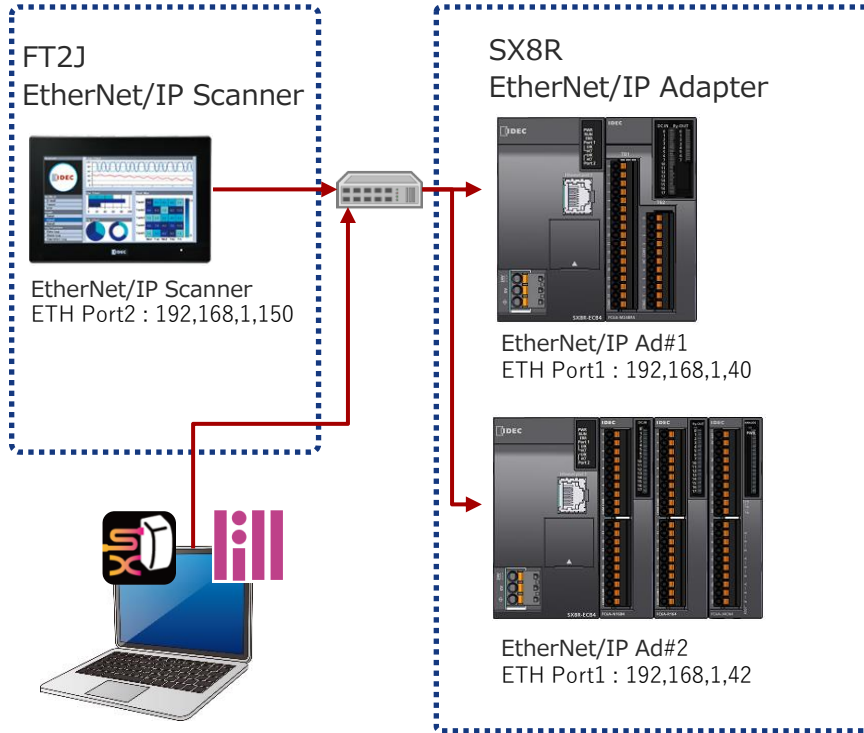


# FT2J and SX8R: EtherNet/IP protocol

Step1: Define shared memory allocation between scanner and adapter according to remote IO system configuration

## System Configuration



## Shared memory setting

EtherNET/IP Scanner FT2J			
D0	←		
D1			
D2	→		
D3			
D100	←		
D101			
D102			
D103			
D104			
D105			
D106			
D107			
D108			
D109			
D110	→		
D111			

EtherNET/IP Ad#1			
Status	2 byte	SX8R-ECB4	
INPUT	2 byte	FC6A-M24BR1	Slot #1
Control	2 byte	SX8R-ECB4	
OUTPUT	2 byte (1byte Reserved)	FC6A-M24BR1	Slot #1

EtherNET/IP Ad#2			
Status	2 byte	SX8R-ECB4	
INPUT	2 byte	FC6A-N16B4	Slot #1
AD Ch.0	DATA 2 byte	FC6A-J4CN4	Slot #3
	Status 2 byte		
AD Ch.1	DATA 2 byte		
	Status 2 byte		
AD Ch.2	DATA 2 byte		
	Status 2 byte		
AD Ch.3	DATA 2 byte		
	Status 2 byte		
Control	2 byte	SX8R-ECB4	
OUTPUT	2 byte	FC6A-R164	Slot #2

## Step2: Configure communication settings for SX8R (EtherNet/IP Adpter#1) using SX8R Configurator

1

Click the Read Module Configuration button to read the connected IO module configuration. (The IO module must be connected to the SX8R and the PC must be connected to the SX8R with a LAN cable.)

Project.mcp - SX8R Configurator

File Online English

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Module Configuration Basic Settings

Verify Read Module Configuration

Total Lateral Dimension: Approximately 96.4mm

Digital Input Module  
Digital Output Module  
Digital Mixed I/O Module  
Analog I/O Module  
Expansion Interface Module

SX8R-ECB4

Configure

Mode : Edit

2

3

4

5

2 Sets the administrative name of the SX8R Remote IO system. The maximum number of characters is 16. Alphabets, numbers, and symbols may be used.

3 Set the IP address of Ethernet Port 1 /2.

4 Select EtherNet/IP Adaptor from the Communication Mode pull-down menu.

5 Write and read passwords can be set for SX8R setting data. Since we are not setting passwords this time, we will turn off the check box for password setting.

Project.mcp - SX8R Configurator

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Module Configuration Basic Settings EtherNet/IP Adaptor

Name: EtherNet/IP Ad#1

IP Settings

Ethernet Port 1:

IP Address: 192.168.1.40

Subnet Mask: 255.255.255.0

Default gateway: 0.0.0.0

Ethernet Port 2:

IP Address: 192.168.1.41

Subnet Mask: 255.255.255.0

Default gateway: 0.0.0.0

Connection

No.	Communication Mode	Interface	Port Number	Access	Allow Access by IP Address
1	EtherNet/IP Adaptor	Port 1	2222		
2	Modbus TCP Server				
3	EtherNet/IP Adaptor				
4	CCLink IE Field Basic Slave Unused				
4	Maintenance Communication Server				

Password

Download Password

password:

Upload Password

password:

Confirm Password:

Self Diagnostic

Turn off digital output when communication timeout occurs

Turn off analog output when communication timeout occurs

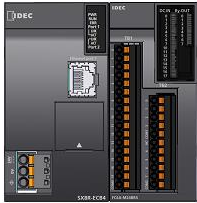
Analog I/O Module Status

Include status of analog inputs in shared memory

Include status of analog outputs in shared memory

Mode : Edit

Step3: Check the address allocation of the EtherNet/IP shared memory in SX8R (EtherNet/IP Adpter#1)



EtherNET/IP Ad#1			
Status	2 byte	SX8R-ECB4	
INPUT	2 byte	FC6A-M24BR1	Slot #1
Control	2 byte	SX8R-ECB4	
OUTPUT	2 byte (1byte Reserved)	FC6A-M24BR1	Slot #1

Project.mcp - SX8R Configurator

File Online English

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Online

Module Configuration Basic Settings **EtherNet/IP Adaptor**

**Shared Memory**

IN (T->O):

Slot	I/O Module	Device Address	Description	Offset (Bytes)	Size (Bytes)
0	SX8R	D8020	System Status		0 2
1	FC6A-M24BR4	I0000 - I0017			2 2
Total					4

OUT (O->T):

Slot	I/O Module	Device Address	Description	Offset (Bytes)	Size (Bytes)
0	SX8R	D8021	Upper Controller Control Register		0 2
1	FC6A-M24BR4	Q0000 - Q0007	Reserved area		2 2
Total					4

Save Shared Memory list Save EDS file

Mode : Edit 135%

1 Select the EtherNet/IP Adpter tab and check the address allocation of the shared memory.

2 Click on the Save Shared Memory List button to save the file as an image file.EDS files can be saved, but for this setup procedure, we will use the EDS files available on IDEC's EC site.

## Step4: Download the setting data to SX8R (EtherNet/IP Adpter#1)

**1** Download the setting data to the SX8R from the Download menu.

**2** Click the Download button to start downloading to SX8R.

**3** If the download is successful, a completion screen will pop up. Click the OK button to complete.

The screenshots show the 'Project.rmcip - SX8R Configurator' interface. The first screenshot shows the 'Download' button in the top toolbar being highlighted with a red arrow and the number 1. A red callout box contains the text: 'Download the setting data to the SX8R from the Download menu.' The second screenshot shows a 'Download' dialog box with a table of network adapters. A red arrow and the number 2 point to the 'Download' button at the bottom of the dialog. A third red arrow and the number 3 point to the 'OK' button on a smaller completion dialog box that has appeared over the main dialog. A red callout box contains the text: 'If the download is successful, a completion screen will pop up. Click the OK button to complete.'

Name	IP Address	Port Number	MAC Address
EtherNet/IP Ad#1	192.168.1.40	2102	00:03:7B:AC:00:44

## Step5: Configure communication settings for SX8R (EtherNet/IP Adpater#1) using SX8R Configurator

1

Click the Read Module Configuration button to read the connected IO module configuration.  
(The IO module must be connected to the SX8R and the PC must be connected to the SX8R with a LAN cable.)

2

3

4

5

2 Sets the administrative name of the SX8R Remote IO system. The maximum number of characters is 16. Alphabets, numbers, and symbols may be used.

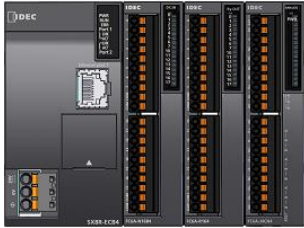
3 Set the IP address of Ethernet Port 1 /2.

4 Select EtherNet/IP Adpater from the Communication Mode pull-down menu.

5 Write and read passwords can be set for SX8R setting data. Since we are not setting passwords this time, we will turn off the check box for password setting.

No.	Communication Mode	IP Address	Port Number	Access	Allow Access by IP Address
1	EtherNet/IP Adaptor	192.168.1.42	2222		
2	Modbus TCP Server	255.255.255.0			
3	EtherNet/IP Slave	0.0.0.0			
4	CC-Link IE Field Basic Slave	192.168.1.43			
	Unused	255.255.255.0			
	Maintenance Communication Server	0.0.0.0			

Step6: Check the address allocation of the EtherNet/IP shared memory in SX8R (EtherNet/IP Adpater#1)



The screenshot shows the 'EtherNet/IP Adaptor' configuration window. A red box labeled '1' points to the 'Shared Memory' tab. A callout box says: 'Select the EtherNet/IP Server tab and check the address allocation of the shared memory.'

Slot	I/O Module	Device Address	Description	Offset (Bytes)	Size (Bytes)
0	SX8R	D8020	System Status	0	2
1	FC6A-N16B4	I0000 - I0017		2	2
3	FC6A-J4CN4	D0040	AI0:Data	4	2
		D0041	AI0:Status	6	2
		D0042	AI1:Data	8	2
		D0043	AI1:Status	10	2
		D0044	AI2:Data	12	2
		D0045	AI2:Status	14	2
		D0046	AI3:Data	16	2
		D0047	AI3:Status	18	2
				Total	20

Slot	I/O Module	Device Address	Description	Offset (Bytes)	Size (Bytes)
0	SX8R	D8021	Upper Controller Control Register	0	2
2	FC6A-R164	Q0000 - Q0017		2	2
				Total	4

At the bottom of the window, a red box labeled '2' points to the 'Save Shared Memory list' button. A callout box says: 'Click on the Save Shared Memory List button to save the file as an image file. EDS files can be saved, but for this setup procedure, we will use the EDS files available on IDEC's EC site.'

EtherNET/IP Ad#2				
Status	2 byte	SX8R-ECB4		
INPUT	2 byte	FC6A-N16B4	Slot #1	
AD Ch.0	DATA 2 byte	FC6A-J4CN4	Slot #3	
	Status 2 byte			
AD Ch.1	DATA 2 byte			
	Status 2 byte			
AD Ch.2	DATA 2 byte			
	Status 2 byte			
AD Ch.3	DATA 2 byte			
	Status 2 byte			
Control	2 byte	SX8R-ECB4		
OUTPUT	2 byte	FC6A-R164	Slot #2	

## Step7: Download the setting data to SX8R (EtherNet/IP Adpter#2)

**1** Download the setting data to the SX8R from the Download menu.

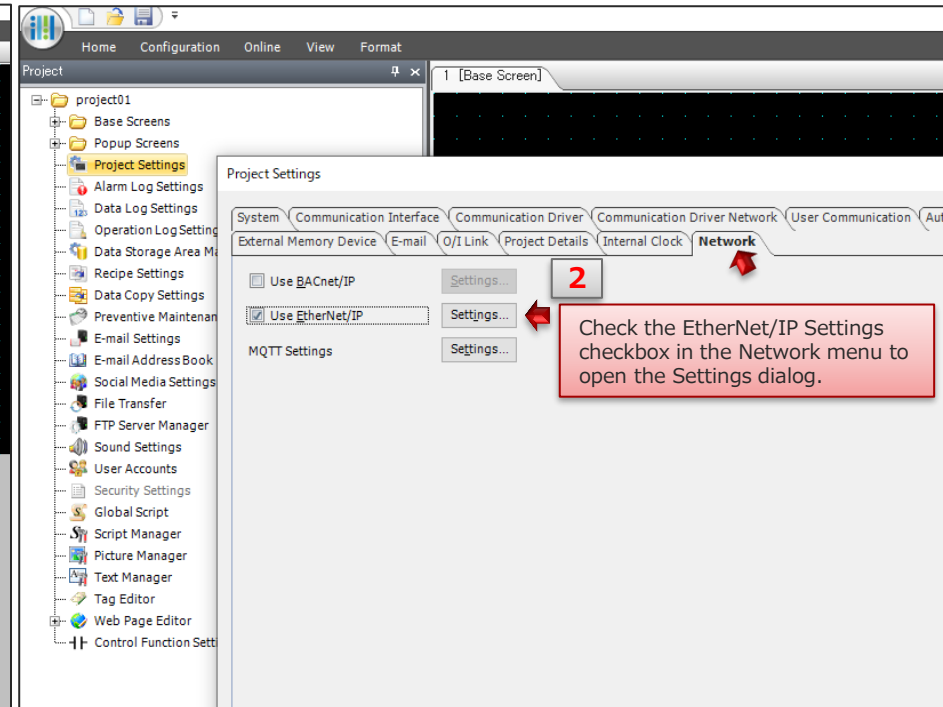
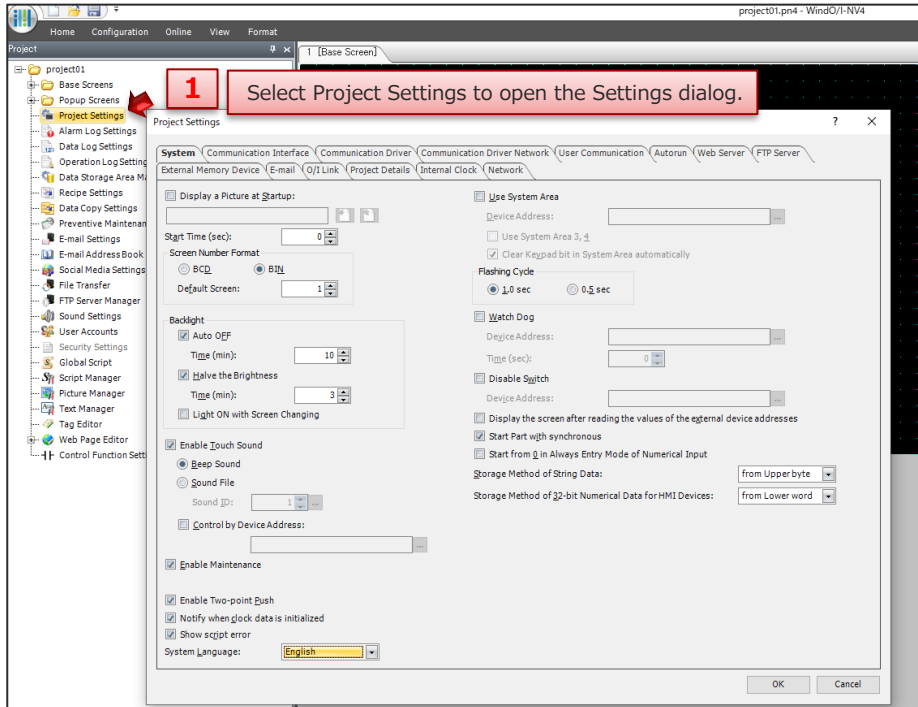
Name	IP Address	Port Number	MAC Address
EtherNET/IP Ad#2	192.168.1.42	2102	00:03:7b:f0:17:44

**2** Click the Download button to start downloading to SX8R.

**3** If the download is successful, a completion screen will pop up. Click the OK button to complete.



## Step8: Configure communication settings for FT2J (EtherNet/IP Scanner) using WindO/I-NV4



Step9: Download the EDS file from the IDEC EC site and import the EDS file into WindO/I-NV4

1

Right-click on the EDS Management menu and turn on the Import button. Turn ON EtherNet/IP communication permission to automatic.

2

Select the SX8R EDS file downloaded from IDEC's EC site.

3

When the EDS file has been imported successfully, a completion dialog box will appear.

## Step10: Add SX8R EDS file to the scan list and configure CIP connection settings for EtherNet/IP Adpter#1

### EtherNet/IP Adapter#1

2

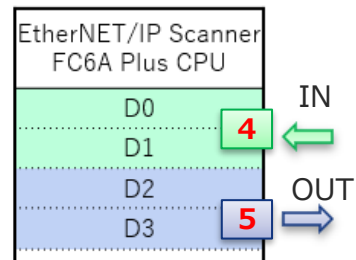
CIP connection settings (control register, first device, size).

Sets the top address of the control register, which occupies 5 words.

Sets the IN data top address and **data size in words** according to the memory map created by the SX8R Configurator.

Sets the OUT data top address and **data size in words** according to the memory map created by the SX8R Configurator.

Shared Memory					
IN (T->O):					
Slot	I/O Module	Device Address	Description	Offset (Bytes)	Size (Bytes)
0	SX8R	D8020	System Status	0	2
1	FC6A-M24BR4	I0000 - I0017		2	2
Total					4
OUT (O->T):					
Slot	I/O Module	Device Address	Description	Offset (Bytes)	Size (Bytes)
0	SX8R	D8021	Upper Controller Control Register	0	2
1	FC6A-M24BR4	Q0000 - Q0007	Reserved area	2	2
Total					4



1

Drag and drop the imported eds file (SX8R-ECBx) and add it to the scan list.

## Step11: Configure target settings for EtherNet/IP Adpter#1 from scanlist

1 Set the Name and IP address set in the SX8R Configurator.

2 Click OK button (1), a warning message will be displayed, but click OK button (2) to complete the setting.

3 Click OK button (1), a warning message will be displayed, but click OK button (2) to complete the setting.

{Warning} Exclusive Owner[IN\_100/OUT\_200]: 'Device Allocation [IN]' is not the size(default) defined in EDS file so that may not con...  
{Warning} Exclusive Owner[IN\_100/OUT\_200]: 'Device Allocation [OUT]' is not the size(default) defined in EDS file so that may not c...

## Step12: Add SX8R EDS file to the scan list and configure CIP connection settings for EtherNet/IP Adpater#2

2

CIP connection settings (control register, first device, size).

**1** Drag and drop the imported eds file (SX8R-ECBx) and add it to the scan list.

**3** Sets the top address of the control register, which occupies 5 words.

**4** Sets the IN data top address and **data size in words** according to the memory map created by the SX8R Configurator.

**5** Sets the OUT data top address and **data size in words** according to the memory map created by the SX8R Configurator.

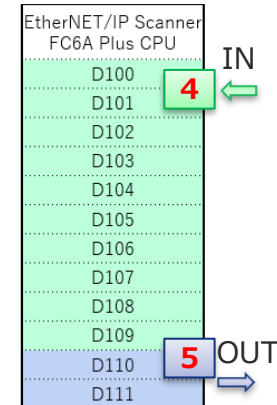
### Shared Memory EtherNet/IP Adapter#2

IN (T->O):

Slot	I/O Module	Device Address	Description	Offset (Bytes)	Size (Bytes)
0	SX8R	D8020	System Status	0	2
1	FC6A-N16B4	I0000 - I0017		2	2
		D0040	AI0:Data	4	2
		D0041	AI0:Status	6	2
		D0042	AI1:Data	8	2
		D0043	AI1:Status	10	2
		D0044	AI2:Data	12	2
		D0045	AI2:Status	14	2
		D0046	AI3:Data	16	2
		D0047	AI3:Status	18	2
Total					20

OUT (O->T):

Slot	I/O Module	Device Address	Description	Offset (Bytes)	Size (Bytes)
0	SX8R	D8021	Upper Controller Control Register	0	2
2	FC6A-R164	Q0000 - Q0017		2	2
Total					4



## Step13: Configure target settings for EtherNet/IP Adpter#1 from scanlist

1

Set the Name and IP address set in the SX8R Configurator.

2

3

Click OK button (1), a warning message will be displayed, but click OK button (2) to complete the setting.

1

FT2J and SX8R: EtherNet/IP communication settings have been completed.