ICP DAS

EIP-2000 FAQ

FAQ Version 1.5

ICP DAS Co., Ltd.

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Q1：How to connect to the Allen-Bradley PLC？

A1：It is tested and confirmed that the EIP-2000 can be connected to the Allen-Bradley™ ControlLogix Logix 5563 through the 1756-ENBT ControlLogix EtherNet/IP Module successfully. The configuration software is RSLogix 5000. Please follow the steps below:

1. Open RSLogix 5000 and create a new project.



Figure1-1. Create a new project.

2. Select the PLC type and give the project a name.

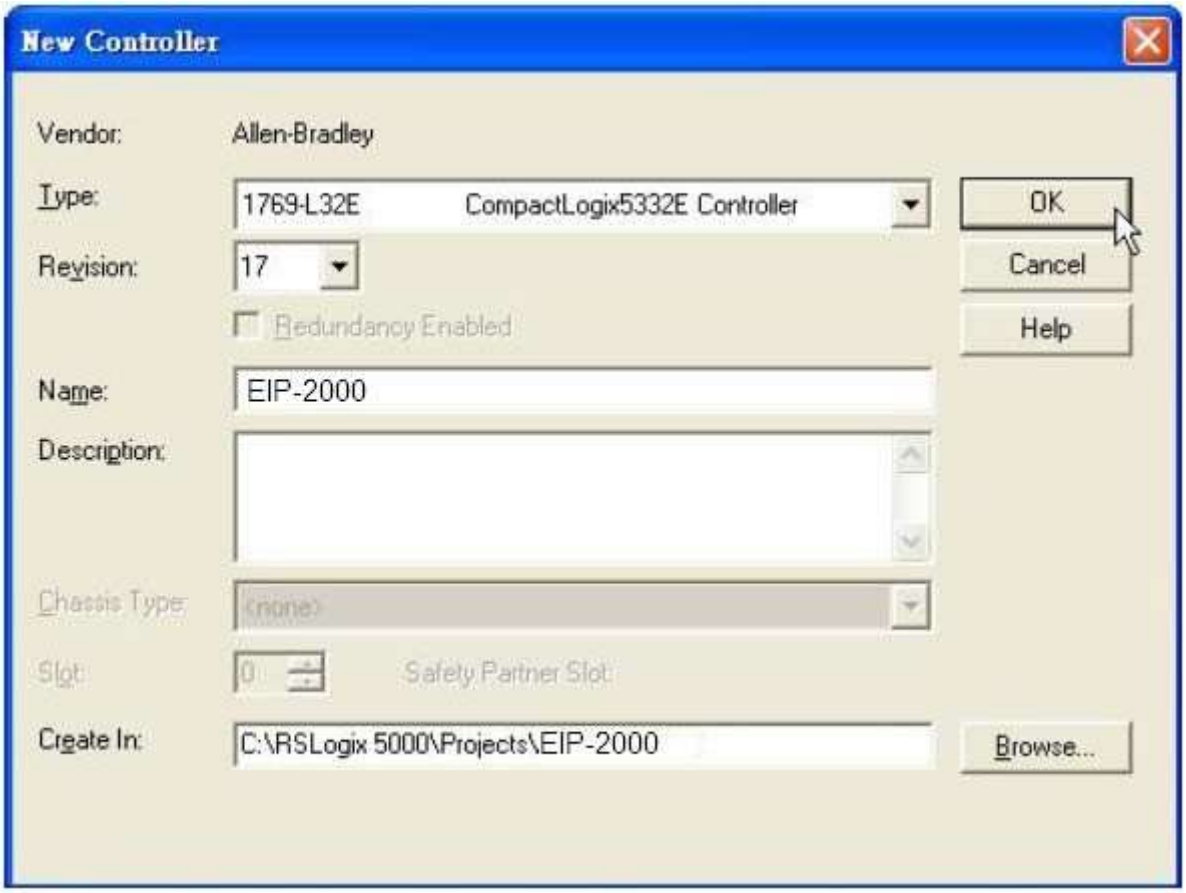


Figure1-2. Set the PLC type and project name.

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3. Create a new module in the “Ethernet” item.

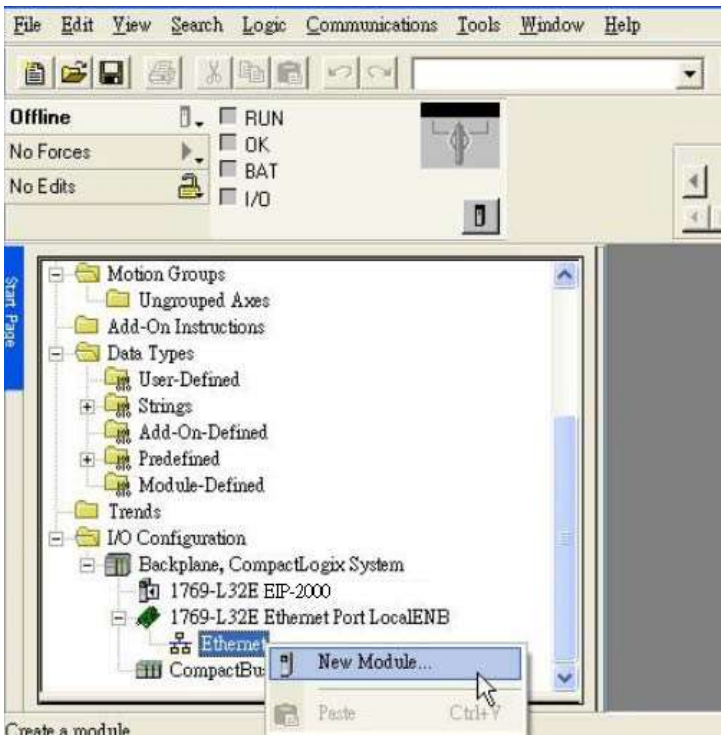
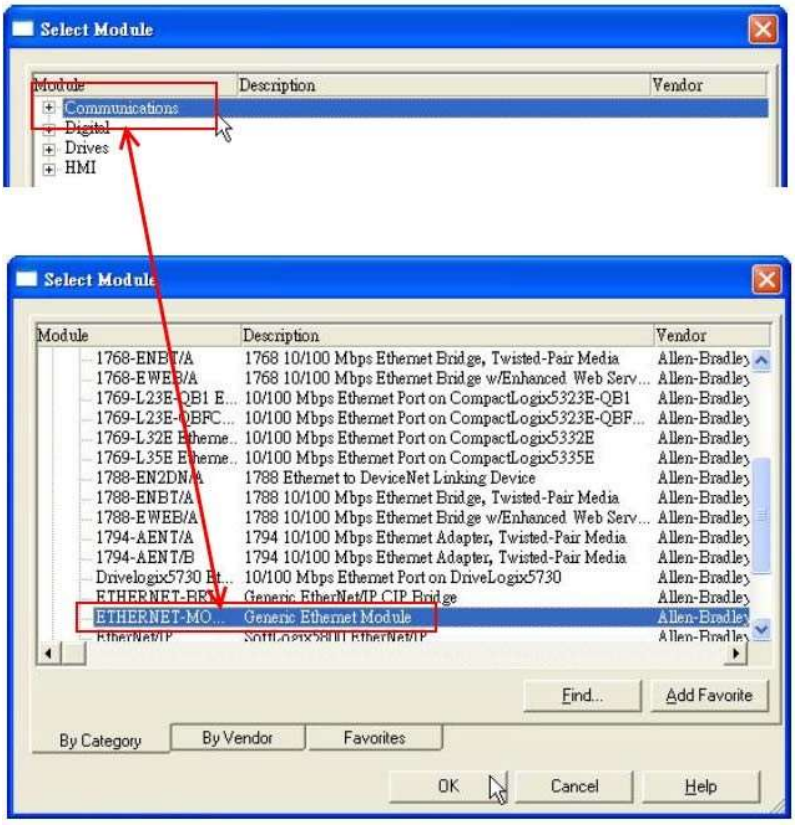


Figure 1-3. Create a new module.

4. Select the “ETHERNET-MODULE” below “Communications” in the Select Module window.



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Figure1-4. Select “ETHERNET-MODULE”.

5. Configure the new module parameters. The I/O length of new module must be the same with the length of EIP-2000 I/O data. The data assembly please refer to Table 1-1 and the instance ID please refer to Table 1-2.

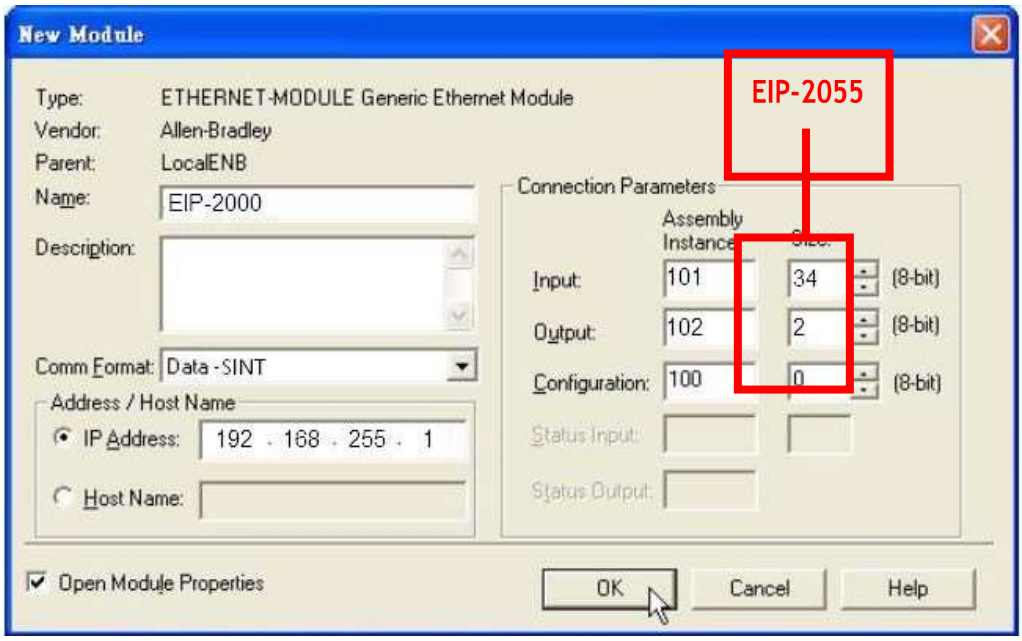


Figure1-5. The settings of EIP-2055

Table 1-1. Data Assembly of EIP-2000

Module	Data Assembly	Byte count	Description
EIP-2055	**Input Assembly**	34	1st Byte: DI status
			2nd Byte: DO status read back
			3rd~34th Byte: DI counters
	Output Assembly	2	1st Byte: DO status
			2nd Byte: to set DI counters zero
EIP-2060	**Input Assembly**	26	1st Byte: DI status
			2nd Byte: DO status read back
			3rd~26th Byte: DI counters
	Output Assembly	2	1st Byte: DO status
			2nd Byte: to set DI counters zero
EIP-2042	**Input Assembly**	2	1st Byte: DO status read back (DO0~DO7).
			2nd Byte: DO status read back (DO8~DO15).
	Output Assembly	2	1st Byte: DO status (DO0~DO7).
			2nd Byte: DO status (DO8~DO15).

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EIP-2051	**Input Assembly**	66	1st Byte: DI status(DI0~DI7).
			2nd Byte: DI status(DI8~DI15).
			3rd~65th Byte: DI counters.
	Output Assembly	2	1st Byte: to set DI counters zero (DI0~DI7).
			2nd Byte: to set DI counters zero (DI8~DI15).
EIP-2017	**Input Assembly**	53	1st ~ 16th Byte: AI status(AI0~7) for DIFF. or S.E. mode.
			17nd ~ 32th Byte: AI status(AI8~15) for S.E. mode only.
			33rd ～40th Byte: AI Type Code (AI0～AI7) for DIFF. or S.E. mode.
			41st ～48th Byte: AI Type Code (AI0～AI7) for S.E. mod only. mode only.
			49th Byte: AI filters status.
			50th Byte: Channel mode status.
			51st Byte: AI representation.
			52nd Byte: Channel selection (AI0～AI7).
			53rd Byte: Channel selection (AI8～AI15).
	Output Assembly	22	1st Byte: Set value to the module.
			2nd ~ 17th Byte: Set type code to AI0~AI15.
			18th Byte: Filter selection of AI
			19th Byte: Channel mode selection DIFF. or S.E.
			20th Byte: AI representation
			21th Byte: AI channel selection (AI0 ~AI7)
			22th Byte: AI channel selection (AI8 ~AI15)
EIP-2019	**Input Assembly**	20	1st ~ 16th Byte: AI status(AI0~AI7).
			17nd ~ 18th Byte: The Brocken wire status.
			19rd ~ 20th Byte: CJC status.
	Output Assembly	21	1st Byte: Set value to the module.
			2nd ~ 7th Byte: Set type code to Ch0~Ch7.
			8th Byte: Filter selection of AI
			9th Byte: Wire break detector
			10th Byte: AI representation
			11th Byte: Select AI channel to be short
			12th Byte: CJC switch
			13th Byte: CJC increment
			14th ~ 21th Byte:CJC Offset

Table 1-2. Instance ID table of EIP-2000

Implicit Message Information of EIP-2000		
Instance	**Instance ID**	**Data length**

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Input(T->O)	65_{hex}(101)	Depends on modules. e.g.34(EIP-2055)
Out(O->T)	66_{hex}(102)	Depends on modules. e.g.2(EIP-2055)
Configuration	64_{hex}(100)	

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Q2：How to use EDS file of EIP-2000 series？

A2：EDS file is a convenient way to make the connection between EtherNet/IP Scanner and Adapter. All the EIP-2000 series EDS file can be download on our website:

http://www.icpdas.com/products/Remote_IO/can_bus/EtherNet_IP_series.htm

We provide the connection steps of Hilscher CIFX 50-RE with EIP-2055 EDS file. The configuration software is SYNCON.net. Please refer to the steps below：

1. Open SYNCON.net and create a new project.

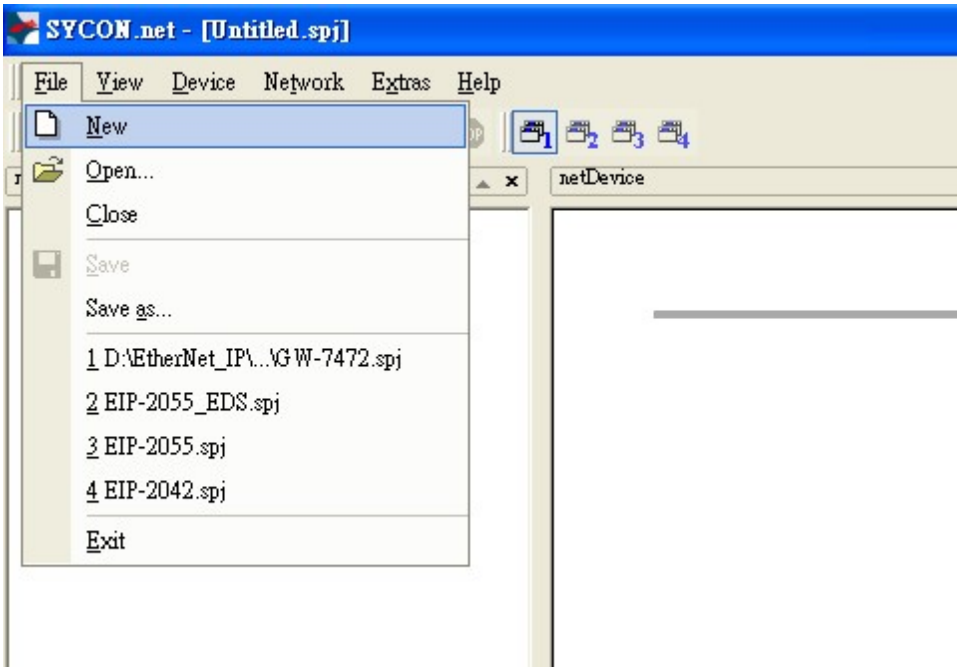


Figure2-1 Create a new project.

2. To find the “CIFX RE/EIM” item below “EtherNet/IP -> Master”, and drag the “CIFX RE/EIM” to the busline.

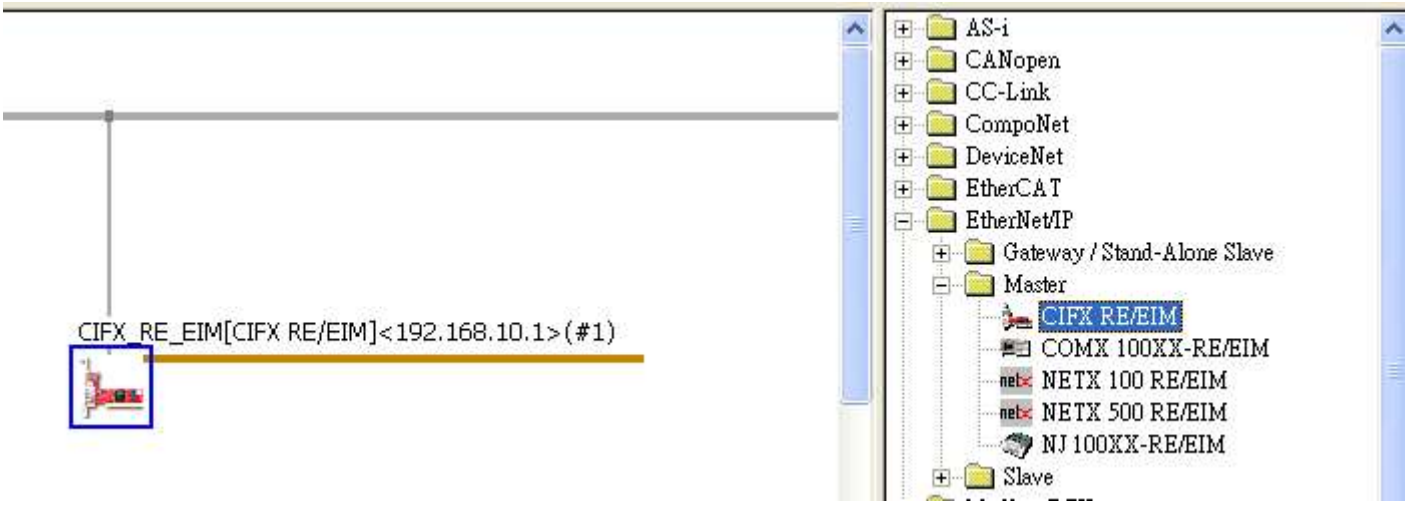


Figure2-2 Select CIFX RE/EIM

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3. Click “Network” and select “Import Device Descriptions”.

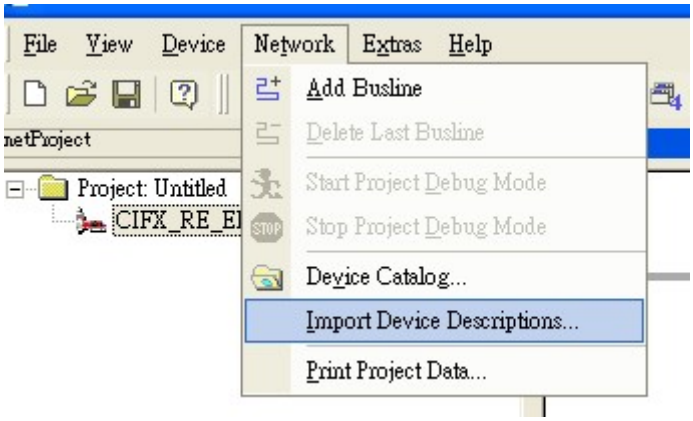


Figure2-3 Import Device Descriptions

4. To select the EDS file you download on our website of CD.



Figure2-4 Select EDS file

5. To find the “EIP-2055 EDS V1.1” item below “EtherNet/IP -> Slave”, and drag the “EIP-2055 EDS V1.1” to the busline.



Figure2-5 EIP-2055 EDS

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6. To configure CIFX RE/EIM and EIP-2055 in the same network area.

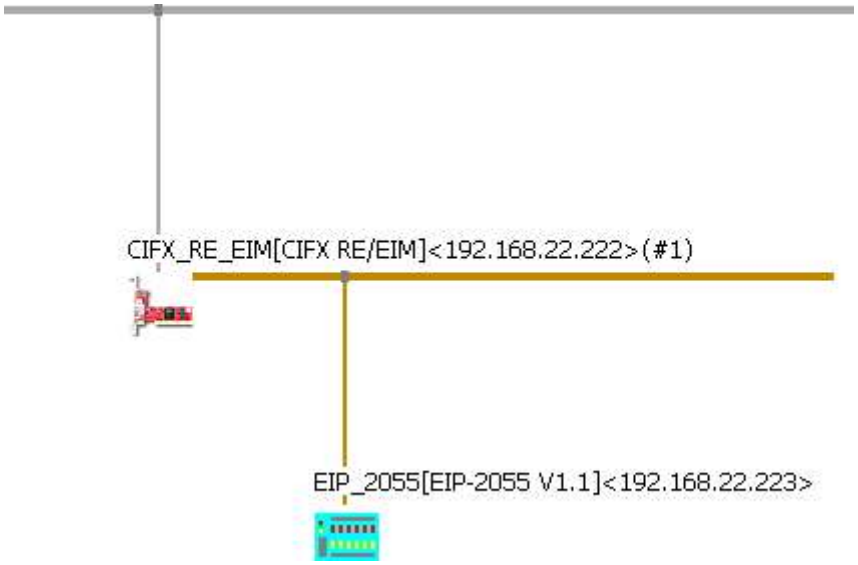


Figure2-6 Network Settings

7. Right click the CIFX_RE/EIM and click “Download”.

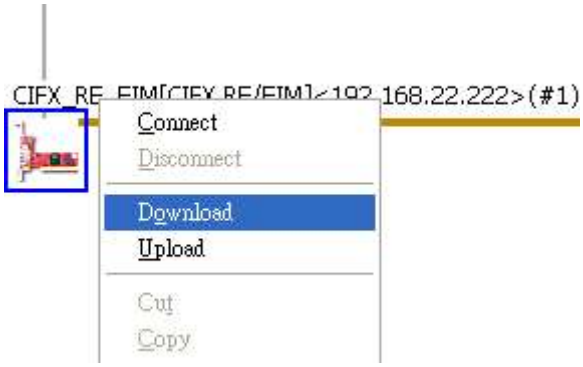


Figure2-7 Download configurations.

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8. Right click the CIFX_RE/EIM again and click “Start Communication”.

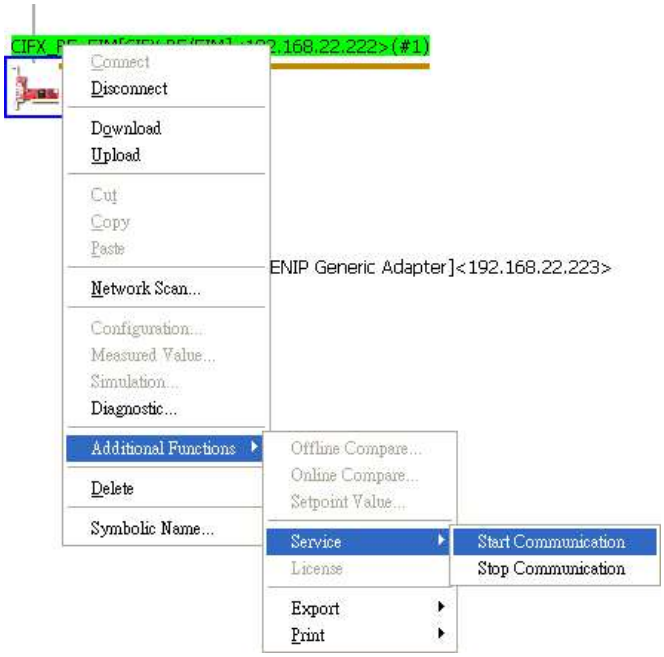


Figure2-8 Start Communication

9. The communication is complete. You can observe the I/O status on the Diagnostic window.

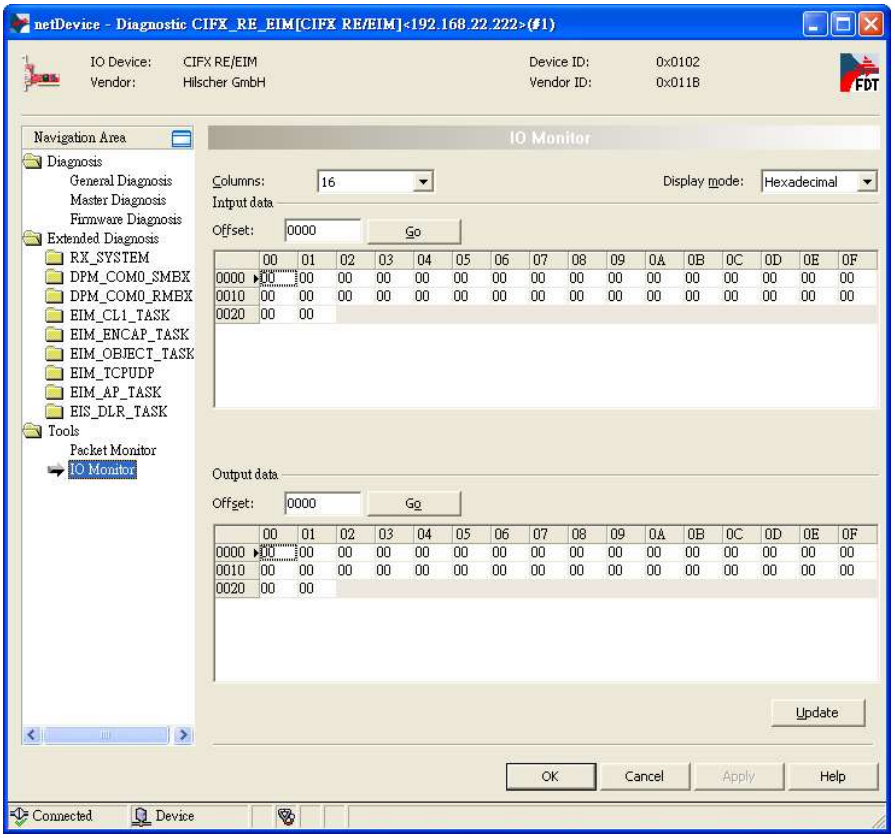


Figure2-9 I/O status observation

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Q3: When I click the “Network Scan” button, and it pop-up a “Can not find any module” window. What should I do?

A3: Please follow these tips to solve the problem.

(1) Disable your anti-virus and the firewall.

(2) Connect to your EIP-2000 directly with an Ethernet cable.

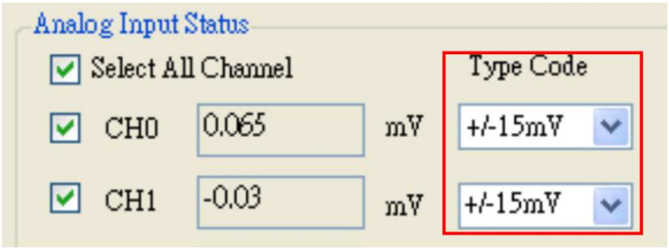
(3) Disable ALL your Wi-Fi adapter and another Ethernet adapter that doesn’t connect with your EIP-2000.

(4) Run the EIP-2000 Utility with the system Administrator.

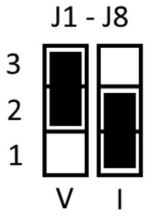
Q4: The AI status we get from the EIP-2017/EIP-2019 is different with the real AI value. How do I solve this problem?

A4: Please follow these tips to solve the problem.

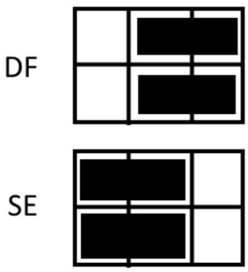
(1) Please check the jumpers. The jumpers must be at the right position.



If the AI type of the channel that you want to get AI status is the voltage type, the jumper must be at the voltage position. If you want to get the current type, the jumper must be at the current position.



Users can check the connection mode when they use the EIP-2017. If the users get the connection mode of the module is Single-Ended(SE) from Utility, they must to select the jumper at SE position. If the setting is Differential(DF), the jumper must at the DF position.

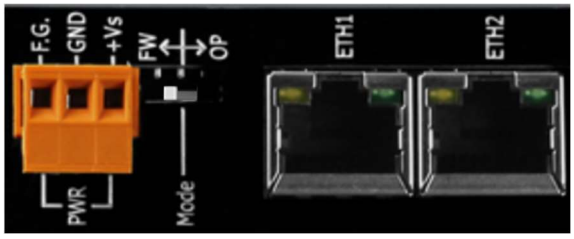


(2) Please update the firmware to the later of v1.6.

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Q5: If I forget the IP address of the EIP-2000 modules, how do I search them?

A5: Users can return to the factory default. Please select to the FW mode then reboot.



Connect to the EIP module with Ethernet cable directly. The EIP-2000 module factory default value is

Parameters	Factory Default Value
IP	192.168.255.1
Subnet Mask	255.255.0.0
Gateway	192.168.0.1

Please set the IP address in 192.168.255.xx, then scan the module with the EIP-2000 Utility.

Q6: I can't update the firmware with the Utility, how should I do?

A6: Please try the following tips,

(1) Disable the firewall and anti-virus.

(2) Connect the module directly without Ethernet switch.

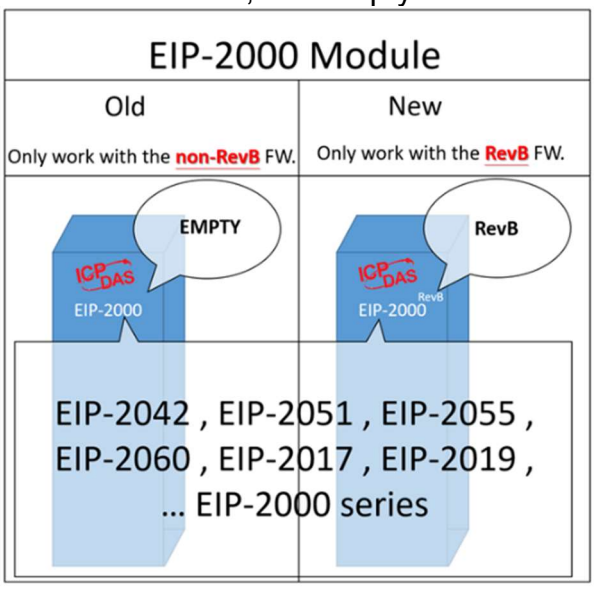
(3) Disable the Wi-Fi adapters and any other Ethernet interfaces.

(4) The firmware file (.dat file) is saved in the path that includes illegal characters, for example, “/_.)&-+!...”, space, Chinese, etc.

(5) The IP address of PC (laptop) is not in the same network area of the module. (The IP address of PC must be the same with the factory settings of EIP modules)

Q7: How to know the version of EIP-2000 modules hardware?

A7: There is a mark on the front side of the case to distinguish non-RevB and RevB.
The case with “RevB” means the RevB version, and empty means “non-RevB” version.



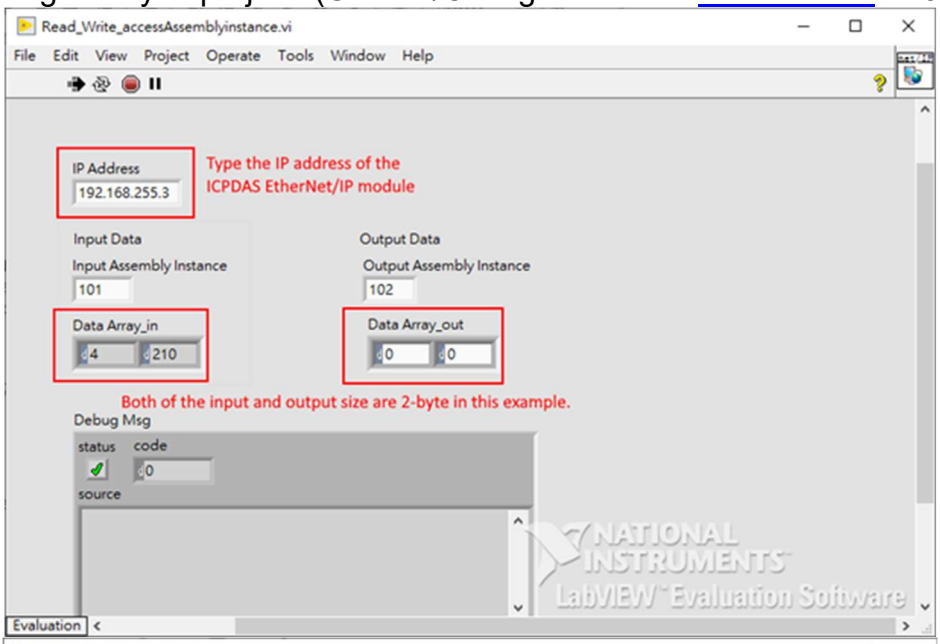
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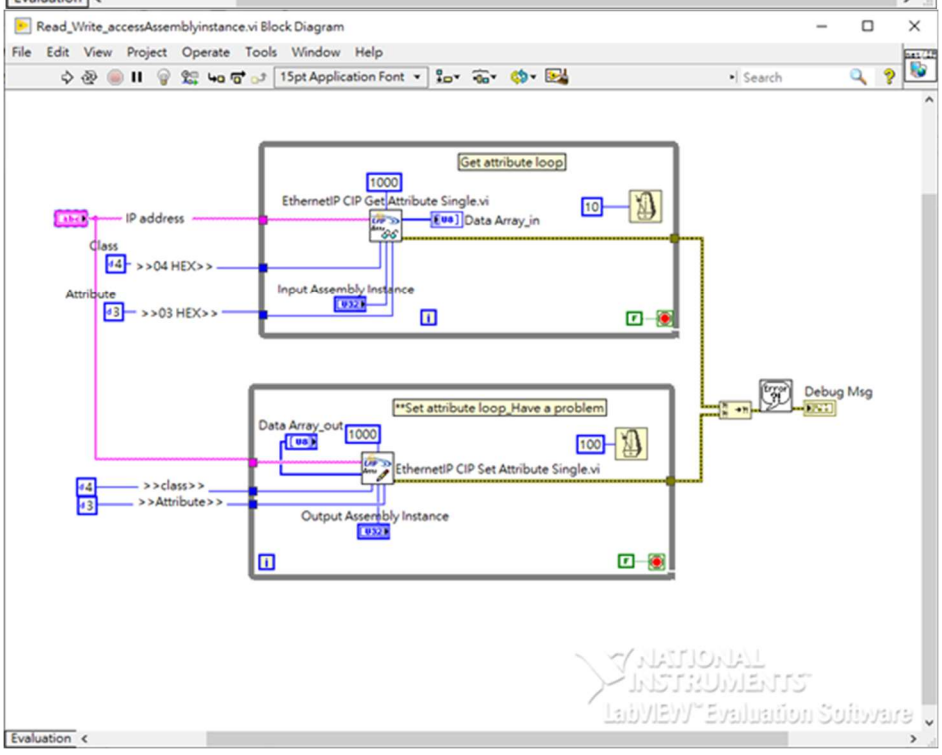
Q8: How to find the compatible FW for EIP-2000 modules?

A8: Refer to “ **Download Center** ” -> “ **FirmWare** ” list and find the compatible FW.
Warning: If you download the incompatible FW to the module, it may occur something uncertain error.

Q9: Is there any LabVIEW sample to EIP-2000 modules?

A9: Refer to “ **Download Center** ” -> “ **Utility & Tools** ”-> “Read_Write_accessAssemblyinstance.vi”
The LabVIEW project is built by the NI-EtherNet/IP driver.
Please upgrade or download the driver form this link.
https://www.ni.com/zh-tw/support/downloads/drivers/download.ni-industrial-communications-for-ethernet-ip.html#305843
Please resize I/O length for you project. (Check I/O length from the user manual P49)





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Q10: What is an EDS file?

A10: When using the CIP protocol of the ODVA organization, it is necessary to write a description file for the device that supports the CIP network so that other devices in the CIP network can recognize the device. This description file is called EDS (Electronic Data Sheet: electronic data files). It can be connected with EtherNet/IP devices of other brands through EDS files.

Q11: Where can I download the EDS file of EIP-2000?

A11: On the module page, click Download Center->Firmware, and select the EDS file of the module.

Q12: What is the Instance ID of EIP-2000 series?

A12: Instance and Instance ID are described in the table below.

Instance	Instance ID	Data length
Input (T -> O)	65 hex (101)	依模組而定
Output (O -> T)	66 hex (102)	依模組而定
Configuration	64 hex (100)	

Q13: What is the data length of the EIP-2000 series?

A13: Refer to the table below.

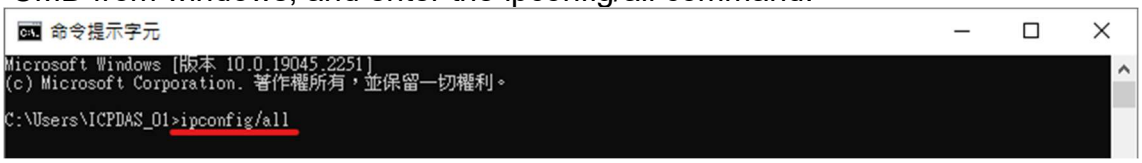
Module	Data Assembly	Byte Count	Description
EIP-2042	Input Assembly	2	1st Byte: DO status read back (DO0~DO7)
			2nd Byte: DO status read back (DO8~DO15)
	Output Assembly	2	1st Byte: DO status (DO0~DO7)
			2nd Byte: DO status (DO8~DO15)
EIP-2051	Input Assembly	66	1st Byte: DI status (DI0~DI7)
			2nd Byte: DI status (DI8~DI15)
			3rd ~ 65th Byte: DI counters
	Output Assembly	2	1st Byte: to set DI counters zero (DI0~DI7)
			2nd Byte: to set DI counters zero (DI8~DI15)
EIP-2055	Input Assembly	34	1st Byte: DI status
			2nd Byte: DO status read back
			3rd ~ 34th Byte: DI counters
	Output Assembly	2	1st Byte: DO status
			2nd Byte: to set DI counters zero
EIP-2060	Input Assembly	26	1st Byte: DI status
			2nd Byte: DO status read back
			3rd ~ 34th Byte: DI counters
	Output Assembly	2	1st Byte: DO status
			2nd Byte: to set DI counters zero

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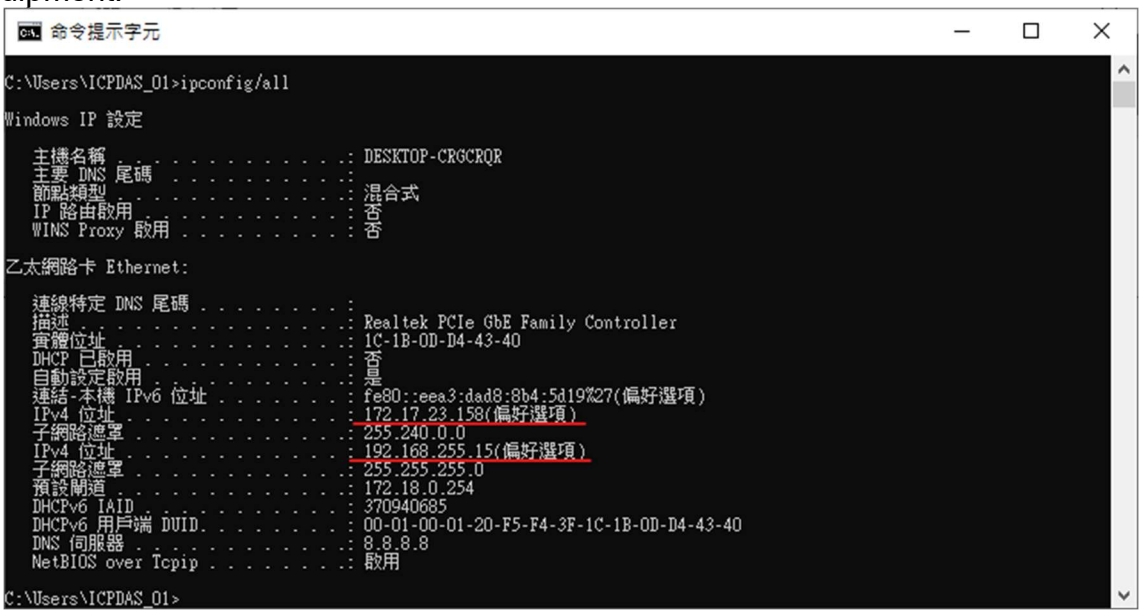
Q14: I can ping the EIP-2000 module, but I cannot use the EIP-2000 Utility for setting and communication testing. How to solve this problem?

A14：According to the following steps, confirm whether the PC has multiple IPs (EIP-2042, the device IP address is: 172.17.23.42 demonstration).

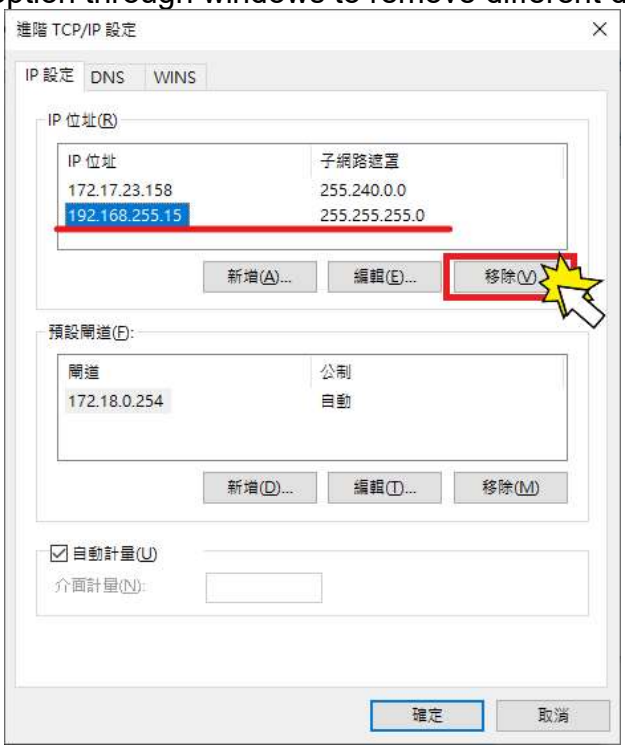
(1). Open the CMD from windows, and enter the ipconfig/all command.



(2). After the input is completed, it will display which IPs are currently on the PC. If there are multiple IPs on the PC, first reserve the same network domain as the EIP-2000 series to set the EIP-2000 series equipment.

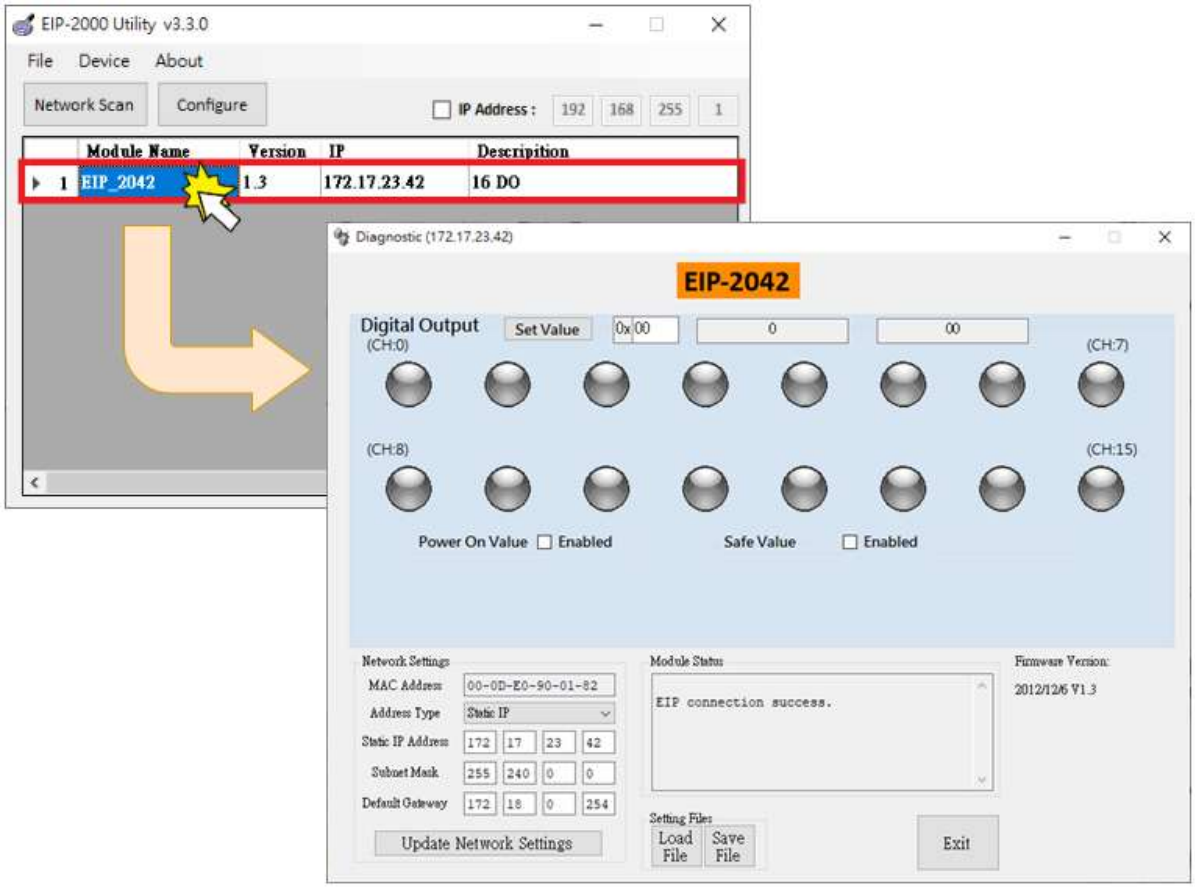


(3). Change the interface card option through windows to remove different domains.



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(4). After removing the different network domains, you can use EIP-2000 Utility to configure the device.



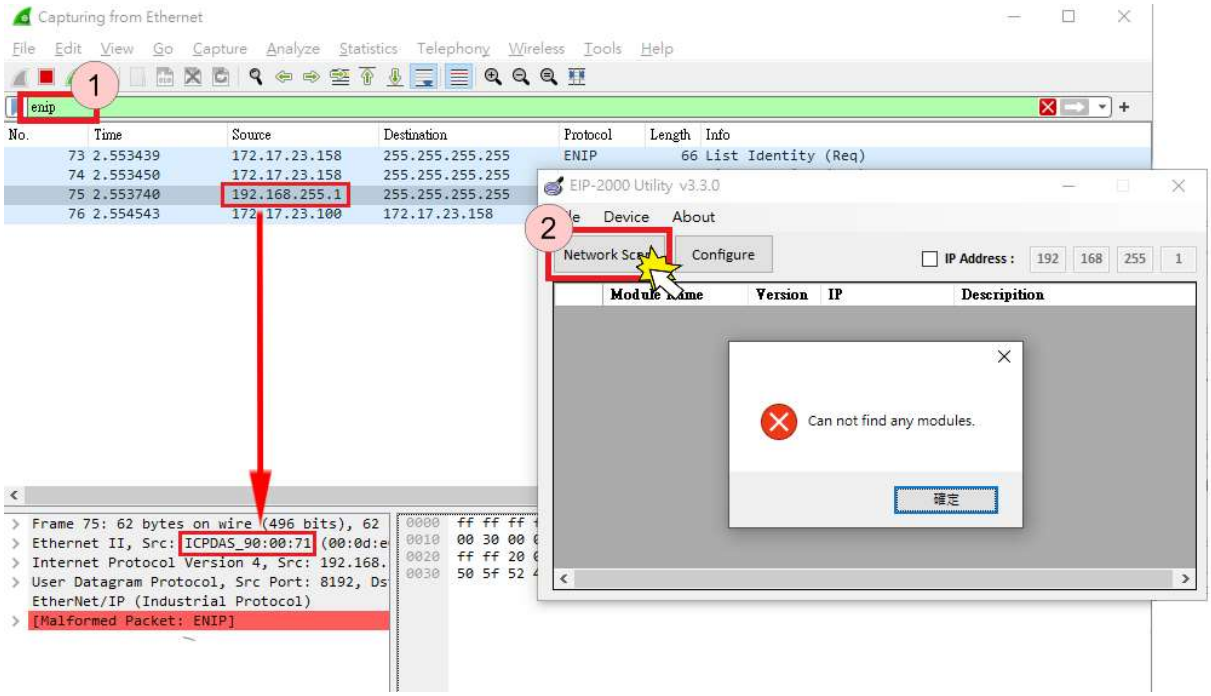
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Q15: If I forget the network settings of the EIP-2000 module, besides restoring the original factory settings, is there any other solution?

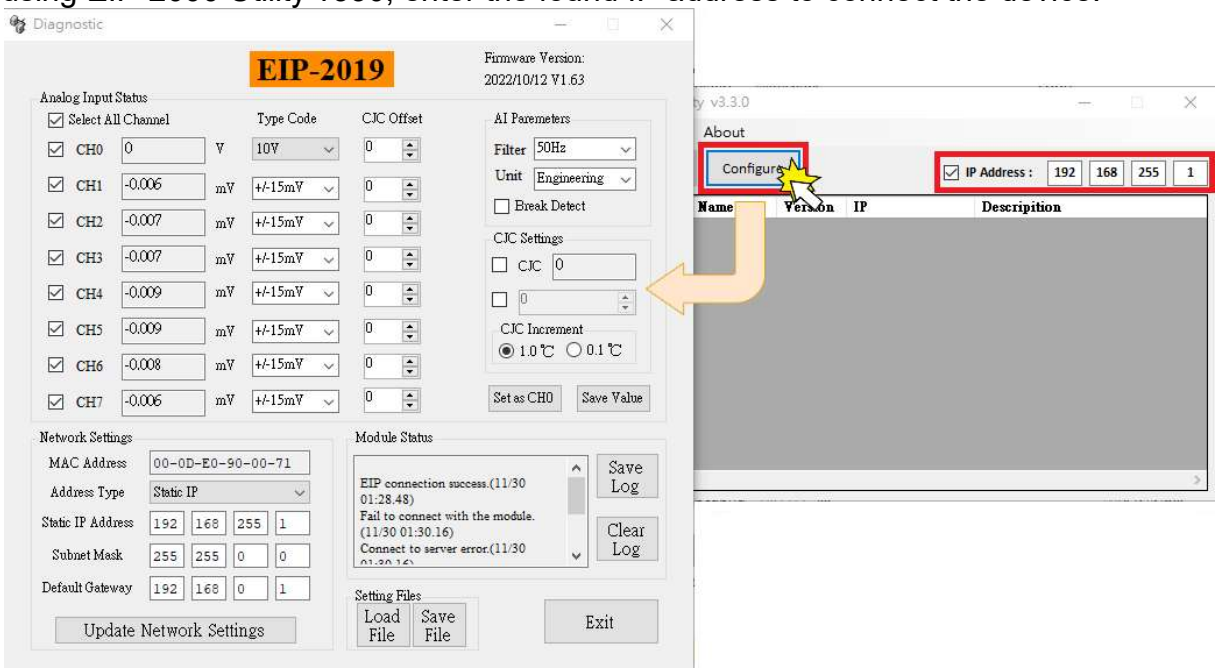
A15：You can find the EIP-2000 module through Wireshark, and connect the module directly through EIP-2000 Utility v330 or a newer version of Utility.

EIP-2000 Utility download：http://www.icpdas.com/tw/download/show.php?num=4842
Wireshark download：https://www.wireshark.org/download.html

(Use EIP-2019 for demonstration)
(1). Enter the **enip** command in the filter field in Wireshark.
(2). Press Network Scan of Utility.
(3). Wireshark will display the scanned Ips.
(4). Confirm which IP address Source is ICPDAS.



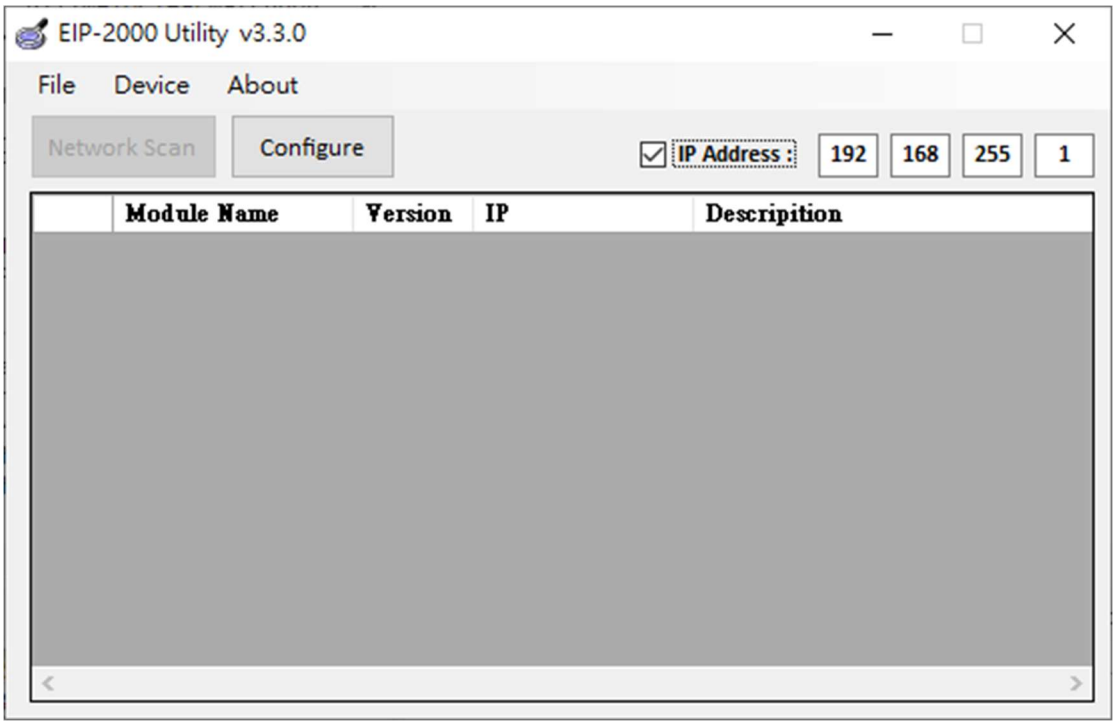
(5). When using EIP-2000 Utility v330, enter the found IP address to connect the device.



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Q16: When I cannot use the EIP-2000 Utility to scan the button, how can I configure or test the connection of the EIP-2000 module?

A16：After the EIP-2000 Utility v330 version, the function of direct connection to the EIP-2000 module will be provided. Users can directly input the IP address of the EIP-2000 module for setting and connection testing, without closing the firewall and Antivirus software to scan the connection information of the EIP-2000 module.



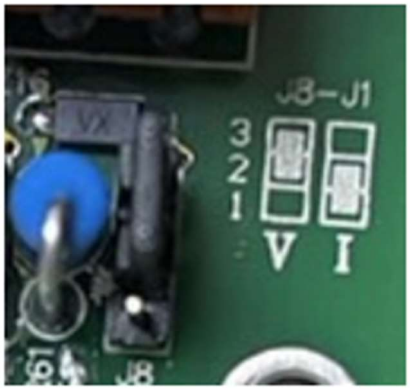
Q17: I can't measure the current value when I change EIP-2017 to the Single-Ended mode. What can I do?

A17：The external resistor is required. Please check the wire-connection and its internal jumpers.

(1) The jumper is in the SE mode.

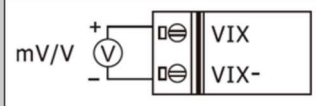
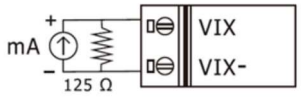
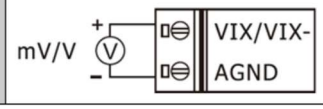
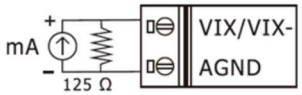


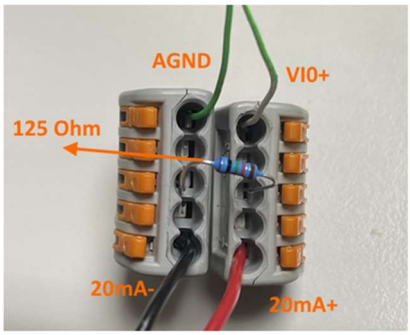
(2) Because of the external resistor, all the channel jumper is in voltage mode.



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(3) The external resistor is wired between VIx and AGND.

AI	Voltage Input Wiring	Current Input Wiring
DIFF.		
S.E.		



(4) The current can be observed by the Utility.

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