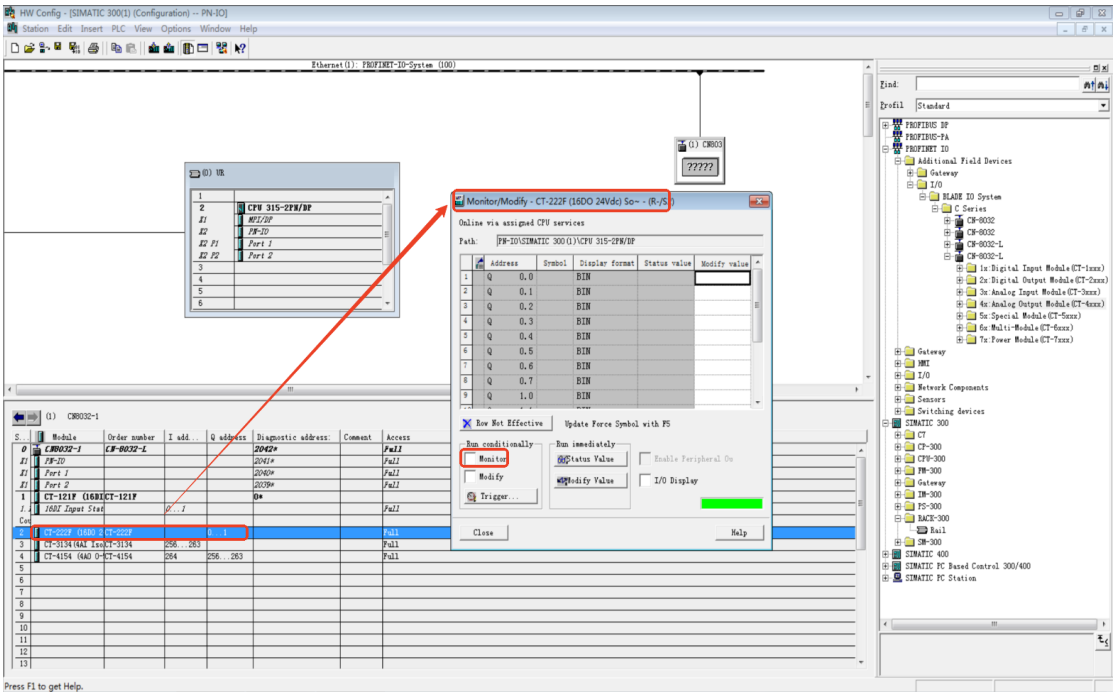
Double-click the CN8032-1 in slot 0 to view and modify the module parameters.




6. Double-click the extended IO module CT-121F, CT-222F, CT-3134, CT-4154, and modify the parameters according to the actual needs.

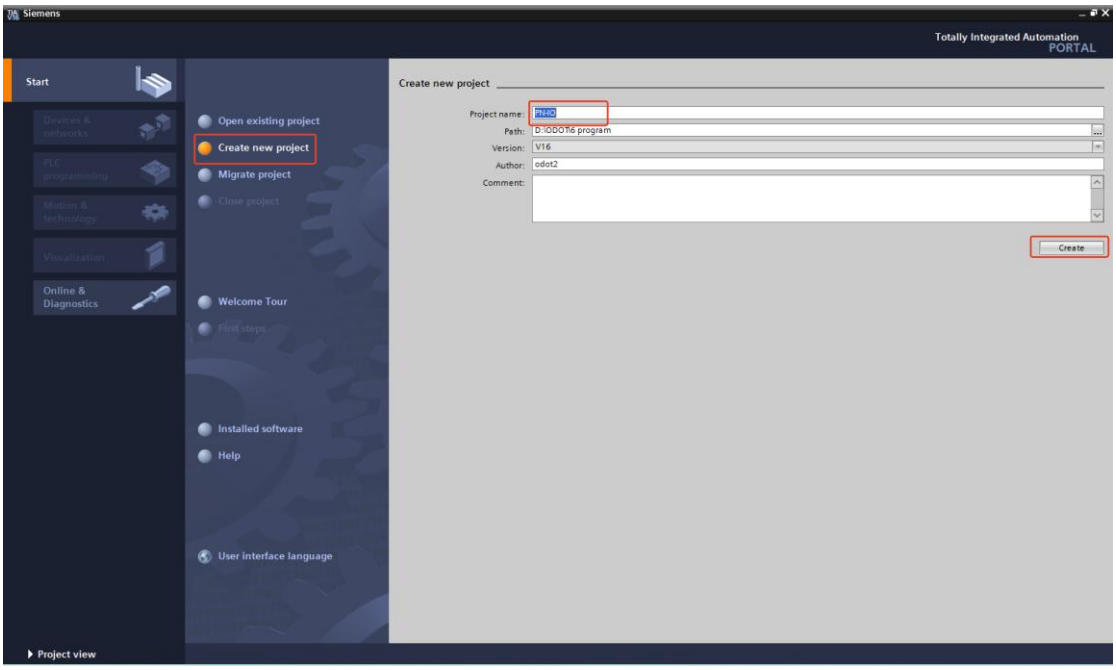



7. Save, compile and download after the configuration is completed. Right-click to monitor the input and output module online, and the following figure shows the monitoring interface of the CT-222F input module.

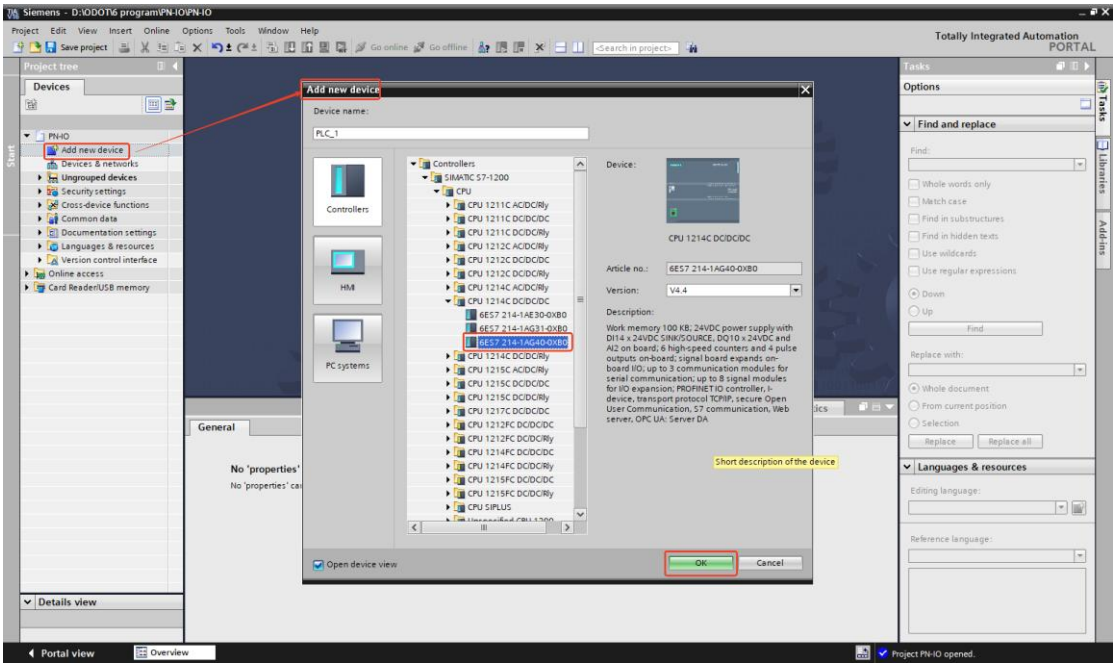

HW Config - [SIMATIC 300(1) (Configuration) -- PN-IO]
Station Edit Insert PLC View Options Window Help
Ethernet(1): PROFINET-IO-System (100)
CPU 315-2PN/DP
MPI/DP
PN-IO
Port 1
Port 2
Monitor/Modify - CT-222F (16DO 24Vdc So~ - (R-/S
Online via assigned CPU services
Path: PN-IO\SIMATIC 300(1)\CPU 315-2PN/DP
Address Symbol Display format Status value Modify value
Row Not Effective
Update Force Symbol with PG
Run conditionally
Monitor
Modify
Trigger...
Run immediately
Status Value
Modify Value
Enable Peripheral Ou
I/O Display
Close
Help
PROFIBUS DP
PROFIBUS-PA
PROFINET IO
Additional Field Devices
Gateway
I/O
BLADE IO System
C Series
CM-8032
CM-8032-L
Gateway
HMI
I/O
Network Components
Sensors
Switching devices
SIMATIC 300
CT
CP-300
CPU-300
FM-300
Gateway
IM-300
PS-300
RACK-300
Rail
SM-300
SIMATIC 400
SIMATIC PC Based Control 300/400
SIMATIC PC Station
Press F1 to get Help.

# 4 Example of communication between Siemens S7-1200 (TIA V16) and CN-8032-L

1.Power on the S7-1214C DC/DC/DC and CN-8032-L, and connect the network cable to the PC, then open the Siemens TIA V16 software, create new project "PN-IO".

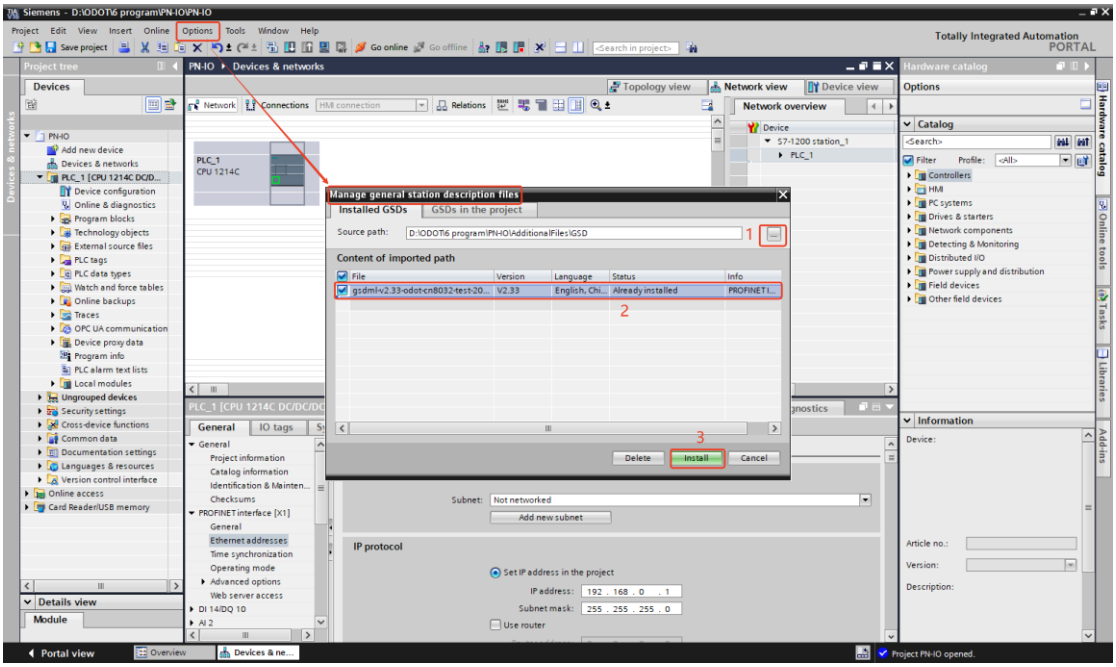


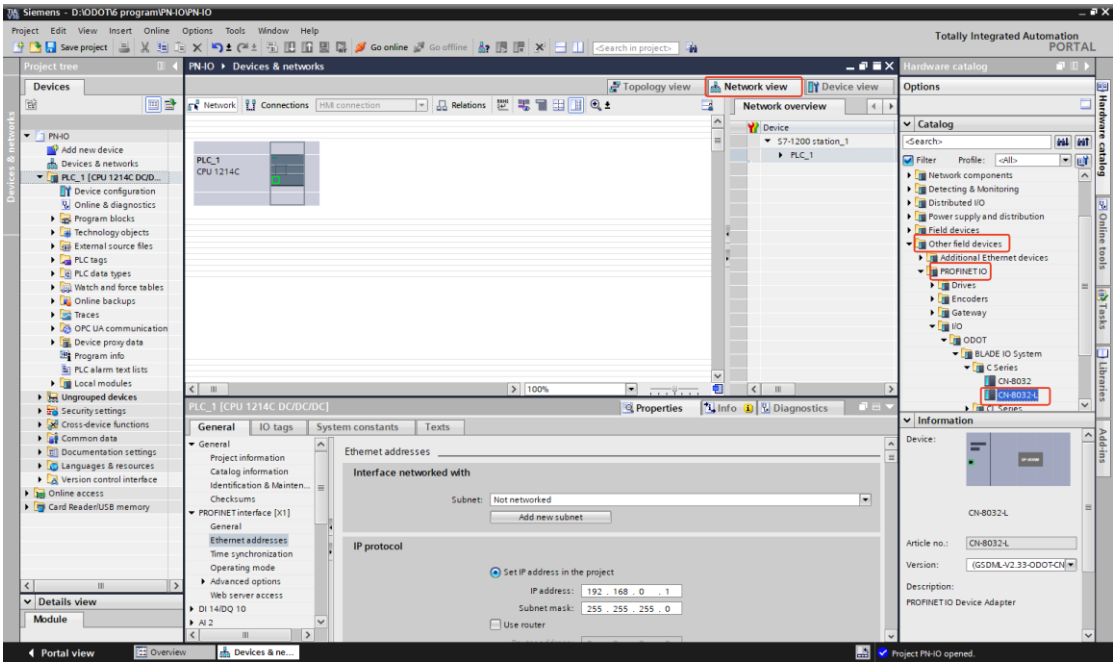

2.Go to the project view, in the Equipment bar of the Project Tree, click the ‘add new device’, add the PLC S7-1214C DC/DC/DC, then click OK.



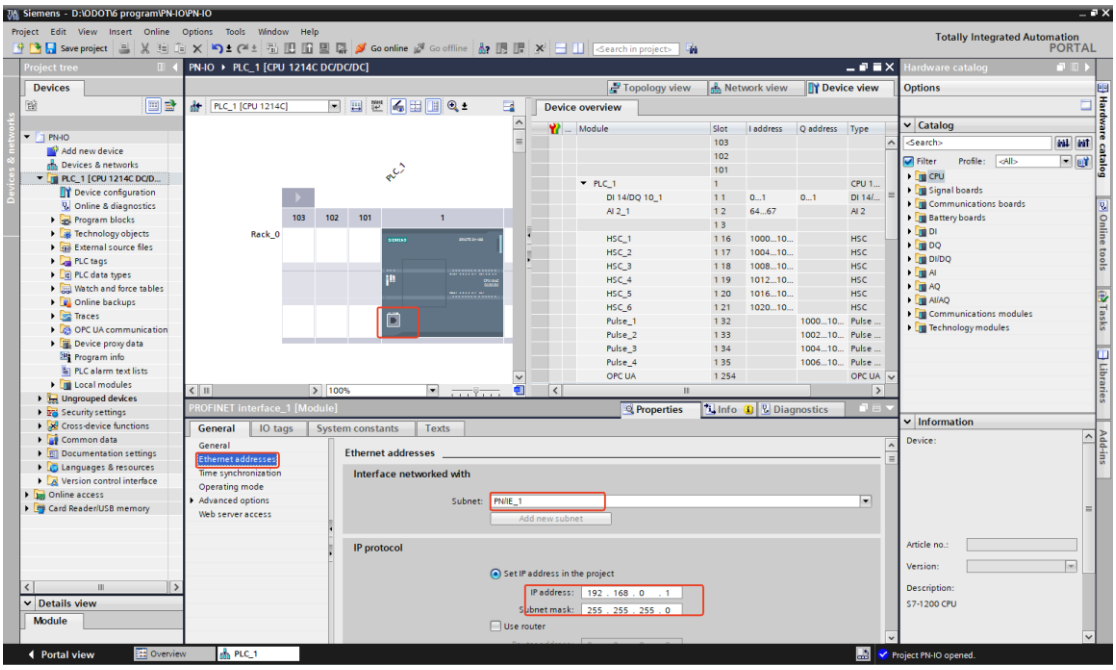

3. Click ‘Options’——'Manage general station description files (GSD)’, In the pop-up

interface, find the GSD file location of CN8032-L, select the GSD file and click Install, and after the installation is complete, the hardware directory will be automatically updated.

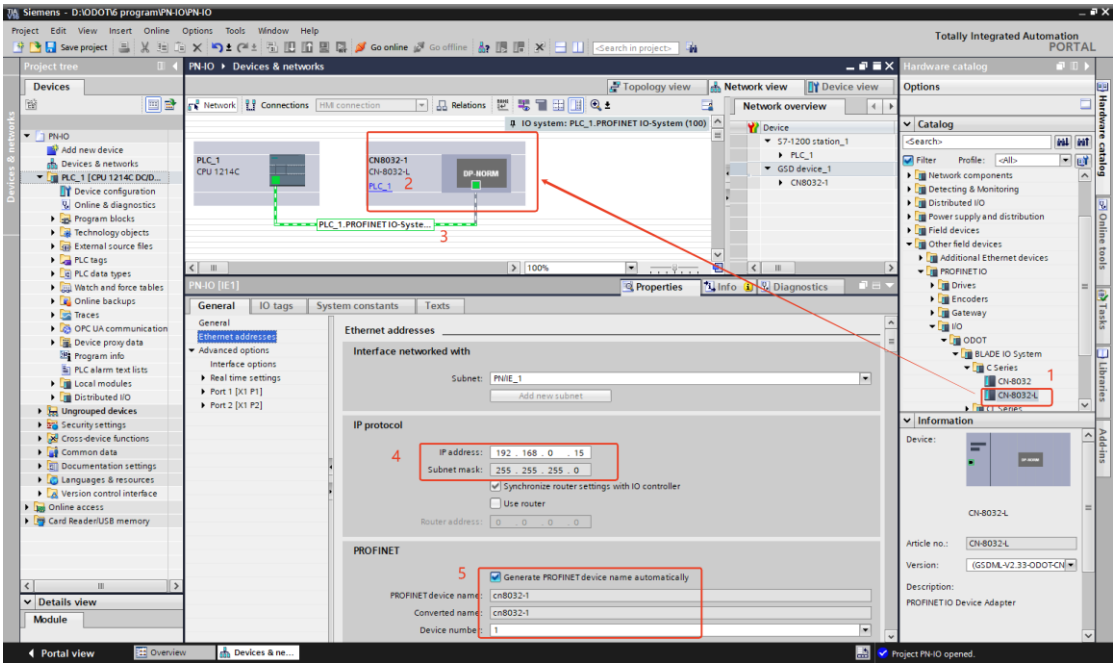


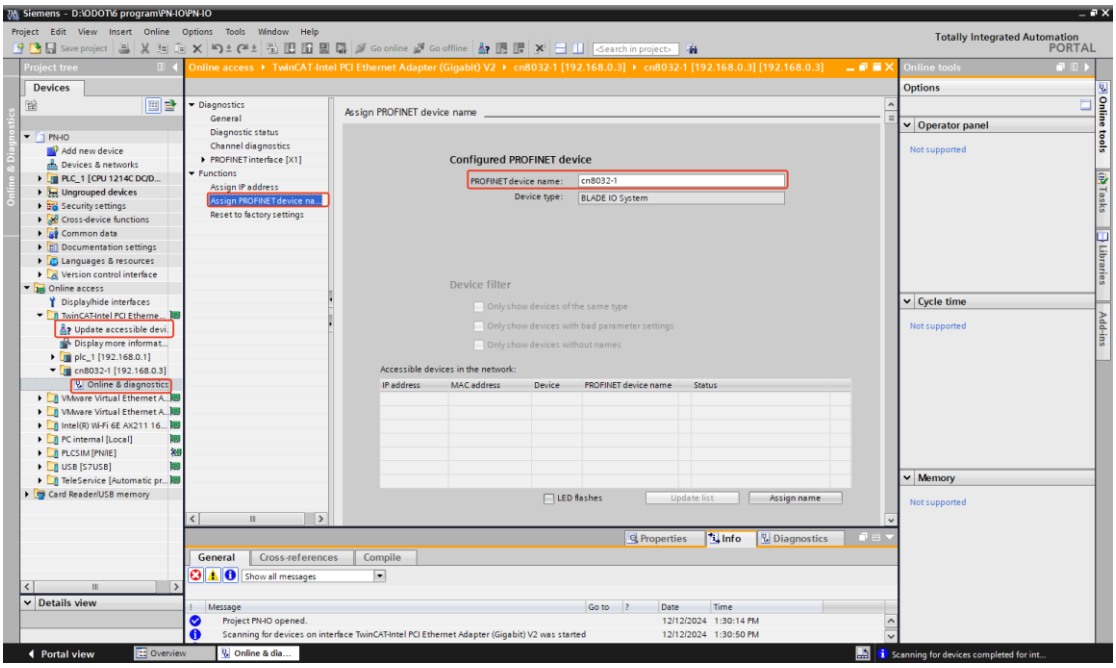
4. In the device view, select the PLC network port and set the network port parameters.



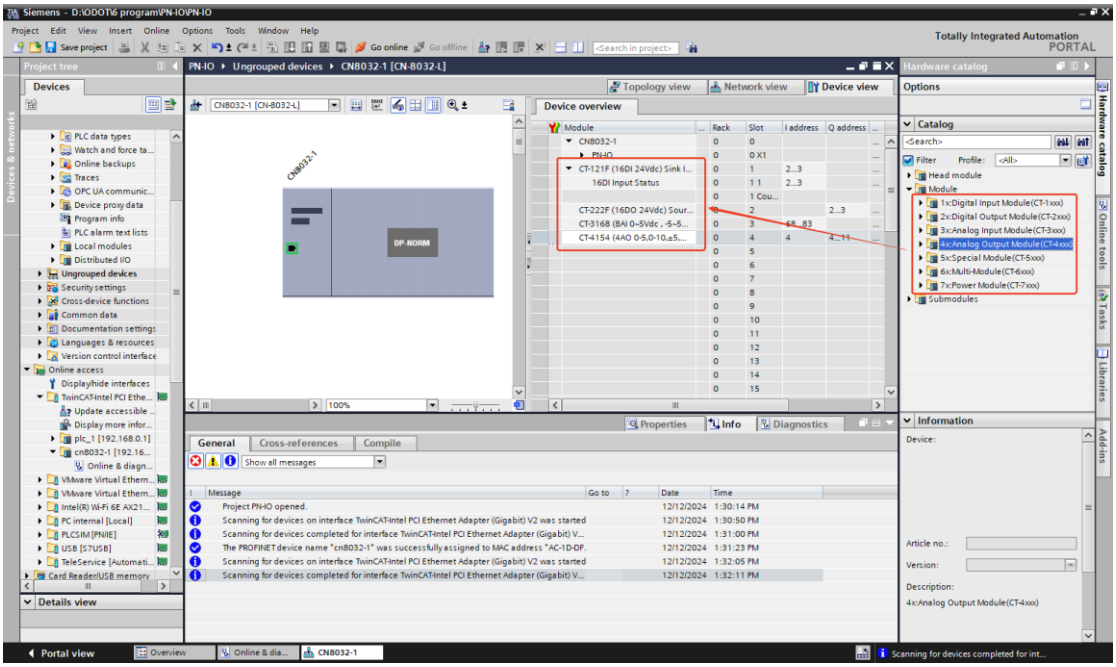
5. In the network view, first drag and drop the CN8032-L module into the network view, and then assign the network interface to “PLC_1. PROFINET IO-System”, click the network port to modify the Ethernet parameters, it can assign the IP address of the module (192.168.1.15), and the PROFINET device name of the module is cn8032-1.



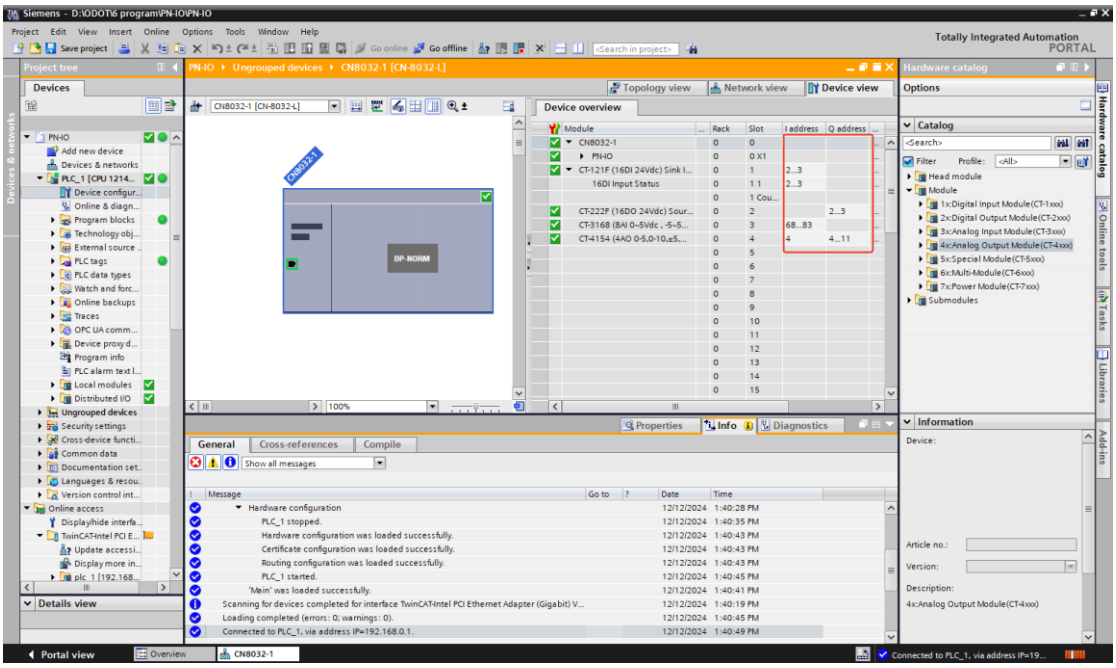
Note: The configuration name must be the same as the device name.



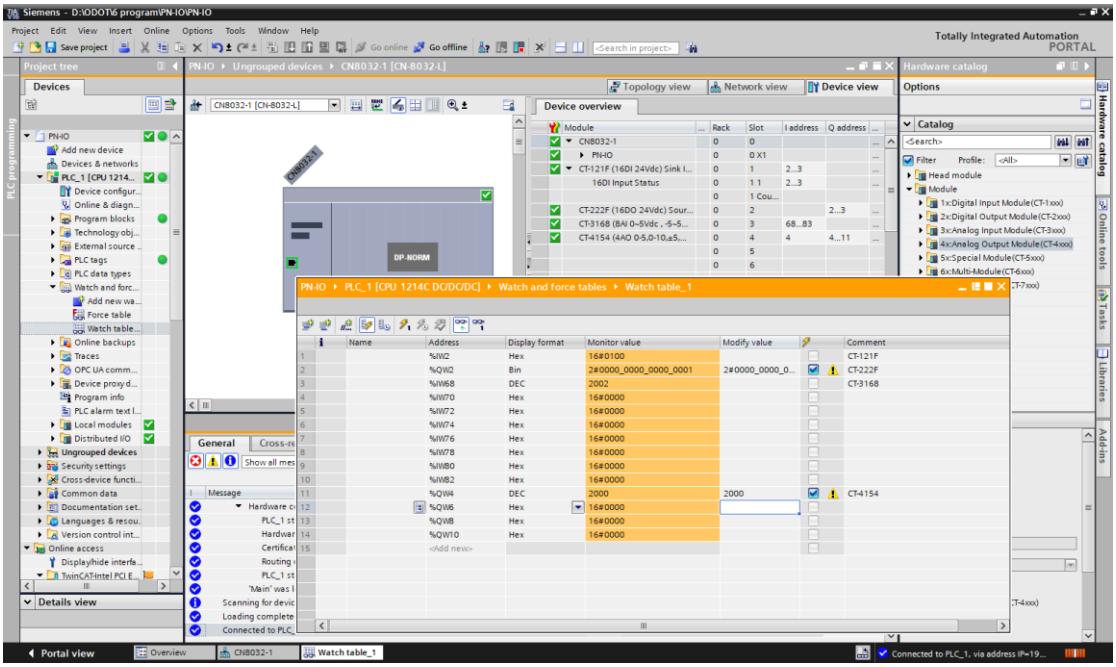

6. Double-click the adapter icon to enter the "Device View", and add the extended IO module in the "Device Overview": CT-121F, CT-222F, CT-3168, CT-4154.




4. After the hardware configuration is completed, save, compile and download, then click "Go Online". At the same time, it can add a new monitoring table to monitor the value of IO modules.

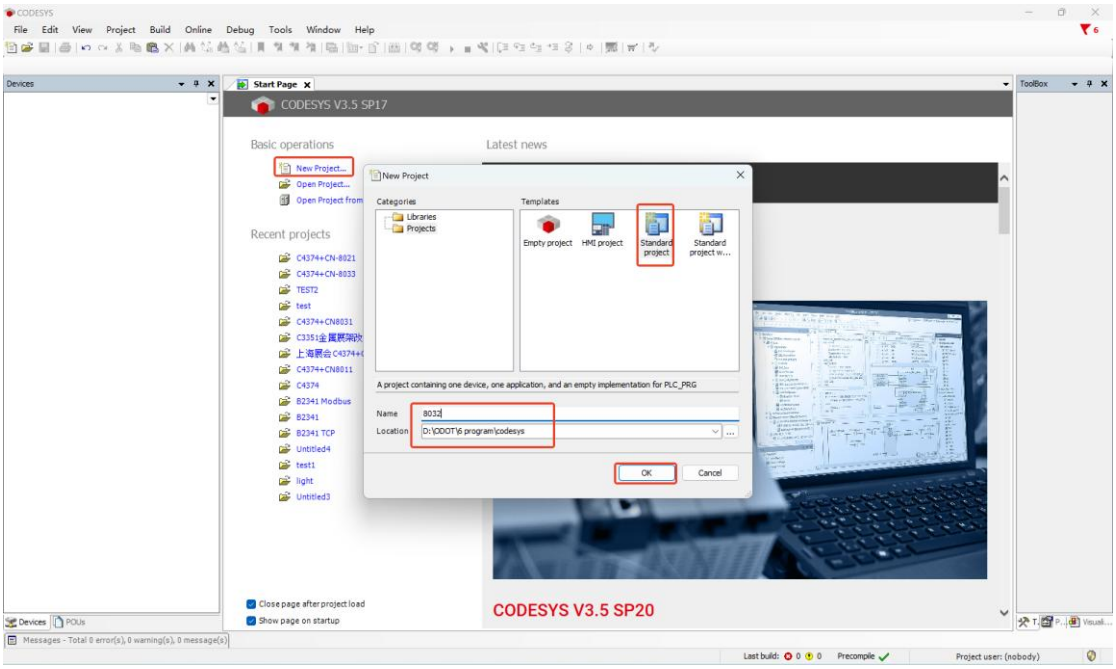


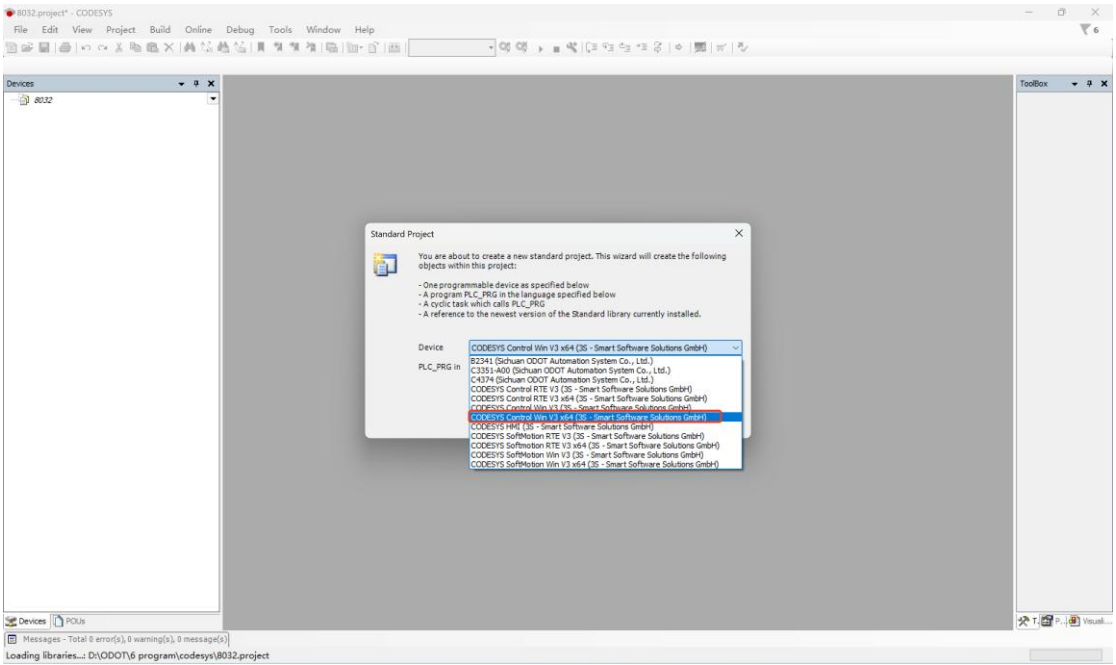
The DI0 of the CT-121F is connected to the high-level signal, the DO8 of the CT-222F is assigned 1, the AO0 channel of the CT-4154 is assigned to 2000, and the AI0 channel of the CT-3168 is connected at the same time.



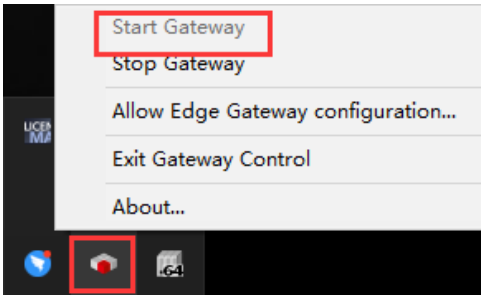
# 5 Example of communication between Codesys and the module

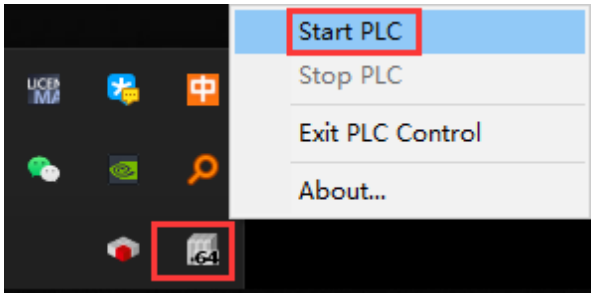
To supply the CN-8032-L module with 24VDC system power supply and field power supply, connect the network cable directly to the CN-8032-L network port, and open the CODESYS software. Create a new project and select it in the pop-up window ‘CODESYS Control Win V3 x64 (3S-Smart Software Solutions GmbH)’, click OK.

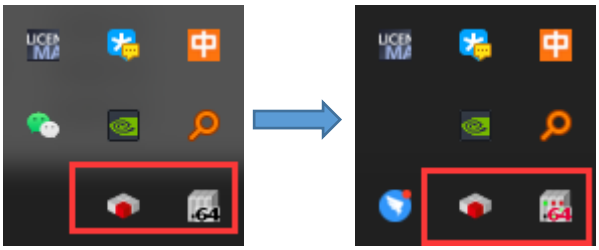


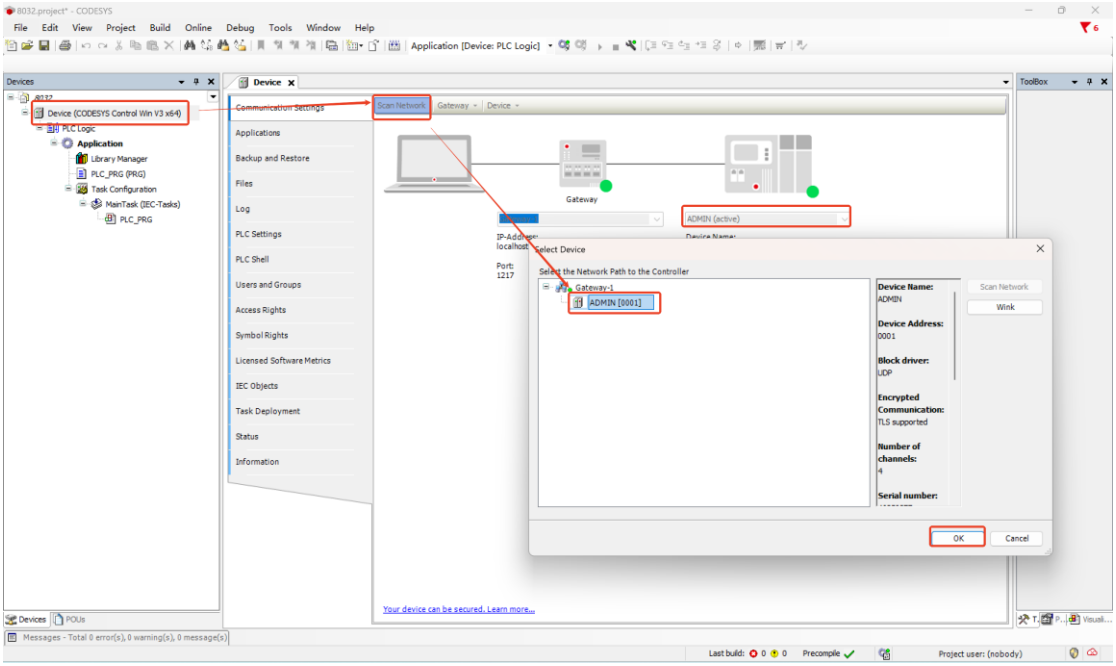
Click the icon in the bottom right corner 'CODESYS Gateway SysTray - x64' and 'CODESYS Control Win SysTray - x64'.Right-click Start Gateway and Start PLC, the soft PLC can be used, and communication can be tested without a hardware PLC, after all the icons are successfully launched, the icon color is red.



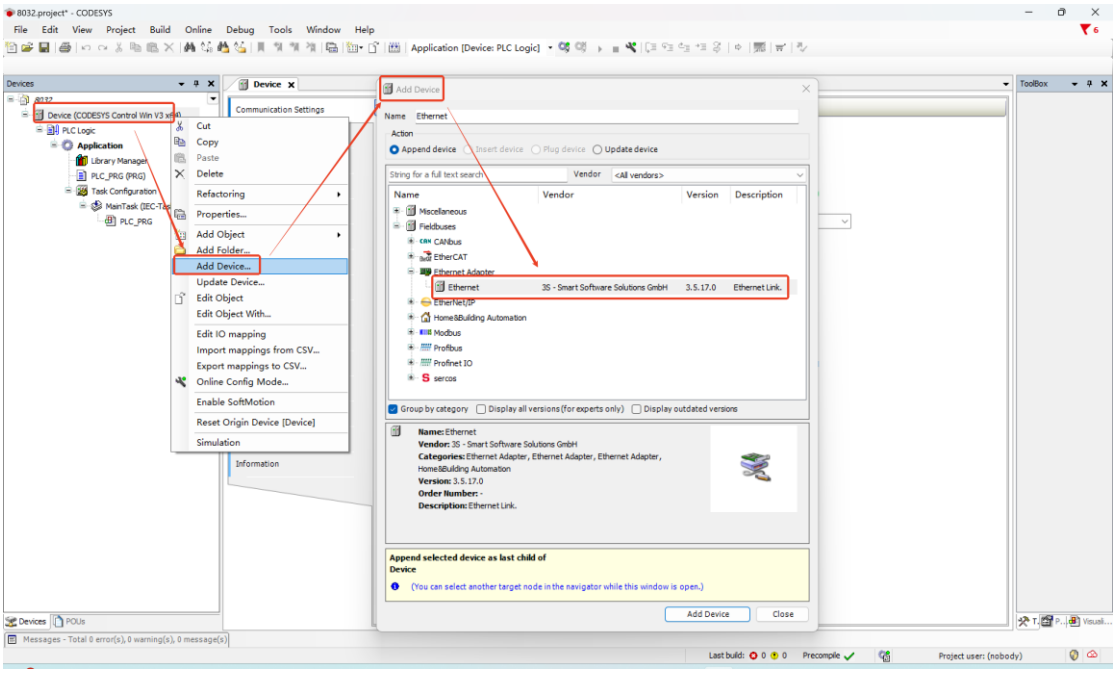



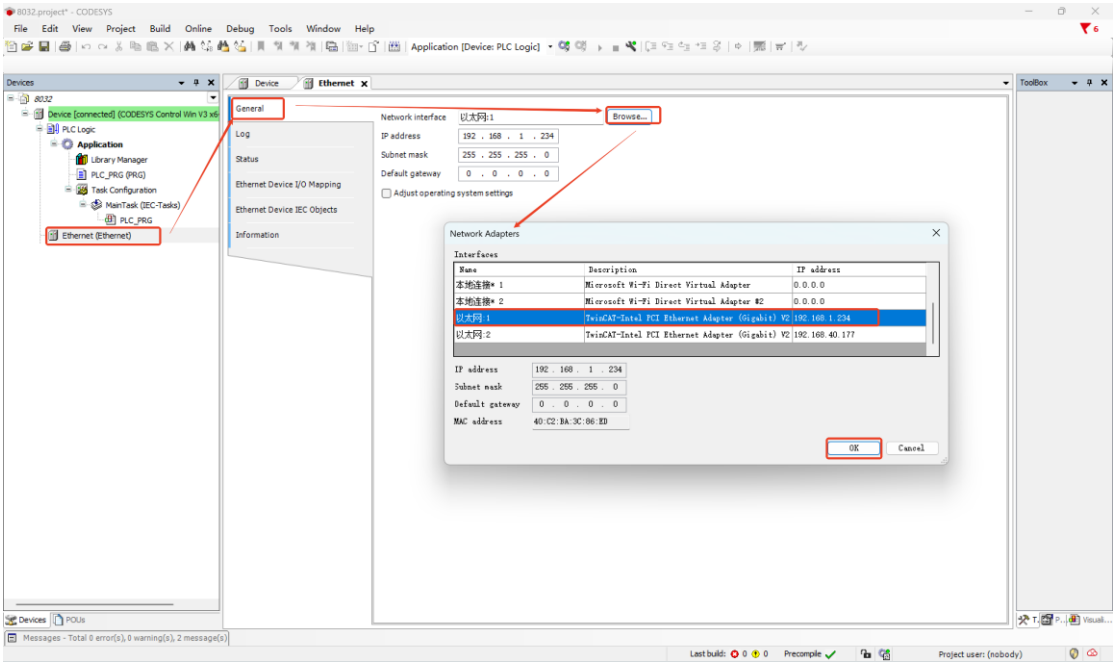
Double-click Device, click on the right to scan the network, the software will automatically scan the laptop (computer name), double-click the computer name, it can see the communication settings interface of the laptop communication display green, the communication is normal, online, downloadable, and can monitor data.



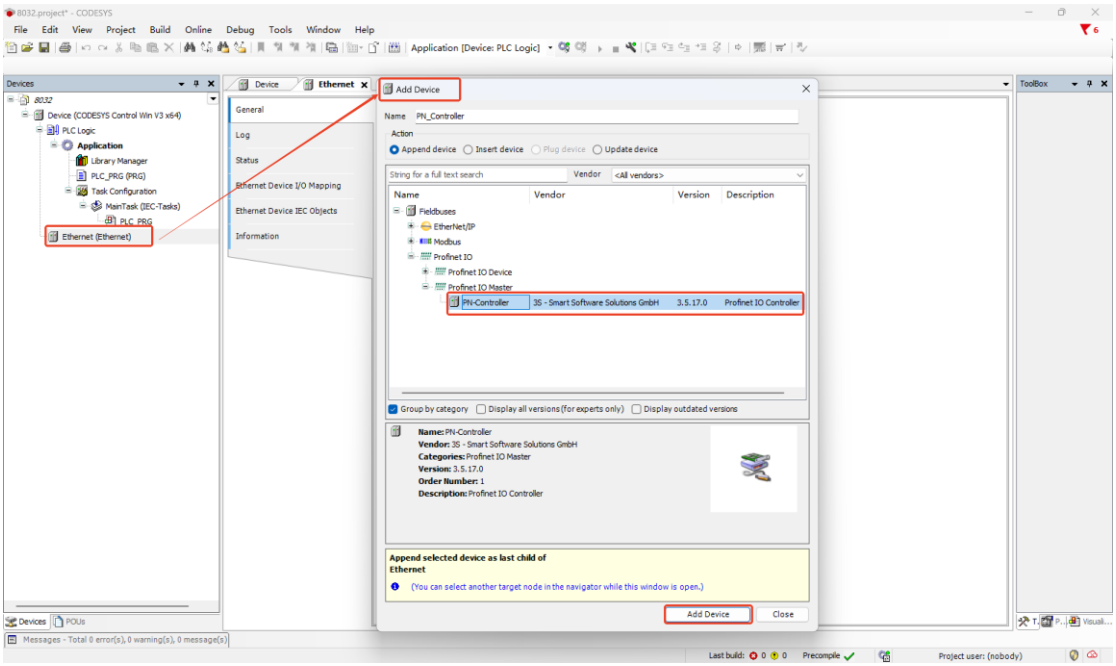
After the communication is established, right-click Device - Add Device - Select Ethernet Adapter - Click Add Device.



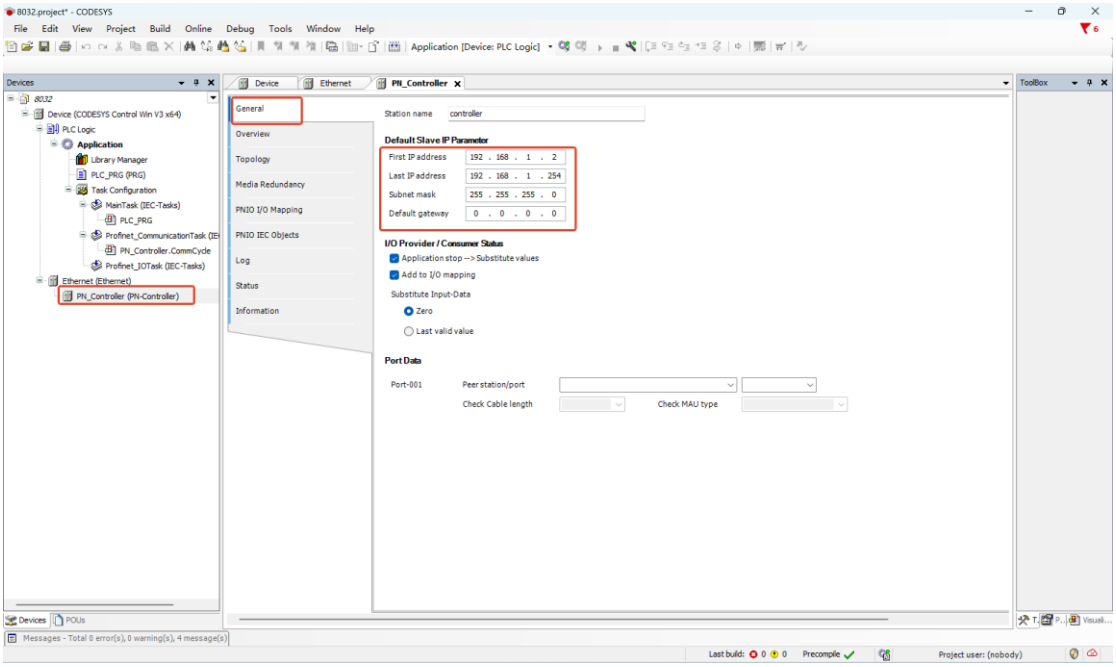

After the addition is complete, double-click Ethernet, click the interface on the right , select the local NIC, and click OK.



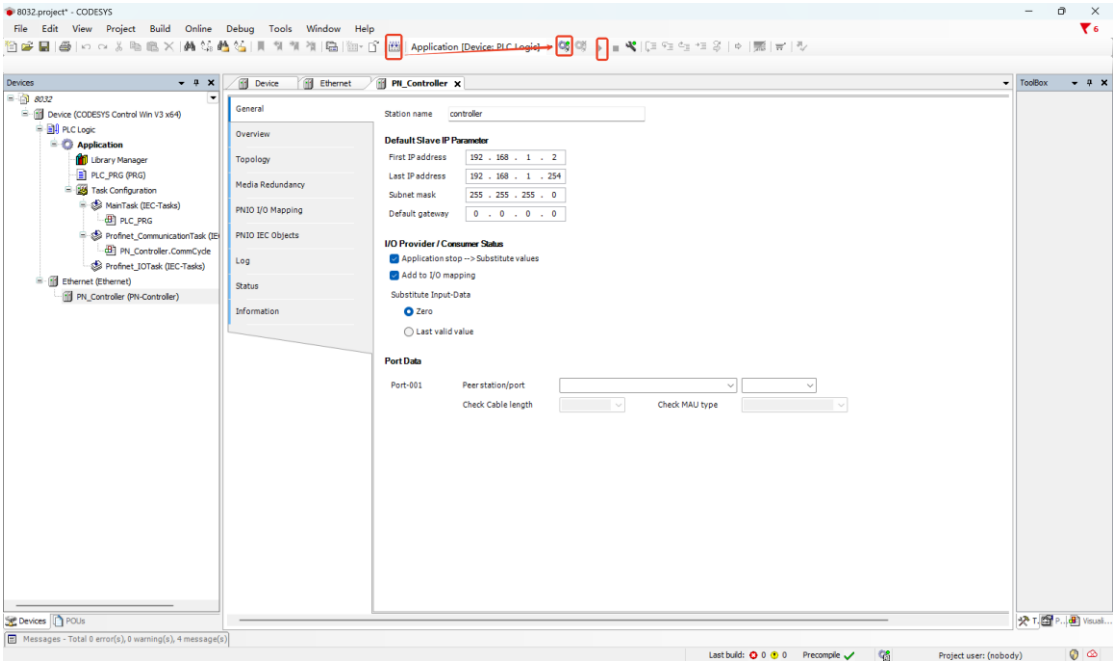

Right-click Ethernet, click Add Device, select Profinet IO - Profinet IO Master - PN-Controller on the right, and click Add Device. Close the pop-up window when the addition is complete.



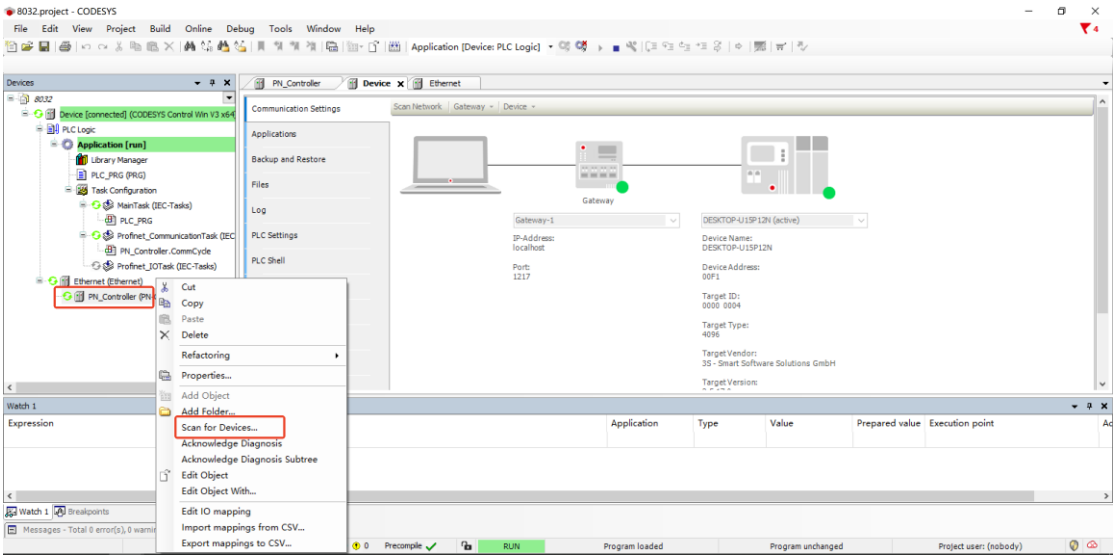

Double-click PN-Controller to view the default slave IP address. Set 192.168.1.x for the Ethernet, so modify the slave device IP parameter to the 192.168.1.x. The red exclamation mark will disappear automatically.

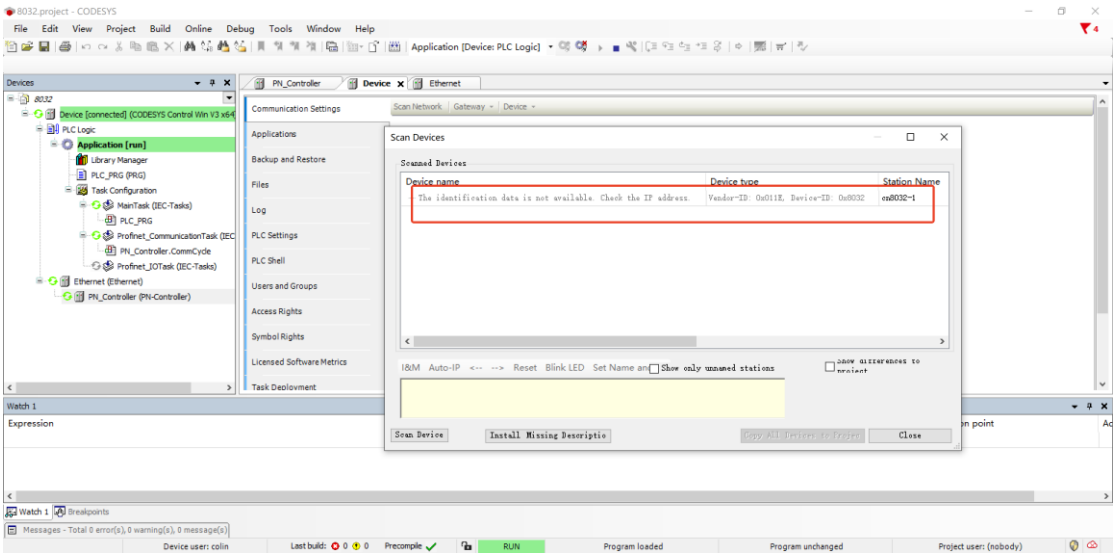



Select Device PLC, click "Compile", compile without errors, click "Login to", click "Start".

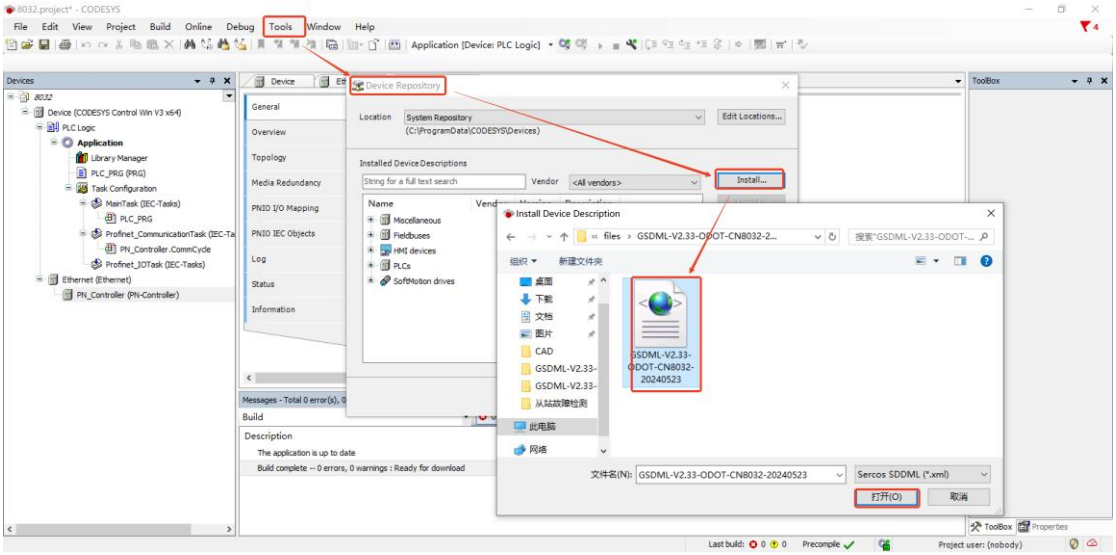


Right-click PN-Controller, click Scan Device, and click Scan Device in the pop-up window to scan CN8032-L.

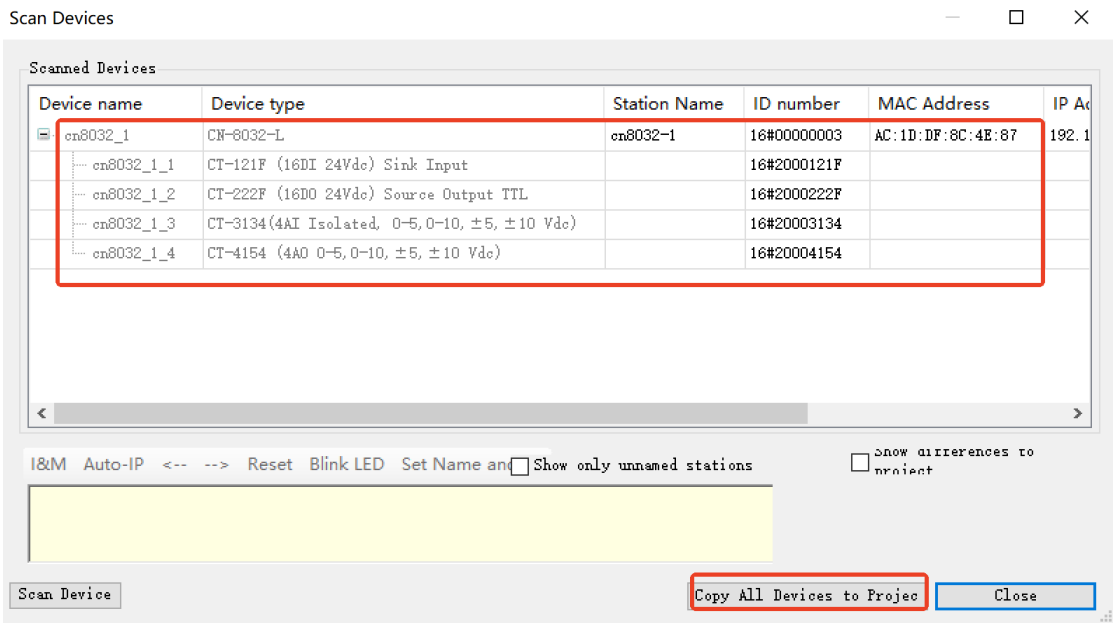


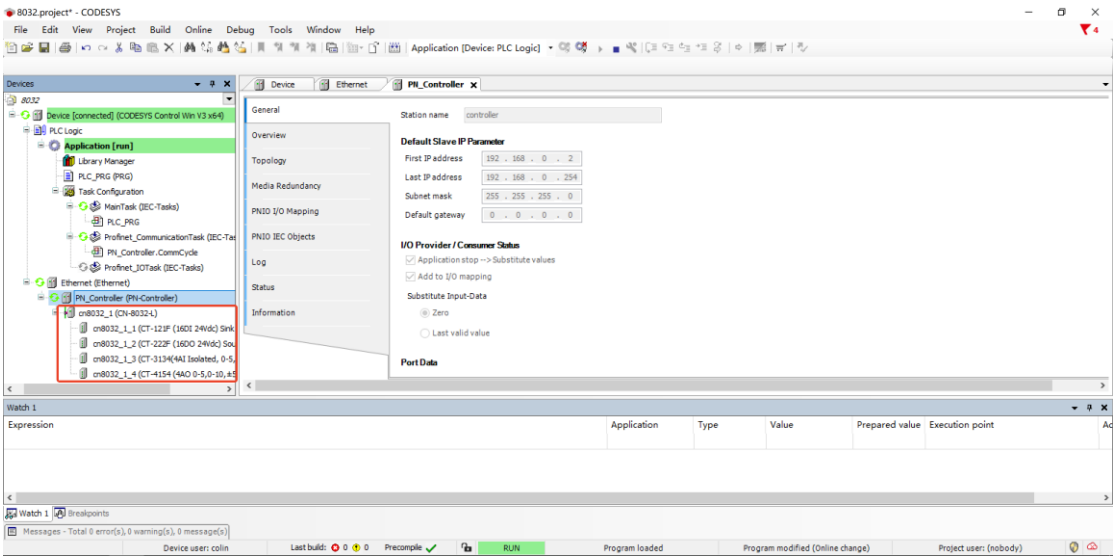



If the message "No identified data! is displayed, please check! ". Click Install the missing description file, click Install in the pop-up window, select the XML file of CN-8032-L, click Open, and successfully install the CN-8032-L XML file.

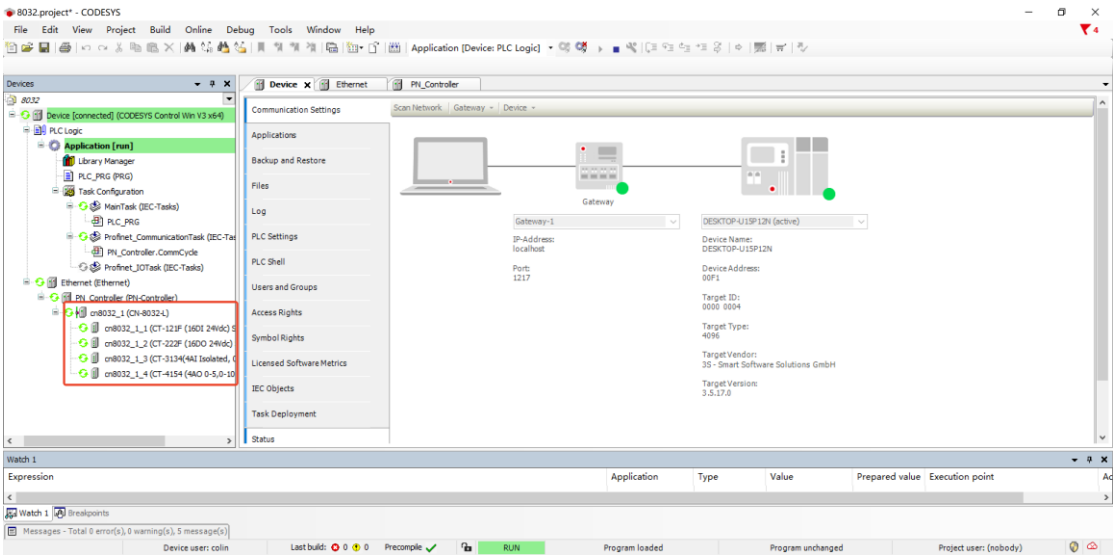



Select the scanned module, click Set IP, the software will automatically assign an IP address to the CN-8032-L, and automatically scan to the adapter module and IO module. Click Copy All Devices to the Project.

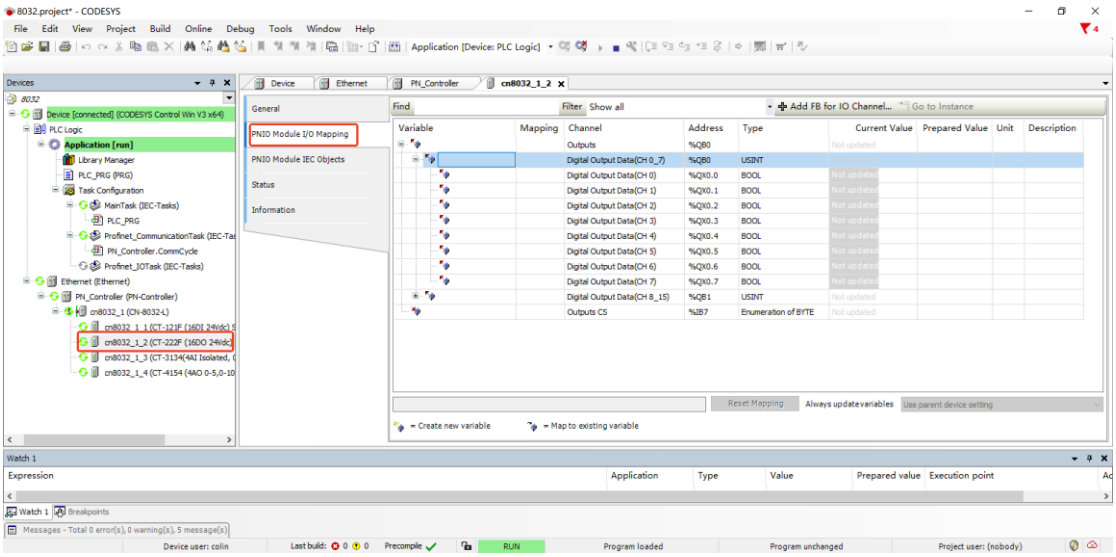


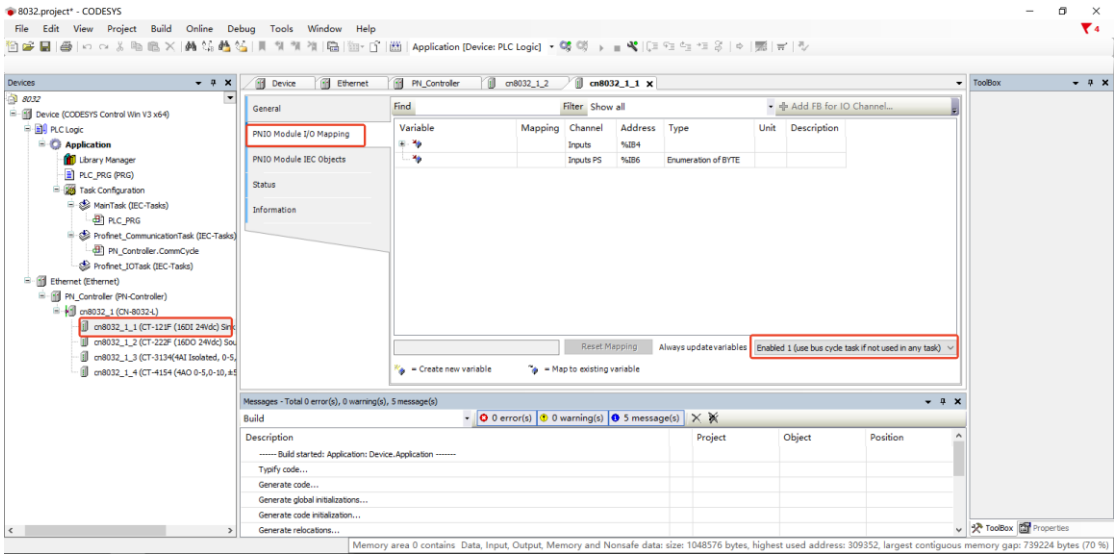

Select the PLC Device, click "Exit ", click "Login to ", click "Start ", and download the IO configuration to the PLC again.



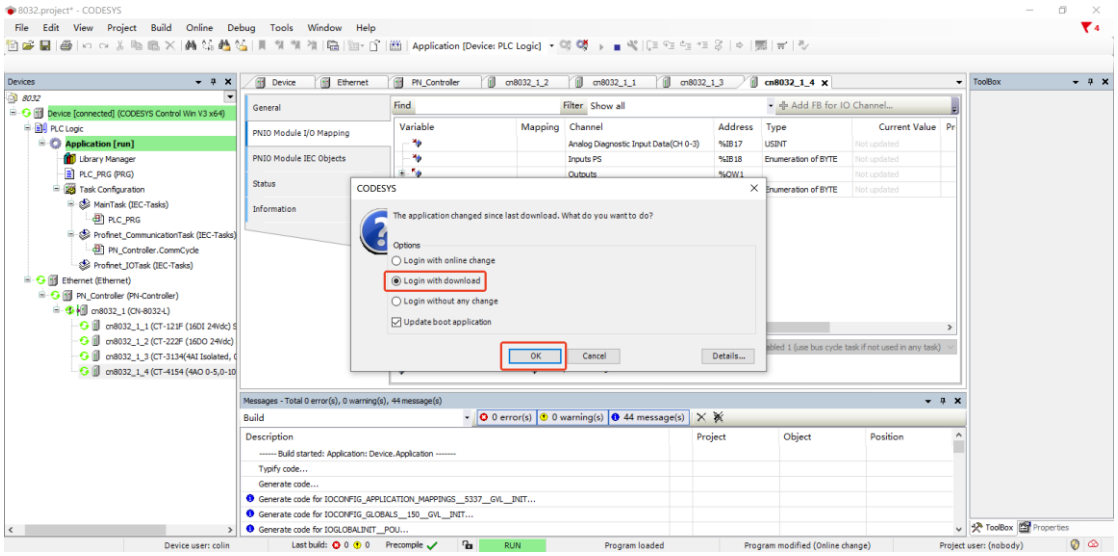
Monitor the I/O value online, the value is grayed out and cannot be changed, and the I/O module parameters need to be set. Click to exit the PLC offline .



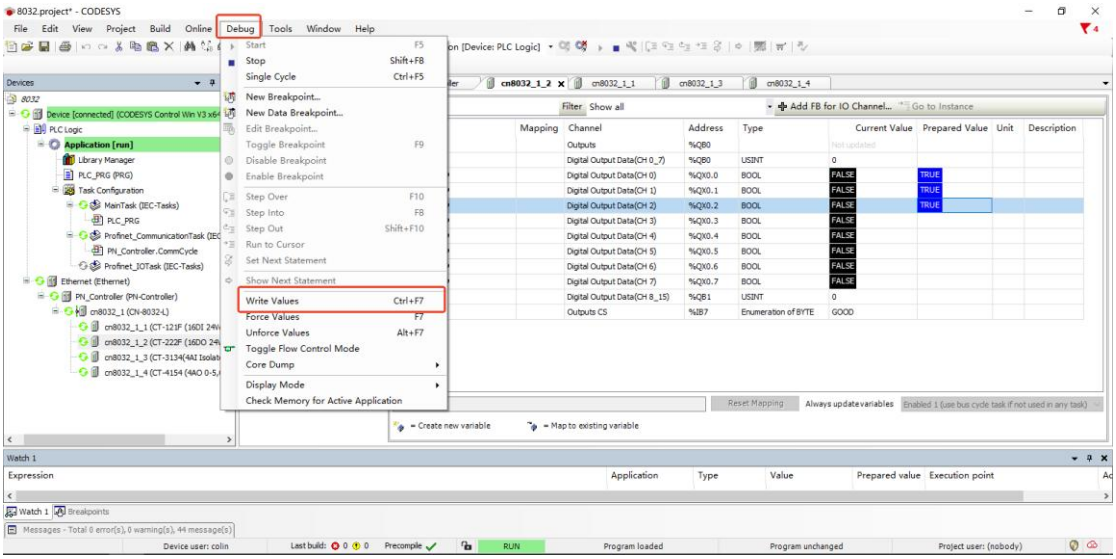
Select the Enabled 1 (Use bus cycle task if not used in any task) in PNIO Module I/O Mapping for all IO modules.

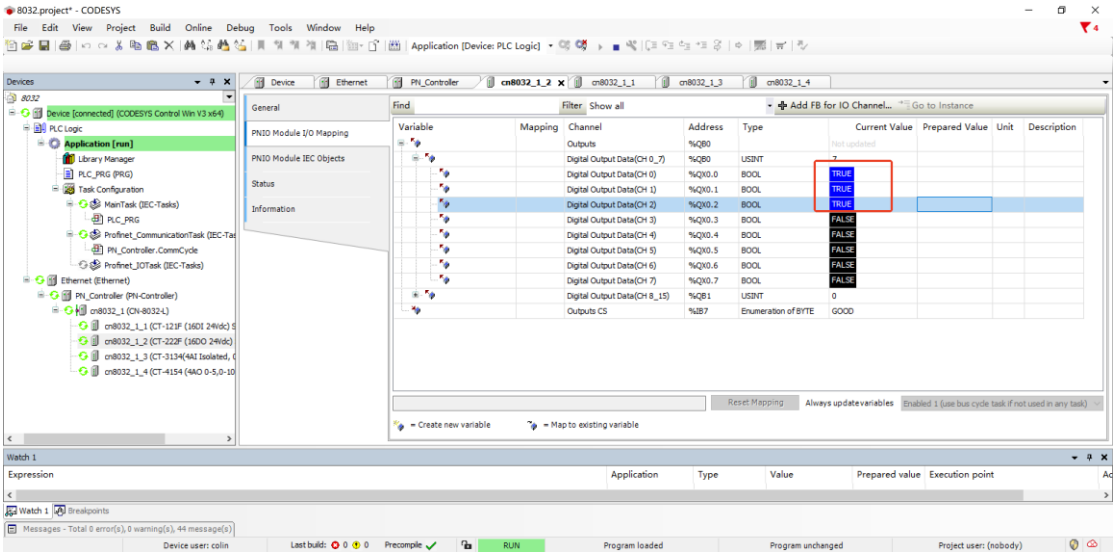


After the parameters are updated, select the PLC and click Compile, Login, and Online.



Select CT-222F, modify the value on the right side of the prepared value, and click "Debug" - "Write Value" to write the value to CT-222F.

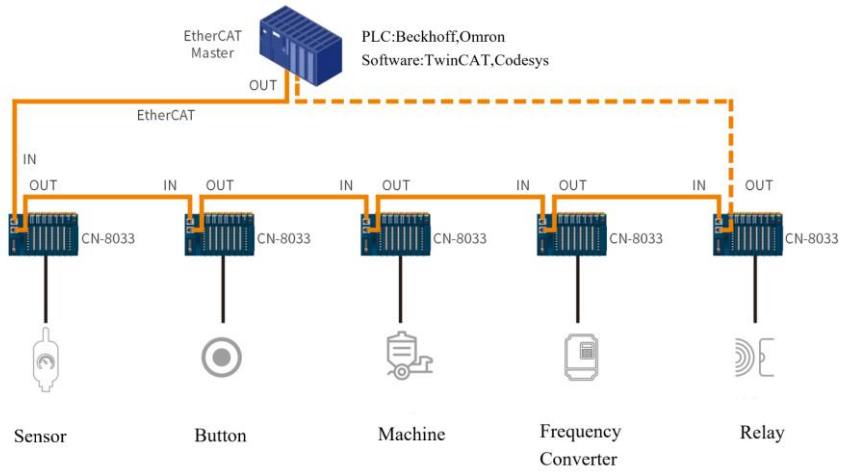

8032.project* - CODESYS
File Edit View Project Build Online Debug Tools Window Help
Start F5
Stop Shift+F8
Single Cycle Ctrl+F5
New Breakpoint...
New Data Breakpoint...
Edit Breakpoint...
Toggle Breakpoint F9
Disable Breakpoint
Enable Breakpoint
Step Over F10
Step Into F8
Step Out Shift+F10
Run to Cursor
Set Next Statement
Show Next Statement
Write Values Ctrl+F7
Force Values F7
Unforce Values Alt+F7
Toggle Flow Control Mode
Core Dump
Display Mode
Check Memory for Active Application
Devices
Watch 1
Expression
Application
Type
Value
Prepared value
Execution point
RUN


8032.project* - CODESYS
File Edit View Project Build Online Debug Tools Window Help
Devices
Watch 1
Expression
Application
Type
Value
Prepared value
Execution point
RUN

# Communication example of the CN-8033 module

## 1 Topology

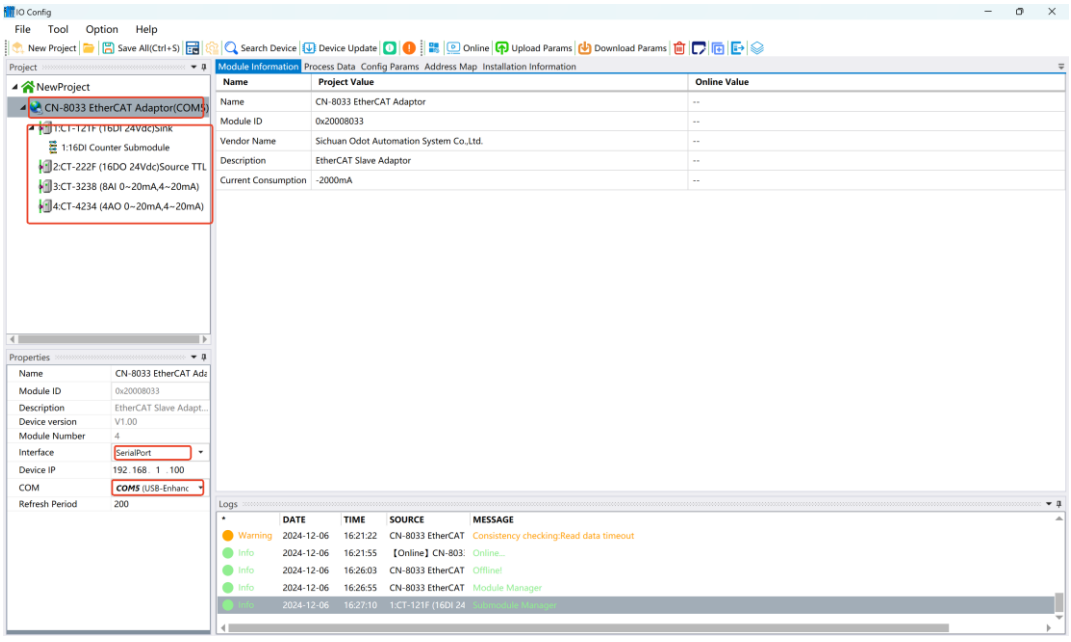
**EtherCAT Mater Communication Topology Diagram**




## 2 TwinCAT 3 Software and Module Communication Examples

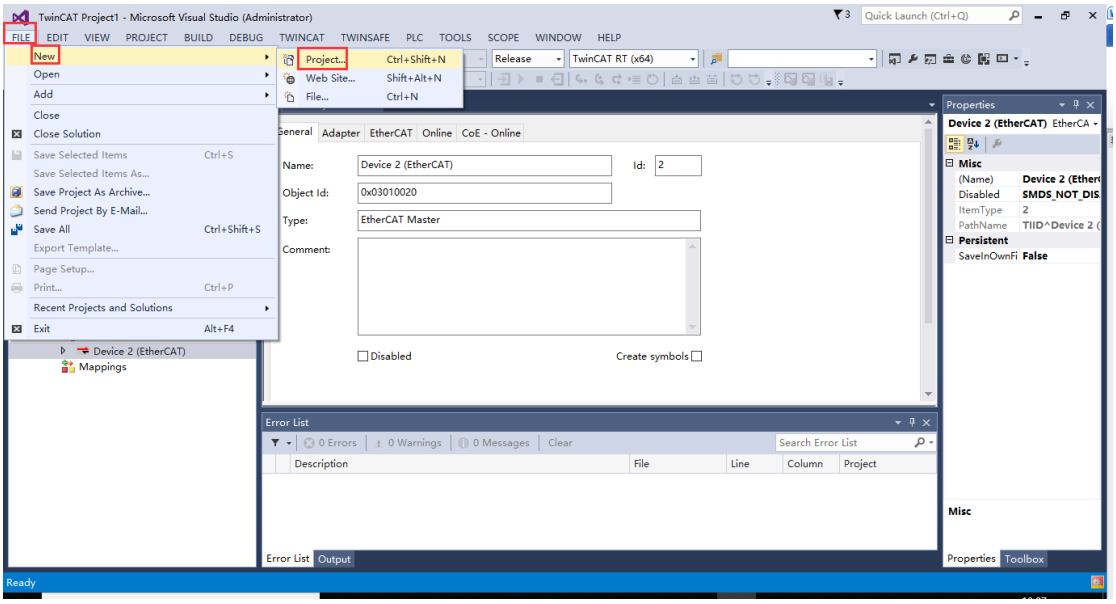
Preparation: The hardware configuration of the IO module is as follows:CN-8033, CT-121F, CT-222F, CT-3238, CT-4234.

Note: The CT-121F has added a sub-module with counting function.

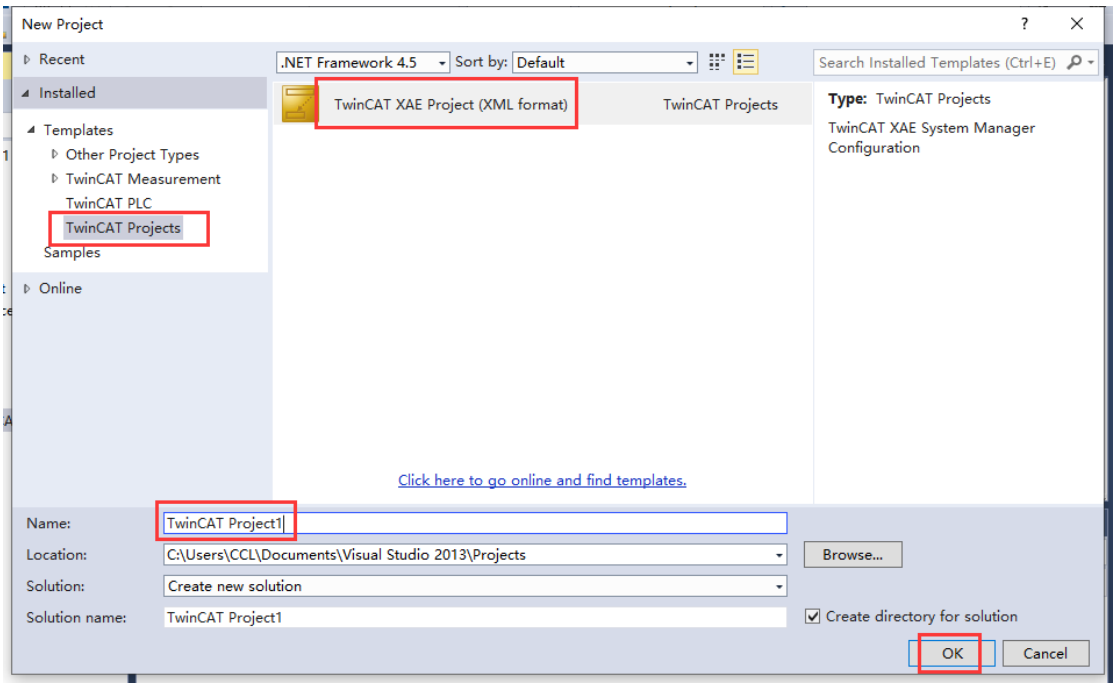


Power on the module CN-8033 and connect it to the PC network port from the ECAT IN interface of CN-8033 (**EtherCAT communication strictly distinguishes input and output, and the interface cannot be connected incorrectly, otherwise the module communication may be abnormal**).

1. Open the TwinCAT XAE software, click ‘FILE’ - > ‘New’ - > ‘Project’, and the interface will pop up as shown in the figure below.




Select the ‘TwinCAT Projects’ and ‘TwinCAT XAE Project’, others remain default (name, location, solution name can be modified as needed), then click the OK.

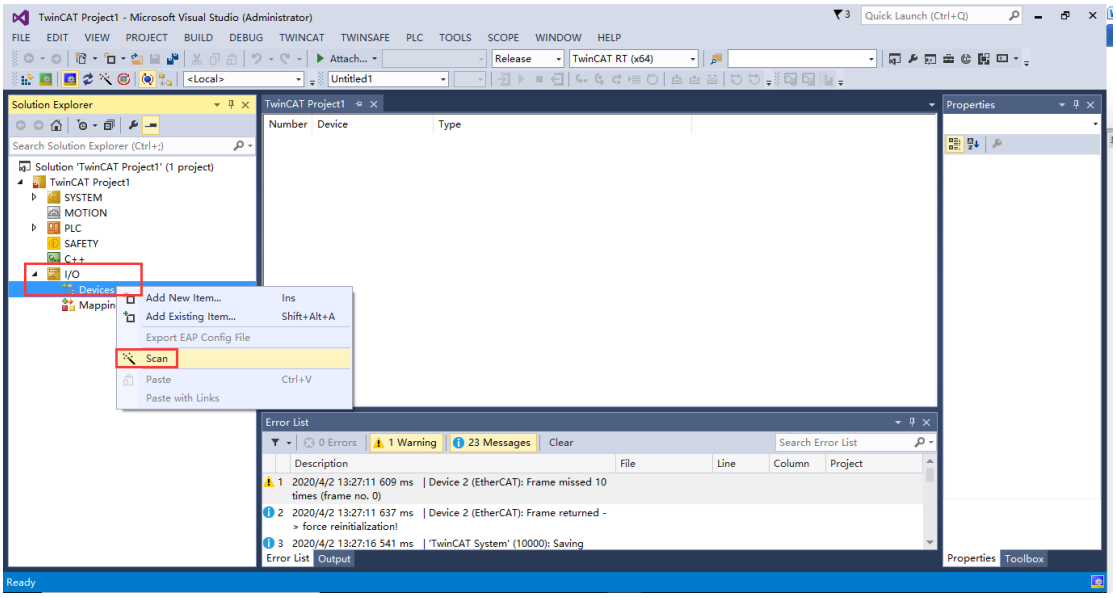


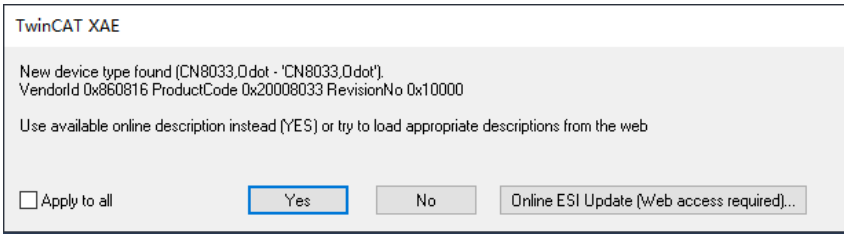
2. Module test

There are two ways to test modules: one is to test the scanning function directly with TwinCAT 3, the other is to manually import the XML file and manually configure the IO for testing. When testing and using, users can choose one of them.

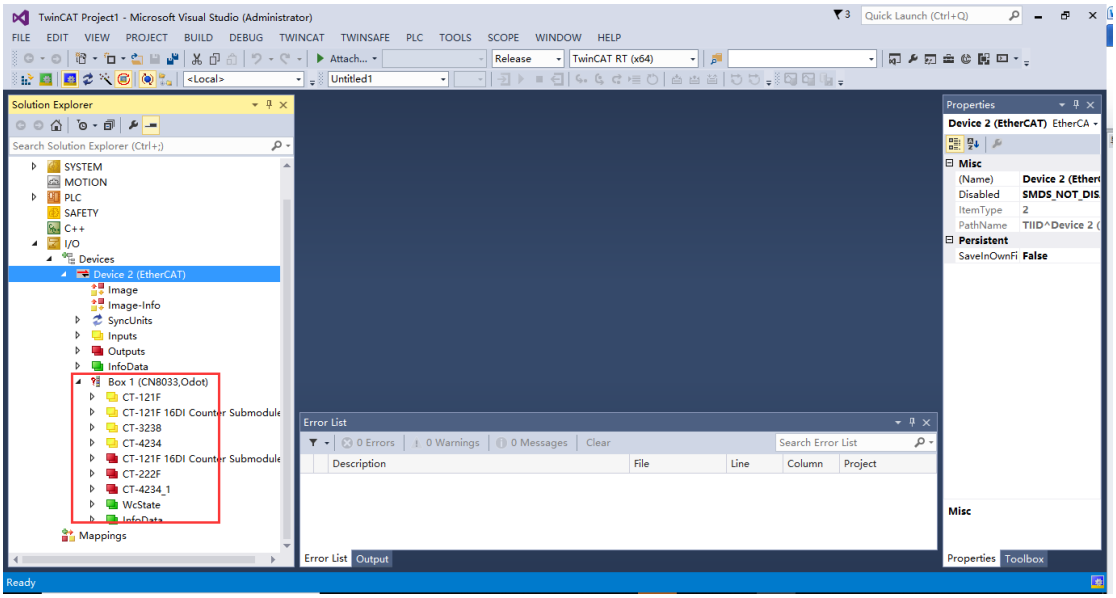
**A**. TwinCAT 3 software scan test (Note: Manually copy the XML file of CN-8033 to the installation directory of the TwinCAT 3 software file C:\TwinCAT\3.1\Config\Io\EtherCAT).

Click ‘I/O’-> ‘Device’ -> ‘Scan’, click OK on the screen that pops up in turn.

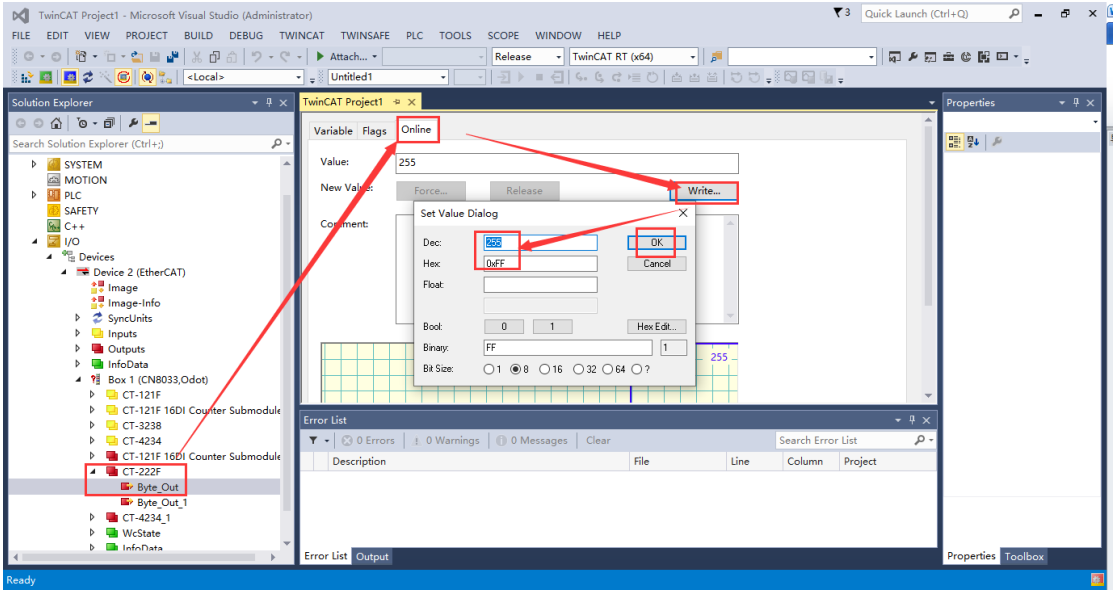


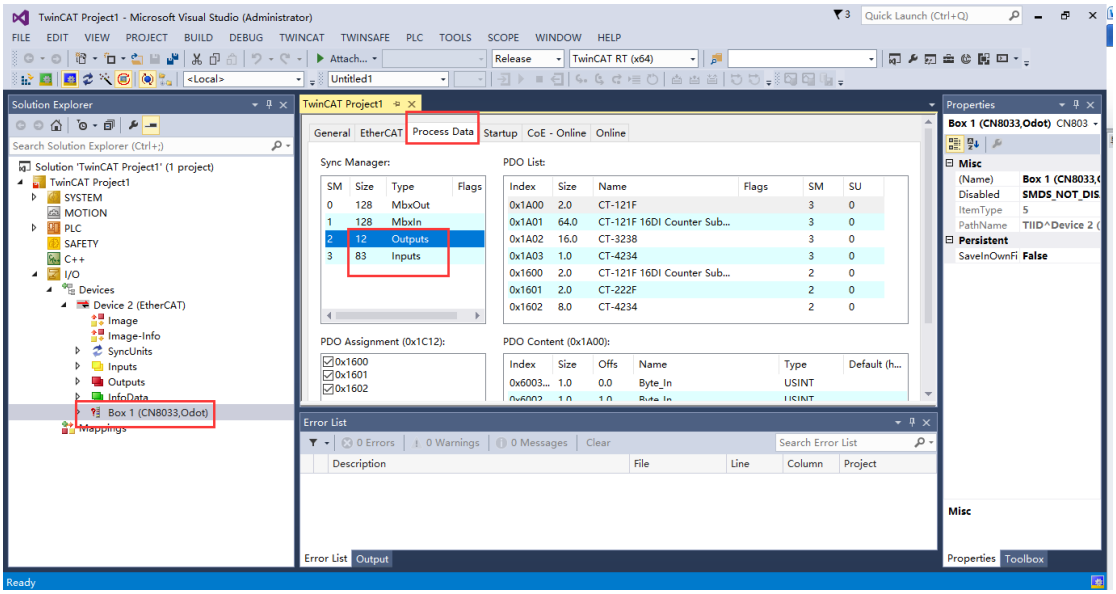

The Activate Free Run Mode interface pops up, and click the Yes button in the interface, start the communication between CN-8033 and TwinCAT, at this point, the interface on the left has been scanned for the relevant information of the module.




Click the CT-222F digital output module, drop-down menu Byte, click the Online——Write, assign a value of 255 to the module, then click OK, it can see that the output channel indicator of the hardware module is on, and the software interface can display the written value.

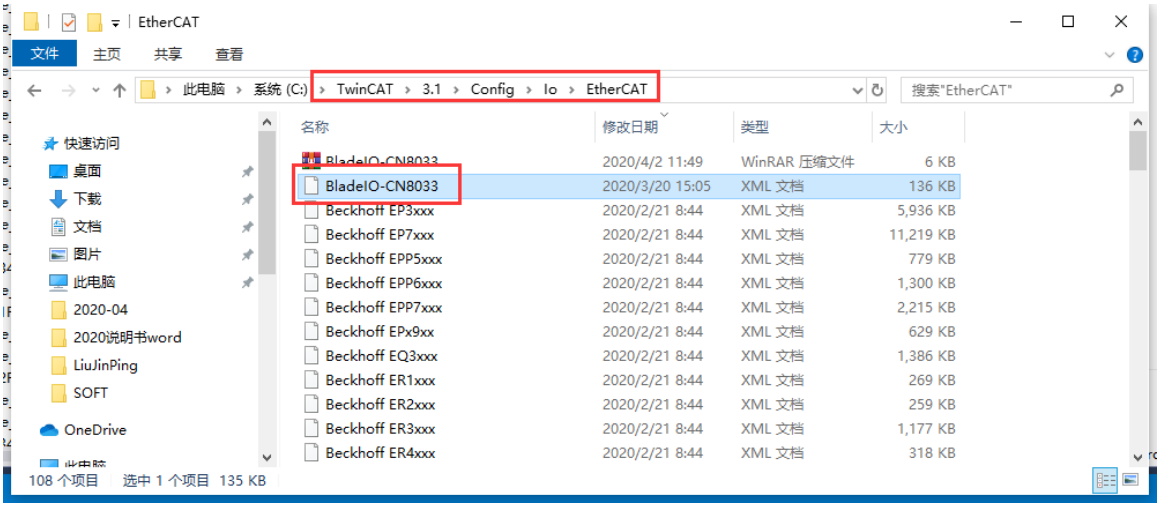


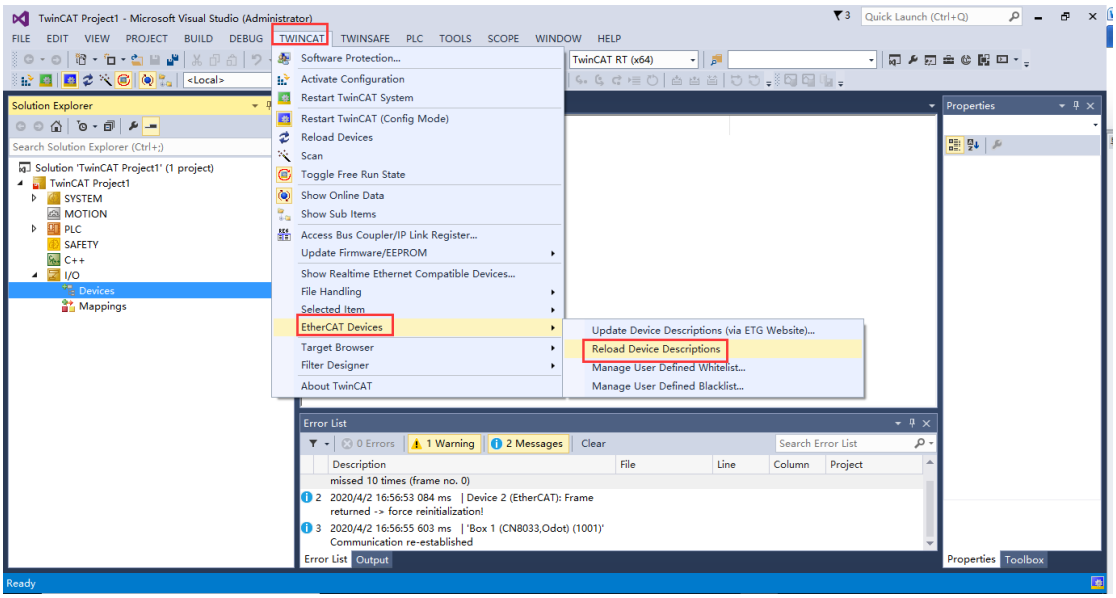

Click the Box 1(CN8033) -- Process Data, it can view the total number of bytes of the input/output. If the module is incorrect, first check whether the number of input and output bytes is correct.




B.Manually import an XML file to configure the I/O module

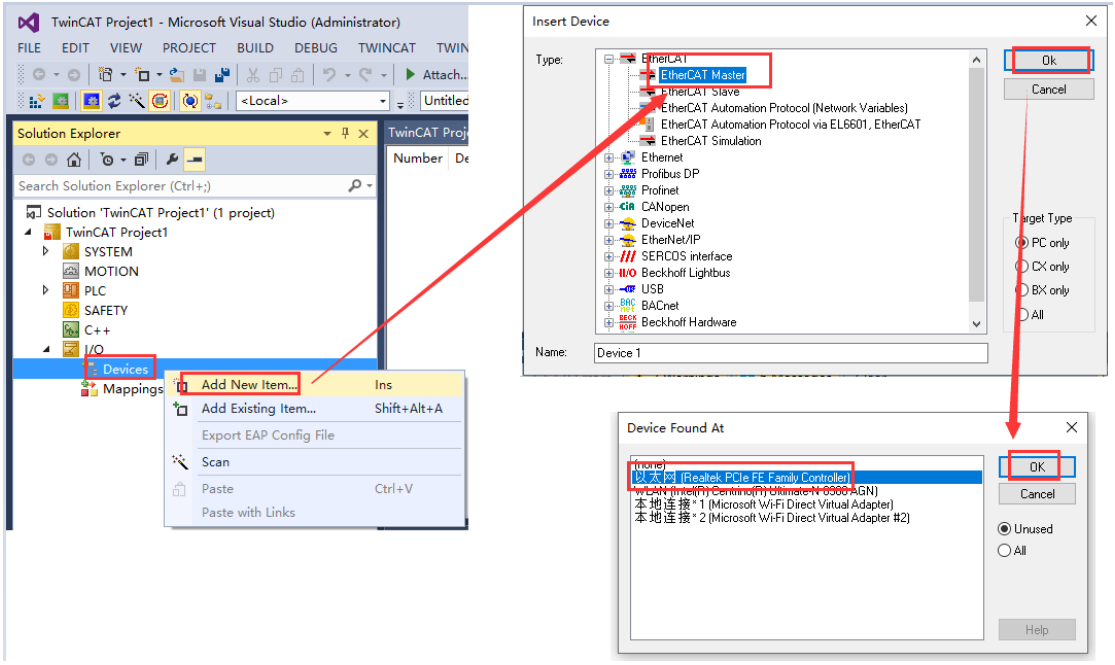
Copy the XML file to ...\TwinCAT\3.1\Config\Io\EtherCAT, as shown in the figure below, load the XML to TwinCAT. Note: When the XML file in this folder is updated, be sure to click again to download the device description file.



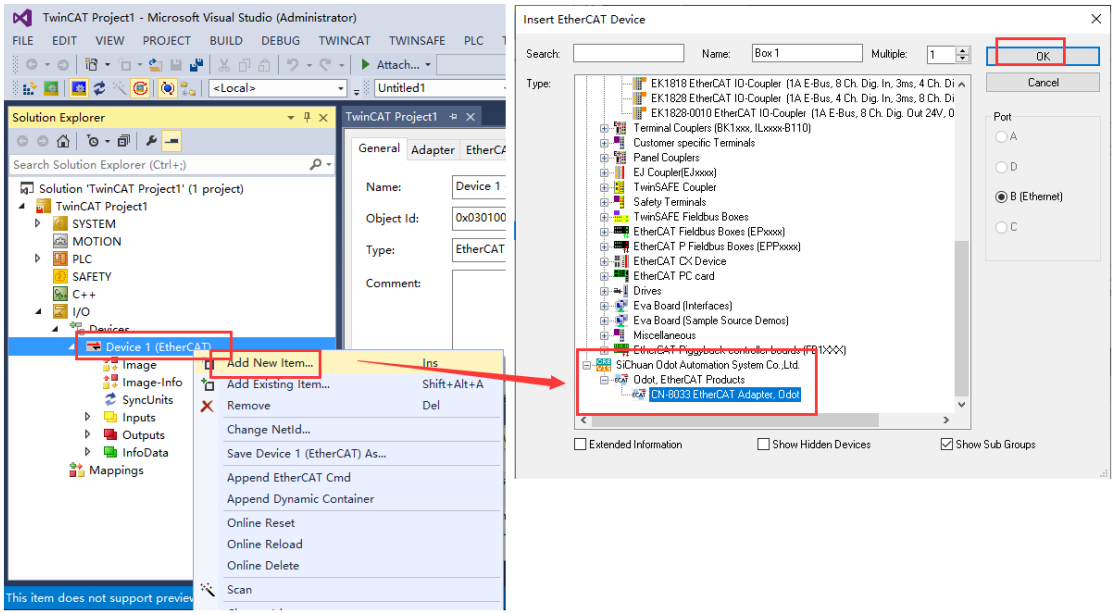


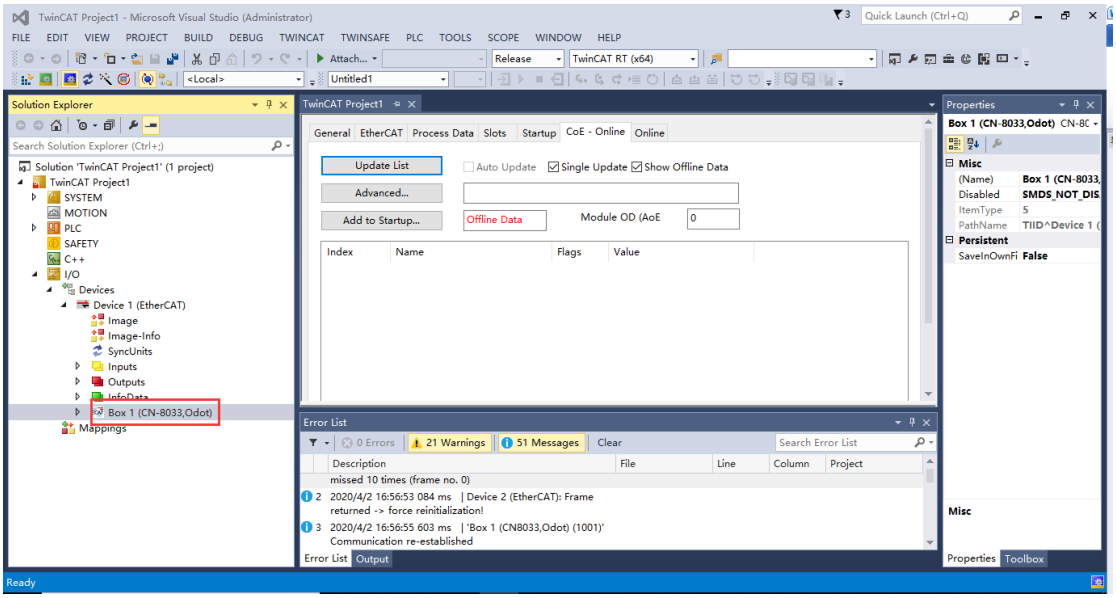

Right-click Device-> Add New Item, the interface shown in the following figure pops up.

Select the EtherCAT Master, then click the OK, in the new pop-up interface, select the used network card and click the OK button.

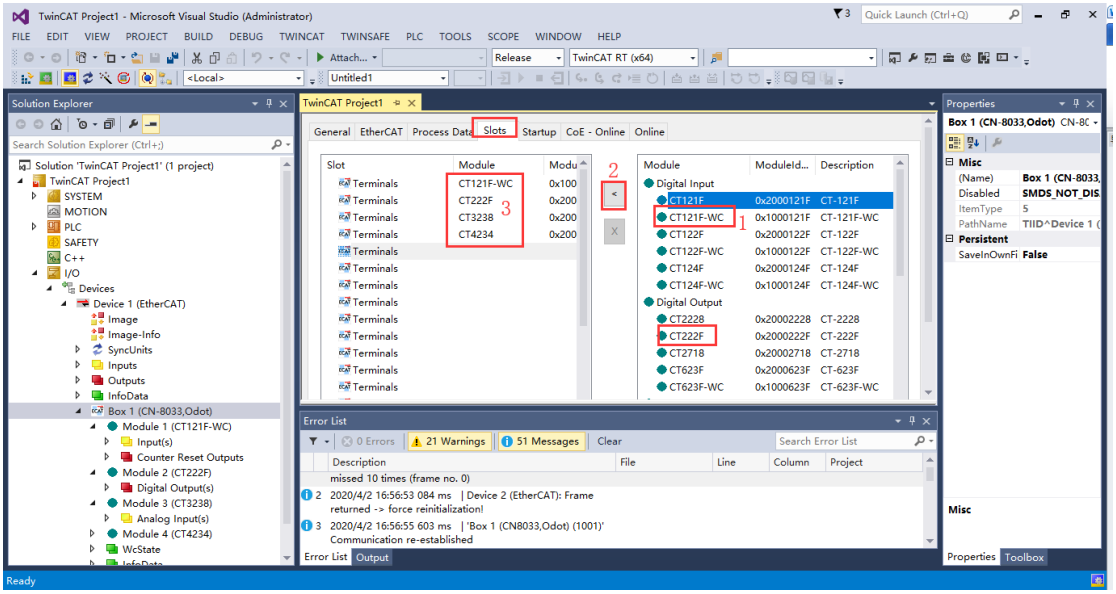



Right-click Device 1 (EtherCAT) -> Add New Item, the interface shown in the following figure. Select it in the newly popped up screen “CN-8033 EtherCAT Adapter.Odot”, then click the OK.

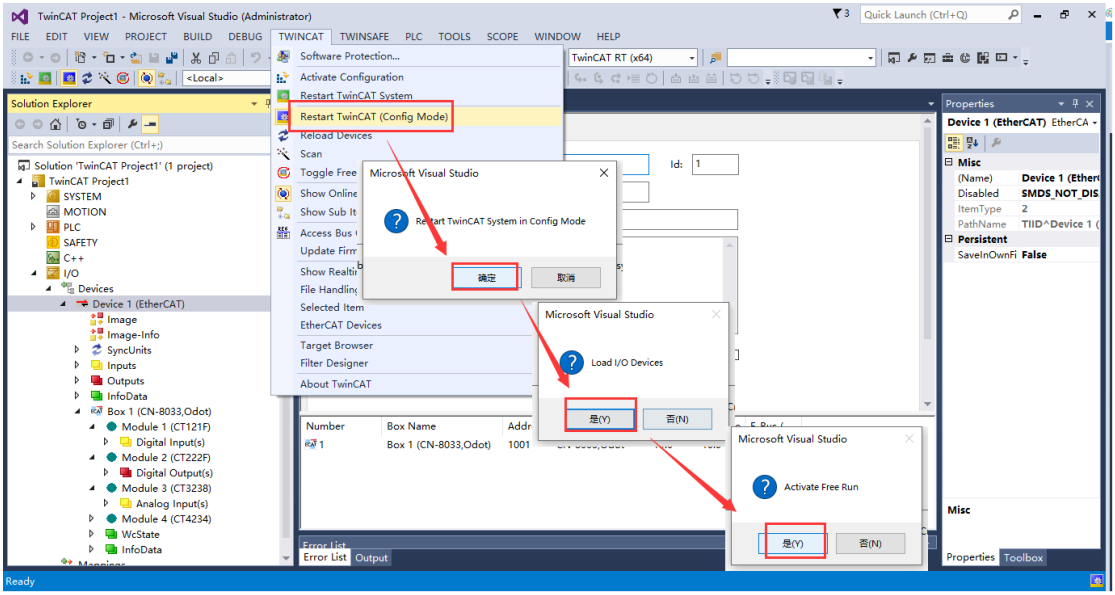



Double-click BOX 1 (CN8033), on the right side of the interface click Slots, click Terminals in the middle of the interface, select the IO module of the slot corresponding to CN8033 on the right, and map it to the left. CT121F-WC, indicates that the counting function is supported (WC-with count).




After the manual configuration is completed, click TWINCAT-Restart TwinCAT(Config Mode)-load I/O Devices-ACtivate Free Run. Complete the configuration download and activate the free-run mode.




After the operation mode is activated, the IO point can be tested, it can view the input/output address of the I/O module:

CT-121F Digital inputs:39.0~40.7, count storage inputs:41~104, count zeroing output：39.0~40.7;

CT-222F Digital output: 41.0~42.7;

CT-3238 Analog inputs: 105~120;

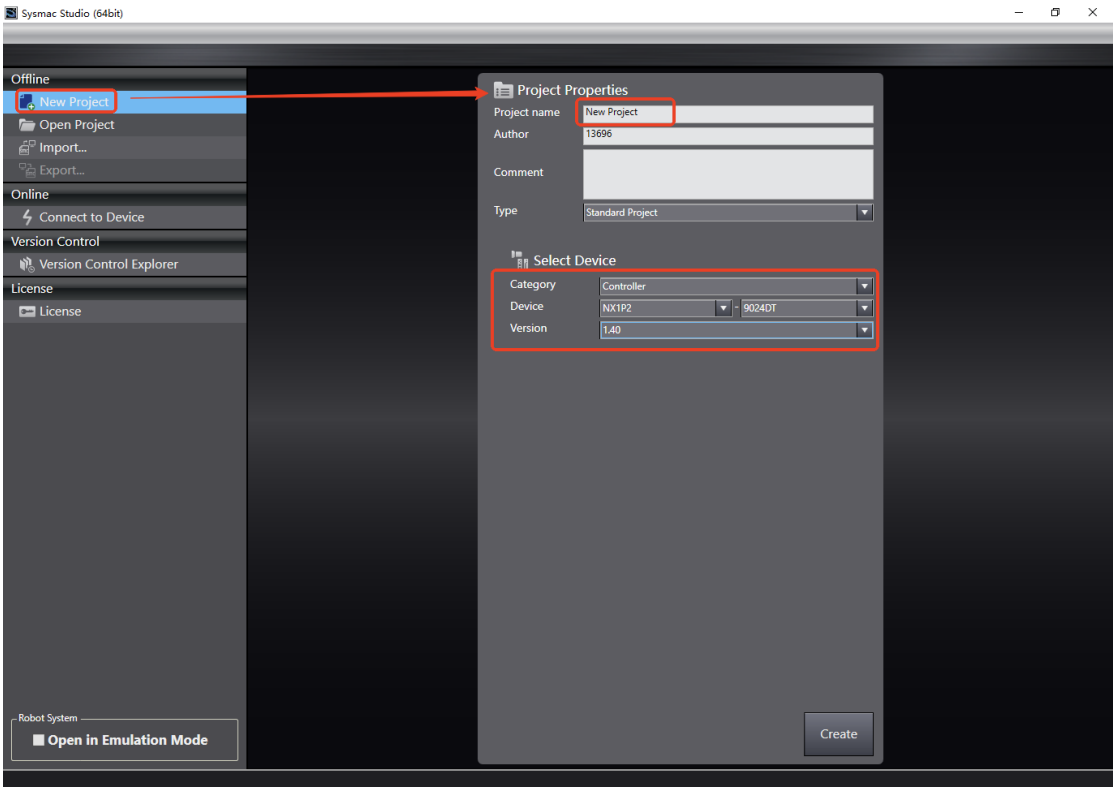
CT-4234 Analog output:43~50, Diagnostic inputs:121.0~121.5;

The point test can be done on a single channel, or the PLC program can be edited for testing.

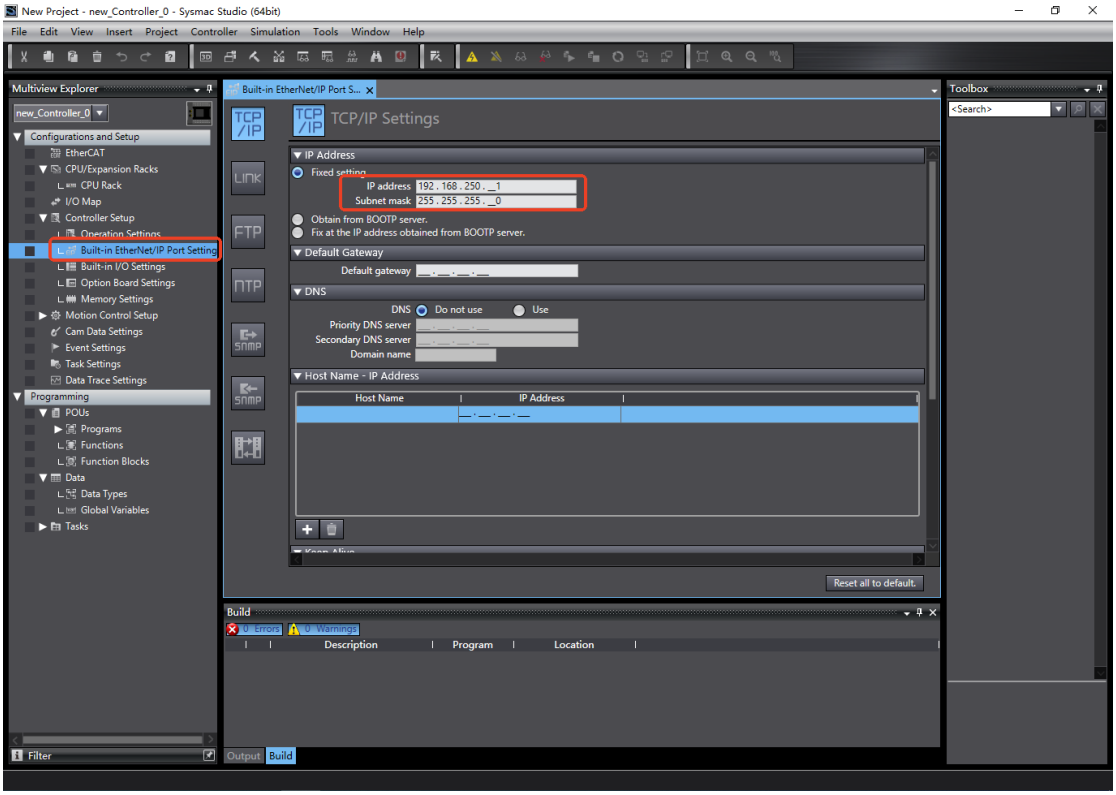
# 3 Example of communication between Omron NX1P2 and module

Power on the Omron NX1P2 and CN-8033 module 24VDC, the network port is connected the Port1 of NX1P2 to PC, the Port 2 is connected to IN of CN-8033.

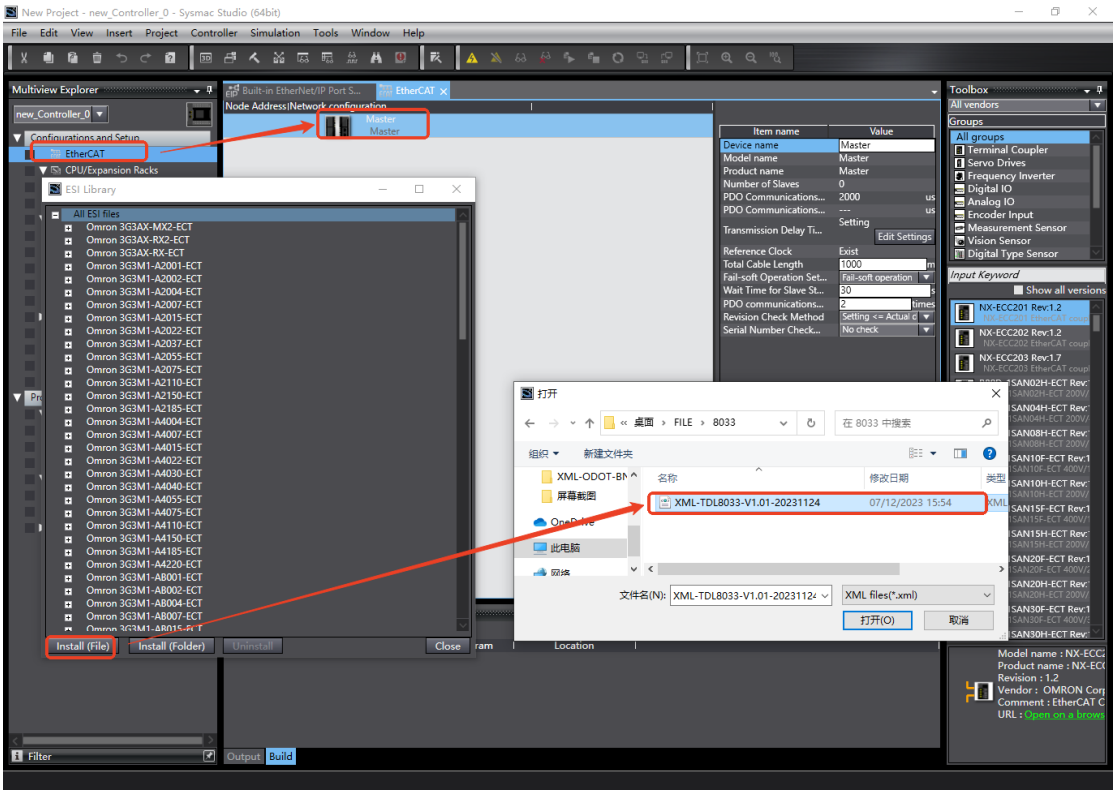
Open the SysmAC Studio software, click New Project, select NX1P2-9024DT, click Create.

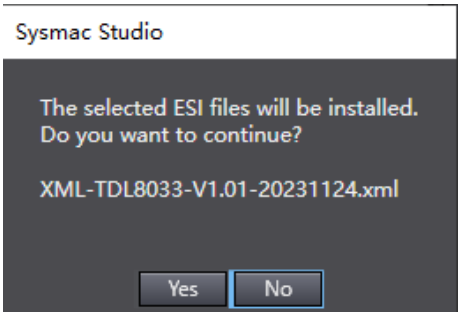


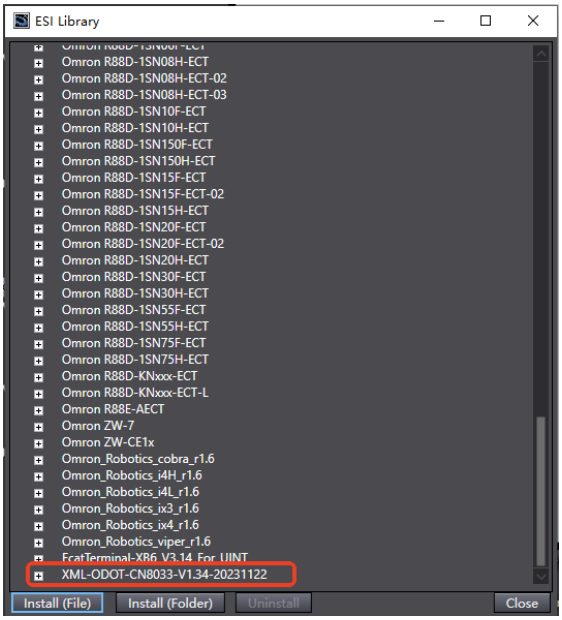

Click Configuration & Settings > Controller Settings > Built-in EtherNet/IP Port Settings to view the fixed IP address.



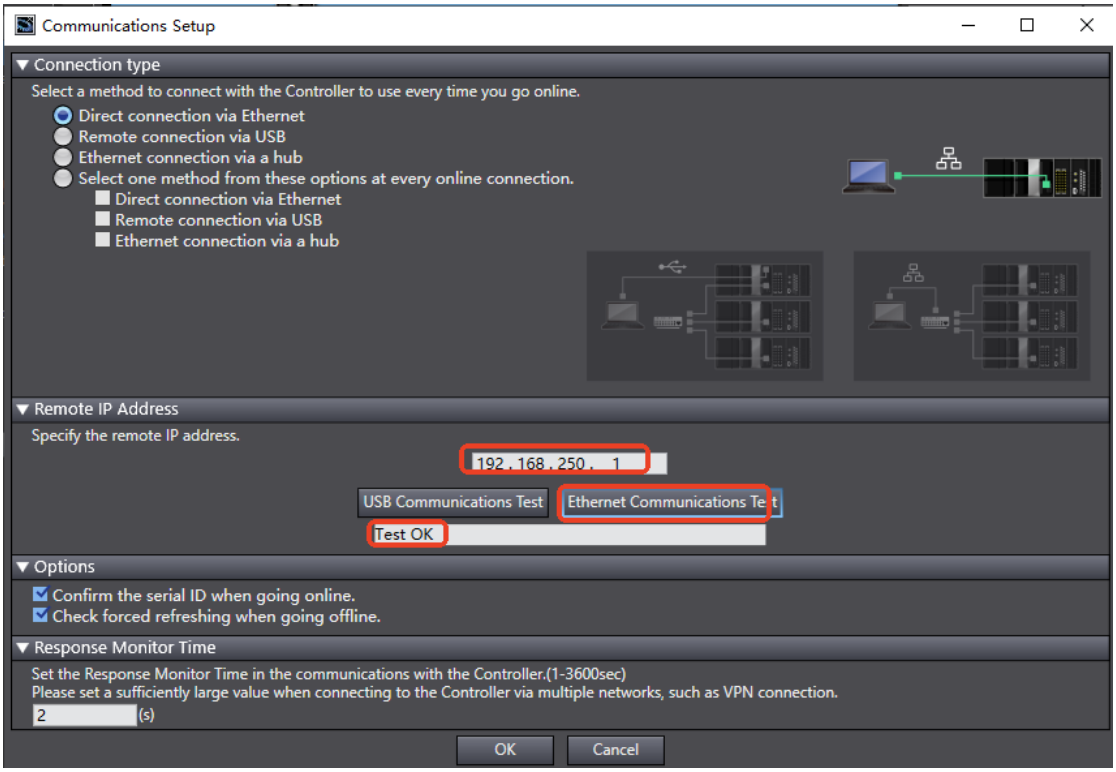

Double-click EtherCAT, right-click on the right side of the main device - display ESI library, click the installation file in the pop-up window, find the CN-8033 XML file, click open, click continue to install the XML file, and the installation is complete. It can see the newly installed CN-8033 at the bottom of the ESI library.


New Project - new_Controller_0 - Sysmac Studio (64bit)
File Edit View Insert Project Controller Simulation Tools Window Help
Multiview Explorer
new_Controller_0
Configurations and Setup
EtherCAT
CPU/Expansion Racks
ESI Library
All ESI files
Omron 3G3AX-MX2-ECT
Omron 3G3AX-RX2-ECT
Omron 3G3AX-RX-ECT
Omron 3G3M1-A2001-ECT
Omron 3G3M1-A2002-ECT
Omron 3G3M1-A2004-ECT
Omron 3G3M1-A2007-ECT
Omron 3G3M1-A2015-ECT
Omron 3G3M1-A2022-ECT
Omron 3G3M1-A2037-ECT
Omron 3G3M1-A2055-ECT
Omron 3G3M1-A2075-ECT
Omron 3G3M1-A2110-ECT
Omron 3G3M1-A2150-ECT
Omron 3G3M1-A2185-ECT
Omron 3G3M1-A4004-ECT
Omron 3G3M1-A4007-ECT
Omron 3G3M1-A4015-ECT
Omron 3G3M1-A4022-ECT
Omron 3G3M1-A4030-ECT
Omron 3G3M1-A4040-ECT
Omron 3G3M1-A4055-ECT
Omron 3G3M1-A4075-ECT
Omron 3G3M1-A4110-ECT
Omron 3G3M1-A4150-ECT
Omron 3G3M1-A4185-ECT
Omron 3G3M1-A4220-ECT
Omron 3G3M1-A8001-ECT
Omron 3G3M1-A8002-ECT
Omron 3G3M1-A8004-ECT
Omron 3G3M1-A8007-ECT
Install (File)
Install (Folder)
Uninstall
Close
Built-in EtherNet/IP Port S...
EtherCAT
Node Address|Network configuration
Master
Item name
Value
Device name
Model name
Product name
Number of Slaves
PDO Communications...
Transmission Delay Ti...
Edit Settings
Reference Clock
Total Cable Length
Fail-soft Operation Set...
Wait Time for Slave St...
PDO communications...
Revision Check Method
Serial Number Check...
打开
桌面 › FILE › 8033
在 8033 中搜索
组织
新建文件夹
XML-ODOT-BN
屏幕截图
此电脑
名称
修改日期
XML-TDL8033-V1.01-20231124
07/12/2023 15:54
文件名(N):
XML files(*.xml)
打开(O)
取消
Location
Toolbox
All vendors
Groups
All groups
Terminal Coupler
Servo Drives
Frequency Inverter
Digital IO
Analog IO
Encoder Input
Measurement Sensor
Vision Sensor
Digital Type Sensor
Input Keyword
Show all versions
NX-ECC201 Rev:1.2
NX-ECC202 Rev:1.2
NX-ECC203 Rev:1.7
Filter
Output
Build

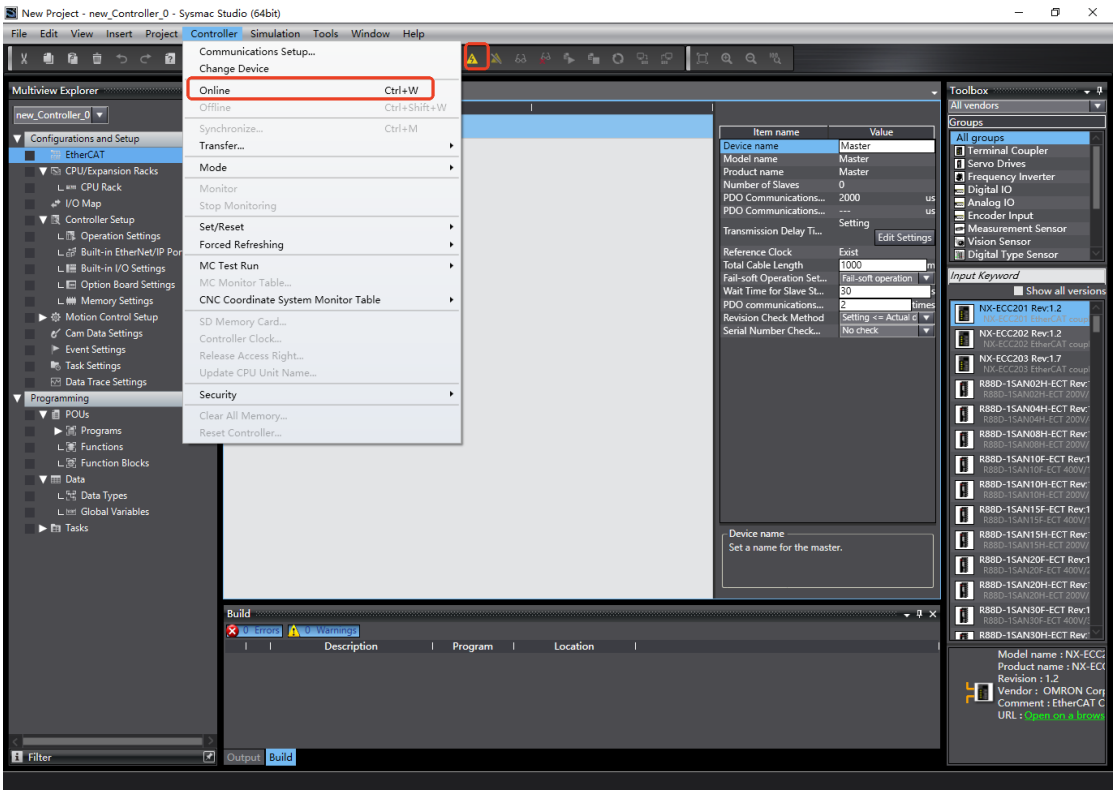

Sysmac Studio
The selected ESI files will be installed.
Do you want to continue?
XML-TDL8033-V1.01-20231124.xml
Yes
No


ESI Library
Omron R88D-1SN08H-ECT
Omron R88D-1SN08H-ECT-02
Omron R88D-1SN08H-ECT-03
Omron R88D-1SN10F-ECT
Omron R88D-1SN10H-ECT
Omron R88D-1SN150F-ECT
Omron R88D-1SN150H-ECT
Omron R88D-1SN15F-ECT
Omron R88D-1SN15F-ECT-02
Omron R88D-1SN15H-ECT
Omron R88D-1SN20F-ECT
Omron R88D-1SN20F-ECT-02
Omron R88D-1SN20H-ECT
Omron R88D-1SN30F-ECT
Omron R88D-1SN30H-ECT
Omron R88D-1SN55F-ECT
Omron R88D-1SN55H-ECT
Omron R88D-1SN75F-ECT
Omron R88D-1SN75H-ECT
Omron R88D-KNxxx-ECT
Omron R88D-KNxxx-ECT-L
Omron R88E-AECT
Omron ZW-7
Omron ZW-CE1x
Omron_Robotics_cobra_r1.6
Omron_Robotics_i4H_r1.6
Omron_Robotics_i4L_r1.6
Omron_Robotics_ix3_r1.6
Omron_Robotics_ix4_r1.6
Omron_Robotics_viper_r1.6
XML-ODOT-CN8033-V1.34-20231122
Install (File)
Install (Folder)
Uninstall
Close

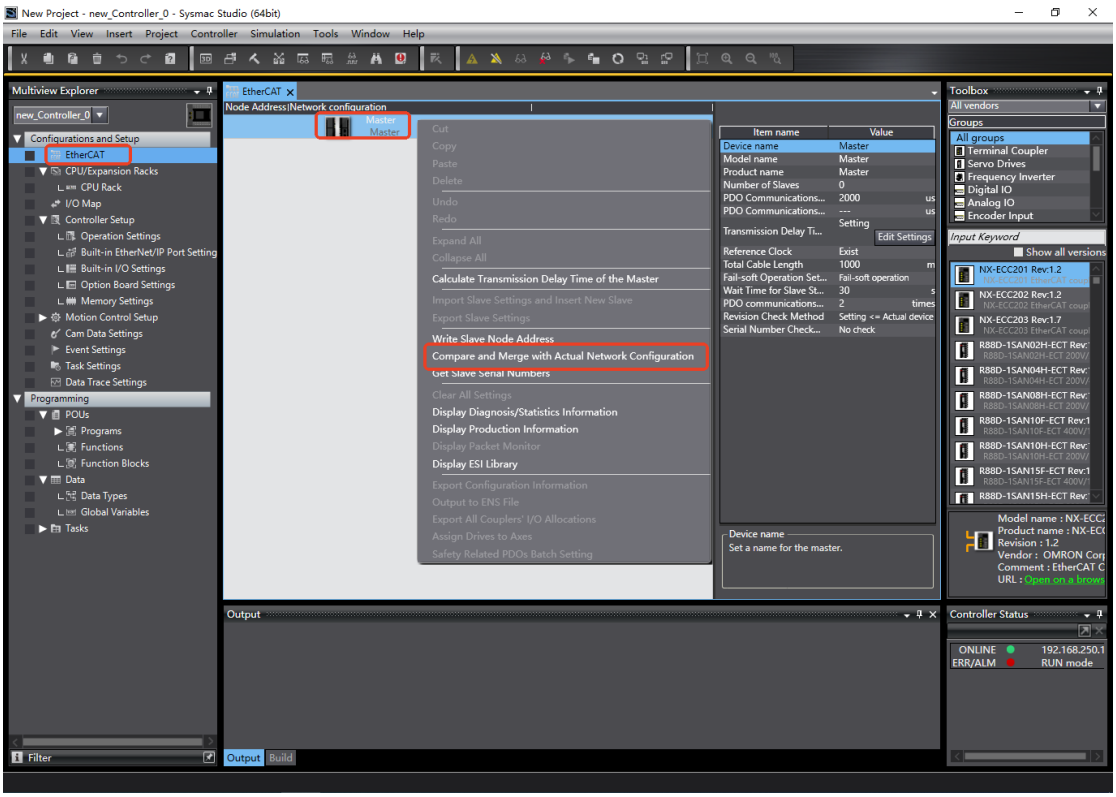
Click Controller - Communication Settings, manually enter the remote PLC IP address 192.168.250.1, click EtherNet communication test, and the test is successful. Click OK.




Click Controller—Online, or click the shortcut icon

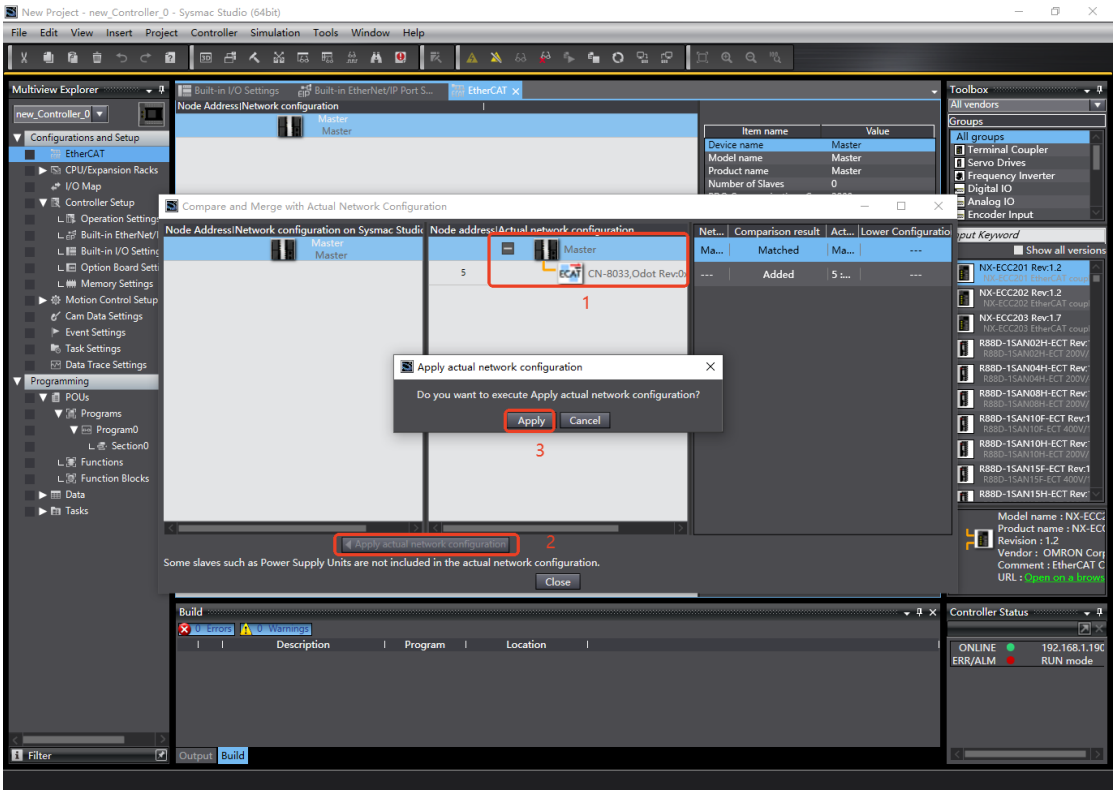


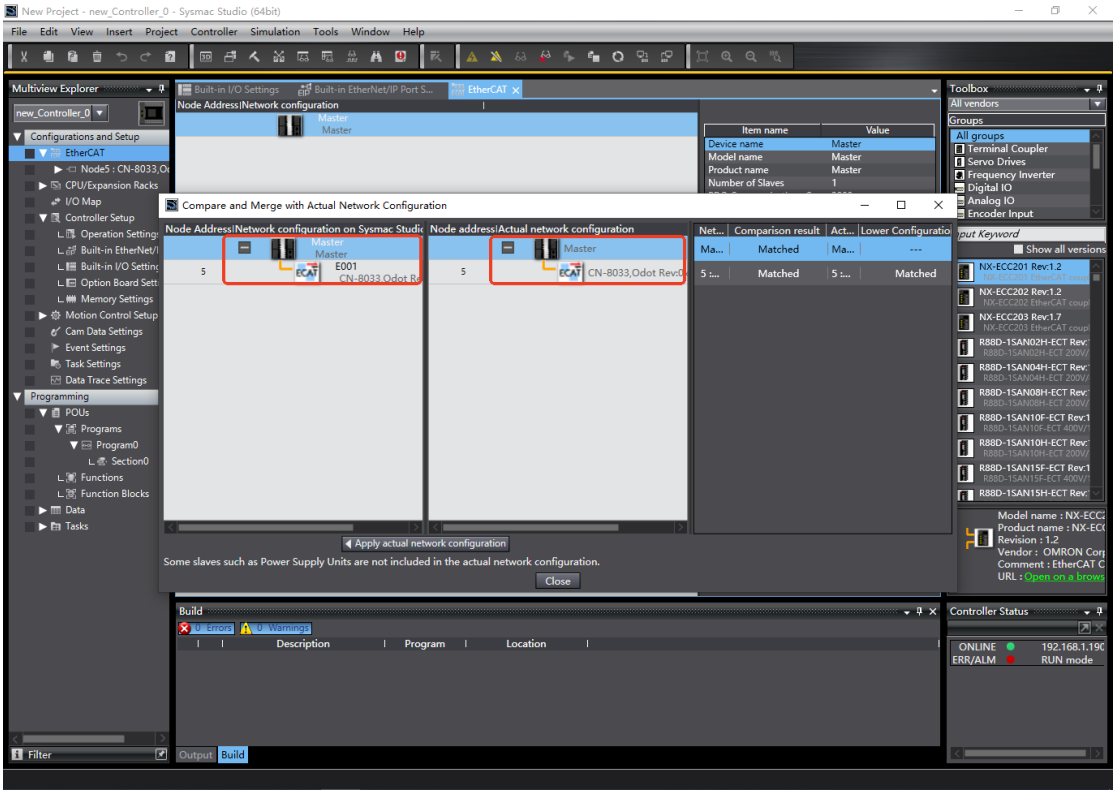

Double-click on EtherCAT, right-click on the master device, and click Compare and Merge with Actual Network Configuration.



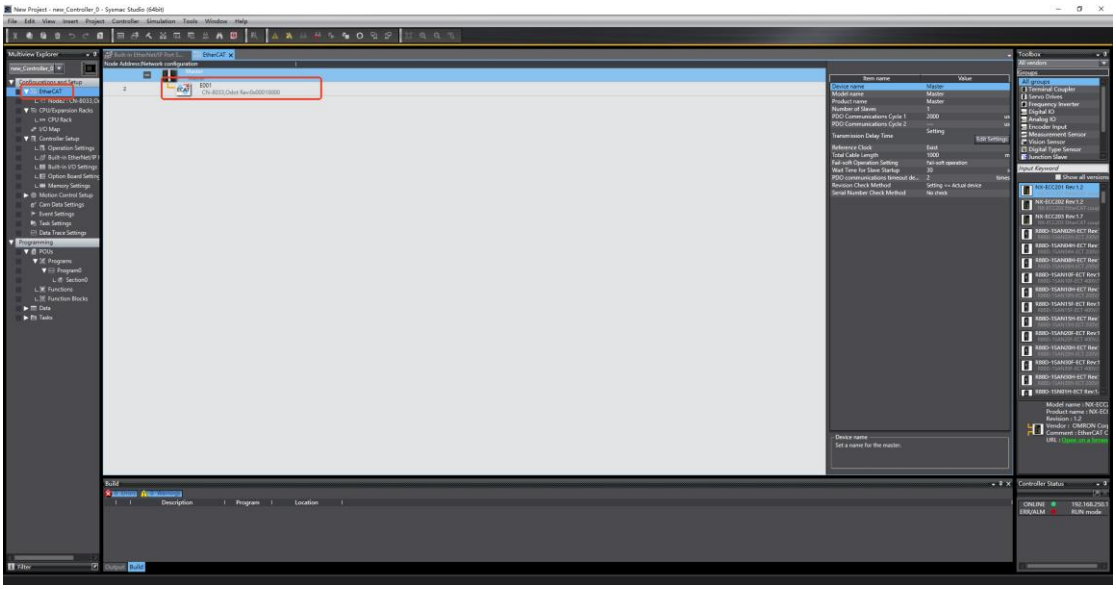

In the pop-up Compare and Merge with Actual Network Configuration window, it can

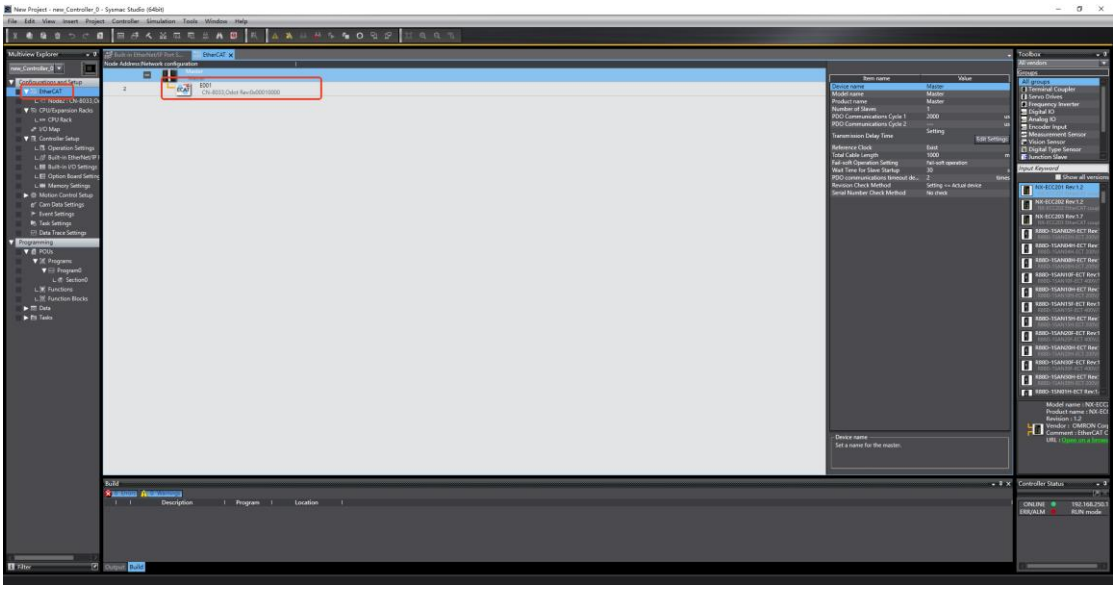
see that a CN-8033 adapter module is attached to the main device in the physical network configuration bar of the node address, and there is no attached device under the main device in the network settings bar of the node address SysmAC Studio. Click Apply Actual Network Configuration, click Apply in the pop-up window, and click Close in the pop-up window, it can see that the network configuration on SysmAC Studio is the same as the actual network configuration.



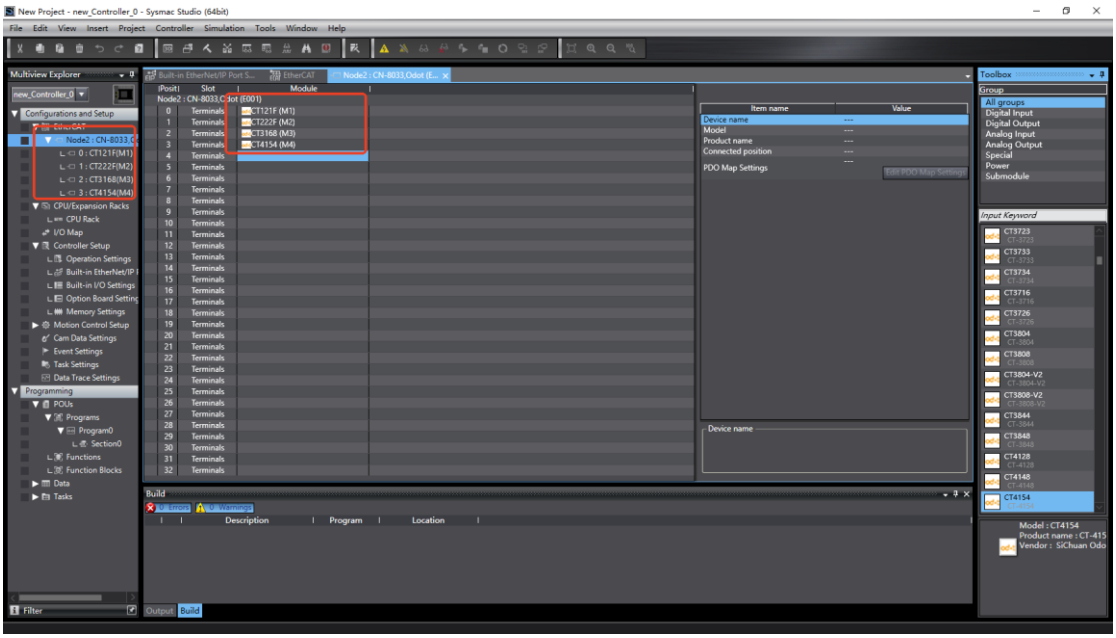



Click to close the Compare and Merge with Actual Network Configuration window.

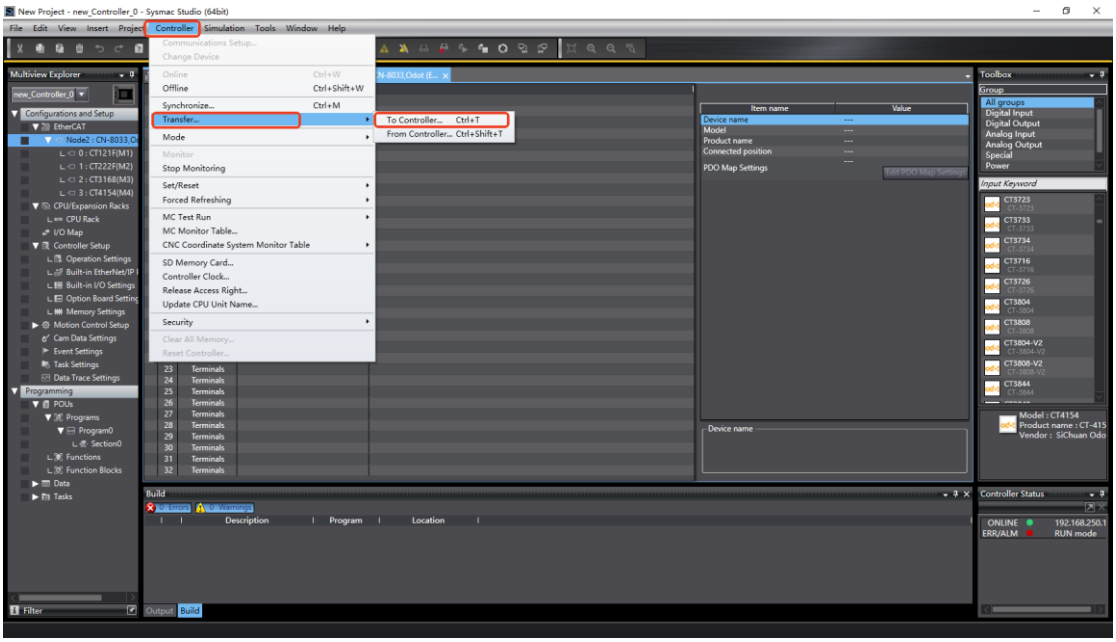


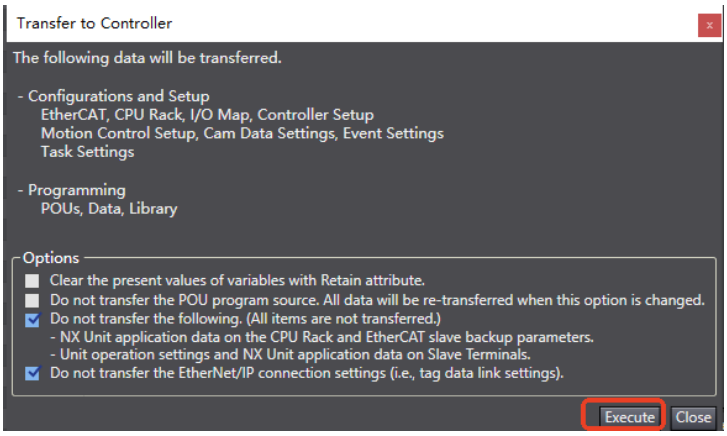


Double-click the CN-8033 to see the I/O modules hanging behind the CN-8033.

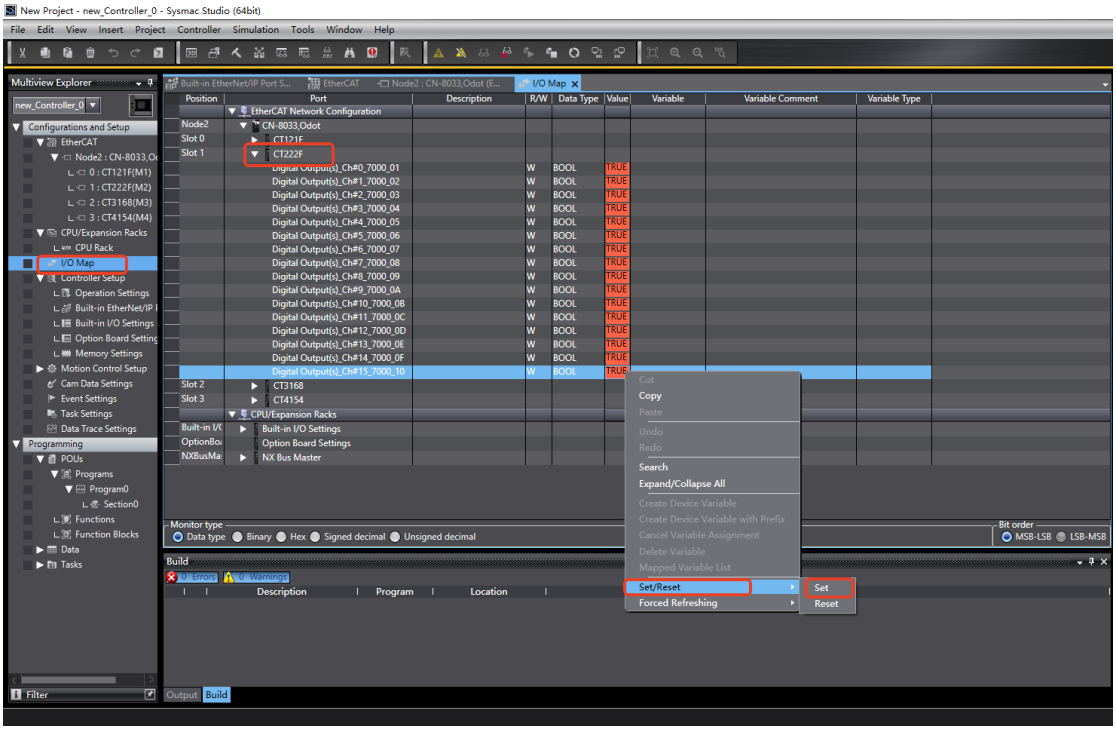


Click on the menu bar Controller - Transferring - Teleport to Controller. Click Execute in the pop-up window to download the configuration, settings, and programs to the PLC. In the pop-up window, click Yes - Yes - OK.




Double-click the I/O map, find the module CT-222F, select the channel right-click Settings/Reset - Set, and set the corresponding channel to 1.


New Project - new_Controller_0 - Sysmac Studio (64bit)
File Edit View Insert Project Controller Simulation Tools Window Help
Multiview Explorer
new_Controller_0
Configurations and Setup
EtherCAT
Node2 : CN-8033,Odot
0 : CT121F(M1)
1 : CT222F(M2)
2 : CT3168(M3)
3 : CT4154(M4)
CPU/Expansion Racks
CPU Rack
I/O Map
Controller Setup
Operation Settings
Built-in EtherNet/IP
Built-in I/O Settings
Option Board Setting
Memory Settings
Motion Control Setup
Cam Data Settings
Event Settings
Task Settings
Data Trace Settings
Programming
POUs
Programs
Program0
Section0
Functions
Function Blocks
Data
Tasks
Filter
I/O Map
Position
Port
Description
R/W
Data Type
Value
Variable
Variable Comment
Variable Type
EtherCAT Network Configuration
Node2
CN-8033,Odot
Slot 0
CT121F
Slot 1
CT222F
Digital Output(s)_Ch#0_7000_01
Digital Output(s)_Ch#1_7000_02
Digital Output(s)_Ch#2_7000_03
Digital Output(s)_Ch#3_7000_04
Digital Output(s)_Ch#4_7000_05
Digital Output(s)_Ch#5_7000_06
Digital Output(s)_Ch#6_7000_07
Digital Output(s)_Ch#7_7000_08
Digital Output(s)_Ch#8_7000_09
Digital Output(s)_Ch#9_7000_0A
Digital Output(s)_Ch#10_7000_0B
Digital Output(s)_Ch#11_7000_0C
Digital Output(s)_Ch#12_7000_0D
Digital Output(s)_Ch#13_7000_0E
Digital Output(s)_Ch#14_7000_0F
Digital Output(s)_Ch#15_7000_10
W
BOOL
TRUE
Slot 2
CT3168
Slot 3
CT4154
CPU/Expansion Racks
Built-in I/O Settings
Option Board Settings
NX Bus Master
Cut
Copy
Paste
Undo
Redo
Search
Expand/Collapse All
Create Device Variable
Create Device Variable with Prefix
Cancel Variable Assignment
Delete Variable
Mapped Variable List
Set/Reset
Forced Refreshing
Set
Reset
Monitor type
Data type
Binary
Hex
Signed decimal
Unsigned decimal
Bit order
MSB-LSB
LSB-MSB
Build
0 Errors
0 Warnings
Description
Program
Location
Output
Build

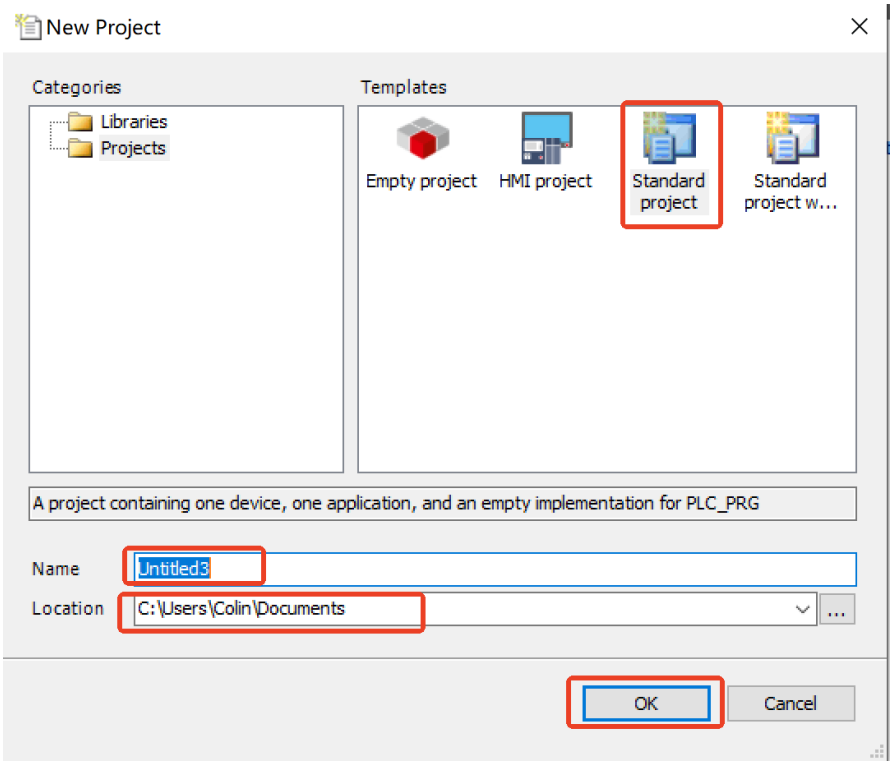
# 4 Example of communication CODESYS with the module

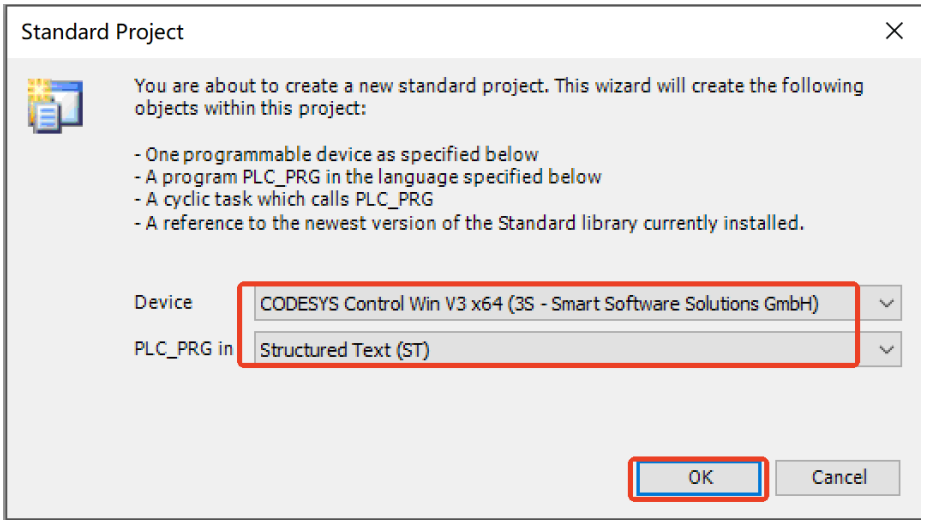
Note: 1. Install the corresponding CODESYS software according to the computer operating system. (The computer is a 64-bit operating system, and codesys needs to install 64-bit.)

2. The matching of EtherCAT Device and Codesys SP Win V3 need to install the WinPCap library（A free download is available for login winpcap.org）.

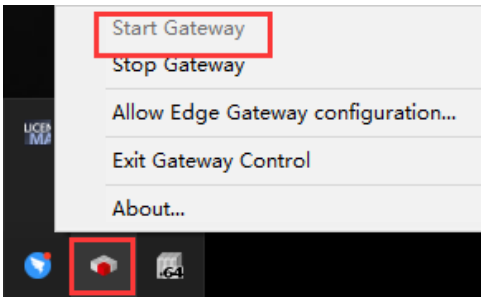
To supply the CN-8033 module with 24VDC system power supply and field power supply, connect the network port to the PC network port from the ECAT IN interface of CN-8033 [**EtherCAT communication strictly distinguishes input and output, and the interface cannot be connected incorrectly, otherwise the module communication may be abnormal**].

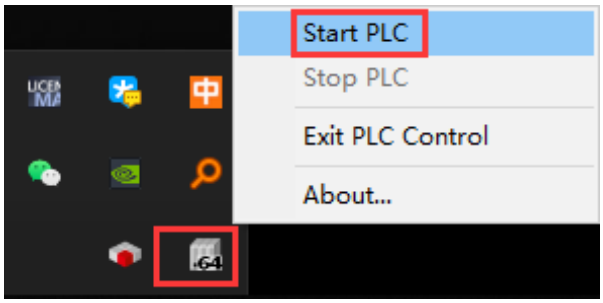
Open the CODESYS software. Create a new project and select it in the pop-up window “CODESYS Control Win V3 x64 (3S-Smart Software Solutions GmbH)”, Click OK.

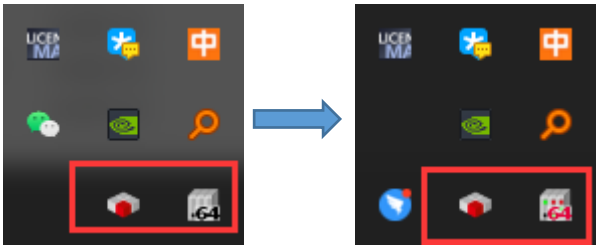




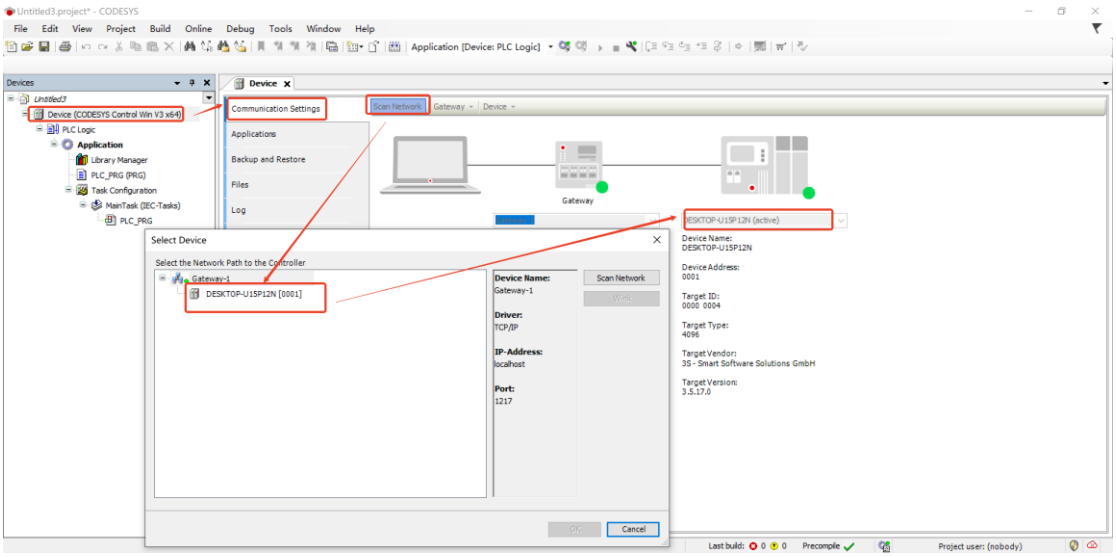

Click on the icons in the bottom right corner "CODESYS Gateway SysTray - x64" and "CODESYS Control Win SysTray - x64". Right-click on the icons Start Gateway and Start PLC, it can access the soft PLC, that is, it can test the communication without a hardware PLC. After all the icons are successfully launched, the icon color is red.



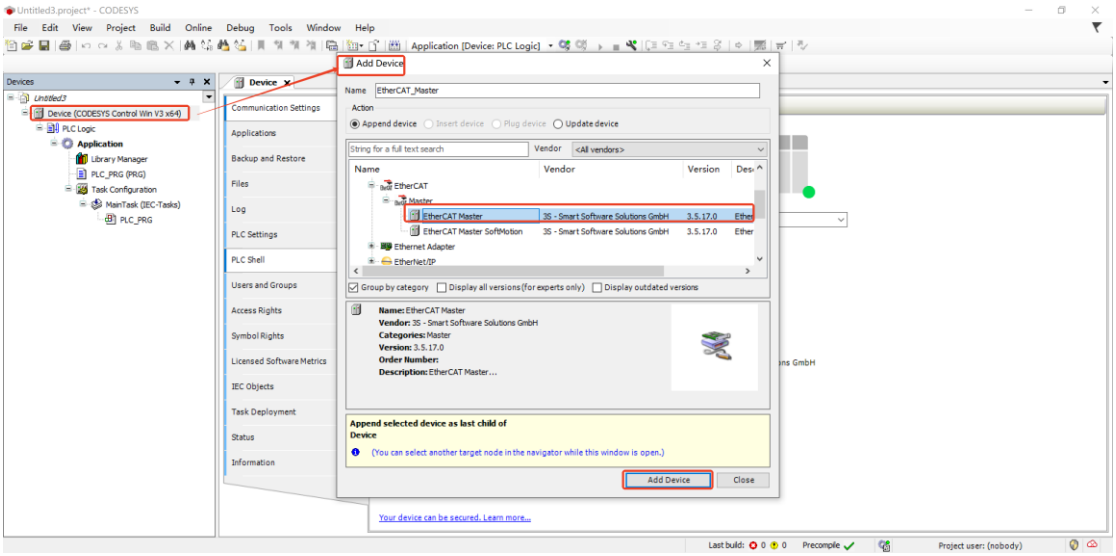



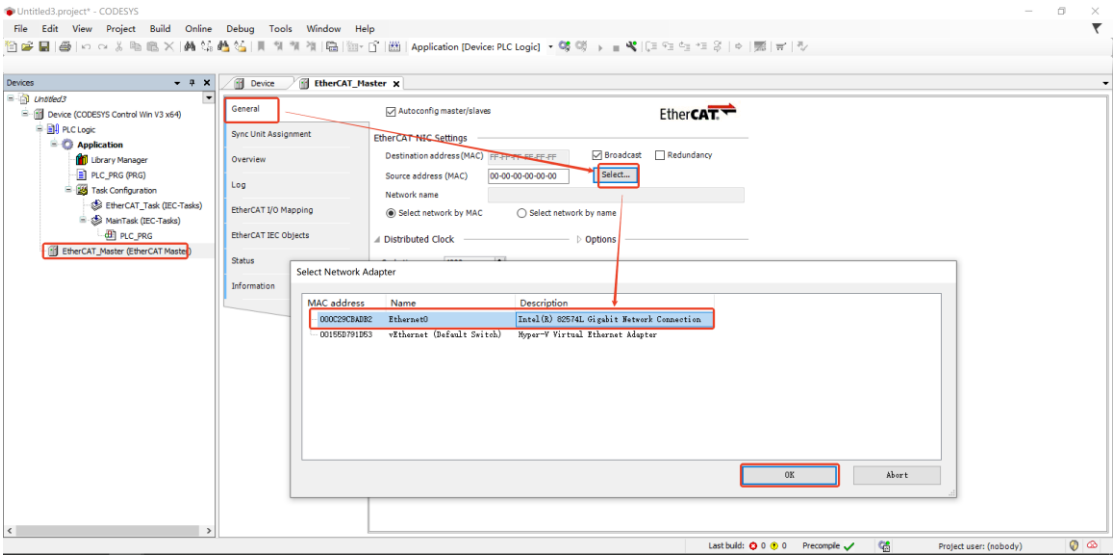
Double-click Device, click on the right to scan the network, the software will automatically scan the laptop (computer name), double-click the computer name, it can see the communication settings interface of the laptop communication display green, the communication is normal, online, downloadable, and can monitor data.



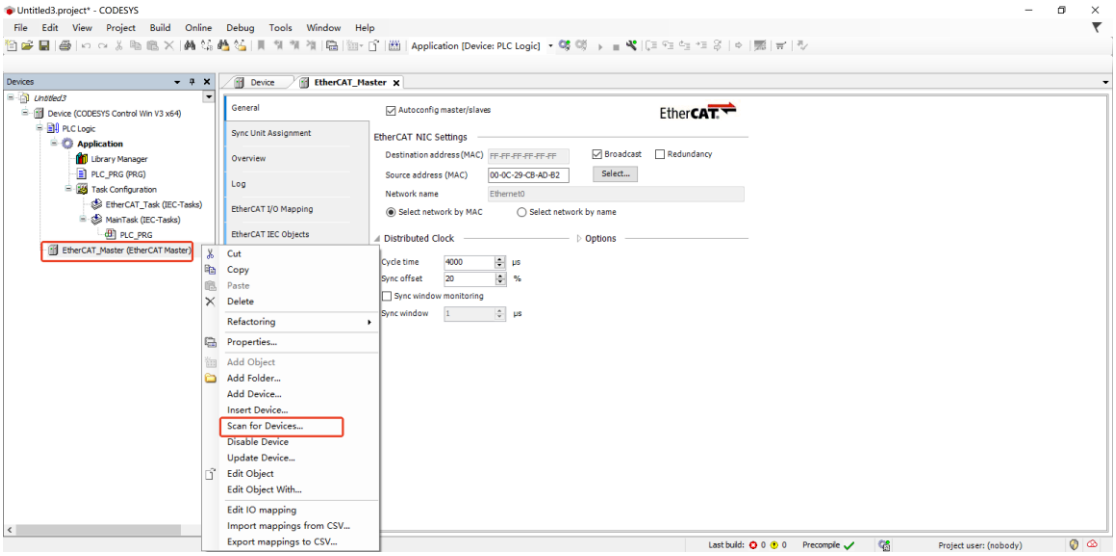

After the communication is established, right-click Device - Add Device - Select EtherCAT - Master - EtherCAT Master - Click Add Device.

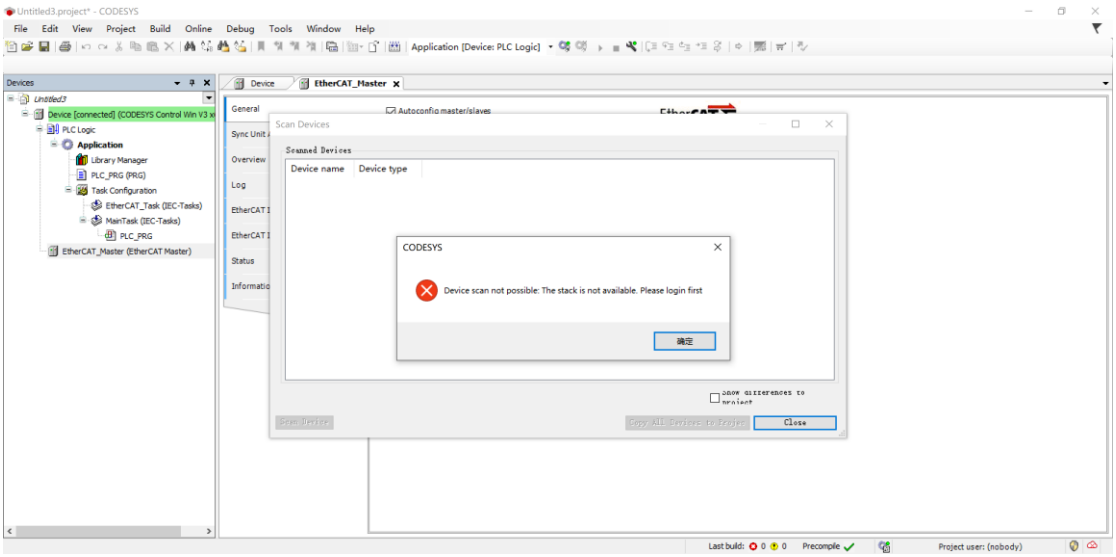



Double-click the EtherCAT_Master, click EtherCAT NIC Settings on the right side - Browse, select the local NIC in the pop-up window, and click OK.

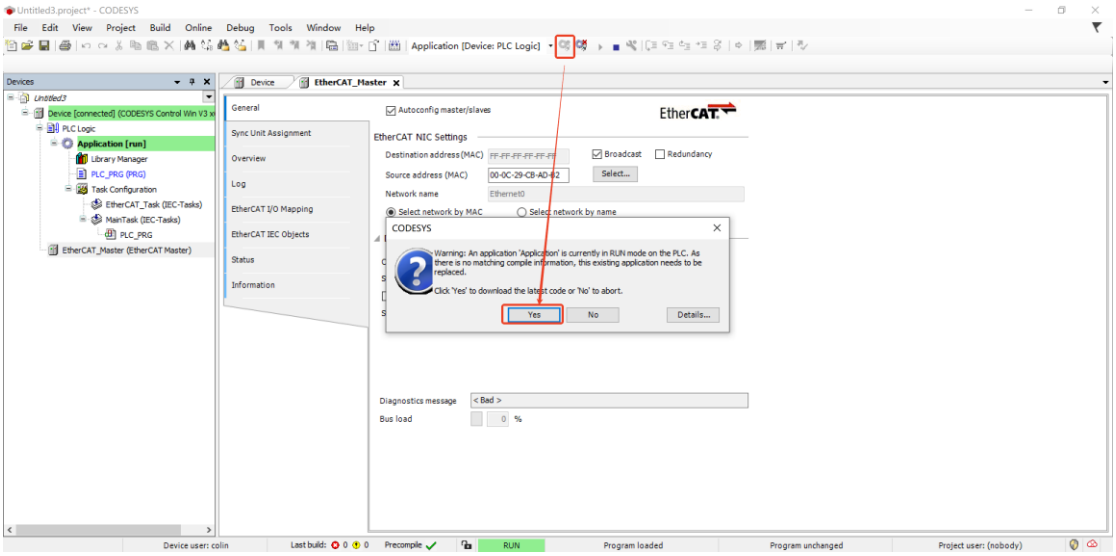



Right-click EtherCAT_Master, click on the scan module, and the pop-up window will display "Unable to scan device: stack unavailable!" Please log in first".

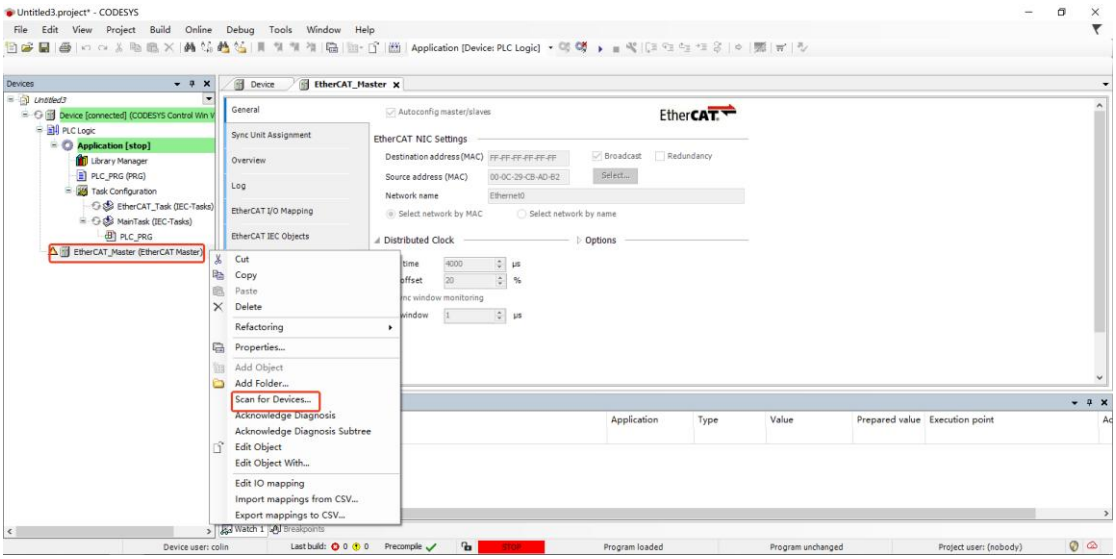


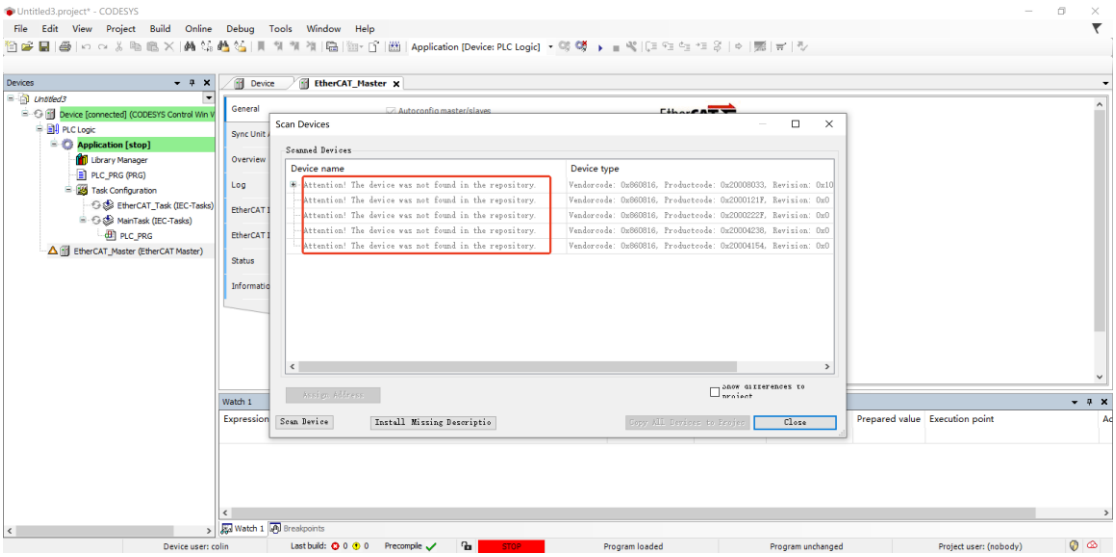
Close the window, select the PLC Device, click "Compile", click "Login" if there is no error in compilation, and click Yes. Click "Launch".



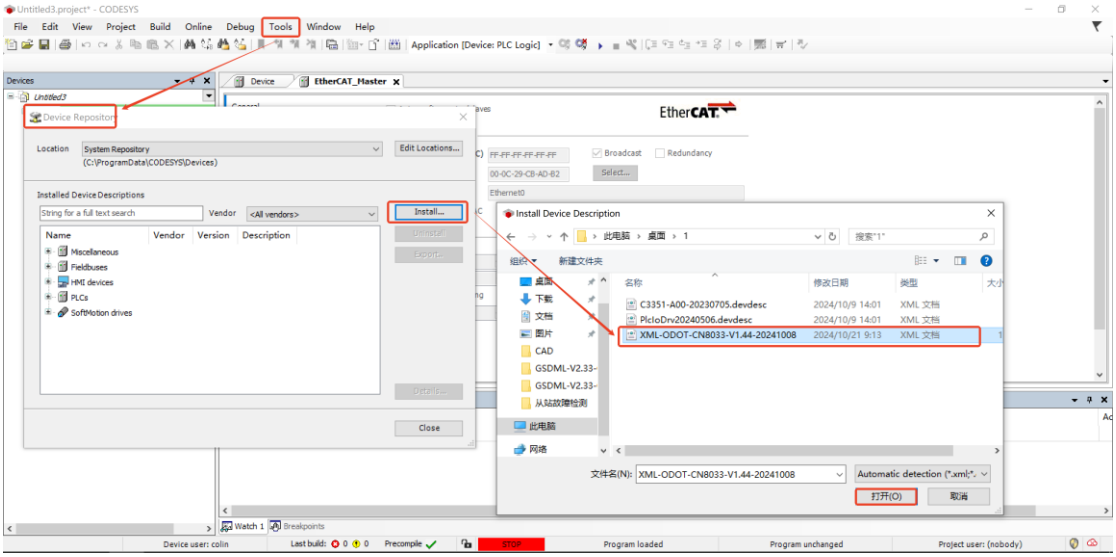

Right-click EtherCAT_Master and click on the Scan module.



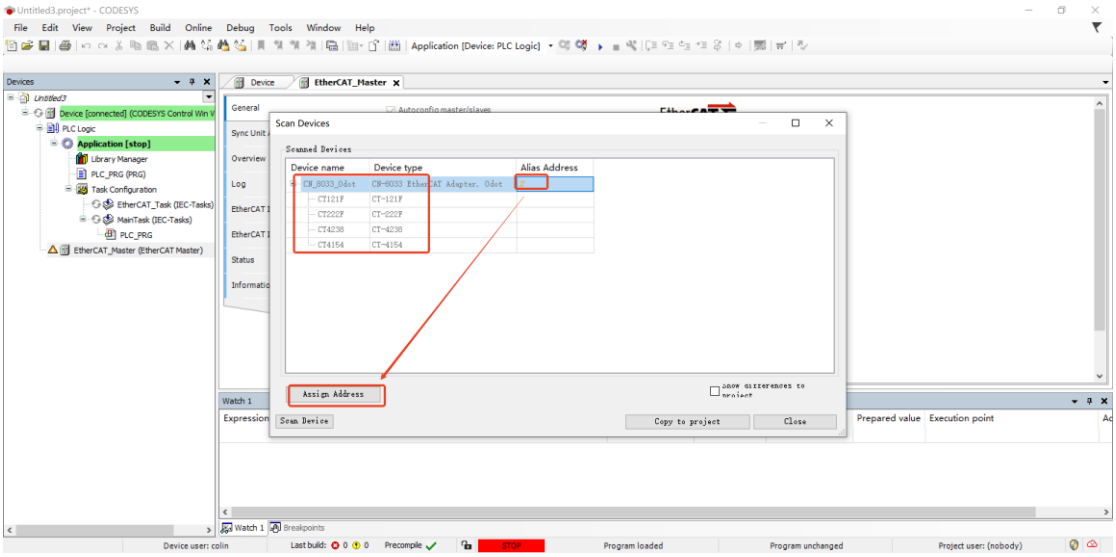

In the pop-up window, if the device is not located in the Device Library, click Tools - Install Device Repository.



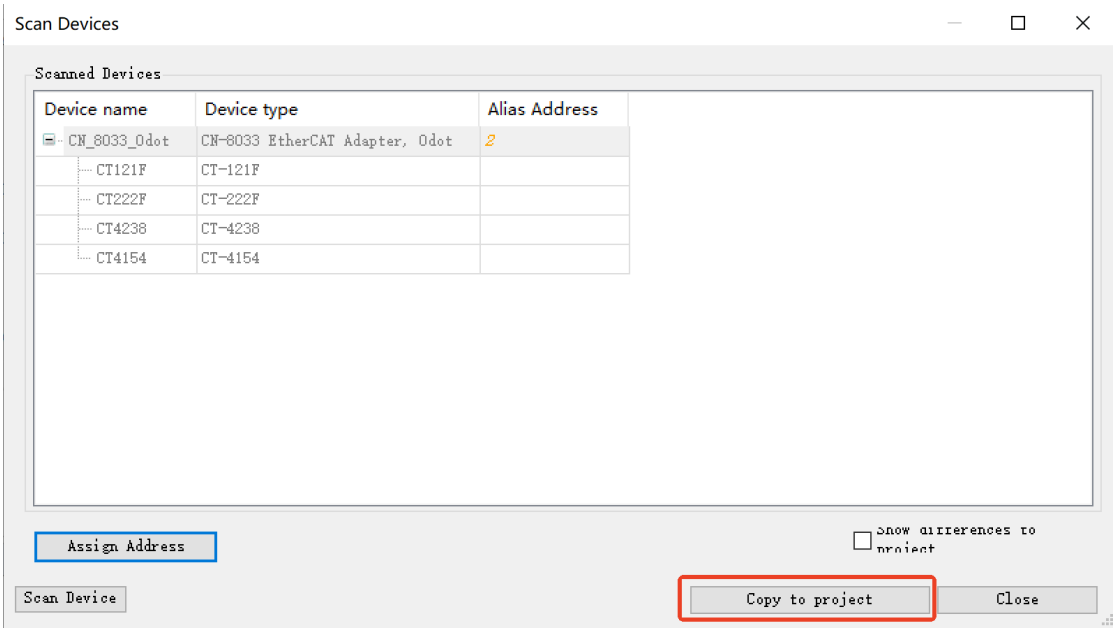

Click Install in the pop-up window, select the CN-8033 xml file, click Open, and successfully install the CN-8033 XML file.



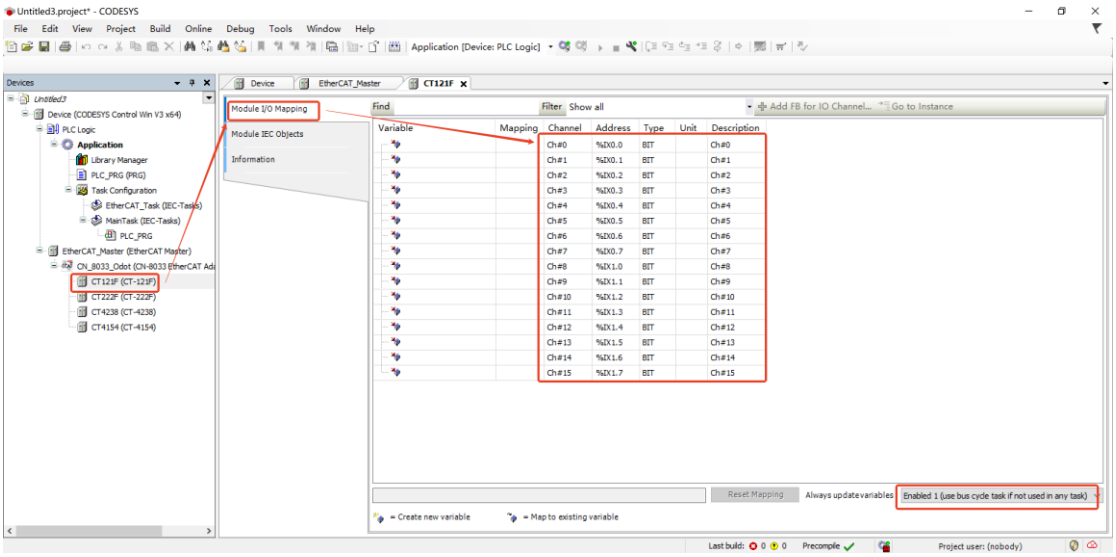

Right-click EtherCAT_Master and click on the Scan module. The factory alias address of the module is 0. It can set the alias address through the module hardware DIP code, or set it in the CODESYS software, select the scanned CN-8033, write a 2 in the alias address, and click to assign the address.



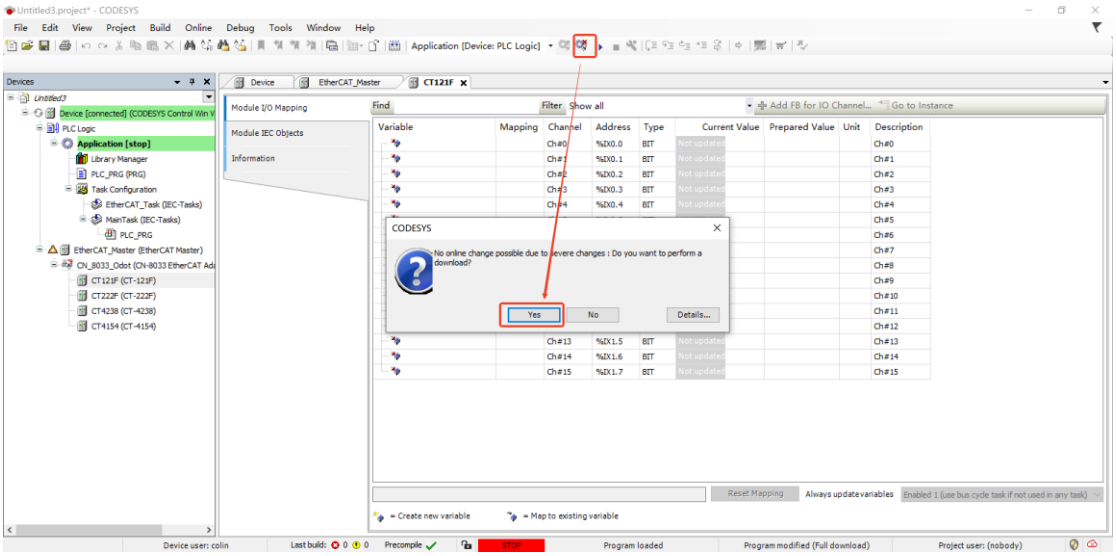

Close the window, right-click, EtherCAT_Master, and click Scan Module. It can scan the adapter module and I/O module normally, and click to copy all devices to the project.



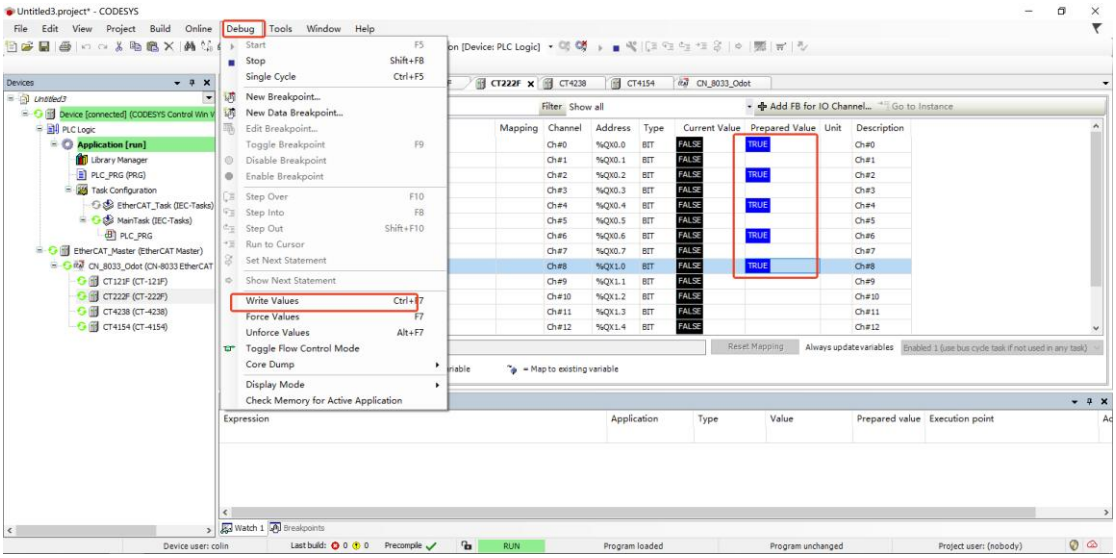

Log out of the PLC login, select the IO module, set the module I/O mapping, and update the variable selection: Enable 1 all the time.

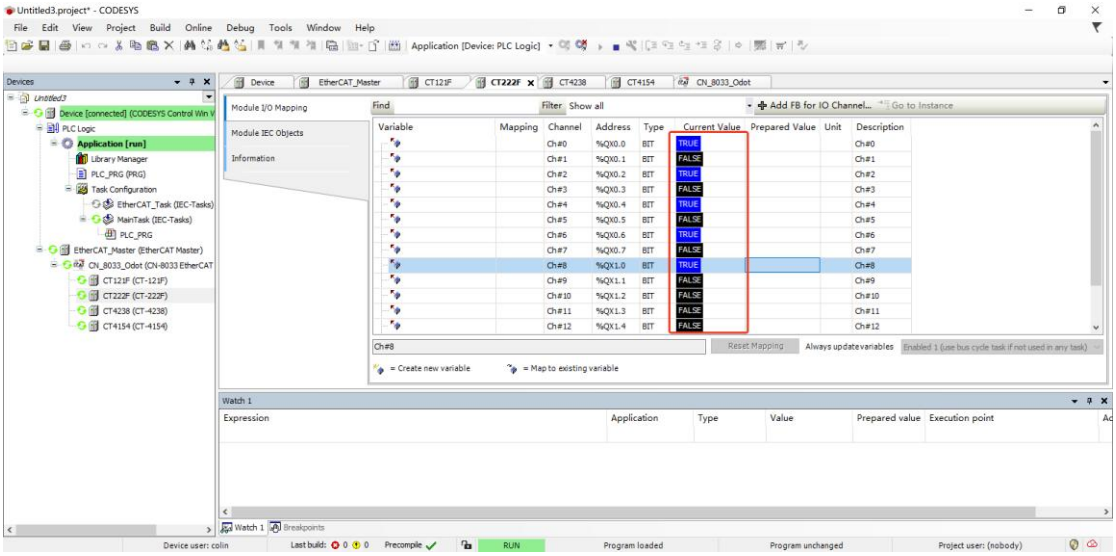


After the parameters are updated, select the PLC Device and click Compile, Login, and Online.



Select CT-222F, modify the value on the right side of the preparatory value, and click "Debug" - "Write Value" to write the value to CT-222F.

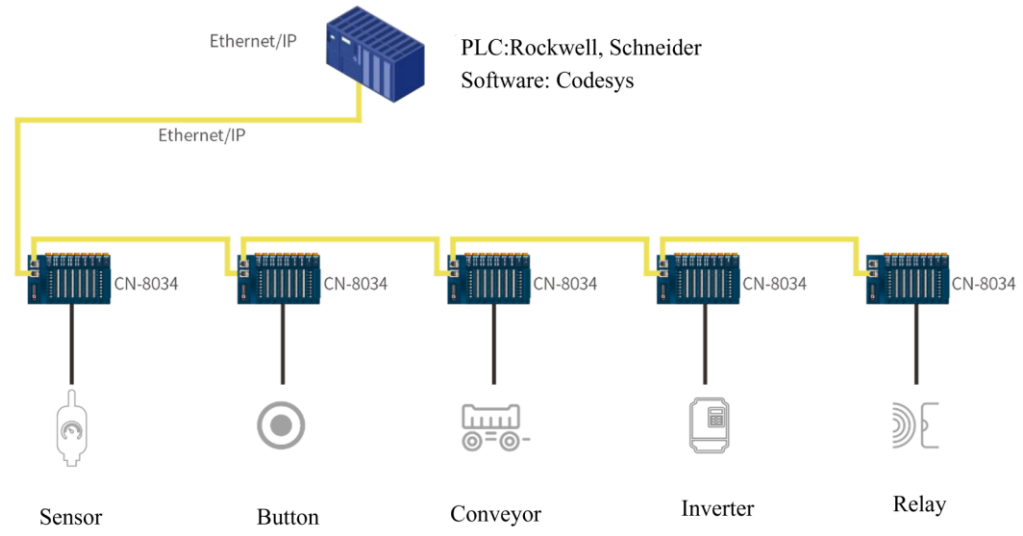

Untitled3.project* - CODESYS
File Edit View Project Build Online Debug Tools Window Help
Start F5
Stop Shift+F8
Single Cycle Ctrl+F5
New Breakpoint...
New Data Breakpoint...
Edit Breakpoint...
Toggle Breakpoint F9
Disable Breakpoint
Enable Breakpoint
Step Over F10
Step Into F8
Step Out Shift+F10
Run to Cursor
Set Next Statement
Show Next Statement
Write Values Ctrl+F7
Force Values F7
Unforce Values Alt+F7
Toggle Flow Control Mode
Core Dump
Display Mode
Check Memory for Active Application
Mapping Channel Address Type Current Value Prepared Value Unit Description
Reset Mapping
Always update variables
Expression Application Type Value Prepared value Execution point
Device user: colin
Last build: 0 0 Precompile
RUN
Program loaded
Program unchanged
Project user: (nobody)


Untitled3.project* - CODESYS
File Edit View Project Build Online Debug Tools Window Help
Application [Device: PLC Logic]
Module I/O Mapping
Module IEC Objects
Information
Variable Mapping Channel Address Type Current Value Prepared Value Unit Description
Reset Mapping
Always update variables
= Create new variable
= Map to existing variable
Watch 1
Expression Application Type Value Prepared value Execution point
Device user: colin
Last build: 0 0 Precompile
RUN
Program loaded
Program unchanged
Project user: (nobody)

# Example of communication for the CN-8034 module

## 1 Topology

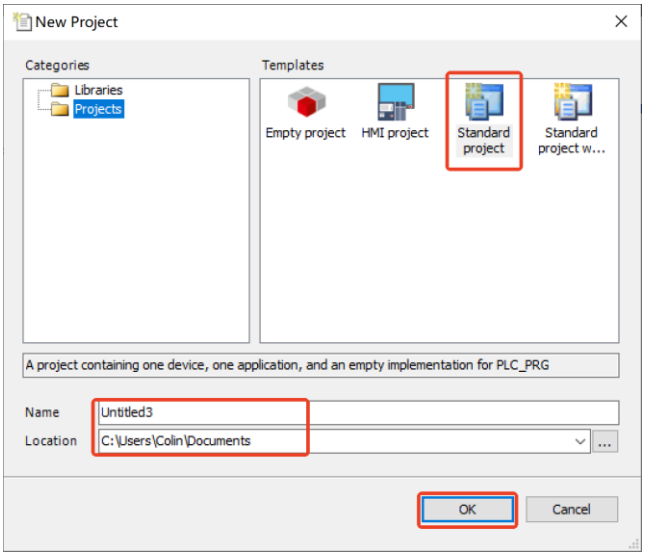
Ethernet/IP communication topology diagram

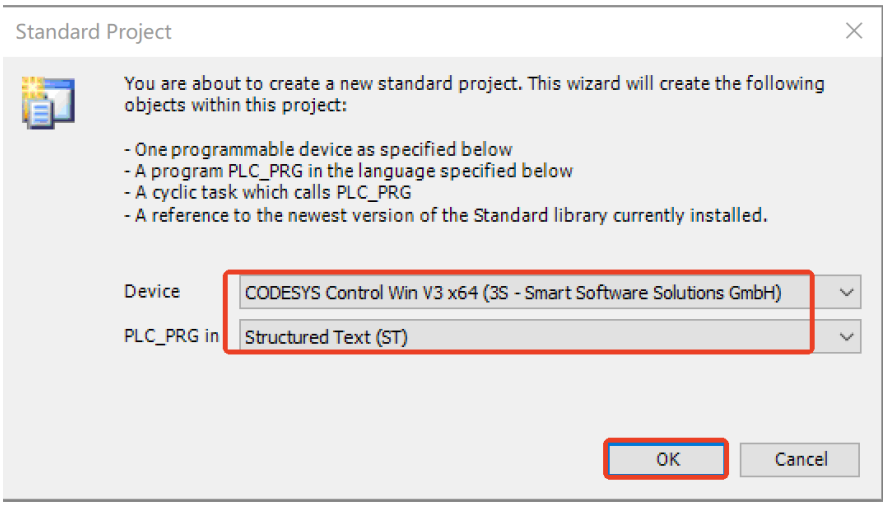



## 2 Example of communication CODESYS with the module

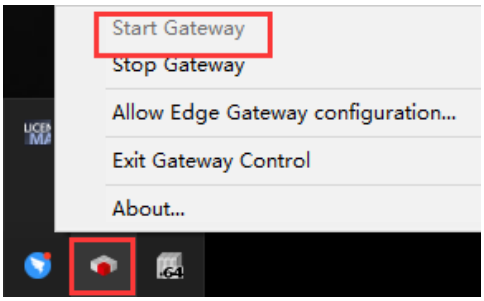
To supply the CN-8034 module with a 24VDC system power supply and field power supply, connect the CN-8034 from the port to the PC network port with a network cable.

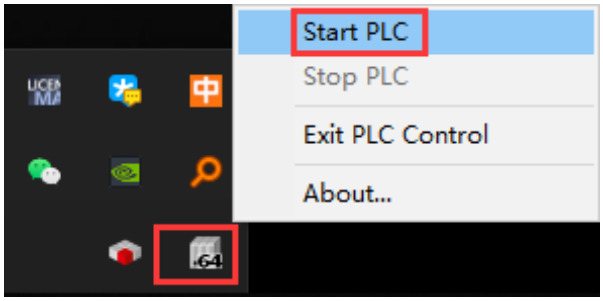
Open the CODESYS software. Create a new project and select it in the pop-up window “CODESYS Control Win V3 x64 （3S-Smart Software Solutions GmbH）”, click OK.

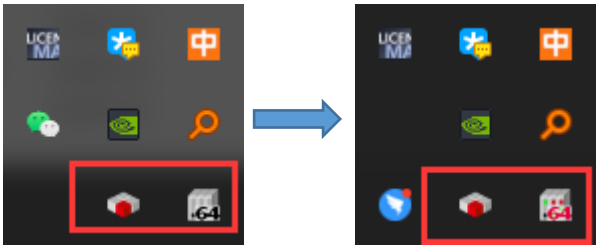




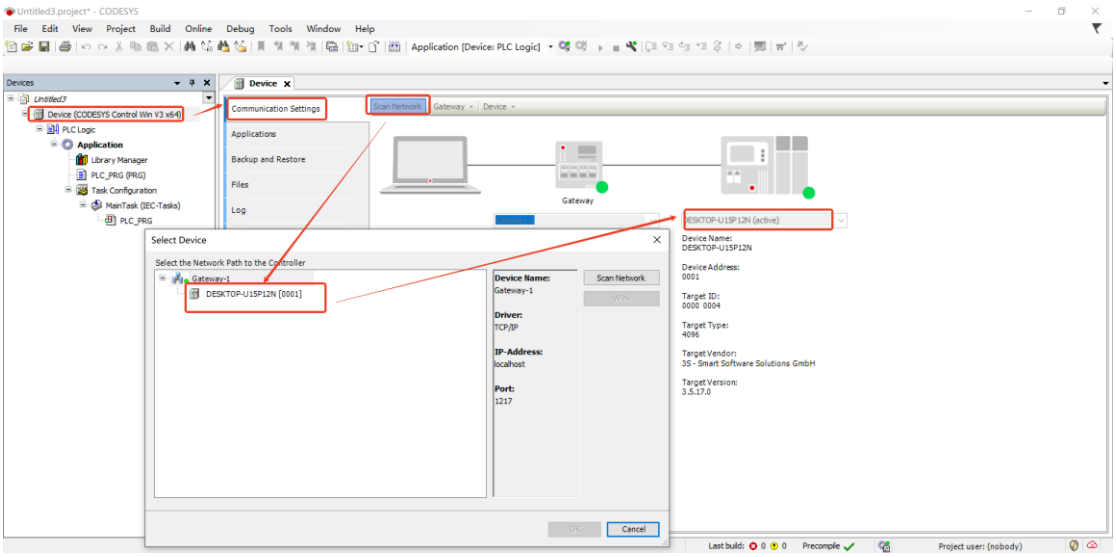

Click the icon in the bottom right corner "CODESYS Gateway SysTray - x64"and "CODESYS Control Win SysTray - x64". Right-click icon Start Gateway and Start PLC, it can take a soft PLC, that is, test the communication without a hardware PLC. After all the icons are successfully launched, the icon color is red.



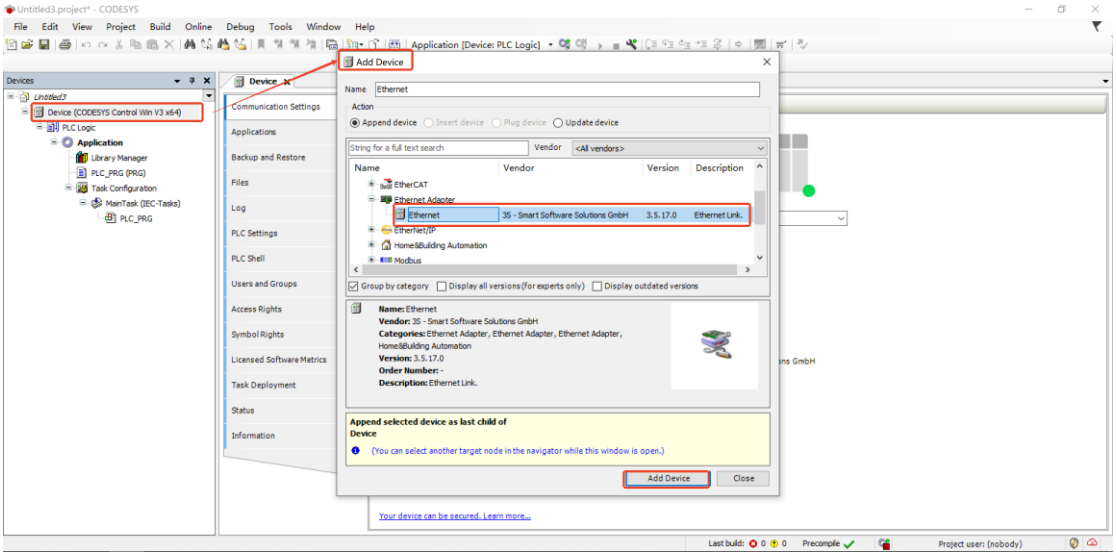



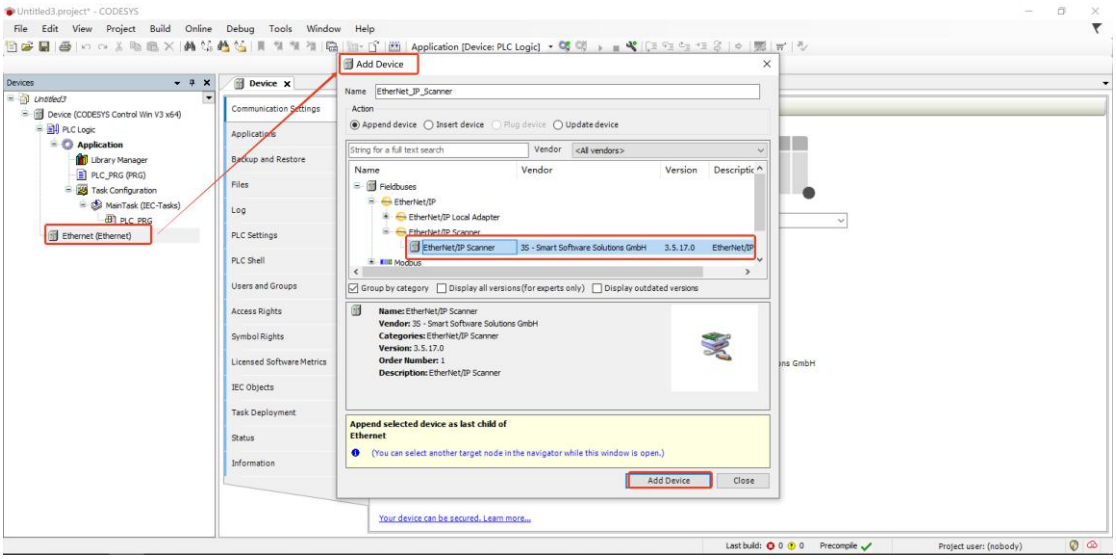
Double-click Device, click on the right to scan the network, the software will automatically scan the laptop (computer name), double-click the computer name, it can see the communication settings interface of the laptop communication display green, the communication is normal, online, downloadable, and it can monitor data.



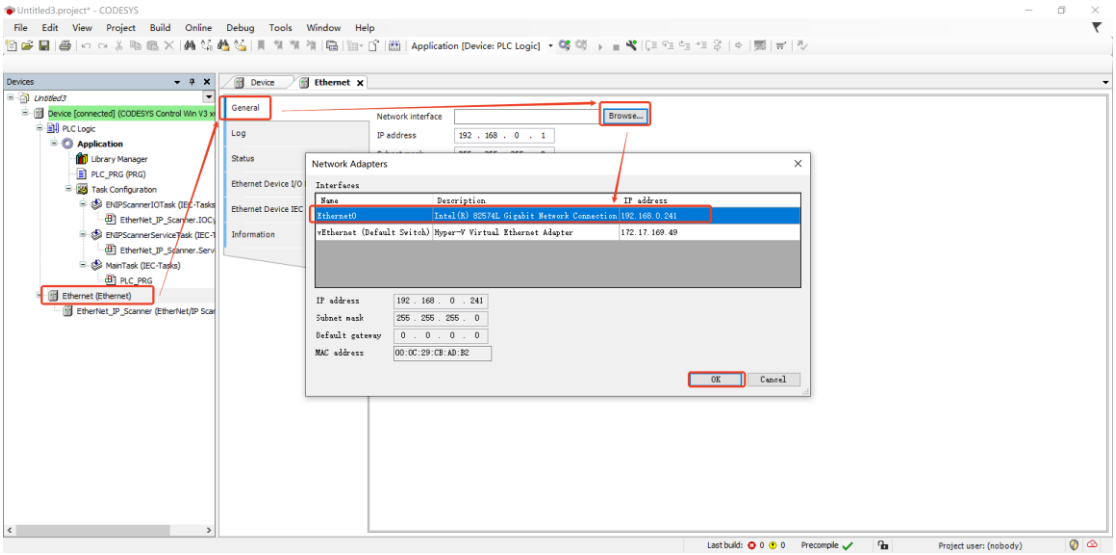

After the communication is established, right-click Device - Add Device - Select Ethernet Adapter - Ethernet - Click Add Device.




Select Ethernet, and right click EthernetIP—EthernetIP scanner—Ethernet/IP Scanner, click Add device.

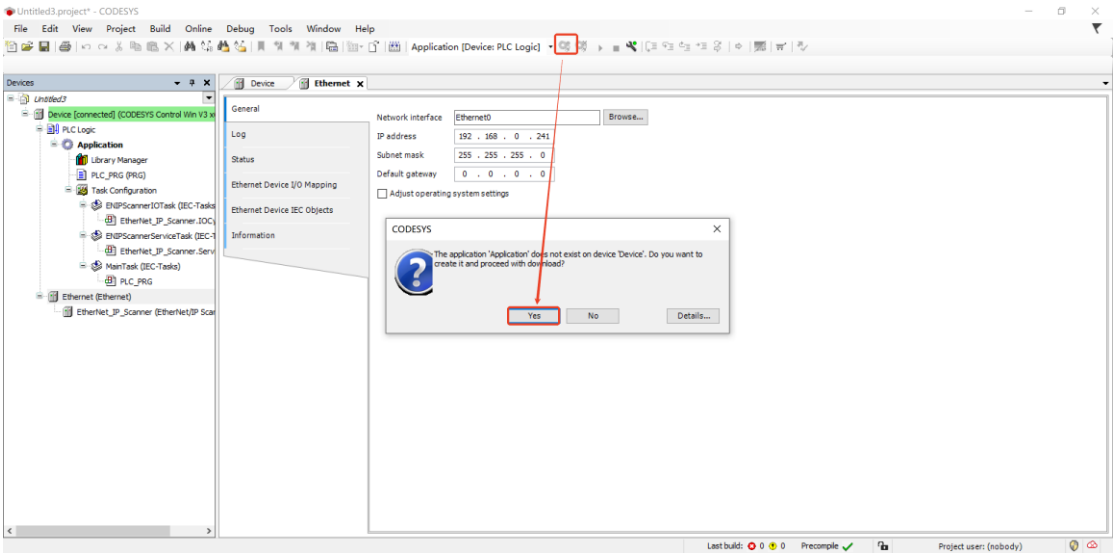



Double-click Ethernet, click General - Interface on the right to select the local network card, select the local network card in the pop-up window, and click OK.

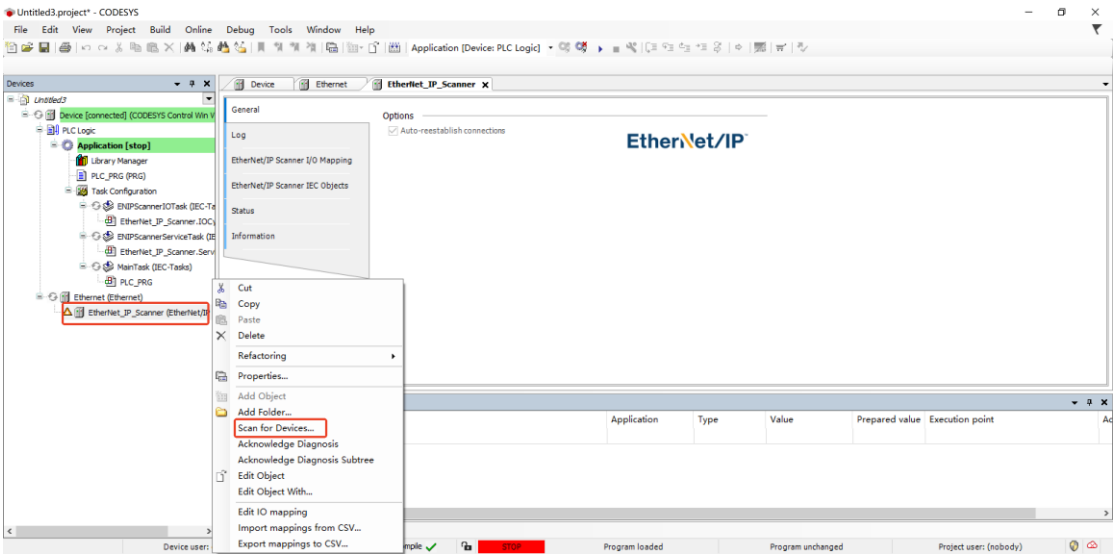



Right-click on Ethernet/IP Scanner, click on the scan module, and the pop-up window will display "Unable to scan: stack unavailable!" Please log in first".

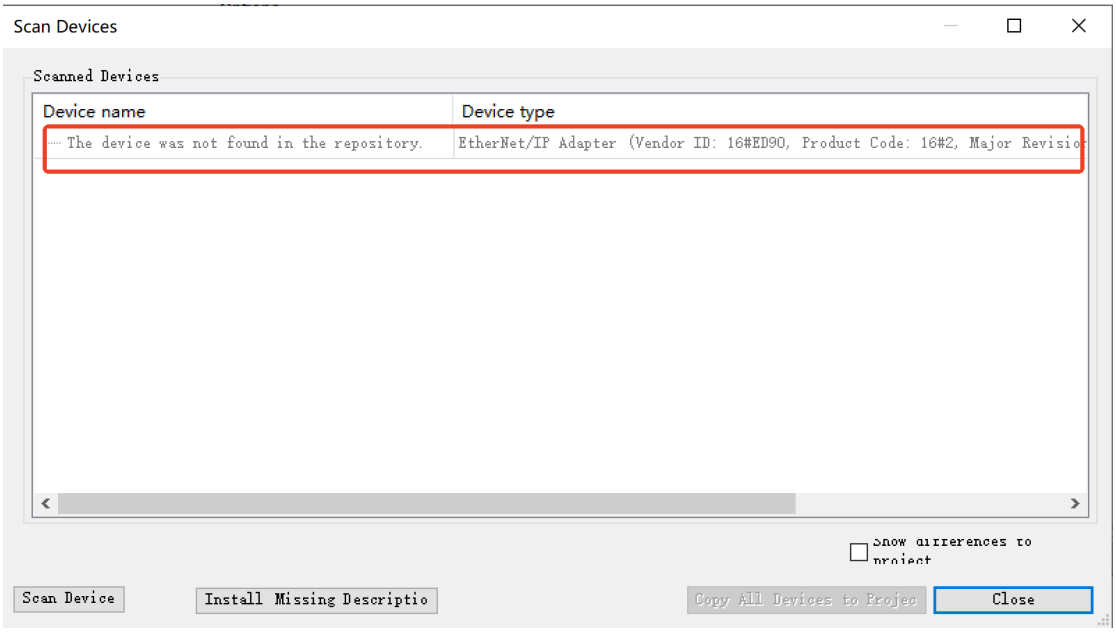
Close the window, select the PLC Device, click "Compile", click "Login" if there is no error in compilation, and click Yes. Click "Launch".



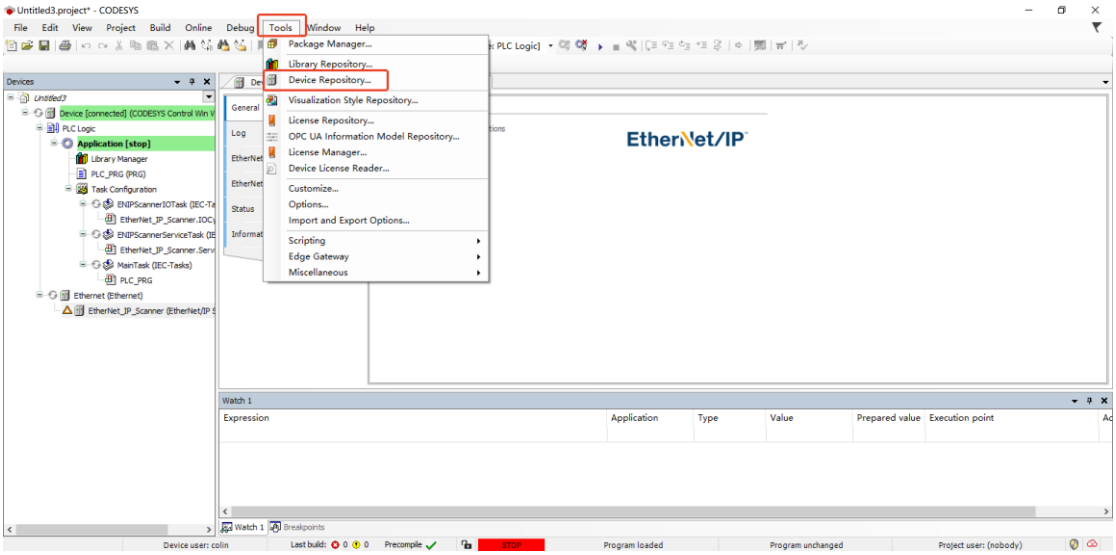

Right click Ethernet/IP Scanner, then click the Scan for devices.



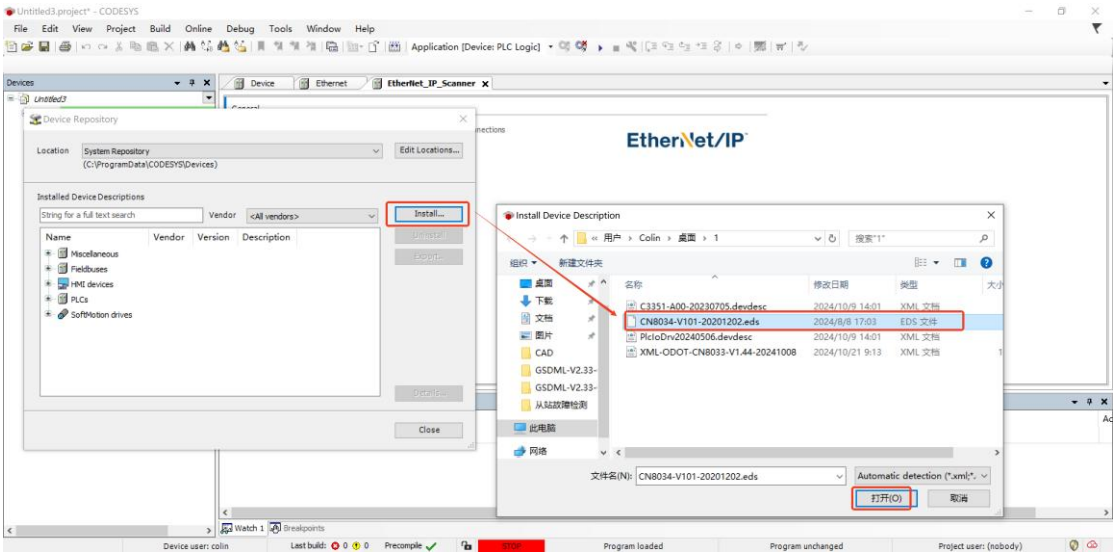

In the pop-up window, the device is not located in the device library.



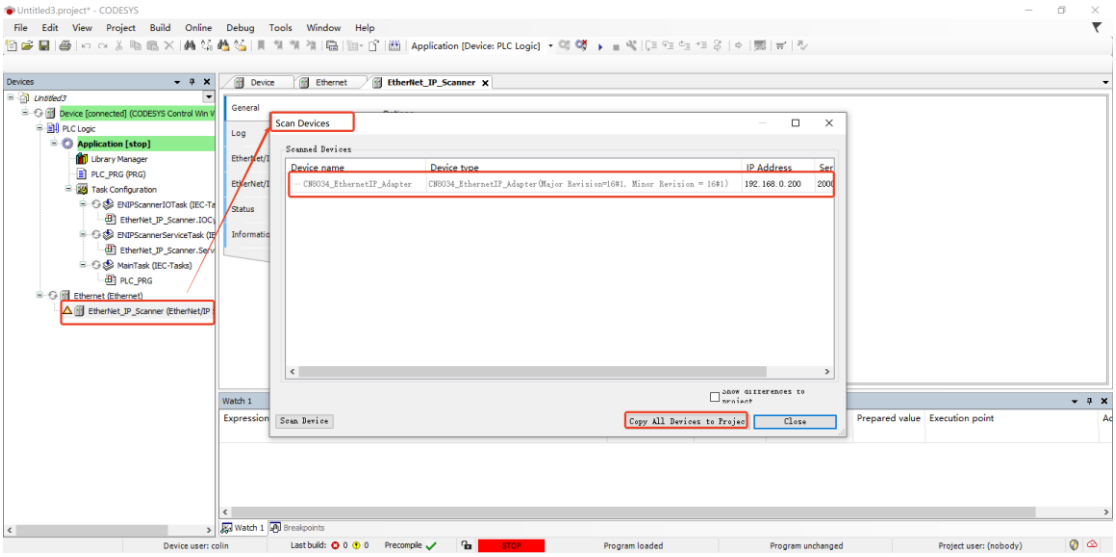

Click Tools – Install Device Repository. (The CN-8034 eds file can be installed when the Codesys software is opened).



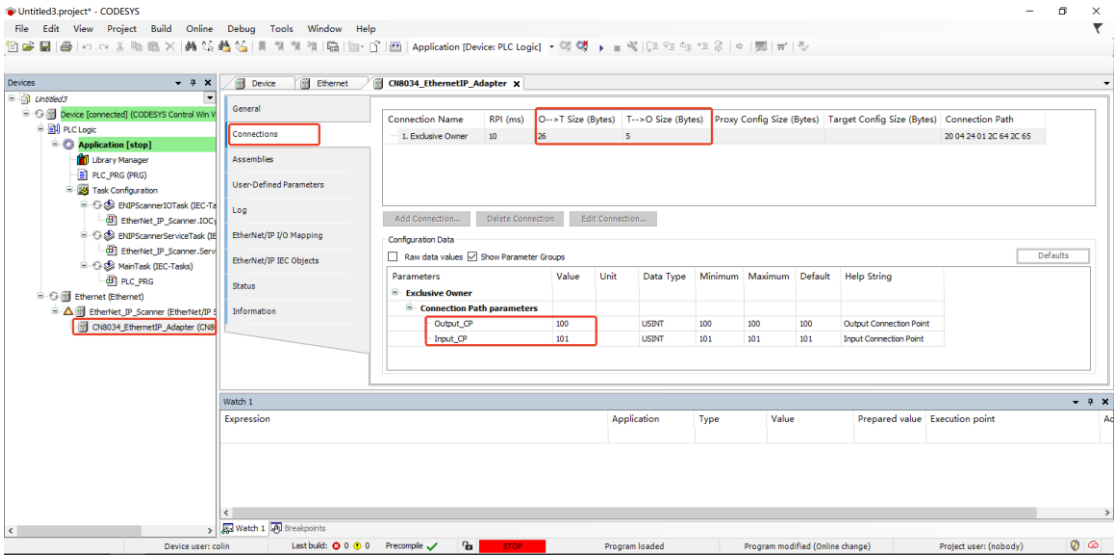

In the pop-up window, click Install, select the CN-8034 eds file, click Open, and successfully install the CN-8034 eds file.



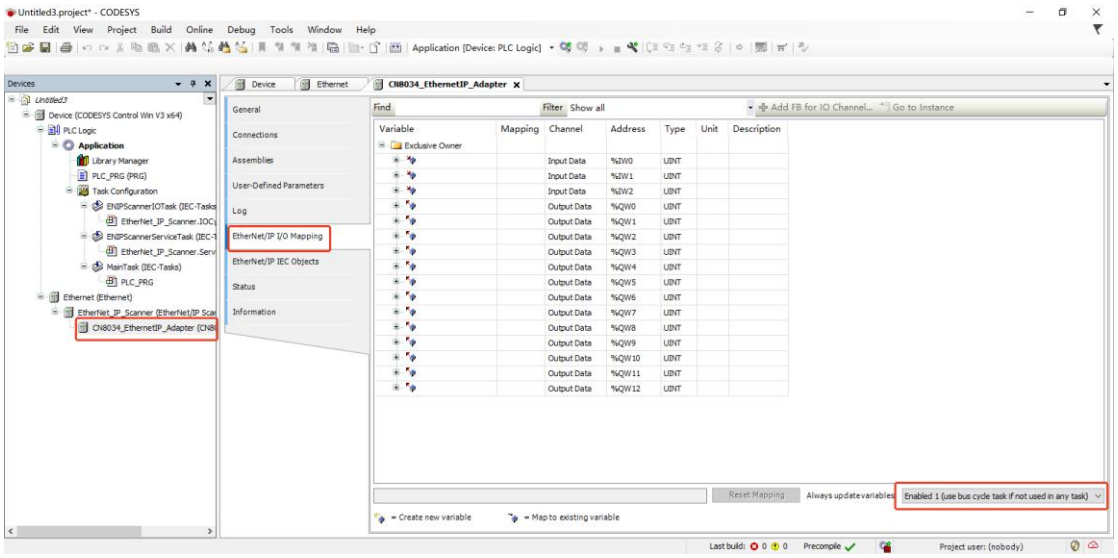

Right-click on Ethernet/IP Scanner and click on the Scan module. Copy the scanned CN-8034 module to the project.



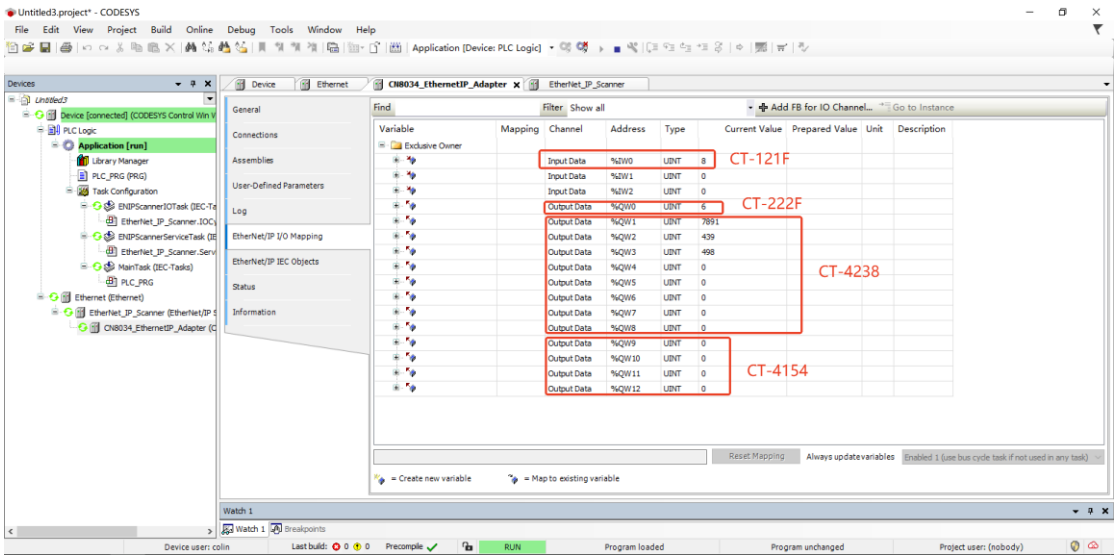

Log out of the PLC and double-click the CN-8034 module to view the input and output data size of the IO module behind the CN-8034 module.




Click on the Ethernet/IP I/O mapping and set the Always Update variable: Enable 1.



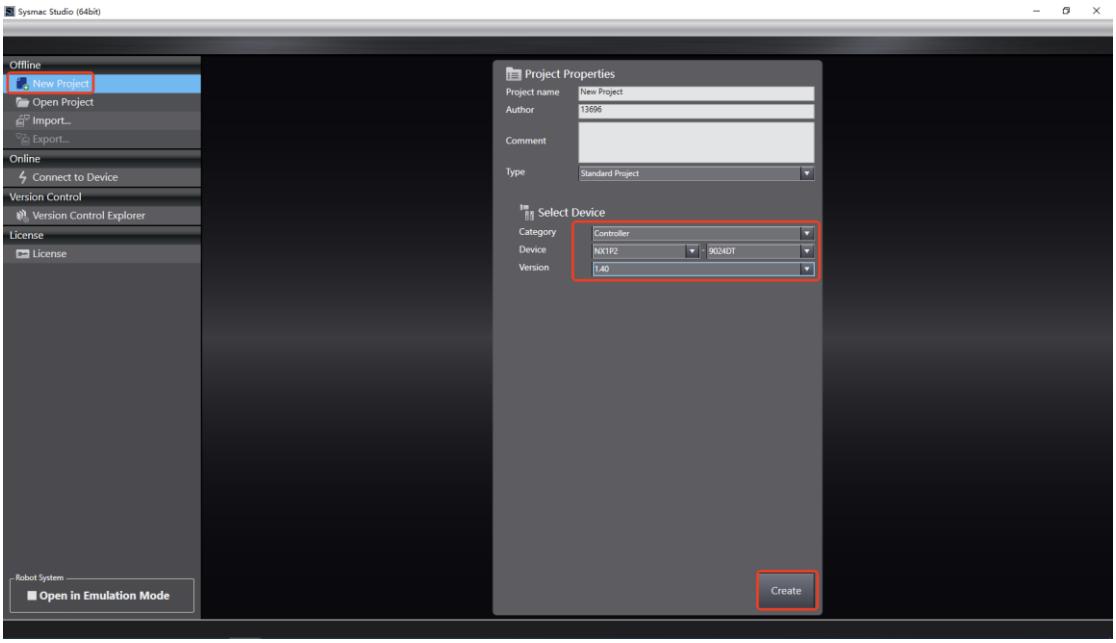

Select the PLC device and click Compile, Login, and Online.



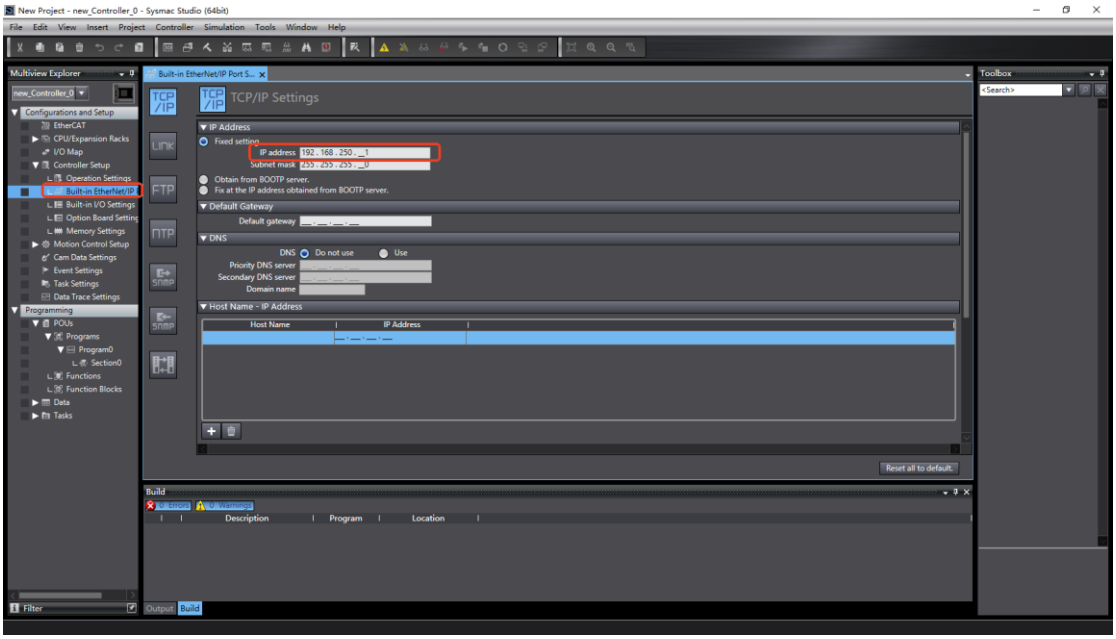
# 3 Example of communication between Omron NX1P2 and module

To supply the CN-8034 module with a 24VDC system power supply and a field power supply, connect the port of the CN-8034 and the PORT1 of the NX1P2 with a network cable.

1. Open SysmAC Studio, create a new project, select NX1P2-9024DT, and click Create.

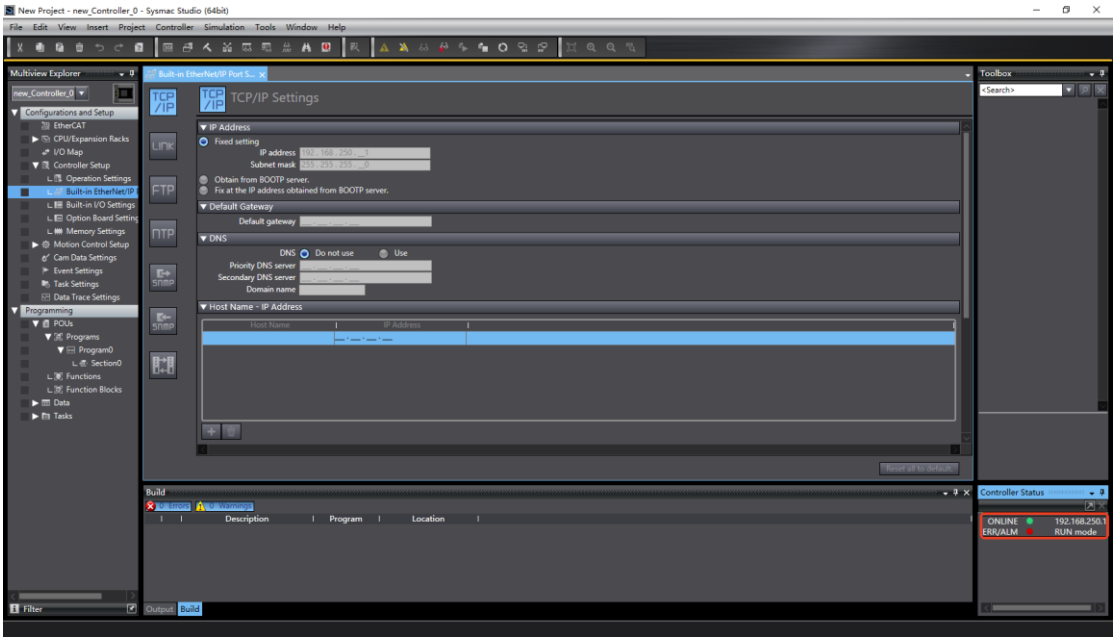



Click Configuration & Settings > Controller Settings > Built-in EtherNet/IP Port Settings to view the fixed IP address.



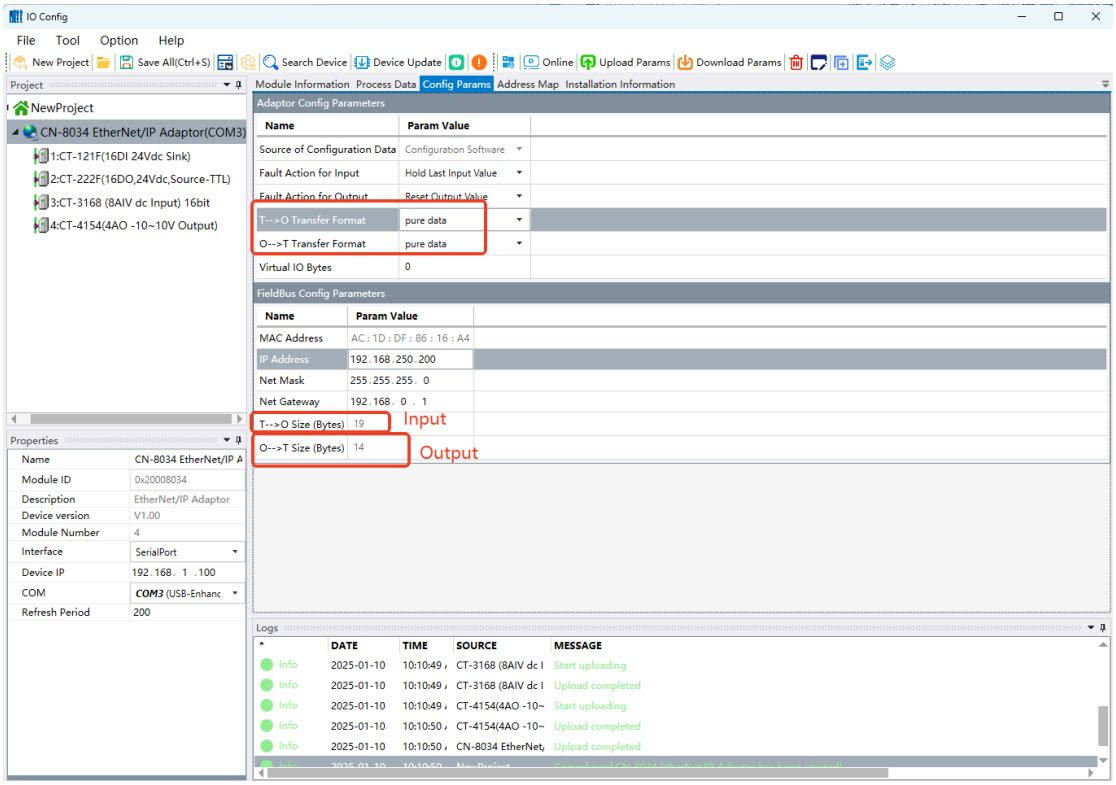

Set the local NIC to be on the same network segment.

Click Online, and it can monitor the connection status on the right side: Running mode. After indicating that the PLC can be connected normally, click offline.



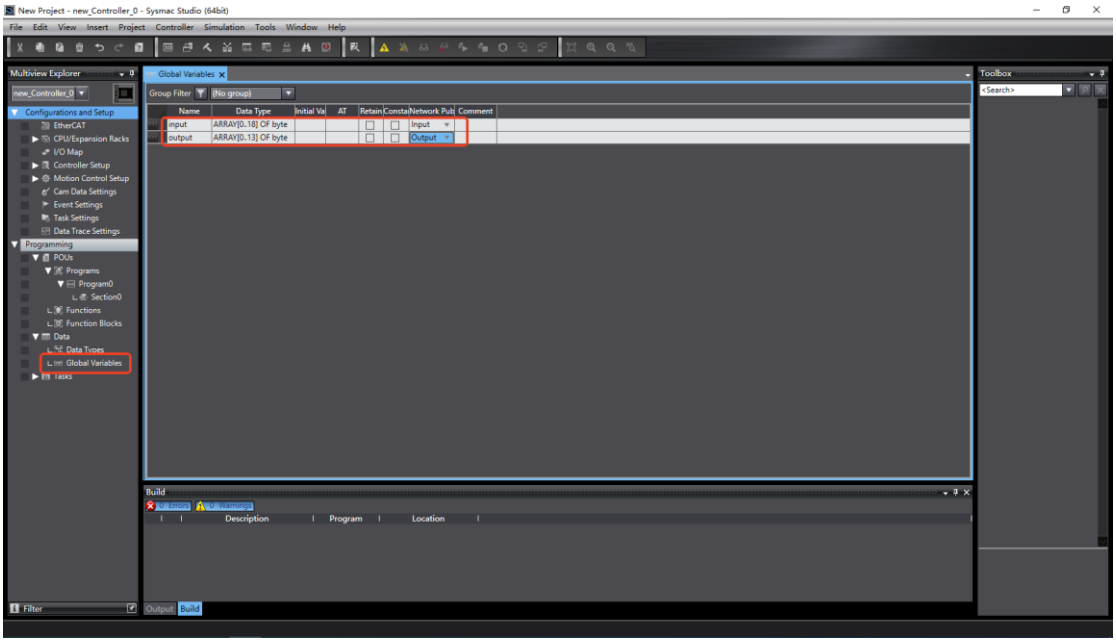

2. Before Ethernet/IP communication, it is necessary to determine the size of the input and output data area. It can use the IO Config software to view the data area size of the IO module, and it can also accumulate the data area size of the IO module by calculating the IO module after you are familiar with the zero point of the IO module. It can be seen that the number of bytes in the input is 19 bytes and the number of

bytes in the output is 14 bytes.

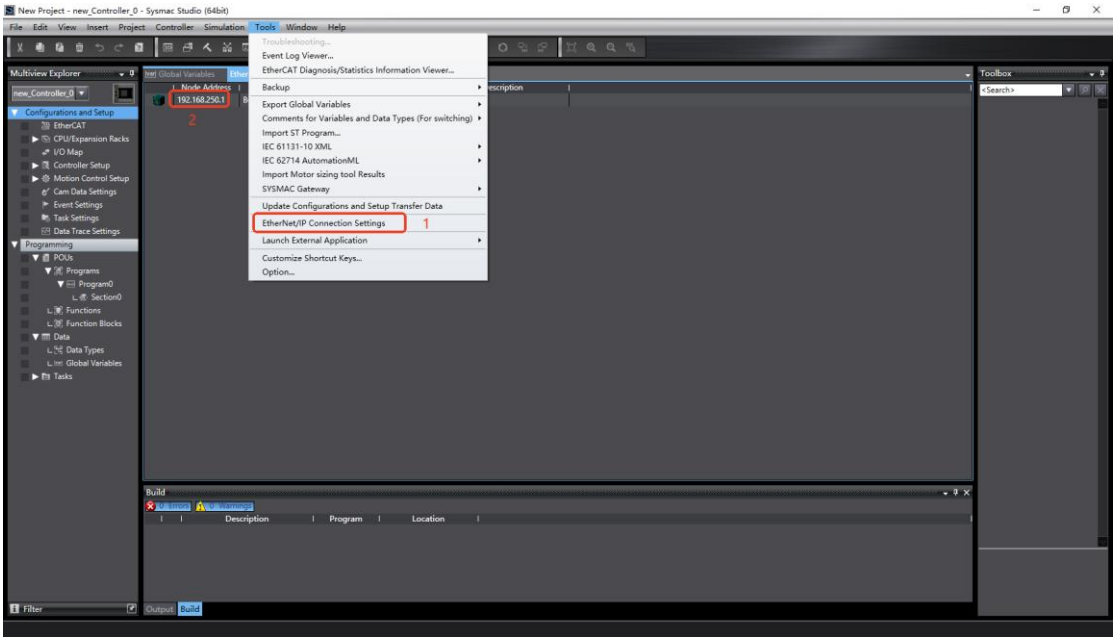



Note: This address is related to the length of the input and output bytes of the PLC, which is very important.

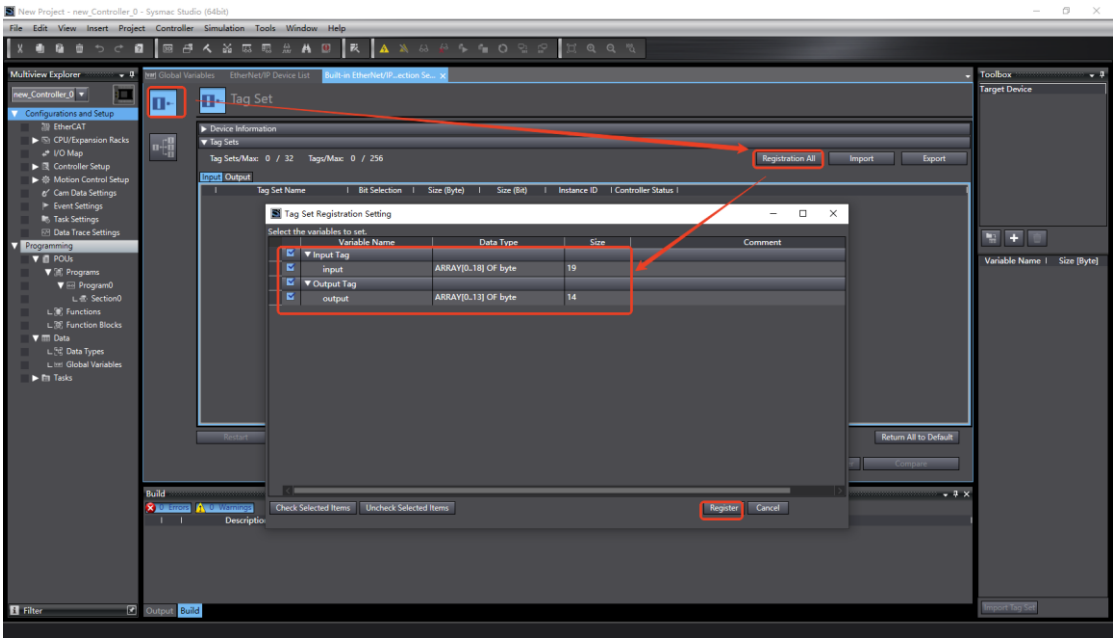
3. According to the size of the input and output data area of the IO module, click the global variable and create a new input variable input (ARRAY [0....18] OF byte), create a new output variable output (ARRAY [0....13] OF byte), the network is open to select input and output respectively.

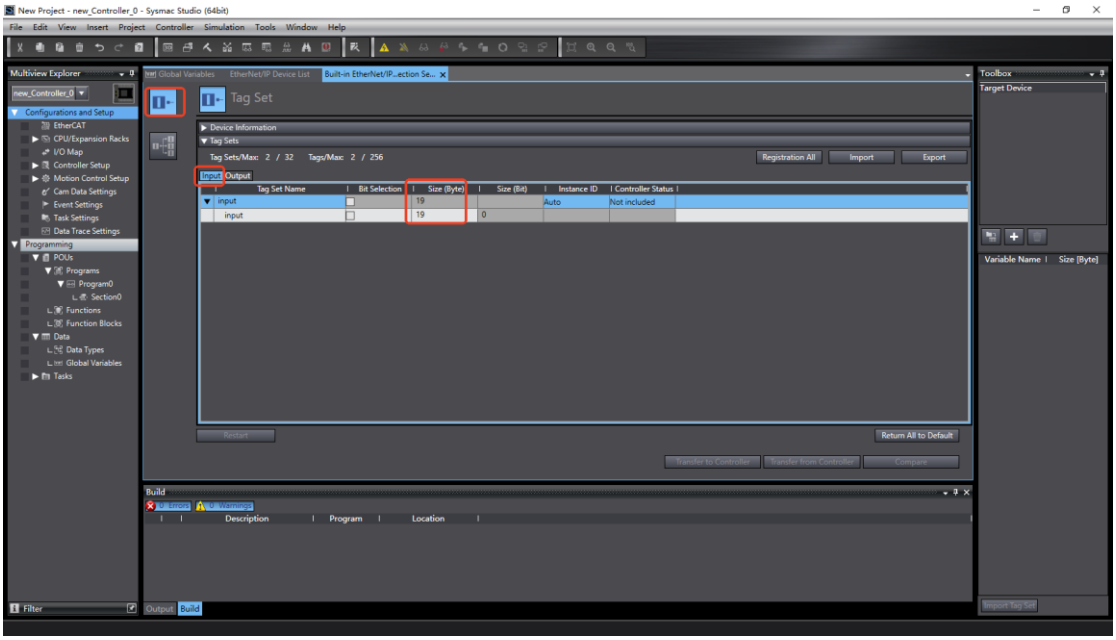


4. Click Tools - Ethernet/IP Connection Settings. Double-click the PLC in the pop-up window to enter the Built-in Ethernet/IP connection settings interface.

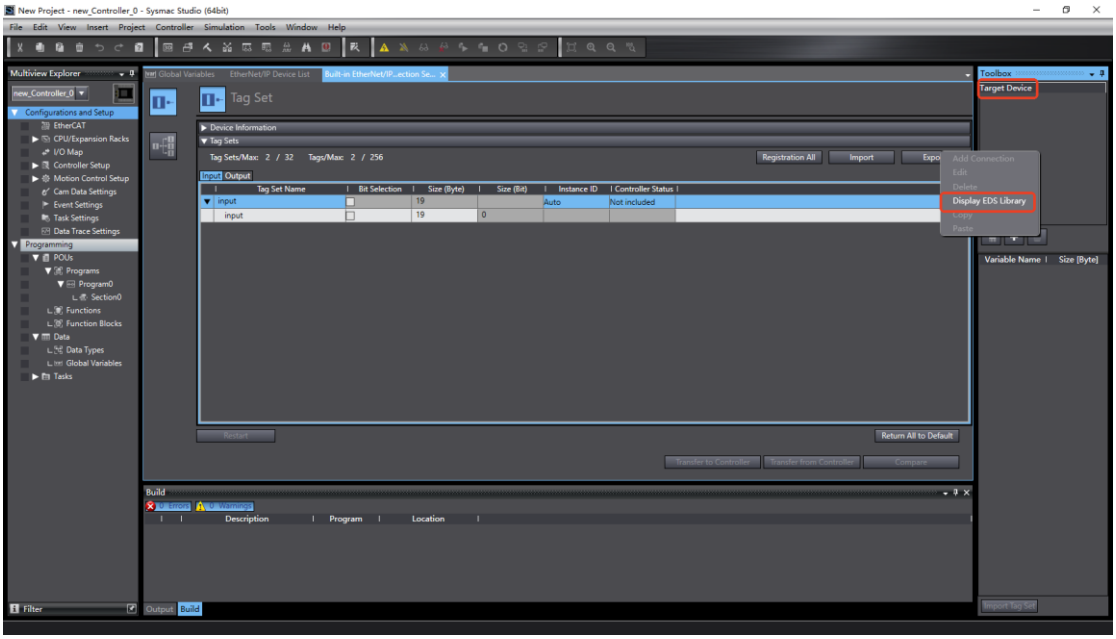


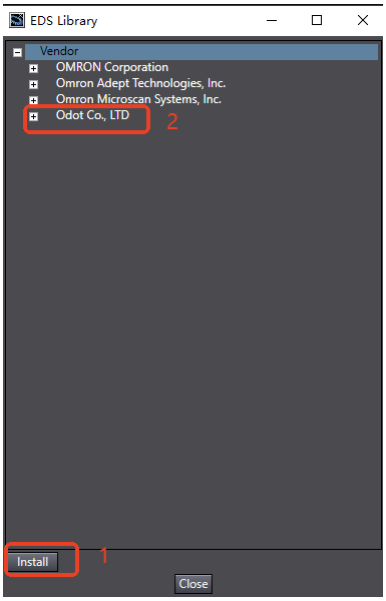

Click Register All and select the input and output variables defined by the global variables. Click Register.



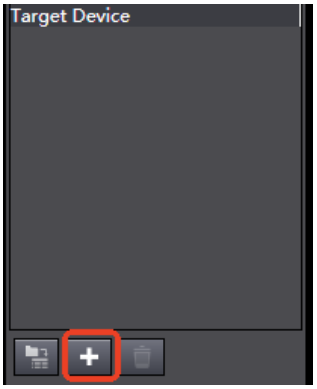



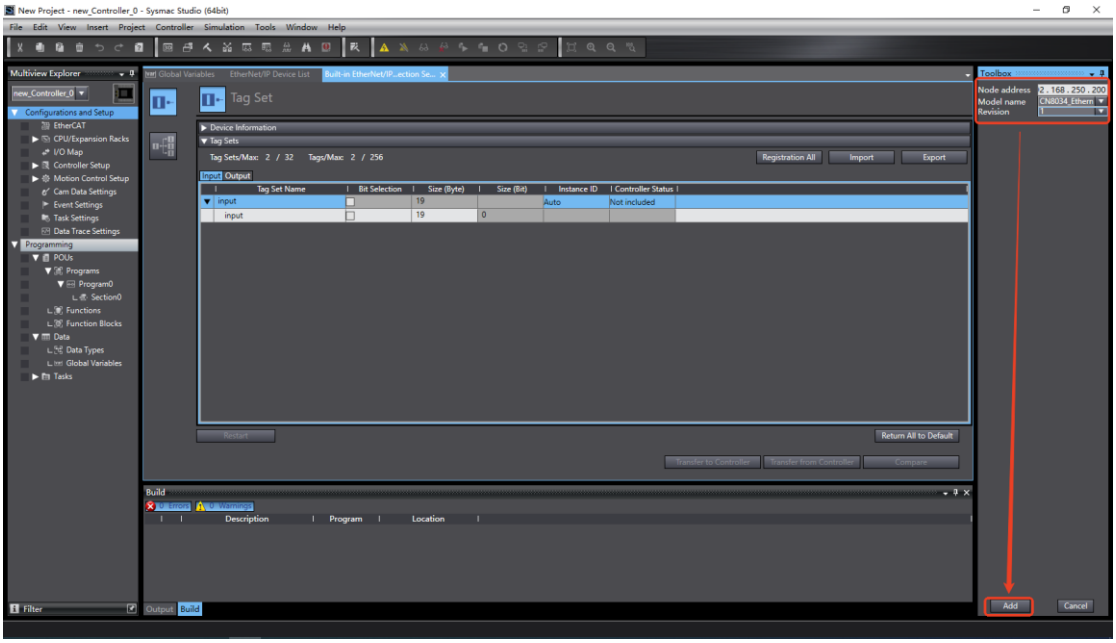

5. In the toolbox on the right, right-click to display the EDS library, and it needs to install the EDS file of CN-8034 when use it for the first time.

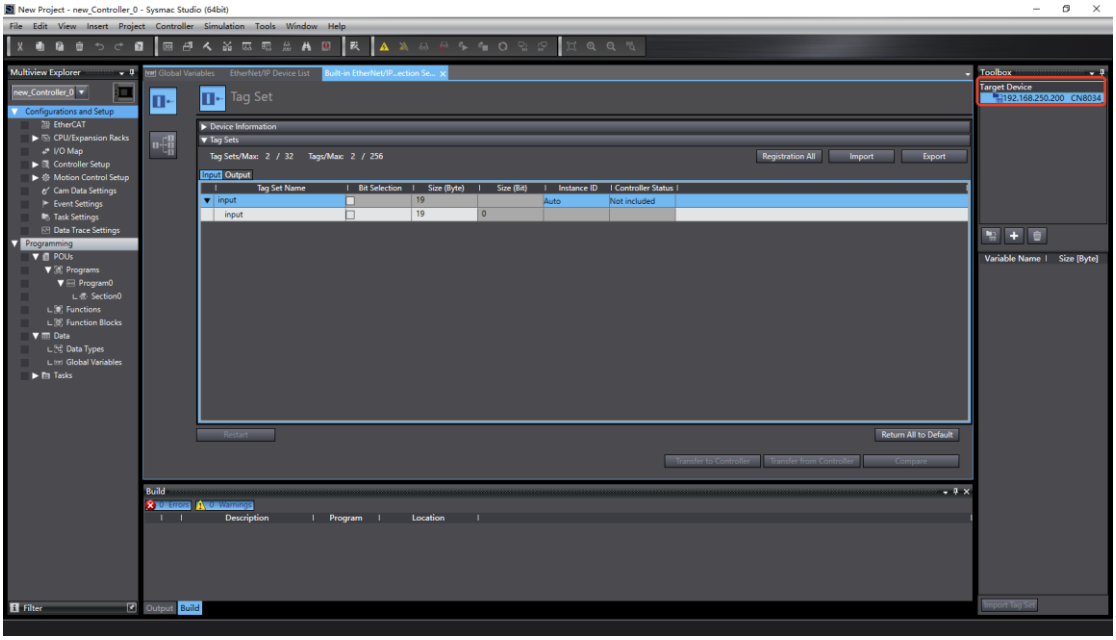


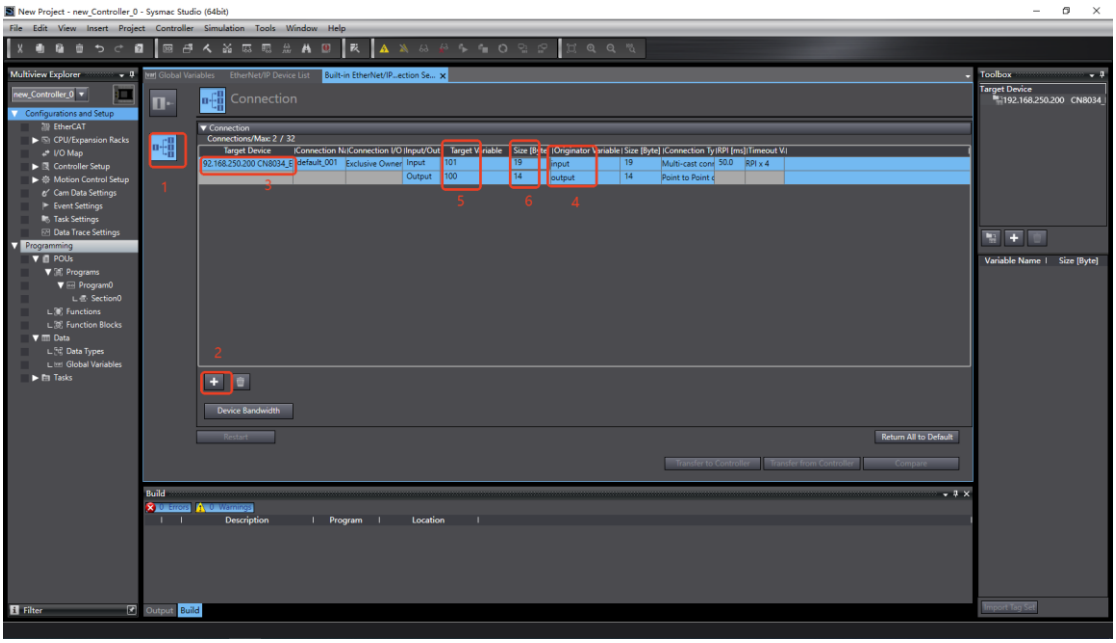

6. After the installation is completed, click Toolbox - Target Device, add CN-8034 network is the configuration module, and click Add below.



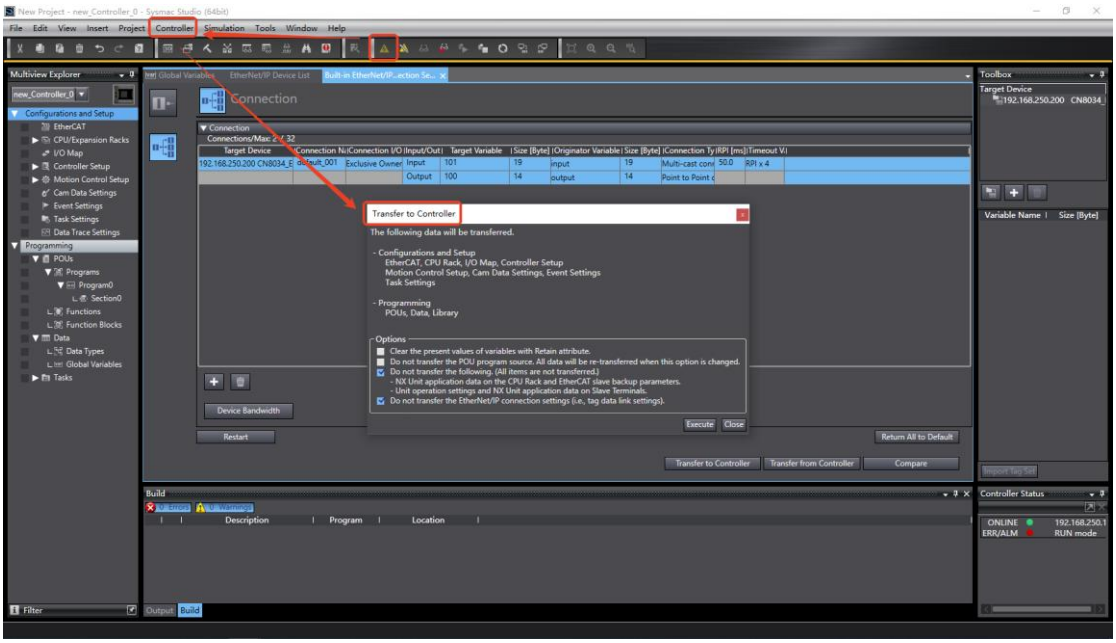


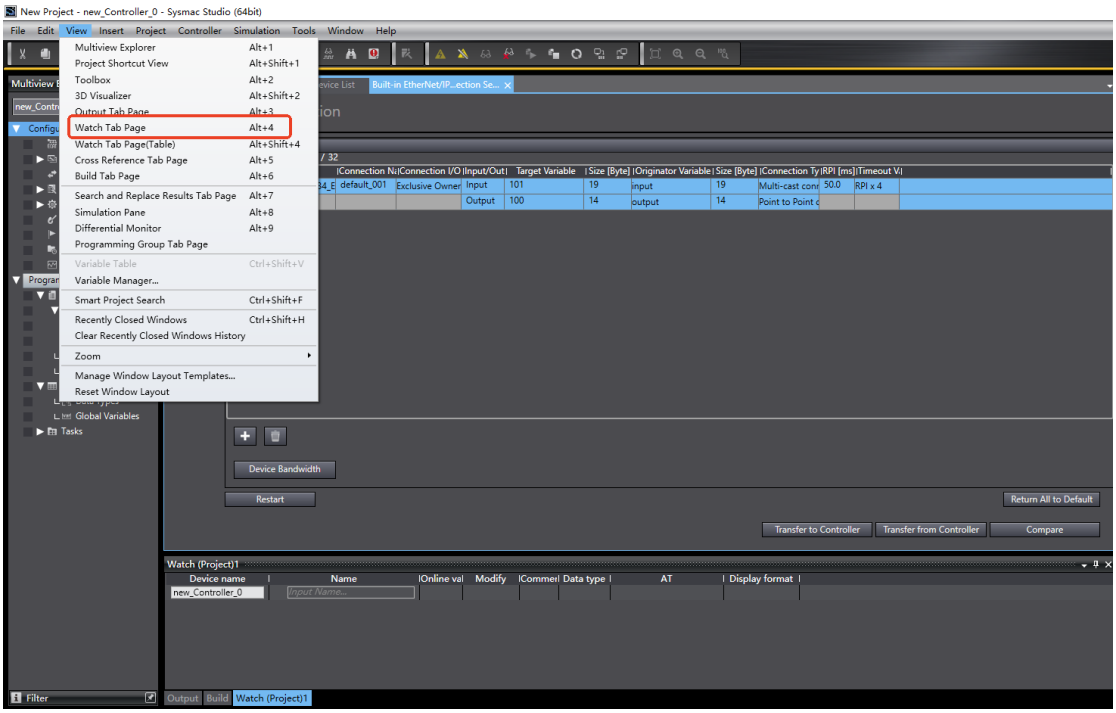

Click Connect, click, select 192.168.250.200, CN-8034 for the target device, first fill in the input of the starting variable, select input, and select output for output. Set 101 for the input of the target variable and 100 for the output to ensure that the size of the target byte is the same as that of the starting variable.

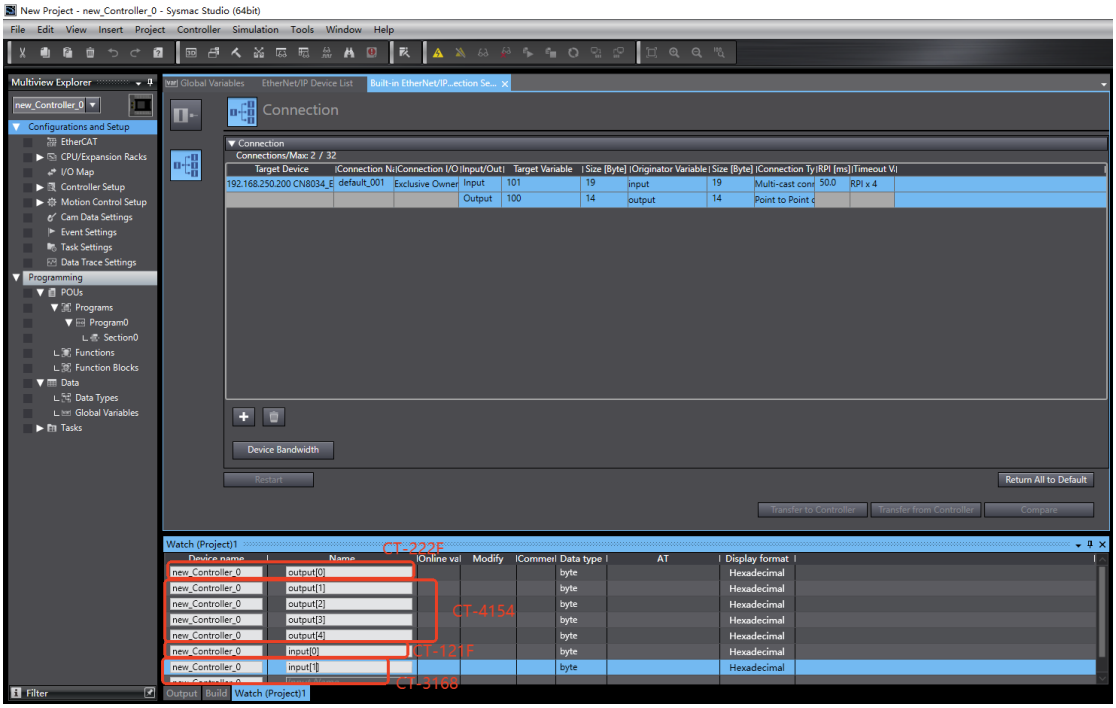



Click Online, then click Controller – Transfer - Transfer to Controller.




Click the View-Watch Tap Page window to add input and output variables to the monitoring window to monitor the data.


New Project - new_Controller_0 - Sysmac Studio (64bit)
File Edit View Insert Project Controller Simulation Tools Window Help
Multiview Explorer Alt+1
Project Shortcut View Alt+Shift+1
Toolbox Alt+2
3D Visualizer Alt+Shift+2
Output Tab Page Alt+3
Watch Tab Page Alt+4
Watch Tab Page(Table) Alt+Shift+4
Cross Reference Tab Page Alt+5
Build Tab Page Alt+6
Search and Replace Results Tab Page Alt+7
Simulation Pane Alt+8
Differential Monitor Alt+9
Programming Group Tab Page
Variable Table Ctrl+Shift+V
Variable Manager...
Smart Project Search Ctrl+Shift+F
Recently Closed Windows Ctrl+Shift+H
Clear Recently Closed Windows History
Zoom
Manage Window Layout Templates...
Reset Window Layout
Device Bandwidth
Restart
Return All to Default
Transfer to Controller
Transfer from Controller
Compare
Watch (Project)1
Device name
Name
Online val
Modify
Comment
Data type
AT
Display format
new_Controller_0
Output
Build
Watch (Project)1


New Project - new_Controller_0 - Sysmac Studio (64bit)
Multiview Explorer
Configurations and Setup
EtherCAT
CPU/Expansion Racks
I/O Map
Controller Setup
Motion Control Setup
Cam Data Settings
Event Settings
Task Settings
Data Trace Settings
Programming
POUs
Programs
Program0
Section0
Functions
Function Blocks
Data
Data Types
Global Variables
Tasks
Connection
Device Bandwidth
Restart
Return All to Default
Transfer to Controller
Transfer from Controller
Compare
Watch (Project)1
CT-222F
CT-4154
CT-121F
CT-3168
Output
Build
Watch (Project)1

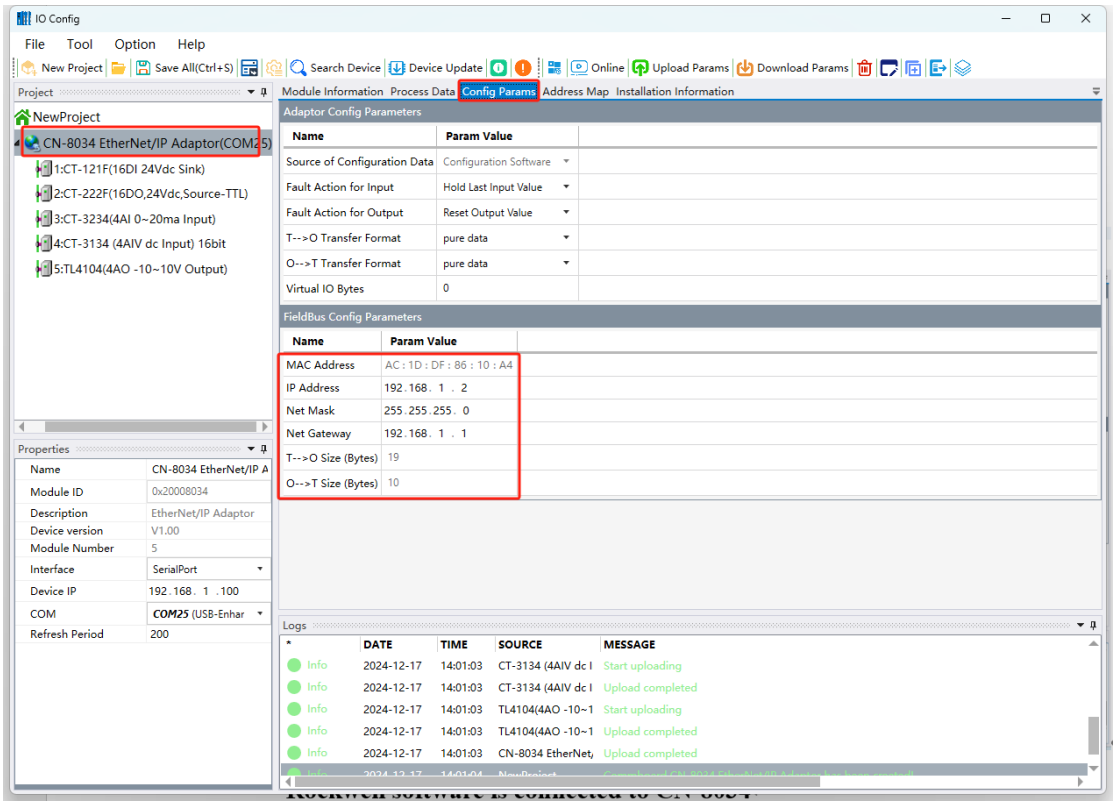
# 4 Example of Rockwell 1769 communicating with the module

Before testing, install the corresponding Rockwell software on PC: BootP-DHCP Tool, RSLink Classic, Studio 5000.

Supplying 24VDC system power supply and field power supply to CN-8034 module, connect the port of CN-8034 and the Ethernet port of 1769 with network cables. CN-8034 is hung on the IO module behind: CT-121F, CT-222F, CT-3234, CT-3134, CT-4154, CT-5801.

**The IO Config software sets CN-8034 parameters.**

Use a Micro USB cable to connect the PC to the CN-8034 configuration interface, and the com port will be generated in the computer device manager. Open the IO Config configuration software to view the IP address of the CN-8034 module (192.168.1.2) and the byte size of input and output data (19 bytes for input and 10 bytes for output).

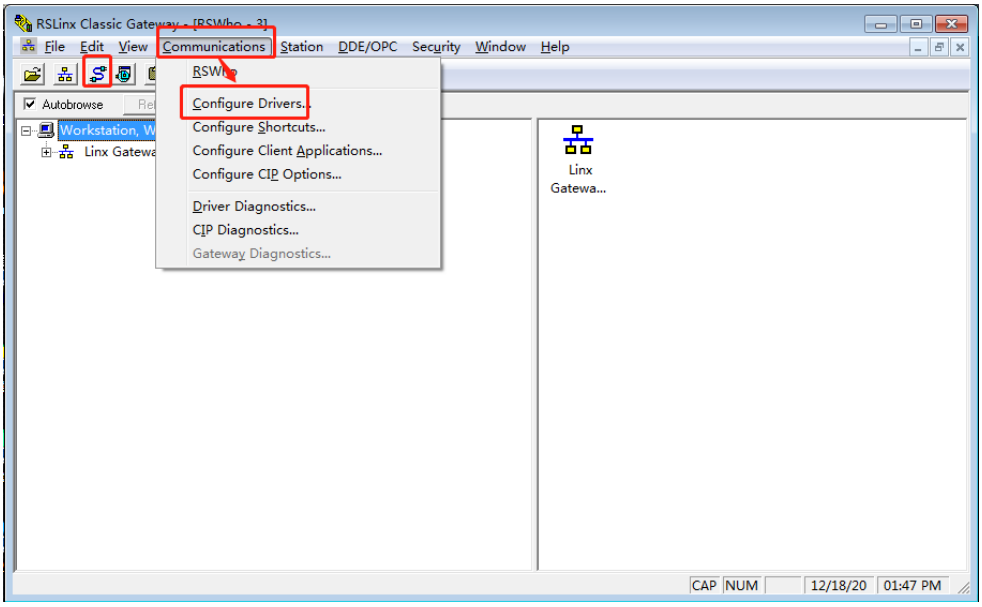



**Rockwell software is connected to CN-8034**

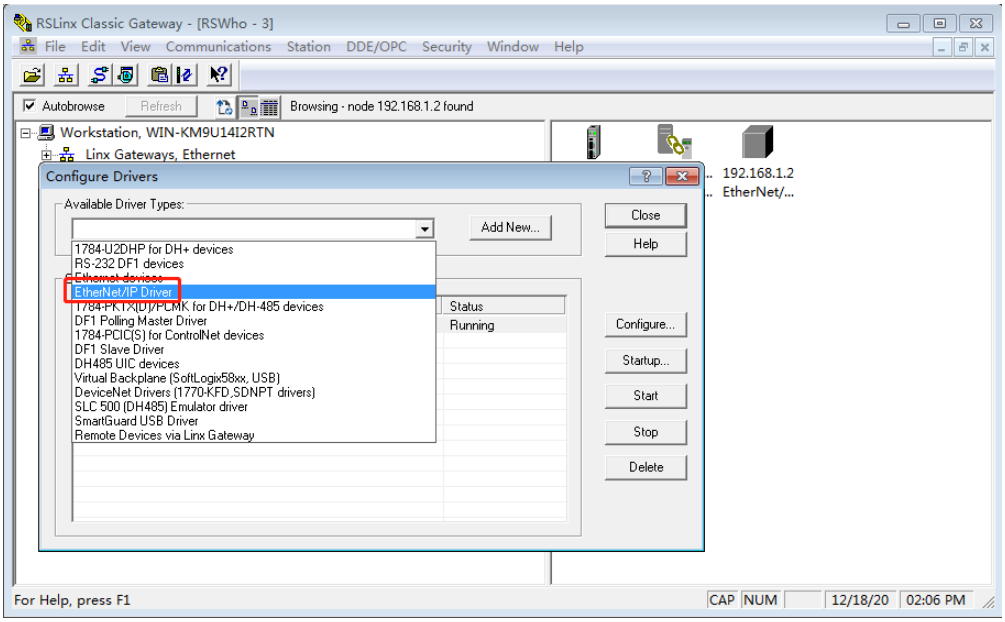
1. If Rockwell's PLC is used for the first time, it needs to use the BootP-DHCP Tool

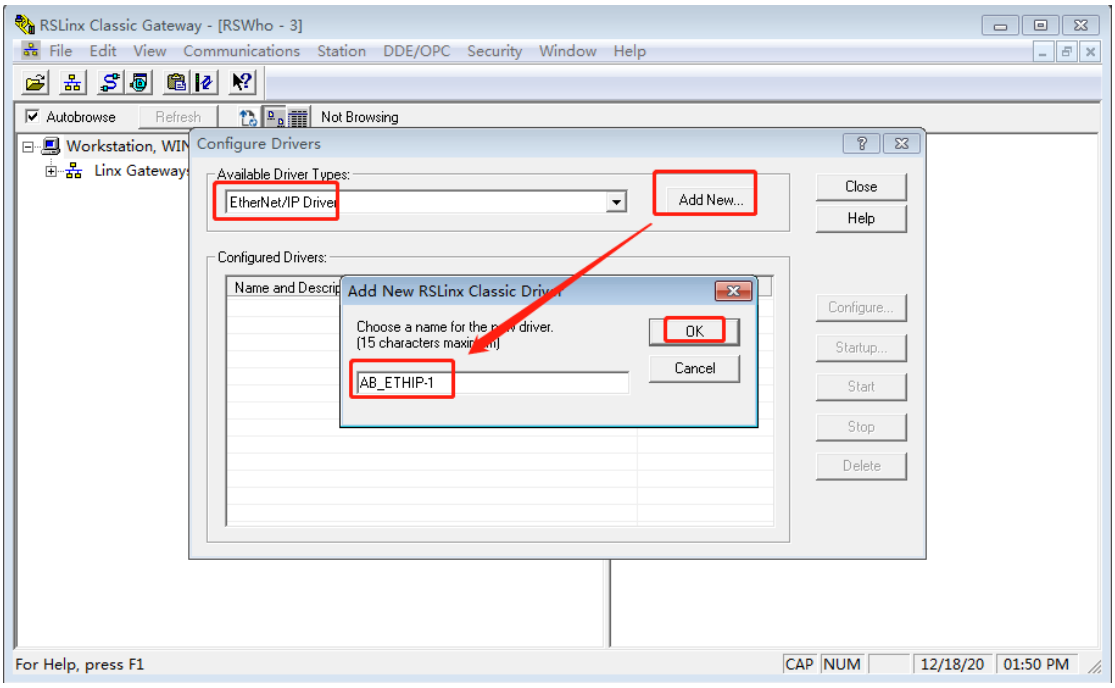
software to assign an IP address to the PLC. The IP address of the 1769PLC used for the test is 192.168.1.11.

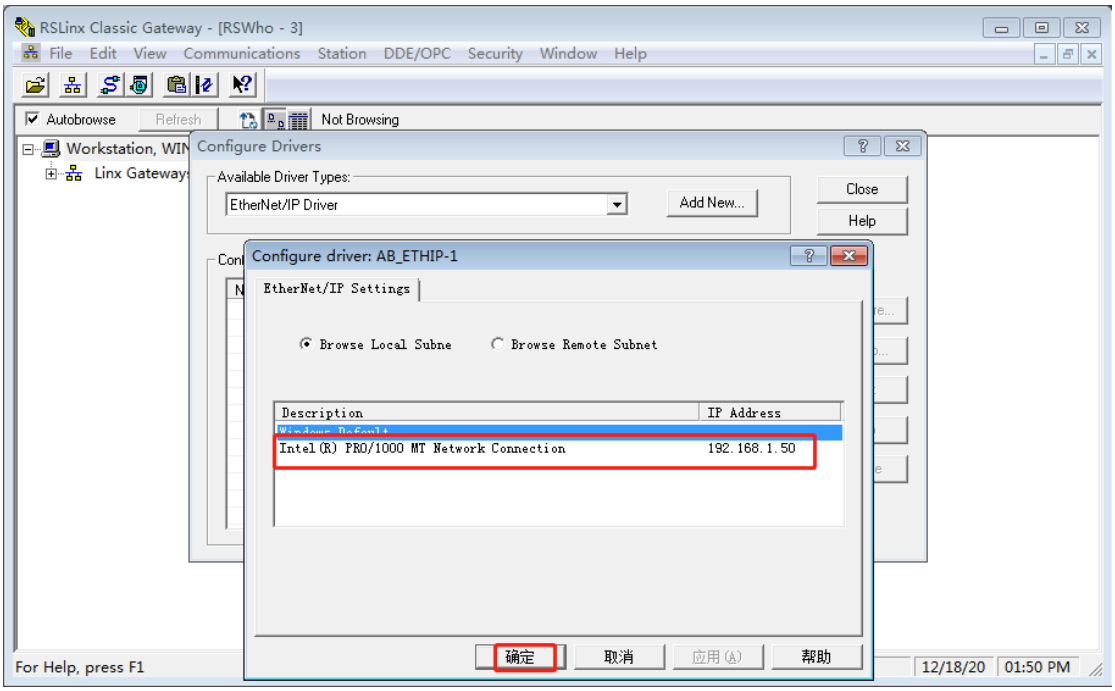
2.Open the RSLink Classic software, click Communications—Configure Drivers or click the shortcut .



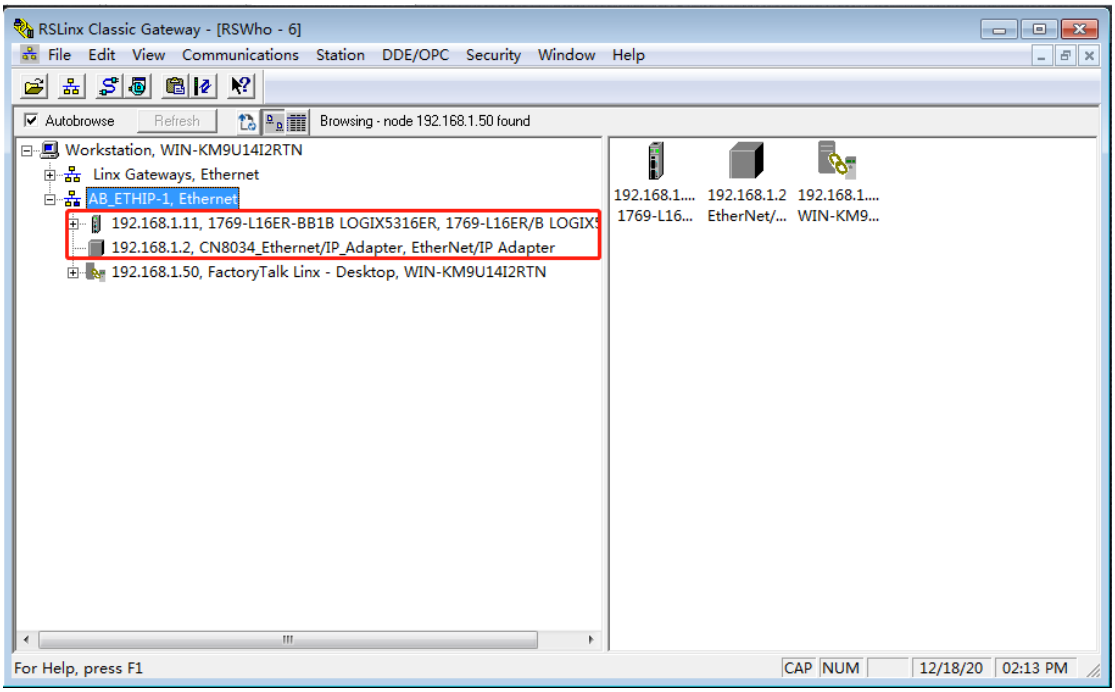

choose the Ethernet/IP Driver under Available Driver Type, click the , added a new RSLink driver. Click OK, in the pop-up window, select the local network adapter.



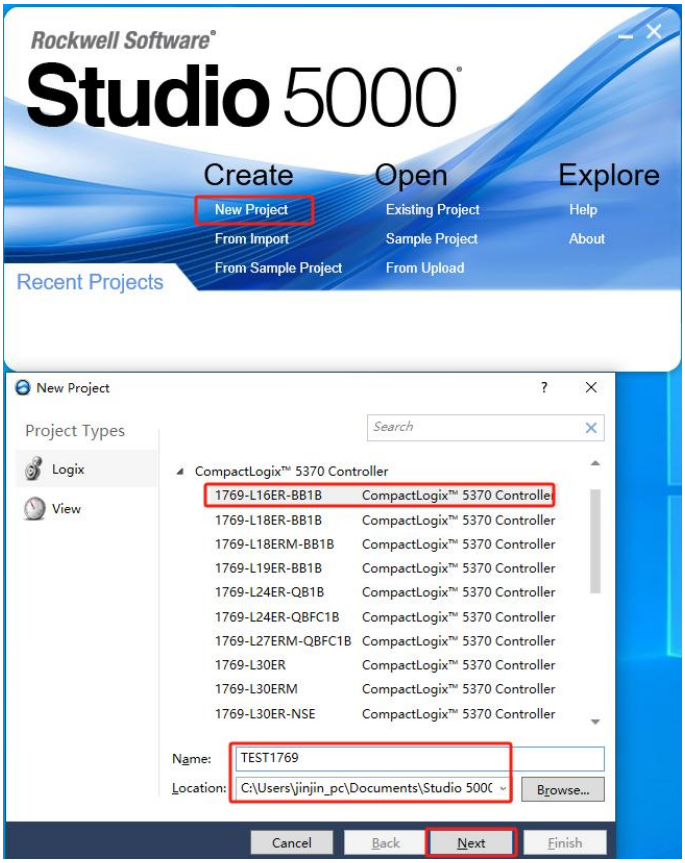


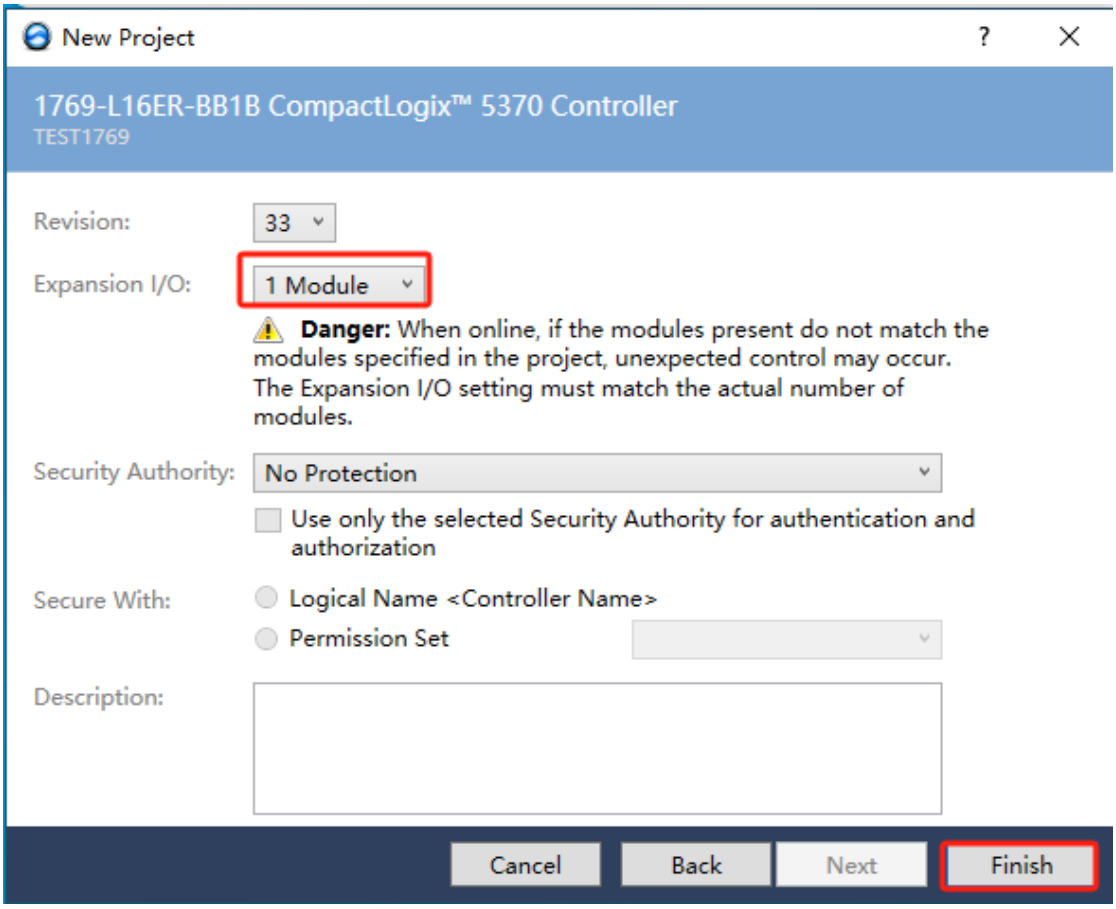




Click the Communications—RSWho or click on the shortcut , it can scan all Ethernet/IP devices on the network from the new RSLink driver drop-down menu.

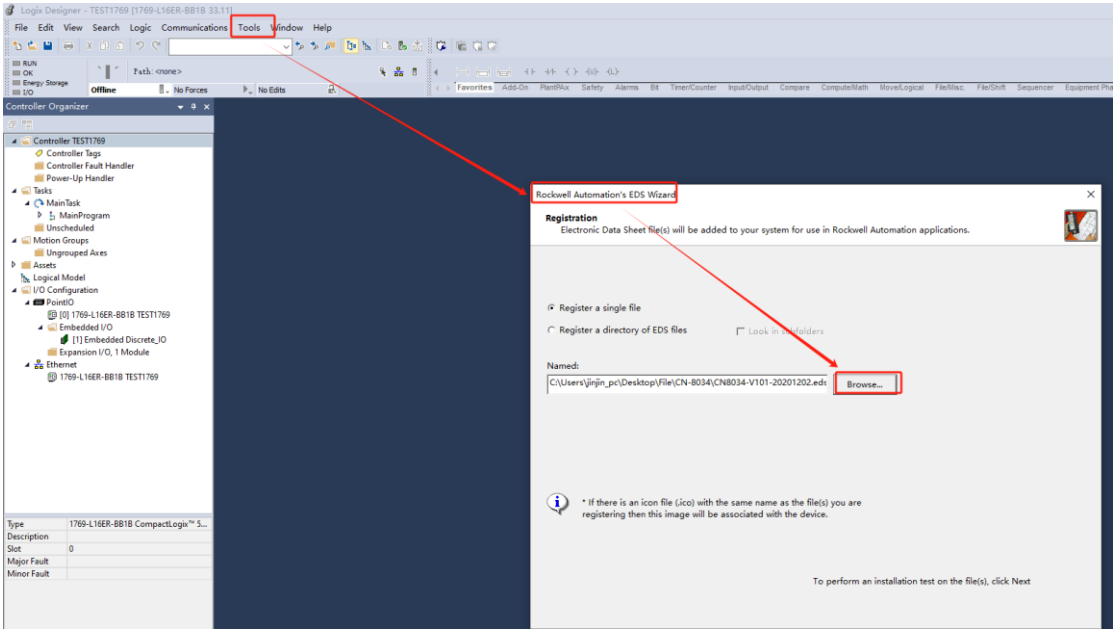



3. Open the Studio 5000 software, click New Project, select 1769-L16ER-BB1B, TEST1769 the project name, click Next, expand I/O, and select 1 module. Click Done.

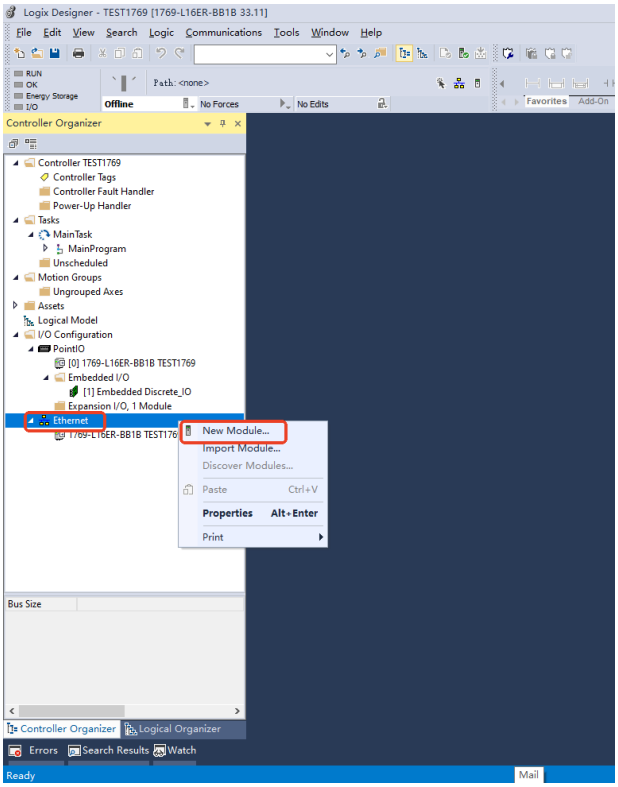




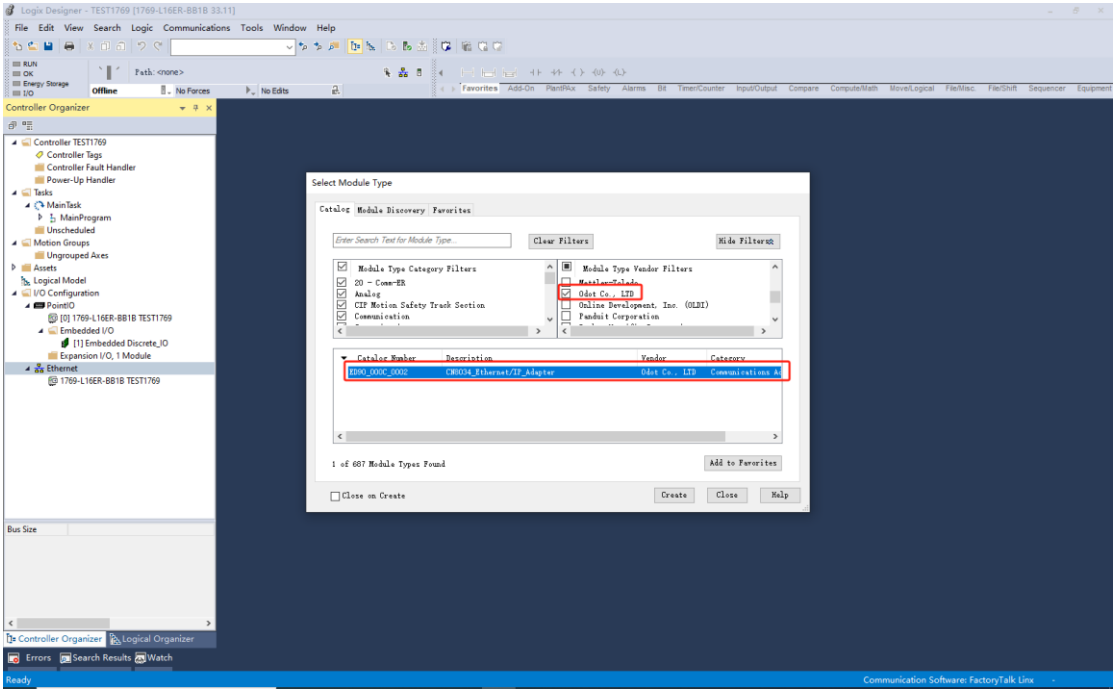

After the new project is completed, click Tools - EDS Hardware Installation Tool, click Next - Next in the pop-up window, click Browse, select the EDS file of CN8034, and click Next until the installation of the EDS file is completed.




Then click Ethernet in the manager, right-click Ethernet and click New Module.

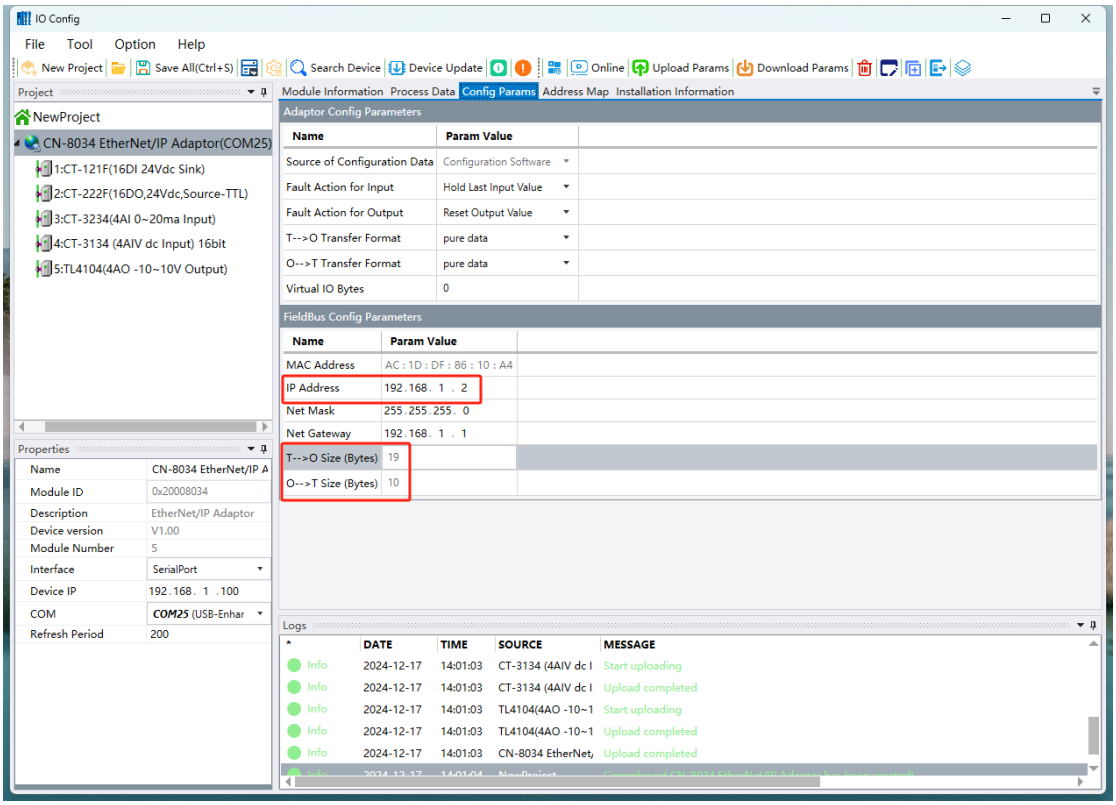


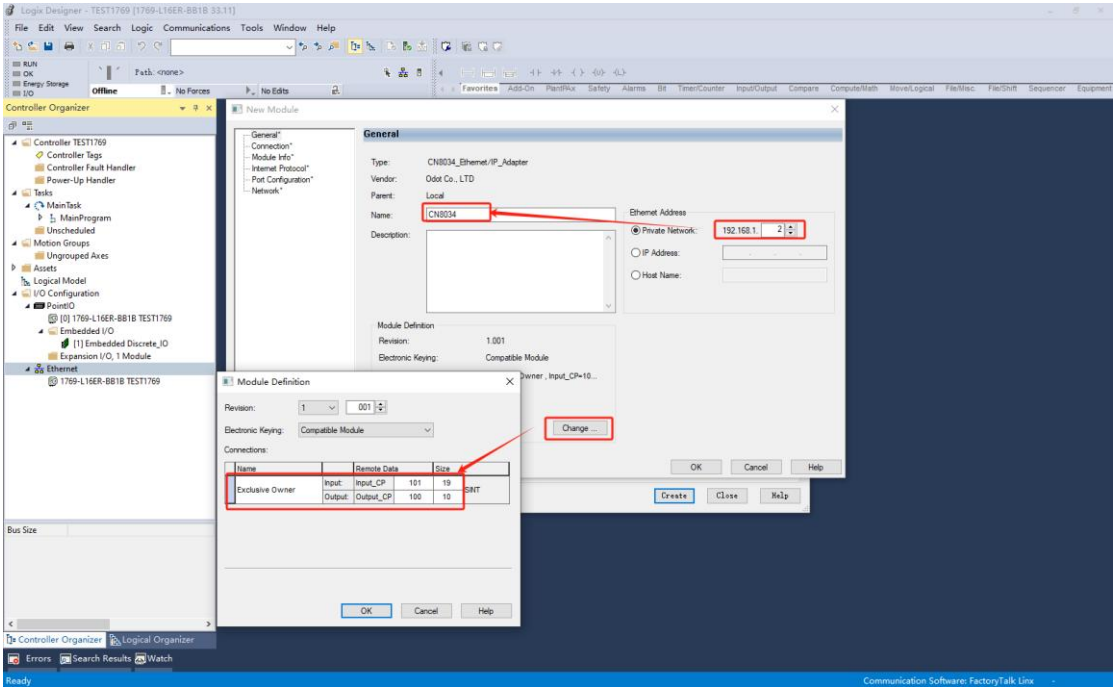

In the pop-up window, select the supplier Odot Co., LTD, select CN8034, and click Create.



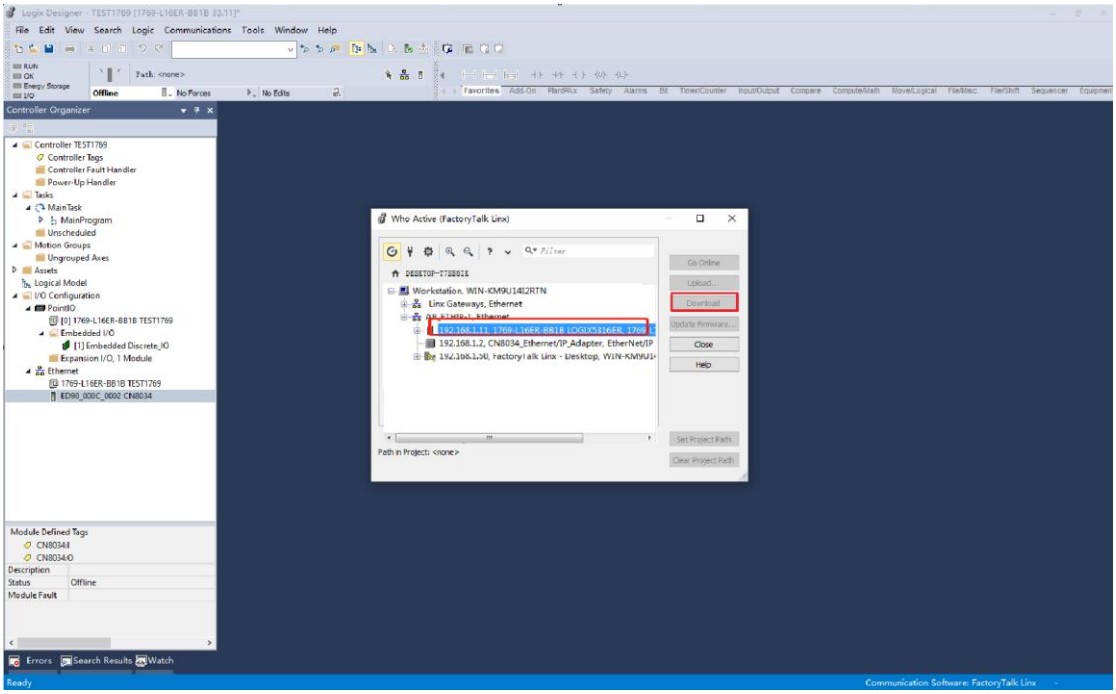

Create a new module, fill in the module name CN8034, module Ethernet IP address: 192.168.1.2 (through the IOCONFIG configuration software configuration or the hardware dial address on the module), click Change, and configure the type and size of the input and output data in the pop-up window (the byte size of the input and

output data can be directly obtained through the configuration parameters of the IO Config software CN-8034). Click OK to add the CN8034 and the attached I/O modules.

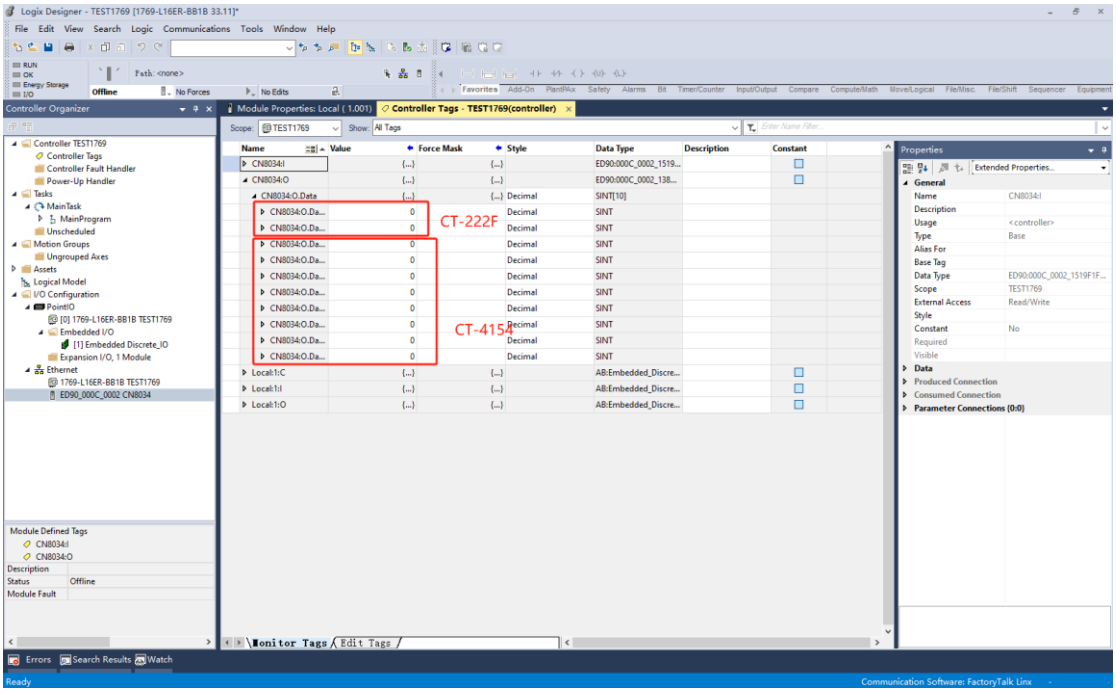



When the configuration is complete, click Save, click and use RSWho to select the communication path, select 1769PLC in the pop-up window, and click Download.




Once the download is complete, click on the Logic - Monitor tag.



# 5 KEYENCE KV8000 and CN-8034 communication example

Before testing, install the corresponding KEYENCE software: **KV STUDIO on PC**.

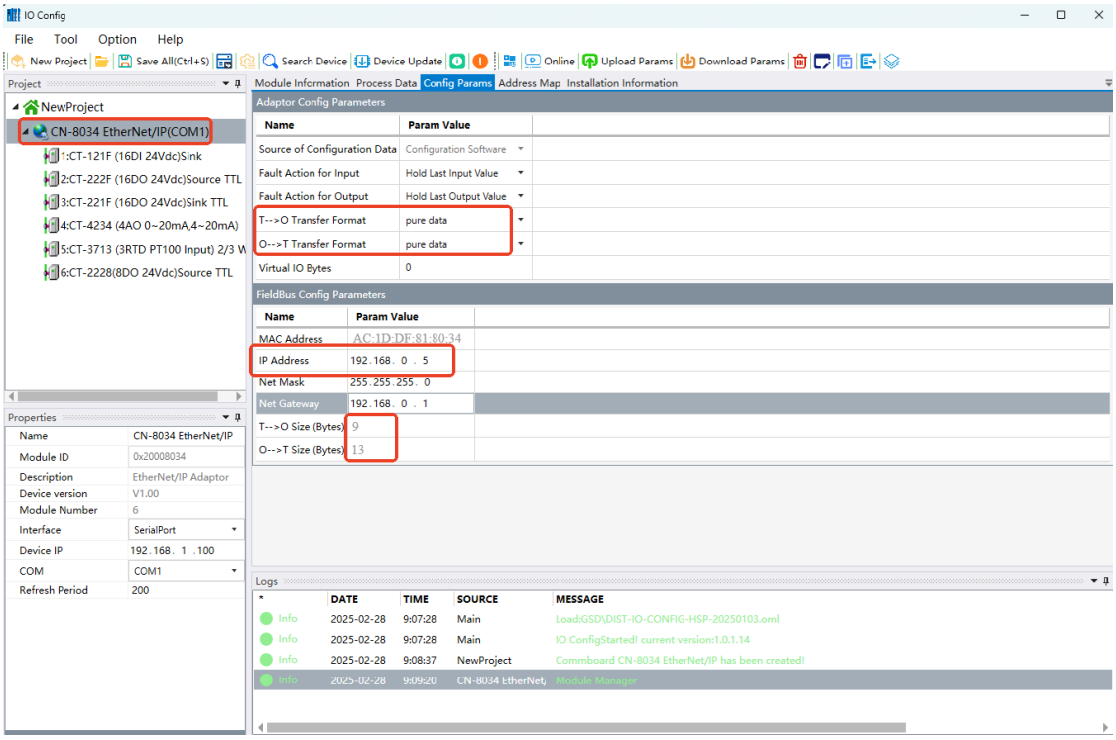
To supply the CN-8034 module with 24VDC system power and field power, connect the PORT of CN-8034 and the Ethernet interface of KV8000 with network cables.

The module hung on CN-8034 are: CT-121F, CT-222F, CT-221F, CT-4234, CT-3713, CT-2228.

1. The IO Config software sets CN-8034 parameters.

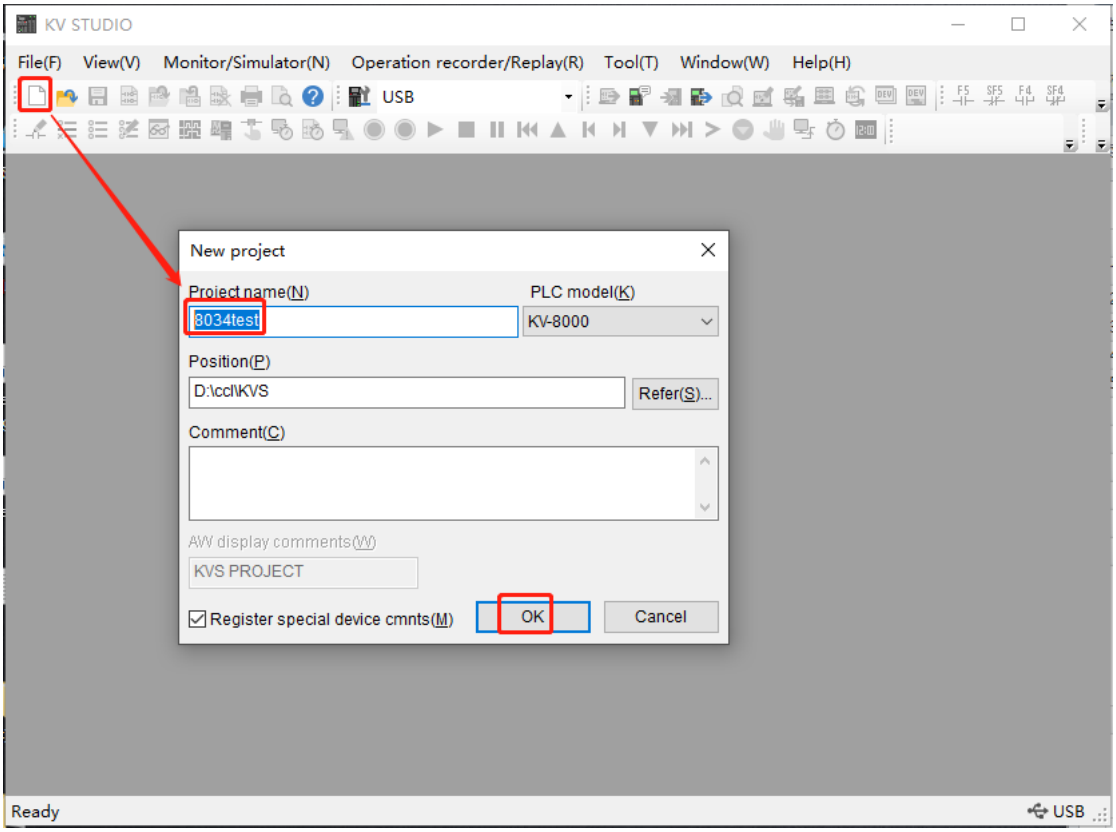
Use a Micro USB cable to connect the PC to the CN-8034 configuration interface, and the com port will be generated in the computer device manager. Open the IO Config software to set the IP address (192.168.0.5) and the size of input and output data (9 bytes for input and 13 bytes for output) of the CN-8034 module.

Note: The byte size of the input and output data here requires the I/O parameter of CN-8034 to be uploaded.

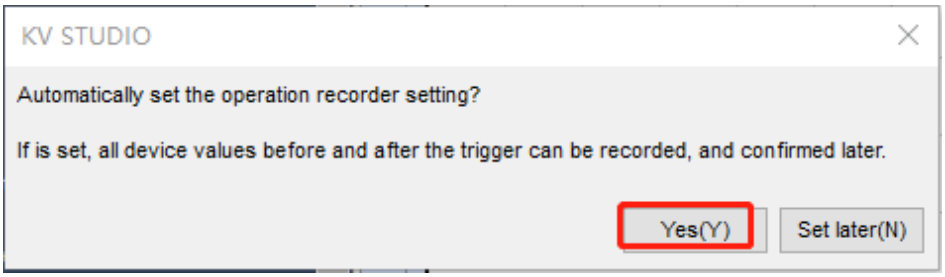


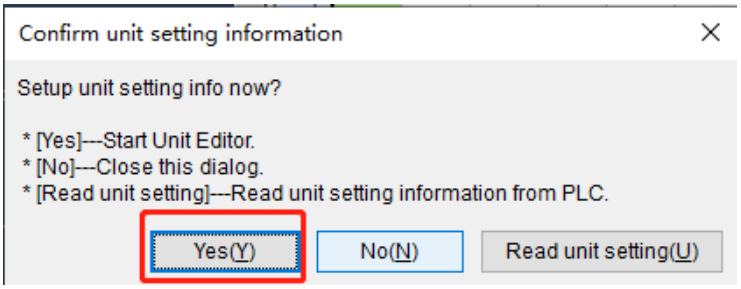

2. KEYENCE software is connected to CN-8034.

Open KV STUDIO and click New Project , Project Name: 8034test, and click OK.



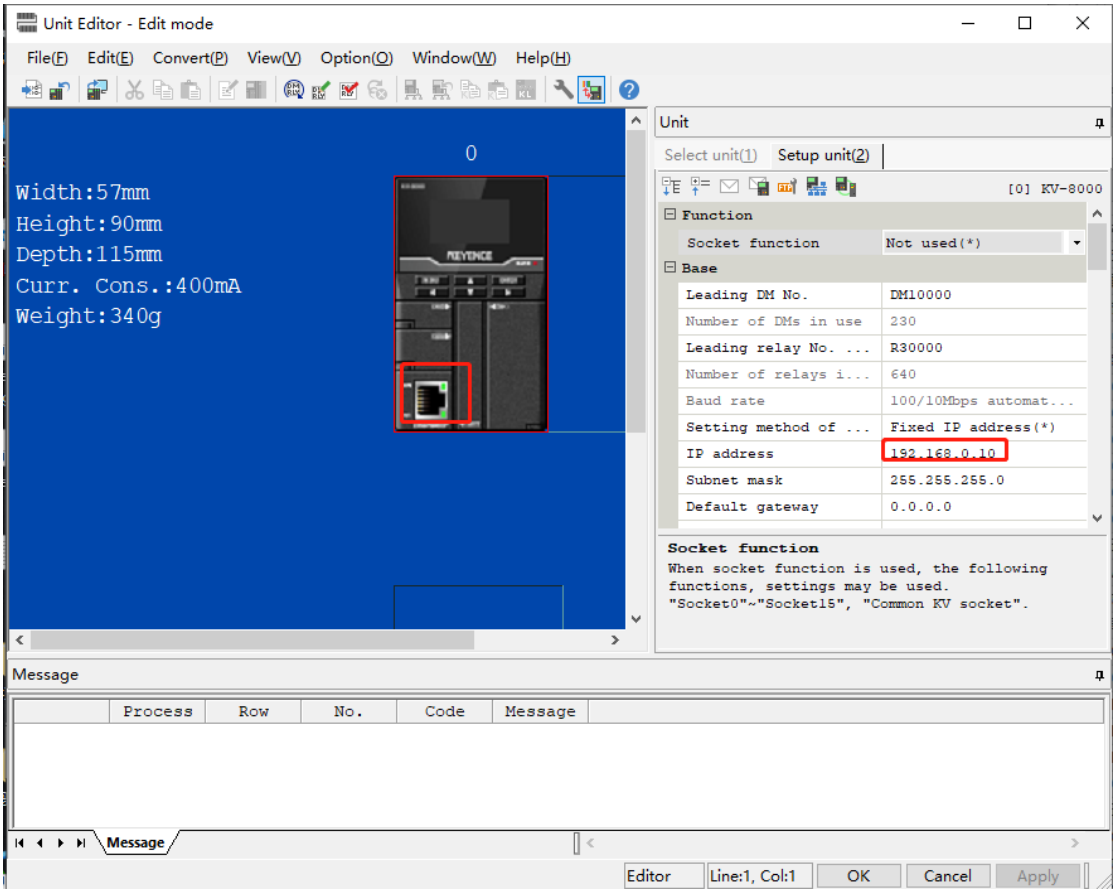

In the pop-up window, click Yes-Yes to enter the unit editing window.



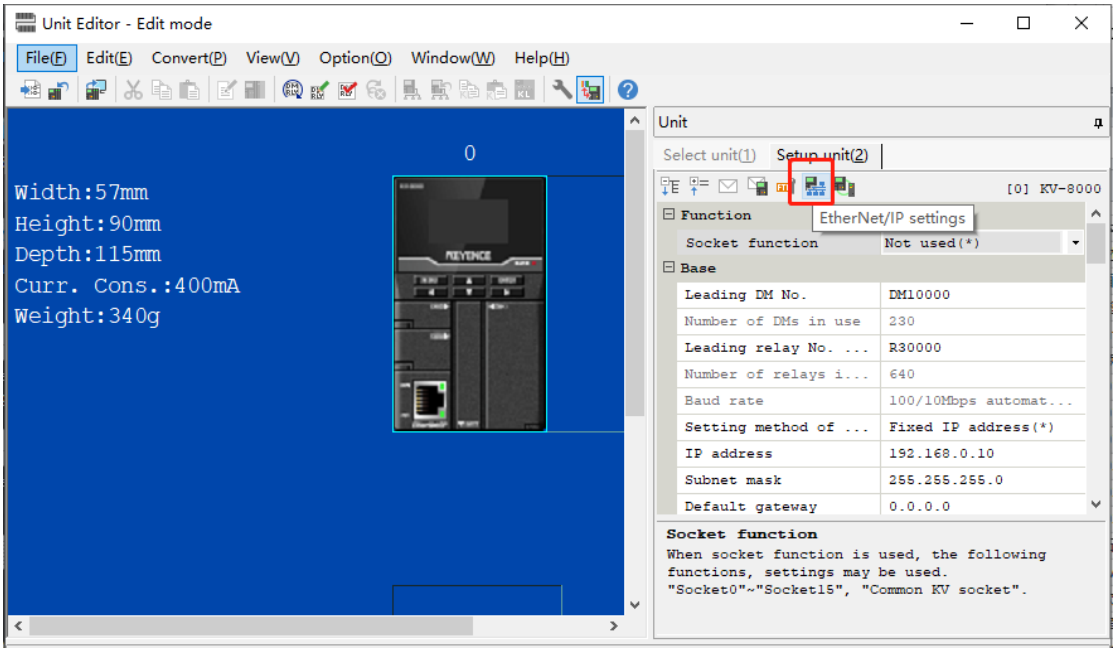




It can view the parameters of the PLC on the interface, and the IP address is:

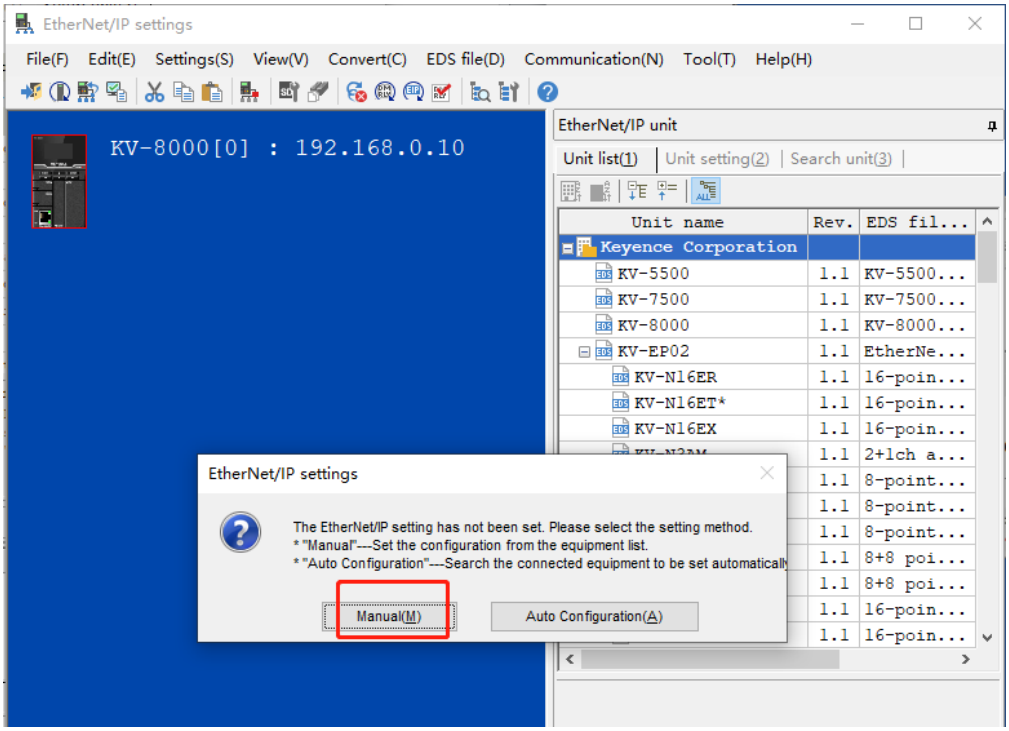
192.168.0.10.



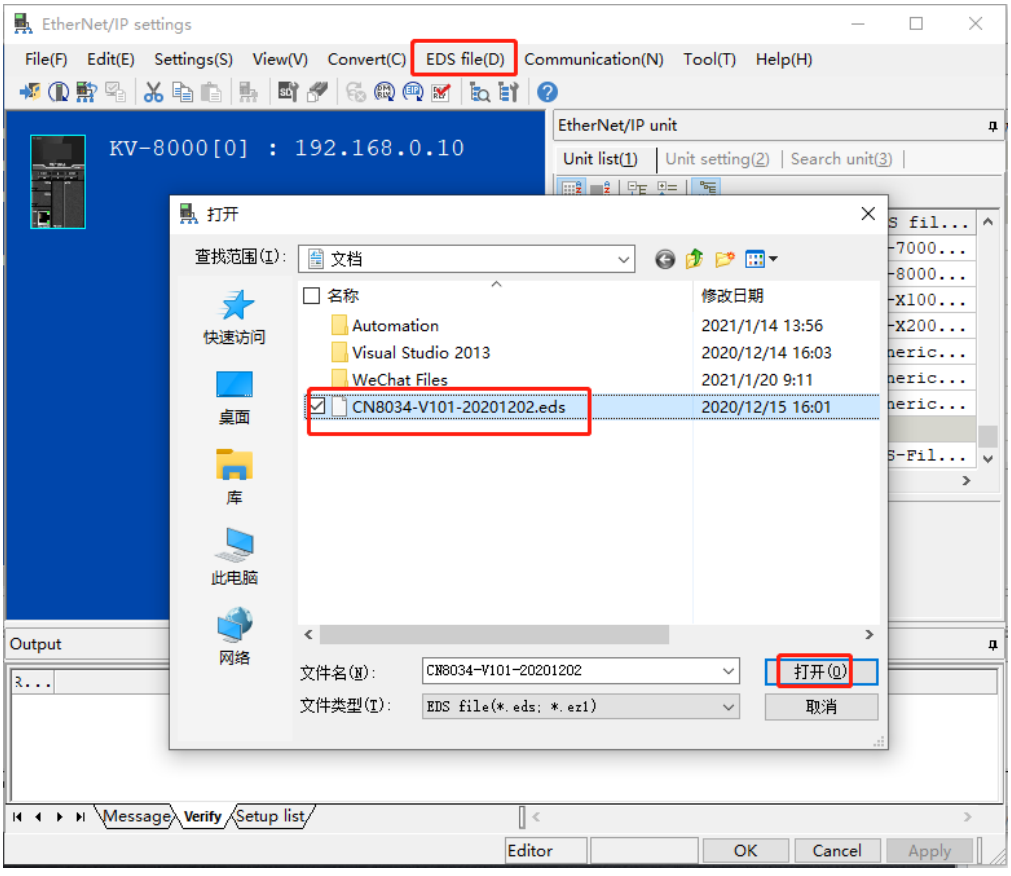

Click on the shortcut key, enter the EtherNet/IP settings interface.



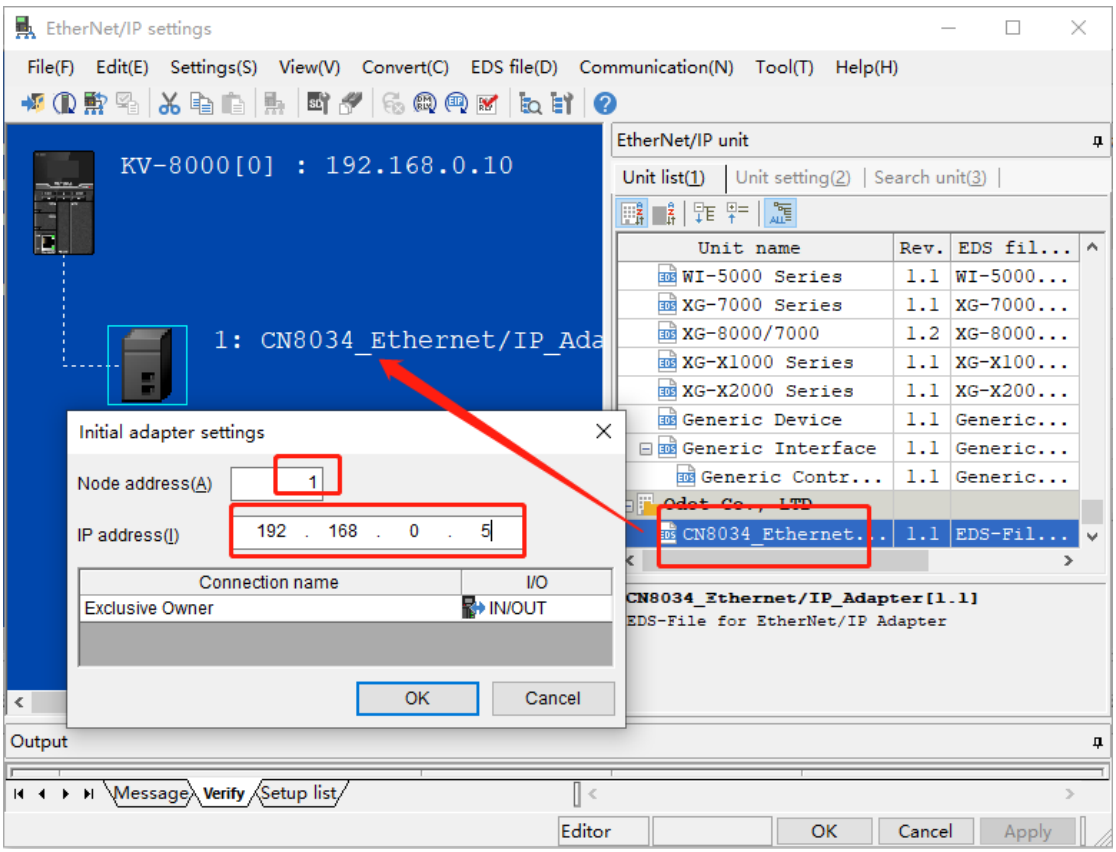

In the pop-up window, click Manual Configuration.



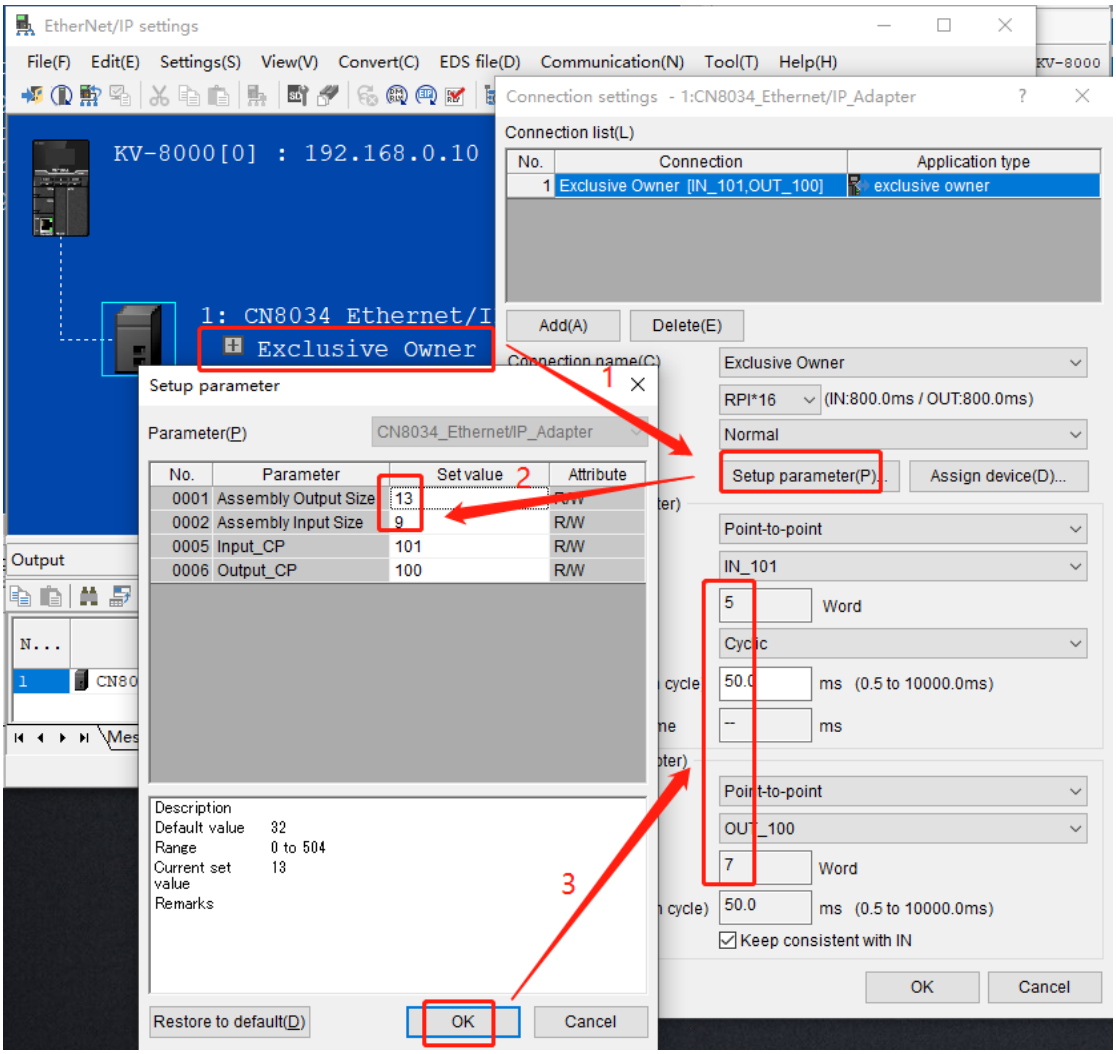

Install the EDS file of CN-8034 (V1.01 is a pure data EDS file). Click EDS file-reg, select the EDS file, and click Open to complete the EDS file installation.



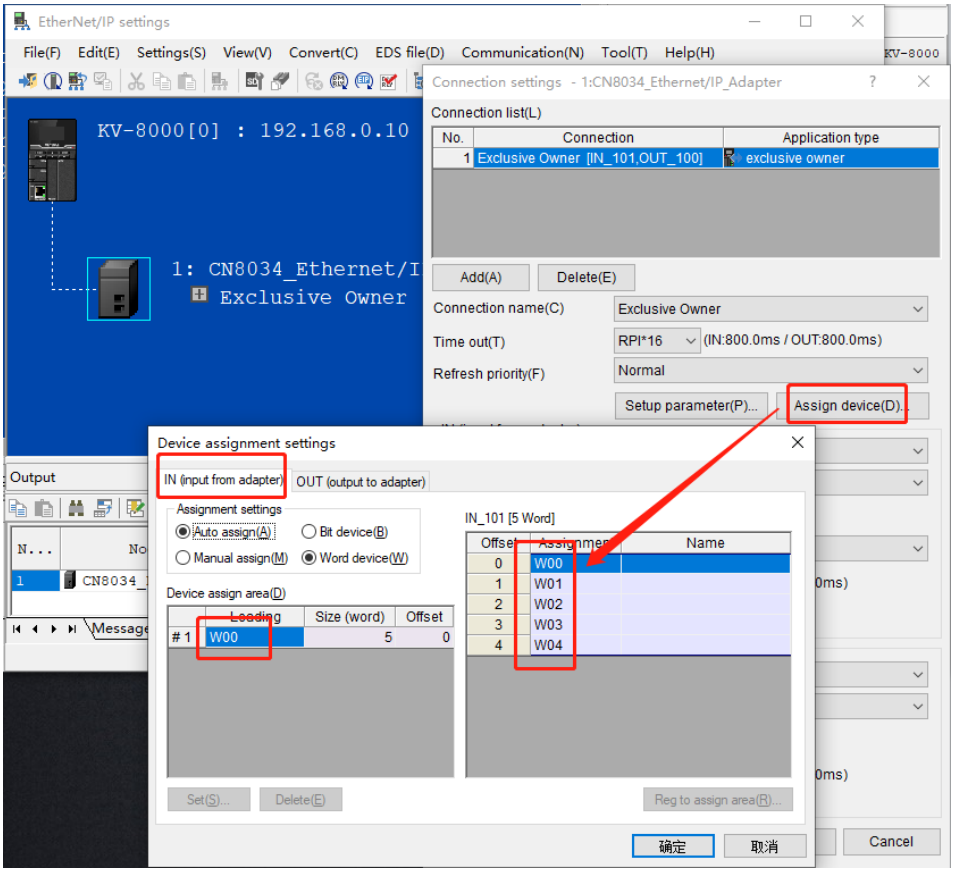

Find the CN-8034 in the unit list, drag it to the KV8000 network, and enter the node address and IP address of the CN-8034. Click OK.

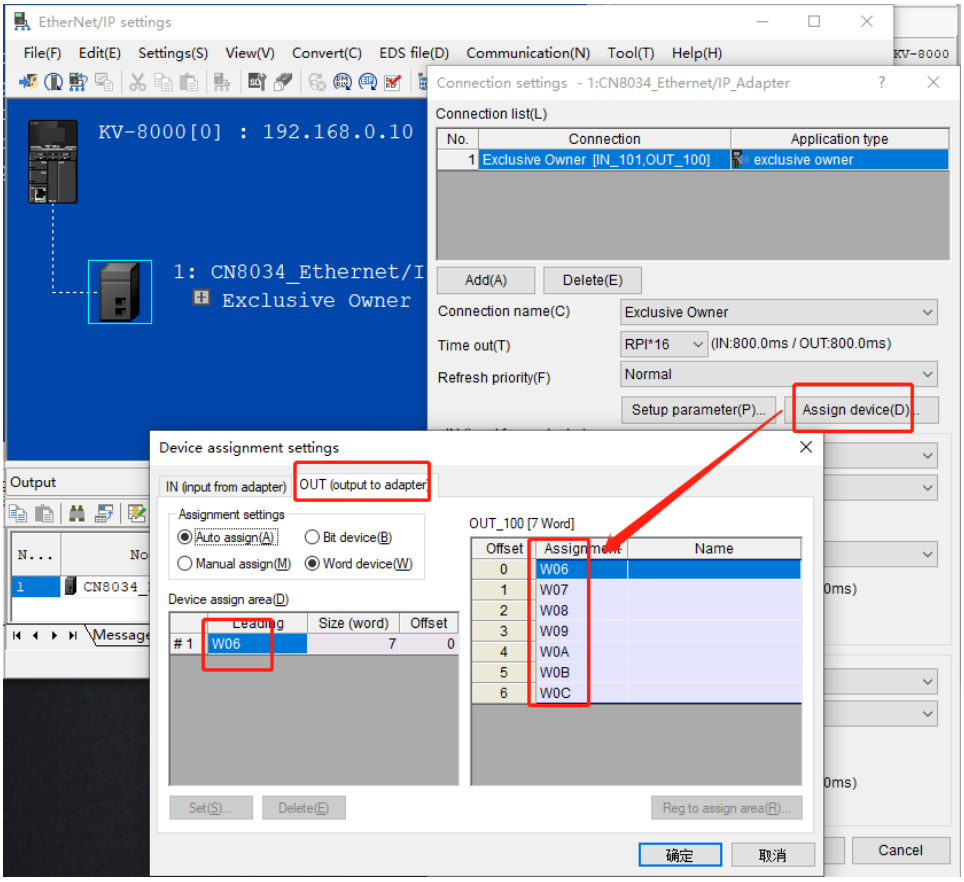



Then set the CN-8034 input and output size. Click Exclusive Owner, click Set parameter in the pop-up window, and fill in the input and output size in the pop-up window. Here fill in the output size 13, input size 9, click OK.



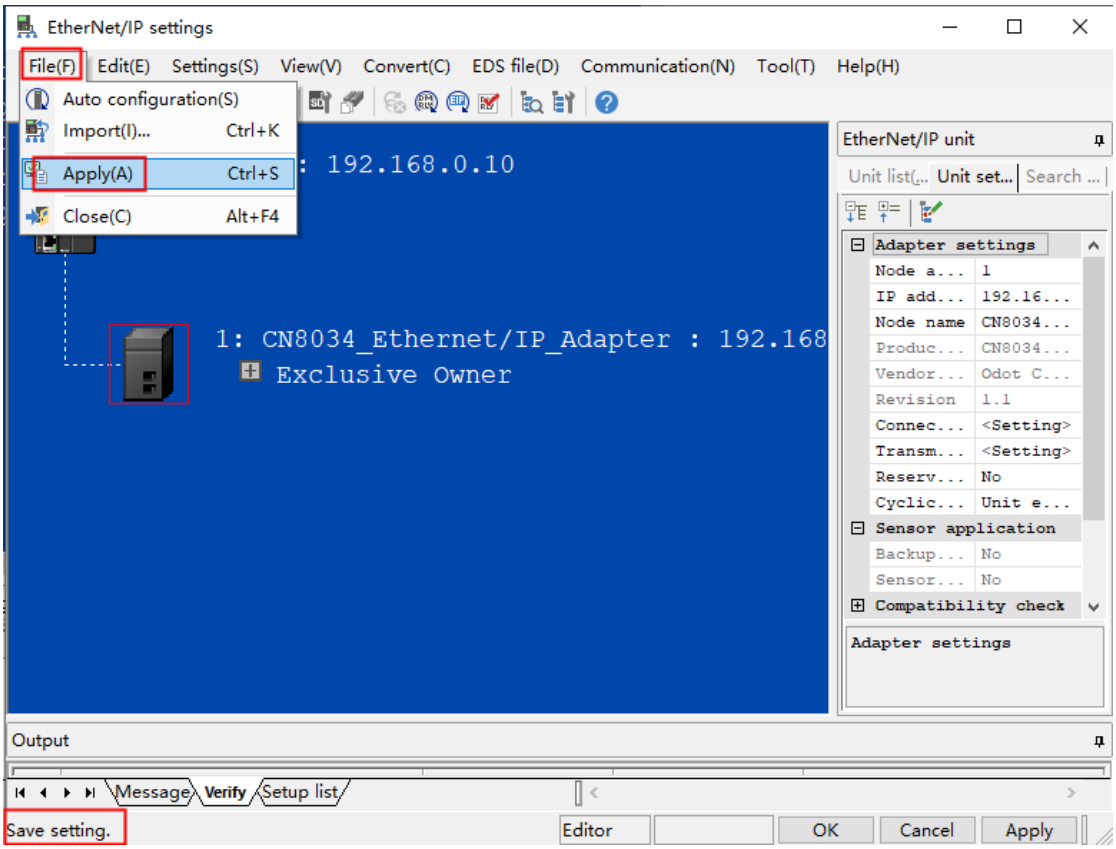

Click Assign device to view the data area address mapped by the IO module of CN-8034.



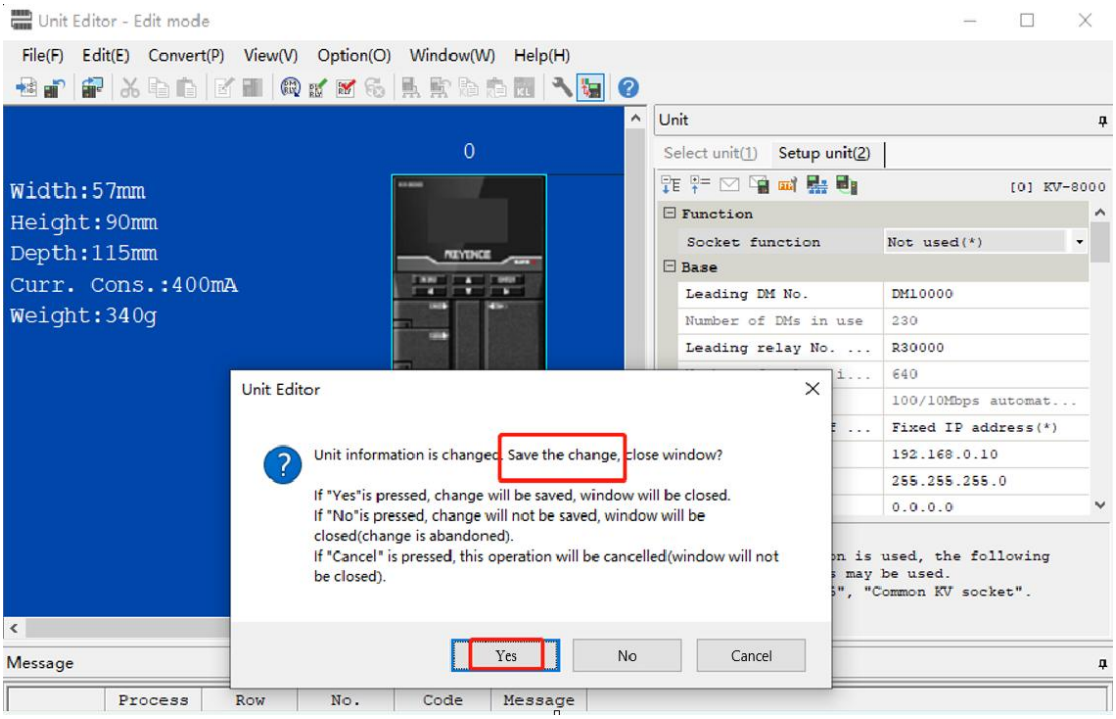




After the configuration is complete, click File-Apply to save the configuration. Close

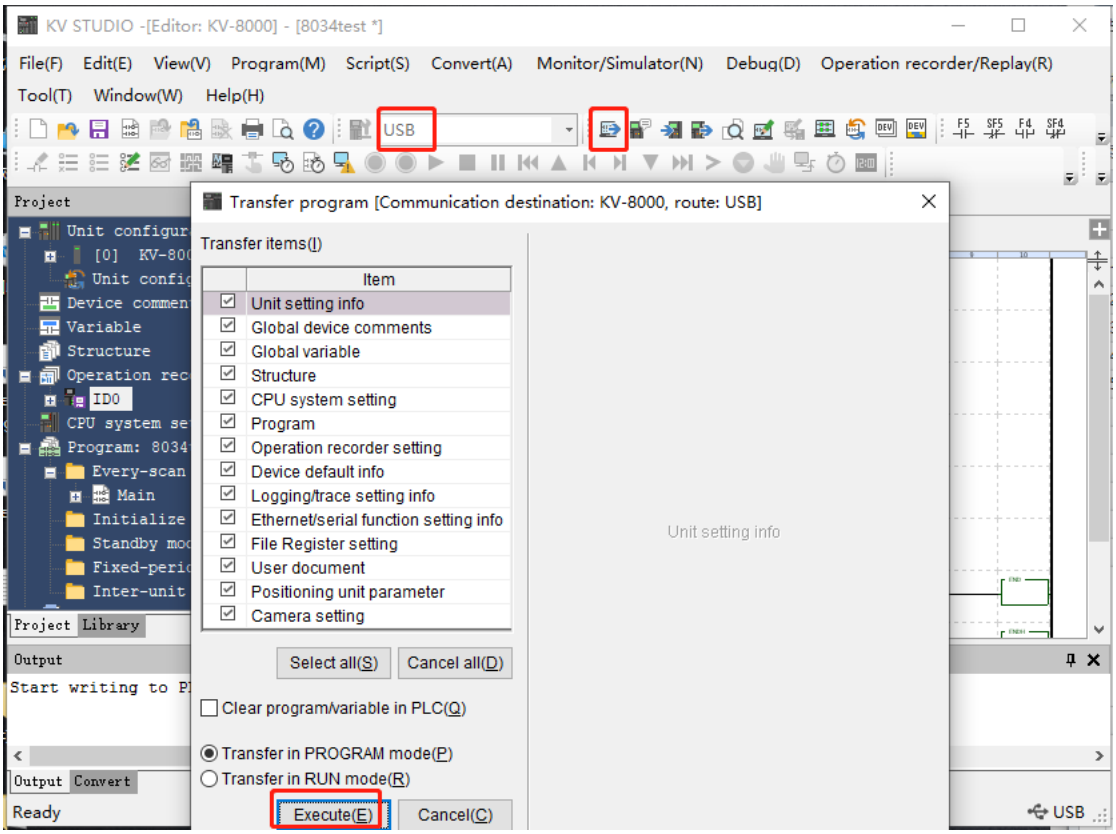
the window.

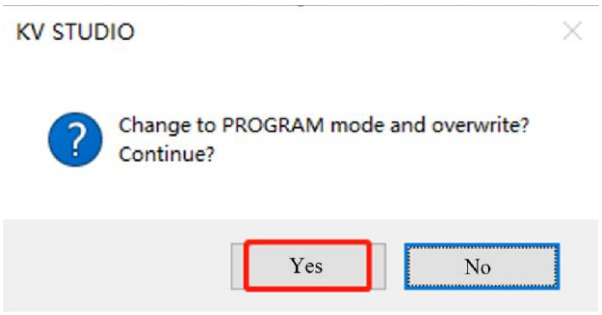


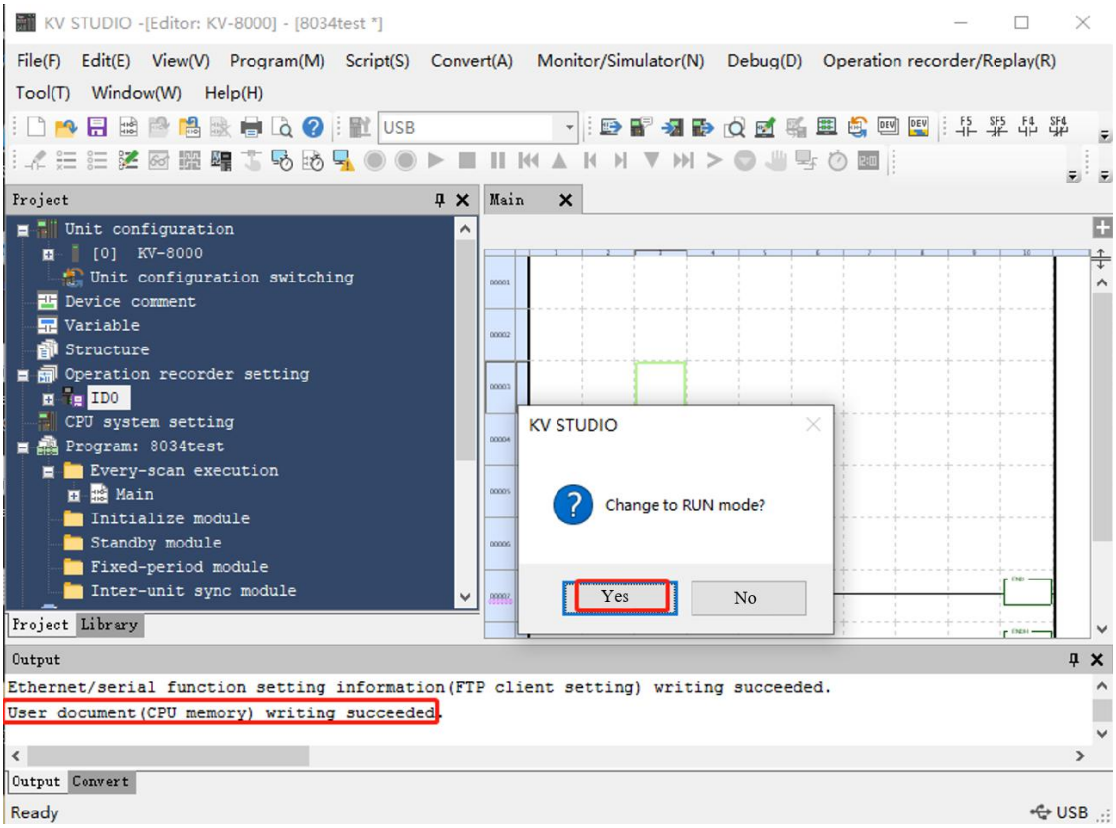

Go back to the cell editing window. Close the window and click Yes in the pop-up dialog box to save the changes.



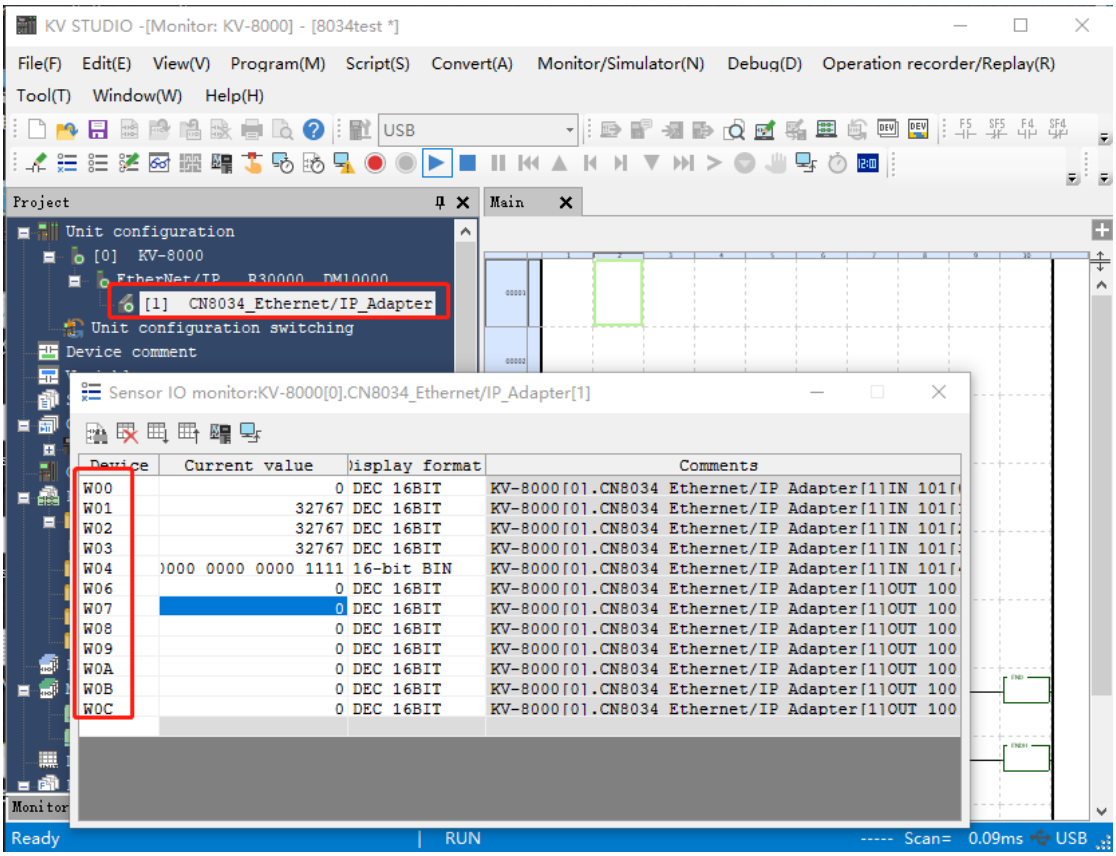
Go back to the KV STUDIO window, select the USB port, click the shortcut key to transfer the program to the KV8000 PLC, click Execute in the pop-up window, and click Yes in the pop-up window. After the program is transferred, click to change the PLC operation mode to RUN mode.



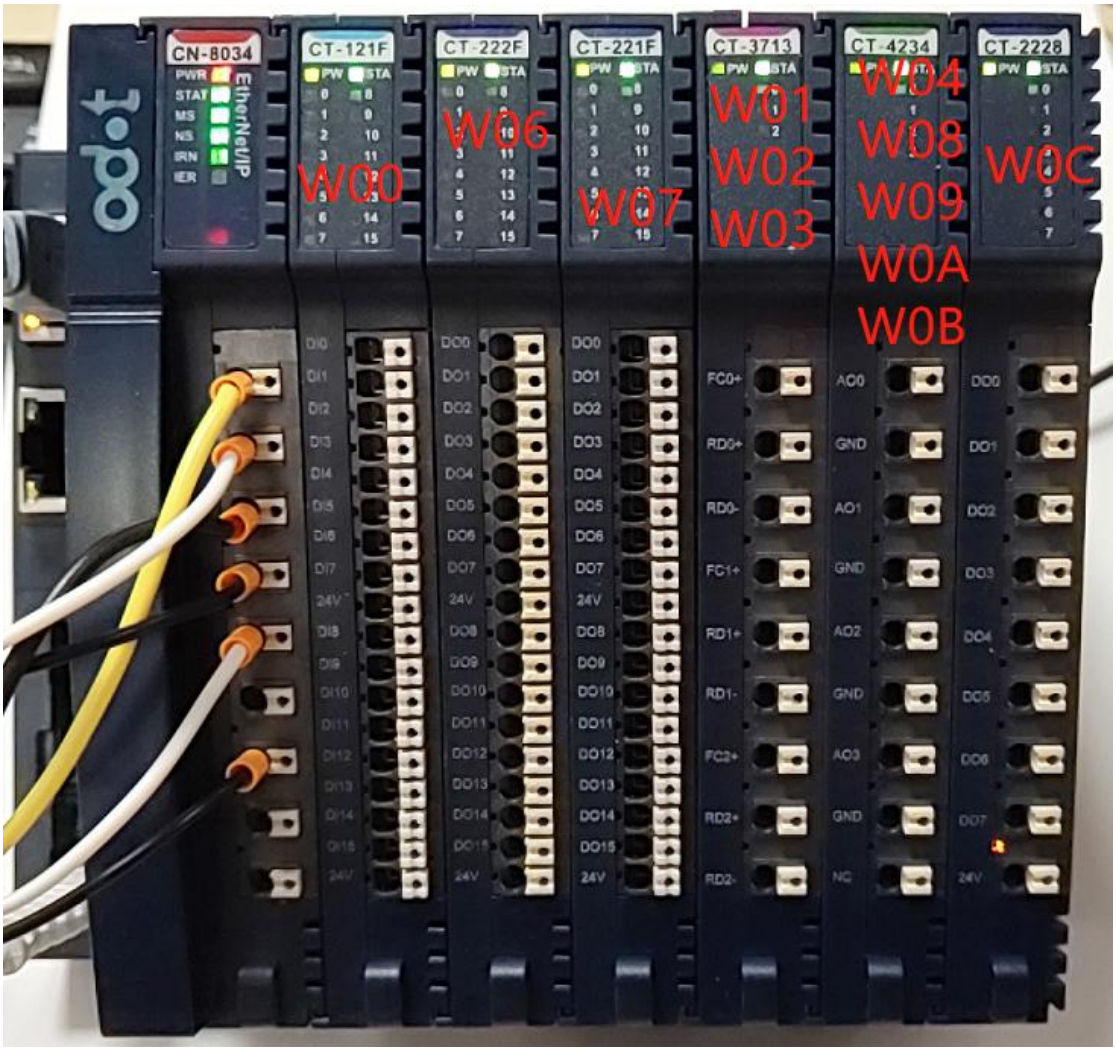






Click the drop-down menu of the project KV8000 and double-click the CN-8034 to display the I/O monitoring interface.



The comparison PLC address corresponds to the hardware module. W00-W05 is the input mapping address, and W06-W0C is the output mapping address. The CT-4234 has input address W04 because the CT-4234 has an input open diagnostic.



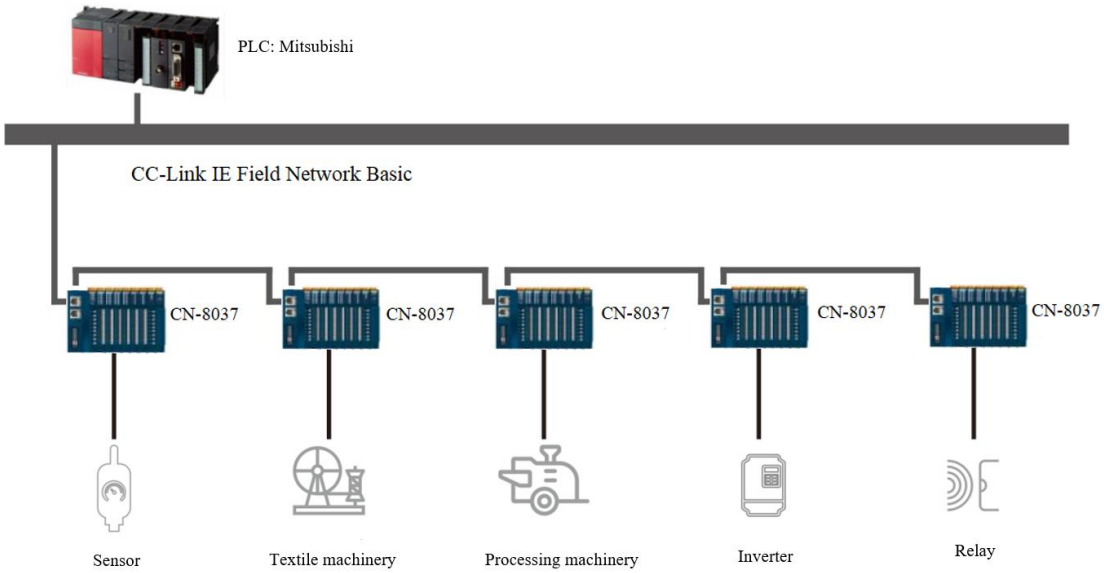

The input and output values correspond to the table.

Sensor IO monitor:KV-8000[0].CN8034_Ethernet/IP_Adapter[1]

| Device | Current value | Display format | Comments |
|---|---|---|---|
| W00 | 2 | DEC 16BIT | KV-8000[0].CN8034 Ethernet/IP Adapter[1]IN |
| W01 | 186 | DEC 16BIT | KV-8000[0].CN8034 Ethernet/IP Adapter[1]IN |
| W02 | 32767 | DEC 16BIT | KV-8000[0].CN8034 Ethernet/IP Adapter[1]IN |
| W03 | 32767 | DEC 16BIT | KV-8000[0].CN8034 Ethernet/IP Adapter[1]IN |
| W04 | 0000 0000 0000 1111 | 16-bit BIN | KV-8000[0].CN8034 Ethernet/IP Adapter[1]IN |
| W06 | 2 | DEC 16BIT | KV-8000[0].CN8034 Ethernet/IP Adapter[1]OUT |
| W07 | 15 | DEC 16BIT | KV-8000[0].CN8034 Ethernet/IP Adapter[1]OUT |
| W08 | 2000 | DEC 16BIT | KV-8000[0].CN8034 Ethernet/IP Adapter[1]OUT |
| W09 | 4888 | DEC 16BIT | KV-8000[0].CN8034 Ethernet/IP Adapter[1]OUT |
| W0A | 0 | DEC 16BIT | KV-8000[0].CN8034 Ethernet/IP Adapter[1]OUT |
| W0B | 0 | DEC 16BIT | KV-8000[0].CN8034 Ethernet/IP Adapter[1]OUT |
| W0C | 255 | DEC 16BIT | KV-8000[0].CN8034 Ethernet/IP Adapter[1]OUT |

# Communication example of the CN-8037 module

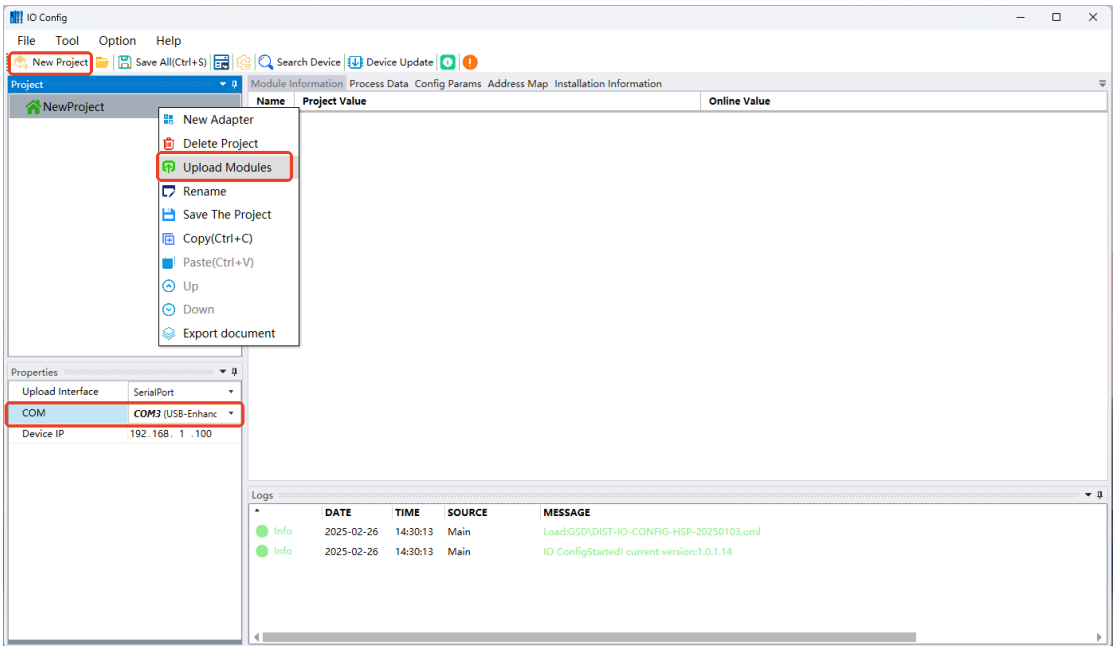
## 1 Topology



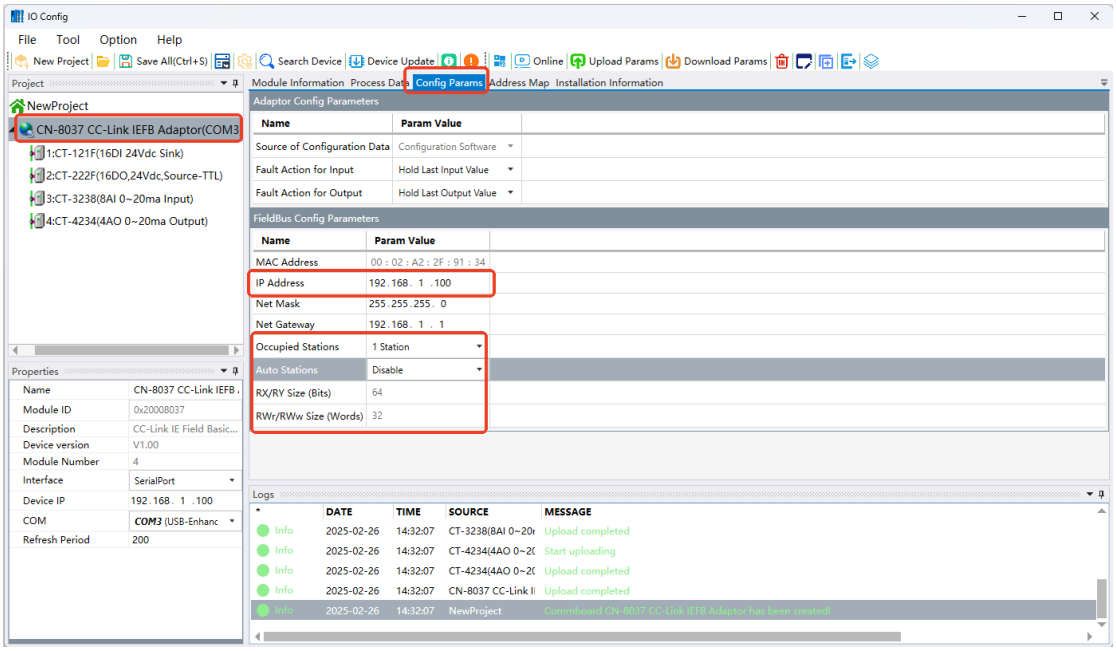
# 2 Example of Mitsubishi FX5U communication with the CN-8037 module

In this chapter, the FX5U-32MT/ES from Mitsubishi will be used as the controller for the CC-Link IEFB and the GX Works 3 will be used as the configuration software to illustrate the configuration method of the CN-8037. The CN-8037 module is supplied with 24VDC system power and field power supply, and the FX5U is supplied with 220V AC power, and the network port of FX5U is connected to Port 2 of CN-8037, and Port1 of CN-8037 is connected to PC for configuration.

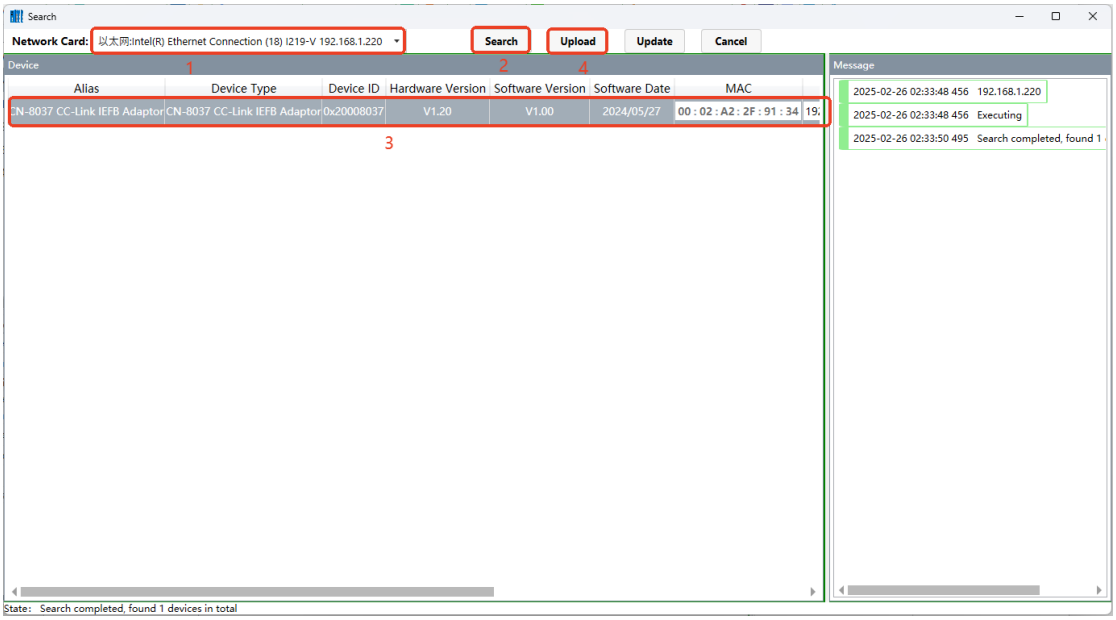
The PC can be connected to the configuration interface of CN-8037 through the USB Type C or using the Ethernet port. Open the IO Config software, create a new project, select the serial port of the upload interface in the property bar, select the COM number, right-click the project, and select the upload module.



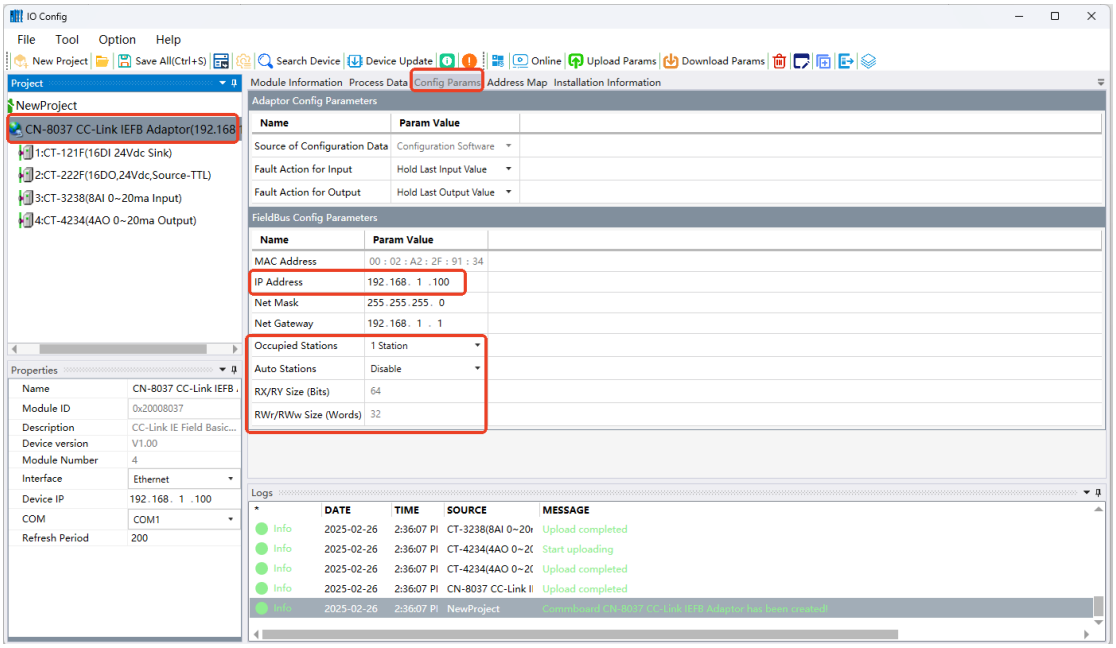

Set the communication parameters of the adapter. It can set the number of occupied stations, and adjust the capacity of RX/RY and RWr/RWw. If enable the auto stations, the minimum number of stations and the multiple of the expansion cycle can be automatically calculated by downloading and uploading the configuration.



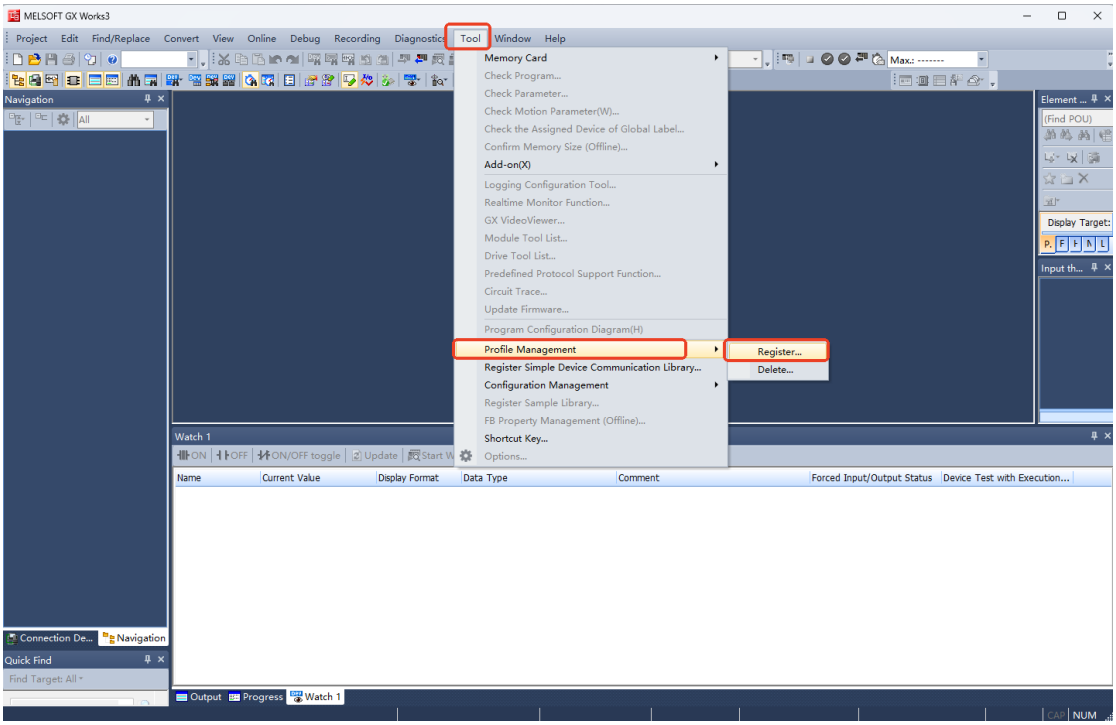

If use the Ethernet port for configuration, open the IO Config software, click the Tools - Search Device or shortcut icon, select the local network card, click Search, select the device CN-8037 coupler in the device list, click Upload, and create a project.

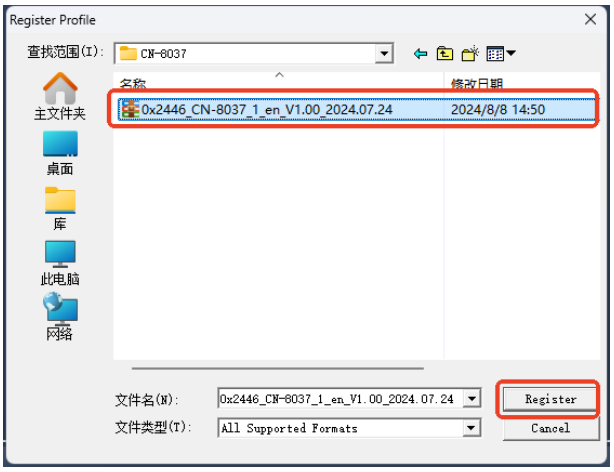



Set the communication parameters of the adapter. It can set the number of logical stations to be occupied, and adjust the capacity of RX/RY and RWr/RWw. If enable automatic calculation of the number of stations, the minimum number of stations and the multiple of the expansion cycle can be automatically calculated by downloading and uploading the configuration.

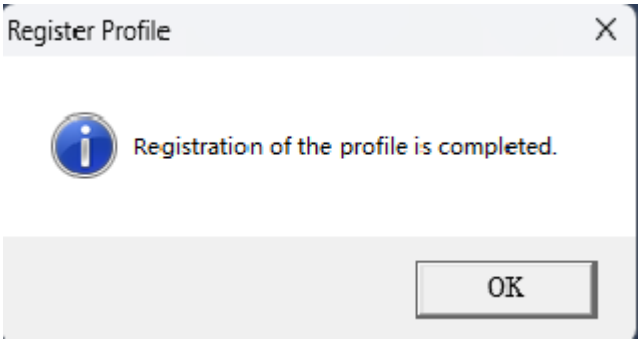



Open the GX Works 3 software, click "Tools - Profile Management - Register", select the configuration file with the suffix " 0x2446_CN-8037_1_en_V1.00_2024.07.24" in the pop-up window, and click Register. (It cannot open a project file or create a new project file until register to the profile.)

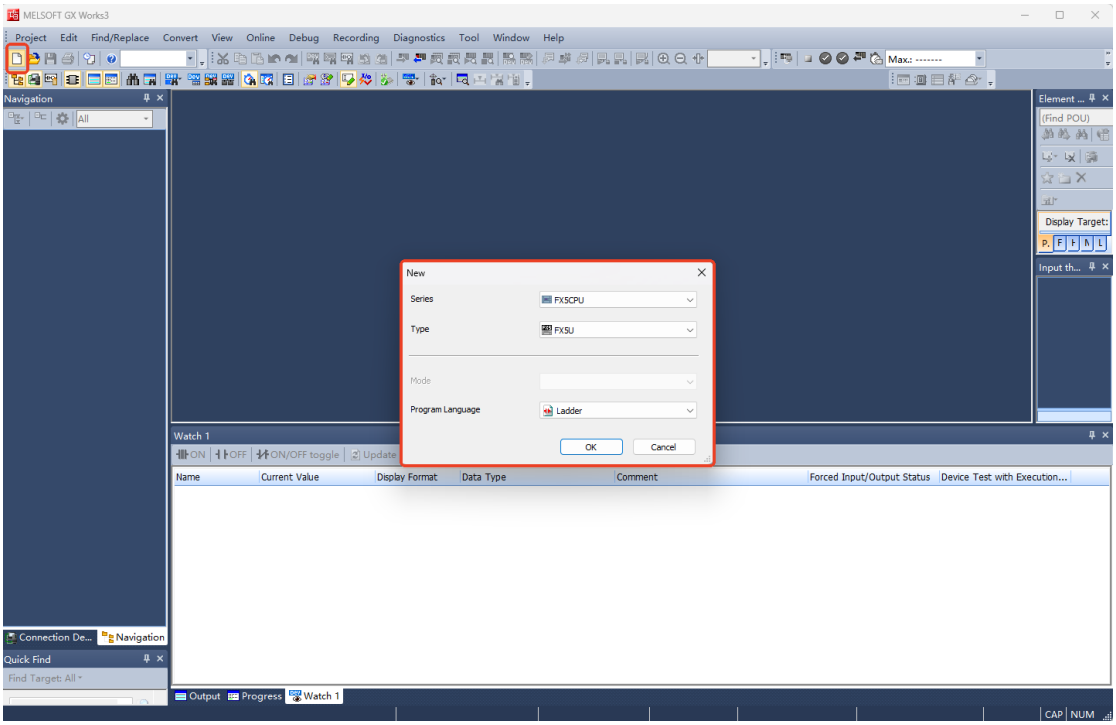




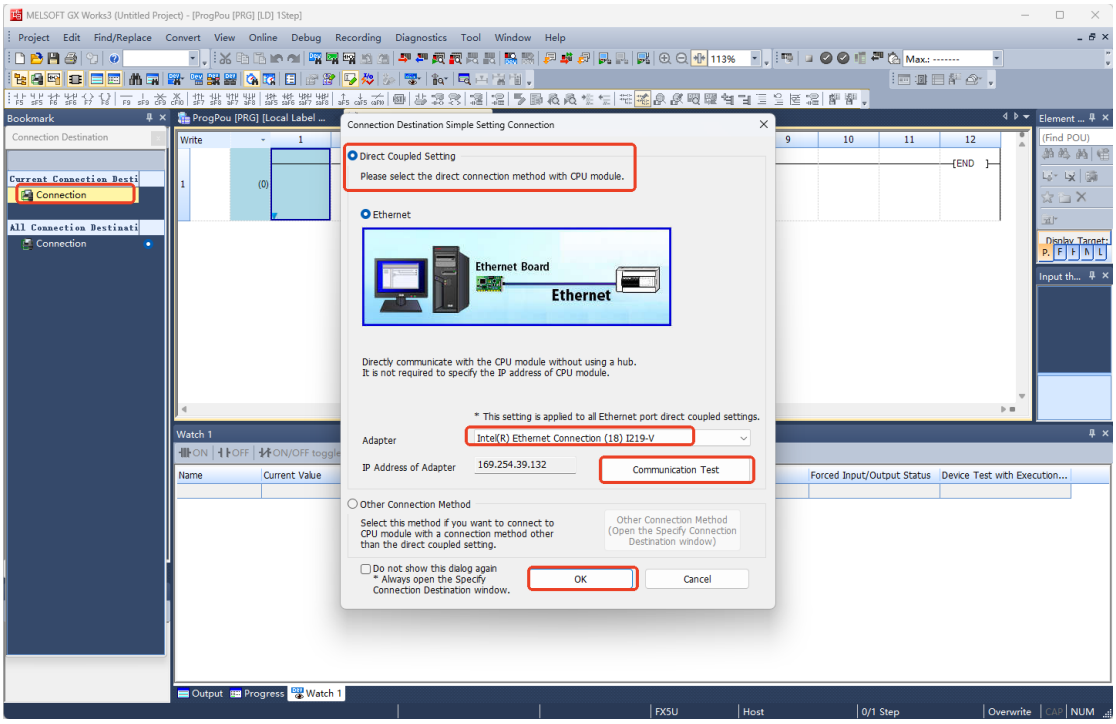

The following window is displayed, indicating that the configuration file is successfully installed.



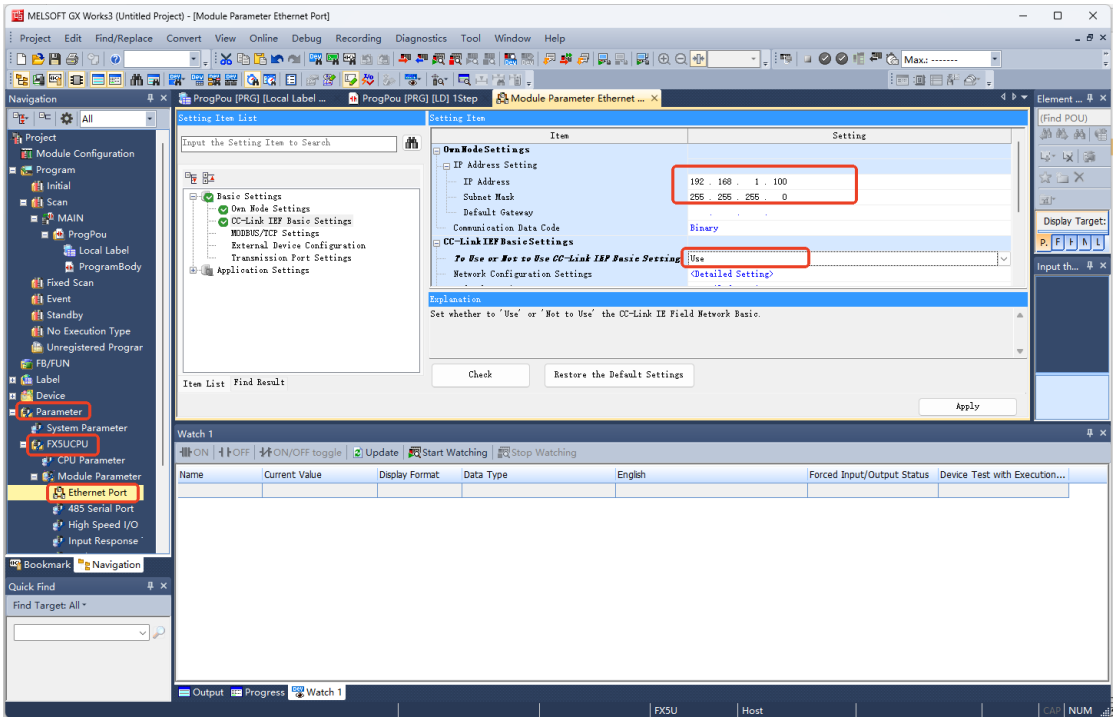

Click New Project, select FX5UCPU series, the model is FX5U, the programming language is Ladder, click OK, and the new project is completed.



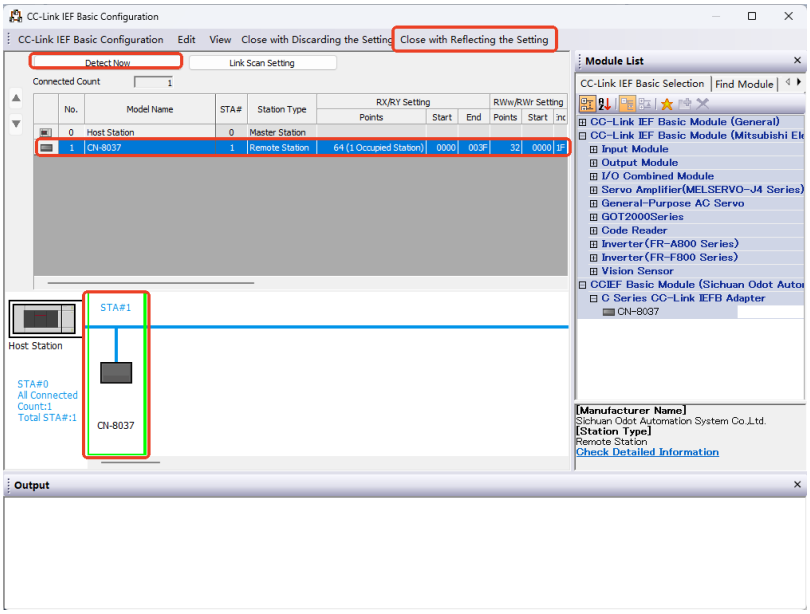
Click on the connection target, select the current connection destination, enter the simple setting connection, select the direct coupled setting, select the corresponding adapter, and click on the communication test.



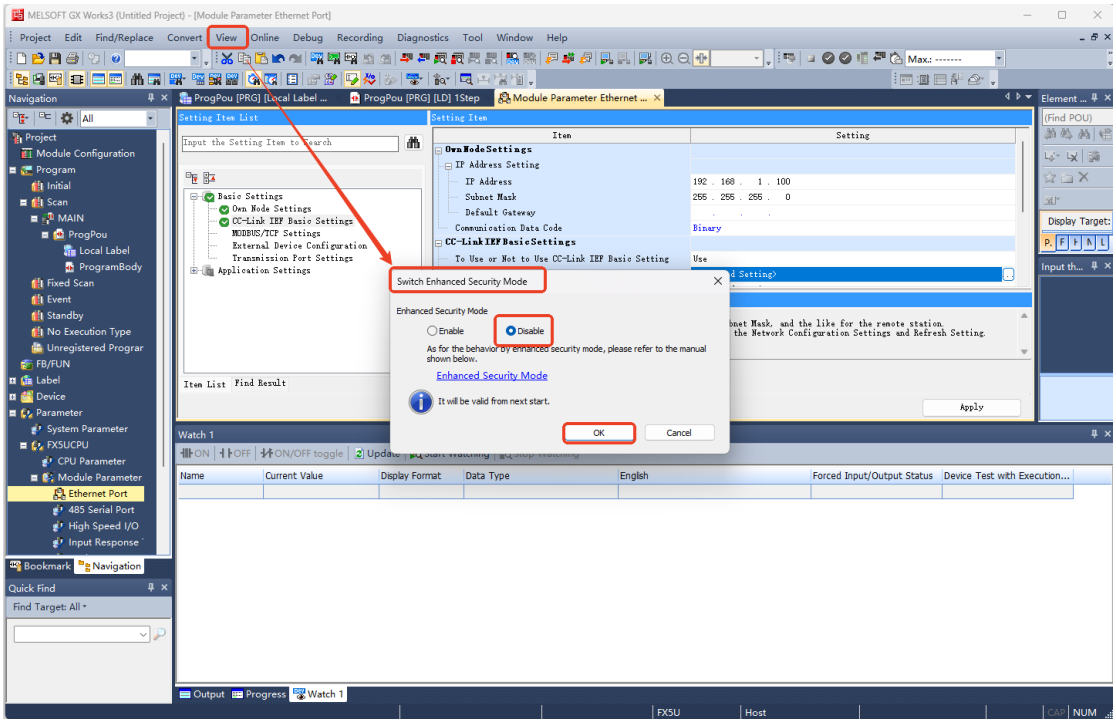

Click Navigation, select Parameters -FX5UCPU-Module Parameters -Ethernet Port, set the IP address and subnet mask, and select use in to use or not to use CC-Link IEF Basic setting.



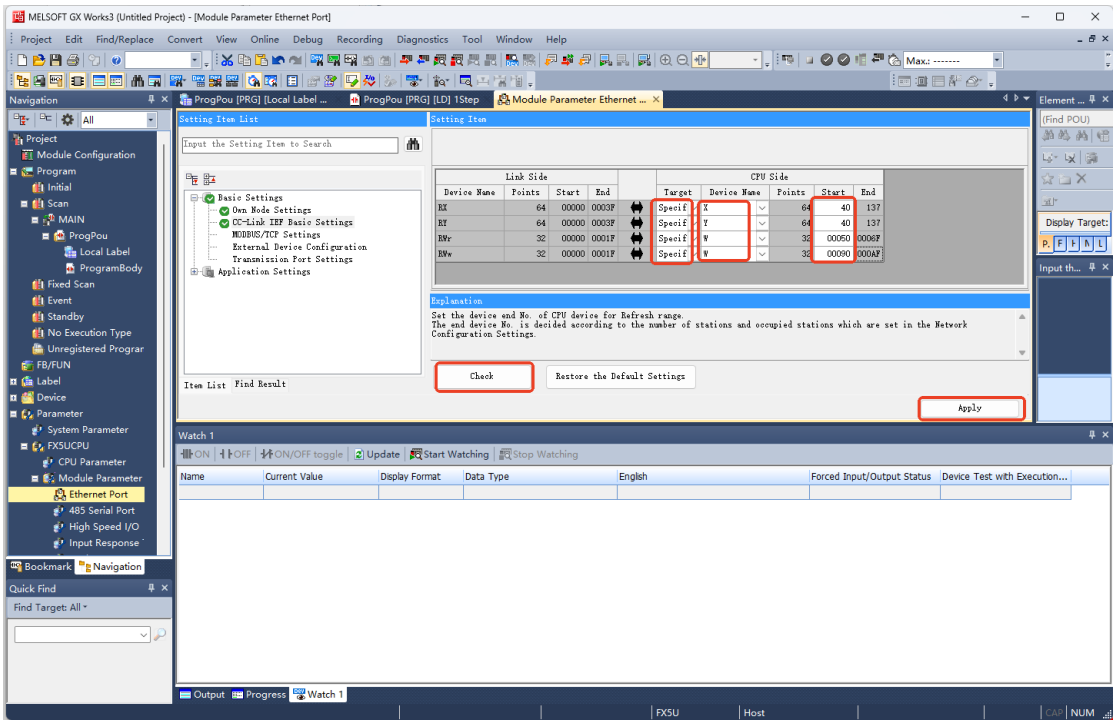
Double-click the detailed settings in the network configuration settings bar, the CC-Link IEF Basic configuration window will pop up, and click detect now (if you manually add the CN-8037 module, an error may be reported, and the station number cannot be determined), the CN-8037 will be scanned, and it can view the CN-8037 RX/RY settings, MAC address and other parameters. CN-8037 with station number 1 will be displayed in the network topology diagram, click close with reflecting the setting to complete the configuration.



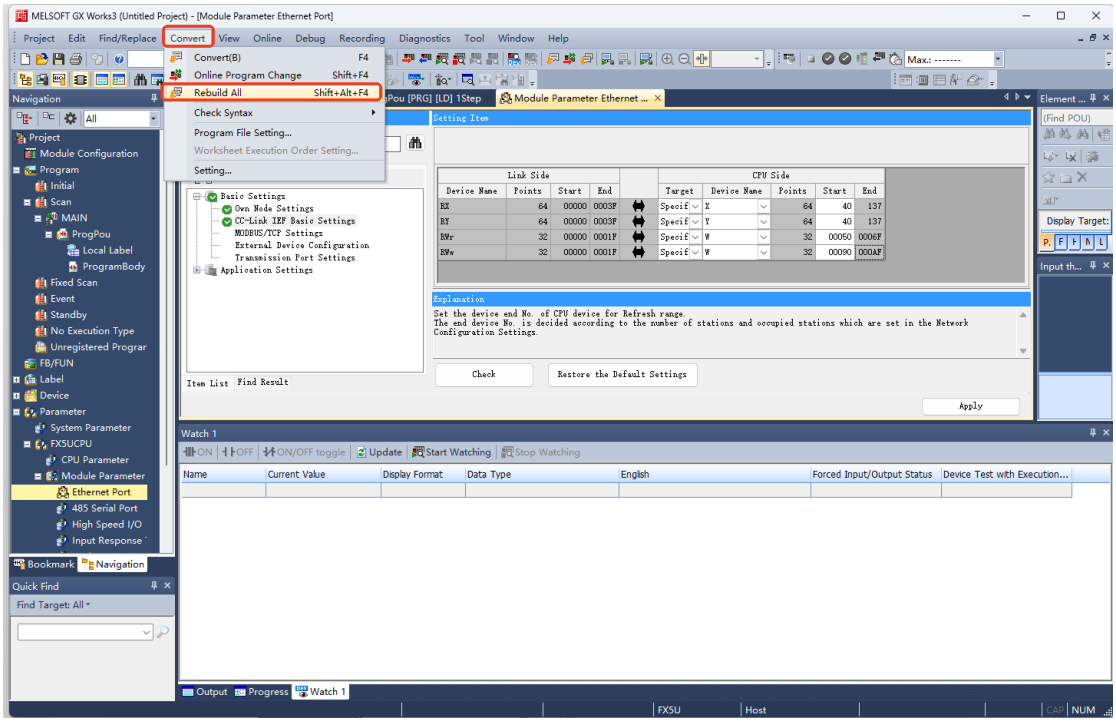

Note: If the error reported in the following figure occurs, it needs to select Disable in View → Security Enhanced Security Mode, and then restart the software to remove the error.



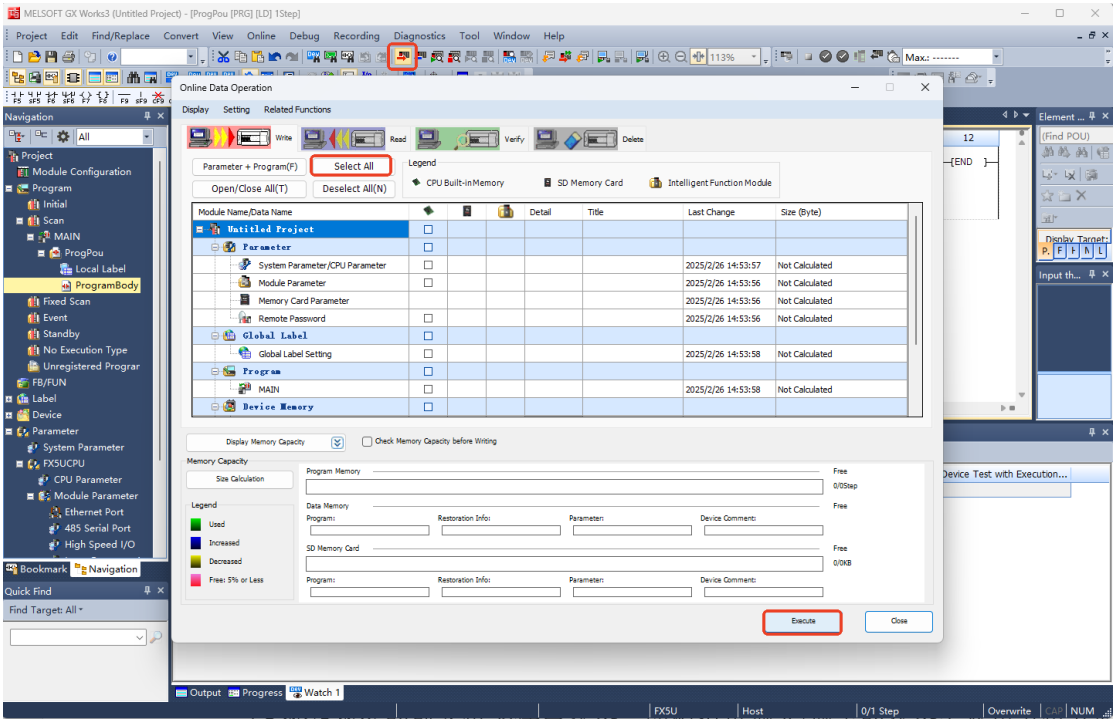

Double-click the detailed settings in the refresh settings bar, enter the window in the picture below, set the refresh target of RX/RY/RWr/RWw, the software component name, the starting address, and after all the parameter settings are completed, click Check, and click Apply after checking that there are no errors. Note that the soft component start address of RWr/RWw should not be duplicated.



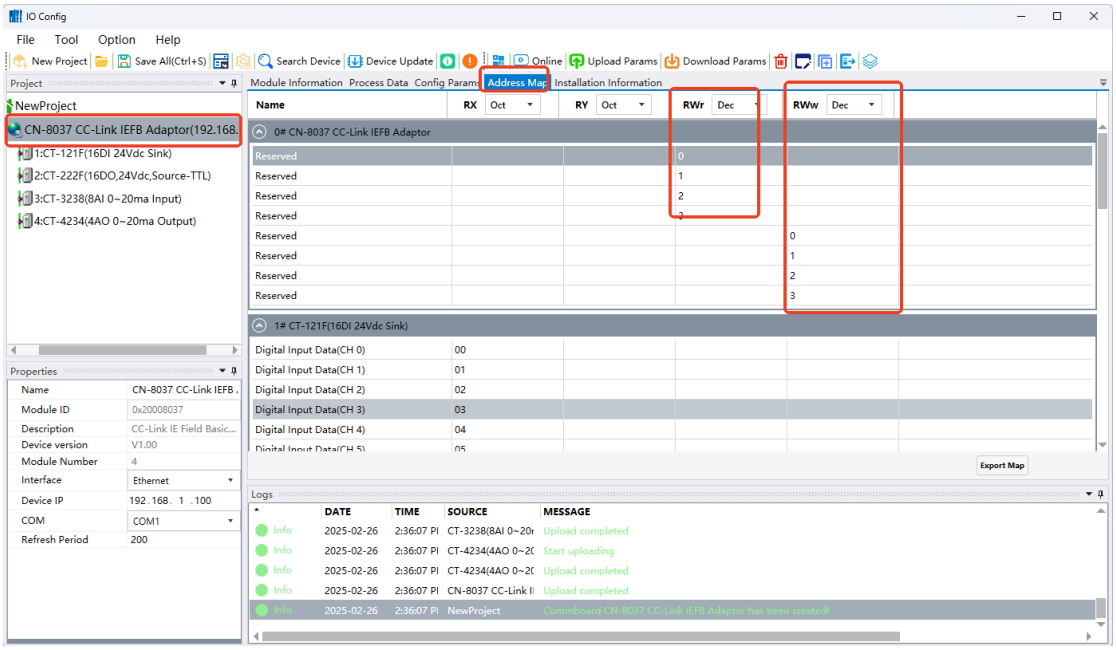

Click Convert in the navigation bar and select Rebuild All.

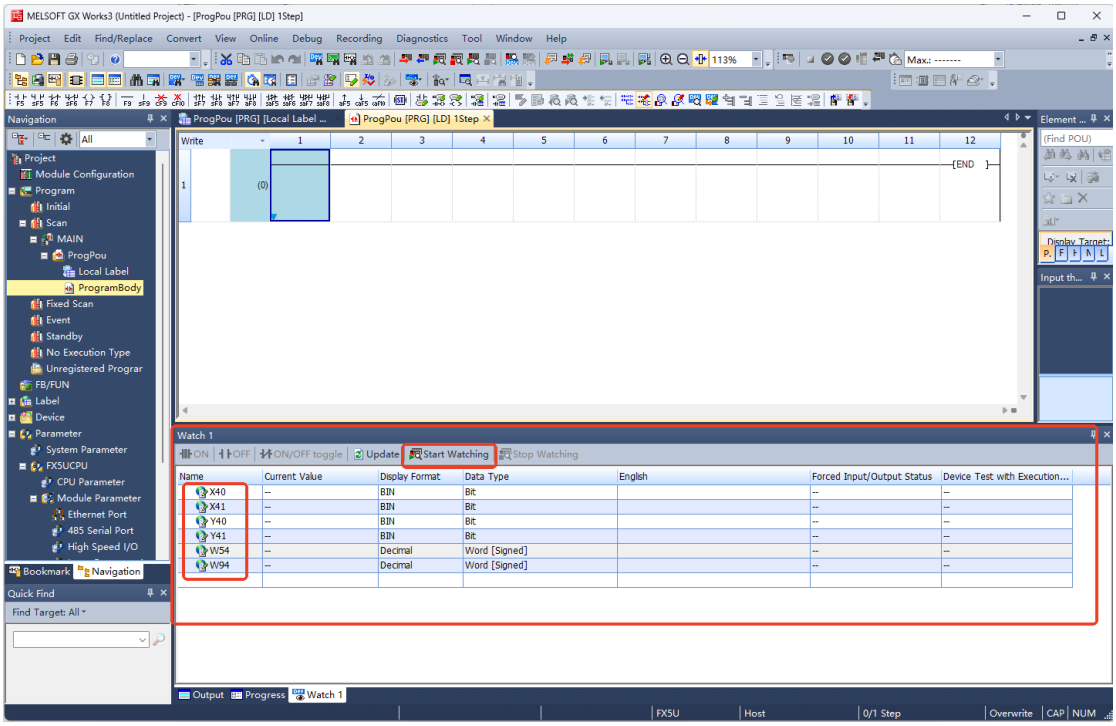



After the conversion is completed, click select all-execute, and after the program is downloaded, reset the CPU module or restart the power supply.

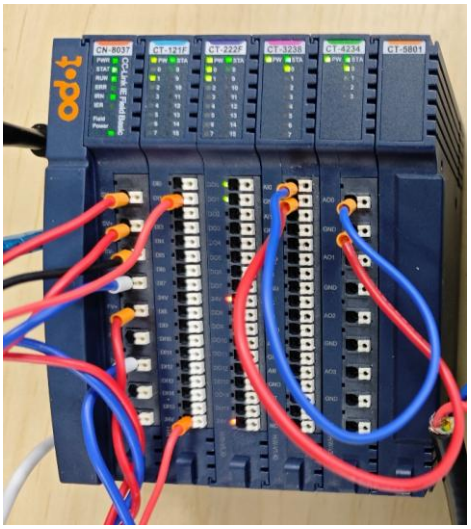



Open the watch table, enter the corresponding software component name, and click to start monitoring the status online. (The first 4 bits of RWr/RWw are reserved, that is, the state of analog input/output needs to be monitored from the fifth digit).




X40 and X41 correspond to input channels 0 and 1 of CT-121F module, Y40 and Y41 correspond to output channels 0 and 1 of CT-222F module, respectively, and W54 correspond to input channel 0 of CT-3238 module. W94 corresponds to output channel 0 of the CT-4234 module.


CN-8037
CT-3216
CT-3224
CT-3235
CT-4234
CT-5801

# Combined use examples between CN-803X and CT-5331

## 1 Example of communication between CN-8033 and CT-5331

**Hardware Composition:**

CN-8033(1), CT-5331(1), CN-8021(16) (CANopen Slave station)

**Software Composition:**

**Configuration Software:** IO Config, configuring the CT-5331 subordinate device, configuring the CN-8033 and CT-5331.

**Programming Software**: Codesys

**Wiring:**

Power the CN-8033 module to the 24VDC system power supply and field power supply, and connect the network cable directly to the PC and CN-8033.

The C_H and C_L terminals of CT-5331 are connected to the H and L terminals of the slave station, and the CAN bus wiring adopts the hand-in-hand wiring method.

Connect the terminal resistors at both ends of the CAN bus to ensure that the bus resistance is about 60 ohms, and prepare a Type-C serial port cable for configuring the CT-5331 module and CN-8033 module.

### 1.1 Configure the slave device

Before configuring, make sure that the addresses of the 16 CN-8021 stations are: 1 2 3..... 16. The baud rate of the bus is 500 Kbit/sec, and the data is alternated by the PDO. 16 stations, each station has 4 RPDOs and 4 TPDOs. 16 stations input a total of 336 words, output a total of 256 words.

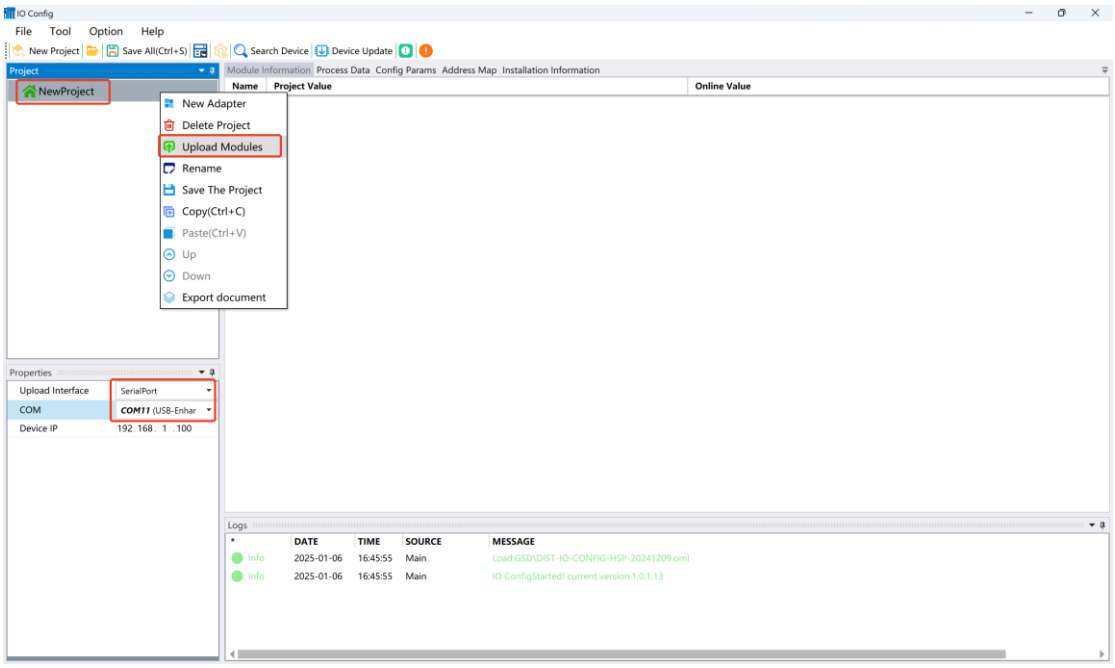
Each CN-8021 can use the default 4 RPDOs and 4 TPDOs. If the amount of data is larger, more PDO commands can be configured. Indexes and sub-indexes can be viewed in IO Config.

| Parameter | COB-ID | Index | Subindex | Data size | Remark |
|---|---|---|---|---|---|

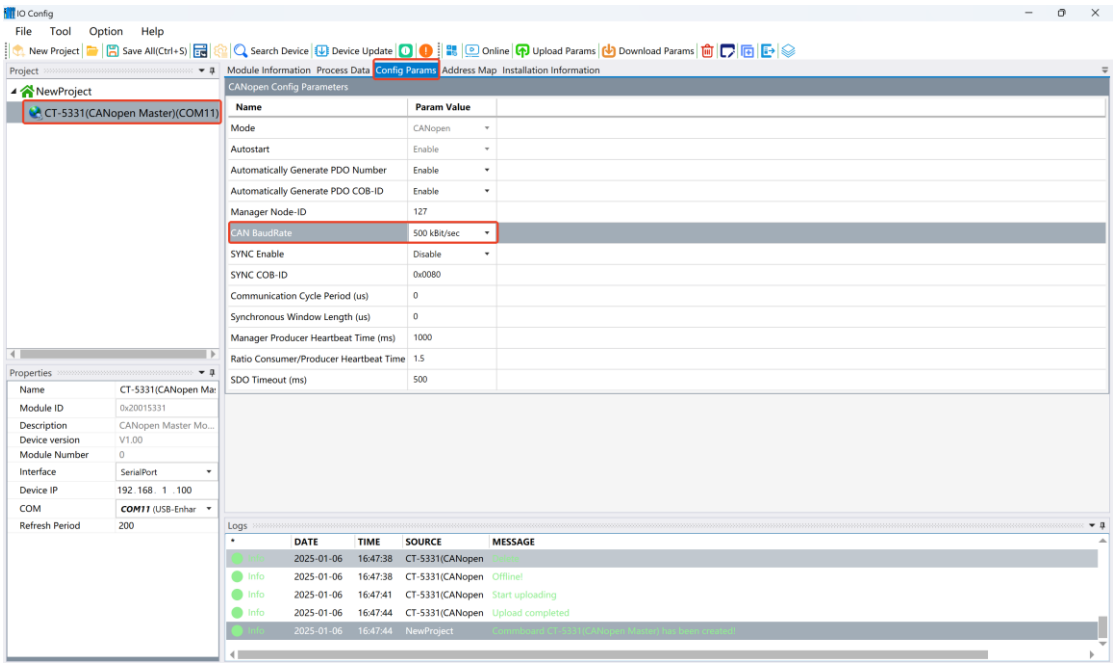
| | | | | | |
|---|---|---|---|---|---|
| TPDO1 | 180h+$NODEID | 6000h | 01-08h | 32 bytes | Digital input |
| TPDO2 | 280h+$NODEID | 6401h | 01-04h | | Analog input |
| TPDO3 | 380h+$NODEID | 6401h | 05-08h | | Analog input |
| TPDO4 | 480h+$NODEID | 6401h | 09-0Ch | | Analog input |
| RPDO1 | 200h+$NODEID | 6200h | 01-08h | 32 bytes | Digital output |
| RPDO2 | 300h+$NODEID | 6411h | 01-04h | | Analog output |
| RPDO3 | 400h+$NODEID | 6411h | 05-08h | | Analog output |
| RPDO4 | 500h+$NODEID | 6411h | 09-0Ch | | Analog output |

Then open the IO Config configuration software and configure the CT-5331 module through the Type-C serial cable. After the Type-C is connected, a COM interface will be generated on the device manager interface of the computer.

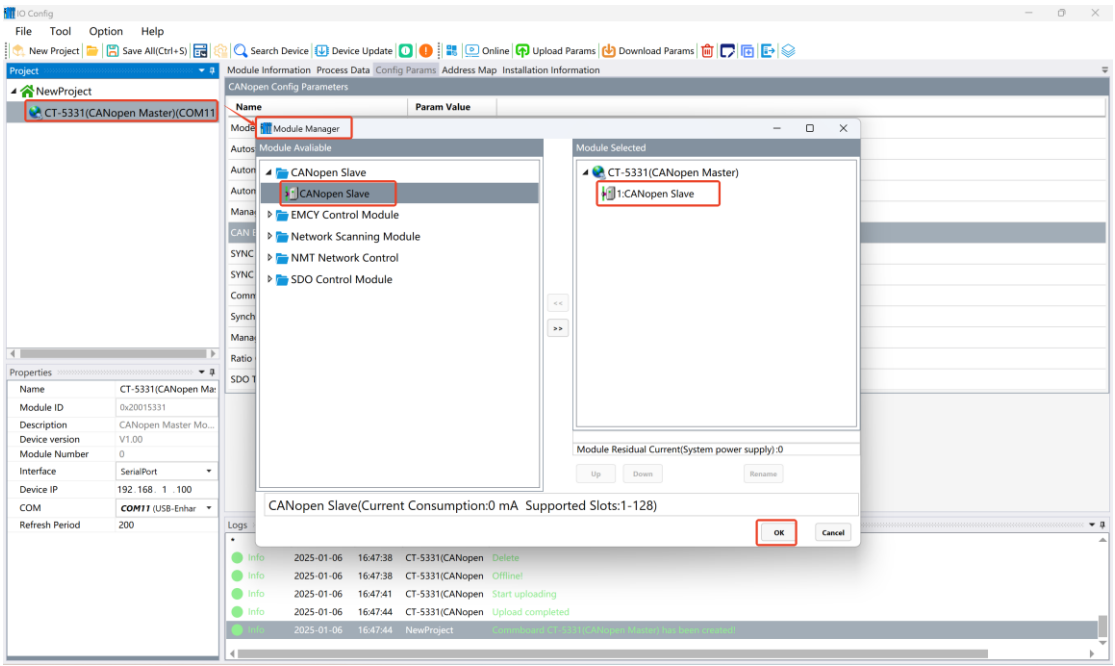
Open the IO Config configuration software, create a new project, and upload module information through the serial port.



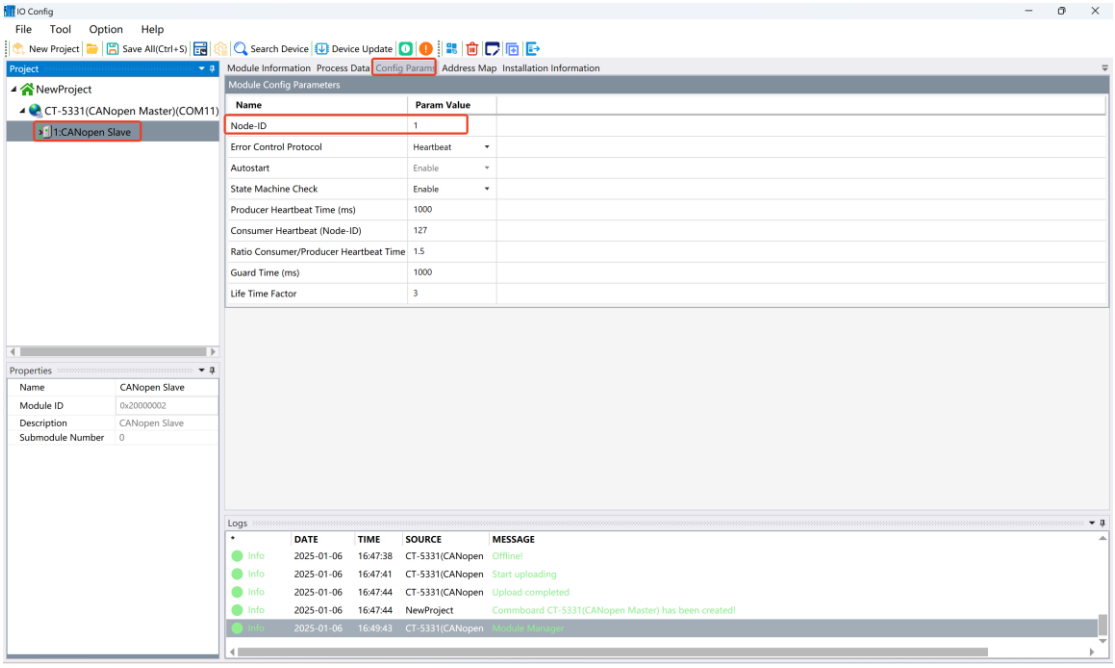

After the upload is successful, modify the baud rate of CANopen as 500kbit/sec,



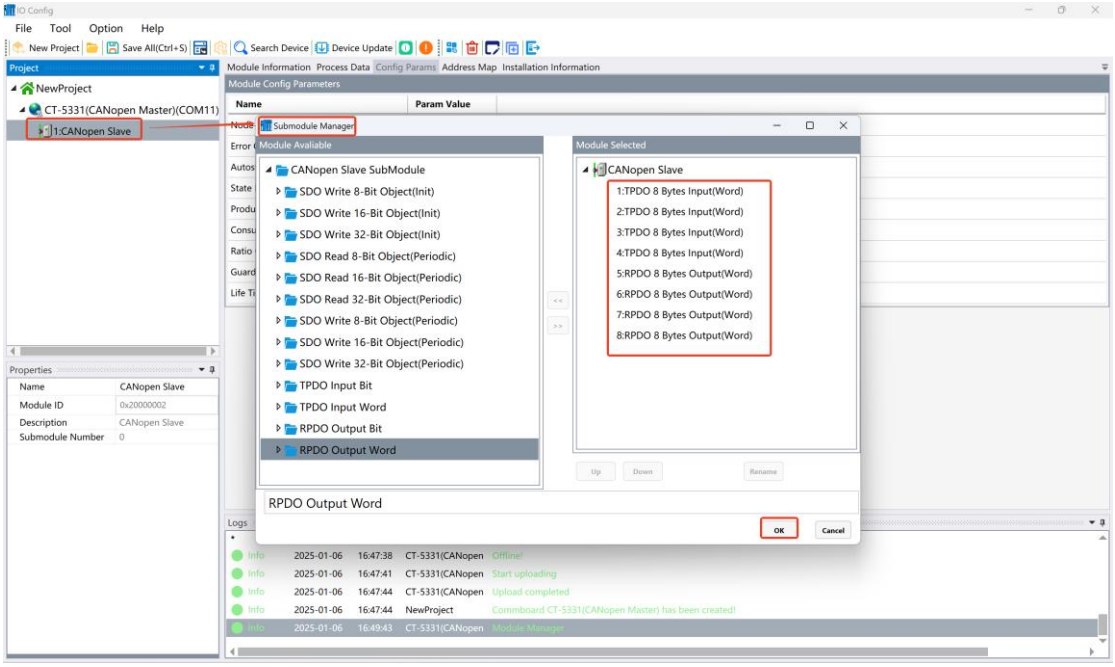

Right-click the CT-5331 module and click Module Management.

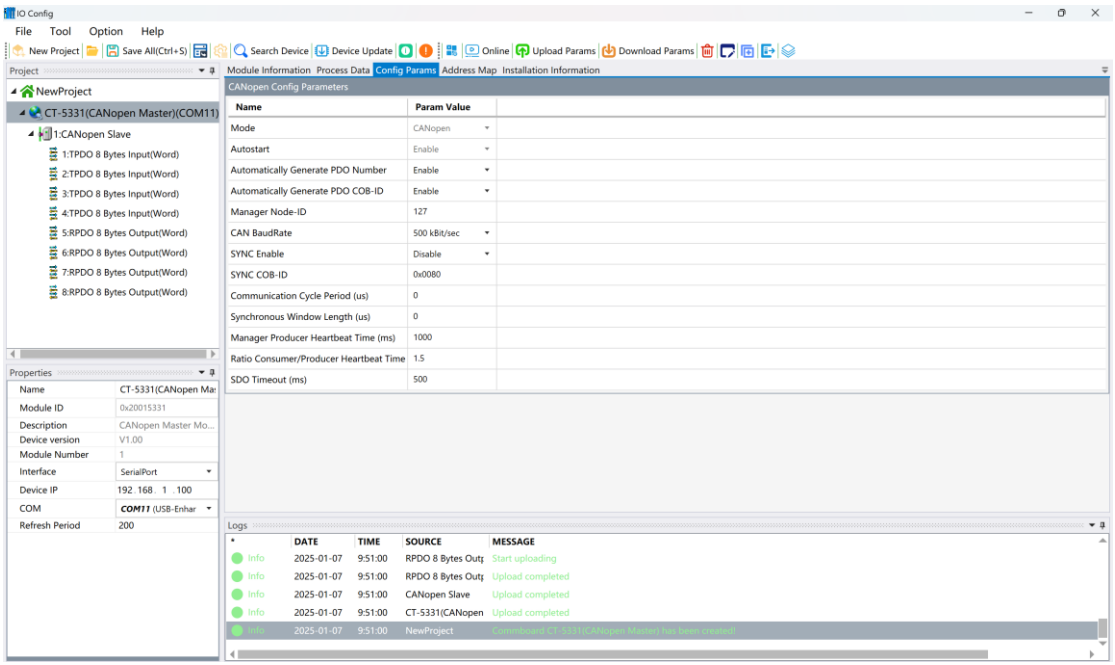



The ID of CANopen click is 1.

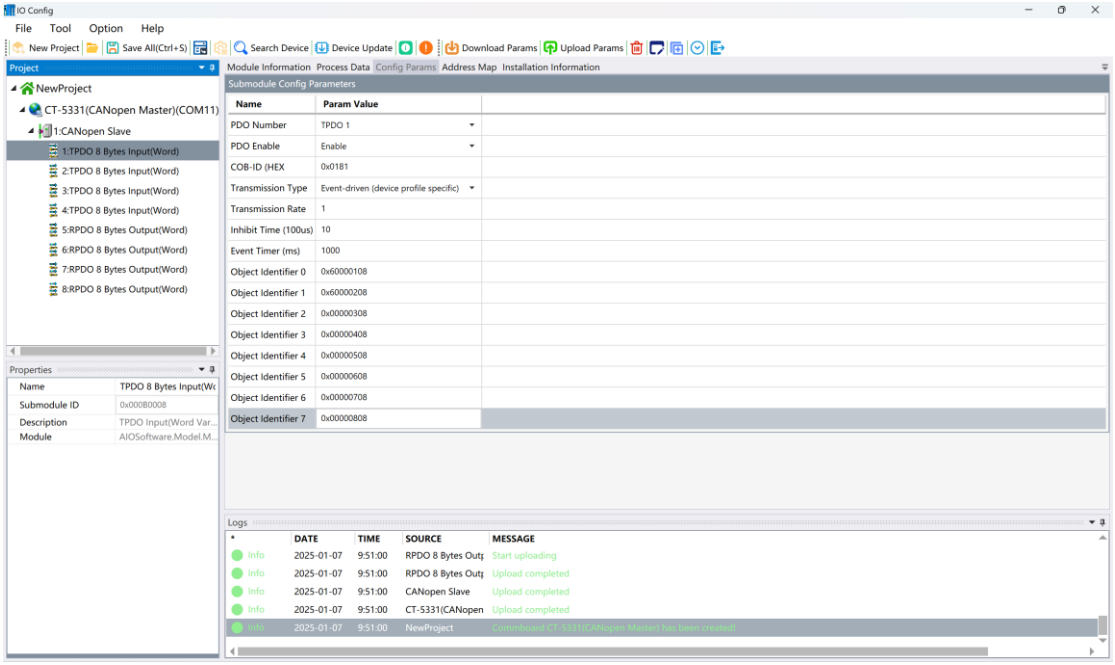



Right-click the CANopen slave, click Submodule Management, and select the required PDO read and write command. Click OK.

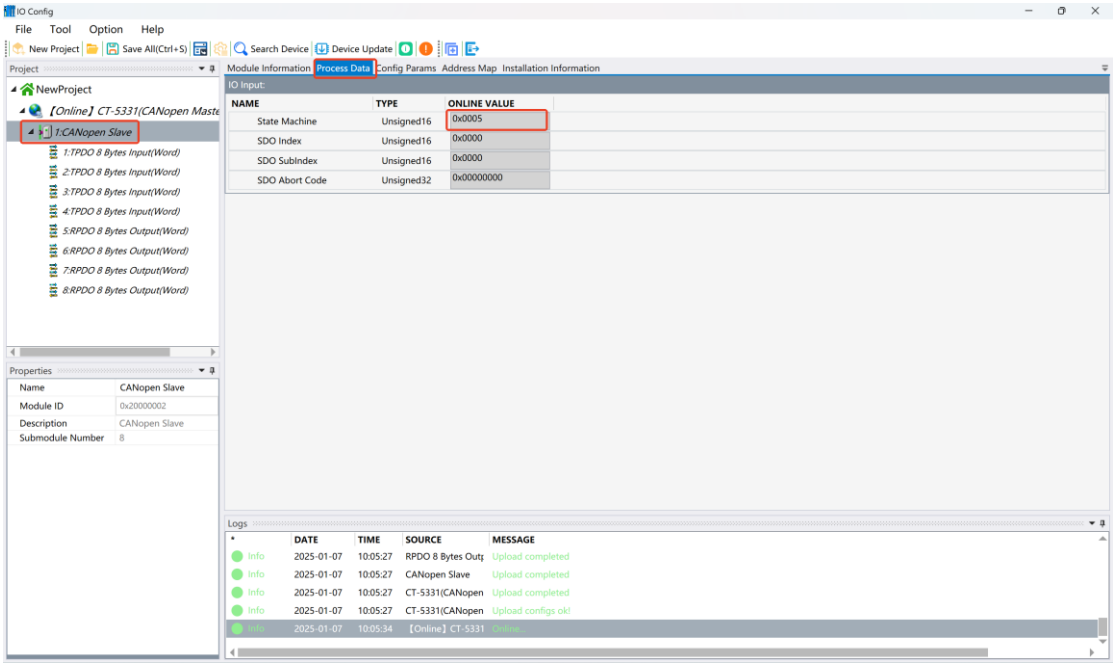




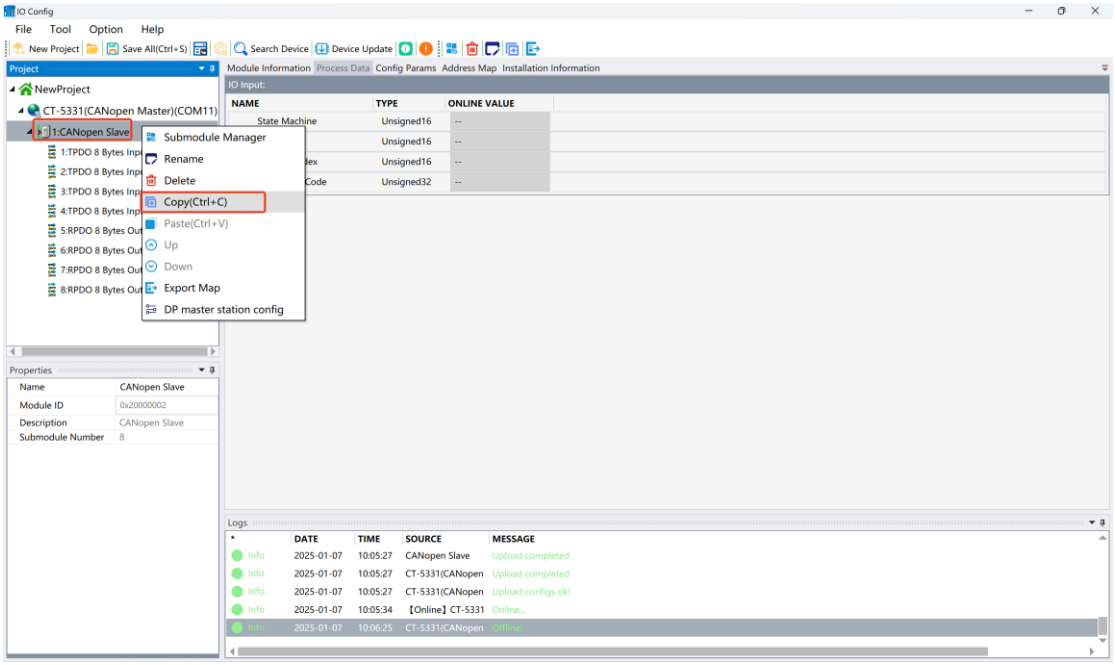

Configure the object identifiers of TPDO and RPDO, and download the configuration after the configuration is complete.

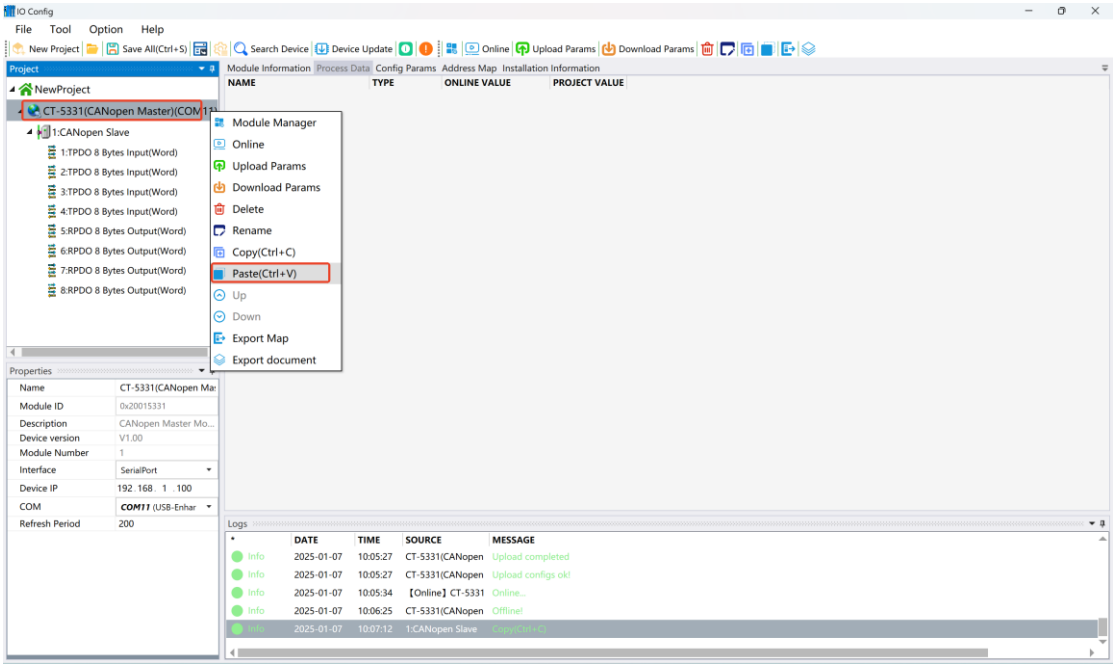



Right-click CT-5331 and click Online to view the status of the slave. It shows 16#0005 that is the running status. Communication is normal.

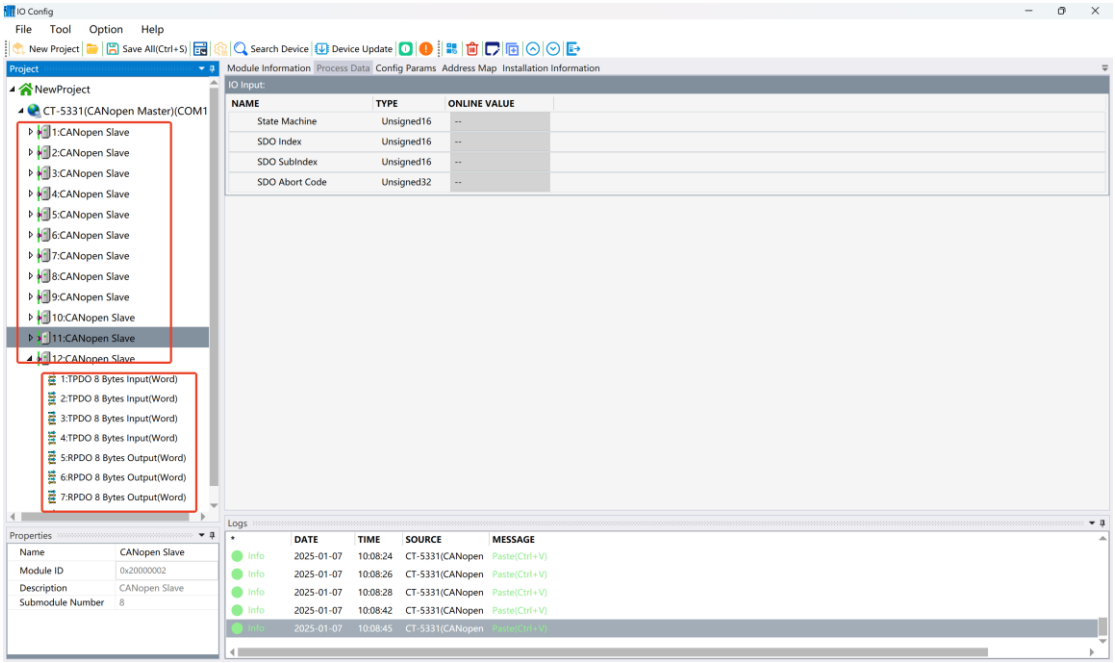


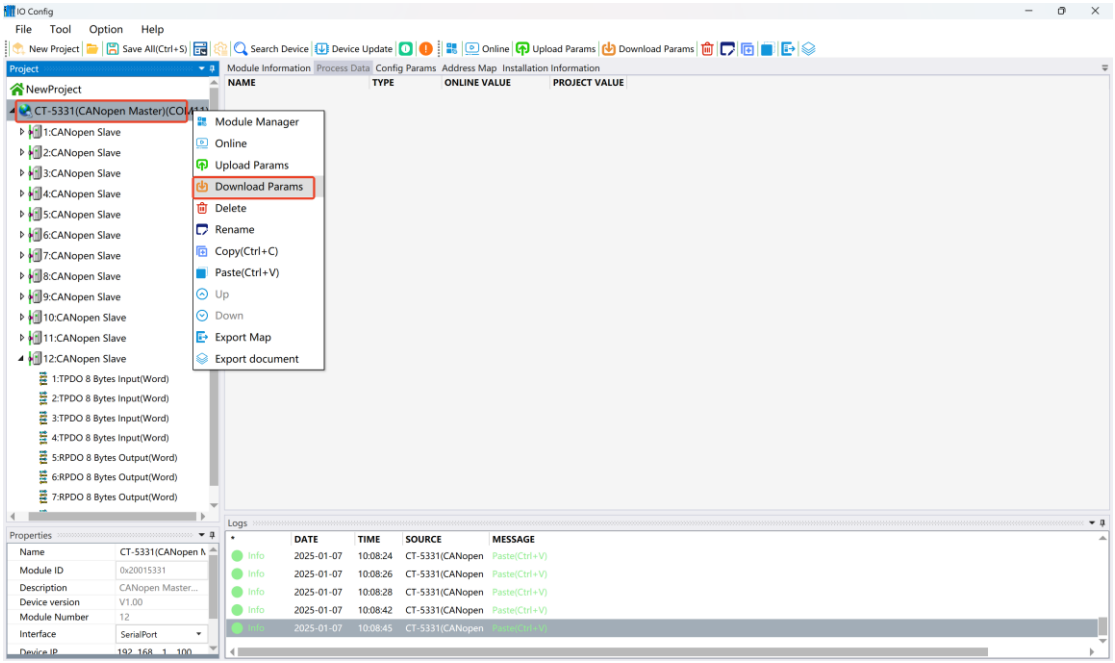

After the communication of a single station is normal, the next 15 stations can be configured by copying and pasting. Or use the shortcut "Ctrl+C" to copy and "Ctrl+V" to paste.






Then modify the corresponding station address 2 3 4..... 12. After the modification, right-click on CT-5331 and click Download Configuration.





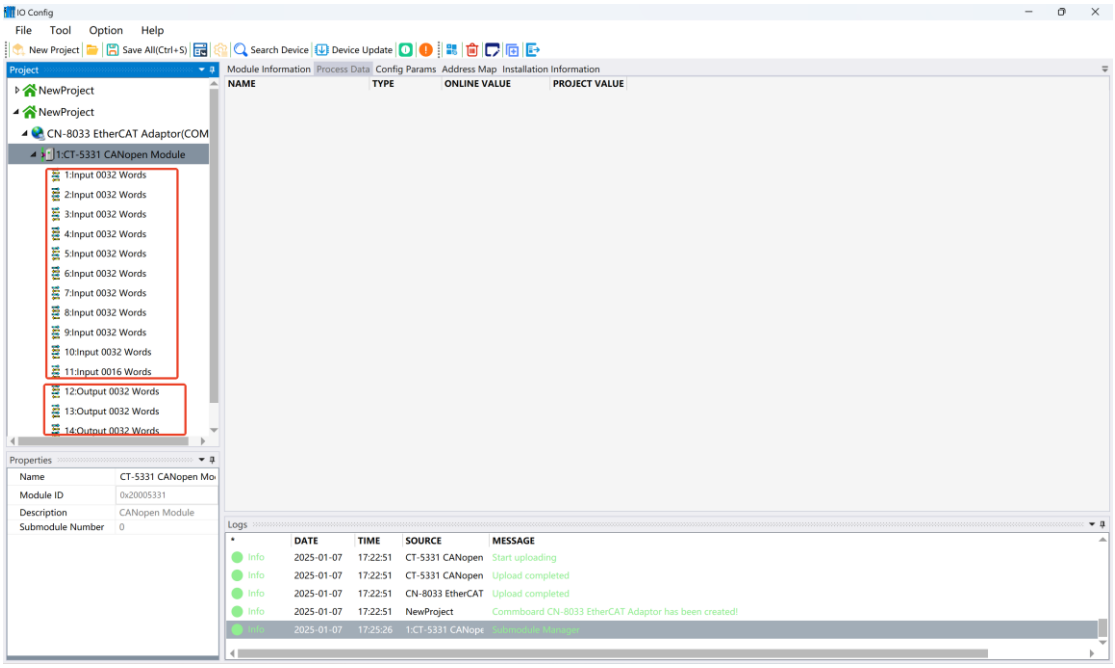

It can also right-click CT-5331 and click Online to view the status of the slave.

## 1.2 Configure the CN-8033 and CT-5331

Use the Type-C interface to upload the CN-8033 and I/O module, right-click the CT-5331 after uploading, add submodules, configure the input and output data size commands, and click OK. (16 stations, 4 RPDOs and 4 TPDOs each.) 16 stations input a total of 336 words, output a total of 256 words. ）

Configure 10 inputs of 32words + 1 input of 16words (336 words), and configure 4 outputs of 32words (256 words).

Note: When CN-8033 is configured with CT-5331, the maximum data length of the input and output commands is 32 words. The reason for this is that the XML file has a maximum of 32words directives defined.

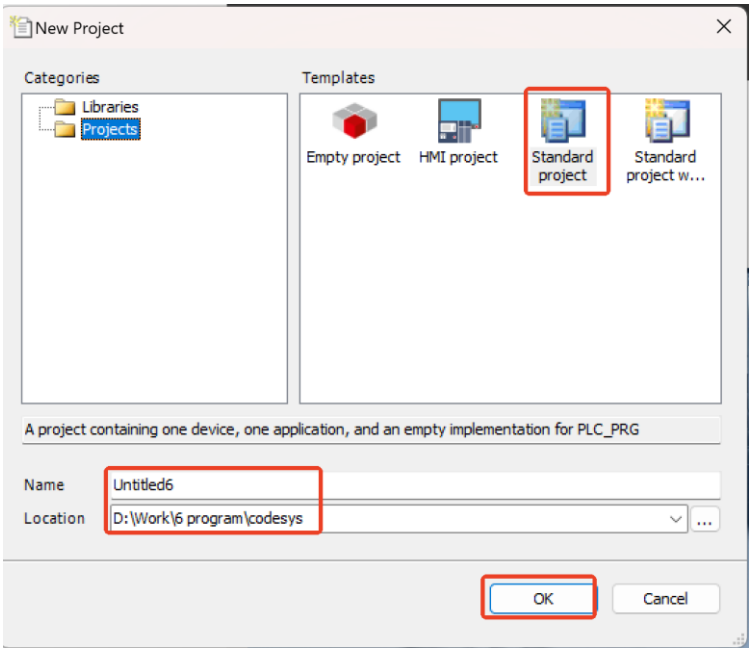


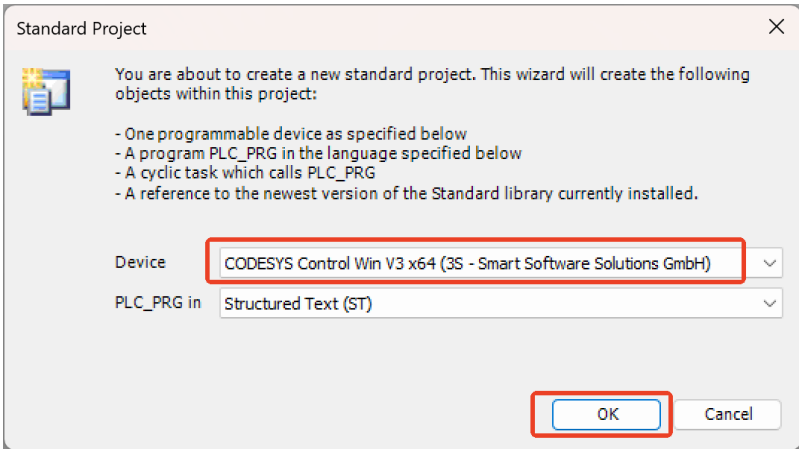

After the configuration is complete, right-click CN-8033 and click Download Params.

## 1.3 Configuration in Codesys software

To use in the CODESYS programming software, it needs to install the XML file of CN-8033 (V1.22 or later).

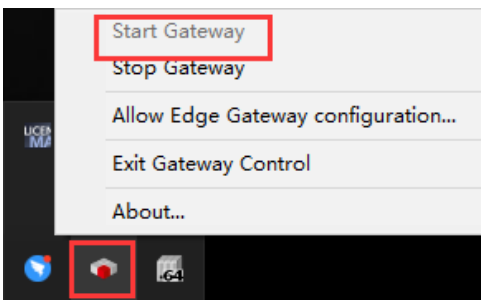
First open the Codesys software, create a new project, in the pop-up window select the “CODESYS Control Win V3 x64 (3S-Smart Software Solutions GmbH)”, click OK.

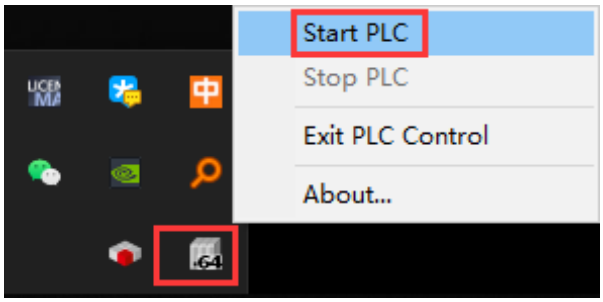


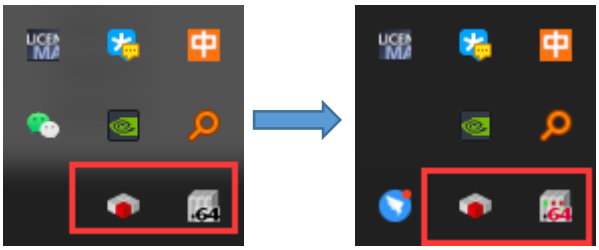




Click the icon in the bottom right corner “CODESYS Gateway SysTray - x64”and “CODESYS Control Win SysTray - x64”. Right click the icon Start Gateway and Start PLC, a soft PLC can be used, the communication can be tested without a hardware PLC. After all the icons are successfully launched, the icon color

is red.

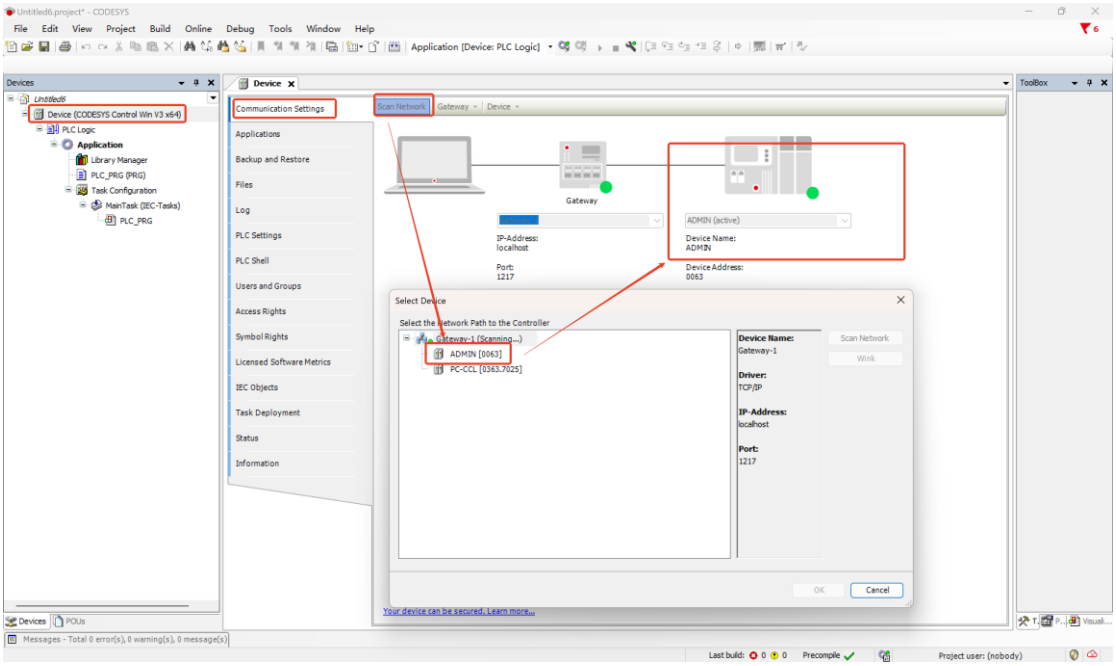


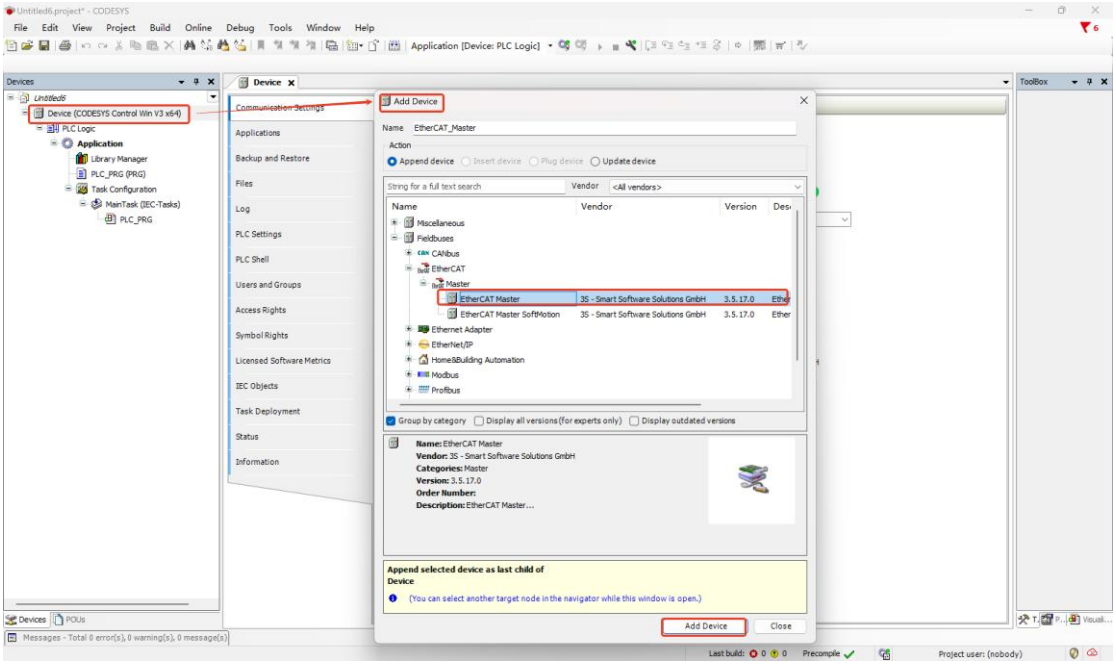
It can also open the service in the computer management and start the corresponding service.

Double-click Device, click on the right to scan the network, the software will automatically scan the laptop (computer name), double-click the computer name, it can see the communication settings interface of the laptop communication display green, the communication is normal, online, downloadable, and can monitor data.

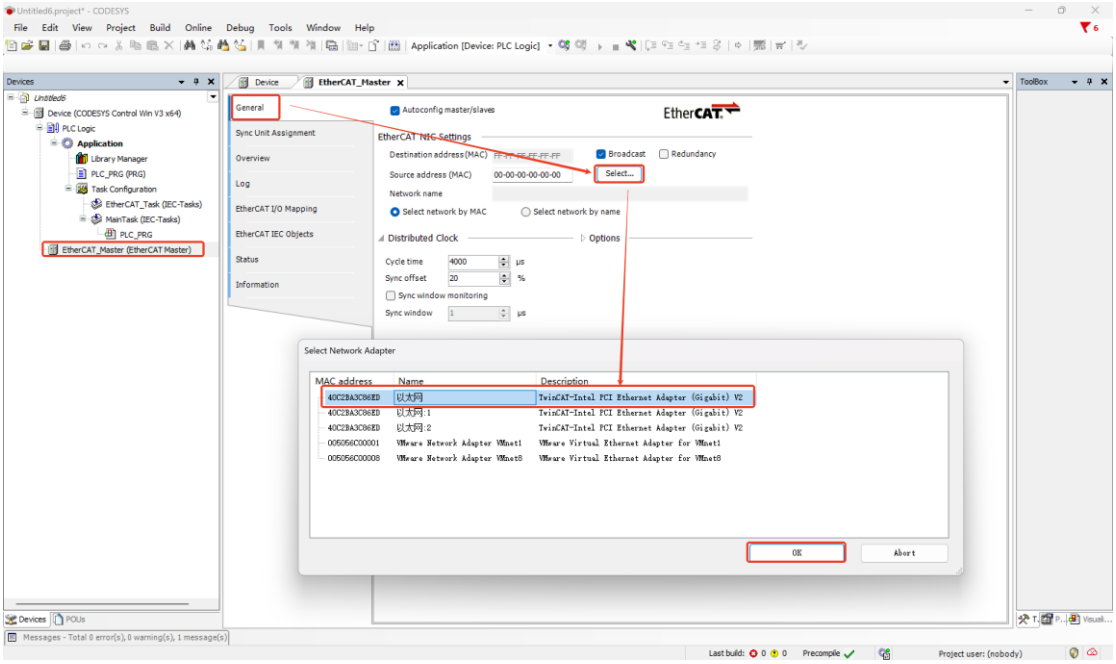



After the communication is established, right-click Device - Add Device - Select

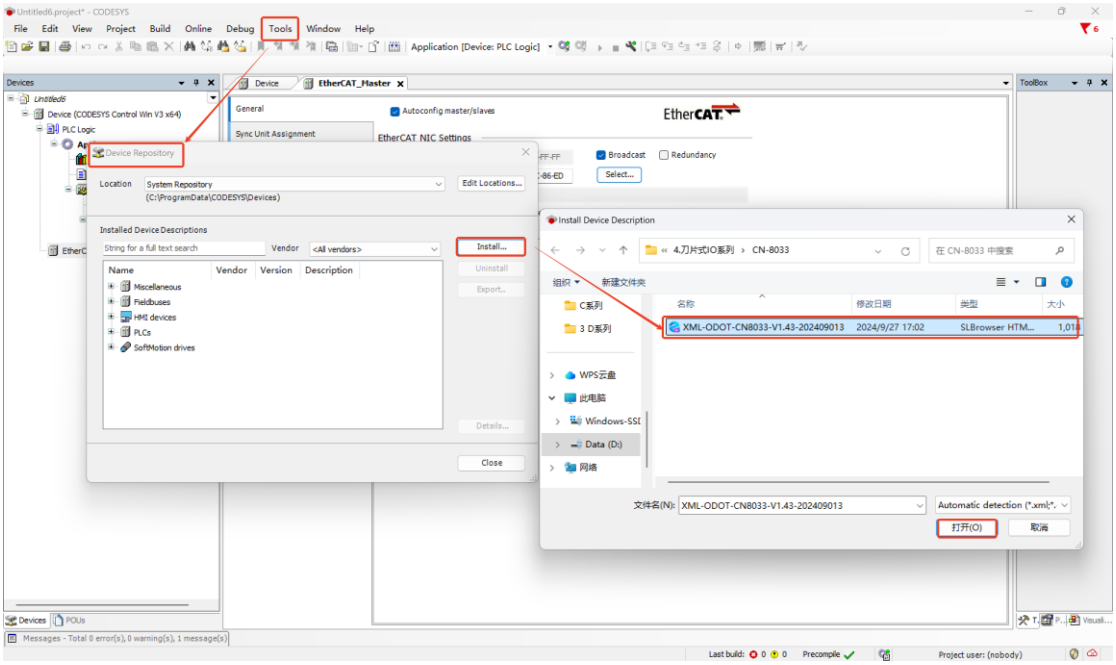
EtherCAT - Master - EtherCAT Master - Click Add Device.



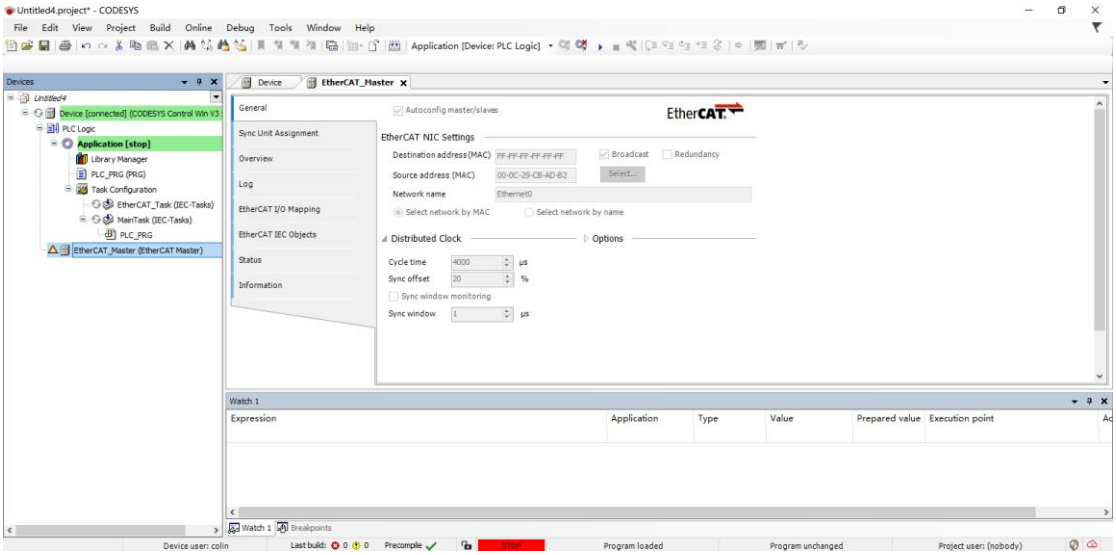

Double-click the EtherCAT_Master, click General - Browse on the right side, select the local NIC in the pop-up window, and click OK.

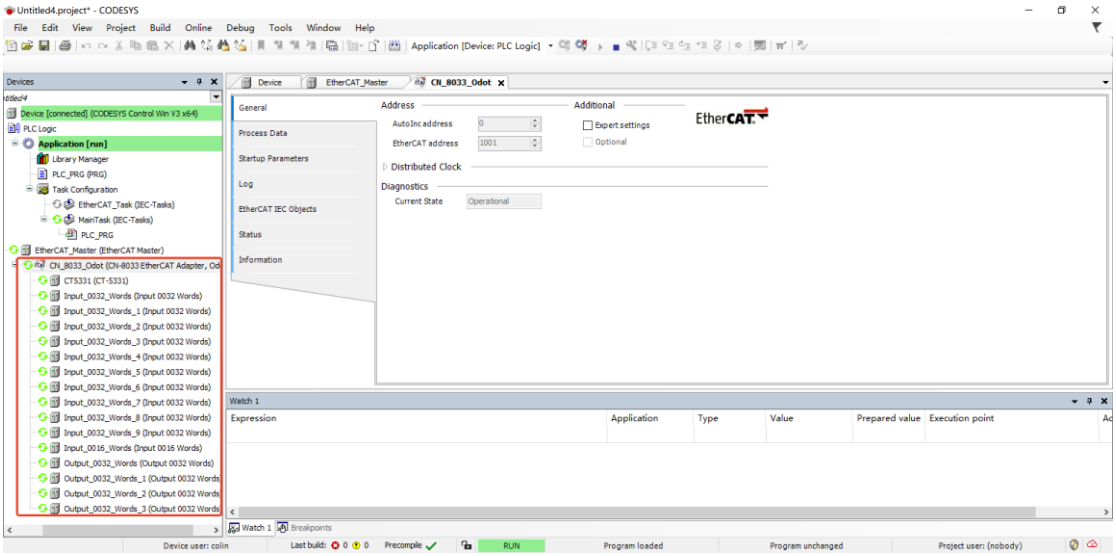



Right-click EtherCAT_Master to scan the module. Before scanning the module, install the XML file of CN-8033. Click Tools - Device Repository - click Install, select the XML file, click Open, and complete the installation of the XML file.




Click to log in, and after logging in online, right-click EtherCAT_Master to scan the module.

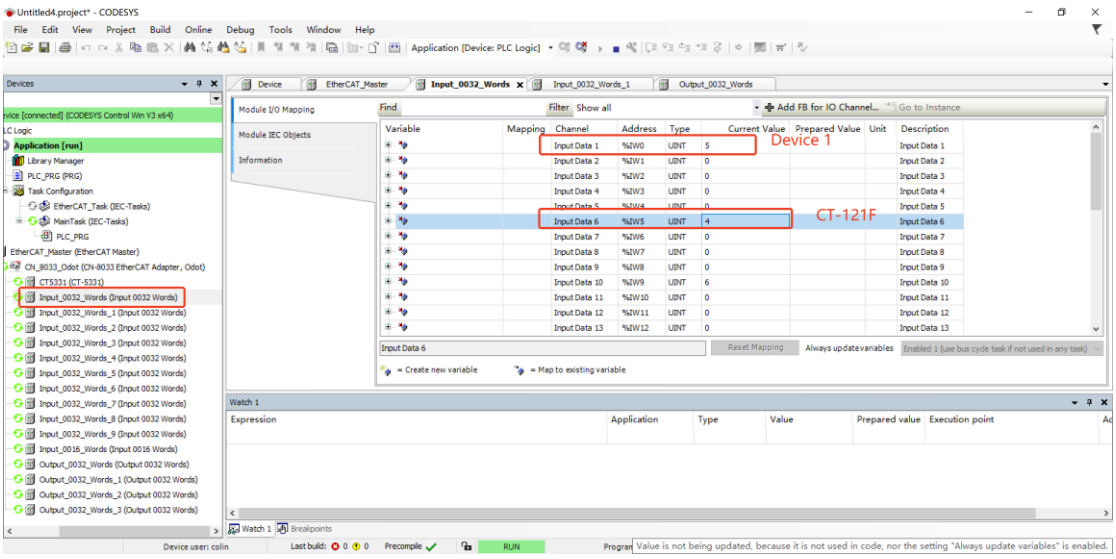




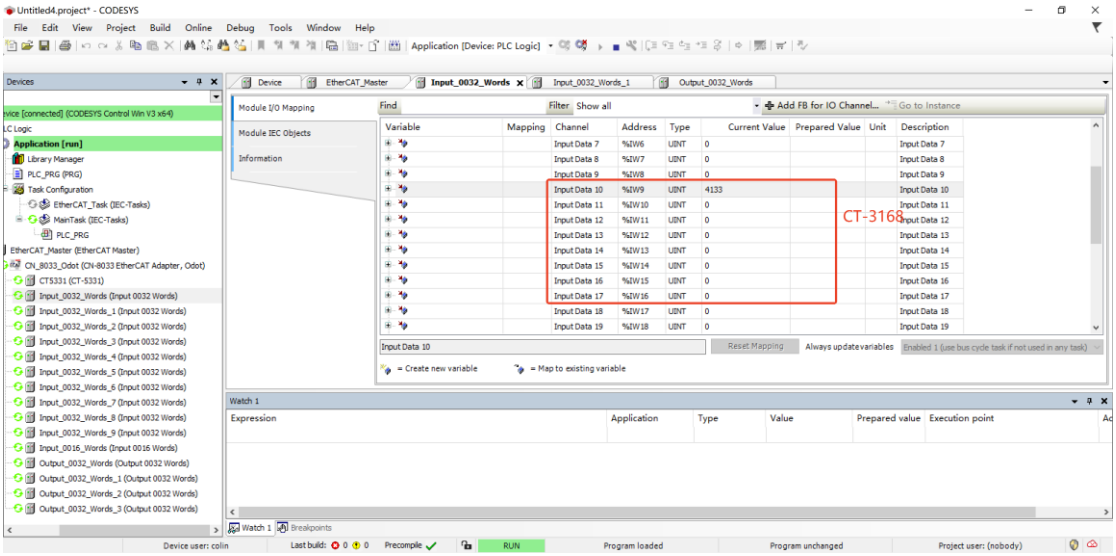
## Input data

16 stations, each station has 4 RPDOs and 4 TPDOs. 16 stations input a total of 336 words, output a total of 256 words.

Configuration: 10 input 32words instructions + 1 input 16words instruction, (336 words).



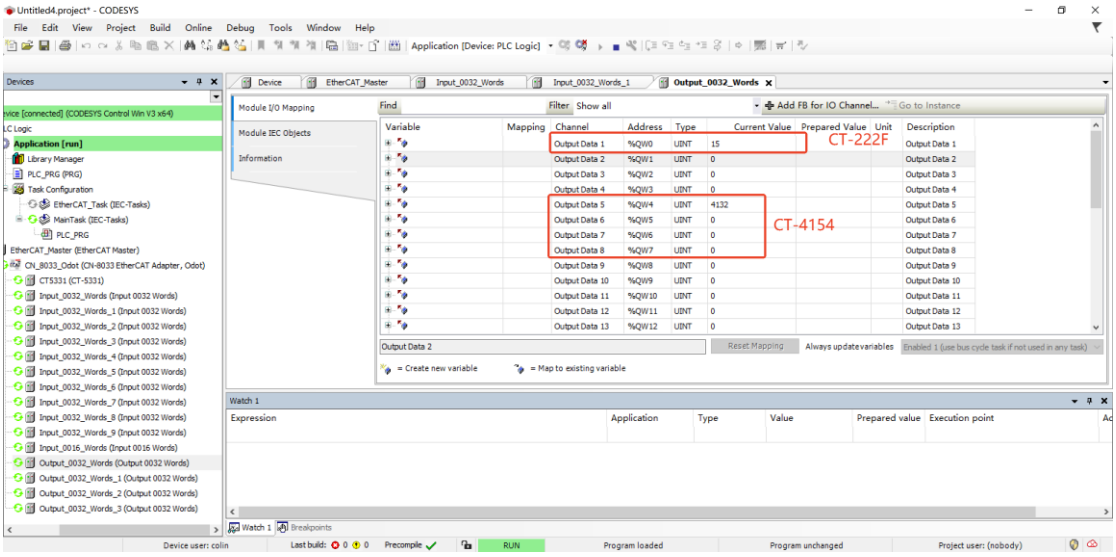

Monitor the CT-3168 module of the first station, corresponding to the address IW9~IW16.

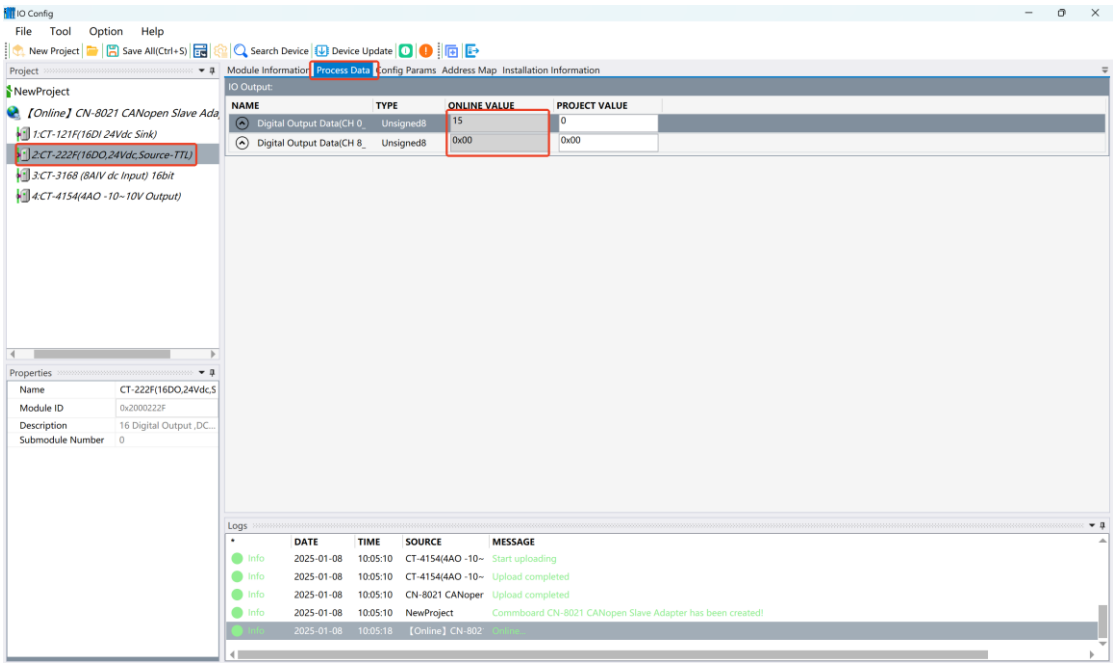


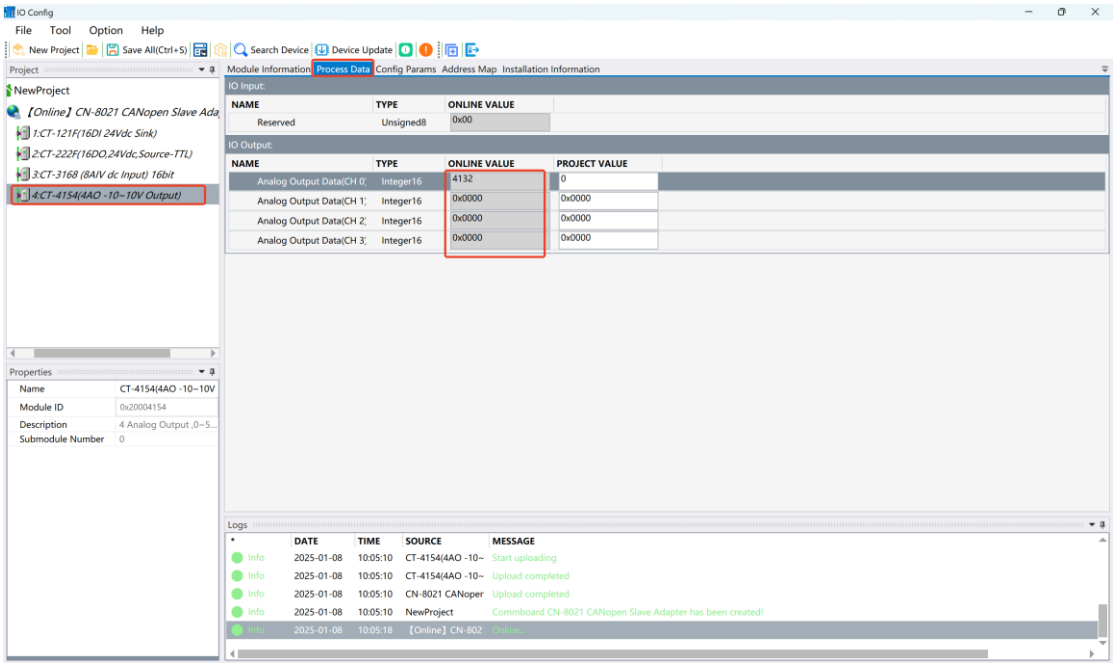

## Output data

Configure 8 output 32words commands, corresponding to the monitoring of the output of 16 slaves.

The first slave station is monitored, corresponding to the output module CT-222F/CT-4154.



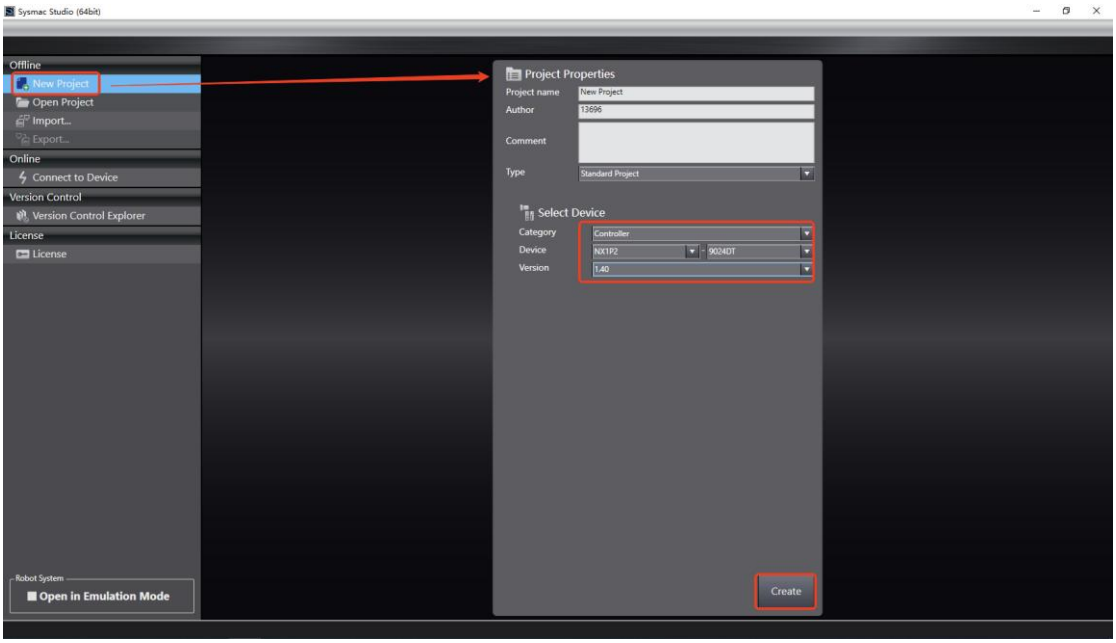

IO Config
File Tool Option Help
New Project Save All(Ctrl+S) Search Device Device Update
Project
NewProject
【Online】CN-8021 CANopen Slave Ada
1:CT-121F(16DI 24Vdc Sink)
2:CT-222F(16DO,24Vdc,Source-TTL)
3:CT-3168 (8AIV dc Input) 16bit
4:CT-4154(4AO -10~10V Output)
Properties
Name CT-222F(16DO,24Vdc,S
Module ID 0x2000222F
Description 16 Digital Output ,DC...
Submodule Number 0
Module Information Process Data Config Params Address Map Installation Information
IO Output:
NAME TYPE ONLINE VALUE PROJECT VALUE
Digital Output Data(CH 0_ Unsigned8 15 0
Digital Output Data(CH 8_ Unsigned8 0x00 0x00
Logs
DATE TIME SOURCE MESSAGE
Info 2025-01-08 10:05:10 CT-4154(4AO -10~ Start uploading
Info 2025-01-08 10:05:10 CT-4154(4AO -10~ Upload completed
Info 2025-01-08 10:05:10 CN-8021 CANoper Upload completed
Info 2025-01-08 10:05:10 NewProject Commboard CN-8021 CANopen Slave Adapter has been created!
Info 2025-01-08 10:05:18 【Online】CN-802 Online...


IO Config
File Tool Option Help
New Project Save All(Ctrl+S) Search Device Device Update
Project
NewProject
【Online】CN-8021 CANopen Slave Ada
1:CT-121F(16DI 24Vdc Sink)
2:CT-222F(16DO,24Vdc,Source-TTL)
3:CT-3168 (8AIV dc Input) 16bit
4:CT-4154(4AO -10~10V Output)
Properties
Name CT-4154(4AO -10~10V
Module ID 0x20004154
Description 4 Analog Output ,0~5...
Submodule Number 0
Module Information Process Data Config Params Address Map Installation Information
IO Input:
NAME TYPE ONLINE VALUE
Reserved Unsigned8 0x00
IO Output:
NAME TYPE ONLINE VALUE PROJECT VALUE
Analog Output Data(CH 0 Integer16 4132 0
Analog Output Data(CH 1 Integer16 0x0000 0x0000
Analog Output Data(CH 2 Integer16 0x0000 0x0000
Analog Output Data(CH 3 Integer16 0x0000 0x0000
Logs
DATE TIME SOURCE MESSAGE
Info 2025-01-08 10:05:10 CT-4154(4AO -10~ Start uploading
Info 2025-01-08 10:05:10 CT-4154(4AO -10~ Upload completed
Info 2025-01-08 10:05:10 CN-8021 CANoper Upload completed
Info 2025-01-08 10:05:10 NewProject Commboard CN-8021 CANopen Slave Adapter has been created!
Info 2025-01-08 10:05:18 【Online】CN-802 Online...

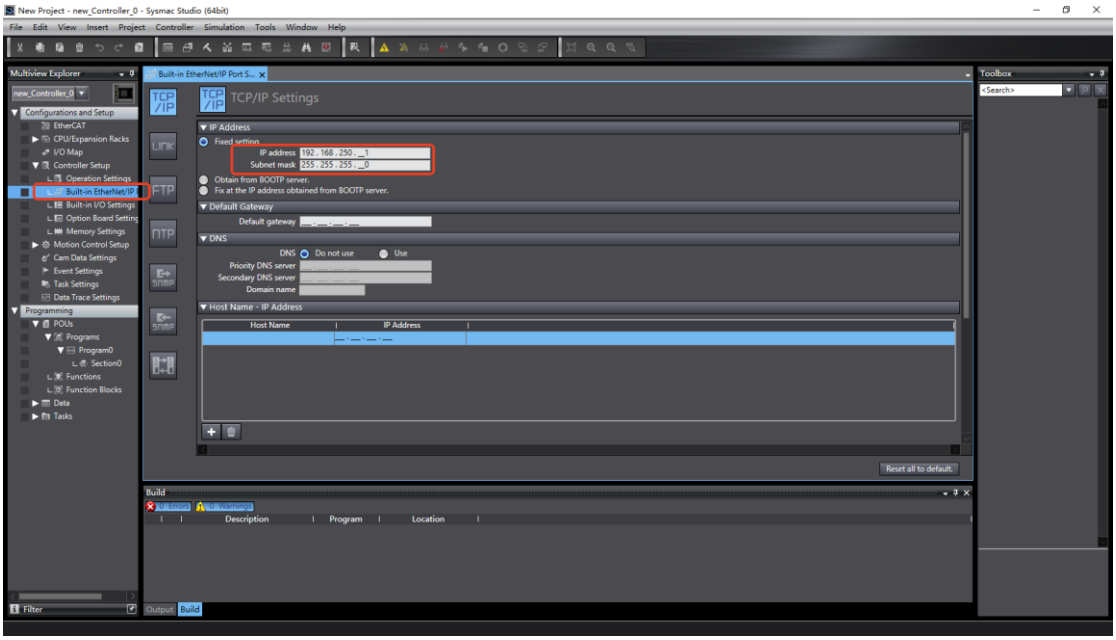
## 1.4 NX1P2 software configuration and debugging

Power on the Omron NX1P2 and CN-8033 modules with 24VDC, the laptop network port is connected the Port1 of NX1P2, the Port 2 of NX1P2 is connected to the IN port of CN-8033.

Open SysmAC Studio, create a project, select NX1P2-9024DT, and click Create.

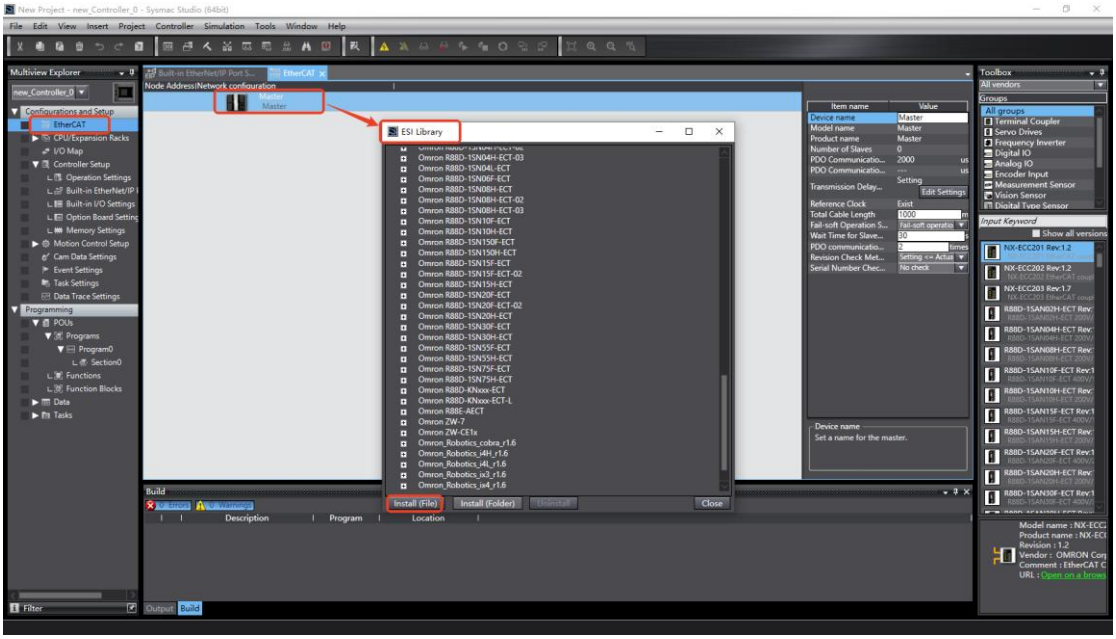


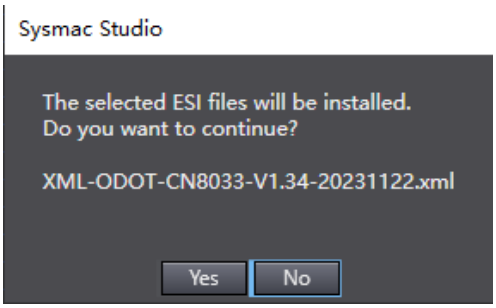

Click Configuration & Setup > Controller Settings > Built-in EtherNet/IP Port Settings to view the fixed IP address.

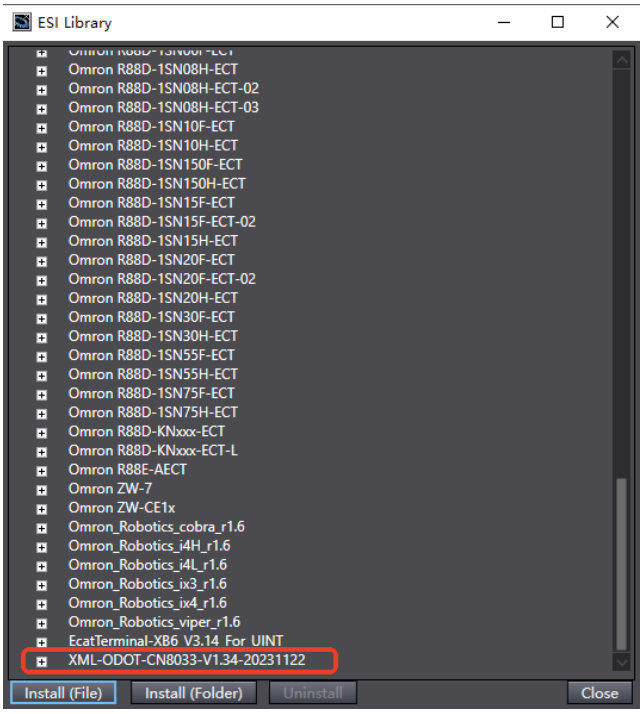



Set the local NIC to be on the same network segment.

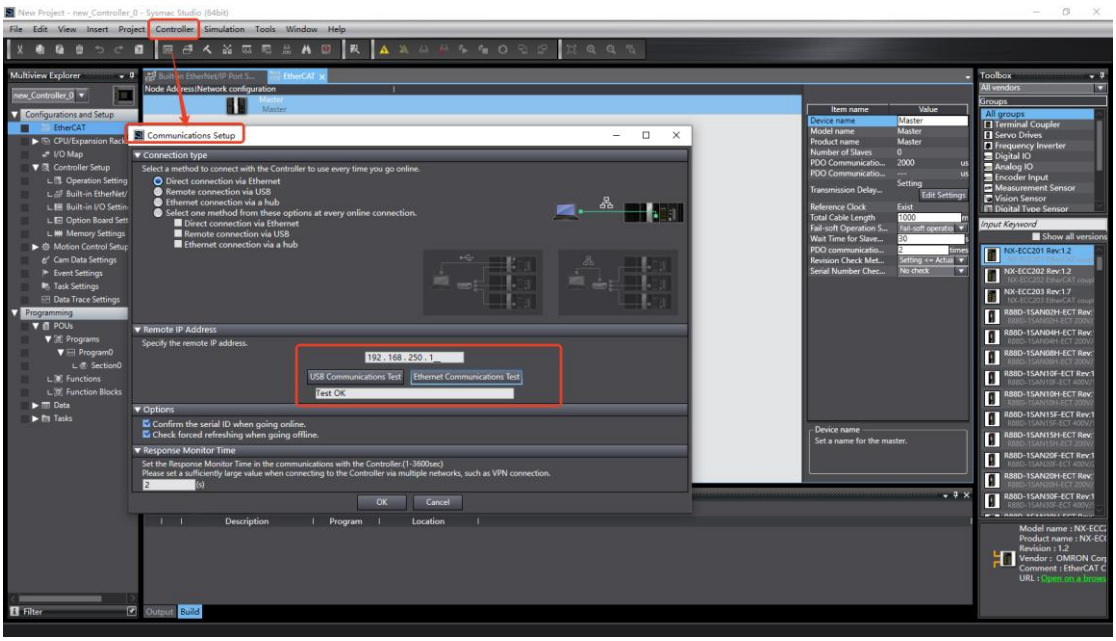
Double-click EtherCAT, right-click on the right side of the main device - display ESI library, click the installation file in the pop-up window, find the CN-8033 XML file, click open, click continue to install the XML file, and the installation is complete. It can see the newly installed CN-8033 at the bottom of the ESI library.



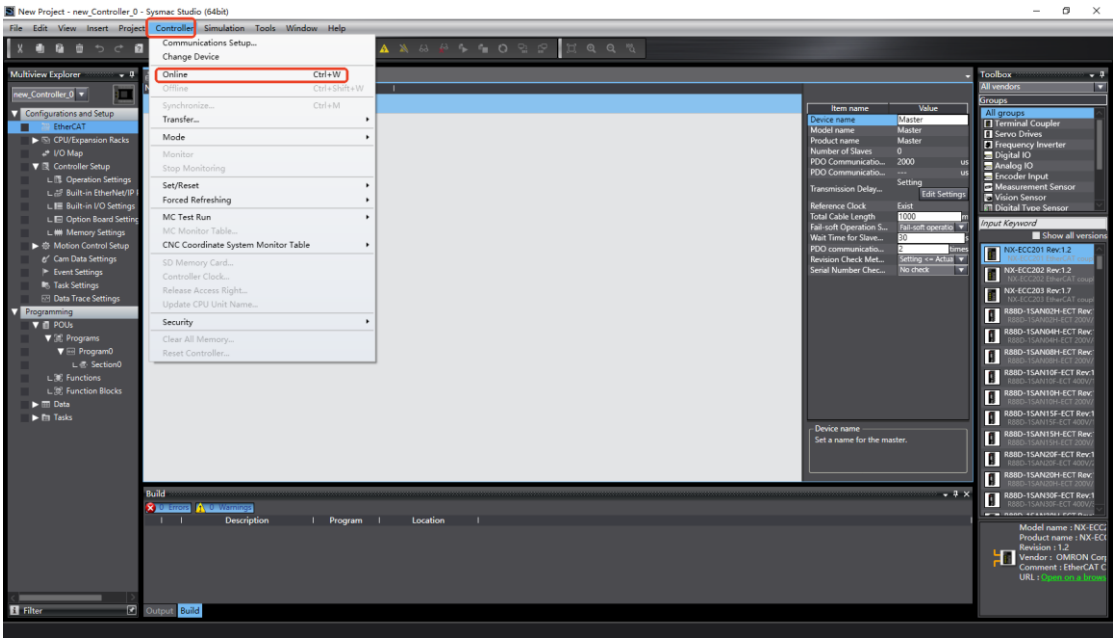





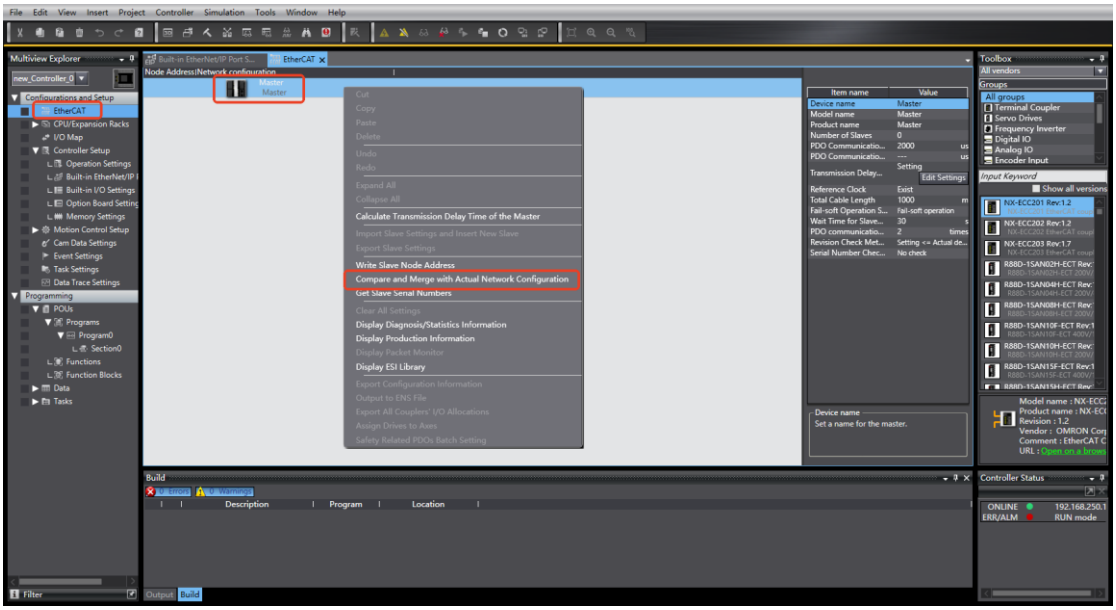

Click Controller - Communication Setup, manually enter the remote PLC IP address 192.168.250.1, click EtherNet communication test, and the test is successful. Click OK.



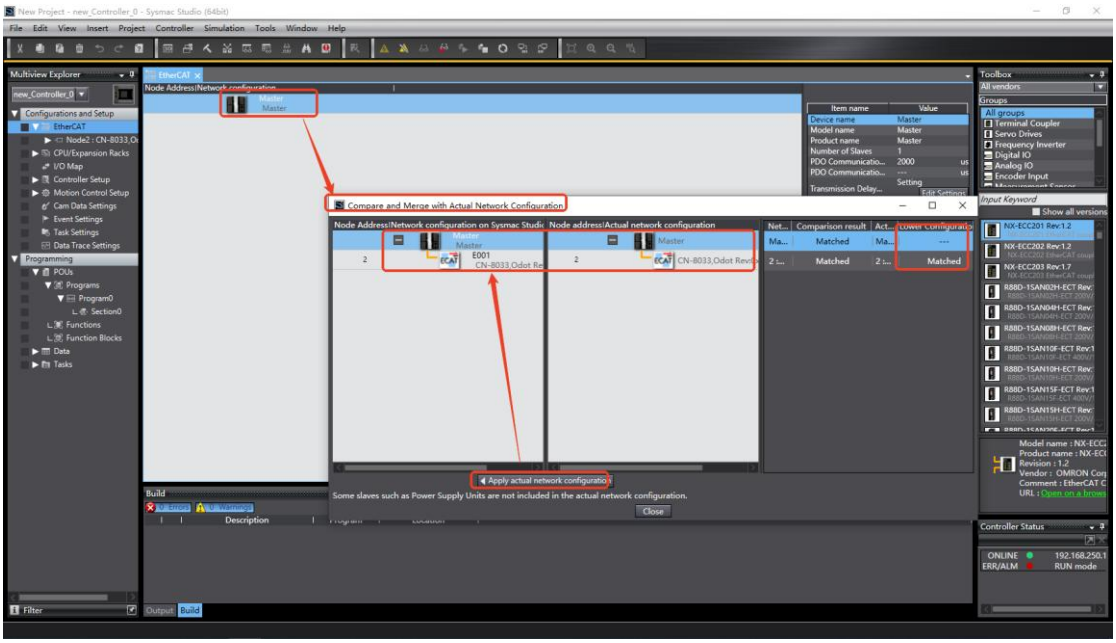

Click Controller—Online, or click the shortcut icon .



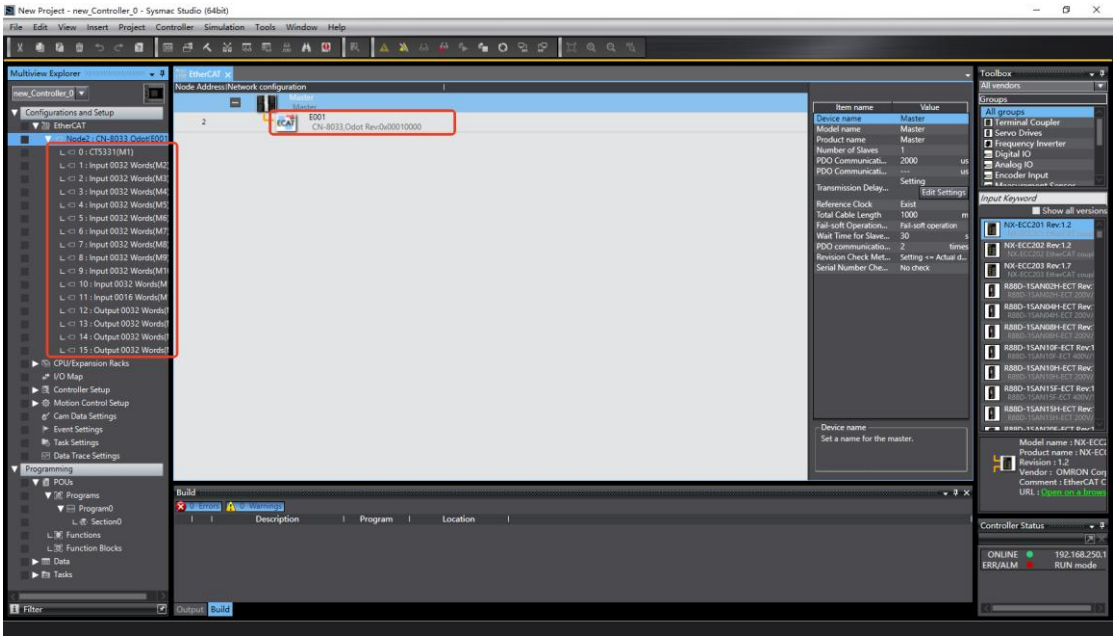

Double-click on EtherCAT, right-click on the master device, and click Compare and Merge with Actual Network Configuration.



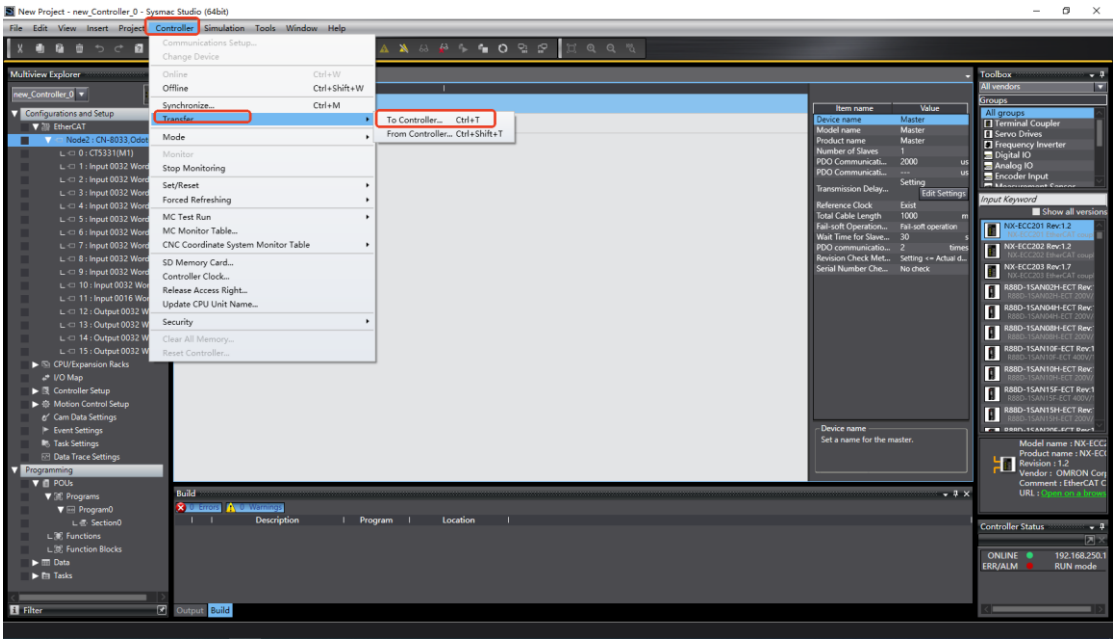

In the pop-up Compare and Merge with Actual Network Configuration window, it can see that a CN-8033 adapter module is attached to the main device in the actual network configuration bar of the node address, and there is no attached device under the main device in the network settings bar of the node address SysmAC Studio. Click Apply actual network configuration, click Apply in the pop-up window, and click Close in the pop-up window, it can see that the network configuration on SysmAC Studio is the same as the actual network configuration.

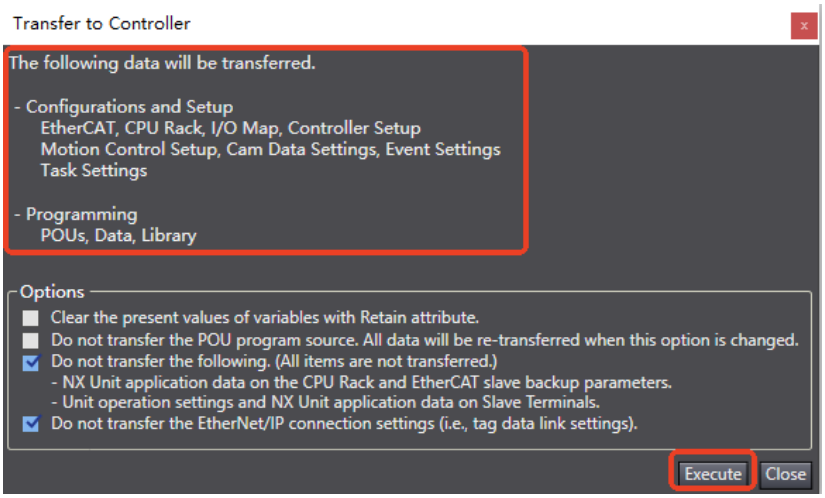


Click to close the Compare and Merge with Actual Network Configuration window. Click on the CN-8033 node under EtherCAT to see the scanned input and output commands.



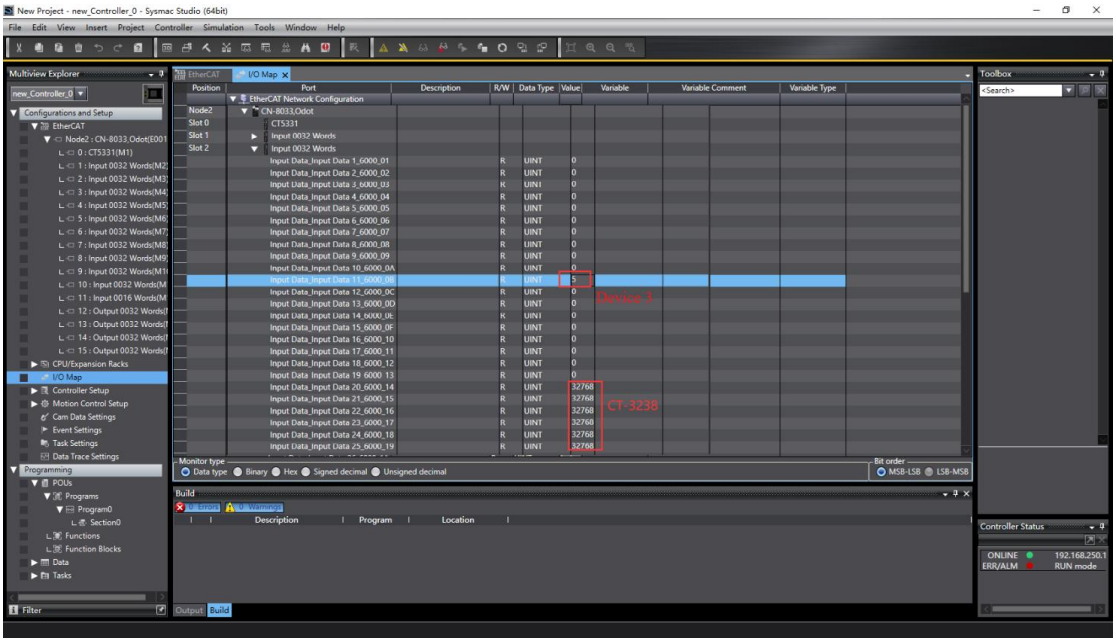
Click on the menu bar Controller - Transfer - To Controller. Click Execute in the pop-up window to download the configuration, settings, and programs to the PLC. In the pop-up window, click Yes - Yes - OK.

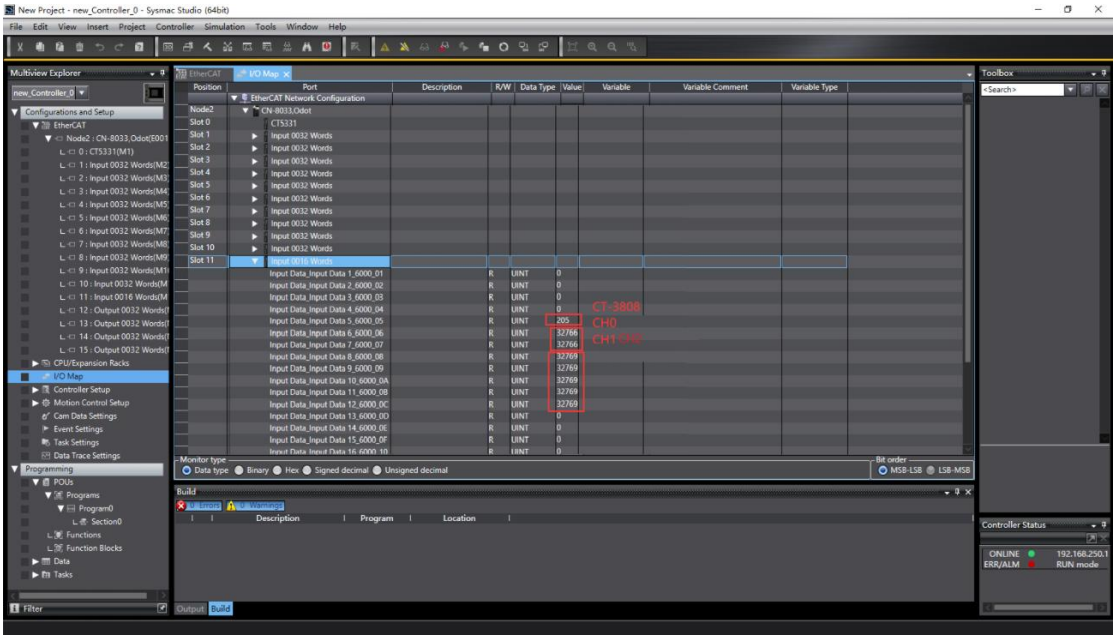



Double-click on the I/O map to monitor the process data of the corresponding CANopen station.

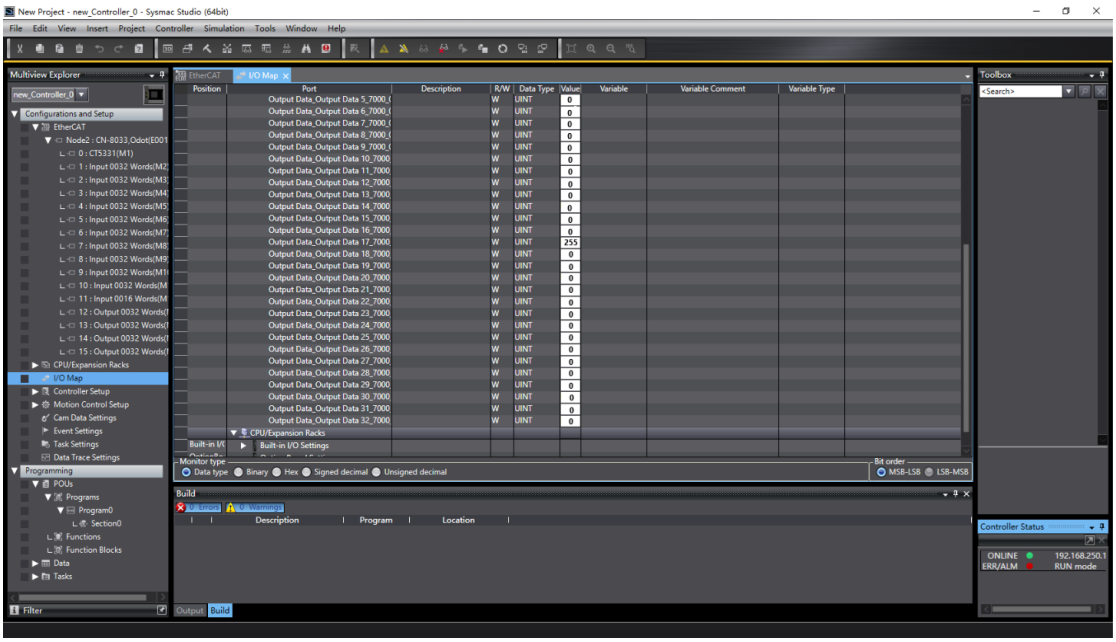
**Input the data**




## Output data

The CT-2228 module corresponding to the 16th station is fully lit up after the 8 channels are lit.


New Project - new_Controller_0 - Sysmac Studio (64bit)
File Edit View Insert Project Controller Simulation Tools Window Help
Multiview Explorer
new_Controller_0
Configurations and Setup
EtherCAT
I/O Map
Controller Setup
Motion Control Setup
Cam Data Settings
Event Settings
Task Settings
Data Trace Settings
Programming
POUs
Programs
Program0
Section0
Functions
Function Blocks
Data
Tasks
Filter
EtherCAT
I/O Map
Position
Port
Description
R/W
Data Type
Value
Variable
Variable Comment
Variable Type
CPU/Expansion Racks
Built-in I/O Settings
Monitor type
Data type
Binary
Hex
Signed decimal
Unsigned decimal
Bit order
MSB-LSB
LSB-MSB
Build
Description
Program
Location
Output
Build
Toolbox
<Search>
Controller Status
ONLINE
ERR/ALM
RUN mode

# 2 Example of communication between CN-8034 and CT-5331

**Hardware Composition:**

CN-8034 (1), CT-5331 (1), CN-8021 (12) (CANopen slave station)

**Software Composition:**

**Configure the software**: IO Config, configuring the CT-5331 subordinate device, configuring the CN-8034 and CT-5331.

**Programming Software:** Codesys

**Wiring:**

Power the CN-8034 module to the 24VDC system power supply and field power supply, and connect the network cable directly to the PC and CN-8034.

The C_H and C_L terminals of CT-5331 are connected to the H and L terminals of the slave station, and the CAN bus wiring adopts the hand-in-hand wiring method.

Connect the terminal resistors at both ends of the CAN bus to ensure that the bus resistance is about 60 ohms, and prepare a Type-C serial port cable for configuring the CT-5331 module and CN-8034 module.

## 2.1 CT-5331 configure the slave device

（The CT-5331 is equipped with 16 stations, each with 4 RPDOs and 4 TPDOs. 16 stations input a total of 336 words, output a total of 256 words.

**But the CN-8034 adapter supports a maximum input of 504 bytes and a maximum output of 504 bytes,** the number of CANopen slaves that mounted on CT-5331 needs to be reduced. 504/2=252 words, a single station has 4 TPDOs (16words), plus each station has 5 words for status monitoring, 252/(16+5)=12, and a single CT-5331 recommends that 12 CANopen slaves be mounted. ）

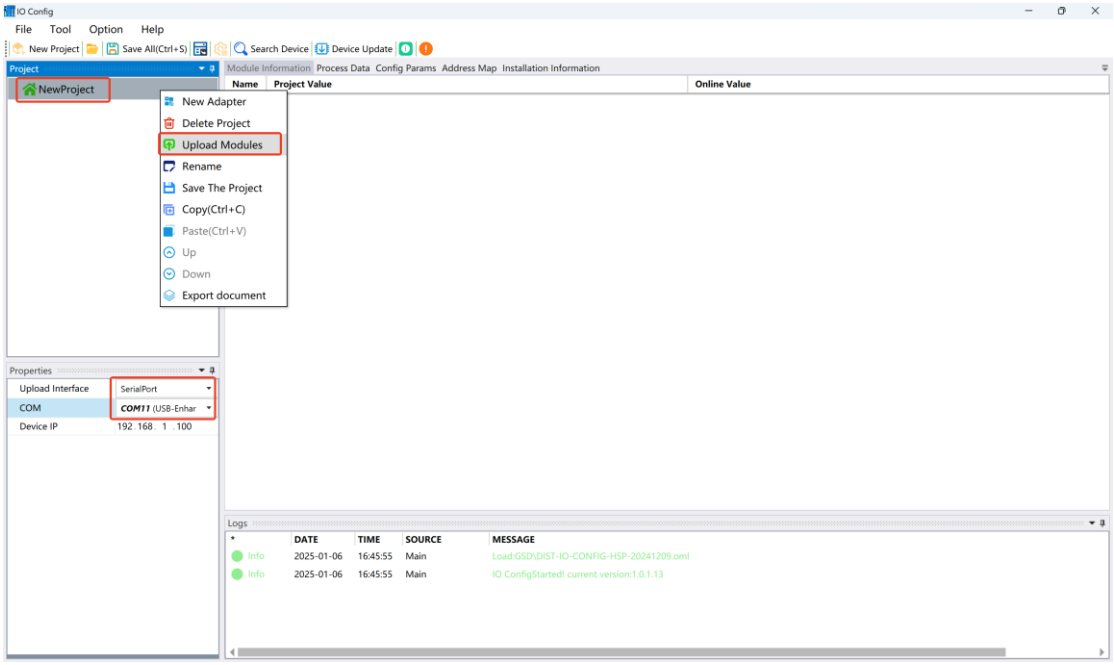
Before configuring, make sure that the addresses of the 12 CN-8021 stations are: 1 2 3..... 16. The baud rate of the bus is 500 Kbit/sec, and the data is delivered by configuring the PDO.

Each CN-8021 can use the default 4 RPDOs and 4 TPDOs. If the amount of data is larger, more PDO commands can be configured. Indexes and sub-indexes can be viewed in IO Config.

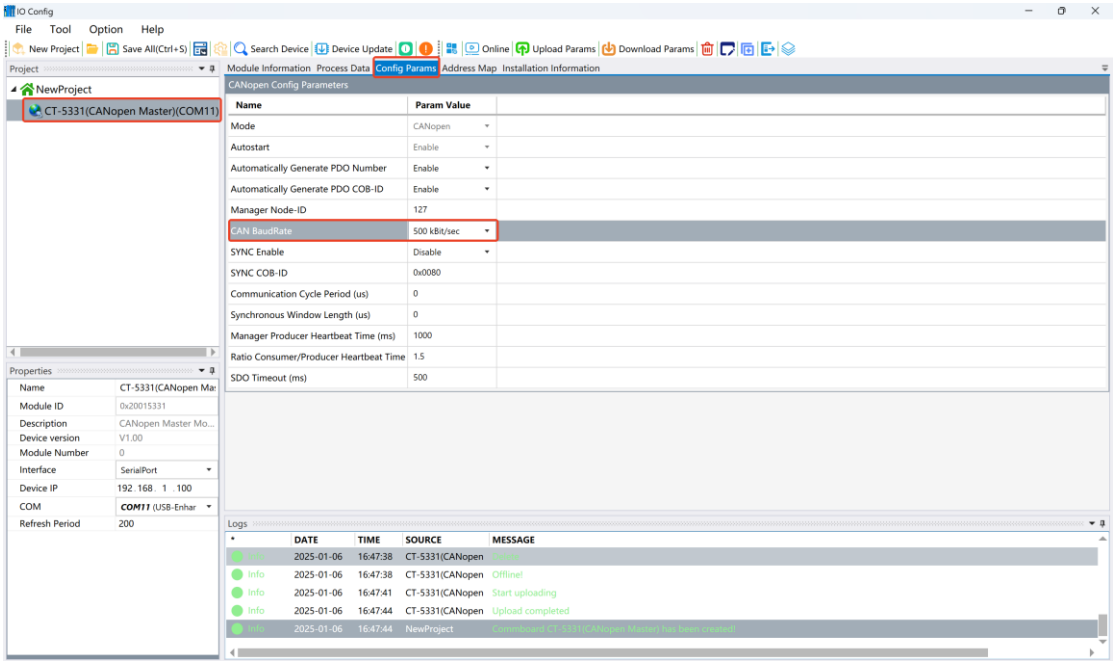
| Parameter | COB-ID | Index | Subindex | Data size | Remark |
|---|---|---|---|---|---|
| TPDO1 | 180h+$NODEID | 6000h | 01-08h | 32 bytes | Digital input |
| TPDO2 | 280h+$NODEID | 6401h | 01-04h | | Analog input |
| TPDO3 | 380h+$NODEID | 6401h | 05-08h | | Analog input |
| TPDO4 | 480h+$NODEID | 6401h | 09-0Ch | | Analog input |
| RPDO1 | 200h+$NODEID | 6200h | 01-08h | 32 bytes | Digital output |
| RPDO2 | 300h+$NODEID | 6411h | 01-04h | | Analog output |
| RPDO3 | 400h+$NODEID | 6411h | 05-08h | | Analog output |
| RPDO4 | 500h+$NODEID | 6411h | 09-0Ch | | Analog output |

Then open the IO config configuration software and configure the CT-5331 module through the Type-C serial cable. After the Type-C is connected, a COM interface will be generated in the device manager interface of the computer.

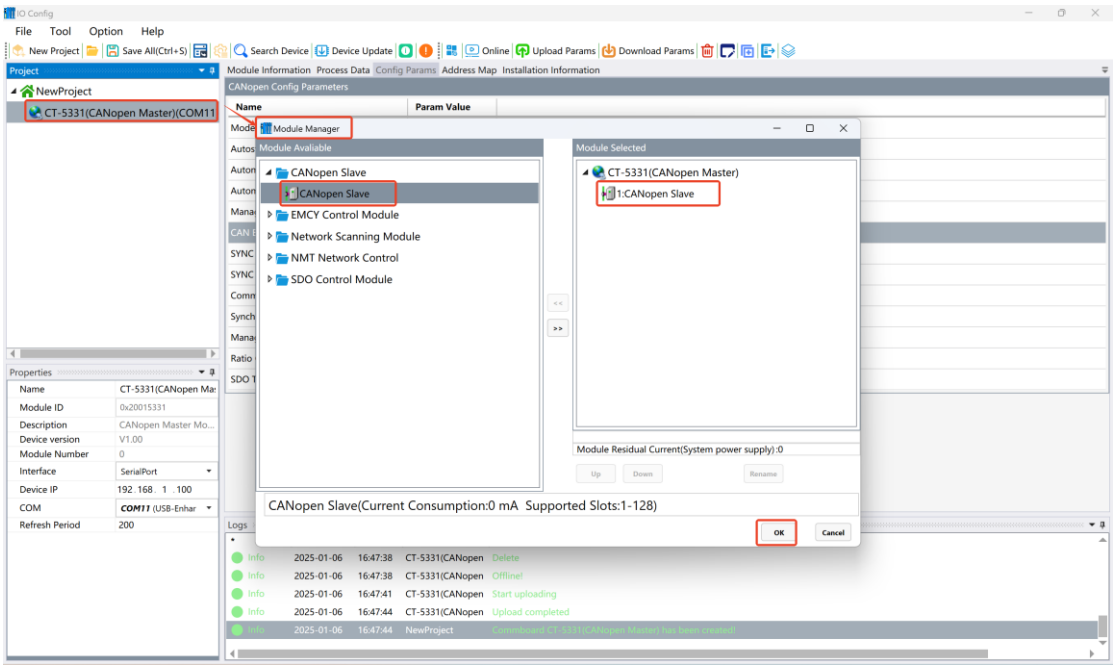
Open the IO config software, create a new project, and upload module through the serial port.



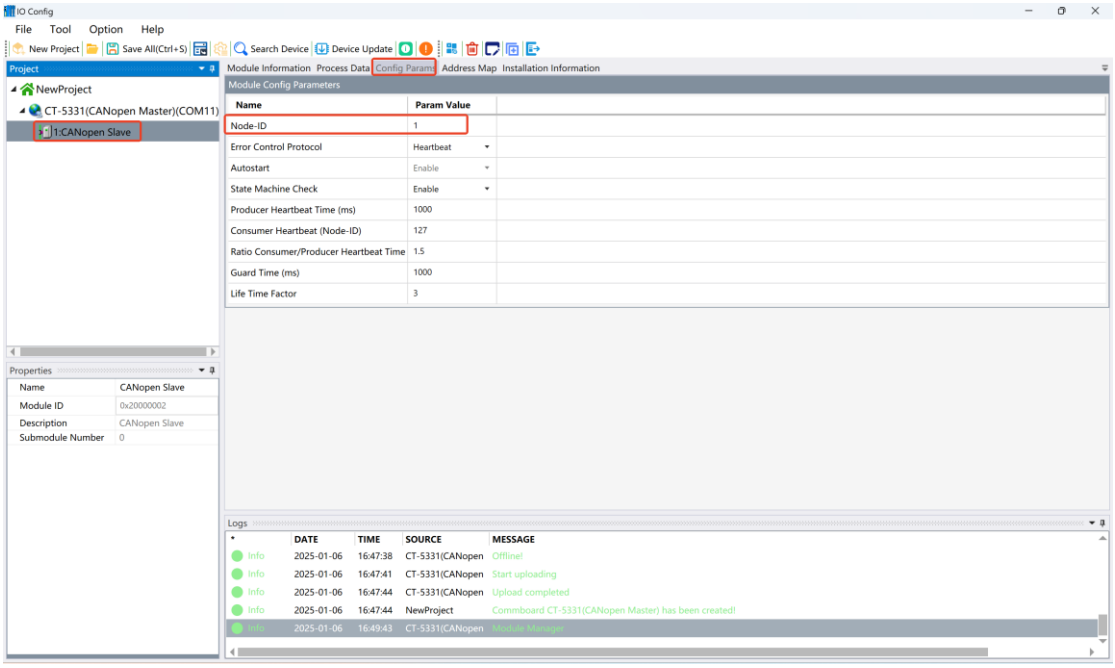

After the upload is successful, modify the baud rate of CANopen as 500kbit/sec,



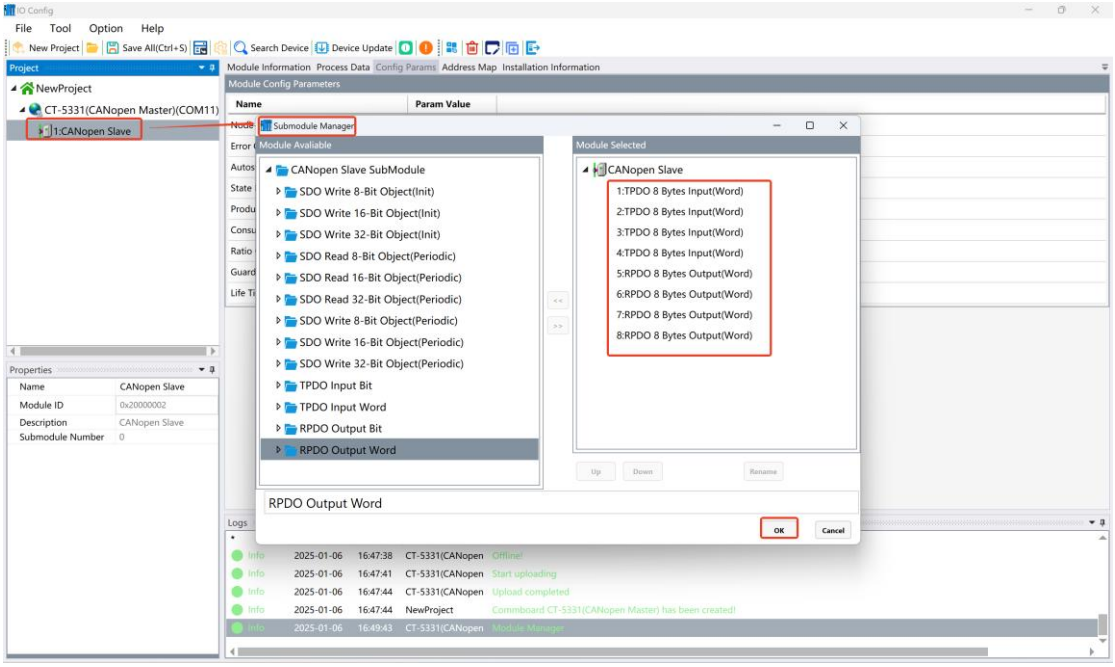

Right-click the CT-5331 module and click Module Management.

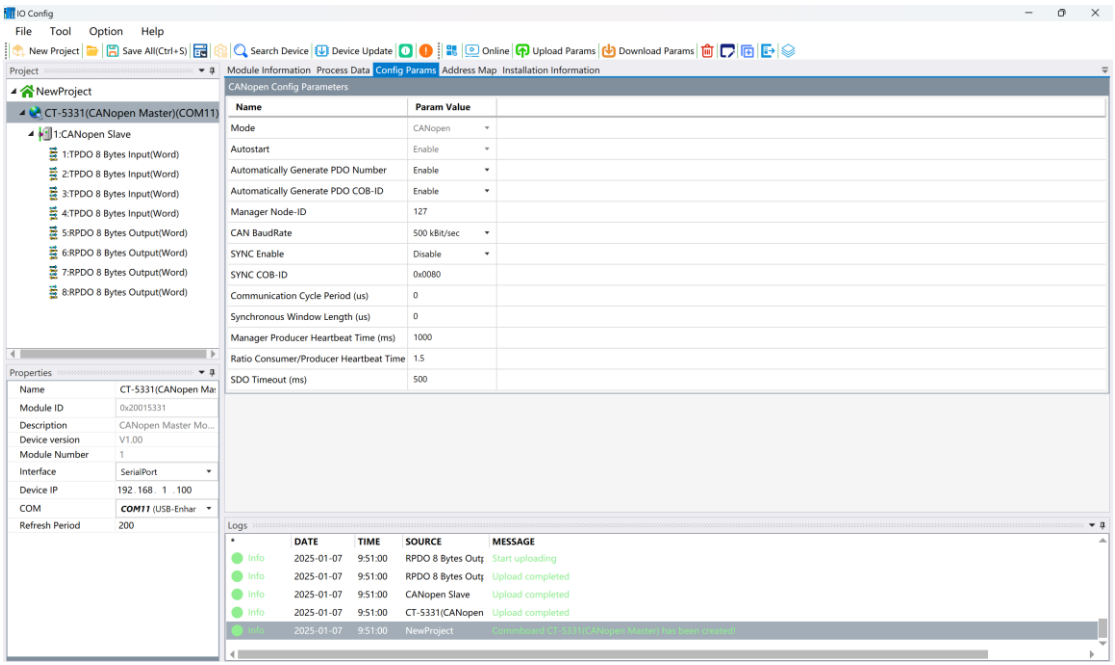



The Node-ID of CANopen is 1.

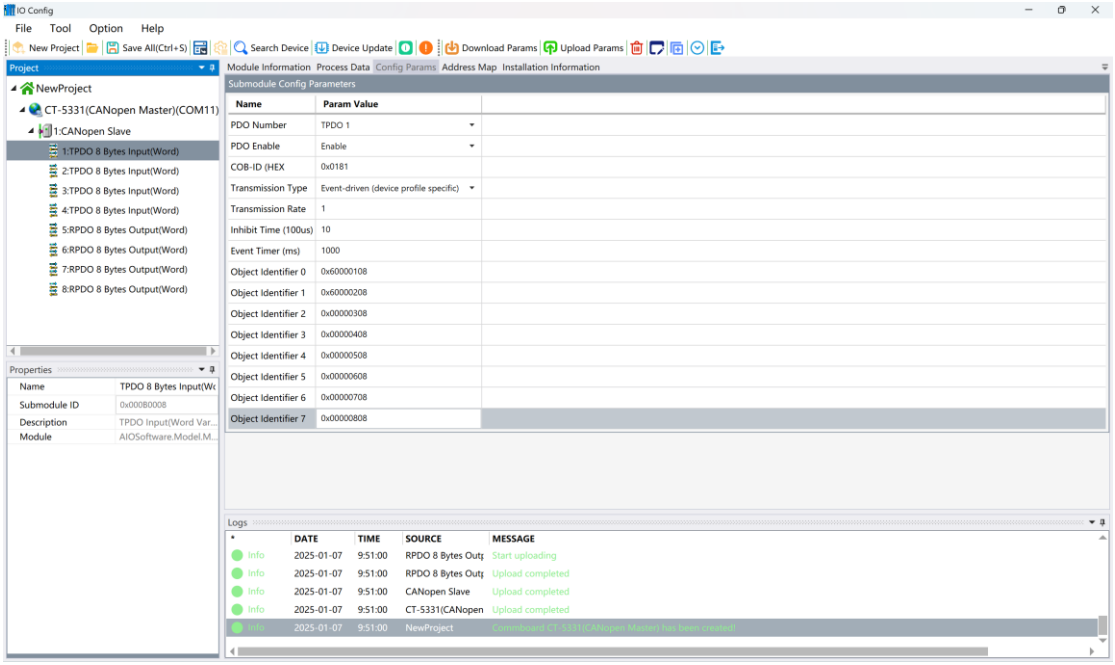



Right-click the CANopen slave, click Submodule Manager, and select the required PDO read and write command. Click OK.

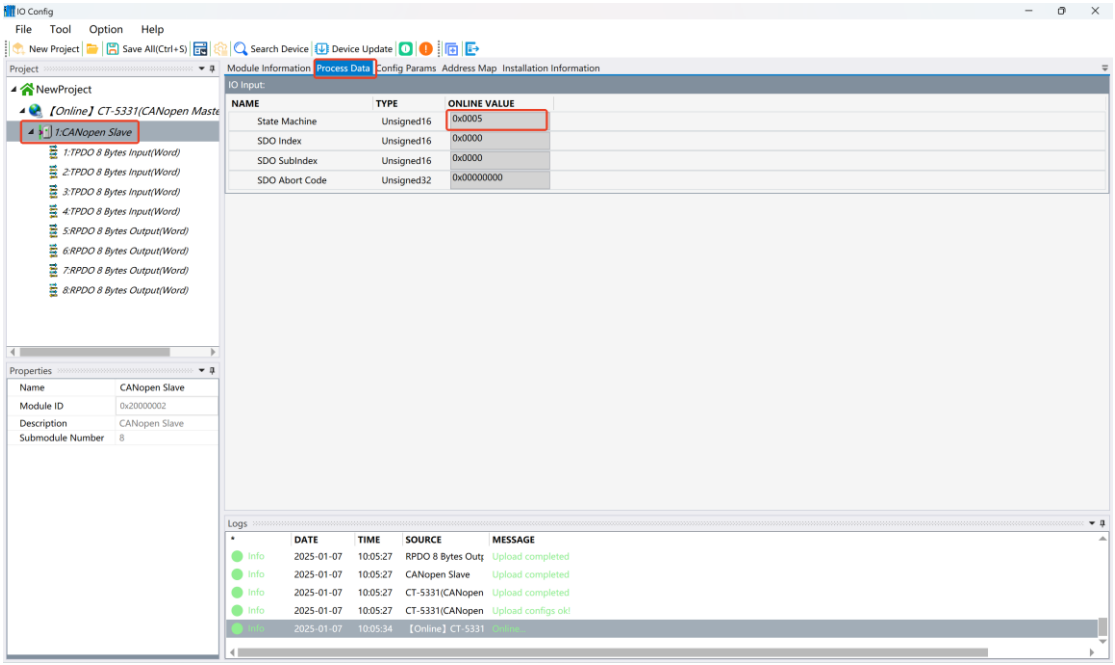




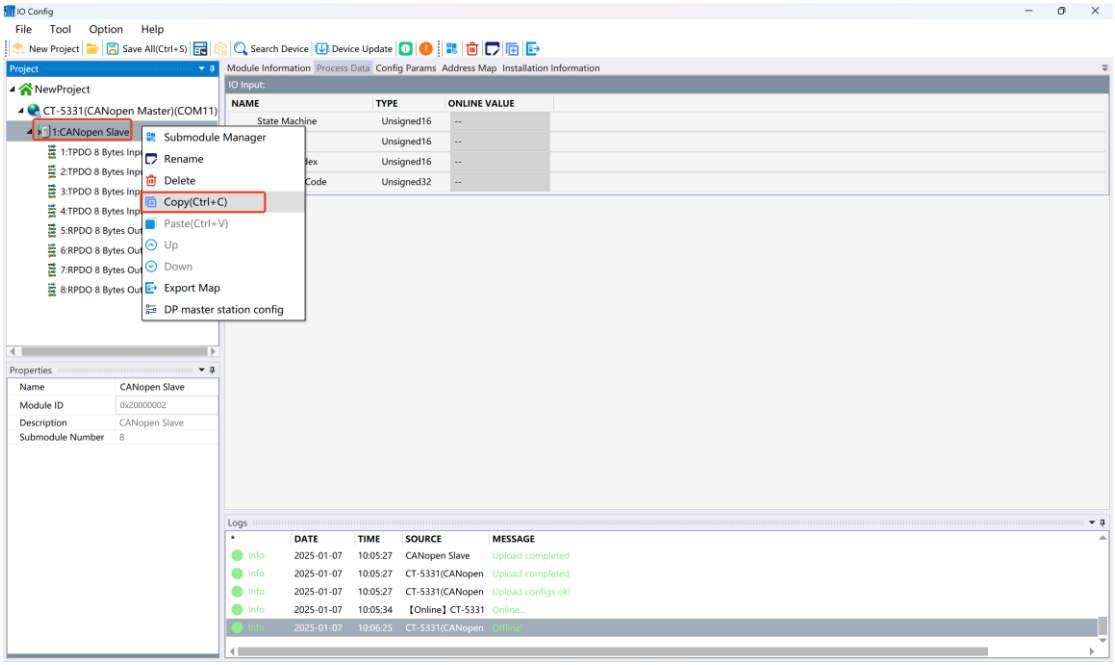

Configure the object identifiers of TPDO and RPDO, and download the configuration after the configuration is complete.

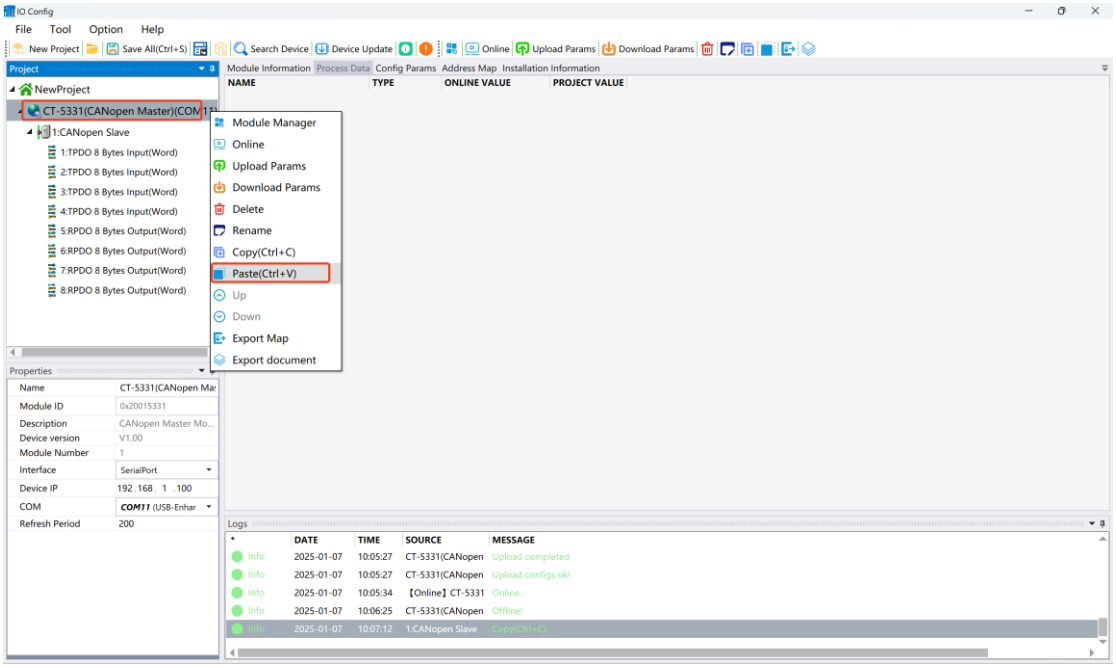



Right-click CT-5331 and click Online to view the status of the slave. It shows 16#0005 that is the running status. Communication is normal.

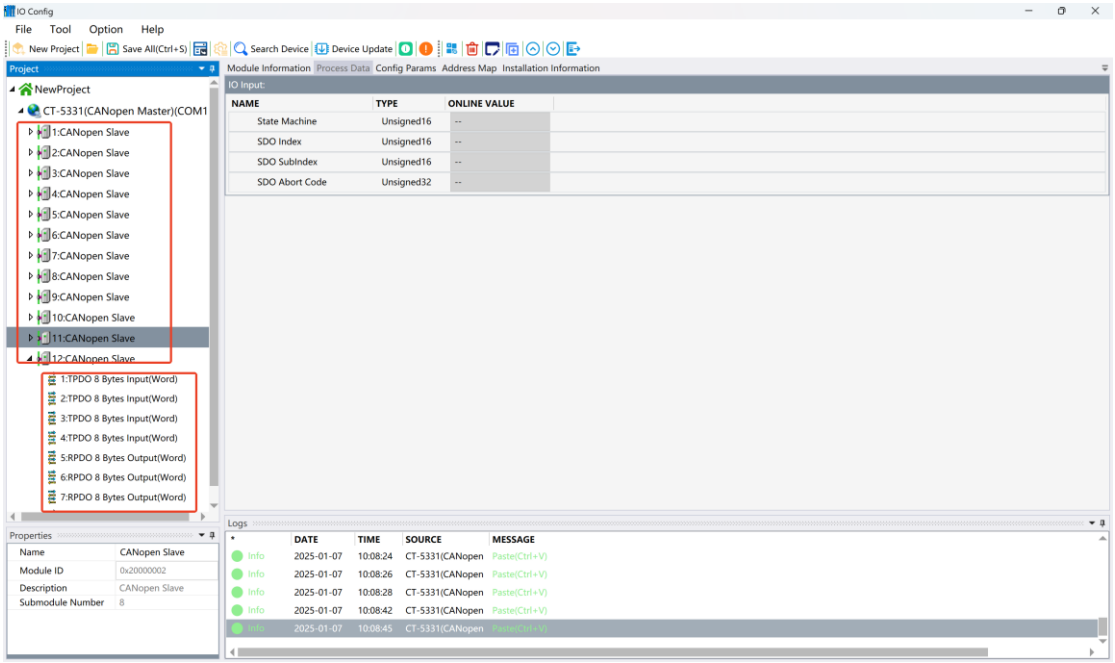


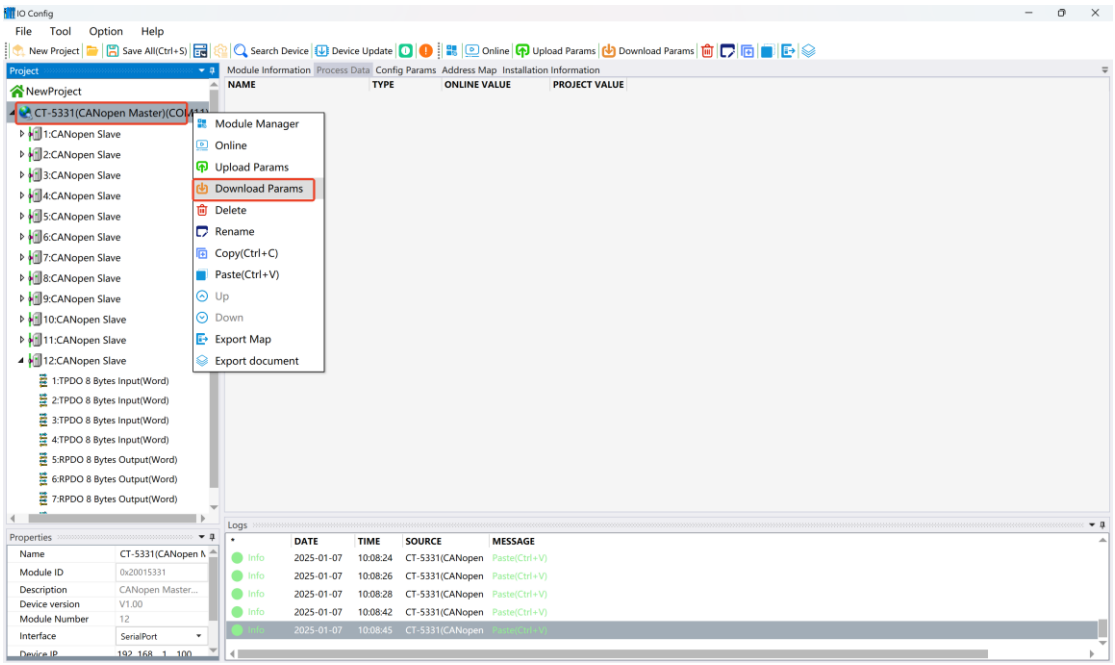

After the communication of a single station is normal, the next 12 stations can be configured by copying and pasting. Or use the shortcut "Ctrl+C" to copy and "Ctrl+V" to paste.






Then modify the corresponding station address 2 3 4..... 12. After the modification, right-click on CT-5331 and click Download Params.

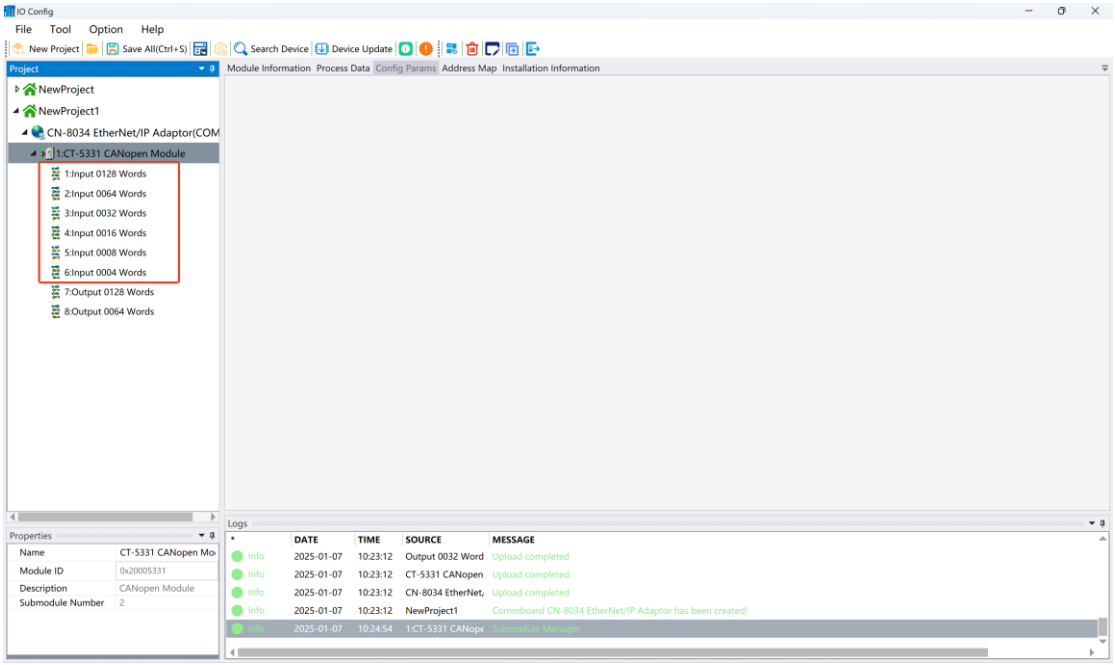





It can also right-click CT-5331 and click Online to view the status of the slave.

## 2.2 Configure the CN-8034 and CT-5331

Use the Type-C interface to upload the CN-8034 and I/O module, right-click the CT-5331 after uploading, add submodules, configure the input and output data size commands, and click OK. (It is recommended to mount 12 CANopen slaves on a single CT-5331, with 252 words in input and 192 words in output.)

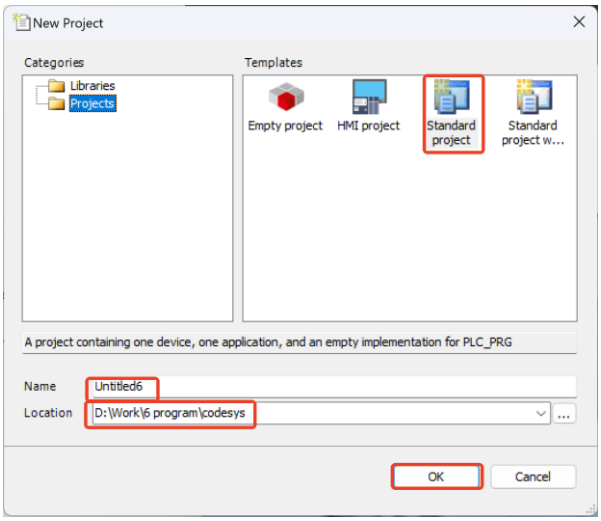


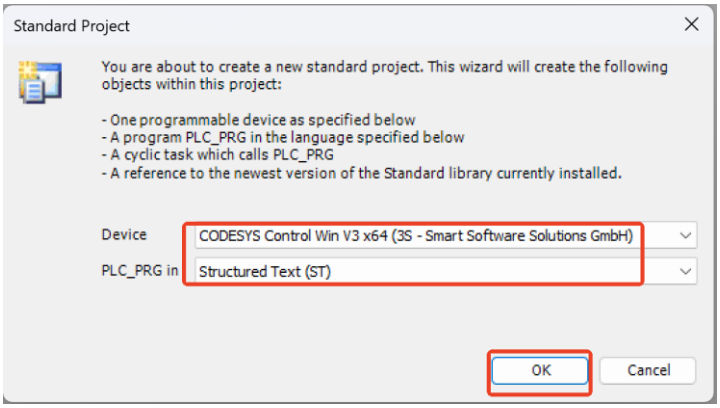

After the configuration is complete, right-click CN-8034 and click Download Params.

## 2.3 Configuration and monitoring in Codesys

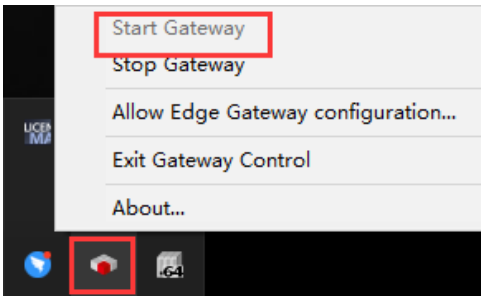
To use the CN-8034 module in CODESYS programming software, it needs to install the CN-8034 eds file.

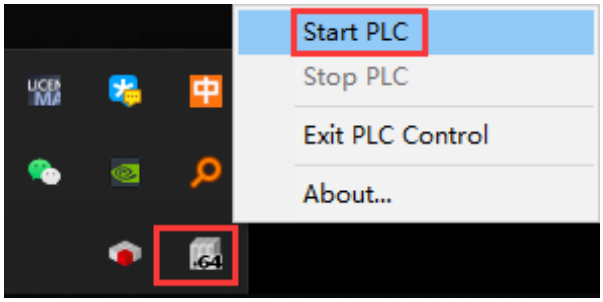
First open the Codesys software. Create a new project, in the pop-up window select "CODESYS Control Win V3 x64 (3S-Smart Software Solutions GmbH)", click OK.

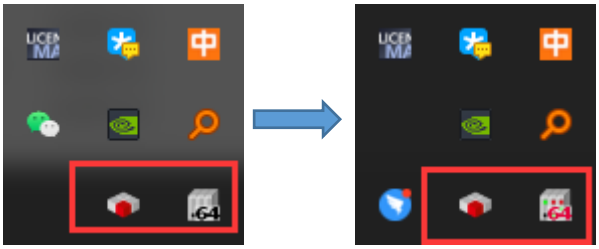



Click the icon in the bottom right corner "CODESYS Gateway SysTray - x64"and "CODESYS Control Win SysTray - x64". Right-click icon Start Gateway and Start PLC, a soft PLC can be used, and communication can be tested without a hardware PLC. After all the icons are successfully launched, the icon color is red.

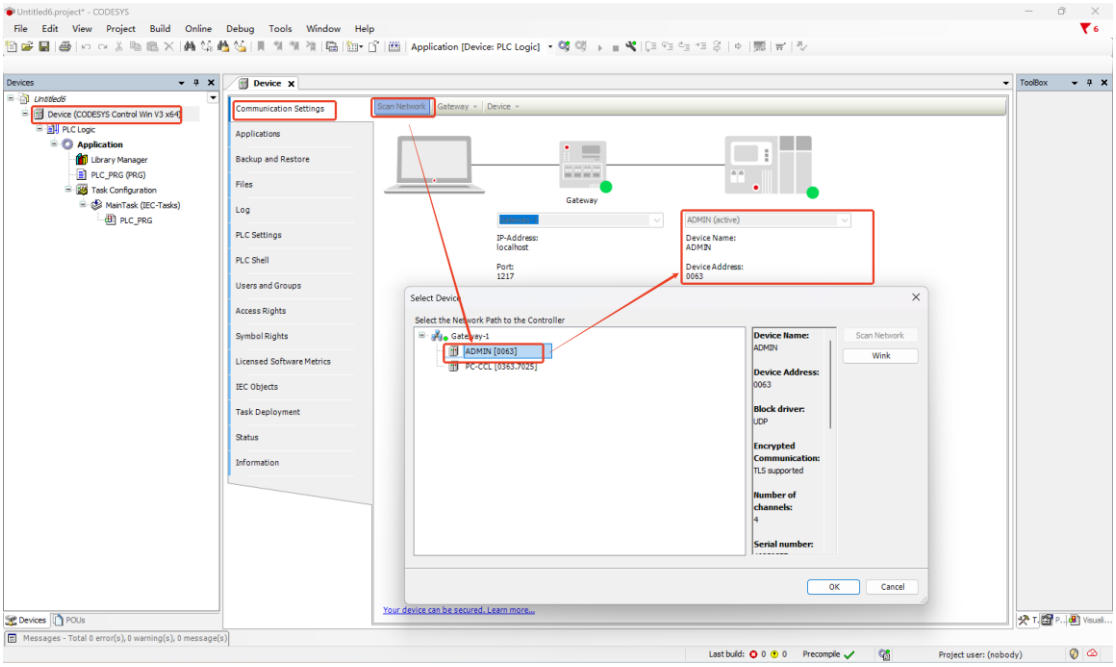


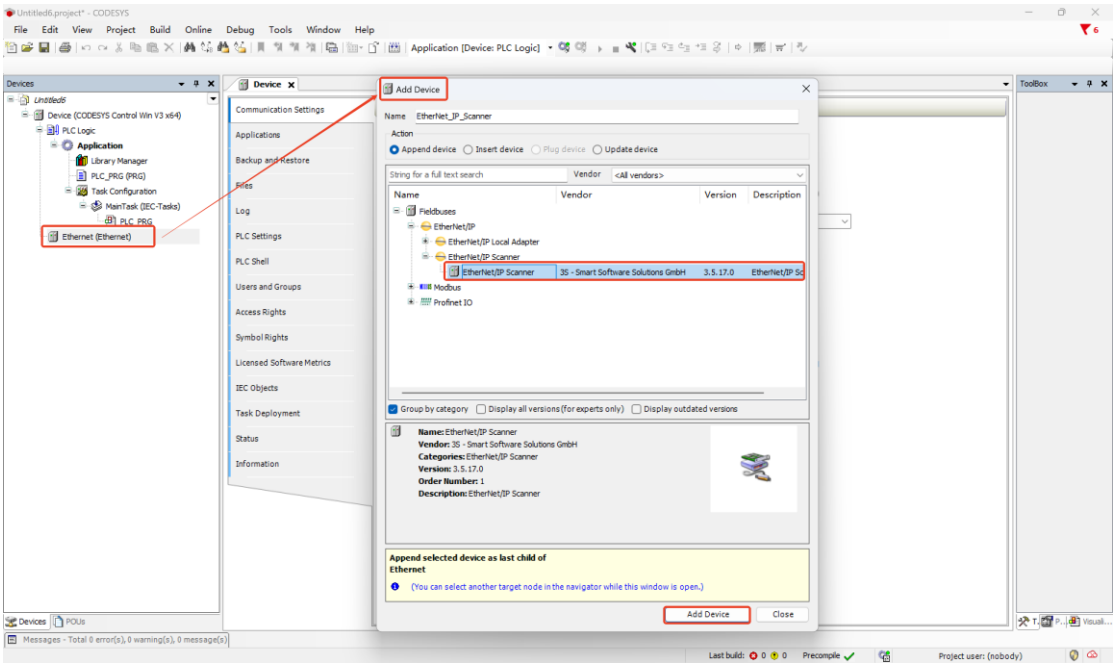



It can also open the service in the computer management and start the corresponding service.

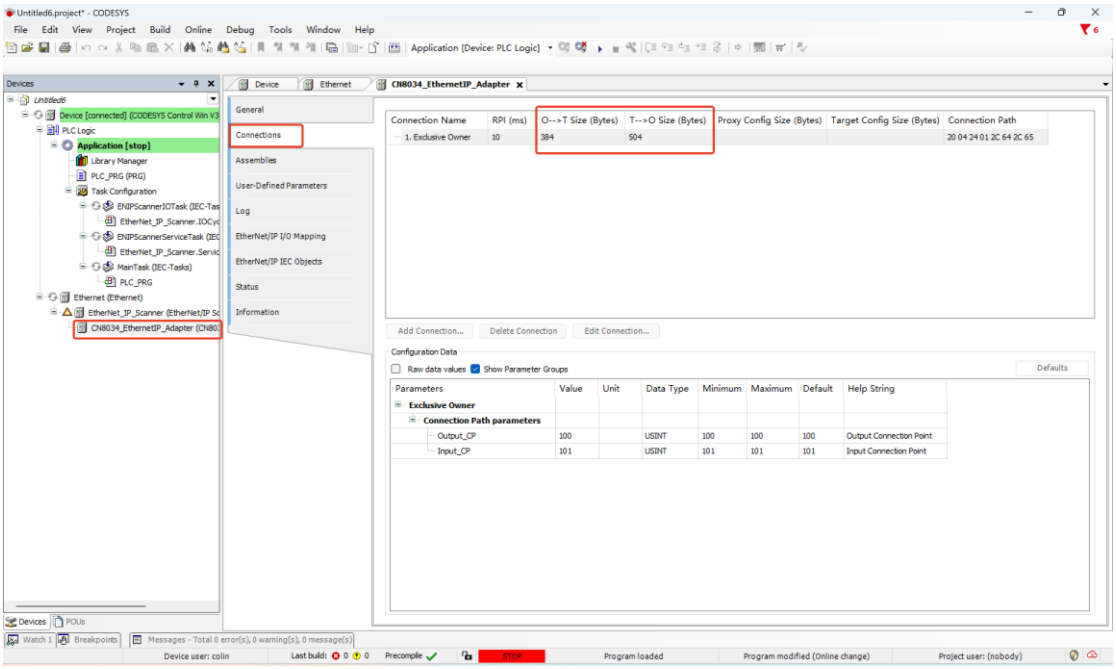
Double-click Device, click on the right to scan the network, the software will automatically scan the laptop (computer name), double-click the computer name, it can see the communication settings interface of the laptop communication display green, the communication is normal, online, downloadable, and can monitor data.




After the communication is established, right-click Device - Add Device - select Ethernet, select Ethernet_IP_Scanner - click Add Device.



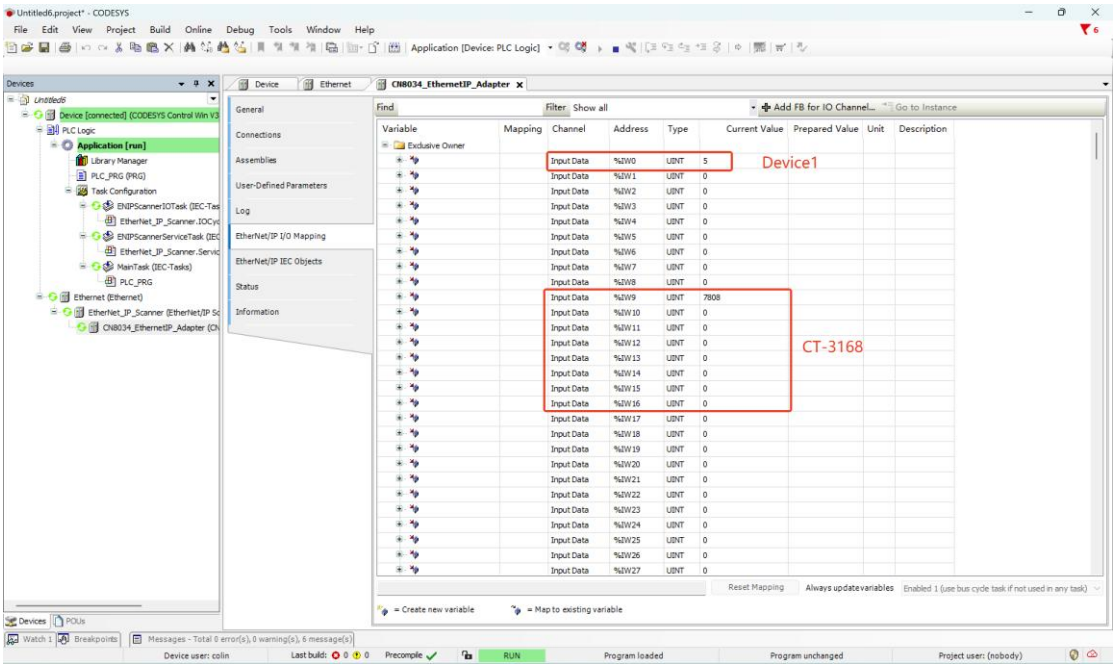
Then click to log in, after logging in successfully, right-click Ethernet/IP, click on the scanning device, it can scan to the CN-8034 module, check whether the input and output data size is correct. The size match is correct, and the communication is normal after logging in.

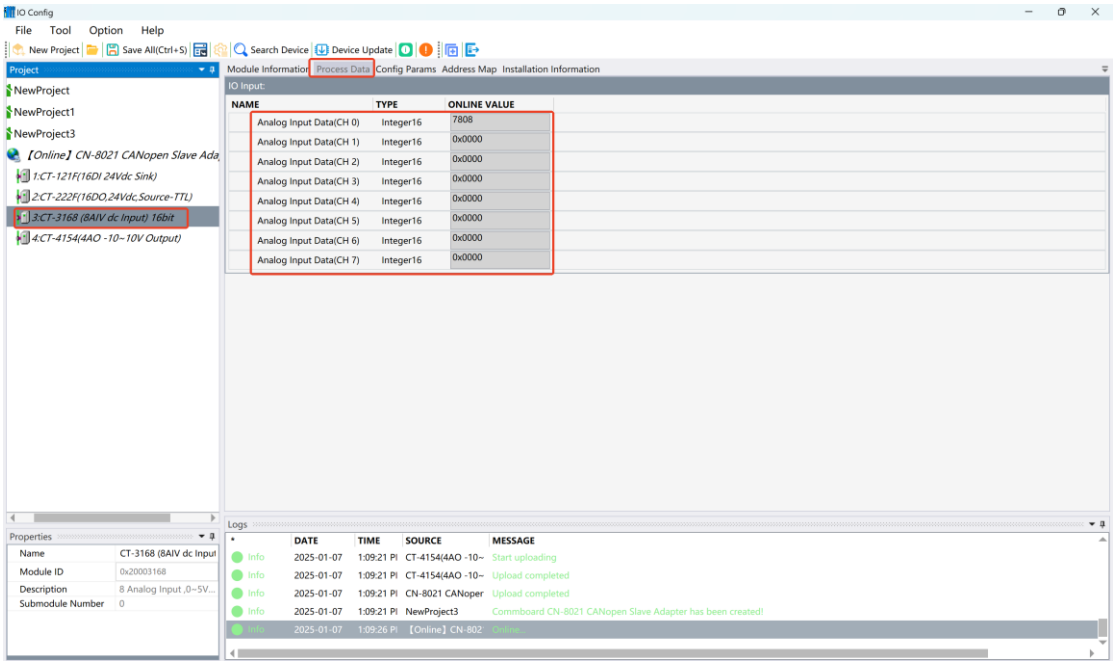


**Input data**

12 stations, each station has 4 RPDOs and 4 TPDOs. 12 stations input 252 words, output 192 words.

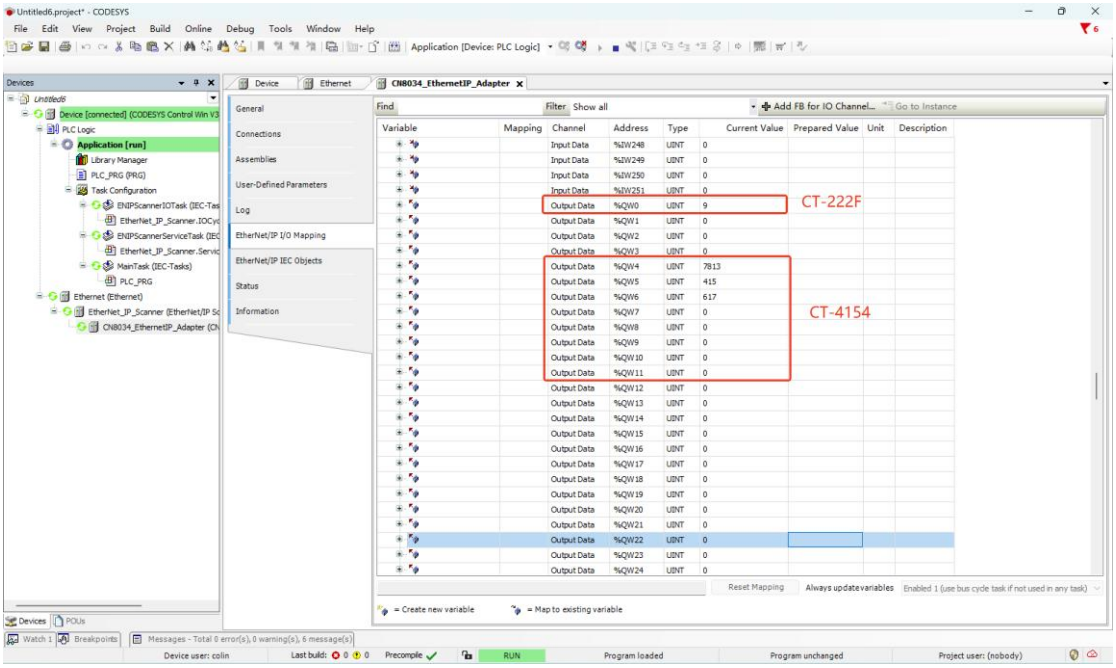
The CT-3168 module of the first CN-8021 station is monitored, and the corresponding address IW0 is the slave status bit of the first station.

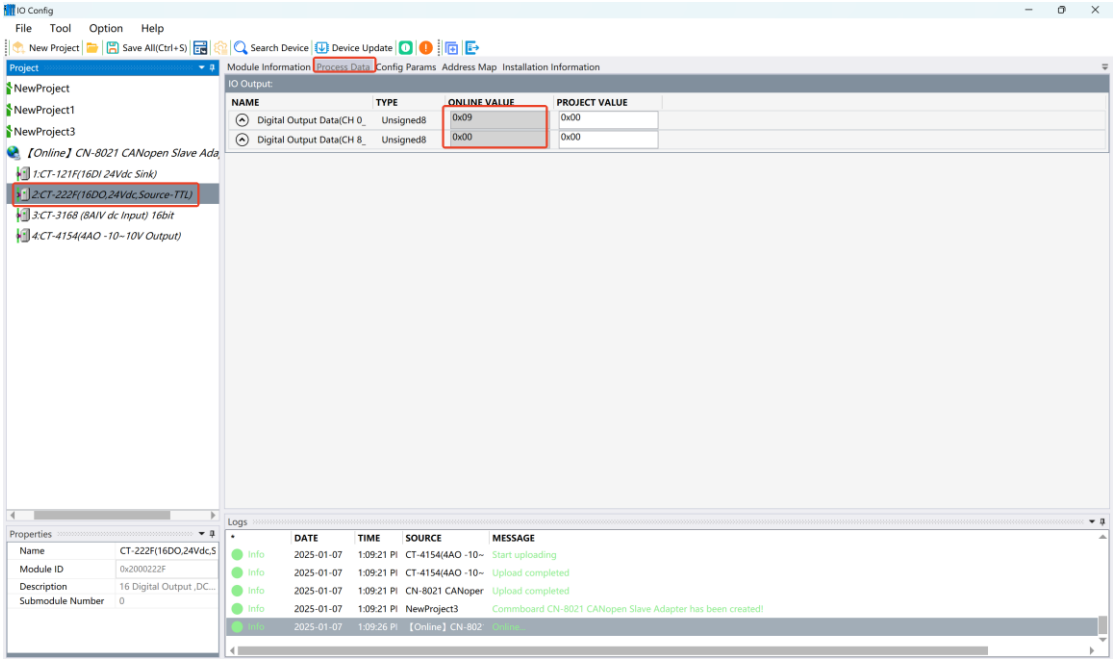


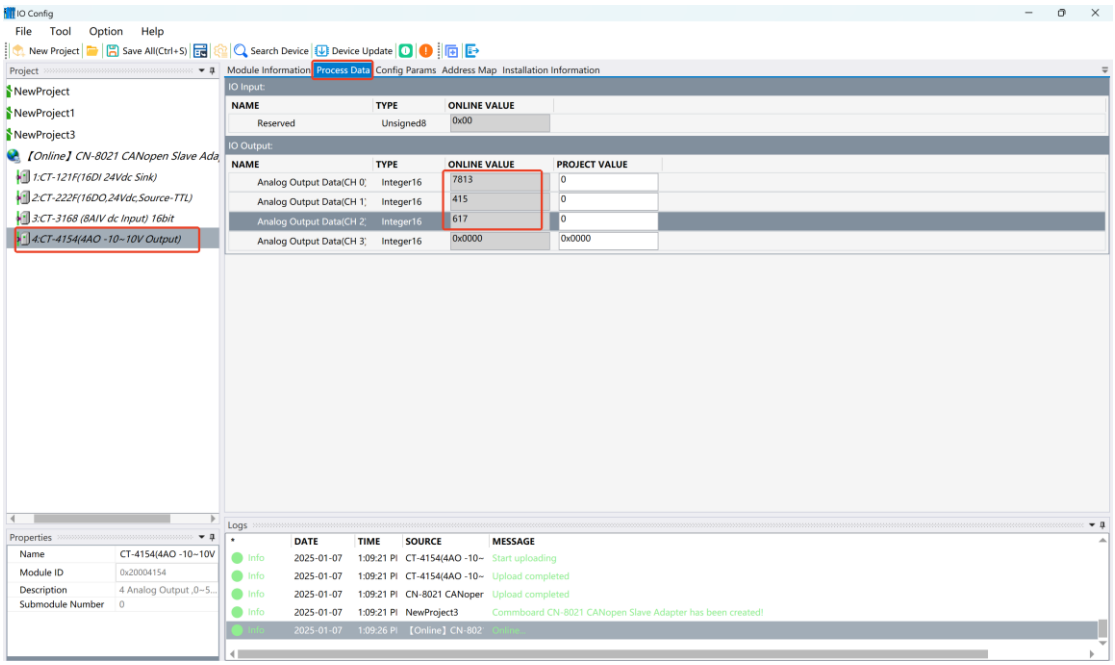



## Output data

The first CN-8021 slave station is monitored, corresponding to the output module CT-222F/CT-4154.


CT-222F
CT-4154




IO Config
File
Tool
Option
Help
New Project
Save All(Ctrl+S)
Search Device
Device Update
Project
NewProject
NewProject1
NewProject3
【Online】CN-8021 CANopen Slave Ada
1:CT-121F(16DI 24Vdc Sink)
2:CT-222F(16DO,24Vdc,Source-TTL)
3:CT-3168 (8AIV dc Input) 16bit
4:CT-4154(4AO -10~10V Output)
Module Information
Process Data
Config Params
Address Map
Installation Information
IO Input:
NAME
TYPE
ONLINE VALUE
Reserved
Unsigned8
0x00
IO Output:
NAME
TYPE
ONLINE VALUE
PROJECT VALUE
Analog Output Data(CH 0
Integer16
7813
0
Analog Output Data(CH 1
Integer16
415
0
Analog Output Data(CH 2
Integer16
617
0
Analog Output Data(CH 3
Integer16
0x0000
0x0000
Properties
Name
CT-4154(4AO -10~10V
Module ID
0x20004154
Description
4 Analog Output ,0~5...
Submodule Number
0
Logs
DATE
TIME
SOURCE
MESSAGE
Info
2025-01-07
1:09:21 PI
CT-4154(4AO -10~
Start uploading
Info
2025-01-07
1:09:21 PI
CT-4154(4AO -10~
Upload completed
Info
2025-01-07
1:09:21 PI
CN-8021 CANoper
Upload completed
Info
2025-01-07
1:09:21 PI
NewProject3
Commboard CN-8021 CANopen Slave Adapter has been created!
Info
2025-01-07
1:09:26 PI
【Online】CN-802
Online...

# Example of CN-803X combined with CT-5341

## 1 Example of communication between CN-8033 and CT-5341

The CT-5341 is a Profibus-DP master module, which can be used with an adapter module to convert the Profibus-DP protocol to other protocols such as ModbusTCP, Profinet, EtherCAT, Ethernet/IP, etc.

Hardware Composition: CN-8033, CT-5341, CN-8012(DP slave), ODOT-DPM01

Configuration Software: IO Config, DP Config;

Programming Software: Codesys;

Wiring: Power the CN-8033 module to the 24VDC system power supply and field power supply, and connect the network cable directly to the PC and CN-8033.

CT-5341 wiring: DP_A, DP_B connected to the terminal blocks of the slave, if the distance is long, it needs to connect the terminal resistors at both ends of the DP bus, and prepare two Type-C serial ports for configuring CT-5341 module and CN-8033 module. (Note: CT-5341 needs to be connected to the serial port cable separately when configuring with DP Config software, and the interface is on the side of the module).

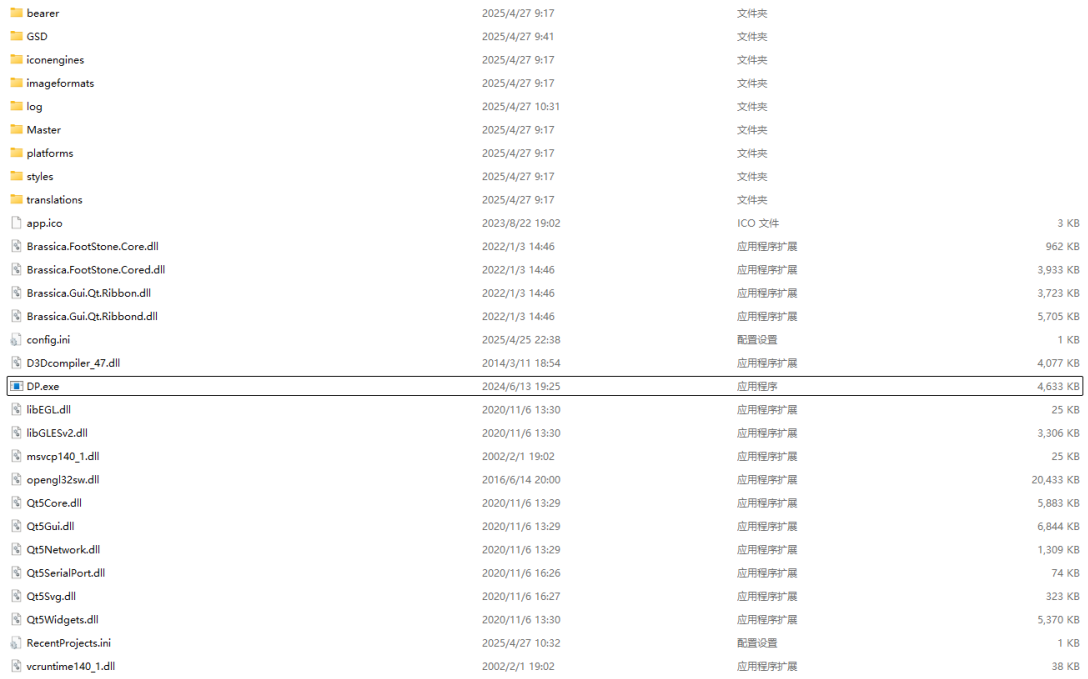
Note: 1. When using the module, it needs to configure the process data reading and writing instructions, diagnostic instructions, configuration information, and configuration parameters of the Profibus-DP bus in the IO Config software.

2. It is recommended to use the latest version of IO Config software;

3. The ODOT-DPM01 gateway is a Modbus-RTU/ASCII to Profibus-DP protocol converter. It is capable of converting data from Modbus-RTU/ASCII to Profibus-DP protocols. Any device with an RS485 interface that supports the Modbus-RTU/ASCII protocol can be interconnected with the fieldbus Profibus-DP using this product.

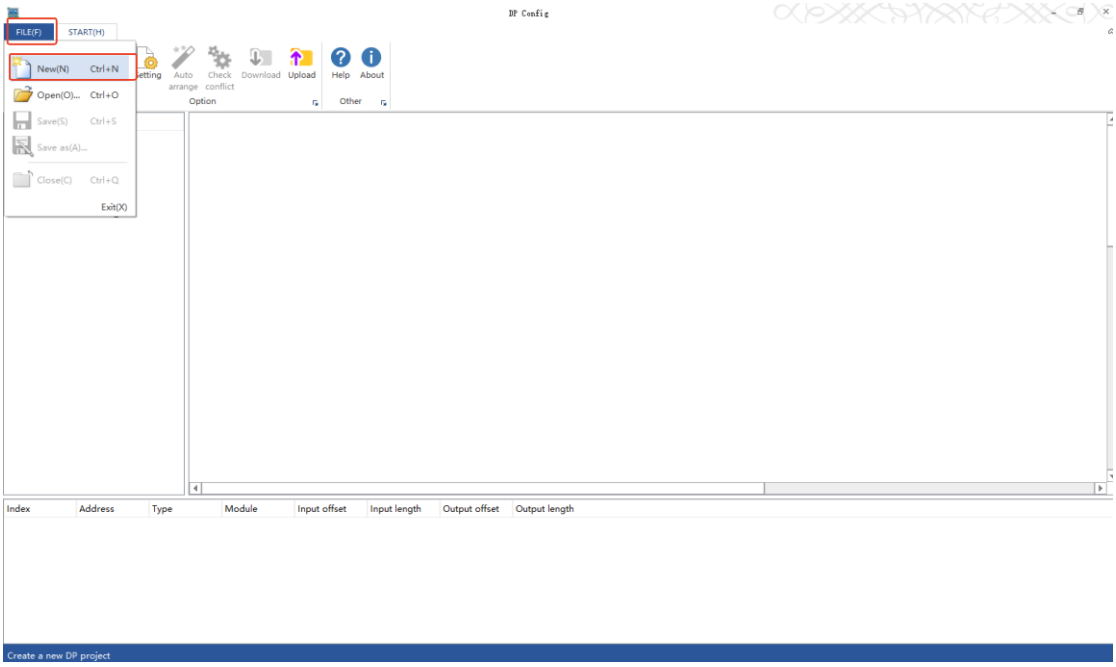
## 1.1 Configure the slave device

First of all, open the DP Config software folder, click on the DP .exe, this application is free of installation.

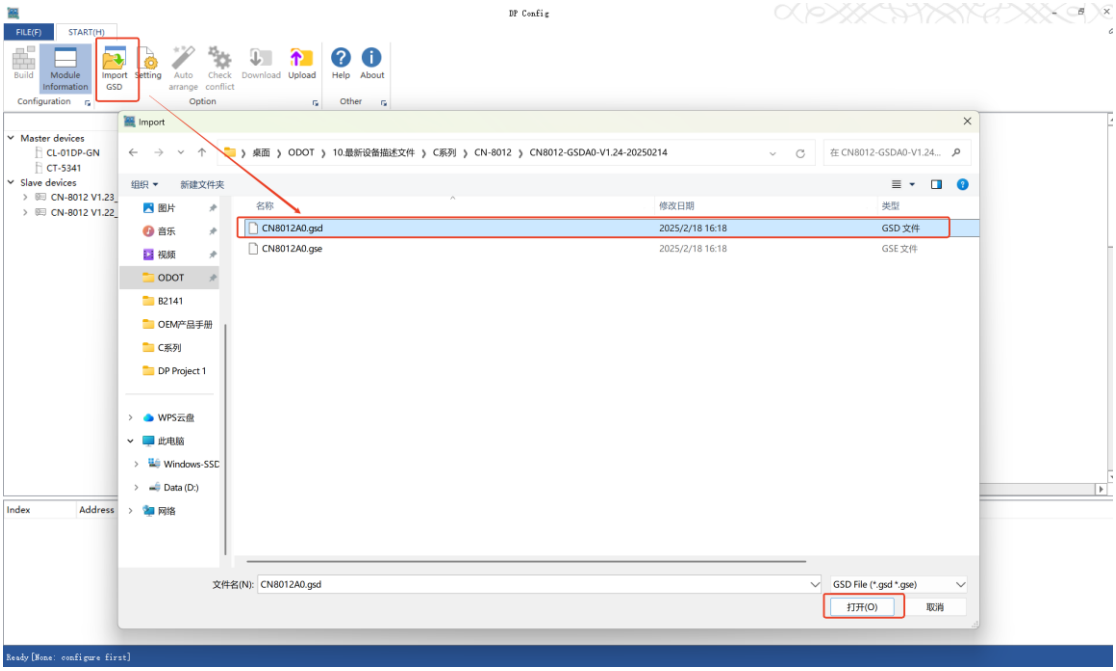


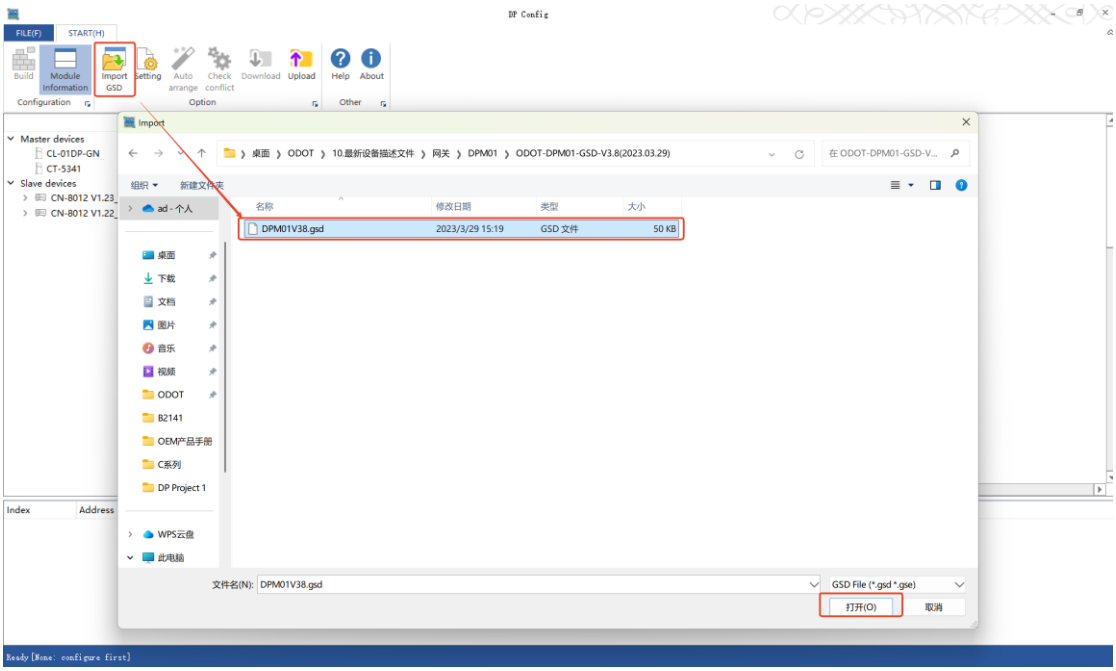
| | | | |
|---|---|---|---|
| bearer | 2025/4/27 9:17 | 文件夹 | |
| GSD | 2025/4/27 9:41 | 文件夹 | |
| iconengines | 2025/4/27 9:17 | 文件夹 | |
| imageformats | 2025/4/27 9:17 | 文件夹 | |
| log | 2025/4/27 10:31 | 文件夹 | |
| Master | 2025/4/27 9:17 | 文件夹 | |
| platforms | 2025/4/27 9:17 | 文件夹 | |
| styles | 2025/4/27 9:17 | 文件夹 | |
| translations | 2025/4/27 9:17 | 文件夹 | |
| app.ico | 2023/8/22 19:02 | ICO 文件 | 3 KB |
| Brassica.FootStone.Core.dll | 2022/1/3 14:46 | 应用程序扩展 | 962 KB |
| Brassica.FootStone.Cored.dll | 2022/1/3 14:46 | 应用程序扩展 | 3,933 KB |
| Brassica.Gui.Qt.Ribbon.dll | 2022/1/3 14:46 | 应用程序扩展 | 3,723 KB |
| Brassica.Gui.Qt.Ribbond.dll | 2022/1/3 14:46 | 应用程序扩展 | 5,705 KB |
| config.ini | 2025/4/25 22:38 | 配置设置 | 1 KB |
| D3Dcompiler_47.dll | 2014/3/11 18:54 | 应用程序扩展 | 4,077 KB |
| DP.exe | 2024/6/13 19:25 | 应用程序 | 4,633 KB |
| libEGL.dll | 2020/11/6 13:30 | 应用程序扩展 | 25 KB |
| libGLESv2.dll | 2020/11/6 13:30 | 应用程序扩展 | 3,306 KB |
| msvcp140_1.dll | 2002/2/1 19:02 | 应用程序扩展 | 25 KB |
| opengl32sw.dll | 2016/6/14 20:00 | 应用程序扩展 | 20,433 KB |
| Qt5Core.dll | 2020/11/6 13:29 | 应用程序扩展 | 5,883 KB |
| Qt5Gui.dll | 2020/11/6 13:29 | 应用程序扩展 | 6,844 KB |
| Qt5Network.dll | 2020/11/6 13:29 | 应用程序扩展 | 1,309 KB |
| Qt5SerialPort.dll | 2020/11/6 16:26 | 应用程序扩展 | 74 KB |
| Qt5Svg.dll | 2020/11/6 16:27 | 应用程序扩展 | 323 KB |
| Qt5Widgets.dll | 2020/11/6 13:30 | 应用程序扩展 | 5,370 KB |
| RecentProjects.ini | 2025/4/27 10:32 | 配置设置 | 1 KB |
| vcruntime140_1.dll | 2002/2/1 19:02 | 应用程序扩展 | 38 KB |

Open the DP Config configuration software, click File, and create a new project.

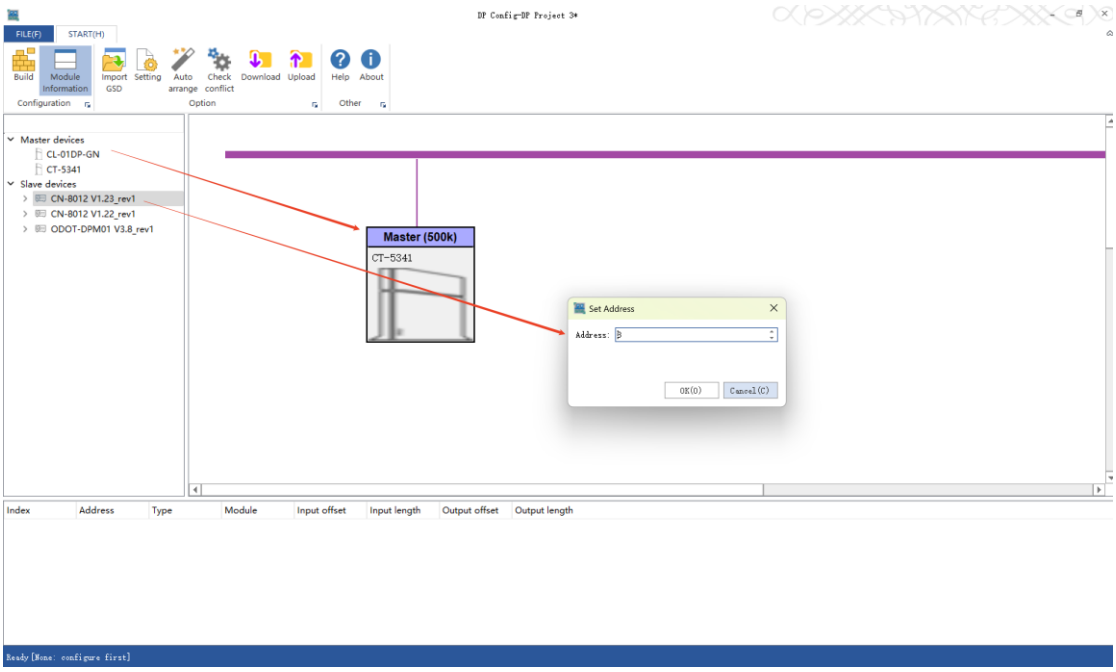



Click Import GSD to import the device description files of CN-8012 and ODOT-DPM01.

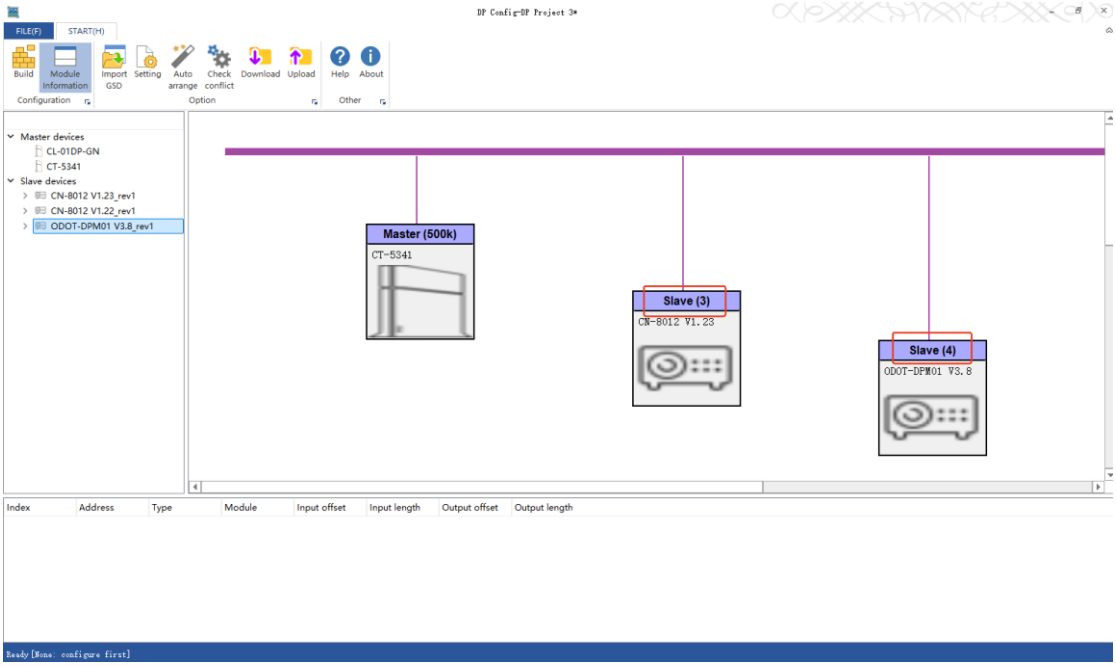


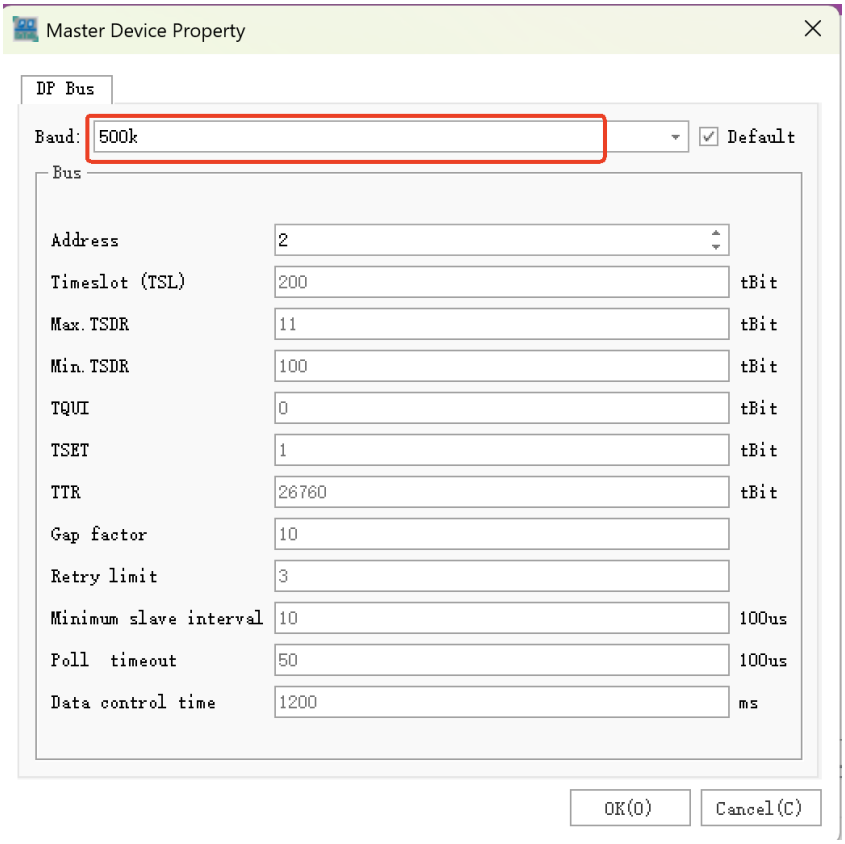

In the DP Config software, the master CT-5341 and slave devices are directly dragged and dropped into the master program, and the corresponding station address is selected according to the CN-8012 DP slave module. (The dial code is set to the slave number, the module dial code is 00000011, and the DP slave number: 3)



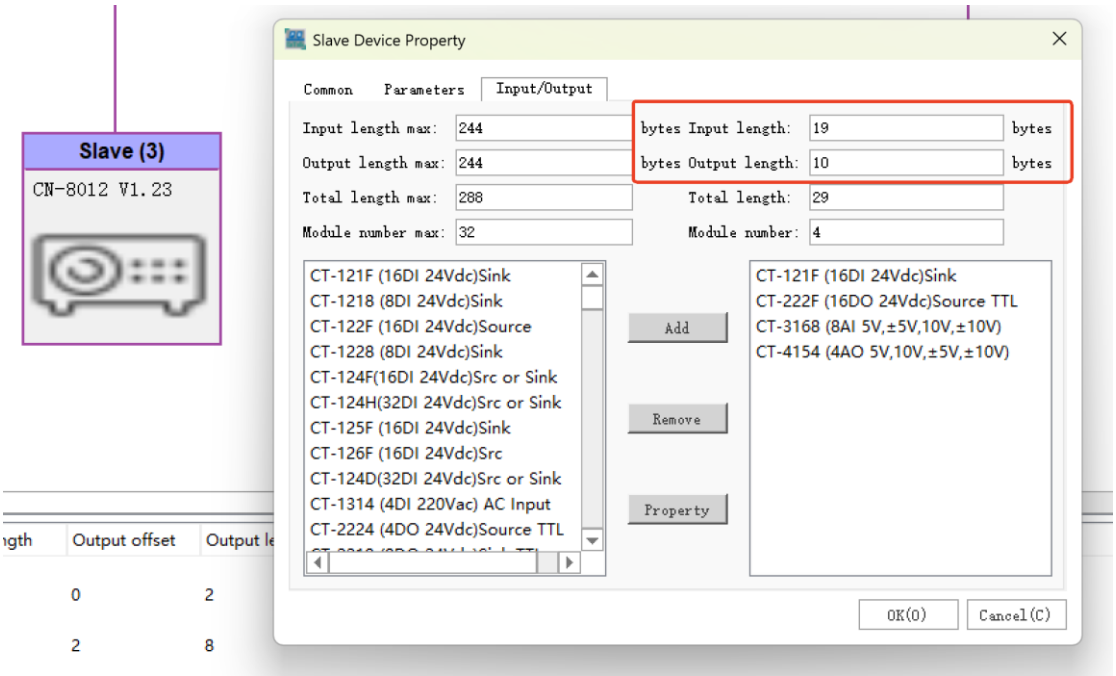

The DIP of the ODOT-DPM01 gateway module is set to 4, that is, the slave address is 4.




Click on the main device, set the configuration parameters, and the baud rate is 500k by default.

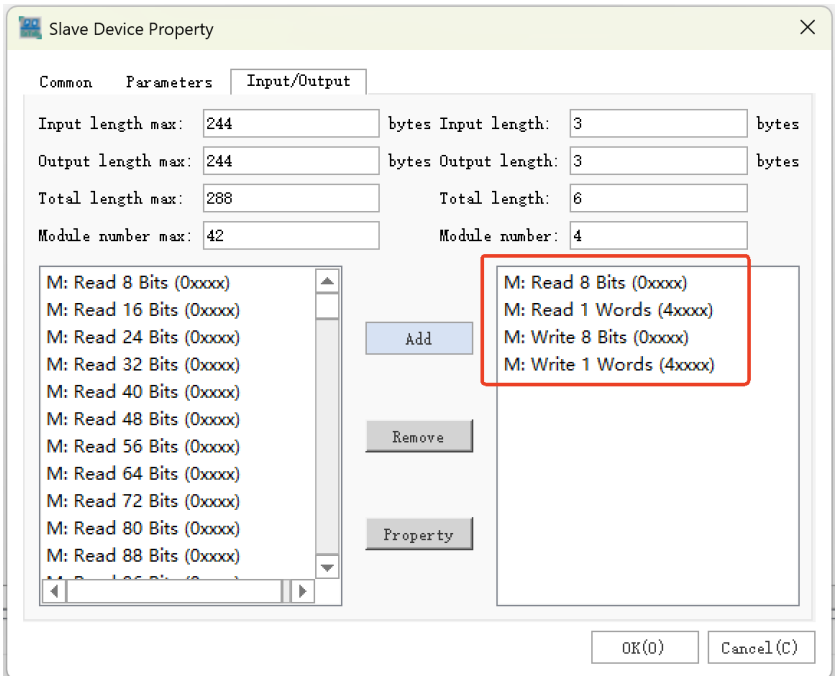



Click on the CN-8012 slave device to add the IO module to directly view the length of input and output bytes, as well as the offset of input and output bytes.

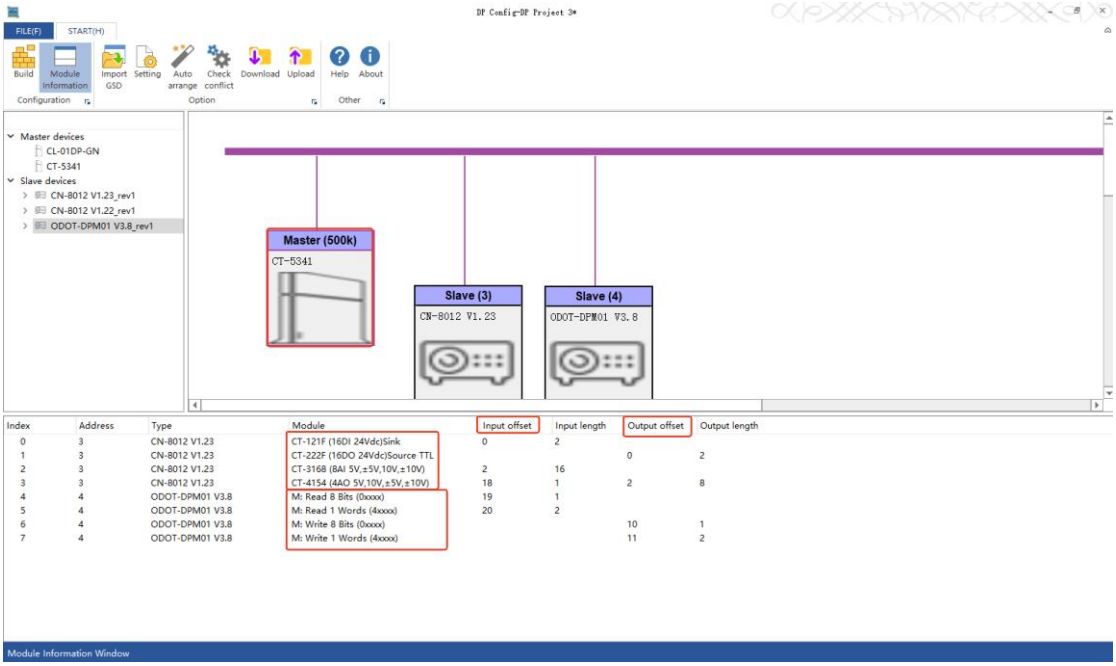



Click ODOT-DPM01 to set the slave device properties, select the mode as the master RTU mode, add the master mode read and write commands, and configure read 8 bits

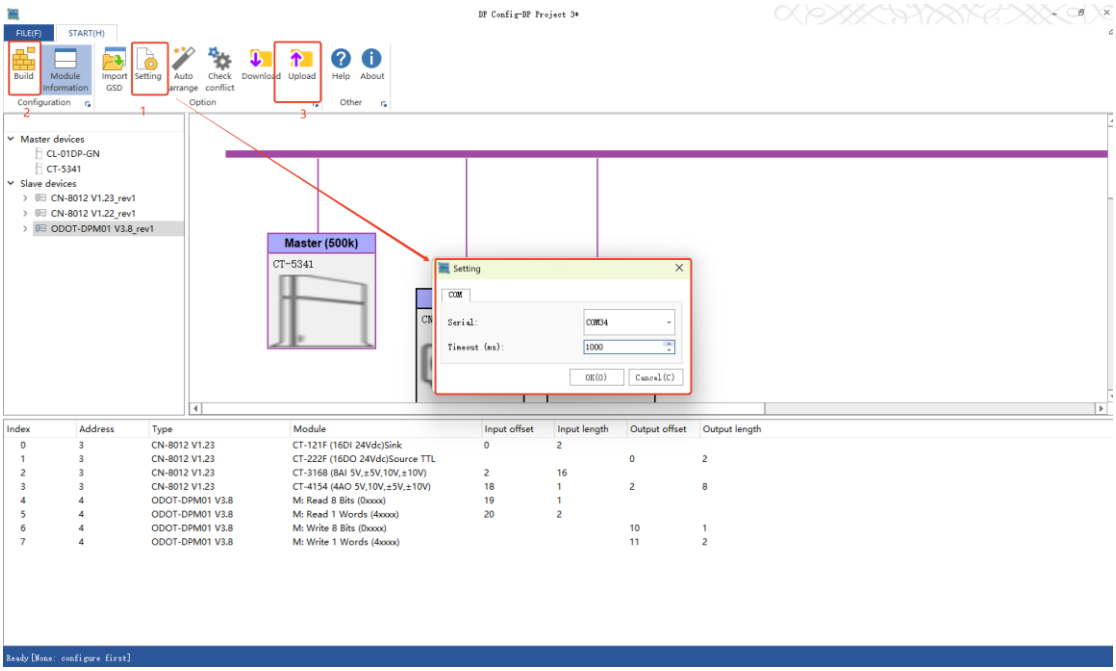
+ write 8 bits, read 1 word + write 1 word.



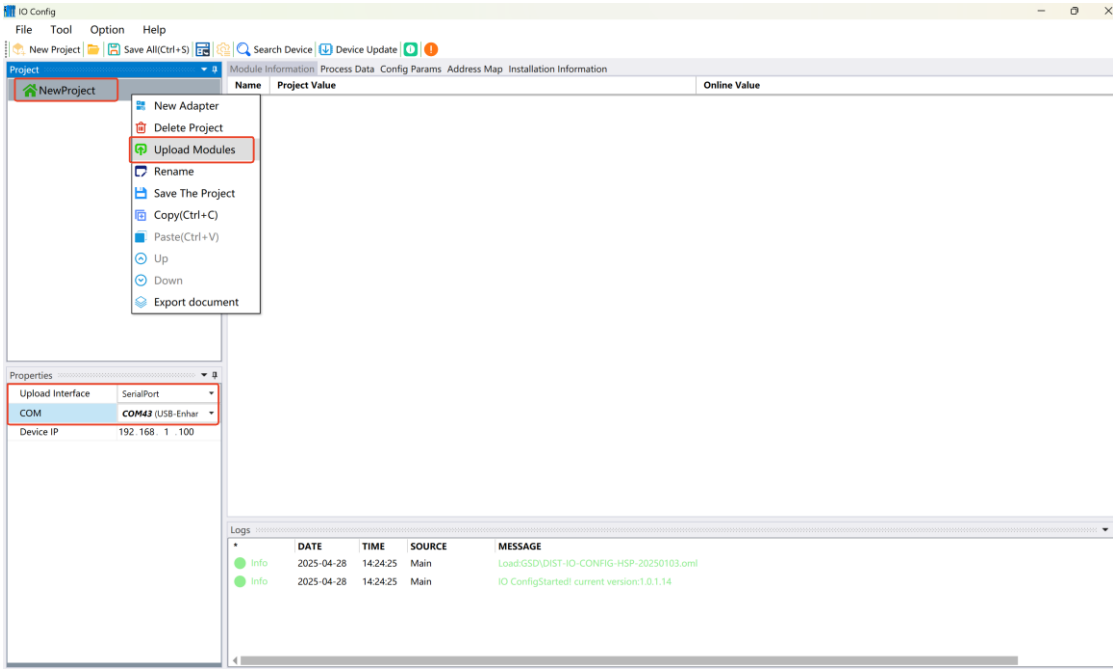

Click on the master CT-5341 to view the input and output offsets of all slaves.




Click Settings, select the corresponding COM port, click Generate Program, and then click Download Program.

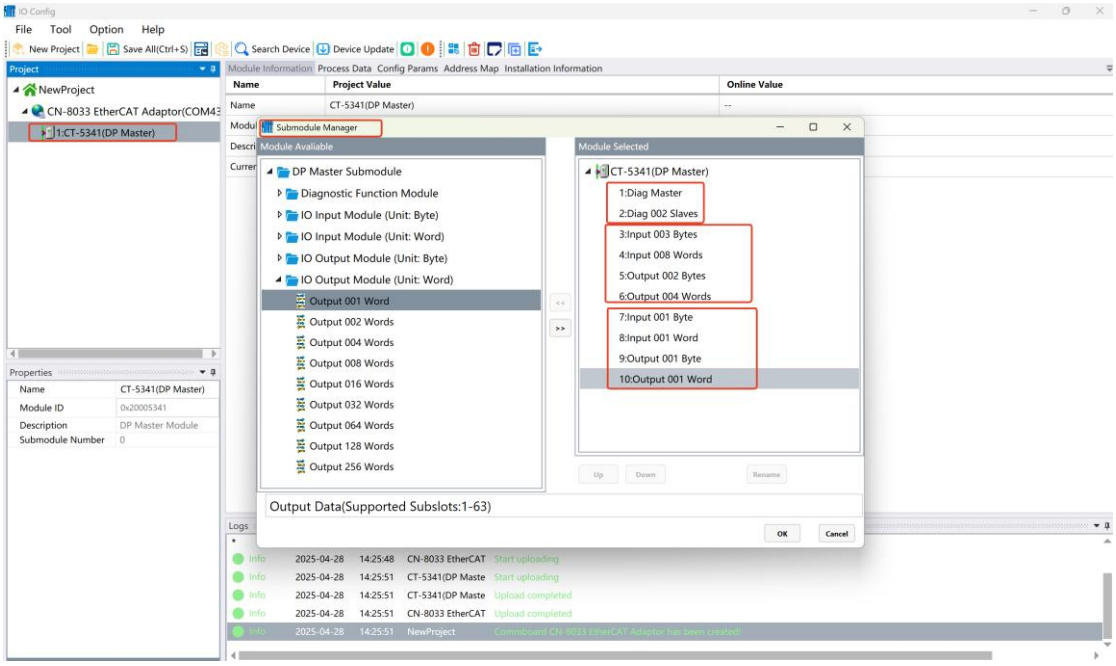



Open the IO Config software, create a new project, and upload module information through the serial port (Type-C interface).

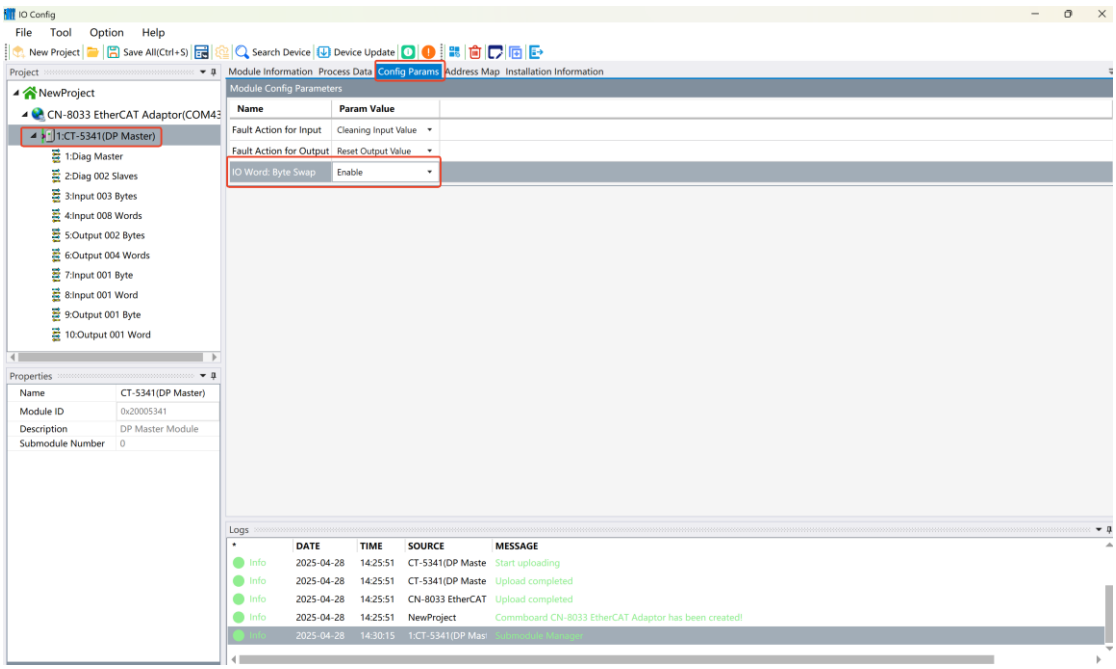



Right-click the CT-5341 module and click submodule manager, add diagnostic function module, configure CN-8012 slave, configure input 8words + input 3Bytes, configure output 4words + output 2Bytes.

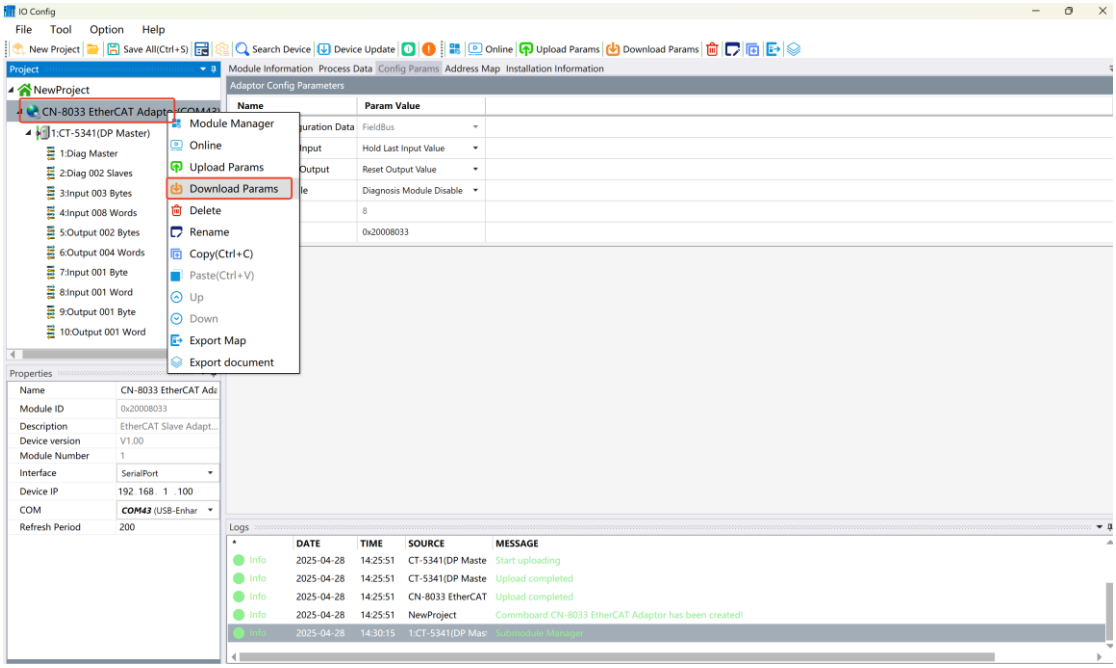
Configure ODOT-DPM01 slave, configure input 1word + input 1 byte, configure output 1word + output 1 byte, and click OK.




Set the IO Word Byte Swap as Enable;

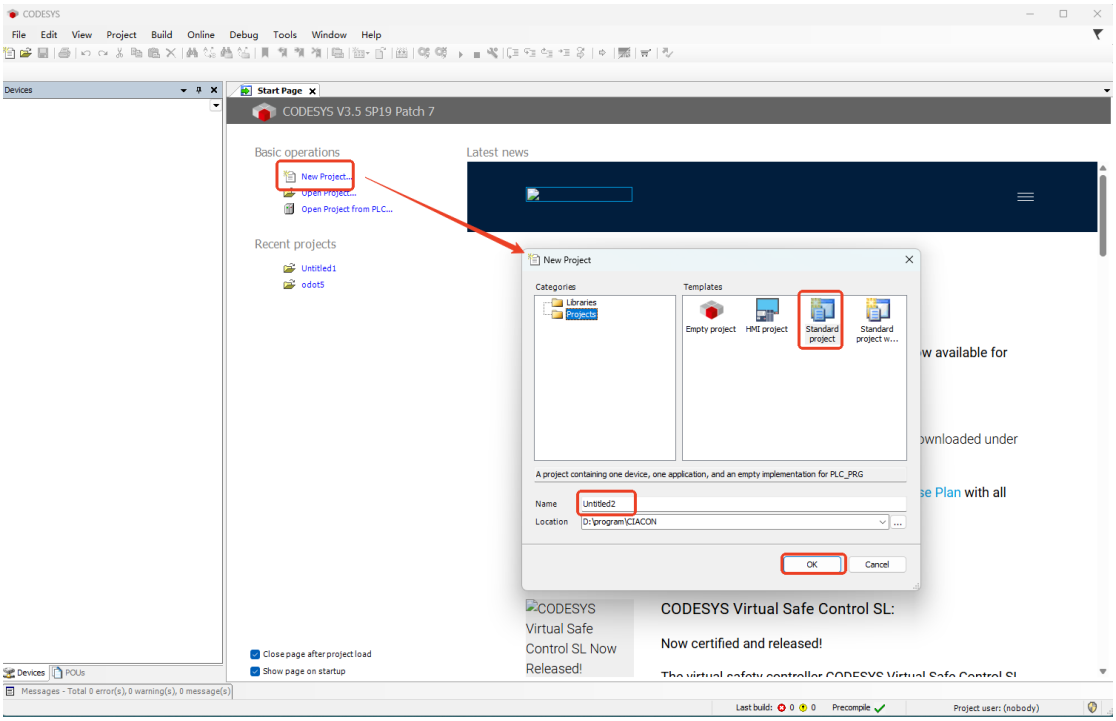


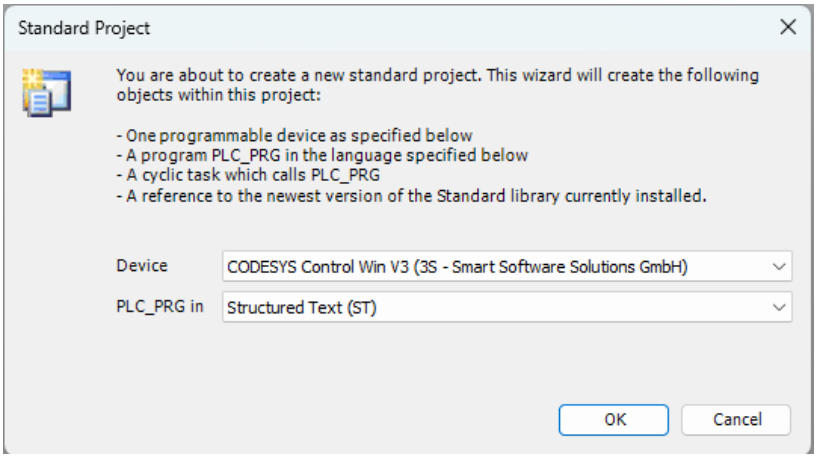

After the configuration is complete, right-click the CN-8033 adapter and click Download Configuration.


IO Config
File Tool Option Help
New Project Save All(Ctrl+S) Search Device Device Update Online Upload Params Download Params
Project
NewProject
CN-8033 EtherCAT Adapter
1:CT-5341(DP Master)
1:Diag Master
2:Diag 002 Slaves
3:Input 003 Bytes
4:Input 008 Words
5:Output 002 Bytes
6:Output 004 Words
7:Input 001 Byte
8:Input 001 Word
9:Output 001 Byte
10:Output 001 Word
Module Manager
Online
Upload Params
Download Params
Delete
Rename
Copy(Ctrl+C)
Paste(Ctrl+V)
Up
Down
Export Map
Export document
Module Information Process Data Config Params Address Map Installation Information
Adaptor Config Parameters
Name
Param Value
FieldBus
Hold Last Input Value
Reset Output Value
Diagnosis Module Disable
0x20008033
Properties
Name CN-8033 EtherCAT Ada
Module ID 0x20008033
Description EtherCAT Slave Adapt...
Device version V1.00
Module Number 1
Interface SerialPort
Device IP 192 . 168 . 1 . 100
COM COM43 (USB-Enhar
Refresh Period 200
Logs
DATE TIME SOURCE MESSAGE
Info 2025-04-28 14:25:51 CT-5341(DP Maste Start uploading
Info 2025-04-28 14:25:51 CT-5341(DP Maste Upload completed
Info 2025-04-28 14:25:51 CN-8033 EtherCAT Upload completed
Info 2025-04-28 14:25:51 NewProject Commboard CN-8033 EtherCAT Adaptor has been created!
Info 2025-04-28 14:30:15 1:CT-5341(DP Mas Submodule Manager

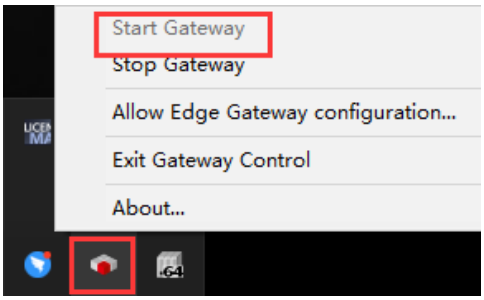
## 1.2 Codesys configuration and debugging

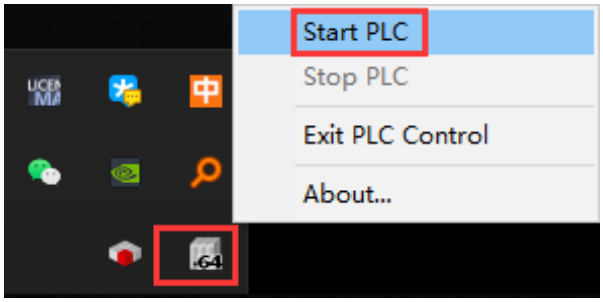
First open the Codesys software, click New Project, in the pop-up window select the "CODESYS Control Win V3 x64 (3S-Smart Software Solutions GmbH)", click the OK.

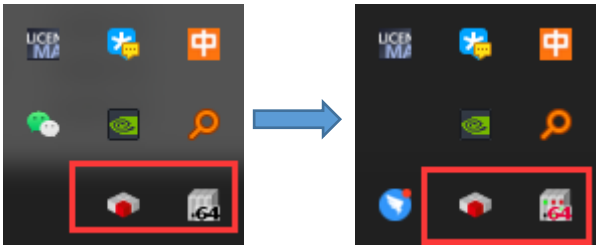


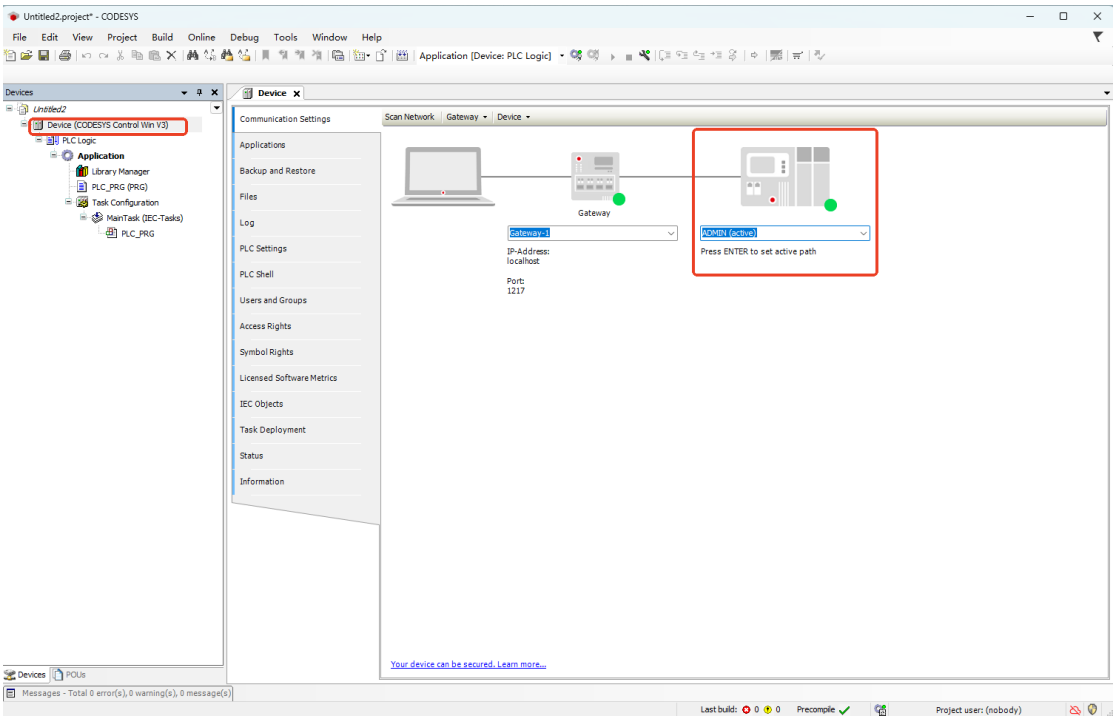

Click on the icons in the bottom right corner "CODESYS Gateway SysTray - x64" and "CODESYS Control Win SysTray - x64". Right-click on the icons Start Gateway and Start PLC, it can access the soft PLC, that is, it can test the communication without a hardware PLC. After all the icons are successfully launched, the icon color is red.



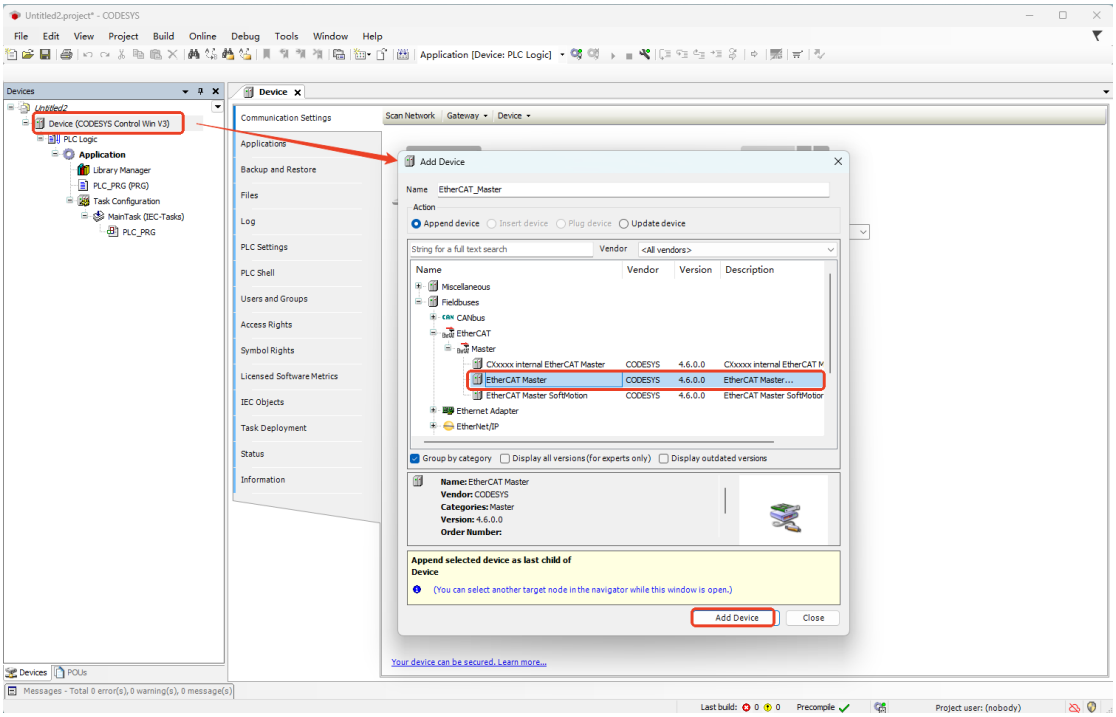



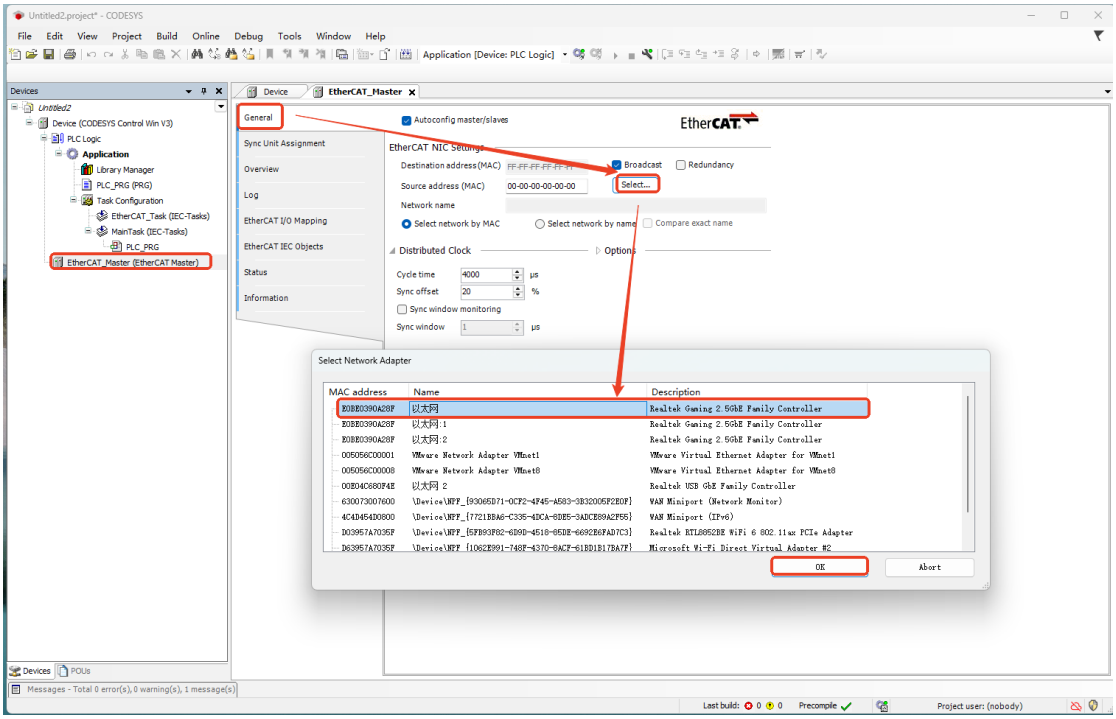
Double-click Device, click on the right to scan the network, the software will automatically scan the laptop (computer name), double-click the computer name, it can see the communication settings interface of the laptop communication display green, the communication is normal, online, downloadable, and can monitor data.



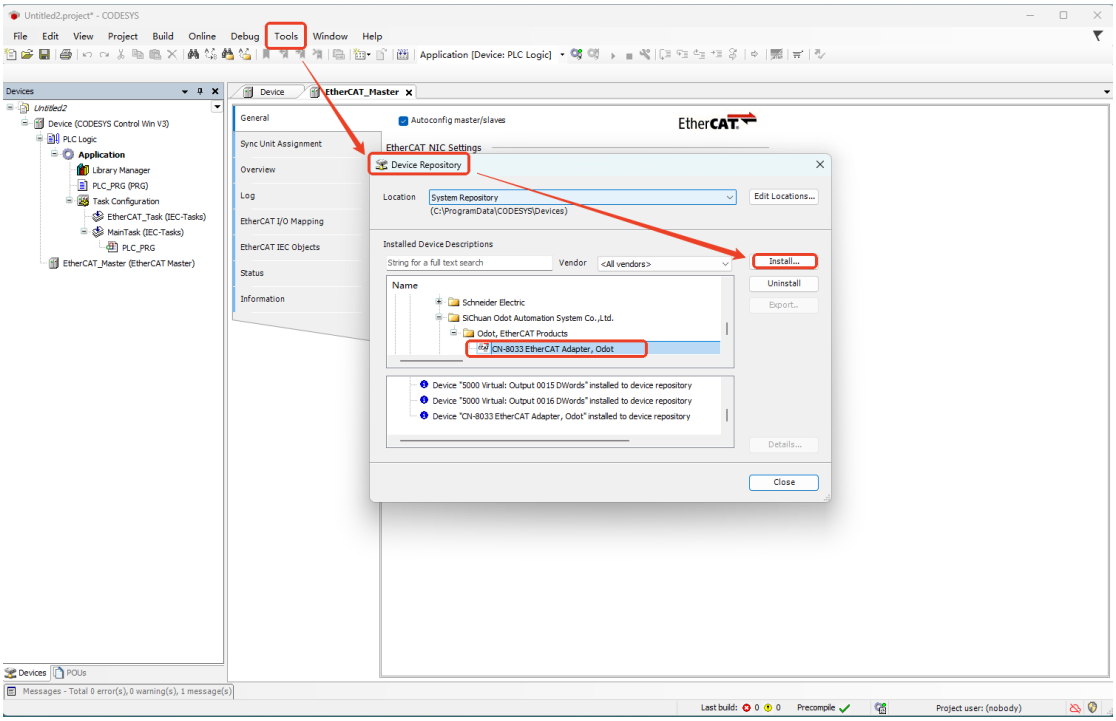

After the communication is established, right-click Device - Add Device - Select EtherCAT - Master - EtherCAT Master - Click Add Device.



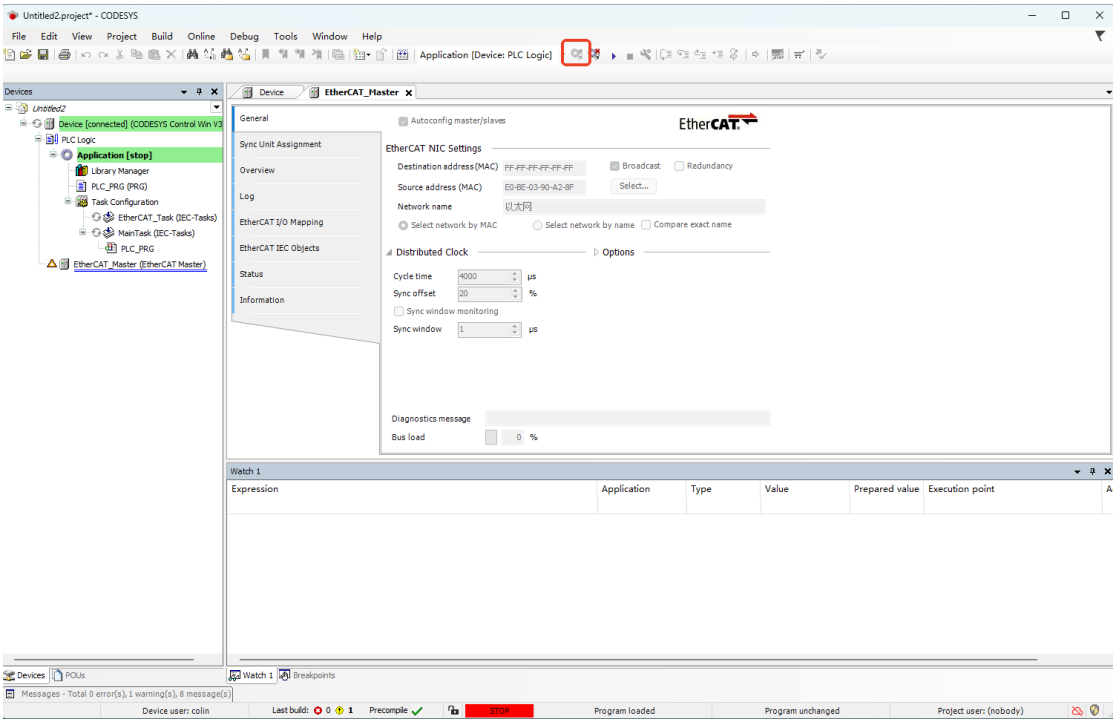

Double-click the EtherCAT_Master, click EtherCAT NIC Settings - Browse on the right side, select the local NIC in the pop-up window, and click OK.



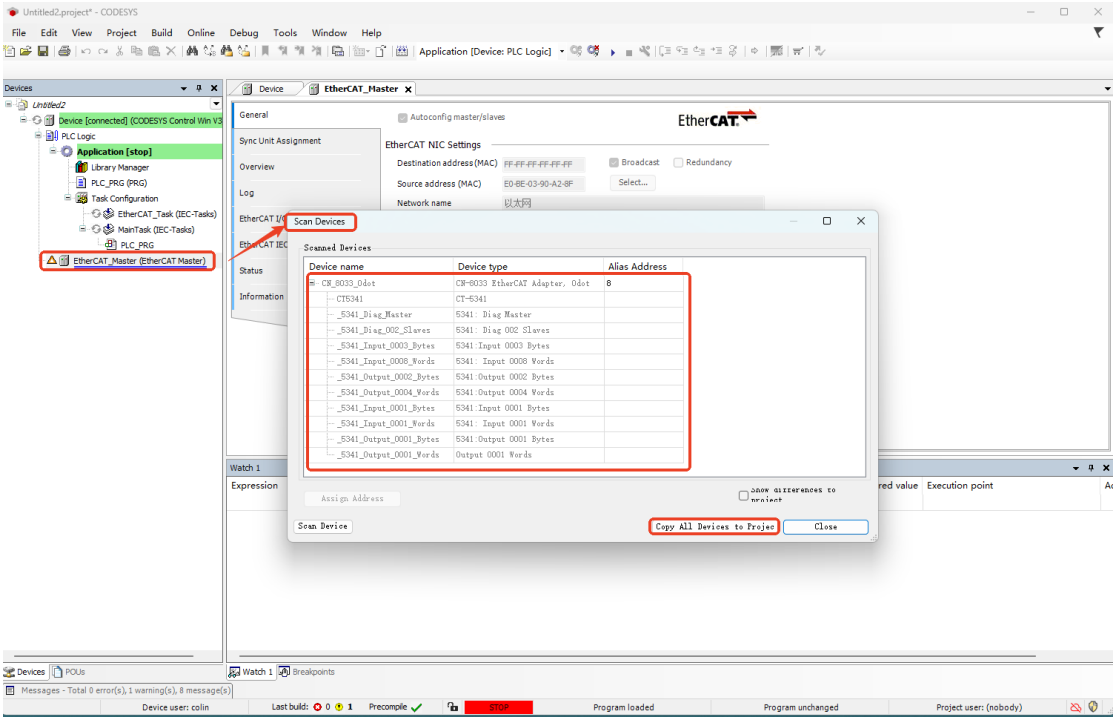

Right-click EtherCAT_Master to scan the module. Before scanning the module, install the XML file of CN-8033. Click Tools - Device Repository - Click Install, select the XML file, click Open, and complete the installation of the XML file.



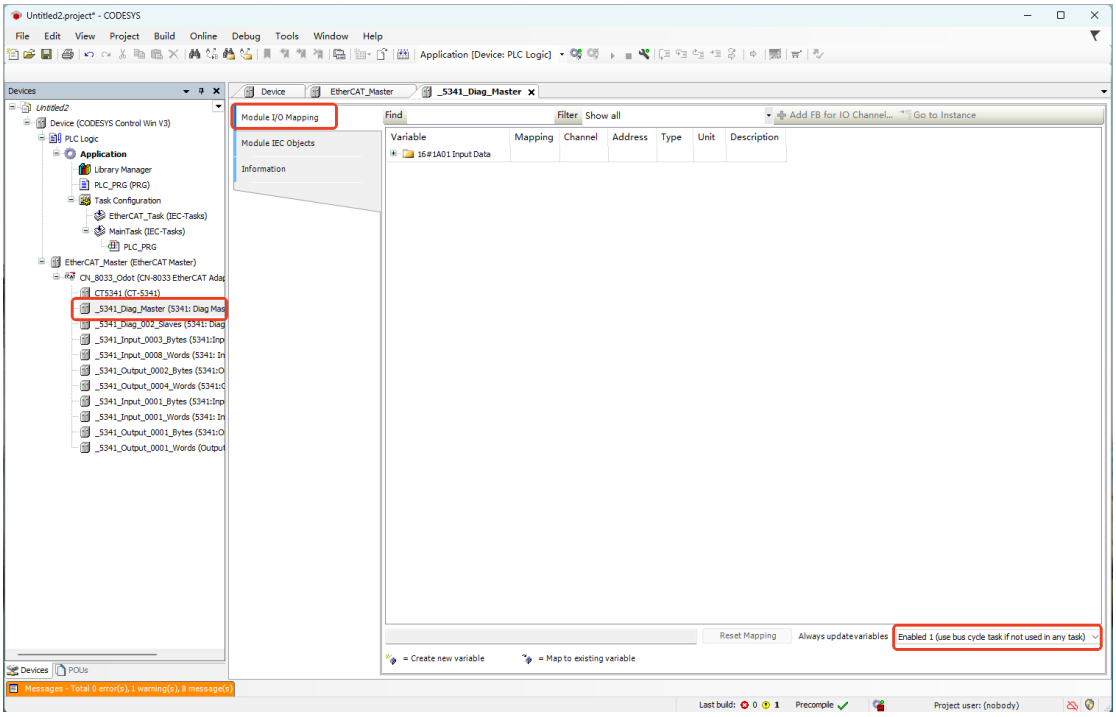

Click to log in, and after logging in online, right-click EtherCAT_Master to scan the module.



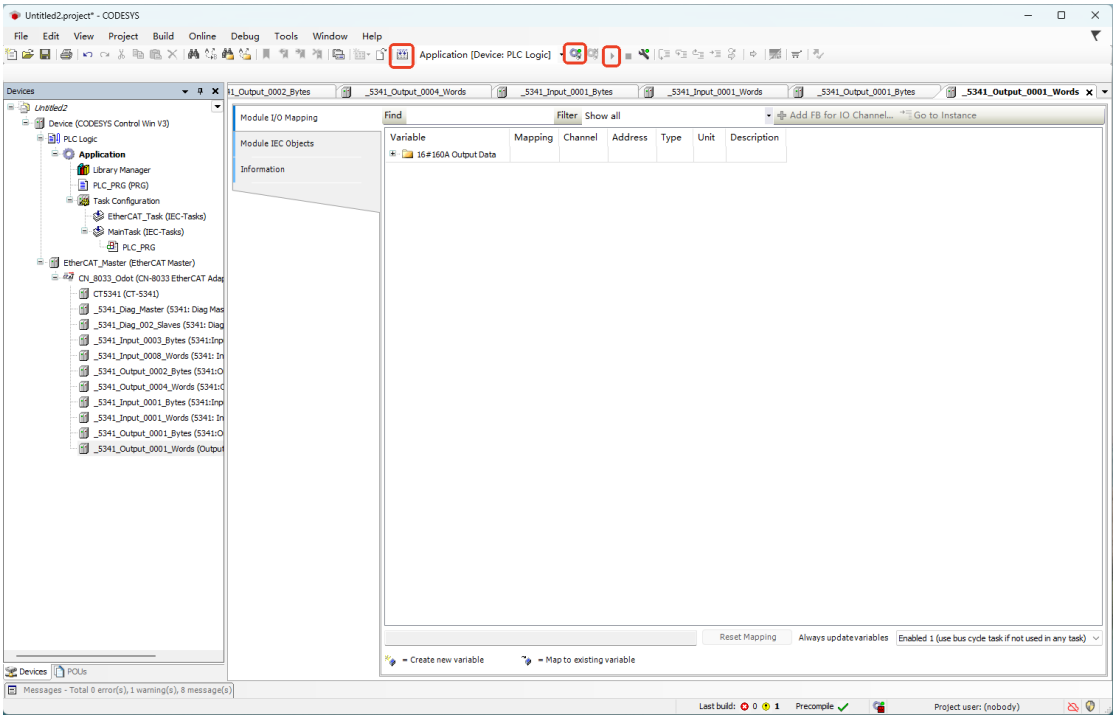

Click Scan Device to check whether the scanned module is consistent with the actual configuration, and click Copy All Devices to Project after confirmation.



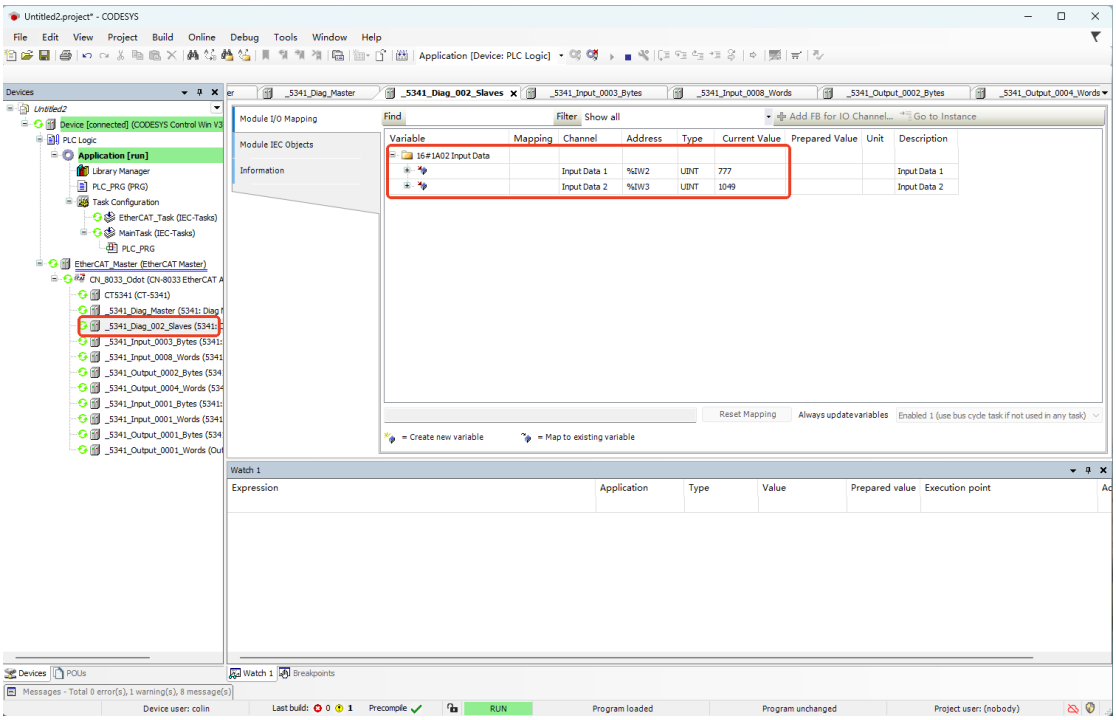

Log out of the PLC login, select the configured commands, click Module I/O mapping, and select Enable 1 (use the bus cycle task if not used in any task).



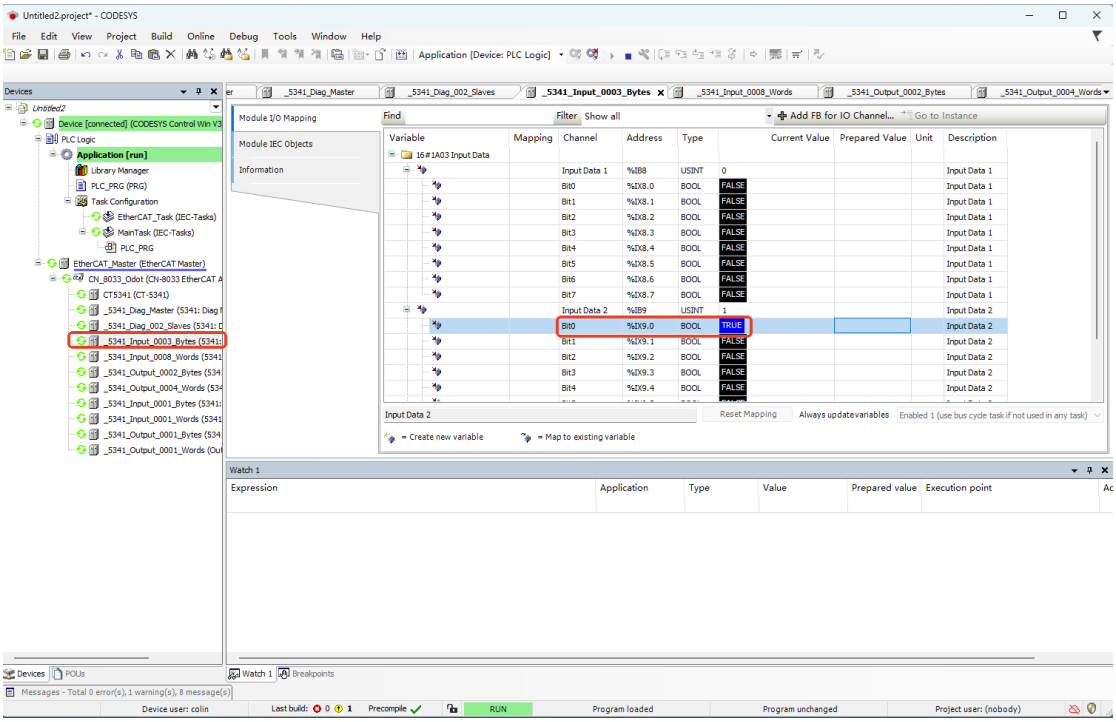

After the parameters are updated, select the PLC Device and click Compile, Login, and Online.



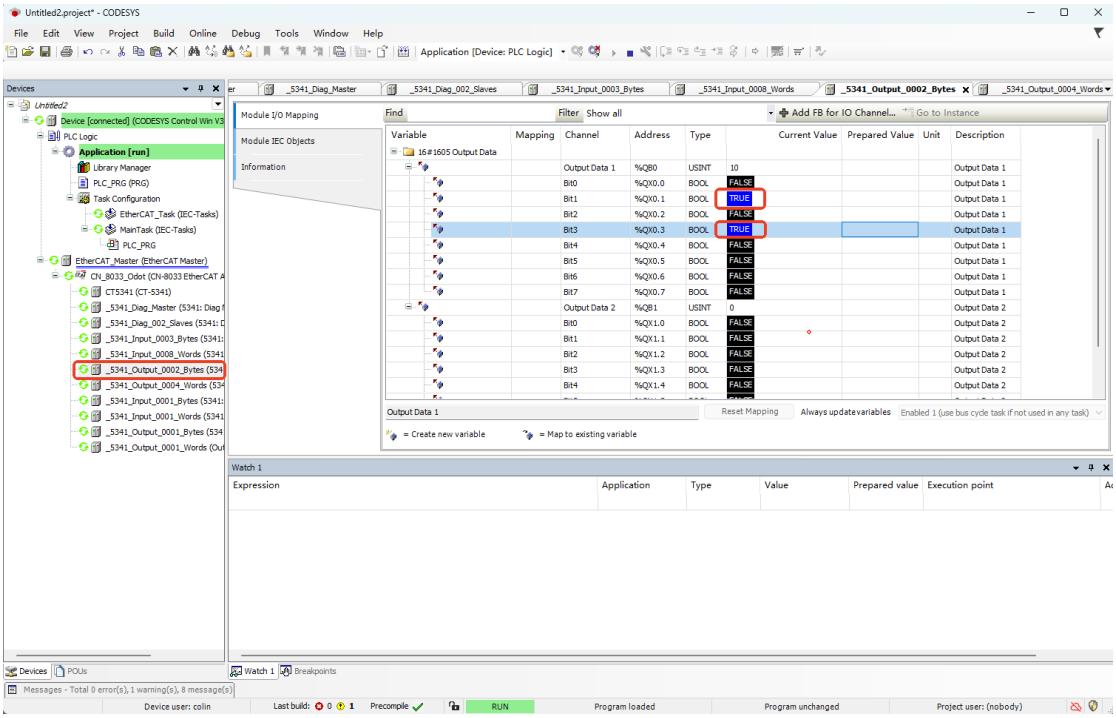

The diagnostic data of the DP master status: 777 corresponds to 0011 0000 1001, and 1049 corresponds to 0100 0001 1001.




Give a high-level signal to channel 8 of the CT-121F, and it can see that channel 8 lights up and Bit 8 changes from FALSE to TRUE.




If write a value in the output data submodule, it can see that the corresponding I/O output submodule CH1 and CH3 channel lights are on.



**Odot Automation System Co., Ltd.**

Plant 204, Comprehensive Bonded Zone, No. 261, Feiyun Avenue, Mianyang,

Sichuan, China.

Tel: +86-0816-2538289

Zip Code: 621000

Email:sales@odotautomation.com

Web: www.odotautomation.com