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.

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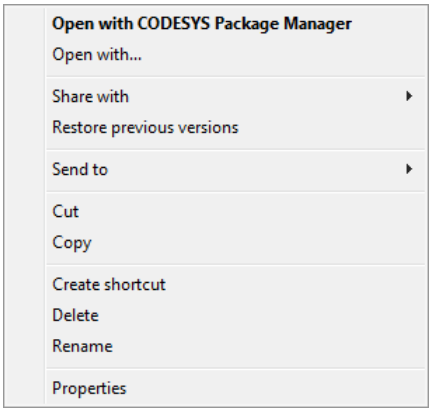
Software version: CODESYS V3.5 SP15 Patch 5

1 Installing Weintek Built-in CODESYS

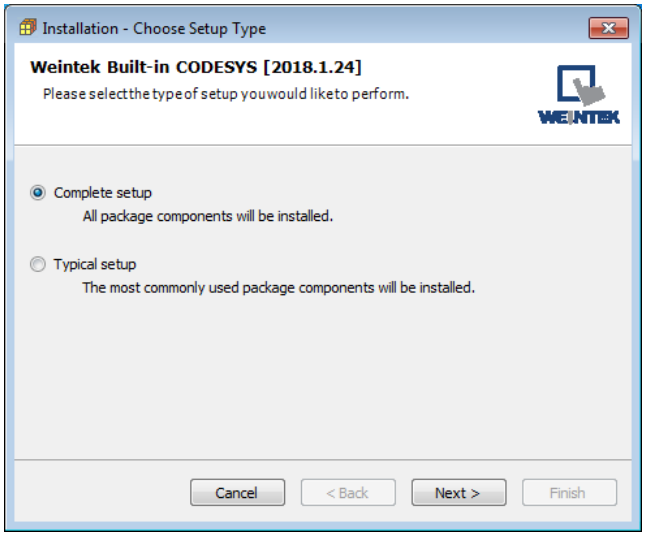
Installing Weintek Built-in CODESYS allows users to easily create a cMT+CODESYS project in CODESYS software. Please find the Package file we prepared and follow these steps for quick installation.

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

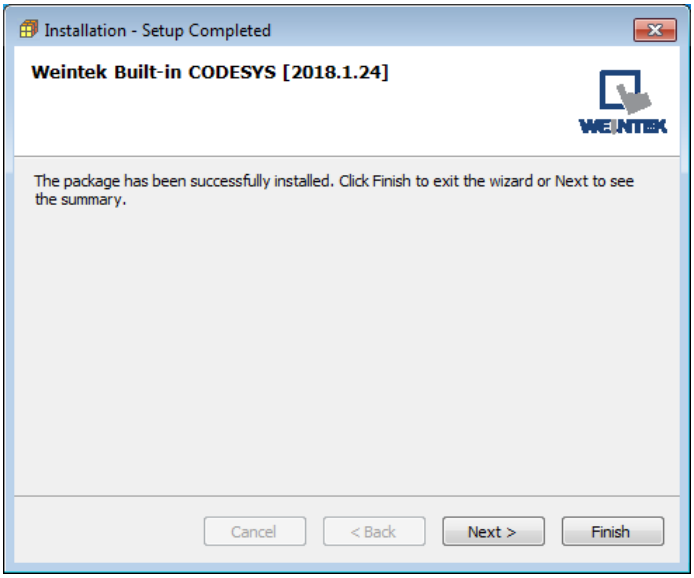
2. On your PC, right-click the mouse button and select [Open with CODESYS Package Manager].



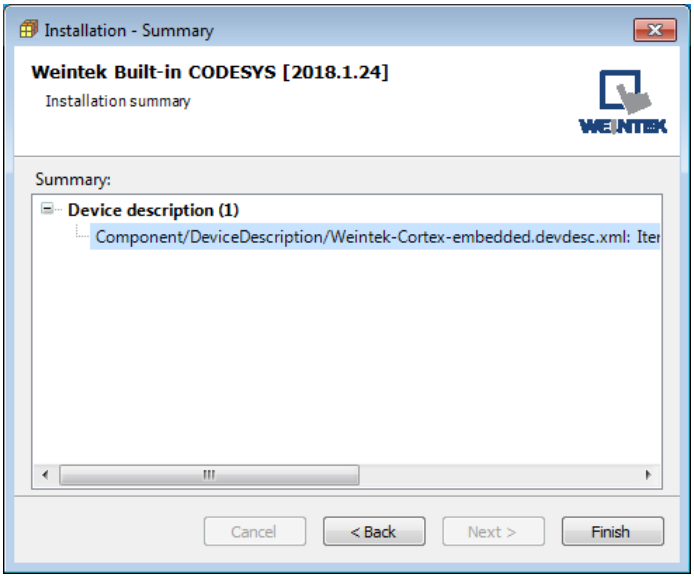
3. Select Complete Setup or Typical Setup (you may select any of these setup types since the components used by Weintek Built-in CODESYS exist in both types.)



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



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

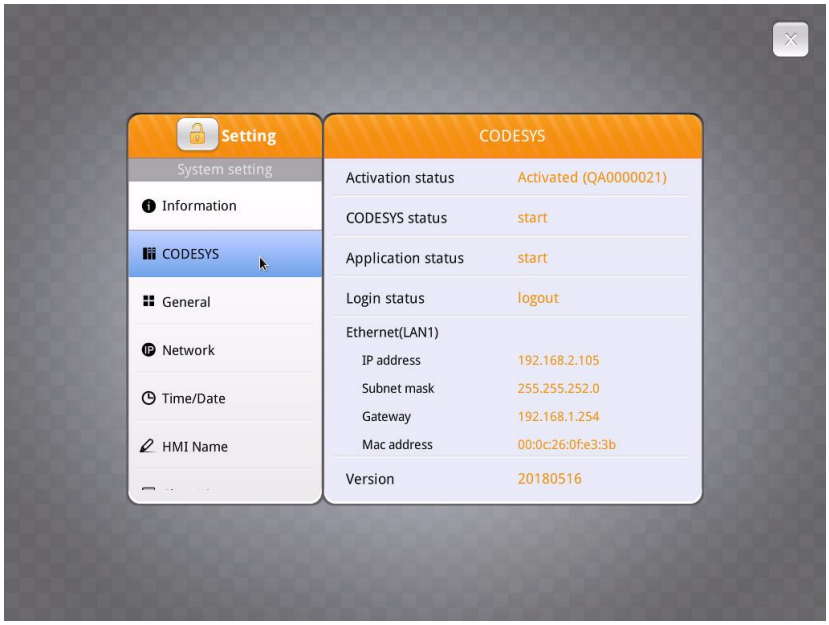


2 Connecting cMT CODESYS

2.1 Connecting Through Network

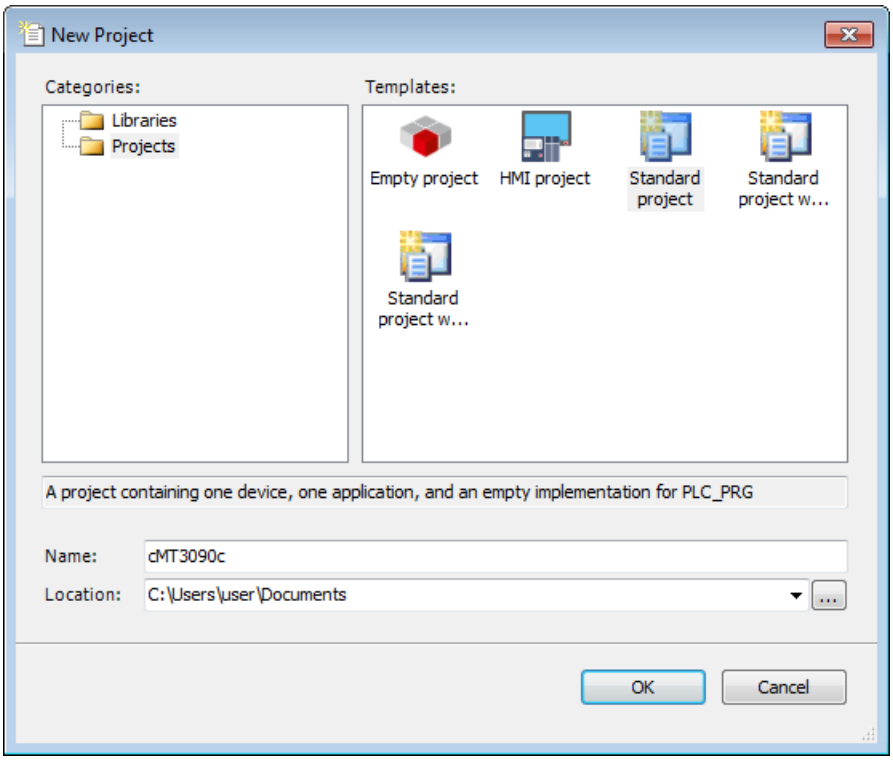
1. Connect cMT model's LAN 1 port with a router or PC.
2. Tap Start button to open HMI system settings window.

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

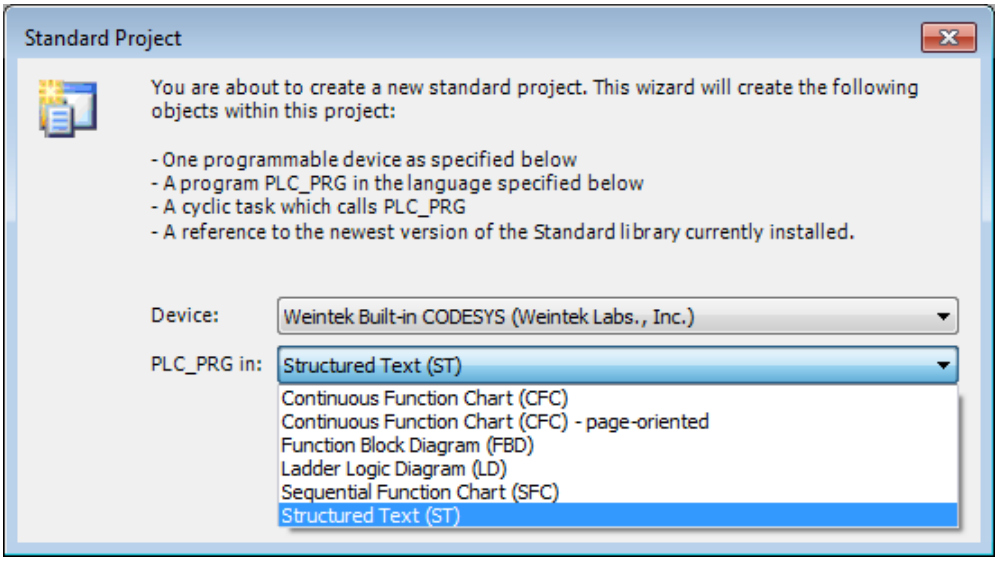


2.2 Creating CODESYS Project

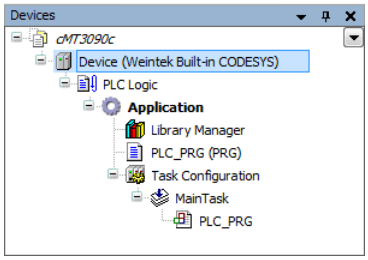
1. Launch CODESYS V3.5 and click [File] » [New Project], and then select [Standard project]. Enter the project name in Name filed, browse for the location, and then click [OK] to leave.

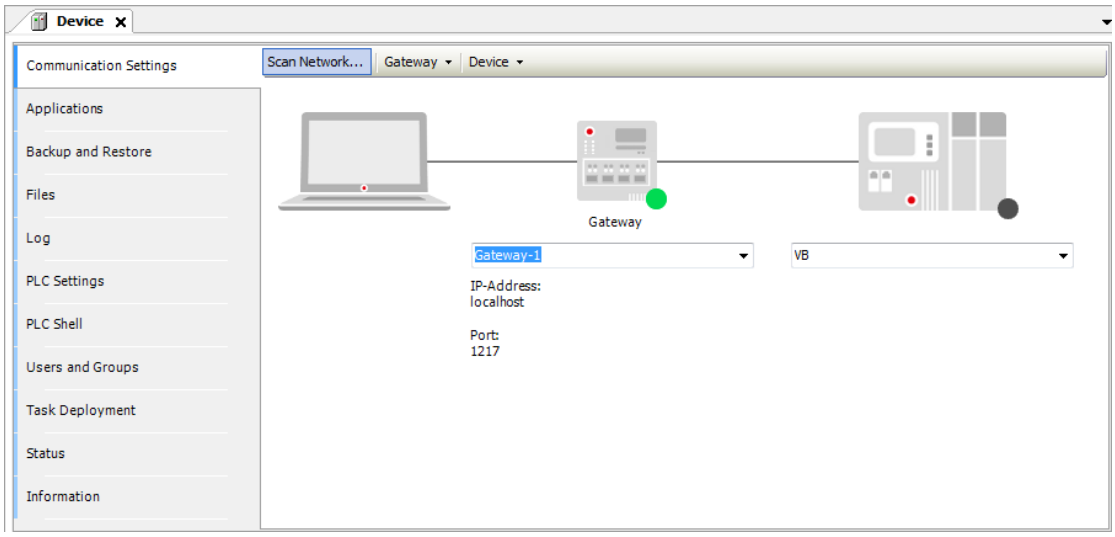


2. Select Weintek Built-in CODESYS. CODESYS software provides 6 languages that can be selected in [PLC_PRG in:] drop-down list as shown below. Structure Text (ST) is used as an example in this manual.

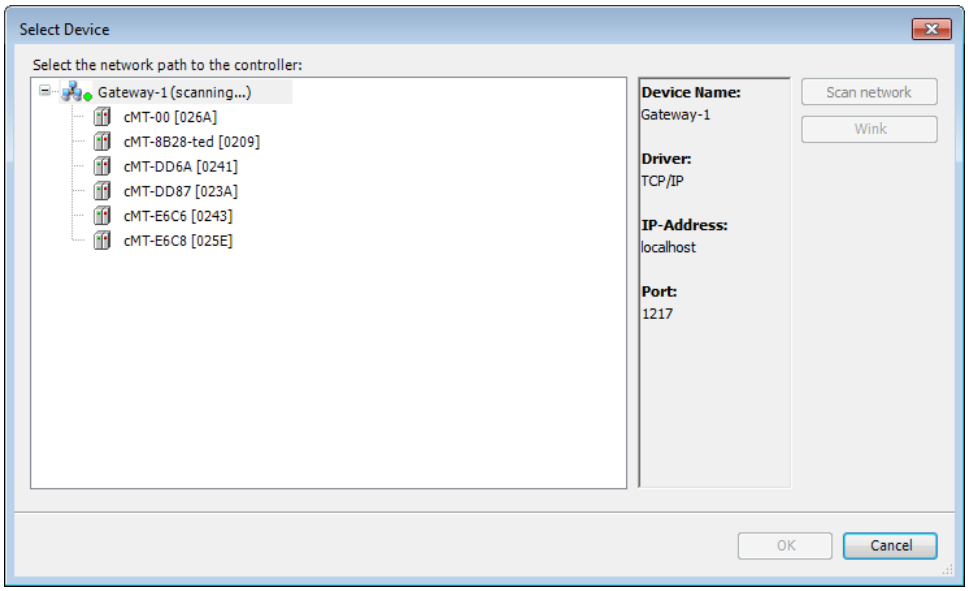


3. Double-click on Device (Weintek Built-in CODESYS) to open the settings window.

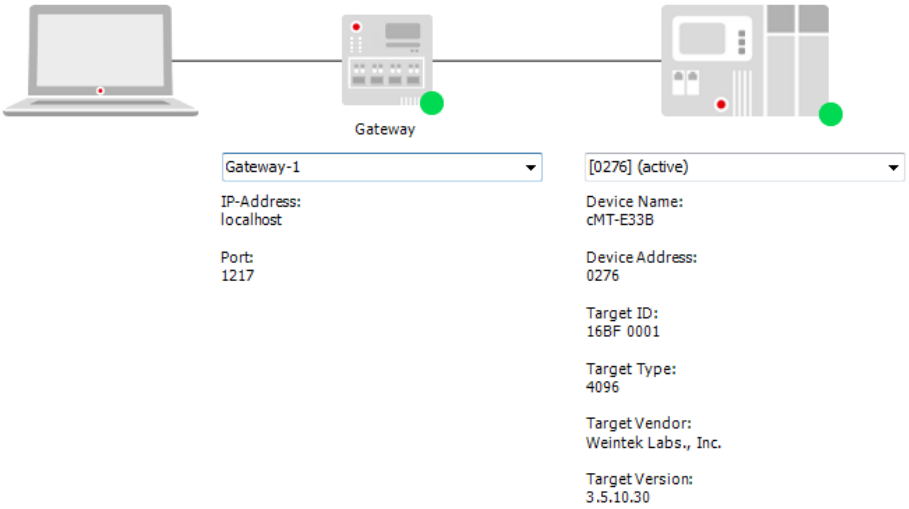




4. Open Scan Network tab, CODESYS software will start searching for the CODESYS devices on the same network. Select the desired device and then click [OK] to leave. The last two IP address parts (between dots) are converted into HEX digits and shown in this window. For example, if the IP address of the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

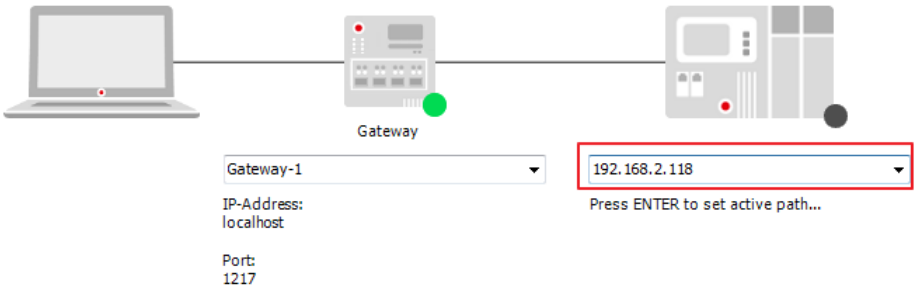


5. The project will connect the selected device.



Note

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

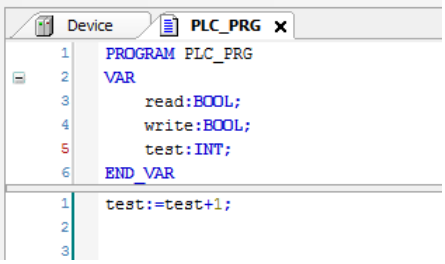


3 Creating EasyBuilder Project

*Please use EasyBuilder Pro v6.00.02 build 20180410 or later versions.

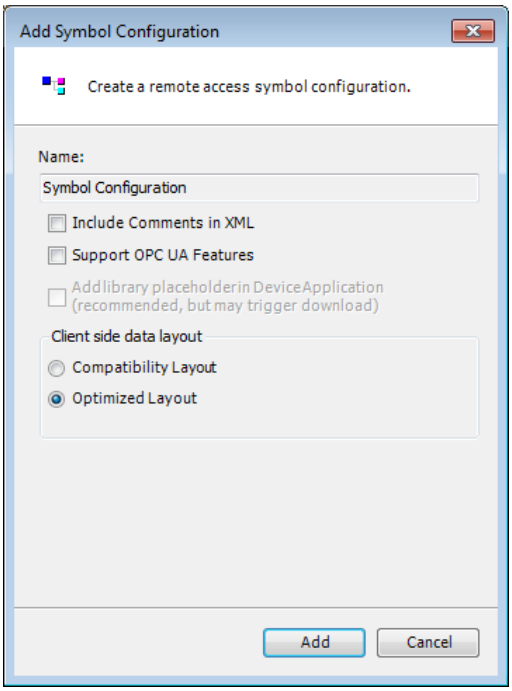
3.1 Creating Tags

1. Create several tags in PLC_PRG tab and make tag “test” accumulate automatically.

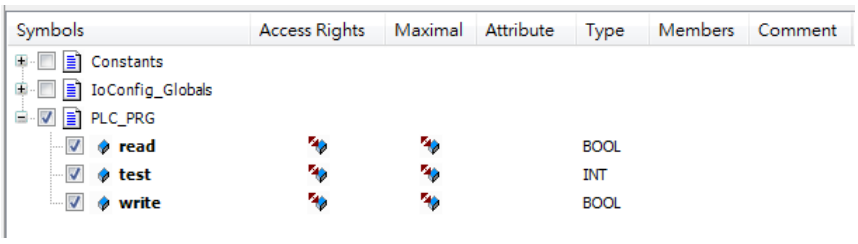


3.2 Exporting Tag

1. Right-click on Application in Devices tree and then select [Add Object] » [Symbol Configuration], use defaults.



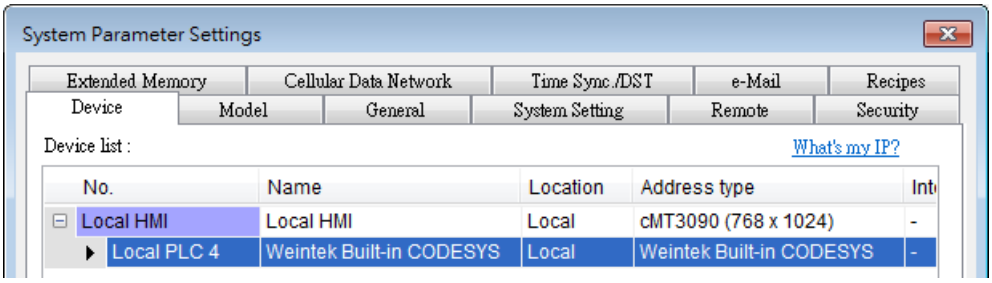
2. Find PLC_PRG, select the variables to be exported, and then click [Build].



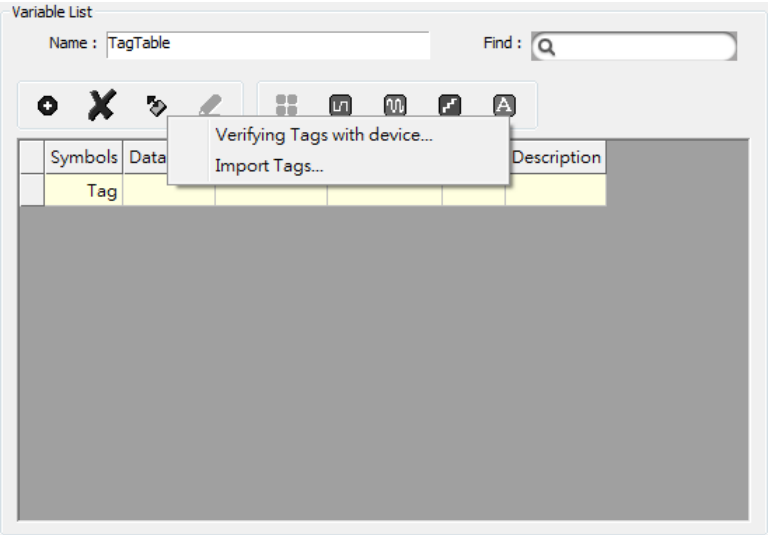
3. Select [Build] » [General code], the *.xml file can be found in the directory of the project.

3.3 Configuring EasyBuilder

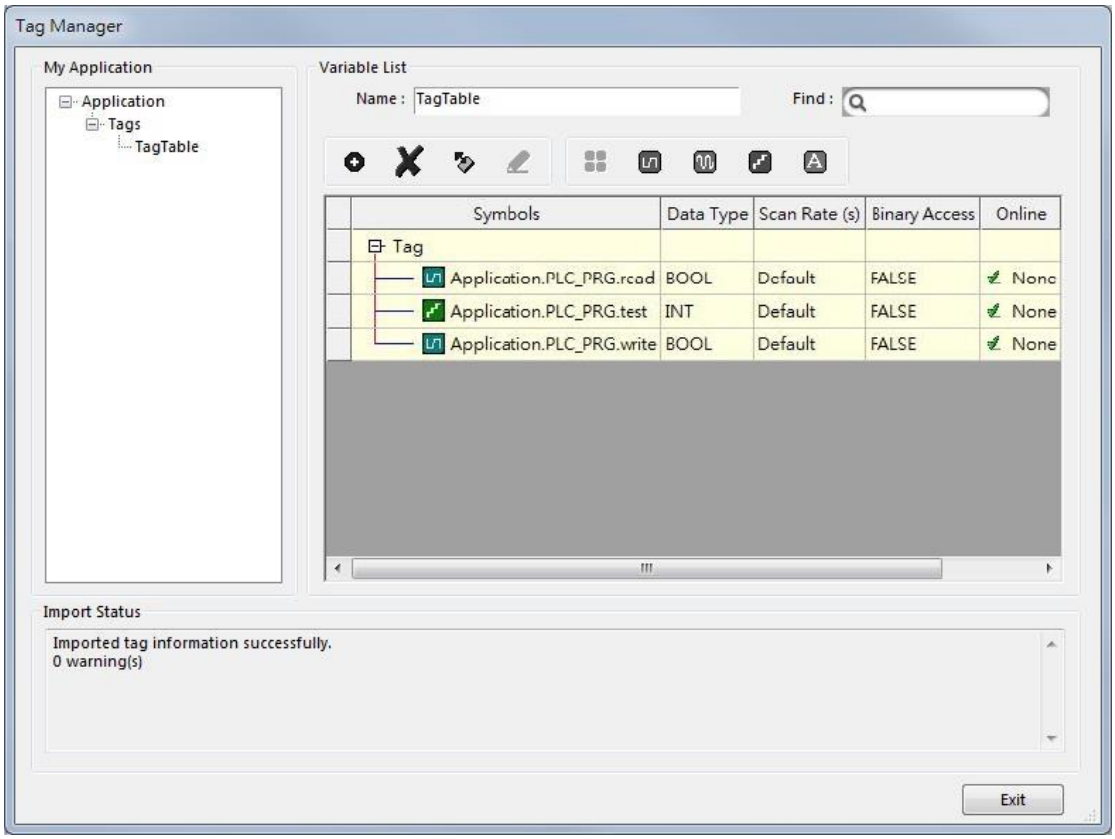
1. Create a project and select Weintek Built-in CODESYS in the device list.



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



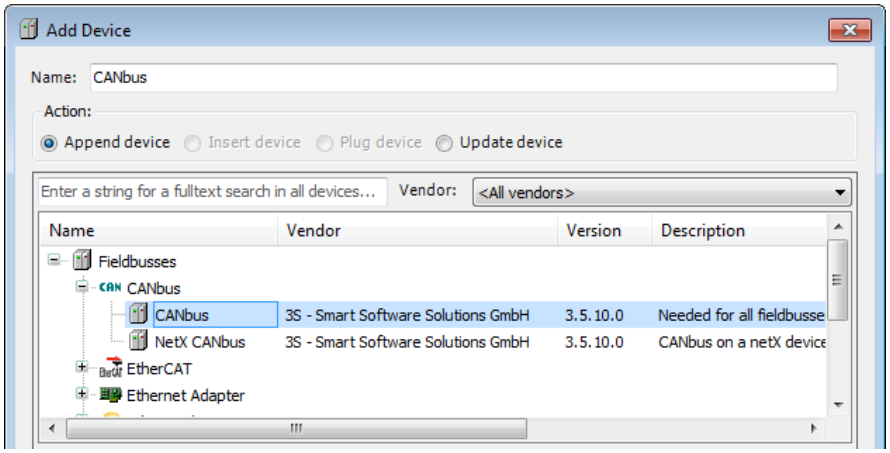
3. The CODESYS tags can now be found in Tag Manager.



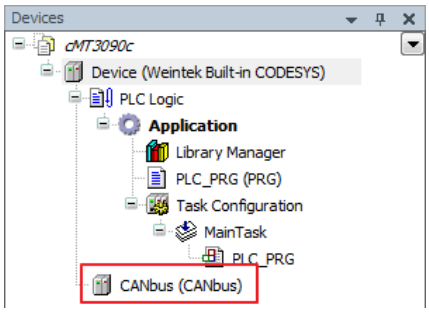
4. Create a Numeric object and use “Application.PLC_PRG.test” for address. After downloading the project to HMI, “test” tag data can be found.

4 Connecting cMT CODESYS to iR-COP

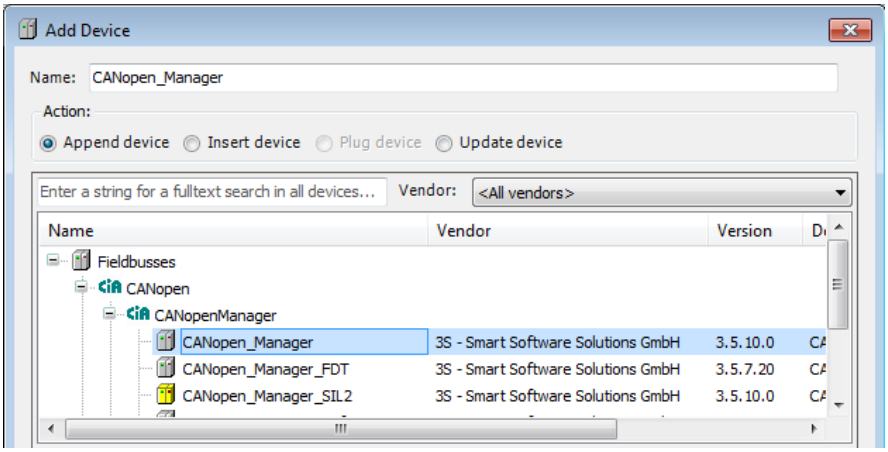
1. Right-click on Device (Weintek Built-in CODESYS) and then select [Add Device].
2. Select [CANbus] » [CANbus], and then select [Add Device].



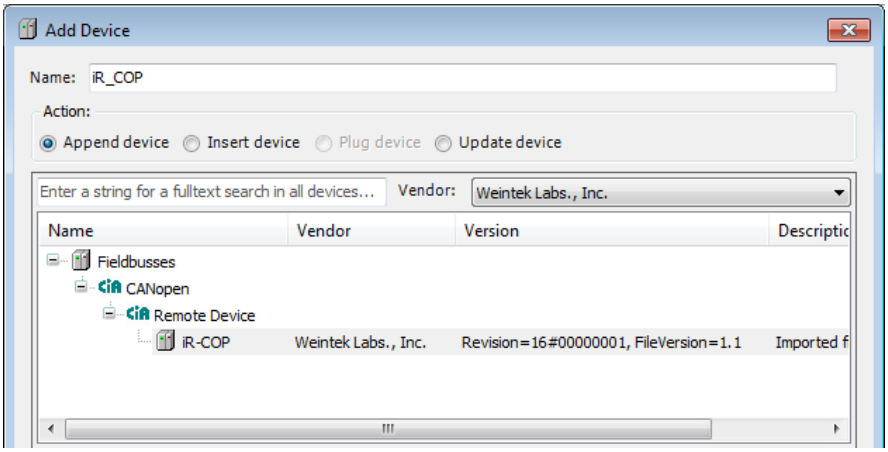
3. CANbus (CANbus) can be found in Devices tree.



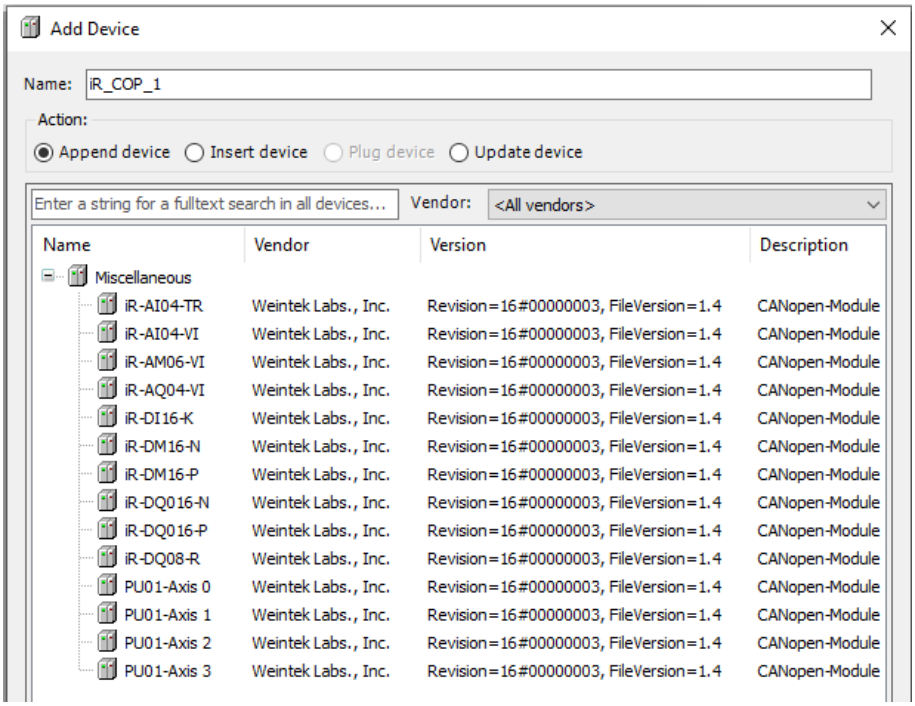
4. Double-click on CANbus (CANbus) with the current window opened in Devices tree, or right-click on CANbus (CANbus) and then select [Add Device].
5. Click [Fieldbusses] » [CANopen] » [CANopen Manager] » [CANopen Manager], and then select [Add Device].



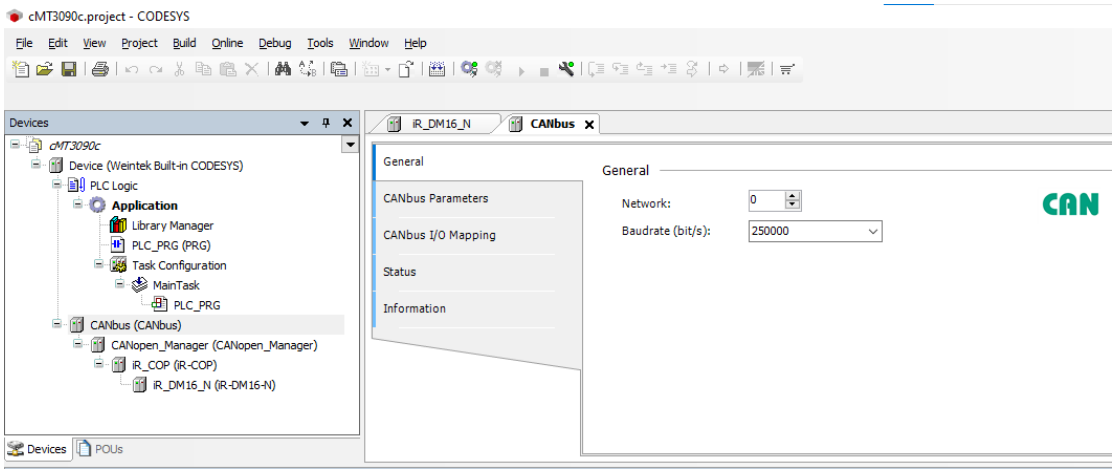
6. Double-click on CANopen_Manager with the current window opened in Devices tree or right-click on CANopen_Manager and then click [Add Device].
7. Click [Fieldbusses] » [CANopen] » [Remote Device], find iR-COP and then select [Add Device].



8. Under [iR-COP] select [Miscellaneous], add I/O module and then select [Add Device].



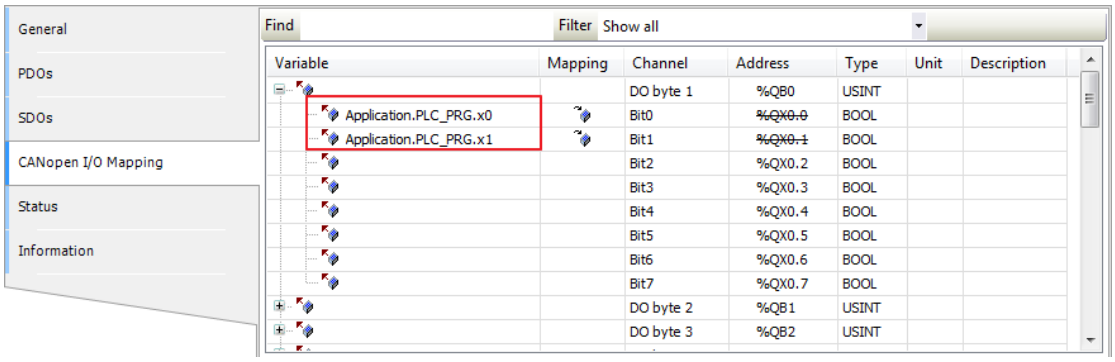
9. Double click on CANbus (CANbus) in Devices tree to open the settings window. Please select the correct baud rate for iR-COP in General tab.



10. Create CANopen variables in PLC_PRG, for example:

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

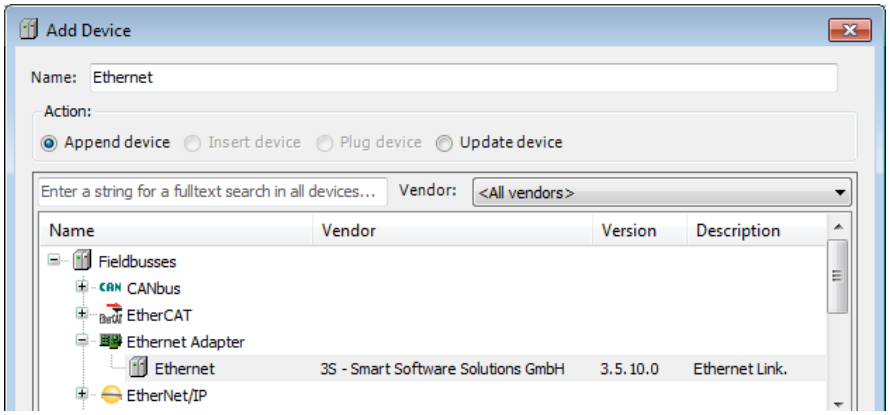
11. Double click on iR_Cop in Devices tree to open the settings window. Select related variables in CANopen I/O Mapping tab.



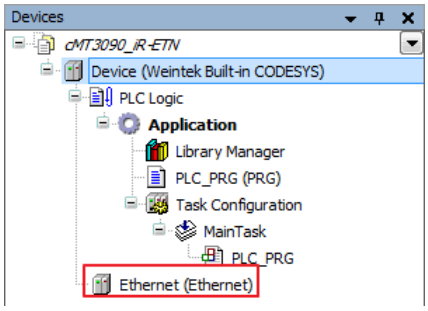
12. When finished, click [Online] » [Login] to download the project to CODESYS.

5 Connecting cMT CODESYS to iR-ETN

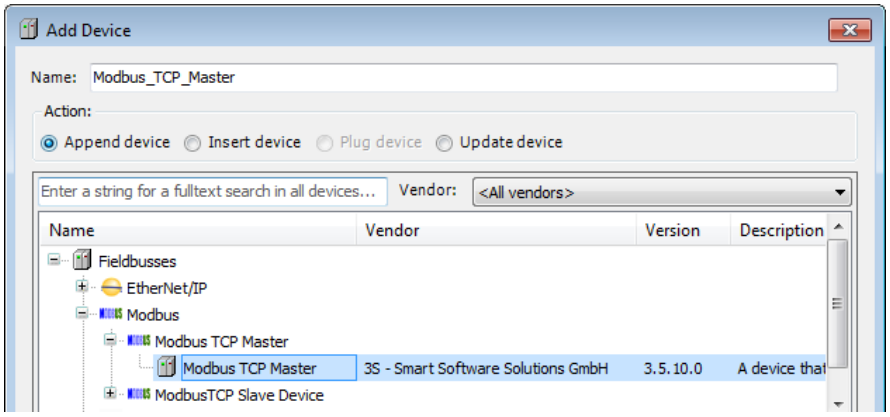
1. Right-click on Device (Weintek Built-in CODESYS/cMT-CTRL) and then select [Add Device].
2. Select [Ethernet Adapter] » [Ethernet] and then click [Add Device].



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



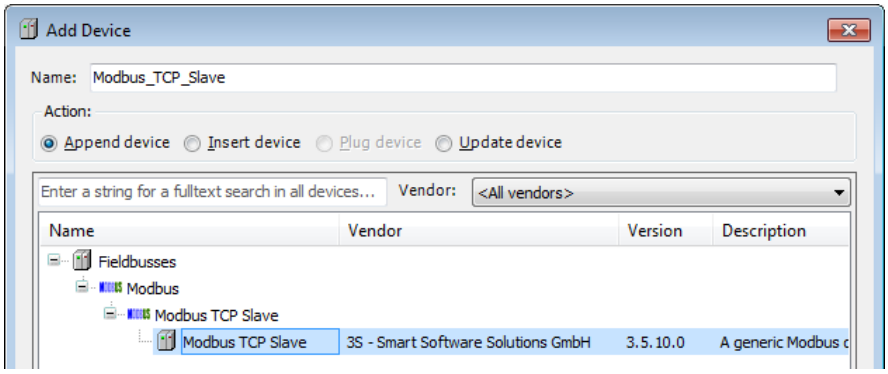
4. Double-click on Ethernet with the current window opened in Devices tree or right-click on Ethernet and then select [Add Device].
5. Click [Fieldbusses] » [Modbus] » [Modbus TCP Master] » [Modbus TCP Master], and then select [Add Device].



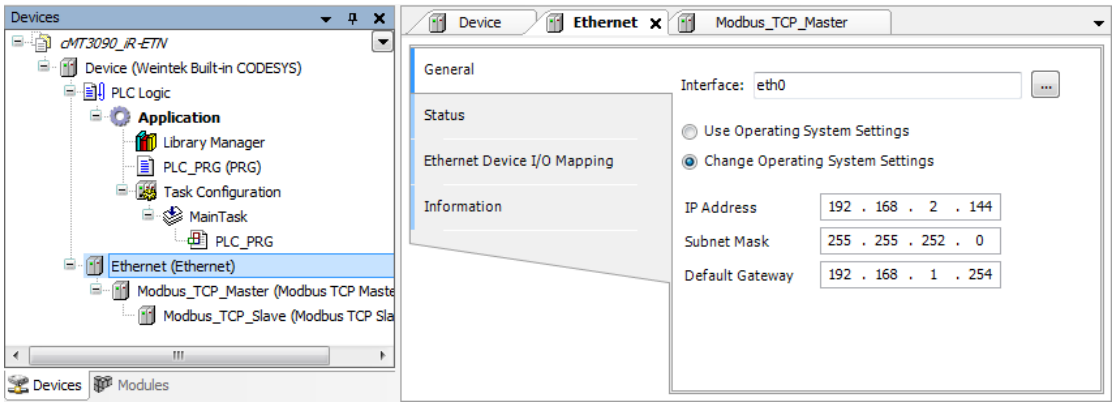
6. Double-click on Modbus TCP Master with the current window opened in Devices tree or right-click on Modbus TCP Master and then click [Add

Device].

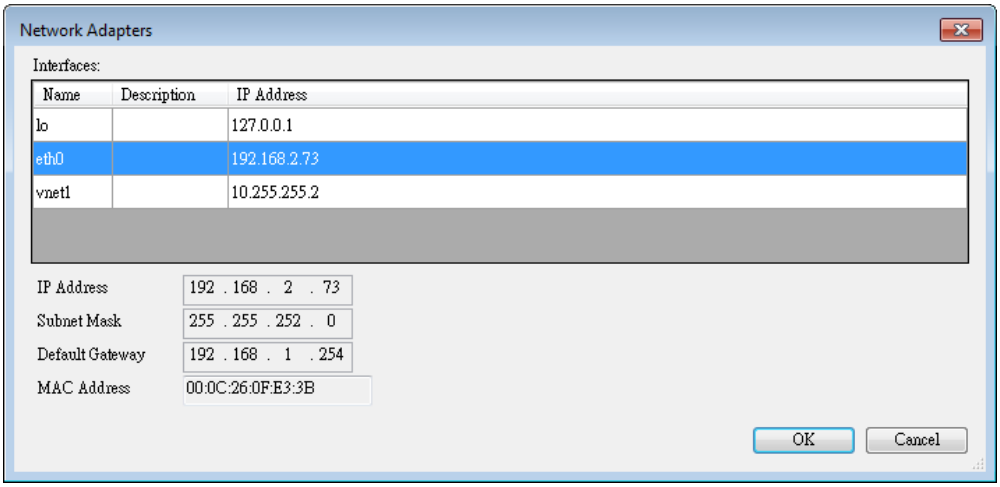
7. Click [Fieldbusses] » [Modbus] » [Modbus TCP Slave] » [Modbus TCP Slave], and then select [Add Device].



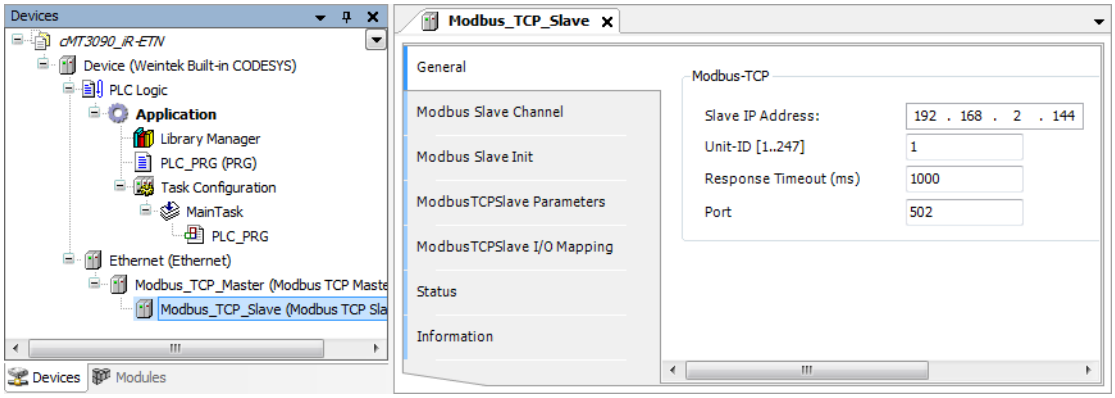
8. Double click on Ethernet in the Devices tree, enter CODESYS's IP address in General tab, and then select [Change Operating System Settings].



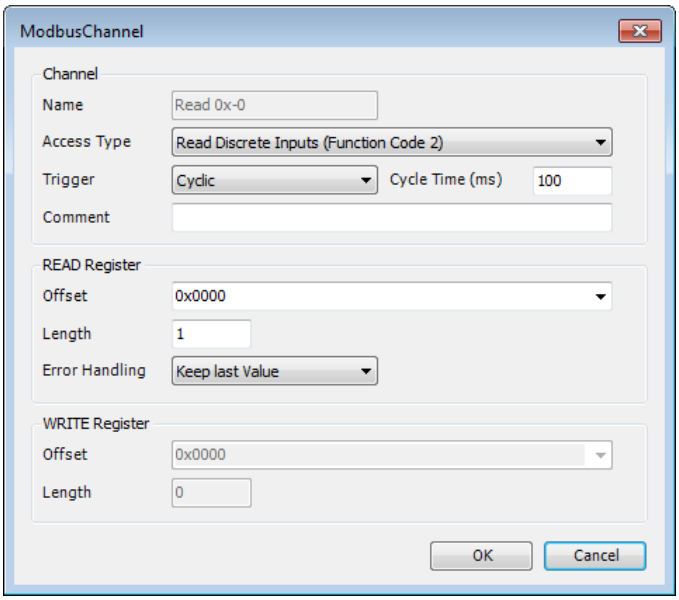
9. When CODESYS is already connected, go to General tab and click the [...] button near Interface field and select eth0.

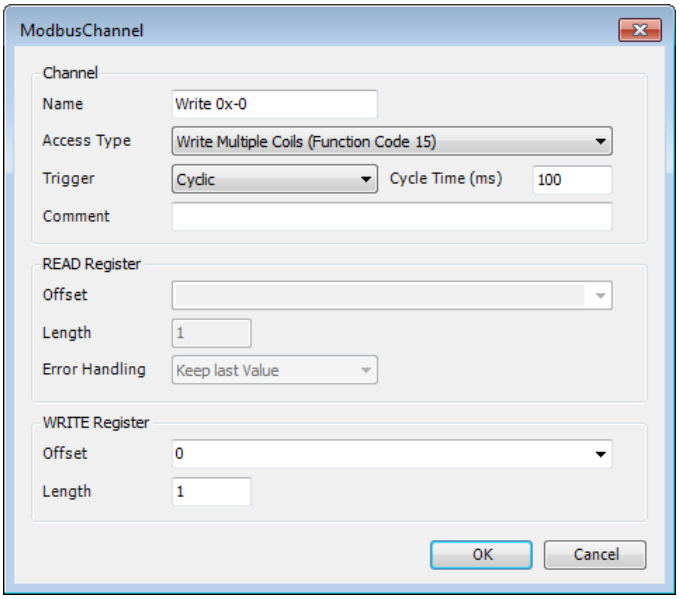


10. Select Modbus_TCP_Slave in the Devices tree and then go to General tab to set up IR-ETN's IP address and Unit ID.



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
```

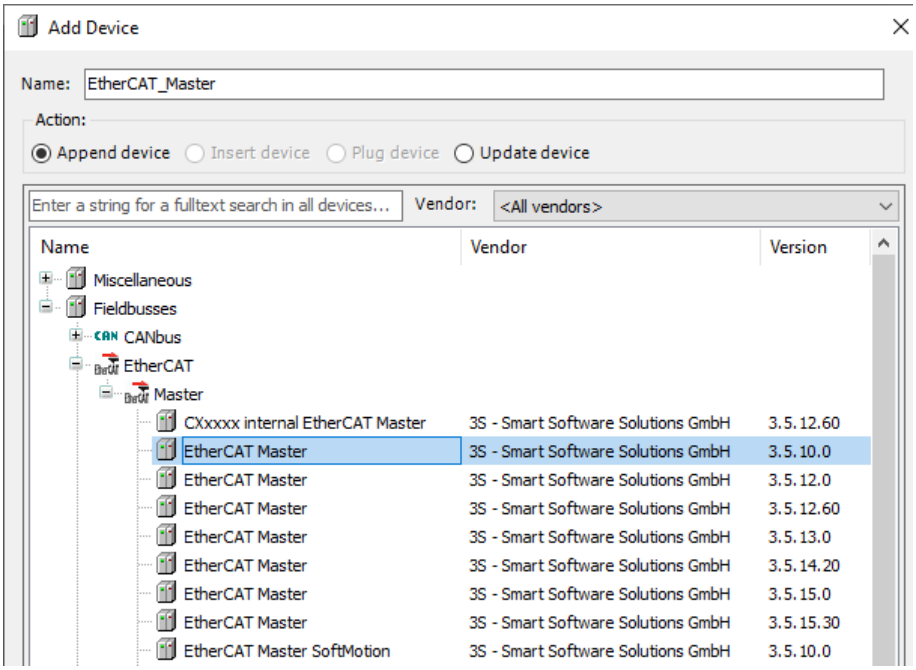
13. Open Modbus_TCP_Slave in Devices tree and then go to [Modbus_TCPSlave I/O Mapping] tab to set variable mapping.

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

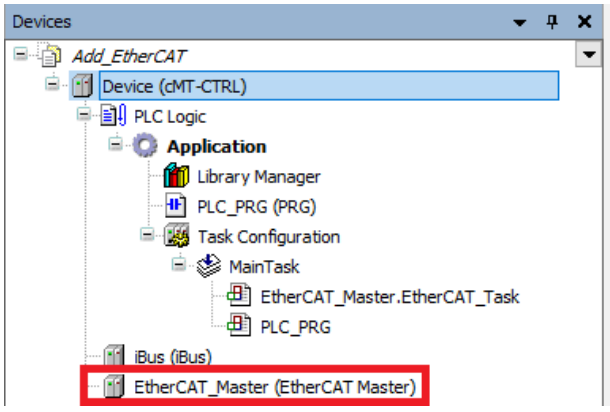
14. When finished, click [Online] » [Login] to download the project to CODESYS.

6 Connecting cMT CODESYS to iR-ECAT

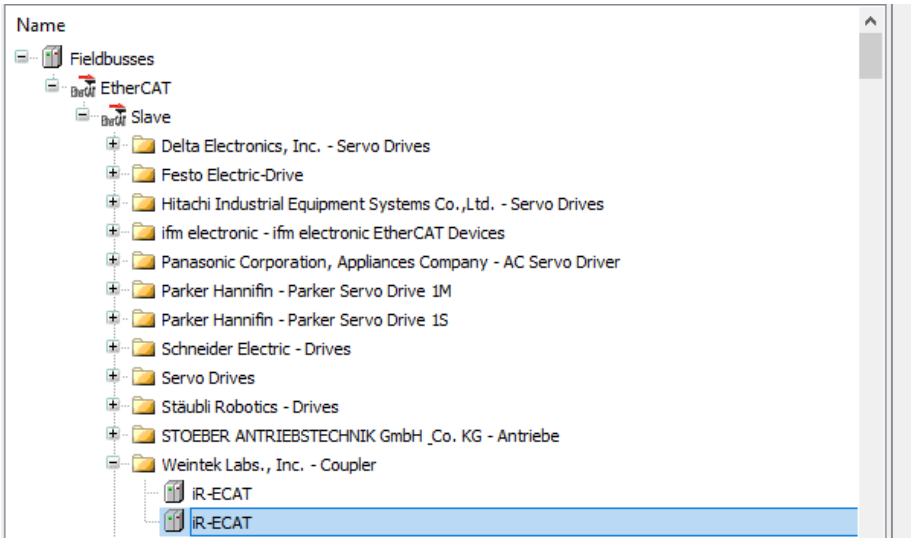
1. Right-click on Device (Weintek Built-in CODESYS/cMT-CTRL) and then select [Add Device].
2. Select [EtherCAT] » [Master] » [EtherCAT Master] and then click [Add Device].



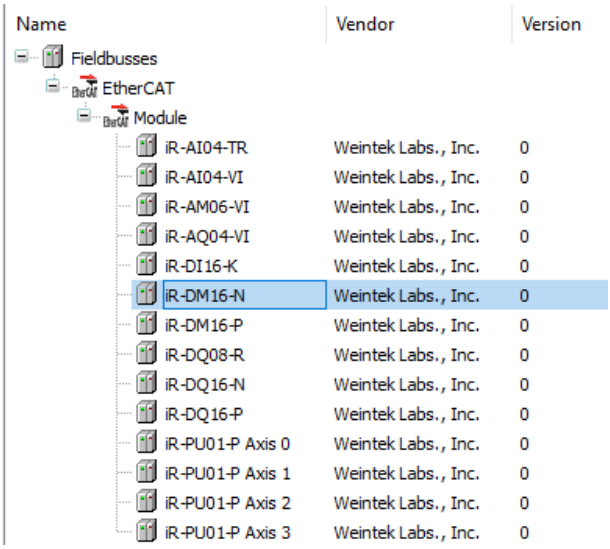
3. EtherCAT_Master can be found in Devices tree.



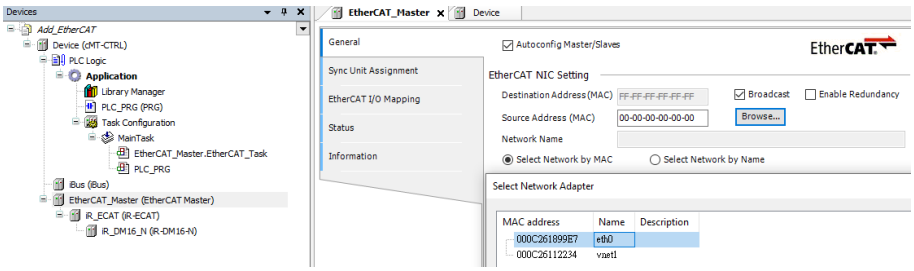
4. Double-click on EtherCAT_Master with the current window opened or in Devices tree right-click on EtherCAT_Master and then select [Add Device].
5. Click [Fieldbusses] » [EtherCAT] » [Slave] » [iR-ECAT], and then select [Add Device].



6. Double-click on iR-ECAT in Devices tree with the current window opened or right-click on iR-ECAT and then click [Add Device].
7. Click [Fieldbusses] » [EtherCAT] » [Module], and then select [Add Device].



8. Double click on EtherCAT in the Devices tree, click Browse in General tab, and then select [eth0].



9. 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
```

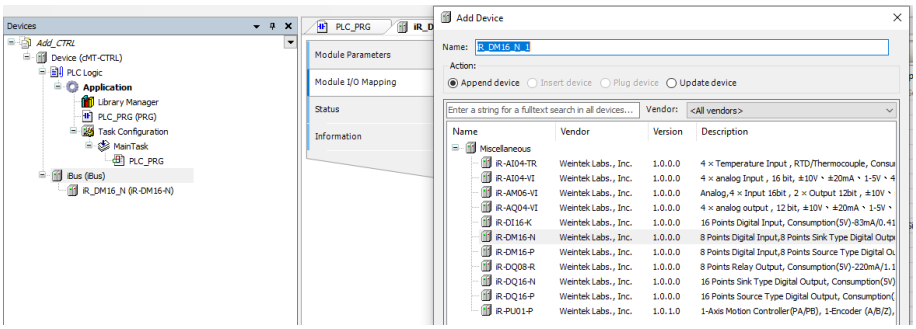
10. In Devices tree open iR-ECAT » [EtherCAT I/O Mapping] and configure the settings.

Variable	Mapping	Channel	Address	Type	Unit	Description
		iR_DM16_N Digital Output	%QB0	BYTE		iR_DM16_N Digital Output
Application.PLC_PRG.read		Bit0	~~%QX0.0~~	BOOL		
		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		
		iR_DM16_N Digital Input	%IB2	BYTE		iR_DM16_N Digital Input
Application.PLC_PRG.write		Bit0	~~%IX2.0~~	BOOL		
		Bit1	%IX2.1	BOOL		
		Bit2	%IX2.2	BOOL		
		Bit3	%IX2.3	BOOL		
		Bit4	%IX2.4	BOOL		
		Bit5	%IX2.5	BOOL		
		Bit6	%IX2.6	BOOL		
		Bit7	%IX2.7	BOOL		

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

7 cMT-CTRL01 Quick Start

1. Right-click on iBus and select [Add Device].
2. Select [Miscellaneous], add the iR modules connected to cMT-CTRL01, and click [Add Device].

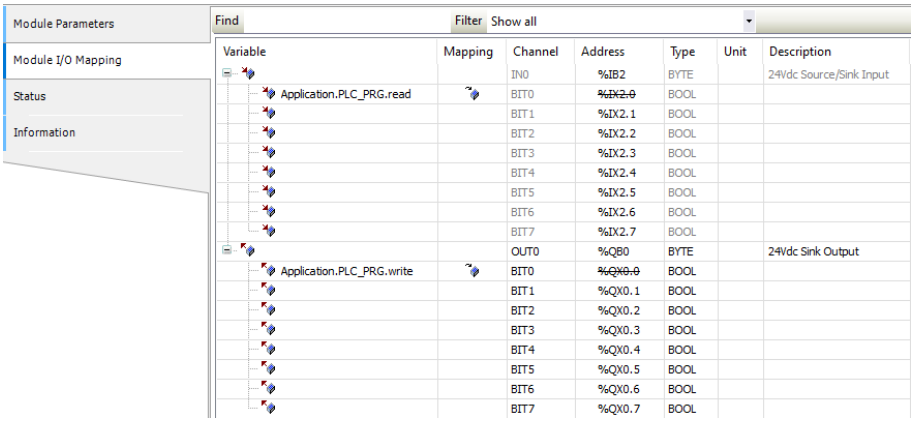


3. Open PLC_PRG in Devices tree, create tag and set Bool as data type. Write a command as shown below.

```
PROGRAM PLC_PRG
VAR
    read:BOOL;
    write:BOOL;
END_VAR
```

```
write:=1;
```

4. In Devices tree open iR module list » [Module I/O Mapping] tab and configure the settings.

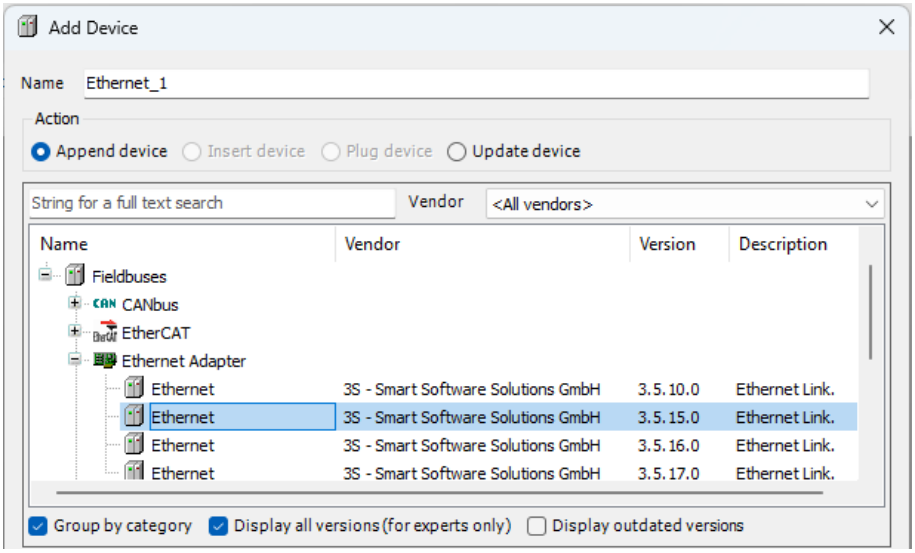


5. When finished, click [Online] » [Login] to download the project to CODESYS.

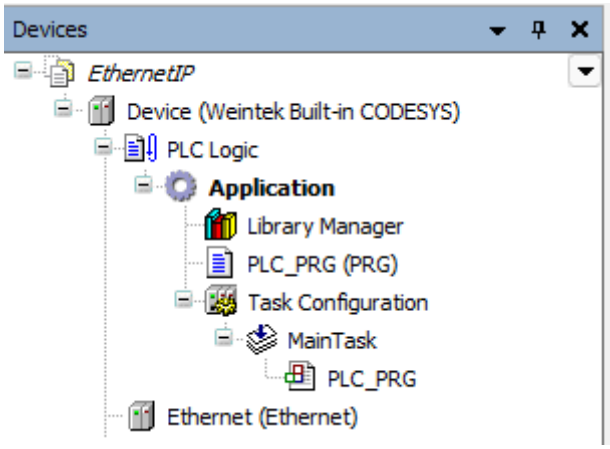
8 CODESYS Ethernet/IP Scanner Quick Start

CODESYS limitation: Currently, only the Ethernet/IP Scanner in CODESYS version 3.5.15 is supported. Using other versions may result in compilation failures.

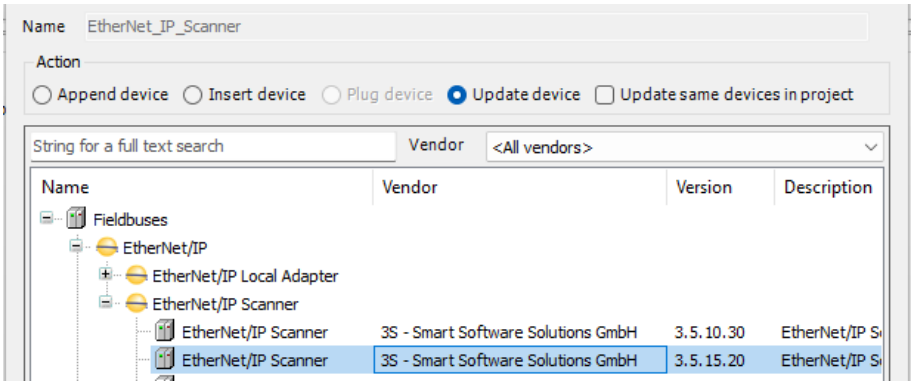
1. Right-click on Device (Weintek Built-in CODESYS/cMT-CTRL) and then select [Add Device].
2. Select [Ethernet Adapter] » [Ethernet] and then click [Add Device].



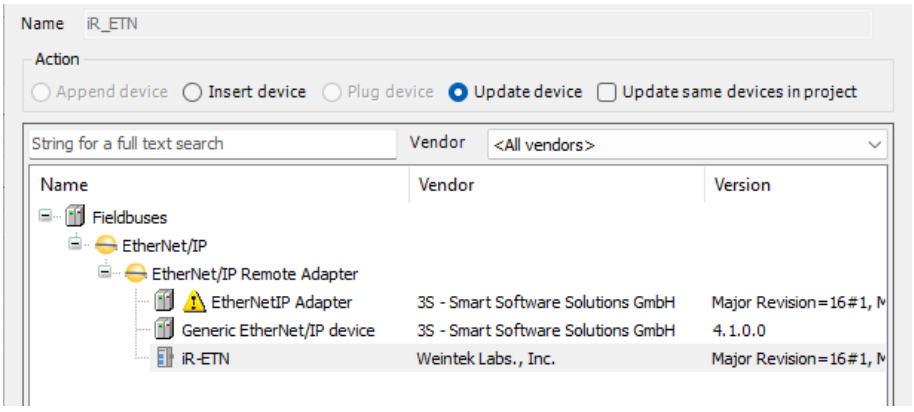
3. Ethernet (Ethernet) can be found in Devices tree.



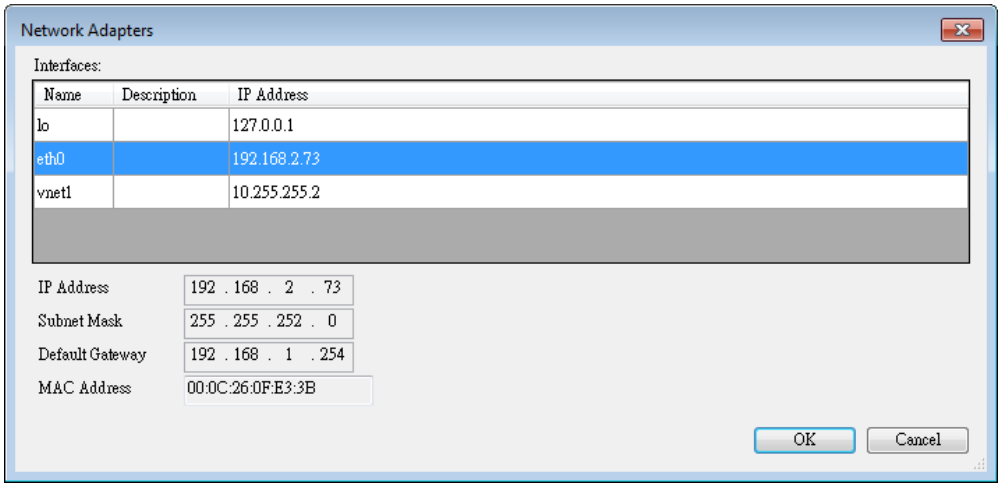
4. With the current window opened, double-click on [Ethernet] in Devices tree or right-click on [Ethernet] in Devices tree and then select [Add Device].
5. Click [Fieldbuses] » [Ethernet/IP] » [Ethernet/IP Scanner] » [Ethernet/IP Scanner], and then select [Add Device].



6. With the current window opened, double-click on [EtherNet/IP Scanner] in Devices tree or right-click on [EtherNet/IP Scanner] in Devices tree and then select [Add Device].
7. Click [Fieldbuses] » [EtherNet/IP] » [EtherNet/IP Remote Adapter] » [iR-ETN], and then select [Add Device].
   For more information about how to generate and add iR-ETN.eds file, please see chapters 1 and 2 in [iR-ETN EtherNet/IP Connection Guide].

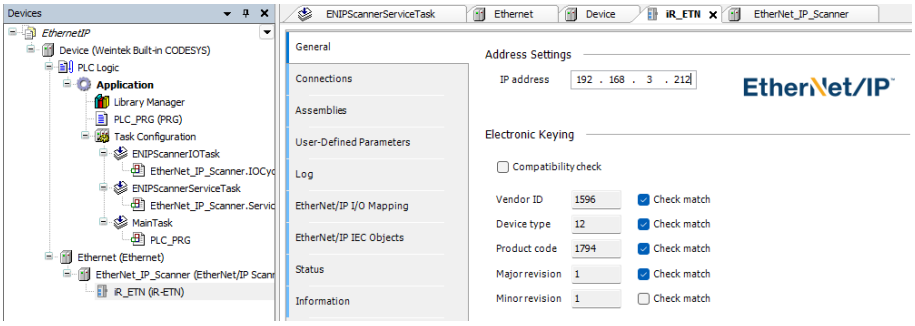


8. When CODESYS is already connected, go to General tab and click the [Browse…] button near Interface field and select eth0.



9. Select iR-ETN in Devices tree and then go to General tab to set up IR-ETN's

IP address.



10. 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
```

```
1  write:=TRUE;
```

11. In Devices tree open iR_ETN » [Ethernet/IP I/O Mapping] tab and configure the settings.

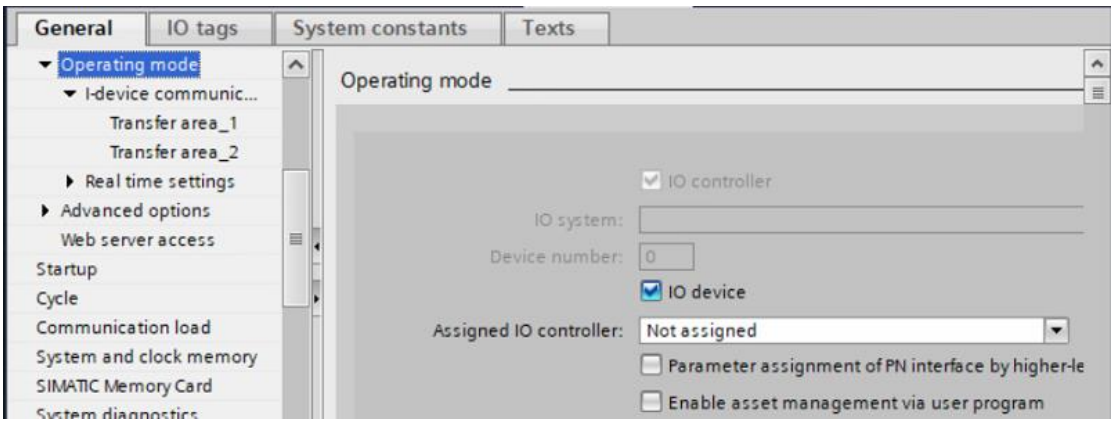
Variable	Mapping	Channel	Address	Type	Unit	Description
Exlusive Owner						
		slot 1 DM16-N DI	%IB0	BYTE		New Help String
Application.PLC_PRG.read		Bit0	~~%IX0.0~~	BOOL		
		Bit1	%IX0.1	BOOL		
		Bit2	%IX0.2	BOOL		
		Bit3	%IX0.3	BOOL		
		Bit4	%IX0.4	BOOL		
		Bit5	%IX0.5	BOOL		
		Bit6	%IX0.6	BOOL		
		Bit7	%IX0.7	BOOL		
		slot 2 DM16-P DI	%IB1	BYTE		New Help String
		slot 1 DM16-N DO	%QB0	BYTE		New Help String
Application.PLC_PRG.write		Bit0	~~%QX0.0~~	BOOL		
		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		
		slot 2 DM16-P DO	%QB1	BYTE		New Help String

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

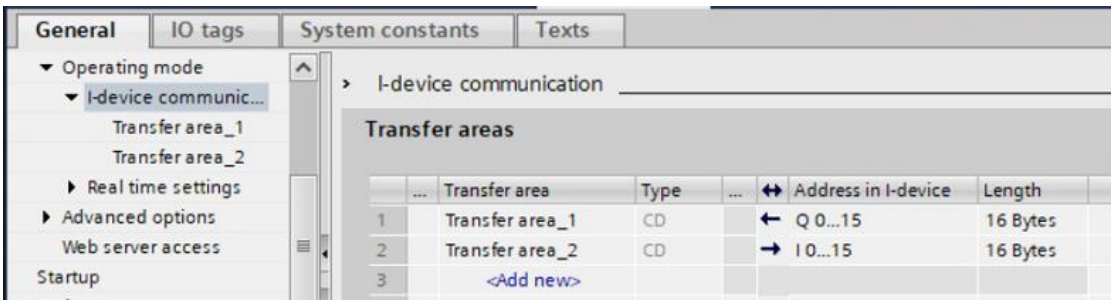
9 CODESYS Profinet Quick Start Guide

TIA Portal Project Setup

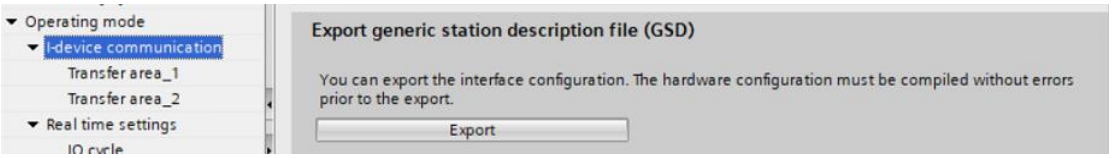
1. Open TIA Portal V19, configure the PLC as a Profinet Slave.
2. In the TIA project, navigate to [Device configuration] » [PROFINET interface] » [Operating mode], select “IO device”.



3. Click [I-device communication] » [Transfer areas] to set data transfer areas.

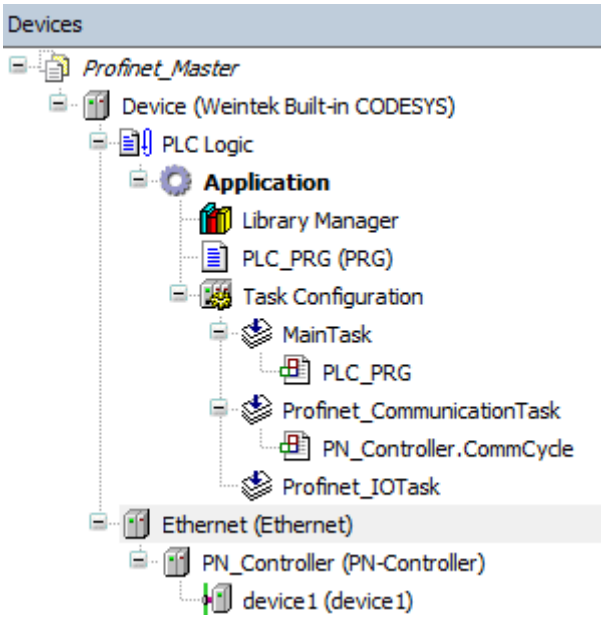


4. After configuring transfer areas, download the settings to the PLC and click “Export” to save the GSDML file (Profinet device description file).

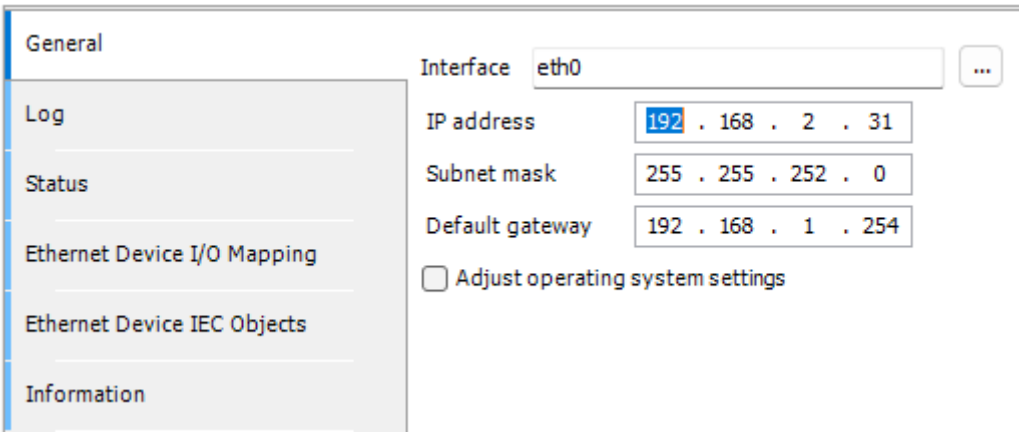


CODESYS Project Setup

5. Open CODESYS IDE, go to [Tools] » [Device repository] » [Install], and install the GSDML file for the PLC.
6. Add [Ethernet], [Profinet IO Master], and [Profinet IO Device] devices.



7. In [Ethernet] » [General], select the “eth0” communication interface.

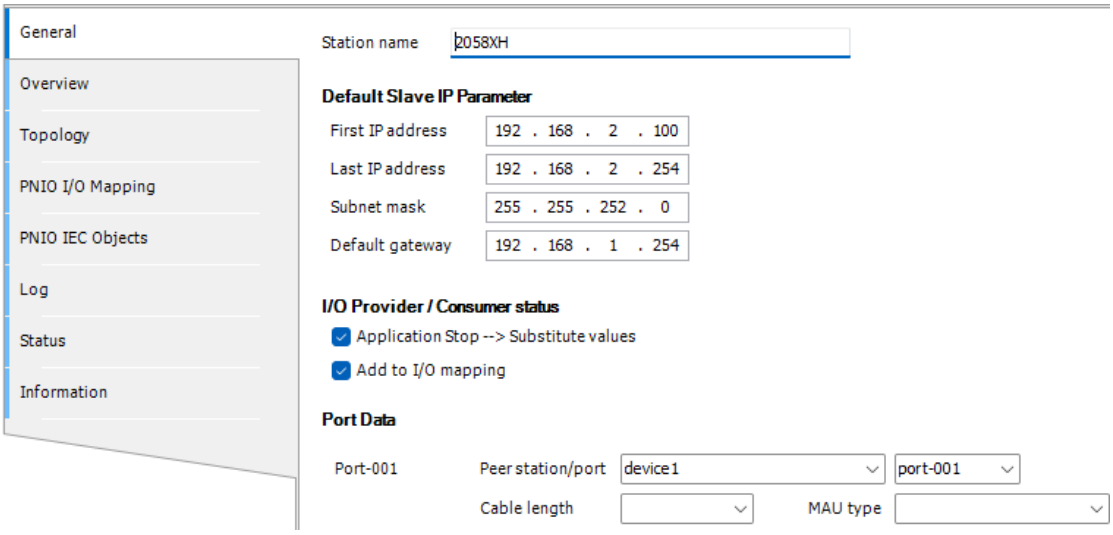


8. In [PN-Controller] » [General], set “Station name”, “Default Slave IP Parameter”, and “Port Data”.

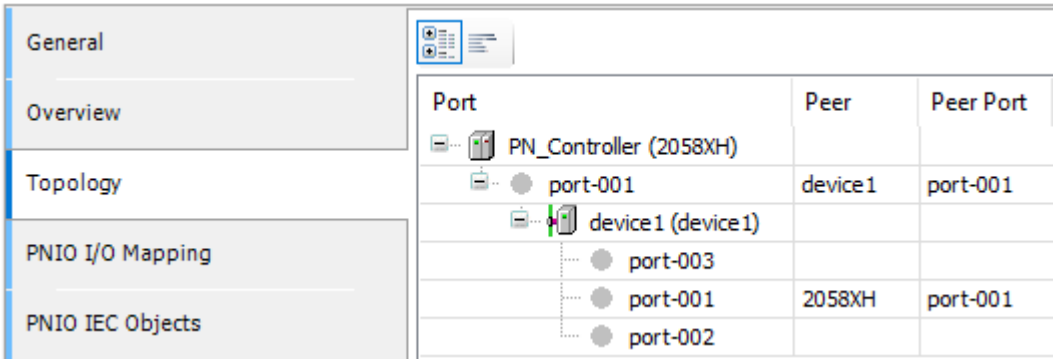
1) **Station name:** Set a unique name for the PN-Controller; duplicate names on the network will cause communication failure.

2) **Default Slave IP Parameter:** Configure the IP address range for the Profinet IO Device.

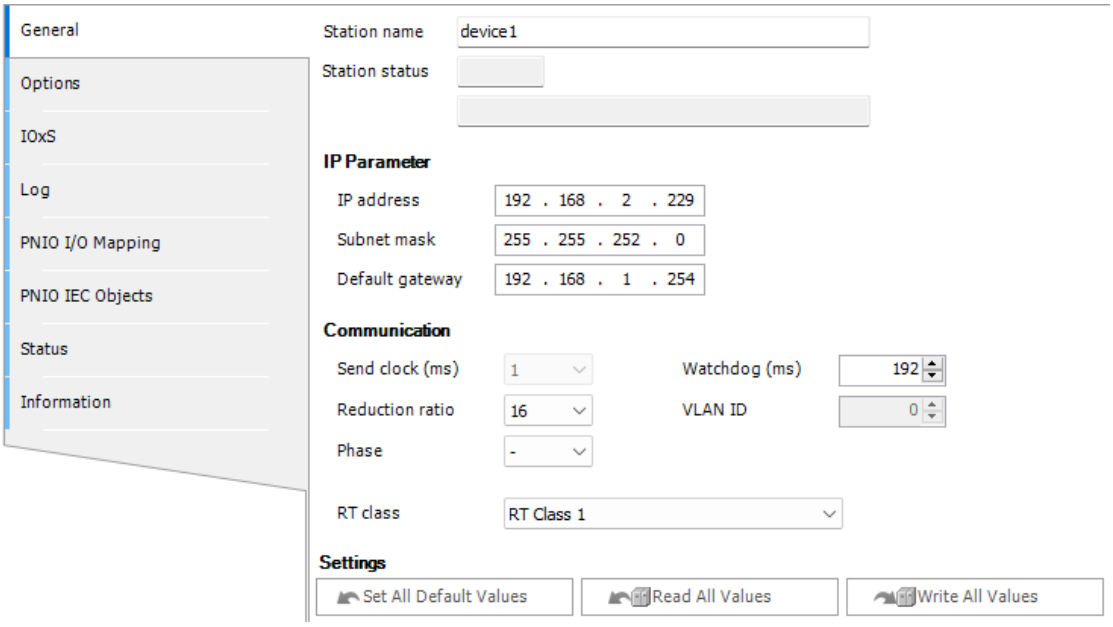
3) **Port Data:** Connect the Ethernet communication port of Profinet IO Device.



9. In [PN-Controller] » [Topology], set the communication port with the Profinet IO Device.

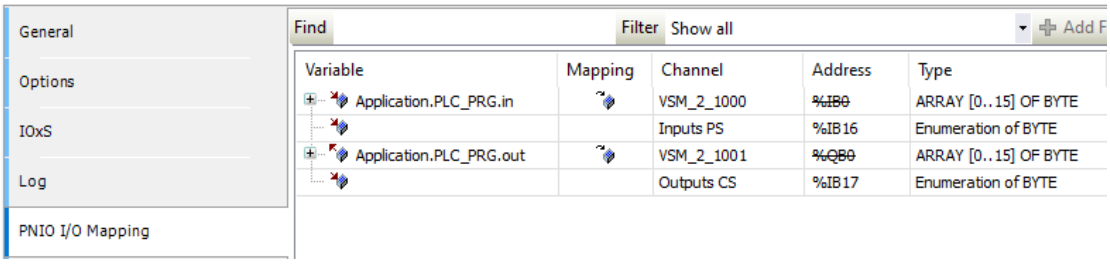


10. In [Profinet IO Device] » [General], set “Station name” and “IP Parameter”.
    1) **Station name:** Set a unique name for the Profinet IO Device; duplicate names on the network will cause communication failure.
    2) **IP Parameter:** Configure the Profinet IO Device’s IP address.



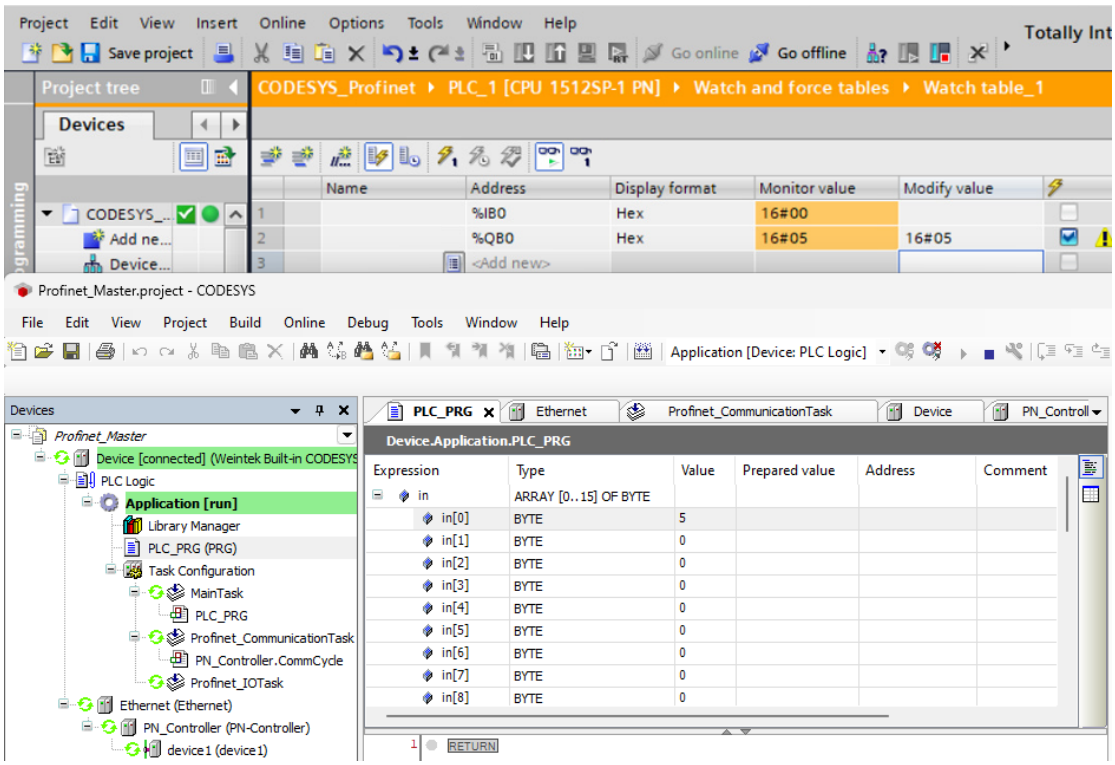
11. Declare CODESYS variables and map them to [Profinet IO Device] » [PNIO I/O Mapping].

```
PROGRAM PLC_PRG
VAR
    in: ARRAY[0..15] OF BYTE;
    out: ARRAY[0..15] OF BYTE;
END VAR
```

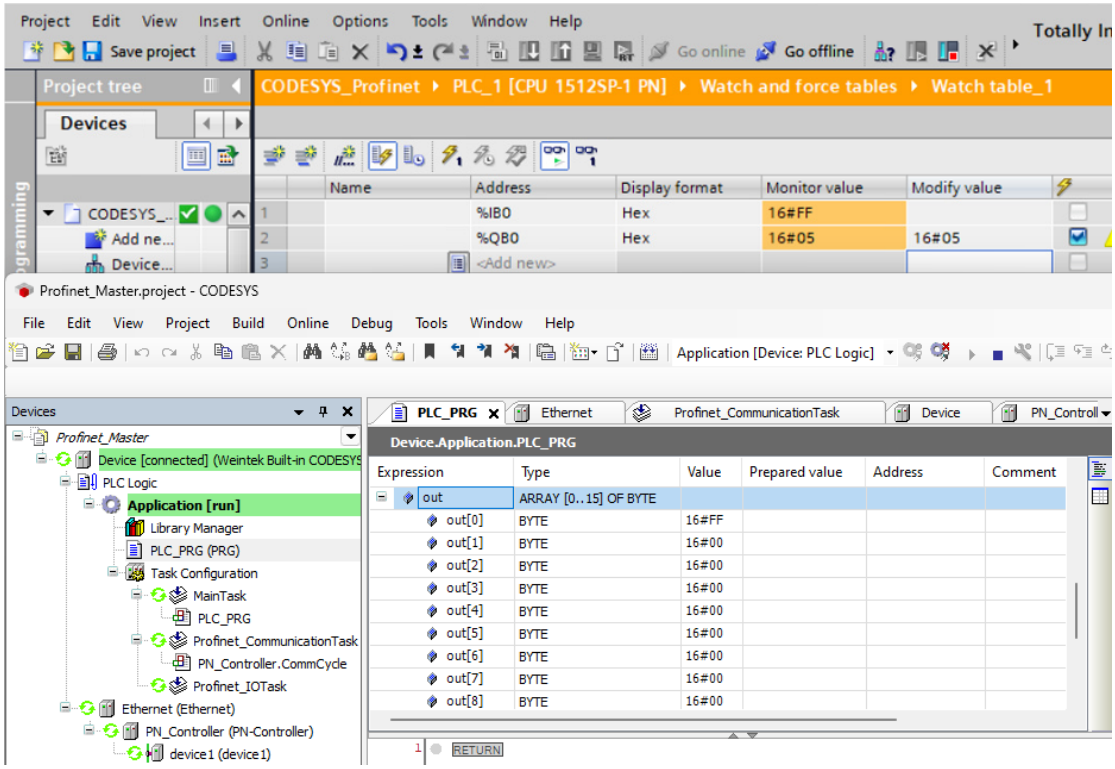


12. In [Online] » [Login], download the project to verify communication.

* Modifying PLC values updates variables in CODESYS.



* Modifying CODESYS variables updates the PLC values.



10 Starting iR Analog Modules

10.1Analog Module Wiring

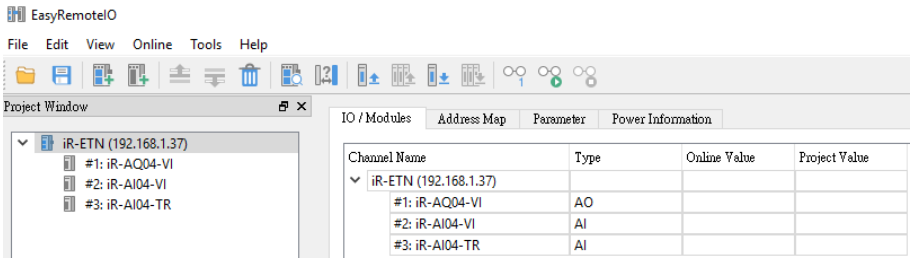
Please see UM018013E_iR-Axxx-VI_UserManual_eng.pdf for information on wiring when using iR-AI04-VI,iR-AM06-VI,iR-AQ04-VI modules.

Please see UM018014E_iR-Axxx-TR_UserManual_eng.pdf for information on wiring when using iR-AI04-TR module.

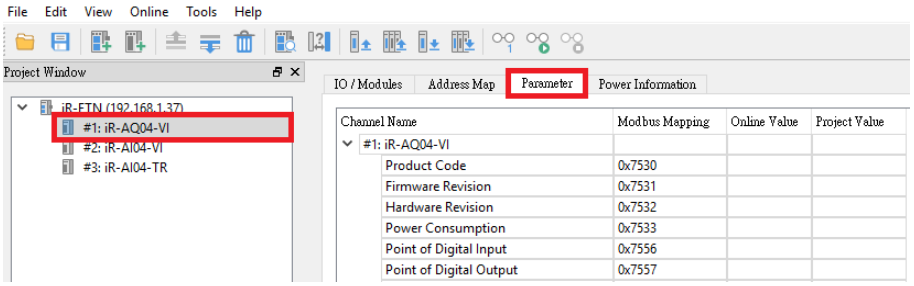
10.2Setting Analog Channels

10.2.1 Using EasyRemoteIO to Set Channels (iR-ETN)

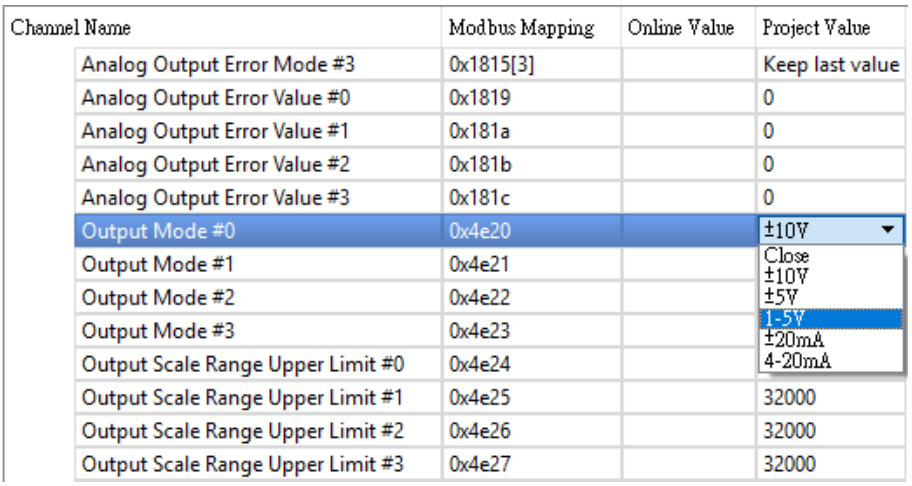
1. Search for iR-ETN on the network.



2. Open the parameter tab of the module to be set.

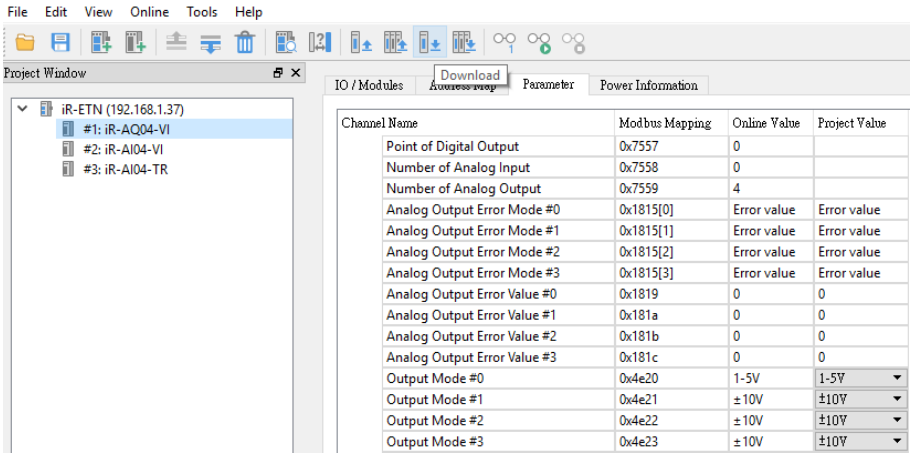


3. Enter the parameters as shown below.



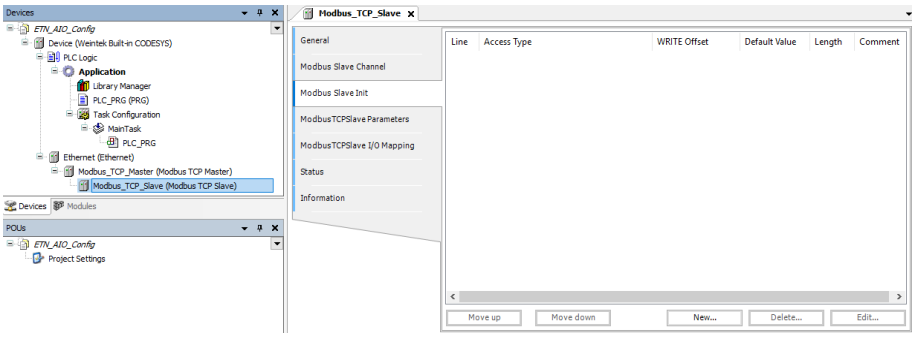
Channel Name	Modbus Mapping	Online Value	Project Value
Analog Output Error Mode #3	0x1815[3]		Keep last value
Analog Output Error Value #0	0x1819		0
Analog Output Error Value #1	0x181a		0
Analog Output Error Value #2	0x181b		0
Analog Output Error Value #3	0x181c		0
Output Mode #0	0x4e20		±10V
Output Mode #1	0x4e21		
Output Mode #2	0x4e22		
Output Mode #3	0x4e23		
Output Scale Range Upper Limit #0	0x4e24		
Output Scale Range Upper Limit #1	0x4e25		32000
Output Scale Range Upper Limit #2	0x4e26		32000
Output Scale Range Upper Limit #3	0x4e27		32000

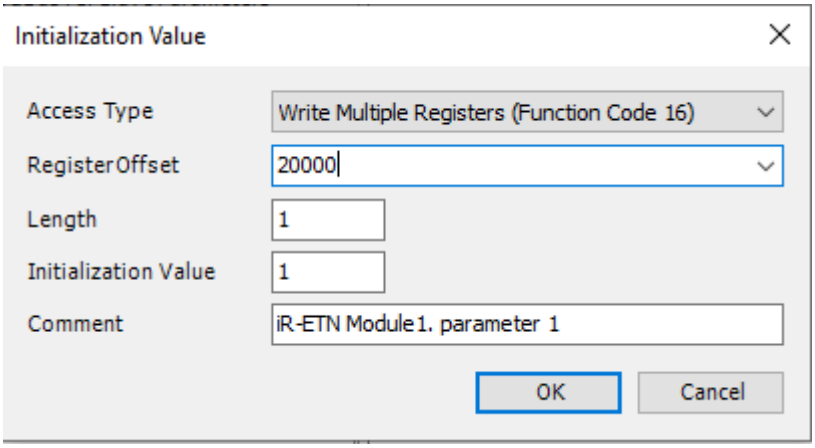
4. Download the project to finish setting parameters.



10.2.2 Using CODESYS to Set Channels (iR-ETN)

1. Add iR-ETN in CODESYS according to the wiring diagram.
2. [Modbus_TCP_Slave] » [Modbus Slave Init] » [New]





Find iR-ETN Modbus Address Mapping table in these user manuals:

For analog modules see UM018013E_iR-Axxx-VI_UserManual_eng.pdf

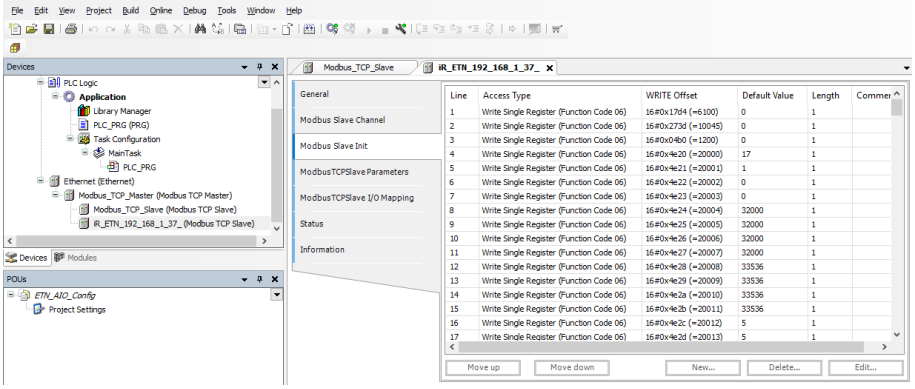
For temperature module see UM018014E_iR-Axxx-TR_UserManual_eng.pdf

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

CODESYS.

Exporting PLCopenXML from EasyRemoteIO:

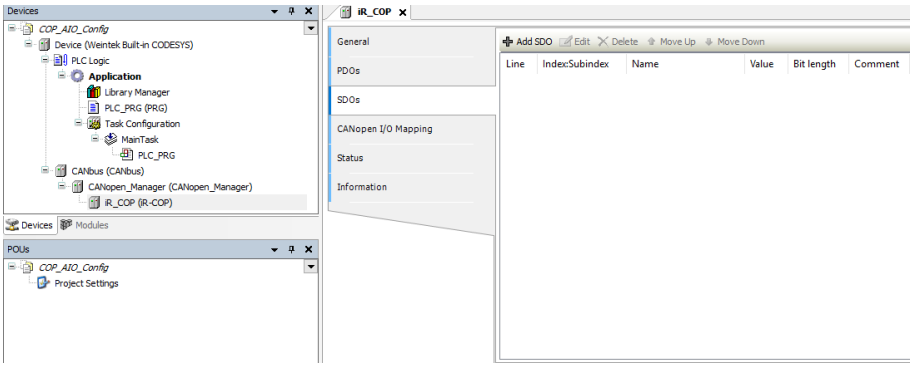
1. Open EasyRemoteIO » [File] » [Export PLCopen XML].
2. Select Modbus_TCP_Master device, open Project tab » [Import PLCopenXML File].

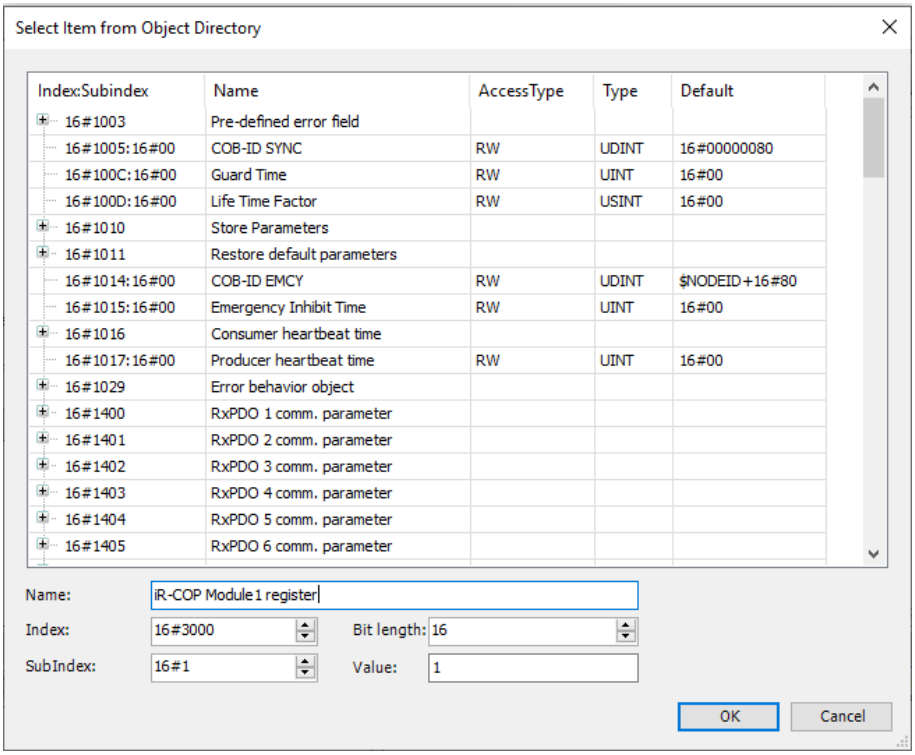


Parameter settings in EasyRemoteIO will be imported to CODESYS, and the parameters are written to the module after login.

10.2.3 Using CODESYS to Set Channels (iR-COP)

1. Add iR-COP following the steps explained in Chapter 4 in this manual.
2. [iR_COP] » [SDOs] » [Add SDO]





Find iR-COP Address Mapping table in these user manuals:

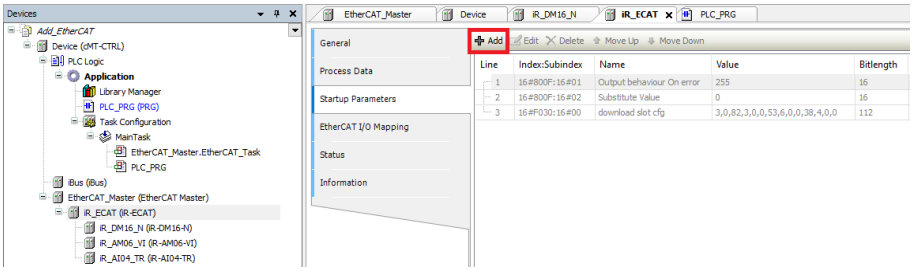
For analog modules see UM018013E_iR-Axxx-VI_UserManual_eng.pdf

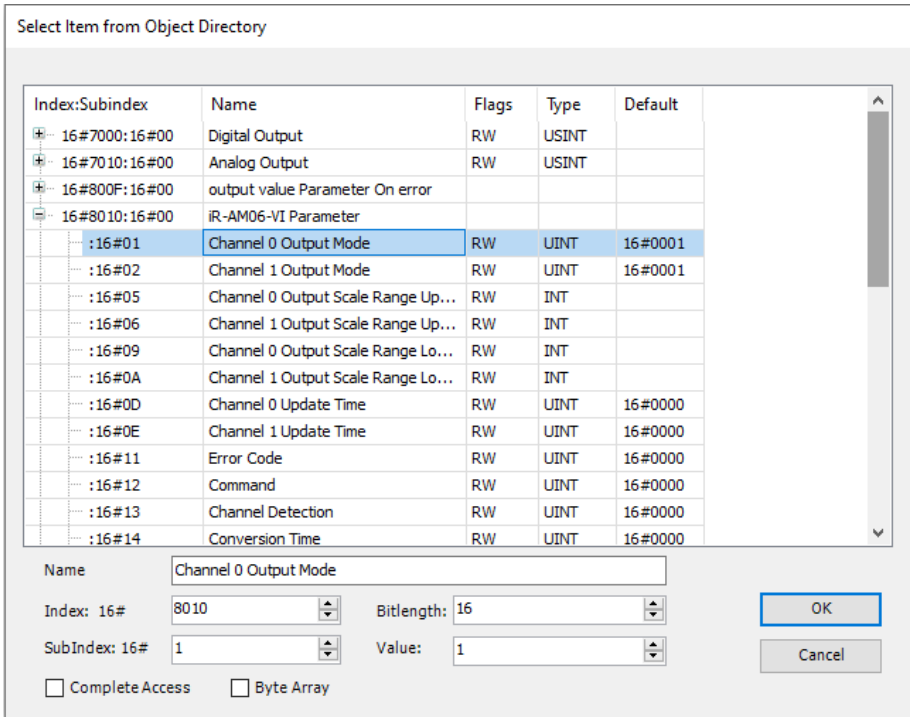
For temperature modules see UM018014E_iR-Axxx-TR_UserManual_eng.pdf

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

10.2.4 Using CODESYS to Set Channels (iR-ECAT)

1. Add iR-ECAT following the steps explained in Chapter 6 in this manual.
2. [iR_ECAT] » [Startup Parameters] » [Add]



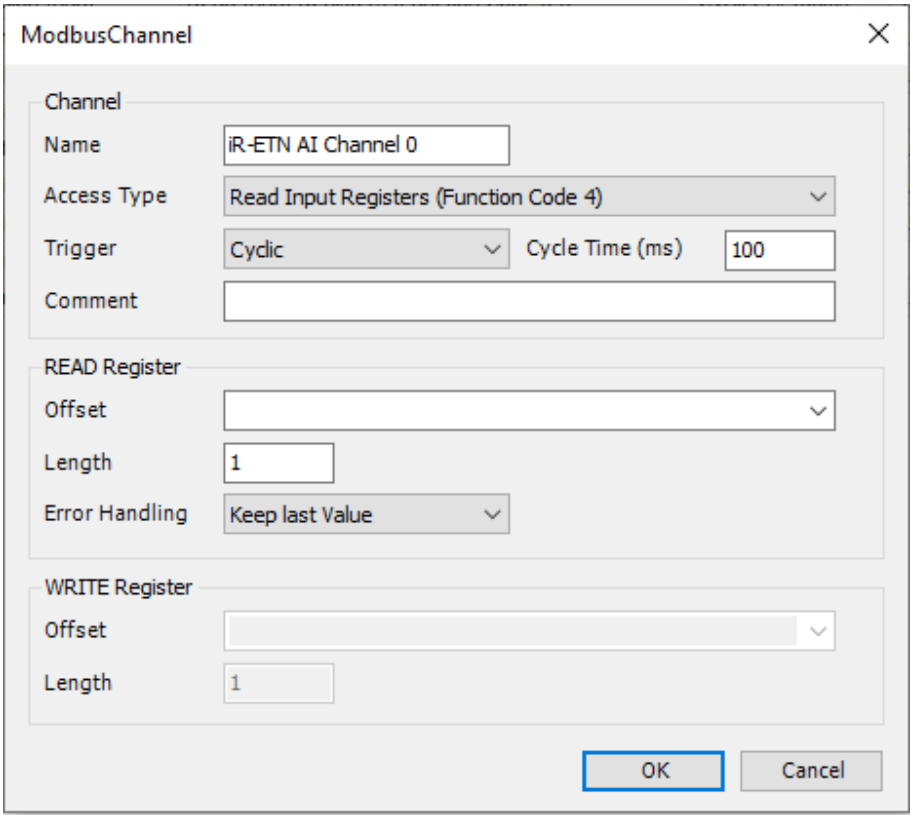


3. When finished, click [Online] » [Login] to download the project to CODESYS.

10.3Analog Channel IO Mapping

10.3.1 Reading / Writing iR-ETN Channels

1. [Modbus_TCP_Slave] » [Modbus Slave Channel] » [Add Channel]



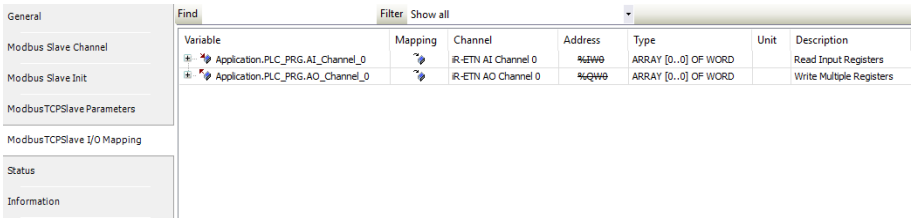
Channel Input Function Code 3 & 4, Modbus address start from 0x0000.
Channel Output Function Code 6 & 16, Modbus address start from 0x0100.
See UM018002E_iR-ETN_UserManual_eng.pdf for information on:
Analog Input Mapping to Modbus (also applicable for temperature module).
Analog Output Mapping to Modbus.

2. Open PLC_PRG in Devices tree, create tag and set INT as data type. Write a command as shown below.

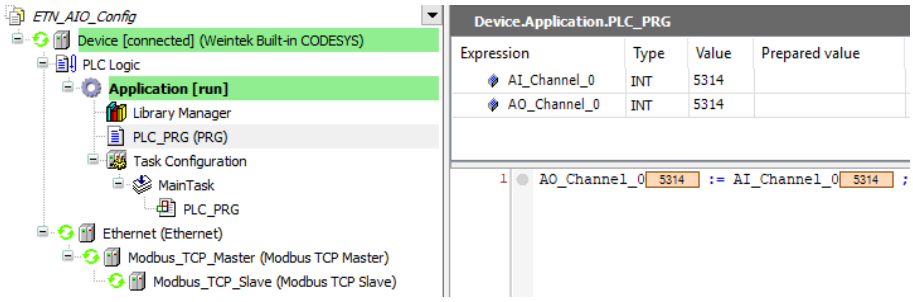
```
1  PROGRAM PLC_PRG
2  VAR
3      AI_Channel_0 : INT ;
4      AO_Channel_0 : INT ;
5  END_VAR
```

```
1  AO_Channel_0 := AI_Channel_0 ;
```

3. In Devices tree open Modbus_TCP_Slave » [ModbusTCPSlave I/O Mapping] tab and configure the settings.

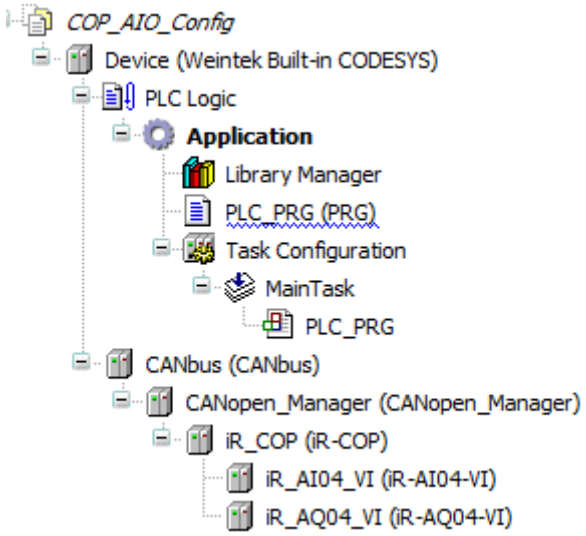


4. When finished, click [Online] » [Login] to download the project to CODESYS.



10.3.2 Reading / Writing iR-COP Channels

1. Add Analog module.

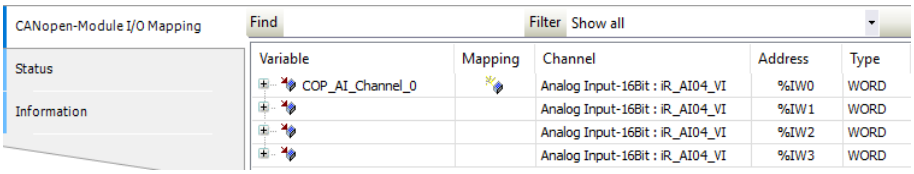


2. Open PLC_PRG in Devices tree, create tag and set INT as data type. Write a command as shown below.

```
1  PROGRAM PLC_PRG
2  VAR
3      COP_AI_Channel_0 : INT ;
4      COP_AO_Channel_0 : INT ;
5  END_VAR
```

```
1  COP_AO_Channel_0 : COP_AI_Channel_0 ;
```

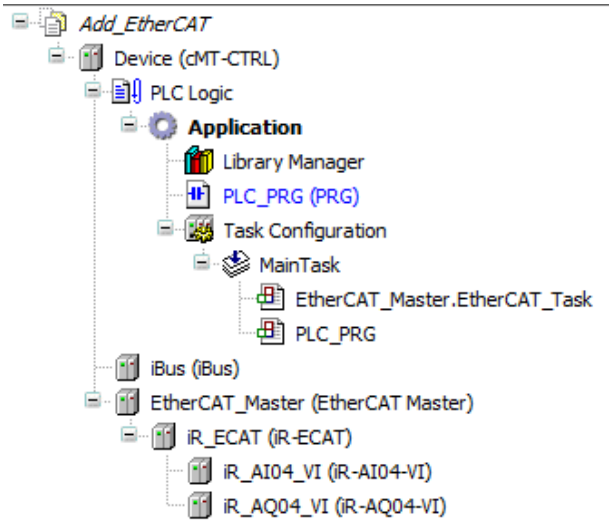
3. In Devices tree open the list of Analog Module » [CANopen-Module I/O Mapping] tab and configure the settings.



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

10.3.3 Reading / Writing iR-ECAT Channels

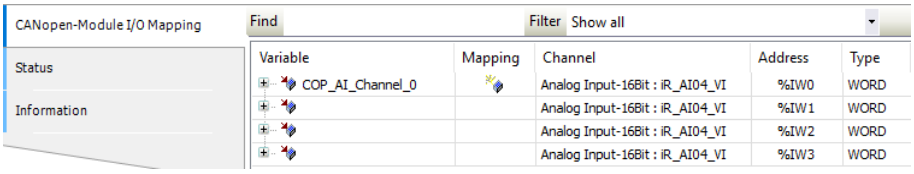
1. Add Analog module.



2. Open PLC_PRG in Devices tree, create tag and set INT as data type. Write a command as shown below.

```
1  PROGRAM PLC_PRG
2  VAR
3      ECAT_AI_Channel_0 : INT ;
4      ECAT_AO_Channel_0 : INT ;
5  END_VAR
```

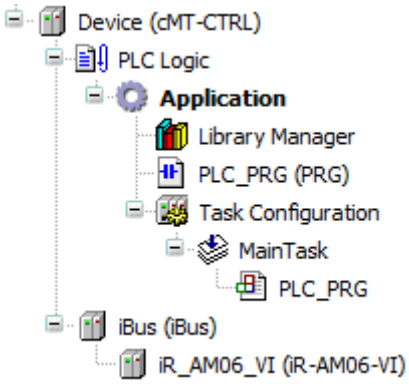
3. In Devices tree open the list of iR-ECAT » [EtherCAT I/O Mapping] tab and configure the settings.



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

10.3.4 Reading / Writing cMT-CTRL01 Channels

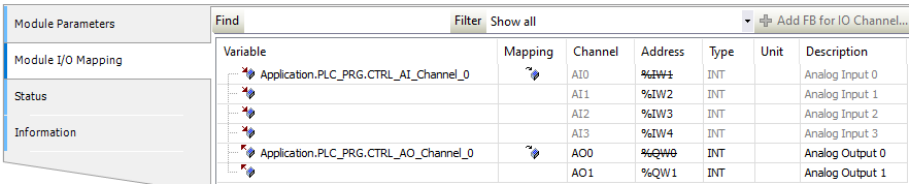
1. Add Analog module.



2. Open PLC_PRG in Devices tree, create tag and set INT as data type. Write a command as shown below.

```
PROGRAM PLC_PRG
VAR
    ECAT_AI_Channel_0 : INT ;
    ECAT_AO_Channel_0 : INT ;
END_VAR
```

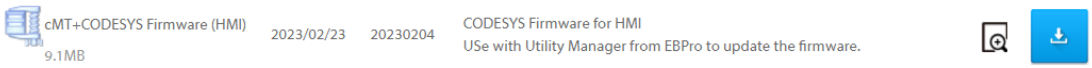
3. In Devices tree open the [iR_AM06_VI] » [Module I/O Mapping] tab and configure the settings.



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

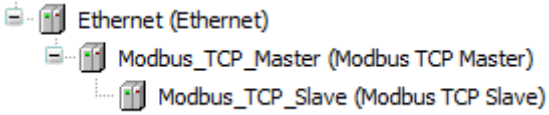
10.4Accessing Analog Module Registers Using Function Blocks

Before proceeding, make sure that the cMT+CODESYS Package has been downloaded and installed.

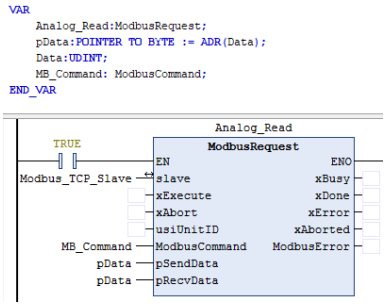


10.4.1 iR-ETN

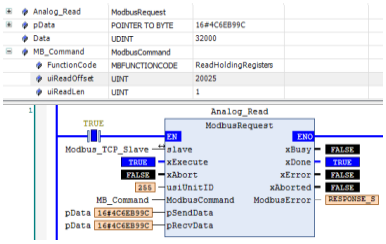
1. Add the [Ethernet], [Modbus_TCP_Master], and [Modbus_TCP_Slave] devices, and configure their communication parameters. For detailed instructions, refer to Chapter 5 of this manual:
   [Device] » [Add device] » [Ethernet].
   [Ethernet] » [Add device] » [Modbus_TCP_Master].
   [Modbus_TCP_Master] » [Add device] » [Modbus_TCP_Slave].



2. Declare the ModbusRequest function block and its associated function block parameters. Log in to CODESYS to proceed.



3. After assigning address parameters in CODESYS, trigger “xExecute” to read the data, which will be displayed in “Data”.

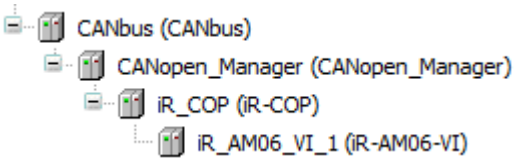


※ ModbusCommand's function code 3 (ReadHoldingRegister) is used to read word addresses.

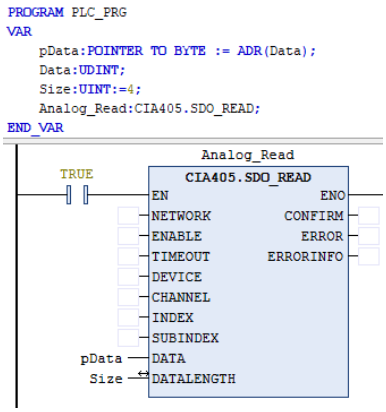
※ For Modbus address mapping, refer to “Analog Module Manual Chapter 8” for detailed information.

10.4.2 iR-COP

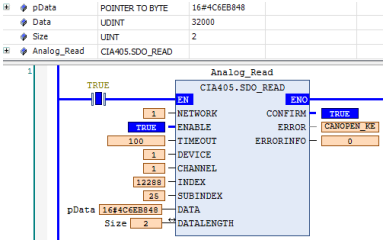
1. Add the [CANbus], [CANopen_Manager], [iR_COP], [iR_Module] devices, and configure their communication parameters. For detailed instructions, refer to Chapter 4 of this manual:
   [Device] » [Add device] » [CANbus].
   [CANopen_Manager] » [Add device] » [iR_COP].
   [iR_COP] » [Add device] » [iR_AM06_VI].



2. Declare the CIA405.SDO_READ function block and its associated function block parameters. Log in to CODESYS to proceed.



3. After assigning required parameters in CODESYS, trigger "ENABLE" to read the data, which will be displayed in "DATA".

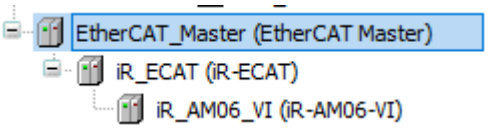


※ The iR_COP Coupler Node_ID corresponds to the DEVICE. Refer to [iR_COP] » [General] » [Node ID] for more information.

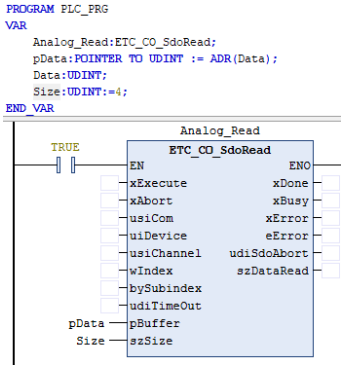
※ For INDEX and SUBINDEX address mapping, refer to "Analog Module Manual Chapter 9" for detailed information.

10.4.3 iR-ECAT

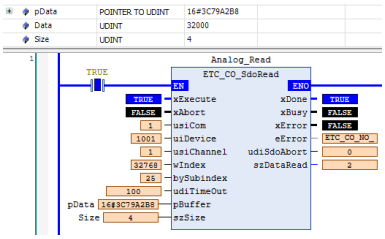
1. Add the [EtherCAT_Master], [iR_ECAT], [iR_Module] devices, and configure their communication parameters. For detailed instructions, refer to Chapter 6 of this manual:
   [Device] » [Add device] » [EtherCAT_Master].
   [EtherCAT_Master] » [Add device] » [iR_ECAT].
   [iR_ECAT] » [Add device] » [iR_AM06_VI].



2. Declare the ETC_CO_Read function block and its associated function block parameters. Log in to CODESYS to proceed.



3. After assigning required parameters in CODESYS, trigger “xExecute” to read the data, which will be displayed in “Data”.



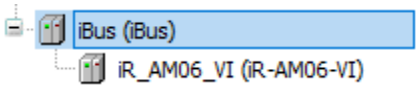
※The EtherCAT Coupler's address corresponds to uiDevice. Please refer to [iR_ECAT] » [General] » [EtherCAT address] for more information.

※For module sequence addressing, use wIndex, where the Index address of the first analog module is 16#8000.

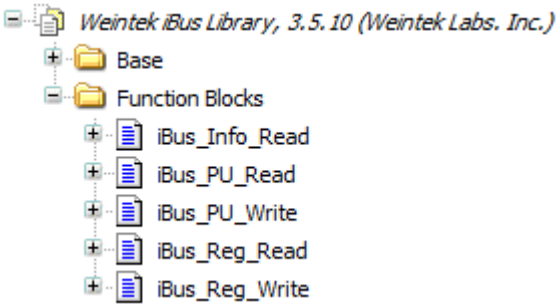
※The address mapping for analog module's registers is done using bySubIndex.

10.4.4 cMT-CTRL01

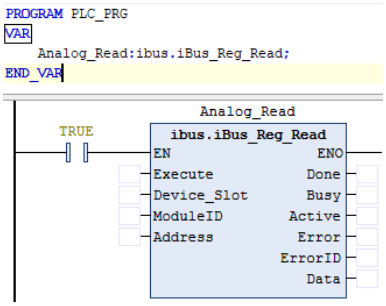
1. Under [iBus] » [Add device], add the analog module.



2. Under [Library Manager] » [Add Library], add Weintek iBus Library.

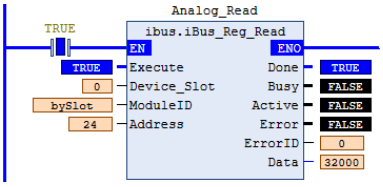


3. Declare the iBus.iBus_Reg_Read function block and log in to CODESYS.



4. Input the desired parameter into the function block for reading, then trigger "Execute" to display the current value in "Data".

   ※ For input parameter configuration, refer to "Weintek Library User Manual Chapter 10 - Weintek iBus Library".



11 Starting iR Motion Control Module

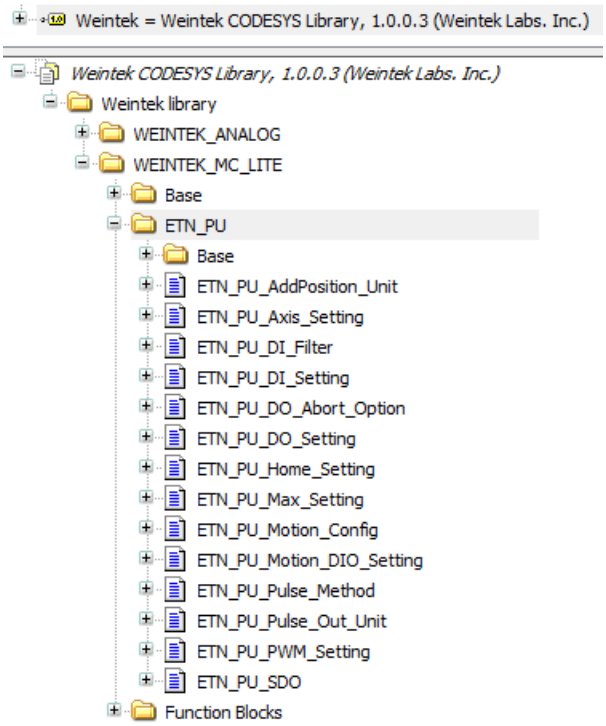
11.1 Motion Control Module Wiring

Please see UM019004E_iR-PU01-P_UserManual_eng.pdf for information on wiring when using iR-PU01-P module.

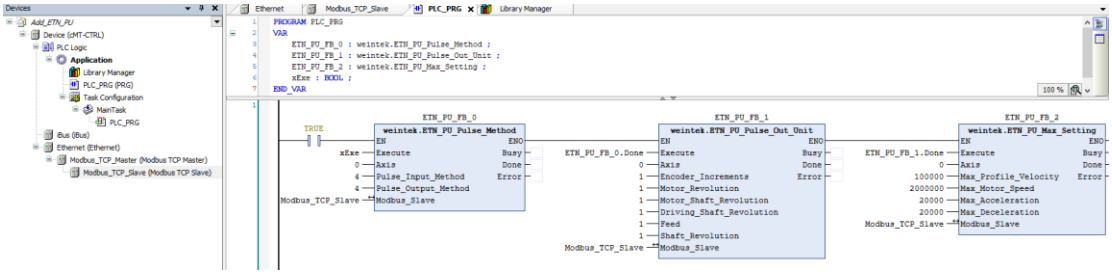
11.2 Setting Motion Control Module Parameters

11.2.1 Writing Motion Control Parameters from iR-ETN

1. Add iR-ETN following the steps explained in Chapter 5 in this manual.
2. Go to [Library Manager] » [Add library] and add Weintek_CODESYS_Library V1.0.0.3.
3. The Function Blocks for writing parameters to iR-PU01P are placed in the ETN_PU folder.



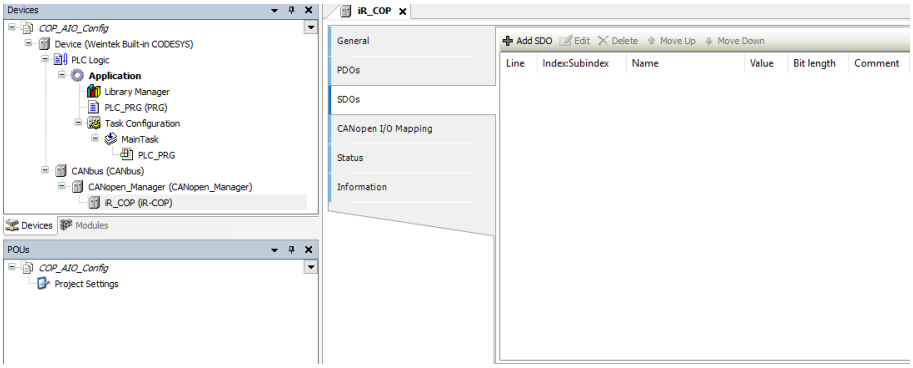
4. Write iR-PU01-P parameters in the program.

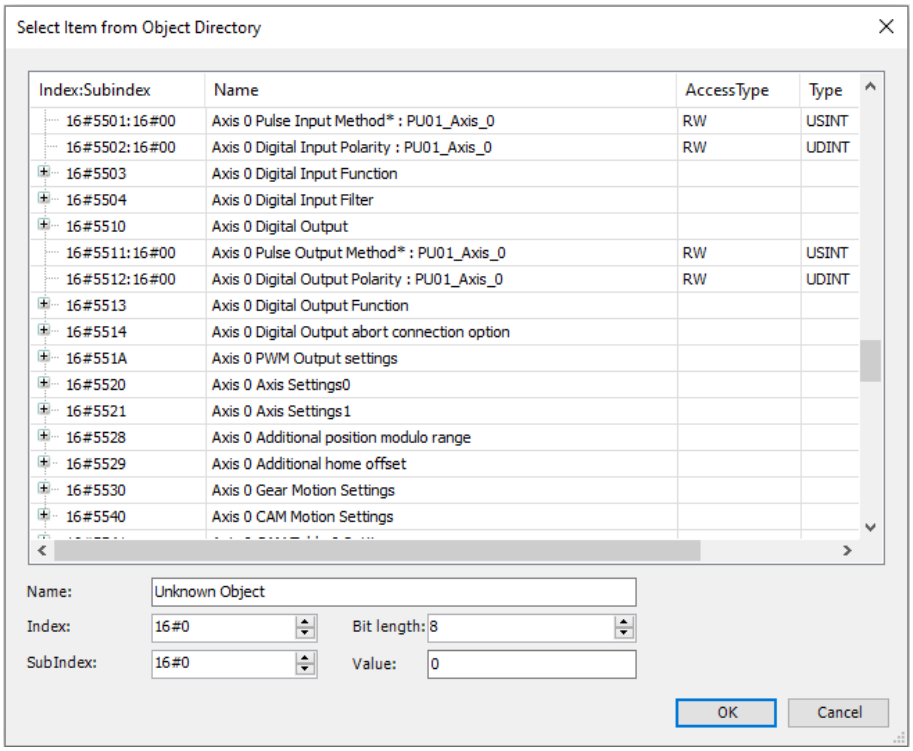


5. When finished, click [Online] » [Login] and download the project to CODESYS. Trigger Execute to write parameters into iR-PU01-P.

11.2.2 Writing Motion Control Parameters from iR-COP

1. Add iR-COP following the steps explained in Chapter 4 in this manual.
2. [iR_COP] » [SDOs] » [Add SDO]



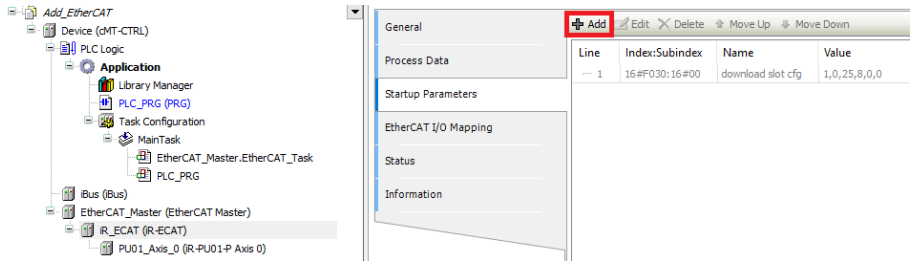


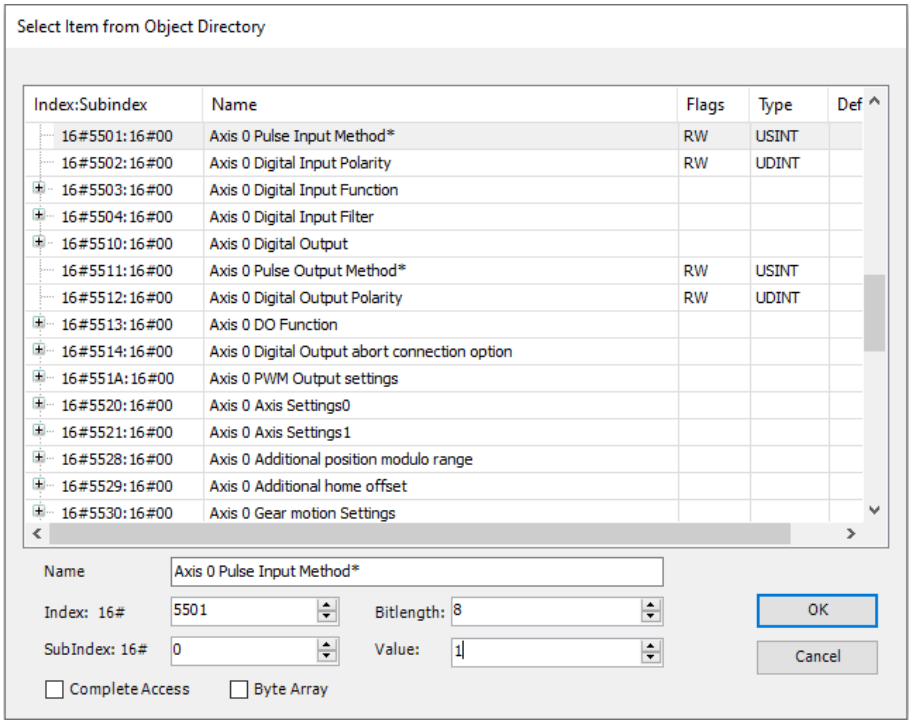
See UM019004E_iR-PU01-P_UserManual_eng.pdf for information on motion control parameter configuration and object dictionary when using analog modules.

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

11.2.3 Writing Motion Control Parameters from iR-ECAT

1. Add iR-ECAT following the steps explained in Chapter 6 in this manual.
2. [iR_ECAT] » [Startup Parameters] » [Add]





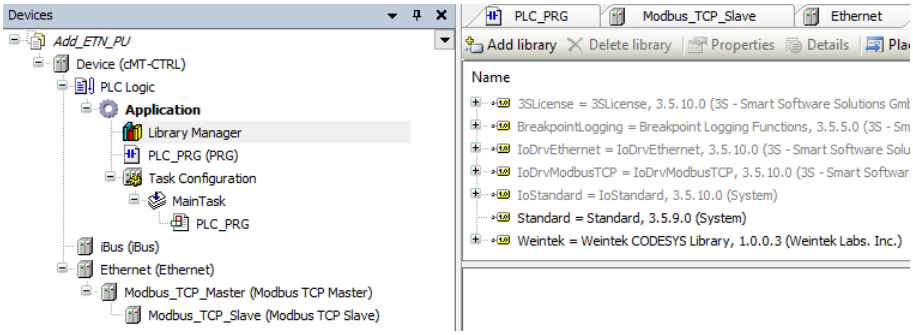
See UM019004E_iR-PU01-P_UserManual_eng.pdf for information on motion control parameter configuration and object dictionary when using analog modules.

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

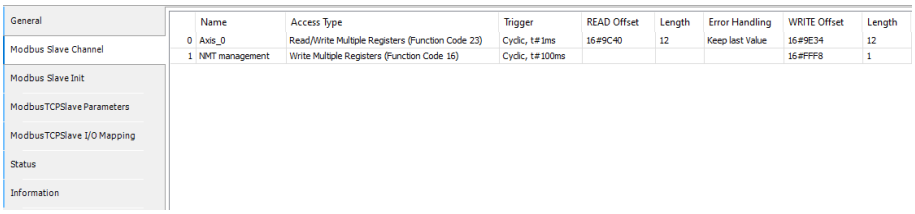
11.3 Motion Control Module I/O Mapping

11.3.1 Reading / Writing iR-ETN Channels

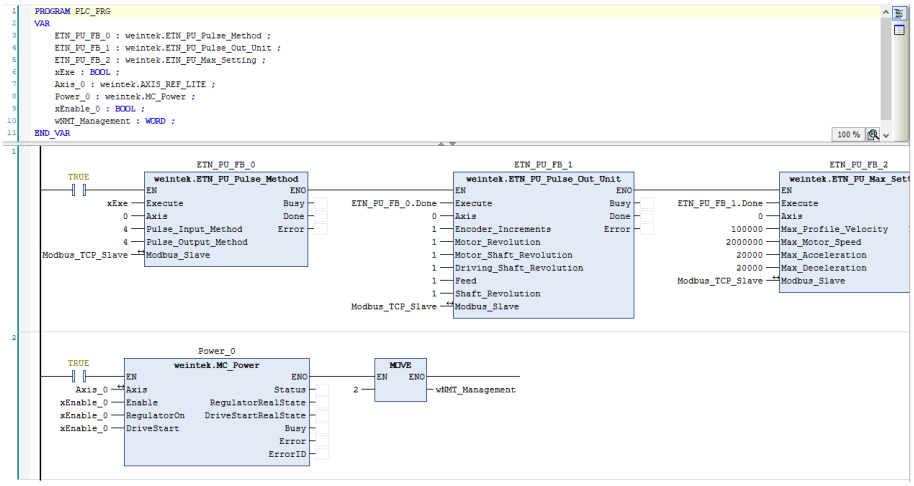
1. Add Weintek_CODESYS_Library and follow the steps in Chapter 5 in this manual to add Modbus TCP device.



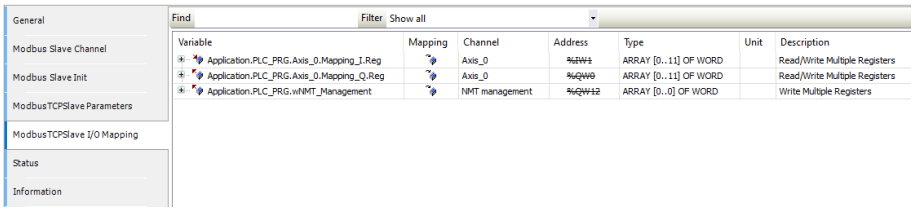
2. Add motion control channels and NMT network management channels.



3. Open PLC_PRG in Devices tree, create tag and set AXIS_REF_Lite as data type. Edit motion control function blocks as shown below.



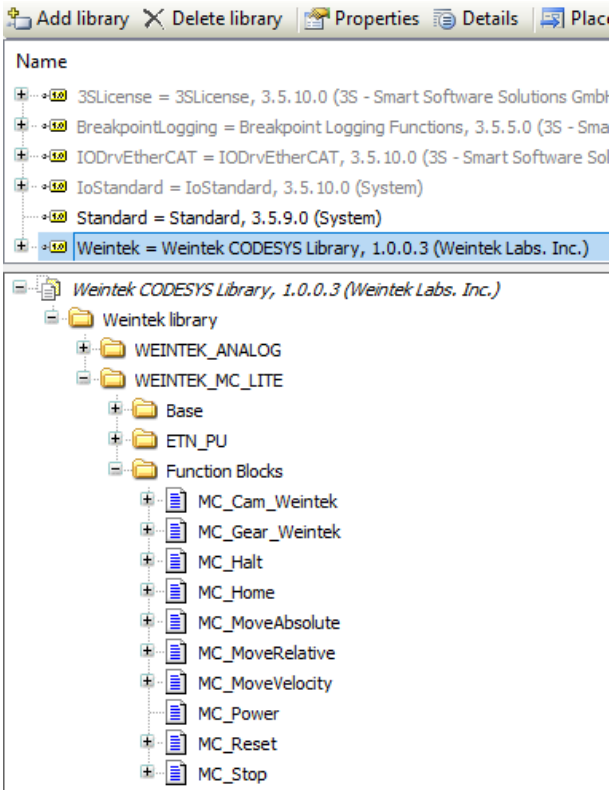
4. In Devices tree open [iR-COP] » [CANopen I/O Mapping] tab to configure the settings.



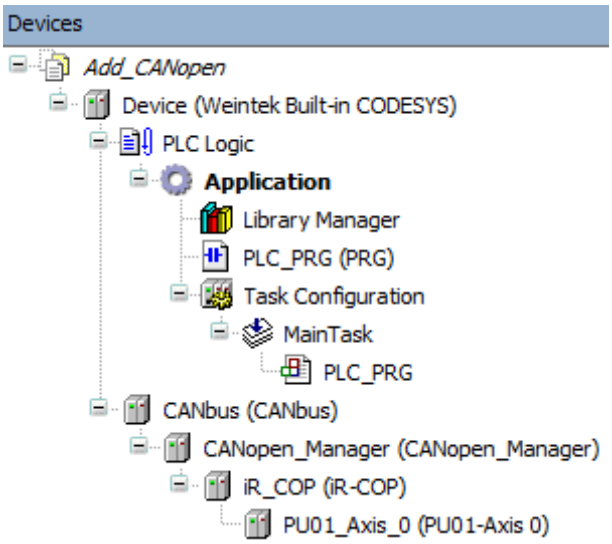
5. When finished, click [Online] » [Login] and download the project to CODESYS. After triggering xExecute_0, iR-PU01-P enters standstill state.

11.3.2 Reading / Writing iR-COP Channels

1. Add Weintek_CODESYS_Library.

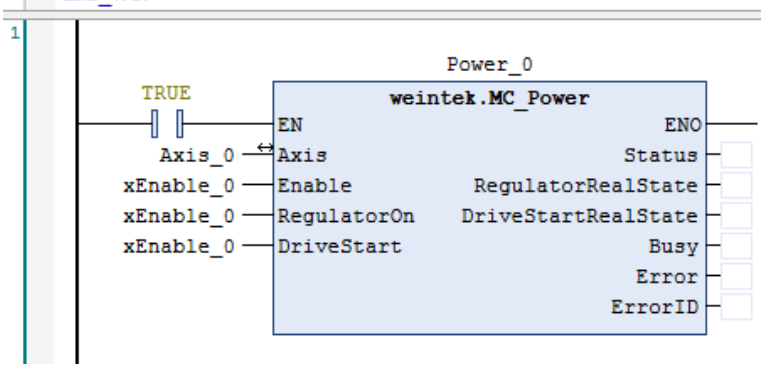


2. Add motion control modules.

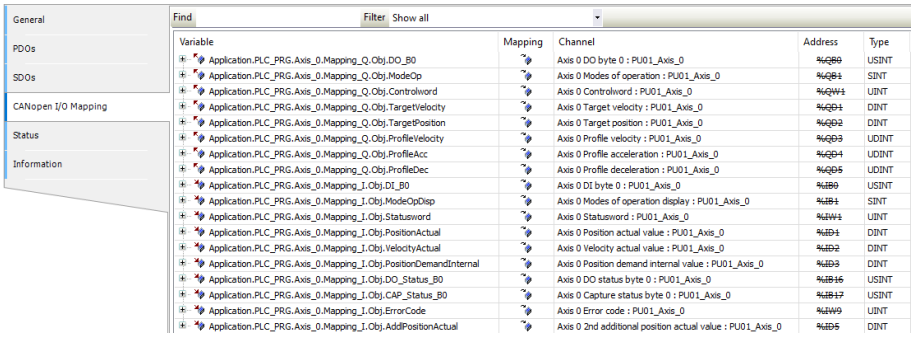


3. Open PLC_PRG in Devices tree, create tag and set AXIS_REF_Lite as data type. Edit motion control function blocks as shown below.

```
1  PROGRAM PLC_PRG
2  VAR
3      Axis_0 : weintek.AXIS_REF_LITE ;
4      Power_0 : weintek.MC_Power ;
5      xEnable_0 : BOOL ;
6  END_VAR
```



4. In Devices tree open [iR_COP] » [CANopen I/O Mapping] tab and configure the settings.

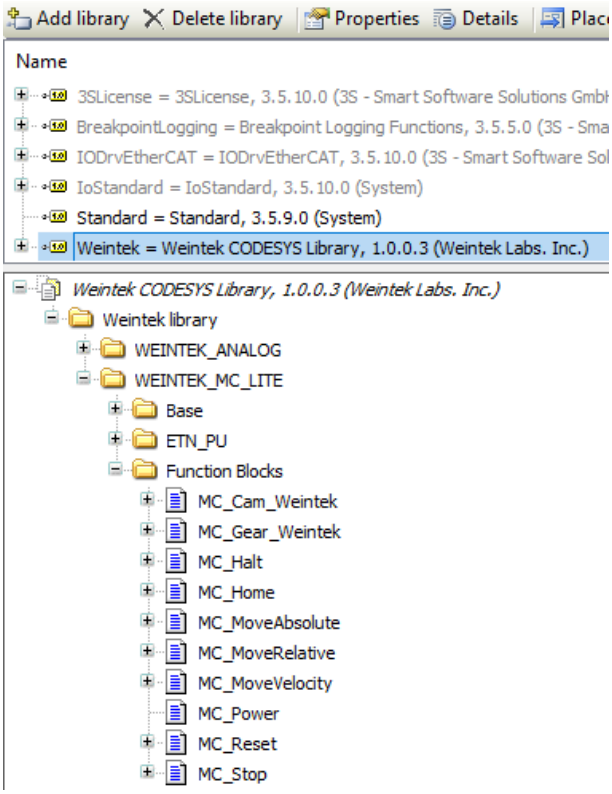


Variable	Mapping	Channel	Address	Type
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.DO_B0		Axis 0 DO byte 0 : PU01_Axis_0	%QB0	USINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ModeOp		Axis 0 Modes of operation : PU01_Axis_0	%QB1	SINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.Controlword		Axis 0 Controlword : PU01_Axis_0	%QW1	UINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.TargetVelocity		Axis 0 Target velocity : PU01_Axis_0	%QD1	DINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.TargetPosition		Axis 0 Target position : PU01_Axis_0	%QD2	DINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileVelocity		Axis 0 Profile velocity : PU01_Axis_0	%QD3	UDINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileAcc		Axis 0 Profile acceleration : PU01_Axis_0	%QD4	UDINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileDec		Axis 0 Profile deceleration : PU01_Axis_0	%QD5	UDINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.DI_B0		Axis 0 DI byte 0 : PU01_Axis_0	%IB0	USINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.ModeOpDisp		Axis 0 Modes of operation display : PU01_Axis_0	%IB1	SINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.Statusword		Axis 0 Statusword : PU01_Axis_0	%IW1	UINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.PositionActual		Axis 0 Position actual value : PU01_Axis_0	%ID1	DINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.VelocityActual		Axis 0 Velocity actual value : PU01_Axis_0	%ID2	DINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.PositionDemandInternal		Axis 0 Position demand internal value : PU01_Axis_0	%ID3	DINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.DO_Status_B0		Axis 0 DO status byte 0 : PU01_Axis_0	%IB16	USINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.CAP_Status_B0		Axis 0 Capture status byte 0 : PU01_Axis_0	%IB17	USINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.ErrorCode		Axis 0 Error code : PU01_Axis_0	%IW9	UINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.AddPositionActual		Axis 0 2nd additional position actual value : PU01_Axis_0	%ID5	DINT

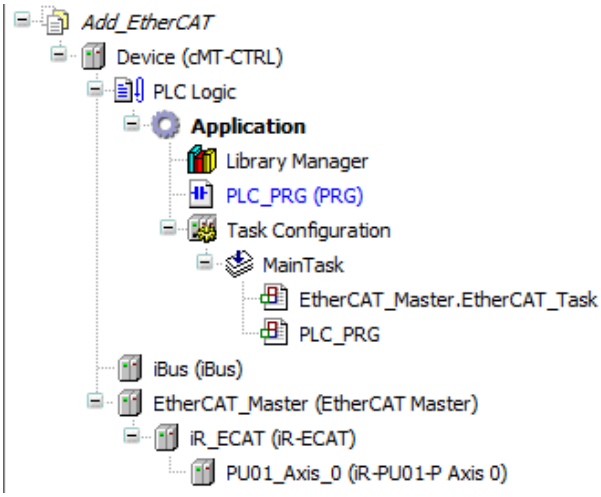
5. When finished, click [Online] » [Login] to download the project to CODESYS. After triggering xExecute_0, iR-PU01-P enters standstill state.

11.3.3 Reading / Writing iR-ECAT Channels

1. Add Weintek_CODESYS_Library.

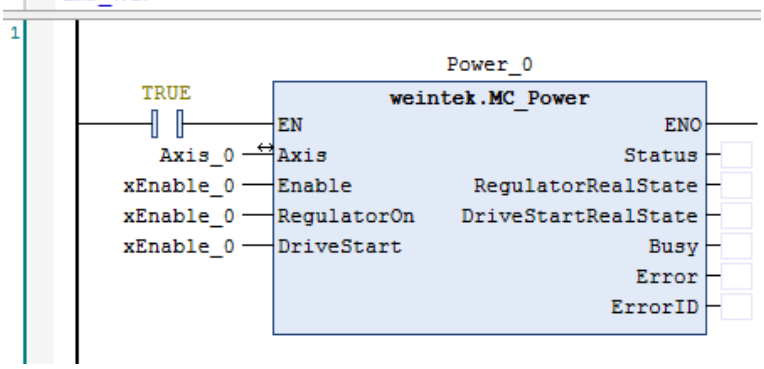


2. Add motion control modules.



3. Open PLC_PRG in Devices tree, create tag and set AXIS_REF_Lite as data type. Edit motion control function blocks as shown below.

```
1  PROGRAM PLC_PRG
2  VAR
3      Axis_0 : weintek.AXIS_REF_LITE ;
4      Power_0 : weintek.MC_Power ;
5      xEnable_0 : BOOL ;
6  END_VAR
```



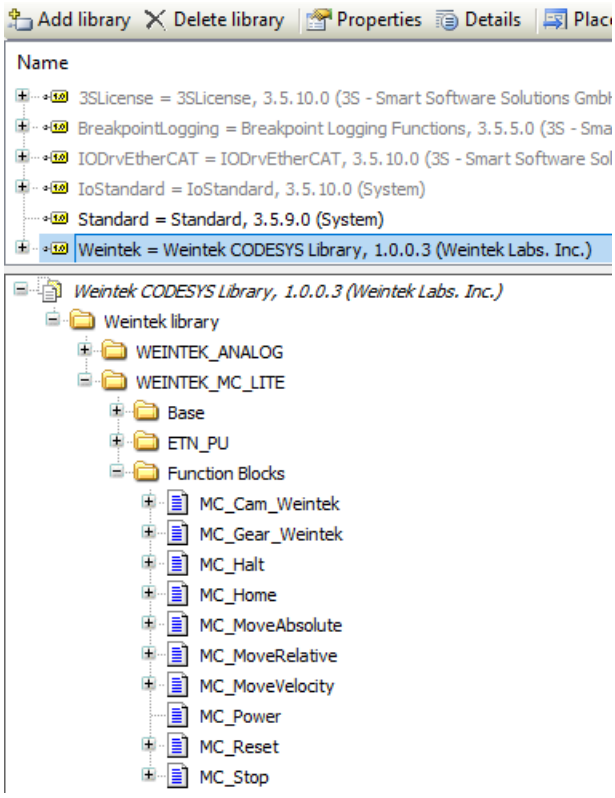
4. In Devices tree open [iR_ECAT] » [EtherCAT I/O Mapping] tab and configure the settings.

Variable	Mapping	Channel	Address	Type	Unit	Description
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.DO_B0		PU01_Axis_0 Axis 0 DO byte 0	%QB0	USINT		PU01_Axis_0 Axis 0 DO byte 0
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ModeOp		PU01_Axis_0 Axis 0 Mode of operation	%QB1	USINT		PU01_Axis_0 Axis 0 Mode of operation
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.Controlword		PU01_Axis_0 Axis 0 Controlword	%QW1	UINT		PU01_Axis_0 Axis 0 Controlword
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.TargetVelocity		PU01_Axis_0 Axis 0 Target velocity	%QD1	DINT		PU01_Axis_0 Axis 0 Target velocity
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.TargetPosition		PU01_Axis_0 Axis 0 Target position	%QD2	DINT		PU01_Axis_0 Axis 0 Target position
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileVelocity		PU01_Axis_0 Axis 0 Profile velocity	%QD3	UDINT		PU01_Axis_0 Axis 0 Profile velocity
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileAcc		PU01_Axis_0 Axis 0 Profile acceleration	%QD4	DINT		PU01_Axis_0 Axis 0 Profile acceleration
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileDec		PU01_Axis_0 Axis 0 Profile deceleration	%QD5	DINT		PU01_Axis_0 Axis 0 Profile deceleration
		PU01_Axis_0 Reserved	%QD6	DINT		PU01_Axis_0 Reserved
		PU01_Axis_0 Reserved	%QD7	DINT		PU01_Axis_0 Reserved
Application.PLC_PRG.Axis_0.Mapping_I.Obj.DI_B0		PU01_Axis_0 Axis 0 DI byte 0	%IB4	USINT		PU01_Axis_0 Axis 0 DI byte 0
Application.PLC_PRG.Axis_0.Mapping_I.Obj.ModeOpDisp		PU01_Axis_0 Axis 0 Mode of operation display	%IB5	USINT		PU01_Axis_0 Axis 0 Mode of operation display
Application.PLC_PRG.Axis_0.Mapping_I.Obj.Statusword		PU01_Axis_0 Axis 0 Statusword	%IW3	UINT		PU01_Axis_0 Axis 0 Statusword
Application.PLC_PRG.Axis_0.Mapping_I.Obj.PositionActual		PU01_Axis_0 Axis 0 Position actual value	%ID2	DINT		PU01_Axis_0 Axis 0 Position actual value
Application.PLC_PRG.Axis_0.Mapping_I.Obj.VelocityActual		PU01_Axis_0 Axis 0 Velocity actual value	%ID3	DINT		PU01_Axis_0 Axis 0 Velocity actual value
Application.PLC_PRG.Axis_0.Mapping_I.Obj.PositionDemandInternal		PU01_Axis_0 Axis 0 Position demand internal value	%ID4	DINT		PU01_Axis_0 Axis 0 Position demand internal value
Application.PLC_PRG.Axis_0.Mapping_I.Obj.DO_Status_B0		PU01_Axis_0 Axis 0 DO status byte 0	%IB20	USINT		PU01_Axis_0 Axis 0 DO status byte 0
Application.PLC_PRG.Axis_0.Mapping_I.Obj.CAP_Status_B0		PU01_Axis_0 Axis 0 Capture status byte 0	%IB21	USINT		PU01_Axis_0 Axis 0 Capture status byte 0
Application.PLC_PRG.Axis_0.Mapping_I.Obj.ErrorCode		PU01_Axis_0 Axis 0 Error code	%IW11	UINT		PU01_Axis_0 Axis 0 Error code
Application.PLC_PRG.Axis_0.Mapping_I.Obj.AddPositionActual		PU01_Axis_0 Axis 0 2nd additional position actual value	%ID6	DINT		PU01_Axis_0 Axis 0 2nd additional position actual value
		PU01_Axis_0 Reserved	%ID7	DINT		PU01_Axis_0 Reserved
		PU01_Axis_0 Reserved	%ID8	DINT		PU01_Axis_0 Reserved

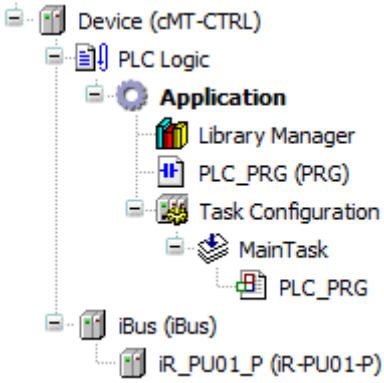
5. When finished, click [Online] » [Login] to download the project to CODESYS. After triggering xExecute_0, iR-PU01-P enters standstill state.

11.3.4 Reading / Writing cMT-CTRL01 Channels

1. Add Weintek_CODESYS_Library.

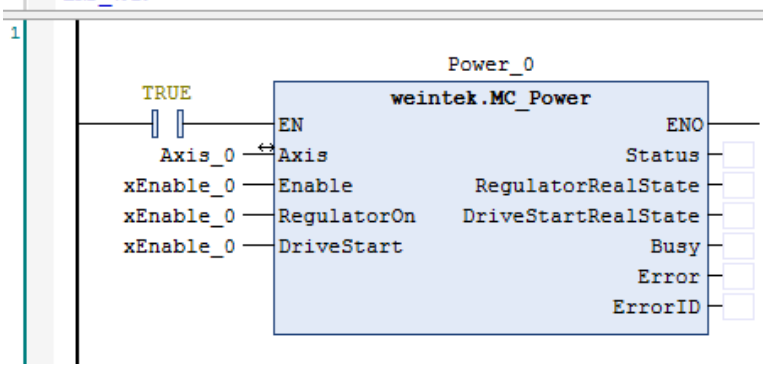


2. Add the motion control module.

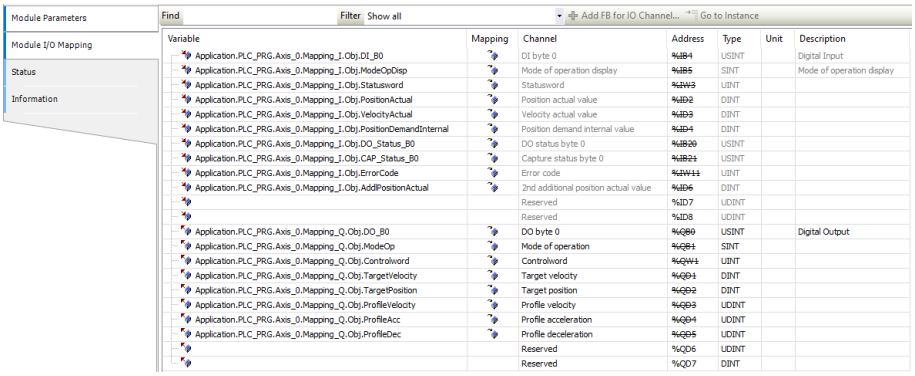


3. Open PLC_PRG in Devices tree, create tag and set AXIS_REF_Lite as data type. Edit motion control function blocks as shown below.

```
1  PROGRAM PLC_PRG
2  VAR
3      Axis_0 : weintek.AXIS_REF_LITE ;
4      Power_0 : weintek.MC_Power ;
5      xEnable_0 : BOOL ;
6  END_VAR
```



4. In Devices tree open [iR_ECAT] » [EtherCAT I/O Mapping] tab and configure the settings.



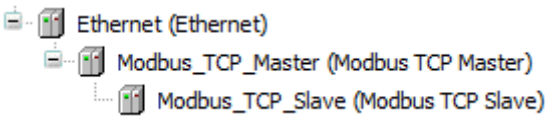
Variable	Mapping	Channel	Address	Type	Unit	Description
Application.PLC_PRG.Axis_0.Mapping_I.Obj.DI_B0		DI byte 0	%IB4	USINT		Digital Input
Application.PLC_PRG.Axis_0.Mapping_I.Obj.ModeOpDisp		Mode of operation display	%IB5	SINT		Mode of operation display
Application.PLC_PRG.Axis_0.Mapping_I.Obj.Statusword		Statusword	%IW3	UINT		
Application.PLC_PRG.Axis_0.Mapping_I.Obj.PositionActual		Position actual value	%ID2	DINT		
Application.PLC_PRG.Axis_0.Mapping_I.Obj.VelocityActual		Velocity actual value	%ID3	DINT		
Application.PLC_PRG.Axis_0.Mapping_I.Obj.PositionDemandInternal		Position demand internal value	%ID4	DINT		
Application.PLC_PRG.Axis_0.Mapping_I.Obj.DO_Status_B0		DO status byte 0	%IB20	USINT		
Application.PLC_PRG.Axis_0.Mapping_I.Obj.CAP_Status_B0		Capture status byte 0	%IB21	USINT		
Application.PLC_PRG.Axis_0.Mapping_I.Obj.ErrorCode		Error code	%IW11	UINT		
Application.PLC_PRG.Axis_0.Mapping_I.Obj.AddPositionActual		2nd additional position actual value	%ID6	DINT		
		Reserved	%ID7	UDINT		
		Reserved	%ID8	UDINT		
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.DO_B0		DO byte 0	%QB0	USINT		Digital Output
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ModeOp		Mode of operation	%QB1	SINT		
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.Controlword		Controlword	%QW1	UINT		
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.TargetVelocity		Target velocity	%QD1	DINT		
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.TargetPosition		Target position	%QD2	DINT		
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileVelocity		Profile velocity	%QD3	UDINT		
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileAcc		Profile acceleration	%QD4	UDINT		
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileDec		Profile deceleration	%QD5	UDINT		
		Reserved	%QD6	UDINT		
		Reserved	%QD7	DINT		

5. When finished, click [Online] » [Login] to download the project to CODESYS. After triggering xExecute_0, iR-PU01-P enters standstill state.

11.4 Accessing Motion Control Module Registers Using Function Blocks

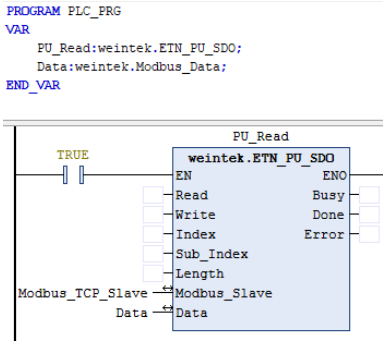
11.4.1 iR-ETN

1. Add the [Ethernet], [Modbus_TCP_Master], and [Modbus_TCP_Slave] devices, and configure their communication parameters. For detailed instructions, refer to Chapter 5 of this manual:
   [Device] » [Add device] » [Ethernet].
   [Ethernet] » [Add device] » [Modbus_TCP_Master].
   [Modbus_TCP_Master] » [Add device] » [Modbus_TCP_Slave].

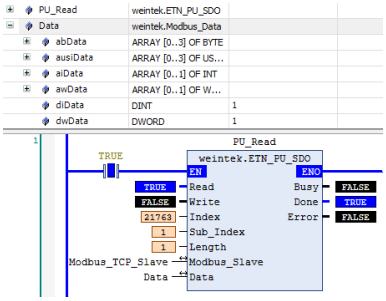


2. Under [Library Manager] » [Add Library], add Weintek_CODESYS_Library.

3. Declare the weintek.ETN_PU_SDO function block and its associated function block parameters. Log in to CODESYS to proceed.



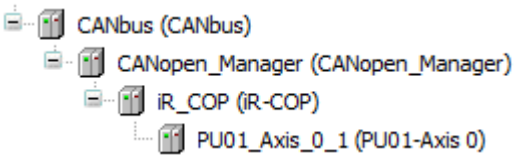
4. After assigning address parameters in CODESYS, trigger “Read” to read the data, which will be displayed in “Data”.



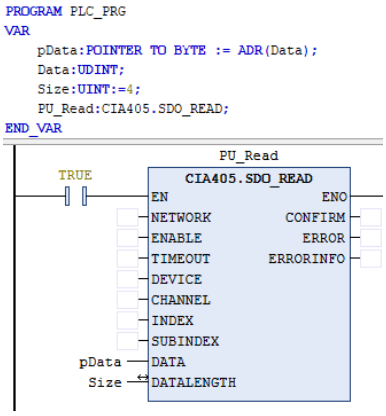
※ For Index and Sub_Index address mapping, refer to “iR-PU01-P User Manual” for detailed information.

11.4.2 iR-COP

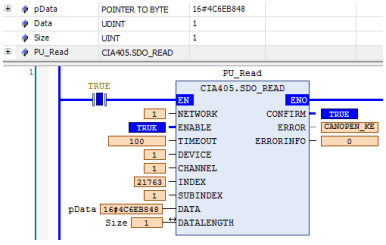
1. Add the [CANbus], [CANopen_Manager], [iR_COP], [iR_Module] devices, and configure their communication parameters. For detailed instructions, refer to Chapter 4 of this manual:
   [Device] » [Add device] » [CANbus].
   [CANopen_Manager] » [Add device] » [iR_COP].
   [iR_COP] » [Add device] » [iR_PU01_P].



2. Declare the CIA405.SDO_READ function block and its associated function block parameters. Log in to CODESYS to proceed.



3. After assigning required parameters in CODESYS, trigger "ENABLE" to read the data, which will be displayed in "DATA".

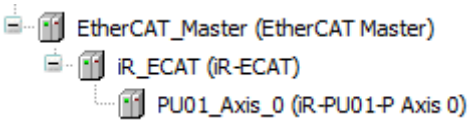


※ The iR_COP Coupler Node_ID corresponds to the DEVICE. Refer to [iR_COP] » [General] » [Node ID] for more information.

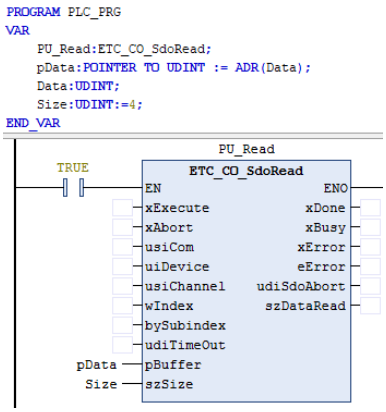
※ For INDEX and SUBINDEX address mapping, refer to "iR-PU01-P User Manual" for detailed information.

11.4.3 iR-ECAT

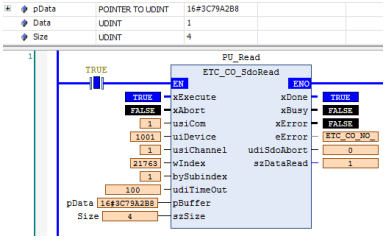
1. Add the [EtherCAT_Master], [iR_ECAT], [iR_Module] devices, and configure their communication parameters. For detailed instructions, refer to Chapter 6 of this manual:
   [Device] » [Add device] » [EtherCAT_Master].
   [EtherCAT_Master] » [Add device] » [iR_ECAT].
   [iR_ECAT] » [Add device] » [iR_PU01_Axis_0].



2. Declare the ETC_CO_Read function block and its associated function block parameters. Log in to CODESYS to proceed.



3. After assigning required parameters in CODESYS, trigger “xExecute” to read the data, which will be displayed in “Data”.



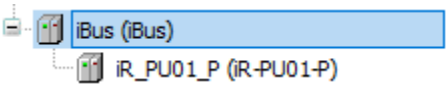
※The EtherCAT Coupler's address corresponds to uiDevice. Please refer to [iR_ECAT] » [General] » [EtherCAT address] for more information.

※For address mapping using wIndex and bySubIndex, refer to “iR-PU01-P User Manual” for detailed information.

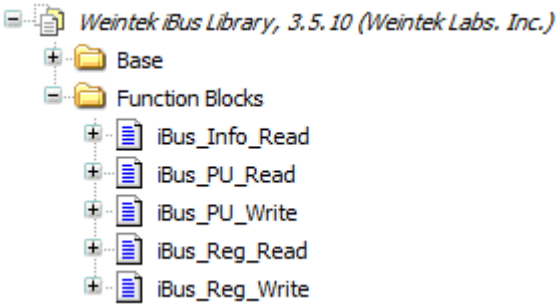
11.4.4 cMT-CTRL01

1. Download and install the cMT+CODESYS Package.

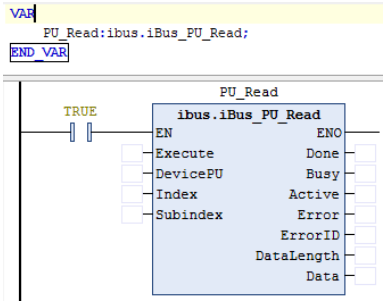
2. Under [iBus] » [Add device], add the motion control module.



3. Under [Library Manager] » [Add Library], add Weintek iBus Library.

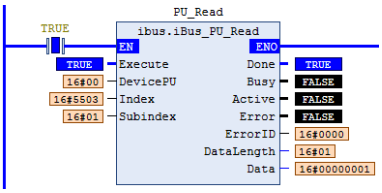


4. Declare the iBus.iBus_PU_Read function block and log in to CODESYS.



5. Input the desired parameter into the function block for reading, then trigger "Execute" to display the current value in "Data".

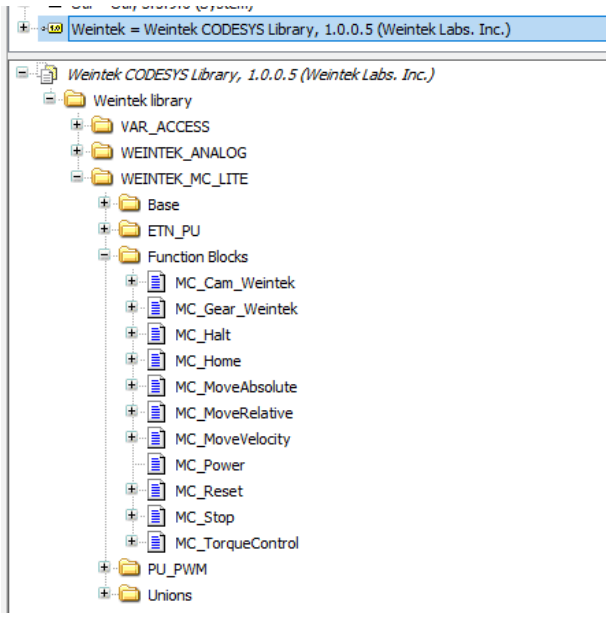
   ※ For input parameter configuration, refer to "Weintek Library User Manual Chapter 10 - Weintek iBus Library".



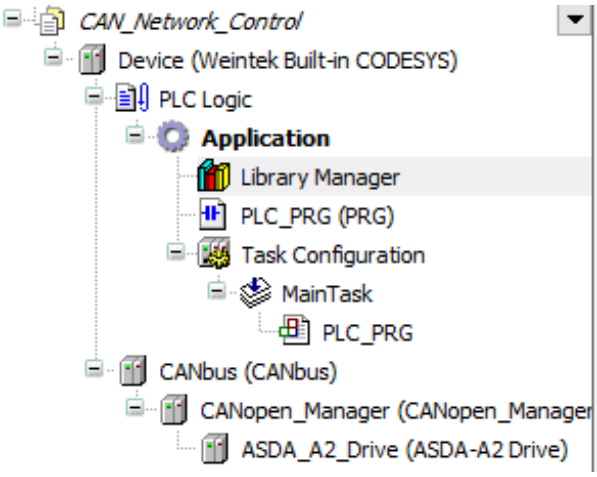
12 Starting Driver

12.1 CANopen Driver

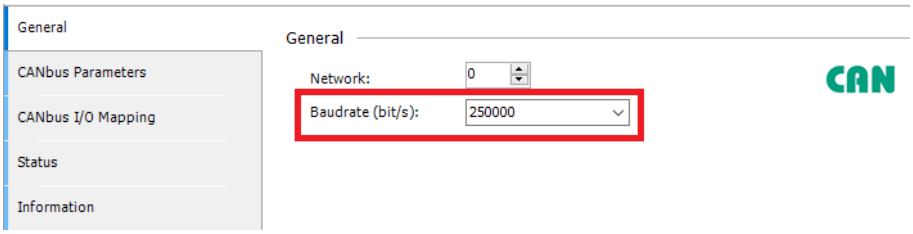
1. Add Weintek_CODESYS_Library.



2. Add CANbus, CANopen_Manager, CANopen drivers.



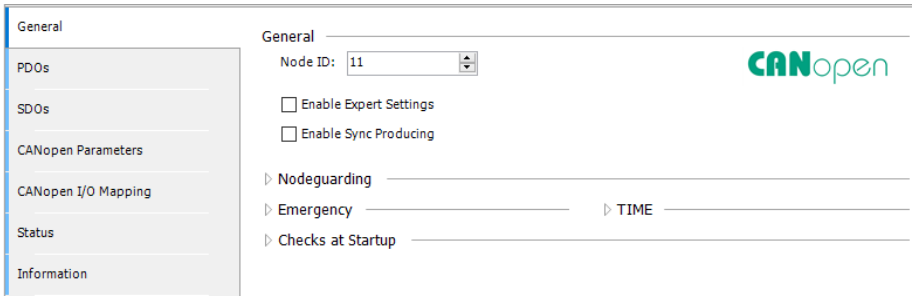
3. CANbus -> Baudrate settings:



CODESYS baudrate must be identical to the driver's baudrate.

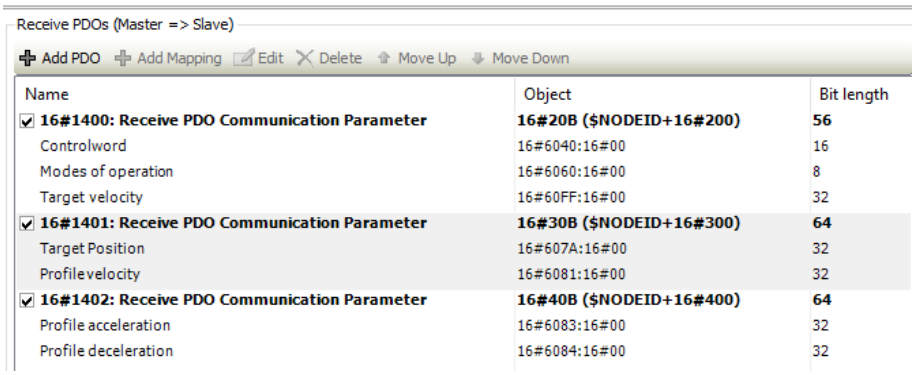
4. CANopen driver settings:

(1) Node ID



Node ID settings must be identical to that of the driver.

(2) PDO settings:



Name	Object	Bit length
16#1400: Receive PDO Communication Parameter	**16#20B ($NODEID+16#200)**	**56**
Controlword	16#6040:16#00	16
Modes of operation	16#6060:16#00	8
Target velocity	16#60FF:16#00	32
16#1401: Receive PDO Communication Parameter	**16#30B ($NODEID+16#300)**	**64**
Target Position	16#607A:16#00	32
Profile velocity	16#6081:16#00	32
16#1402: Receive PDO Communication Parameter	**16#40B ($NODEID+16#400)**	**64**
Profile acceleration	16#6083:16#00	32
Profile deceleration	16#6084:16#00	32

See Axis Variable Instance Mapping_Q to add variables for output

channels.

Transmit PDOs (Slave => Master)

Add PDO | Add Mapping | Edit | Delete | Move Up | Move Down

Name	Object	Bit length
16#1800: Transmit PDO Communication Parameter	**16#18B ($NODEID+16#180)**	**56**
Modes of operation display	16#6061:16#00	8
Statusword	16#6041:16#00	16
Position actual value	16#6064:16#00	32
16#1801: Transmit PDO Communication Parameter	**16#28B ($NODEID+16#280)**	**64**
Velocity actual value	16#606C:16#00	32
Position demand value*	16#60FC:16#00	32

See Axis Variable Instance Mapping_I to add variables for input channels.

(3) SDO settings:

General | PDOs | SDOs | CANopen Parameters | CANopen I/O Mapping | Status | Information

Add SDO | Edit | Delete | Move Up | Move Down

Line	Index:Subindex	Name	Value	Bit length
1	16#607F:16#00	Max profile velocity	200	32
2	16#6080:16#00	Max motor speed	200	32
3	16#6085:16#00	Quick stop deceleration	200	32
4	16#60C5:16#00	Max acceleration	200	32
5	16#60C6:16#00	Max deceleration	200	32

Follow the settings in the screenshot above to set initial values for checking motor rotation.

(4) CANopen I/O Mapping:

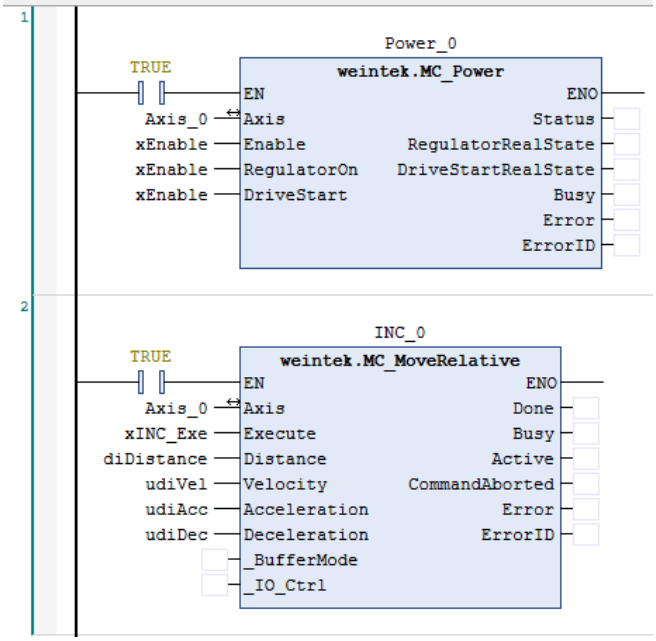
Find | Filter Show all

Variable	Mapping	Channel	Address	Type
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.Controlword		Controlword	%QW0	UINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ModeOp		Modes of operation	%QB2	SINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.TargetVelocity		Target velocity	%QD1	DINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.TargetPosition		Target Position	%QD2	DINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileVelocity		Profile velocity	%QD3	UDINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileAcc		Profile acceleration	%QD4	UDINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileDec		Profile deceleration	%QD5	UDINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.ModeOpDisp		Modes of operation display	%IB0	SINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.Statusword		Statusword	%IW1	UINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.PositionActual		Position actual value	%ID1	DINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.VelocityActual		Velocity actual value	%ID2	DINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.PositionDemandInternal		Position demand value*	%ID3	DINT

Mapping_I and Mapping_Q should be mapped to CANopen I/O Mapping.

5. Programming:

```
1  PROGRAM PLC_PRG
2  VAR
3      Axis_0 : weintek.AXIS_REF_LITE ;
4      Power_0 : weintek.MC_Power ;
5      INC_0 : weintek.MC_MoveRelative ;
6      xEnable : BOOL ;
7      xINC_Exe : BOOL ;
8      diDistance : DINT := 10000 ;
9      udiVel : UDINT := 10000 ;
10     udiAcc : UDINT := 1000 ;
11     udiDec : UDINT := 1000 ;
12 END_VAR
```



Function blocks MC_Power & MC_MoveRelative are needed for testing motor rotation.

Trigger “xEnable” and then trigger “xINC_Exe” to give command to the motor to perform positioning. When MC_Power.Status = FALSE, use MC_Reset function block to reset the motor and then trigger “xINC_Exe”.

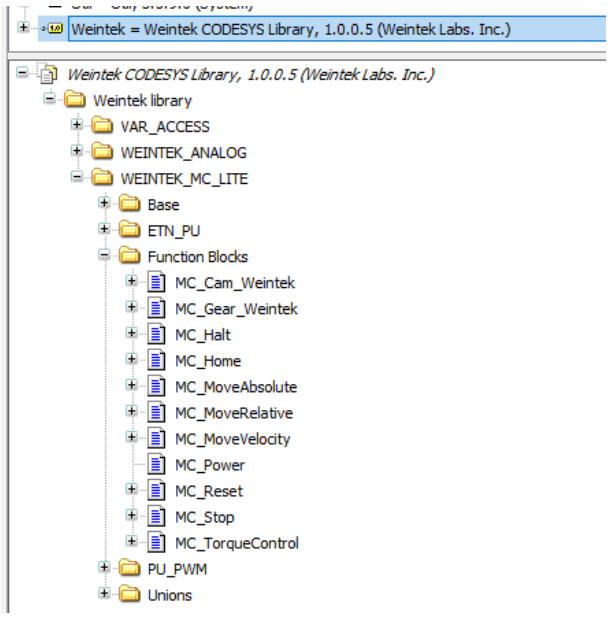
※ Function blocks that can give command to the motor can be found in Weintek_MC_LITE folder in Weintek Library.

For more information, please see the following user manual.

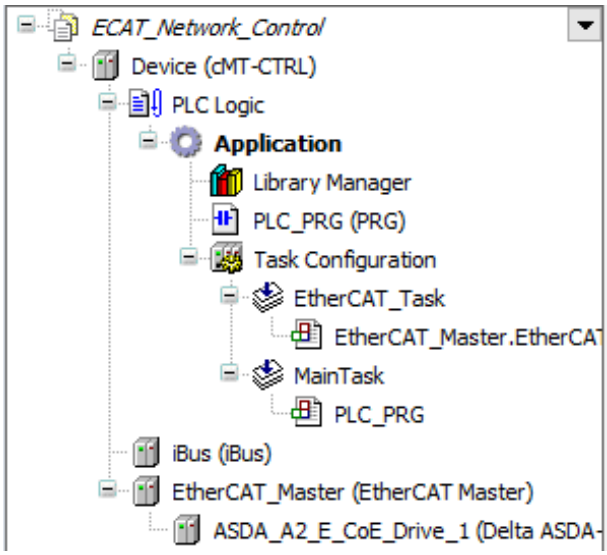
UM018017E_CODESYS_Weintek_Library_UserManual_eng

12.2 EtherCAT Driver

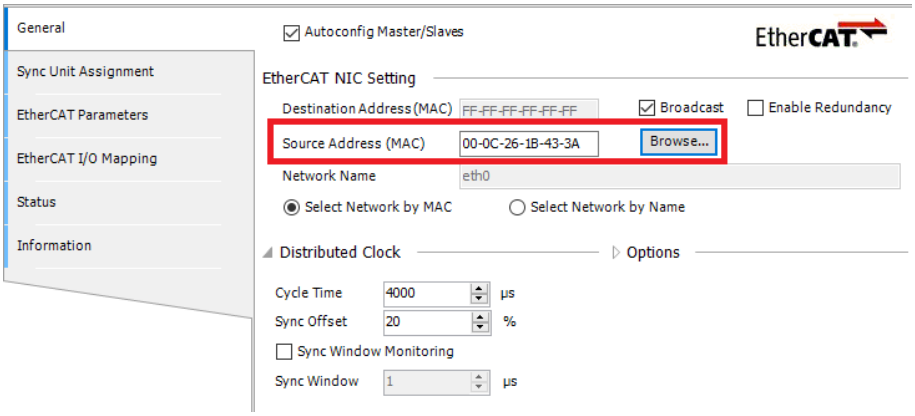
1. Add Weintek_CODESYS_Library.



2. Add EtherCAT_Master, EtherCAT drivers.

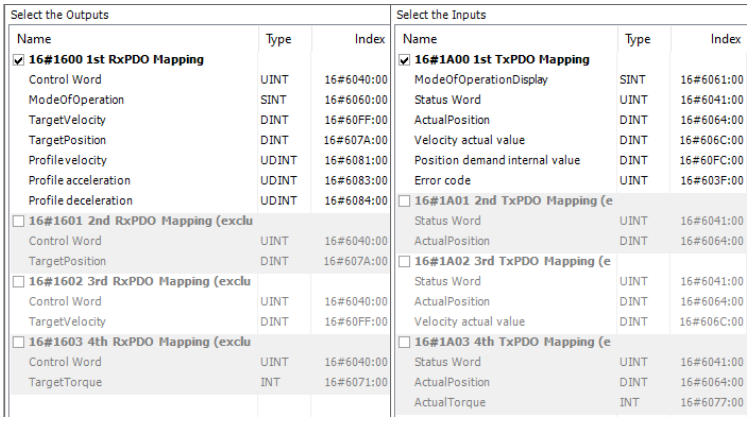


3. EtherCAT_Master -> Source Address(MAC):



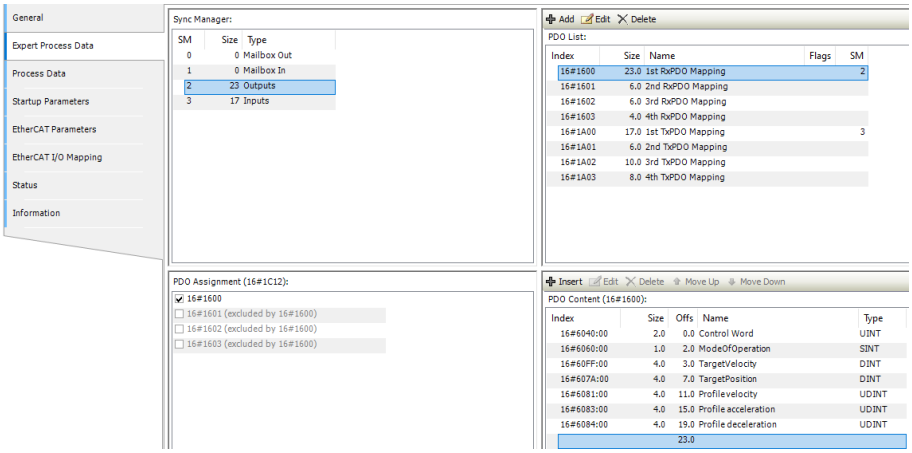
4. EtherCAT driver settings:

(1) Process Data

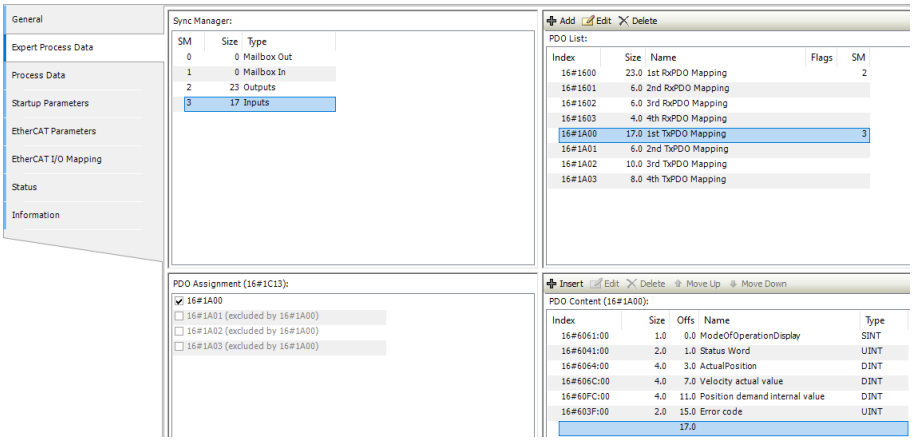


Select an RxPDO Mapping and a TxPDO mapping.

(2) Expert Process Data

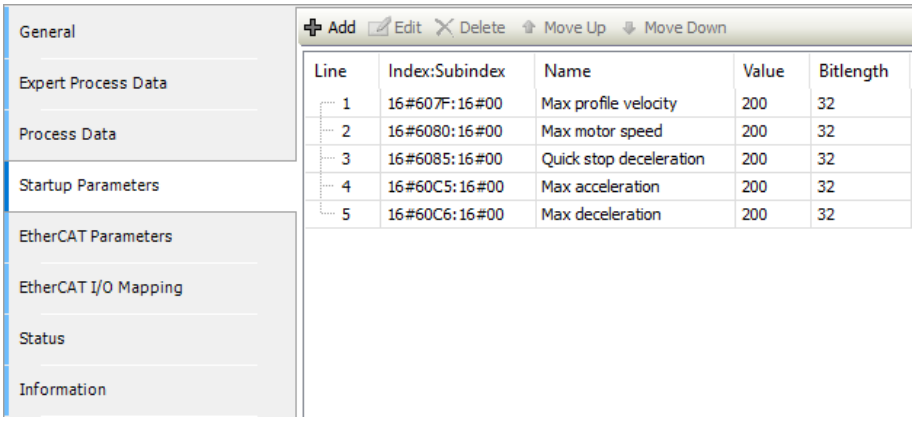


See Axis Variable Instance Mapping_Q to add variables for output channels.



See Axis Variable Instance Mapping_I to add variables for input channels.

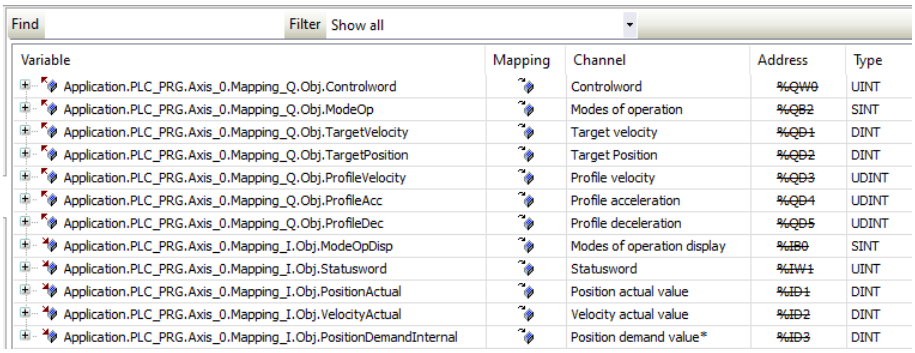
(3) Startup Parameters:



Line	Index:Subindex	Name	Value	Bitlength
1	16#607F:16#00	Max profile velocity	200	32
2	16#6080:16#00	Max motor speed	200	32
3	16#6085:16#00	Quick stop deceleration	200	32
4	16#60C5:16#00	Max acceleration	200	32
5	16#60C6:16#00	Max deceleration	200	32

Follow the settings in the screenshot above to set initial values for checking motor rotation.

(4) EtherCAT I/O Mapping:

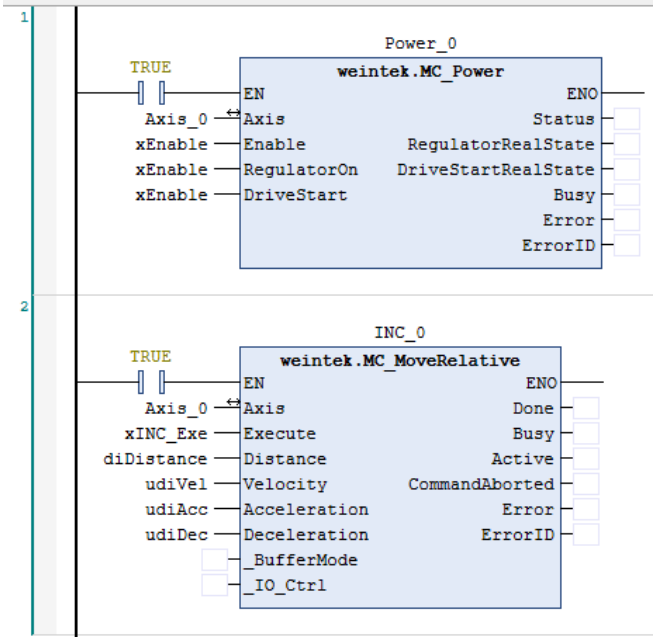


Variable	Mapping	Channel	Address	Type
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.Controlword		Controlword	%QW0	UINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ModeOp		Modes of operation	%QB2	SINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.TargetVelocity		Target velocity	%QD1	DINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.TargetPosition		Target Position	%QD2	DINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileVelocity		Profile velocity	%QD3	UDINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileAcc		Profile acceleration	%QD4	UDINT
Application.PLC_PRG.Axis_0.Mapping_Q.Obj.ProfileDec		Profile deceleration	%QD5	UDINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.ModeOpDisp		Modes of operation display	%IB0	SINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.Statusword		Statusword	%IW1	UINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.PositionActual		Position actual value	%ID1	DINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.VelocityActual		Velocity actual value	%ID2	DINT
Application.PLC_PRG.Axis_0.Mapping_I.Obj.PositionDemandInternal		Position demand value*	%ID3	DINT

Mapping_I and Mapping_Q should be mapped to EtherCAT I/O Mapping.

5. Programming:

```
1  PROGRAM PLC_PRG
2  VAR
3      Axis_0 : weintek.AXIS_REF_LITE ;
4      Power_0 : weintek.MC_Power ;
5      INC_0 : weintek.MC_MoveRelative ;
6      xEnable : BOOL ;
7      xINC_Exe : BOOL ;
8      diDistance : DINT := 10000 ;
9      udiVel : UDINT := 10000 ;
10     udiAcc : UDINT := 1000 ;
11     udiDec : UDINT := 1000 ;
12 END VAR
```



Function blocks MC_Power & MC_MoveRelative are needed for testing motor rotation.

Trigger “xEnable” and then trigger “xINC_Exe” to give command to the motor to perform positioning. When MC_Power.Status = FALSE, use MC_Reset function block to reset the motor and then trigger “xINC_Exe”.

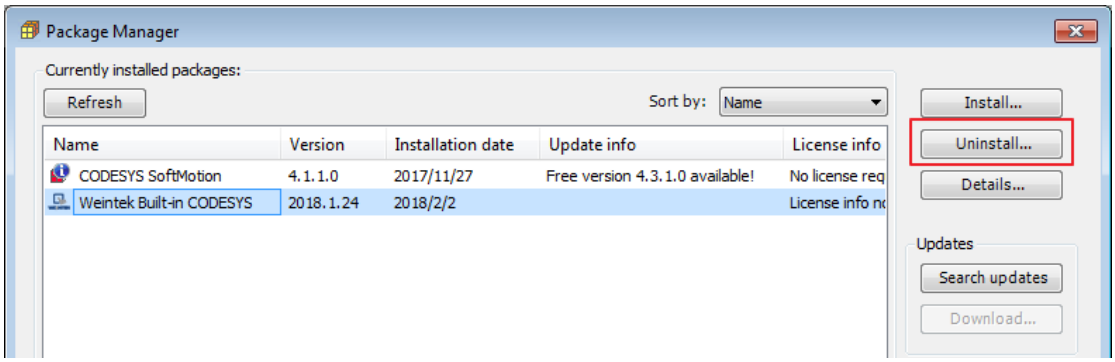
※ Function blocks that can give command to the motor can be found in Weintek_MC_LITE folder in Weintek Library.

For more information, please see the following user manual.

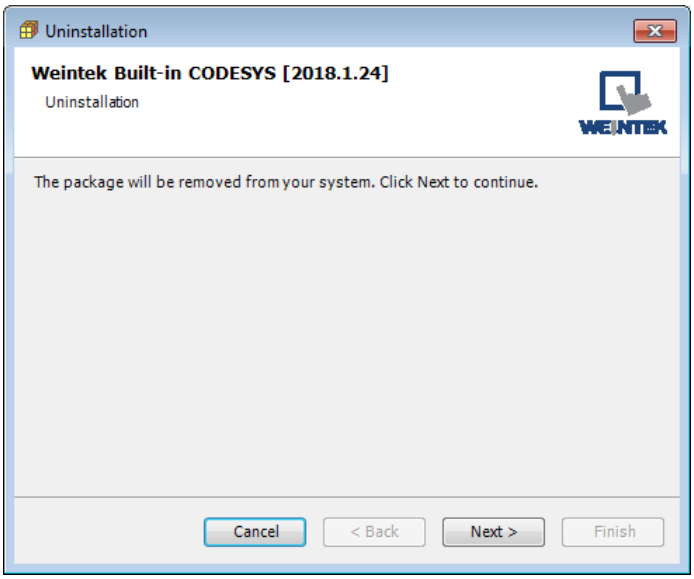
[UM018017E_CODESYS_Weintek_Library_UserManual_eng]

13 Removing Weintek Built-in CODESYS

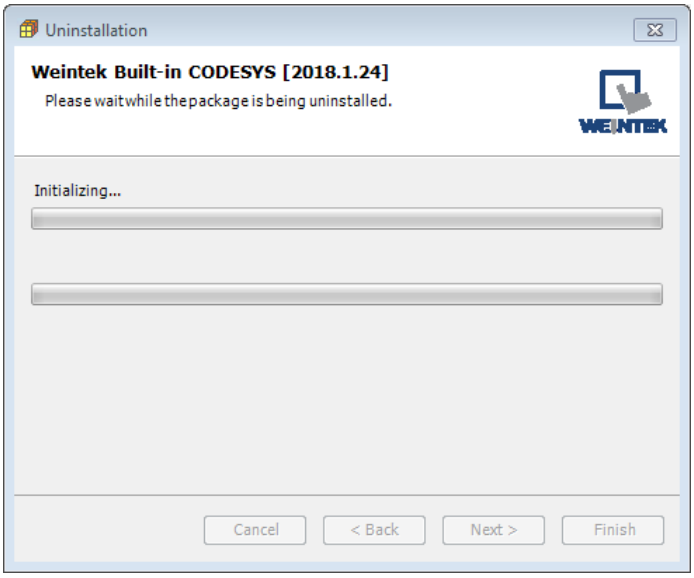
1. Click [Tools] » [Packages Manager].
2. Find Weintek Built-in CODESYS and then click [Uninstall].



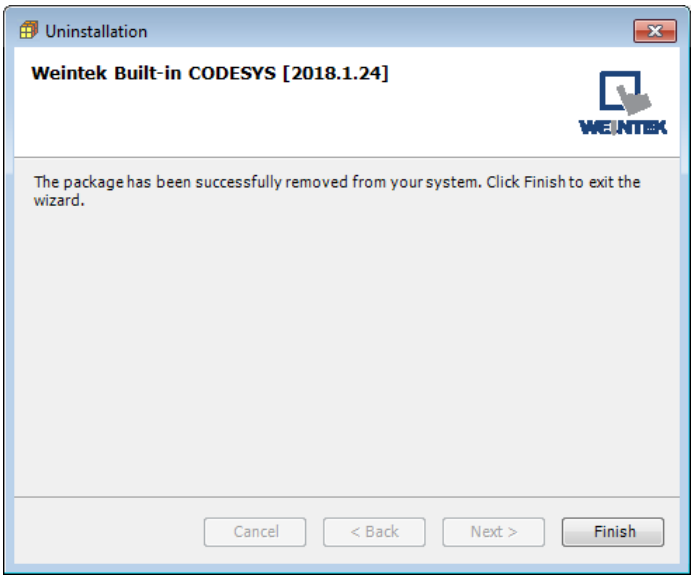
3. Click [Next] when seeing the window below.



4. Removing the program.



5. Click [Finish].



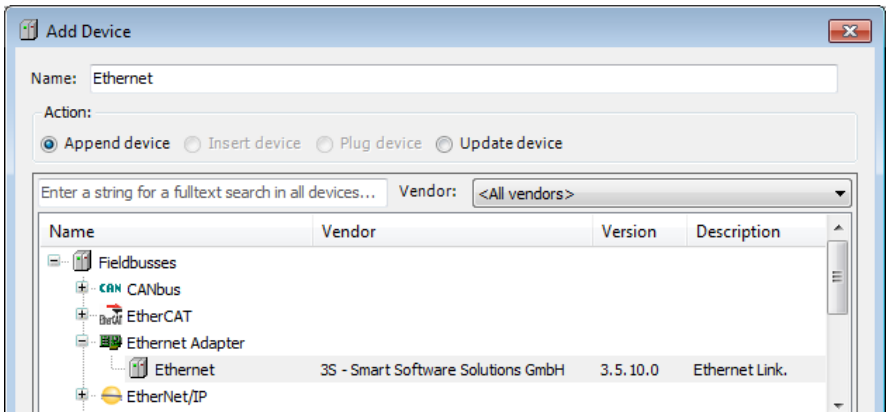
14 Frequently Asked Questions

14.1 Questions Related to IP Address

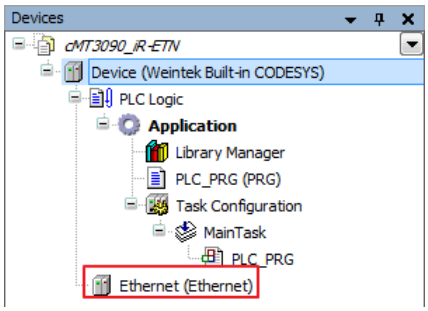
Q1. How to use static IP address for cMT CODESYS?

A: Please follow these steps.

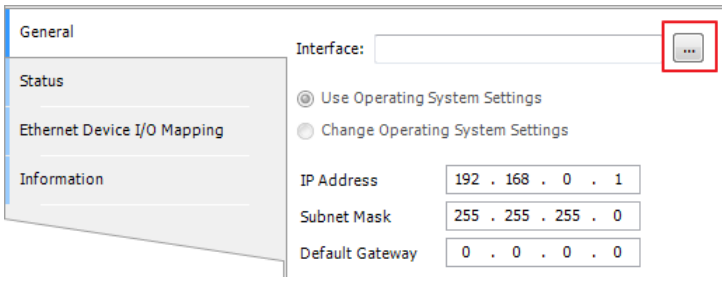
1. Right-click on "Device (Weintek Built-in CODESYS)" and select [Add Device].
2. Select [Ethernet Adapter] » [Ethernet] and then select [Add Device].



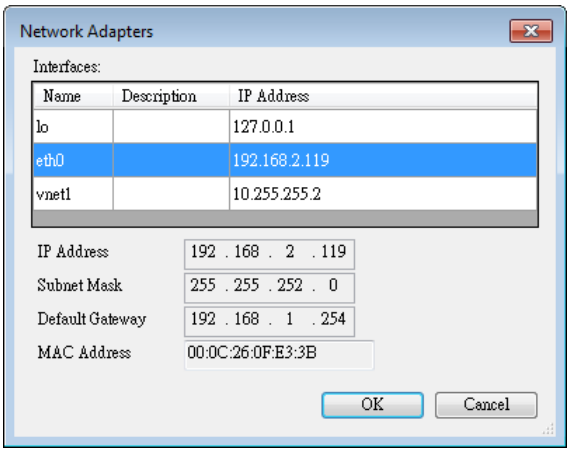
3. In Device tree find Ethernet and double click it.



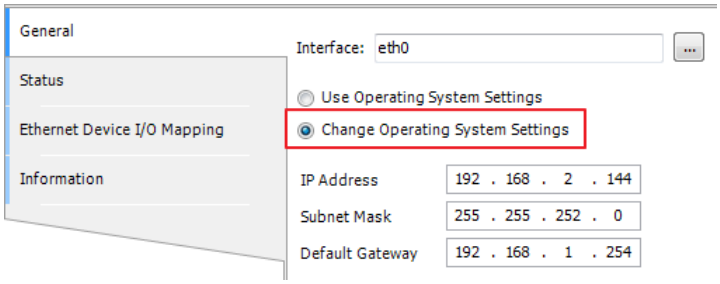
4. The following window opens, click [...] button.



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.

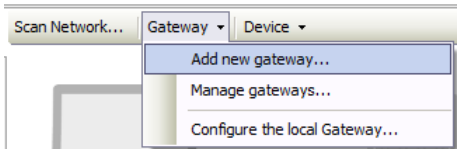
14.2 Questions Related to CODESYS

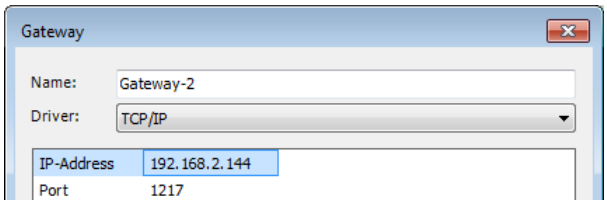
Q1. When the indicator of CODESYS Gateway lights up in red, how can I connect to the device?

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.

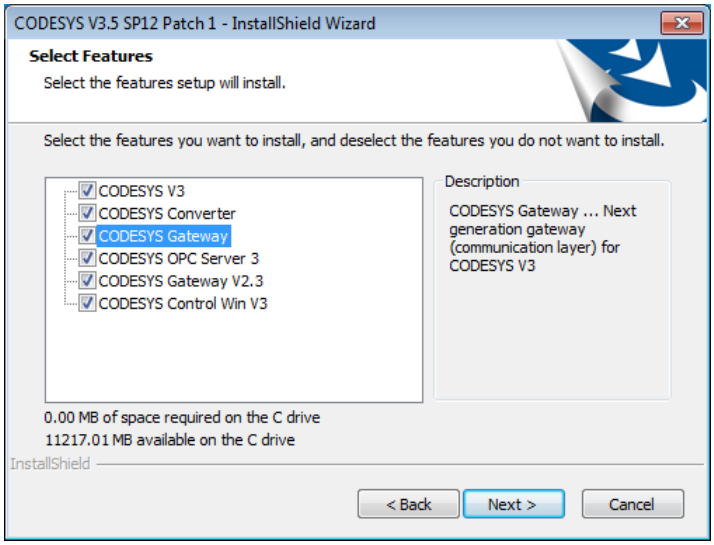
1. Click the icon of "CODESYS Gateway SysTray" in system settings and then click [Start Gateway].

2. Add new gateway and enter HMI IP.

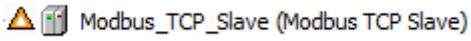




3. Re-install CODESYS Gateway.



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.

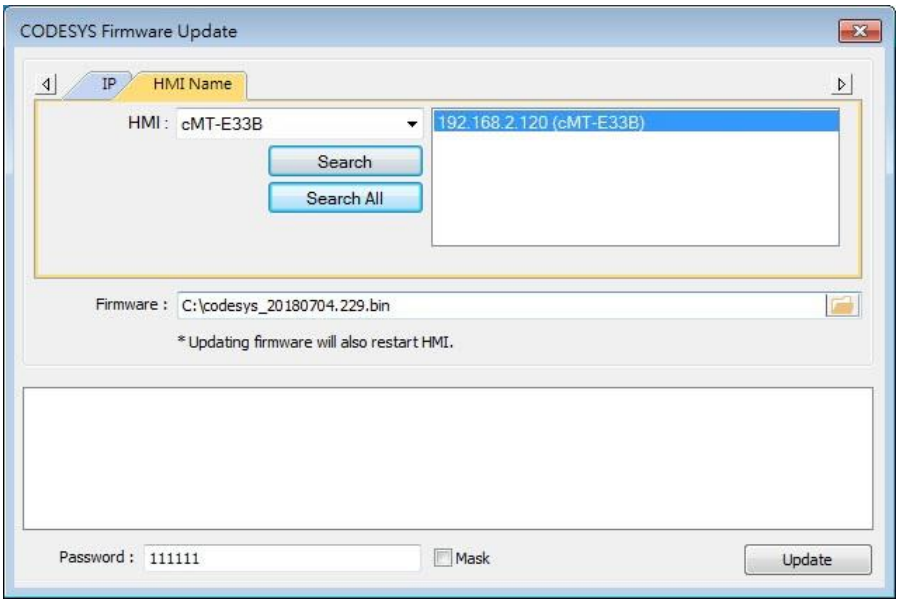
14.3 Questions Related to Downloading cMT CODESYS File

Q1. How to update CODESYS firmware?

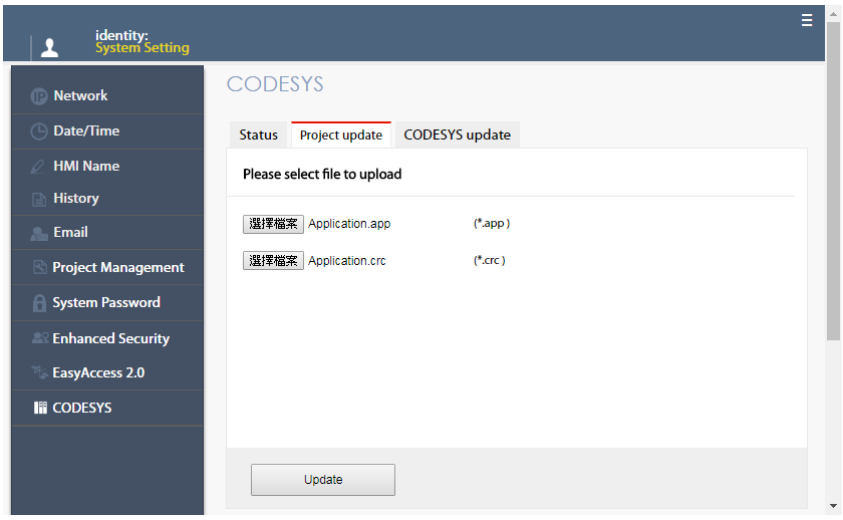
A:

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].



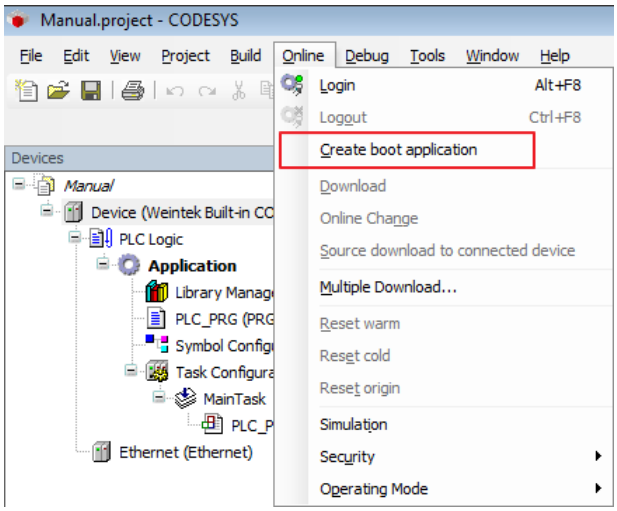
2. Enter cMT HMI's IP address in the website browser and find [CODESYS] » [CODESYS update] tab. Select the file and click [Update].



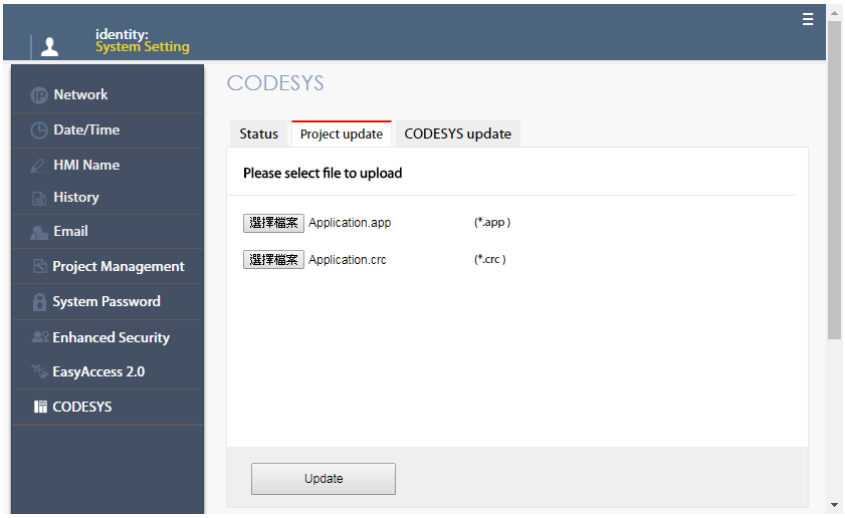
Q2. How to download CODESYS project using website?

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].



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