

User Manual

cMT+CODESYS and Remote I/O Quick Start Guide

This is a step-by-step instruction on how to set up cMT+CODESYS and Remote I/O.

V1.01

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Software version: CODESYS V3.5 SP10 Patch 3

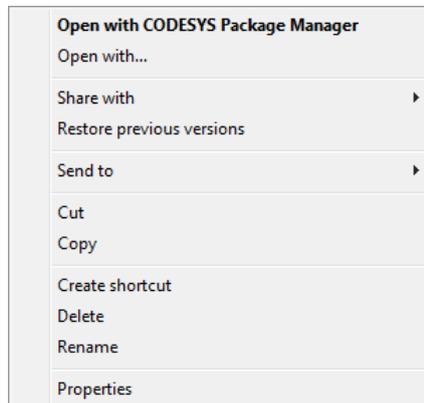
1 Installing Weintek Built-in CODESYS

Installing Weintek Built-in CODESYS allows users to easily create a cMT+CODESYS project in CODESYS software. Please find the Package file we prepared and follow these steps for quick installation.

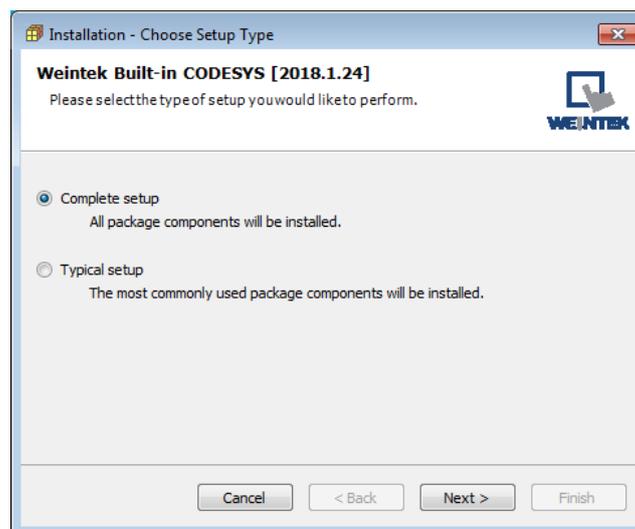
1. First, get a copy of CODESYS Package file.



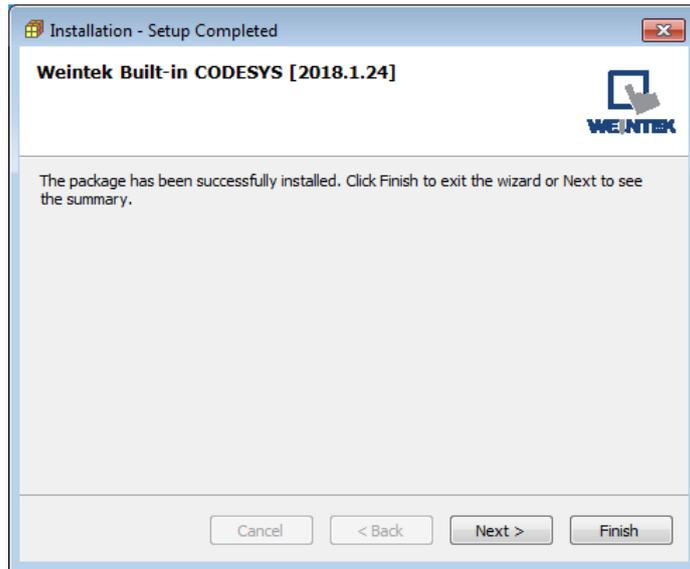
2. On your PC, right-click the mouse button and select [Open with CODESYS Package Manager].



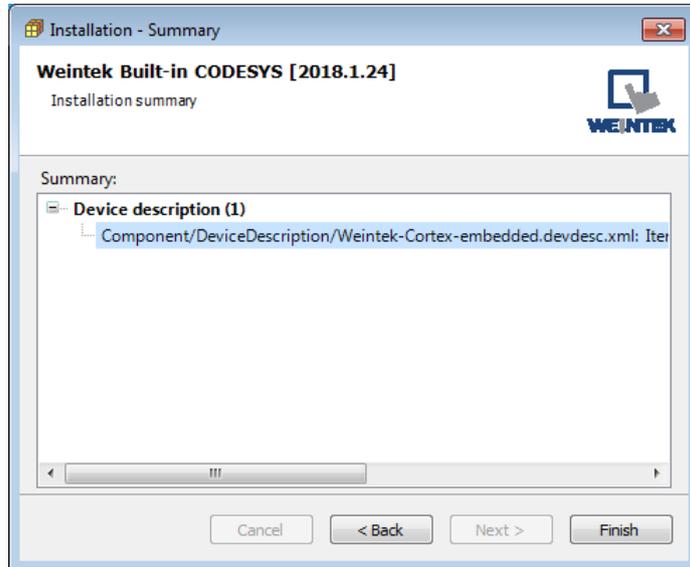
3. Select Complete Setup or Typical Setup (you may select any of these setup types since the components used by Weintek Built-in CODESYS exist in both types.)



4. Click [Next] when seeing the following message.



- 5. The installed component will be shown in the installation summary.



2 Connecting cMT CODESYS

2.1 Connecting Through Network

1. Connect cMT model's LAN 1 port with a router or PC.
2. Tap Start button to open HMI system settings window.

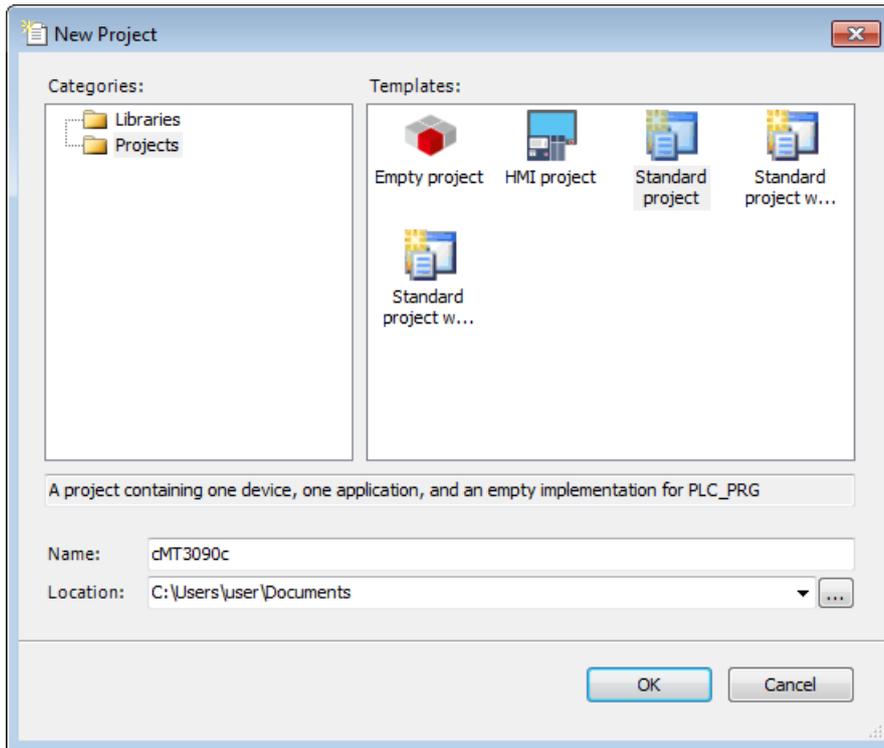


3. Open CODESYS page and find the IP address. By default, DHCP is used and it will automatically obtain an IP address.

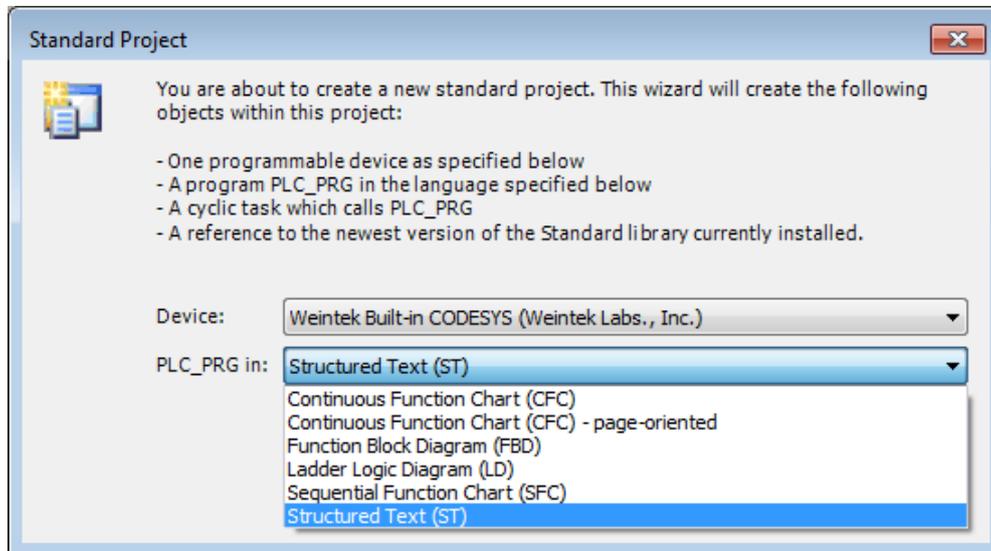


2.2 Creating CODESYS Project

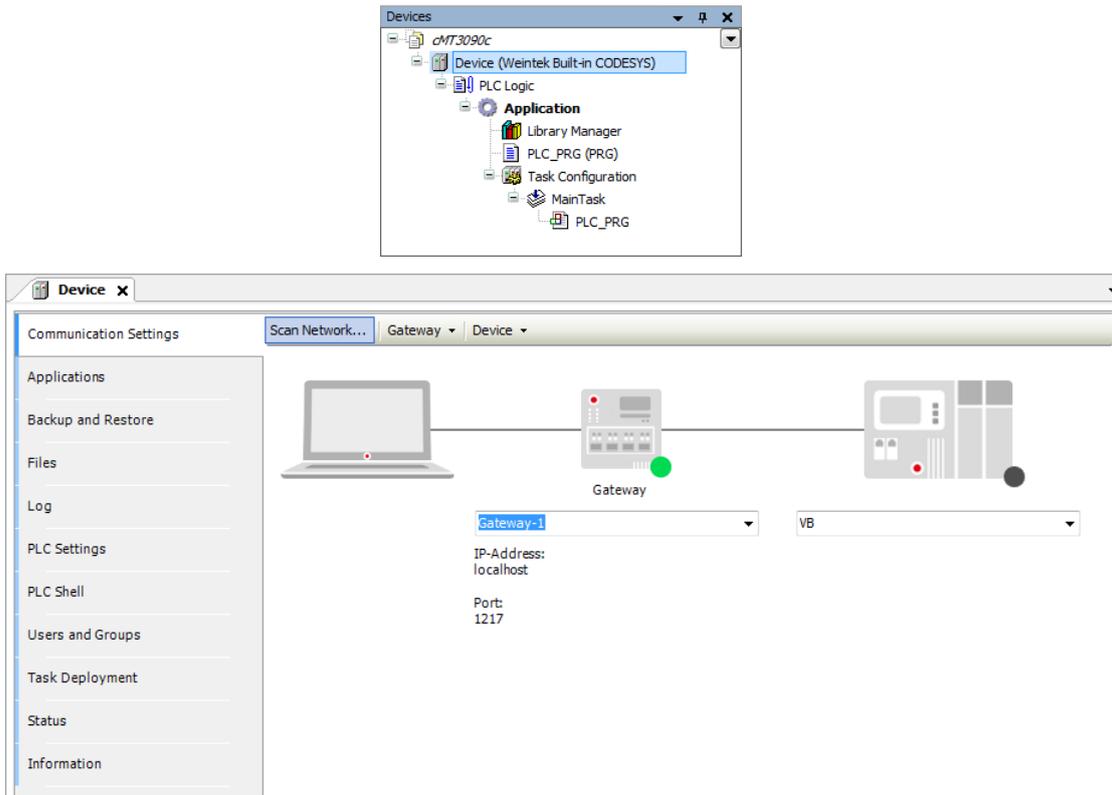
1. Launch CODESYS V3.5 and click [File] » [New Project], and then select [Standard project]. Enter the project name in Name field, browse for the location, and then click [OK] to leave.



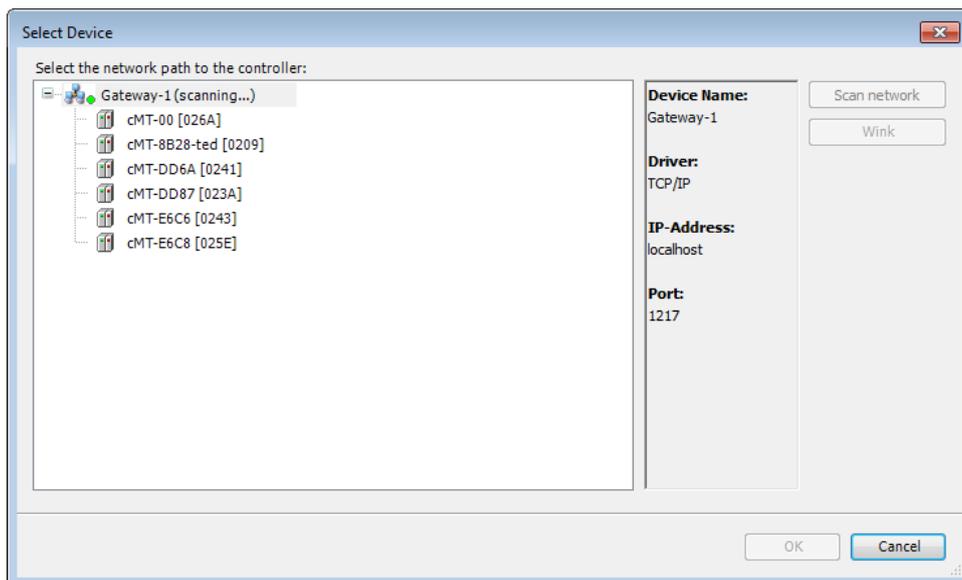
2. Select Weintek Built-in CODESYS. CODESYS software provides 6 languages that can be selected in [PLC_PRG in:] drop-down list as shown below. Structure Text (ST) is used as an example in this manual.



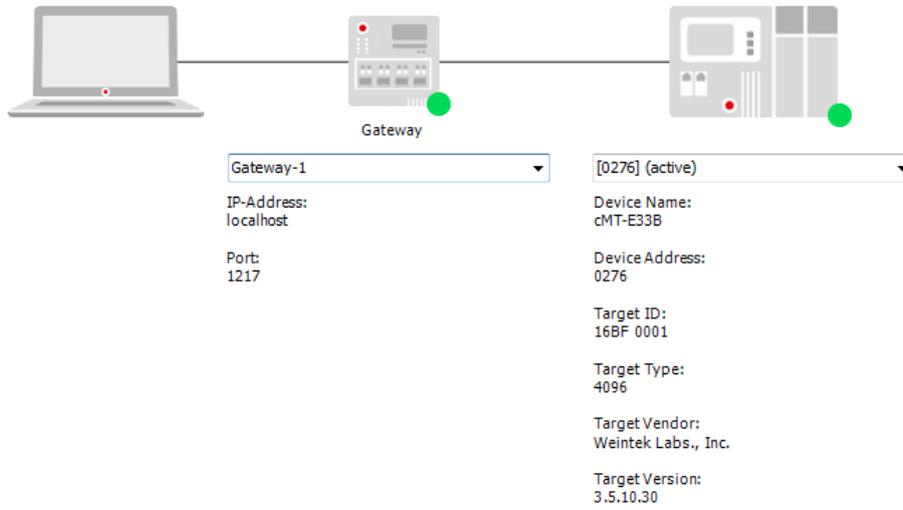
3. Double-click on Device (Weintek Built-in CODESYS) to open the settings window.



4. Open Scan Network tab, CODESYS software will start searching for the CODESYS devices on the same network. Select the desired device and then click [OK] to leave. The last two IP address parts (between dots) are converted into HEX digits and shown in this window. For example, if the IP address of the CODESYS device is 192.168.2.118, please select *HMI Name[0276]*.



5. The project will connect the selected device.



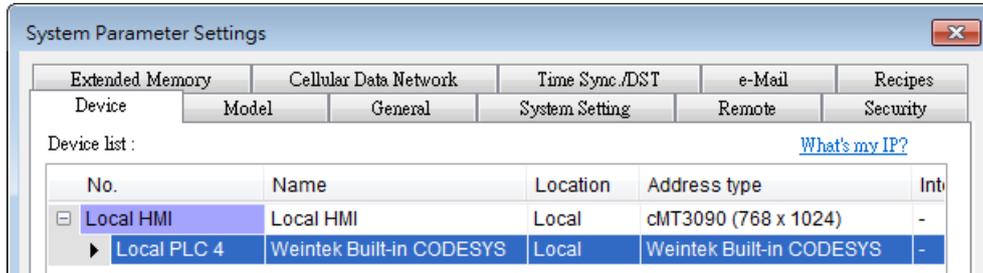
Note

- IP address of the device can be entered in the field shown below.

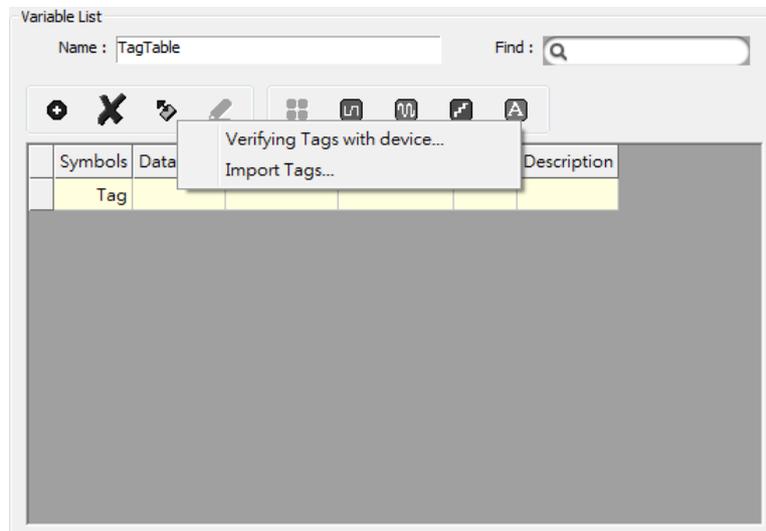


3.3 Configuring EasyBuilder

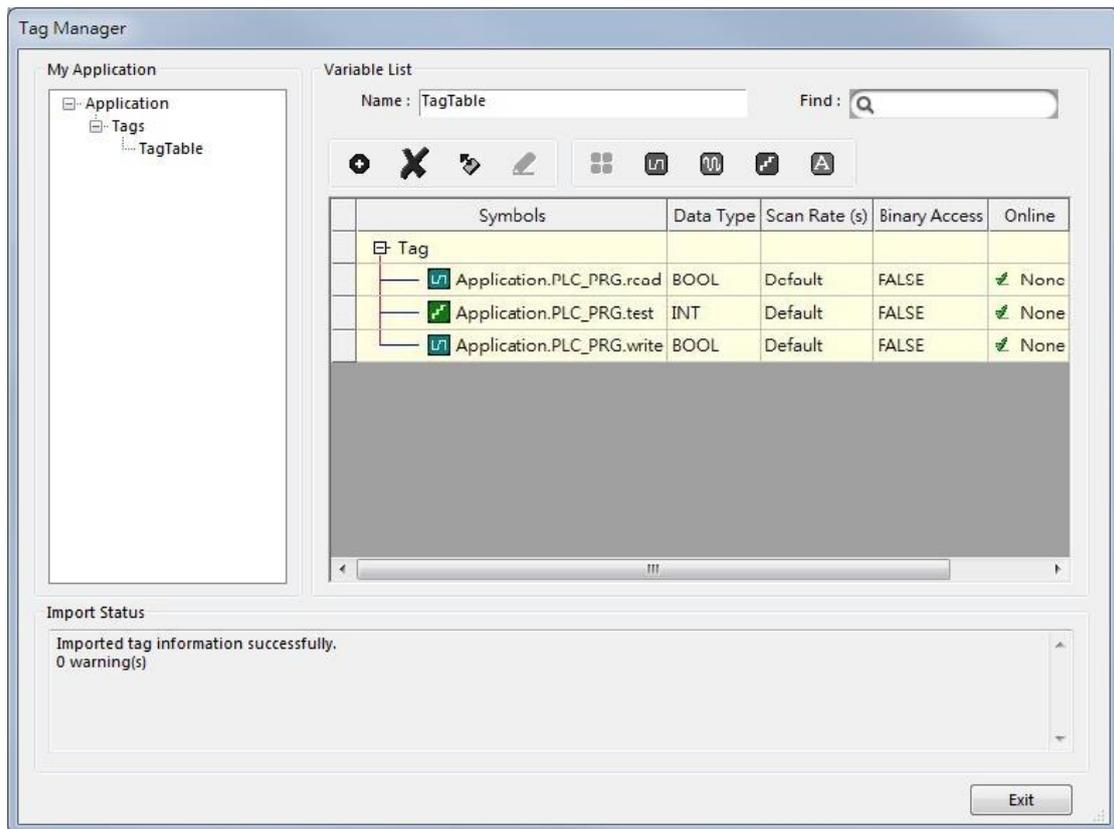
1. Create a project and select Weintek Built-in CODESYS in the device list.



2. Open Tag Manager and click , and then click [Import Tag] to import the *.xml file built in preceding steps.



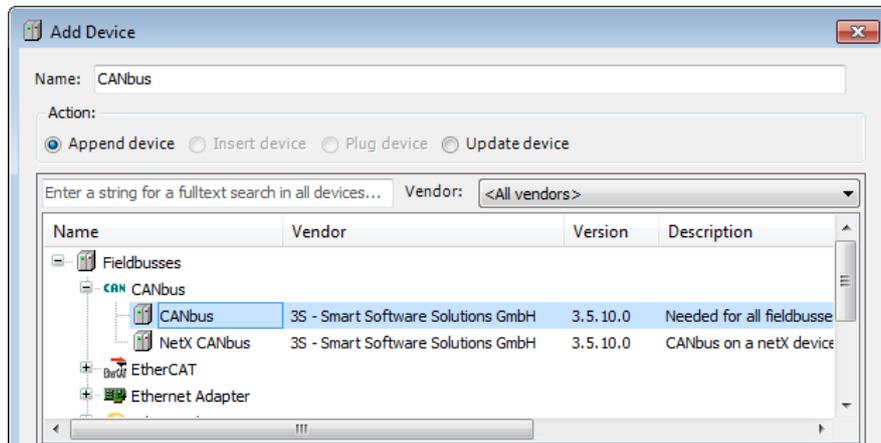
3. The CODESYS tags can now be found in Tag Manager.



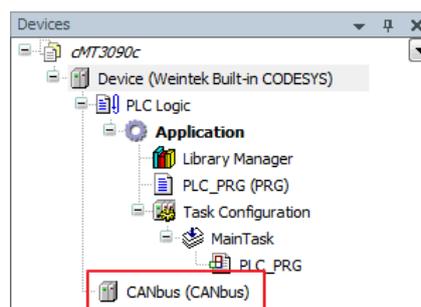
4. Create a Numeric object and use "Application.PLC_PRG.test" for address. After downloading the project to HMI, "test" tag data can be found.

4 Connecting cMT CODESYS to iR-COP

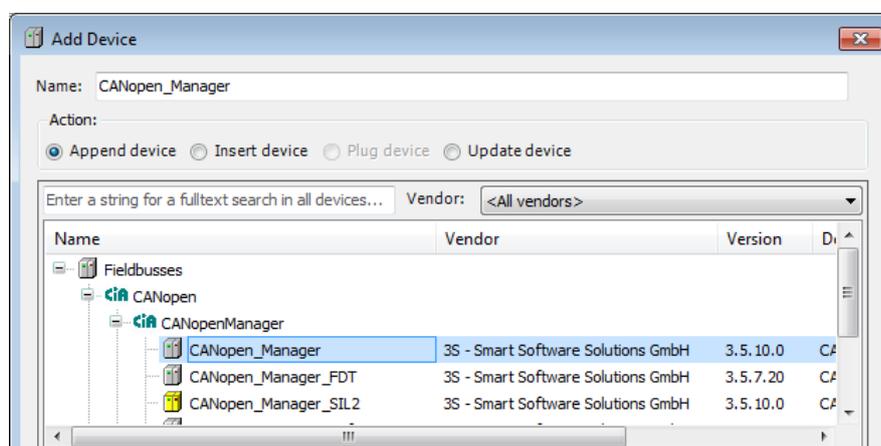
1. Right-click on Device (Weintek Built-in CODESYS) and then select [Add Device].
2. Select [CANbus] » [CANbus], and then select [Add Device].



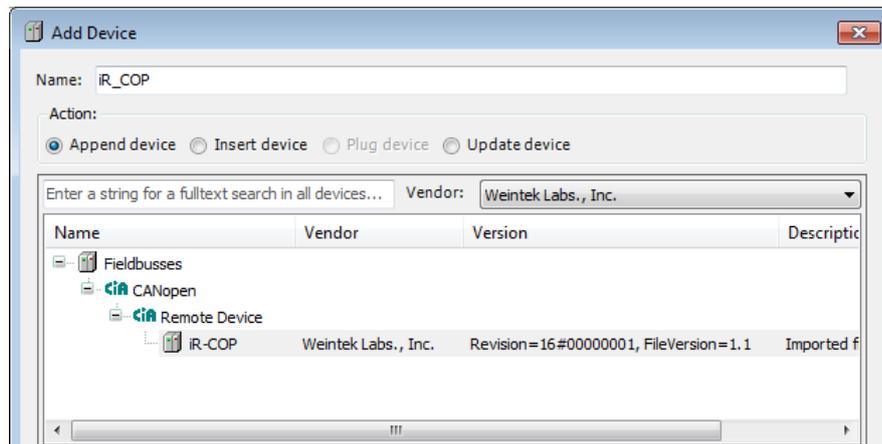
3. CANbus (CANbus) can be found in Devices tree.



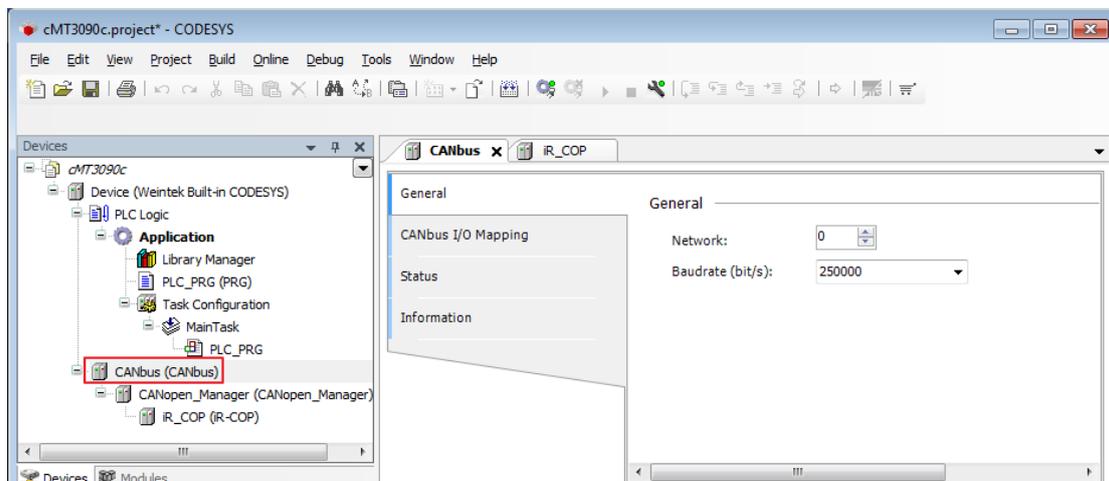
4. Double-click on CANbus (CANbus) with the current window opened in Devices tree, or right-click on CANbus (CANbus) and then select [Add Device].
5. Click [Fieldbusses] » [CANopen] » [CANopen Manager] » [CANopen Manager], and then select [Add Device].



6. Double-click on CANopen_Manager with the current window opened in Devices tree or right-click on CANopen_Manager and then click [Add Device].
7. Click [Fieldbusses] » [CANopen] » [Remote Device], find iR-COP and then select [Add Device].



8. Double click on CANbus (CANbus) in Devices tree to open the settings window. Please select the correct baud rate for iR-COP in General tab.



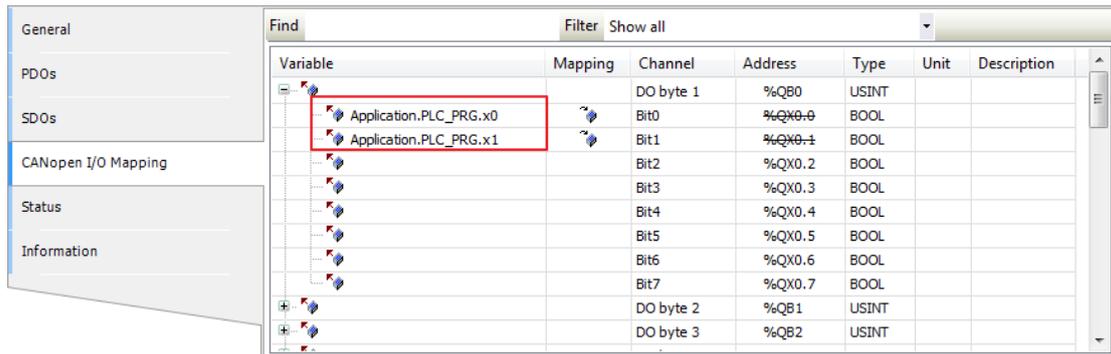
9. Create CANopen variables in PLC_PRG, for example:

```

1  PROGRAM PLC_PRG
2  VAR
3      x0 : BOOL;
4      x1 : BOOL;
5
6  END_VAR

```

10. Double click on iR_Cop in Devices tree to open the settings window. Select related variables in CANopen I/O Mapping tab.

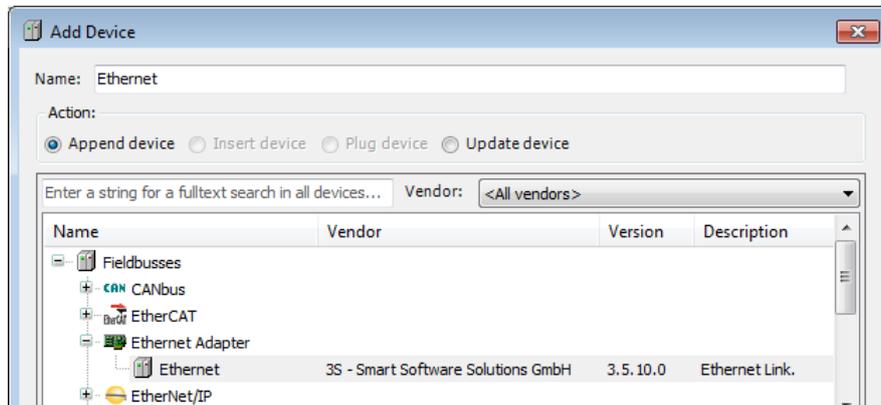


Variable	Mapping	Channel	Address	Type	Unit	Description
		DO byte 1	%QB0	USINT		
Application.PLC_PRG.x0		Bit0	%QX0.0	BOOL		
Application.PLC_PRG.x1		Bit1	%QX0.1	BOOL		
		Bit2	%QX0.2	BOOL		
		Bit3	%QX0.3	BOOL		
		Bit4	%QX0.4	BOOL		
		Bit5	%QX0.5	BOOL		
		Bit6	%QX0.6	BOOL		
		Bit7	%QX0.7	BOOL		
		DO byte 2	%QB1	USINT		
		DO byte 3	%QB2	USINT		

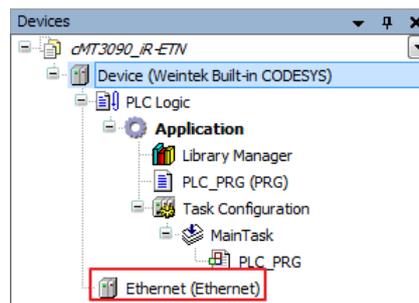
11. When finished, click [Online] » [Login] to download the project to CODESYS.

5 Connecting cMT CODESYS to iR-ETN

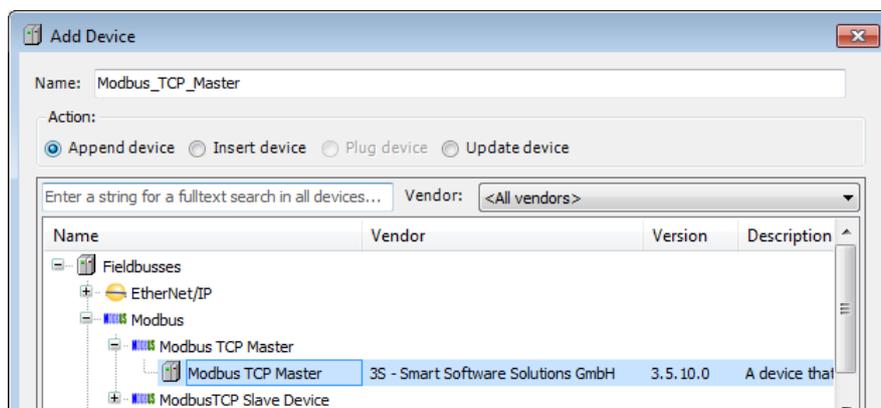
1. Right-click on Device (Weintek Built-in CODESYS) and then select [Add Device].
2. Select [Ethernet Adapter] » [Ethernet] and then click [Add Device].



3. Ethernet (Ethernet) can be found in Devices tree.



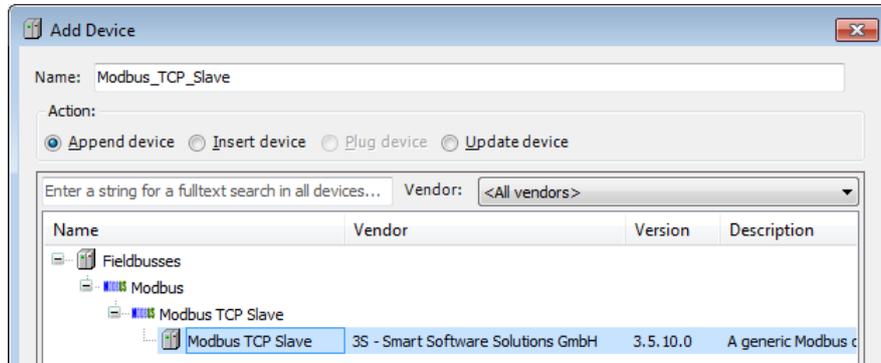
4. Double-click on Ethernet with the current window opened in Devices tree or right-click on Ethernet and then select [Add Device].
5. Click [Fieldbusses] » [Modbus] » [Modbus TCP Master] » [Modbus TCP Master], and then select [Add Device].



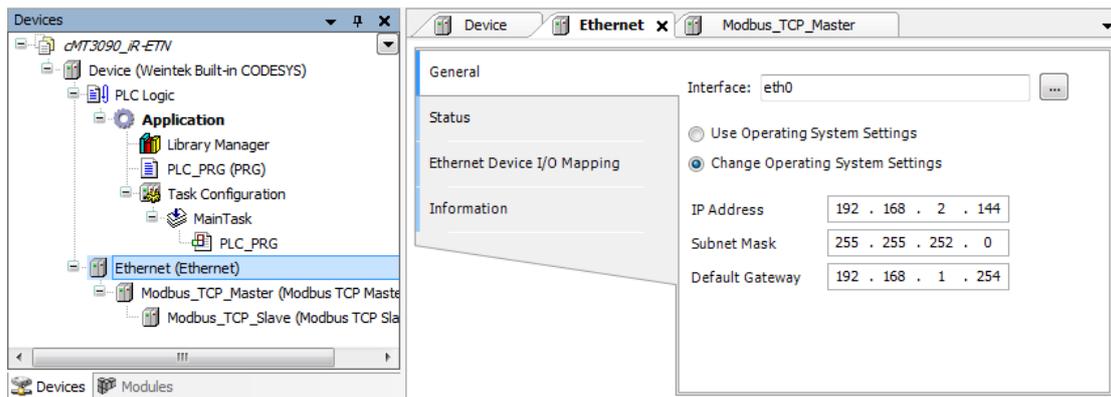
6. Double-click on Modbus TCP Master with the current window opened in Devices tree or right-click on Modbus TCP Master and then click [Add

Device].

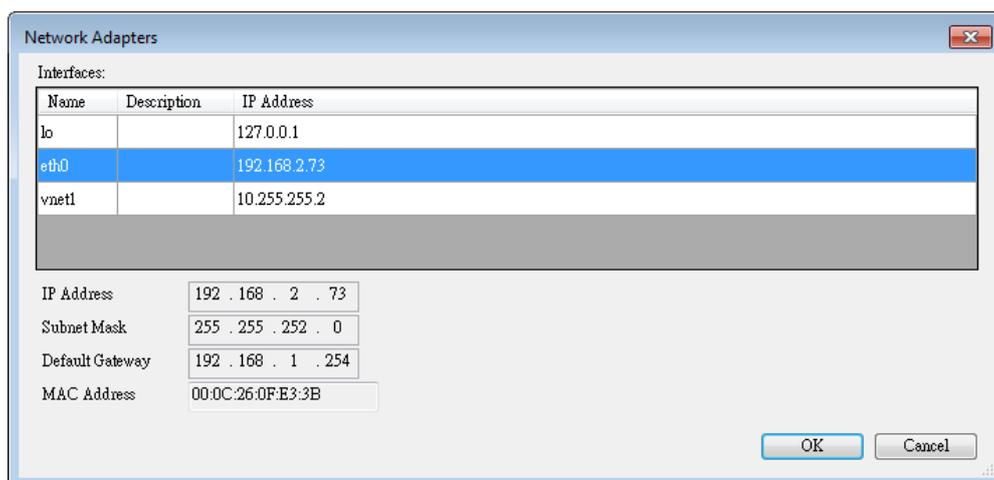
- Click [Fieldbusses] » [Modbus] » [Modbus TCP Slave] » [Modbus TCP Slave], and then select [Add Device].



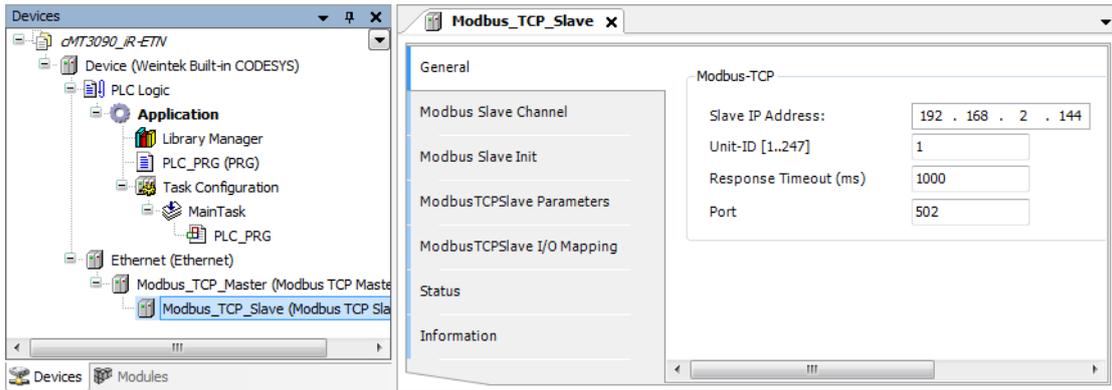
- Double click on Ethernet in the Devices tree, enter CODESYS’s IP address in General tab, and then select [Change Operating System Settings].



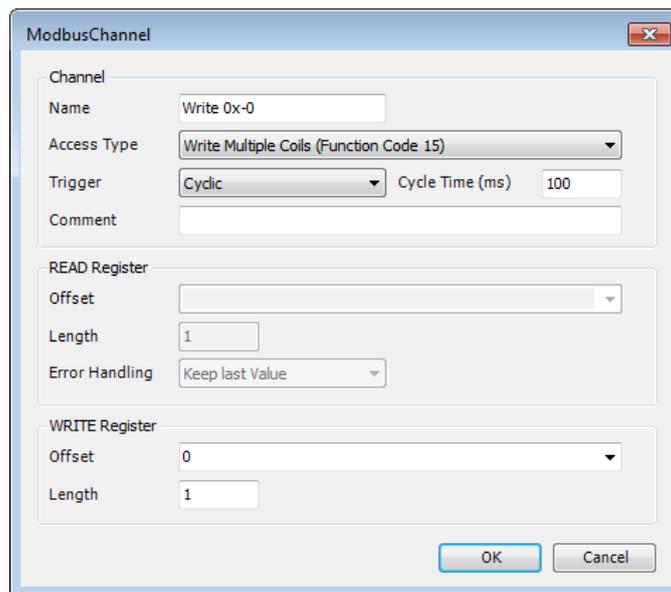
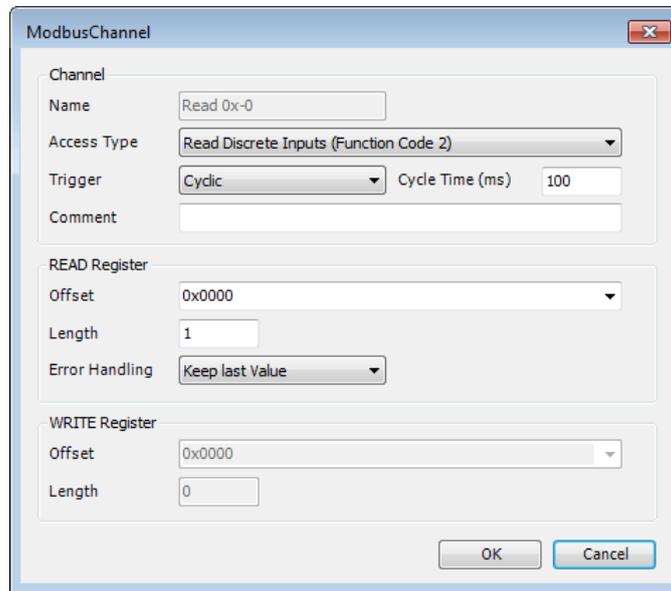
- When CODESYS is already connected, go to General tab and click the [...] button near Interface field and select eth0.



- Select Modbus_TCP_Slave in the Devices tree and then go to General tab to set up IR-ETN’s IP address and Unit ID.



11. Open [Modbus Slave Channel] tab and create Modbus Variable.



12. Open PLC_PRG in Devices tree, create tag and set Bool as data type. Write

a command as shown below.

```

1  PROGRAM PLC_PRG
2  VAR
3      read:BOOL;
4      write:BOOL;
5  END_VAR
6
1  write:=1;
2
    
```

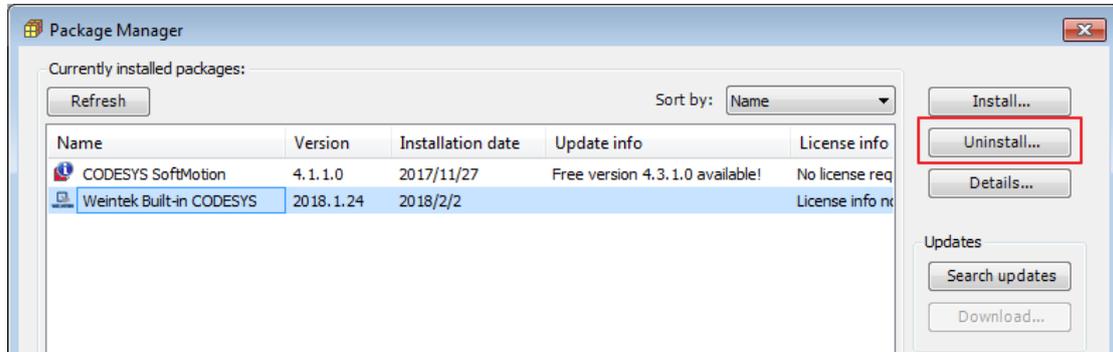
13. Open Modbus_TCP_Slave in Devices tree and then go to [Modbus_TCPSlave I/O Mapping] tab to set up iR-ETN’s IP address and Unit ID.

Variable	Mapping	Channel	Address	Type	Unit	Description
		Read 0x-0	%IB0	ARRAY [0..0] OF BYTE		Read Discrete Inputs
		Read 0x-0[0]	%IB0	BYTE		Read Discrete Inputs
Application.PLC_PRG.read		Bit0	%IX0-0	BOOL		0x0000
		Write 0x-0	%QB0	ARRAY [0..0] OF BYTE		Write Multiple Coils
		Write 0x-0[0]	%QB0	BYTE		Write Multiple Coils
Application.PLC_PRG.write		Bit0	%QX0-0	BOOL		0x0000

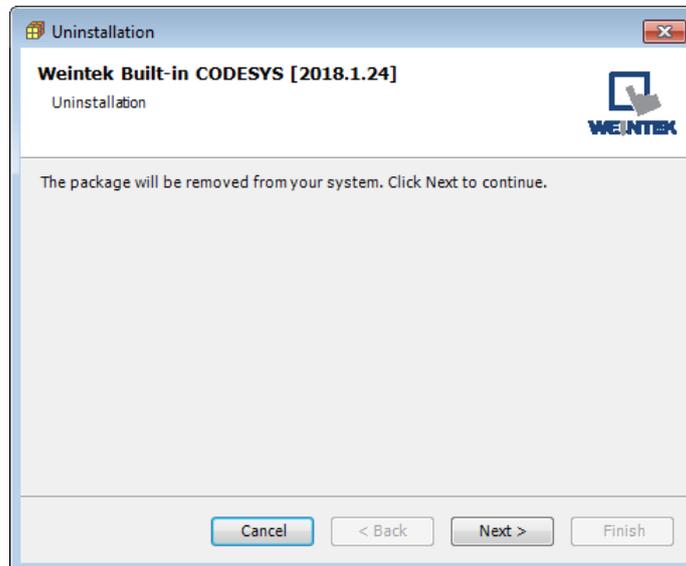
14. When finished, click [Online] » [Login] to download the project to CODESYS.

6 Removing Weintek Built-in CODESYS

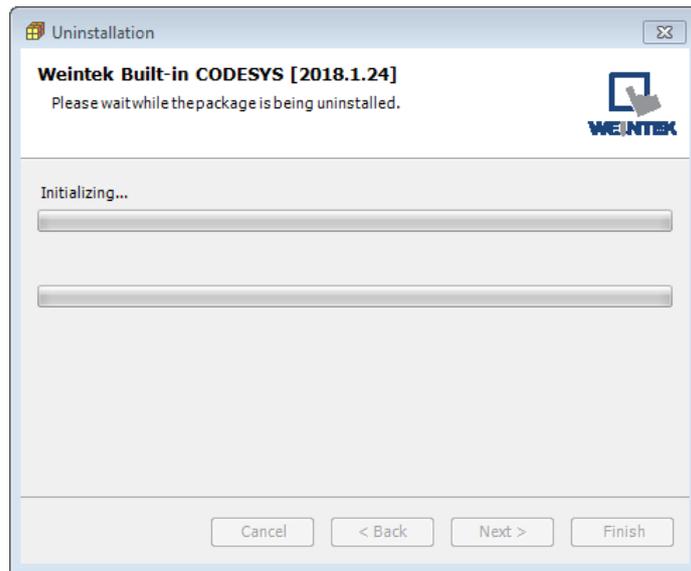
1. Click [Tools] » [Packages Manager].
2. Find Weintek Built-in CODESYS and then click [Uninstall].



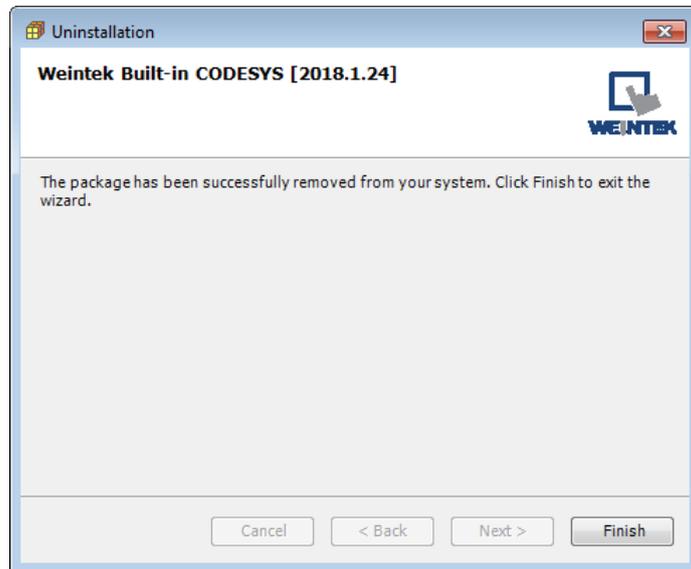
3. Click [Next] when seeing the window below.



4. Removing the program.



5. Click [Finish].



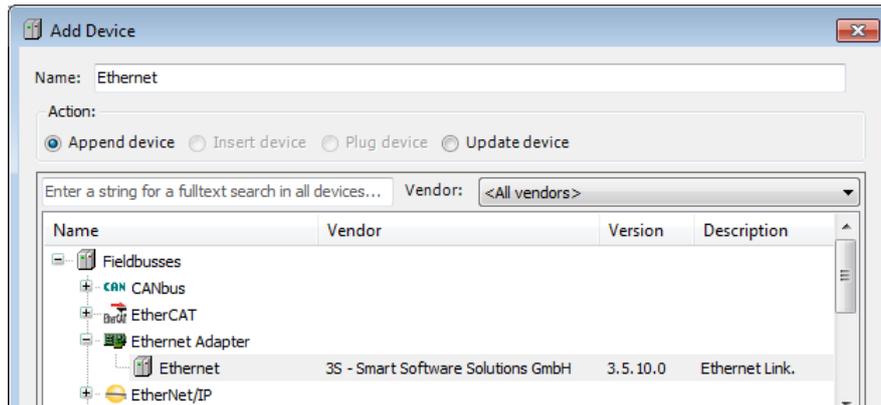
7 Frequently Asked Questions

7.1 Questions Related to IP Address

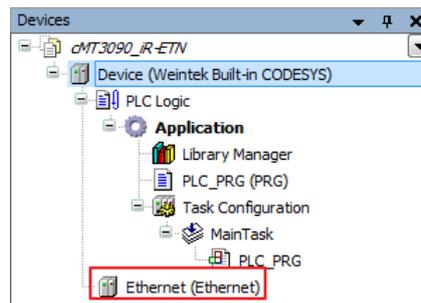
Q1. How to use static IP address for cMT CODESYS?

A: Please follow these steps.

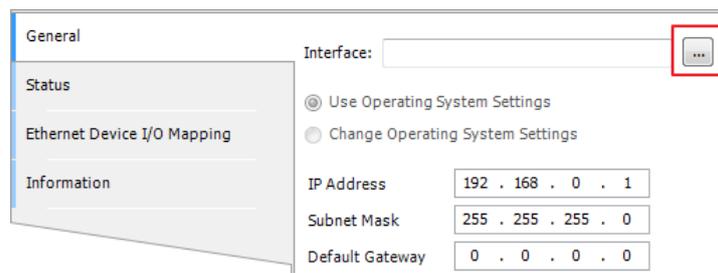
1. Right-click on “Device (Weintek Built-in CODESYS)” and select [Add Device].
2. Select [Ethernet Adapter] » [Ethernet] and then select [Add Device].



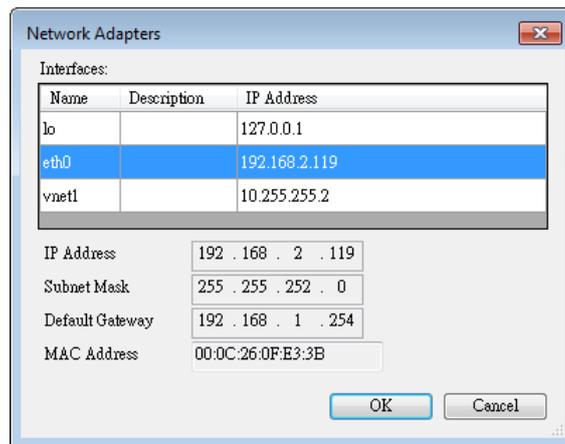
3. In Device tree find Ethernet and double click it.



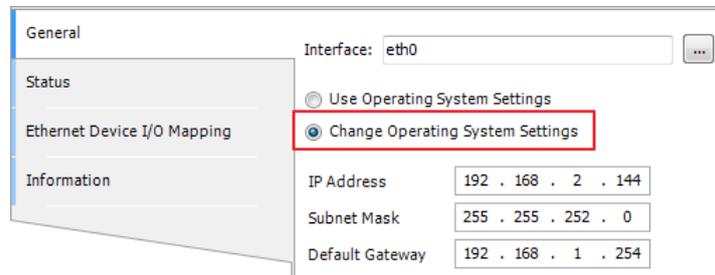
4. The following window opens, click [...] button.



5. Select “eth0”. Please see “2.2 Creating CODESYS Project” to finish CODESYS project settings before doing this step.



6. Select [Change Operating System Settings].



7. Download the project to cMT CODESYS.

Q2. Why my CODESYS Gateway shows 0.0.0.0?

A: When using static IP for cMT CODESYS, its IP address will be displayed as 0.0.0.0.

Q3. Can I use the same domain for cMT HMI's LAN 1 and LAN 2?

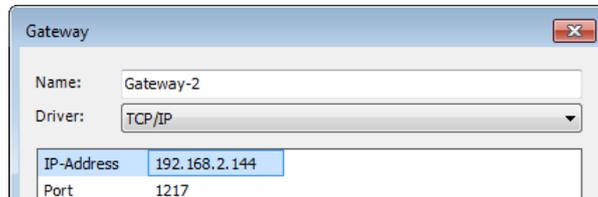
A: This is acceptable only when cMT HMI has CODESYS activated.

7.2 Questions Related to CODESYS

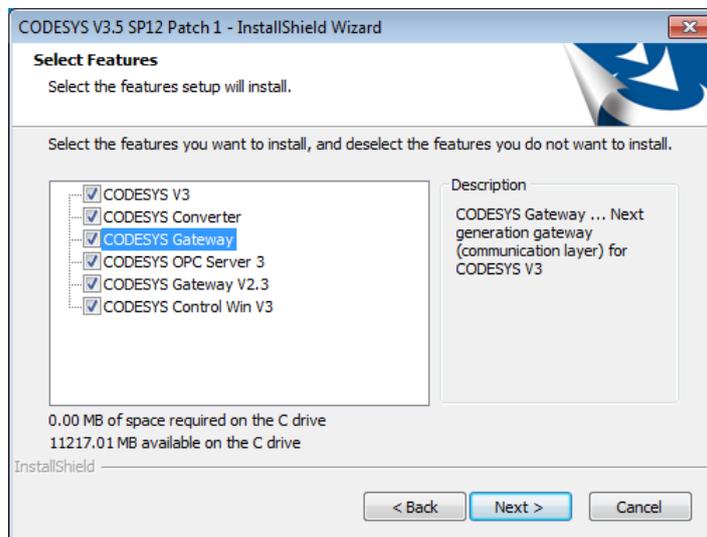
Q1. When the indicator of CODESYS Gateway lights up in red, how can I connect to the device?

A: When CODESYS Gateway is not properly started or installed, its indicator will light up in red. Please try the following 3 methods to solve this situation.

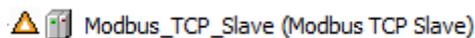
1. Click the icon of "CODESYS Gateway SysTray" in system settings and then click [Start Gateway].
2. Add new gateway and enter HMI IP.



3. Re-install CODESYS Gateway.



Q2. Why a triangle icon shows near Modbus_TCP_Slave device when I log in HMI in CODESYS software?



A: This means that HMI cannot connect Modbus TCP/IP device via CODESYS. Please check the IP settings and make sure the cable is properly connected.

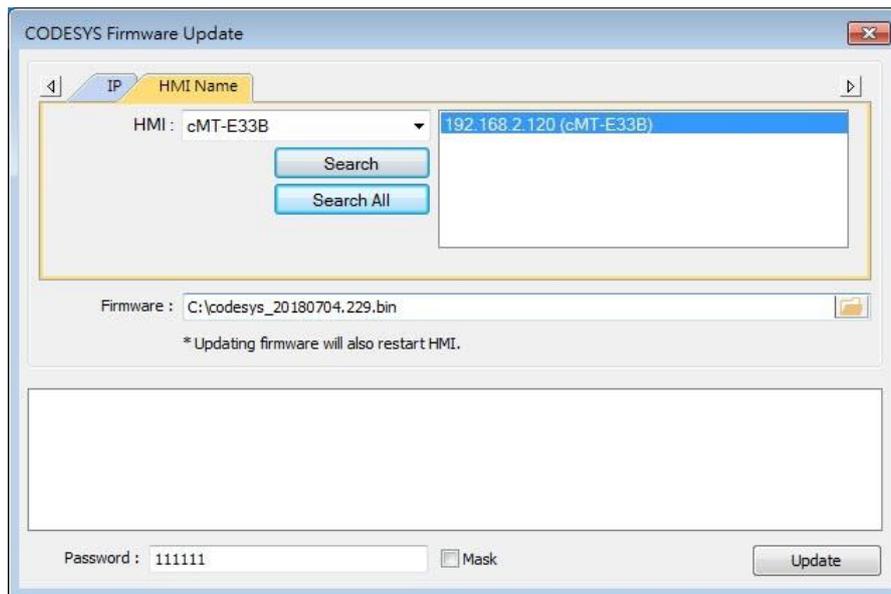
7.3 Questions Related to Downloading cMT CODESYS File

Q1. How to update CODESYS firmware?

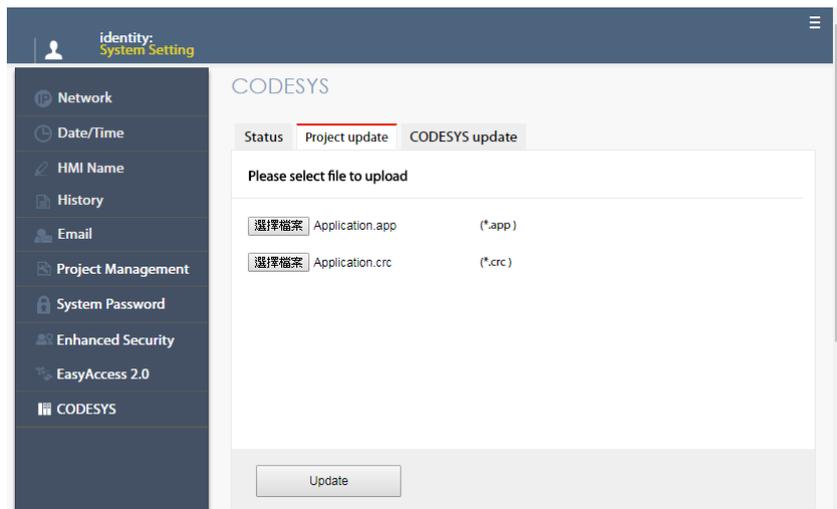
A:

There are 2 ways to update CODESYS firmware.

- 1.** Launch Utility Manager and select cMT Series » Maintenance » CODESYS Firmware Update. Browse for the firmware file and click [Update].



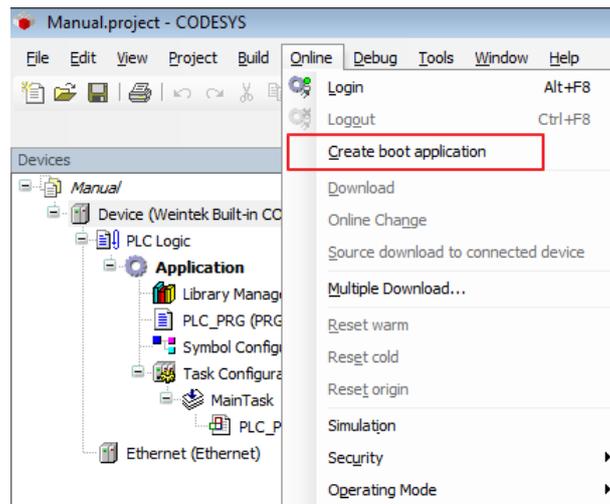
2. Enter cMT HMI's IP address in the website browser and find [CODESYS] » [CODESYS update] tab. Select the file and click [Update].



- Q2.** How to download CODESYS project using website?

A:

1. In CODESYS software select [Online] » [Create boot application]. An *.app file and a *.crc file will be generated.



2. Enter cMT HMI's IP address in the website browser and find [CODESYS] » [Project update] tab. Select the files generated in the last step and click [Update].

