



Pass-Through Function Guide

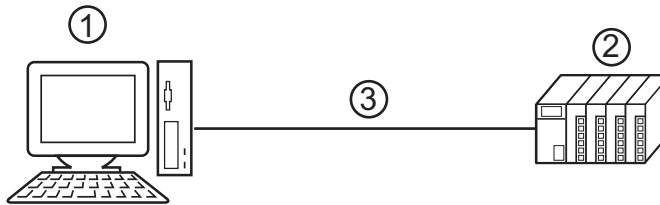
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1 General Description

1.1 What is the Pass-Through Function?

When communicating with the external devices using Windows applications such as ladder software that uses serial interfaces, the ladder software and external device need to be serially interfaced.

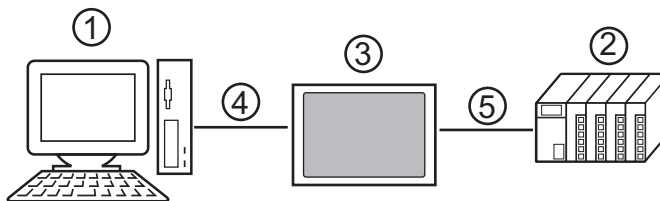
Example)



1. PC with a ladder software installed.
2. External device to be communicated with.
3. Serial interface

On GP-Pro EX, using the pass-through function enables communication between the ladder software and external device through an indicator.

Example)



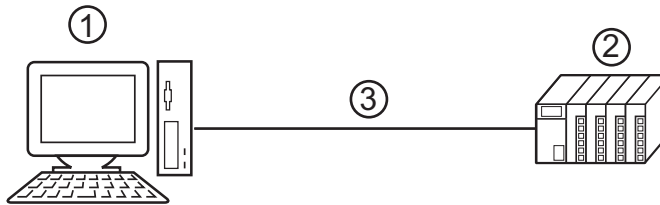
1. PC with as ladder software installed.
2. External device to be set.
3. Indicator to relay serial interface.
4. USB Transfer Cable (*1) or Ethernet (UDP) connection.
5. Connecting cable corresponding to the external device.

*1 The USB transfer cables you can use differ between display units. For more information, refer to the GP-Pro EX Reference Manual's "Transferring Project Files via USB Transfer Cable".

Using the pass-through function makes connecting cables unnecessary when changing the settings of external devices with the ladder software.

When using the WinGP, installing the WinGP and the ladder software in one PC enables usage of the pass-through function in the following configuration.

Example)



1. PC with the WinGP and ladder software installed
2. External device to be set
3. Connecting cable corresponding to the external device

NOTE

- WinGP needs to be registered in the pass-through function setting tool. Enter the PC's IP address to search for the indicator.

We recommend entering the loopback address (127.0.0.1) for the IP address.

☞ "3.1.2 Setting with Pass-Through Function Tool" (page 17)

1.2 Mechanism of the Pass-through Function

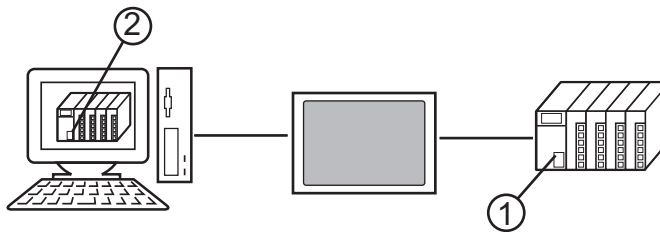
The Pass-Through function is a mechanism for the associate virtual port on the PC to communicate with the serial interface port of the external device.

Hereinafter, the virtual port on the PC is to be referred to as “virtual COM.”

Example)

By setting the virtual COM “Port 1” in communication setting of the ladder software, the system operates as if it is connected to port 1 of the external device.

To implement this operation, the pass-through function setting tool, virtual COM bus driver, and virtual COM port driver are used.



1. Port 1 of external device for serial interface.
2. Hereinafter, the virtual port on the PC is to be referred to as “virtual COM.”

The Pass-Through function setting tool and virtual COM bus driver, virtual COM port driver provide the functions below.

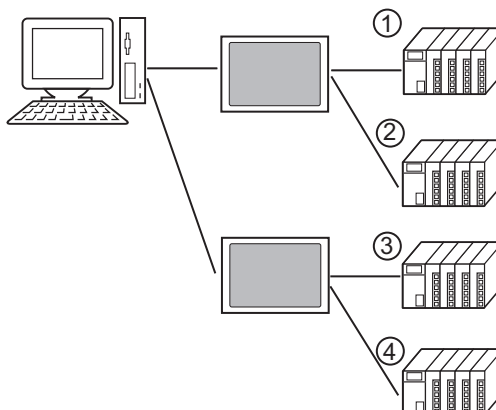
- Make port 1' on the PC: Virtual COM port driver
- Associate port 1' with port 1: Pass-Through function setting tool
- Exchange data of port 1' and port 1: Virtual COM bus driver

The Pass-Through function enables communication with the external devices using the installed virtual COM ports. However, only up to 4 virtual COM ports can be used simultaneously.

To communicate with multiple Device/PLCs, online the COM port associated with the Device/PLC in the GP-Pro EX [Pass-Through Configuration Tool].

☞ "3.1 Setting with Pass-Through Function Setting Tool" (page 13)

Example)



1.3 Operation Environment

The following environment is required to use the Pass-Through function.

Compatible with GP-Pro EX

GP-Pro EX Ver.1.1 or higher.

GP-Pro EX Ver.2.5 or higher is required for using WinGP.

Compatible OS

Microsoft® Windows® XP (32-bit versions: SP2 or later)

Microsoft® Windows Vista® (All editions of 32-bit versions)

Microsoft® Windows® 7 (All editions of 32-bit/64-bit versions)

Microsoft® Windows® 8 / Microsoft® Windows® 8.1 (All editions of 32-bit/64-bit versions)

Microsoft® Windows® 10 (32-bit/64-bit versions of Home, Pro, and Enterprise)

■ Precautions

- When using the Pass-Through Function, do not allow the computer to switch to standby (Windows XP), sleep (Windows Vista, Windows 7, Windows 8, Windows 8.1, Windows 10), or hibernation modes when communicating with External Devices. If the computer is allowed to switch to one of these modes, communications with the External Device will be interrupted.
- When it takes a long time for External Device to respond (e.g. writing to RAM), set the larger value to [Timeout] in [Communication settings] than the response time from External Device.
- When data is transferred with the pass-through function during execution of the logic function, an error may occur in the middle of transferring the data. If the error occurs, stop the execution of the logic function and transfer the data, or transfer the data without using the pass-through function.

2 Install

Installation of the Pass-Through function setting tool and virtual COM bus driver/virtual Com port driver for Pass-Through function use.

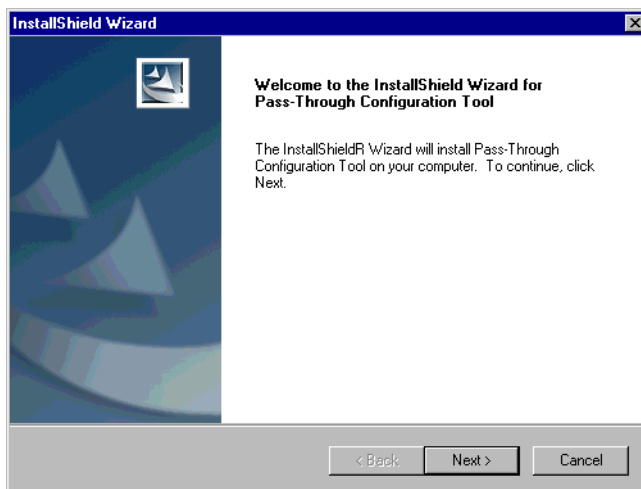
IMPORTANT

- Install the Pass-Through Function under the administrative privileges.
- Be sure to quit all application programs and close (disable) all resident programs, such as virus detection software.

2.1 Install of Pass-Through Function

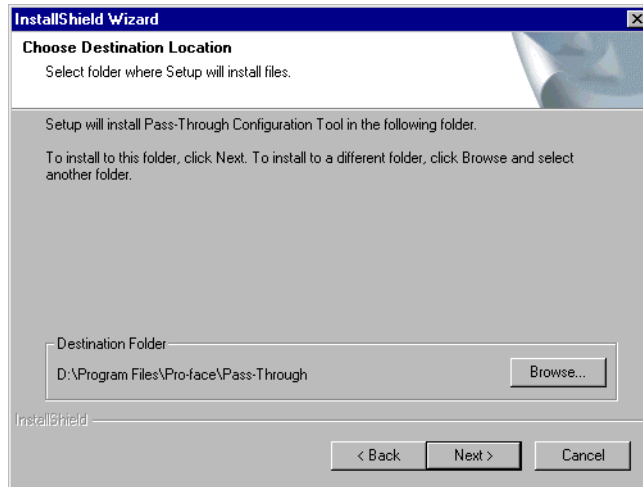
2.1.1 Install on Windows XP

- 1 Start up the installer of GP-Pro EX.
- 2 When the install screen is displayed, click “Pass-Through.”
- 3 The dialog box, “Welcome to the InstallShield Wizard for Pass-Through Configuration Tool” is displayed, and go forward with the installation following the directions of the wizard.

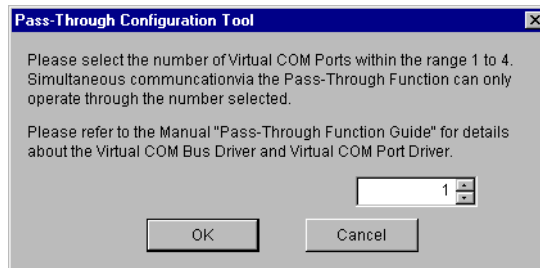
**NOTE**

- When the Pass-Through function is installed in your computer, the dialog box of “Confirm Uninstall” is displayed. Uninstall the Pass Trough function following the instructions of the dialog box and restart the computer to install.

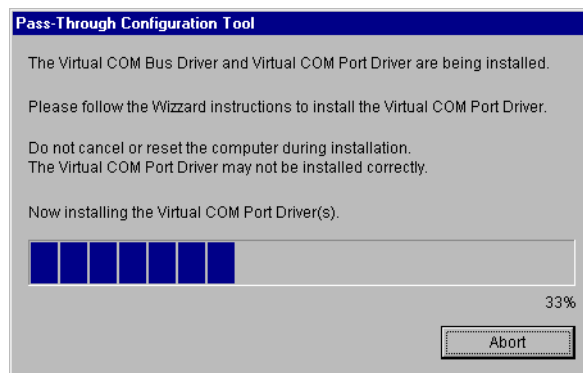
- 4 Choose the place for installation from the dialog box “Choose Destination Location” and click “Next.”



- 5 Input the number (1 to 4), of the virtual COM ports to be installed and click “OK.” Installation is executed double the inputted figure.



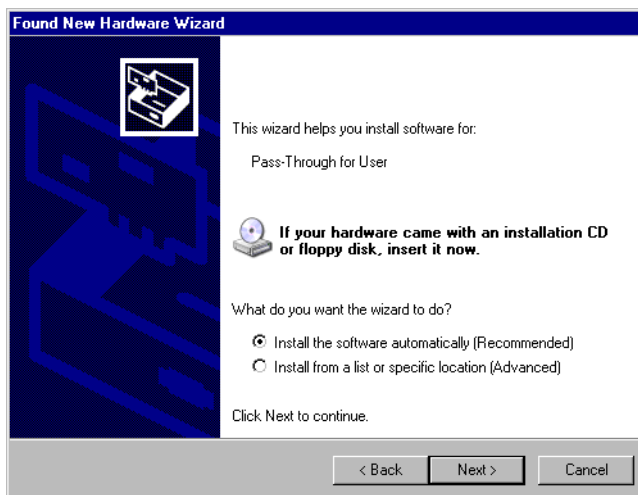
- 6 Virtual COM port driver and virtual COM bus driver are installed. Do not cancel or restart until the installation is completed.



- 7 If the dialog box, “Welcome to the Found New Hardware Wizard” is displayed, choose “No, not at this time.” and click “Next.” This message may not be displayed depending on the environment in which it is to be installed.



- 8 The dialog box for confirming installation is displayed. Choose “Install the software automatically (Recommended)” and click “Next.”


IMPORTANT

- If the dialog box regarding Windows Logo identification test, click “Continue” to continue installation.

- 9 The dialog box, “Completing the Found New Hardware Wizard” is displayed, and click “Finish.”



- IMPORTANT** • As for the installation of virtual COM, twice the number of virtual COM installations input according to procedure 6 are executed.

- 10 When all virtual COM ports are installed, the dialog box, “Restarting Windows“ is displayed. Choose “Yes, I want to restart my computer now.” to restart your computer.



- NOTE** • Installed virtual COM can be checked using the “Device Manager.” Choose “Show hidden devices” from the “View” menu.

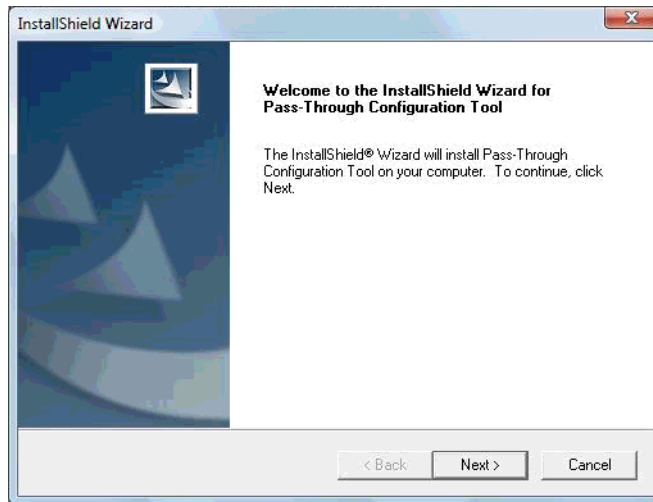
- IMPORTANT** • When uninstalling the virtual COM, always follow the procedures described in the appendix. If the virtual COM is uninstalled with the Device Manager, Windows may become unstable.
 ☞ "5.1 Uninstall of Pass-Through Function" (page 20)

2.1.2 Install on Windows Vista / Windows 7 / Windows 8 / Windows 8.1 / Windows 10

- 1 Start up the installer of GP-Pro EX.
- 2 When the install screen is displayed, click “Pass-Through.”

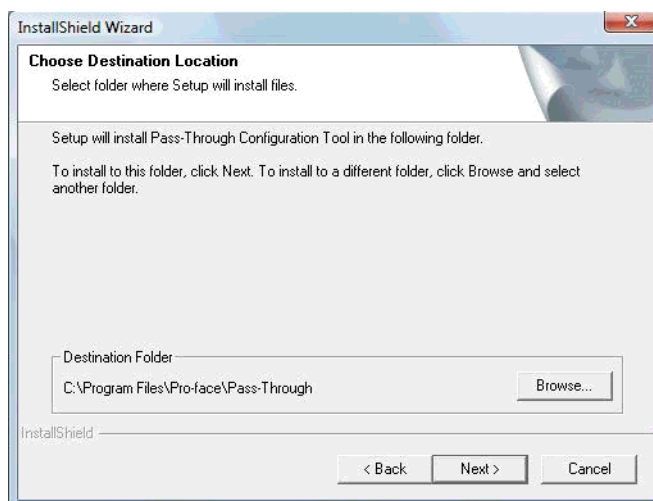
NOTE • If the dialog box, “User Account Control” is displayed, choose “Allow.”

- 3 The dialog box, “Welcome to the InstallShield Wizard for Pass-Through Configuration Tool” is displayed, and go forward with the installation following the directions of the wizard.

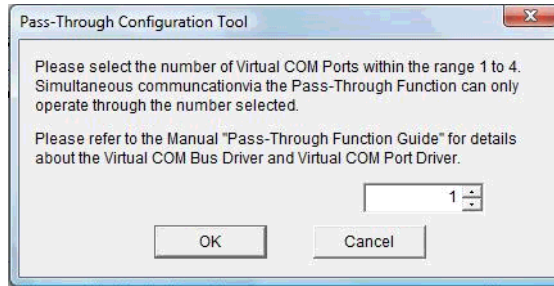


NOTE • When the Pass-Through function is installed in your computer, the dialog box of “Confirm Uninstall” is displayed. Uninstall the Pass Trough function following the instructions of the dialog box and restart the computer to install.

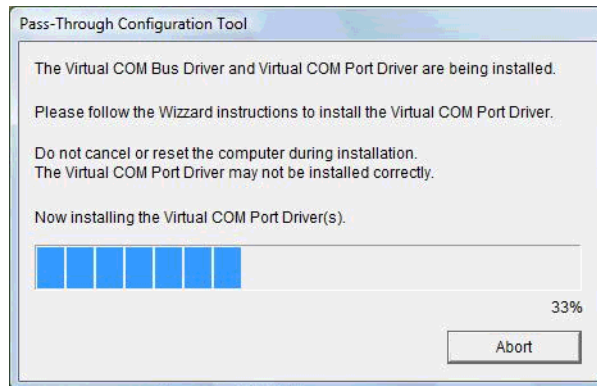
- 4 Select where to install the Pass-Through function setting tool and click “Next.”



- 5 Input the number (1 to 4), of the virtual COM ports to be installed and click “OK.” Installation is executed double the inputted figure.

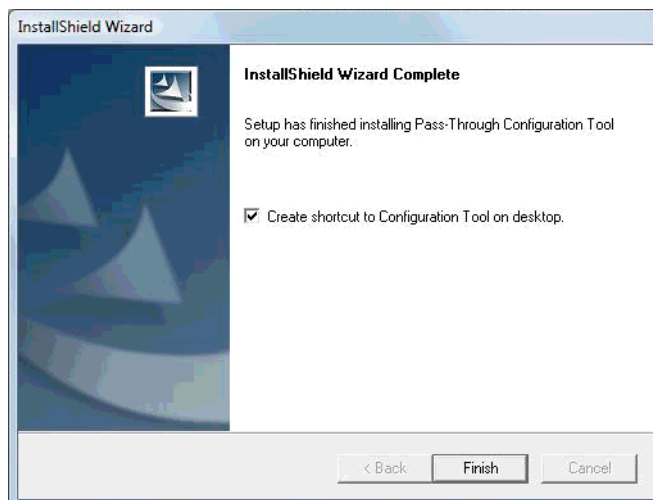


- 6 Virtual COM port driver and virtual COM bus driver are installed. Do not cancel or restart until the installation is completed.


IMPORTANT

- If the dialog box, “Windows can't verify the publisher of this driver software” is displayed, choose “Install this driver software anyway” and continue the installation.

- 7 The dialog box, “InstallShield Wizard Complete” is displayed, and click “Finish.”



- 8 When all virtual COM ports are installed, the dialog box, “Restarting Windows” is displayed. Choose “Yes, I want to restart my computer now.” to restart your computer.



-
- NOTE** • Installed virtual COM can be checked using the “Device Manager.” Choose “Show hidden devices” from the “View” menu.
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- IMPORTANT** • When uninstalling the virtual COM, always follow the procedures described in the appendix. If the virtual COM is uninstalled with the Device Manager, Windows may become unstable.
- ☞ "5.1 Uninstall of Pass-Through Function" (page 20)
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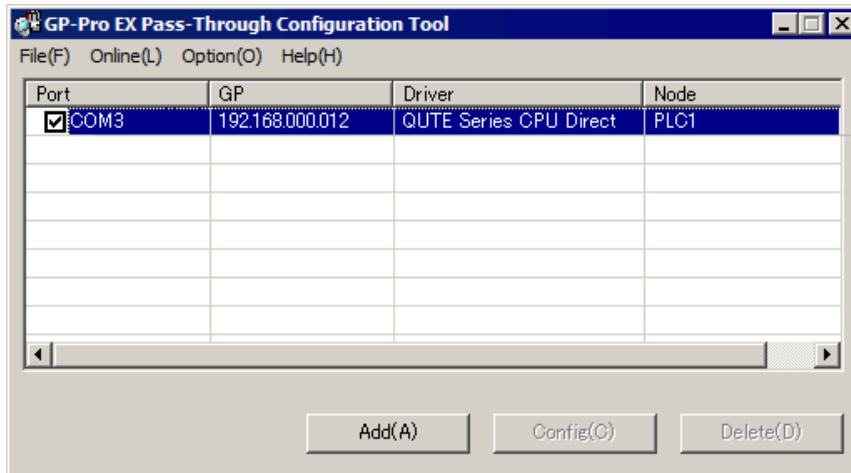
3 Setting

Set association between virtual Com made by virtual COM bus driver/virtual COM port driver and external device using the pass-through function setting tool. When you use an Ethernet driver that supports the pass-through function, you can also associate the Ethernet port with the External Device.

3.1 Setting with Pass-Through Function Setting Tool

3.1.1 Interface of Pass-Through Function Setting Tool

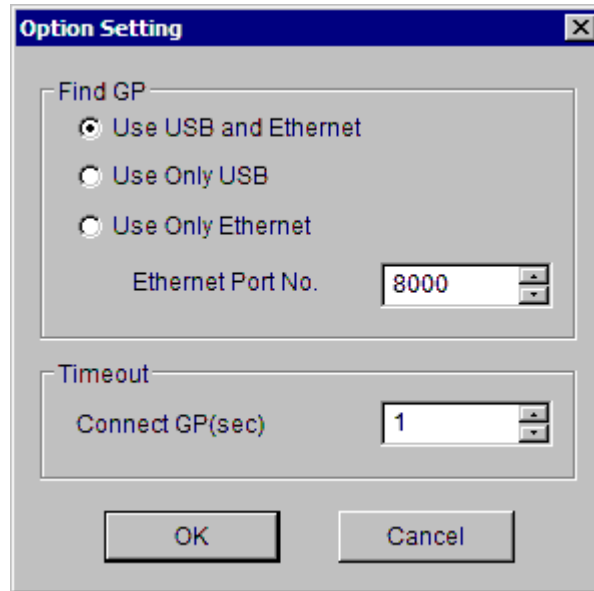
- Pass-Through Function Setting Tool



| Setup Items | Setup Description |
|-------------|---|
| Menu bar | Menu to operate pass-through function setting tool is displayed. When these are selected, pull down menu is displayed. |
| Port | The currently set port is displayed. Check box shows the current on-line status. When there is a check in the box, port is on line. |
| GP | Connection method with GP is displayed. |
| Driver | Driver set on the GP is displayed. |
| Node | Name of external device connected to GP is displayed. |
| Add | Adds the port used by the pass-through function. |
| Config | The setting of port registered in the pass-through function setting tool is changed. |
| Delete | The setting of port registered in the pass-through function setting tool is deleted. |

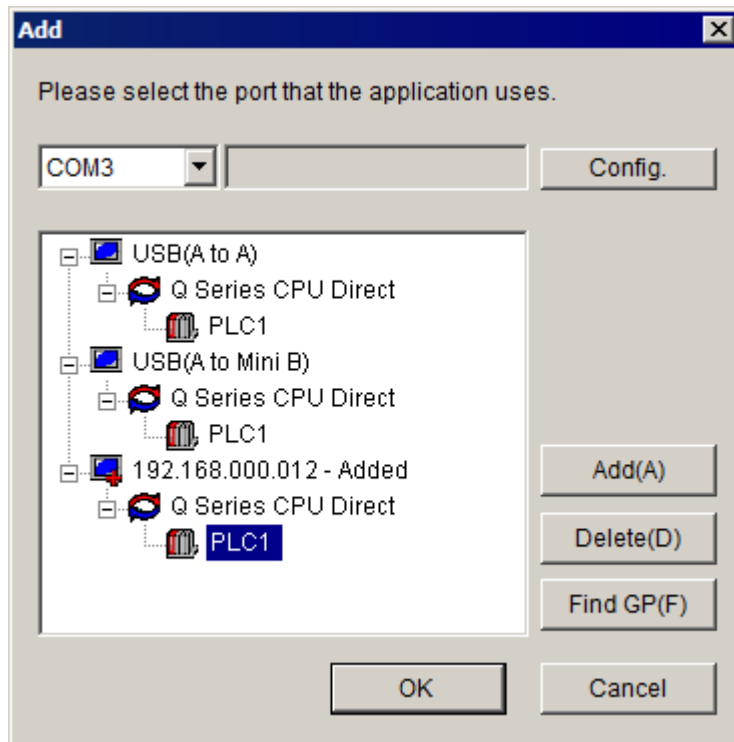
- NOTE**
- When you set multiple ports online at the same time, the following limits will apply:
 - When the same port is defined on multiple Device/PLCs, you can set only one Device/PLC online.
 - When multiple Device/PLCs use the same model of USB transfer cable, you can set only one Device/PLC online.

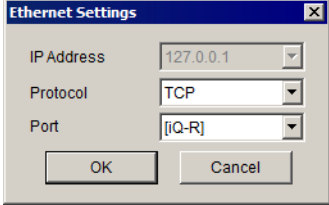
- [Option Setting] menu



| Setup Items | Setup Description |
|-------------|---|
| Find GP | Sets up the path used to search for GPs. If the selected path includes Ethernet, define the Ethernet port on a computer with the Pass-Through Configuration Tool installed. |
| Timeout | Enter the amount of time (in seconds) the computer waits to receive a response from the display unit. |

- [Add]/[Config] Dialog Box

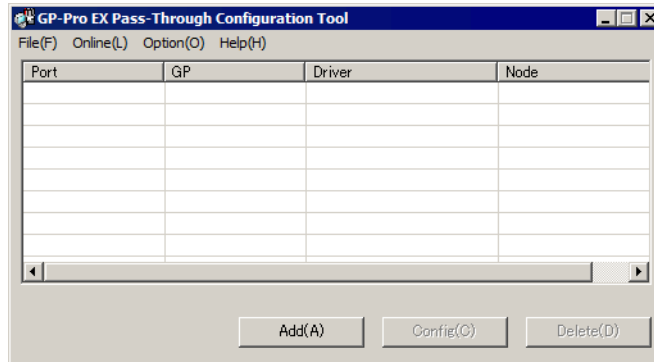


| Setup Items | Setup Description |
|---|---|
| Please select the port that the application uses. | Select the port used by applications such as ladder software. Select either Virtual COM port or Ethernet. |
| Config. | Select the settings, [Protocol] and [Port], for communication between the display unit and External Device. These settings become available when the [Please select the port that the application uses] property is set to [Ethernet].  |
| List | USB or indicator connected on the Ethernet is searched, and the list of external device connected to the GP is displayed. The details on the display of the connection type are as follows: <ul style="list-style-type: none"> • USB (A to A): Connection with USB Transfer Cable (CA3-USBCB-01) • USB (A to Mini B): Connection with USB Data Transfer Cable (USB A/Mini B 1.8m) (ZC9USCBMB1) • IP Address: Connection with Ethernet cable |
| Add | GP that cannot be found by search such as access beyond the router is added. GP is searched by inputting IP address in the displayed dialog box, and added to the list. The [Add] button adds only GPs that are connected to the Ethernet. |
| Delete | GP is deleted from the list. Only GP that is added by [Add] button can be deleted. |

| Setup Items | Setup Description |
|-------------|--|
| Find GP | <p>USB or GP on the Ethernet is searched again.</p> <p>NOTE</p> <p>GP that is added by [Add] button is not deleted even if it is searched again. However, when an GP using the same IP address is searched, information is updated.</p> |

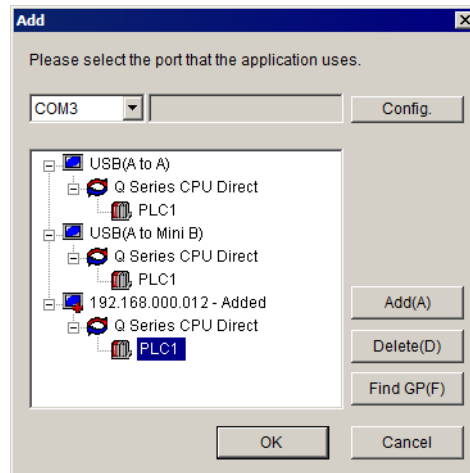
3.1.2 Setting with Pass-Through Function Tool

- 1 From [Start Menu], select [Pro-face]-[Pass-Through function setting tool] to start up the pass-through function setting tool.



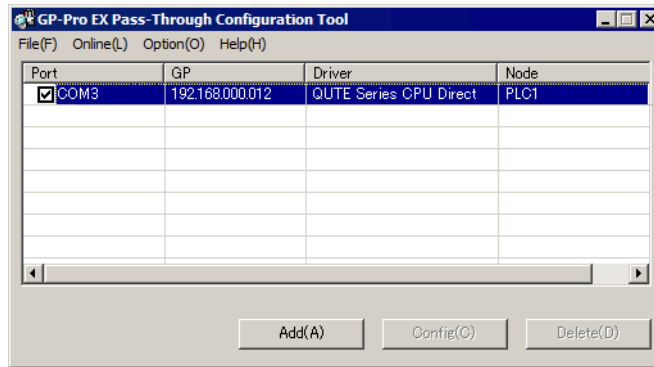
- NOTE**
- An icon is displayed on the task bar while the Pass-Through application is starting up. When right-clicking the Pass-Through setting tool icon in the task bar, the menu is displayed, and select [Start the setting tool] in the menu.

- 2 Click “Add” from the dialog box of Pass-Through function setting tool.
- 3 The Add dialog box lists the External Devices you can use. Select the port ([Virtual COM port] or [Ethernet]) and External Device in use, and click OK.



- NOTE**
- If external device to be used is not displayed, click “Find GP.” If it is not displayed even after the search, click “Add,” a dialog box is displayed, and input IP address of the GP connected to the external device.
 - When registering WinGP with the pass-through function setting tool, click [Add] to display the dialog box, and enter the PC's IP address. We recommend that you enter the loopback address (127.0.0.1) in the IP address and search when registering WinGP in the PC in which the pass-through function setting tool is activated. When searching with the IP address, the WinGP needs to be activated. A compatible pass-through function driver needs to be sent to the WinGP prior to activation.
 - When the port you are using is [Ethernet], click [Config.] and define the [Protocol] and [Port]. The IP address is fixed as the loopback address (127.0.0.1).

- 4 Combinations of associated virtual COM and external device are displayed in the dialog box of the Pass-Through function setting tool. Place a check in the check box in the COM port column to make the combination on-line.



4 Error Messages

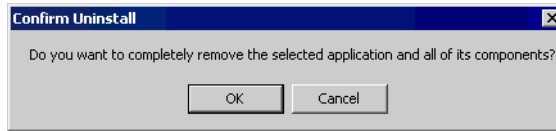
Error messages of pass-through functions are as follows.

| Error Message | Description |
|---|---|
| Timeout error is occurred. | Time out occurred when connecting with the setting registered in the pass-through function setting tool. Check that the GP is connected. |
| Failed to open port of Virtual Com Driver. | Failed to open Virtual COM when connecting with the setting registered in the pass-through function setting tool. Check that port number set by applications such as ladder software is the same. |
| The node is already connected. | Connected to the GP that has already been connected with pass-through function. Check the connection status of pass-through function with the pass-through function setting tool. |
| Virtual COM port driver is not normally installed. Please install Virtual COM port driver | Virtual COM port driver is not properly installed. After deleting virtual COM port driver, reinstall. |
| The port number of virtual COM is overlaped. Please change virtual port number of virtual Com in the device manager | Port number of virtual COM duplicated. Change the corresponding COM port number with device manager. |

5 Appendix

5.1 Uninstall of Pass-Through Function

- 1 Start up the installer of GP-Pro EX.
- 2 When the install screen is displayed, click “Pass-Through.”
- 3 The dialog box “Confirm Uninstall” is displayed. Click “OK” to uninstall the Pass-Through function.



- 4 After uninstallation, restart the computer following the instructions in the displayed dialog box.

