PANASONIC Electric Works

FP Series

Ethernet (MewtocolCom) Driver

Supported version TOP Design Studio V1.0 or higher

CONTENTS

We would like to thank our customers for using M2I's "Touch Operation Panel (M2I TOP) Series". Read this manual and familiarize yourself with the connection method and procedures of the "TOP and external device".

1. System configuration

The system configuration of TOP and "PANASONIC Electric Works – FP Series **Ethernet**" is as follows.

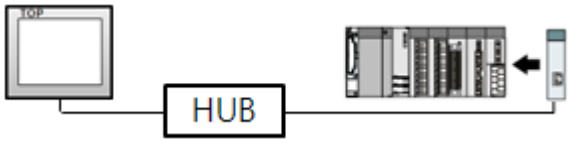
Series	CPU	Link I/F	Communication method	Communication setting	Cable
FP	FP7	CPS31E	Ethernet (TCP/UDP)	3. TOP communication setting 4. External device setting	Twisted pair cable*Note 1)

*Note 1) Twisted pair cable

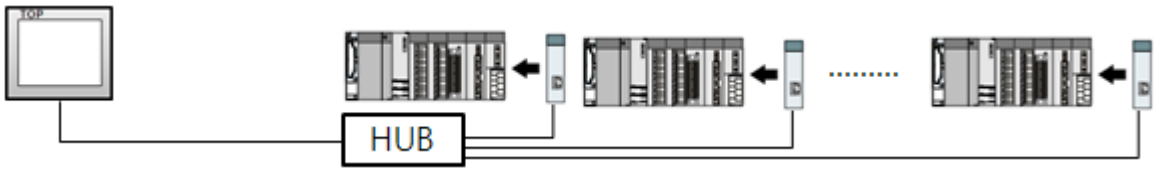
- Refer to STP (Shielded Twisted Pair Cable) or UTP (Unshielded Twisted Pair Cable) Category 3, 4, 5.
- Depending on the network configuration, you can connect to components such as the hub and transceiver, and in this case, use a direct cable.

■ Connectable configuration

• 1:1 connection (one TOP and one external device) connection

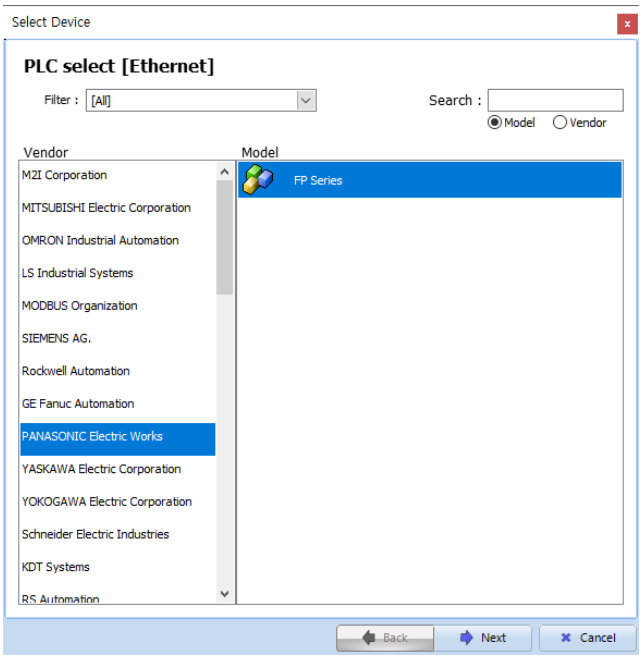


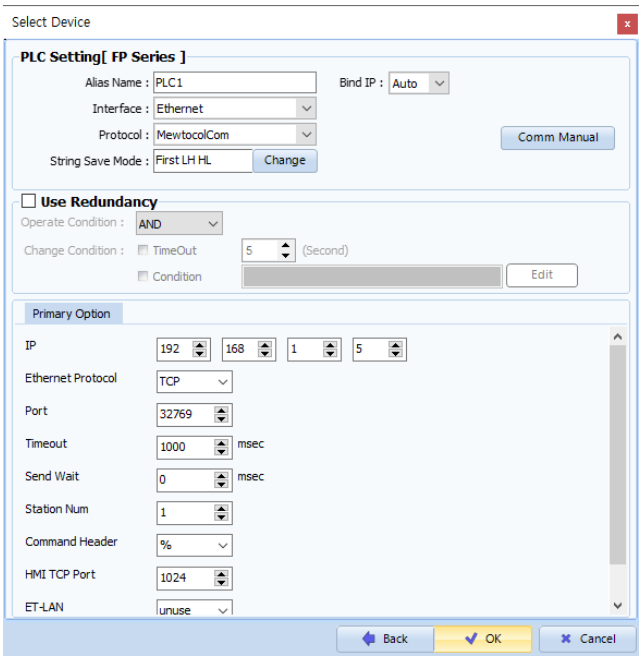
• 1:N connection (one TOP and multiple external devices) connection



2. External device selection

■ Select a TOP model and a port, and then select an external device.





Settings		Contents
TOP	Model	Check the TOP display and process to select the touch model.
External device	Vendor	Select the vendor of the external device to be connected to TOP. Select "PANASONIC Electric Works".
	PLC	Select an external device to connect to TOP. **Model** / **Interface** / **Protocol** FP Series / Ethernet / MewtocolCom Please check the system configuration in Chapter 1 to see if the external device you want to connect is a model whose system can be configured.

3. TOP communication setting

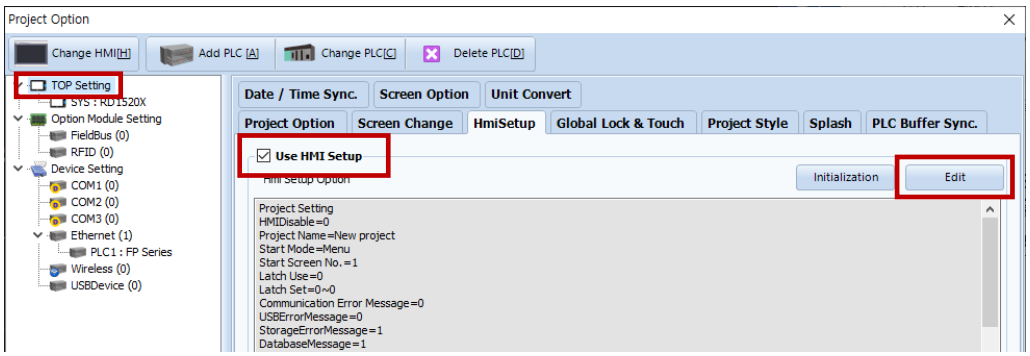
The communication can be set in TOP Design Studio or TOP main menu. The communication should be set in the same way as that of the external device.

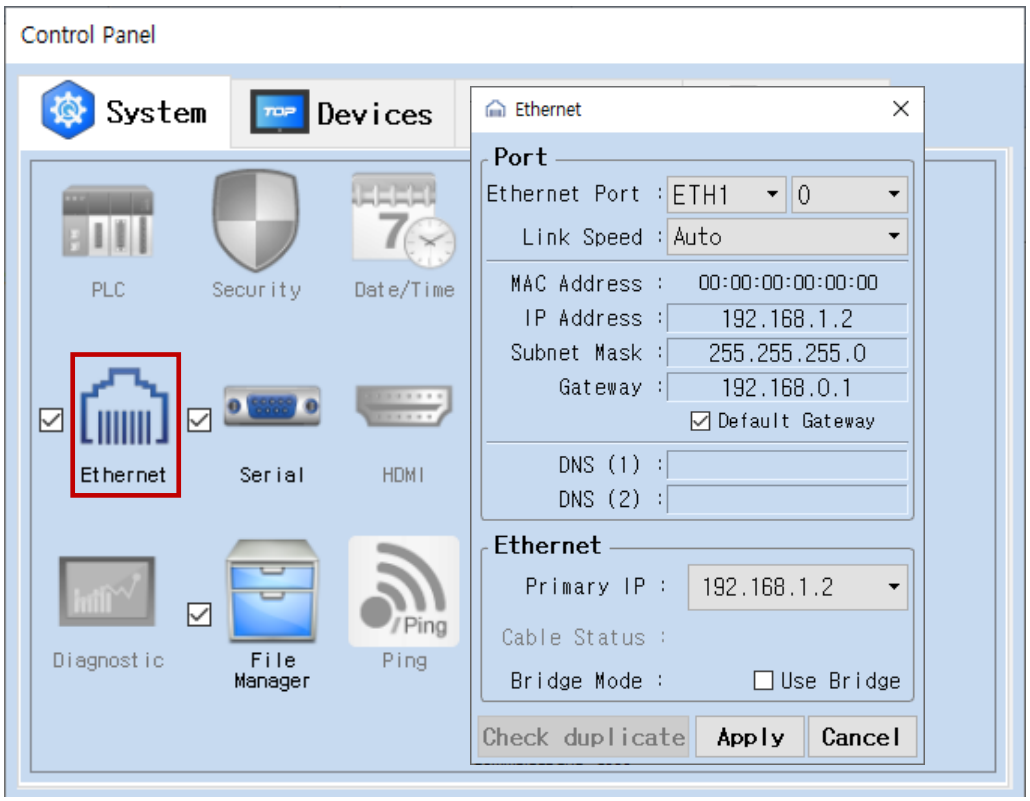
3.1 Communication setting in TOP Design Studio

(1) Communication interface setting

■ [Project > Project properties > TOP settings] → [Project option > Check "Use HMI settings" > Edit > Serial]

– Set the TOP communication interface in TOP Design Studio.





Items	TOP	External device	Remarks
IP Address*Note 1) Note 2)	192.168.1.2	192.168.1.5	
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	192.168.0.1	192.168.0.1	

*Note 1) The network addresses of the TOP and the external device (the first three digits of the IP, 192 . 168 . 0 . 0) should match.

*Note 2) Do not use duplicate IP addresses over the same network.

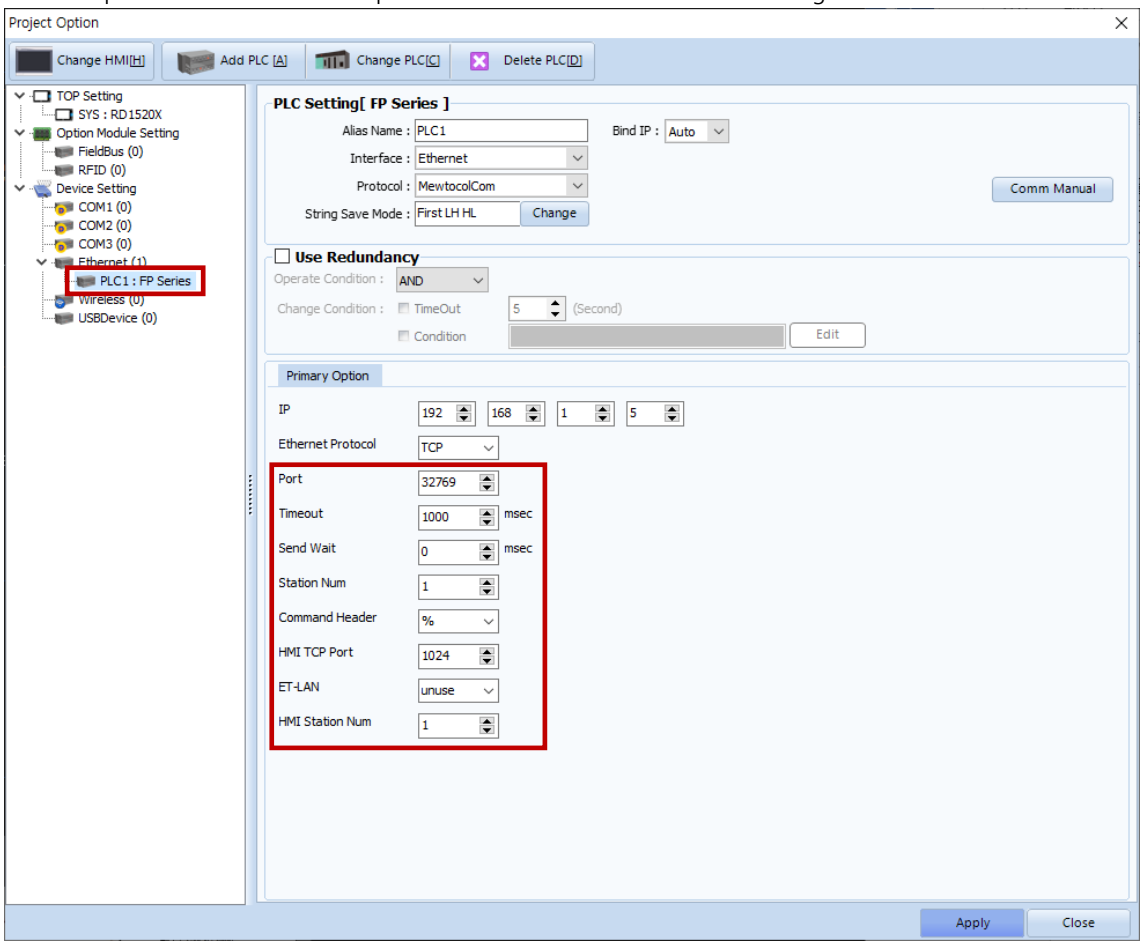
* The above settings are examples recommended by the company.

Items	Description
IP Address	Set an IP address to be used by the TOP to use over the network.
Subnet Mask	Enter the subnet mask of the network.
Gateway	Enter the gateway of the network.

(2) Communication option setting

■ [Project > Project properties > PLC settings > Ethernet > "PLC1: FP Series"]

– Set the options of the FP Series Computer Link communication driver in TOP Design Studio.

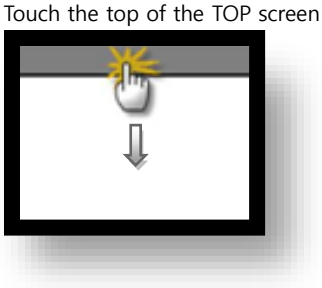


Items	Settings	Remarks
Interface	Select "Ethernet".	Refer to "2. External device selection".
Protocol	Select the communication protocol between the TOP and an external device.	
TimeOut	Set the time for the TOP to wait for a response from an external device.	
SendWait	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	
Port	Enter the port of the external device.	
Station Num	Enter the station number of the external device.	
Command Header	Set the characters of the header during communication.	
HMI TCP Port	Enter the TOP port during communication.	
ET-LAN	Set whether the ET-LAN unit is compatible.	
HMI Station Num	Enter the station number of HMI to be used for ET-LAN unit compatibility.	

3.2. Communication setting in TOP

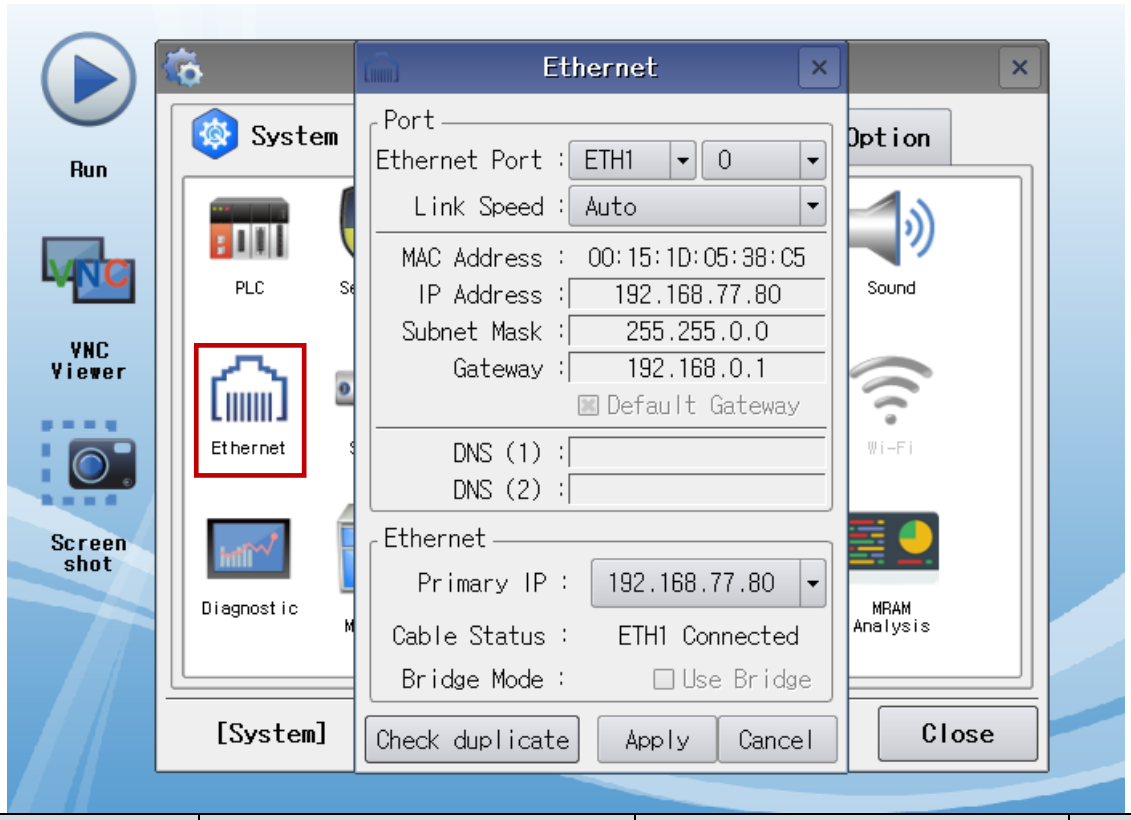
*** This is a setting method when "Use HMI Setup" in the setting items in "3.1 TOP Design Studio" is not checked.**

■ Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.



(1) Communication interface setting

■ [Main screen > Control panel > Ethernet]



Items	TOP	External device	Remarks
IP Address*Note 1) Note 2)	192.168.1.2	192.168.1.5	
Subnet Mask	255.255.255.0	255.255.255.0	
Gateway	192.168.0.1	192.168.0.1	

*Note 1)The network address of TOP and the external device (the first three digits of the IP 192 . 168 . 0 . 0) must be the same.

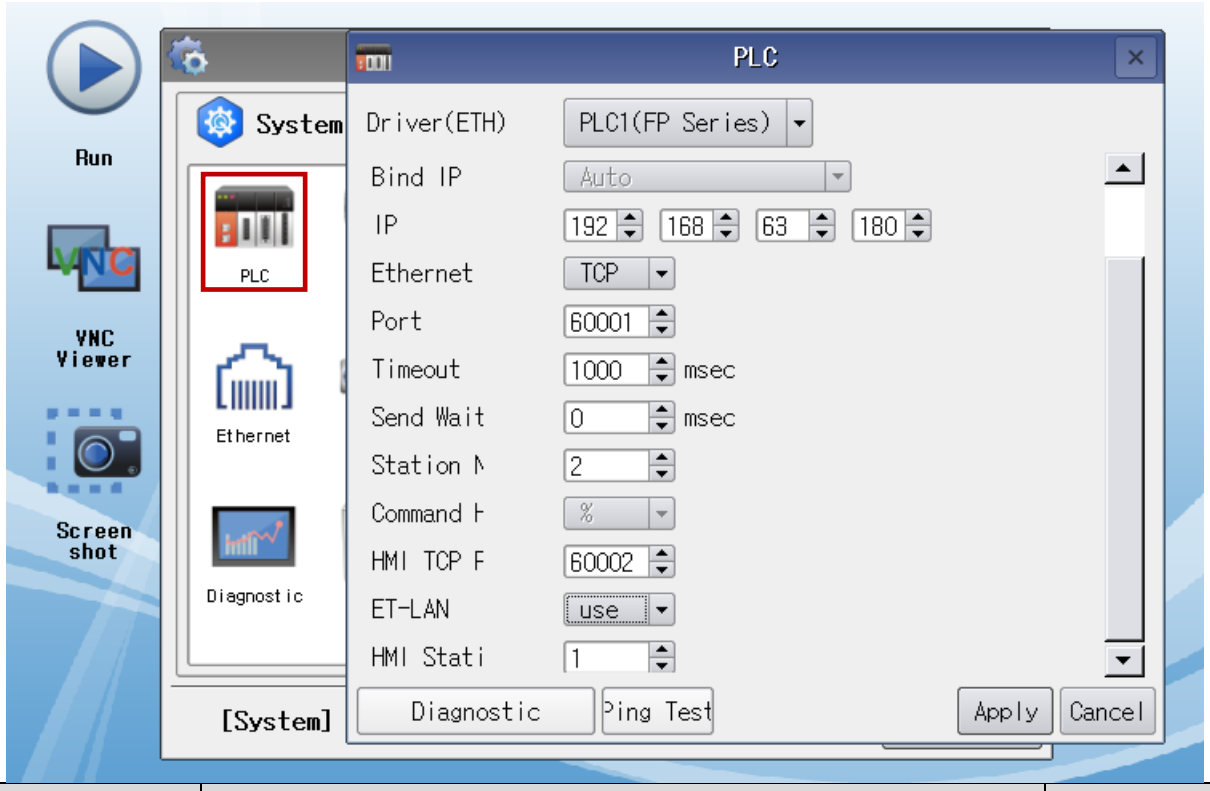
*Note 2) Do not use duplicate IP addresses over the same network.

* The above settings are examples recommended by the company.

Items	Description
IP Address	Set an IP address to be used by the TOP to use over the network.
Subnet Mask	Enter the subnet mask of the network.
Gateway	Enter the gateway of the network.

(2) Communication option setting

■ [Main screen > Control panel > PLC]



Items	Settings	Remarks
Interface	Select "Ethernet".	Refer to "2. External device selection".
Protocol	Select the serial communication protocol between the TOP and an external device.	
TimeOut (ms)	Set the time for the TOP to wait for a response from an external device.	
SendWait (ms)	Set the waiting time between TOP's receiving a response from an external device and sending the next command request.	
Port	Enter the port of the external device.	
Station Num	Enter the station number of the external device.	
CommandHeader	Set the characters of the header during communication.	
HMI TCP Port	Enter the TOP port during communication.	
ET-LAN	Set whether the ET-LAN unit is compatible.	
HMI Station Num	Enter the station number of HMI to be used for ET-LAN unit compatibility.	

3.3 Communication diagnostics

■ Check the interface setting status between the TOP and an external device.

- Touch the top of the TOP screen and drag it down. Touch "EXIT" in the pop-up window to go to the main screen.
- Check whether the port (ETH1/ETH2) settings you want to use are the same as those of the external device in [Control panel > Ethernet].

■ Diagnosis of whether the port communication is normal or not

- Touch "Communication diagnostics" in [Control Panel > PLC].
- The Diagnostics dialog box pops up on the screen and determines the diagnostic status.

OK	**Communication setting normal**
Time Out Error	**Communication setting abnormal** - Check the cable, TOP, and external device setting status. **(Reference: Communication diagnostics sheet)**

■ Communication diagnostics sheet

- If there is a problem with the communication connection with an external terminal, please check the settings in the sheet below.

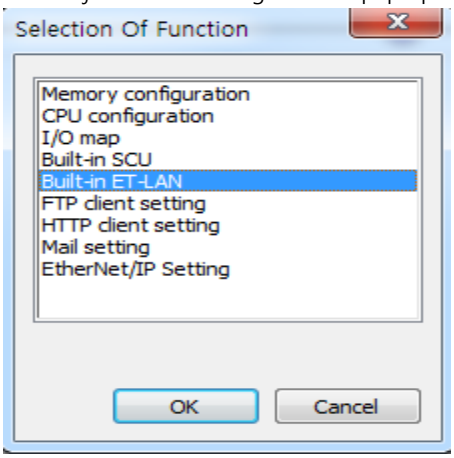
Items	Contents		Check		Remarks
System configuration	How to connect the system		OK	NG	1. System configuration
	Connection cable name		OK	NG	
TOP	Version information		OK	NG	2. External device selection 3. Communication setting
	Port in use		OK	NG	
	Driver name		OK	NG	
	Other detailed settings		OK	NG	
	Relative prefix	Project setting	OK	NG	
		Communication diagnostics	OK	NG	
	Ethernet port setting	IP Address	OK	NG	
		Subnet Mask	OK	NG	
		Gateway	OK	NG	
External device	CPU name		OK	NG	4. External device setting
	Communication port name (module name)		OK	NG	
	Protocol (mode)		OK	NG	
	Setup Prefix		OK	NG	
	Other detailed settings		OK	NG	
	Ethernet port setting	IP Address	OK	NG	
		Subnet Mask	OK	NG	
		Gateway	OK	NG	
	Check address range		OK	NG	5. Supported addresses (For details, please refer to the PLC vendor's manual.)

4. External device setting

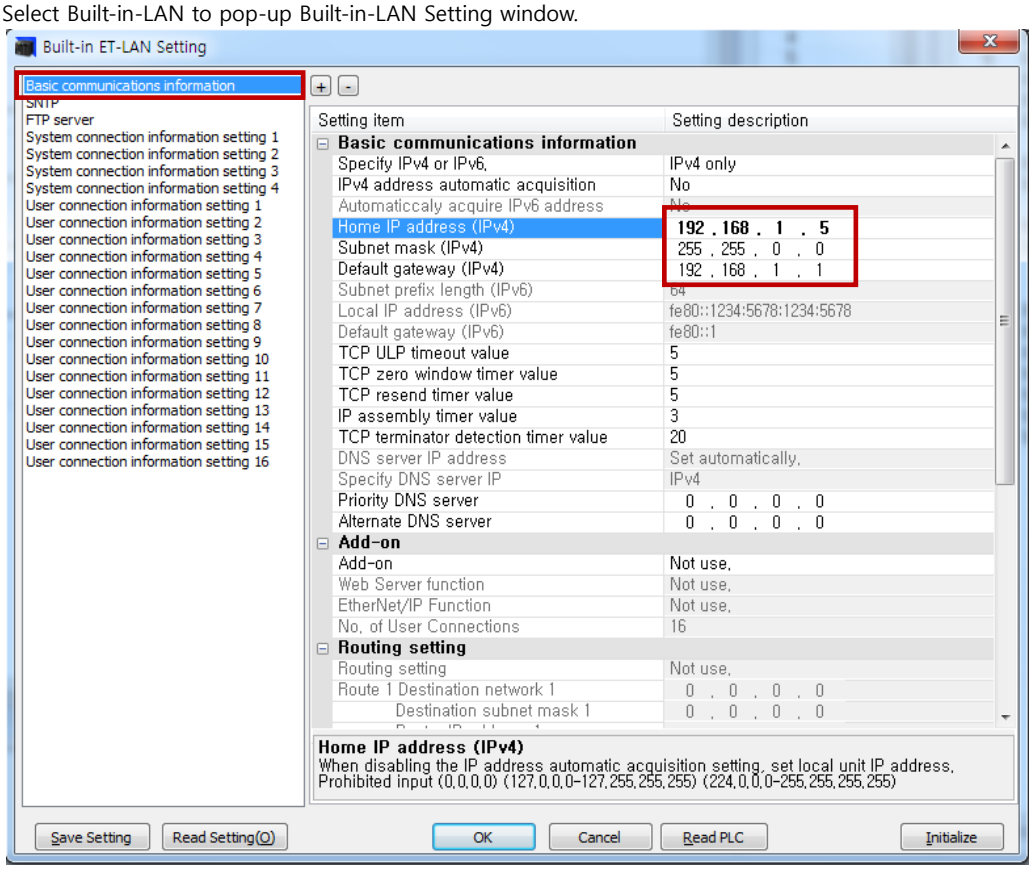
4.1 External device setting - FP7

Use "FP SERIES" Ladder Software "FPWIN GR7" to set as follows. For more detailed setting method than that described in this example, refer to the PLC user manual

1. Click Project >> FP7 configuraion to pop-up the selection function window.

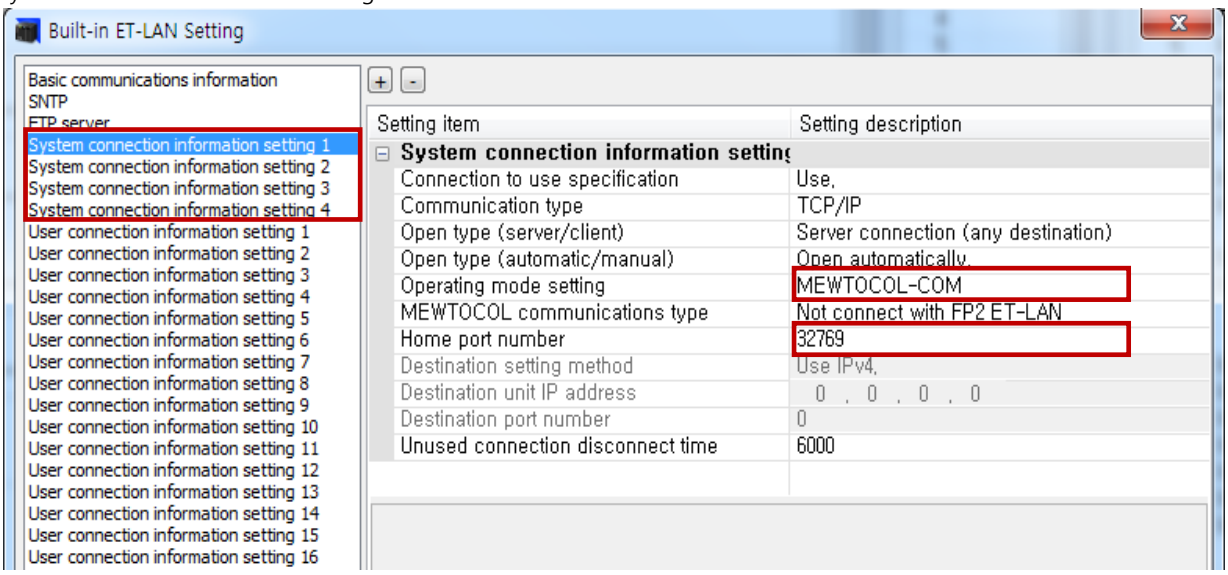


2. Select Built-in-LAN to pop-up Built-in-LAN Setting window.



3. Set IP in Basic communications information.

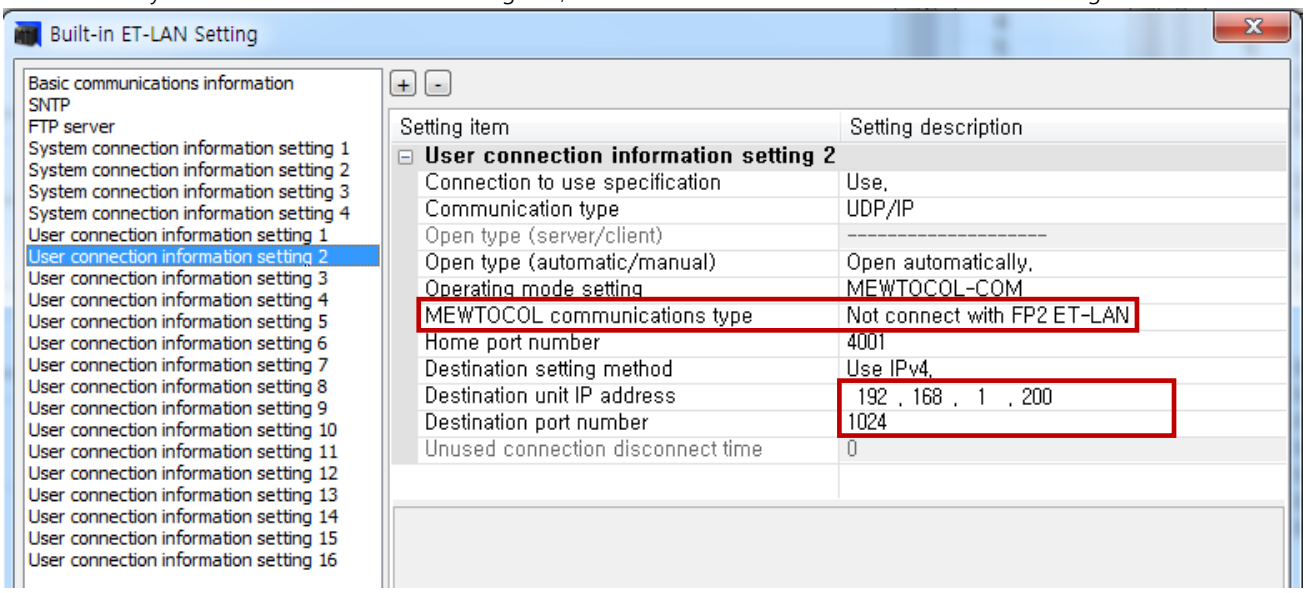
4. System connection information setting 1~4



Though there are MEWTOCOL-COM, MEWTOCOL7-COM, MODBUS-TCP, MEWTOCOL-DAT,MC protocols, TOP only supports MEWTOCOL-COM.

It sets the PLC port.

5. In addition to System connection information setting 1~4, It can be set with User connection information setting.



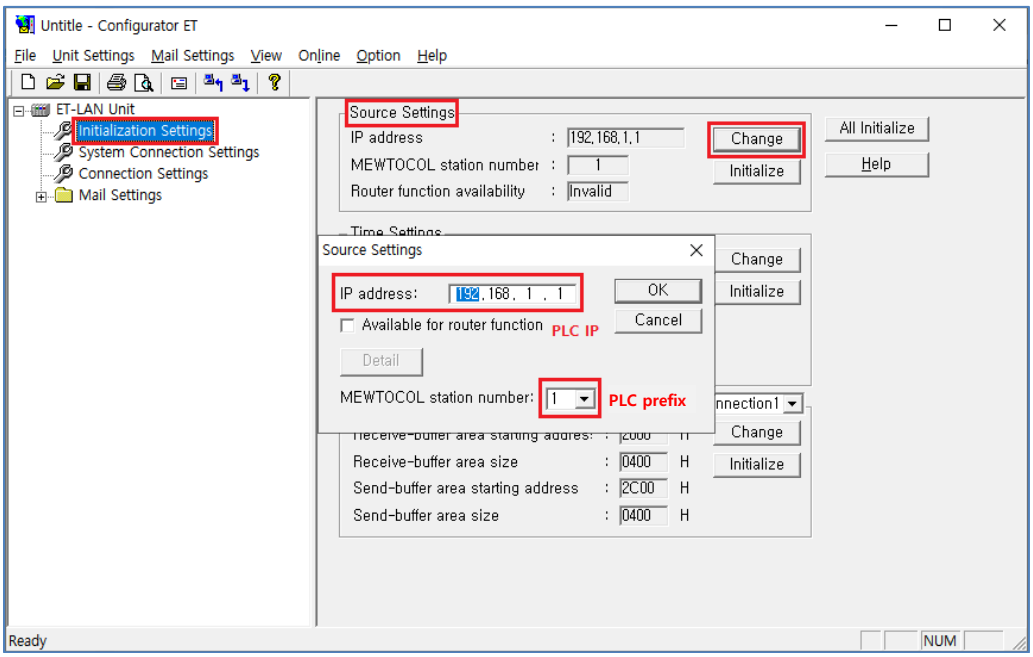
In case of UDP, also enter IP and PORT of TOP.

*Caution) If the MEWTOCOL communications type is set to connect with the FP2 ET-LAN, set the ET-LAN item in the HMI communication option setting to 'use'.

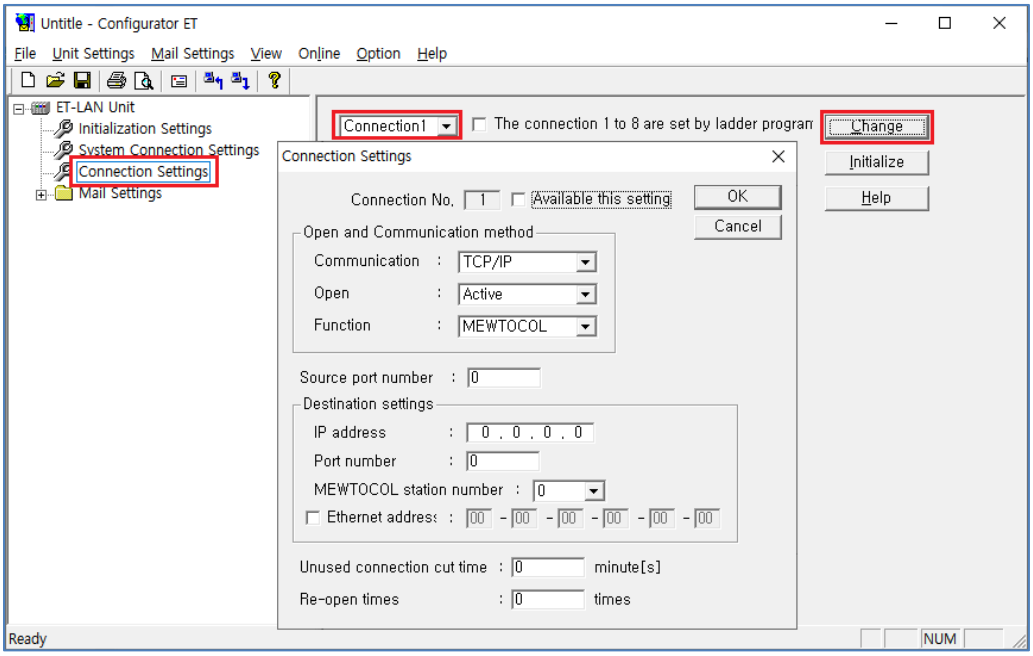
4.1 External device setting - FP2 ET-LAN

Use the "Configurator ET", the ET-LAN unit communication setting software of "FP SERIES" to set as follows. For more detailed setting method than that described in this example, refer to the PLC user manual

1. Click ET-LAN Unit >> Initialization Settings >> Source Settings >> Change to pop-up the Source Settings window and set IP and the station number of PLC.

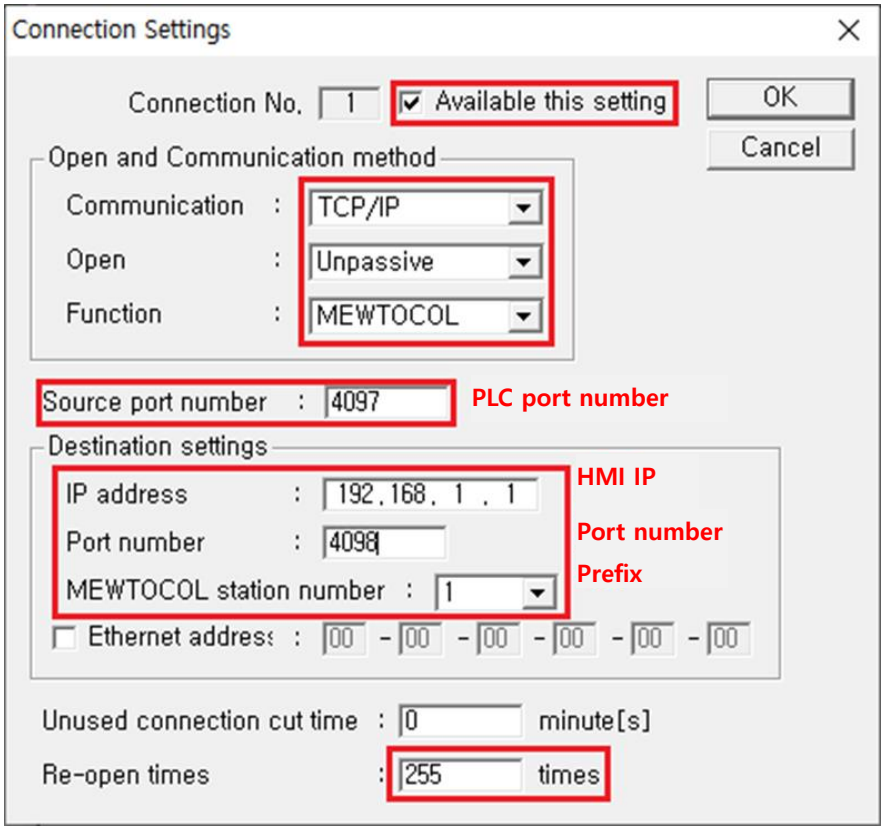


2. Click Connection Settings >> Connection1 >> Change to pop-up the .Connection Settings window.



*Caution) The setting "The connection 1 to 8 are set by ladder program" must be off.

3. In the Connection Settings window, enter whether to apply the Connection setting, communication method, PLC port number and HMI setting values.



5. Supported addresses

The devices available in TOP are as follows:

The device range (address) may differ depending on the CPU module series/type. The TOP series supports the maximum address range used by the external device series. Please refer to each CPU module user manual and be take caution to not deviate from the address range supported by the device you want to use.

Operand	Name	Bit address	Word address	Remarks
X	Input relay	X00 ~ X511F	WX0 ~ WX511	*Note 1)
Y	Output relay	Y00 ~ Y511F	WY0 ~ WY511	*Note 1)
R	Internal relay	R00 ~ R886F	WR0 ~ WR886	*Note 1)
	Special relay	R9000 ~ R910F	WR900 ~ WR910	
L	Link relay	L00 ~ L639F	WL0 ~ WL639	*Note 1)
T	Timer(contact)	T0 ~ T3071	———	
C	counter(contact)	C0 ~ C3071	———	
SV	Timer/Counter(Setting value)	———	SV0 ~ SV3071	
EV	Timer/Counter(Elapsed value)	———	EV0 ~ EV3071	
DT	Data register	DT0.0 ~ DT10239.F	DT0 ~ DT10239	
	Special data register	DT90000.0 ~ DT90511.F	DT90000 ~ DT90511	
LD	Link register	LD0.0 ~ LD8447.F	LD0 ~ LD8447	
FL	File register	FL0.0 ~ FL32764.F	FL0 ~ FL32764	

*Note 1) For X, Y, R, and L, bit/word processing is possible. In bit processing, 1 unit is hexadecimal and 10 units is decimal.

(E.g.) X12C

Word processing is preceded by a W (e.g.) WX12 = X120-X12F 16-bit data)

*Caution) The special register (DT) is only available on FP2/2SH/10SH.