






**OMC System Software  
High-performanceHMI  
CIPCon User Manual  
IM41S93-E**

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Symbol Definition	
	<b>WARNING:</b> Indicates information that a potentially hazardous situation which, if not avoided, could result in serious injury or death.
	<b>RISK OF ELECTRICAL SHOCK:</b> Indicates information that Potential shock hazard where HAZARDOUS LIVE voltages greater than 30V RMS, 42.4V peak, or 60V DC may be accessible.
	<b>ESD HAZARD:</b> Indicates information that Danger of an electro-static discharge to which equipment may be sensitive. Observe precautions for handling electrostatic sensitive devices
	<b>ATTENTION:</b> Identifies information that requires special consideration.
	<b>TIP:</b> Identifies advice or hints for the user.

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# CIPCon User Manual

## Section 1 Terms

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Abbreviation/ Terms	Description
EtherNet/IP	EtherNet/IP is an industrial application layer protocol for automation. Built on standard UDP/IP and TCP/IP protocols, it defines an application layer protocol for configuring, accessing , and controlling industrial automation devices using fixed Ethernet hardware and software.
ENIP	Abbreviation for EtherNet/IP.
Scanner	Scanner. EtherNet/IP master.
Adapter	Adapter. EtherNet/IP slave station.
UCMM	It is unable to connect with the information manager and it is mainly transferred through message based on non-connected transfer method.
EDS	Open device description file.
DBM	DBM file is the final file of ETHERNET/IP configuration software which provides to hardware.
PBC	PBC file is the engineering configuration file generated by CIPCon.

## Section 2 System Application Guide

The network device can be compartmentalized to Scanner (master) and Adapter (slave) on the basis of EtherNet/IP specifications. Scanner can manage and initiate communication with client devices.

The EtherNet/IP communication module COM725-S connects Adapter devices based on standard EtherNet/IP to the system. Through extended I/O E-BUS and controller communication, data exchange between DCS system and heterogeneous system (smart devices or controller systems of other companies) can be achieved. Besides, EtherNet/IP protocol supports UCMM (Read/Write) service.

CIPCon software is one EtherNet/IP communication configuration software, mainly used for configuring communication parameters of COM725-S.

### 2.1 Network Structure

COM725-S serving as the EtherNet/IP network interface device can not only communicate with standard EtherNet/IP device but also communicate with controller. Its network structure is shown in Figure 2-1.

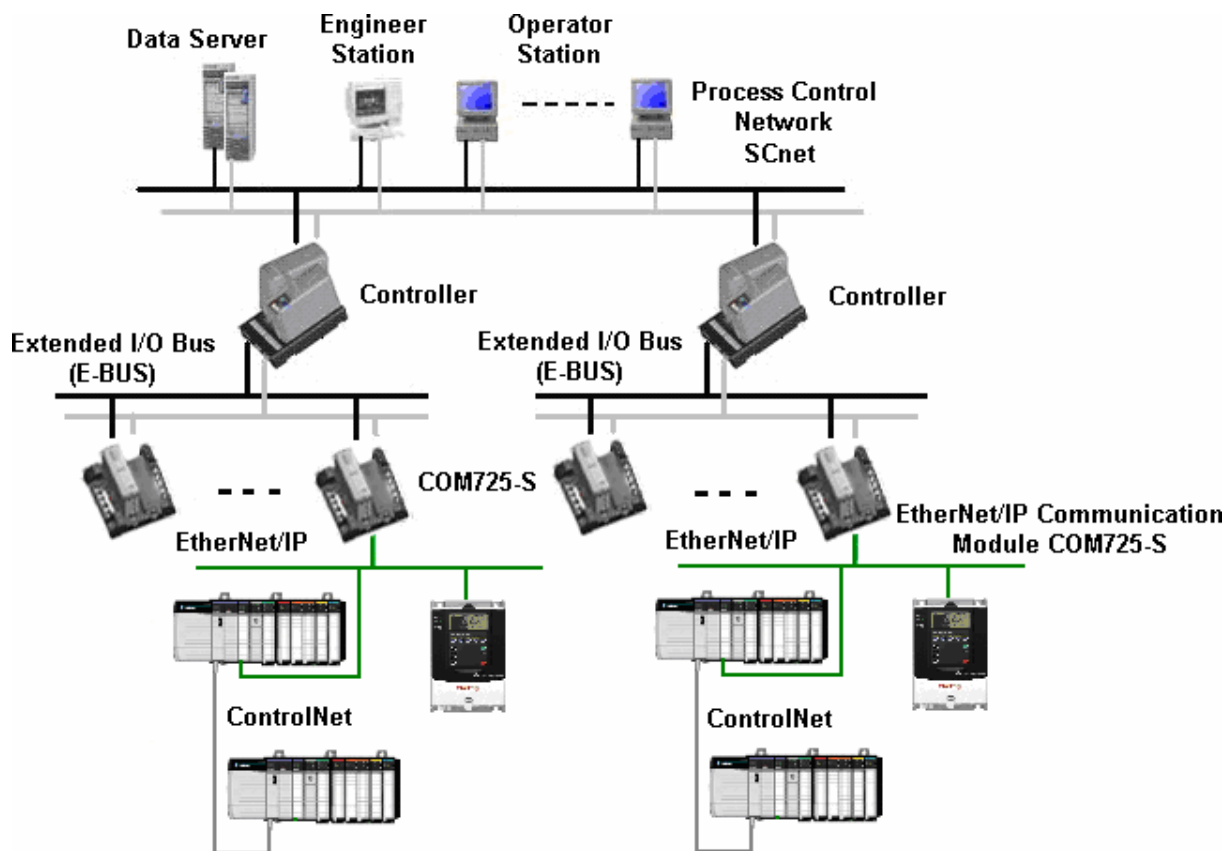


Figure 2-1 Network structure of COM725-S

## 2.2 Performance

### E-BUS communication index

- The maximum nodes in E-BUS of single control station is 32, including I/O connection modules, communication modules, EtherNet/IP modules and systematic interconnected modules.
- Interface: 2 channel E-BUS interface.
- Communication rate: 10/100Mbps.

### Ethernet/IP communication index

- Communication Interface: 1 channel EtherNet/IP interface.
- Supported communicate rate of EtherNet/IP: 10/100Mbps.
- Input total data of all ENIP devices connected to a communication module is no longer than 3.5k bytes.
- Input data of single ENIP devices connected to a communication module is no longer than 512 bytes.
- Output total data of all ENIP devices connected to a communication module is no longer than 3.5k bytes.
- Output data of single ENIP devices connected to a communication module is no longer than 256 bytes.
- The maximum number of ENIP devices supported by the system is 64, while up to 8 UCMM devices can be supported.

## Section 3 CIPCon Use Guide

User can configure the EtherNet/IP site, view and set the basic properties of station, add submodules to the slave station and set the parameter information of module with the EtherNet/IP configuration management software (CIPCon).

The station types of EtherNet/IP include Adapter and UCMM. During system configuration, the EtherNet/IP communication module acts as a Scanner to perform real-time data communication of class 1 type with Adapter. The EtherNet/IP communication module can also act as a UCMM client, communicating with up to 8 UCMM servers via UCMM services.

### 3.1 Work Flow of Configuration

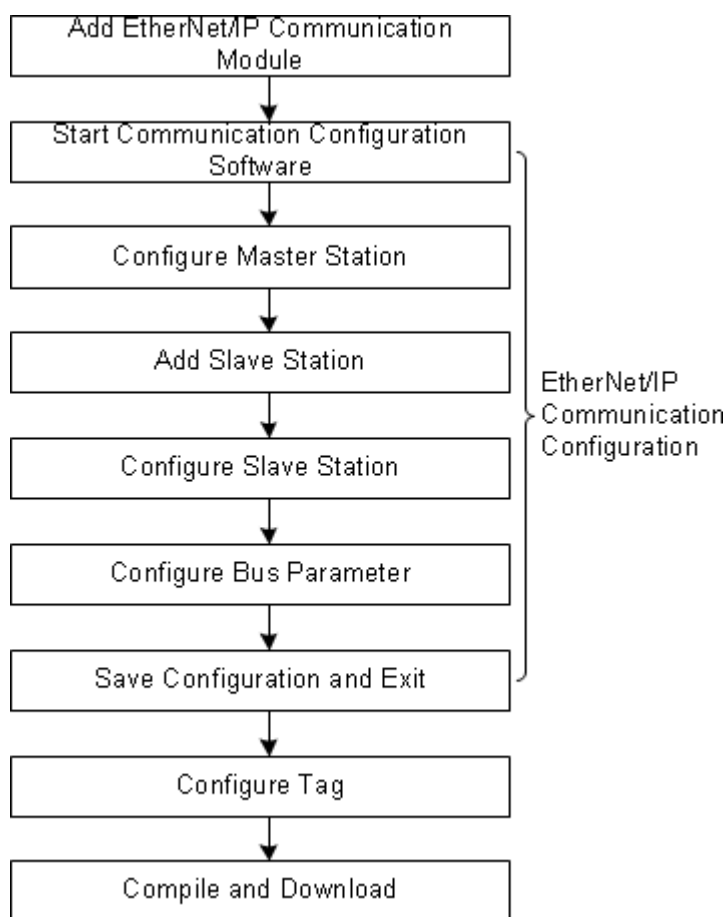



Figure 3-1 Configure flow chart


### 3.2 Add EtherNet/IP Communication Module

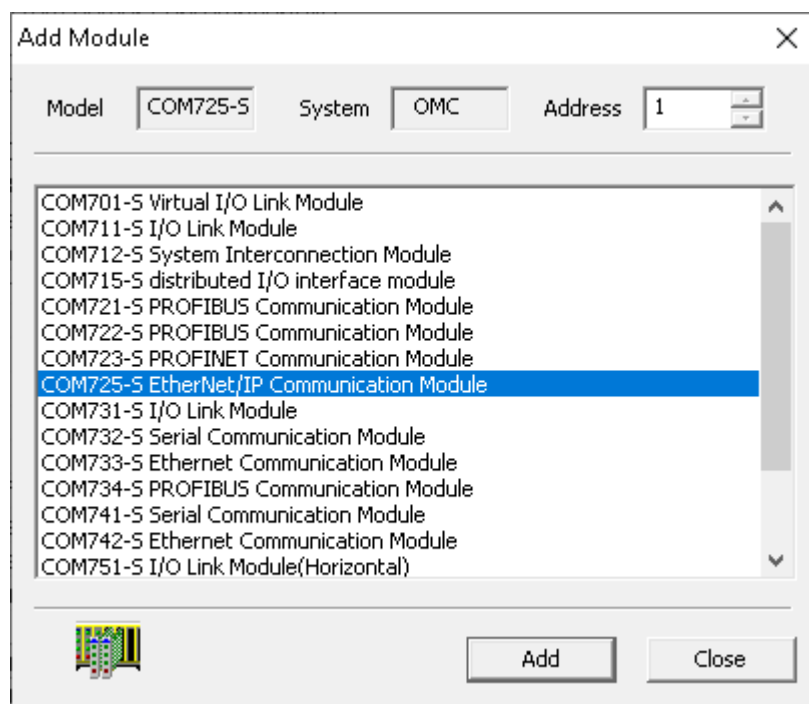
Click **Start > OMC > VFExplorer** to run system configuration software, or click  on the

desktop to run the software directly.

After run the “configuration management software”, load the corresponding project, select the corresponding controller and double click “hardware configuration” to enter into hardware configuration interface.

There are two approaches to add “COM725-S”:

1. Select the main controller, right click and then select “add” or select “operate/add” in the menu, or directly click the  in the tool bar, then a dialogue box shown in Figure 3-2 will pop up. Select “COM725-S EtherNet/IP communication module” and corresponding address, then click “add” to finish the adding process.



**Figure 3-2 Add COM725-S**

2. After selecting the controller, add the subordinate device at the subordinate device list at the right view, as shown in Figure 6-3.



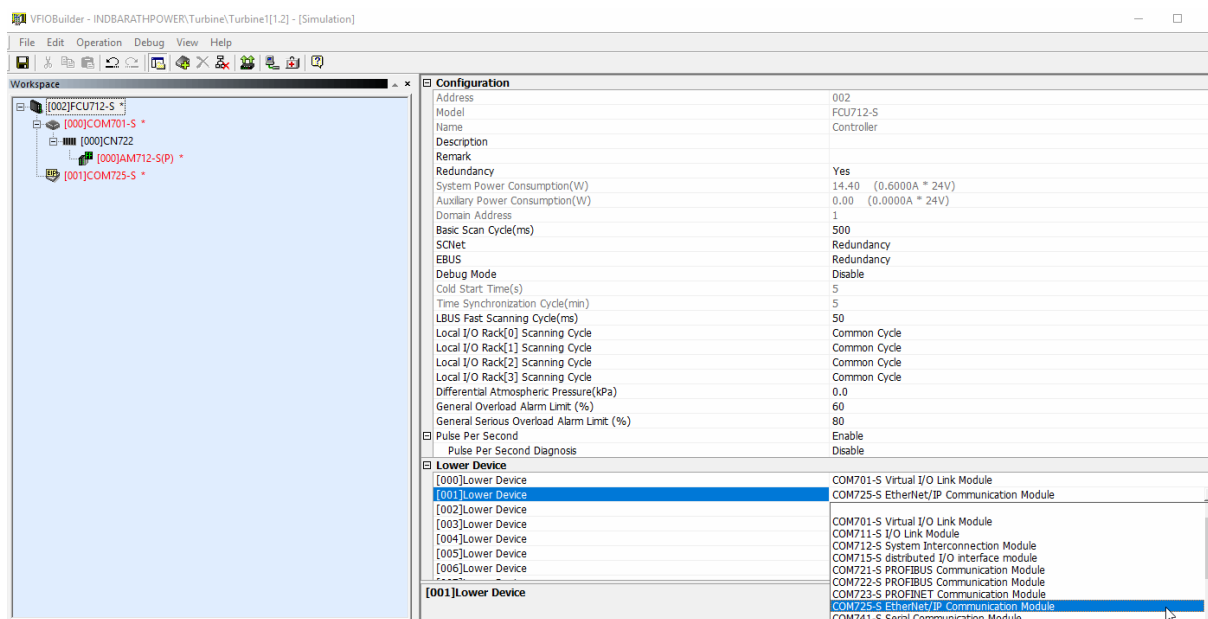


Figure 3-3 Add COM725-S

**Attention:**

The address set when adding COM725-S into hardware configuration, i.e. the address of COM725-S in the E-BUS node is the same as the address jumper in the base. The scope is 1~7.

### 3.3 EtherNet/IP Communication Configuration

This section will configure an EtherNet/IP communication module, a UCMM device, and an Adapter device to describe how to configure EtherNet/IP using CIPCon.

#### 3.3.1 Start CIPCon Communication Configuration Interface

In hardware configure software, select the EtherNet/IP master interface module and select “Communication Configuration” in its right menu to login CIPCon software shown as following figure.

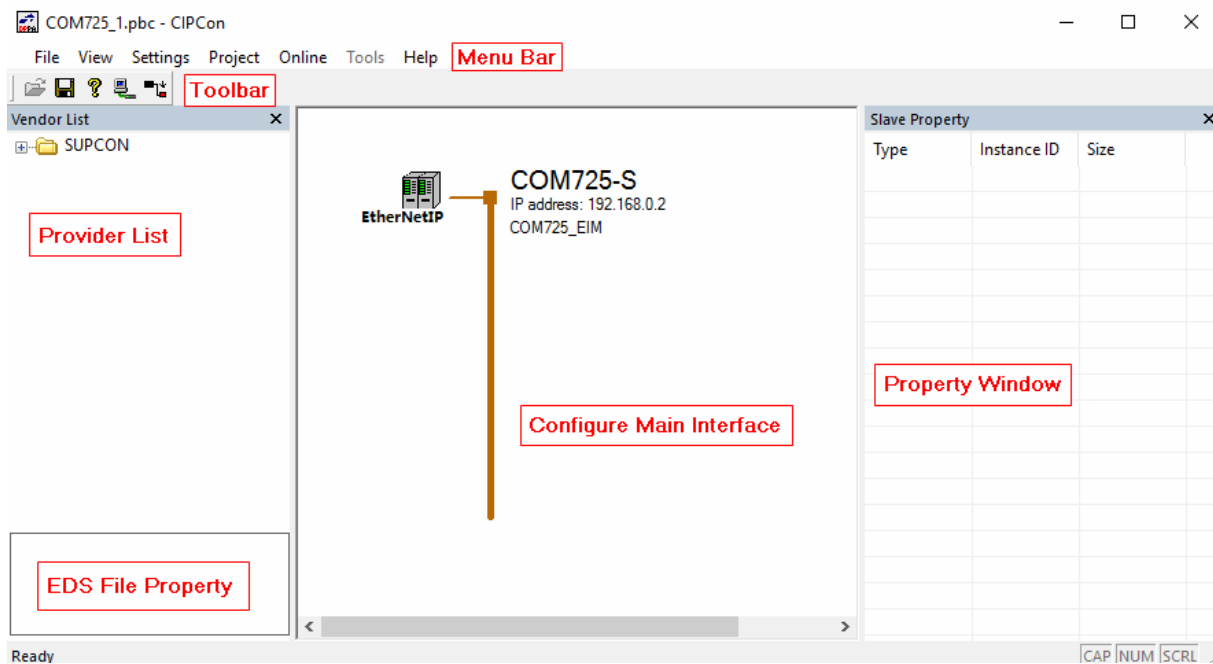
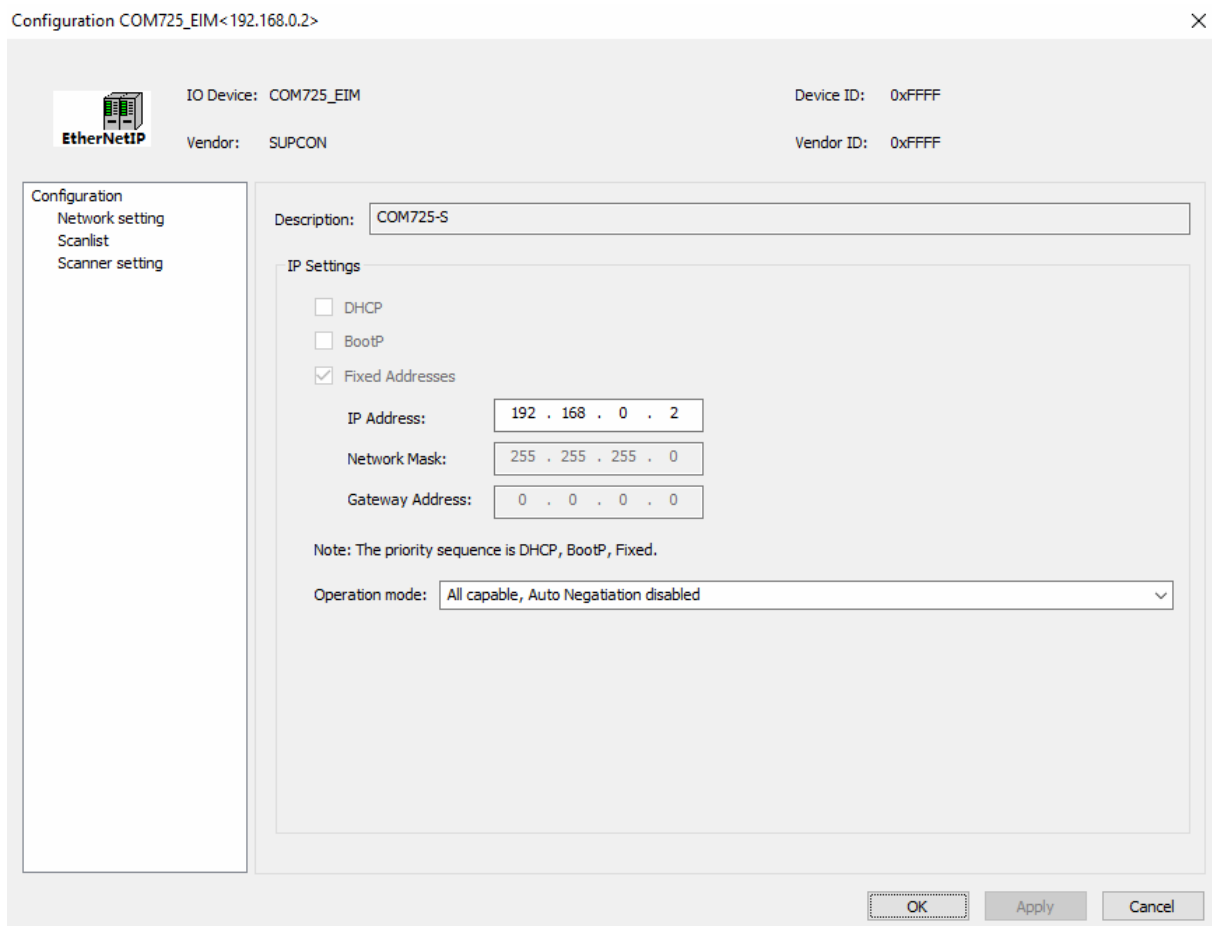


Figure 3-4 EtherNet/IP communication configuration interface

### 3.3.2 Master Station Configuration

Use the left button to select the master station, select the menu **Settings/Master Configuration**, or double-click the master station icon to open the master configuration dialog as shown below. The default master IP address is 192.168.0.2. If the master address needs to be modified, modify it directly in the "IP address" dialog in the figure below.



**Figure 3-5 Master station configuration**




**Attention:**

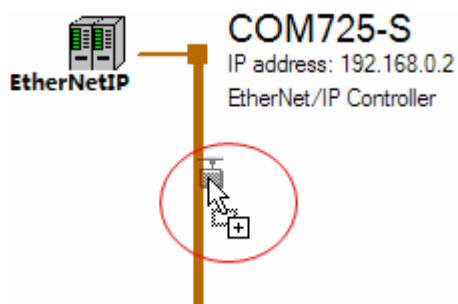
As COM725-S is configured redundancy, the IP address of master station module in CIPCon is as the same as that of the configuration of the left module. The third place of the IP address of the right module is the number of its left counterpart plus one, other places are the same as those of its left counterpart. For example, IP address in configuration is 192.168.0.2, then the IP address of the left module is 192.168.0.2 and the IP address of the right module is 192.168.1.2.

### 3.3.3 Add Slave Station

There are three methods to add slave station.

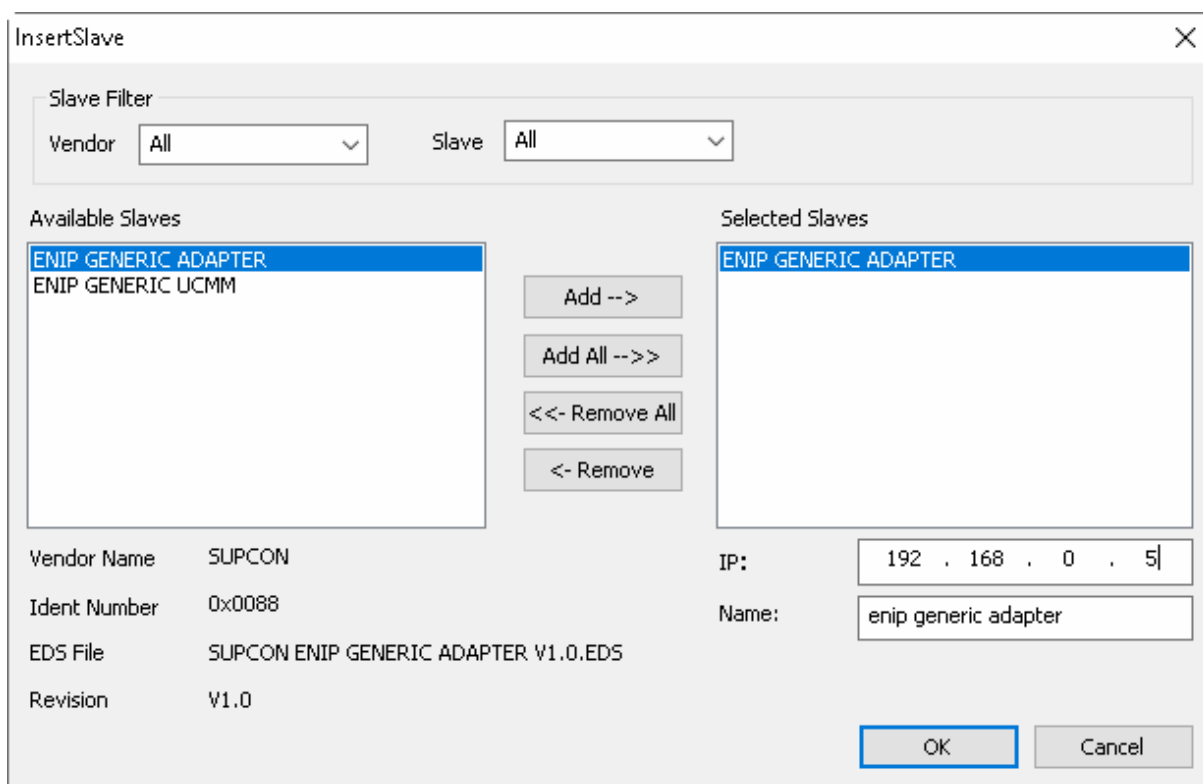
#### Method 1

Click toolbar button . Point to DP bus, and the mark which in the figure below will be appearing.



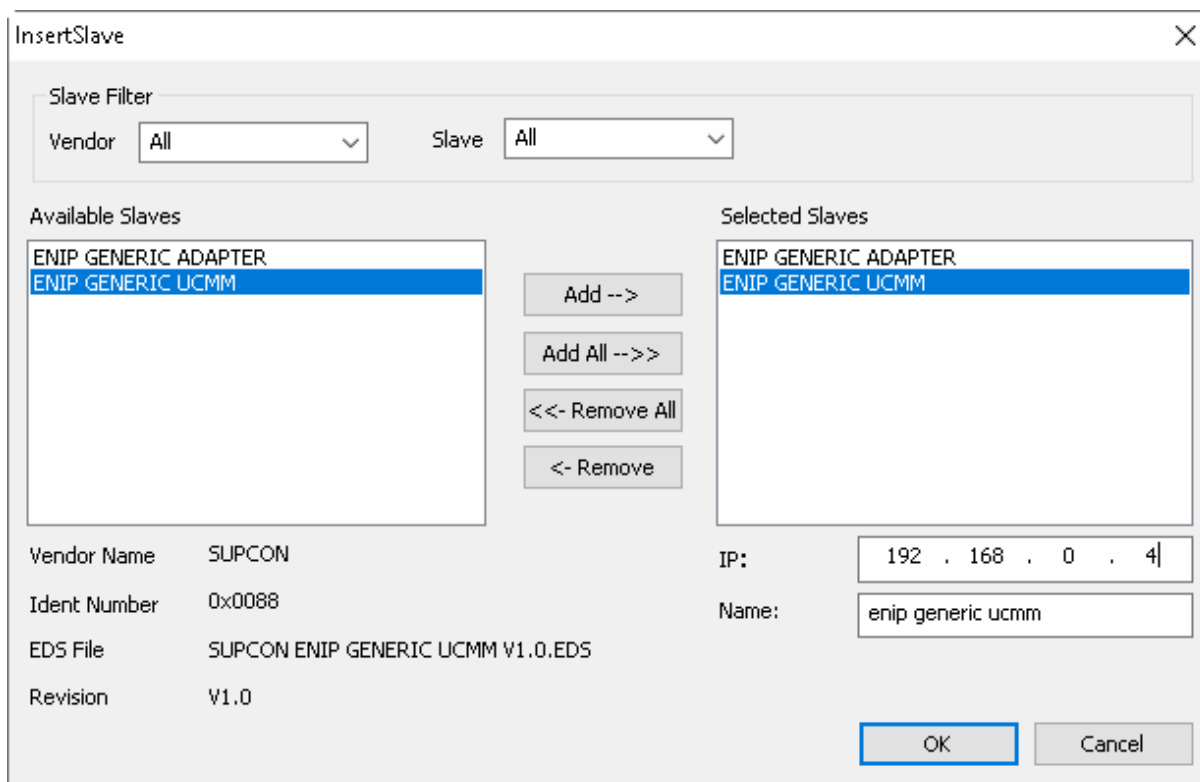
**Figure 3-6 Add slave station**

Click the mark to popup "Insert Slave" dialog box, and select "ENIP GENERIC ADAPTER". Click "Add" to add it to "Select Slaves". Configure station address of "ENIP GENERIC ADAPTER" as 192.168.0.5, shown as following figure.



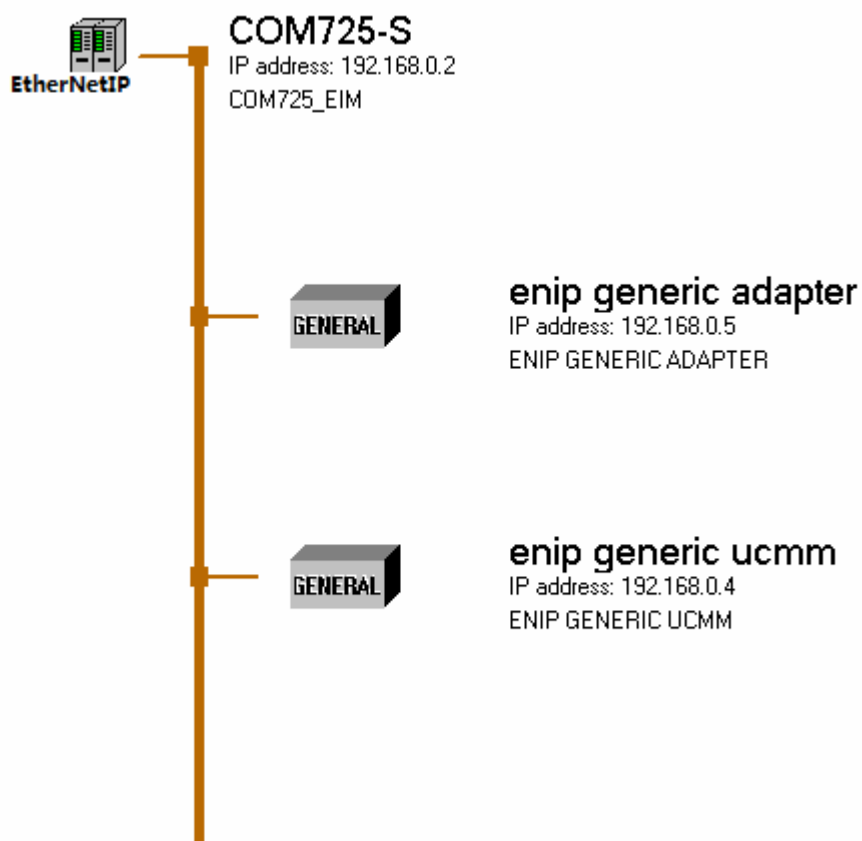
**Figure 3-7 Insert slave station 1**

Select "ENIP GENERIC UCMM" in the same way and click "Add" to add it to the selected slave sequence. Set the IP address of "ENIP GENERIC UCMM" as 192.168.0.4, as shown below.



**Figure 3-8 Insert slave station 2**

The CIPCon configuration interface after adding the slave station is shown below.



**Figure 3-9 The CIPCon configuration interface after adding the slave station**

## Method 2

Right-click EtherNetIP bus, and select "Insert Slave Station" to popup "Insert Slave Station" configuration interface.

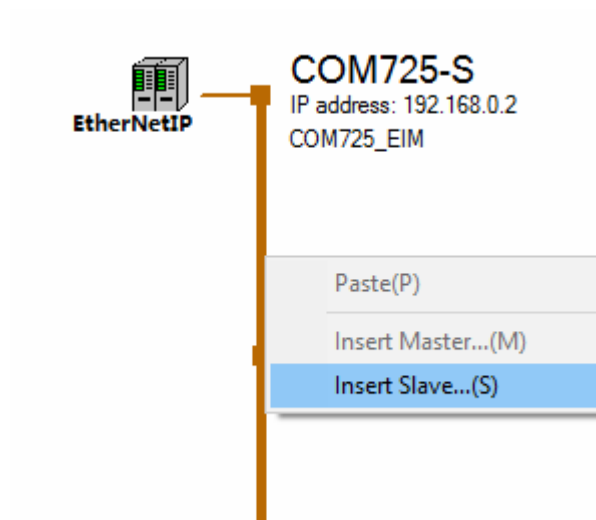


Figure 3-10 Select "Insert Slave Station"

Other operations are similar to operations in "Method1".

## Method3

Select slave needed to add from provider list. Push the mouse and drag the selected slave to EtherNetIP bus, then popup "Slave Information" dialog box shown as following figure. Set the IP and name to complete the addition of slave station.

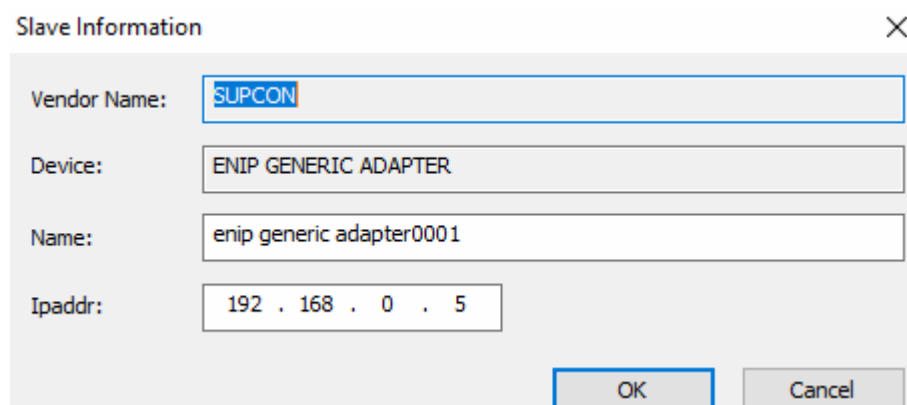
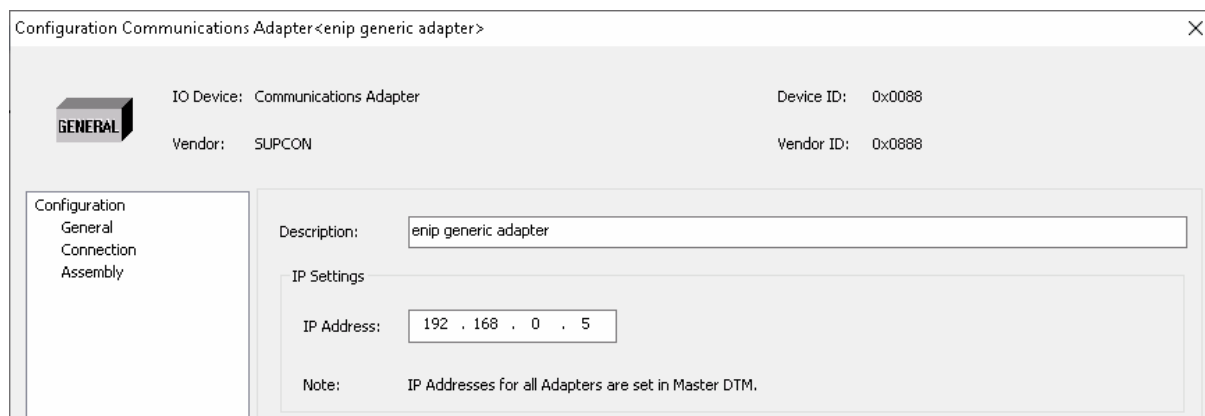


Figure 3-11 Slave station information 1

### 3.3.4 Configure Configuration

#### Adapter slave station configuration

Use left mouse button to select the " Enip Generic Adapter ", select menu **Settings\Slave Configuration**, or double click the slave icon to open configuration interface. Or select the slave, right-click on it and select "Slave Configuration".



**Figure 3-12 Configuration interface of Adapter slave station**

### 1.General Settings

The "General Settings" screen is shown in Figure 3-12. The device name and IP address can be modified.



#### **Attention:**

When COM725-S is redundantly configured, the IP address of the slave station in CIPCon is that of COM725-S on the left side, the third place of the IP address of the slave station connected with COM725-S on the right side is that of its counterpart plus one, other places are the same of those of its left counterpart. For example, the IP address of the slave station in the configuration is 192.168.0.5, then the IP address of the slave station of module on the left side is 192.168.0.5 and that of the module on the right side is 192.168.1.5.

### 2.Connection Settings

Click "Connection" in the list to switch to the connection configuration interface, as shown below. The parameter item "Connection" is used to configure the transmission mode of real-time data of Adapter: select "POINT2POINT" and indicate that the real-time data of Adapter is sent in a point-to-point manner. Select "MULTICAST" to indicate that the real-time data of Adapter is transmitted in multicast mode. Packet Rate in millisecond is used for setting the interaction period between Adapter device and COM725, Target->Originator is the interaction period of the real-time input data, Originator-> Target is the interaction period of the real-time output data. Target Config Instance ID is the configuration ID number for the input and output.

Configuration Communications Adapter<enip generic adapter>

IO Device: Communications Adapter      Device ID: 0x0088

Vendor: SUPCON      Vendor ID: 0x0888

**GENERAL**

Configuration  
General  
Connection  
Assembly

Connection name: Connection1

Trigger and Transport

Transport type: Exclusive Owner

Trigger mode: cyclic

Originator to Target

Connection type: POINT2POINT

RT transfer format: 32-bit run/idle header

Target to Originator

Connection type: POINT2POINT

RT transfer format: connection is pure data and is modeless

Packet Rate in milliseconds

Target->Originator(IN): 100

Originator->Target(OUT): 100

Target Config Instance ID

IN: 101

OUT: 100

CFG: 1

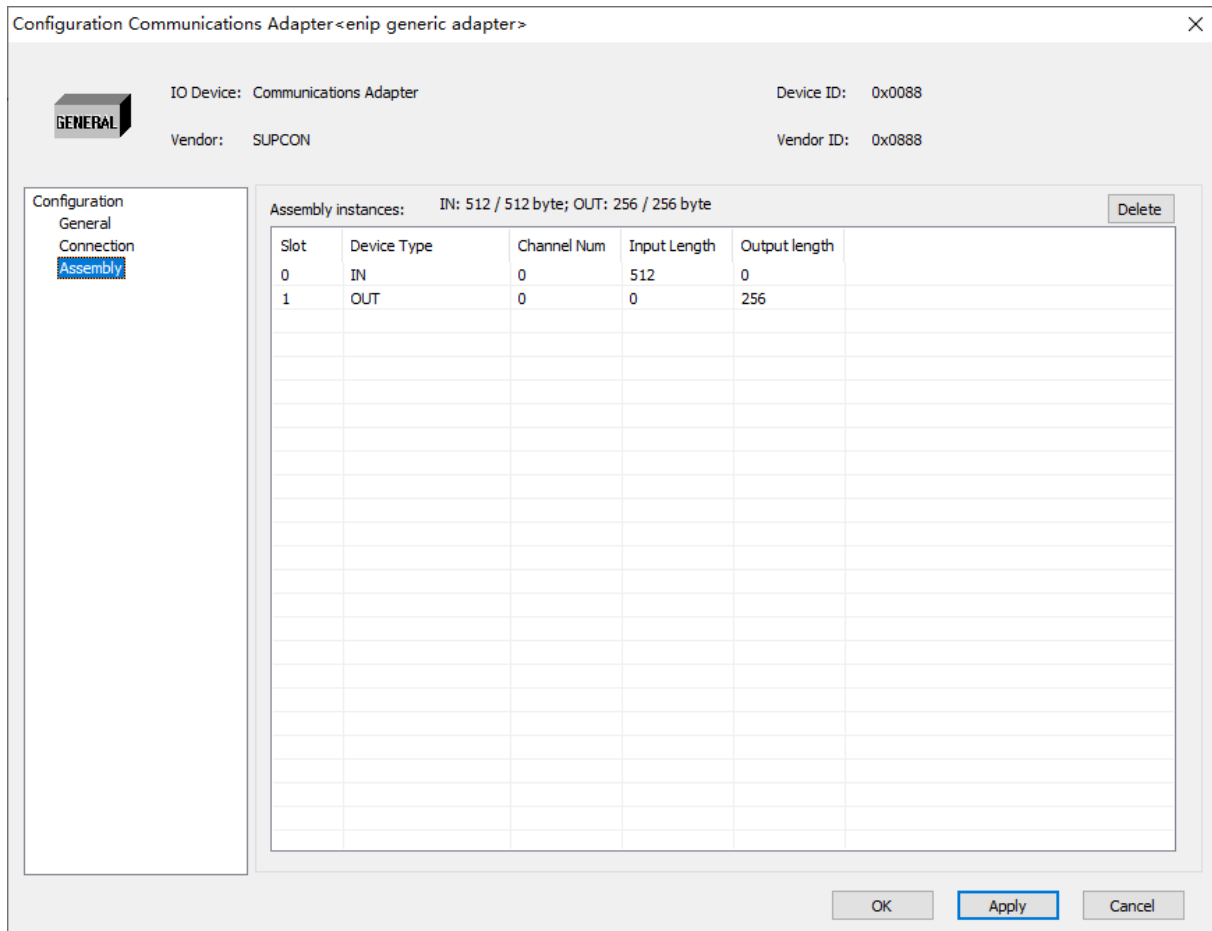
OK Apply Cancel

**Figure 3-13 Configuration interface of connection**

### 3.Assembly

Click "Assembly" in the list to switch to the ID assembly interface, as shown below. On the right pane, enter the input and output length by double-clicking the corresponding cell.





**Figure 3-14 ID assembly interface**

## UCMM slave station configuration

Select Enip Generic UCMM with mouse and select **Settings/slave station** in the menu, double click the slave station icon to open the configuration interface. Or select the slave station and right click the slave station and select “slave station configuration”.

Configuration Communications Adapter <enip generic ucmm>

**GENERAL**

IO Device: Communications Adapter      Device ID: 0x0088

Vendor: SUPCON      Vendor ID: 0x0888

Configuration  
General  
Assembly

Description: enip generic ucmm

IP Settings

IP Address: 192 . 168 . 0 . 4

Path: 1,0 (e.g."192.168.0.1 , 1 , 0")

Note: IP Addresses for all Adapters are set in Master DTM.

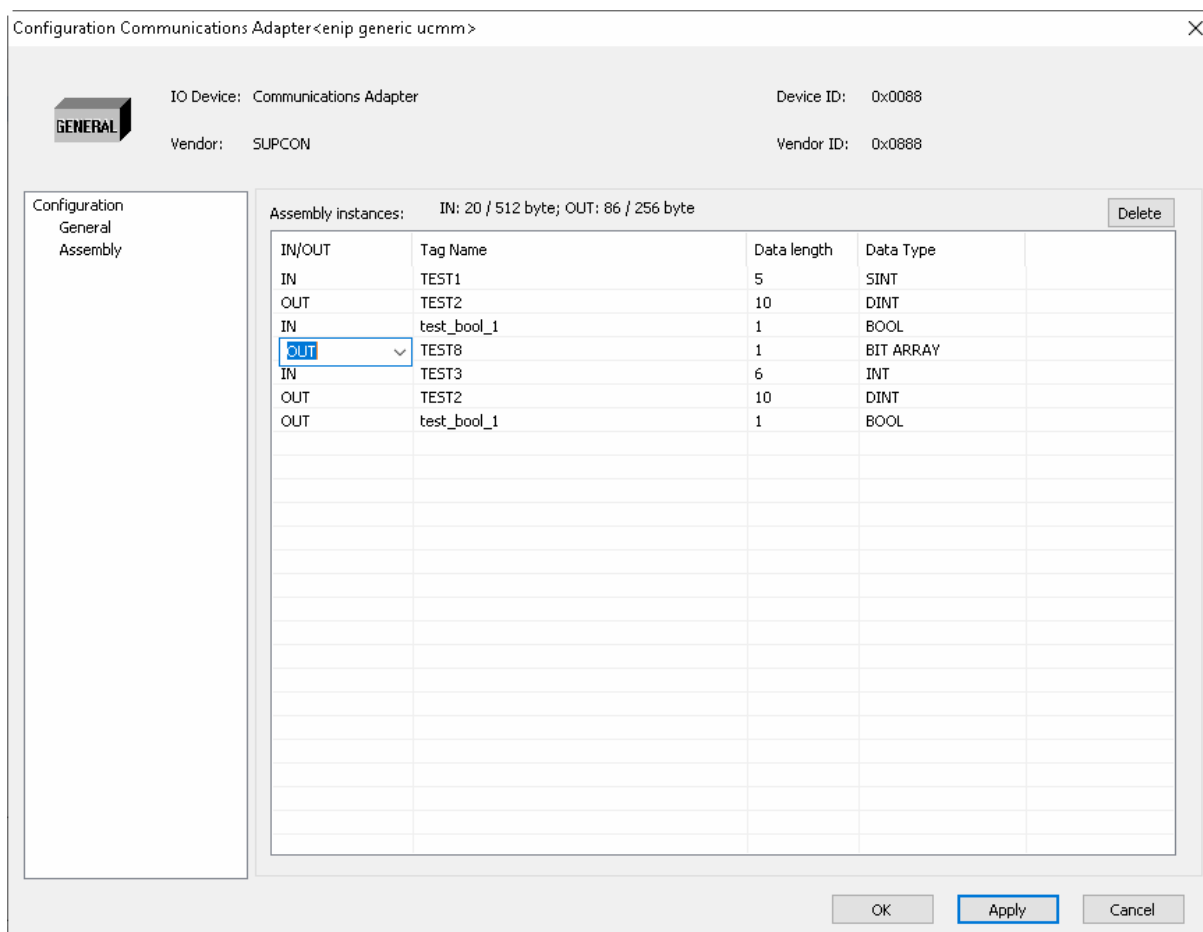
OK Apply Cancel

**Figure 3-15 UCMM slave station configuration interface**

### 1. General settings

The "General Settings" screen is shown in Figure 3-15. You can modify the device name, IP address and path. The format of the path of device is <IP>,1,<CPU Slot>. IP bar is filled in with IP, and 1,<CPU Slot> is filled in the Path bar. For example, the IP address of EIP module is 192.168.0.4 and Rockwell logix controller is inserted in the first slot and the IP bar should be filled in with 192.168.0.4, Path bar should be filled with 1.0.

### 2. Assembly



**Figure 3-16 Input and output assembly interface of UCMM**

Click “Assembly” in the list on the left side and switch to the input and output assembly interface as shown in the figure above. It is used for configuring Tag name, data length and data type of the input and output configuration. click the corresponding cell to modify it. The maximum input length of single slot is 254 bytes and the maximum output length of single slot is 254 bytes. The total input length is up to 512 bytes and the total output length is up to 256 byte. In which, the single length of SINT, BOOL is 1 byte, the single length of INT is 2 byte, and the single length of DINT, BIT ARRAY, and REAL is 4 bytes.



**Attention:**

“Data length” is the number of “Data Type”. For example: Tag Name is the variable of TEST2, Data length is 10, Data Type is DINT, and the total length of the slot is 40.

### 3.3.5 Save Configuration and Exit

After configuring the EtherNet/IP communication in CIPCon software, select button or menu **File\Save** to save configuration, close the CIPCon software and go back to hardware configuration software “VFIOBuilder”.

### 3.4 Tag Configuration

After completing the EtherNet/IP communication configuration in the previous paragraph, return to the “VFIOBuilder”.

#### Update Configuration

In the VFIOBuilder software, select the corresponding “COM725-S”, and select “Update configuration” by right click or select **Operate (O)/ Update Configuration** to update the communication configuration. The following figure shows the updated configuration.

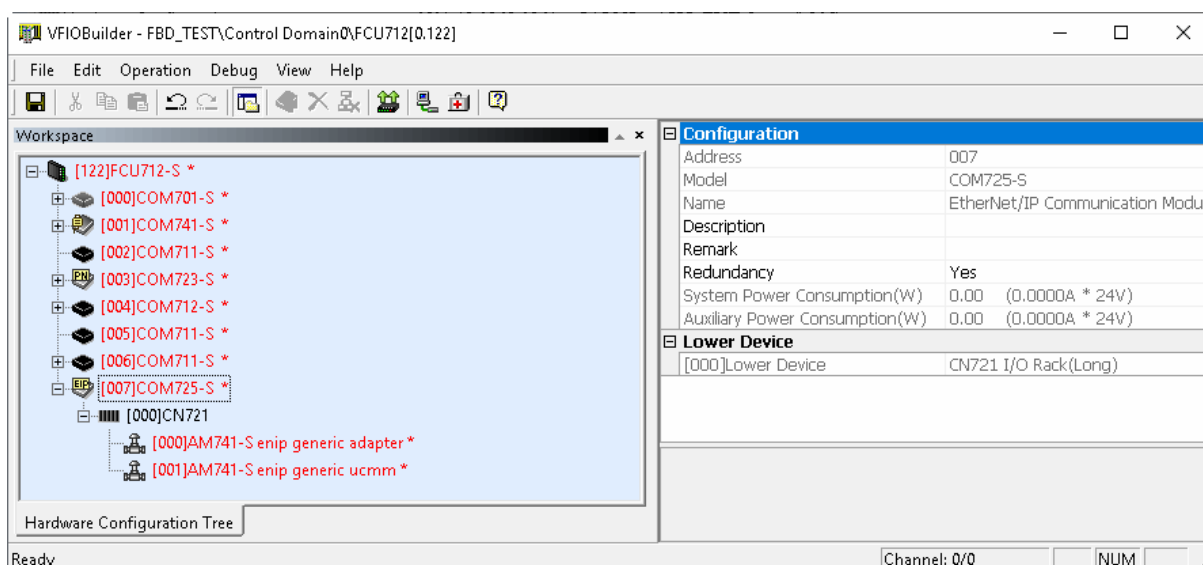



Figure 3-17 The updated communication configuration Interface

#### Save Hardware Configuration

After completing the hardware configuration of COM725-S, click  button to save the hardware configuration.

After configuring the Ethernet/IP communication in above, close CIPCon and go back to hardware configuration software.

After completing the hardware configuration as mentioned in the previous paragraph, return to the “Configuration Management Software” interface, and double click “tag table” to enter the “Tag Configuration Software” interface.

#### 1. Add Tags Automatically

In the “Tag Configuration Software” interface, select **Operation / Scan Tags from Channels / Communication Tag Strategy** to enter into the communication tag strategy configuration interface.

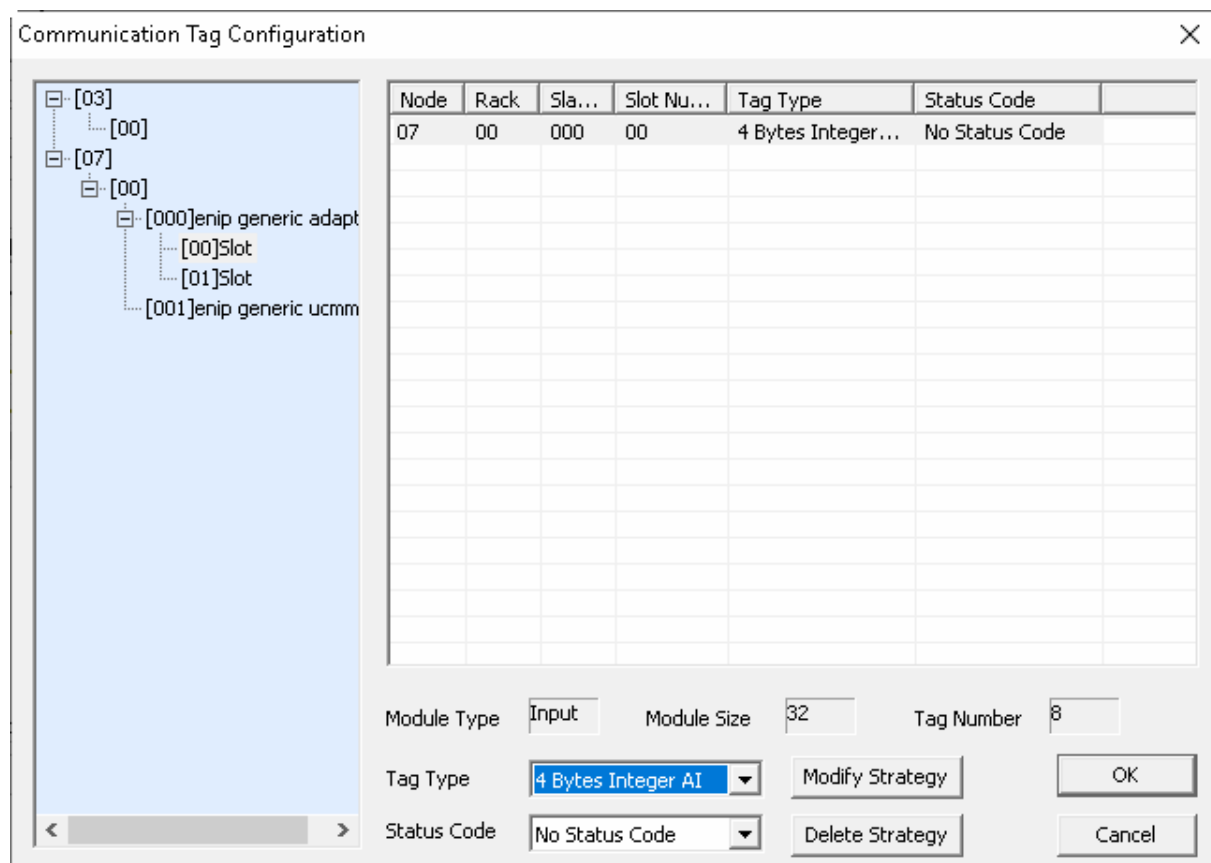
In the “Communication Tag Strategy” interface, unfold the tree type structure in the left view and find the slaves and slots to be added to the hardware configuration as shown in Figure 3-18.

Add tag strategy: select the tag strategy where needs adding tag strategy, select corresponding tag type in “tag type” column in the lower window, select corresponding status code type in the “status code” column, and click “Add strategy” button to add the tag strategy.

Modify the existing tag strategy: select the tag strategy to be modified, modify the "tag type" or "status code" through pull down menu, and click "Modify Strategy" button to finish change.

Delete the existing tag strategy: select the tag strategy to be deleted, and click “Delete Strategy” button to delete it.

After finishing configuration of all tag strategy, click “OK” button to finish configuration of communication tag strategy and go back to “tag configuration software” interface.



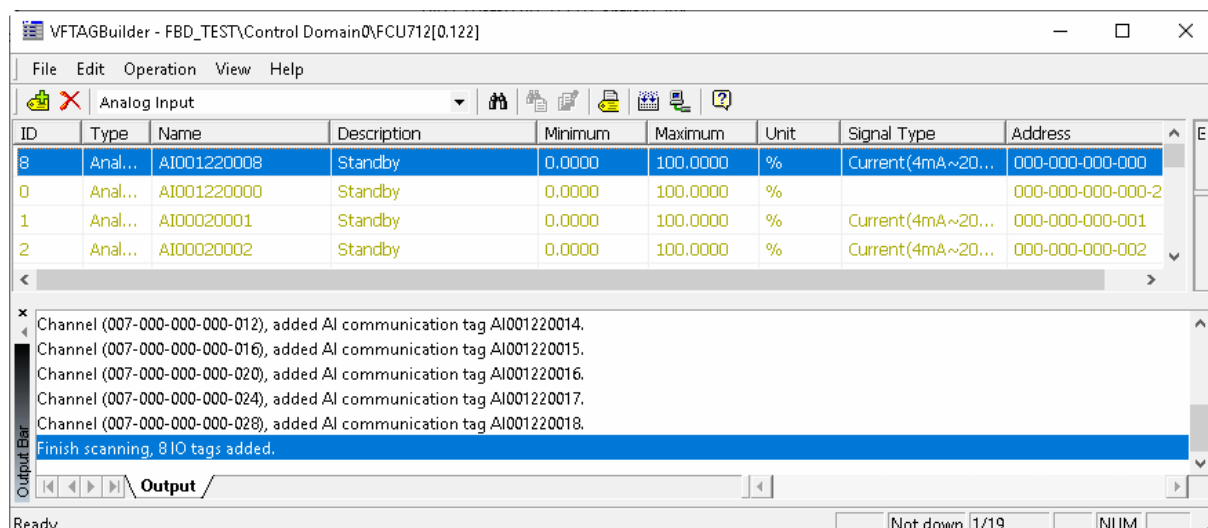
**Figure 3-18 Configuration of the communication tag strategy**



**Attention:**

**One slot, one tag strategy.**


When return to “Tag Configuration Software”, select **Operation/Scan Tags from Channels**. Select **Scan All** or **Scan New Added** to start the automatic scanning of hardware configuration and automatically add the tag according to the communication tag strategy. When the automatic scanning is completed, the interface is shown in Figure 3-19.

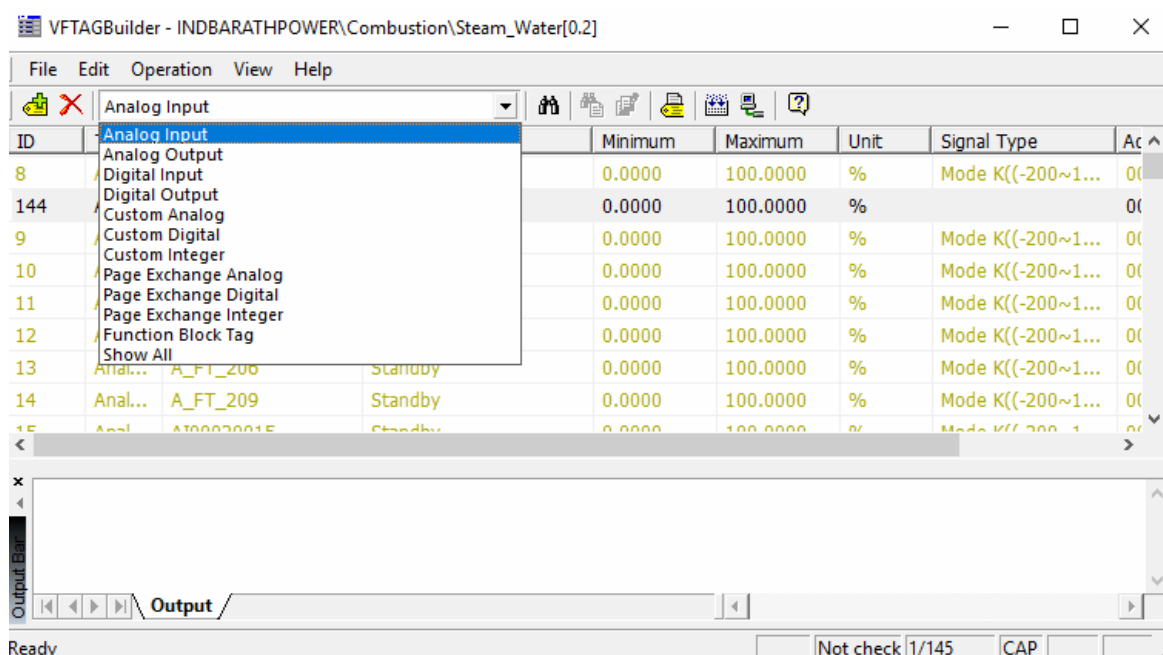


**Figure 3-19 Interface after finishing scanning tag**

## 2. Add and Modify Tags by Manual

### Add New Tag

In “tag configuration software” interface, select the corresponding tag type through the pull down menu in the upper window to switch to the window of the corresponding tag type as shown in Figure 3-20. For example, select “Analog in” to enter AI tag window and click  button to add a new AI tag.



**Figure 3-20 Interface of selecting tag**

When carry out tag configuration of EtherNet/IP communication module COM725-S, you need to select the corresponding type of communication tag in “tag type”. Take AI tag as example as shown in Figure 3-21.

<b>Basic Properties</b>	
Number	10
Name	AI12100010
Type	Analog Input
Description	Standby
<b>Input Channel Settings</b>	
Tag Type	Communication AI Tag
Communication Node No.	000
Communication Rack No.	000
Slave Station Address	000
Data Block No.	000
The Offset Address of the Tag in the	000
APL Tag	No
<b>Communication Parameter Settings</b>	
Data Type	DINT
Signal Properties	Actual Value
Status Code Location	Status Code Ahead
Data Format	No Conversion
<b>Signal Conversion Process</b>	
<b>Desirable Operating Range</b>	
<b>Output Range Settings</b>	
<b>Input Original Code Settings</b>	
Input Original Code Maximum	100.0000
Input Original Code Minimum	0.0000
<b>Alarm Settings</b>	
<b>Interlock Output Settings</b>	
<b>Tag Fault Safety Processing</b>	
<b>Cold Start Mode</b>	
<b>Supervision Settings</b>	

**Figure 3-21 Set the AI tag**

Select corresponding tag and set the tag parameter in the parameter column at the right side of the tag window.

### Instruction of Communication Tag

- Parameter instruction of AI/AO tags
  - “Input/output channel settings” column
    - Communication node number: the node address of COM725-S in the E-Bus, i.e. COM725-S address set in hardware configuration.
    - Communication rack number: corresponds to the bus number under COM725-S which is fixed at 0.
    - Slave address: address of slave station.
    - Data block number: slot number in hardware configuration.
    - The offset address of tag in data block: the offset address of analog tag in data block with byte as unit.
  - Instruction of Communication Tag

- Data type: “2 bytes integer (signed)”, “2 bytes integer (unsigned)”, “4 bytes integer (signed)”, “4 bytes integer (unsigned)” and “4 bytes floating-point number” three types. Select according to the actual signal type.
- Communication signal status code settings: “no status code”, “status code at front” and “status code at back” three options. Select option according to the actual signal. Generally, select “no status code” for PN slave signal.
- Communication data format conversion selection: determine whether convert the format of the big and small ends.
- “Input/output original code settings” column: set the upper and lower limits of the original code of the communication signal in slave. The original code varies based on different slaves. For example, the upper and lower limit of the original code of Siemens S7-300 series is usually 0 and 27648.

## 2. Parameter instruction of DI/DO tags

<b>Basic Properties</b>	
Number	45
Name	DI12100045
Type	Digital Input
Description	Standby
<b>Input Channel Settings</b>	
Tag Type	Communication DI Tag
Communication Node No.	000
Communication Rack No.	000
Slave Station Address	000
Data Block No.	000
The Offset Address of the Tag in the Data Block	000
APL Tag	No
<b>Signal Conversion Process</b>	
Input Negate	Disable
<b>Alarm Settings</b>	
<b>Tag Fault Processing</b>	
Fault Safety Switch	Enable
Fault Processing	HOLD
<b>Cold Start Mode</b>	
<b>Supervision Settings</b>	
Tag Group	Tag Group 0
Tag Level	Level 0
ON Description	ON
OFF Description	OFF
Panel	*
<b>SOE Settings</b>	

**Figure 3-22 Set the DI tag**

“Input/output channel settings” column

- Communication node number: the node address of COM725-S in the E-Bus, i.e. COM725-S address set in hardware configuration.
- Communication rack number: corresponds to the bus number under COM725-S which



is fixed at 0.


- Slave station address: address of slave station.
- Data block number: slot number in hardware configuration.
- The offset address of tag in the data block: the offset address of switch value tag in data block with bit as unit.

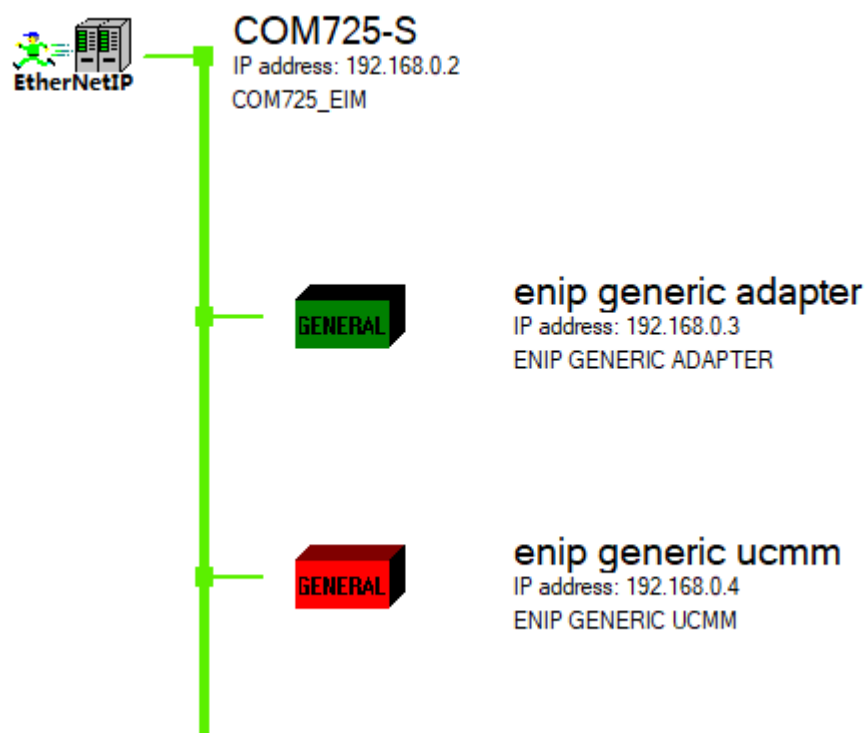
### 3.5 Compile and Download

After completion of setting, close the hardware configuration window, go back to the software interface of the configuration management, save the configuration set, and select to compile and download in proper order. The system configuration download can be divided into online and offline download.

- **Online download:** When there is no major change in configuration and the online device is not modified, carry out online download. Online download can ensure that the unmodified device, its commands and relation between the commands and the tag remain unchanged.
- **Offline download:** When there is major change in the configuration, for example, modification to the hardware structure of the system and the system forbids the user to carry out online download to ensure site safety. When it is ensured that there will be no major problem, offline download can be selected.

### 3.6 EtherNetIP Online Diagnose and Device Management







Diagnose and Management in CIPCon only can be valid in “Debug Mode Online”. The status can be achieved by select the command of **Online/ Debug Mode** or click . The main interface of configuration is shown below.



**Figure 3-23 Debug mode**

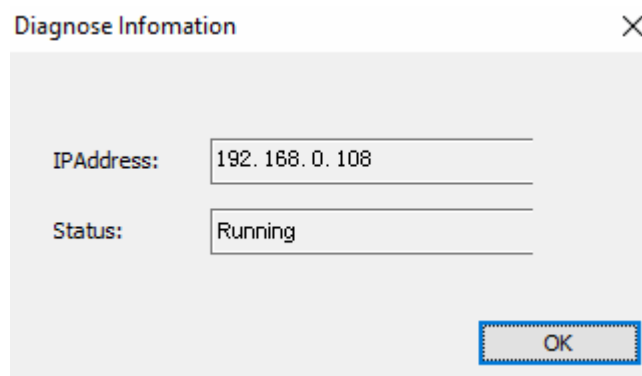
Table 3-1 shows the instruction of icons in above figure.

**Table 3-1 Icon instruction**

Icon	Description
	Slave icon in non debug mode.
	Slave icon in debug mode, and the slave is communicating normally.
	Slave icon in debug mode, and the slave is communicating abnormally (slave dropped or instrument unmatched).
	Master icon in non-debug mode.
	In debug mode, the EtherNet/IP master communicates normally.
	In debug mode, the EtherNet/IP master communicates abnormally(IP conflict, etc.).

### 3.6.1 Online Diagnose

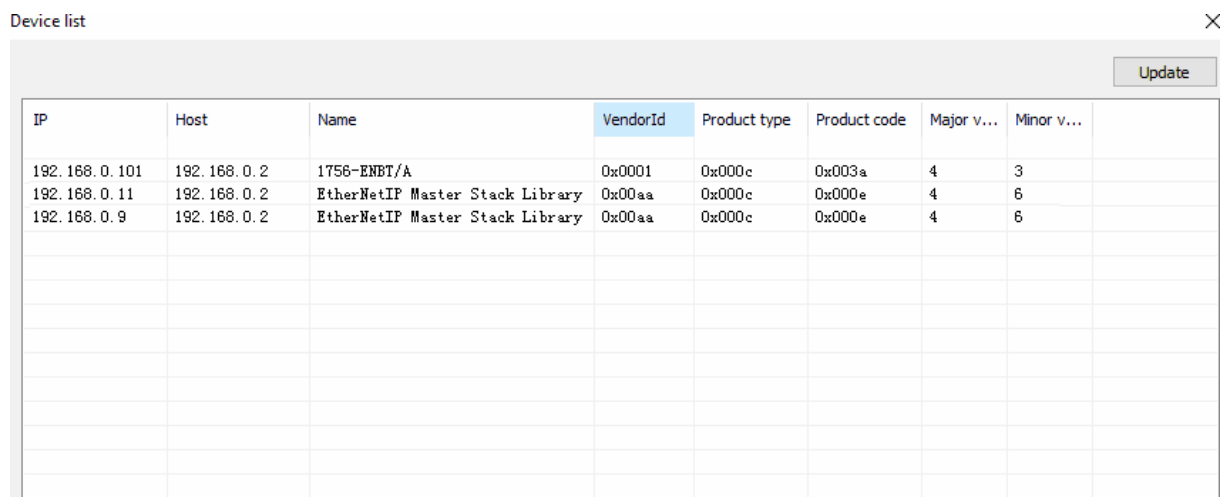
Select the slave icon and select "Online/Diagnose" in the menu bar, or right-click the slave icon to select " Diagnose", and the "Diagnose Information" screen shown below will pop up to view the diagnostic information.



**Figure 3-24 Slave diagnose information**

### 3.6.2 Live List

Select master station icon, select “Online/Live List” in menu bar, or right click master icon and select "Live List", and the "Device List" interface will pop up. Click “Update” to update device, and devices online will be displayed in “Device Address”, as shown below.



**Figure 3-25 EtherNet/IP bus list interface**

### 3.6.3 I/O Real-time Data

In debug mode, select slave icon, select “Online/I/O Monitor”, or right click slave icon select “I/O Monitor”, pops up “I/O Monitor” interface below. Click “Update” button, the input and output data will be display real time.

I/O Monitor ×

Inputs Outputs

I/O Data

dec	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
1																
2																
3																
4																
5																
6																
7																
8																
9																
10																
11																
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34																
35																
36																
37																
38																
39																
40																

Update

hex

OK

**Figure 3-26 I/O Real-time Data**

## 3.7 Other Functions

Table 3-2 shows the functions instruction of other menu items.

**Table 3-2 Other Menu Functions introduction**

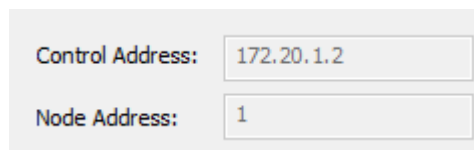
Menus	Submenus	Function Description
Project	Property	Used to fill general property and communication property, communication property in different systems are different.
Help	About	Display matched system of software, revision of software, copyright of software etc. information.

### 3.7.1 Project Property

Select “Project/ Property” in menu bar, then popup “Project Property” window. Click “Communication” in configuration tree to view communication property. And the communication property is various in different systems.

In the OMC system:

View the corresponding control address and node address.

A screenshot of a software dialog box titled "OMC Communication Property". It contains two rows of labels and text input fields. The first row is labeled "Control Address:" and the input field contains the IP address "172.20.1.2". The second row is labeled "Node Address:" and the input field contains the number "1".

Control Address:	172.20.1.2
Node Address:	1

**Figure 3-27 OMC Communication Property**

## Section 4 Rockwell Device Use Guide

### 4.1 Device Discovery

RSLinx is a prerequisite for using all RS-related configuration software, providing the required driver for all devices. Only devices successfully detected in RSLinx can be used in other software.

1. Open the RSLinx software by selecting "Start > Rockwell Software > RSLinx > RSLinx Classic", as shown in the following figure.

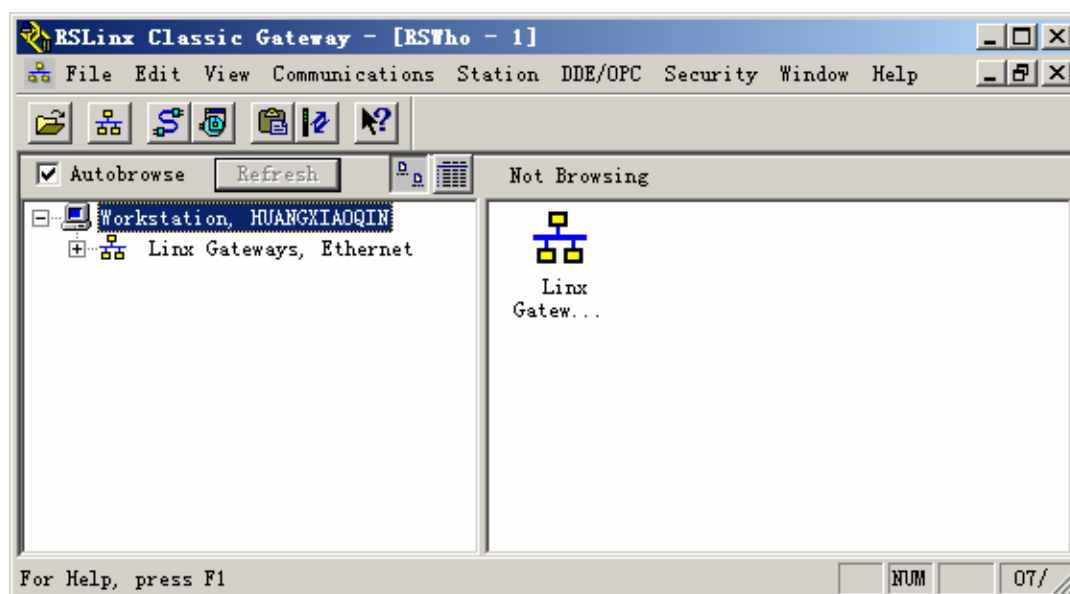

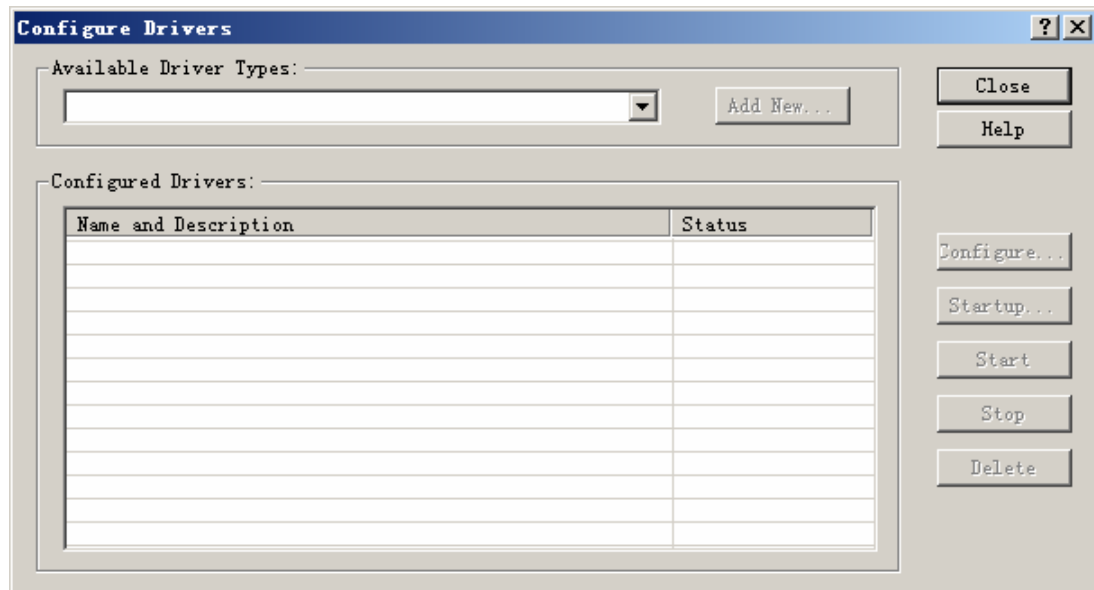


Figure 4-1 RSLinx main window

2. Select "Communications > Configure Drivers...", or click  on the toolbar above to open the "Configure Drivers" interface, as shown in the figure below, to configure the driver.



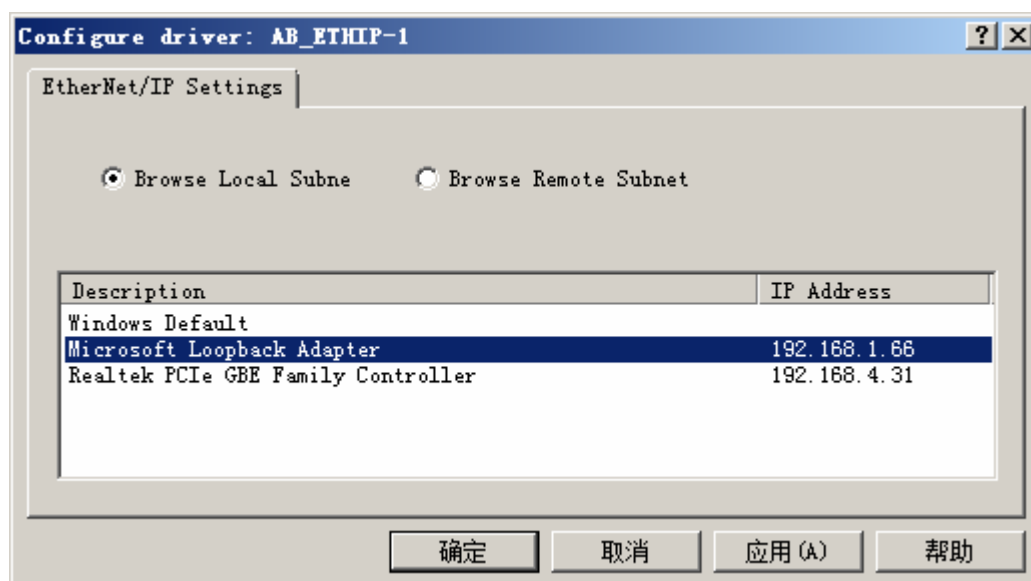
**Figure 4-2 Configure drivers**

3. In the interface shown in above, select "EtherNet/IP Driver" from "Available Driver Types", and then click the "Add New..." button on the right side to pop up a window as shown in the following figure, and add a new EtherNet/IP driver.




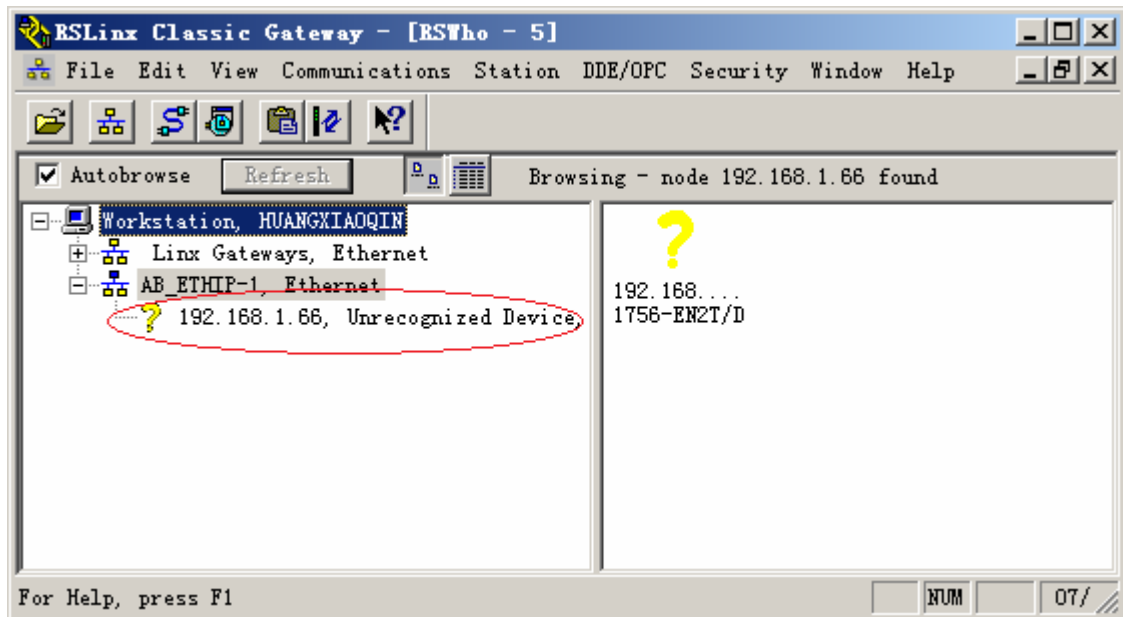
**Figure 4-3 Add new EtherNet/IP driver**

4. Enter the name of the EtherNet/IP driver, click "OK", and the interface (shown in the figure below) will pop up. Select the NIC corresponding to the Adapter IP address.



**Figure 4-4 Select IP**

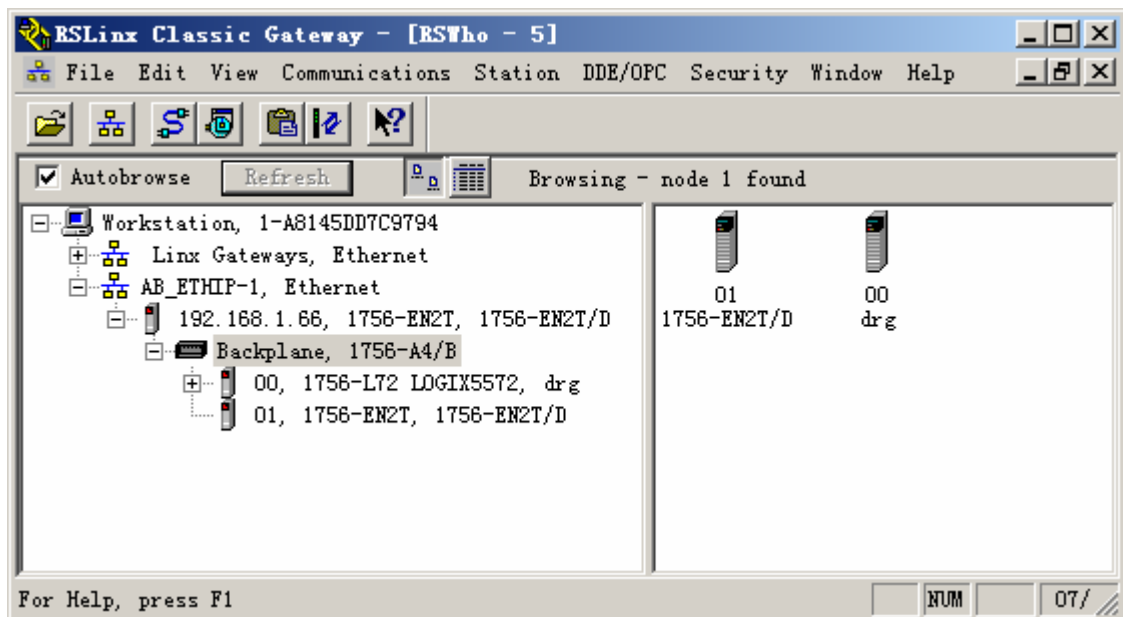
- In the RSLinx main window, click  in the toolbar to open the "RDWho" interface, as shown in the following figure, to obtain device connection information.



**Figure 4-5 Obtaining device connection information**

When opening the "RSWho" interface for the first time, newly added EtherNet/IP related driver devices may not be recognized. At this time, please select the device and choose "Upload EDS file from device" from the right-click menu to update the device description file.

- After the device description file is updated, the device becomes recognized as shown in the following figure



**Figure 4-6 Device is recognized**



## 4.2 Project Building

**Attention:**

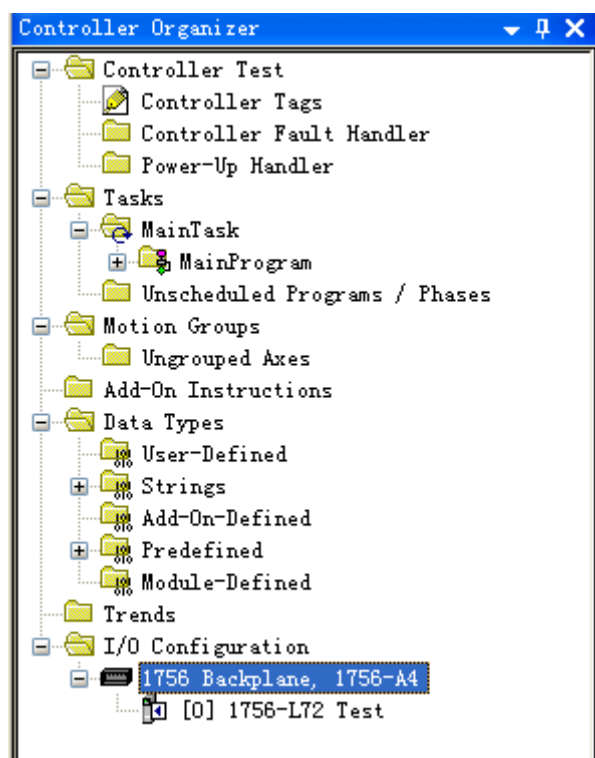
Before setting up through RSLogix 5000 software, please ensure that the knob of the Logix1756 controller is in the PROG state.

To create a new project:

1. Open the RSLogix 5000 software, select "File > New", and a pop-up window appears as shown in the figure below. Select the controller model, enter the project name, select the rack model, and then click "OK".

**Figure 4-7 "New Controller" window**

2. After adding the controller, the newly added device will be displayed in the device list on the left side of the interface.



**Figure 4-8 Device list**

3. Right-click the backplane in the device list, such as "1756 Backplane", and select "New Module" from the right-click menu to bring up the interface shown in Figure 4-9 and Figure 4-10.
4. Add the EtherNet/IP module 1756-ENBT, set the module name and IP address. In the "General" tab, you can set the module name as shown in Figure 4-9; in the Internet Protocol tab, you can set the IP address as shown in Figure 4-10.

**Module Properties: Local:0 (1756-EN2T 3.1)**

General | Connection | Time Sync | Module Info | Internet Protocol | Port Configuration | RSNetWorx

Type: 1756-EN2T 1756 10/100 Mbps Ethernet Bridge, Twisted-Pair Media Change Type...

Vendor: Allen-Bradley

Parent: Local

Name: DEF

Description:

**Ethernet Address**

☐ Private Network: 192.168.1.

☒ IP Address: 192 . 168 . 0 . 1

☐ Host Name:

Slot: 0

**Module Definition** Change...

Revision: 3.1

Electronic Keying: Compatible Module

Rack Connection: None

Time Sync Connection: None

Status: Offline

OK Cancel Apply Help

Figure 4-9 Add module (1)

**Module Properties: Local:0 (1756-EN2T 3.1)**

General | Connection | Time Sync | Module Info | **Internet Protocol** | Port Configuration | RSNetWorx

**Internet Protocol (IP) Settings**

IP settings can be manually configured or can be automatically configured if the network supports this capability.

☒ Manually configure IP settings

☐ Obtain IP settings automatically using BOOTP

☐ Obtain IP settings automatically using DHCP

☐ IP settings set by switches on the module

**IP Settings Configuration**

Physical Module IP Address: 192 . 168 . 0 . 101 Subnet Mask: 255 . 255 . 255 . 0

IP Address in physical module does not match address in general properties (192.168.0.1)

[Copy IP address from general properties.](#)

Gateway Address: 0 . 0 . 0 . 0

Domain Name:

Host Name:

Primary DNS Server Address: 0 . 0 . 0 . 0

Secondary DNS Server Address: 0 . 0 . 0 . 0

Physical module does not match configured module. [Refresh communication.](#) Set

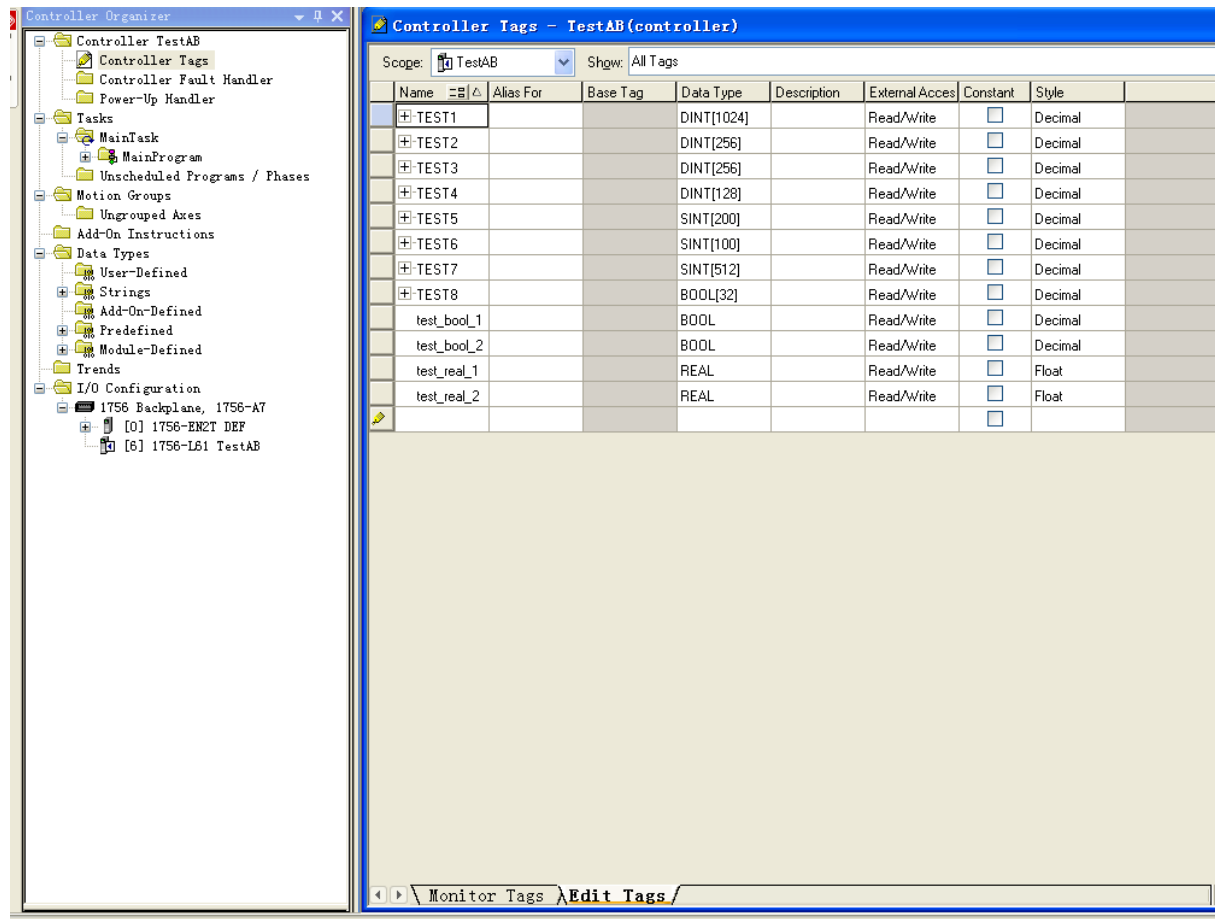
Status: Faulted

OK Cancel Apply Help

Figure 4-10 New module (2)

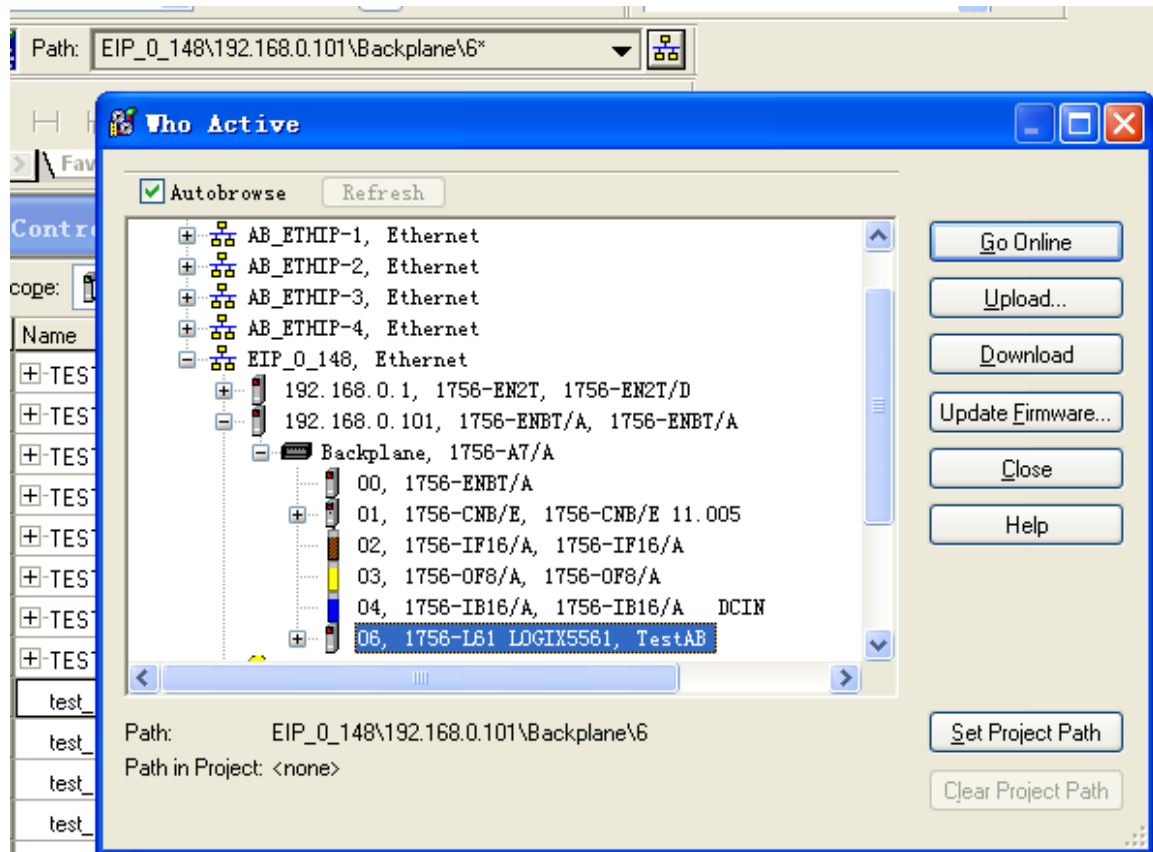
**Attention:**

When adding a new module to the 1756-ENBT/A module, the IP address needs to be consistent with that of COM725-S.



**Figure 4-11** Module configuration

- Click the "Who Active" button, select the corresponding controller, and download the configuration.

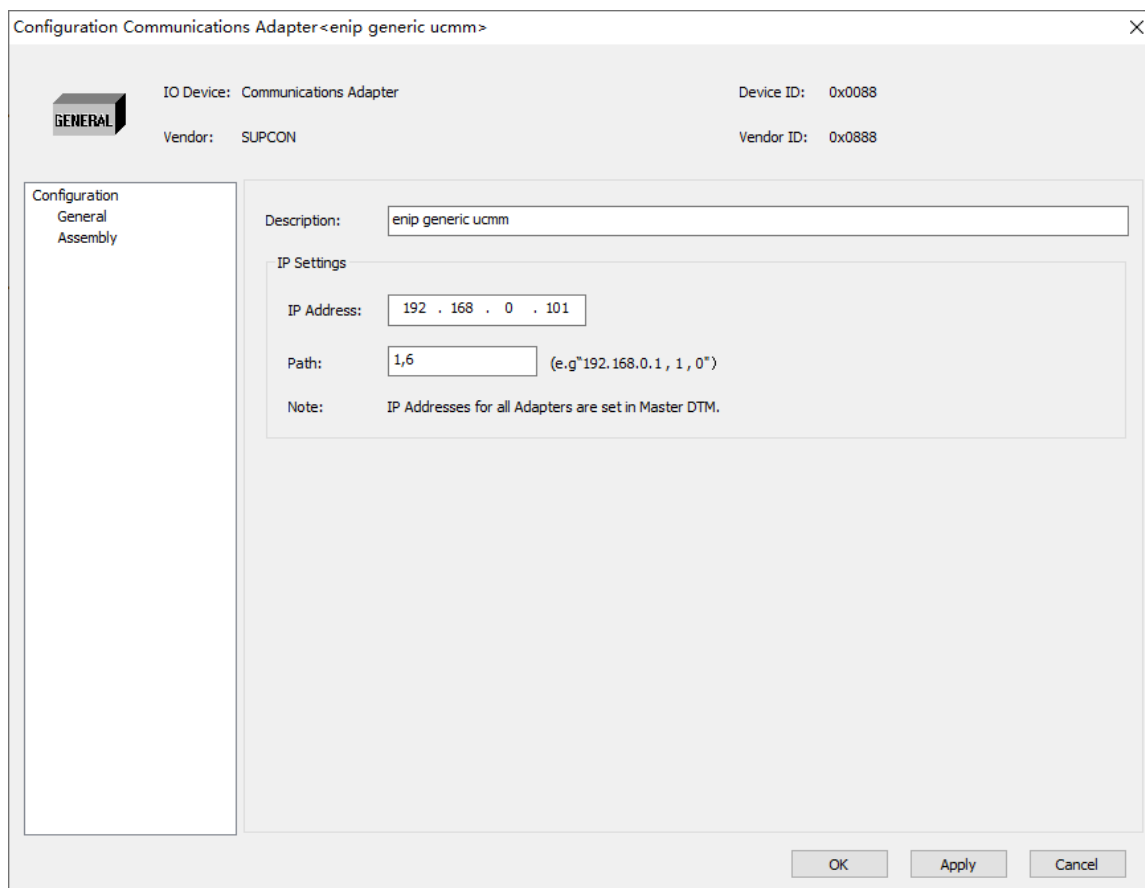


**Figure 4-12 Configuration download**

6. After the configuration download is completed, switch the knob of the Logix1756 controller to the RUN state.

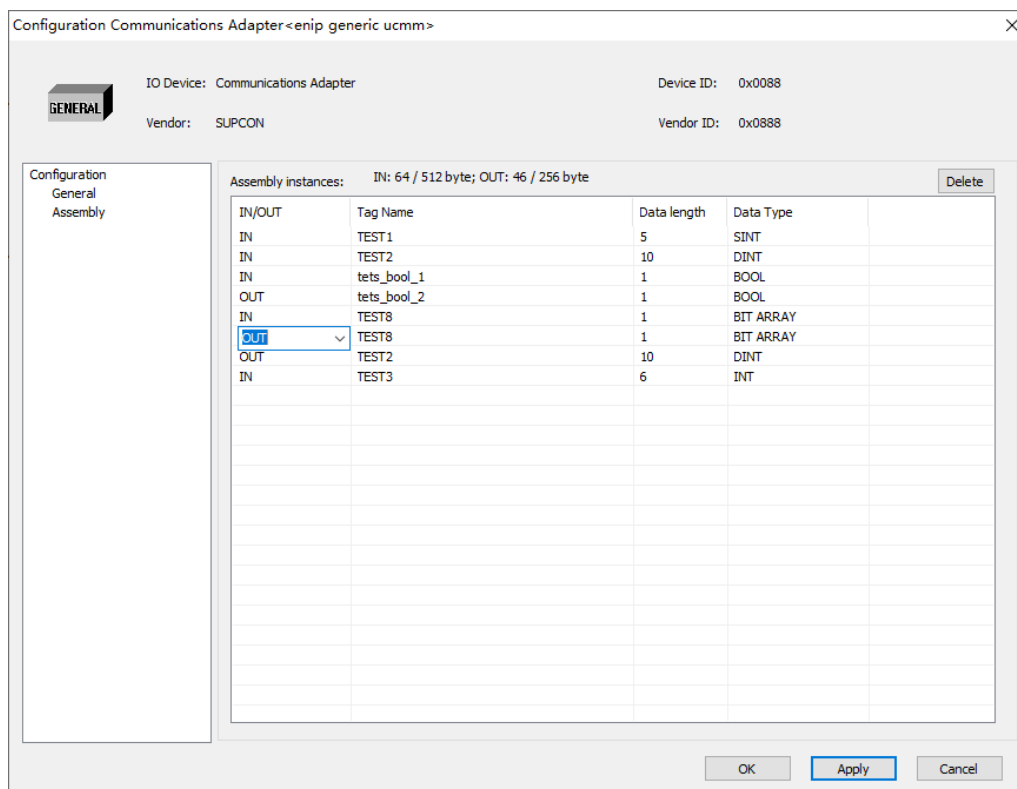
### 4.3 CIPCon Configuration

1. In hardware configuration software, select the corresponding COM725-S module, right-click it and select "Communication Configuration" to open CIPCon software.
2. Modify the IP address of COM725-S to 192.168.0.2, which is consistent with the configuration address shown in Figure 4-11.
3. Add the slave device "ENIP GENERIC UCMM", set the IP address to 192.168.0.101, which is consistent with the module IP address set in Figure 4-9.



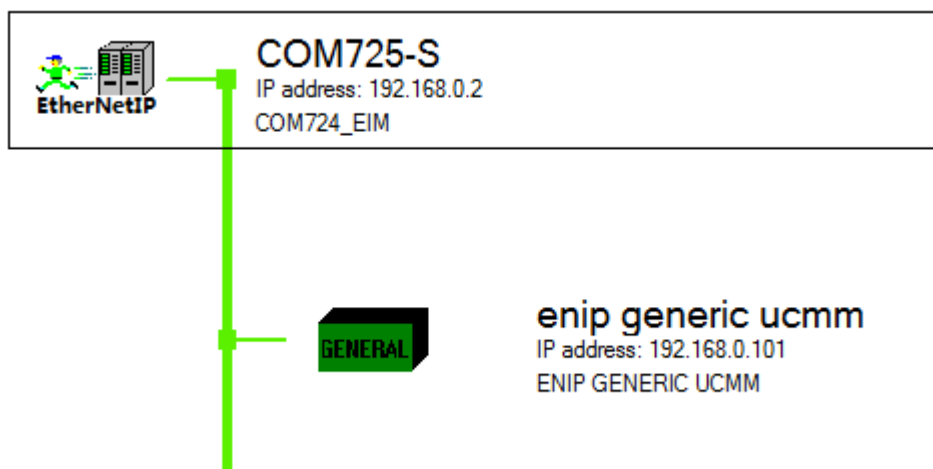
**Figure 4-13 Set the IP addresses of the master and slave devices**

4. Configure the added devices in the previous step. The values of Tag Name, Data length and Data Type need to be consistent with the configuration set in RSLogix5000 (as shown in Figure 4-11).



**Figure 4-14 Set module configuration parameters**

5. Save the configuration changes and close the window. Follow the instructions in Tag Configuration and Compile and Download to configure the tags and download the configuration.
6. After the configuration download is complete, open CIPCon software and enable debugging mode. If the window is similar to the figure below, the configuration is successful, and the module is normally performing real-time data interaction.



**Figure 4-15 Configuration successful**

## Section 5 Turck Remote IO Device Use Guide

### 5.1 Device Discovery

When the computer and Turck remote IO are connected to the same physical network, you can use "Turck Service Tool" to scan for remote IO devices, obtain device list, and their IP addresses.



1. Open the "Turck Service Tool" software by double-clicking the icon.
2. Click "Search" button to scan for devices. The interface is shown in the figure below.

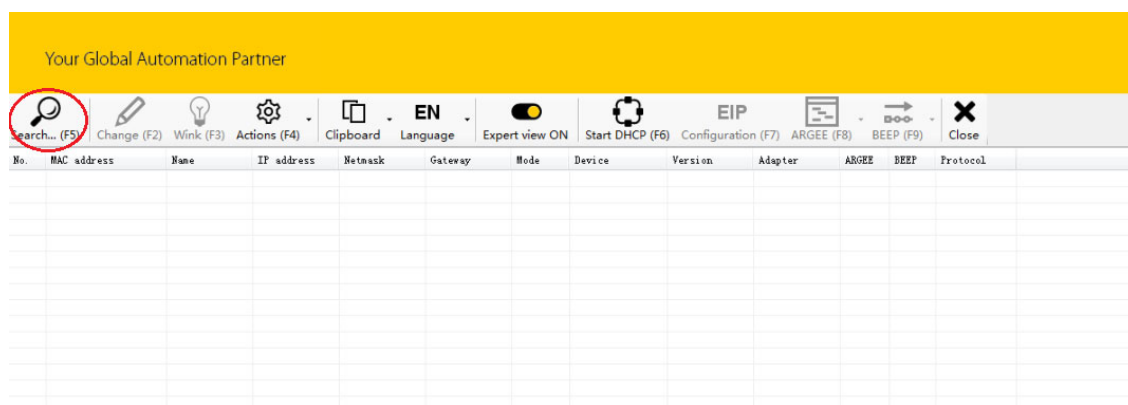


Figure 5-1 Turck Service Tool main interface

3. The following figure shows an example of device list connected to the computer, with their IP addresses highlighted in blue.

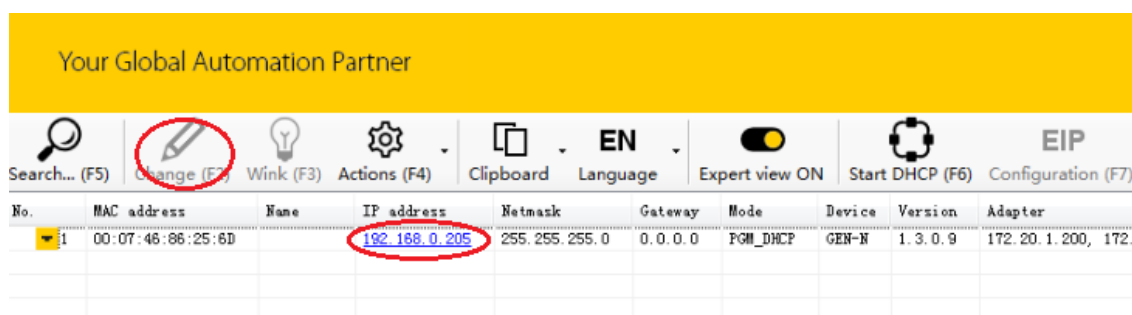


Figure 5-2 Device list

4. Select any device from the list, click "Change" button, and modify the IP address in the pop-up window, as shown in the figure below.



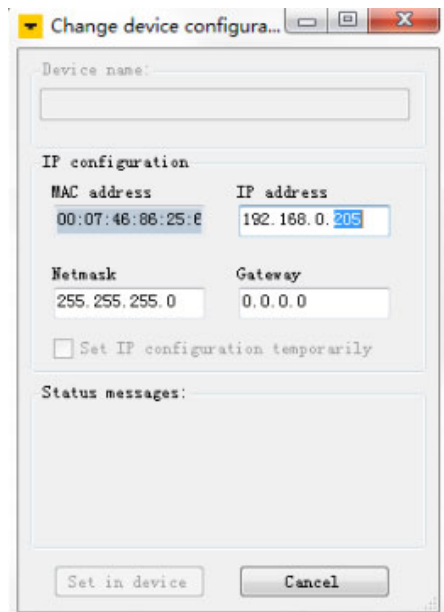
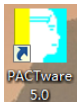


Figure 5-3 Change IP

## 5.2 Modify Module Type

Use PACTware software to configure the AI, AO, DI, and DO modules in the device.

1. Open the PACTware software by clicking , and its main interface is shown in the figure below.

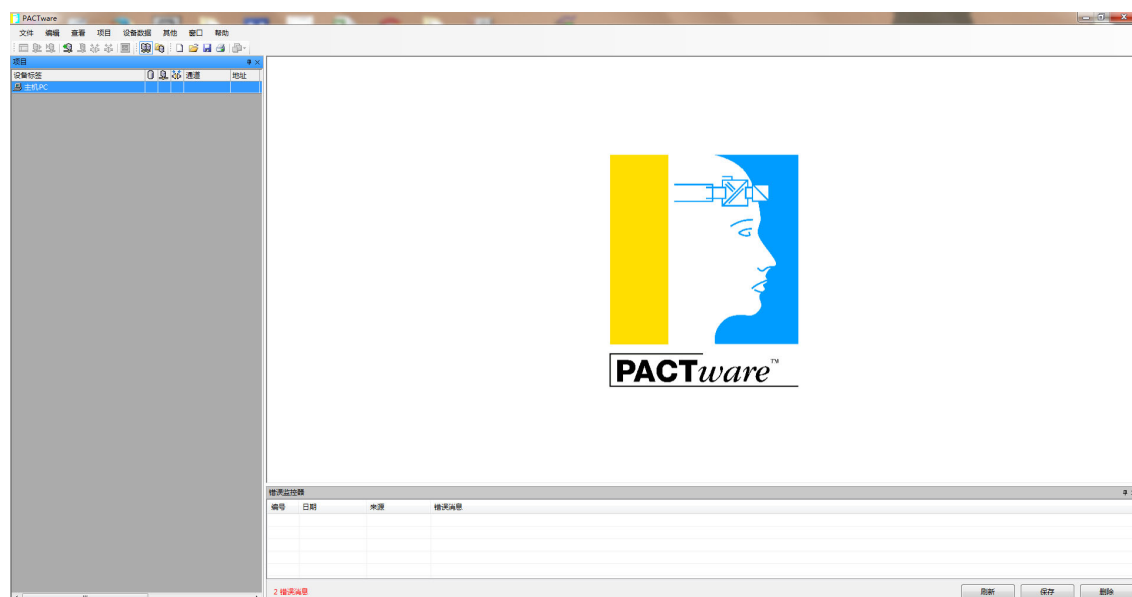
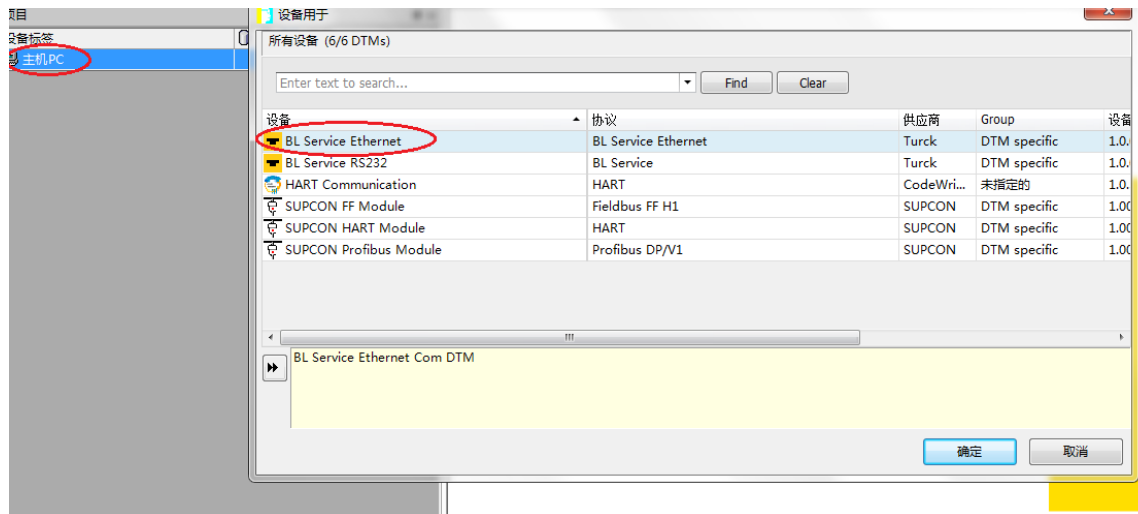


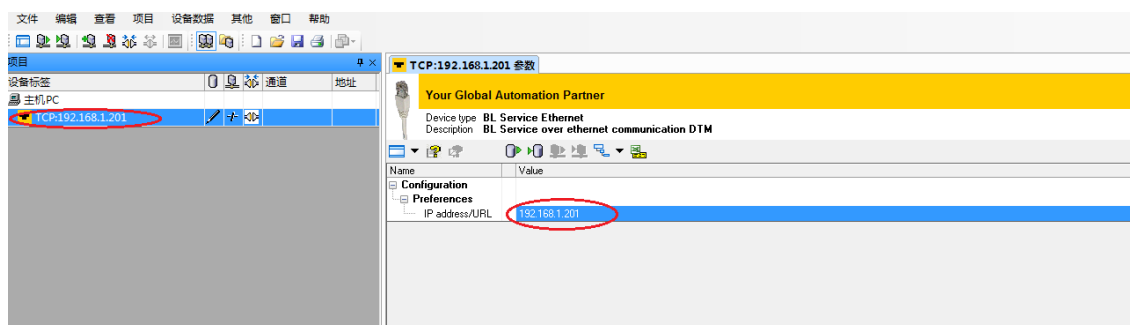
Figure 5-4 PACTware main interface

- Right-click on the PC host, select "Add Device", and double-click "BL Service Ethernet" in the pop-up window.



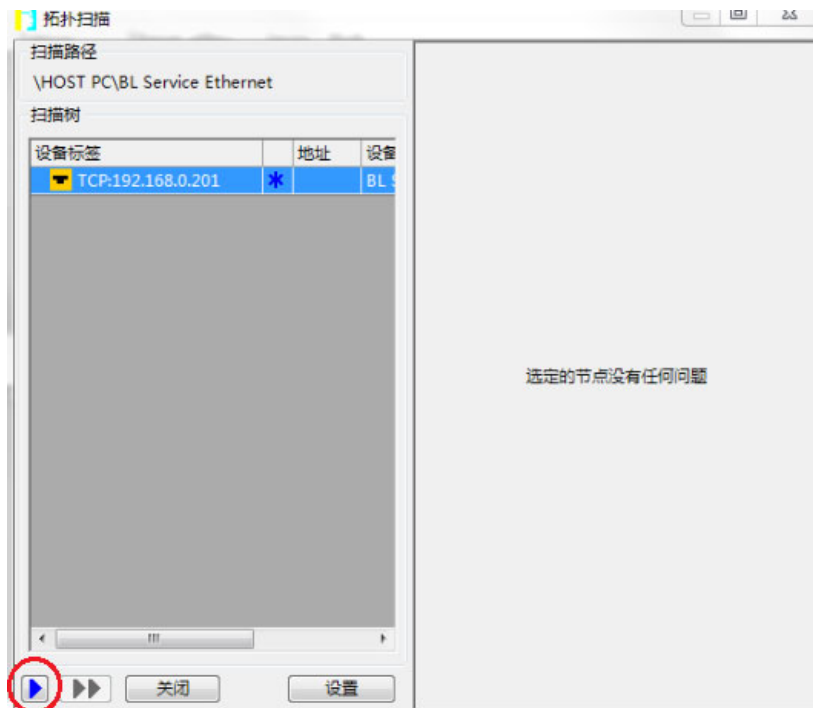
**Figure 5-5 New BL Service Ethernet**

- The IP address of the newly created BL Service Ethernet should be the IP address of the current computer. To modify it, right-click on the address, select Parameters, and modify the IP address as the red circle shown in the figure below.

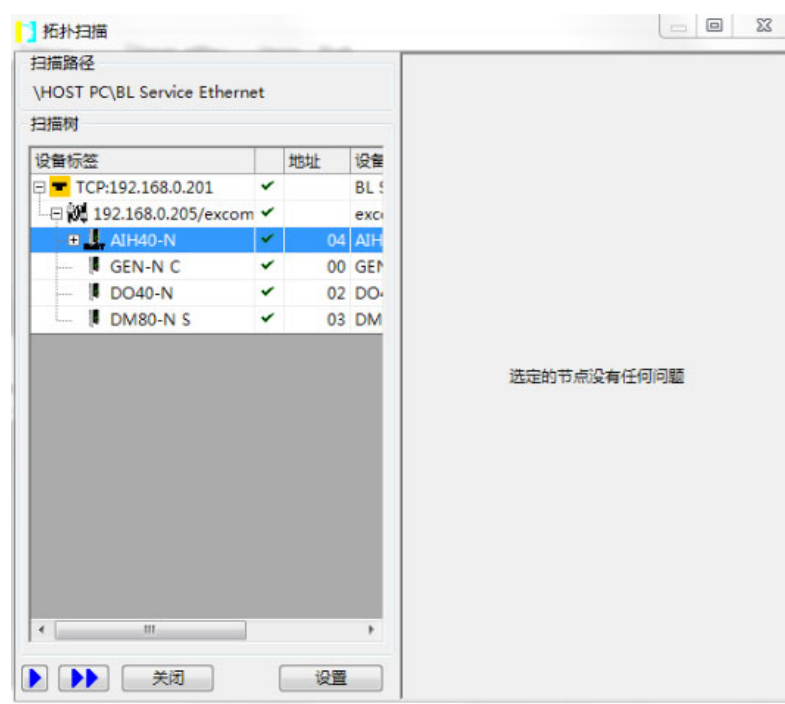


**Figure 5-6 Modify BL Service Ethernet address**

- Right-click on the BL Service Ethernet, select Topology Scan, and click the blue arrow to scan for the AI, AO, DI, DO modules and instruments under that device.



**Figure 5-7 Topology Scan**



**Figure 5-8 Topology Scan Results**

- After closing the topology scan interface, a list of modules and instruments appears on the right side. The red box (marked in the figure below) represents the remote IO device, and the blue box represents the IO modules and instruments under that device. Right-click on the red box and select Connect to establish a connection with the remote IO device. The connection

status in the purple box turns green, indicating that a connection has been established.

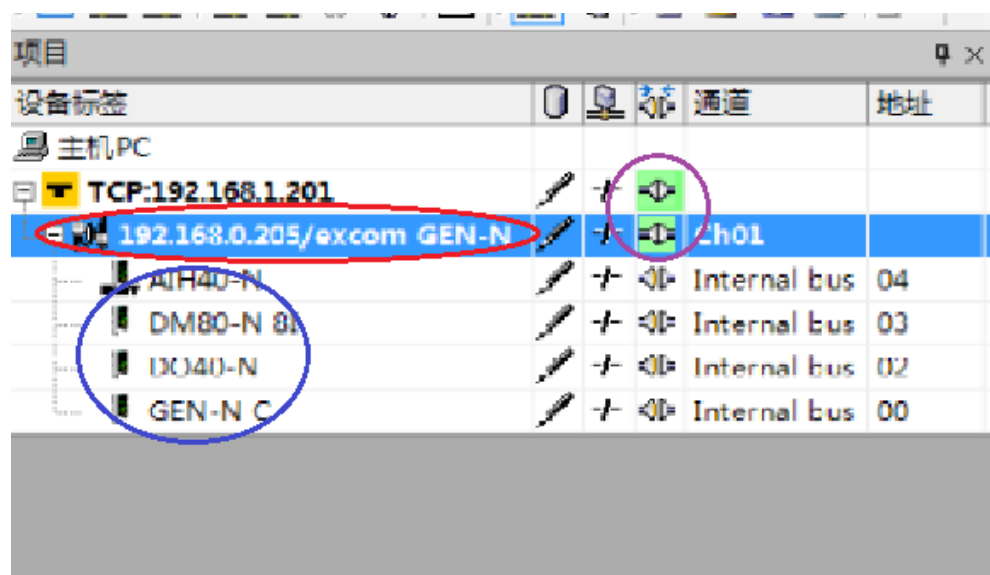


Figure 5-9 Establish Connection

- Right-click on the IO module, select Change Device, and modify the device type and address of the IO module. Note that the modified type and address should correspond to the actual hardware. After modifying, right-click on the red box (Figure 5-9), and select Parameters. In the pop-up window, the Project column is the modified IO module type, and the Hardware column is the default device type for the IO module. Click "Write DTM conf" first, then click "Activate temp DTM conf". Then click "Update FDT Project" to download the modified IO type to the remote IO device.

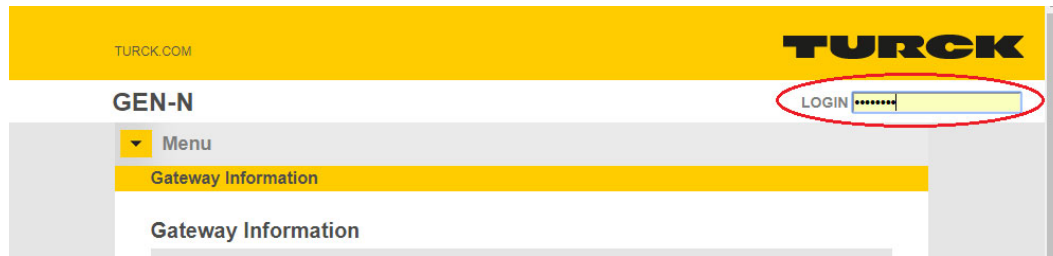
<div> <div>Update FDT Project</div> <div>Deactivate temp. DTM conf.</div> <div>Activate temp. DTM conf.</div> <div>Write DTM conf.</div> </div>						
Slot	Hardware	PLS-Conf.	DTM-Conf.	Project	Parameter	Comment
0	GEN-N	GEN-N C	GEN-N C	GEN-N C	Identical	OK
1	-	-	-	-	-	-
2	DO40-N	DO40-N	DO40-N	DO40-N	Identical	OK
3	DM80-N	DM80-N 8I	DM80-N 8I	DM80-N 8I	Identical	OK
4	AIH40-N	AIH40-N 8H	AIH40-N 8H	AIH40-N 8H	Identical	OK
5	-	-	-	-	-	-
6	-	-	-	-	-	-
7	-	-	-	-	-	-
8	-	-	-	-	-	-
9	-	-	-	-	-	-
10	-	-	-	-	-	-
11	-	-	-	-	-	-
12	-	-	-	-	-	-
13	-	-	-	-	-	-
14	-	-	-	-	-	-
15	-	-	-	-	-	-
16	-	-	-	-	-	-
17	-	-	-	-	-	-
18	-	-	-	-	-	-
19	-	-	-	-	-	-
20	-	-	-	-	-	-
21	-	-	-	-	-	-
22	-	-	-	-	-	-
23	-	-	-	-	-	-

Figure 5-10 Modify IO module type

## 5.3 Device Configuration

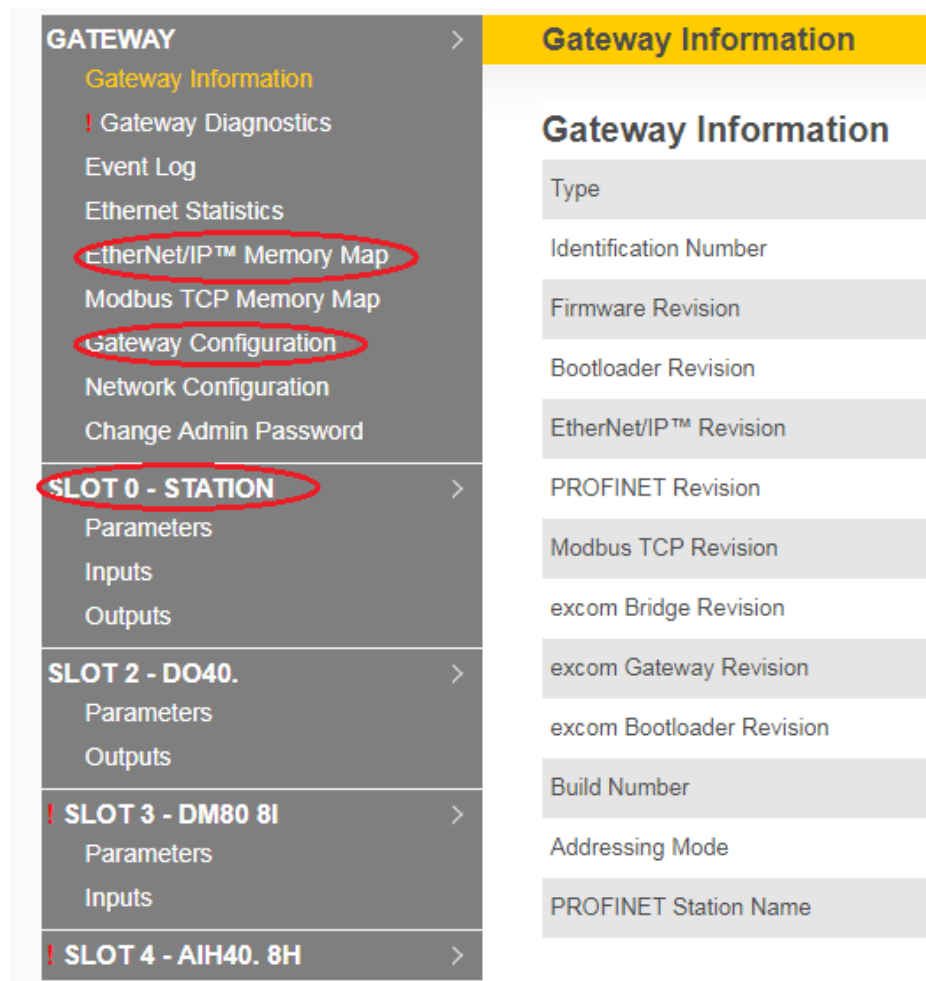
Relevant parameters of Turck remote IO devices can be read and configured through the WEB client. The login address of the web client is the device IP address, and the password is "password" by default.

1. Open a browser and enter the device address in the address bar, for example, 192.168.0.205. After opening the webpage, enter the login password "password" at the LOGIN prompt and press Enter key.

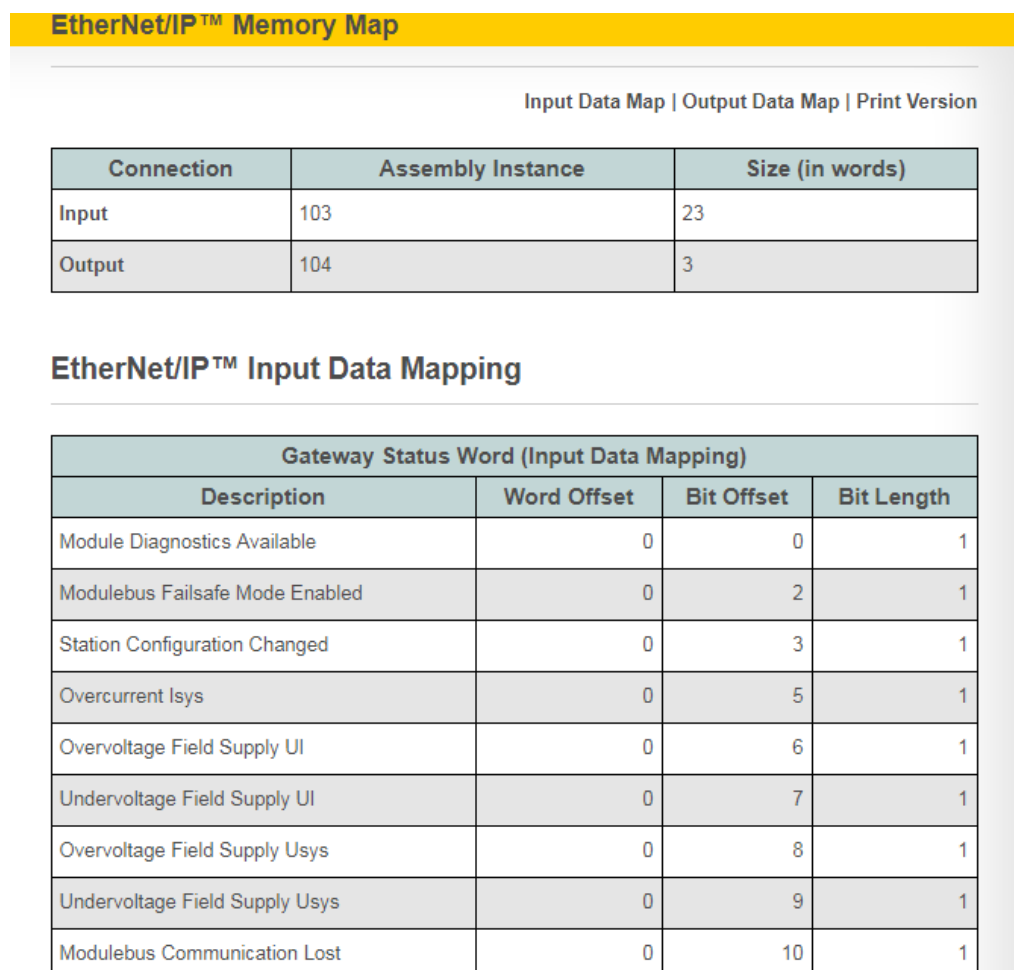


**Figure 5-11 Open Turck web client**

2. The function list is on the right side of the interface. "EtherNet/IP Memory Map" is used to view the length of input and output data, "Gateway Configuration" is used to restore factory settings and upload current configurations, "SLOT0-STATION" is used to configure whether the device is redundant, and the options under "SLOT1" are used to configure the status of the corresponding IO module.



3. The "EtherNet/IP Memory Map" interface lists the lengths of "input" and "output" data for the device, as well as the meaning of each bit in this data.



**Figure 5-12 Ethernet/IP Memory Map**

- In the "Modbus Configuration" interface, "Reset to Factory Defaults" resets the device to its factory settings. "Update Module List Configuration" re-uploads the current device list. If no changes have been made to the device, it is not necessary to pay attention to these items.

Activate Summarized Diagnostics ☐

## PROFINET Configuration

PROFINET Station Name

## Modbus Configuration

NOTE: To disable the watchdog timer, enter 0. Also, the value is in milisecond (ms).

Watchdog Timer

NOTE: To disable connection timeout, enter 0. Also, the value is in second.

Connection Timeout



**Figure 5-13 Modbus Configuration**

- In the "Parameters" interface of SLOT0-STATION, the "Redundancy mode" should be set to "System redundancy". Click the "Submit" to confirm settings. If "Redundancy mode" is set to "off," the Turck device is in non-redundant mode.

**Slot 0 - Station - Parameters**

Line frequency	<input type="text" value="50 Hz"/>
Analog data format	<input type="text" value="Status MSB"/>
CAN redundancy	<input type="text" value="on"/>
Redundancy mode	<input type="text" value="System redundancy"/>
Power supply	<input type="text" value="simple"/>

**Figure 5-14 Slot0-Station-Parameters**

## 5.4 CIPCon configuration:

- In the hardware configuration software, select the corresponding COM725-S module, right-click it and select "Communication Configuration" to open CIPCon software.

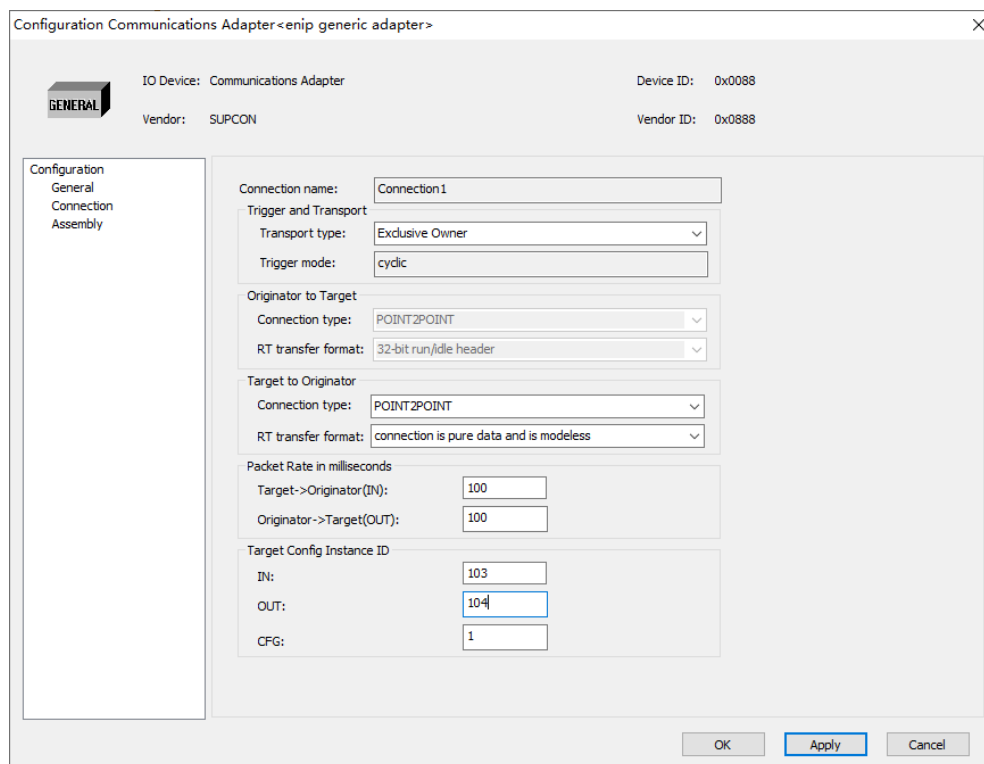


2. Change the IP address of COM725-S to 192.168.0.2, which is on the same network segment as the Turck Remote IO IP address.
3. Add the station "ENIP GENERIC ADAPTER," set the IP address to 192.168.0.205, consistent with the module IP address.



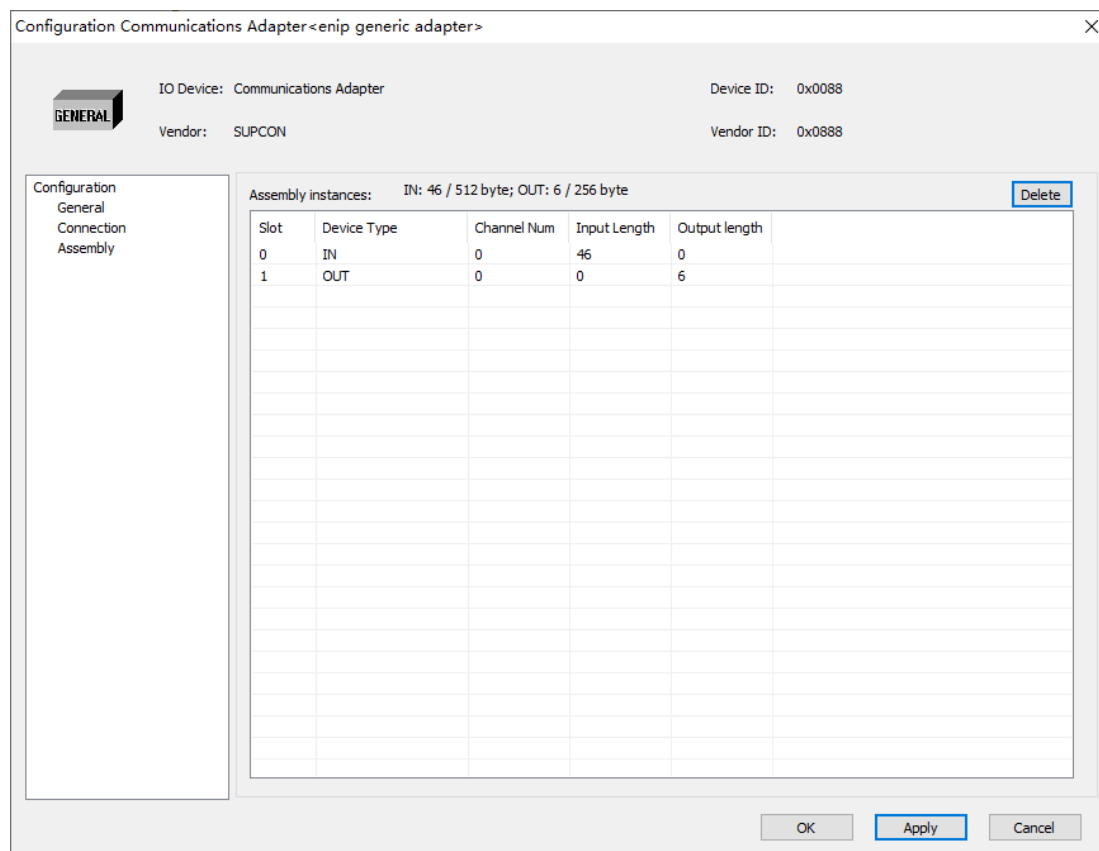
**Figure 5-15 Configure IP address**

4. In the connection configuration interface, the Instance ID corresponds to the Assembly Instance in the EtherNet/IP Memory Map on the Turck WEB interface. The data exchange cycle can be set in "Packet Rate in milliseconds".



**Figure 5-16 Connection configuration window**

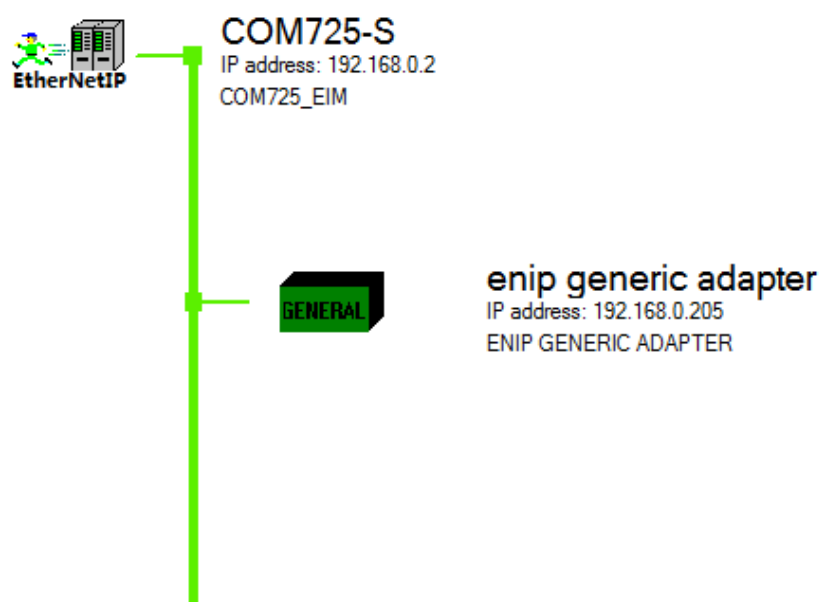
- In the Assembly interface, add two slots (IN and OUT). Input Length and Output Length are twice the Size value in the EtherNet/IP Memory Map on the Turck web client.



Connection	Assembly Instance	Size (in words)
Input	103	23
Output	104	3

**Figure 5-17 Assembly window**

- Save the configuration and close the interface, and configure the tags and download the configuration (see Tag Configuration and Compile and Download).
- After the configuration download is completed, open the CIPCon software and open debug mode. If the interface is similar to the following figure, it means that the configuration is successful, and the module is normally conducting real-time data exchange.



*Figure 5-18 Debugging is normal*

## 5.5 Notes on Redundancy Configuration:

- The COM725 redundant modules use the same configuration file. The third section of the right module IP equals 1 plus that of the left module. For example, if the IP address of the left module is 192.168.0.2, the IP address of the right module is 192.168.1.2.  
The address of the device connected to the left module is 192.168.0.205, while the address of the device connected to the right module is 192.168.1.205. The left module IP is configured in the High-performanceHMI software.
- The left and right EtherNet/IP communication modules of the Turck Remote IO device need to be configured separately. And you have to ensure that all configurations of them except for the IP address are exactly the same. Otherwise, there may be situations where redundancy switching cannot be performed and the redundant module does not transmit data.
- In the CIPCon configuration method, the left communication module of the Turck device should be configured with an IP of 192.168.0.205 and connected to the left COM725 module. The right communication module of the Turck device should be configured with an IP of 192.168.1.205 and connected to the right COM725 module.

## Section 6 Revision

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*Table 6-1 Retrofit list of the version*

Document Version	Applicable Module Model	Remarks
V1.0 (20230301)	OMC High-performanceHMI V4.70.00.00	First version
V1.1 (20230830)	OMC High-performanceHMI V5.10.00.00-M	Updated screenshots. Added Rockwell Device Use Guide and Turck Remote IO Device Use Guide.