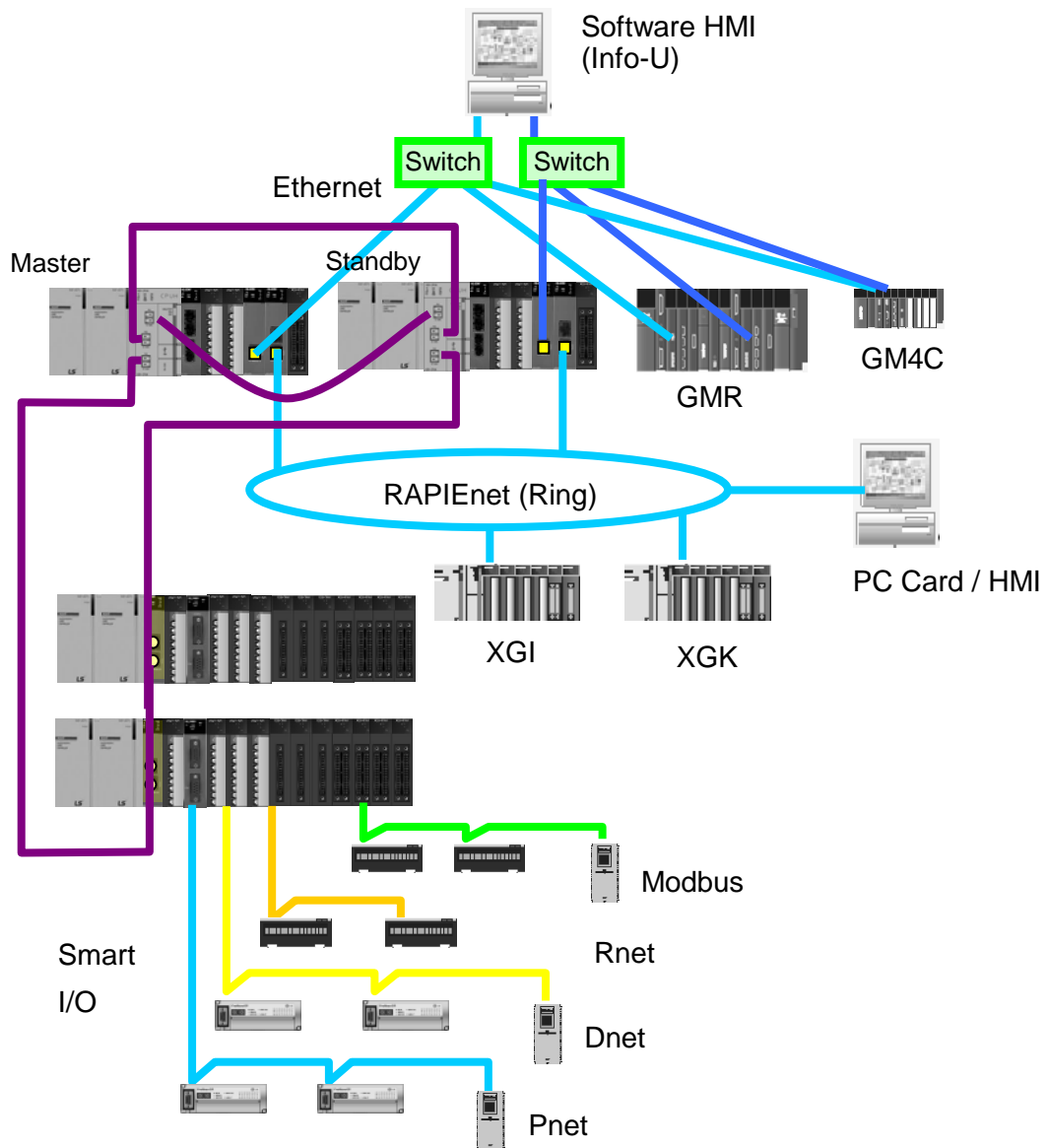


**4.1.7 System configuration using dedicated Ethernet between HMIs, PLCs at XGR system**

For communication with upper system, previous PLC system and other company's controller, Ethernet communication module can be used and For communication with XGT PLC, industrial Ethernet communication can be used to improve the reliability and speed.



[Figure 4.1.8] XGT redundancy system (Between HMIs, PLCs)

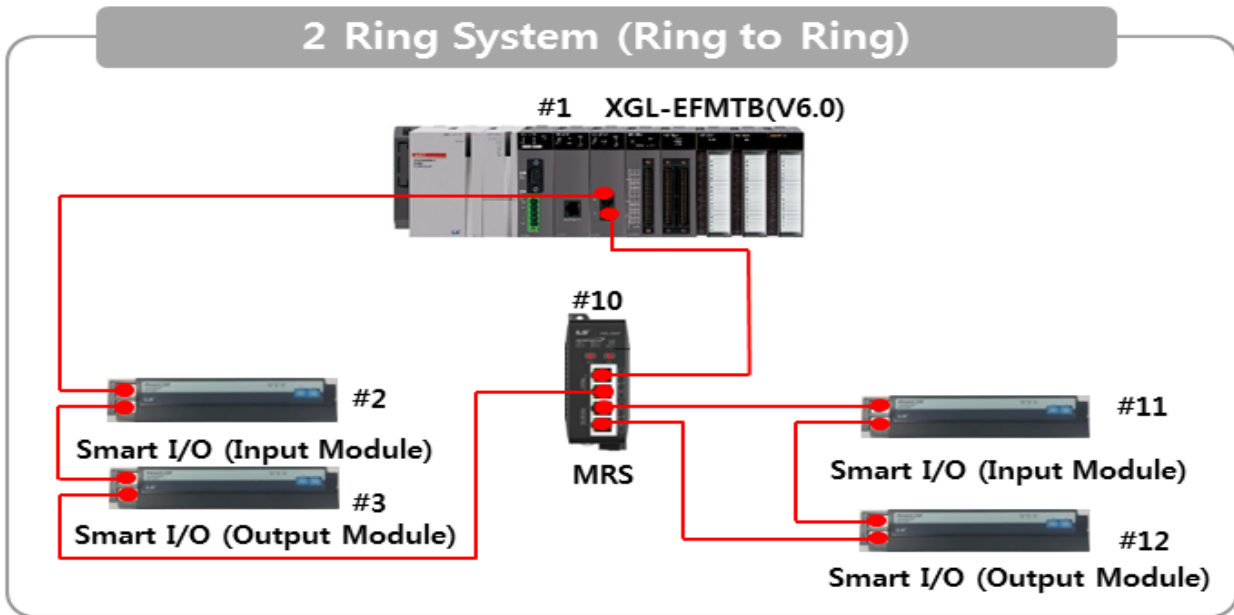
### 4.1.8 Ethernet, RAPIEnet mixed system configuration through MRS (FEnet V6.0 or above and MRS V1.1 or above)

higher level system can be used for Ethernet for devices that require compatibility, such as third-party systems. Ring configuration and communication with Smart I / O can be connected using RAPIEnet protocol.

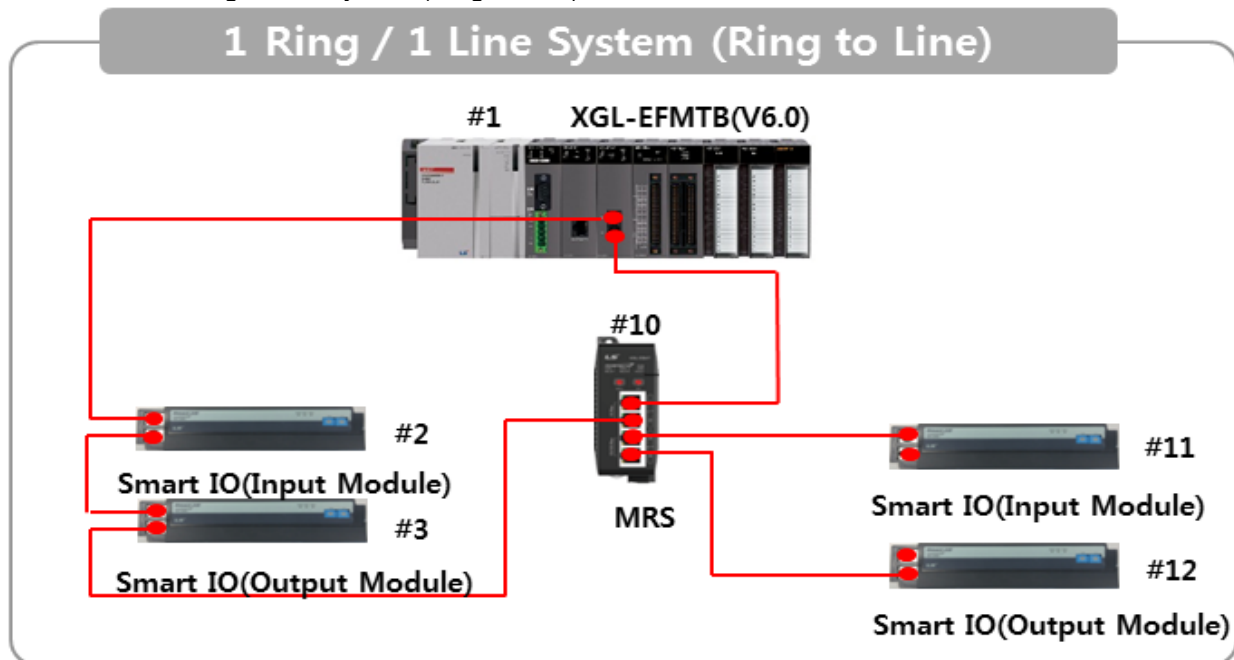
- (1) It is possible to configure various system types by using single type MRS. (Compatibility between RAPIEnet)

 RAPIEnet

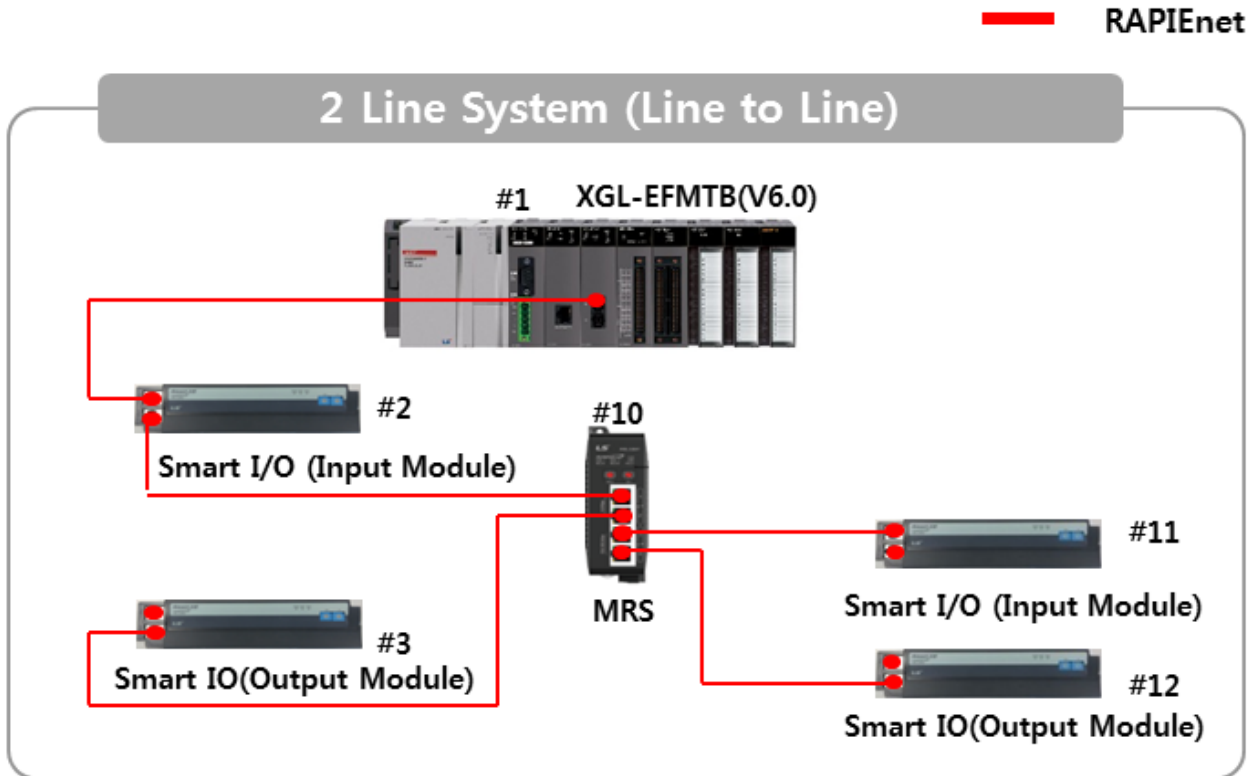
- 1) 2 Ring System (Ring to Ring)



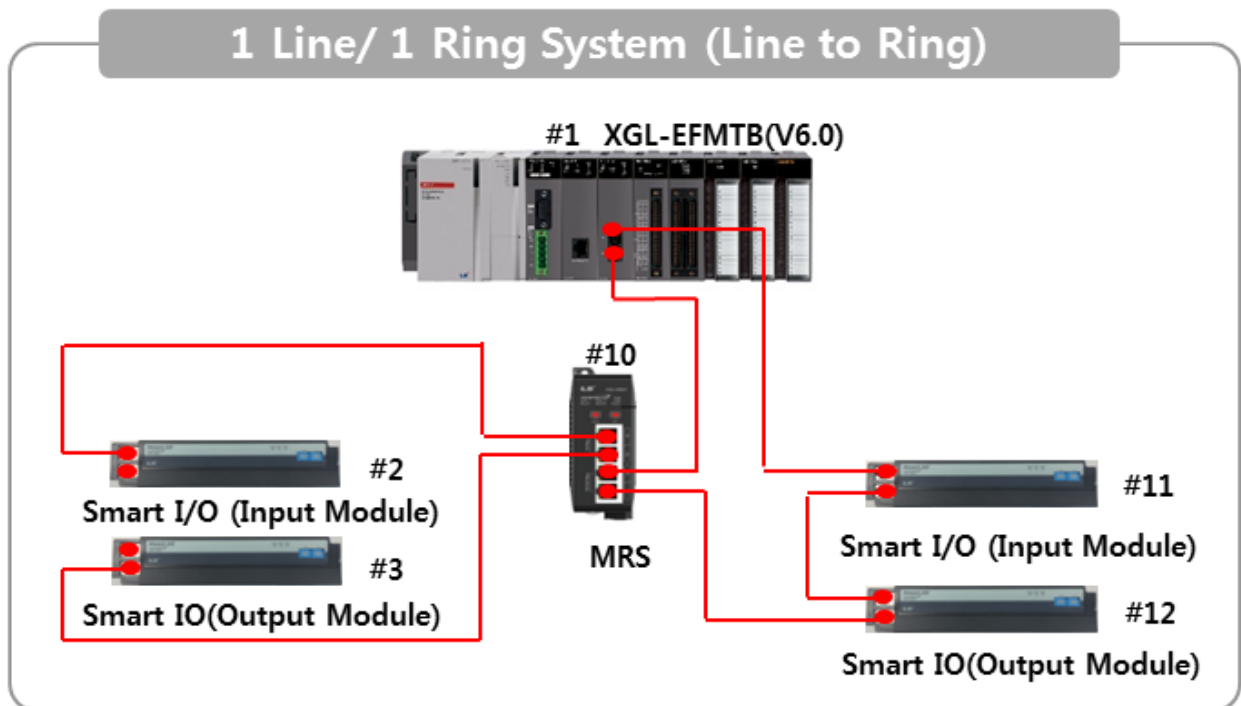
- 2) 1 Ring / 1Line System (Ring to Line)



3) 2 Line System (Line to Line)

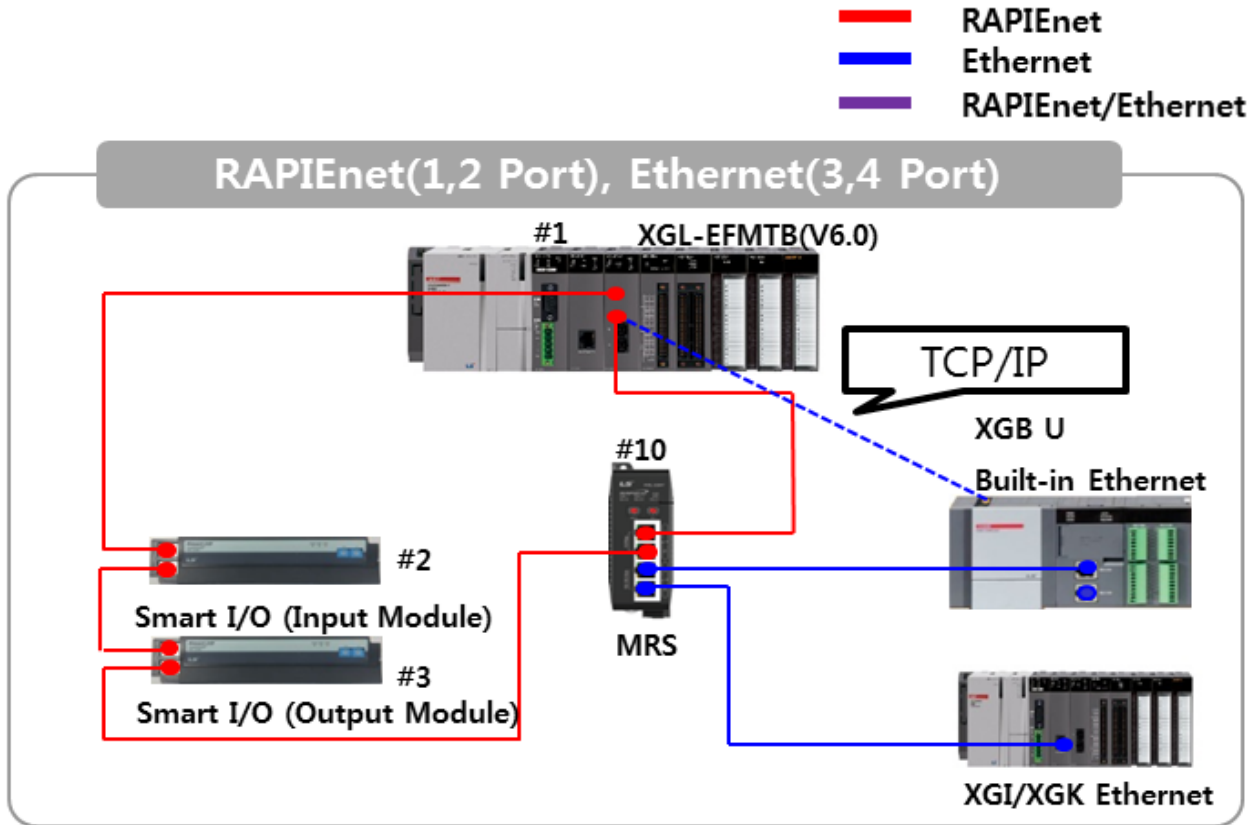


4) 1 Line / 1 Ring System (Line to Ring)

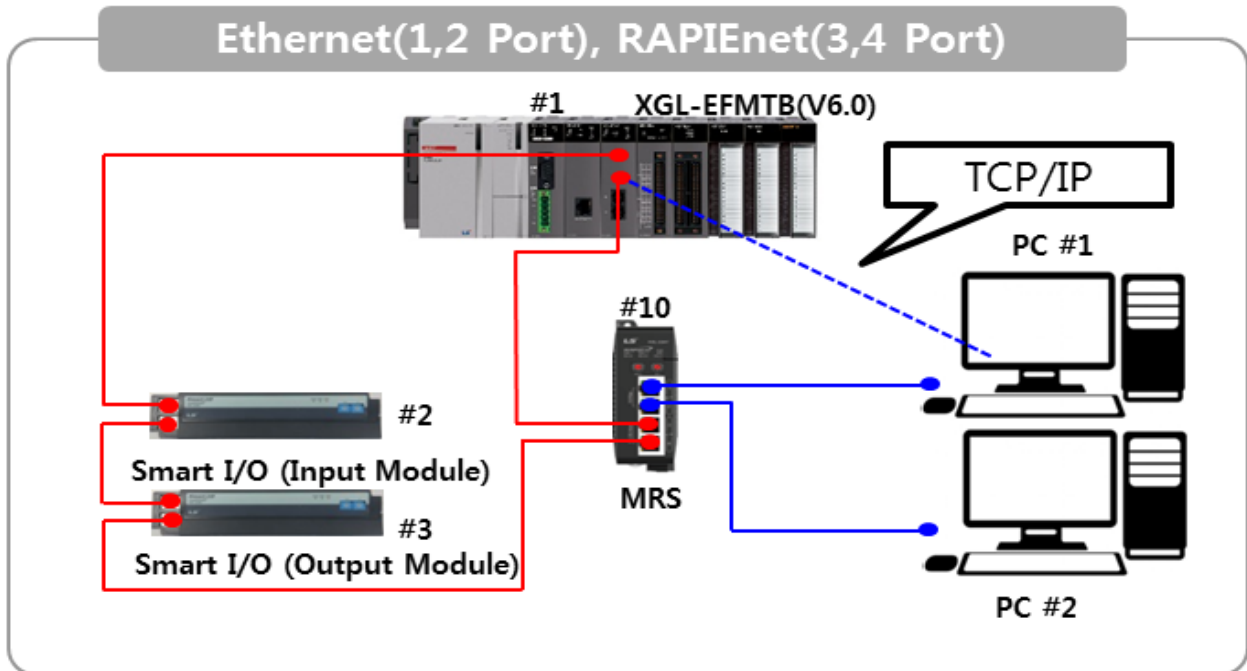


(2) It is possible to configure various system types by using single type MRS.  
 (Commercial Ethernet compatibility)

1) RAPIEnet (1, 2 Port), Ethernet (3, 4 Port)

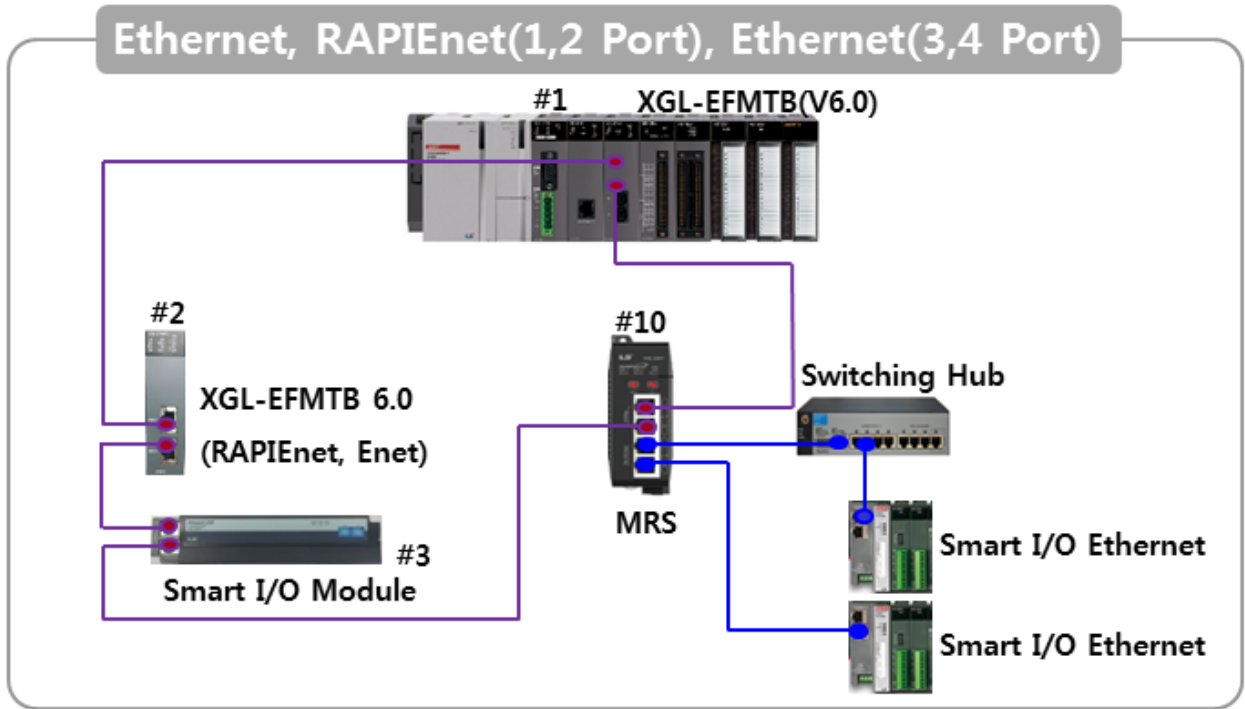


2) Ethernet (1, 2 Port), RAPIEnet (3, 4 Port)

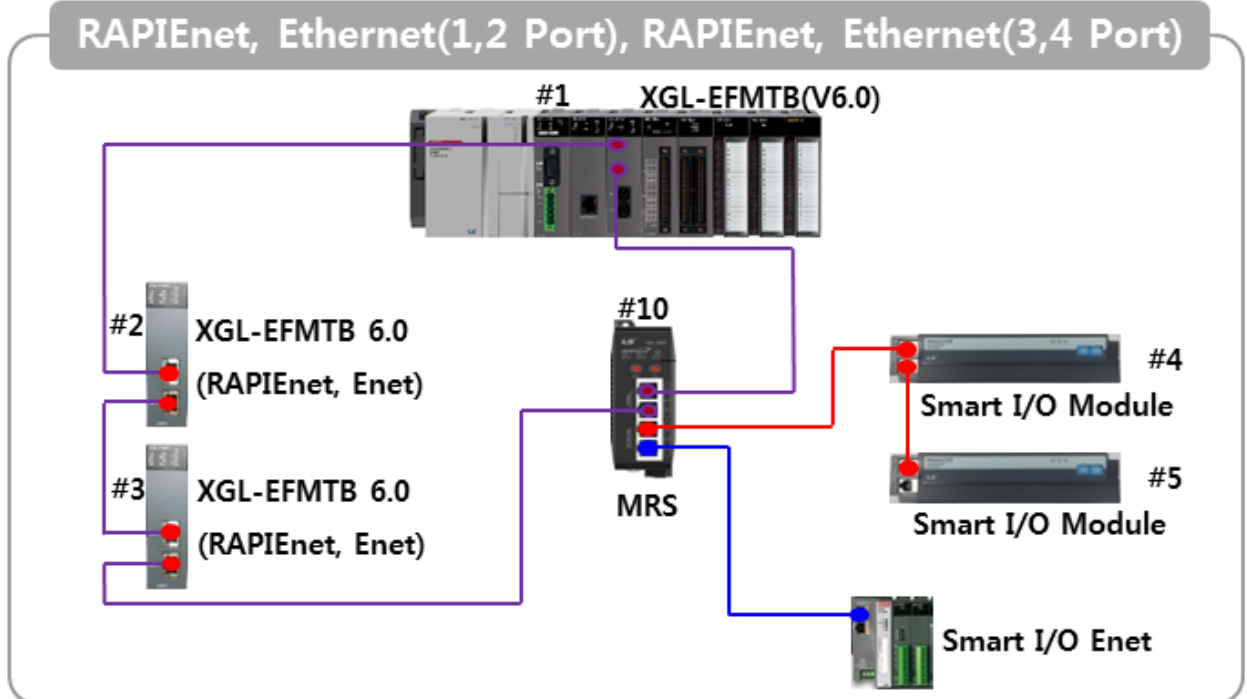


3) Ethernet ,RAPIEnet(1, 2 Port), Ethernet (3, 4 Port)

- RAPIEnet
- Ethernet
- RAPIEnet/Ethernet



4) RAPIEnet, Ethernet (1, 2 Port), RAPIEnet, Ethernet (3, 4 Port)



# Chapter 5 XG5000 Program

In order to operate FEnet I/F module, XG5000, a dedicated S/W for communication modules, must be used to setup or manage parameters of communication modules including FEnet I/F module.

XG5000 is dedicated software to setup parameters and of communication modules such as FEnet, Cnet, DeviceNet and Profibus-DP communication modules, manage and diagnose communication modules.

## 5.1 Introduction

As a basic program tool needed to setup, control and manage the network in Ethernet communication, XG5000 is used to setup and manage all of the communication parameters including system parameters, service parameters, module and network diagnosis, etc.

With regard to Ethernet network, the functions of XG5000 can be mainly classified as follows;

- 1) Basic parameters setting of communication system,
- 2) Parameters setting of communication service (HS link, P2P, dedicated service)
- 3) Diagnosis service for module and network

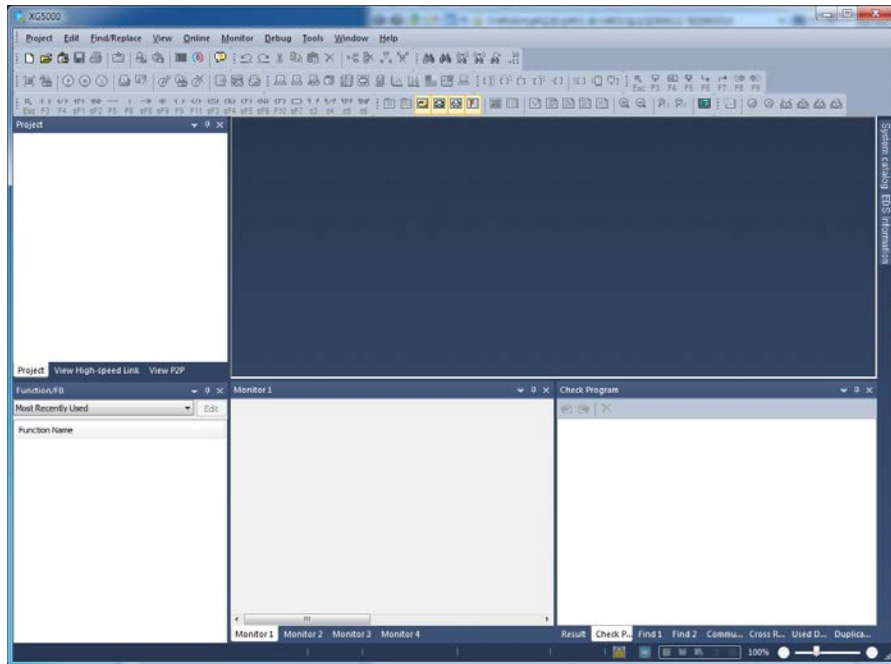
Parameters and files the user has specified can be written (downloaded) on and read (uploaded) from Ethernet communication module through CPU module. Since once downloaded communication system parameters are managed by CPU, they can be directly used without resetting even if a new communication module is installed on the initially specified position.

This chapter will focus on the description of settings necessary for the application of Ethernet module

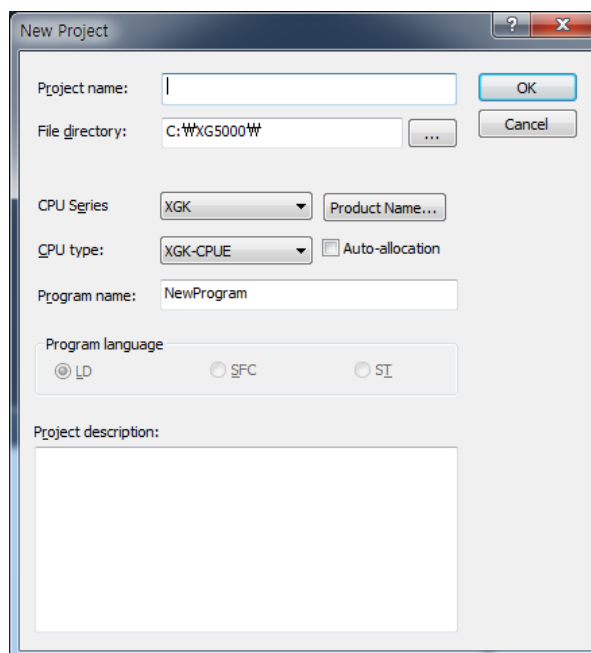
## 5.2 Basic Settings

### 5.2.1 PLC type setting

To connect XG5000 to PLC, it is necessary to set PLC type. To create new project, click [File] → [New File] in XG5000 Menu. At new project menu, set the project name, project type and PLC type. [Fig 5.2.1] is initial screen of XG5000



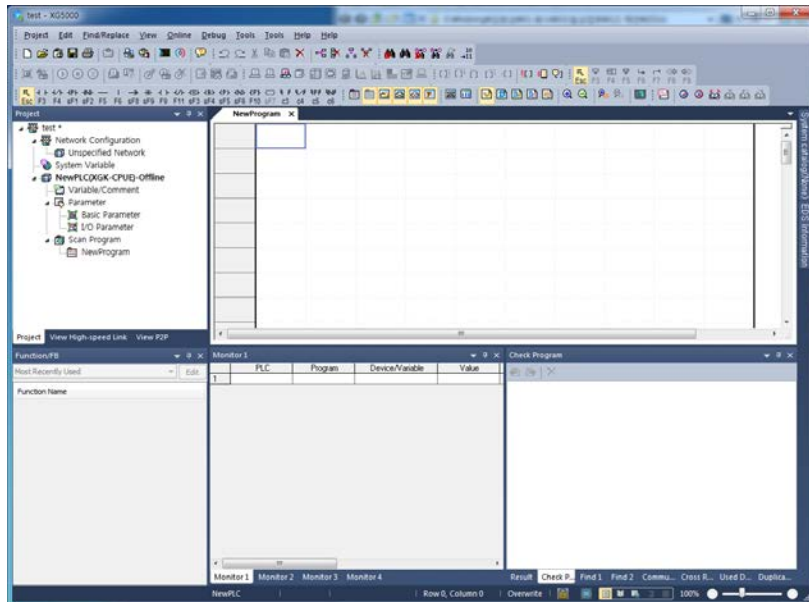
[Fig 5.2.1] Start Page of XG5000



[Fig. 5.2.2] Create new project

There are 4 types of PLC series; XGK, XGB, XGI and XGR. For more detail, refer to relevant user manual. Here XGK is selected as example. There are 5 CPUs in XGK; XGK-CPUU, XGK-CPUA, XGK-CPUE and XGK-CPUS.

After setting is complete, menu of [Fig 5.2.3] will be displayed.



[Fig 5.2.3] Initial menu of XG5000

### 5.2.2 Register of communication module

Here describes standard setting that is necessary to execute FENet module

#### (1) Selection and execution of communication module

For standard setting of communication module, register the communication module at relevant base, slot. The user can register in on-line or off-line status.

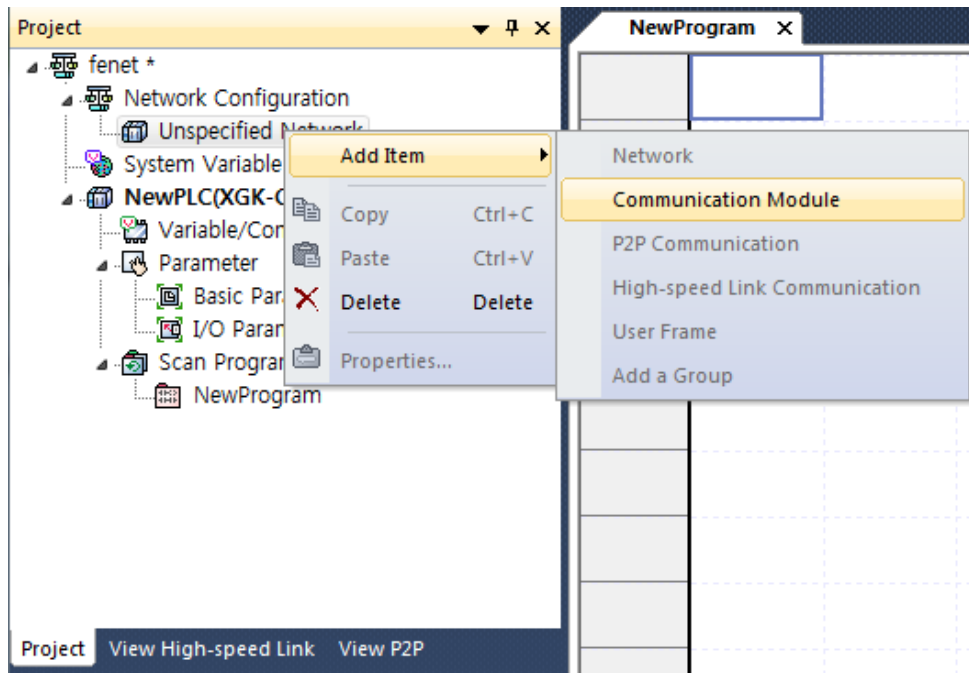
##### A) Register in off-line status

If you register a communication module without connected to XGT, Use a “Communication module setting” window.

If FENet is to be registered on base 0 and slot 2, Set it in the following procedure at a project Window.

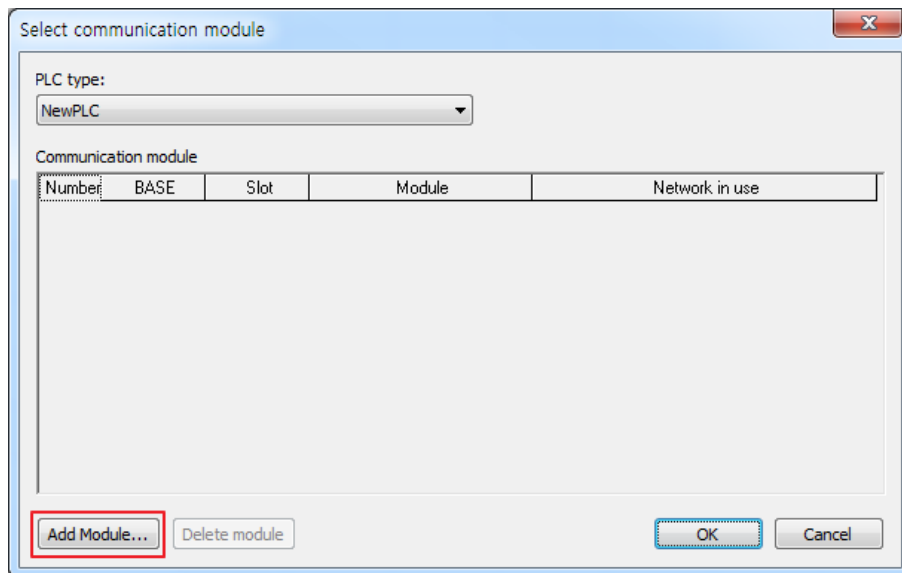


a) Right click [unspecified Network] -> [add item] -> [Communication module]



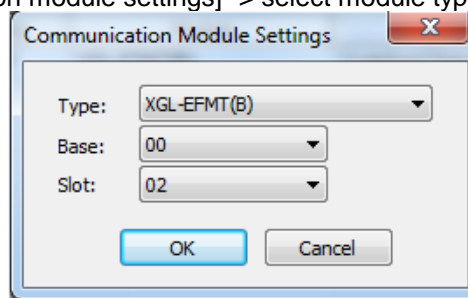
[Fig 5.2.4] Select communication module menu

b) Click [Select communication module] -> [Add module]



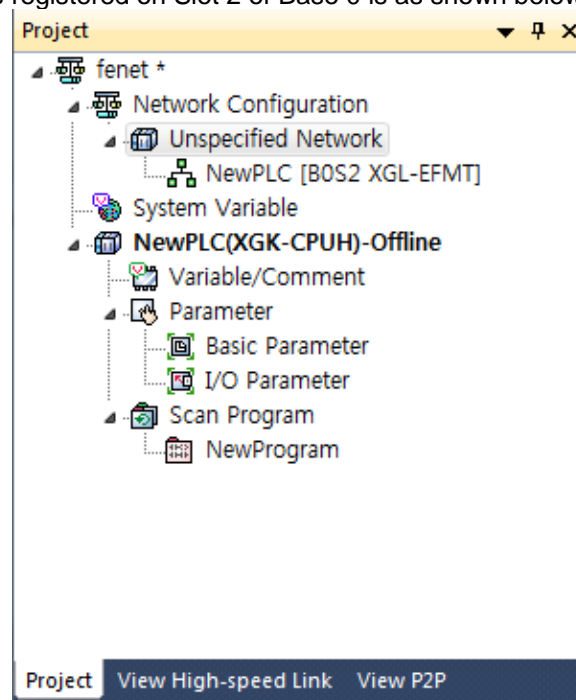
[Fig 5.2.5] Add module

c) [Communication module settings] -> select module type, base, slot



[Fig. 5.2.6] Communication module setting

FEnet module is registered on Slot 2 of Base 0 is as shown below;

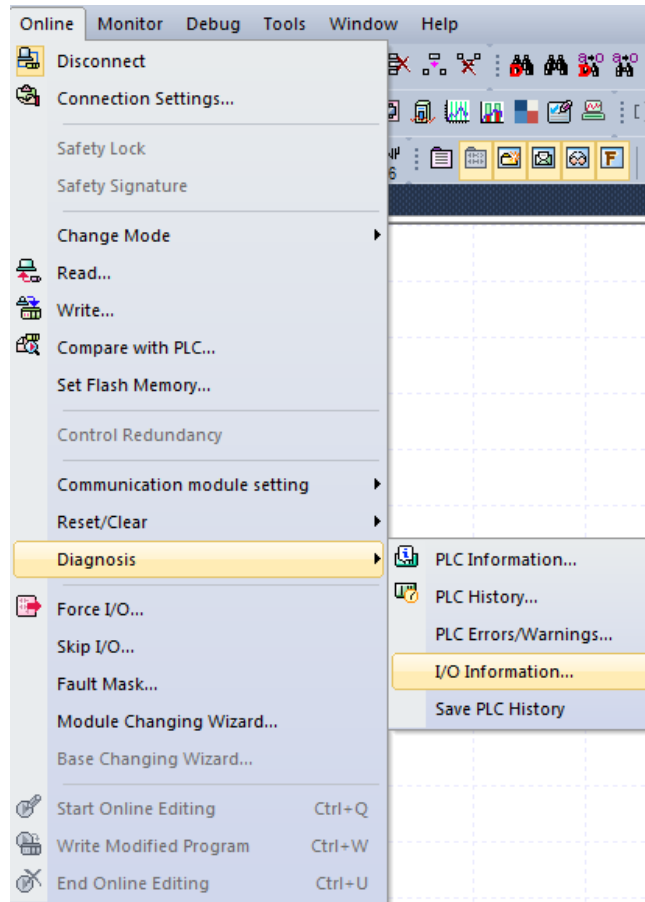


[Fig. 5.2.7] Manually register communication module

B) Register in Online status.

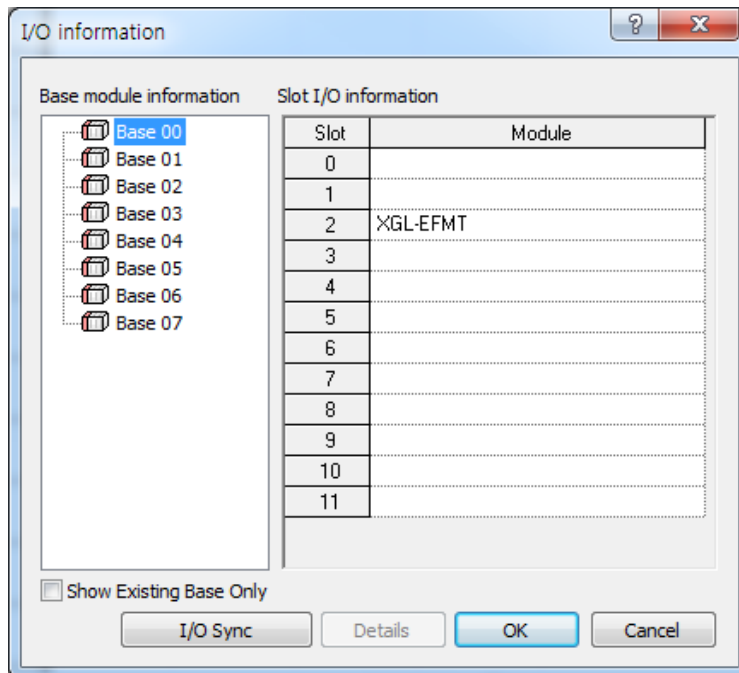
If Connect XG5000 and PLC on which the communication module is installed, I/O sync can help automatically register module.

a) Select [Online] -> [Diagnosis] -> [I/O information]



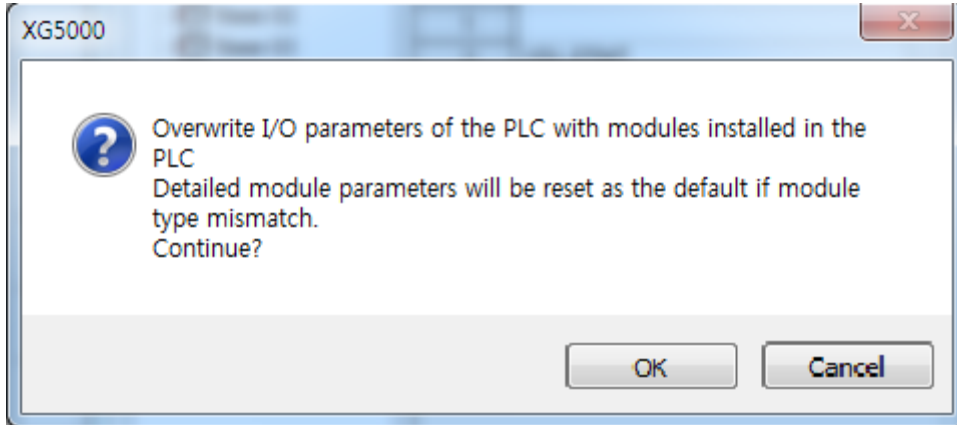
[Fig. 5.2.8] I/O information

b) Click [I/O information] -> [I/O sync]



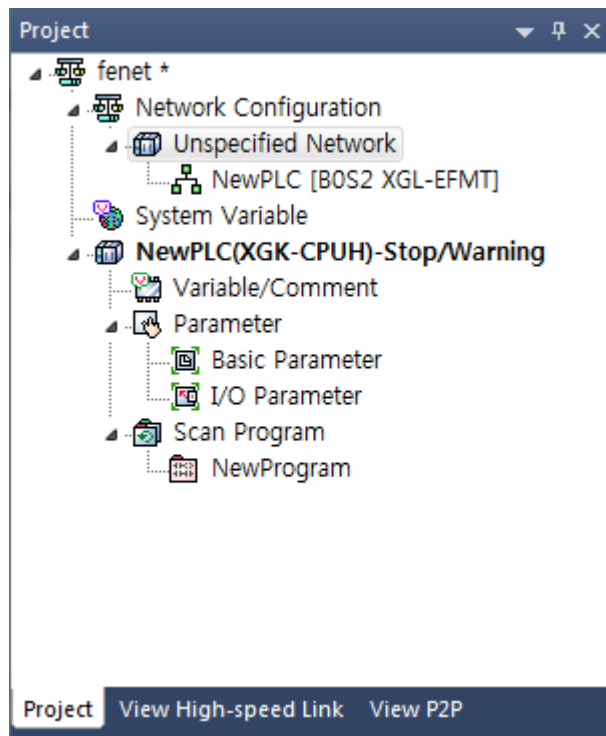
[Fig. 5.2.9] I/O Sync

c) Check message and click OK button.



[fig. 5.2.10] I/O sync warning message

FEnet module is registered on Slot 2 of Base 0 is as shown below;



[Fig. 5.2.11] Automatically register communication module.

### 5.2.3 Standard settings (Module)

Standard settings is to specify communication system parameters necessary to control and manage the Ethernet network, which will decide basic items such as FEnet I/F module's IP address, subnet mask, gateway address, DNS server, reception latency time, number of dedicated connections, host table setting, etc.

Thus, surely set basic parameters on the standard settings screen of the module window so to download for the Ethernet communication. Standard settings are classified into for XGI/XGK and for XGR.

(1) In case CPU is XGK/XGI series

[Fig. 5.2.12] shows specified standard parameters in case CPU is XGI/XGK

[Fig. 5.2.12] Standard settings (details) in case of XGK/XGI

Details on the screen displayed in [Fig. 5.2.12] are as follows;  
Among those details below, IP address, High-speed link station No. and media shall be reset appropriately for the application environment.

### 1) TCP/IP setting

Classification	Description
Station No.	Specify station No. for High-speed link communication between LSIS PLCs' FEnet I/F modules, which shall not be duplicated identically to the correspondent communication module.  * Notes for OS version V6.0 or above. When using RAPIEnet/Modbus RTU.ASCII/XGT Cnet dedicated communication, It can be used for Station number.
Media	Select media to use. <ul style="list-style-type: none"> <li>▷ AUTO (electric) : automatically detects the module presently installed.</li> <li>▷ 10M/HALF : 10MBps Half Duplex electric</li> <li>▷ 10M/FULL : 10MBps Full Duplex electric</li> <li>▷ 100M/HALF : 100MBps Half Duplex electric</li> <li>▷ 100M/FULL : 100MBps Full Duplex electric</li> <li>▷ FX/100M/HALF : 100MBps Half Duplex optical</li> <li>▷ FX/100M/FULL : 100MBps Full Duplex optical</li> </ul>
IP address	Specify the IP Address of the applicable FEnet I/F module.
Subnet mask	Value necessary to check if destination station is on the same network of the applicable station.
Gateway	IP address of Gateway or Router to transmit/receive data through the public network or a network different from the network where the applicable FEnet module is included.
DNS server	Specify the IP address of domain name server.
DHCP <sup>(note1)</sup>	Check DHCP option when not fixed but dynamic IP is to be used (ADSL).
Relay	Using when send frame received at one port to another port.
Reception wating time	If there is no request during the specified time from the host PC or MMI connected for dedicated communication, it will end the dedicated service connection regardless of normal ending procedures supposing that the higher level system is with error. This time is used in dedicated service to reset the channel when any error occurs on the destination station or the cable is disconnected.
Number of dedicated connections	Max. number of TCP dedicated services accessible at a time. (1~16) <ul style="list-style-type: none"> <li>- OS V6.0 or under It can get 1~16 connections. And default connection setting is 3 connections.</li> <li>- OS V6.0 or above It can get 64 connections per each TCP port.</li> </ul>

2) Driver (server) setting

Classification	Description
XGT server	Set when operated as dedicated communication server (slave) (TCP Port:2004, UDP Port:2005)  - OS V6.0 or under: XGT Enet dedicated communication sever. - OS V6.0 or above: XGT Enet dedicated communication sever / XGT Cnet dedicated communication sever are supported at the same time.
Modbus TCP/IP server	Set when operated as Modbus server driver (slave) (TCP Port:502)  - OS V6.0 or under: Modbus TCP sever. - OS V6.0 or above: Modbus TCP/RTU/ASCII sever are supported at the same time.
Smart server	XGT server/Modbus servers are supported at the same time. (OS V6.0 or above)

3) RAPIEnet setting

Classification	Description
RAPIEnet setting (OS V6.0 or above)	Select protocol driver when using RAPIEnet. - Disable: RAPIEnet is disabled. - LSIS RAPIEnet

4) Host table setting

Classification	Description
Enable host table	Access allowed to applicable module of IP address registered in host table (unregistered client(IP address) is prohibited from connection when enabled)

### Notes

(Note 1) Notice in setting DHCP

(1) To check the IP address after DHCP setting, check IP address in Online -> System diagnosis -> Detailed module information or click standard setting after executing Open From PLC.

(2) In case of dynamic IP address, IP address is reset when module is disconnected from server or Power is off

(3) In case of using Remote connection to module using DHCP, when remote side restart, you have to check the IP address of remote station

(4) In case of using DHCP with XGL-EFMTB/EFMFB, you have to use only port 1.

(1) In case CPU is XGR series

[Fig. 5.2.13] shows specified standard parameters in case CPU is XGR CPU. In case of XGR, some of items in Standard setting is different according to whether you use ONE IP Solution or not.

Standard Settings

Standard Settings Host Table Settings

ONE IP Solution (Station Number and IP on standby are Master+1)

TCP/IP Settings

One IP

Station No.: 0

Media: Port1: AUTO(electric) Port2: AUTO(electric)

IP address: 192 . 168 . 80 . 2

Subnet Mask: 255 . 255 . 255 . 0

Gateway: 192 . 168 . 80 . 1

DNS Server: 0 . 0 . 0 . 1

DHCP

Relay

No. of Dedicated Connections: 3 (1 - 16)

Receive Time Out Settings

Client: 60 sec(2 - 255)

Server: 15 sec(2 - 255)

Driver Setting

Server Mode: XGT server Modbus Settings

RAPIEnet Settings: Disable

OK Cancel

[Fig. 5.2.13] Standard settings (details) in case of XGR

Details on the screen displayed in [Fig. 5.2.13] are as follows;  
Among those details below, IP address, High-speed link station No. and media shall be reset appropriately for the application environment.



## 1) TCP/IP setting (XGI/XGK series)

Classification	Description
ONE IP Solution	<p>1. You are able to connect to master base FENet of XGR redundancy system with one IP regardless of Master conversion. For this, in case of master conversion, FENet modules of master base and standby base exchange each other's IP address</p> <p>2. If you check ONE IP Solution, ONE IP Solution function is activated and you register only one IP</p> <p>3. When using ONE IP Solution, IP address should be even number. That number become FENet module IP address of master base</p> <p>4. The above number + 1 becomes FENet module IP address of standby base</p>
Station No.	<p>Specify station No. for High-speed link communication between LSIS PLCs' FENet I/F modules, which shall not be duplicated identically to the correspondent communication module.</p> <p>* Notes for OS version V6.0 or above. When using RAPIEnet/Modbus RTU.ASCII/XGT Cnet dedicated communication, It can be used for Station number.</p>
Media	<p>Select media to use.</p> <ul style="list-style-type: none"> <li>▷ AUTO (electric) : automatically detects the module presently installed.</li> <li>▷ 10M/HALF : 10MBps Half Duplex electric</li> <li>▷ 10M/FULL : 10MBps Full Duplex electric</li> <li>▷ 100M/HALF : 100MBps Half Duplex electric</li> <li>▷ 100M/FULL : 100MBps Full Duplex electric</li> <li>▷ FX/100M/HALF : 100MBps Half Duplex optical</li> <li>▷ FX/100M/FULL : 100MBps Full Duplex optical</li> </ul>
IP address	Specify the IP Address of the applicable FENet I/F module.
Subnet mask	Value necessary to check if destination station is on the same network of the applicable station.
Gateway	IP address of Gateway or Router to transmit/receive data through the public network or a network different from the network where the applicable FENet module is included.
DNS server	Specify the IP address of domain name server.
DHCP	Check DHCP option when not fixed but dynamic IP is to be used (ADSL).
Relay	Using when send frame received at one port to another port.
Reception wating time	If there is no request during the specified time from the host PC or MMI connected for dedicated communication, it will end the dedicated service connection regardless of normal ending procedures supposing that the higher level system is with error. This time is used in dedicated service to reset the channel when any error occurs on the destination station or the cable is disconnected.
Number of dedicated connections	<p>Max. number of TCP dedicated services accessible at a time. (1~16)</p> <ul style="list-style-type: none"> <li>- OS V6.0 or under It can get 1~16 connections. And default connection setting is 3 connections.</li> <li>- OS V6.0 or above It can get 64 connections per each TCP port.</li> </ul>

## Chapter 5 XG5000 Program

Classification	Description
A->B, B->A	This option is activated When One IP Solution is not is not used. After setting parameter of A side or B side, if you click A->B, B->A, the parameters in one side is copied into another side.

### 2) Driver (server) setting

Classification	Description
XGT server	Set when operated as dedicated communication server (slave) (TCP Port:2004, UDP Port:2005)  - OS V6.0 or under: XGT Enet dedicated communication sever. - OS V6.0 or above: XGT Enet dedicated communication sever. / XGT Cnet dedicated communication sever. support at the same time.
Modbus TCP/IP server	Set when operated as Modbus server driver (slave) (TCP Port:502)  - OS V6.0 or under: Modbus TCP sever. - OS V6.0 or above: Modbus TCP/RTU/ASCII sever are supported at the same time.
Smart Server	Supports XGT Server and Modbus Server at the same time.

### 3) RAPIEnet setting

Classification	Description
RAPIEnet setting (OS V6.0 or above)	Select protocol driver when using RAPIEnet. - Disable: RAPIEnet is disabled. - LSIS RAPIEnet

### 4) Host table setting

Classification	Description
Enable host table	Access allowed to applicable module of IP address registered in host table (unregistered client(IP address) is prohibited from connection when enabled)

### Notes

(Note 1) Notice in setting DHCP

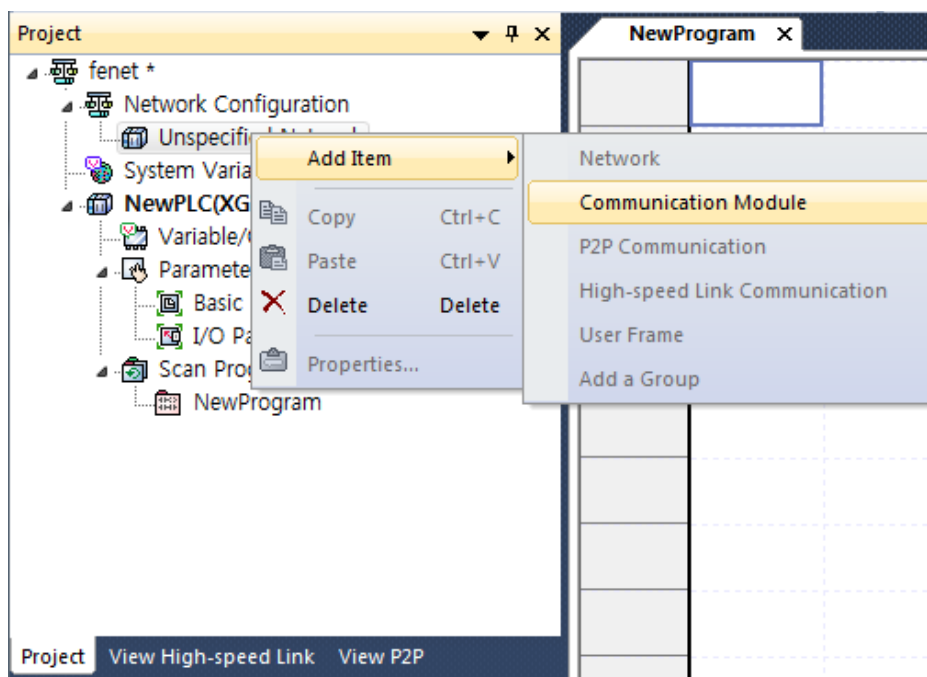
- (1) To check the IP address after DHCP setting, check IP address in Online -> System diagnosis  
-> Detailed module information or click standard setting after executing Open From PLC.
- (2) In case of flexible IP address, IP address is reset when module is disconnected from server or Power is off
- (3) In case of using Remote connection to module using DHCP, when remote side restart, you have to check the IP address of remote station
- (4) In case of using DHCP with XGL-EFMTB/EFMFB, you have to use only port 1.

## 5.3 High-speed Link Settings

### 5.3.1 Setting of High-speed link parameters

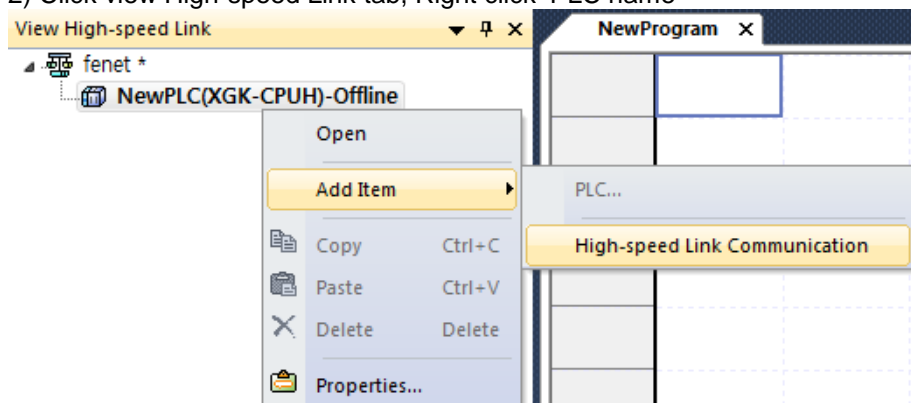
How to set High-speed link communication of FENet I/F module will be described. High speed links of FENet I/F module are supported up to 12 according to the number of installed module. For each HS link, 32 transmission blocks, 128 reception blocks are available. And in case of combined setting of transmission/reception block, 128 blocks are available.

- (1) Choose one method in two methods from Initial selection screen
- 1) Click project tab, Right click [Unspecified network]



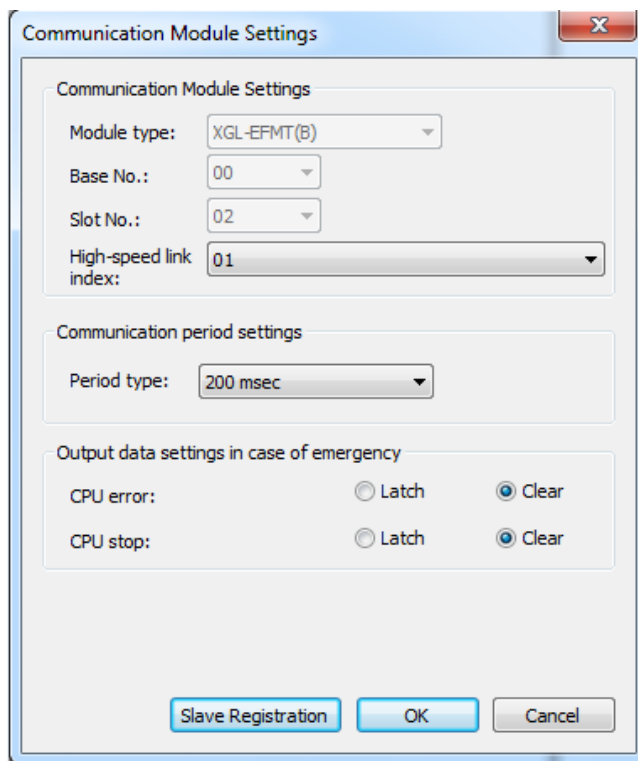
[fig.5.3.1] Select High speed Communication from Project tab

- 2) Click view High-speed Link tab, Right click 'PLC name'



[fig.5.3.2] Select High speed Communication

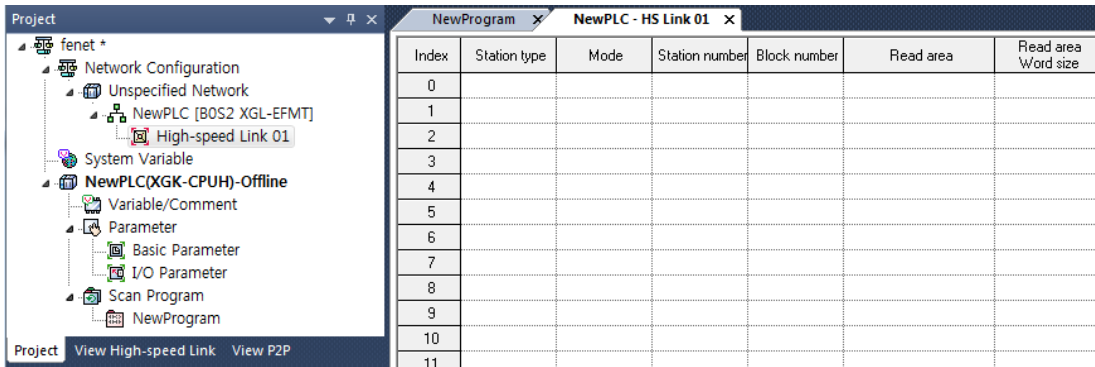
(2) Setting communication module



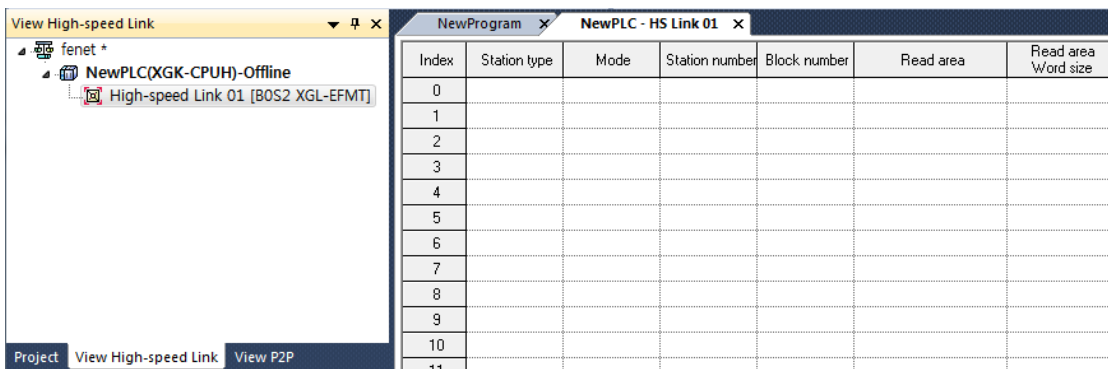
[fig.5.3.3] Setting of communication module and communication period

Classification		Description
Communication module settings	Module type	Select FENet.
	Base No.	Select Base No. the module is installed on. (Main Base : 00)
	Slot No.	Select Slot No. the module is installed on.
Communication period settings	Period type	Set the data transmission period. (available range is 5ms~10sec)
Output data setup in case of emergency	Latch	Maintain and send the latest data received from CPU. It is seen that it is cleared if CPU sends data as 0 even though latch is set. Make sure to check the emergency output data setting of CPU.
	Clear	It sends by setting received High-speed Link data as 0 in ignoring data from CPU. If emergency data is set as 'clear' in emergency output data setting of XG5000 High-speed Link module setting even though emergency output data setting of device area of High-speed Link sending part is set as latch in CPU, the data set as 0 is sent. Make sure to set it after checking desired operation.
Slave register (OS V6.0 or above)		Select RAPIenet Smart I/O that wants to register in high speed link.

(3) After select communication module



[fig.5.3.4] double click High-speed Link 01 from project tab



[fig.5.3.5] double click High-speed Link 01 from View High-speed Link tab

(4) High-speed link parameters settings (double-click High-speed link parameters window)

Index	Station type	Mode	Station number	Block number	Read area	Read area Word size	Save area	Save area Word size
0								
1								
2								
3								
4								

[Fig. 5.3.6] High-speed link block settings

Classification		Description
Station type	FEnet	This item is not related with FEnet I/F module so this is always fixed as 'MASTER'
	RAPIDnet (V6.0 or above)	
	RAPIDnet Remote (V6.0 or above)	
Mode	1.Send	Sends data
	2.Receive	Receives data
	3. Send /Receive	* Supports only for V6.0 or above Send data and Receive data When RAPIDnet Smart IO is selected, it automatically set.
Station No.		In case of Send Mode, it indicates station number of this module. And in case of Receive Mode, it indicates that of target module.

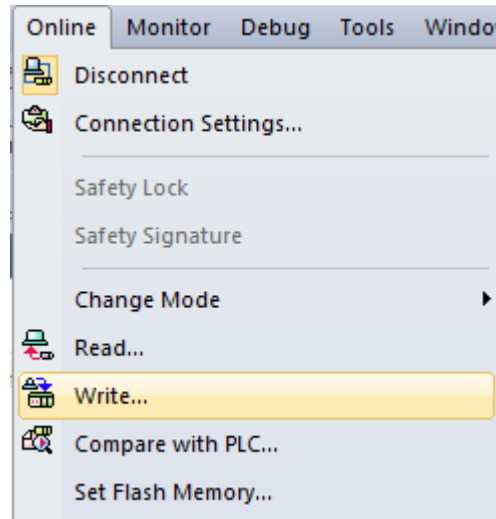
## Chapter 5 XG5000 Program

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Block No.	Specify Tx Block and Rx Block. * Note for OS V6.0 - RAPIEnet Smart IO is automatically set to have the same station number and block number.
Read area	Memory area of this module. (P,L,M,K,...)
Read area Word size	Specify data size to transmit..(WORD)
Save area	Area to save data received from the destination station.
Save area Word size	Specify data size to receive.

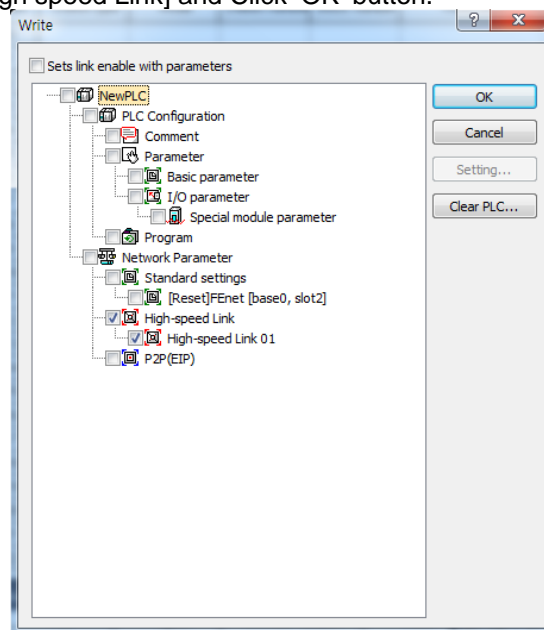
(5) Writing High-speed Link Parameter

- 1) Click [Online] -> [Write]



[fig.5.3.7] Write menu

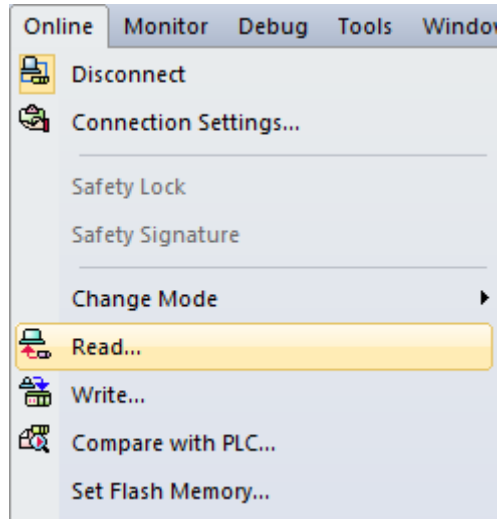
- 2) Check [High speed Link] and Click 'OK' button.



[Fig 5.3.8] Writing High-speed Link parameter

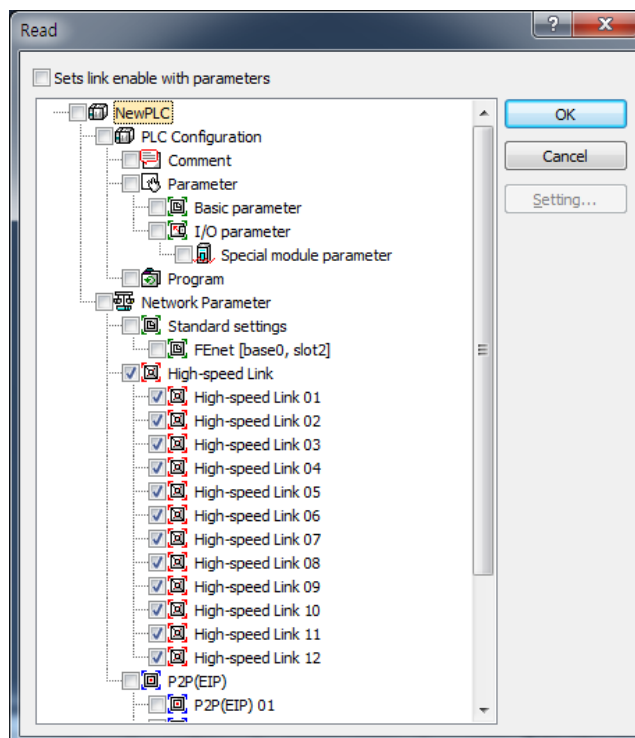
### (6) Reading High-speed Link parameter

1) Click [Online] -> [Read].



[Fig.5.3.9] Read menu

2) Check [High speed Link] and Click 'OK' button.



[Fig 5.3.10] Reading High-speed Link parameter

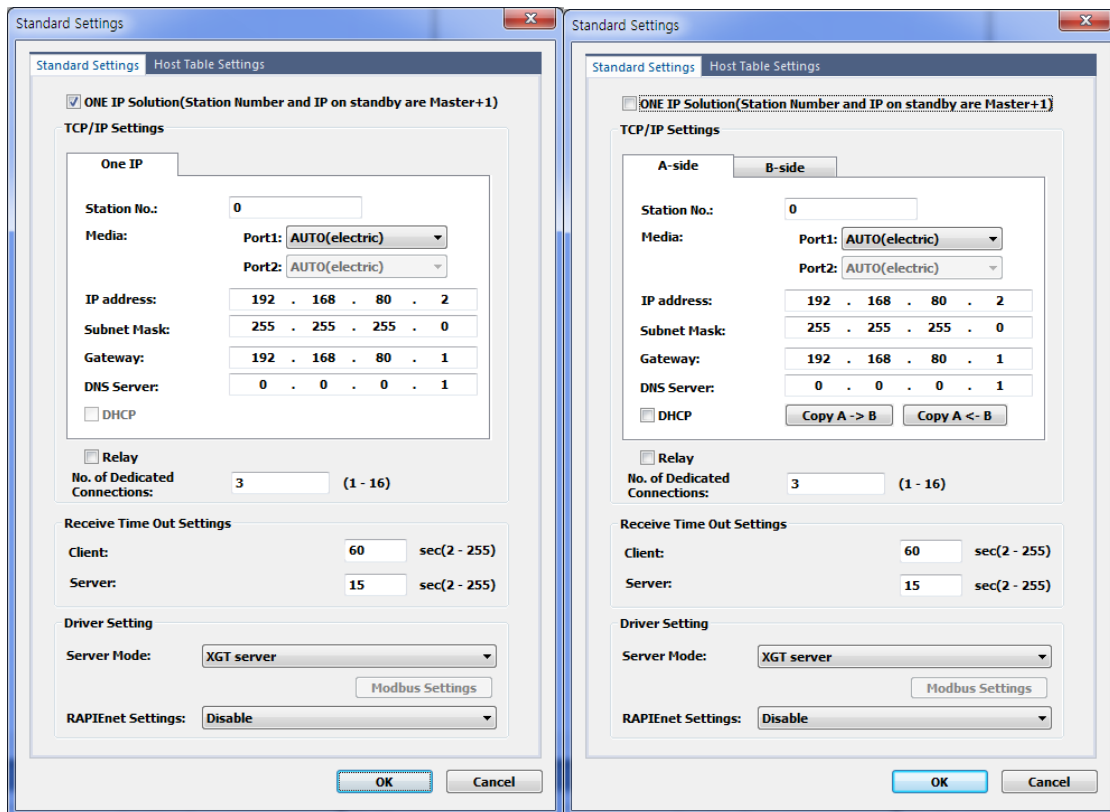


### 5.3.2 High Speed Link parameter at XGR redundant system

Standard setting is same with XGK, XGI but parameter of communication module of MASTER and STANDBY should be set respectively. At redundant system, available number of module is up to 6.

(1) Standard settings

For standard setting in redundancy, you can set one HS link station number and IP address etc. by using One IP Solution or can set parameters of A side and B side separately by not using One IP Solution. For more detail, refer to CH6 High Speed Link service.



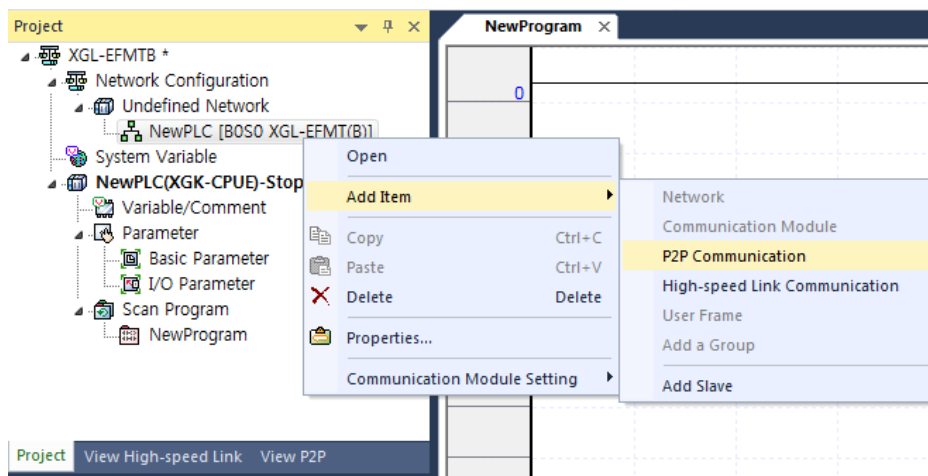
[Fig 5.3.11] Redundant standard setting screen

## 5.4 P2P Settings

### 5.4.1 P2P parameters

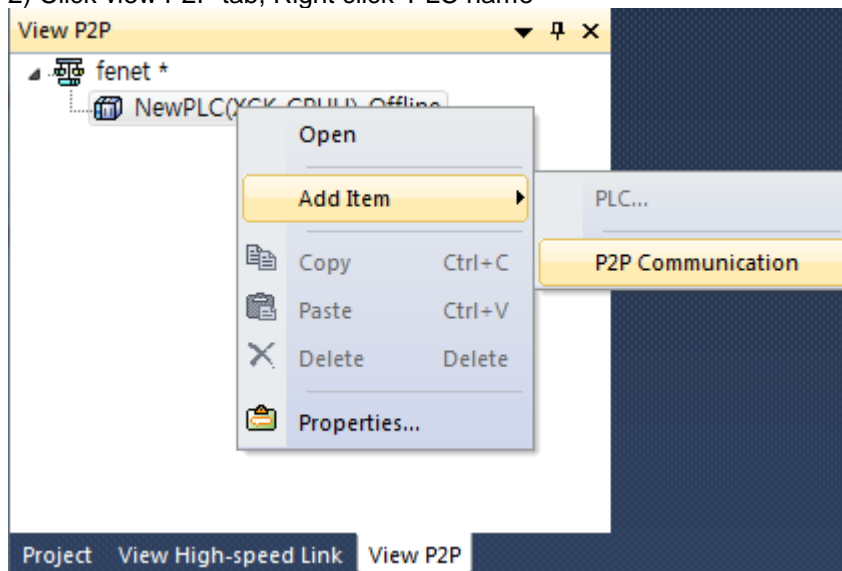
P2P setting of FENet I/F module will be described. P2P Setting is possible to up to 8  
Each P2P set the block up to 64.

- (1) Choose one method in two methods from Initial selection screen
  - 1) Click project tab, Right click [Unspecified network]



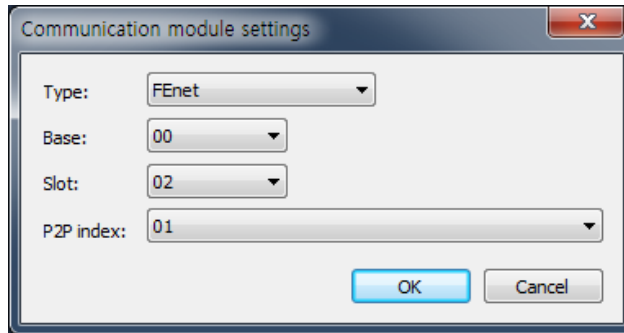
[fig.5.4.1] Select communication module from Project tab

- 2) Click view P2P tab, Right click 'PLC name'



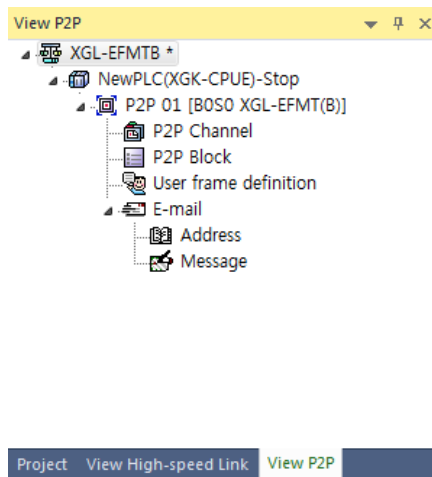
[fig.5.4.2] Select View P2P tab

(2) Setting Communication module



[Fig. 5.4.3] Selection of communication module

Classification		Description
Communication module settings	Module type	Select FEnet.
	Base No.	Select Base No. the module is installed on. (Main Base : 00)
	Slot No.	Select Slot No. the module is installed on.



[Fig. 5.4.4] P2P setting details

After communication module setting is completed, P2P setting details screen will be displayed as in [Fig. 5.4.3]. Refer to Chapter 7 P2P Service for detailed setting.

Classification		Description
P2P channel	User defined frame	Edit the user defined protocol.
	XGT Enet client	Set XGT Enet dedicated service master.
	Modbus TCP client	Set to Modbus TCP master.
	XGT Cnet client (OS V6.0 or above)	Set XGT Cnet dedicated service client.
	Modbus RTU client (OS V6.0 or above)	Set Modbus RTU client.

	Modbus ASCII client (OS V6.0 or above)	Set Modbus ASCII client.
	RAPIEnet client (OS V6.0 or above)	Set RAPIEnet client. (However, RAPIEnet must be enabled in the basic parameter.)
	P2P Block	Set each command block based on specified XGT client of P2P channel.
	User defined frame	Set each command frame for the user defined frame of P2P channel.
	E-mail	Execute as defined by the user for E-mail service.

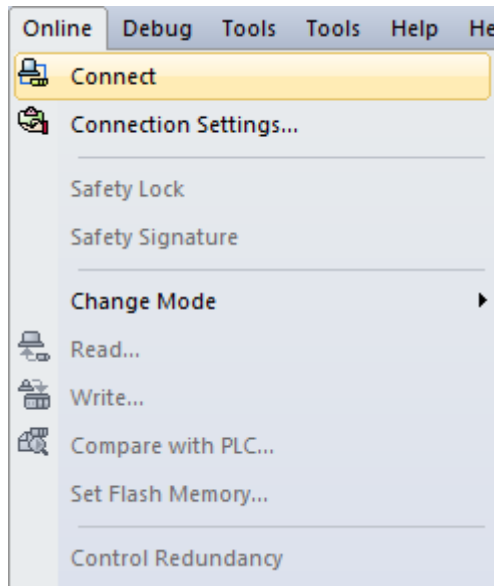
## 5.5 Connect and Download to Communication Module

### 5.5.1 Download/Upload

XG5000 can be used for downloading (writing) specified parameters or uploading (reading) the parameters stored in the PLC.

#### (1) Write (download)

Connect with CPU of the basic base FEnet I/F module installed on whose parameters are desired to write through [Online] -> [Connect] menu.

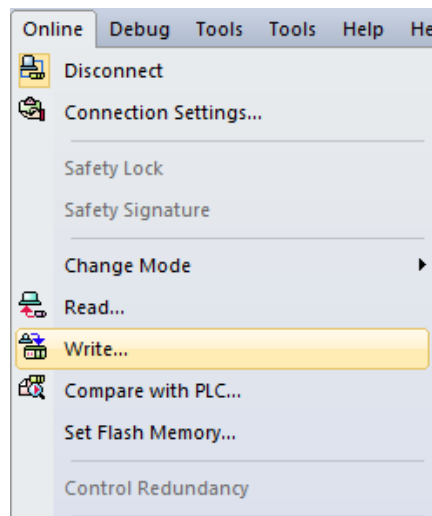


[Fig. 5.5.1] Connect menu

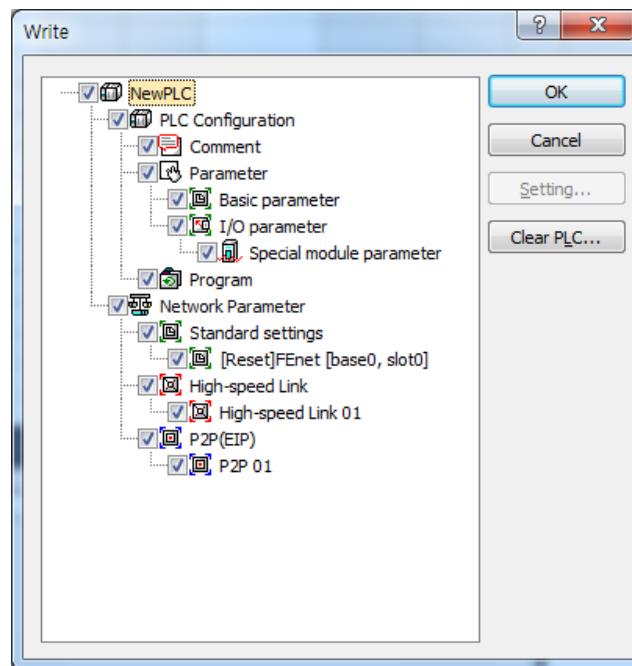
After connection is established, select [Online] -> [Write(standard settings, HS link, P2P)] to display [Fig. 5.5.1] screen, where to specify standard settings items of the base and slot positions FEnet I/F module to write (download) is installed on.

#### Notes

- 1) XG5000 can be programmed through RS-232C port or USB port of CPU module. Refer to CPU Module's connection diagram for detailed cable type.



[Fig. 5.5.2] Write Parameter window



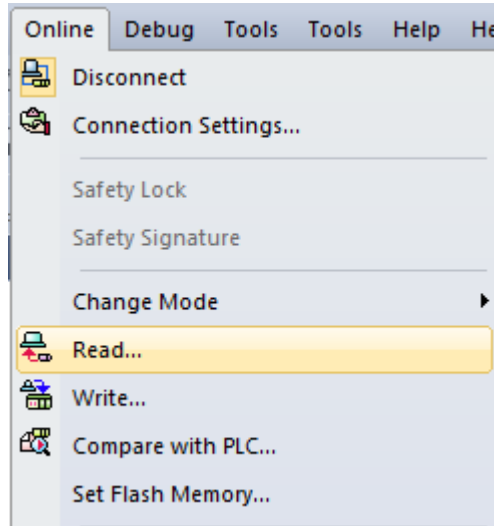
[Fig. 5.5.3] Write screen

### Notes

- 1) In case any service allows link when downloading parameter to CPU by using XG5000, it automatically works with the parameter newly downloaded after downloading the parameter; if the service does not allow the link, the parameter is not applied until the link is allowed.
- 2) In case of OS V6.0 or above, you have to reset the CPU to start normally after setting basic parameter.

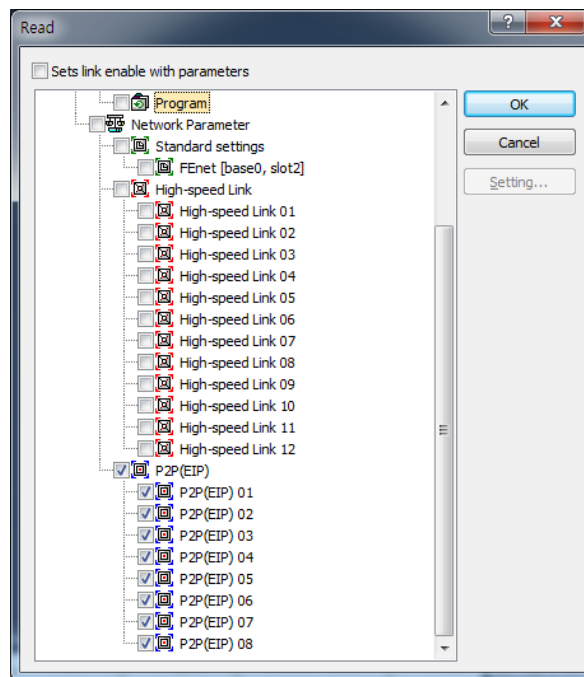
(2) Read (upload)

Connect with CPU of the basic base FENet I/F module to read is installed on, and register the communication module to read standard settings.



[Fig. 5.5.4] Read Parameter window

After connected, select [Online] -> [Read(standard settings, HS link, P2P)] to display [Fig. 5.5.5] screen



[Fig. 5.5.5] Read Parameter menu

Where, confirm Base No. and Slot No. among the standard settings items, and then select standard settings of the applicable communication module.

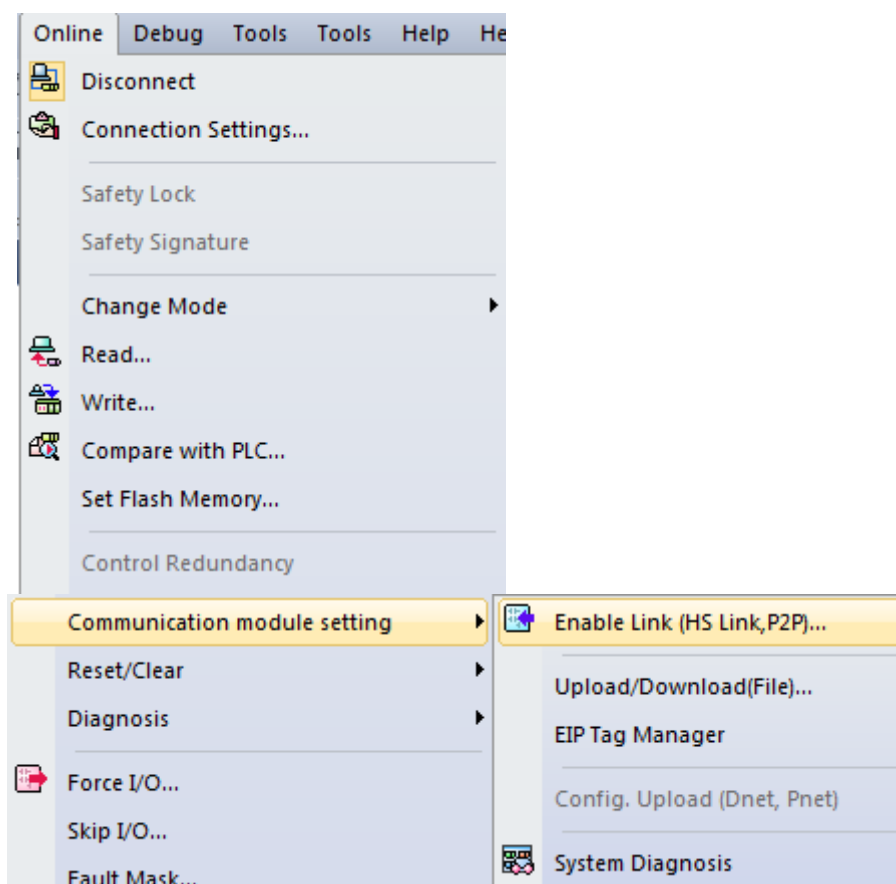
After Read is completed, confirm edit/standard settings of the XG5000 screen to find the data read from FENet module saved.

### 5.5.2 Enable Link

Link enable procedures are necessary to start the operation of the communication for actual Tx/Rx of downloaded High-speed link and P2P data through XG5000. Let Link Enable ON to start Tx/Rx service of the communication module, which will enable or disable the operation relationship separately from the specified parameters, where the communication will be kept on based on the Enable conditions even if CPU stops.

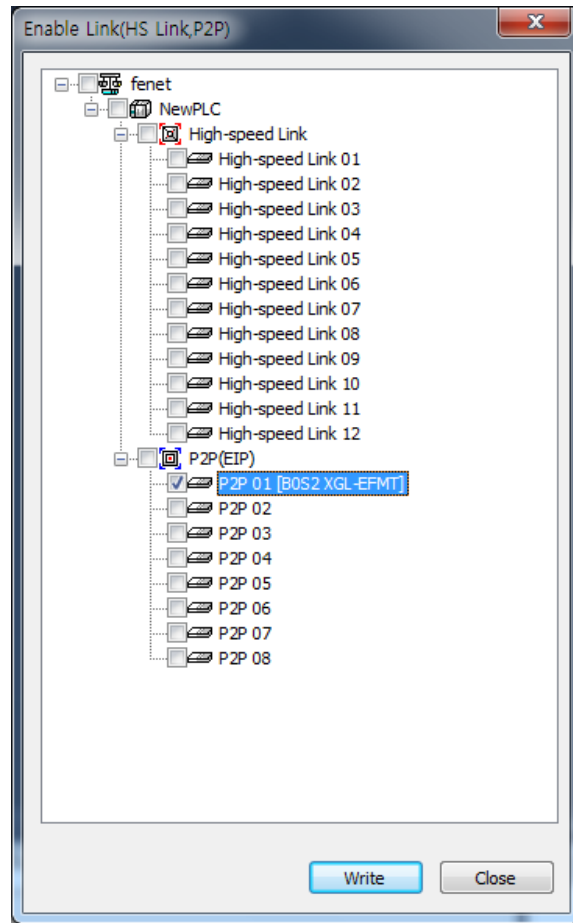
#### (1) Link Enable from XG5000

The next is to specify XG5000 for the Enable conditions. Click the setting menu on [Fig. 5.5.6] to display [Fig. 5.5.7]. Check the items which need the link service.



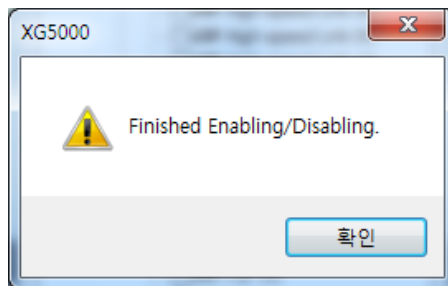
[Fig. 5.5.6] Enable Link setting





[Fig. 5.5.7] Selection of Enable Link

If Enable Link Write is executed, a message will be displayed as in [Fig. 5.5.8], which means that Link is normally enabled.



[Fig. 5.5.8] Message Screen of Enable Link

## Chapter 5 XG5000 Program

\* Enable Link through flag

It describes "Enable Link" method through flag. The following XG5000 version, CPU OS version is needed.

Item	Version
XG5000	V3.61 or above
XGR CPU	V1.91 or above
XGI CPU	V3.4 or above
XGK CPU	V3.7 or above

Flag list related with "Enable Link"

-XGR

Flag	Data type	Device	Description
_HS_ENABLE_STATE	ARRAY[0..11] OF BOOL	%FX19040	HS link enable/disable current state
_HS_REQ	ARRAY[0..11] OF BOOL	%FX31520	HS link enable/disable request
_HS_REQ_NUM	ARRAY[0..11] OF BOOL	%FX31536	HS link enable/disable setting
_P2P_ENABLE_STATE	ARRAY[0..7] OF BOOL	%FX19072	P2P enable/disable current state
_P2P_REQ	ARRAY[0..7] OF BOOL	%FX31552	P2P enable/disable request
_P2P_REQ_NUM	ARRAY[0..7] OF BOOL	%FX31568	P2P enable/disable setting

-XGI

Flag	Data type	Device	Description
_HS_ENABLE_STATE	ARRAY[0..11] OF BOOL	%FX15840	HS link enable/disable current state
_HS_REQ	ARRAY[0..11] OF BOOL	%FX16480	HS link enable/disable request
_HS_REQ_NUM	ARRAY[0..11] OF BOOL	%FX16496	HS link enable/disable setting
_P2P_ENABLE_STATE	ARRAY[0..7] OF BOOL	%FX15872	P2P enable/disable current state
_P2P_REQ	ARRAY[0..7] OF BOOL	%FX16512	P2P enable/disable request
_P2P_REQ_NUM	ARRAY[0..7] OF BOOL	%FX16528	P2P enable/disable setting

-XGK

Flag	Data type	Device	Description
_HS1_ENABLE_STATE	BIT	F09600	HS link 1 enable/disable current state
_HS2_ENABLE_STATE	BIT	F09601	HS link 2 enable/disable current state
_HS3_ENABLE_STATE	BIT	F09602	HS link 3 enable/disable current state
_HS4_ENABLE_STATE	BIT	F09603	HS link 4 enable/disable current state
_HS5_ENABLE_STATE	BIT	F09604	HS link 5 enable/disable current state
_HS6_ENABLE_STATE	BIT	F09605	HS link 6 enable/disable current state
_HS7_ENABLE_STATE	BIT	F09606	HS link 7 enable/disable current state
_HS8_ENABLE_STATE	BIT	F09607	HS link 8 enable/disable current state
_HS9_ENABLE_STATE	BIT	F09608	HS link 9 enable/disable current state
_HS10_ENABLE_STATE	BIT	F09609	HS link 10 enable/disable current state
_HS11_ENABLE_STATE	BIT	F0960A	HS link 11 enable/disable current state
_HS12_ENABLE_STATE	BIT	F0960B	HS link 12 enable/disable current state
_HS1_REQ	BIT	F10300	HS link 1 enable/disable request
_HS2_REQ	BIT	F10301	HS link 2 enable/disable request
_HS3_REQ	BIT	F10302	HS link 3 enable/disable request
_HS4_REQ	BIT	F10303	HS link 4 enable/disable request
_HS5_REQ	BIT	F10304	HS link 5 enable/disable request
_HS6_REQ	BIT	F10305	HS link 6 enable/disable request
_HS7_REQ	BIT	F10306	HS link 7 enable/disable request
_HS8_REQ	BIT	F10307	HS link 8 enable/disable request
_HS9_REQ	BIT	F10308	HS link 9 enable/disable request
_HS10_REQ	BIT	F10309	HS link 10 enable/disable request
_HS11_REQ	BIT	F1030A	HS link 11 enable/disable request

Flag	Data type	Device	Description
_HS12_REQ	BIT	F1030B	HS link 12 enable/disable request
_HS1_REQ_NUM	BIT	F10310	HS link 1 enable/disable setting
_HS2_REQ_NUM	BIT	F10311	HS link 2 enable/disable setting
_HS3_REQ_NUM	BIT	F10312	HS link 3 enable/disable setting
_HS4_REQ_NUM	BIT	F10313	HS link 4 enable/disable setting
_HS5_REQ_NUM	BIT	F10314	HS link 5 enable/disable setting
_HS6_REQ_NUM	BIT	F10315	HS link 6 enable/disable setting
_HS7_REQ_NUM	BIT	F10316	HS link 7 enable/disable setting
_HS8_REQ_NUM	BIT	F10317	HS link 8 enable/disable setting
_HS9_REQ_NUM	BIT	F10318	HS link 9 enable/disable setting
_HS10_REQ_NUM	BIT	F10319	HS link 10 enable/disable setting
_HS11_REQ_NUM	BIT	F1031A	HS link 11 enable/disable setting
_HS12_REQ_NUM	BIT	F1031B	HS link 12 enable/disable setting
_P2P1_ENABLE_STATE	BIT	F09620	P2P1 enable/disable current state
_P2P2_ENABLE_STATE	BIT	F09621	P2P2 enable/disable current state
_P2P3_ENABLE_STATE	BIT	F09622	P2P3 enable/disable current state
_P2P4_ENABLE_STATE	BIT	F09623	P2P4 enable/disable current state
_P2P5_ENABLE_STATE	BIT	F09624	P2P5 enable/disable current state
_P2P6_ENABLE_STATE	BIT	F09625	P2P6 enable/disable current state
_P2P7_ENABLE_STATE	BIT	F09626	P2P7 enable/disable current state
_P2P8_ENABLE_STATE	BIT	F09627	P2P8 enable/disable current state
_P2P1_REQ	BIT	F10320	P2P1 enable/disable request
_P2P2_REQ	BIT	F10321	P2P2 enable/disable request
_P2P3_REQ	BIT	F10322	P2P3 enable/disable request
_P2P4_REQ	BIT	F10323	P2P4 enable/disable request
_P2P5_REQ	BIT	F10324	P2P5 enable/disable request
_P2P6_REQ	BIT	F10325	P2P6 enable/disable request
_P2P7_REQ	BIT	F10326	P2P7 enable/disable request
_P2P8_REQ	BIT	F10327	P2P8 enable/disable request
_P2P1_REQ_NUM	BIT	F10330	P2P1 enable/disable setting
_P2P2_REQ_NUM	BIT	F10331	P2P2 enable/disable setting
_P2P3_REQ_NUM	BIT	F10332	P2P3 enable/disable setting
_P2P4_REQ_NUM	BIT	F10333	P2P4 enable/disable setting
_P2P5_REQ_NUM	BIT	F10334	P2P5 enable/disable setting
_P2P6_REQ_NUM	BIT	F10335	P2P6 enable/disable setting
_P2P7_REQ_NUM	BIT	F10336	P2P7 enable/disable setting
_P2P8_REQ_NUM	BIT	F10337	P2P8 enable/disable setting

- ▶ How to enable link  
-HS link/P2P enable/disable setting flag ON → HS link/P2P enable/disable request flag ON
- ▶ How to disable link  
-HS link/P2P enable/disable setting flag OFF → HS link/P2P enable/disable request flag ON
- ▶ You can monitor the Enable/Disable state of the each link through “enable/disable current states” flag.