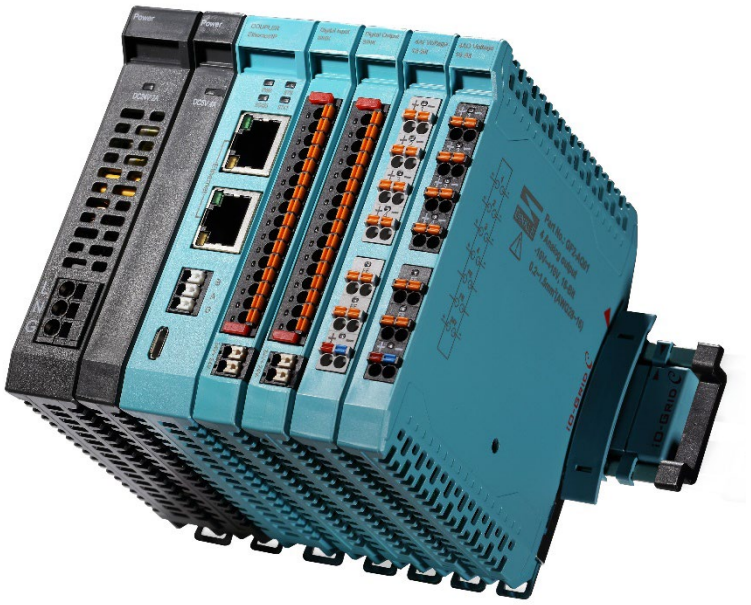
DAUDIN CO., LTD.

2301EN
V1.0.0



iO-GRID C

EtherCAT Connection Operating Manual

Table of Contents

1. Example Remote I/O Module System Configuration List

Part No.	Specification	Remarks
GF2-C002T	EtherCAT Coupler	
GF2-DI01T	16-channel digital input module, Sink, 24VDC	
GF2-DQ01T	16-channel digital output module, Sink, 24VDC	
GF2-AI01T	4-channel analog input module (-10… 10VDC, 0…10VDC，0...5VDC)	
GF2-AQ01T	4-channel analog output module (-10… 10VDC, 0…10VDC，0...5VDC)	
GFPS-0202	Power 24V / 48W	

1.1 Product Description

I. The coupler is used externally to connect with the EtherCAT's communication port.

II. The coupler is in charge of the management and dynamic configuration of I/O parameters and so on.

III. The power module is standard for remote I/Os and users can choose the model or brand of power module they prefer.

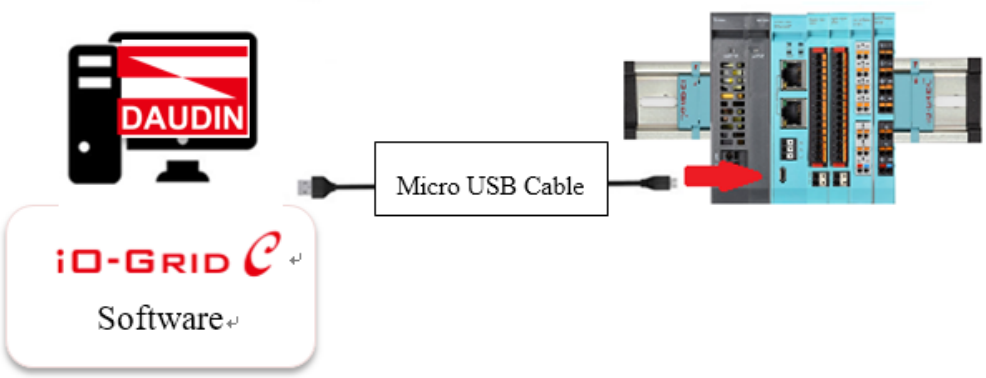
2. Coupler Parameter Settings

This chapter explains how a coupler connects to EtherCAT. For detailed information on iO-GRID C, please refer to the ***i-Designer User's Manual***

2.1 Preceding Operation of Software Setup

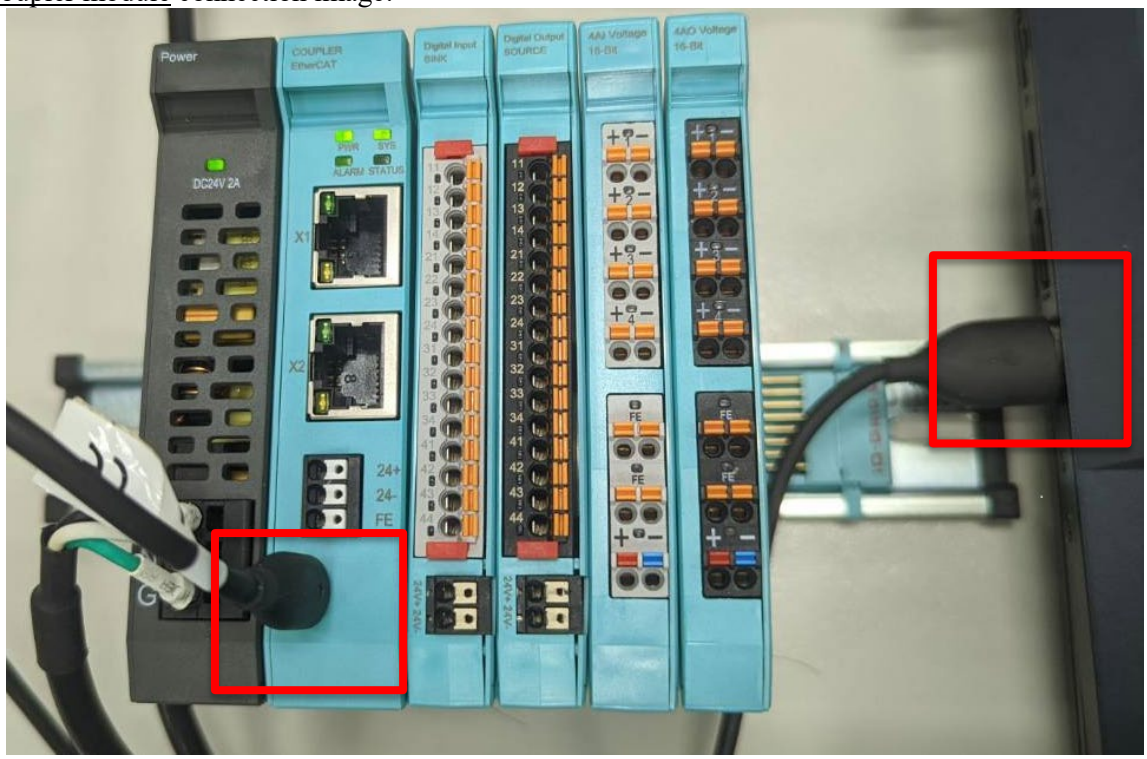
Connect with the coupler module using a Micro-USB cable
Plug your Micro-USB cable to the Micro-USB port on your coupler module.
Make sure the fieldbus is powered and then open the i-Designer setup program
Coupler Module Parameters Setup

Coupler module connection illustration:



※Before setting up the coupler module, please confirm that the I/O modules are lined up closely on the fieldbus

Coupler module connection image:

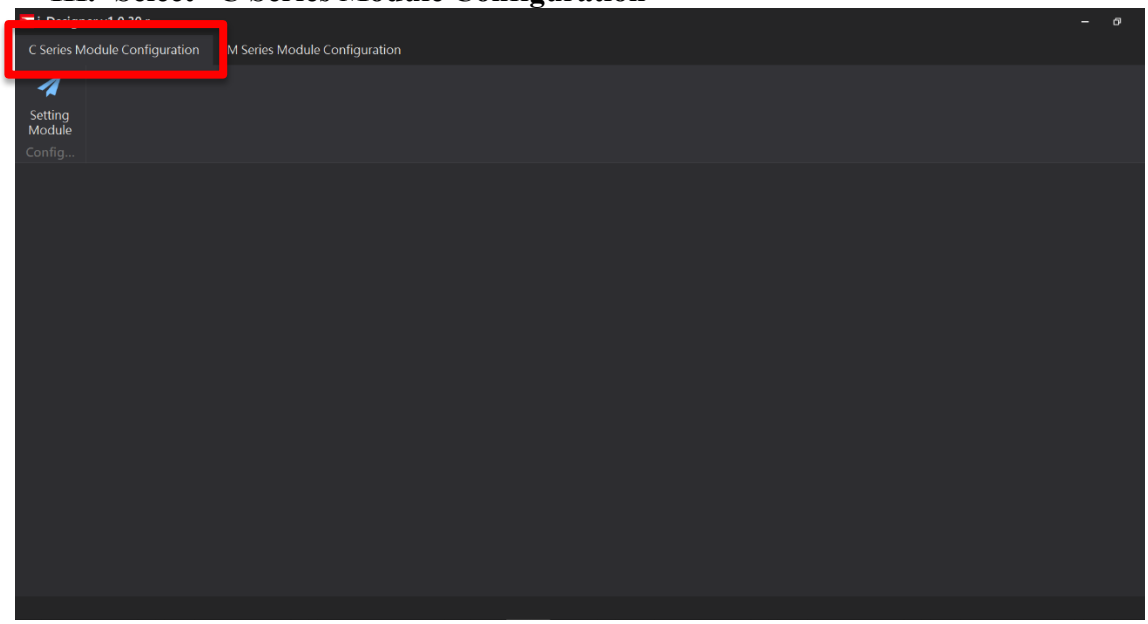


2.2 Coupler Software Setup

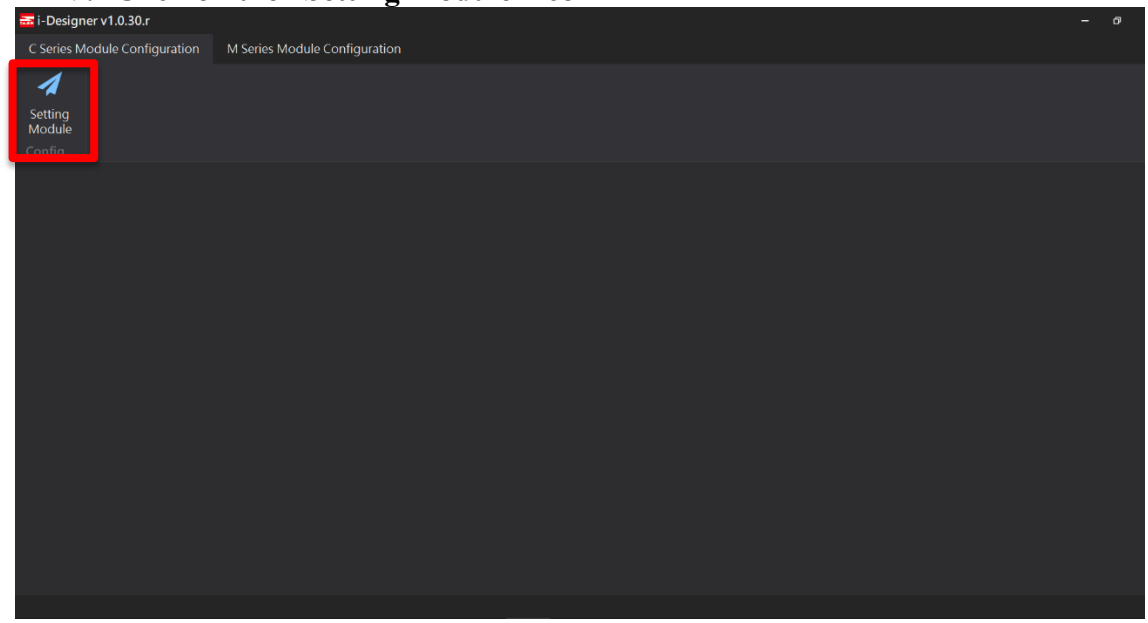
I. Make sure that the module is powered and connected to the USB port

II. Click to launch the software

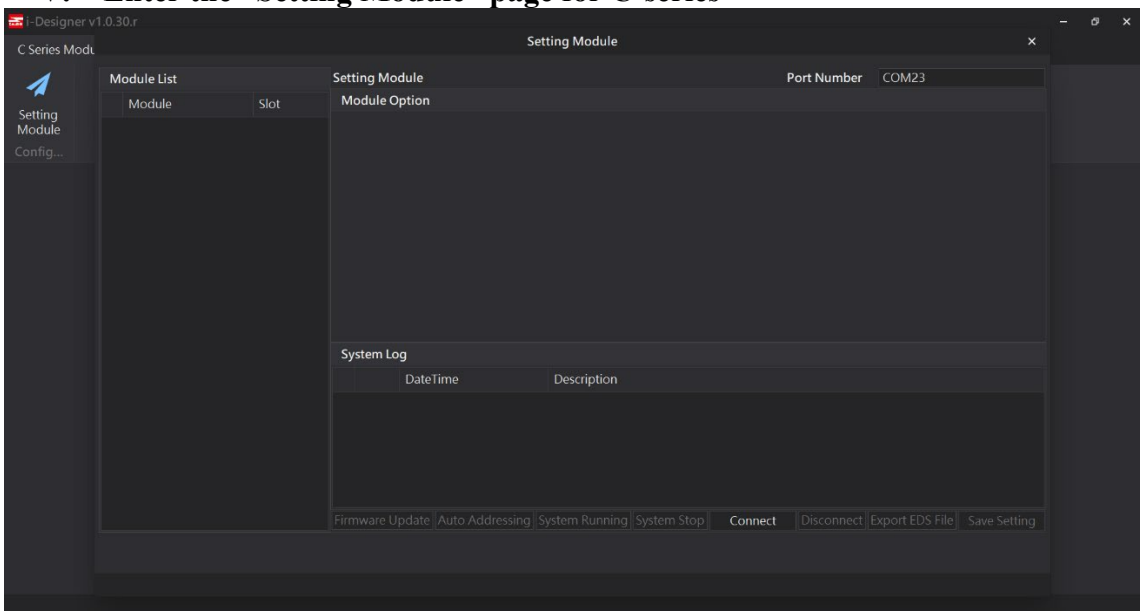
III. Select “C Series Module Configuration”



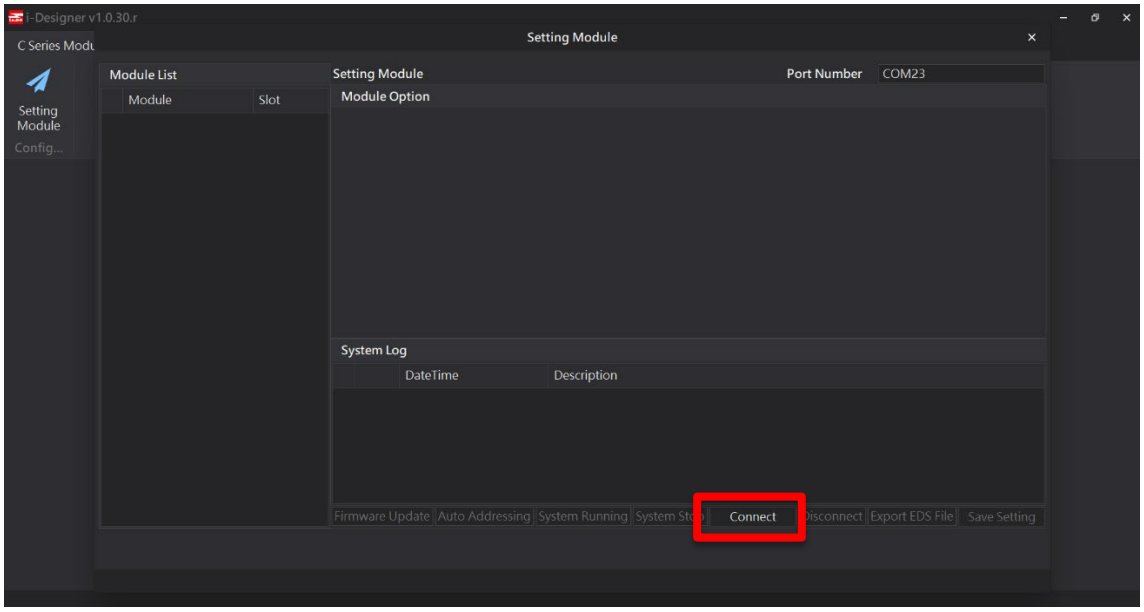
IV. Click on the “Setting Module” icon



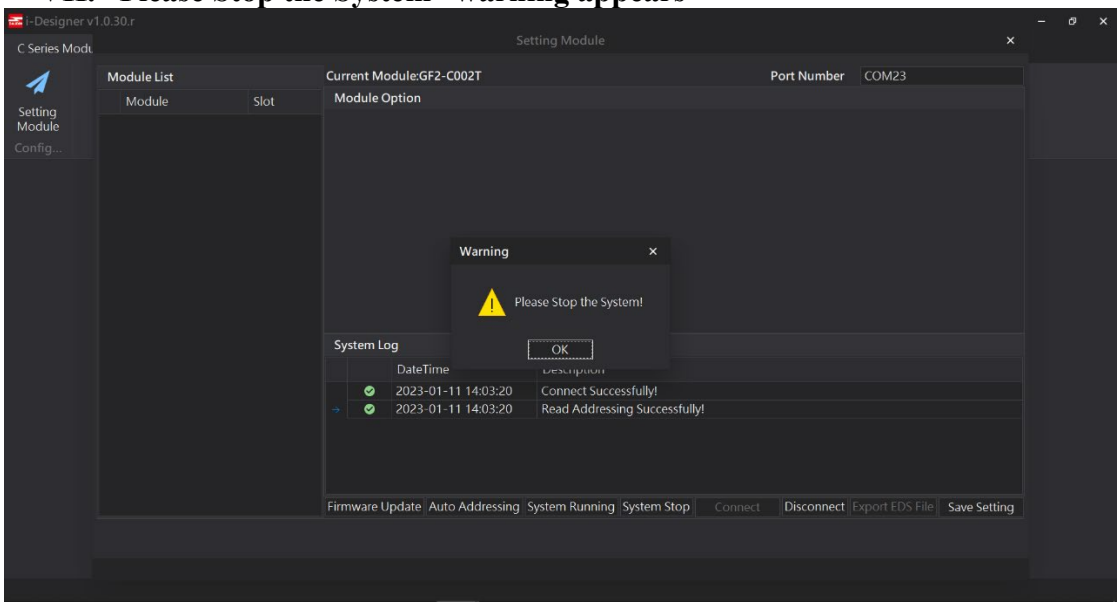
V. Enter the “Setting Module” page for C-series



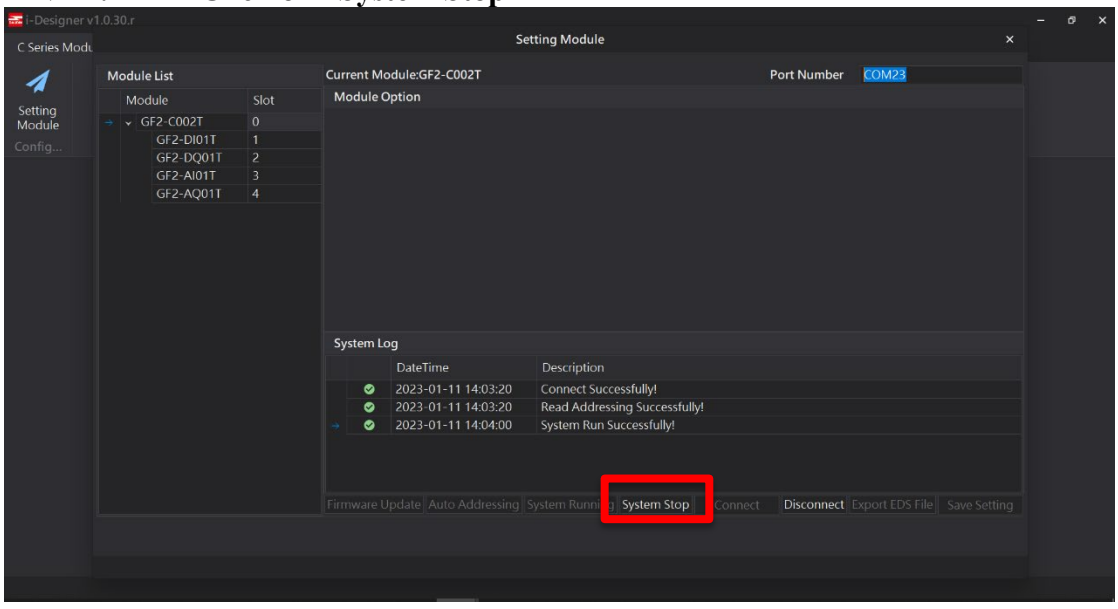
VI. Click on “Connect”



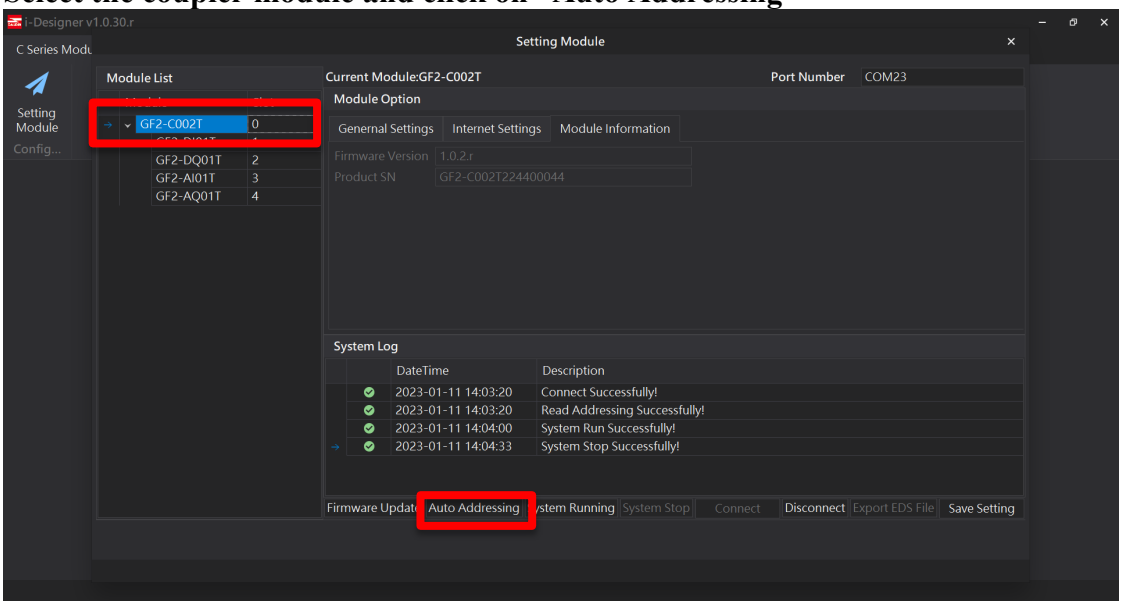
VII. “Please Stop the System” warning appears



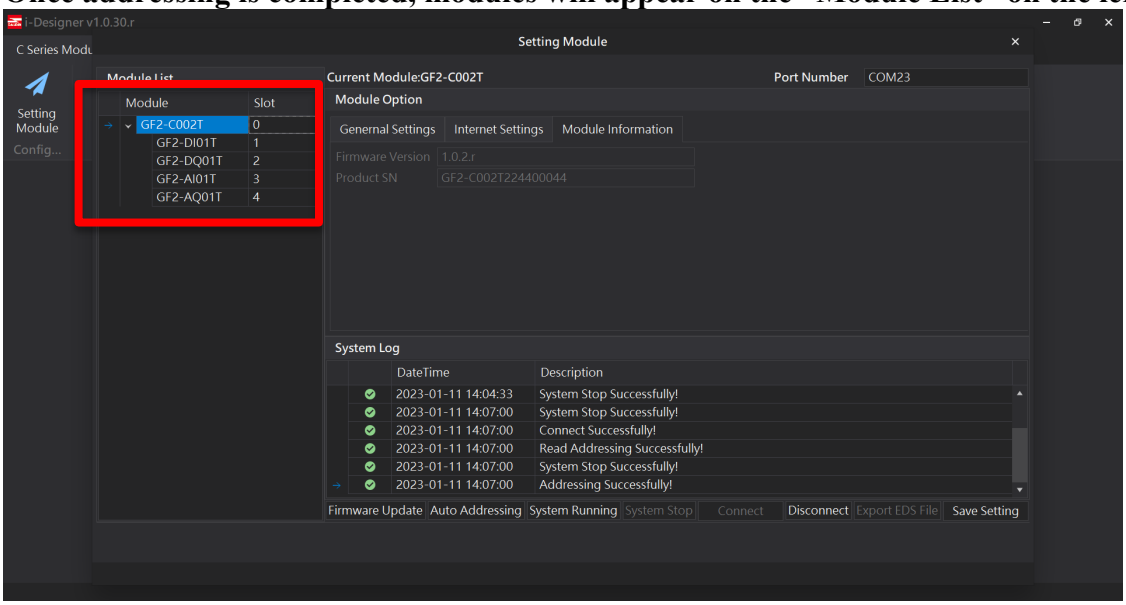
VIII. Click on “System Stop”



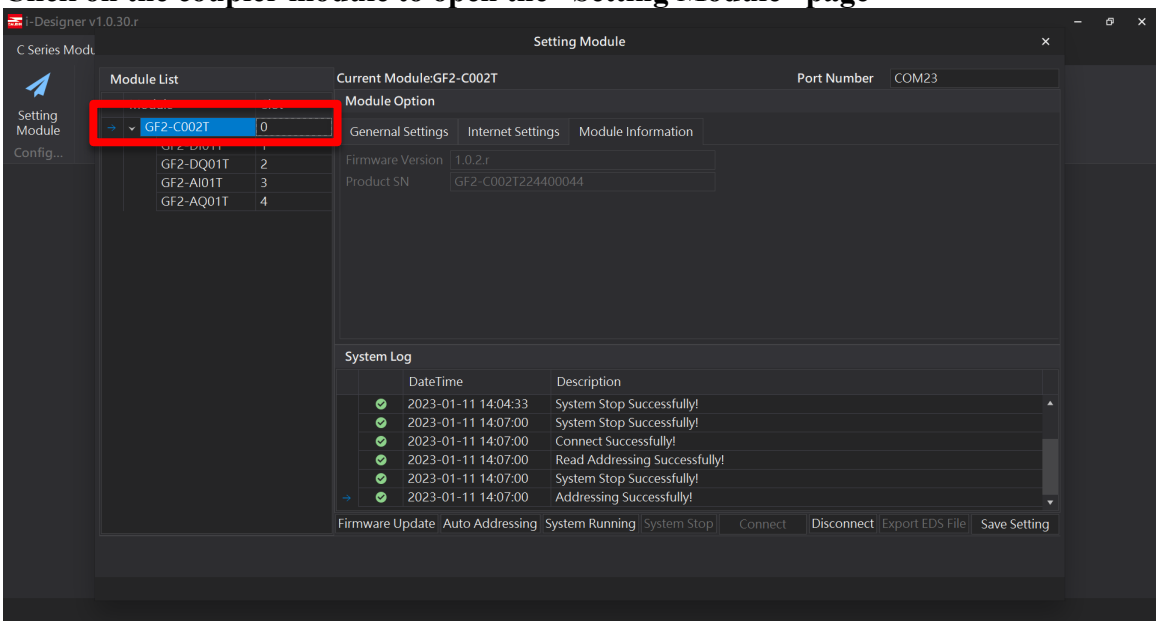
IX. Select the coupler module and click on “Auto Addressing”



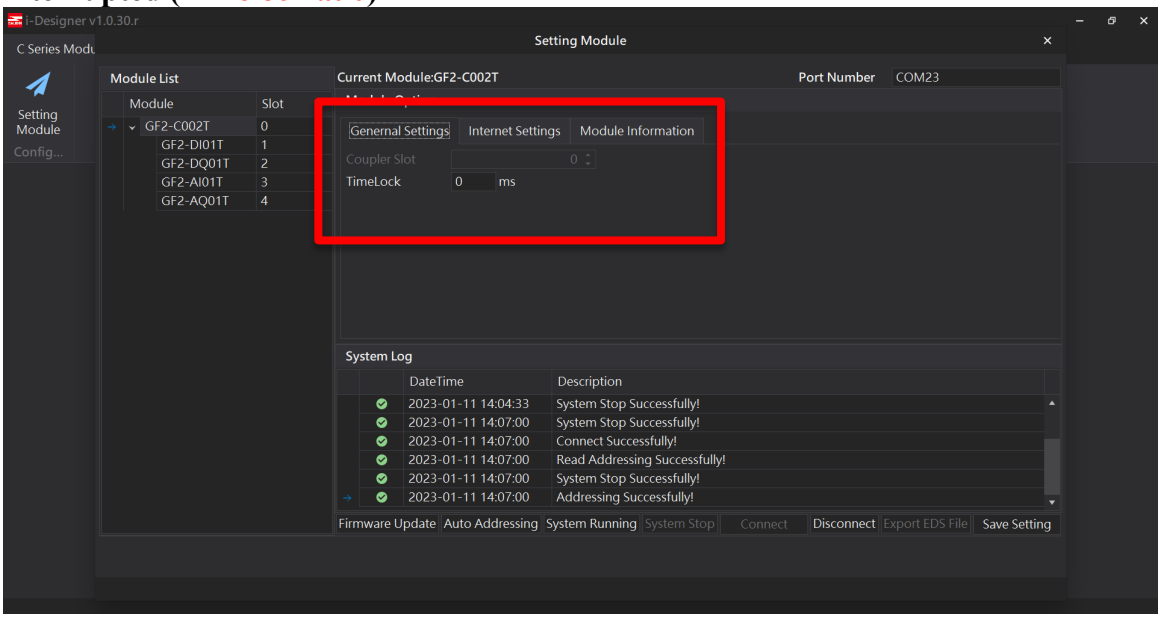
X. Once addressing is completed, modules will appear on the “Module List” on the left



XI. Click on the coupler module to open the “Setting Module” page



XII. Type in the device name and if transmission should continue once connection is interrupted (Timelock at 0)

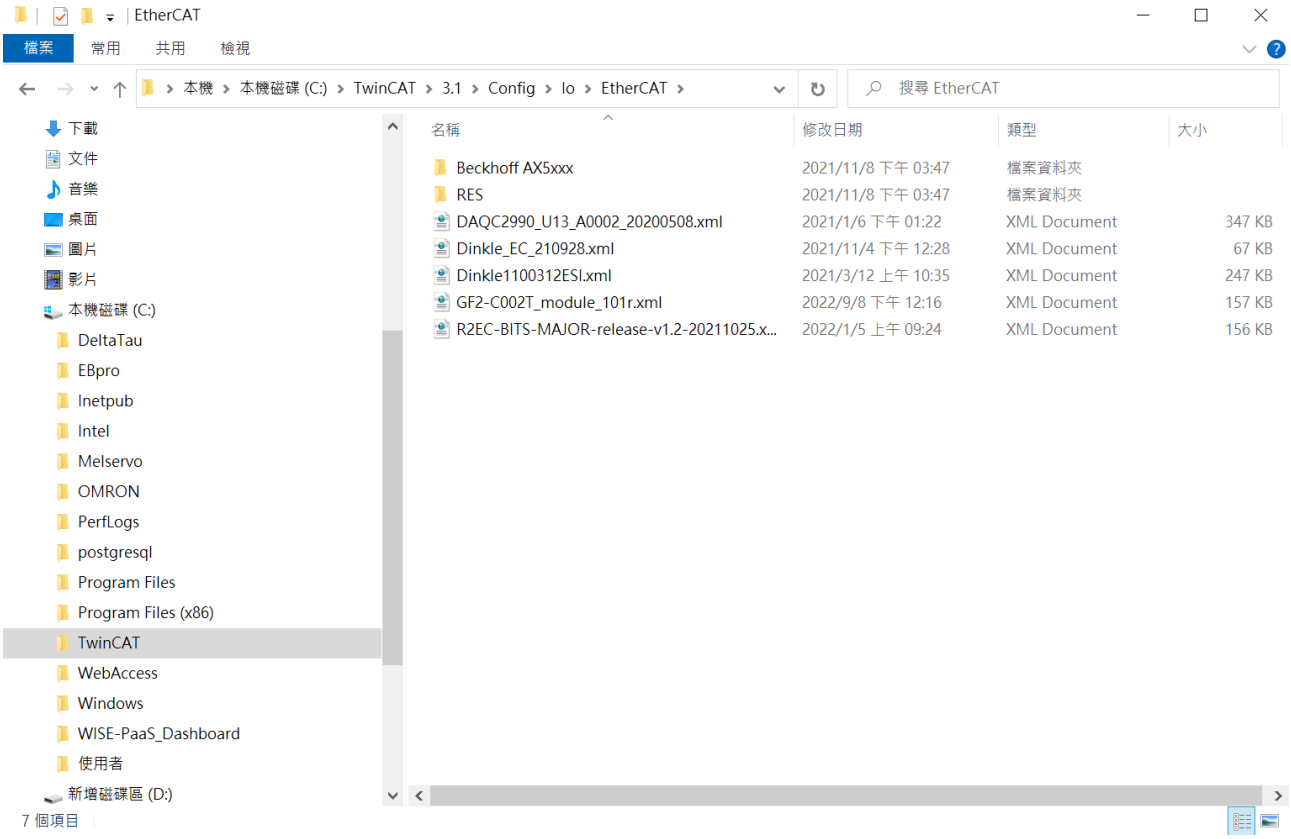


3. Beginner's Guide to Different Brands' Software

3.1 Beginner's guide to io-Grid using TwinCAT program

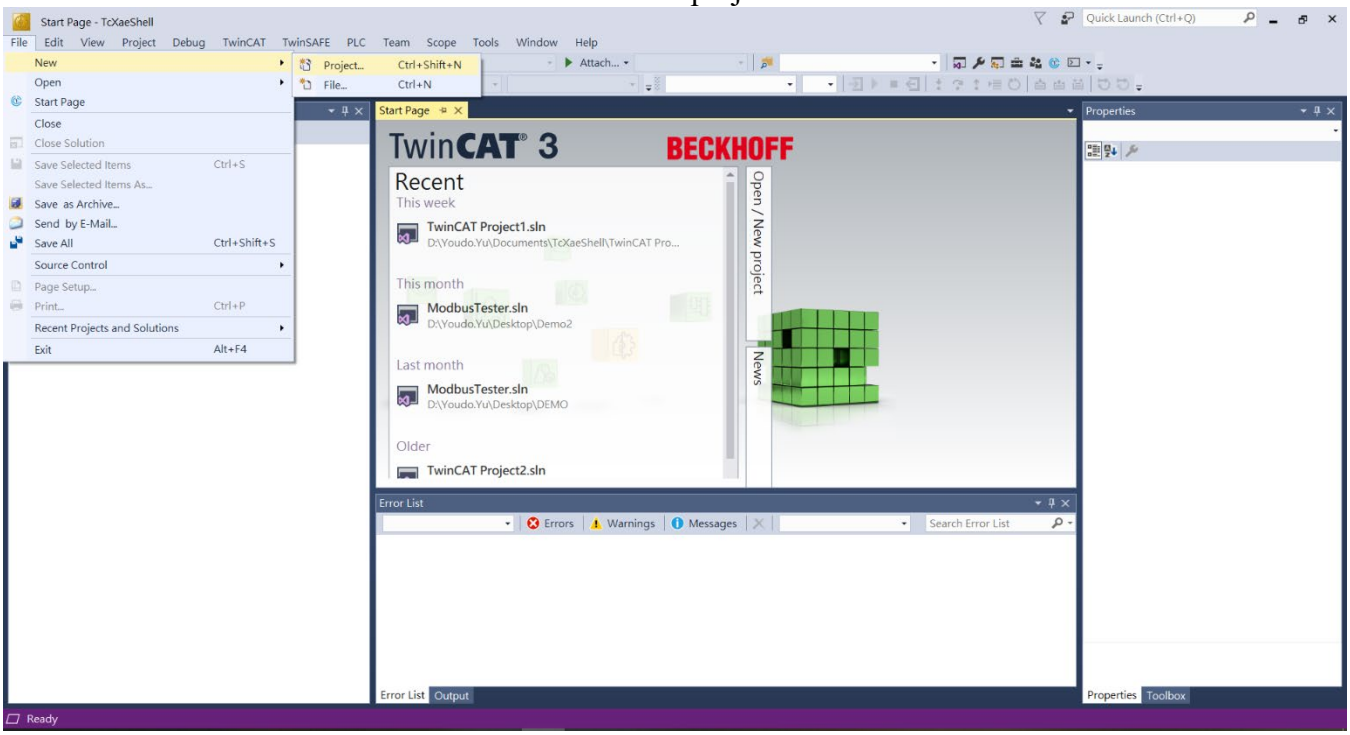
I. Install XML

Move the XML file (such as "GF2-C002T_module_101r.xml") to the installation folder of TwinCAT ("C:\TwinCAT\3.1\Config\Io\EtherCAT") as the illustration below:

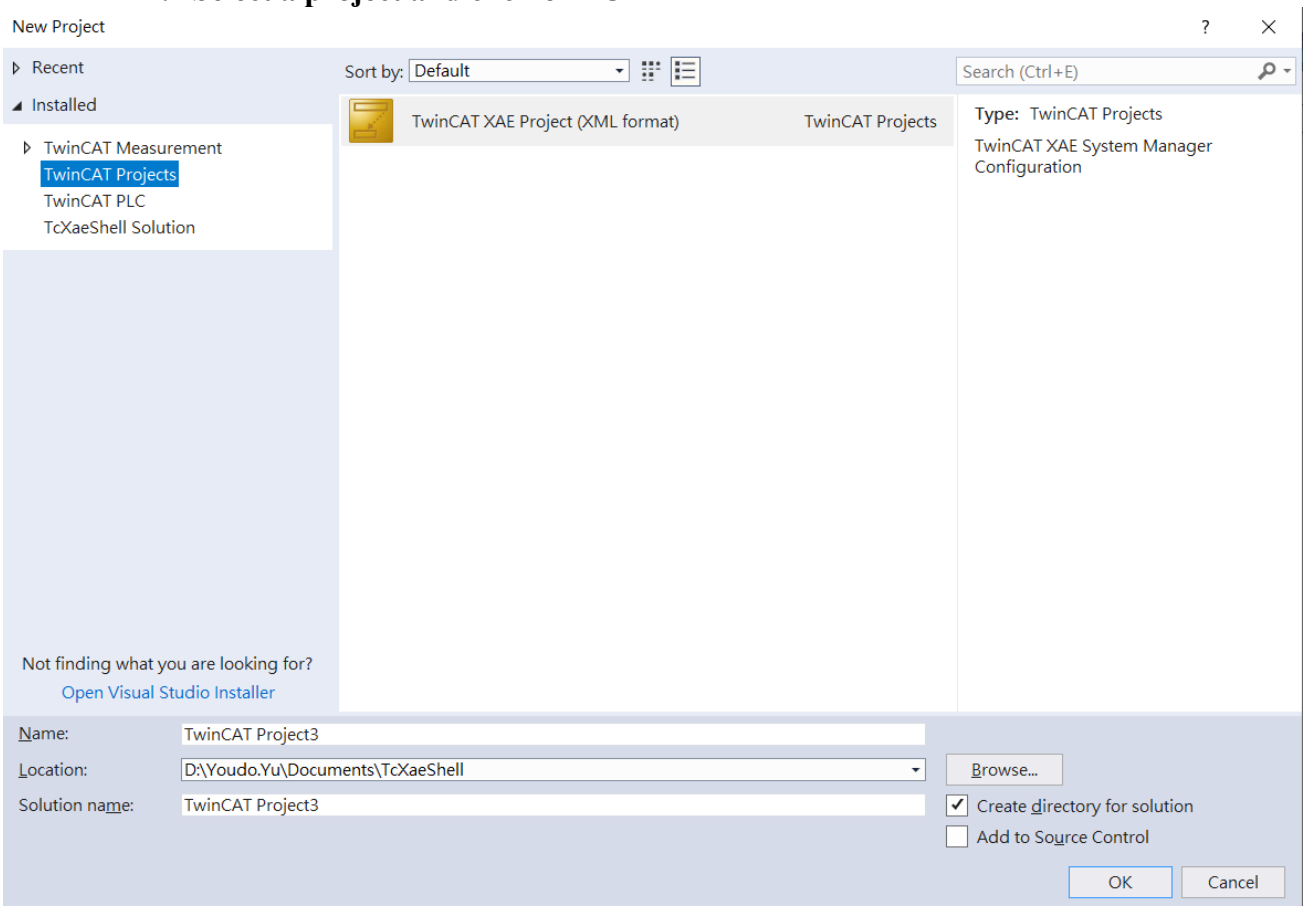


II. Create a New Project

Click on the “File” tab to create a new project

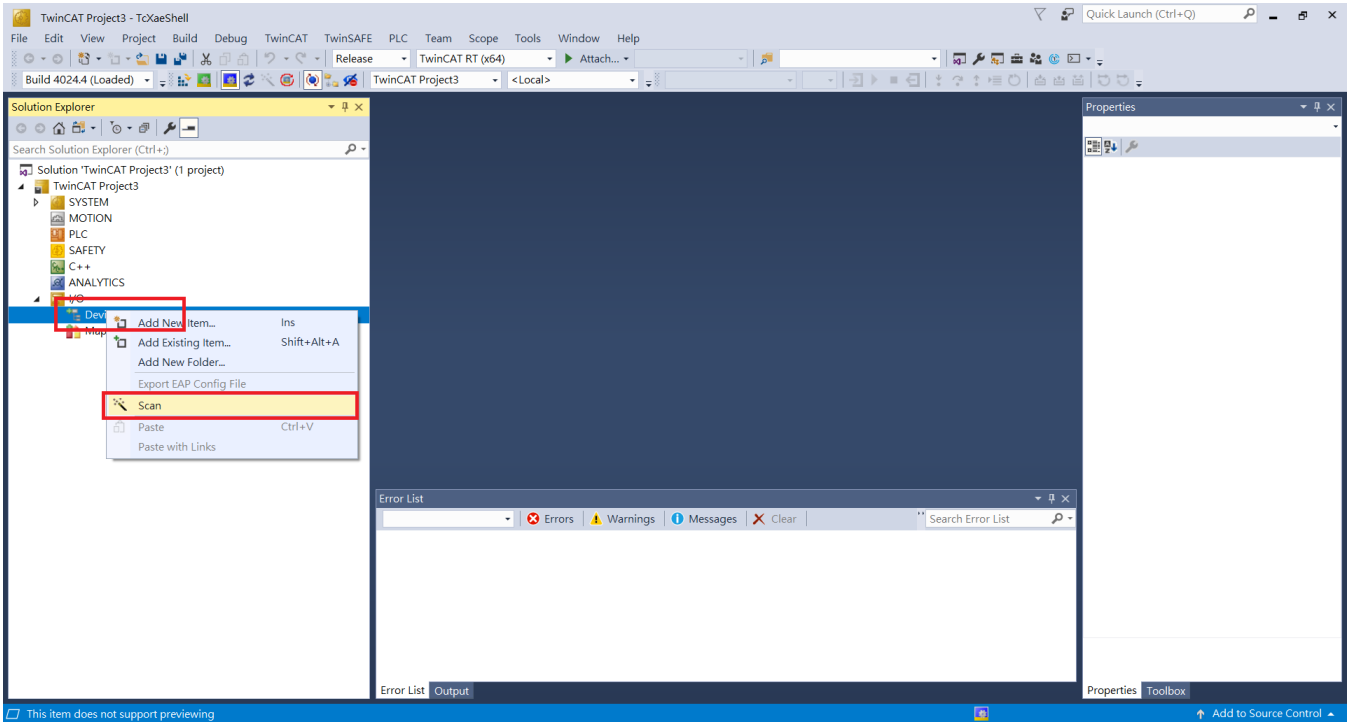


III. Select a project and click on “OK”

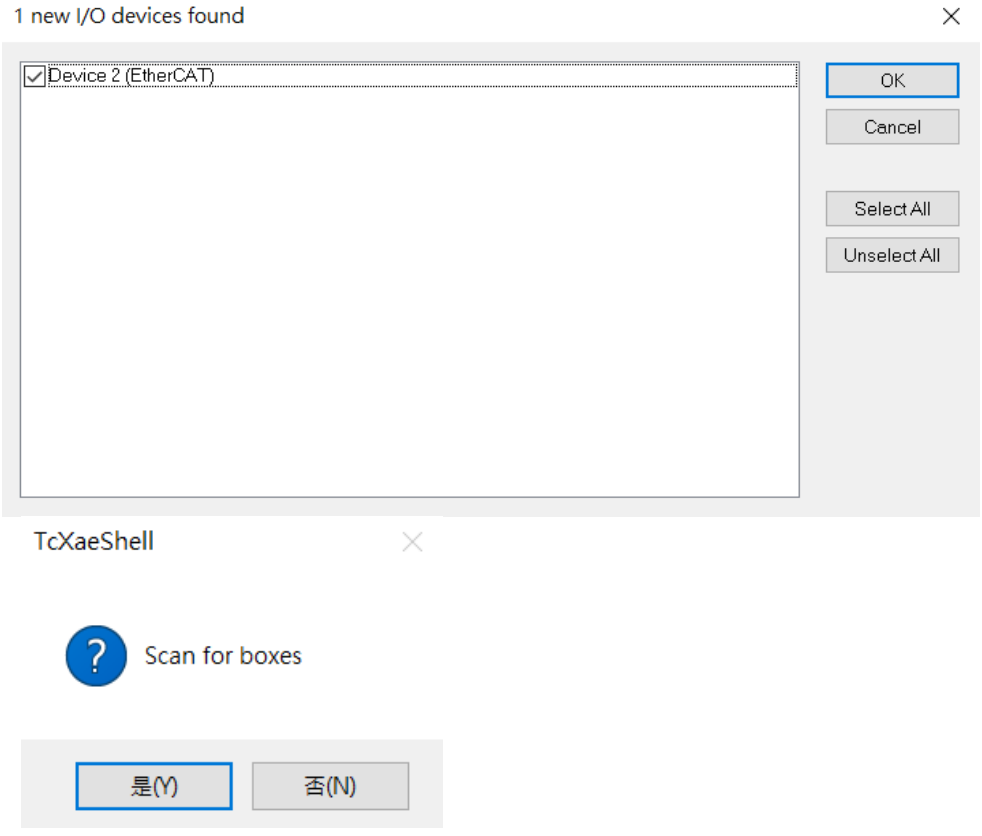


IV. Device Scan

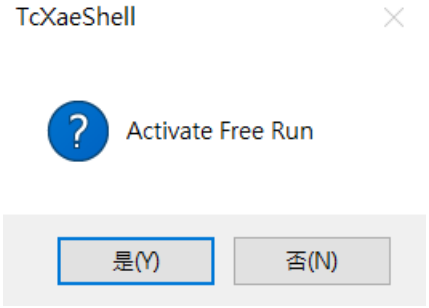
Open the “I/O Options” under the project interface, right-click on “Devices” and click on “Scan” to scan connected devices



V. Click on the device and then click on “YES”

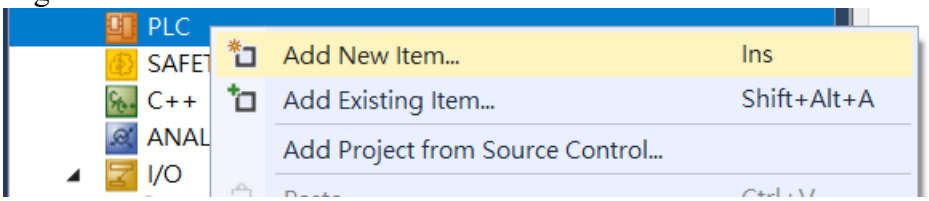


VI. “Activate Free Run” message appears, click on “Yes”

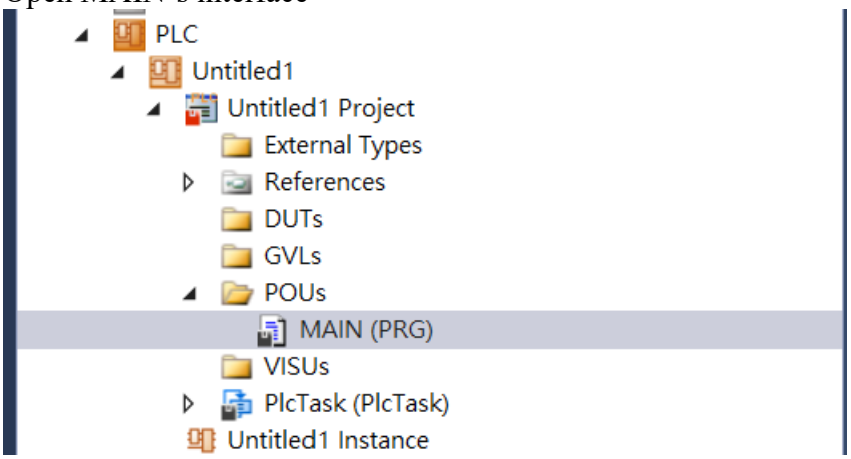


VII. Add Global Variables

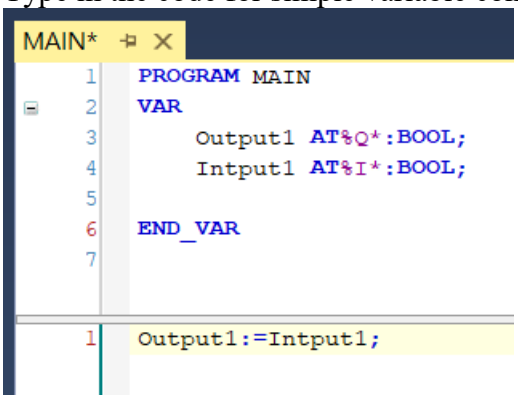
Right-click on PLC and select "Add New Item”



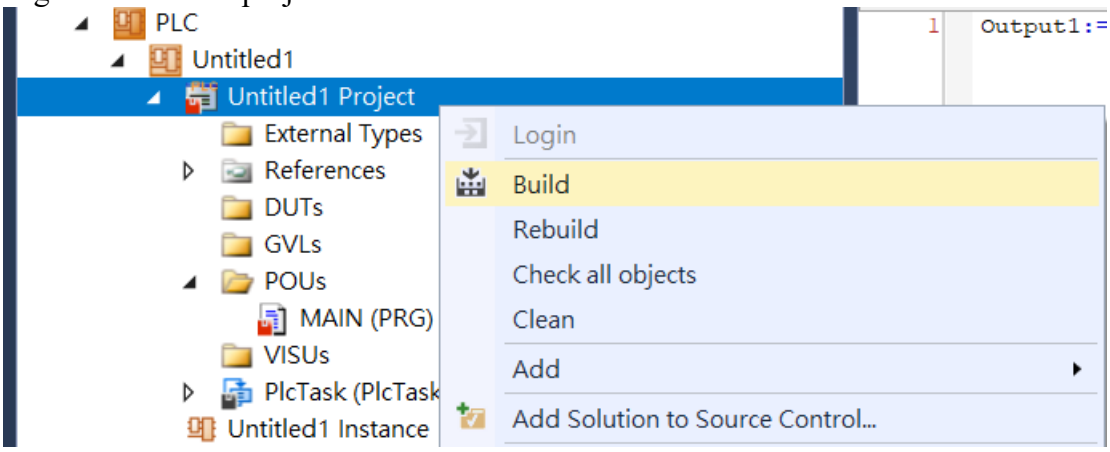
Open MAIN’s interface



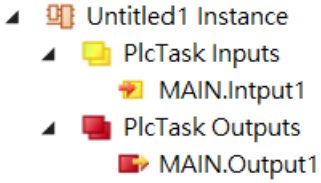
Type in the code for simple variable conversion with input and output specified



Right-click on the project and select “Build”

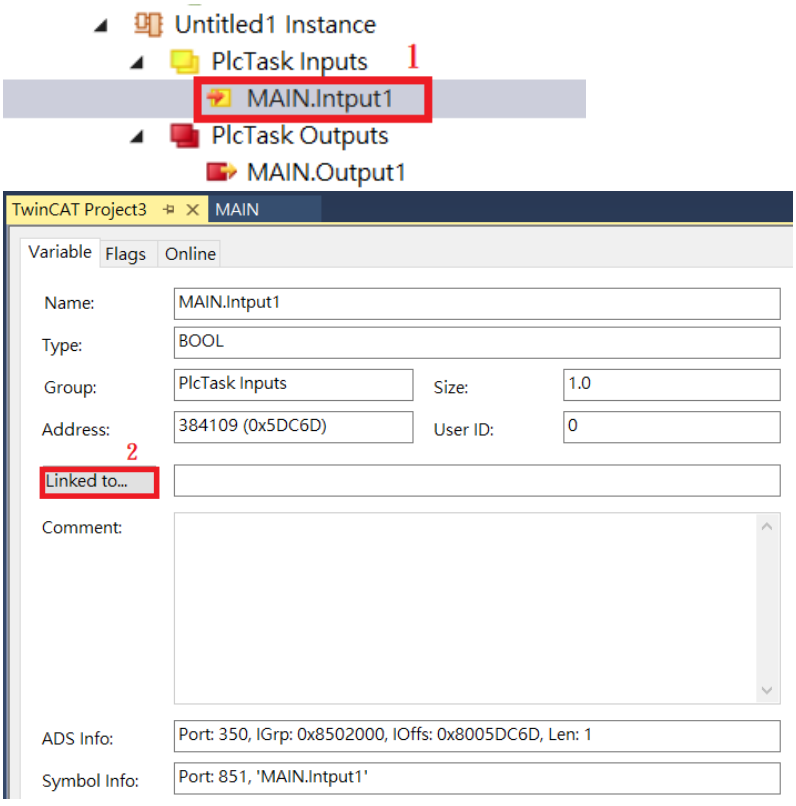


If there is no errors, the system will show that it has been built. Now, you can click on the instance to expand the variable input and output

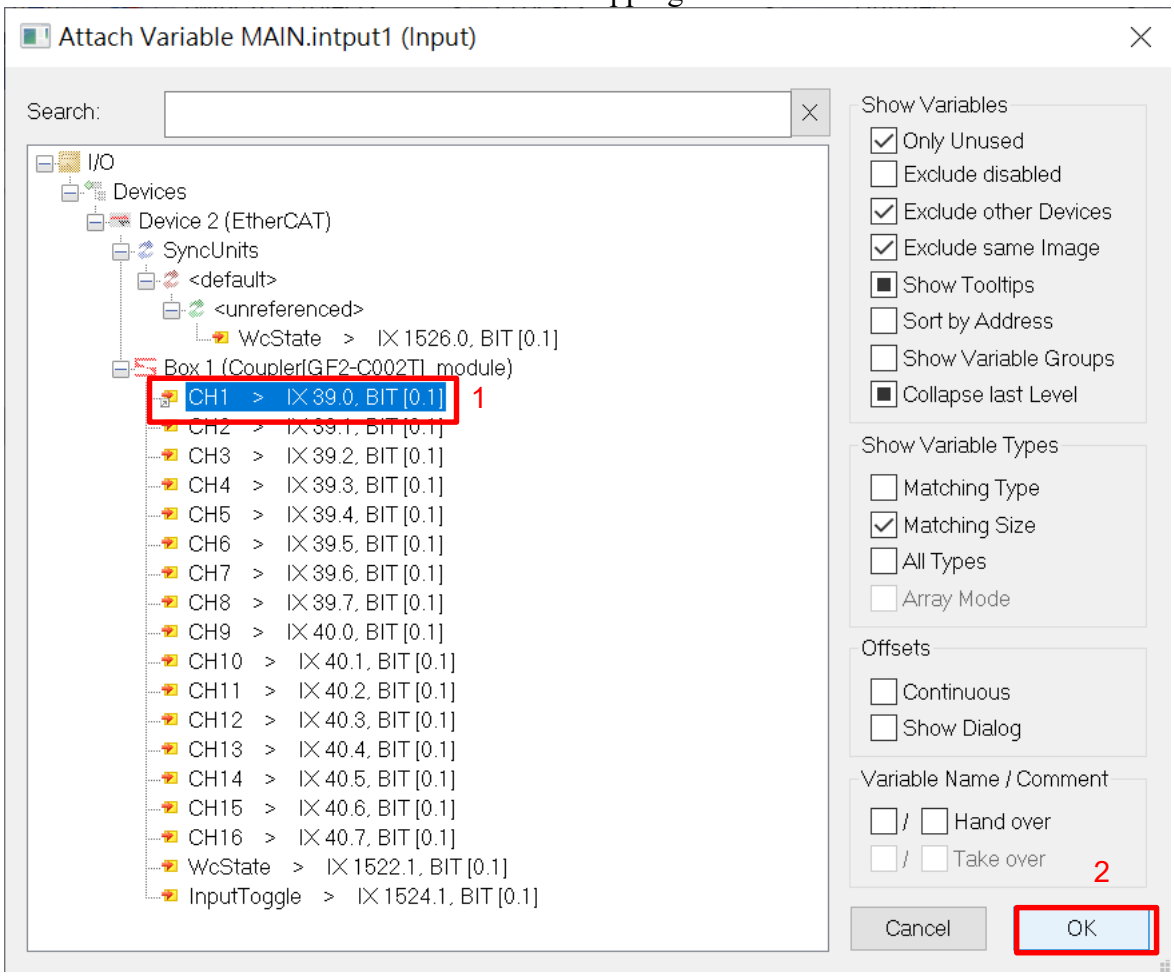


VIII. Channel Mapping

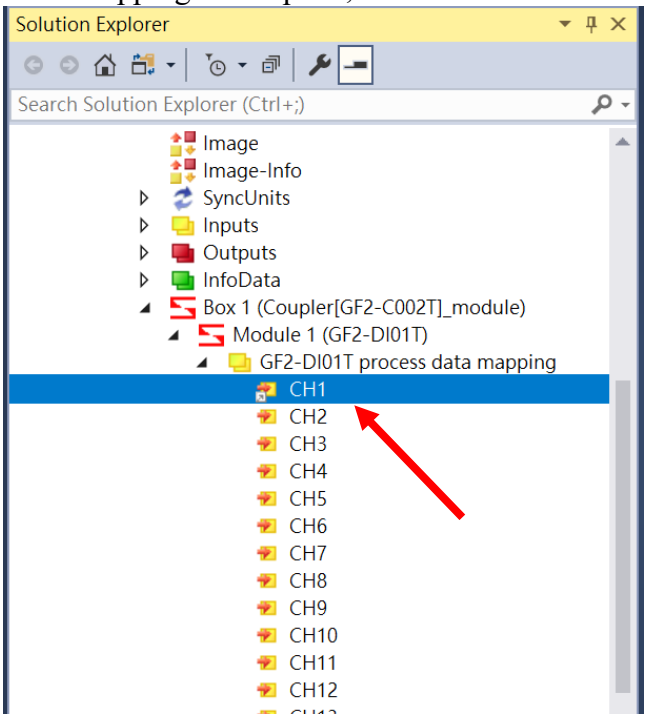
Double-click to expand the variables. Now, you can conduct channel mapping in the interface



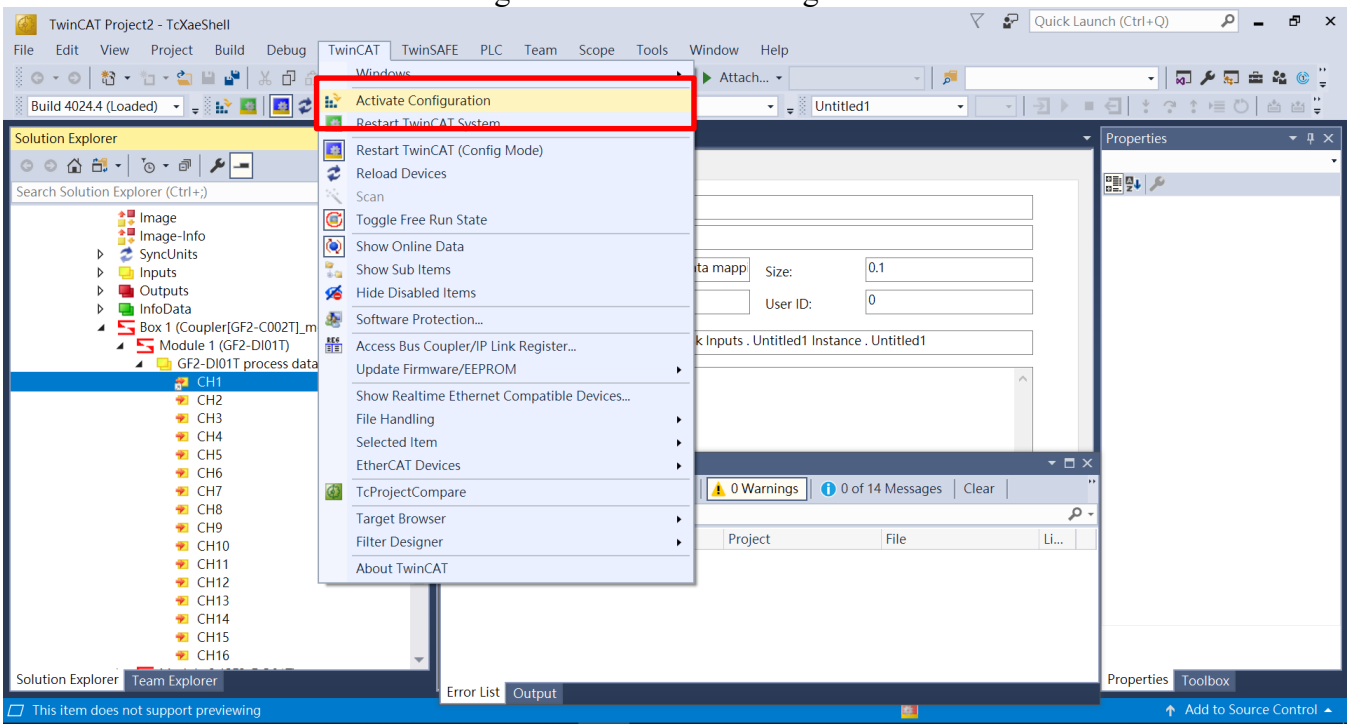
Click on “Linked to...” to enter the mapping interface to choose the channels



Once mapping is complete, there will be a small icons before the linked channels



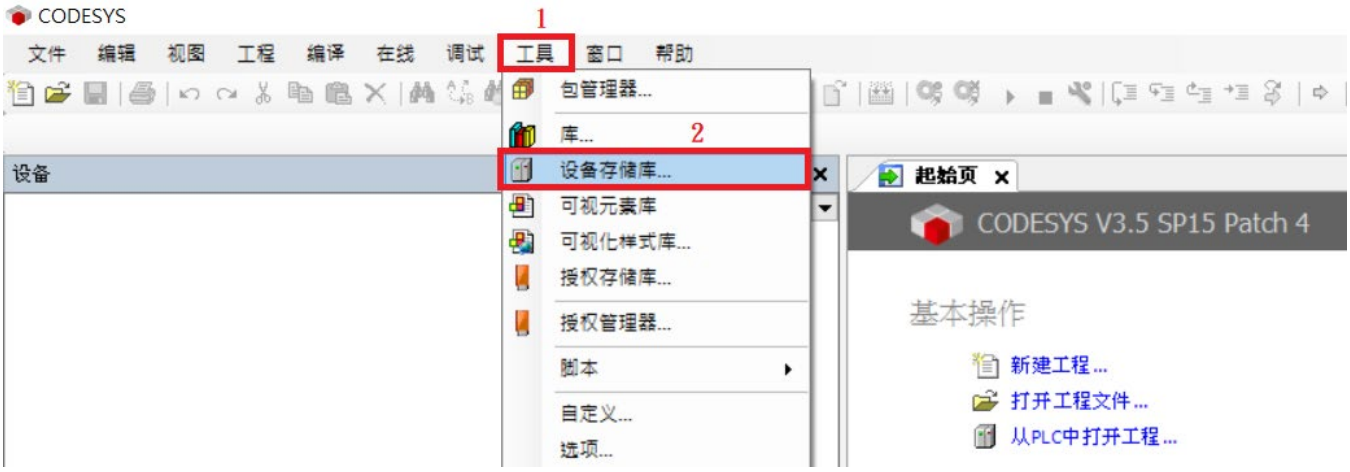
Click on ”Activate Configuration” to start running the modules



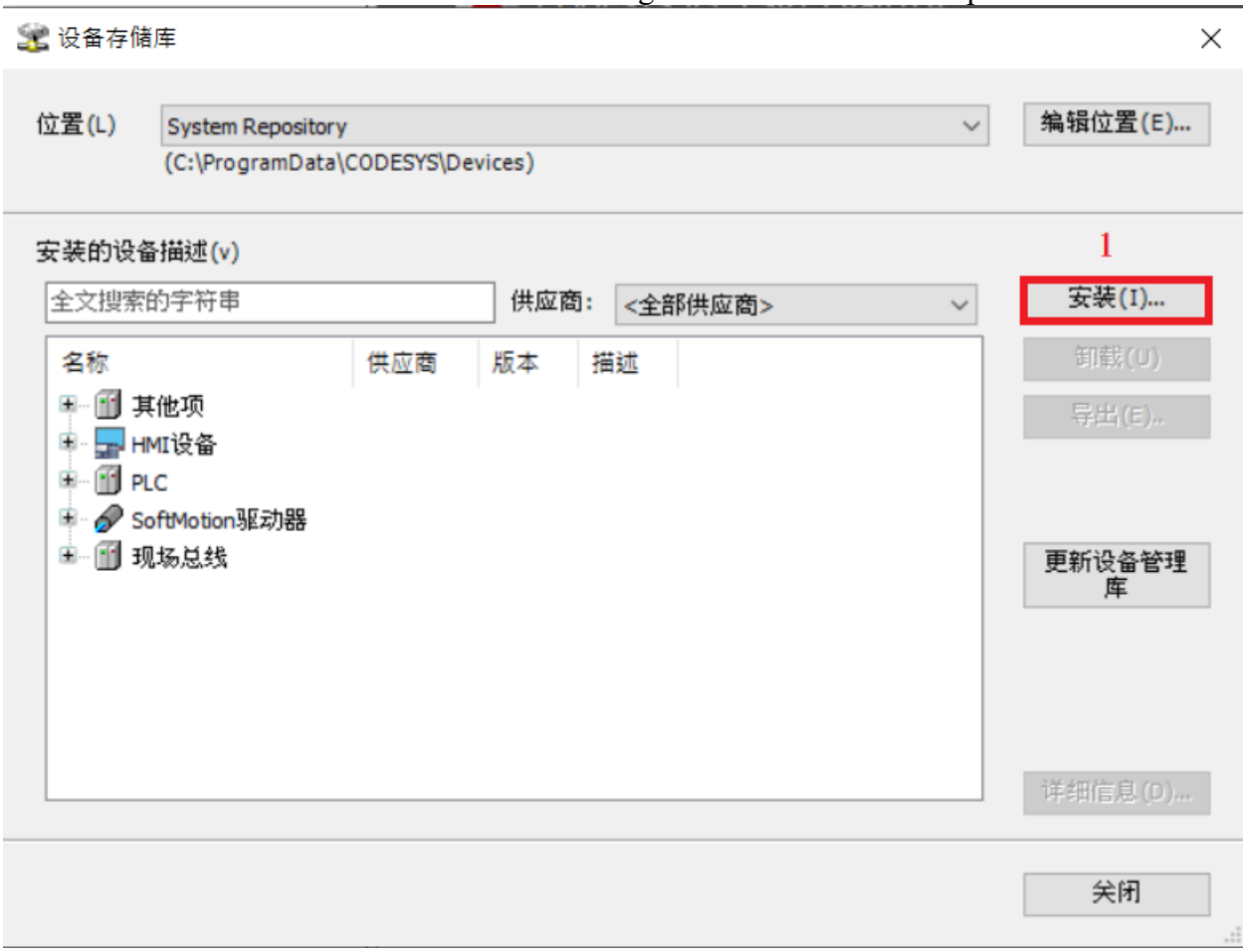
3.2 Beginner's guide to iO-Grid C using Codesys program

I. Install XML

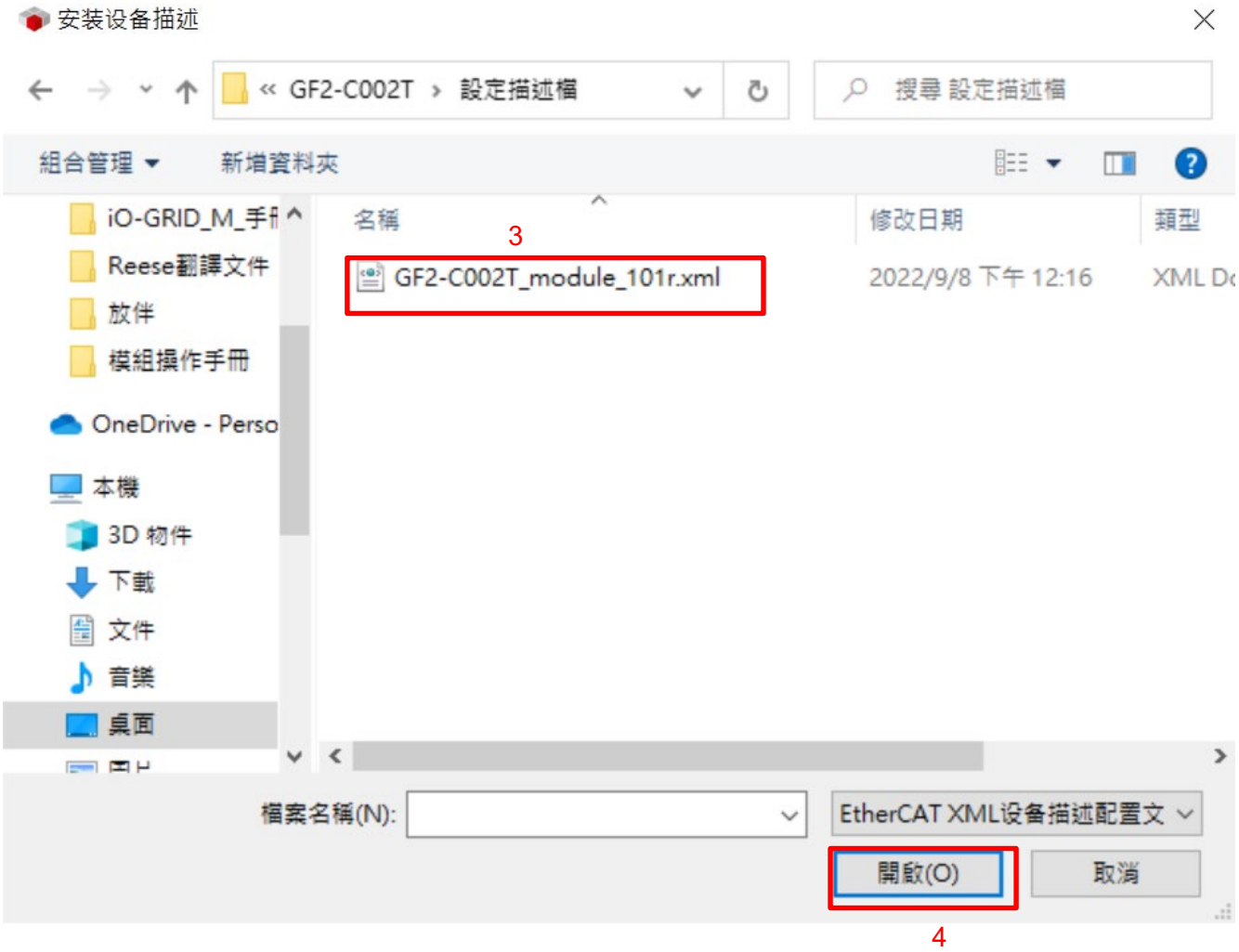
Launch Codesys and select the device library under "Tools"



Click on "Install" and choose the path for the XML file. For document type, please select "EtherCAT XML Device Configuration" and click on "Open"

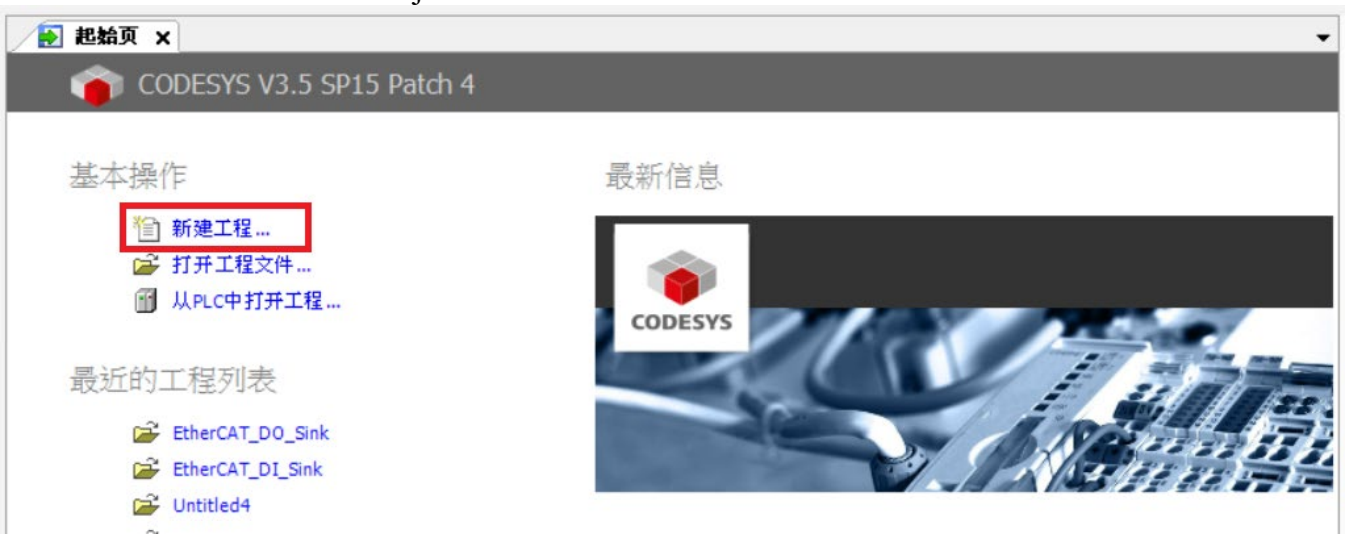


If a message appears indicating that the device has been installed successfully, this means the XML has been installed successfully

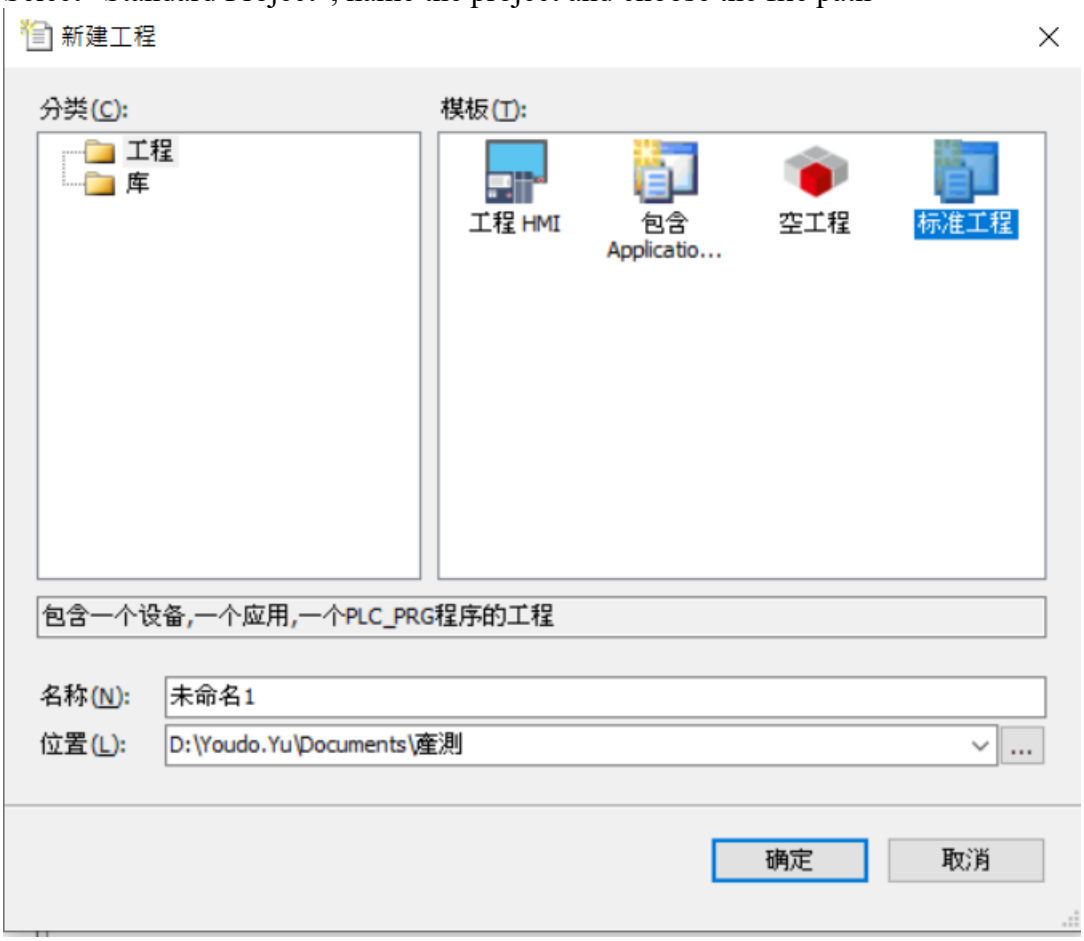


II. Create a New Project

Click on “New Project"



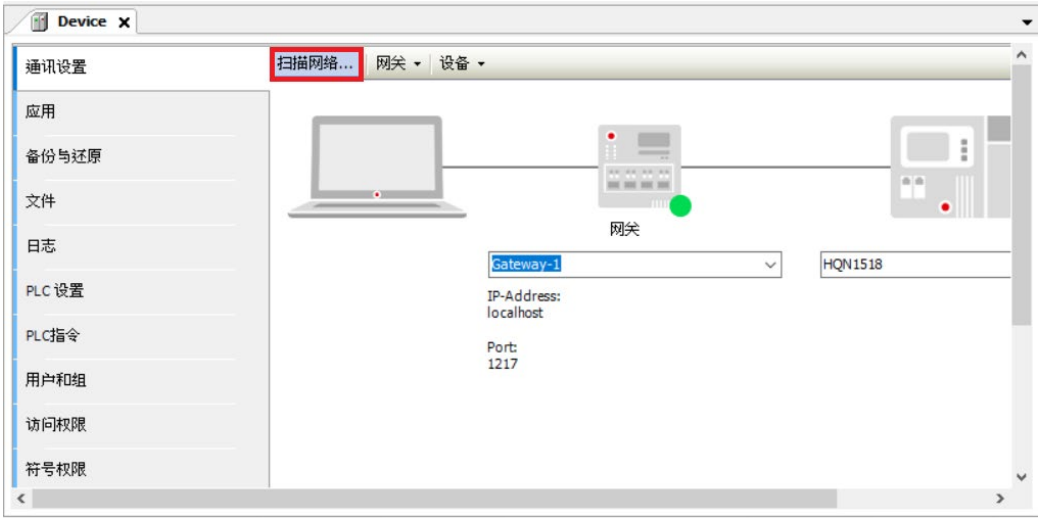
Select “Standard Project”, name the project and choose the file path



Choose the client’s device and programming language

Double-click on the device

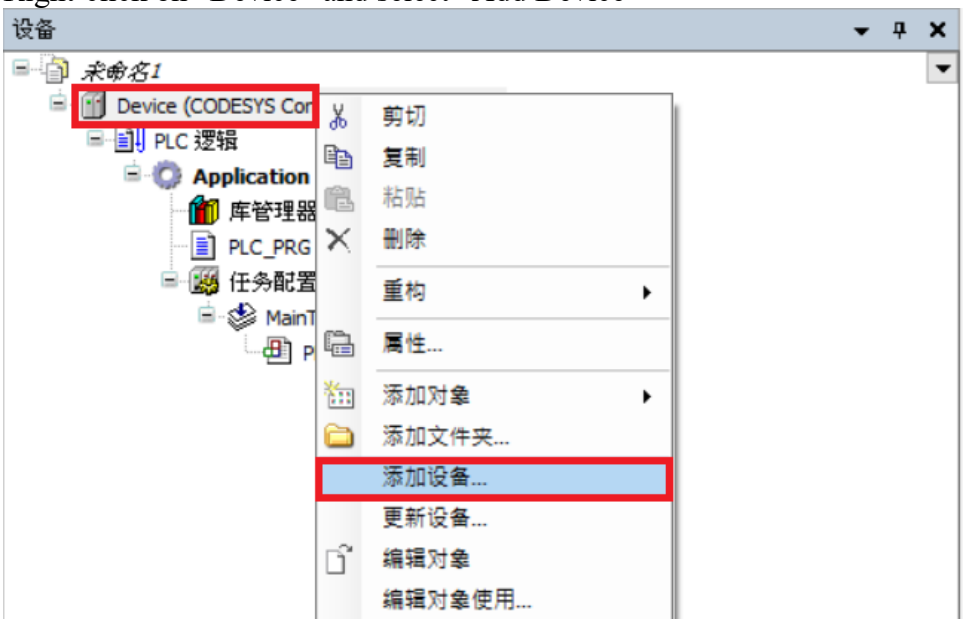
Select “Communication Settings” and then “Scan Networks”



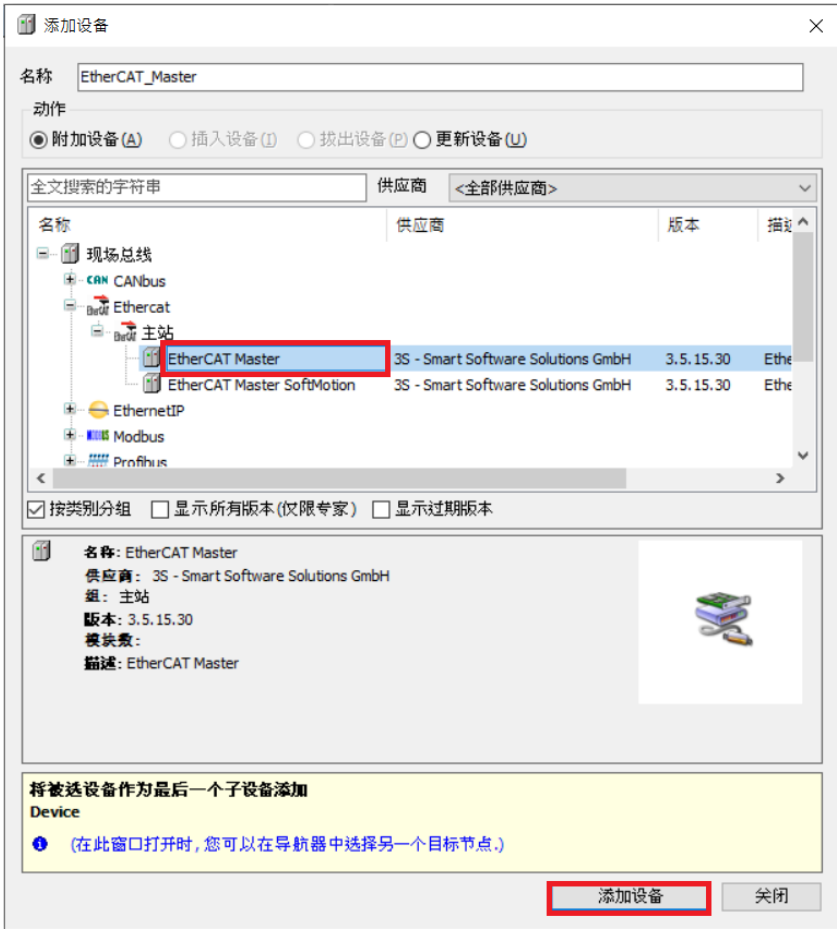
Select the device and then click on “YES”

III. Add an EtherCAT Device

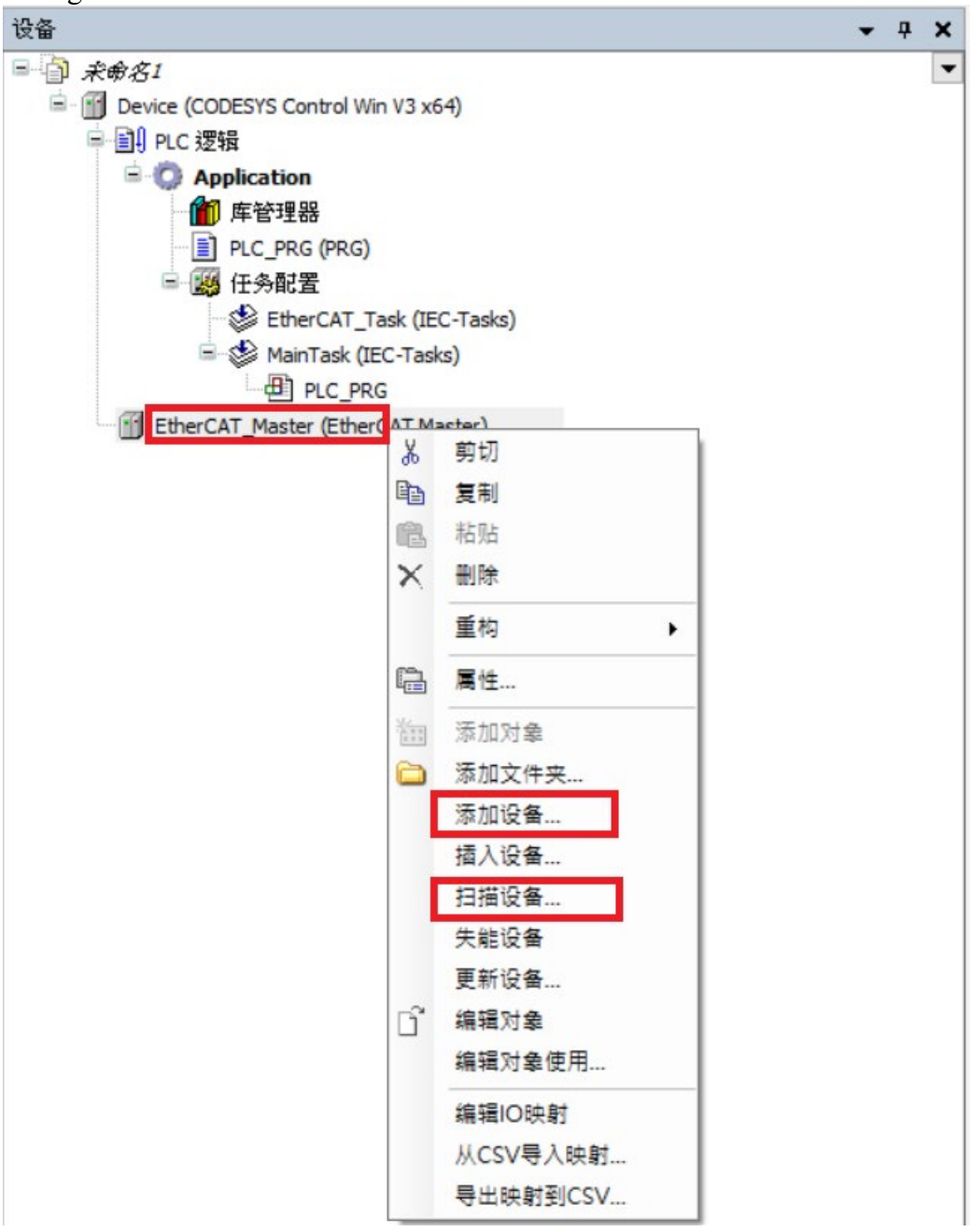
Right-click on “Device” and select “Add Device”



From the “Add Device” window, select “EtherCAT Master” and click on it to add ad device

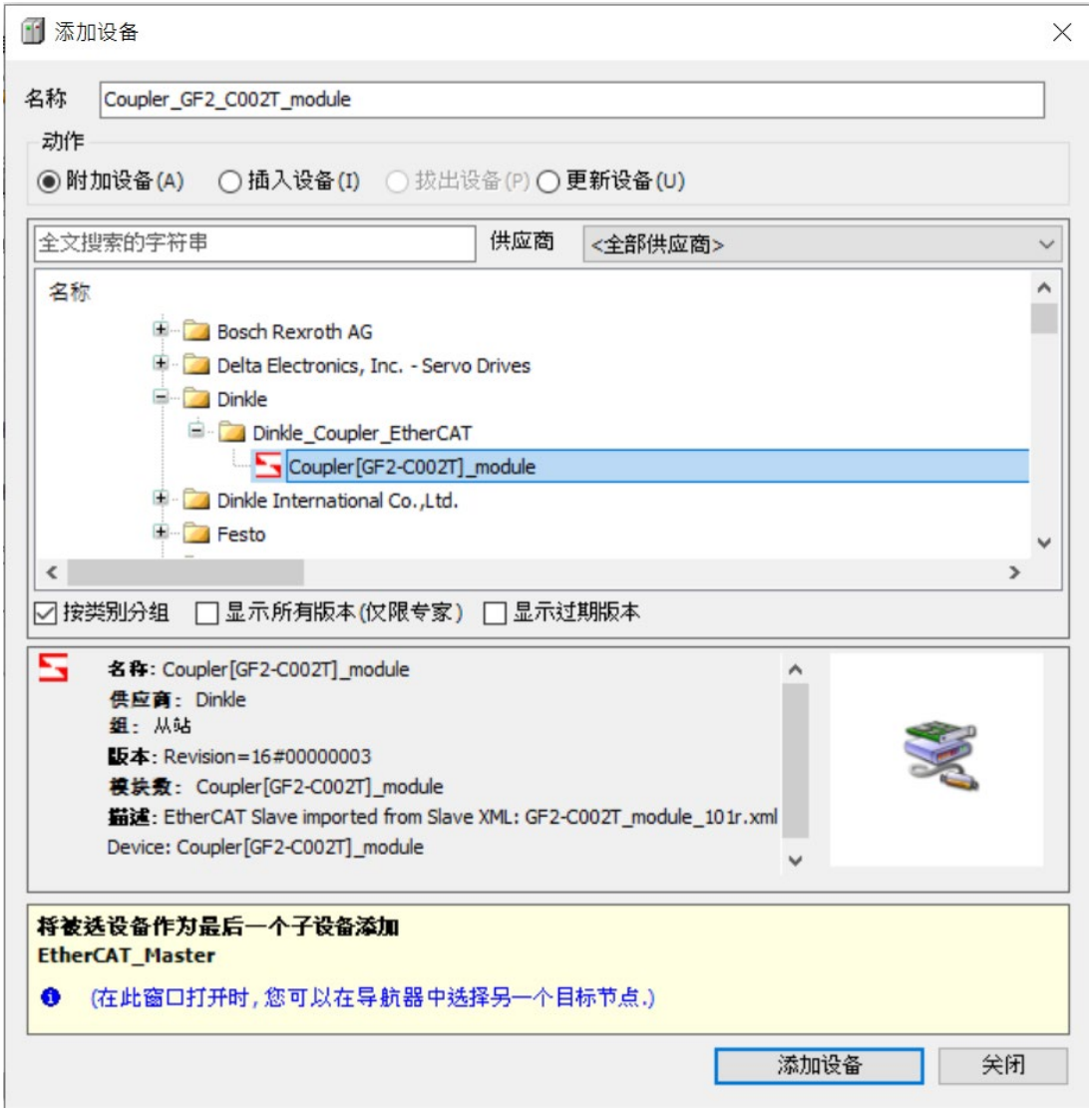


Right-click on “EtherCAT Master”, select “Add Device” or “Scan Device” for device configuration

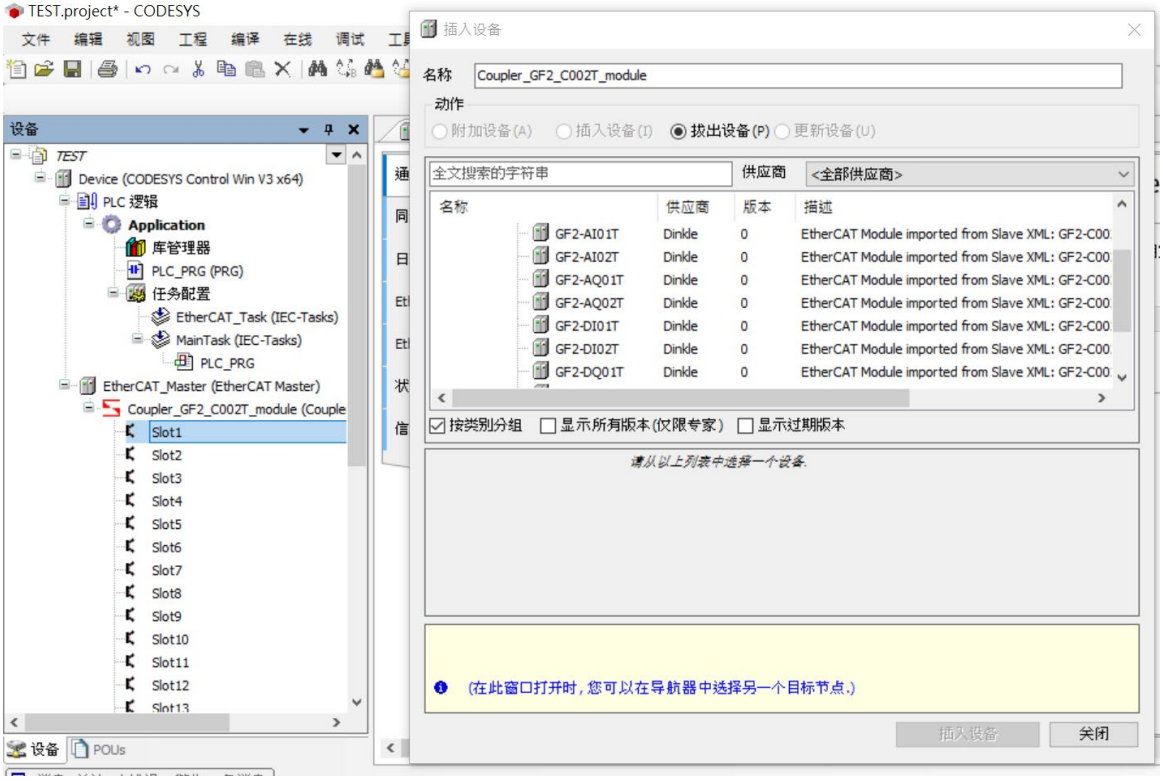


IV. How to Add a Module Manually

After clicking on “Add Device”, select the needed io-Grid C module in the window and then click on “Add Device”

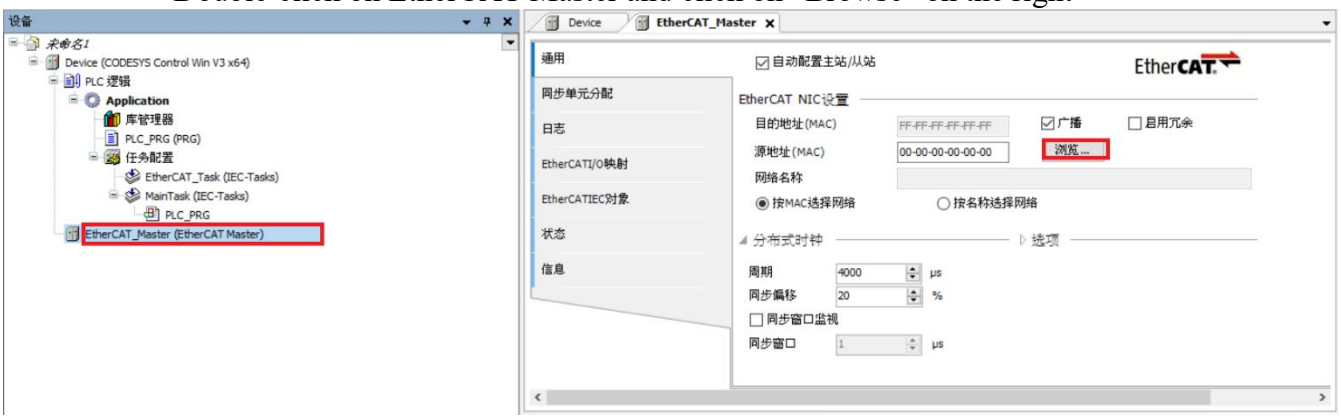


After clicking on “Add Device”, click on the row of slots and select the needed iO-Grid I/O module in the window and then click on “Add Device”
(Must be the same as the UI)



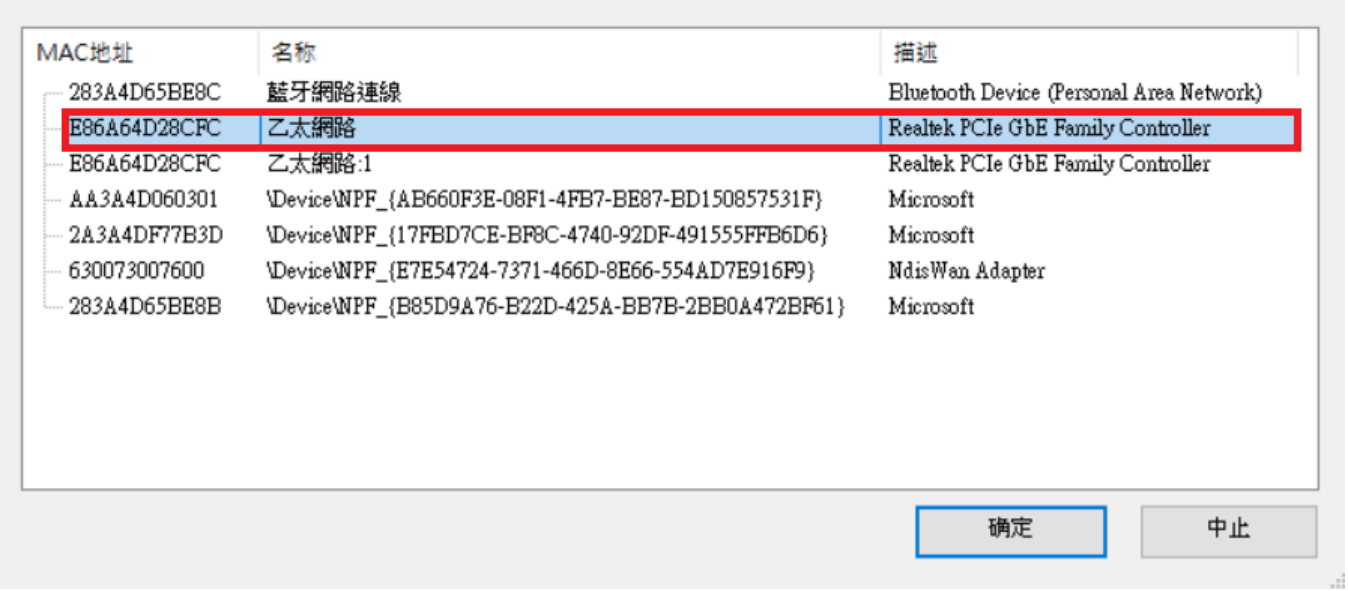
V. How to Scan and Add a Module

Double-click on EtherCAT Master and click on “Browse” on the right

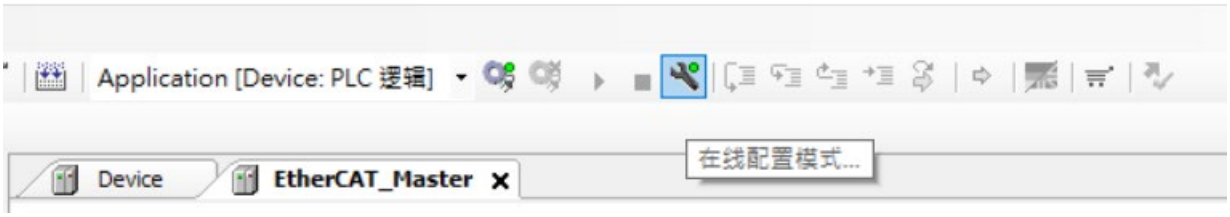


Select the network interface card to connect

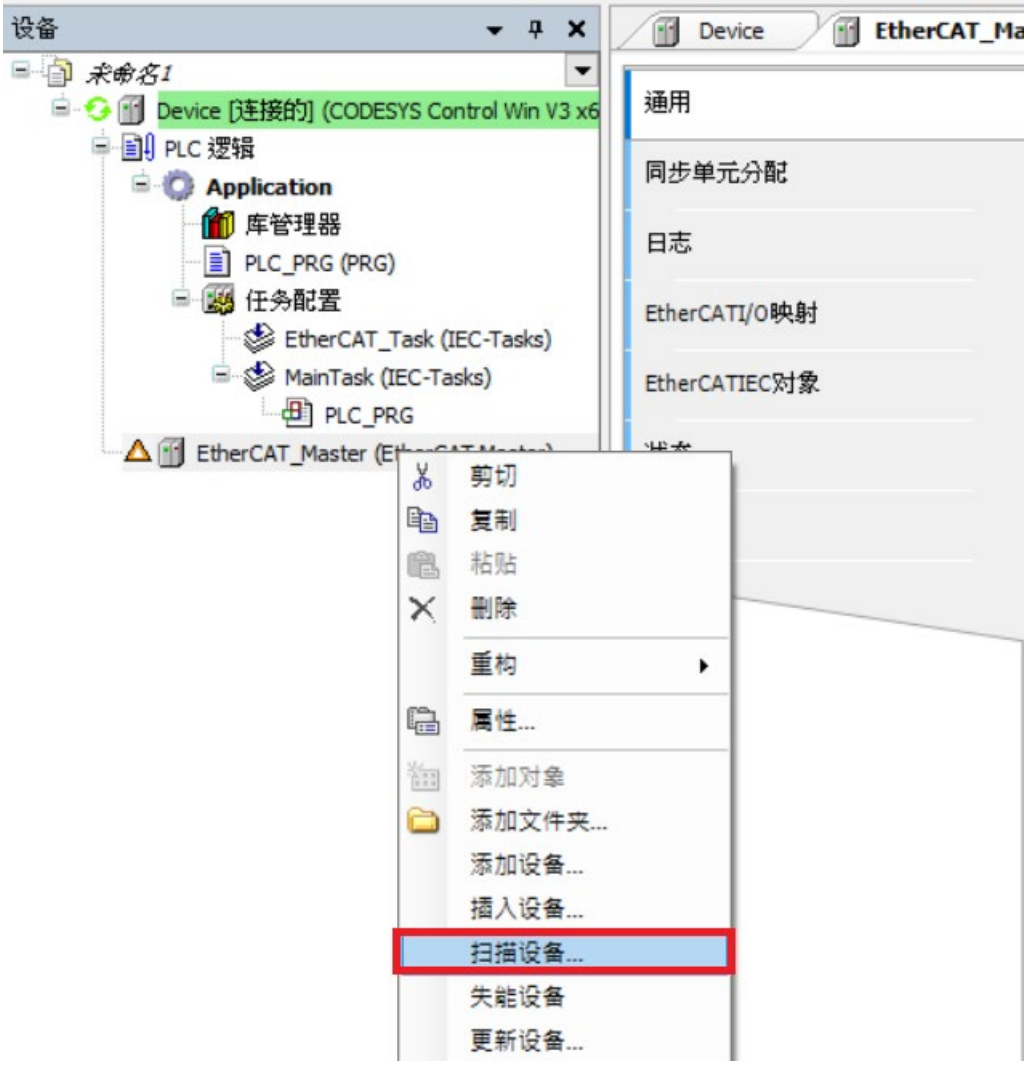
选择网络适配器



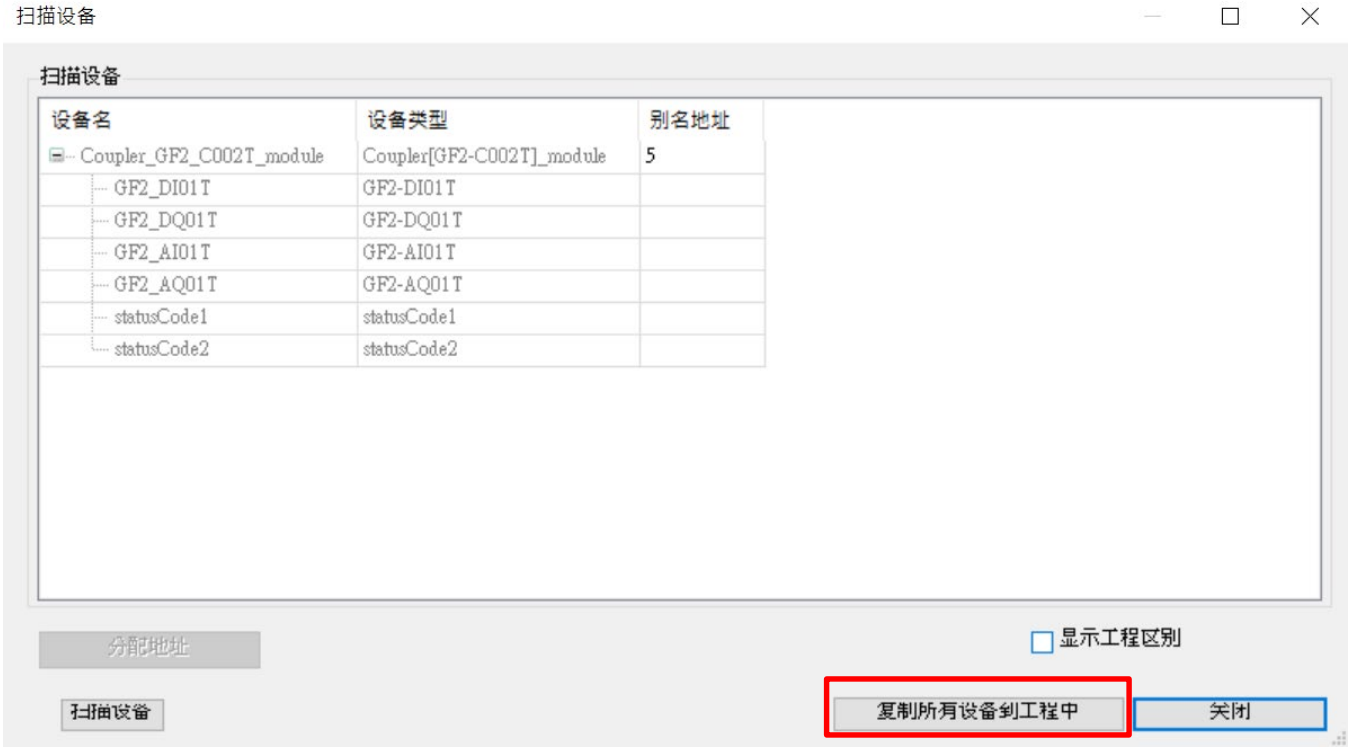
Click on “Online Configuration Mode” in the toolbar above



Right-click on EtherCAT Master and click on “Scan Devices” on the right

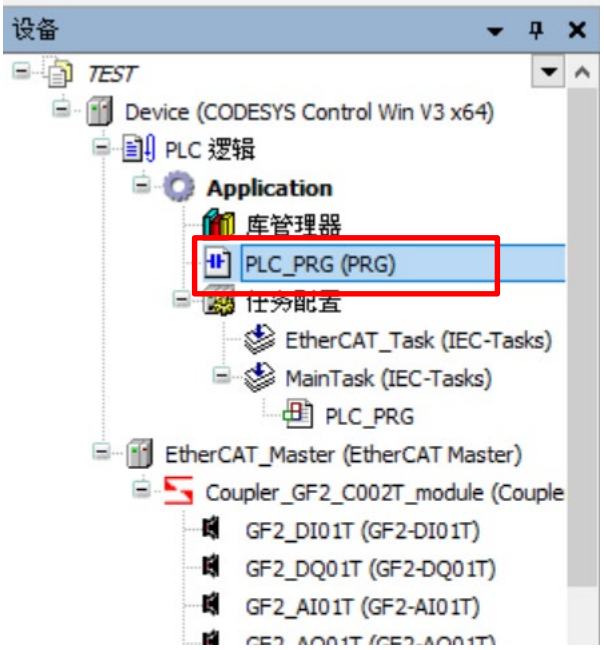


Confirm all the scanned devices and then click on “Copy All Devices to Project”

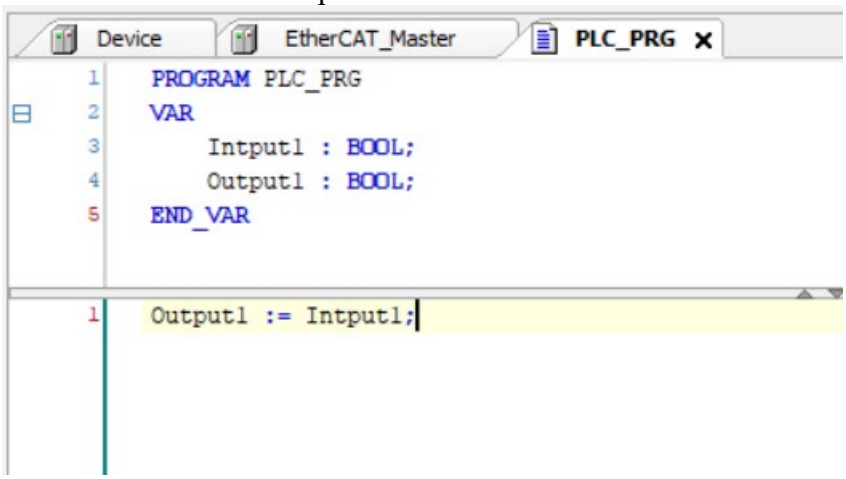


V. Simple I/O Mapping

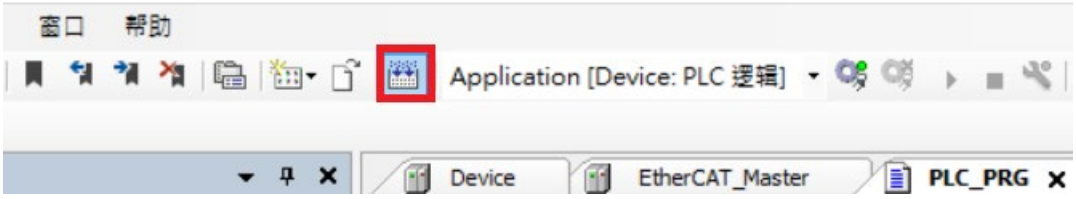
Click on “PLC_PRG” to open the program editing page



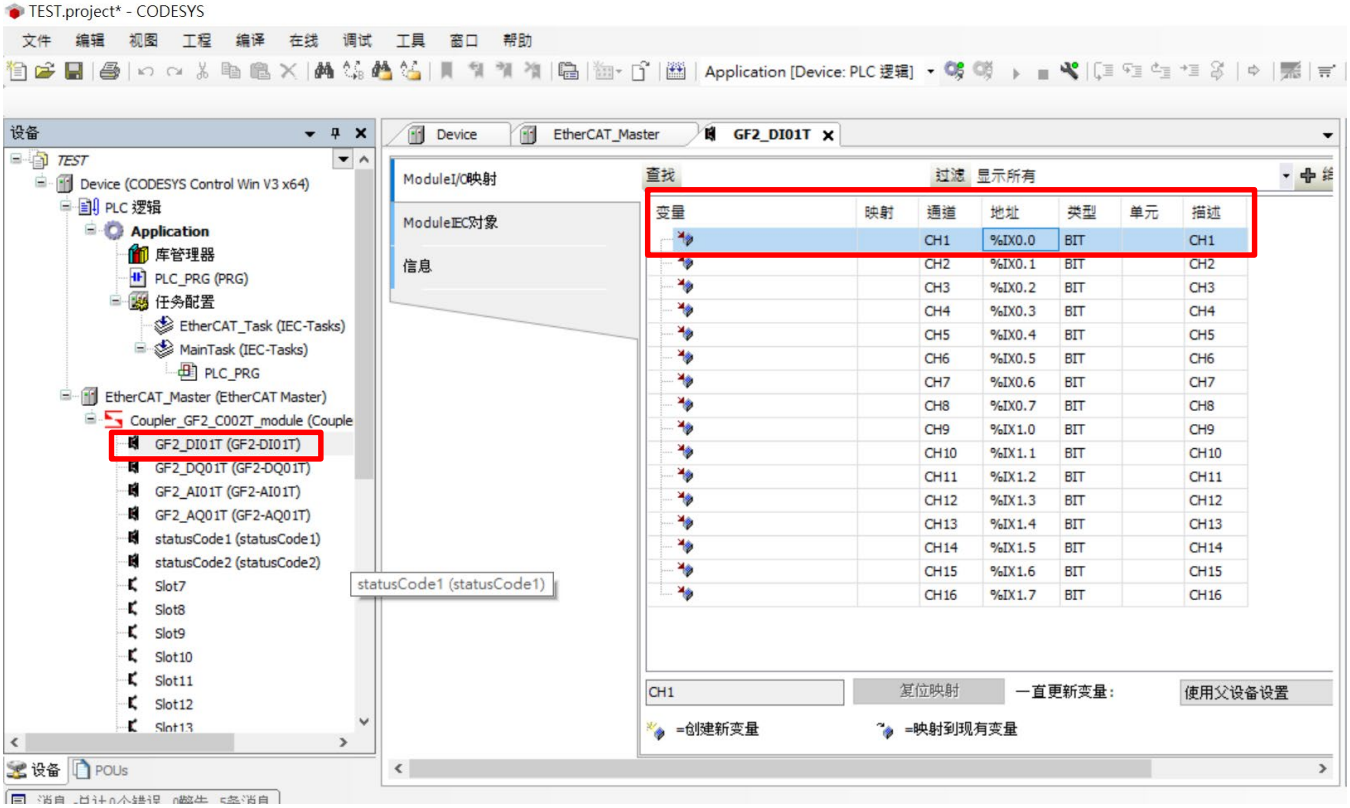
Create variables and simple codes



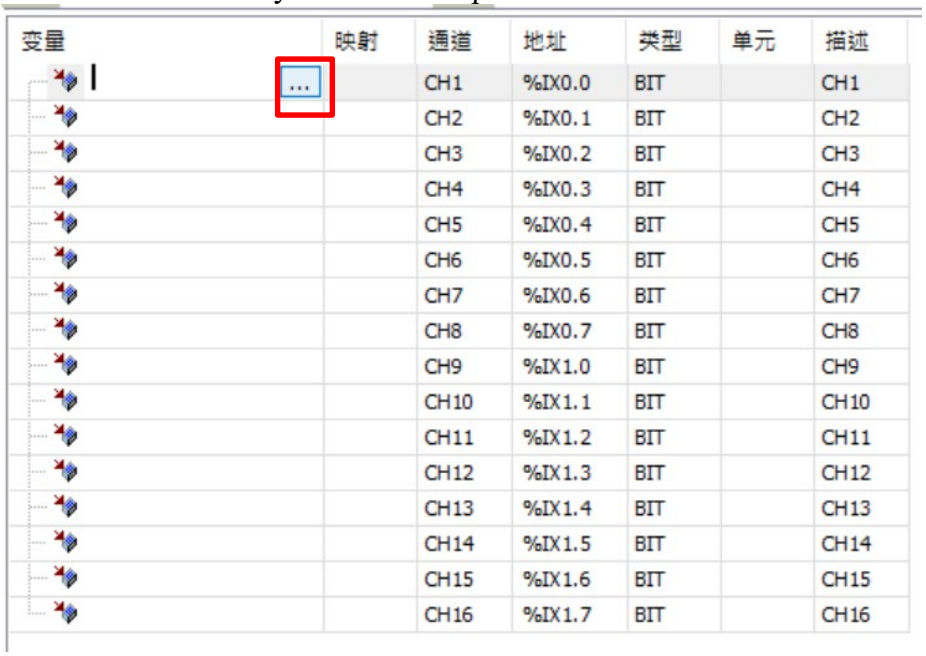
Click on “編譯程序" on the toolbar above



Double-click on the corresponding I/O module on the left and select “EtherCAT I/O Mapping” page

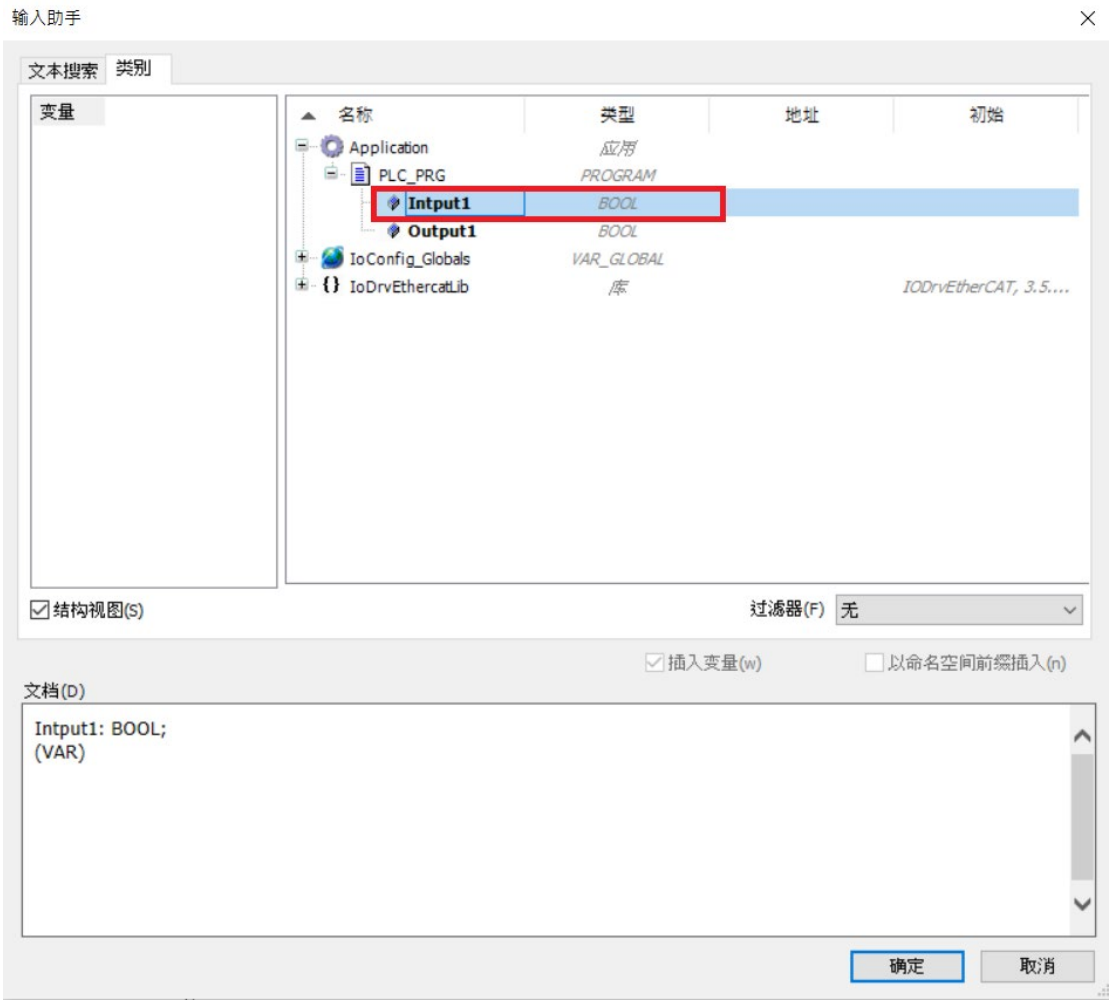


Click on the channel you want to map...



变量	映射	通道	地址	类型	单元	描述
	...	CH1	%IX0.0	BIT		CH1
		CH2	%IX0.1	BIT		CH2
		CH3	%IX0.2	BIT		CH3
		CH4	%IX0.3	BIT		CH4
		CH5	%IX0.4	BIT		CH5
		CH6	%IX0.5	BIT		CH6
		CH7	%IX0.6	BIT		CH7
		CH8	%IX0.7	BIT		CH8
		CH9	%IX1.0	BIT		CH9
		CH10	%IX1.1	BIT		CH10
		CH11	%IX1.2	BIT		CH11
		CH12	%IX1.3	BIT		CH12
		CH13	%IX1.4	BIT		CH13
		CH14	%IX1.5	BIT		CH14
		CH15	%IX1.6	BIT		CH15
		CH16	%IX1.7	BIT		CH16

Select corresponding variables



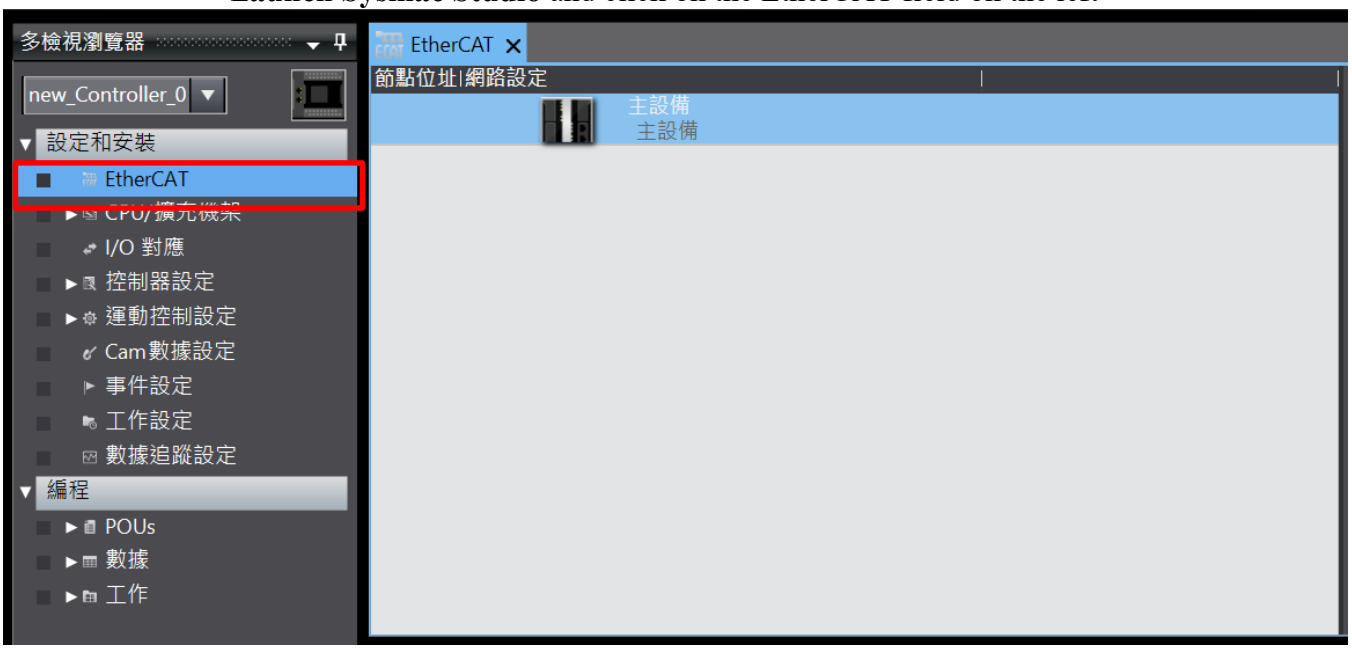
Once mapping is complete, click on the toolbar above to register the PLC

Now you can view all the I/O mappings when online

3.3 Beginner's guide to iO-GRID C using Sysmac Studio program

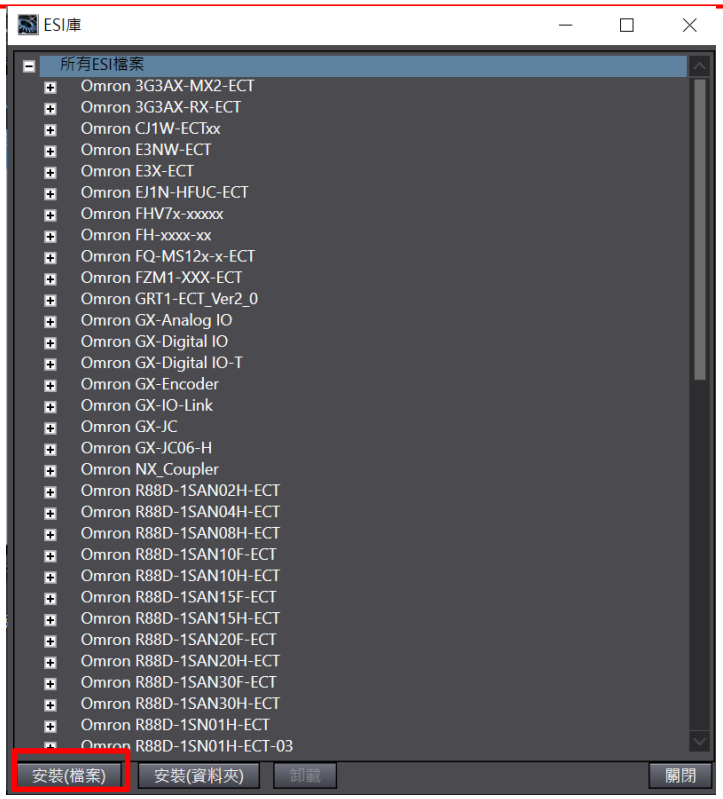
I. Install the XML file

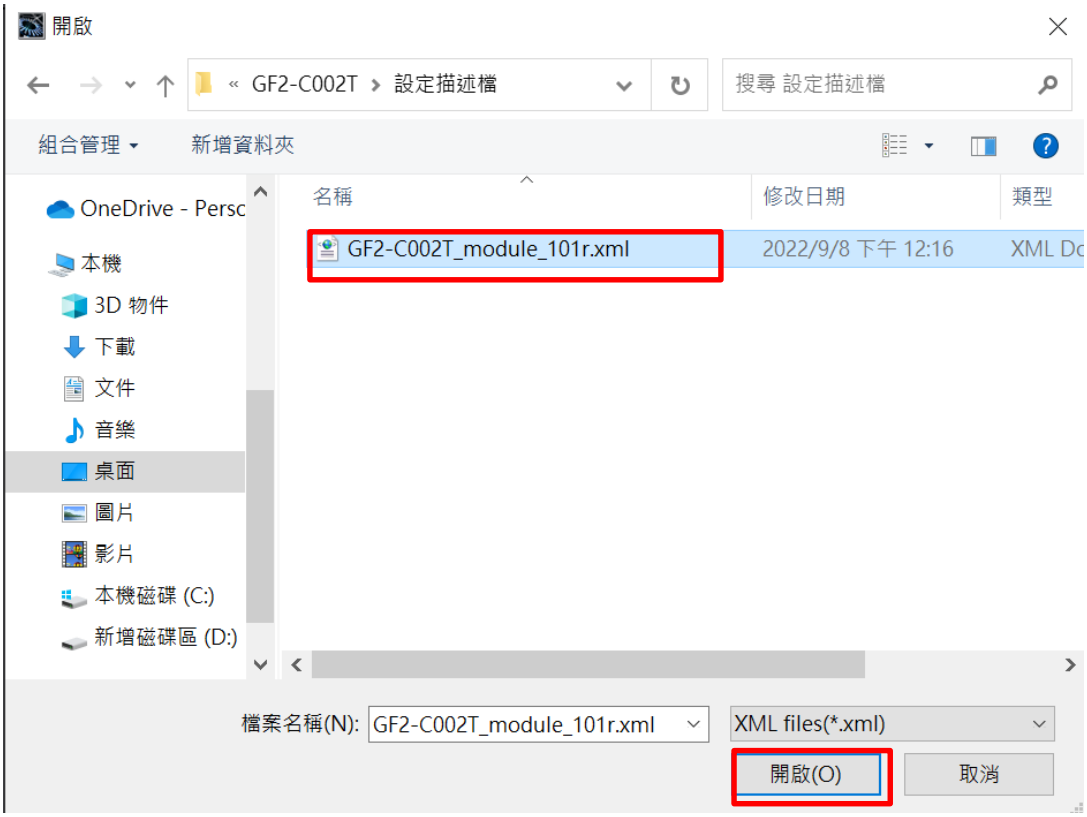
Launch Sysmac Studio and click on the EtherCAT field on the left



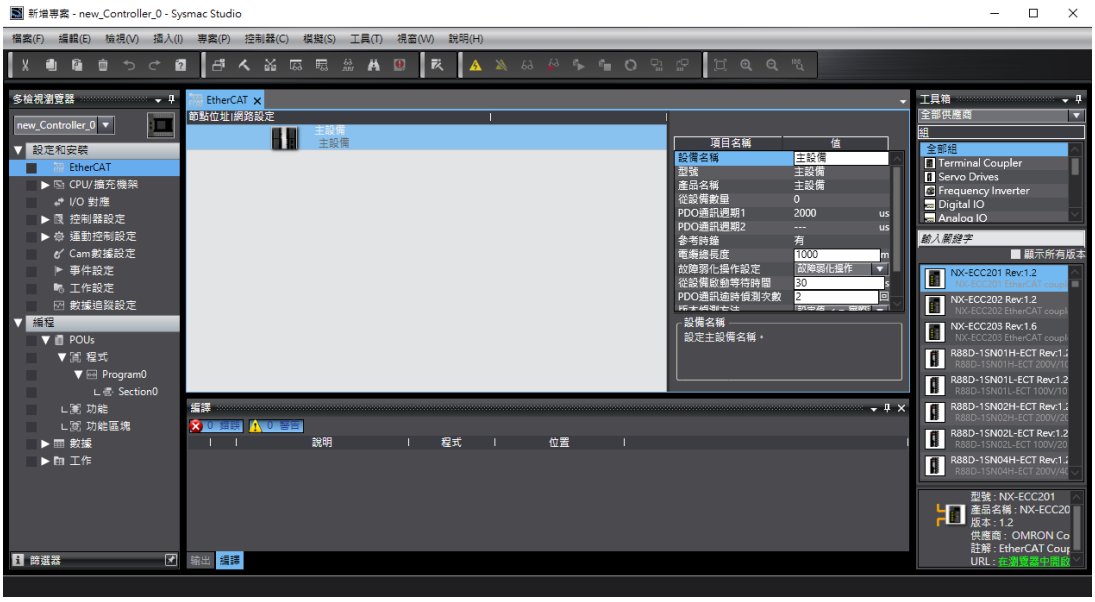
Right-click on "Main Device" and select "Show ESI Library"

Click on "Install (File" and select the C002T device configuration profile


ESI庫
所有ESI檔案
Omron 3G3AX-MX2-ECT
Omron 3G3AX-RX-ECT
Omron CJ1W-ECTxx
Omron E3NW-ECT
Omron E3X-ECT
Omron EJ1N-HFUC-ECT
Omron FHV7x-xxxxx
Omron FH-xxxx-xx
Omron FQ-MS12x-x-ECT
Omron FZM1-XXX-ECT
Omron GRT1-ECT_Ver2_0
Omron GX-Analog IO
Omron GX-Digital IO
Omron GX-Digital IO-T
Omron GX-Encoder
Omron GX-IO-Link
Omron GX-JC
Omron GX-JC06-H
Omron NX_Coupler
Omron R88D-1SAN02H-ECT
Omron R88D-1SAN04H-ECT
Omron R88D-1SAN08H-ECT
Omron R88D-1SAN10F-ECT
Omron R88D-1SAN10H-ECT
Omron R88D-1SAN15F-ECT
Omron R88D-1SAN15H-ECT
Omron R88D-1SAN20F-ECT
Omron R88D-1SAN20H-ECT
Omron R88D-1SAN30F-ECT
Omron R88D-1SAN30H-ECT
Omron R88D-1SN01H-ECT
Omron R88D-1SN01H-ECT-03
安裝(檔案)
安裝(資料夾)
卸載
關閉

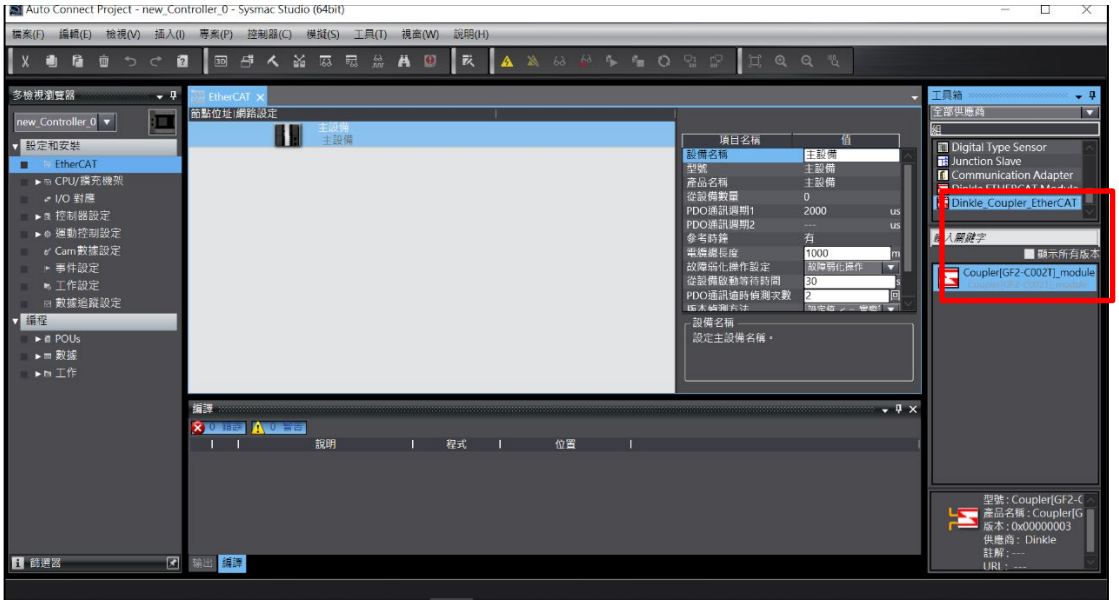

開啟
GF2-C002T › 設定描述檔
搜尋 設定描述檔
組合管理
新增資料夾
OneDrive - Persc
本機
3D 物件
下載
文件
音樂
桌面
圖片
影片
本機磁碟 (C:)
新增磁碟區 (D:)
名稱
修改日期
類型
GF2-C002T_module_101r.xml
2022/9/8 下午 12:16
檔案名稱(N): GF2-C002T_module_101r.xml
XML files(*.xml)
開啟(O)
取消

II. Create a new file and click on “EtherCAT” on the left



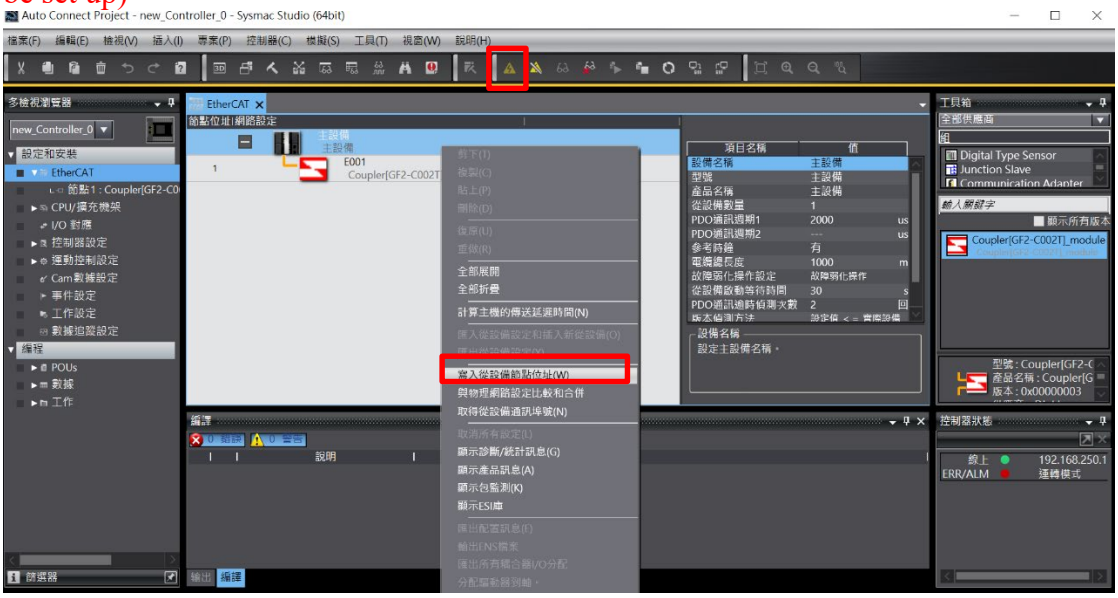
III. Users can, based on their configuration, manually add connect devices, Such as by double-clicking on the coupler module to add it to the connected devices

※Nodes must be placed in proper order

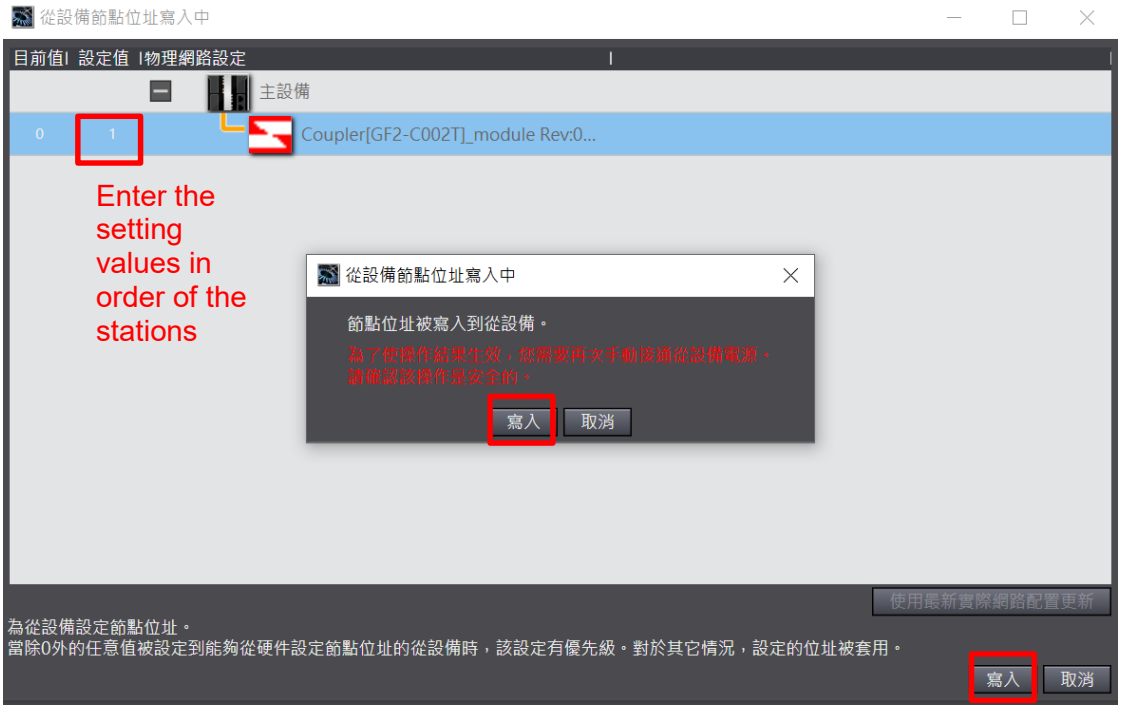


IV. Click on the "Connect" icon. Once connected, right-click on the main device and select "Write Slave Device Node Address"

(iO-GRID C's slave device has a default node of 0. Therefore, the node number must be set up)

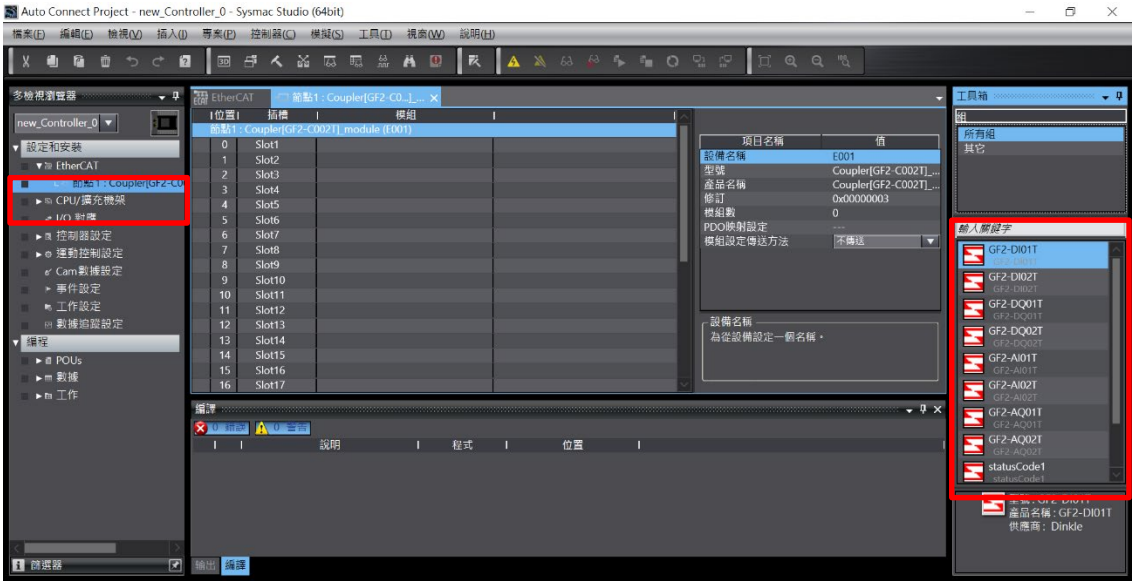


Once you enter a node number, you need to restart iO-GRID C for the new node number to apply

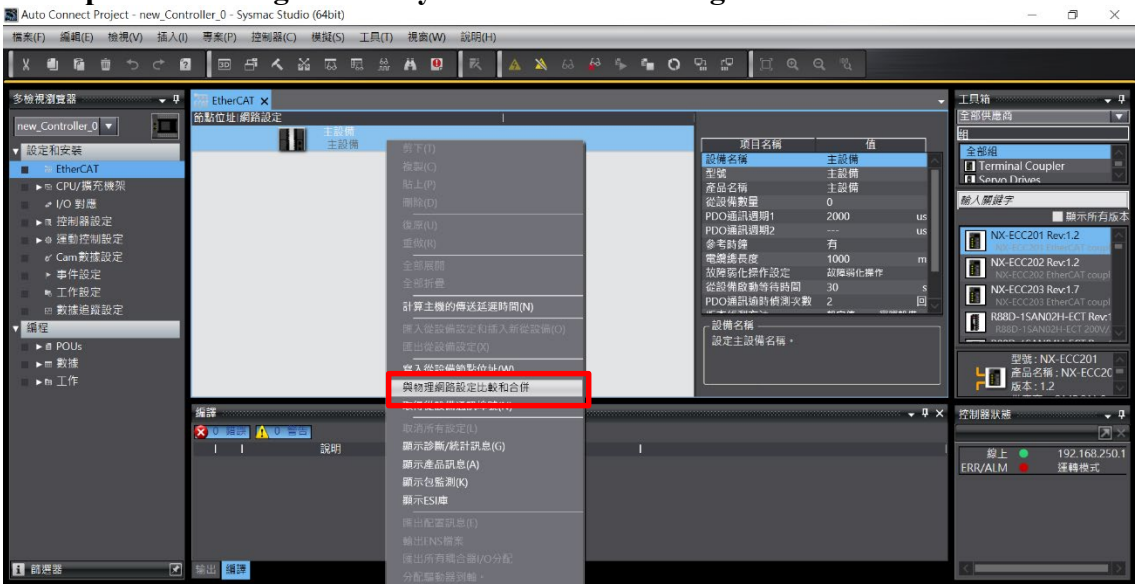


V. After switching to the off line mode, click on the module on the left and add I/O based on the UI's configuration

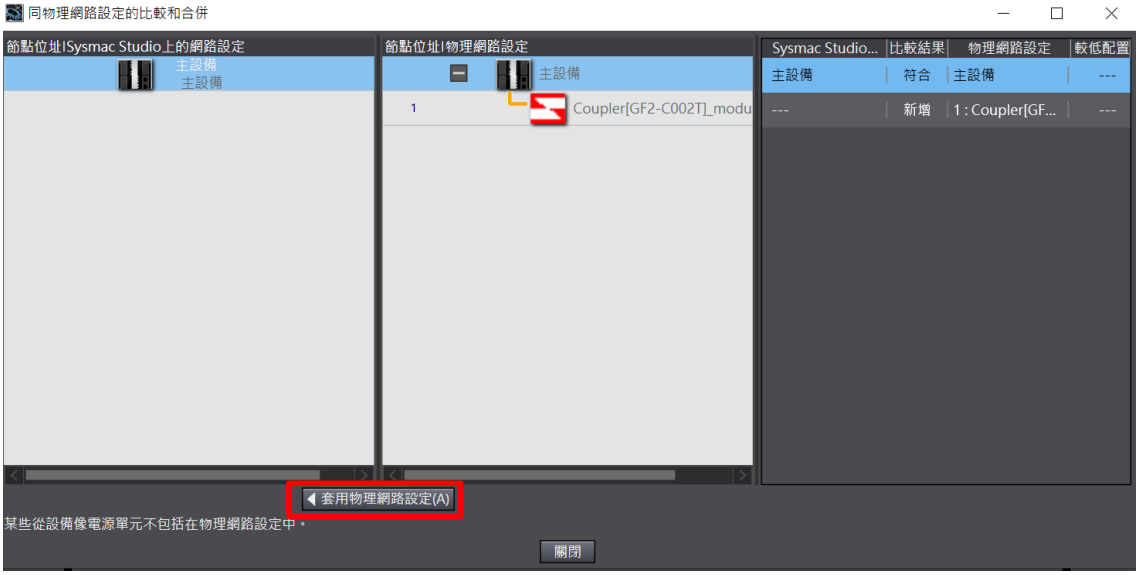
(I/O configuration must be the same as the UI)



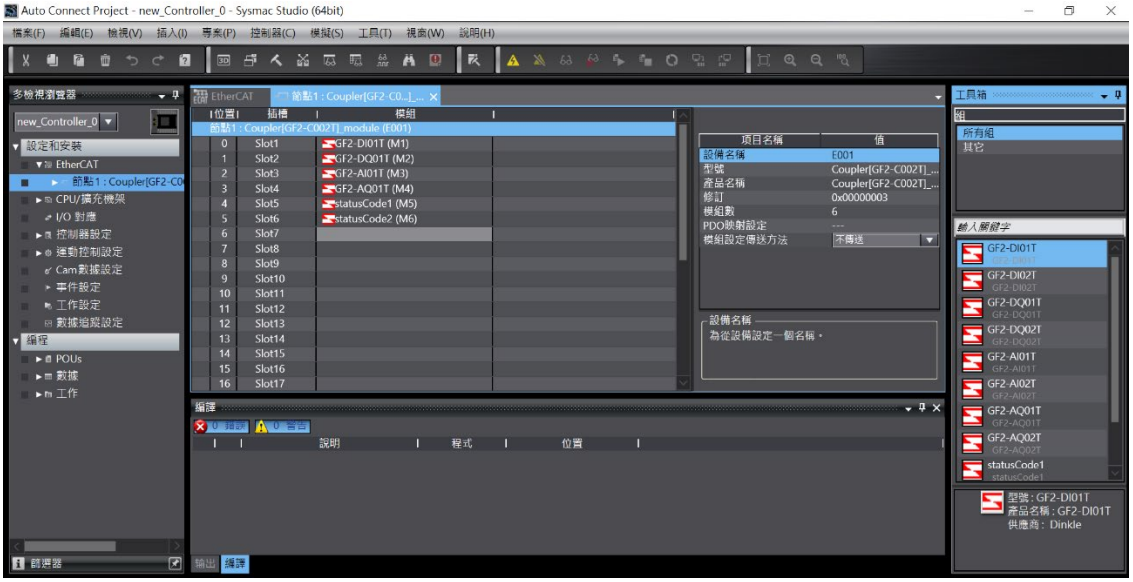
VI. When connected, you can also click on the main device then click on "Compare and Merge with Physical Network Settings"



Click on “Apply Physical Network Device”



The node’s I/O will load automatically



VII. I/O mapping and simple programming

Click on “I/O Mapping” on the left to define the variables on the right