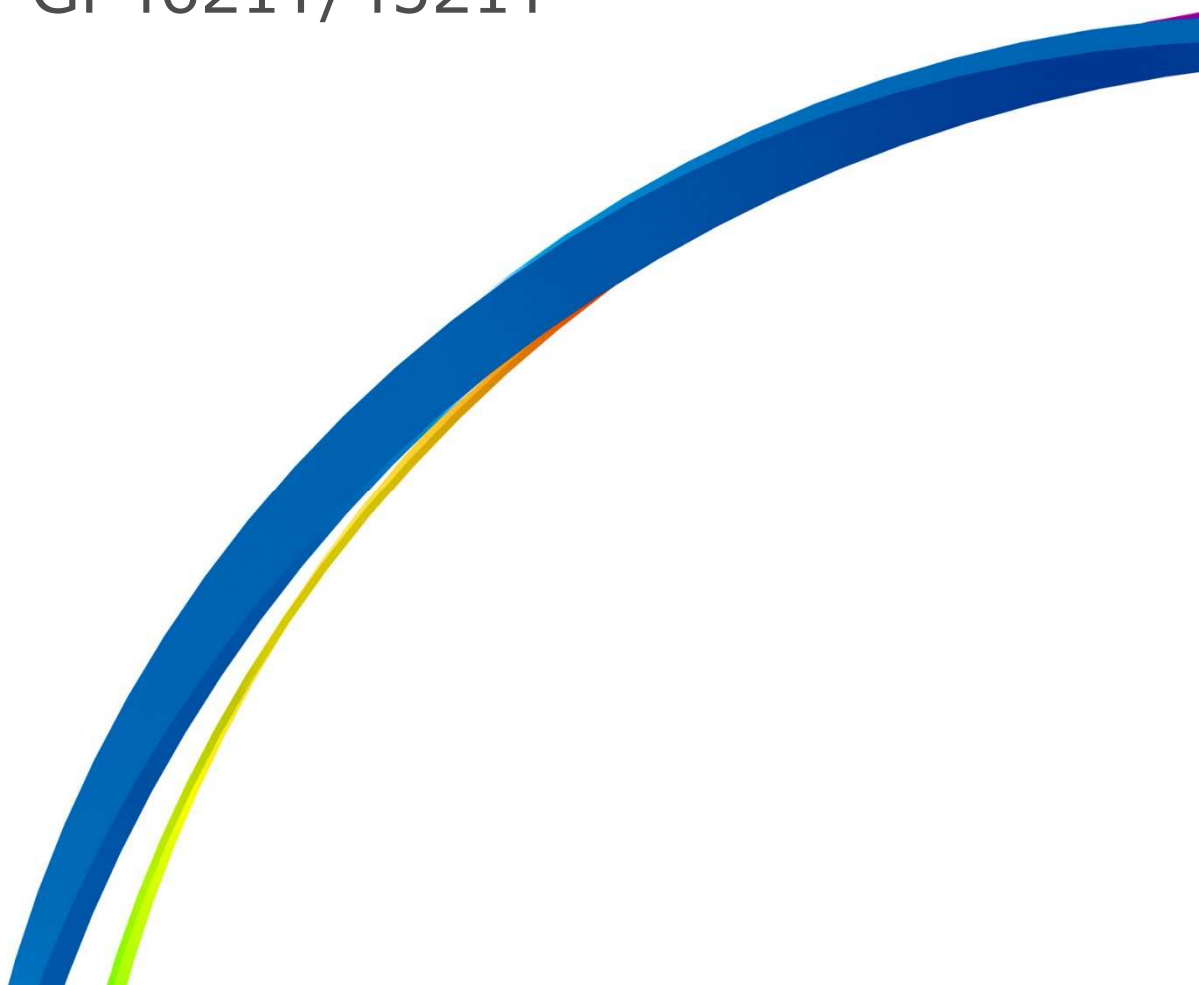# Replacement Guidebook

GP3650/35x0/3450 (Multimedia model)

→ GP4621T/4521T

Introduction

This guidebook introduces the procedures to replace the GP-3000 Multimedia model. First of all, please check the multimedia function and the image unit function you are using.

Model	Model number	Substitute model	Model Number
GP-3650T	AGP3650-T1-AF	GP-4621T+ VM unit	PFXGP4621TAA *1
	AGP3650-T1-AF-M (Coated model)		PFXGP4621TAAC *1
	AGP3650-T1-D24-M (Coated model)		PFXGP4621TADC *1
GP-3560T	AGP3560-T1-AF		PFXGP4621TAA *1
	AGP3560-T1-AF-M (Coated model)		PFXGP4621TAAC *1
GP-3550T	AGP3550-T1-AF	GP-4521T+ VM unit	PFXGP4521TAA *1
	AGP3550-T1-AF-M (Coated model)		PFXGP4521TAAC *1
GP-3450T	AGP3450-T1-D24	GP-4521T+ VM unit	PFXGP4521TAD *1 *2
	AGP3450-T1-D24-M (Coated model)		PFXGP4521TADC *1 *2

*1 Able to display video via a VM unit. But the picture recording/video replay feature is not supported.
*2 The panel cut-out dimensions differ. Consider replacement with SP-5400TW that has compatibility with panel cut-out dimensions. But SP-5400TW does not support the video display and picture recording/video replay feature.

Safety Information
HAZARD OF OPERATOR INJURY, OR UNINTENDED EQUIPMENT DAMAGE
Before operating any of these products, be sure to read all related manuals thoroughly.
Failure to follow these instructions can result in death, serious injury or unintended equipment damage.

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Chapter 1. Specification Comparison

1.1 GP-3650T and GP-4621T specification comparison

	GP-3650T	GP-4621T
Display Type	TFT Color LCD	
Display Colors	65,536 colors (without blink)/16,384 colors (with blink)	
Display Resolution	SVGA(800×600 pixels)	
Panel Cutout Dimensions	W301.5 × H227.5mm [11.87 x 8.96 in]	
Panel Thickness	1.6 to 10.0 mm [0.06 to 0.39 in]	**NEW** 1.6 ～ 5mm [0.06 to 0.2 in]
External Dimensions	W313 × H239 × D56mm [W12.32 x H9.41 x D2.20in]	**NEW** W315 × H241 × D83mm (including VM unit) [W12.40 x 9.49 x 3.26 in]
Touch Panel Type	Resistive Film (analog)	
Memory / **Application**	F FLASH EPROM 10MB / 8MB *1	**NEW** FLASH EPROM 32MB
Memory / **SRAM**	SRAM 320KB	
Backup Battery	Secondary Battery (Rechargeable Lithium battery)	Primary Battery (Replacement Battery)
Input Voltage	AC100 to 240V / DC24V	
Serial I/F / **COM1**	Connector D-Sub 9-pin plug RS-232C/422/485	**NEW** Connector D-Sub 9-pin plug RS-232C
Serial I/F / **COM2**	Connector D-Sub 9-pin socket RS-422/485	**NEW** Connector D-Sub 9-pin plug RS-422/485

Ethernet I/F	10BASE-T/100BASE-TX	
CF Card I/F	CF Card Slot x 1	None
SD Card I/F	None	SD Card Slot x 1
USB I/F(Type A)	USB(TYPE-A) x 2	**NEW** USB(TYPE-A) x 1 USB(TYPE miniB) x 1
Auxiliary I/O I/F	Output: Alarm/RUN/Buzzer, Input: Remote Reset, Connector Two piece type terminal block	None 2.11.1 Video Input/DVI input/output
Video Input I/F (Built in M class model)	NTSC/PAL/SECAM Input ,Connector RCA	
Audio Input I/F *3	MIC/LINE Input, Connector MINI-JACK	
Sound Output I/F	Speaker Output, Connector Two piece type terminal block (Same as Auxiliary I/O I/F)	
Expansion Image Unit I/F	GP3000 VM unit (GP3000-VM01) RGB unit (GP3000-RGB201) DVI input unit (GP3000-DVI01) GP2000VM unit (GP2000-VM41)	GP3000 VM unit (GP3000-VM01) RGB unit (GP3000-RGB201)

*1 Depending on the GP-Pro EX version, the amount of internal memory will vary.
    10MB: GP-Pro EX V2.6 or higher, 8MB: GP-Pro EX V2.5 or lower

1.2 GP-3550T and GP-4521T specification comparison

	GP-3550	GP-4521T
Display Type	TFT Color LCD	
Display Colors	65,536 colors (without blink)/16,384 colors (with blink)	
Display Resolution	VGA(640×480 pixels)	
Panel Cutout Dimensions	W259 × H201mm [10.20 x 7.91 in]	
Panel Thickness	1.6 to 10.0mm [0.06 to 0.39in]	**NEW** 1.6 to 5.0mm [0.06 to 0.2in]
External Dimensions	W270.5 × H212.5 × D57mm [W10.65 x H8.37 x D2.24in]	**NEW** W272.5 × H214.5 × D84mm (Including VM unit) [10.73 x 8.44 x D3.3 in]
Touch Panel Type	Resistive Film (analog)	
Memory	**Application**	FLASH EPROM 10MB / 8MB *1	**NEW** FLASH EPROM 32MB
	SRAM	SRAM 320KB	
Backup Battery	Secondary Battery (Rechargeable Lithium battery)	**NEW** Primary Battery (Replacement Lithium battery)
Input Voltage	AC100 to 240V	AC100 to 240V / DC24V

Serial I/F	COM1	Connector D-Sub 9-pin plug RS-232C/422/485	**NEW** Connector D-Sub 9-pin plug RS-232C
	COM2	Connector D-Sub 9-pin socket RS-422/485	**NEW** Connector D-Sub 9-pin plug RS-422/485
Ethernet I/F		10BASE-T/100BASE-TX	
CF Card I/F		CF Card Slot x 1	None
SD Card I/F		None	**NEW** CF Card Slot x 1
USB I/F(Type A)		USB TYPE-A x 2	**NEW** USB TYPE-A x 1 USB TYPE mini B x 1
Auxiliary I/O I/F		Output: Alarm/RUN/Buzzer, Input: Remote Reset, Connector Two piece type terminal block	None 2.11.1 Video Input/DVI input/output
Video Input I/F (Built in M class model)		NTSC/PAL/SECAM, Connector RCA	
Audio Input I/F		MIC/LINE Input, Connector MINI-JACK	
Sound Output I/F		Speaker Output, Connector Two piece type terminal block (Same as Auxiliary I/O I/F)	
Expansion Unit I/F (For Video Unit)		GP3000 VM unit (GP3000-VM01) RGB unit (GP3000-RGB201) DVI input unit (GP3000-DVI01) GP2000VM unit (GP2000-VM41)	GP3000 VM unit (GP3000-VM01) RGB unit (GP3000-RGB201)

*1 Depending on the GP-Pro EX version, the amount of internal memory will vary.
10MB: GP-Pro EX V2.6 or higher, 8MB: GP-Pro EX V2.5 or lower

1.3 GP-3560T and GP-4621T specification comparison

	GP-3560	GP-4621T
Display Type	TFT Color LCD	
Display Colors	65,536 colors (without blink)/16,384 colors (with blink)	
Display Resolution	SVGA(800×600 pixels)	
Panel Cutout Dimensions	W259 × H201mm [10.20 x 7.91 in]	W301.5 × H227.5mm [11.87 x 8.96 in] 2.2 Replacing GP-3560
Panel Thickness	1.6 to 10.0mm [0.06 to 0.39in]	**NEW** 1.6 to 5.0mm [0.06 to 0.2in]
External Dimensions	W270.5 × H212.5 × D57mm [W10.65 x H8.37 x D2.24in]	**NEW** W315 × H241 × D83mm (including VM unit) [W12.40 x 9.49 x 3.26 in]
Touch Panel Type	Resistive Film (analog)	
Memory / **Application**	FLASH EPROM 10MB / 8MB *1	FLASH EPROM 32MB
Memory / **SRAM**	SRAM 320KB	
Backup Battery	Secondary Battery (Rechargeable Lithium battery)	**NEW** Primary Battery (Replacement Lithium battery)
Input Voltage	AC100 to 240V	AC100 to 240V / DC24V
Serial I/F / **COM1**	RS-232C/422/485 Connector D-Sub 9-pin plug	**NEW** RS-232C Connector D-Sub 9-pin plug
Serial I/F / **COM2**	RS-422/485 Connector D-Sub 9-pin socket	**NEW** RS-422/485 Connector D-Sub 9-pin plug
Ethernet I/F	10BASE-T/100BASE-TX	
CF Card I/F	CF Card Slot (TYPE-II)	None

SD Card I/F	None	SD Card Slot
USB I/F(Type A)	USB TYPE-A x 2	USB TYPE-A x 1 USB TYPE-miniB x 1
Auxiliary I/O I/F	Output: Alarm/RUN/Buzzer, Input: Remote Reset, Connector Two piece type terminal block	None
Video Input I/F (Built in M class model)	NTSC/PAL, Connector RCA	
Audio Input I/F *3	MIC/LINE Input, Connector MINI-JACK	
Sound Output I/F	Speaker Output, Connector Two piece type terminal block (Same as Auxiliary I/O I/F)	
Expansion Unit I/F (For Video Unit)	GP3000 VM unit (GP3000-VM01) RGB unit (GP3000-RGB201) DVI input unit (GP3000-DVI01) GP2000VM unit (GP2000-VM41)	GP3000 VM unit (GP3000-VM01) RGB unit (GP3000-RGB201)

*1 Depending on the GP-Pro EX version, the amount of internal memory will vary.
      10MB: GP-Pro EX V2.6 or higher, 8MB: GP-Pro EX V2.5 or lower

1.4 GP-3450T and GP-4521 specification comparison

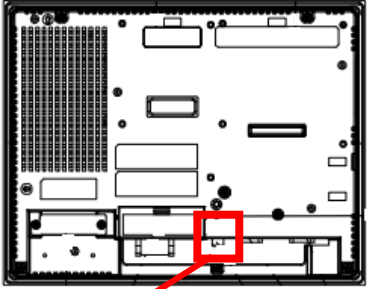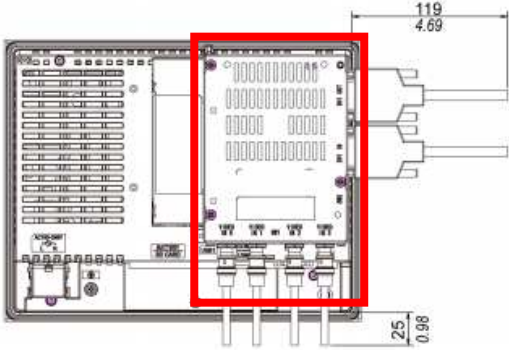|	GP-3450	GP-4521T
Display Type	TFT Color LCD	
Display Colors	65,536 colors (without blink)/16,384 colors (with blink)	
Display Resolution	VGA(640×480 pixels)	
Panel Cutout Dimensions	W204.5 × H159.5mm [8.05 x 6.28 in]	**NEW** W259 × H201mm [10.20 x 7.91 in]
Panel Thickness	1.6 to 10.0mm [0.06 to 0.39in]	1.6 to 10.0mm [0.06 to 0.39in]
External Dimensions	W215 × H170 × D60mm [W8.46 x H6.69 x D2.36in]	**NEW** W272.5 × H214.5 × D84mm (Including VM unit) [10.73 x 8.44 x D3.3 in]
Touch Panel Type	Resistive Film (analog)	
Memory / **Application**	FLASH EPROM 10MB / 8MB *1	FLASH EPROM 32MB
Memory / **SRAM**	SRAM 320KB	
Backup Battery	Secondary Battery (Rechargeable Lithium battery)	**NEW** Primary Battery (Replacement Lithium battery)
Input Voltage	DC24V	**NEW** AC100 to 240V / DC24V
Serial I/F / **COM1**	RS-232C/422/485 Connector D-Sub 9-pin plug	**NEW** RS-232C Connector D-Sub 9-pin plug
Serial I/F / **COM2**	RS-422/485 Connector D-Sub 9-pin socket	**NEW** RS-422/485 Connector D-Sub 9-pin plug
Ethernet I/F	10BASE-T/100BASE-TX	
CF Card I/F	CF Card Slot	None
SD card I/F	None	SD Card Slot
USB I/F(Type A)	USB TYPE-A x 2	USB TYPE-A x 1 USB TYPE-miniB x 1

Auxiliary I/O I/F	Speaker Output, Connector Two piece type terminal block (Same as Auxiliary I/O I/F)	None 2.11.1 Video Input/DVI input/output
Video Input I/F *3	NTSC/PAL, Connector RCA	
Audio Input I/F *3	MIC/LINE Input, Connector MINI-JACK	
Sound Output I/F	Speaker Output, Connector Two piece type terminal block (Same as Auxiliary I/O I/F)	
Expansion Unit I/F (For Video Unit)	-	GP3000 VM unit (GP3000-VM01) RGB unit (GP3000-RGB201)

*1 Depending on the GP-Pro EX version, the amount of internal memory will vary.
    10MB: GP-Pro EX V2.6 or higher, 8MB: GP-Pro EX V2.5 or lower

Chapter 2. Hardware Compatibility

2.1 Differences of external appearance

GP3650, GP35x0, and GP3450 series have a video interface on each display unit. But, as for GP4521T and GP4621T, a VM unit is attached as a video interface. Because of it, location and external dimensions of every connector have remarkably changed. When replacing the product, be sure to see the GP3000 series hardware manual and the GP4000 series hardware manual.

(Example) GP35x0 series	（Example）GP-4521T
Built-in video interface	VM Unit Video Interface

2.2 Replacing GP-3560

Panel cut-out and external dimensions differ between GP-3560T and GP-4621T.
When replacing the product with 10.4" GP-4521T, the panel cut-out dimensions are the same, but the resolution is different.

	GP-3560T	GP-4621T	GP-4521T
Inch	10.4"	12.1"	10.4"
Resolution	SVGA (800x600 pixels)		VGA (640x480 pixels)
Panel cut-out dimensions	W259×H201mm	W301.5×H227.5mm	W259×H201mm (Same as GP-3560T)

2.3 Transfer cable

To transfer screen data to GP-4521T/4621T series, use a USB transfer cable or Ethernet.

The USB cables that can be used for GP-4521T/4621T series are as follows;

	Model	Connector Type	Connector on GP
Options	CA3-USBCB-01		USB (Type A)
	ZC9USCBMB1		USB (Type mini B)
Commercial Item	-		

The same USB transfer cable (CA3-USBCB-01) as that for GP3000 series can be used.

2.4 Interface

2.4.1 Serial Interface
The pin assignment and the shape of plug/socket connector of GP3000 series are different from GP-4521T/4621T.
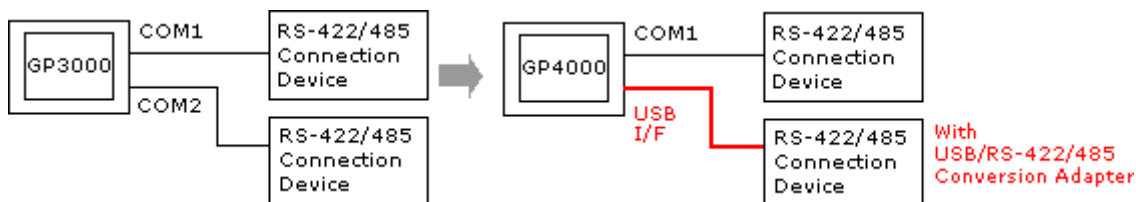To know the details about them, see the below
        [4.2 Shapes of COM ports]
        [4.3 Signals of COM ports]
        [4.5 Cable Diagram at the time of replacement].

When both the COM1 port and the COM2 port have the RS-422/485 setting, only the COM2 port can be used for RS-422/485 connection after replacement.
Using a USB/RS-422/485 Conversion Adapter (PFXZCBCBCVUSR41) may allow you to use GP4000 series' USB interface as RS-422/485 serial interface for connection.

For more information, please refer to USB/RS-422/485 Conversion Adapter Installation Guide. (http://www.pro-face.com/otasuke/download/manual/cgi/manual.cgi?mode=33&cat=3)

IMPORTANT
When using USB/RS-422/485 Conversion Adapter (PFXZCBCBCVUSR41) with a display unit, the device/PLCs you can connect to its serial interface (RS-422/485) are limited. To check the connection configuration, please refer to refer to USB/RS-422/485 Conversion Adapter Connection Guide (http://www.pro-face.com/otasuke/files/manual/gpproex/new/device/data/com_usc.pdf)

2.4.2 Auxiliary I/O Interface (AUX)

GP-4521T/4621T series is not equipped with Auxiliary I/O Feature. External Reset Input and 3 Outputs (RUN Output, System Alarm Output, and External Buzzer Output) that can be used for GP-3000 series cannot be used.

2.4.3 Sound Output Interface (for GP3000 series only)

GP-4521T/4621T series is not equipped with the sound output function. The sound output function for GP-3000 series cannot be used.

2.4.4 CF Card Interface

GP-4521T/4621T series is not equipped with a CF card slot. But a SD card slot and a USB interfaces are installed. In order to use the GP3000 series data saved in the CF card and the functions using the CF card, use a SD card or a USB flash drive instead.

* When using a SD card with GP-4521T/4621T series, please verify it supports the following specifications:

	File format	Maximum capacity
SD	FAT16	2GB
SDHC	FAT32	32GB

When the setting of the output destination folder is set to "CF Card" on GP-Pro EX, if you change the display unit type, the setting will automatically change to the one that uses a SD card.
To change the setting of the output destination folder, see [5.1 Changing the setting of the external media to use].

2.4.5 USB Interface (GP-35x0/3650 only)

GP-35x0/3650T has two USB ports (USB Type A) but GP-4521T/4621T series has only one.

If devices are connected to both USB ports on GP-3000 series, use an USB hub for GP-4521T/4621T series. Because of bus power limit on GP-4521T/4621T series USB port, it's recommended to use an USB hub supporting self-power supply and be sure to check the operation before use.

Also, several USB devices of the same category in the following table cannot be simultaneously used. Even if multiple USB devices of the same category are connected to the display unit, only the first USB device recognized by the display unit can be used.

USB Devices of the same category

Category	USB Device
1	Printer, USB-PIO converter
2	Keyboard, Numeric keys, Barcode reader
3	Mouse
4	USB storage (USB memory, CF/SD card reader, and so on)
5	USB transfer cable
6	USB-Serial (RS-232C) conversion cable, SUB/RS-422/485 Conversion Adapter

2.5 Peripheral units and option units

2.5.1 Barcode reader connection

Like GP-3000 series, GP-4521T/4621T allows you to connect a barcode reader to its USB interface (Type A) or its serial interface.

For the models GP4000 series supports, see Pro-face web site (http://www.pro-face.com/otasuke/qa/3000/0056_connect_e.html).

2.5.2 Printer connection

Like GP-3000 series, GP4000 series allows you to connect a printer on its USB interface (Type A).

For the models GP4000 series supports, see Pro-face web site (http://www.pro-face.com/otasuke/qa/3000/0056_connect_e.html).

2.5.3 Expansion Unit

GP-4521T/4621T series is not equipped with an expansion communication unit interface. The expansion unit (each kind of unit like CC-LINK Unit) for GP3000 series cannot be used.

2.5.4 Isolation Unit
RS-485 isolation unit for GP3000 series (CA3-ISO485-01) cannot be used for GP-4521T/4621T series. You can use the RS-232C isolation unit (CA3-ISO232-01) for GP-4521T/4621T series instead.

Note for using RS-232C isolation unit (CA3-ISO232-01)
・ Connect it to GP-4521T/4621T series via COM1 (232C). COM2 cannot be used. ・ It's necessary to set the 9th pin of the COM port to VCC. [Settings on GP-ProEX] Select "VCC" from [System Settings] -> [Device/PLC] in the [Project] menu on GP-Pro EX. ・ RS-422/485 (2-wire type) communication and serial multilink are not supported.

2.6 Backup Battery

Unlike GP-3000 series, GP4000 series does not use rechargeable secondary batteries but replaceable primary ones. (For both a rechargeable type and a replaceable one, contents to be backed up are the same.)
When the time for replacement of backup batteries approaches, the message to urge you to replace the battery, "RAAA053: Running out of power in the backup battery. Please change the battery." appears. When the message appears, replace the battery referring to the GP4000 series hardware manual.

Replaceable Battery Model
PFXZCBBT1

2.7 Power Consumption

The power consumption of GP3000 series is different from that of GP4000 series.

	AC type	DC tyepe
GP-3650/35x0/3450	90VA or less （AC100V） 108VA or less （AC240V）	50W or less
GP-4521T/4621T	56VA or less　（AC100V） 77VA or less　（AC240V）	17W or less

For the detailed electric specifications, see the hardware manual.

2.8 Materials/Colors of the body

The materials and the colors of GP3000 series and GP4000 series are as follows:

	GP-3650/35x0/3450	GP-4521T/4621T
Color	Silver	Light Gray
Material	Aluminum alloy	Resin with glass

2.9 About Ladder monitor

PLC Ladder monitor tool cannot be used for GP4000 series.

2.10 Other Notes

- Do not expose GP4000 series to direct sunlight.
- Do not use GP4000 series outdoors.

- Do not turn on GP4000 series if condensation has occurred inside the device.

- When you are continuously using GP4000 series without oxygen, the brightness might decrease. Please ventilate the control panel periodically.

2.11 Video Display and Multimedia Feature

2.11.1 Video Input and DVI input/output
Replace the video and the DVI-I device that were connected to the video input I/F of GP-3650/35x0/3450 with a VM unit.
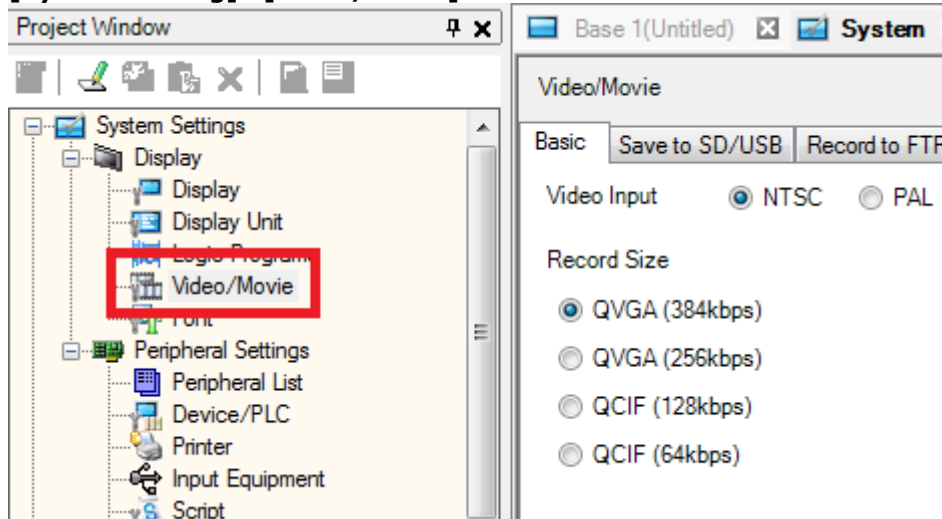
	GP-3650/35x0/3450	GP-4521T/4621T +VM Unit(GP3000-VM01)
Input Type	NTSC/PAL/SECAM	NTSC/PAL
Connector Shape	RCA connector （75Ω）	BNC connector (75Ω)
The number of Video Input Interfaces	1	4
The number of DVI-I Input Interfaces	0	1
The number of DVI-I Output Interfaces	0	1

＊ SECAM is not supported.

＊ If the DVI Input Unit have been used for GP-3650/35x0/3450, it can be replaced with DVI-I input of a VM Unit (GP3000-VM01).

＊ GP4521T and GP4621T do not support GP2000 series VM Unit (GP2000-VM01).
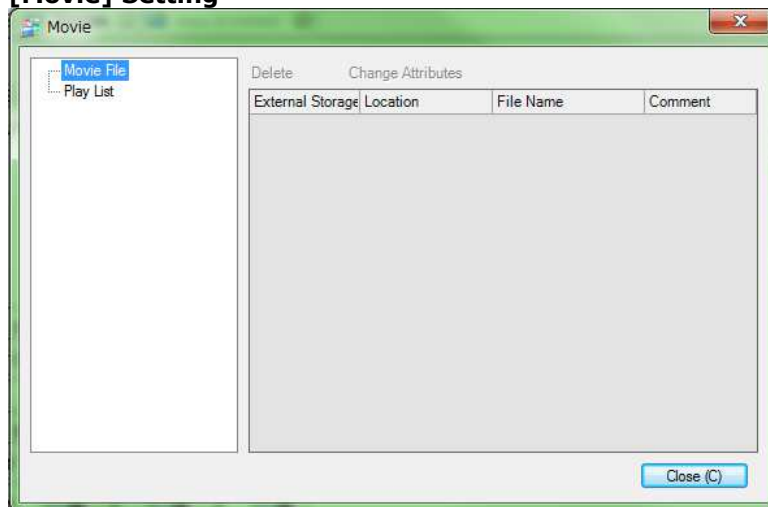
2.11.2 GP-Pro EX Multimedia Feature

GP4521T and GP4621T allow video display by a VM Unit, but they do not support the video recording and replay feature and Camera-Viewer EX. The GP-Pro EX's settings below are disabled. The video display settings of the VM Unit are required again.   Reference→ 3.7 Change The Video / Movie Setting.
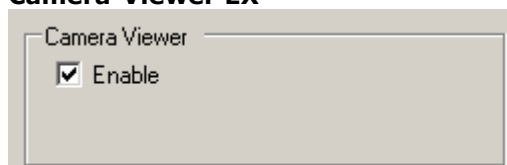
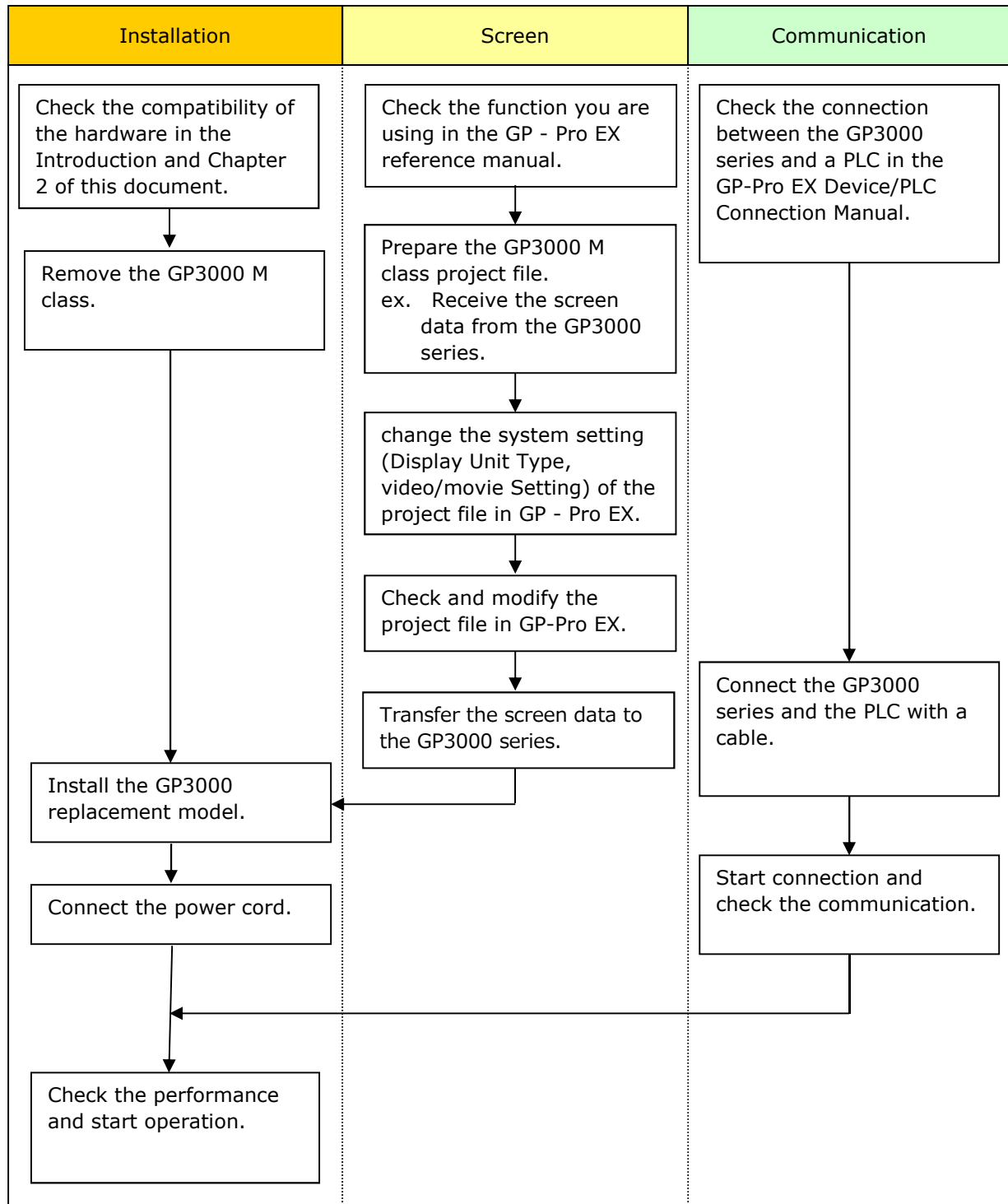**[System Setting]−[Video/Movie]**

[Movie] Setting

Camera-Viewer EX

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Chapter 3. Replacement of system structures

3.1 Work Flow

Installation	Screen	Communication
Check the compatibility of the hardware in the Introduction and Chapter 2 of this document.	Check the function you are using in the GP - Pro EX reference manual.	Check the connection between the GP3000 series and a PLC in the GP-Pro EX Device/PLC Connection Manual.
Remove the GP3000 M class.	Prepare the GP3000 M class project file. ex. Receive the screen data from the GP3000 series.	
	change the system setting (Display Unit Type, video/movie Setting) of the project file in GP - Pro EX.	
	Check and modify the project file in GP-Pro EX.	
Install the GP3000 replacement model.	Transfer the screen data to the GP3000 series.	Connect the GP3000 series and the PLC with a cable.
Connect the power cord.		Start connection and check the communication.
Check the performance and start operation.		

3.2 Preparation

Requirements for receiving screen data from GP3000 series *1	PC in which GP-Pro EX Transfer Tool is installed. *2
	USB Transfer Cable (model: CA3-USBCB-01) * Possible to send/receive a screen via a CF card, a USB storage device or Ethernet (for GP3000 series only).
Requirements for converting screen data of GP3000 series and transferring the converted data to GP4000 series.	PC in which GP-Pro EX Ver.4.07.300 or later is installed.
	Transfer Cable (The following three types of cables are available) ・ A USB transfer cable (model: CA3-USBCB-01) ・ A USB data-transfer cable (model: ZC9USCBMB1) ・ A commercial USB cable (USB Type A/mini B) * Possible to send/receive a screen via a SD card , a USB storage device or Ethernet.

*1: This step is required if screen data is saved only in the GP unit, not in any other device.

*2: Please use the same version or later as or than that of the software used during creating screens on GP3000 series. If you don't know the version, we recommend you to use the newest version. For the newest version, you can download the transfer tool from our web site called [OtasukePro!] (http://www.pro-face.com/otasuke/download/freesoft/gpproex_transfer.htm).

3.3 Receive screen data from GP3000 series

You can transfer data to GP3000 series via;

・ A USB transfer cable (model: CA3-USBCB-01)

・ A CF card/USB storage device

・ Ethernet

・

But this section explains, as an example, how to receive screen data from GP3000 series using a USB transfer cable (model: CA3-USBCB-01).
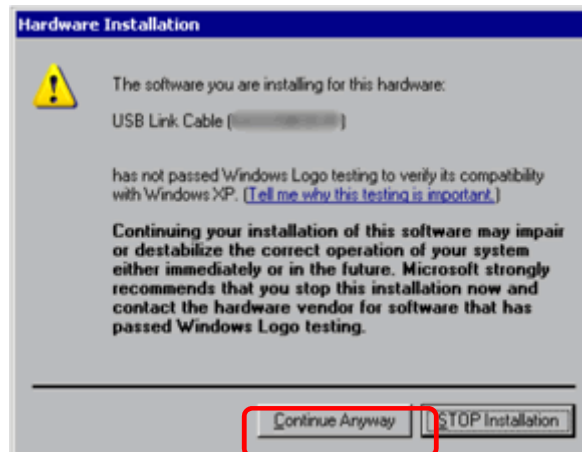
If you have backed up screen data, this step is unnecessary, skip to the next section [3.4 Change the Display Unit Type].

PC   USB transfer cable   GP
            (CA3-USBCB-01)

(1) Connect your PC and GP3000 series with a USB transfer cable.
If the driver of the cable has not been installed on your PC yet, a dialog box will appear.
Please follow the instructions.

NOTE
· The "Hardware Installation" dialog box as shown below may appear during installing the USB driver depending on the security level of Windows® XP. Click [Continue Anyway] to start installing the driver. When installation is completed, click [Finish]. · If the following symptoms appear on Microsoft Windows® 7, go to updating "USB Data Transfer Driver" on [OtasukePro!] for download. (http://www.pro-face.com/otasuke/download/freesoft/gpproex_transfer.htm) - An error occurs when GP-Pro EX or Transfer Tool is installed - An error occurs when data is transferred via a USB transfer cable (model: CA3-USBCB-01).

(2) Start the Transfer Tool of GP-Pro EX.
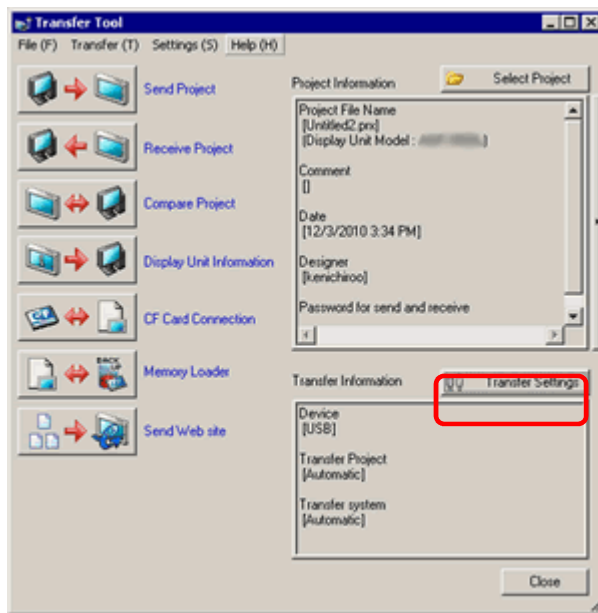
(3) Make sure that the [Device] in the "Transfer Settings Information" is set to [USB]. If not, click the [Transfer Setting] button to open the "Transfer Setting" dialog box. Select [USB] in the Communication Port Settings field and click [OK].

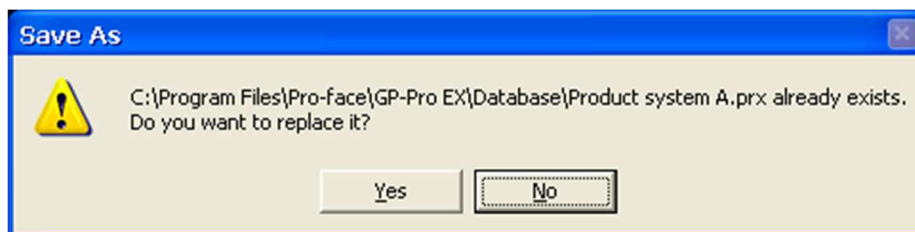(4) Start GP-Pro EX Transfer Tool and click the [Receive Project] button.
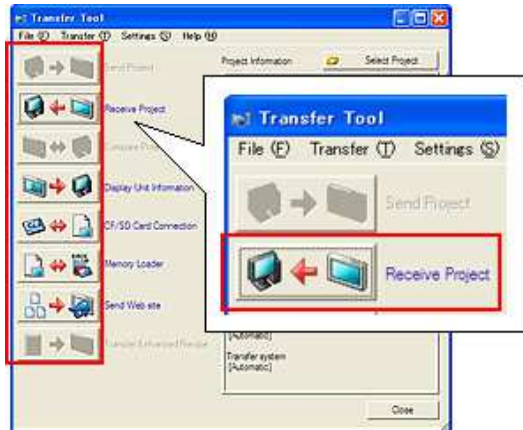
(5) Click [Receive Project], and the following dialog box will appear. Specify a place to save the received data in and a project file name, and then click [Save] to start transfer.
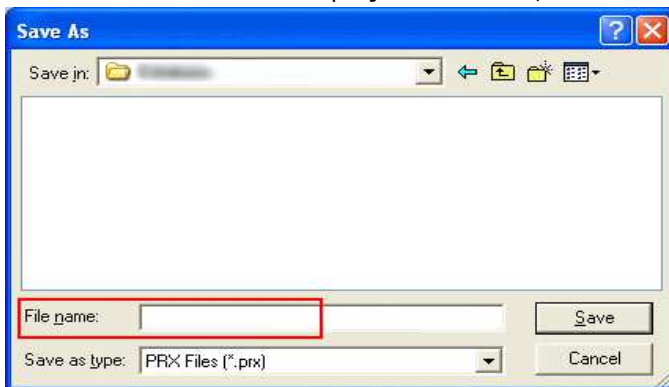
NOTE
When a file exists, the window that confirms whether or not to overwrite the file is displayed.

(6) The following dialog box appears during transfer and you can check the communication status. (The display unit enters the Transferring mode and communication with the device such as a PLC is terminated.)


Display Screen
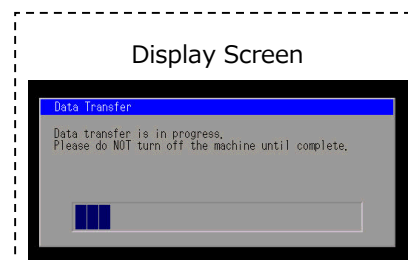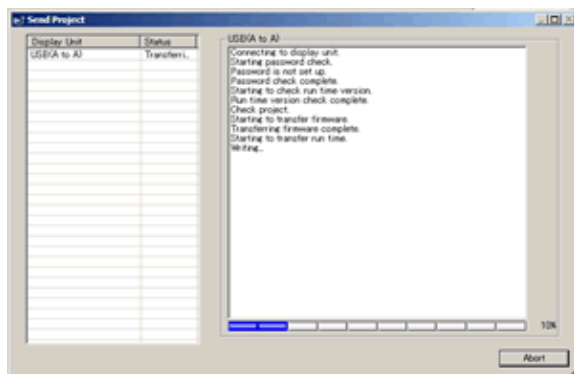
NOTE

- If you receive the project files that use CF card data such as Recipe Function (CSV data), the following dialog box will appear during transfer. Specify a place to save the CF card data in. Click [OK], and the [Receive Project] dialog box will return and transfer will be completed.

- GP4000 series that is a replacement model is not equipped with a CF card slot. If the display unit type is changed to GP4000 series, the CF card setting will be replaced with the SD card setting automatically. To check or change the destination folder setting, see [5.1 Changing the setting of the external media to use].

(7) When transfer is completed, the status displayed in the dialog box will change from [Transferring] to [Complete Transfer]. Click [Close] to close the dialog box.
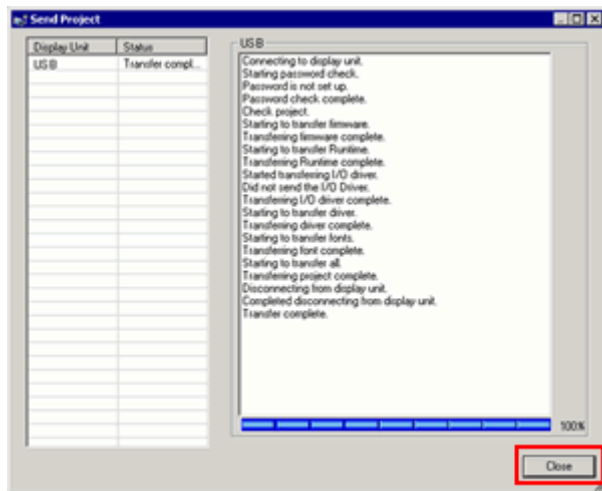
(8) Close the Transfer Tool.

3.4 Change the Display Unit Type

Open the received project file (*.prx) of GP3000 series on GP-Pro EX and change the display unit type to GP4000 series.

(1) Open the received project file (*.prx) on GP-Pro EX.
(2) Click [System Settings]->[Display]->[Change Display] in [Project] menu and change the Display Unit type to the replacement model.
(3) Click [Project]->[Save As] and save the changed project file.

3.5 Transfer the screen data to GP4000 series

Transfer the project file after the display unit type change to GP4000 series.
You can transfer data to GP4000 series via;

- ・ An USB transfer cable (model: CA3-USBCB-01)
- ・ An USB data transfer cable (model: ZC9USCBMB1)
- ・ A commercial USB cable (USB Type A/mini B)
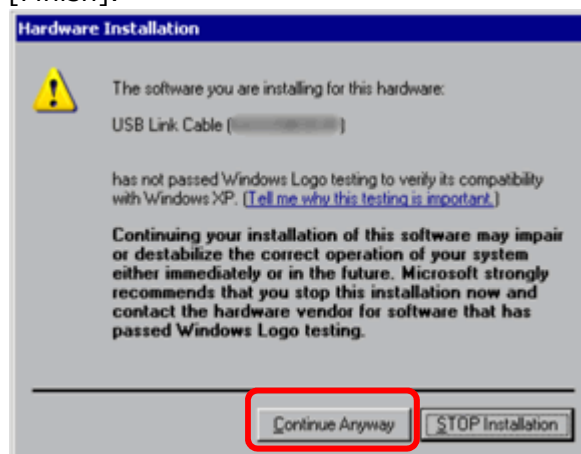- ・ A SD card/USB storage device
- ・ Ethernet

But, this section explains, as an example, how to transfer screen data with an USB transfer cable (model: CA3-USBCB-01).

PC   USB transfer cable
            (CA3-USBCB-01)   GP

(1) Connect your PC and the GP unit of GP4000 series with a USB transfer cable. If the driver of the cable has not been installed on you PC, a dialog box will appear. Please follow the instructions.

| NOTE |
| --- |
| ・ The "Hardware Installation" dialog box as shown below may appear during installing the USB driver depending on the security level of Windows® XP. Click [Continue Anyway] to start installing the driver. When installation is completed, click [Finish].

・ If the following symptoms appear on Microsoft Windows® 7, go to updating "USB Data Transfer Driver" on [OtasukePro!] for download (http://www.pro-face.com/otasuke/download/freesoft/gpproex_transfer.htm).
- An error occurs when GP-Pro EX or Transfer Tool is installed
- An error occurs when data is transferred via a USB transfer cable (model: CA3-USBCB-01). |

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Trun on the power of GP4000 series. The "Initial Start Mode" screen will appear on the display unit. After transferring a project file once, this screen will not appear again.

(2) On the GP-Pro EX's State Toolbar, click the [Transfer Project] icon to open the Transfer Tool.
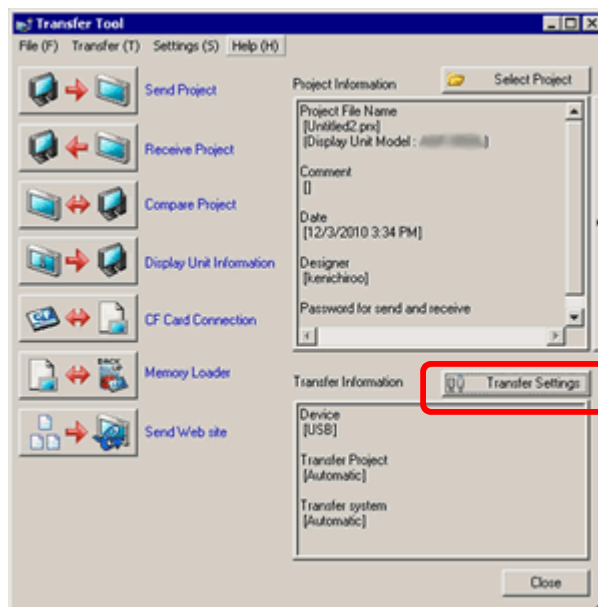
To transfer a different project file, click the [Select Project] button and select a project file.

(3) Make sure that the [Device] in the "Transfer Settings Information" is set to [USB]. If not, click the [Transfer Setting] button to open the "Transfer Setting" dialog box. Select [USB] in the Communication Port Settings field and click [OK].


(4) Click [Send Project] to start transfer.
When the following dialog box appears, click [Yes]. This dialog box doesn't appear when the same project file is sent again.
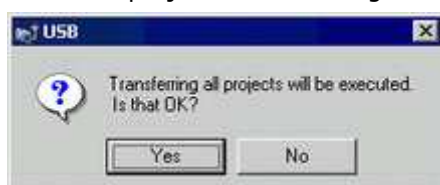
(5) The following dialog box appears during transfer and you can check the communication status. (The display unit enters the Transferring mode and communication with the device such as a PLC is terminated.)
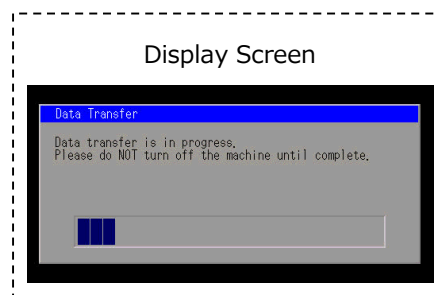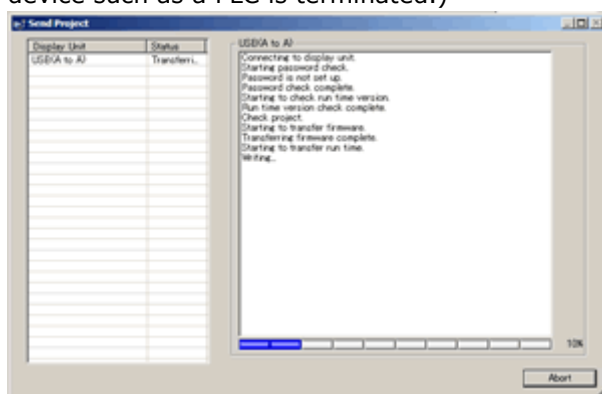
Display Screen

(6) When transfer is completed, the status displayed in the dialog box will change from [Transferring] to [Complete Transfer]. Click [Close] to close the dialog box.
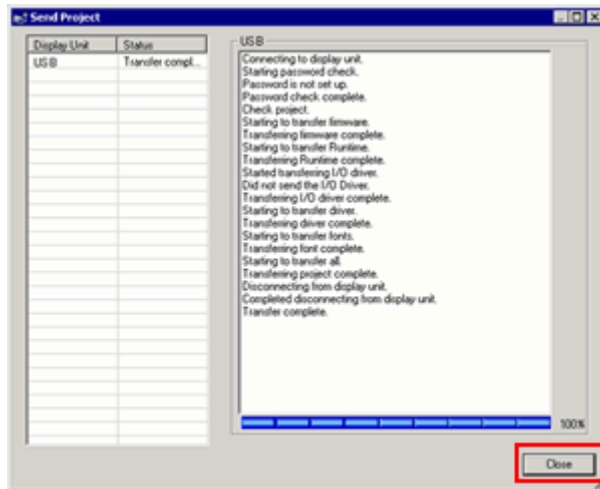
The display unit will be reset and a screen of the transferred project file will be displayed.

(7) Close the Transfer Tool.

(8) Click the [X] mark on top right of the screen or [Project]->[Exit] to close GP-Pro EX.

3.6 Differences of software

Some functions supported by GP3000 series are not supported by GP4000 series. For details of the supported parts and functions, refer to [Supported Featuers] of GP-Pro EX Reference Manual
(http://www.pro-face.com/otasuke/files/manual/gpproex/new/refer/gpproex.htm).

3.7 Change The Video / Movie Setting.

Because there are differences of features and settings between GP3650/35x0/3450 and GP4521T/4621T + Image Unit, it is necessary to configure Image Unit settings.

[Example of setting procedure of image unit]
1) Start basic setting of Image Unit Setting.
   From the [Project] menu, point to [System Settings], and click [Image Unit].

2) In [Image Unit], verify [VM unit (3000)] is selected.
   For [Video Control Start Address] select [Disable]. For [Video Input] select [NTSC]. (If the video signal is PAL, select [PAL].)
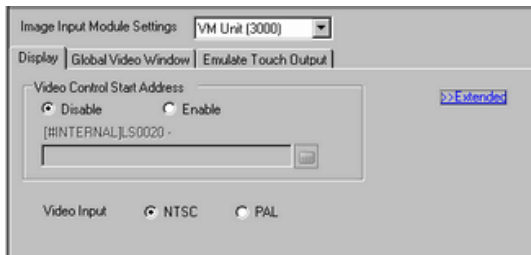

3) In the [Screen] menu, select [New Screen]. The [New Screen] dialog box appears.

4) For the [Screens of Type] select [Image Unit Window]. Set the [Screen Number] and [Title] then click [New]. (For example, [Screen Number] =1, [Title] = Video)

5) The Image Unit Window will appear.
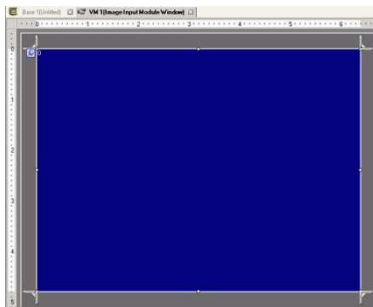
6) Click the display area (blue area), and adjust the size of the border.
    As necessary, drag the Resize Boundary located at the four corners of the screen to adjust the screen size.

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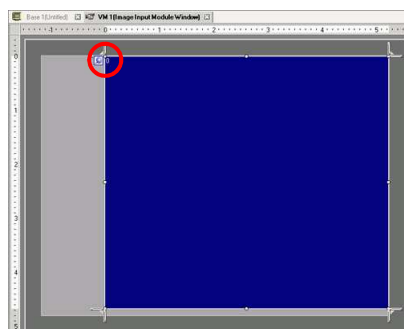
7) Double-click the blue display area. The following dialog box appears. In [Video Layout] click.
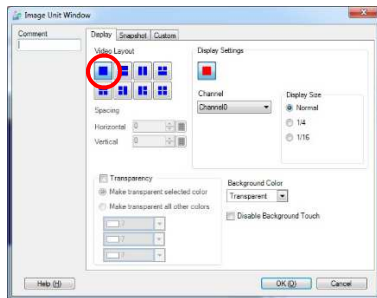
8) In the [Display] area, click one screen mark, and under the [Channel], select the camera image to be displayed in this upper left area (for example, Channel 0).
Also select the size of the image (for example, Nomal).。

> Note
> o If the selected [Display Size] is larger than the display unit or the blue display area, the entire image will not display. You can use [Video Display position] on the [Custom Settings] tab to specify which part of the input image to be displayed. If you want to display the entire image, set the [Display Size] smaller than the size of the blue display area.
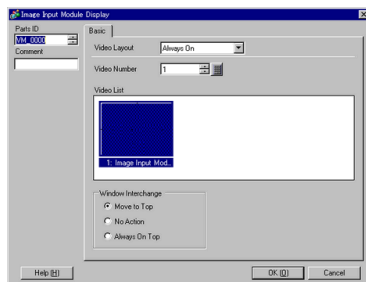
9) Click [OK] to finish and exit the [Image Unit Window] settings.

10) Click the [Base 1] tab to display the base screen.
On the [Parts (P)] menu, select [Image Unit Display (V)] to place the [Image Unit Display] on the screen.
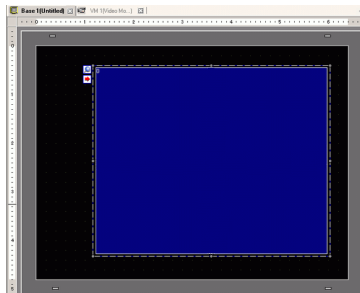
11) Double-click the [Image Unit Display]. The following dialog box appears.

12) In the [Video Layout] list, click [ON/OFF display] and select the video screen number (for example, 1) in the [Video Number].

> Note
> After you set up the Video Screen, the icon appears on the [Image Unit Display]. Click the icon to display the corresponding video screen. This feature is useful for checking or changing the video settings.。

13) The basic setting of Image Unit Setting is completed.

Chapter 4 Communication with Device/PLC

4.1 Drivers

4.1.1 Connectable Devices
More connectable drivers will be added.
For the devices/PLC each driver supports, see [Connectable Devices] (http://www.pro-face.com/product/soft/gpproex/driver/driver.html).

4.1.2 Connecting to Multiple Device/PLCs
Check out the table below to see which model is appropriate for replacement depending on the state of the connection with your Device/PLC.
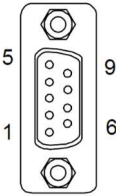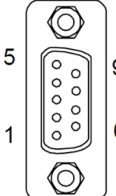
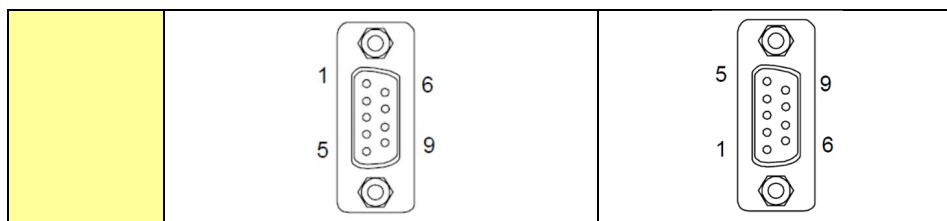| Number of Device/PLC Drivers *1	Connection method for GP-3650/35x0/3450	GP-4521T/4621
1	Replace the product with GP-4521T/4621 is possible. *2	
2	COM1: Connect to a RS-422/485 device COM2: Connect to a RS-422/485 device	Replace the product with the COM2 port (RS-422/485) of GP-4521T/4621T and a USB/RS-422/485 converting adapter (PFXZCBCBCVUSR41) *3
2	For connection methods except the above, replace the product with GP-4521T/4621T. *2	
3 or more	COM1: Connect to a RS-422/485 device COM2: Connect to a RS-422/485 device + Ethernet	Replace the product with the COM port (RS-422/485) of GP-4521T/4621T + the Ethernet port, and a USB/RS-422/485 converting adapter (PFXZCBCBCVUSR41) *3
3 or more	For connection methods except the above, replace the product with GP-4521T/4621T. *2	

*1: To see the number of device/PLC drivers, click [System Settings] -> [Device/PLC] from the [Project] menu on GP-Pro EX.
*2: The cable change might be required. See [4.5 Cable Diagram at the time of replacement].
*3: About "USB/RS-422/485 Conversion Adapter (PFXZCBCBCVUSR41)", be sure to read [2.5.1 Serial Interface] for details before use.

4.2 Shapes of COM ports

	GP-3650/35x0/3450	GP4521T/4621T
COM1	D-Sub9 plug RS-232C/422/485 5 [ ] 9 1 [ ] 6	D-Sub9 plug RS-232C 5 [ ] 9 1 [ ] 6
COM2	D-Sub9 socket RS-422/485	D-Sub9 plug RS-422/485

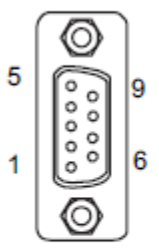| MEMO |
|---|
| ・To use the connecting cable used for GP-3650/35x0/3450, see [4.5 Cable Diagram at the time of replacement].
・If both COM1 and COM2 on GP-3650/35x0/3450 have connected to RS-422/485 devices, the COM1 cannot be connected when the product is replaced with GP-4521T/4621T. For details, see [4.5 Cable Diagram at the time of replacement]. |

4.3 Signals of COM ports

4.3.1 Signals of COM1
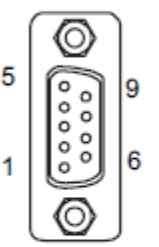For GP-3650/35x0/3450
RS-232C (plug)

Pin Connection	Pin No.	RS-232C		
		Signal Name	Direction	Meaning
(GP unit side)	1	CD	Input	Carrier Detect
	2	RD(RXD)	Input	Receive Data
	3	SD(TXD)	Output	Send Data
	4	ER(DTR)	Output	Data Terminal Ready
	5	SG	-	Signal Ground
	6	DR(DSR)	Input	Data Set Ready
	7	RS(RTS)	Output	Request to Send
	8	CS(CTS)	Input	Send possible
	9	CI(RI)/VCC	Input/–	Called Status Display +5V±5% Output 0.25A[*1]
	Shell	FG	–	Frame Ground (Common with SG)

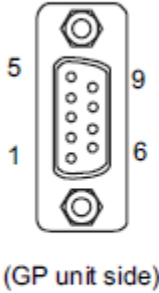*1: RI and VICC of Pin 9 are switched on the software.
VCC Output is not protected from overcurrent.
Please follow the current rating to avoid false operation or breakdown.

RS-422/485 (plug)

Pin Connection	Pin No.	RS-422/RS-485		
		Signal Name	Direction	Meaning
(GP unit side)	1	RDA	Input	Receive Data A (+)
	2	RDB	Input	Receive Data B (-)
	3	SDA	Output	Send Data A (+)
	4	ERA	Output	Data Terminal Ready A (+)
	5	SG	-	Signal Ground
	6	CSB	Input	Send Possible B (-)
	7	SDB	Output	Send Data B (-)
	8	CSA	Input	Send Possible A (+)
	9	ERB	Output	Data Terminal Ready B (-)
	Shell	FG	–	Frame Ground (Common with SG)

For GP-4521T/4621T
RS-232C (plug)

Pin Connection	Pin No.	RS-232C		
		Signal Name	Direction	Meaning
	1	CD	Input	Carrier Detect
	2	RD(RXD)	Input	Receive Data
	3	SD(TXD)	Output	Send Data
	4	ER(DTR)	Output	Data Terminal Ready
	5	SG	-	Signal Ground
	6	DR(DSR)	Input	Data Set Ready
	7	RS(RTS)	Output	Request to Send
	8	CS(CTS)	Input	Send possible
	9	CI(RI)/VCC	Input/–	Called Status Display +5V±5% Output 0.25A[1]
	Shell	FG	–	Frame Ground (Common with SG)

*1: RI and VICC of Pin 9 are switched on the software.
   VCC Output is not protected from overcurrent.
   Please follow the current rating to avoid false operation or breakdown.

4.3.2 Signals of COM2
For 3650/35x0/3450
RS-422/485 (socket)

Pin Arrangement	Pin No.	RS422/RS485		
		Signal Name	Direction	Meaning
	1	TRMRX	-	Termination (Receiver side: 100Ω)
	2	RDA	Input	Receive Data A(+)
	3	SDA	Output	Send Data A(+)
	4	RS(RTS)	Output	Request for Send
	5	SG	-	Signal Ground
	6	VCC	-	+5V±5% Output 0.25A *1
	7	RDB	Input	Receive DataB(-)
	8	SDB	Output	Send Data B(-)
	9	TRMTX	-	Termination (Receiver side: 100Ω)
	Shell	FG	-	Frame Ground (Common with SG)

For GP-4521T/4621T
RS-422/485 (plug)

Pin Connection	Pin No.	RS-422/RS-485		
		Signal Name	Direction	Meaning
	1	RDA	Input	Receive Data A (+)
	2	RDB	Input	Receive Data B (-)
	3	SDA	Output	Send Data A (+)
	4	ERA	Output	Data Terminal Ready A (+)
(GP unit side)	5	SG	-	Signal Ground
	6	CSB	Input	Send Possible B (-)
	7	SDB	Output	Send Data B (-)
	8	CSA	Input	Send Possible A (+)
	9	ERB	Output	Data Terminal Ready B (-)
	Shell	FG	–	Frame Ground (Common with SG)

4.4 Multilink Connection

For the communication drivers that support serial multi-link, see [Which drivers support serial multilink communication?]
(http://www.pro-face.com/otasuke/files/manual/gpproex/new/device/com_mlnk.htm).

4.5 Cable Diagram at the time of replacement

The pin assignment and the shape of plug/socket connector of GP3000 series are different from GP4000 series.
Please note that there are precautions and restrictions as described below **when replacing GP-3000 series**.

- When a RS-422/485 device is connected via the COM1 port, **if GP3000 series is replaced with GP4000 series, it will be connected via the COM2 port of GP4000 series.** (The cable diagram can be still used.)
  Before GP4000 series is connected, be sure to change the port setting to COM2 on the Device/PLC setting. Also, please check the communication settings with GP-Pro EX Device/PLC Connection Manual just in case. (http://www.pro-face.com/otasuke/files/manual/gpproex/new/device/index.htm)
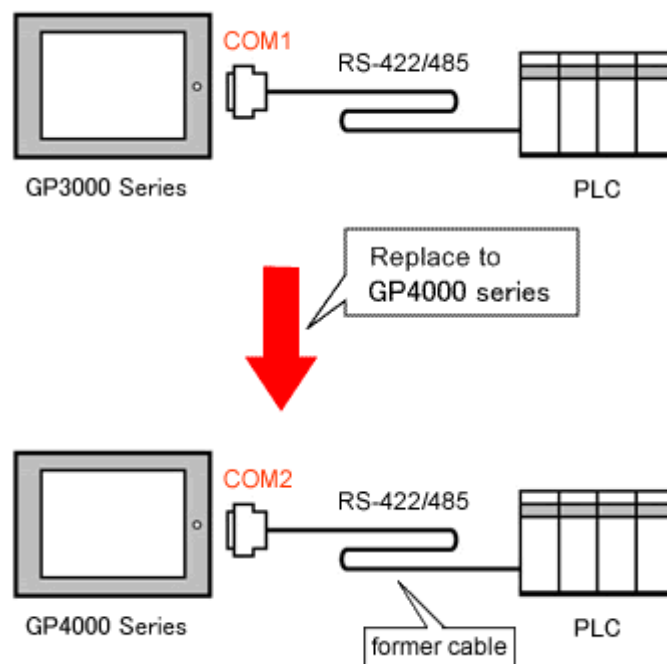
・　　The cable used for connection to **GP3000 series via COM2** can be used for GP4000 series with a COM Port Conversion Adapter (CA3-ADPCOM-01) added in the following cases;
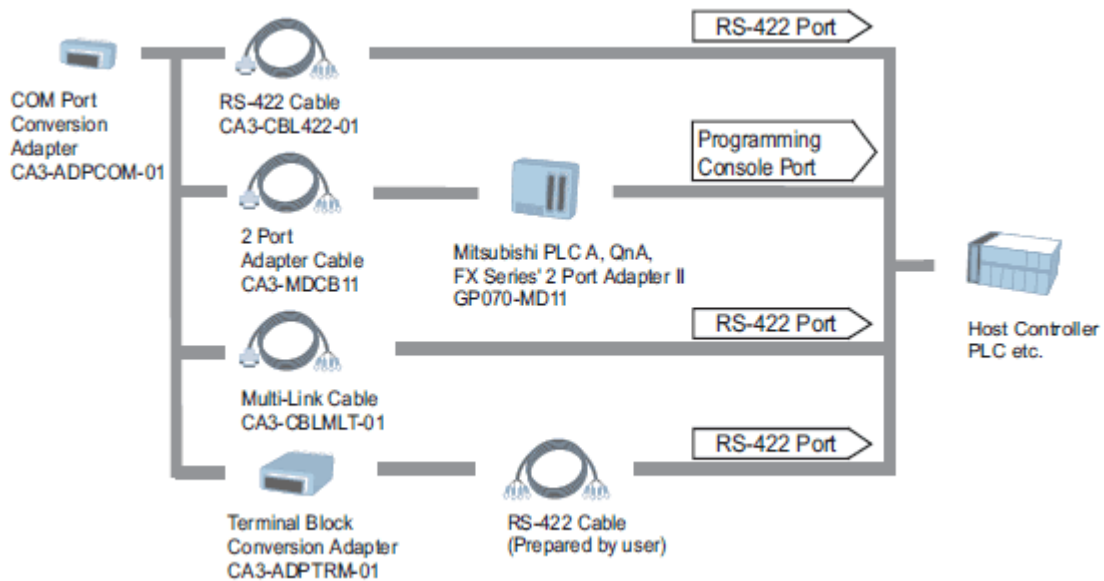
In all other cases, the operation is not guaranteed and it's recommended to prepare a new connection cable. To check the cable diagram, please refer to GP-Pro EX Device/PLC Connection Manual.

Important
If the homemade COM 2 cable diagram for GP3000 series is used for GP-4501T/TW with a COM port conversion adapter (CA3-ADPCOM-01), no operation is guaranteed. It's recommended to get a new cable diagram prepared for GP-4501T/TW. For cable diagrams, see GP-Pro EX Device/PLC Connection Manual. （http://www.pro-face.com/otasuke/files/manual/gpproex/new/device/index.htm）

・　　When both the COM1 port and the COM2 port have the RS-422/485 setting, only the COM2 port can be used for RS-422/485 connection after replacement with GP4000 series.
Using a USB/RS-422/485 Conversion Adapter may allow you to use GP4000 series' USB interface as RS-422/485 serial interface for connection.
For more information, please refer to USB/RS-422/485 Conversion Adapter Installation Guide.
（http://www.pro-face.com/otasuke/download/manual/cgi/manual.cgi?mode=33&cat=3）

| Important |
| --- |
| The connected devices/PLC which can connect to the serial interface side of USB/RS-422/485 Conversion Adapter are limited. For details, see USB/RS-422/485 Conversion Adapter Connection Guide
(http://www.pro-face.com/otasuke/files/manual/gpproex/new/device/data/com_usc.pdf) |

Chapter 5 Appendix

5.1 Changing the setting of the external media to use

If a CF card is used for GP/ST-3500 series, after the display unit type of the project file is changed to GP4000 series, "a CF card" is automatically replaced with "a SD card" for the external media setting.

(1) After conversion of the project file data, at GP-Pro EX Error Check, if the message, "The project contains features that require a SD card. However, the selected display does not support SD cards so these features will not run." appears,
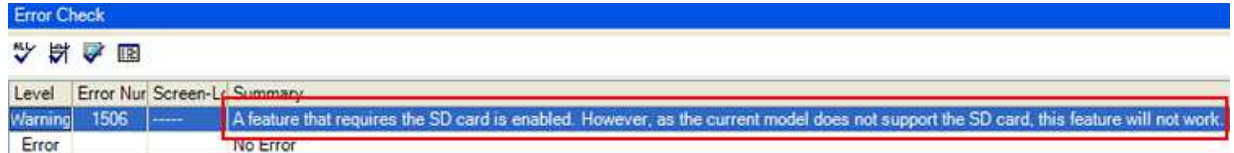
<Cause>
The model without a SD card slot has the setting that uses a SD card.
->Solution 1

(2) To use a USB flash drive instead of a SD card ->Solution 1
(3) To check or change the SD card's data output destination folder setting
->Solution 2

[Solution]

1. Change the SD Card setting to the USB storage setting following the steps below.

<Procedure>
i. Click [Project]->[Information]->[Destination Folder].
ii. Uncheck "Enable SD Card" and check "Enable USB Storage.

SD Card Destination

    ☐ Enable SD Card
        SD Card Folder
        C:\Program Files\Pro-face\GP-Pro EX   Browse...

USB Storage Destination

    ☑ Enable USB Storage
        USB Storage Folder
        C:\Program Files\Pro-face\GP-Pro EX   Browse...

iii. Click the [Browse] button and specify a destination folder.

SD Card Destination

    ☐ Enable SD Card
        SD Card Folder
        C:\Program Files\Pro-face\GP-Pro EX   Browse...

USB Storage Destination

    ☑ Enable USB Storage
        USB Storage Folder
        C:\Program Files\Pro-face\GP-Pro EX   Browse...

iv. Click [OK] to confirm the setting.
v. Click [Project]->[Save] to save changes.
vi. Check each function that uses the CF card and replace the setting of [SD Card] with the one of [USB Storage].

NOTE
To check each function setting of GP-Pro EX, refer to GP-Pro EX Reference Manual.

2. Check and change the destination folder setting following the steps below.
   i. Click [Project]->[Information]->[Destination Folder].
   ii. The current setting is displayed.

   iii. After changing it, click [OK] to confirm the setting.
   iv. Click [Project]->[Save] to save changes.