

User Manual

## ***iR-ETN/iR-ETN40R - EtherNet/IP Connection Guide***

This guide walks through the steps to connect iR-ETN/iR-ETN40R with PLC.

UM020006E\_20231116

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## Overview

iR-ETN/iR-ETN40R firmware supports EtherNet/IP protocol. In EasyRemote IO software, the description file (EDS) for EtherNet/IP devices can be generated. By scanning the iR-ETN/iR-ETN40R devices in EasyRemote IO software, the EDS file can be generated according to the current I/O configuration. The EDS file can then be imported by PLC or EtherNet/IP Scanner devices to complete configuration with minimal effort.

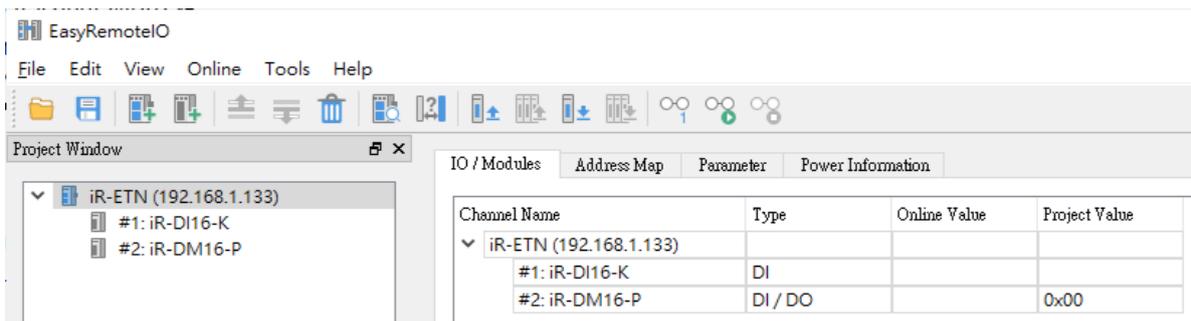
- Applicable firmware version:
  - iR-ETN: V1.0.3.0
  - iR-ETN40R: V1.0.0.1
- Applicable EasyRemoteIO version:
  - iR-ETN: V1.3.2.0 or later
  - iR-ETN40R: V1.4.3.0 or later
- For more information on updating iR-ETN firmware, please see [UM019005E iR Series Firmware Update UserManual eng.pdf](#)

This user manual explains how to generate iR-ETN's/iR-ETN40R's EtherNet/IP EDS File, and how to connect PLC to iR-ETN/iR-ETN40R via EtherNet/IP.

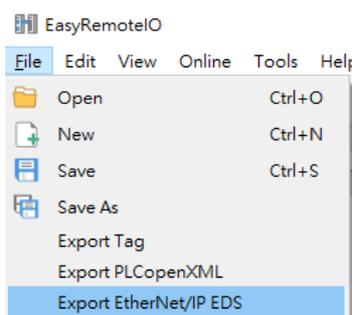
## Chapter1. How to Generate EDS File using EasyRemoteIO

For more information on EasyRemoteIO, please see [UM018004E EasyRemoteIO UserManual eng.pdf](#)

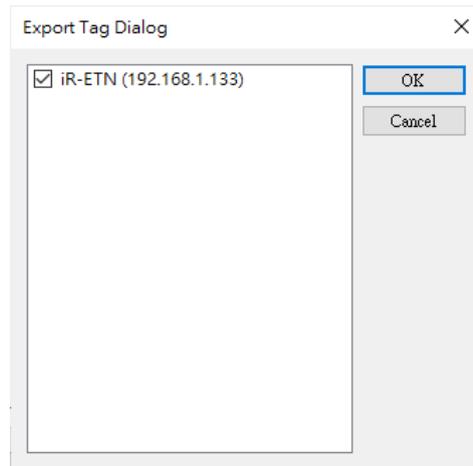
Step 1. Launch EasyRemoteIO, click [Automatic scan] to scan network for iR-ETN/iR-ETN40R. The information of iR-ETN/iR-ETN40R and the connected modules is shown as below.



Step 2. Click [File] » [Export EtherNet/IP EDS] and select the file to export tags.



Step 3. Select the iR-ETN and click OK.



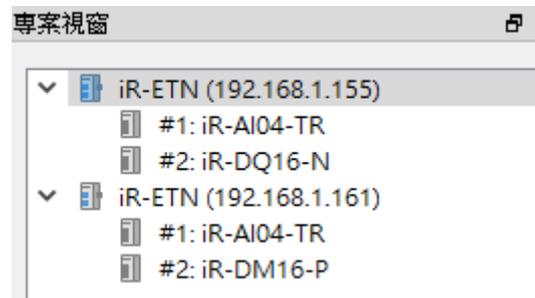
EDS file is successfully exported.



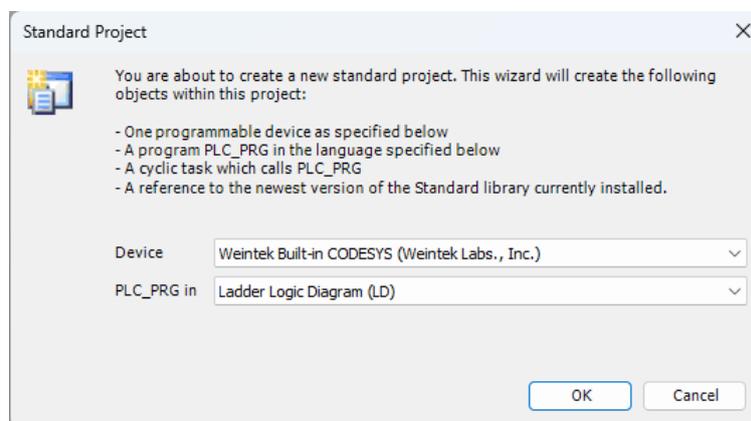
## Chapter2. CODESYS

This chapter explains how to connect two iR-ETN and iR Remote I/O in CODESYS.

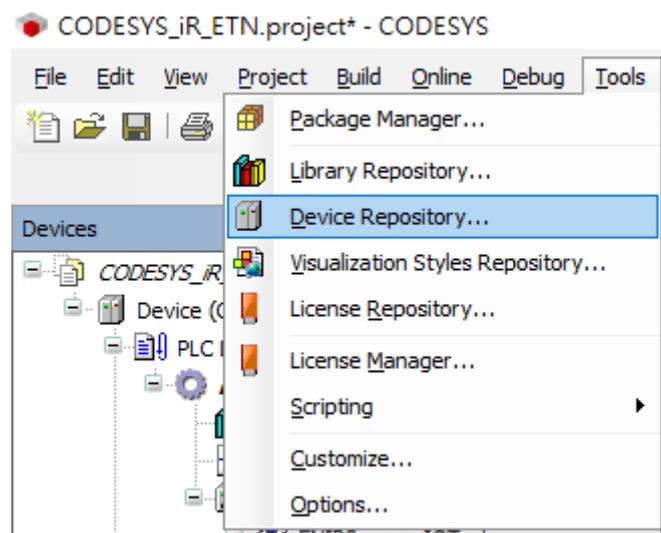
Step 1. In EasyRemoteIO scan and export EtherNet/IP EDS.



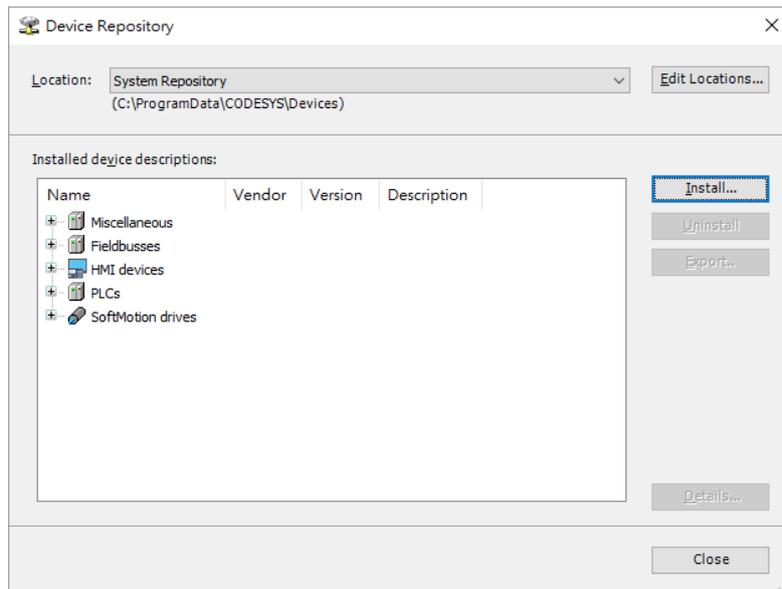
Step 2. Open a new project in CODESYS and select a Weintek device.



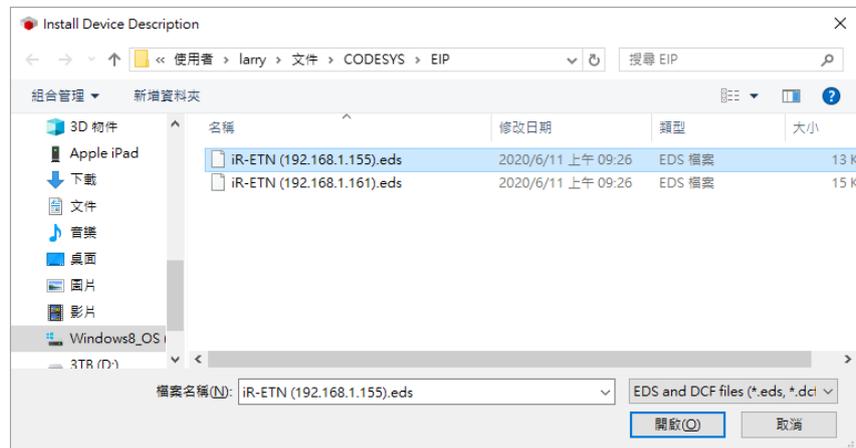
Step 3. Click [Tools] » [Device Repository...].



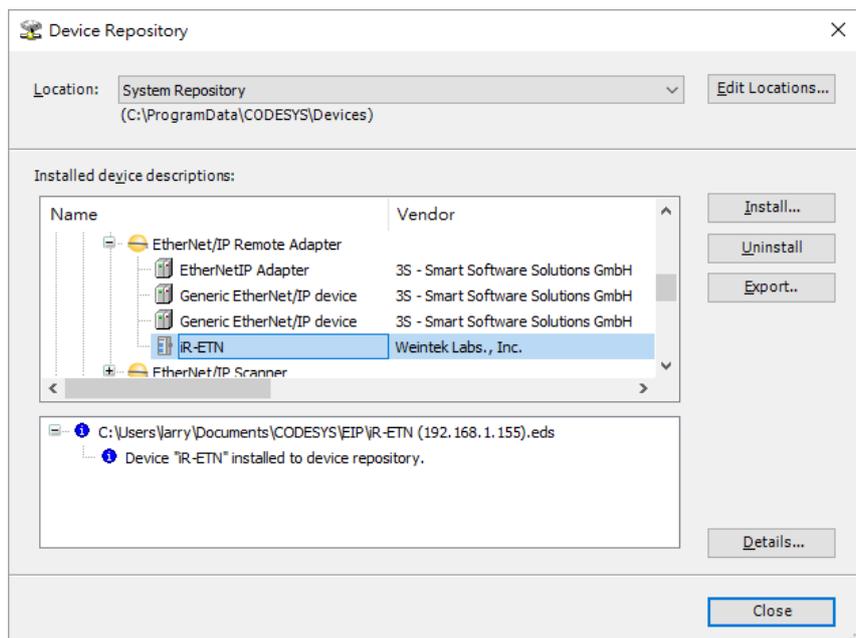
Step 4. Click [Install...].



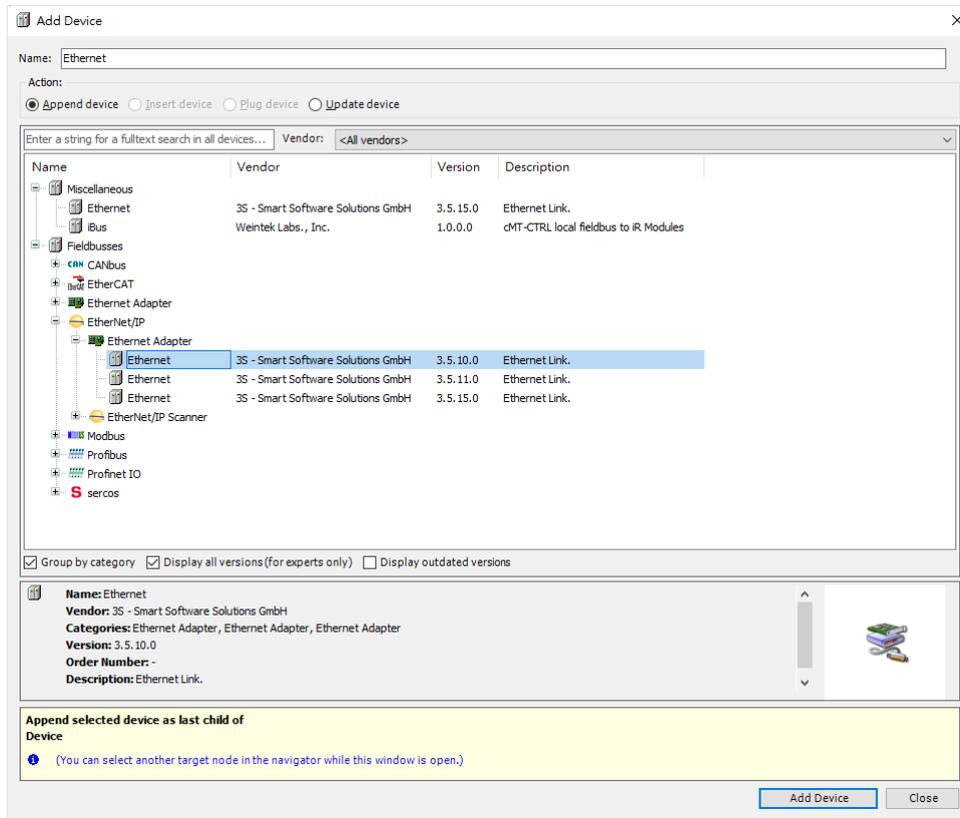
Step 5. Select [EDS and DCF files (\*.eds, \*.dcf)] and then select the first \*.eds file.



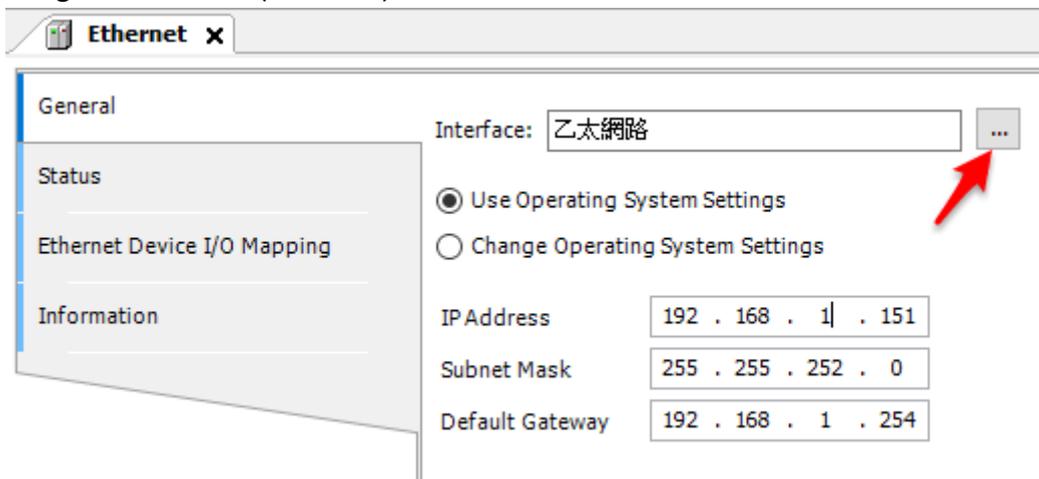
Step 6. After importing the file, the iR-ETN is added under EtherNet/IP Remote Adapter.

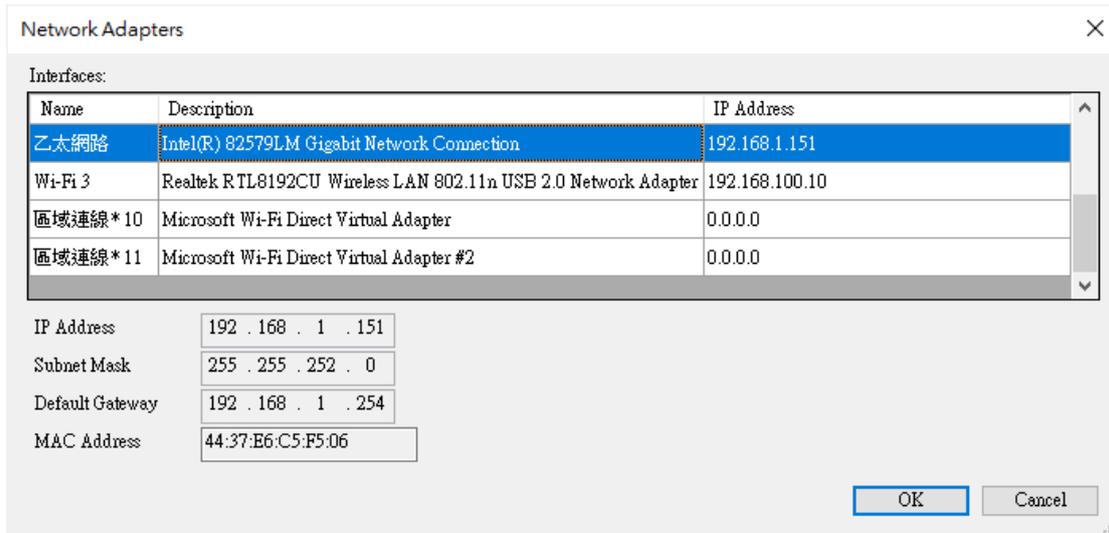


Step 7. Add an Ethernet device.

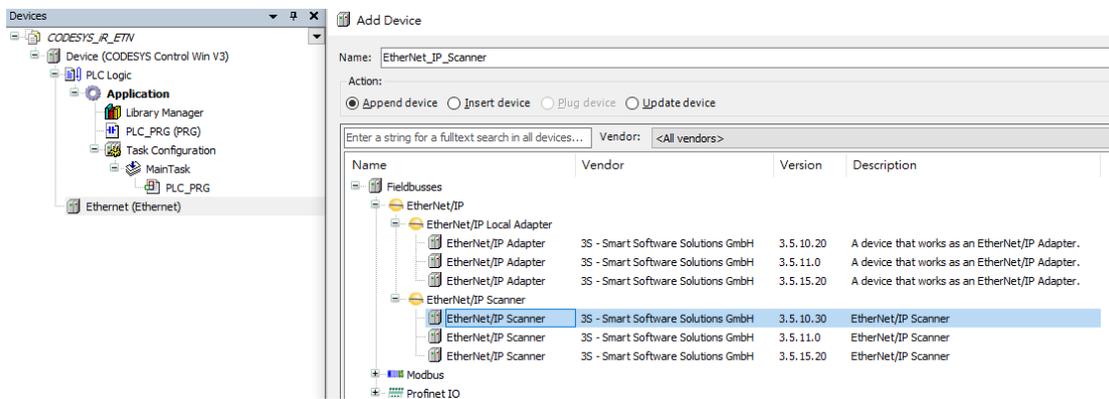


Step 8. Assign an interface (Ethernet).

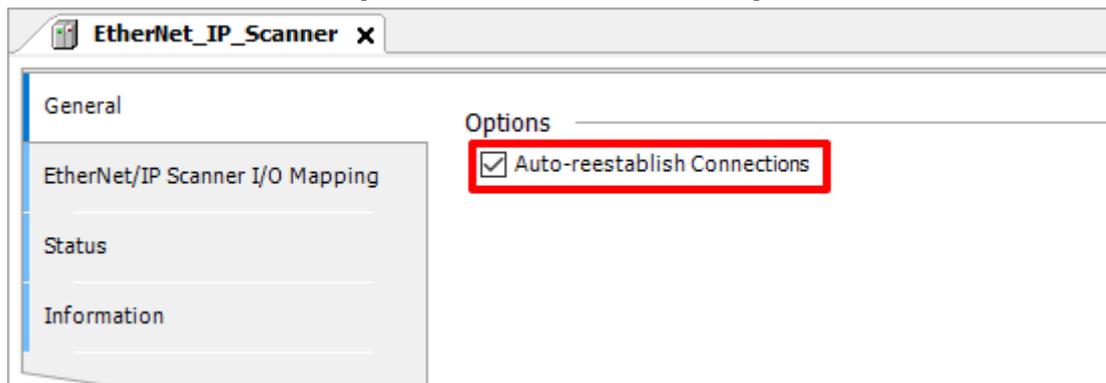




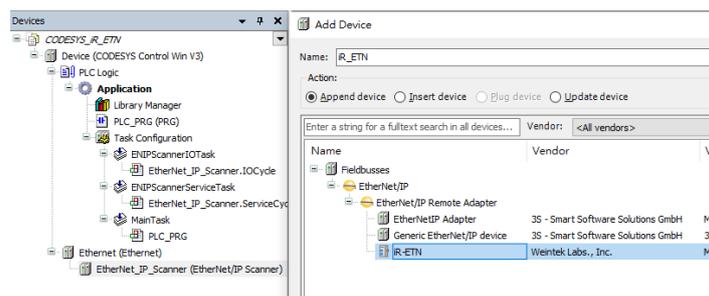
### Step 9. Add an EtherNet/IP Scanner.



\*Please note that [Auto-reestablish Connections] must be selected.

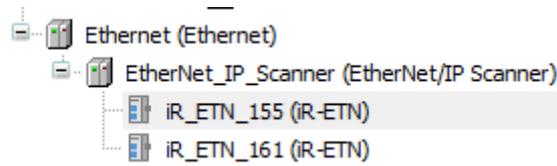


### Step 10. Add the first iR-ETN.

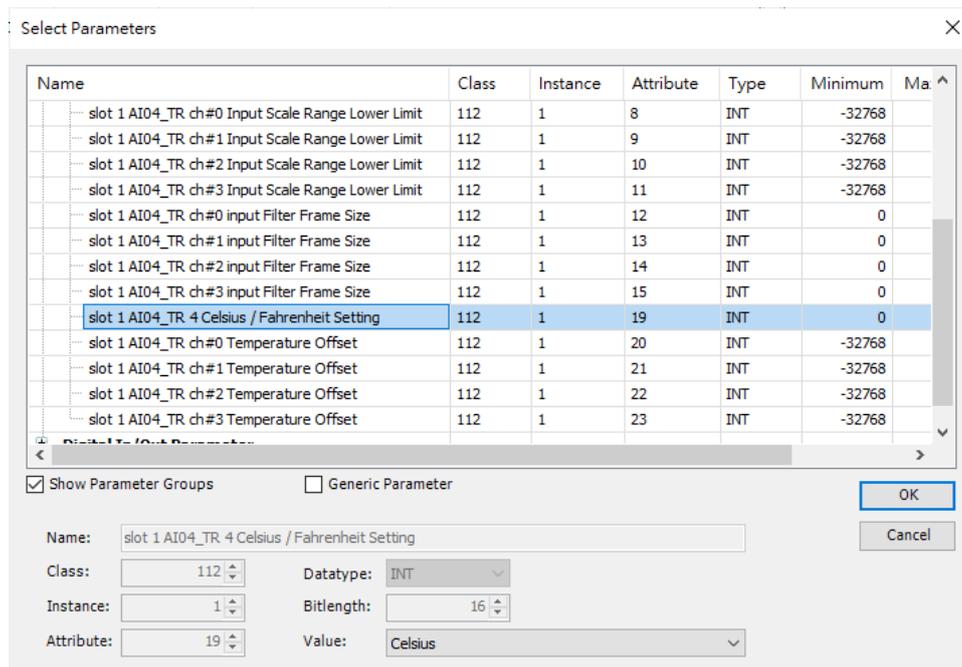
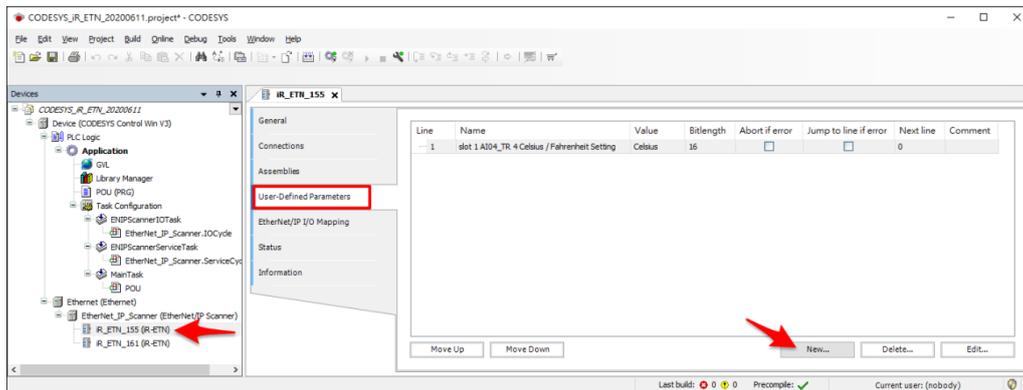


Start from step 3 again to add the second iR-ETN's \*.eds file. This will overwrite the \*.eds file of the first iR-ETN.

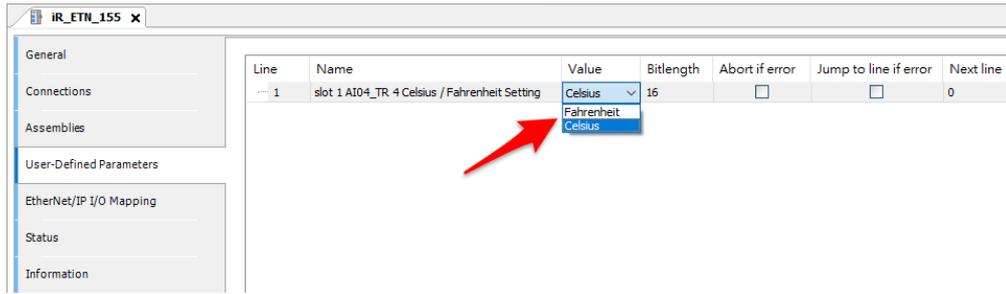
Add the second iR-ETN.



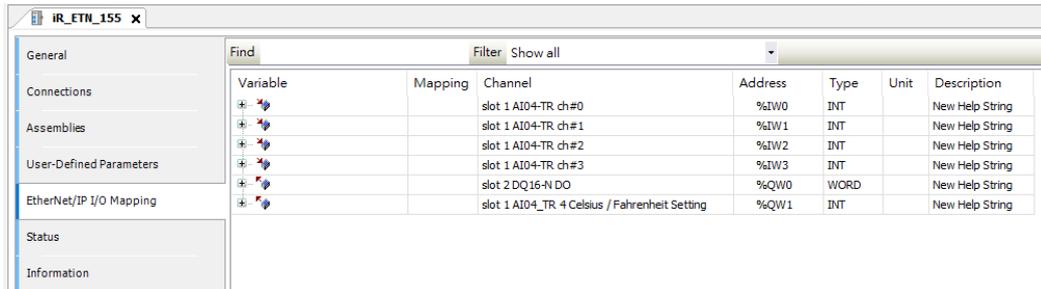
Step 11. The default iR module setting is shown. Add new parameters in User-Defined Parameters tab.



The initial values can be set after adding new parameters.



Step 12. In EtherNet/IP I/O Mapping tab find the IO address and start editing the program.

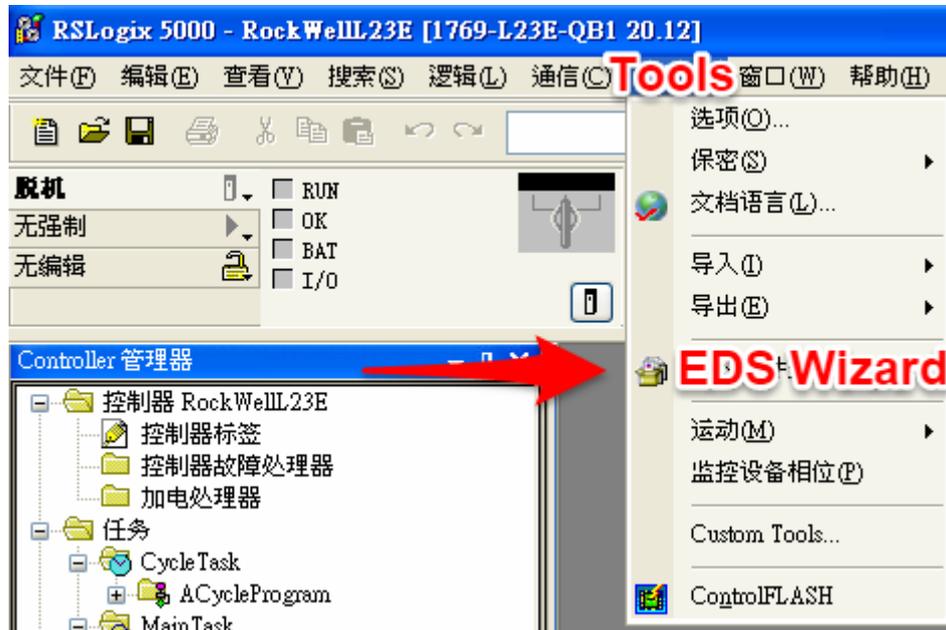


## Chapter3. Rockwell CompactLogix/ControlLogix

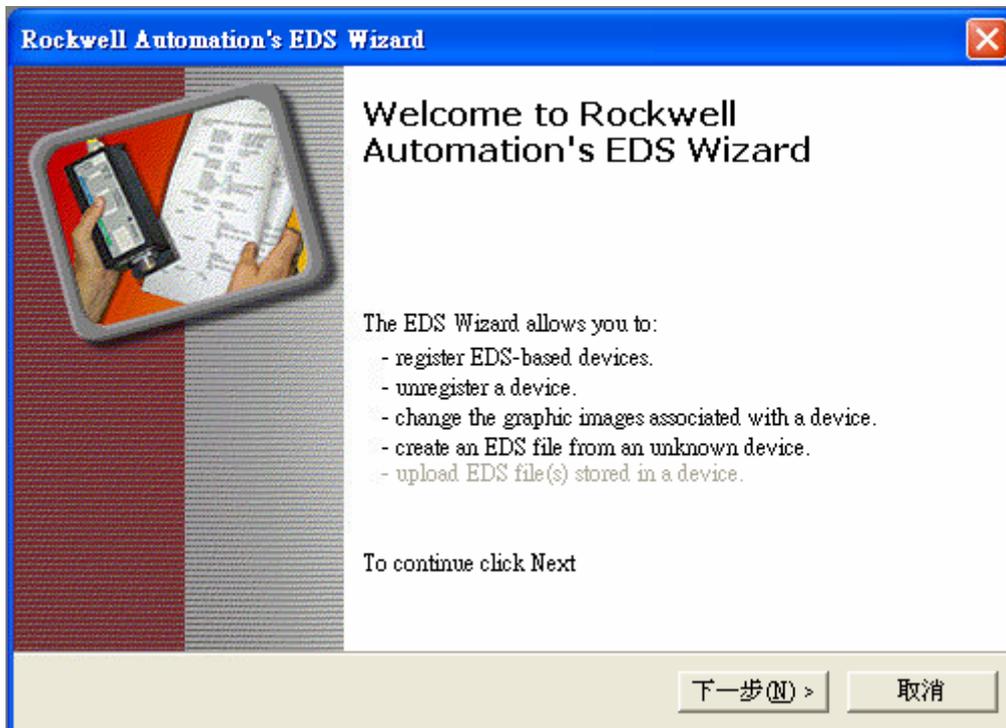
### 3.1. Adding a Single iR-ETN

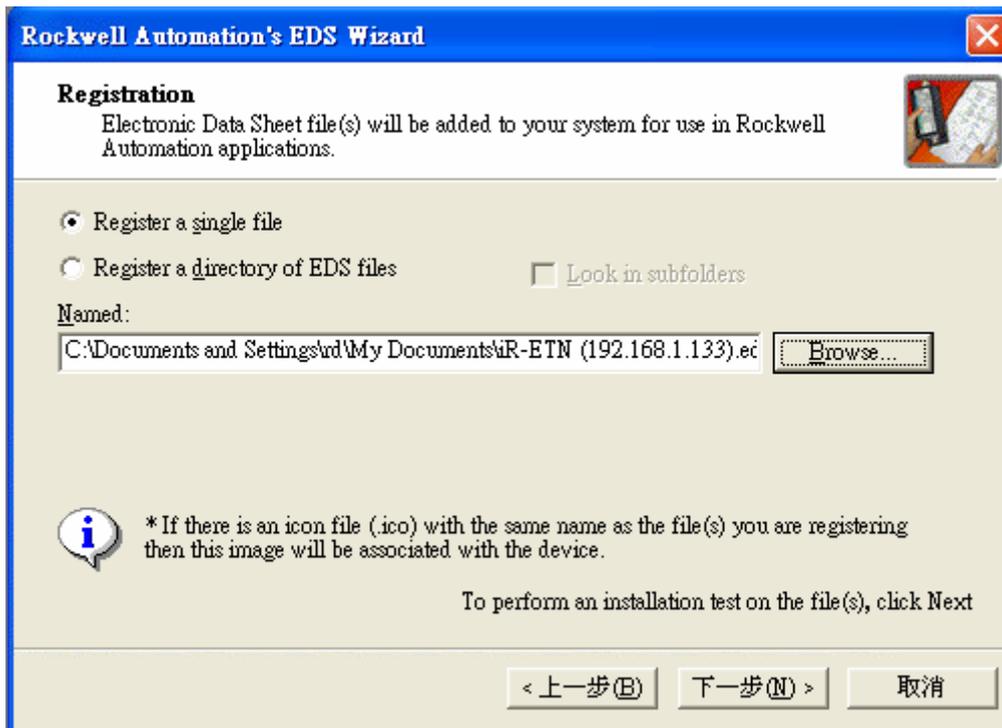
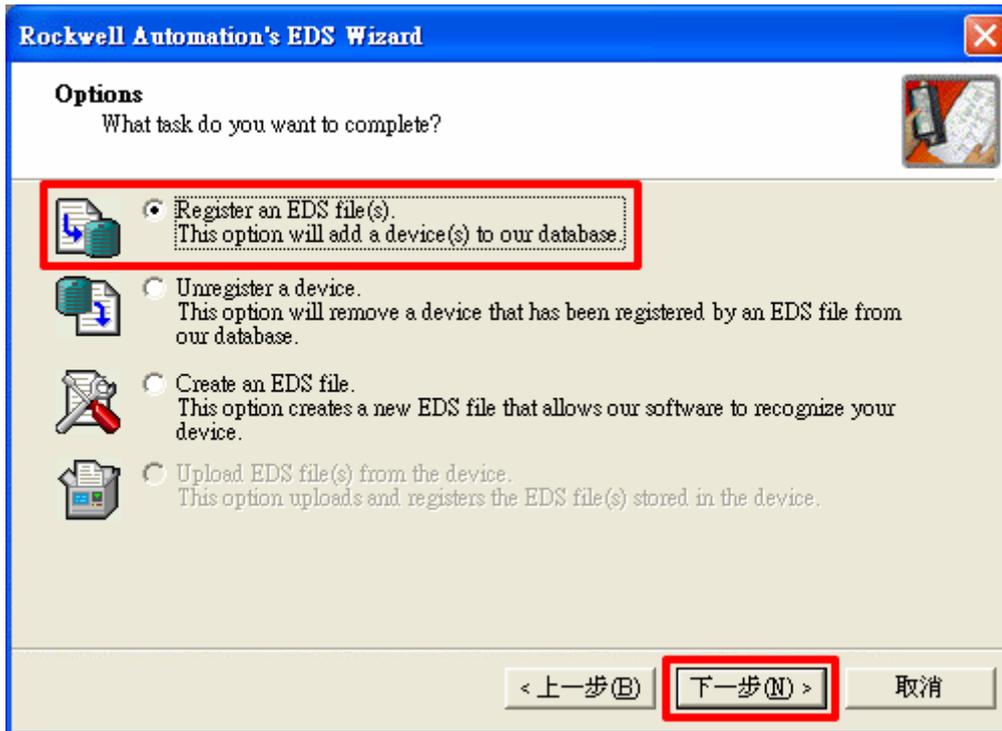
Rockwell CompactLogix and ControlLogix can be edited using RSLogix 5000.

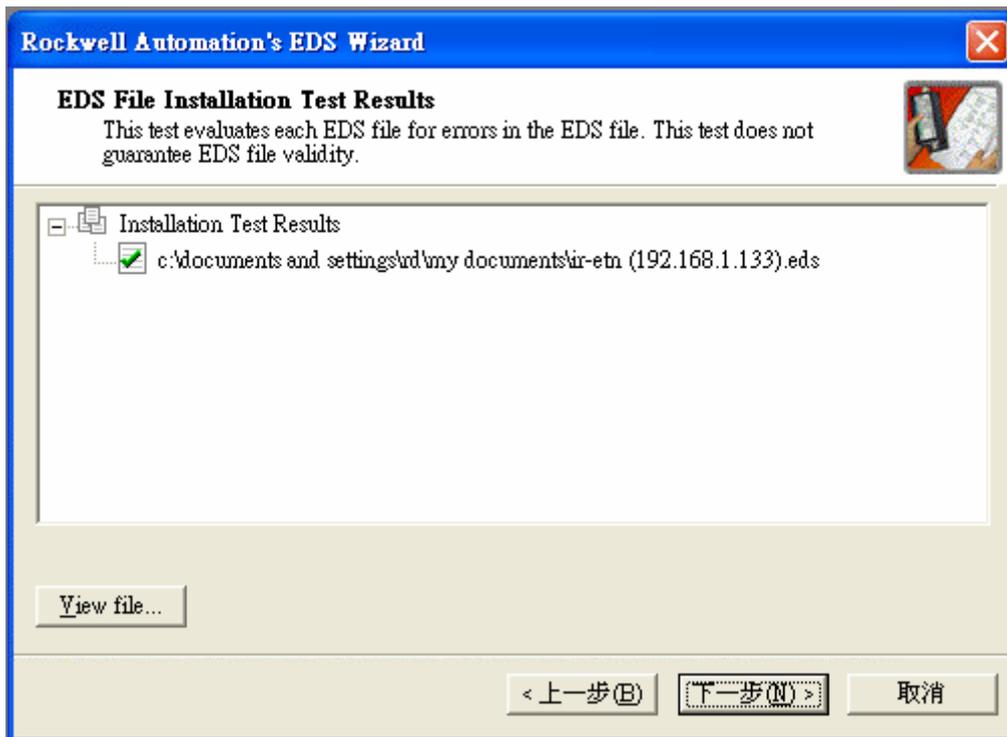
Step 1. Open [Tools] » [EDS Wizard] and import iR-ETN's EDS file.

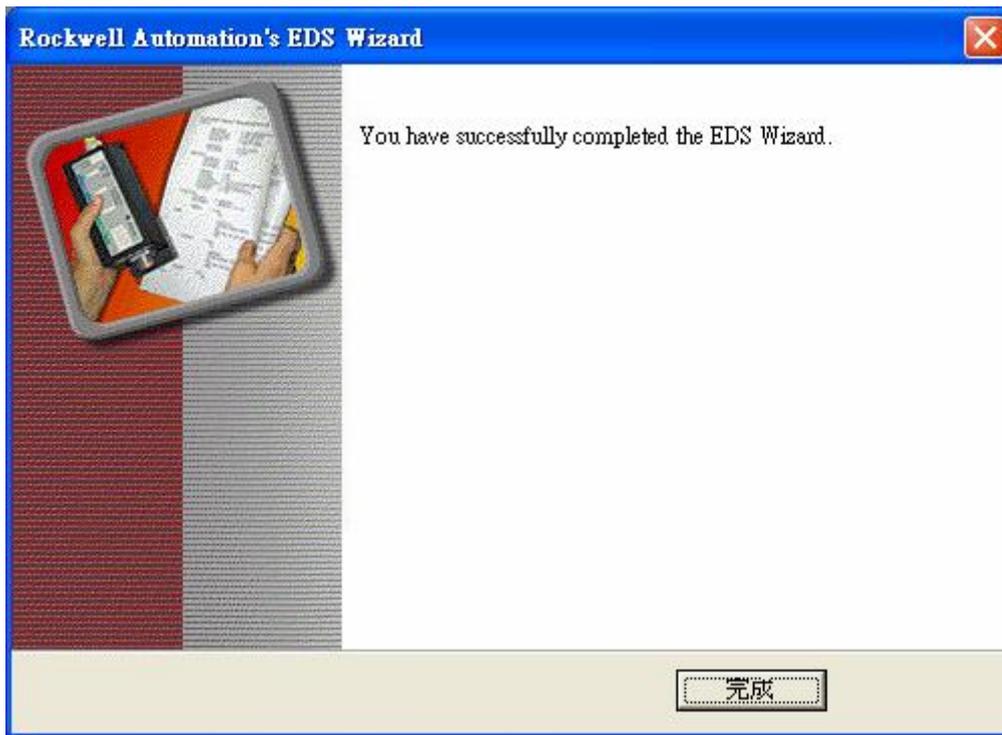
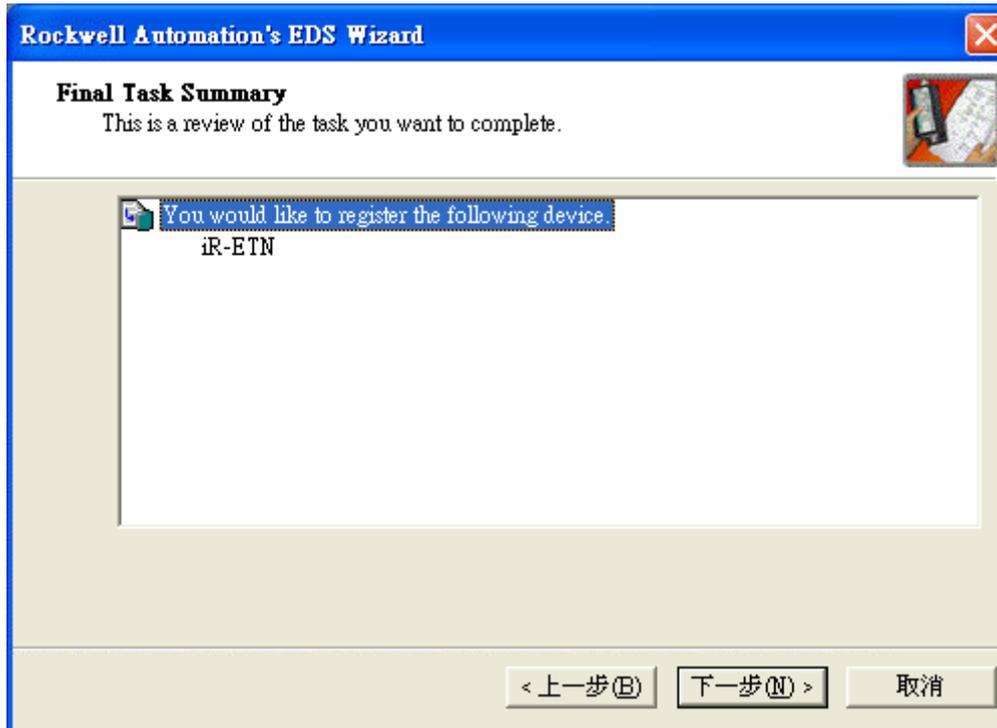


Import EDS file following the on-screen instructions.

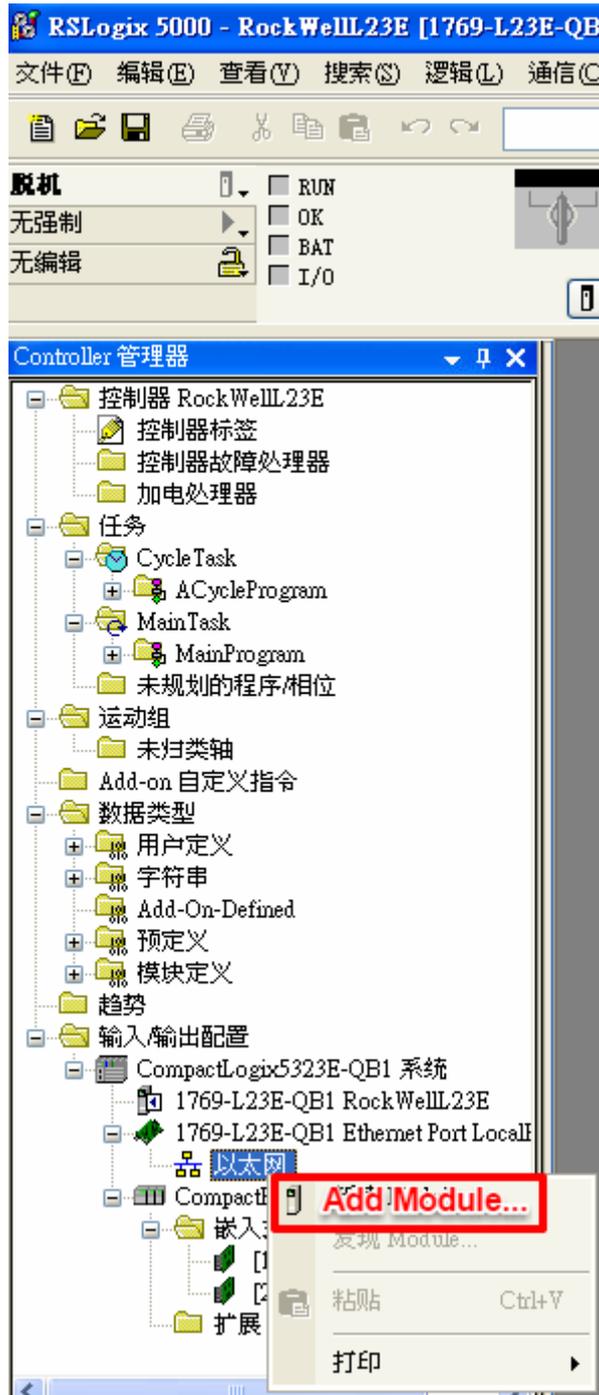


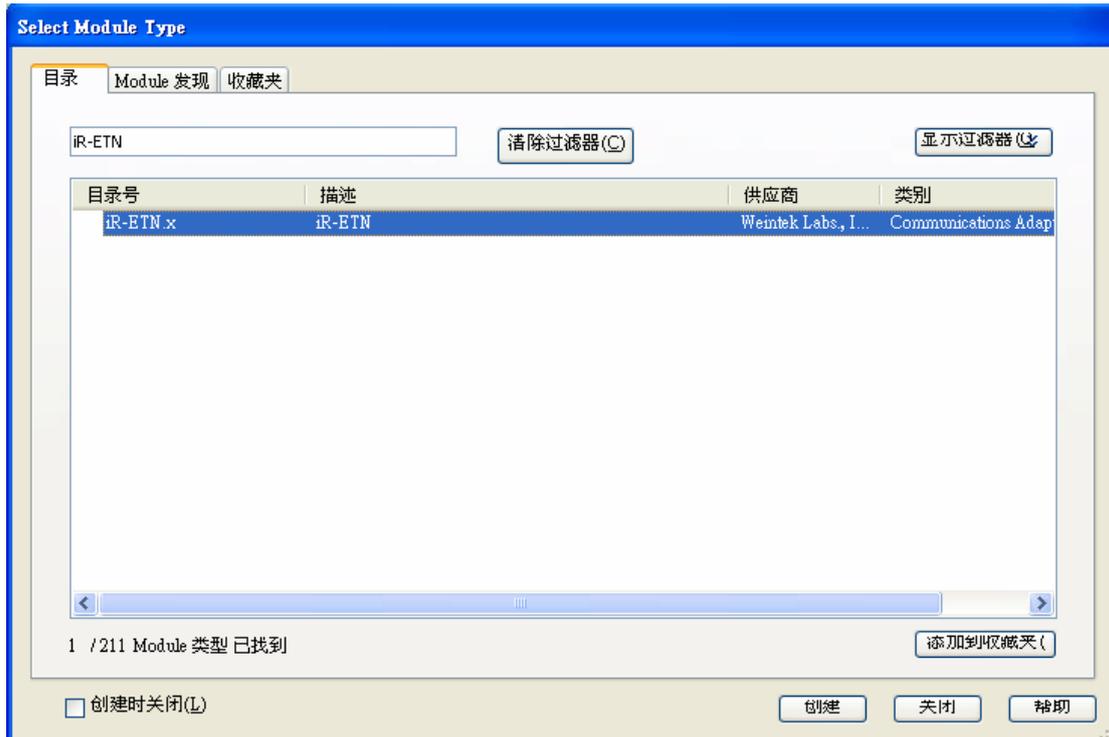




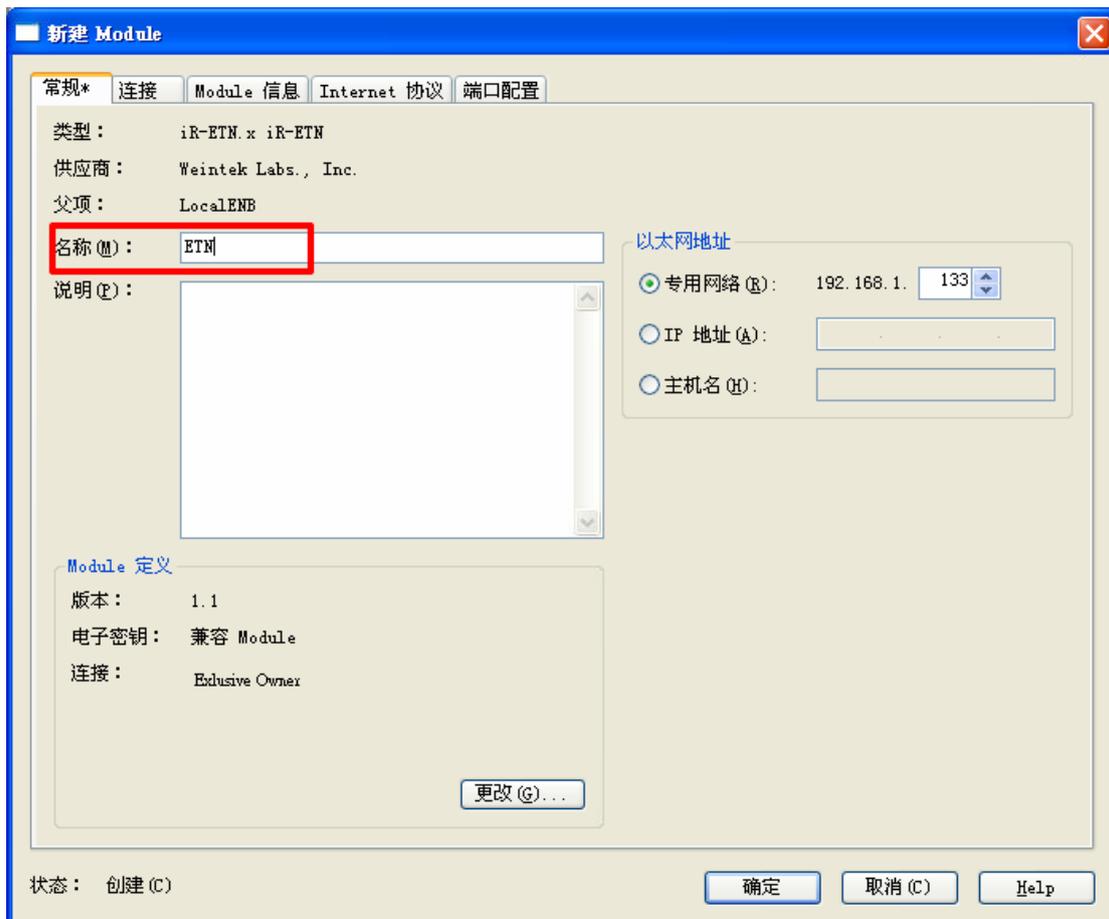


Step 2. Right-click on [Ethernet] and select [Add Module...].

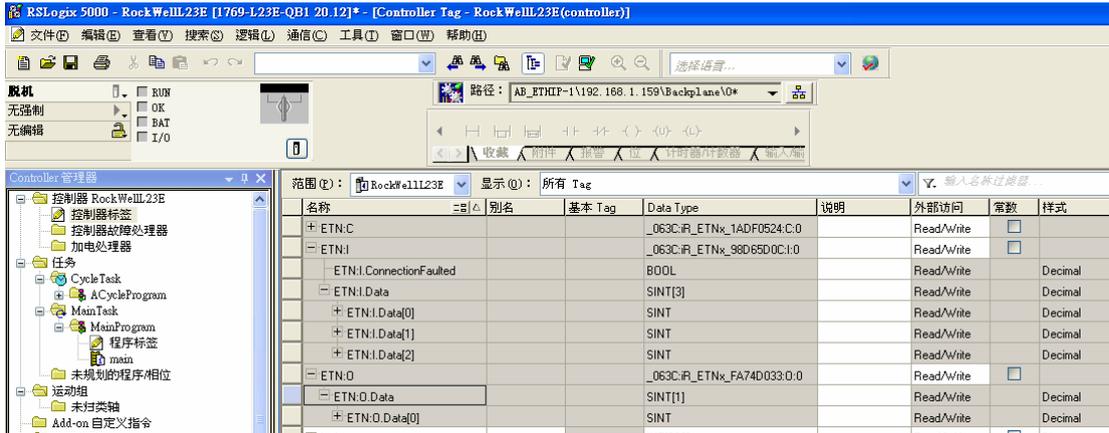




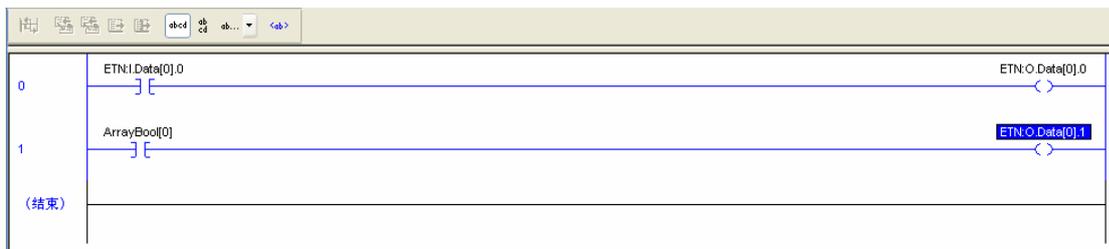
Enter iR-ETN's IP address and device name. The device name will be used in the tags.



Step 3. iR-ETN's Input/Output Data can be found in the tag.



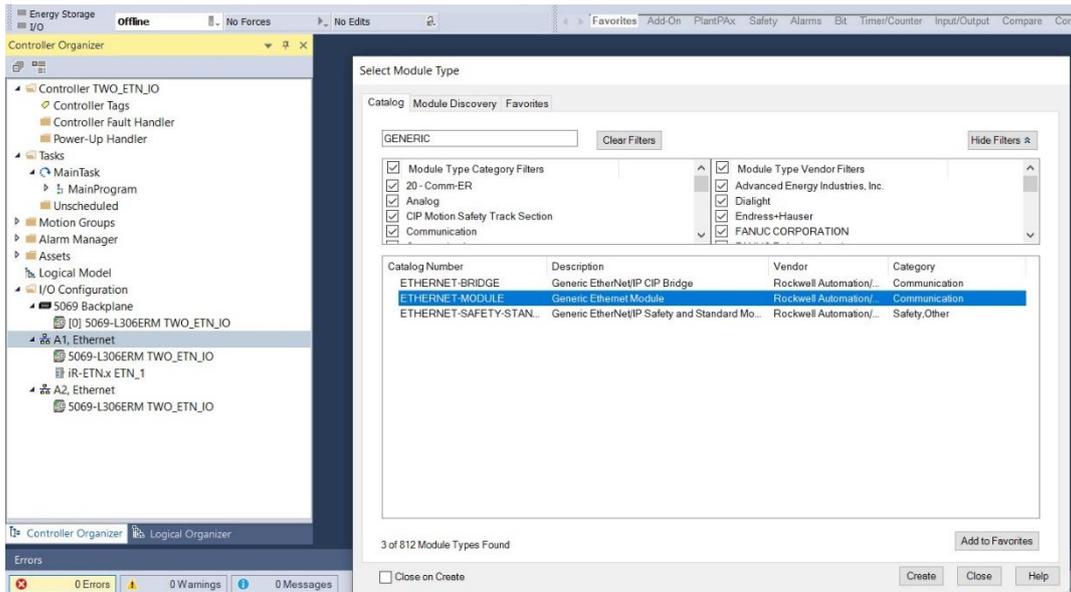
Select the corresponding bit when programming.



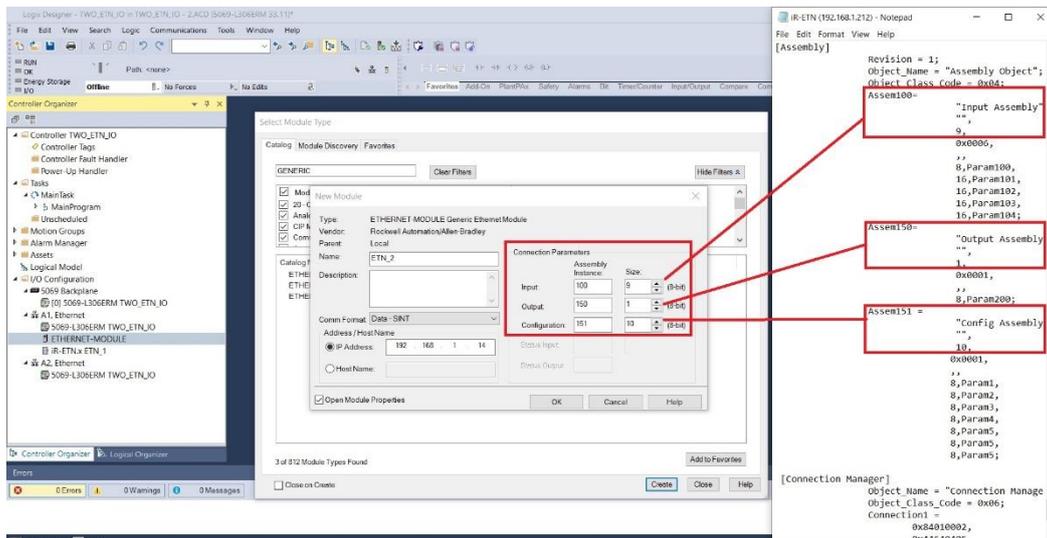
### 3.2. Adding Multiple iR-ETN

In Allen Bradley software, each device requires a unique EDS file. To add multiple iR-ETN (each with different number of I/O), please follow instructions below.

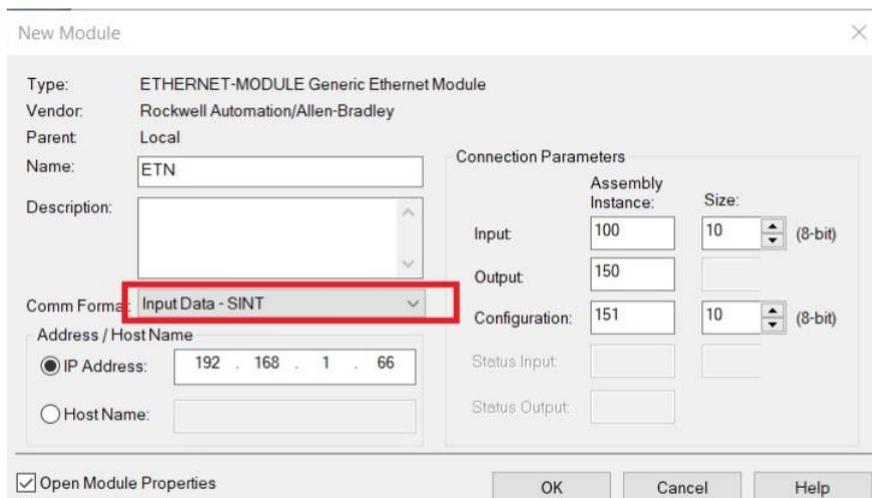
Step 1. Go to [Ethernet] » [Add Module] and add Generic Ethernet Module.



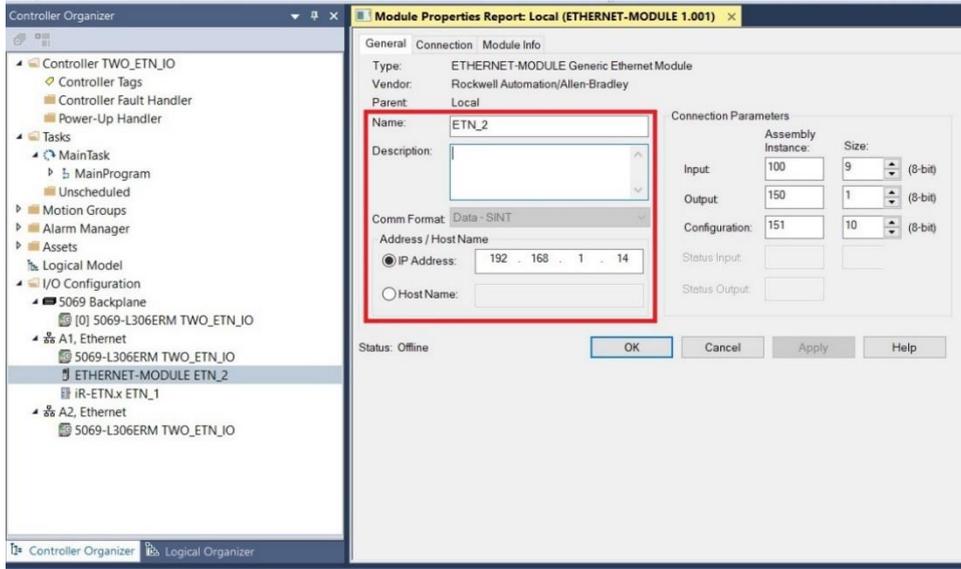
Step 2. Configure connection parameters for iR-ETN's EDS file.



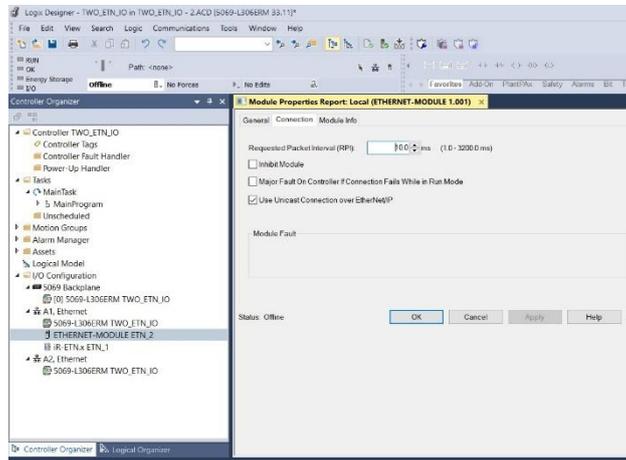
\*When Assembly Instance only has Input, "Comm Format" must be set to "Input Data – SINT".



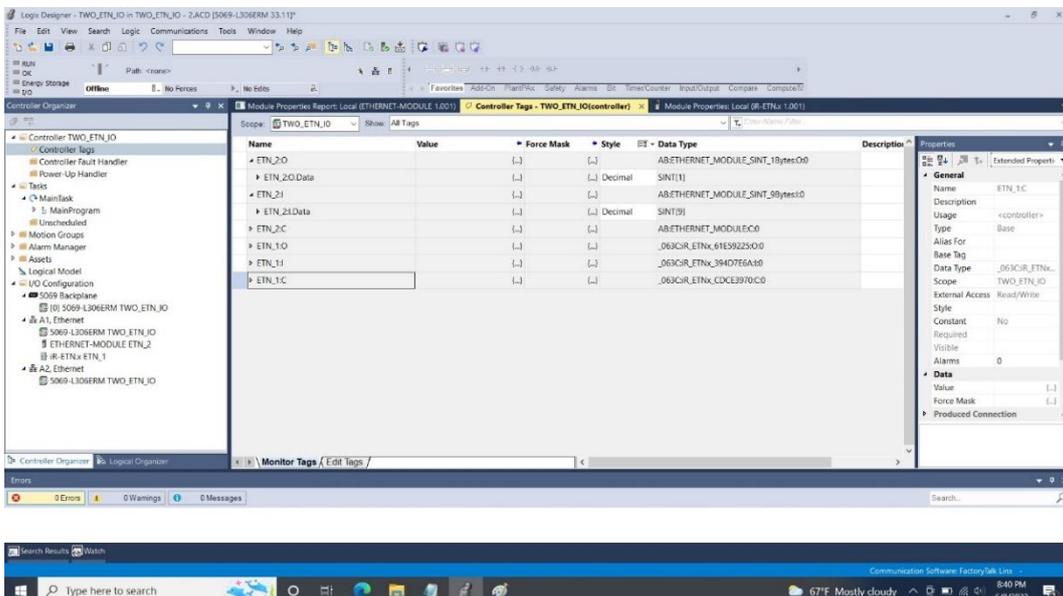
Step 3. Enter iR-ETN's IP address, name, and description.



Step 4. Enter RPI. Use the default setting, which is 10 ms (min. RPI support for iR-ETN is 5 ms).



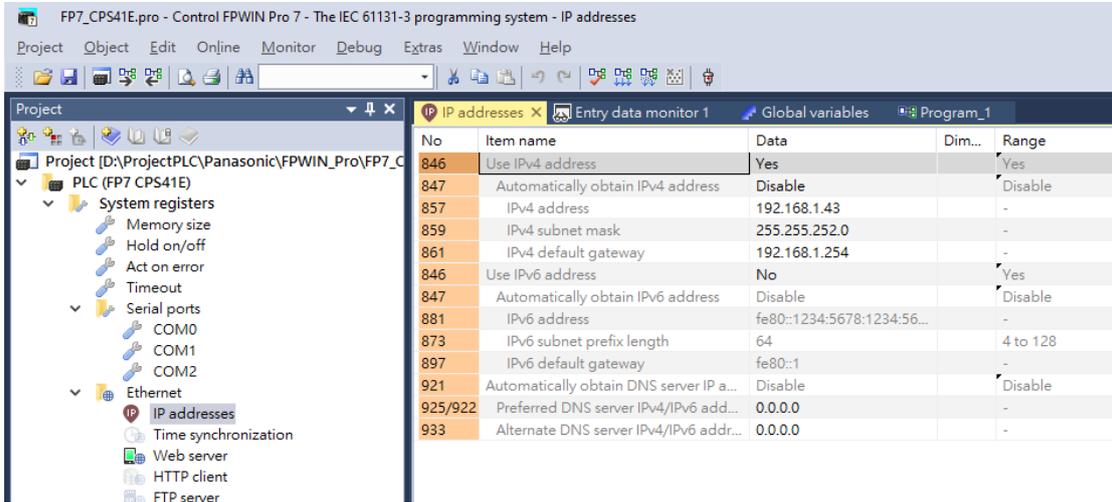
Step 5. When you have finished setting the parameters, you can see iR-ETN's I/O status in Controller Tags page. In this example, the first slot of iR-ETN = DM16-P and the second slot = AI04-TR.



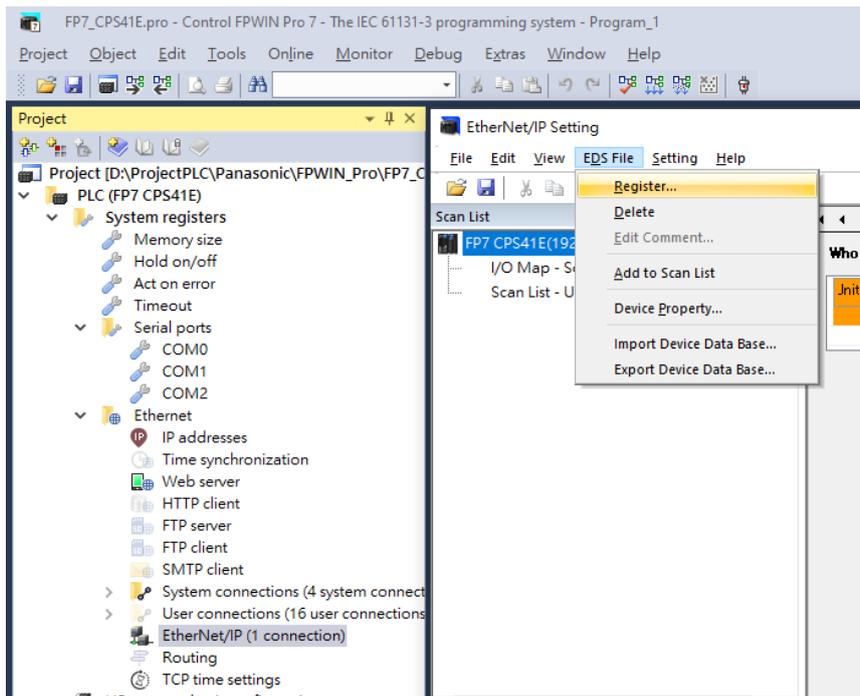
## Chapter4. Panasonic FP7

Panasonic FP7 CPS41E CPU supports EtherNet/IP, please use Control FFWIN Pro 7 software to edit the program.

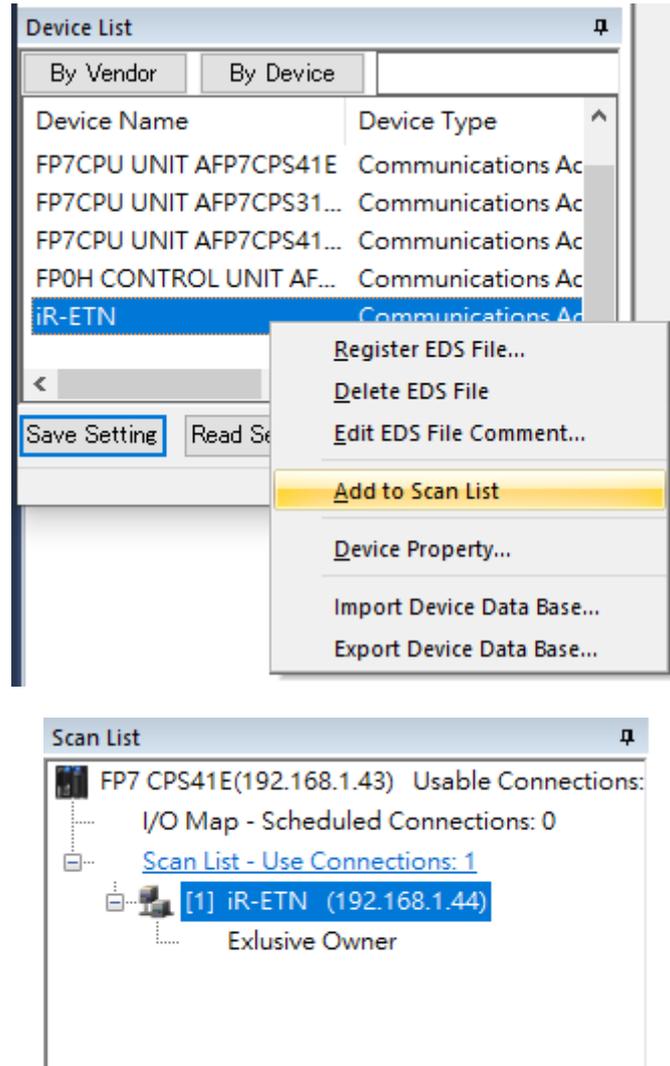
Step 1. Use static IP for PLC.



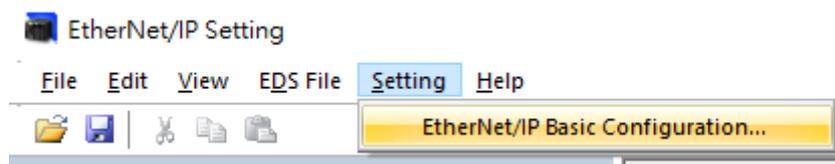
Step 2. Open EtherNet/IP Setting » [EDS File] » [Register...] and import iR-ETN's EDS file.



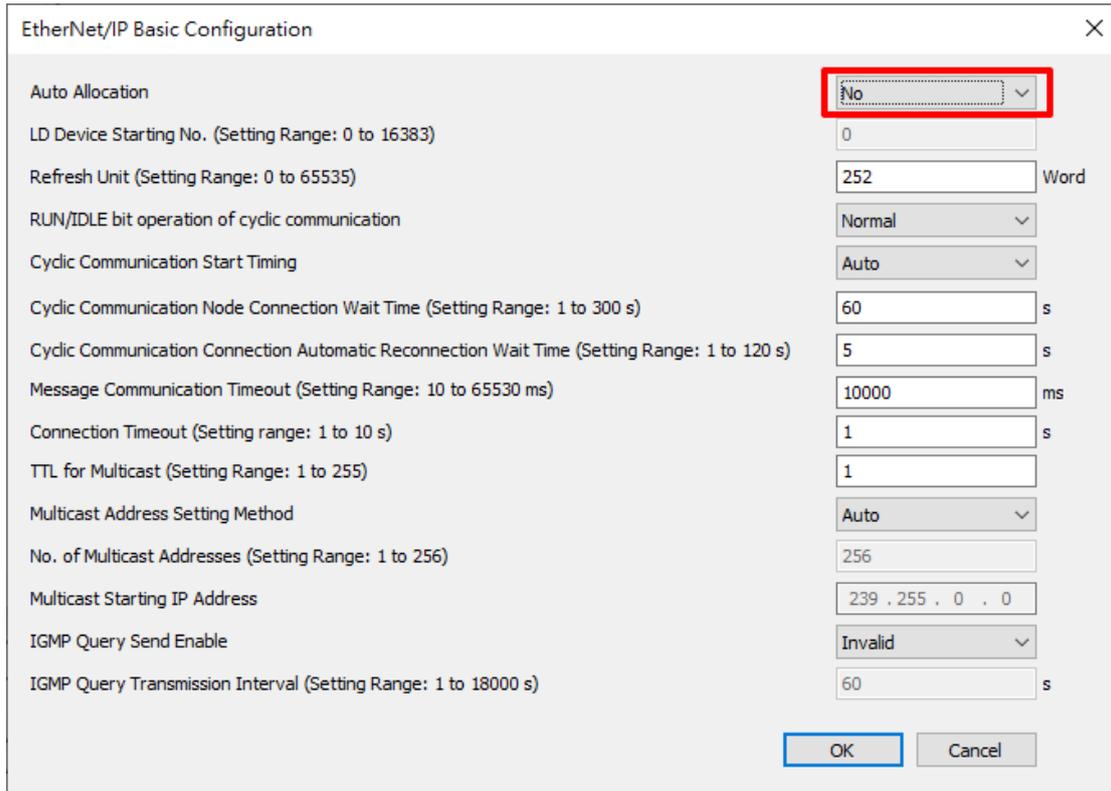
Step 3. Right-click on iR-ETN and select [Add to Scan List].



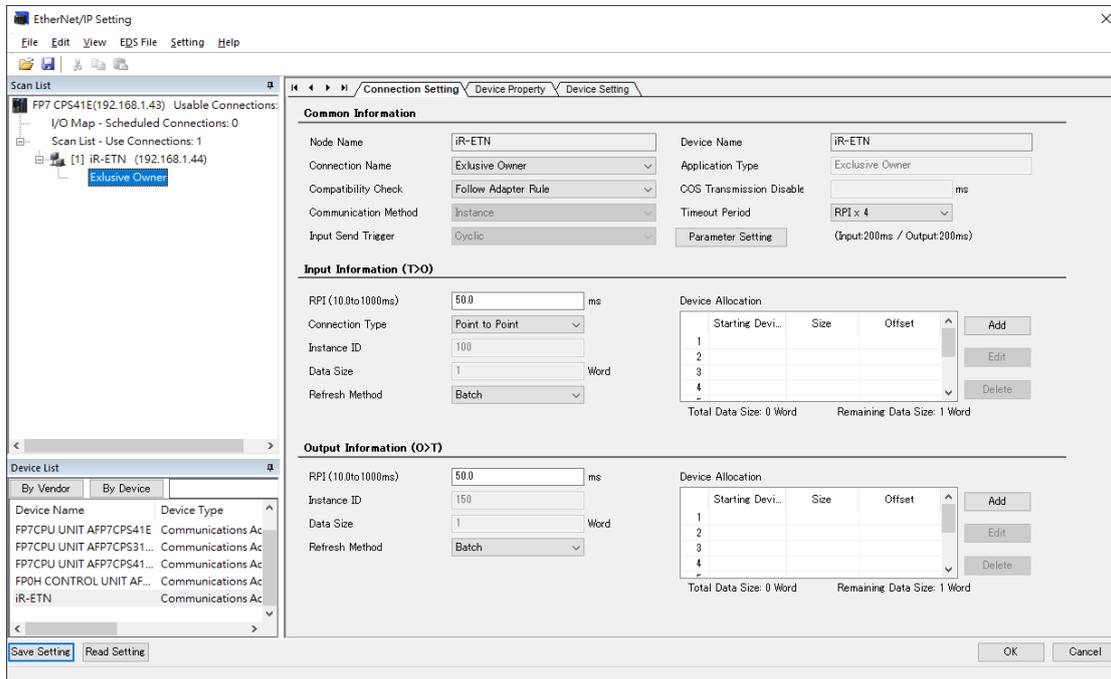
Step 4. [Setting] » [EtherNet/IP Basic Configuration...]



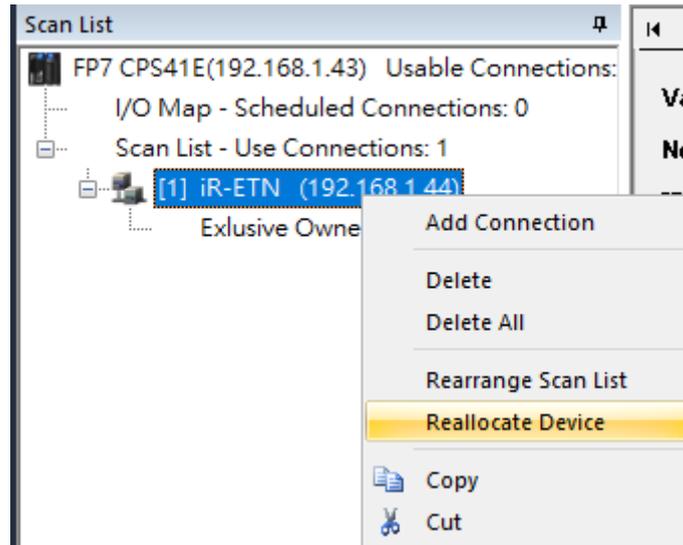
Set [Auto Allocation] to “No”.



Step 5. Device Allocation is currently empty.



Right-click on iR-ETN and select [Reallocate Device].



Settings can be saved for other projects to read by clicking [Save Setting].  
Click [OK] to finish settings.

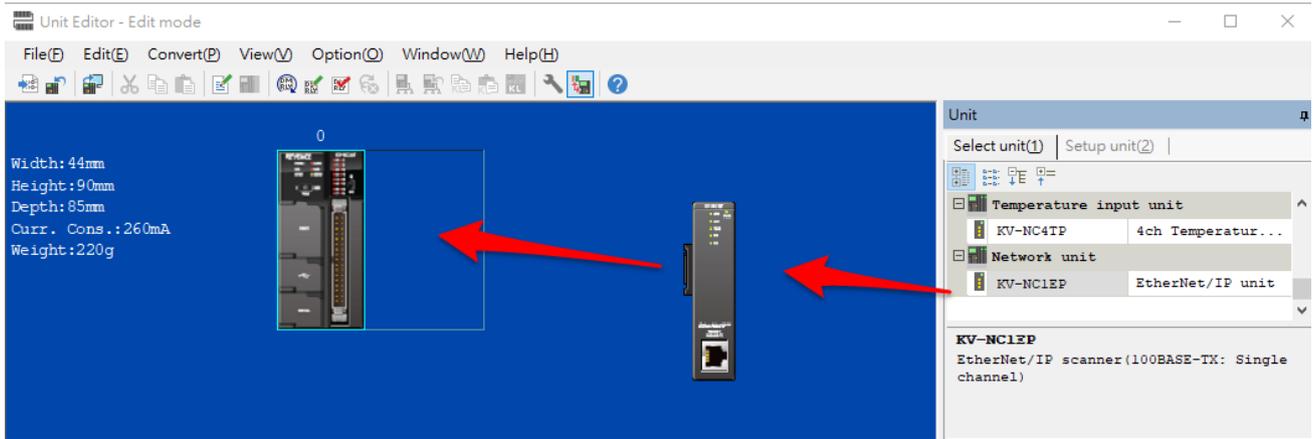
Step 6. Configure I/O mapping in [Global variables] tab for use in the program

	Class	Identifier	FP address	IEC address	Type	Initial
0	VAR_GLOBAL	bT1	LD0.0	%MX8.0.0	BOOL	FALSE
1	VAR_GLOBAL	bOut1	LD1.0	%MX8.1.0	BOOL	FALSE
2	VAR_GLOBAL	bOut2	LD1.8	%MX8.1.8	BOOL	FALSE
3	VAR_GLOBAL	bT2	LD0.8	%MX8.0.8	BOOL	FALSE

## Chapter5. KEYENCE KV Series

KEYENCE KV-NC32 can connect to iR-ETN using KV-NC1EP. Use KV STUDIO software to edit the program.

Step 1. Open a new project, double-click on KV-NC32, and then add KV-NC1EP in Unit Editor.



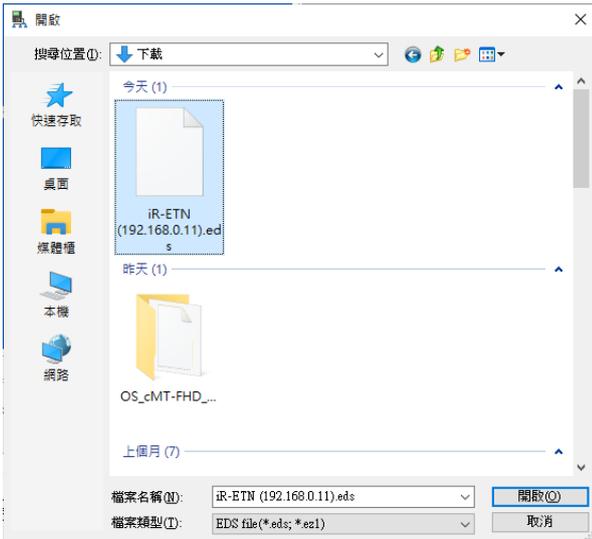
Step 2. Set the IP address of KV-NC1EP.

Base	
Leading DM No.	DM10000
Number of DMs...	230
Leading relay...	R1000
Number of rel...	640
Baud rate	100/10Mbps aut...
Setting metho...	Fixed IP addre...
IP address	192.168.0.10
Subnet mask	255.255.255.0
Default gateway	0.0.0.0
DNS server	0.0.0.0
Receive timeo...	10
Keep Alive[s]	600

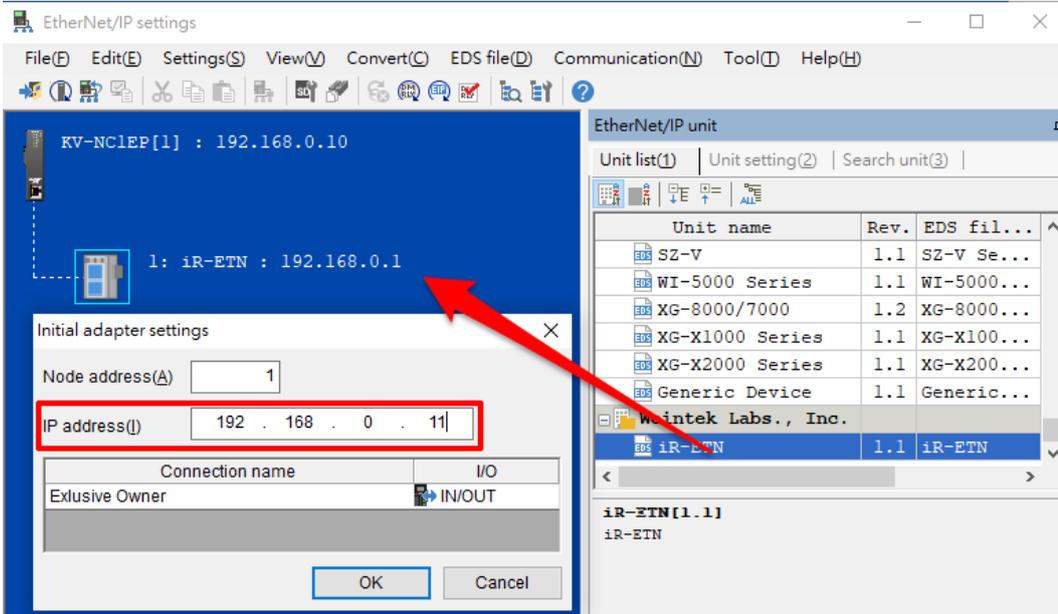
Step 3. EtherNet/IP setting of KV-NC1EP:

EtherNet/IP settings	
Automatic distribution setup	Enable (*)
Start No. of the distribution bit device	B0000
Start No. of the distribution word device	W0000
Update upper limit [word/scan]	252
cyclic(I/O) messages starts automatically	Enable (*)
cyclic(I/O) messages error detection mask time (when connect...	60
cyclic(I/O) messages error detection mask time (when disconn...	5
Explicit messages timeout [ms]	10000
Retry time (system expansion) [s]	60
Multicast TTL	1
Multicast address designation method	Automatic distribution (*)
Number of multicast address	256
Multicast initial address	239.255.0.0
Enable IGMP query sending	Disable (*)
IGMP query sending interval [s]	60
EtherNet/IP settings	<Setting>

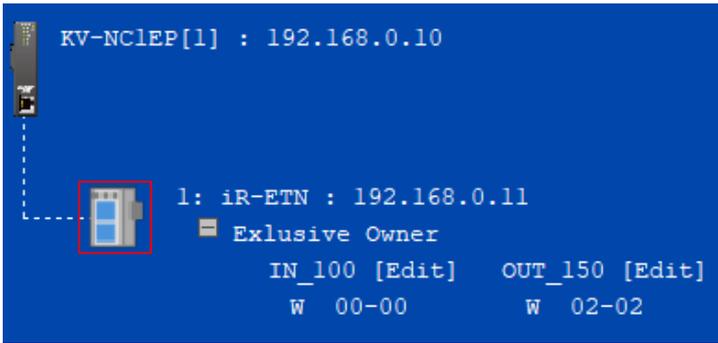
Step 4. Import iR-ETN's EDS file generated by EasyRemoteIO.



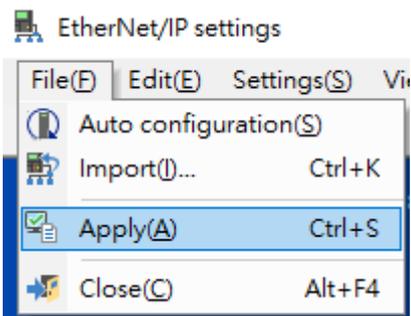
Step 5. Double-click on iR-ETN to add it into the settings and then set iR-ETN's IP address.



iR-ETN configuration is completed, the input address is W00 and output address is W02.



Step 6. Click [Apply] to finish.



Input module corresponds to W00 and Output module corresponds to W02. Edit the PLC program, download the program to PLC and then run the program.