

27 | Recording and Playing Video

This chapter gives an overview of how to use GP-Pro EX to record and play video on the display unit.

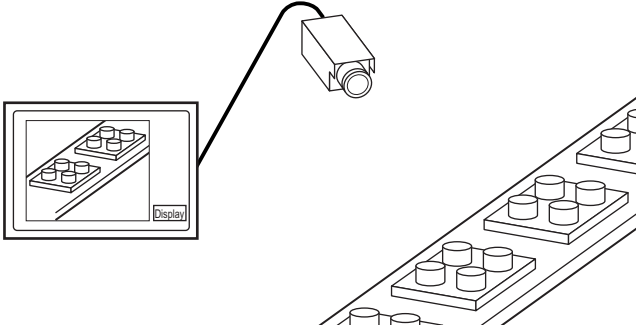
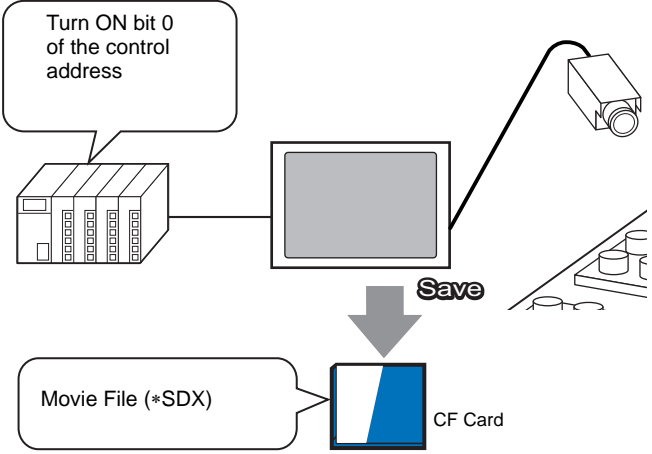
Please start by reading “27.1 Settings Menu” (page 27-2) and then turn to the corresponding page.

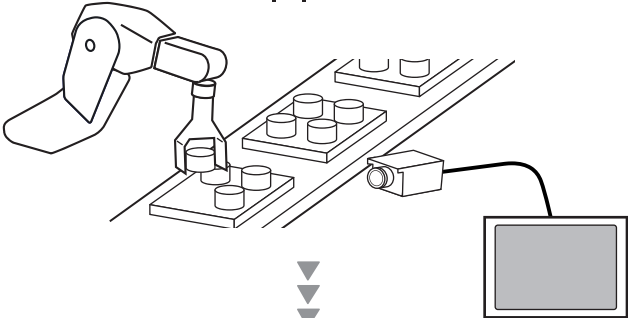
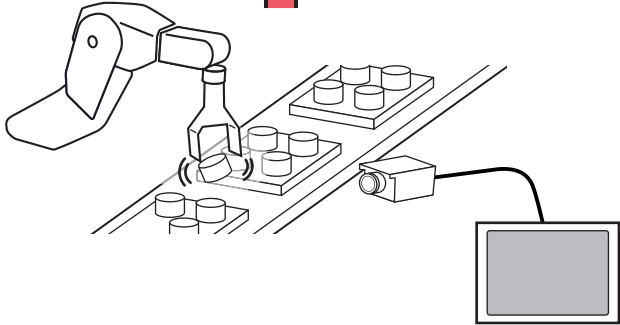

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27.1 Settings Menu

Only limited models can use the features introduced in this chapter. Confirm that your model supports the features before changing any settings. For more information, see

☞ “1.3 List of Supported Functions by Device” (page 1-5)

Displaying Video Camera Output	
<p>Displays real-time video from a camera connected to the GP.</p> 	<ul style="list-style-type: none">☞ Setup Procedure (page 27-9)☞ Introduction (page 27-8)
Recording Video	
<p>Saves the video signal to a CF Card or FTP server as movie files.</p> 	<ul style="list-style-type: none">☞ Setup Procedure (page 27-13)☞ Introduction (page 27-12)

Recording Video Before and After a Malfunction	
<p>Automatically saves the video signal before and after a malfunction.</p> <p>Normal</p> <p>⏮ ⏭ OFF</p>  <p>▼ ▼ ▼</p> <p>Malfunction</p> <p>10:00</p> <p>⚡ Monitor Bit ON</p>  <p>Video from 9:59-10:01</p>  <p>CF Card</p> <p>Save</p>	<ul style="list-style-type: none">➡ Setup Procedure (page 27-21)➡ Introduction (page 27-20)


Playing Movies

Plays the movies in the specified order.

Play List

- 1.MC060527_152349.SDX
- 2.ABC.SDX
- 3.MC060527_152350.SDX

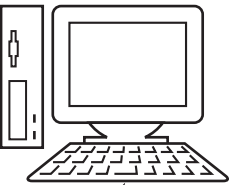
CF Card



Movie File

MC060527 1523.48.SDX	MC060527 152350.SDX
-------------------------	------------------------

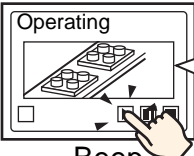
FTP Server



Movie File

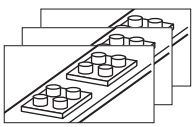
ABC.SDX	DEF.SDX
XYZ.SDX	

Operating



Beep

Plays the movie files in order.



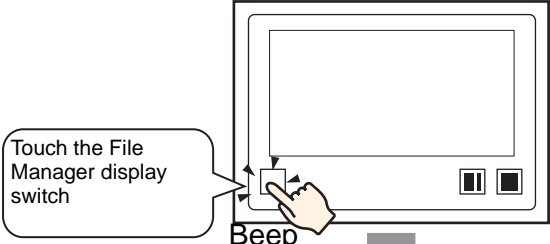
➡ Setup Procedure (page 27-26)

➡ Introduction (page 27-25)

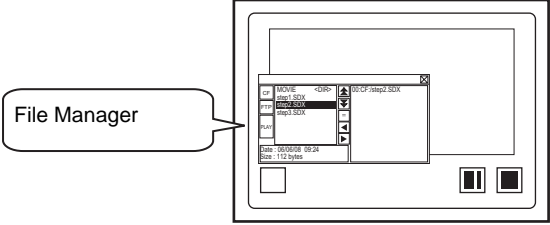
Playing Movies

Plays the movie you want to see when you want to see it.

Touch the File Manager display switch

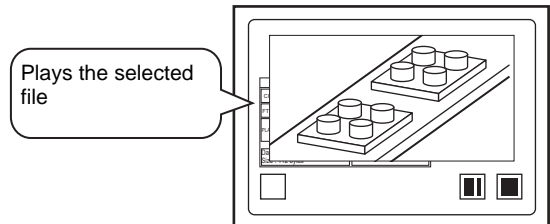


Beep



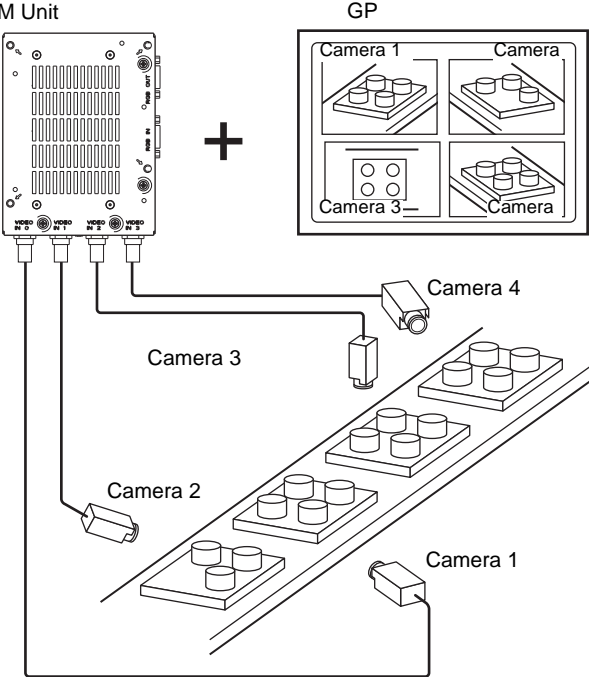
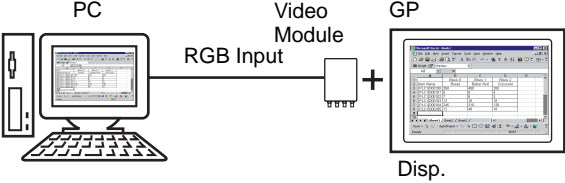
File Manager

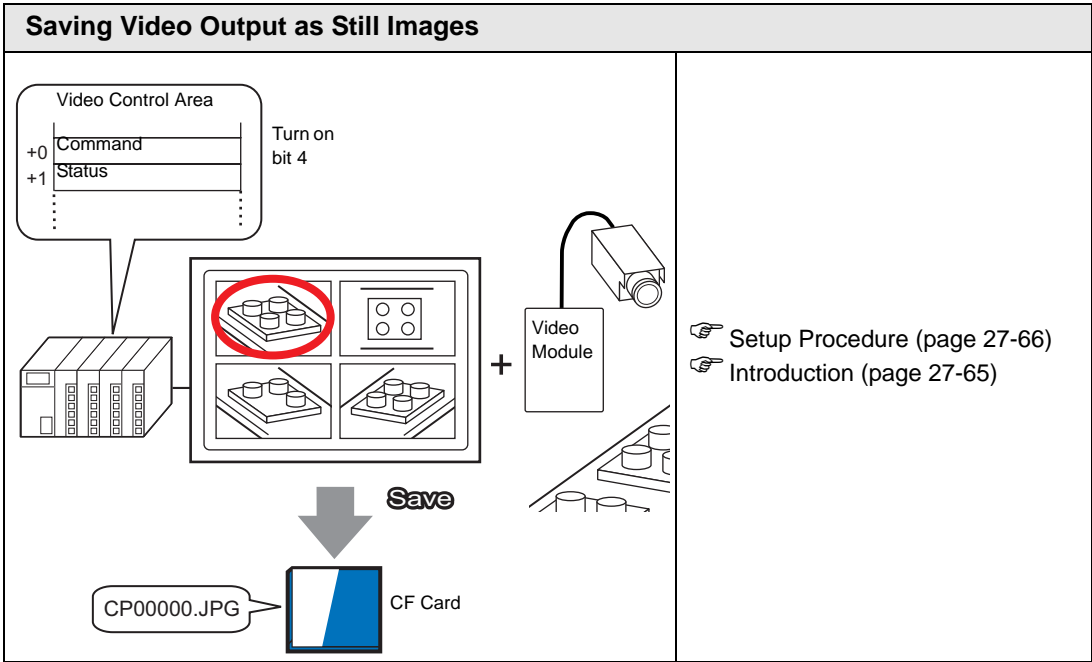
Plays the selected file



➡ Setup Procedure (page 27-33)

➡ Introduction (page 27-25)

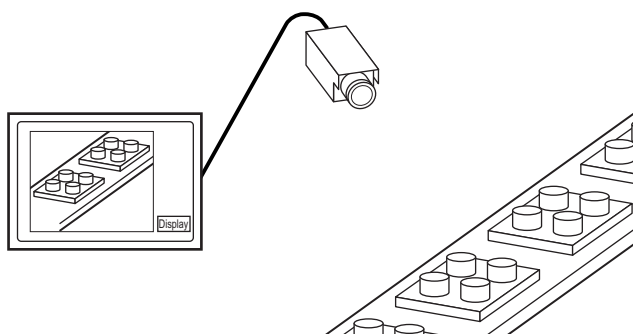
Displaying Multiple Video Camera Outputs Simultaneously	
<p>Displays video from cameras connected to a VM unit in real time.</p> <p>VM Unit</p> <p>GP</p>  <p>Camera 1</p> <p>Camera 2</p> <p>Camera 3</p> <p>Camera 4</p> <p>GP</p> <p>Camera 1</p> <p>Camera 2</p> <p>Camera 3</p> <p>Camera 4</p>	<p>➡ Setup Procedure (page 27-51)</p> <p>➡ Introduction (page 27-50)</p>
Displaying PC Screen	
<p>GP can be used as a PC monitor.</p> <p>PC</p> <p>Video Module</p> <p>RGB Input</p> <p>GP</p> <p>Disp.</p> 	<p>➡ Setup Procedure (page 27-60)</p> <p>➡ Introduction (page 27-59)</p>



27.2 Displaying Video Camera Output

27.2.1 Introduction

With GP-3450T/3550T/3650T/3750T, you can display real-time images from a video camera directly connected to the GP. This is useful for monitoring the operation status of a factory line.

**NOTE**

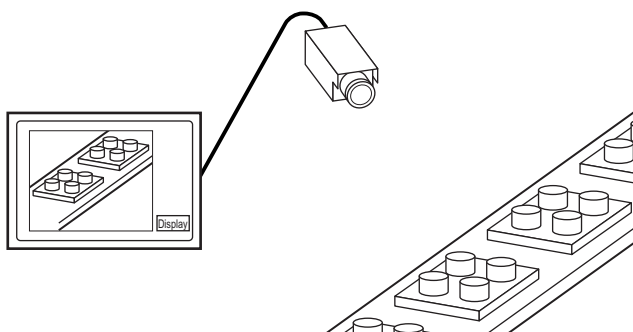
- With GP-3550T/3650T, you can also display video using the (optional) VM unit.
 - ☞ “27.9.6 [Video Module] Settings Guide” (page 27-124)
- Only images are displayed. In order to display images with sound, you must first record a movie and then play it back.
 - ☞ “27.3 Recording Video” (page 27-12)

27.2.2 Setup Procedure

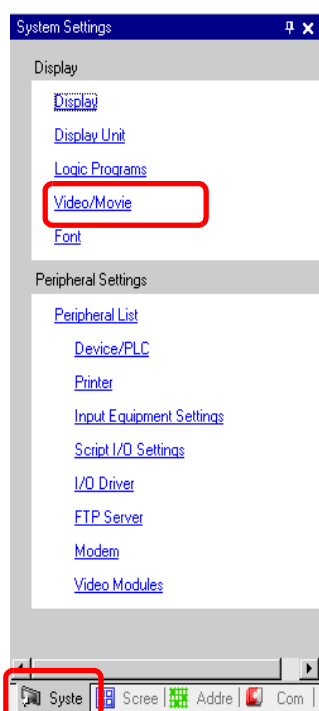
NOTE

- Please refer to the settings guide for details.
 - ☞ “27.9.1 [Video/Movie] Settings Guide” (page 27-73)
 - ☞ “27.9.4 [Movie Player] Settings Guide” (page 27-95)
- For details on how to arrange the components and how to specify the address, shape, color, and label settings, refer to the “Component Editing Procedure”.
 - ☞ “9.6.1 Editing Parts” (page 9-38)

Displaying video from a video camera on the GP screen in real time.



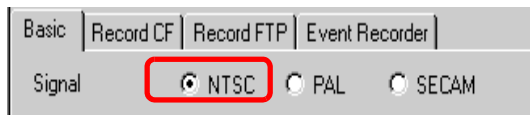
1 In [System Settings], click [Video/Movie].




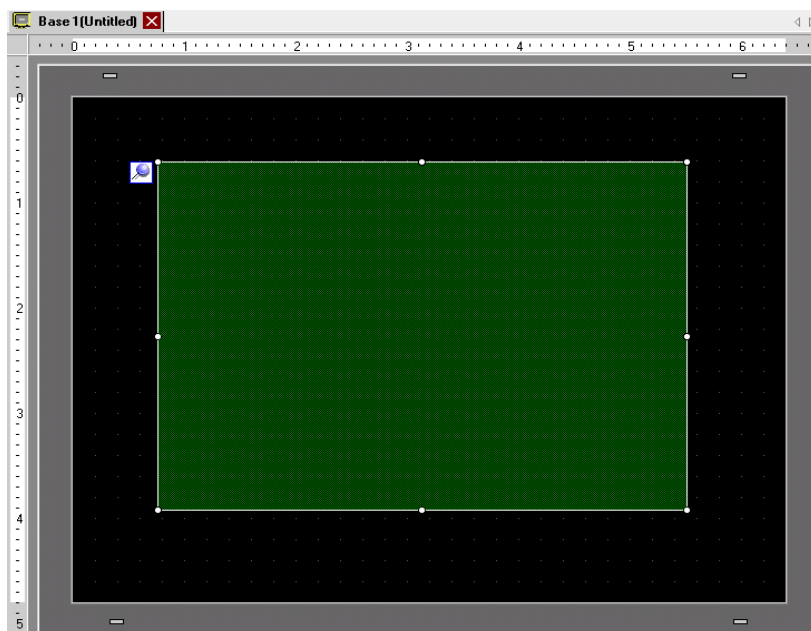
NOTE

- If the [System Settings] tab is not displayed in the workspace, on the [View (V)] menu, point to [Workspace (W)], and then click [System Settings (S)].

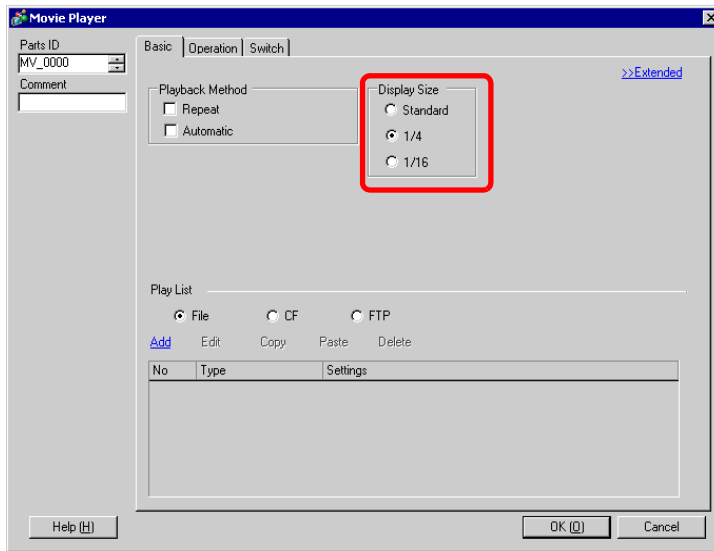
2 From [Video Signal], select [NTSC].



3 In the [Screen List] window, open the base screen where you want to display the video. On the [Parts (P)] menu, click [Movie Player (O)] or click , and place a player on the screen.



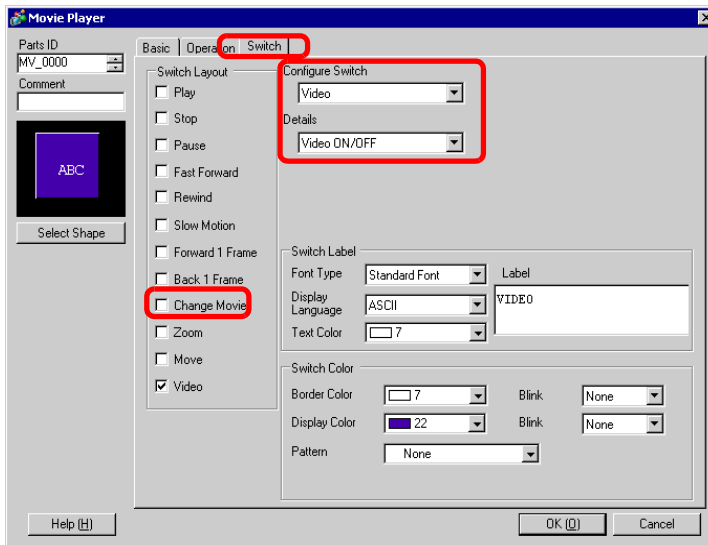
- 4 Double-click the movie player. The following dialog box appears. In the [Display Size] area select [1/4].



NOTE

- If the selected [Display Size] is larger than the size of the GP screen or the movie player, the entire image is not displayed. If you want to display the entire image, set the [Display Size] smaller than the size of the movie player.

- 5 Click the [Switch] tab. Under [Switch Layout], select the [Video Display] check box. In the [Details] list, select [Video ON/OFF].



- 6 Click [Select Shape] to select the shape of the switch and specify the label and color as desired, and then click [OK].

NOTE

- Depending on the shape of the switch, you may not be able to change the color.

27.3 Recording Video

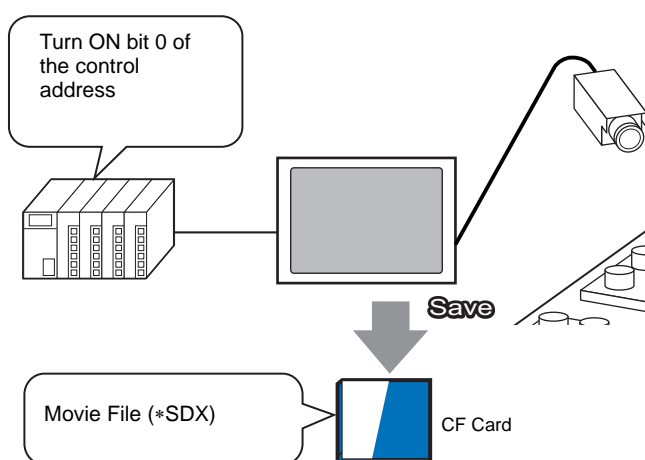
27.3.1 Introduction

GP-3450T/3550T/3650T/3750T models can save the video signal from the GP as movie files with audio.

Turn ON bit 0 of the specified control address to start saving on the CF Card (or FTP server). The video signal is saved in a movie file format (.sdx) unique to GP.

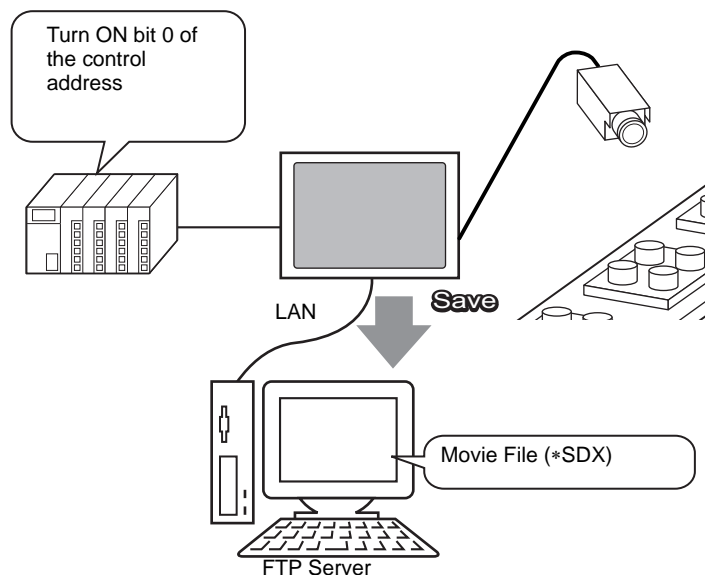
■ Saving on a CF Card

In the Movie folder on the CF Card, the movie file is saved under the specified folder name and file name (first 2 letters). Each file can save a movie of up to 512 MB. Each folder can save a maximum of 100 files.



■ Saving on an FTP Server

On a registered FTP server, a movie file is saved under the specified folder name and file name (first 2 letters). Each file can save a movie up to 2048 MB.



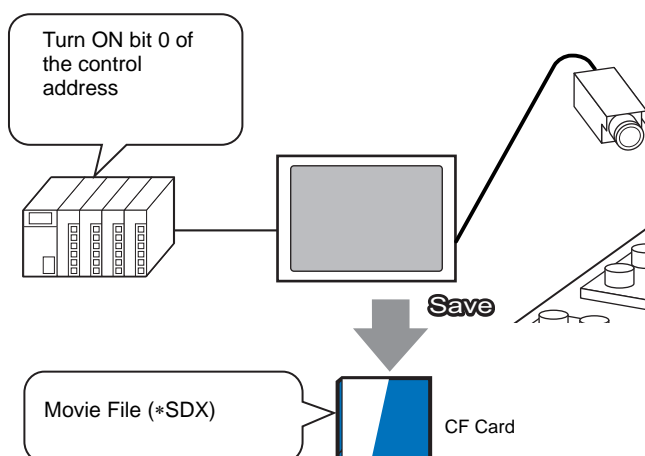
27.3.2 Setup Procedure

■ Saving a Movie File on a CF Card

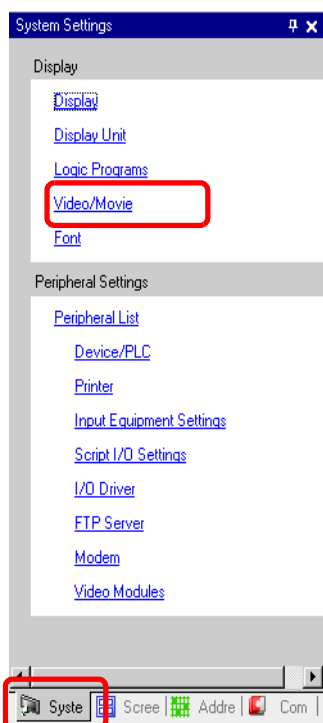
NOTE

- Please refer to the settings guide for details.
 ☞ “27.9.1 [Video/Movie] Settings Guide” (page 27-73)

Turn ON 0-bit of the control address to begin saving the movie file to the CF Card.

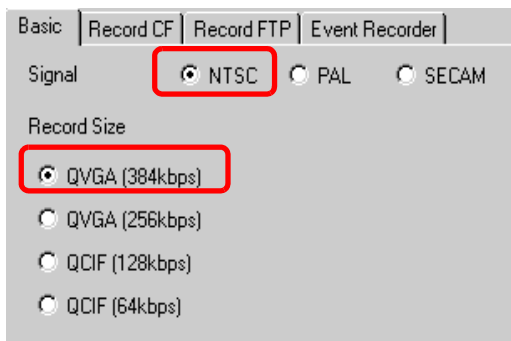


1 In [System Settings], click [Video/Movie].


NOTE

- If the [System Settings] tab is not displayed in the workspace, on the [View (V)] menu, point to [Workspace (W)], and then click [System Settings (S)].

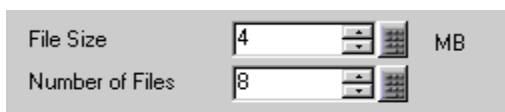
2 In the [Video Signal] area, select [NTSC]. Under [Record Size], select [QVGA(384kbps)].



3 Click the [Record CF] tab and select the [Record CF] check box.



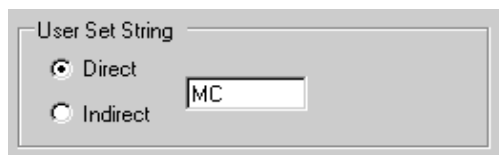
4 Specify the [File Size] and [Total Files] to be saved.



NOTE

- Video input that exceeds the specified file size saves as the next file. The file name is created based on the time stamp (year, month, day, hour, minute, second) when the file size was exceeded.

5 In the [User Set String] area select [Direct] and enter two single-byte characters (for example, MC). This string is the folder name and the first two characters of the file name in which the movie is saved.



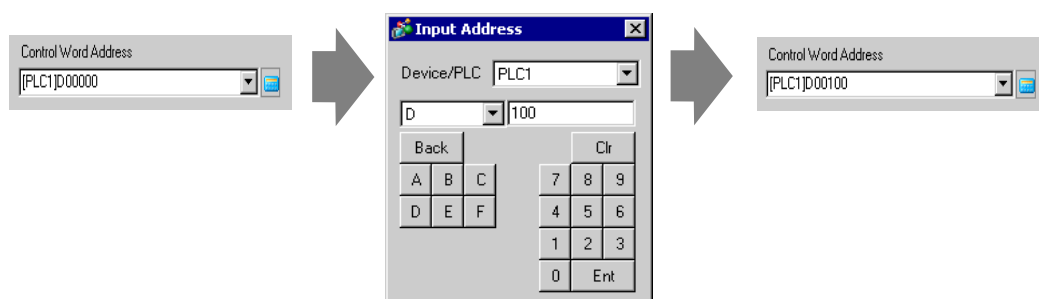
NOTE

- The movie is saved with the file name beginning with the user-defined string (maximum two characters) + timestamp (year, month, day, hours, minutes, seconds) + file extension .sdx.
For example, If a file is saved on May 27, 2006 at 15:23:46, the file name is "MC060527_152346.SDX".
- If [Indirect] is selected, you must store the user set string with PLC before saving to the CF. Store the two-character string in the second of three words at the specified address.
- If [User Set String] is not set, the folder will be named "NONAME".

6 In [Control Word Address], specify a Word address (for example, D100) to control saving.

Click the icon to display an address input keypad.

Enter "D" and "100".



Movie save setting to CF Card has been successfully completed.

NOTE

- The video signal can be displayed while it is being recorded.
- Stored movie files cannot be played while a video signal is being recorded.

◆ Operating Procedure

Use three sequential Words from the specified address to control saving.

D100	Control
D101	Status
D102	Number of Saved

- 1 Turn ON bit 0 of D100 to start recording (saving to CF Card).
Bit 0 of status address (D101) turns ON while saving.
- 2 D100 bit 0 turns off which stops the recording. "1" is added to D102.

NOTE

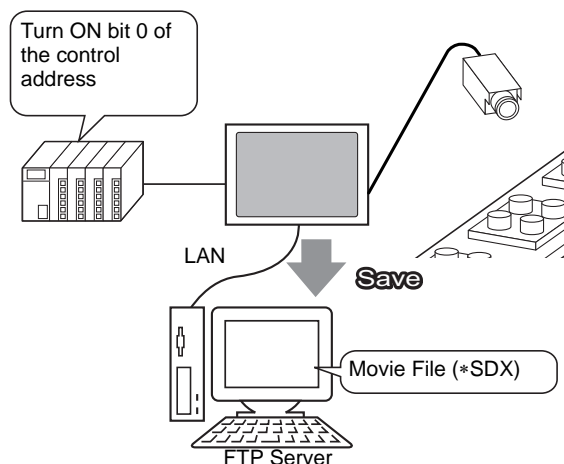
- You cannot save more movie files in the folder than the number specified in [Total Files].

■ Saving a Movie File on an FTP Server

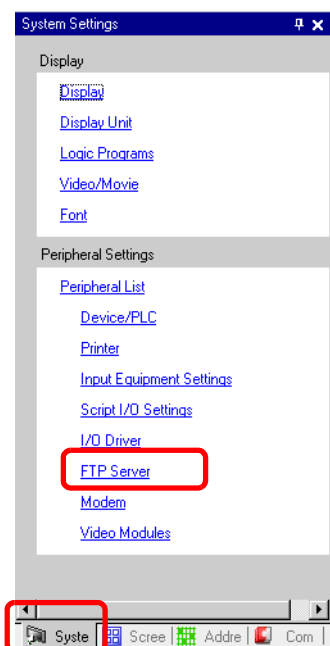
NOTE

- In order to save the files on an FTP server, you must have an FTP (File Transfer Protocol) server set up on the network in advance.
- Please refer to the settings guide for details.
 - ☞ “27.9.2 [FTP Server] Settings Guide” (page 27-91)
 - ☞ “27.9.1 [Video/Movie] Settings Guide” (page 27-73)

Turn ON bit 0 of the control address to start saving a movie file on the registered FTP server.



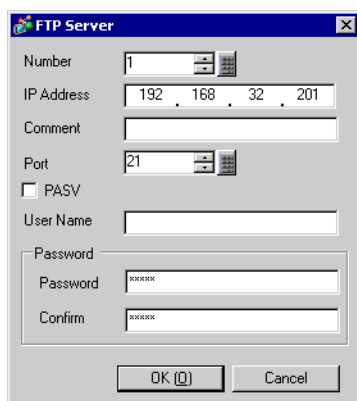
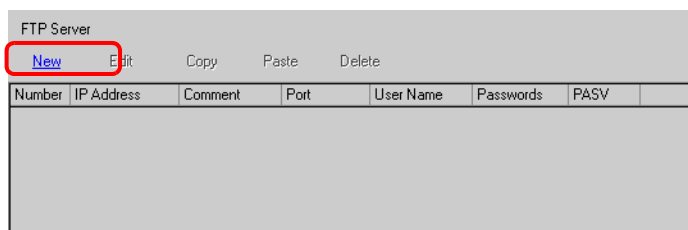
1 In the [System Settings], click [FTP Server].



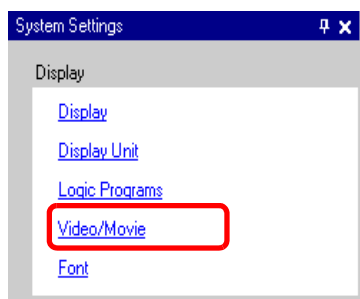
NOTE

- If the [System Settings] tab is not displayed in the workspace, on the [View (V)] menu, point to [Workspace (W)], and then click [System Settings (S)].

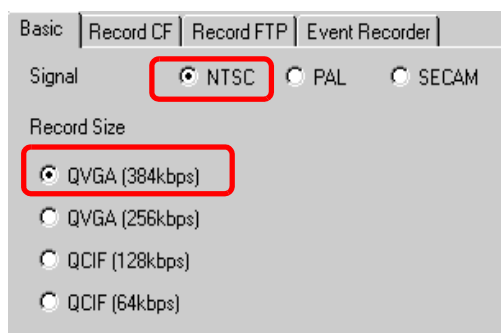
- Click [New] to open the [FTP Server] dialog box. Enter the FTP server information (registry number, IP address, password, etc.) to save the movie file. Click [OK] to exit the FTP server registration.



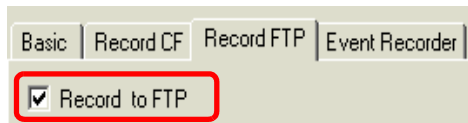
- In [System Settings], click [Video/Movie].



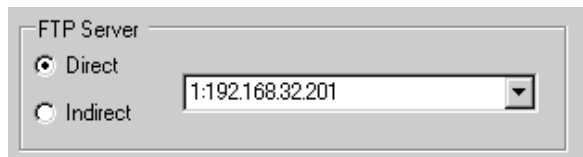
- Select [Video Signal] and [Record Size].



5 Click the [Record FTP] tab and select the [Record FTP] check box.



6 In [FTP Server], select [Direct] then select the registration number of the FTP server registered in step 2.



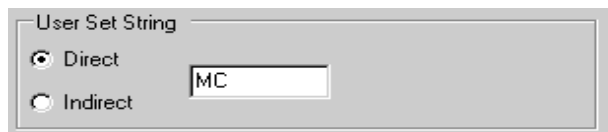
7 In [File Size], set the maximum file size for the video.



NOTE

- Video input that exceeds the specified file size saves as the next file. The file name is created based on the time stamp (year, month, day, hour, minute, second) when the file size was exceeded.

8 In the [User Set String] area select [Direct] and enter two single-byte characters (for example, MC). This string is the folder name and the first two characters of the file name in which the movie is saved.



NOTE

- The movie is saved with the file name beginning with the user-defined string (maximum two characters) + time stamp + file extension .sdx. For example, if a file is saved on May 27, 2006 at 15:23:46, the file name is "MC060527_152346.SDX".
- If [Indirect] is selected, you must specify the server registry number with PLC before saving on the FTP server. To specify the number indirectly, use three Words from the specified address.
- If you do not specify a string in the [User Specified String] field, the folder is named "NONAME."

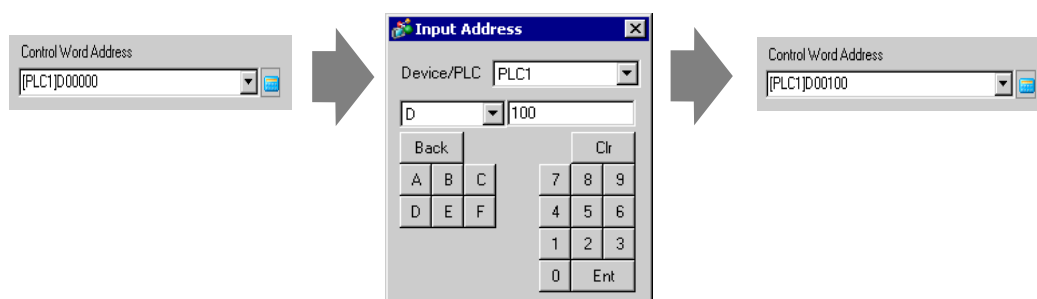
9 In [Timeout], enter the waiting time for connecting to the FTP server (for example, 60 seconds).



10 In [Control Word Address], specify a Word address (for example, D100) to control saving.

Click the icon to display an address input keypad.

Enter "D" and "100".



Movie save setting on the FTP server has been successfully completed

NOTE

- The video signal can be displayed while it is being recorded.
- Stored movie files cannot be played while a video signal is being recorded.

◆ Operating Procedure

Use two sequential Words from the specified address to control saving.

D100	Control
D101	Status

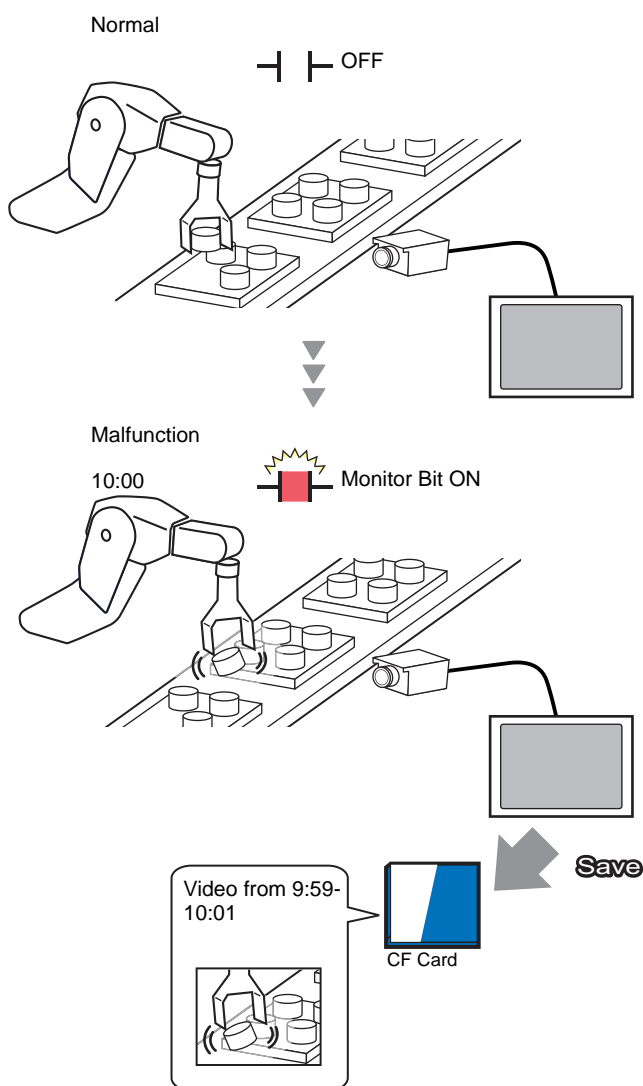
- 1 Turn ON bit 0 of D100 to start recording (saving on the FTP server).
Bit 0 of status address (D101) turns ON while saving.
- 2 Turn OFF bit 0 of D100 to stop recording.

27.4 Recording Video Before and After a Malfunction

27.4.1 Introduction

GP-3450T/3550T/3650T/3750T allows you to automatically save the video signal before and after a malfunction as movie files (images and sound) when specified conditions are met. The function captures the moment when a malfunction occurs on an assembly line and is useful for investigating the cause.

When the trigger bit address is turned ON during monitoring, up to 60 seconds of video before the event and 60 seconds of video after the event is saved as a movie file to a CF Card or FTP server.

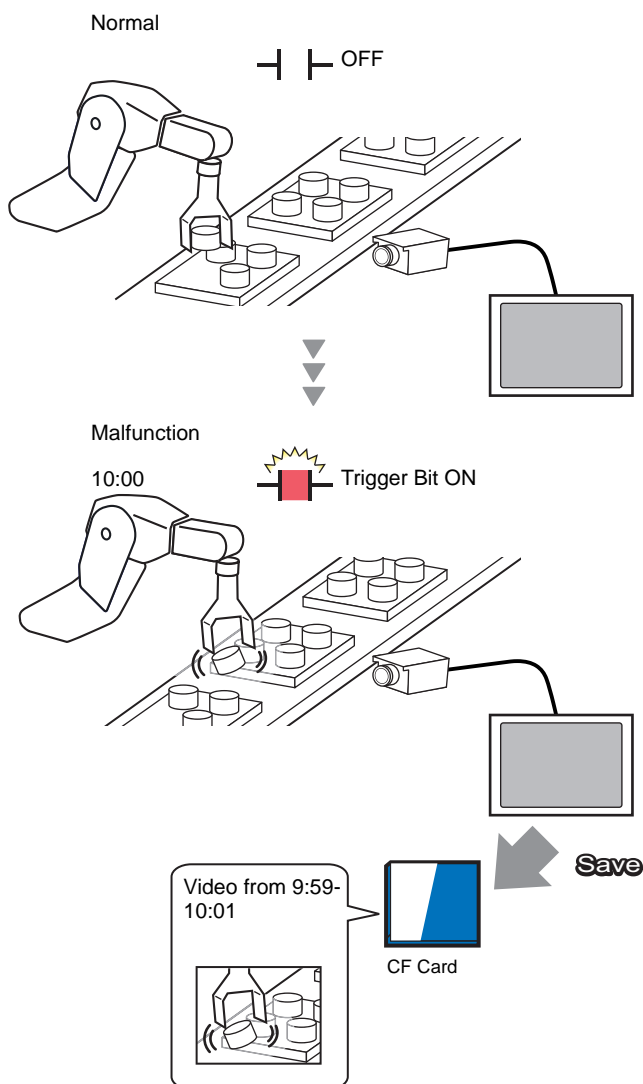


27.4.2 Setup Procedure

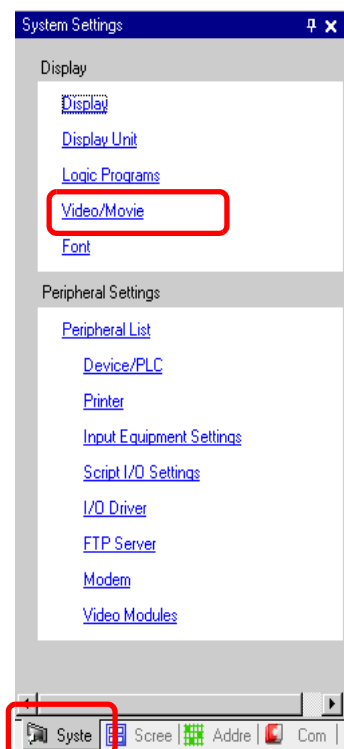
NOTE

- Please refer to the settings guide for details.
 ☞ “27.9.1 [Video/Movie] Settings Guide” (page 27-73)

Saving video as a movie file before and after an assembly line malfunction or other event. When the trigger bit address is turned ON (and the monitoring bit is also ON) video is saved to a CF Card.



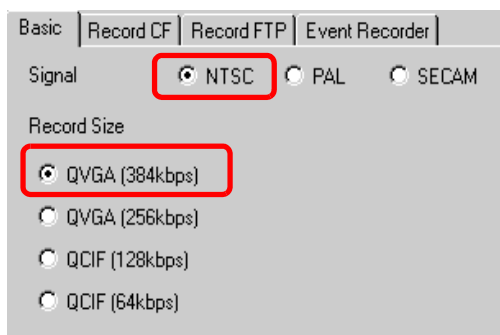
1 In [System Settings], click [Video/Movie].



NOTE

- If the [System Settings] tab is not displayed in the workspace, on the [View (V)] menu, point to [Workspace (W)], and then click [System Settings (S)].

2 Select [Video Signal] and [Record Size].



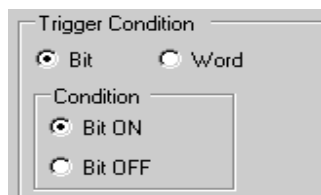
3 Click the [Event Recorder] tab, and then select the [Record Events] check box.



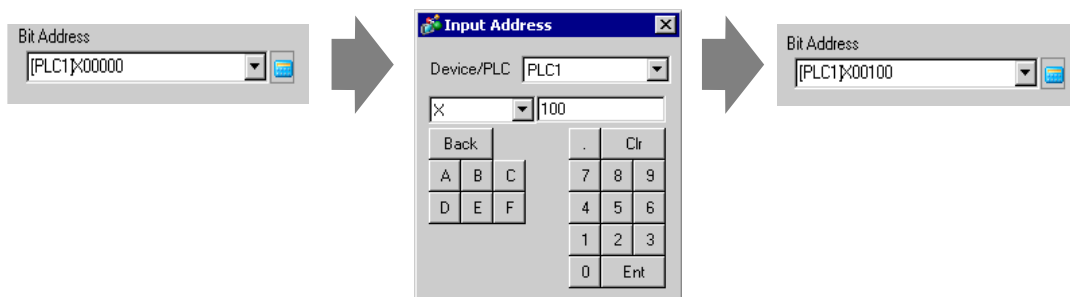
NOTE

- Movies cannot be played while the [Record Events] function is enabled.

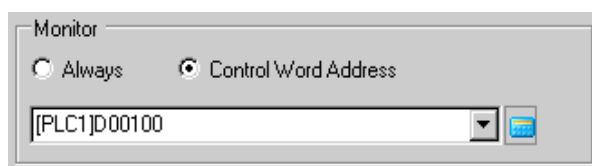
4 Under [Trigger], select [Bit], and under [Condition], select [Bit ON].



5 In the [Bit Address] box, specify the bit address to start saving. (For example, X100)



6 Under [Watch], select [Control Word Address] for the monitoring conditions and specify the address used to control monitoring (for example, D100). Two sequential words from the specified address are used for control.

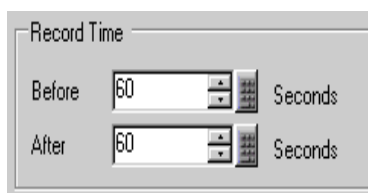


D100	Control
D101	Status

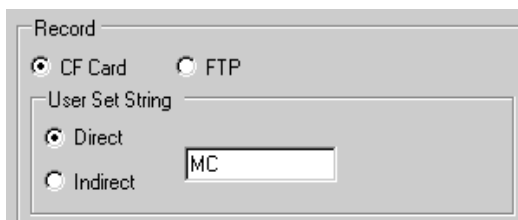
NOTE

- If bit 0 (monitoring bit) of the specified control address is not ON, movie files cannot be saved even with the trigger bit address ON.
- When [Always] is selected for the monitoring conditions, [Event Recorder] monitoring is always ON and movies cannot be played.

7 Under [Record Time], specify the seconds to record (for example, 60) before and after a trigger occurs.



- 8 Under [Record], select [CF]. In the [User Set String] area select [Direct] and enter two single-byte characters (for example, MC). This string is the folder name and the first two characters of the file name in which the movie is saved.



NOTE

- The movie can be saved to either a CF card or an FTP server. You cannot save the movie until the current recording process is completed.
 - The movie is saved under a file name consisting of the user set string (two characters) + time stamp (saves the starting year, month, day, hour, minute, second) and file extension .sdx.
(For example, if a folder and file are saved at 15:23'26" on May 27, 2006, the file name will be "MC060527_152346.SDX".)
 - If [Indirect] is selected, you must store the user set string with PLC before saving to the CF. Store the two-character string in the second of three words at the specified address.
 - If [User Set String] is not set, the folder will be named "NONAME".
-

The settings are complete.

NOTE

- The video signal can be displayed even when Event Recorder is enabled.
-

27.5 Playing Movies

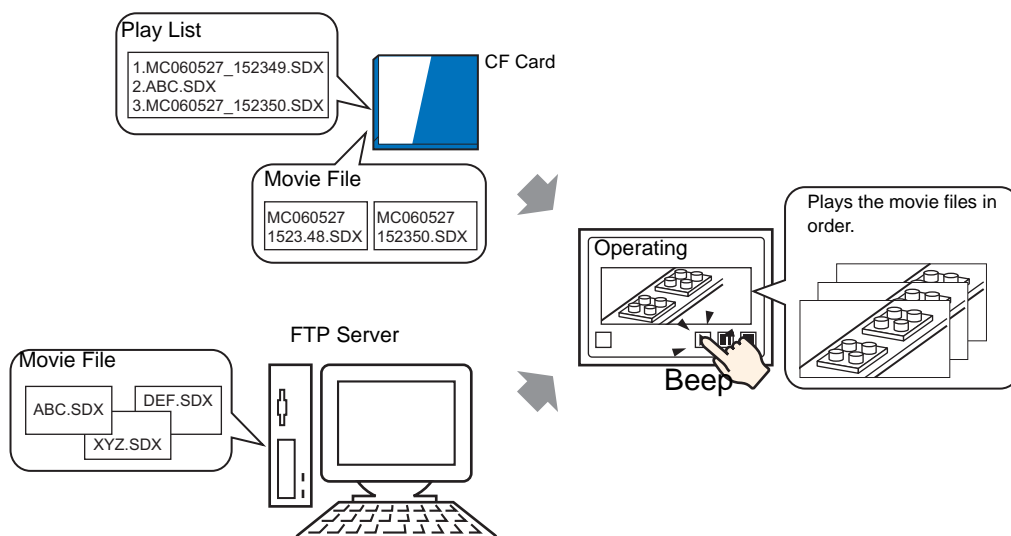
27.5.1 Introduction

In GP-3450T/3550T/3650T/3750T, the recorded *.sdx movie file can be played on the GP. A user can touch the keys to pause or rewind.

There are two methods for playing movie files saved on a CF Card or FTP server.

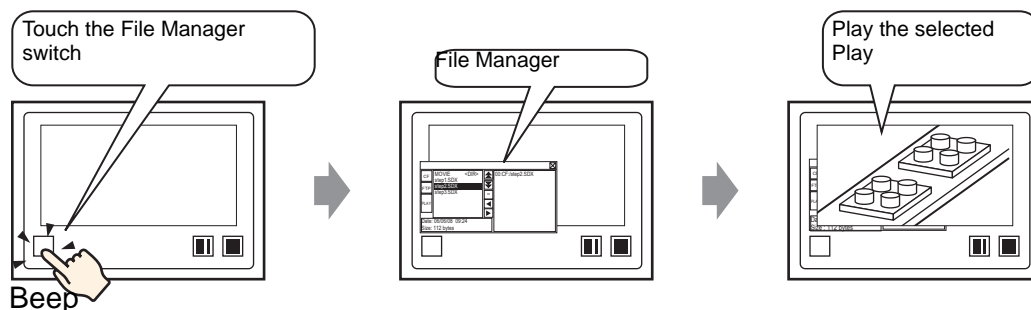
■ Using a Play List

If you know the movie files you want to play, for example, to display a process recorded in movies, first register the movie files you want to play in a playlist. If several movie files are registered in the playlist, the files will be played sequentially in that order.



■ Selecting a Movie at Run Time

Using Special Data Display [File Manager], a user can play a particular movie file by touching the desired file.



NOTE

- Using [Movie Converter], you can convert PC movie files to a format playable on GP.
 ☞ "27.5.3 Converting Movie Files" (page 27-41)

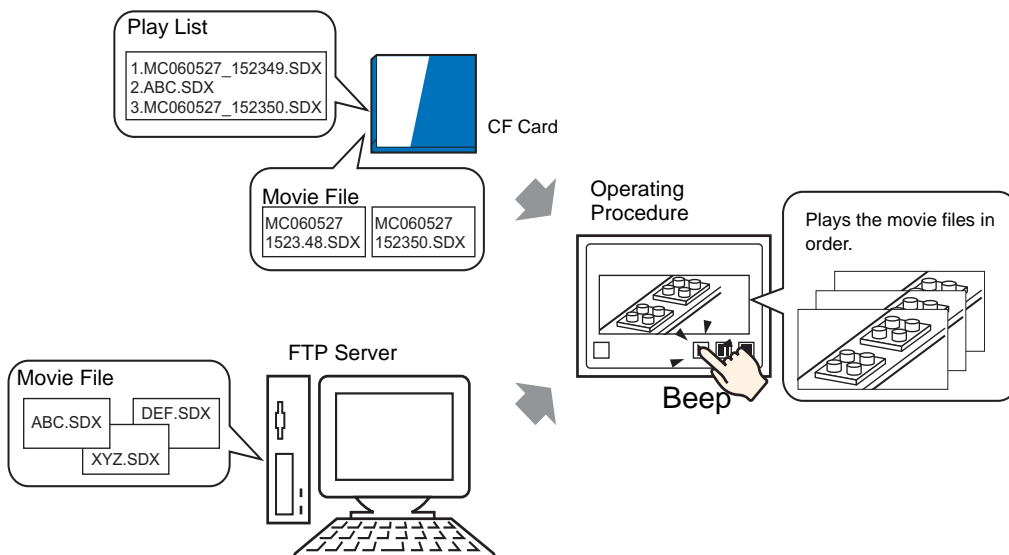
27.5.2 Setup Procedure

NOTE

- Please refer to the settings guide for details.
 - ☞ “27.9.3 Common [Movie] Settings Guide” (page 27-93)
 - ☞ “27.9.4 [Movie Player] Settings Guide” (page 27-95)
 - ☞ “25.10.2 [Special Data Display] Settings Guide ■ File Manager” (page 25-86)
- For details on how to arrange the components and how to specify the address, shape, color, and label settings, refer to the "Component Editing Procedure".
 - ☞ “9.6.1 Editing Parts” (page 9-38)

■ Using a Play List

Determine the order of the movie files in the playlist, and play the movies in that order.

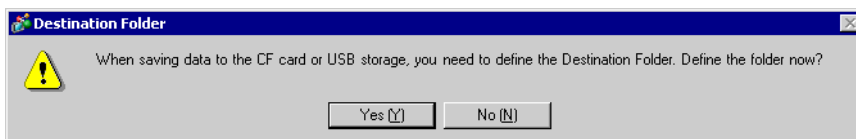


◆ Creating a Play List File

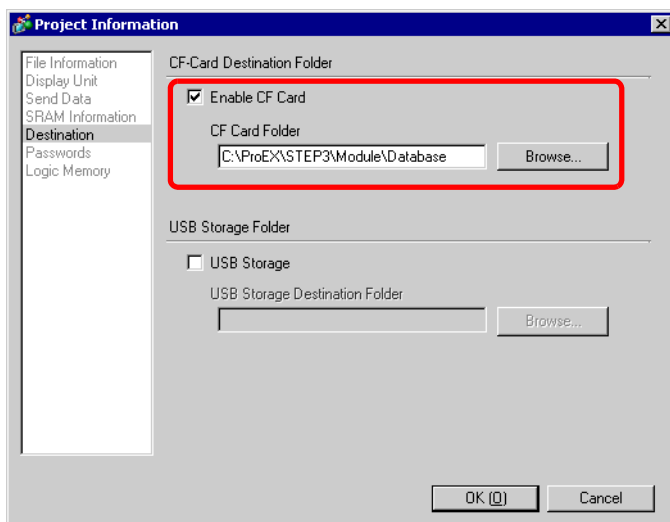
NOTE

- To create a playlist file and save it on a CF Card, you must specify the CF Card output folder.
- If you have specified the [Destination Folder] already, the following message is not displayed. Begin specifying settings from procedure 3.
 - ☞ “■ Setting the Output folder” (page 5-41)

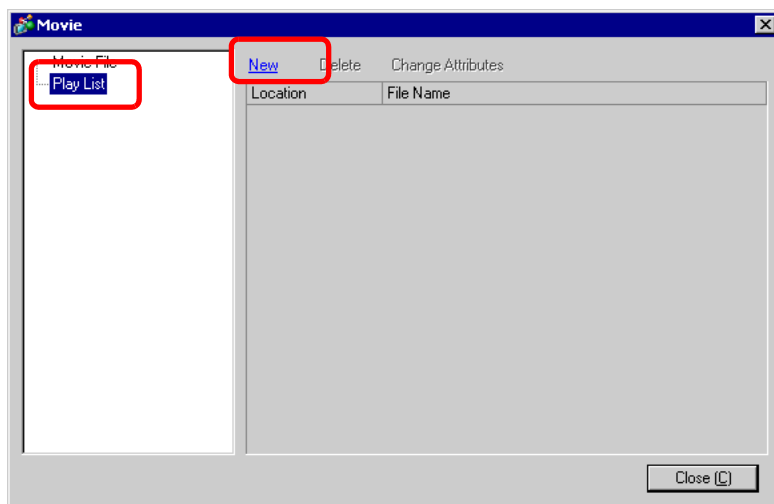
- 1 On the [Common Settings (R)] menu, click [Movie(O)] or click . The following dialog box appears. Click [Yes] to display the [Project Information] dialog box.



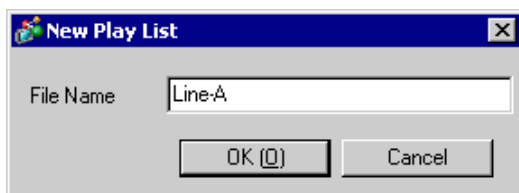
- 2 Select the [Enable CF Card] check box, specify the folder in which the movie files are stored, and click [OK].



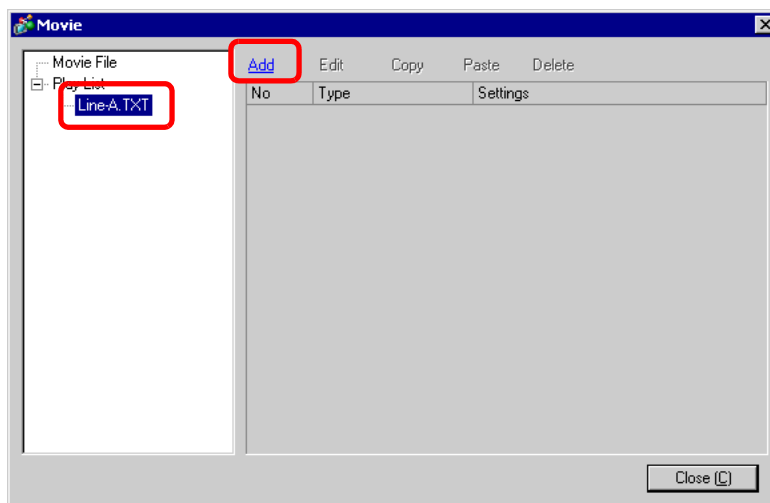
- 3 The [Movie] dialog box appears. Select [Play List] and click [New].



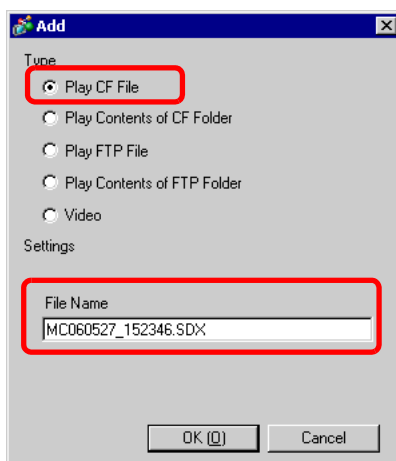
- 4 The [New Play List] dialog box appears. Enter the playlist file name (for example, Line-A) and click [OK].



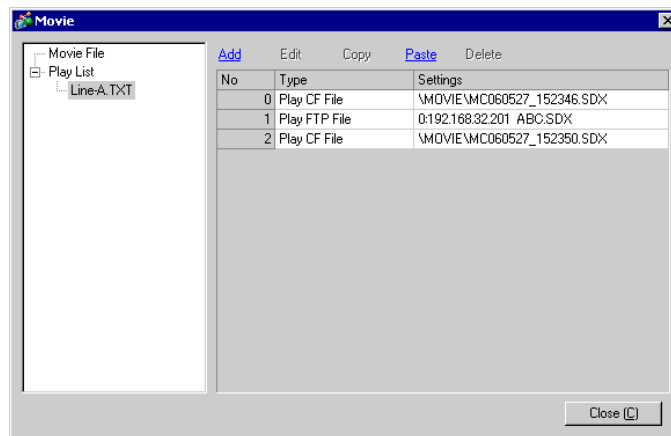
5 Select the created file and click [Add].



6 The [Add] dialog box appears. Select [Play CF File], and in [File Name], enter the name of a movie file to be registered in the playlist (for example, MC060527_152346.SDX). Click [OK].



You can register movie files in the order you want to play them. After completing theregistration, click [Close].



NOTE

- To create a play list on the FTP Server, use a text file (such as Notepad) to create a file in the following format. You can specify the created file (TXT) by selecting [FTP] in the movie player - [Play List].


<Format>

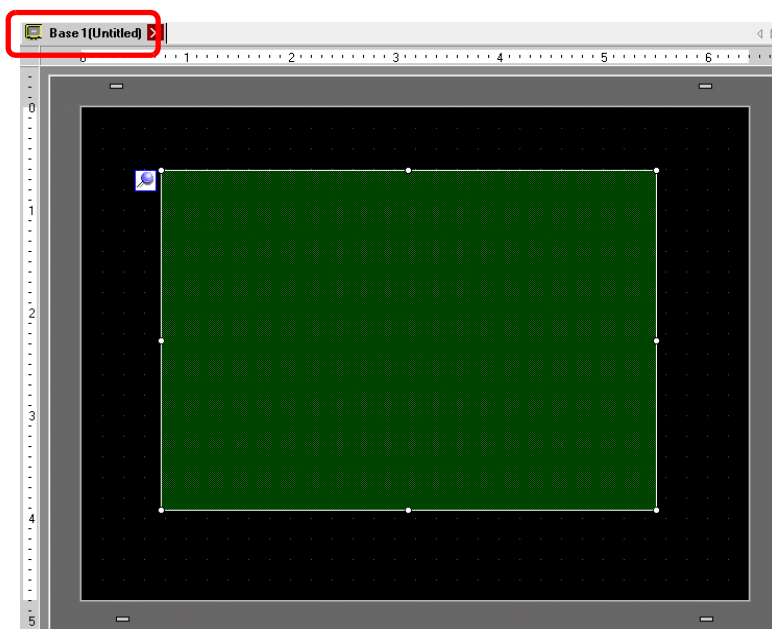
- Specify a movie file on the CF Card
(serial Number),CF \MOVIE\((folder name))\((file name.SDX)
- Specify a folder on the CF Card.
(serial number),CF,\MOVIE\folder_name\
- Specify a movie file on the FTP server.
(serial number),FTP,FTP(FTP server registration number),(folder name)\file_name.SDX
- Specify a folder on the FTP server
(serial number),FTP,FTP(FTP server registration number),(folder name)\
- Display real-time video.
(serial Number),INVM
- he serial number is assigned to the first line starting from 0 and then assigned sequentially to the following lines. Lines can be created from 0 to 99.
- If you want to add comments, type the pound symbol (#) at the beginning of the line then type the comments. Lines with comments or line breaks do not affect movie play.
- The FTP server registration number is the number registered in [FTP Server].
- Separate the folder name and file name using "\".
- The playlist file name must use the extension .TXT.
- The maximum number of movie files that can be played is 100.

"Description example"

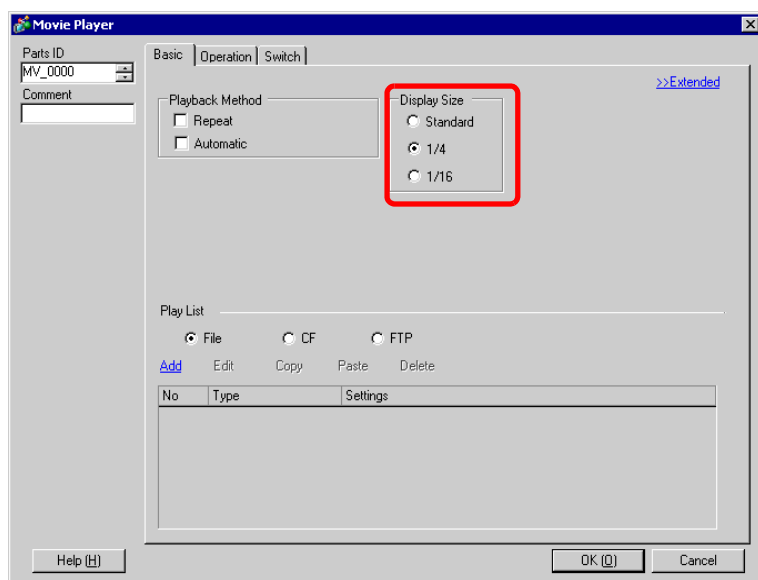
```
#Play list 1
0,CF,\MOVIE\MC\MC060527_152346.SDX
1,FTP,FTP0\MC\ABC.SDX
2,CF,\MOVIE\MC\MC060527_152350.SDX
```

◆ Creating the Movie Play Screen

- 7 In the [Screen List] window open the base screen where you want to display the video. On the [Parts (P)] menu, click [Movie Player (O)], or click  and place a movie player on the screen.



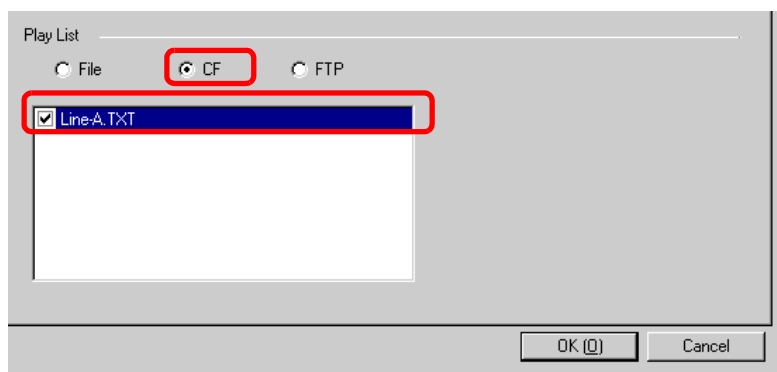
- 8 Double-click the movie player. The following dialog box appears. In the [Display Size] area select [1/4].



NOTE

- If the selected [Display Size] is larger than the size of the GP screen or the movie player, the entire image is not displayed. If you want to display the entire image, set the [Display Size] smaller than the size of the movie player.

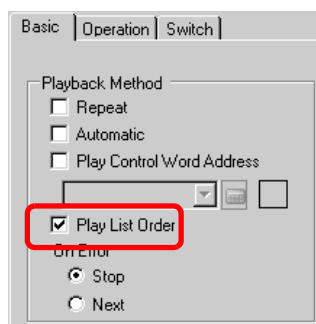
- 9 In [Play List], select [CF] and select the check box next to the file created in step 7. (For example, Line-A.TXT)



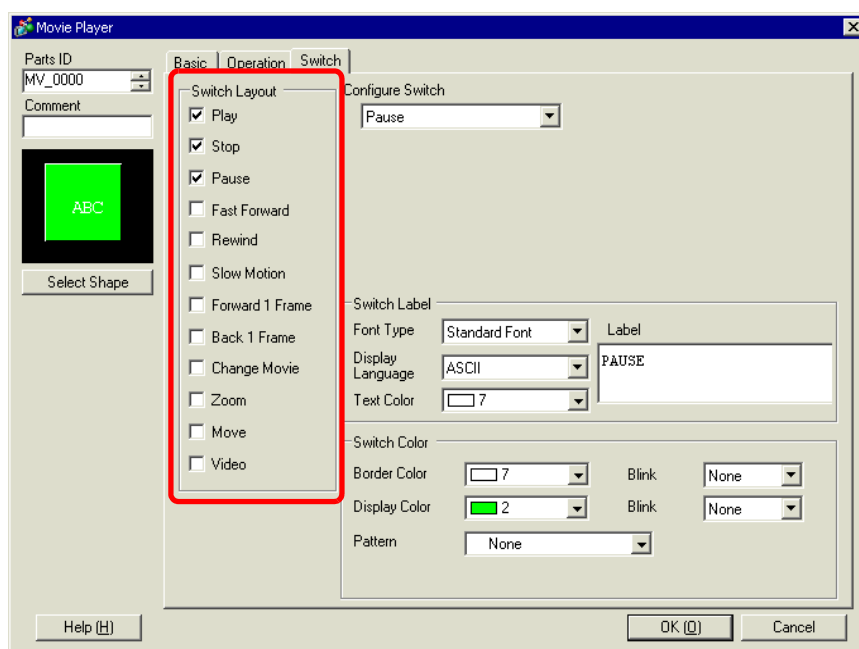
NOTE

- If you select [File], the playlist can be specified in the Movie Player. In this case, the playlist file is not required.

- 10 Click [Details] and select the [Play List Order] check box.



- 11 Configure a switch for operation. Open the [Switch] tab, and select the [Play], [Pause], and [Stop] check boxes in the [Switch Layout].

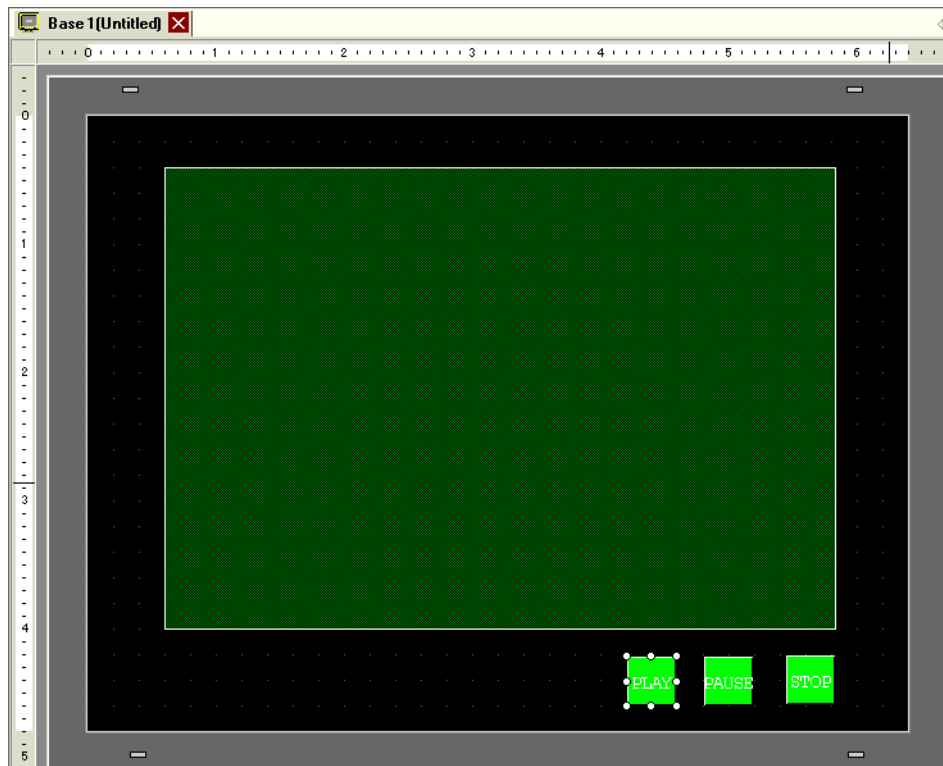


- 12 In [Select Shape], select the shape of the switch, and specify the label and color as necessary. Click [OK] to complete the settings.

NOTE

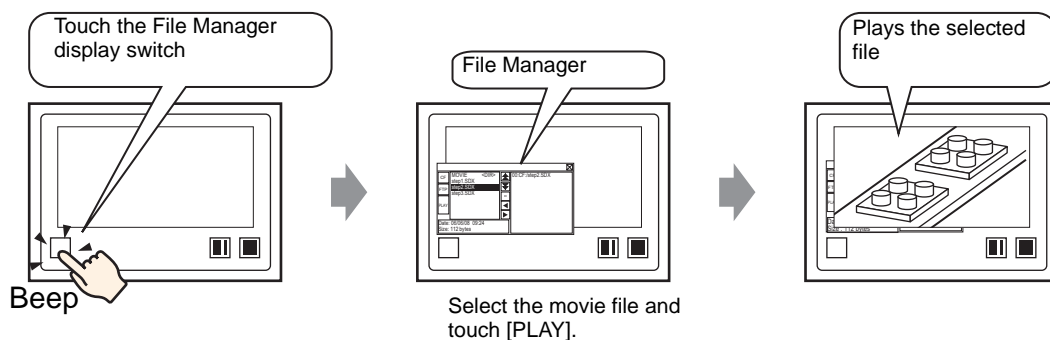
- You cannot specify individual shapes and colors for switches drawn using the [Switch] tab on the [Movie Player] part. You can only specify individual labels. If you want to define specific shapes and colors for each switch, do not use the [Switch] tab. Instead, use the Switch/Lamp part to create a [Movie Player Switch] from the [Special Switch] settings. For more information, see [☞ “11.14.4 Special Switch” \(page 11-59\)](#)
- Depending on the shape of the switch, you may not be able to change the color.

The switches can be individually selected and moved to a desired location.

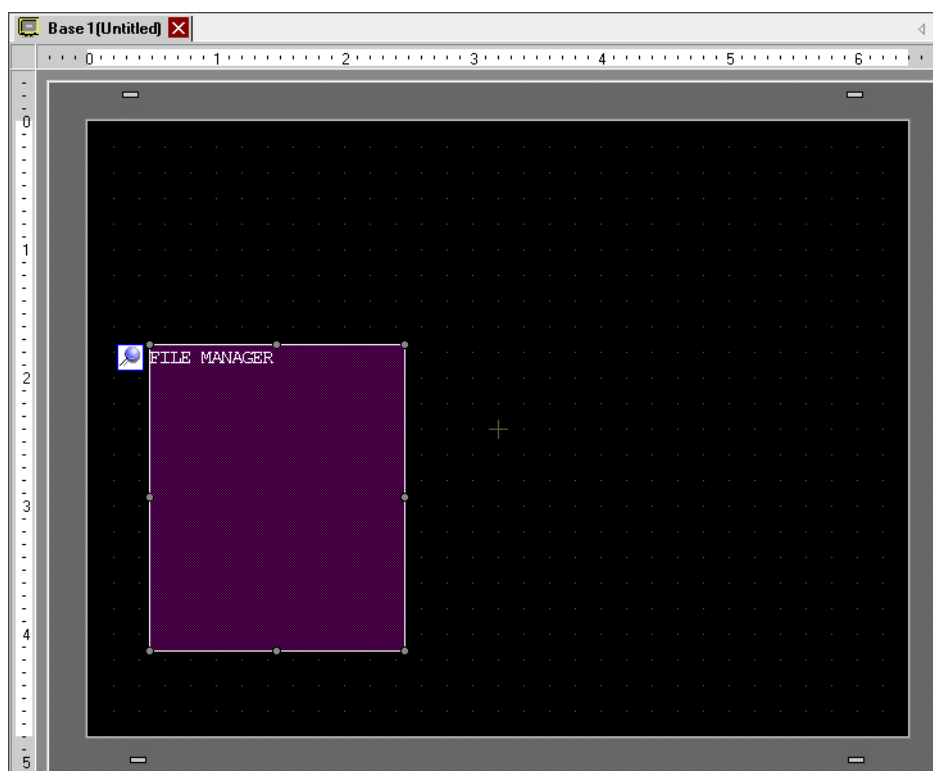


■ Selecting a Movie at Run Time

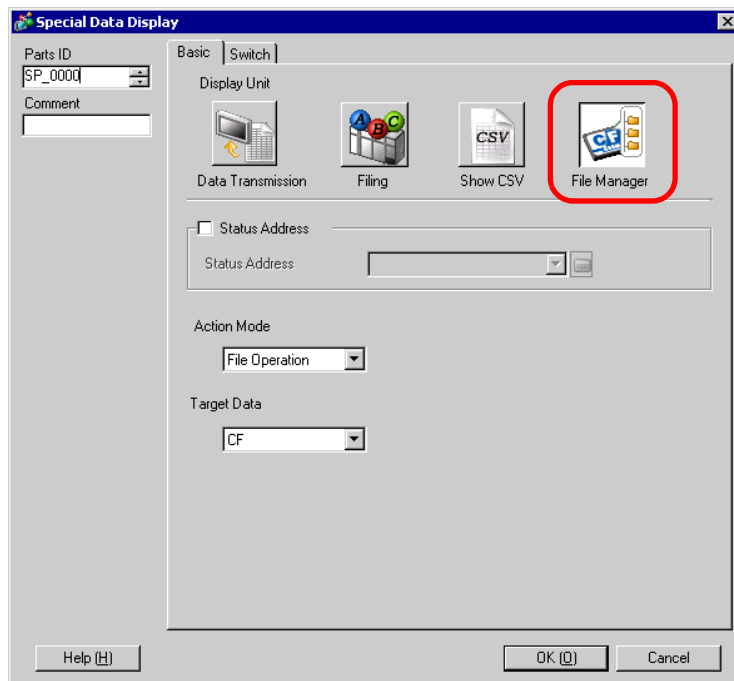
Selecting the movie file on the GP screen immediately causes the movie to play.



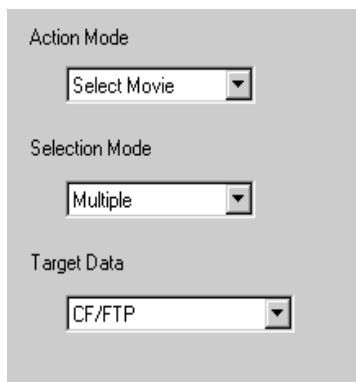
- 1 On the [Parts (P)] menu, point to [Special Data Display (P)] and then click [File Manager (M)] and place File Manager on the screen.



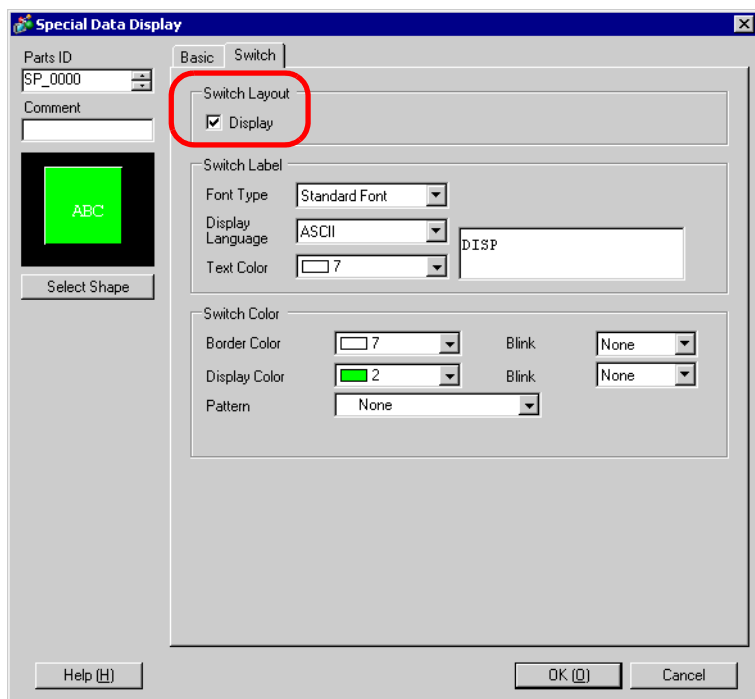
2 Double-click the [File Manager]. The following dialog box appears.



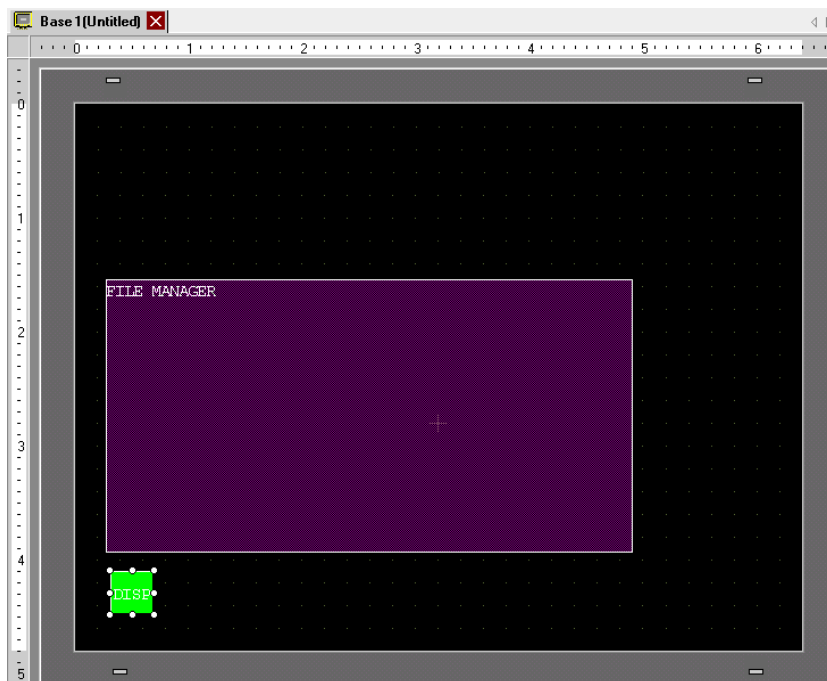
3 Under [Mode], select [Select Movie]. Under [Selection Mode], select [Plural] and under [Target Data] select [CF/FTP].



- 4 Click the [Switch] tab and under [Switch Layout] select the [Display] check box. Select the shape of the File Manager switch, specify the label and color, and click [OK].



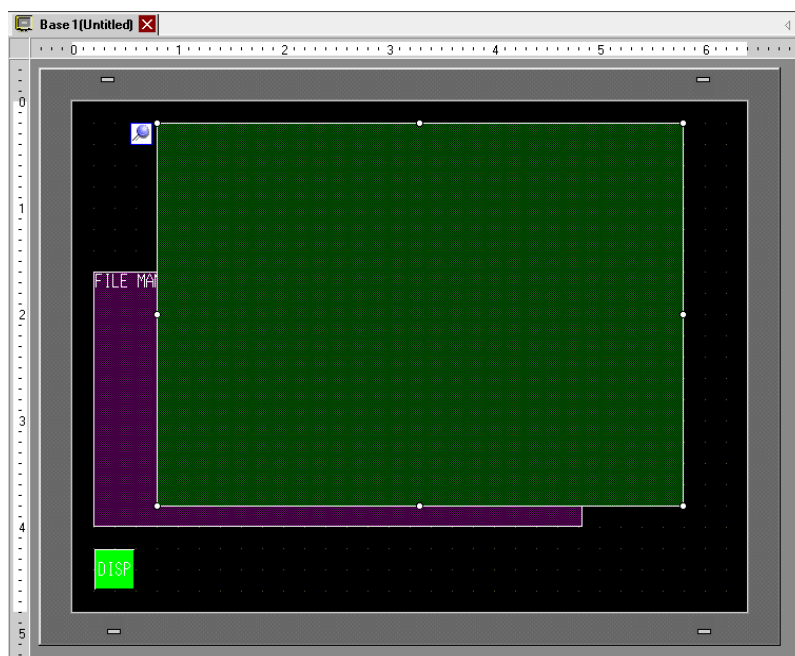
The Special Data Display [File Manager] has been specified. The switches placed with the [Switch] tab of [File Manager] can be individually selected and moved to a desired location.



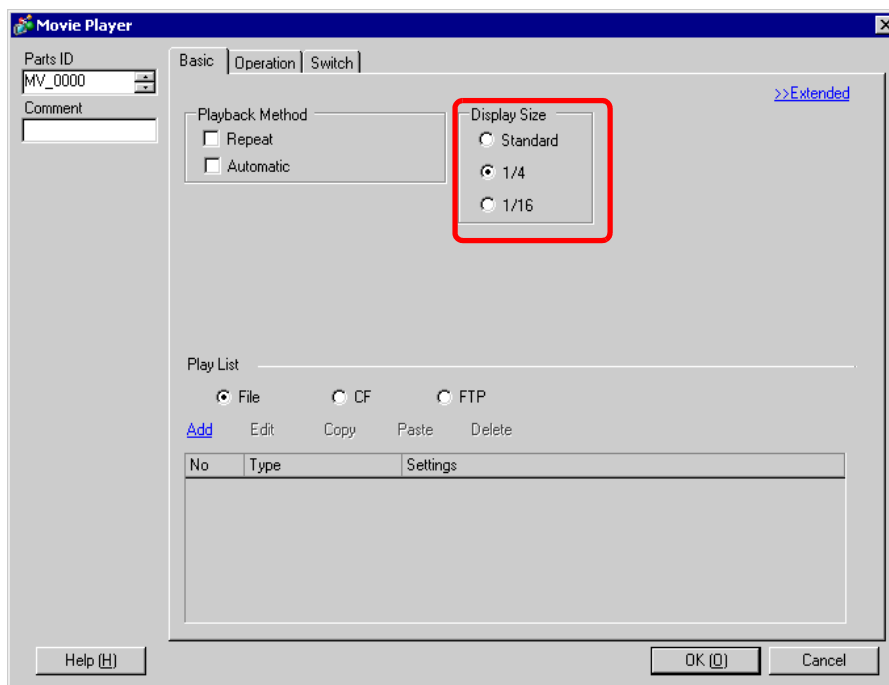
NOTE

- Only one Special Data Display [File Manager] can be placed on one screen.

- 5 On the [Parts (P)] menu, click [Movie Player (O)] and place Movie Player in the same Base screen as [File Manager].



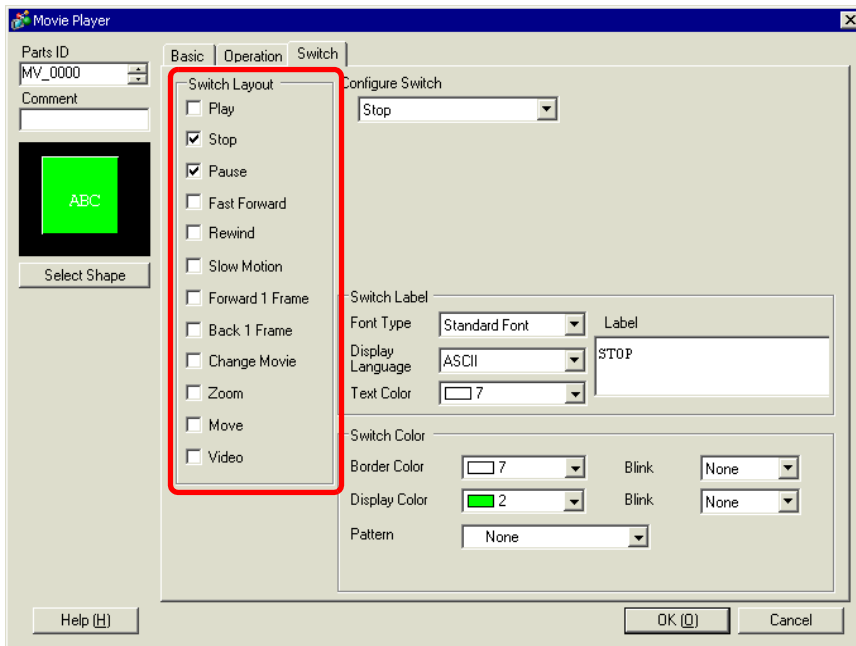
- 6 Double-click the movie player. The following dialog box appears. In the [Display Size] area select [1/4].



NOTE

- If the selected [Display Size] is larger than the size of the GP screen or the movie player, the entire image is not displayed. If you want to display the entire image, set the [Display Size] smaller than the size of the movie player.

- 7 Place the operation switch. Click the [Switch] tab and, under [Switch Layout], select [Stop] and [Pause].



- 8 In [Select Shape], select the shape of the switch, specify the label and color, and click [OK].

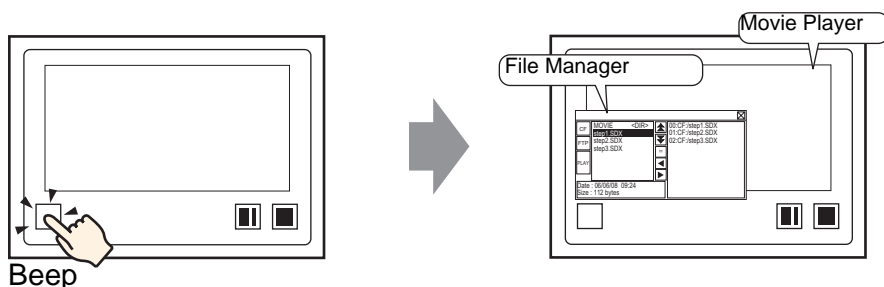
NOTE

- You cannot specify individual shapes and colors for switches drawn using the [Switch] tab on the [Movie Player] part. You can only specify individual labels. If you want to define specific shapes and colors for each switch, do not use the [Switch] tab. Instead, use the Switch/Lamp part to create a [Movie Player Switch] from the [Special Switch] settings. For more information, see [“11.14.4 Special Switch” \(page 11-59\)](#)
- Depending on the shape of the switch, you may not be able to change the color.

The switches placed with the [Switch] tab in [Movie Player] can be individually selected and moved to a desired location.

◆ Using File Manager to Play Movies

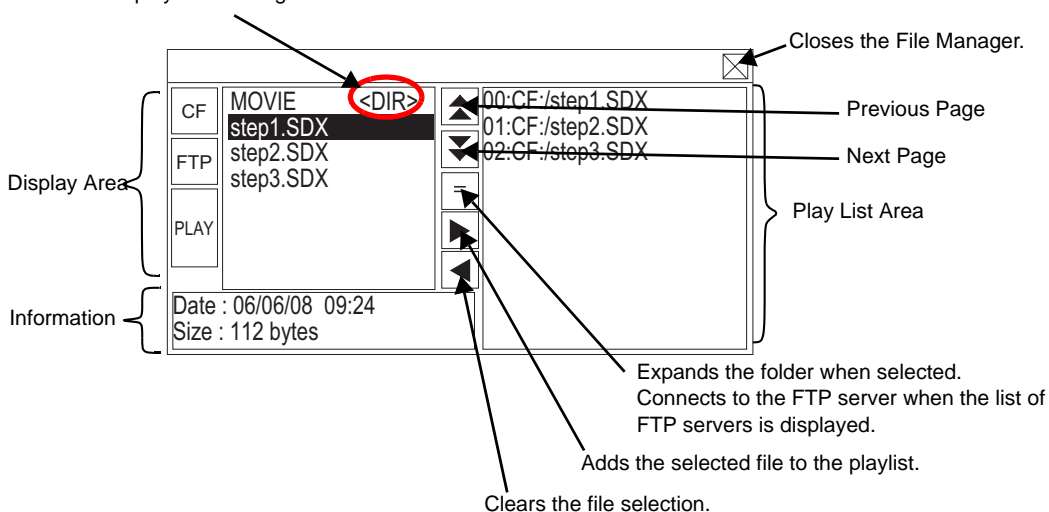
1 Touch the File Manager Display Switch to call up [File Manager] on the GP screen.



(If you touch the display switch again, [File Manager] will close.)

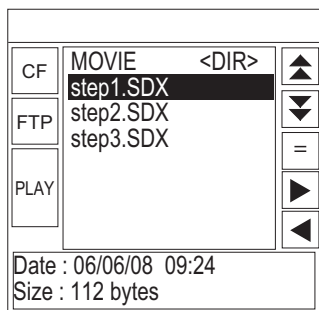
2 Setting [Selection Mode] on the Special Data Display [File Manager] to [Plural] and setting [Target Data] to [CF/FTP] displays the following contents.

< DIR > is displayed to the right of the folder name.

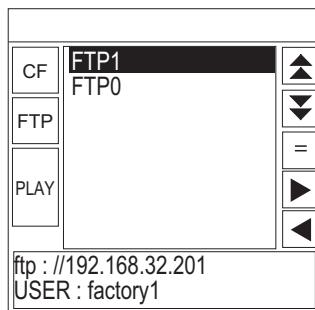


- **Display Area**
Touch [CF] or [FTP] to select the file location.
Selecting [CF] displays a list of the folder names or file names on the CF Card.
Selecting [FTP] displays a list of host settings names on the FTP server list when not connected to the FTP server.
The files are displayed in the order in which they were created. It is not possible to sort the files by file numbers or time stamps.
Touching [PLAY] starts playing the files with GP-Pro Ex.
- **Information Area**
Selecting a folder displays the folder creation date. Selecting a file displays the creation date and size of the file.
The FTP server list displays the IP addresses and user names of the selected hosts.
- **Play List Area**
The names of the files to be played are displayed in the list. The files are played in the order of this list.

- 3 Selecting the folder and touching the [=] key displays a list of all the files in the folder.



CF Card

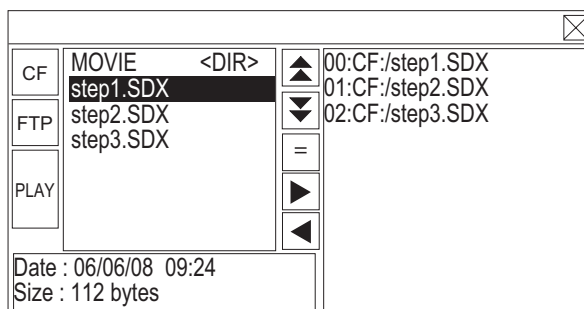


FTP Server

NOTE

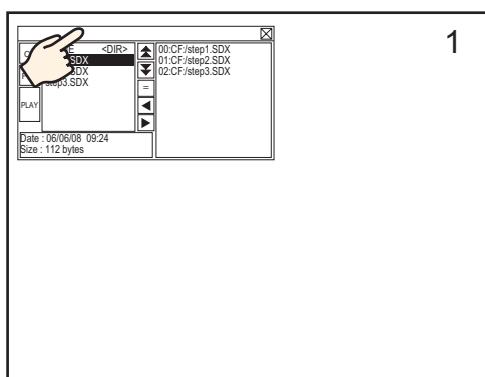
- To return to the above tree (the list of folders) from the file list page, select "..< DIR >" in the first line and touch the [=] key.
- After connecting to the FTP server selected with [=] key, selecting [FTP] displays the file list.

- 4 On the GP, select the movie file you want to play and touch the [▶] key to add the file to the playlist. Touching [PLAY] starts playing the files in the order registered in the playlist.



◆ How to Move File Manager

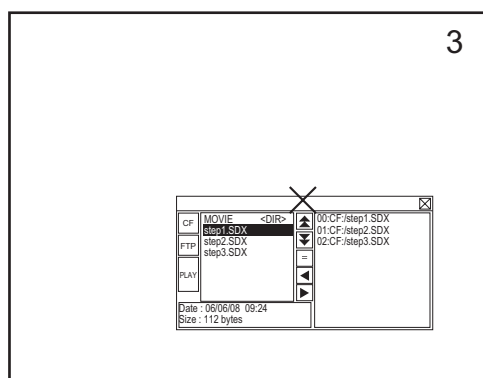
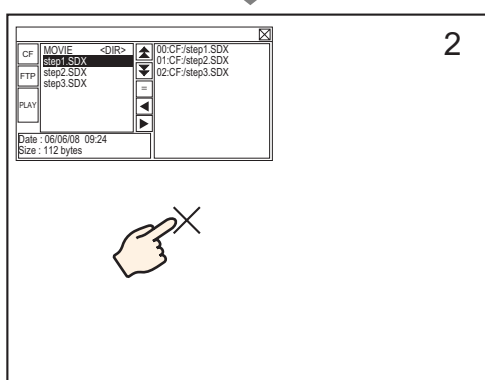
The screen position of Special Data Display [File Manager] can be changed.



- 1 Touch the top of the [File Manager] Display.
- 2 Touch the desired position on the screen where you want the display to move.
- 3 The [File Manager] Display moves to display the specified position.

NOTE

- If the [File Manager] Display runs off the screen at a specified position, the coordinates adjust so that the entire window is displayed.



27.5.3 Converting Movie Files

To display movie files from a PC on the GP, you need to convert the file into a GP proprietary file format (*.SDX). Use the Movie Converter to convert the movie file into SDX format, or convert SDX files into a Windows compatible file format.

IMPORTANT

- You need to purchase a separate license to install the movie converter.
- In order to use the movie converter, you need to install on the PC the codec for the movie file you want to convert. If the PC can play the movie file, the codec is already installed.
- A default codec is installed with video/audio players such as Windows® Media Player.

Movie Converter Operating Environment

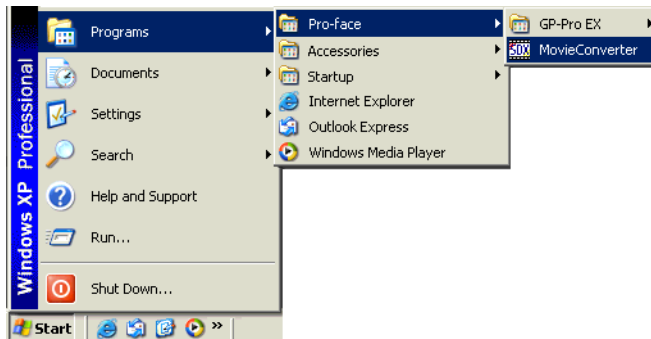
	Specification	Remarks
PC	Windows® compatible machine	Pentium® III 1 GHz or faster is recommended
Hard Disk Space	60 MB or more	This capacity is required to install Movie Converter.
Memory	256 MB or more	512 MB or more recommended
OS	Windows® 2000 Service Pack 4, Windows® XP (Home Edition/ Professional Edition) Service Pack 2 or later	
Others	Windows® Media Player 9.0	For details on Windows® Media Player, see the Microsoft web site.
	Mouse	Make sure the mouse is compatible with the operating system above.
	CD-ROM drive	This is required only for installation. Make sure to use a drive that accepts the OS above.

■ Installation of the Movie Converter

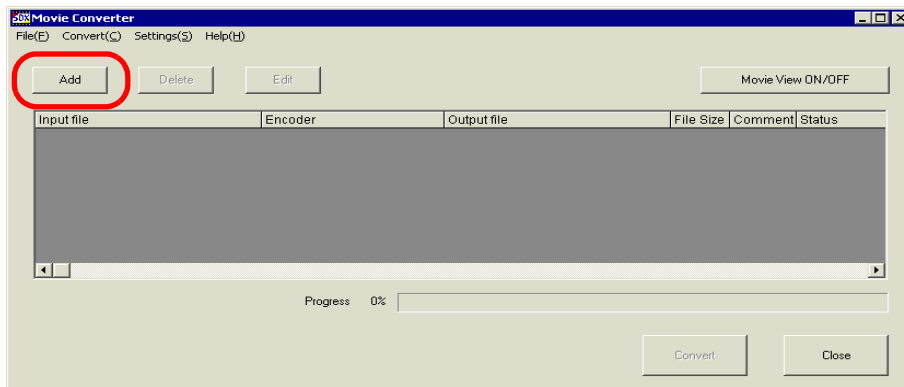
- 1 Insert the GP-Pro EX CD into the CD-ROM drive. The [Set Up Menu] window appears.
- 2 Click [Install Tool] and then click [Movie Converter].
- 3 The install screen appears. Install according to the procedure. The key code is attached to the license.

■ Starting Movie Converter and Converting Movies

- 1 On the taskbar click [Start], point to [Programs], [Pro-face], and then click [Movie Converter].



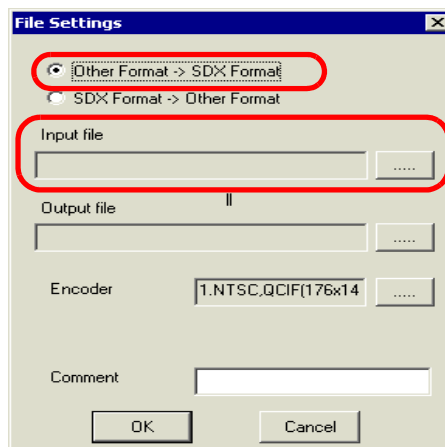
- 2 In [Movie Converter], click [Add]. The [File Settings] dialog box appears.



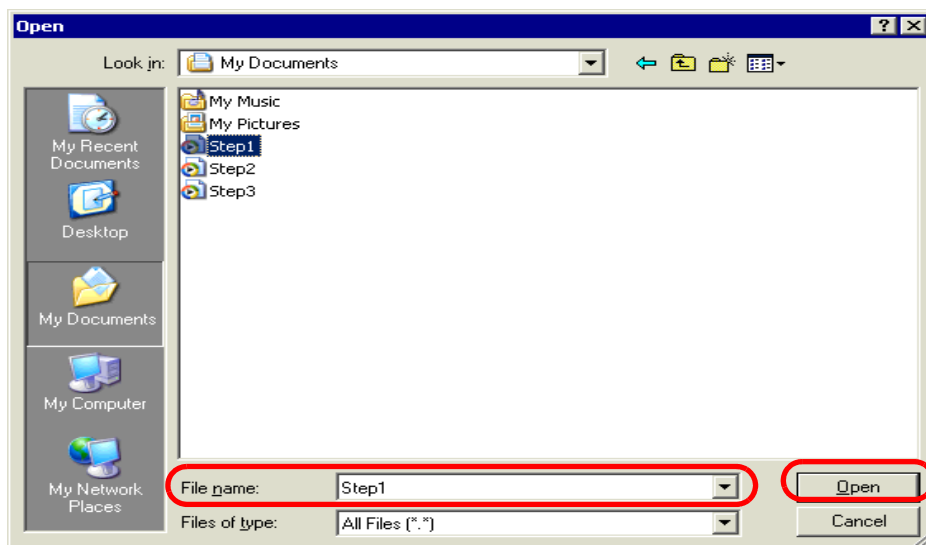
NOTE

- When the [Image Conversion In Progress] window is displayed, the name of the movie being converted is displayed in the window. To close the [Image Conversion in Progress] window, click [Hide File List].

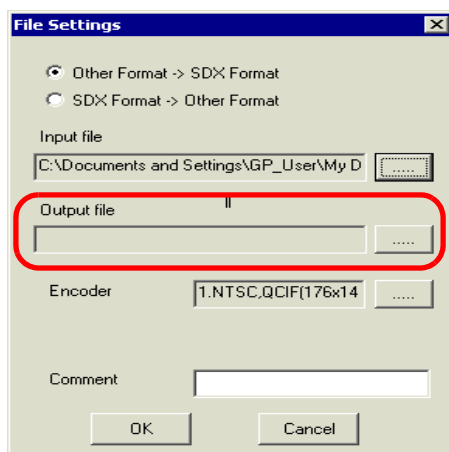
- 3 Select [Other Format → SDX Format]. Click [...] in [Input File]. The [Open] dialog box appears.



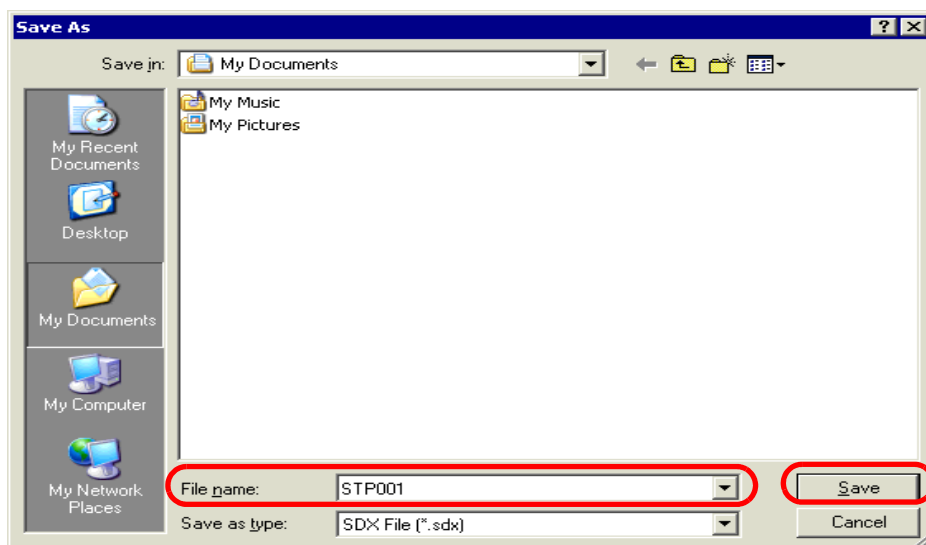
- 4 Select [Look in] and [File Name (N)] for the file to be converted, and then click [Open].



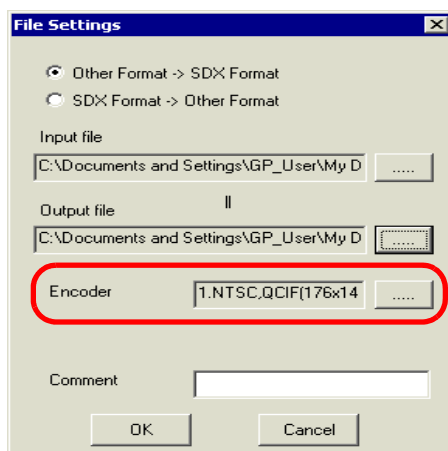
- 5 Return to the [File Settings] dialog box. Click the ellipsis [...] in the [Output File]- property. The [Save As] dialog box appears.



6 Specify [Save in] and [File Name (N)] for the file to be converted, and click [Save].



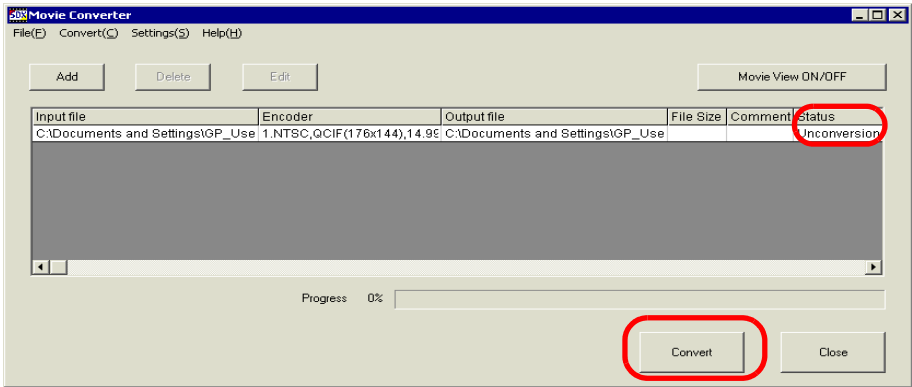
7 Select the conversion encoding in [...] in [Encoder], and click [OK].



NOTE

- In the Movie Converter, using the [Settings (S)] menu's [Default Settings (S)] command, you can initialize the Encoder, Video, and Audio settings.

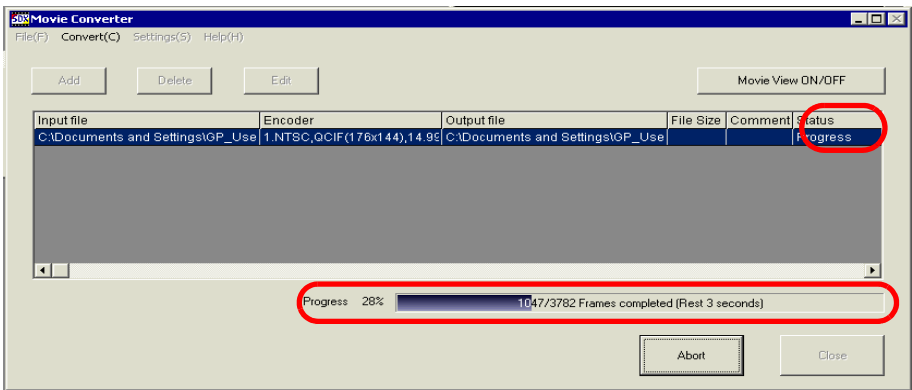
8 A list containing the specified files is displayed. The state of the current file can be checked in [State]. Clicking [Convert] starts the conversion.



NOTE

- If multiple conversion settings are specified, all the conversions displayed in the list are performed in sequential order.

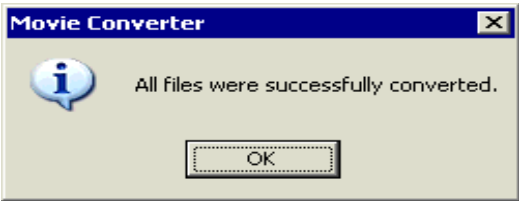
9 During conversion, [State] for the file list is displayed as [Conversion In Progress] and the state of the conversion is displayed in [Progress].



NOTE

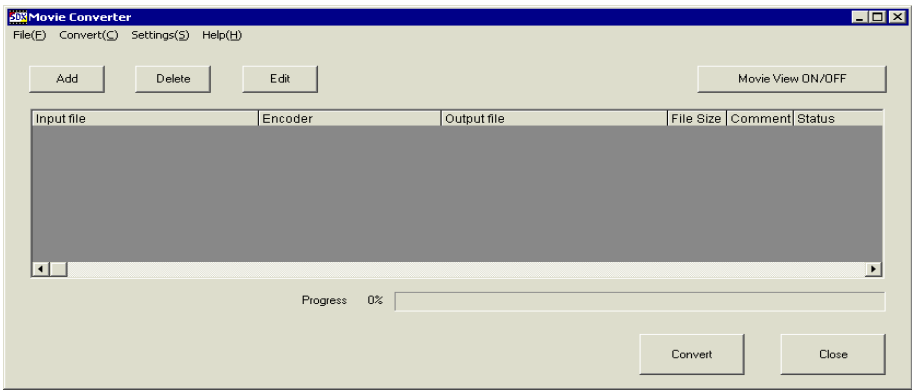
- Clicking [Stop] will stop the conversion.

10 After the conversion finishes normally, the following message appears. Click [OK].



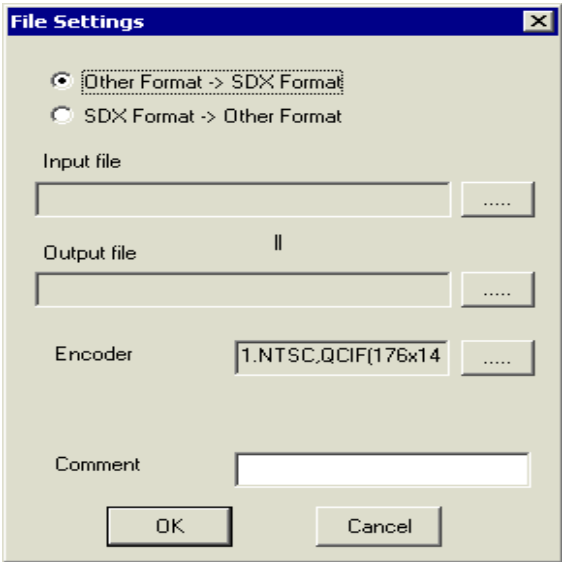
■ **Movie Converter Setting Guide**

"Movie Converter" is a tool for converting movie files on a PC to a GP-specific movie file format (SDX) and for converting a GP-specific movie file to a format playable on a PC. On the [Start] menu, select [Movie Converter] from [Pro-face] in [Program (P)] to start up the converter.



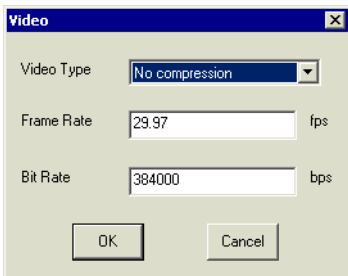
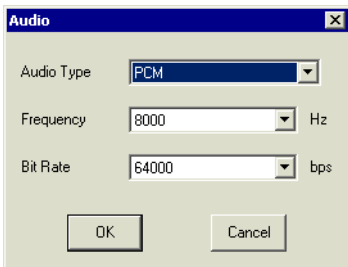
Setting	Description
Add	In the opened [File Settings] dialog box, you can register a list of movie files for conversion.
Delete	Deletes the selected file from the file conversion list.
Edit	Changes the settings for the file selected from the file conversion list.
Movie View ON/OFF	Displays/hides the Image Conversion In Progress window.

◆ File Settings



Setting	Description																																				
Converting Other Formats → SDX Format	Converts other formats to SDX format. <div><div>NOTE</div><ul style="list-style-type: none">Any movie can be selected for conversion regardless of the movie format.After conversion, the original file extension will be changed to SDX as the default.</div>																																				
	Input File	Click [...] to select a movie file for conversion.																																			
	Output File	Click [...] to specify the location for saving the converted file and to specify the file name.																																			
	Encoder	<div>The following settings can be selected.</div> <table><tr><th>Input Image Signal</th><th>Record Size</th><th>Number of Frames</th><th>Bit Rate</th></tr><tr><td>NTSC</td><td>QCIF (176 x 144)</td><td>14.99 fps</td><td>64 kbps</td></tr><tr><td>NTSC</td><td>QCIF (176 x 144)</td><td>14.99 fps</td><td>128 kbps</td></tr><tr><td>NTSC</td><td>QVGA (320 x 240)</td><td>14.99 fps</td><td>256 kbps</td></tr><tr><td>NTSC</td><td>QVGA (320 x 240)</td><td>14.99 fps</td><td>384 kbps</td></tr><tr><td>PAL</td><td>QCIF (176 x 144)</td><td>12.50 fps</td><td>64 kbps</td></tr><tr><td>PAL</td><td>QCIF (176 x 144)</td><td>12.50 fps</td><td>128 kbps</td></tr><tr><td>PAL</td><td>QVGA (320 x 240)</td><td>12.50 fps</td><td>256 kbps</td></tr><tr><td>PAL</td><td>QVGA (320 x 240)</td><td>12.50 fps</td><td>384 kbps</td></tr></table>	Input Image Signal	Record Size	Number of Frames	Bit Rate	NTSC	QCIF (176 x 144)	14.99 fps	64 kbps	NTSC	QCIF (176 x 144)	14.99 fps	128 kbps	NTSC	QVGA (320 x 240)	14.99 fps	256 kbps	NTSC	QVGA (320 x 240)	14.99 fps	384 kbps	PAL	QCIF (176 x 144)	12.50 fps	64 kbps	PAL	QCIF (176 x 144)	12.50 fps	128 kbps	PAL	QVGA (320 x 240)	12.50 fps	256 kbps	PAL	QVGA (320 x 240)	12.50 fps
Input Image Signal	Record Size	Number of Frames	Bit Rate																																		
NTSC	QCIF (176 x 144)	14.99 fps	64 kbps																																		
NTSC	QCIF (176 x 144)	14.99 fps	128 kbps																																		
NTSC	QVGA (320 x 240)	14.99 fps	256 kbps																																		
NTSC	QVGA (320 x 240)	14.99 fps	384 kbps																																		
PAL	QCIF (176 x 144)	12.50 fps	64 kbps																																		
PAL	QCIF (176 x 144)	12.50 fps	128 kbps																																		
PAL	QVGA (320 x 240)	12.50 fps	256 kbps																																		
PAL	QVGA (320 x 240)	12.50 fps	384 kbps																																		

Continued

Setting	Description
Converting SDX Format → Other Formats	Converts the SDX format to a format other than SDX.
Input File	Click [...] to select a movie file for conversion.
Output File	Click [...] to specify the location for saving the converted file and to specify the file name.
Image Settings	<p>Click and the [Image Settings] dialog box appears.</p>  <ul style="list-style-type: none"> • Specify Image Format The selections vary depending on the codec installed on the PC running Movie Converter. • Number of Frames, Bit Rate The settings will vary depending on the codec installed on the PC running Movie Converter.
Sound (H)	<p>Click and the [Sound Format Settings] dialog box appears.</p>  <ul style="list-style-type: none"> • Specify Sound Format The selections vary depending on the codec installed on the PC running Movie Converter. • Frequency, Bit Rate The settings will vary depending on the codec installed on the PC running Movie Converter.
Comment	Input arbitrary comments. The comments are used to distinguish between movie files on GP-Pro EX

■ Error Messages

◆ List of Errors that might Occur After Conversion (Other format →SDX Format)

Error	Actions to Take
Memory acquisition failed.	Secure free memory.
DirectX initialization failed.	Confirm that the input file is correct. Confirm that the requirements for the operating environment are satisfied.
Resize initialization failed.	An error has occurred in the codec. Either check that the codec is installed or use another codec.
MPEG4 encoder initialization failed.	
SDX file initialization failed.	
DirectX data acquisition failed.	
Resize failed.	
MPEG4 encoding failed.	
MPEG4 encoder deletion failed.	
SDX file frame data writing failed.	
SDX file close processing (writing) failed.	
Downsampling failed.	

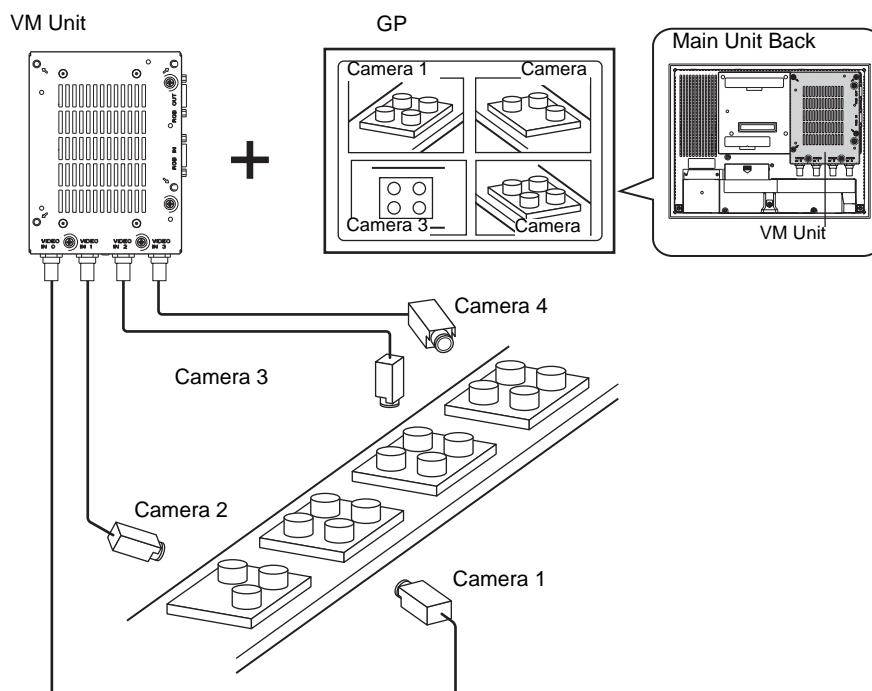
◆ List of errors that might occur after conversion (SDX format → other format)

Error	Actions to Take
Memory acquisition failed.	Secure free memory.
SDX file initialization failed.	Confirm that the input file is correct. Confirm that the requirements for the operating environment are satisfied.
MPEG4 decoder initialization failed.	An error occurred in the codec. Confirm that the codec parameters are specified correctly, or use a different codec.
DirectX initialization failed.	
MPEG4 decoding failed.	
DirectX image data writing failed.	
DirectX audio data writing failed.	
DirectX close processing failed.	
Downsampling failed.	

27.6 Displaying Multiple Video Camera Outputs Simultaneously

27.6.1 Introduction

Install the Video Module option on the GP-3500T/3550T/3600T/3650T to display pictures on the GP screen from one to four video cameras connected to the Video Module. It is useful for viewing images from various angles.



NOTE

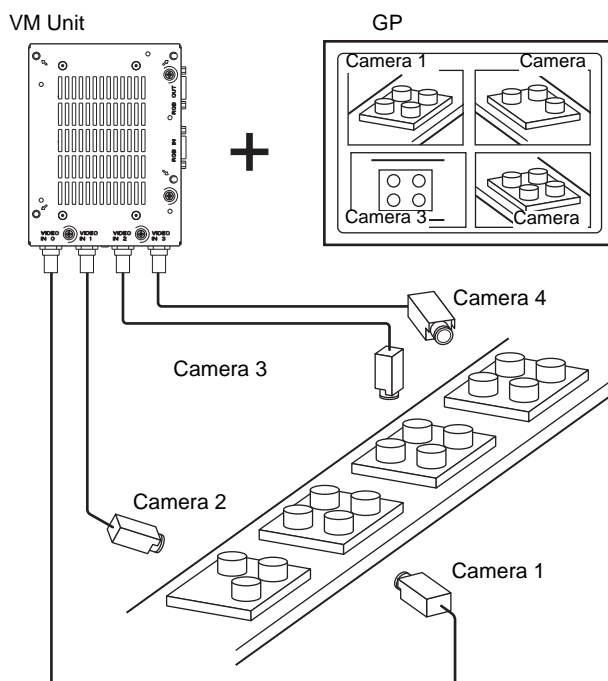
- For the Video Module specifications and installation method, please refer to the "VM Unit User's Manual."
- You can display the PC screen on one of the four split screens.
 ➞ "27.7 Displaying PC Screen" (page 27-59)
- You can capture video as still images and save the images in JPEG format.
 ➞ "27.8 Saving Video Output as Still Images" (page 27-65)

27.6.2 Setup Procedure

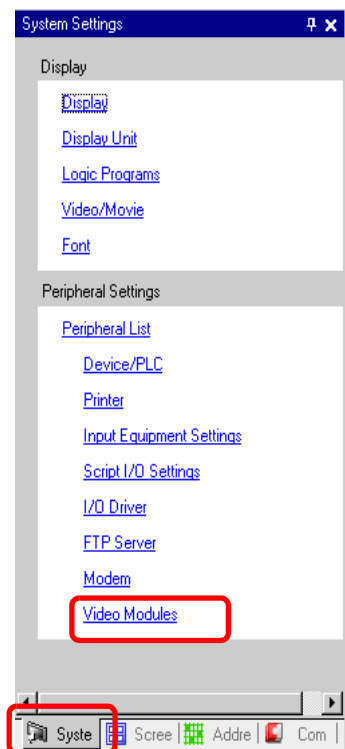
NOTE

- Please refer to the settings guide for details.
 - ☞ “27.9.5 Common [Video Module] Settings Guide” (page 27-115)
 - ☞ “27.9.6 [Video Module] Settings Guide” (page 27-124)
 - ☞ “27.9.7 Video Module Display Settings Guide” (page 27-137)
- For a detailed description of the methods for parts placement and for specifying the address, shape, color, and label, refer to the "Procedures for Editing Parts".
 - ☞ “9.6.1 Editing Parts” (page 9-38)

With the Video Module installed, pictures taken from four angles are displayed on the GP screen in real time.



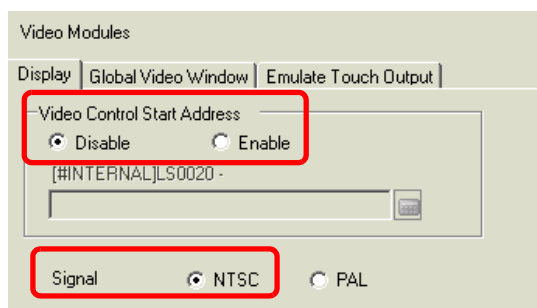
1 In the [System Settings], select [Video Module].



NOTE


- If the [System Settings] tab is not displayed in the workspace, on the [View (V)] menu, point to [Workspace (W)], and then click [System Settings (S)].

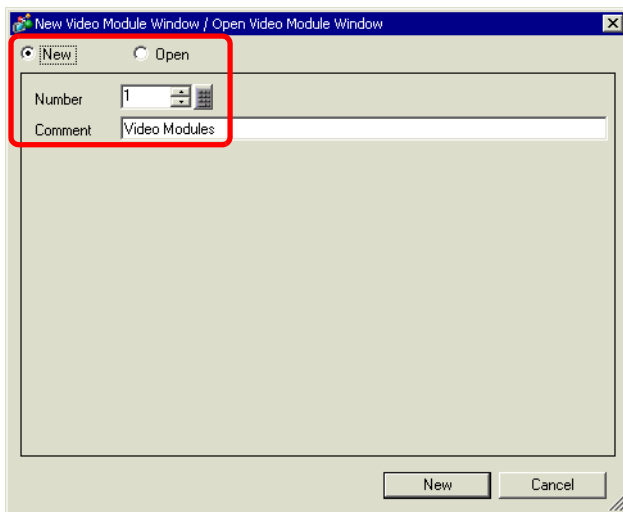
2 For [Video Control Start Address] select [Disable]. In [Video Signal] select the video signal supported in your region: [NTSC] or [PAL].



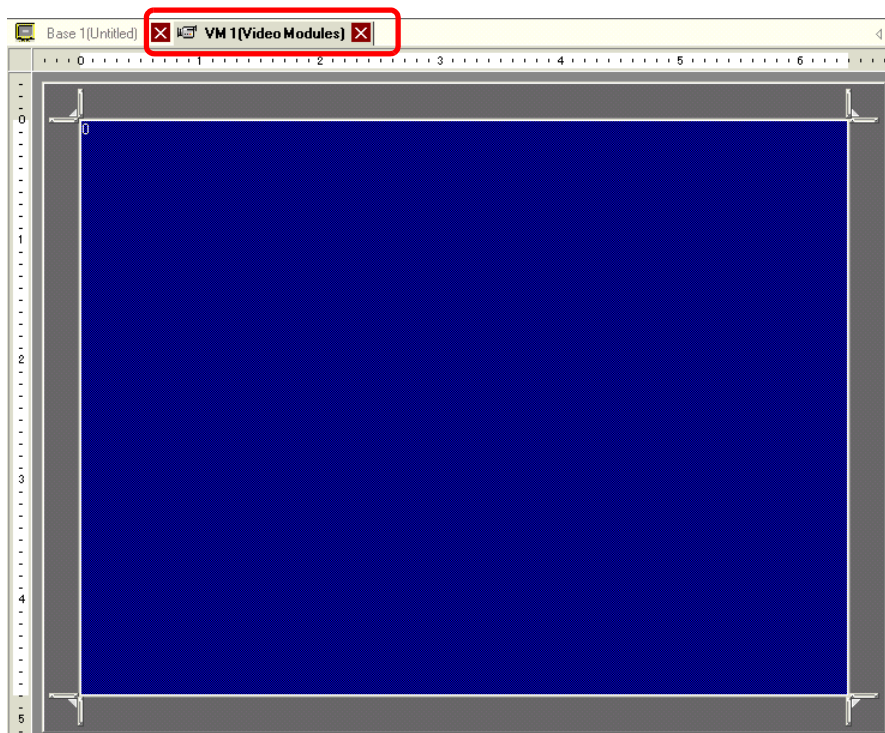
NOTE

- If the [Video Control Start Address] is set to [Enable], 42 Words from the setup control address are automatically used to control the video display. For the items in the video control, see the following.
 ☞ “◆ Video Control Area” (page 27-124)


- 3 On the [Common Settings (R)] menu, select [Video Module (V)] or click  to open the following dialog box. Select [New] and then specify [Number] and [Comment]. (For example, Number "1", Comment "Video")

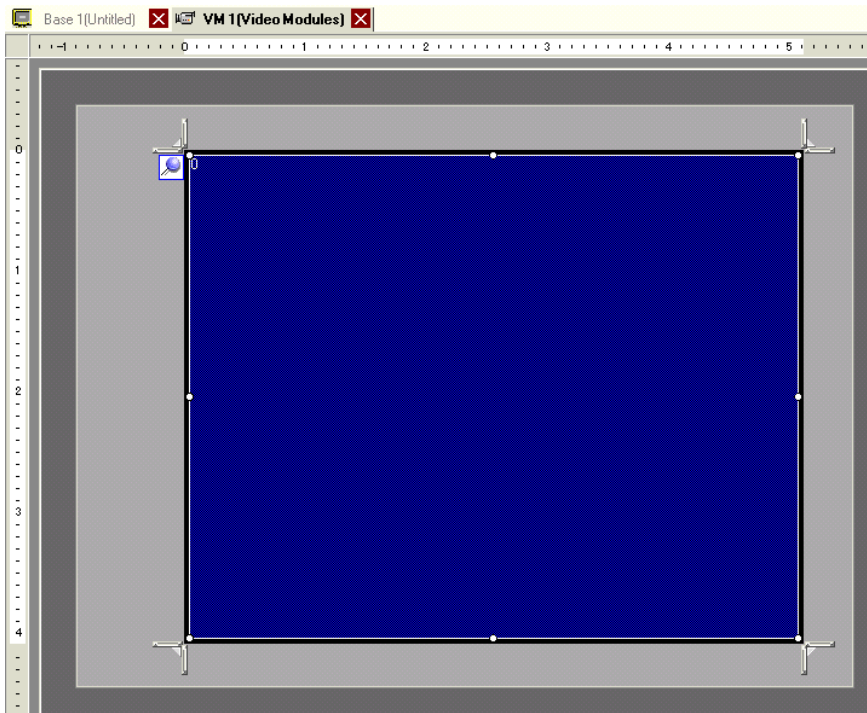


- 4 The video window [VM 1] appears.

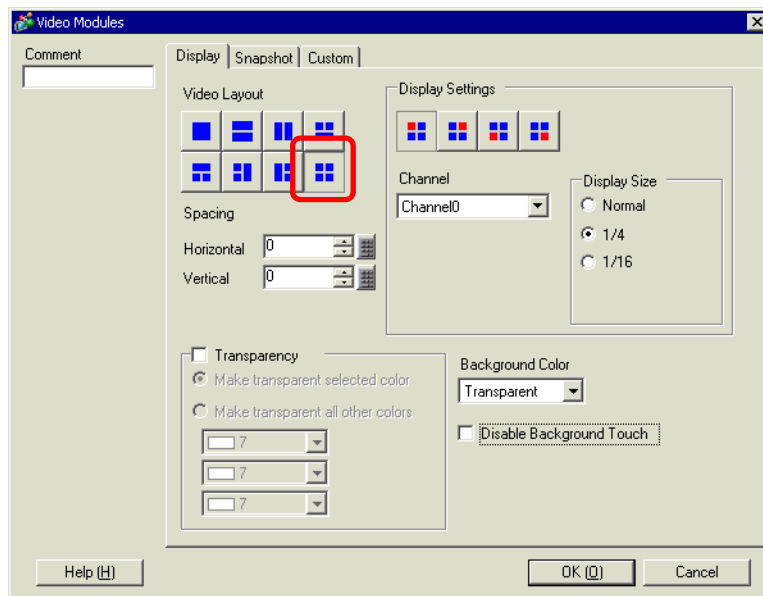



5 Adjust the [Video Module] size.

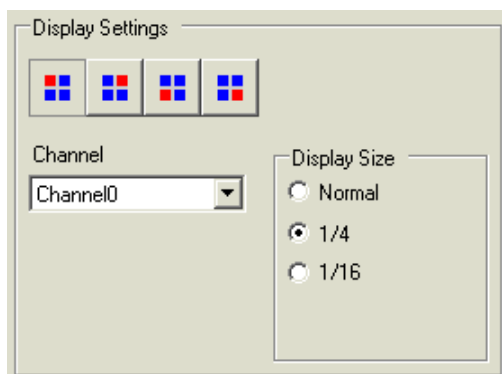
To enlarge the Window Screens, first reduce the display area (blue parts), then drag the  mark on the four corners to adjust the [Video Module] size. To enlarge, expand the window size and adjust the display area to fit the window size.



6 Double-click the blue display area. The following dialog box appears. Select [Video Layout] .



- 7 In the [Display] area, click , 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, 1/4).

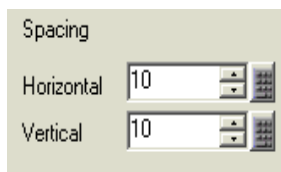


Similarly, select the channels and display sizes for the images displayed in the upper right, lower left, and lower right areas.

NOTE


- 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.

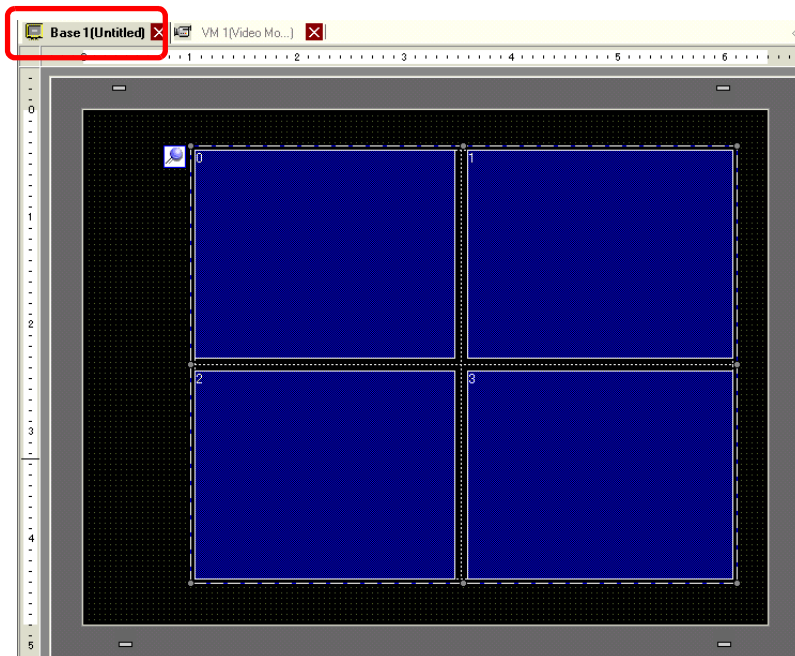
- 8 Specify the values for the space between the screens. (For example, horizontal 10, vertical 10) Click [OK] to finish and exit the Video Module window settings.



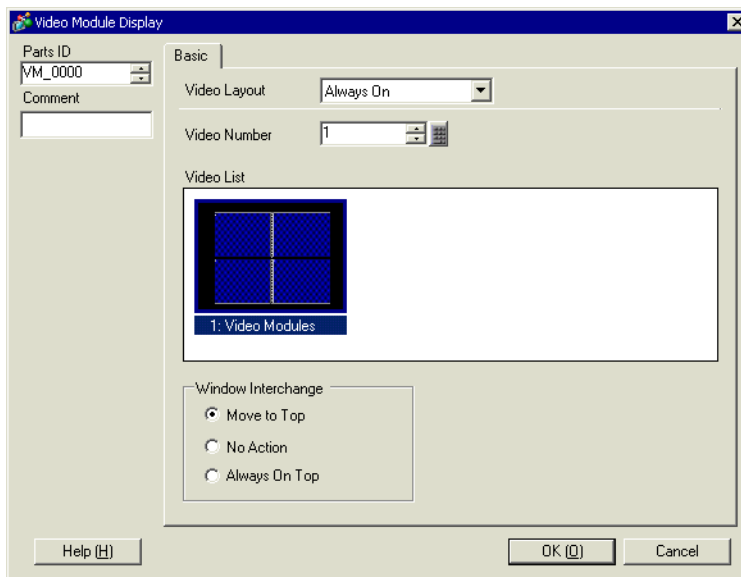
NOTE

- You can drag the dots between each screen to adjust the space between screens.

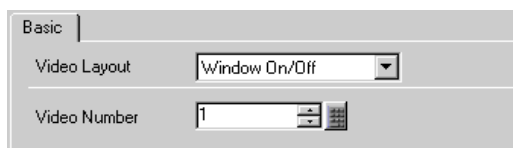
- 9 Click the [Base 1] tab to display the base screen. On the [Parts (P)] menu, select [Video Module Display (V)] or click  to place a Video Module display on the screen.



- 10 Double-click the Video Module display. The following dialog box appears.



- 11 In the [Video Layout] list, click [Window On/Off], and select the video screen number (for example, 1) in the [Video Number] box.



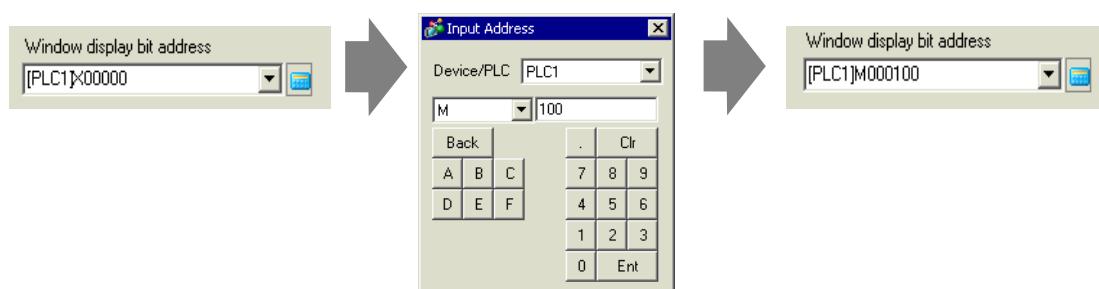
12 Under [Window Touch Behavior], select [Move to Top].




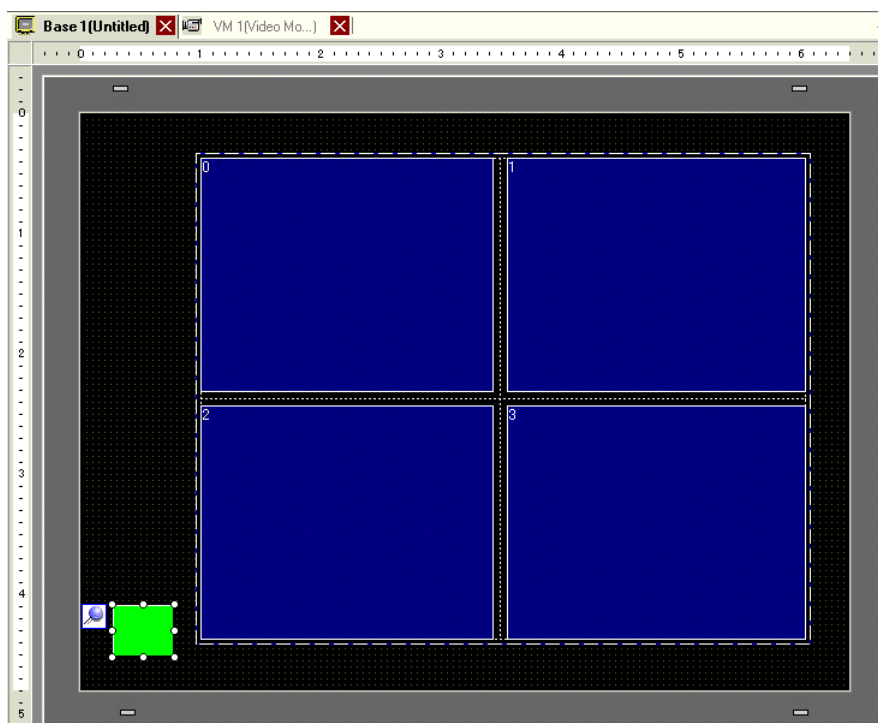
13 In the [Window Display Bit Address] list, select the bit address (for example, M100) for controlling the window display and click [OK].

Click the icon to display an address input keypad.

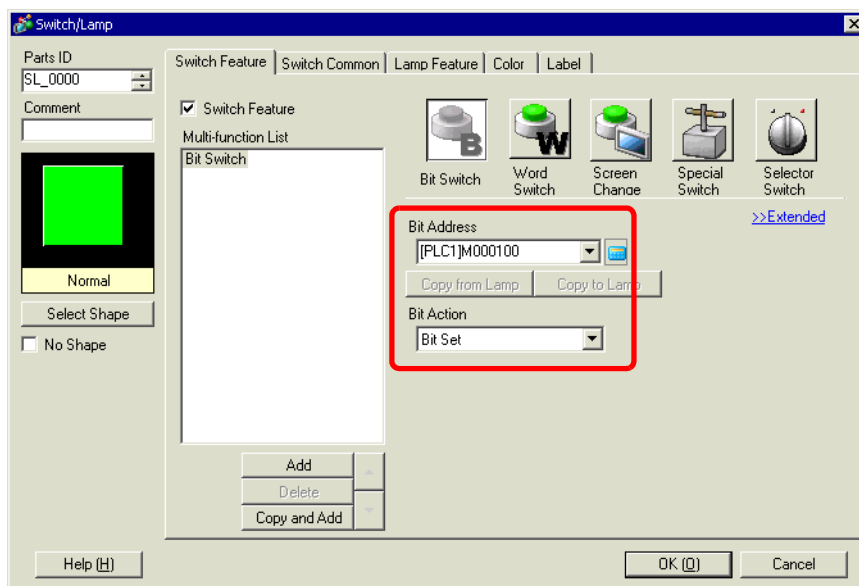
Enter "M" and "100".



14 Place an ON/OFF switch on the screen to control the Video Module display. On the [Parts (P)] menu, point to [Switch Lamp (C)] and click [Bit Switch (B)], or click  to place the switch on the screen.



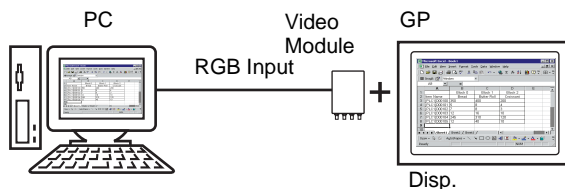
- 15 Double-click the switch. The following dialog box appears. In the [Bit Address] list, select the (M100) address for controlling the screen and select [Bit Invert] in the [Bit Action] list.



27.7 Displaying PC Screen

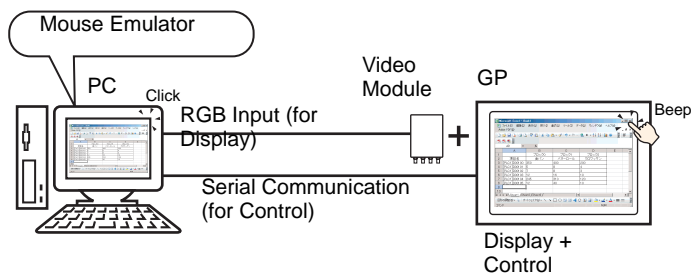
27.7.1 Introduction

Install the Video Module option on the GP-3500T/3550T/3600T/3650T to display a PC screen on the GP through an RGB connection with the PC. You can use the GP as a PC monitor.



NOTE

- For the Video Module specifications and installation method, please refer to the "VM Unit User's Manual."
- Install a touch-panel driver on your PC to output GP touch coordinates through serial communication. You can control the PC's pointer on the GP.

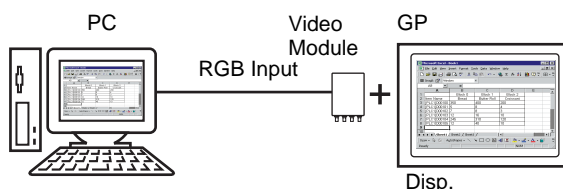


27.7.2 Setup Procedure

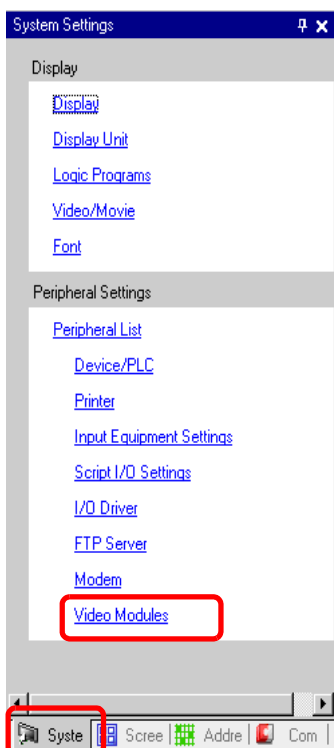
NOTE

- Please refer to the settings guide for details.
 - ☞ “27.9.5 Common [Video Module] Settings Guide” (page 27-115)
 - ☞ “27.9.6 [Video Module] Settings Guide” (page 27-124)
 - ☞ “27.9.7 Video Module Display Settings Guide” (page 27-137)
- For details about placing parts or setting addresses, shapes, colors, and labels, please refer to Editing Parts.
 - ☞ “9.6.1 Editing Parts” (page 9-38)

The PC screen is displayed on the screen of the GP with the installed Video Module.



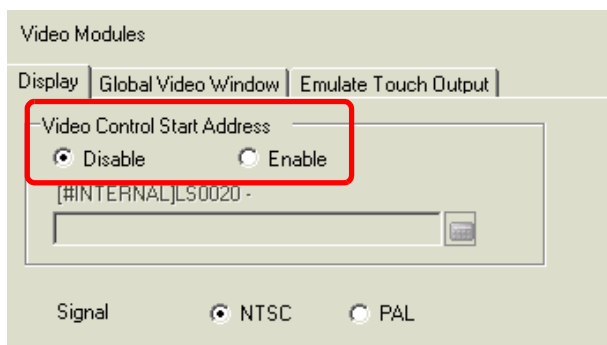
1 In the [System Settings], select [Video Module].



NOTE


- If the [System Settings] tab is not displayed in the workspace, on the [View (V)] menu, point to [Workspace (W)], and then click [System Settings (S)].

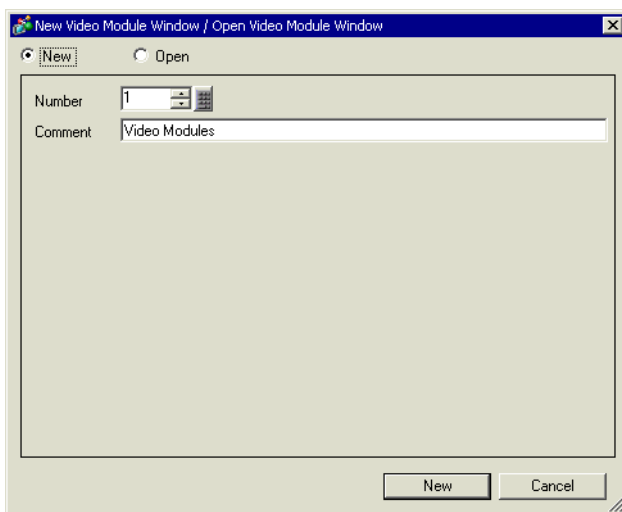
2 For [Video Control Start Address], select [Disable].



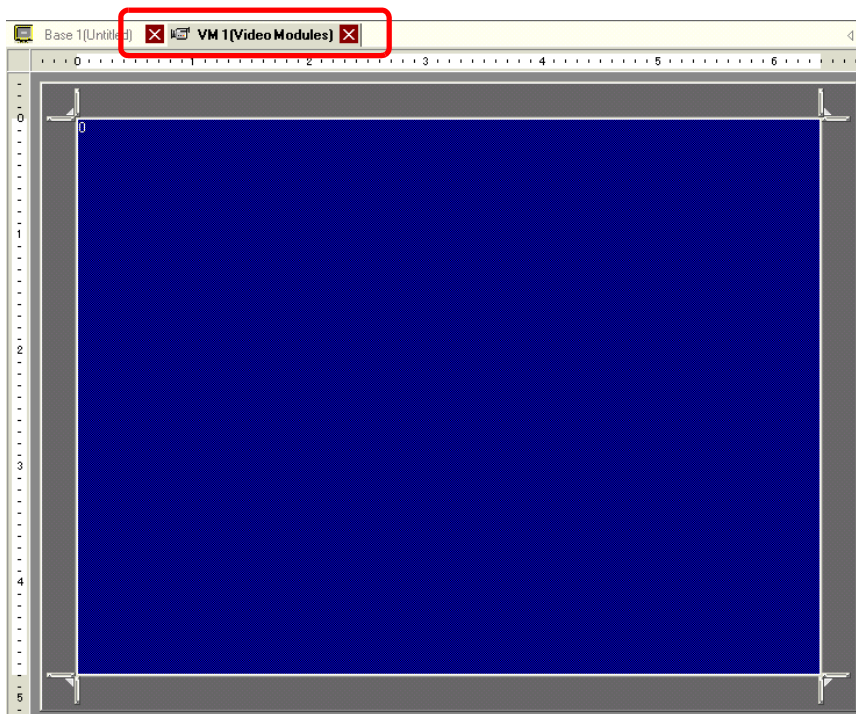
NOTE

- If the [Video Control Start Address] is set to [Enable], 42 words from the setup control address are automatically used to control the video display. For the items in the video control, see the following.
 ☞ “◆ Video Control Area” (page 27-124)
- When displaying only the PC screen on the GP using RGB input, you can select either [NTSC] or [PAL] as the video [Signal] without affecting the display.


3 On the [Common Settings (R)] menu, select [Video Module (U)], or click  to open the following dialog box. Select [New], and then specify [Number] and [Comment]. (For example, Number "1", Comment "Video")

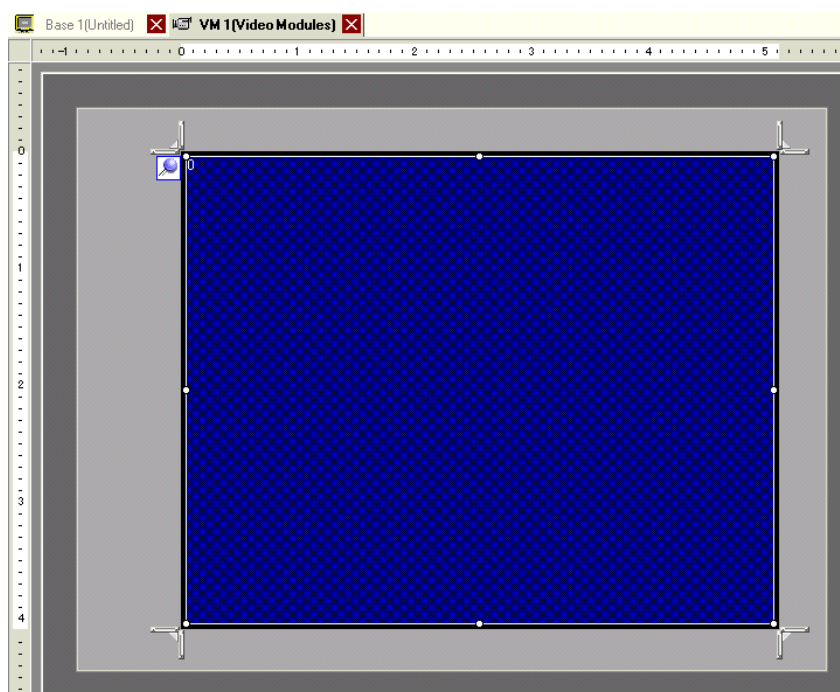



4 The video window [VM 1] appears.

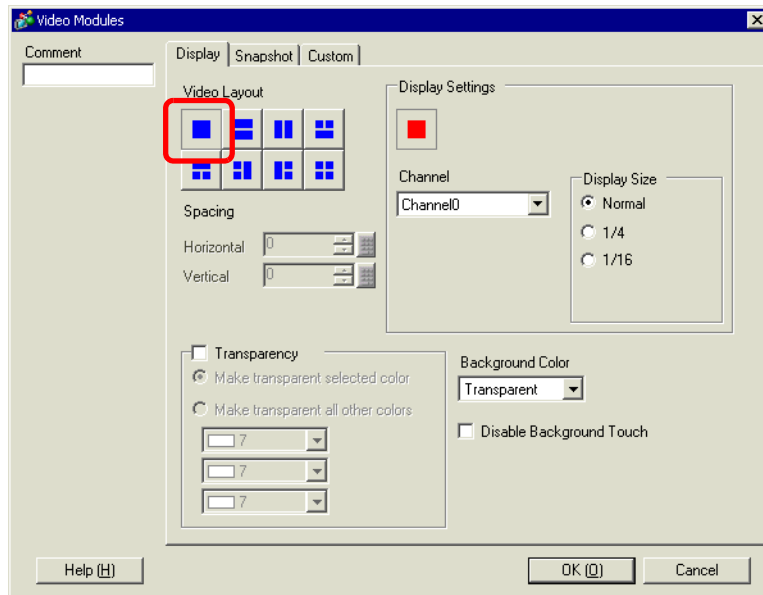


5 Adjust the [Video Module] size.

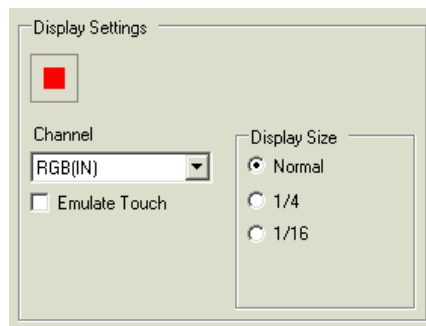
To reduce the Window Screens, first reduce the display area (Blue parts), then drag the  mark on the four corners to adjust the [Video Module] size. To enlarge, expand the window size and adjust the display area to fit the window size.



- 6 Double-clicking the display area (the blue part) opens the following dialog box. Under [Video Layout], click .




- 7 In the [Channel] list, select [RGB(IN)] and set the [Display Size] to [Normal].

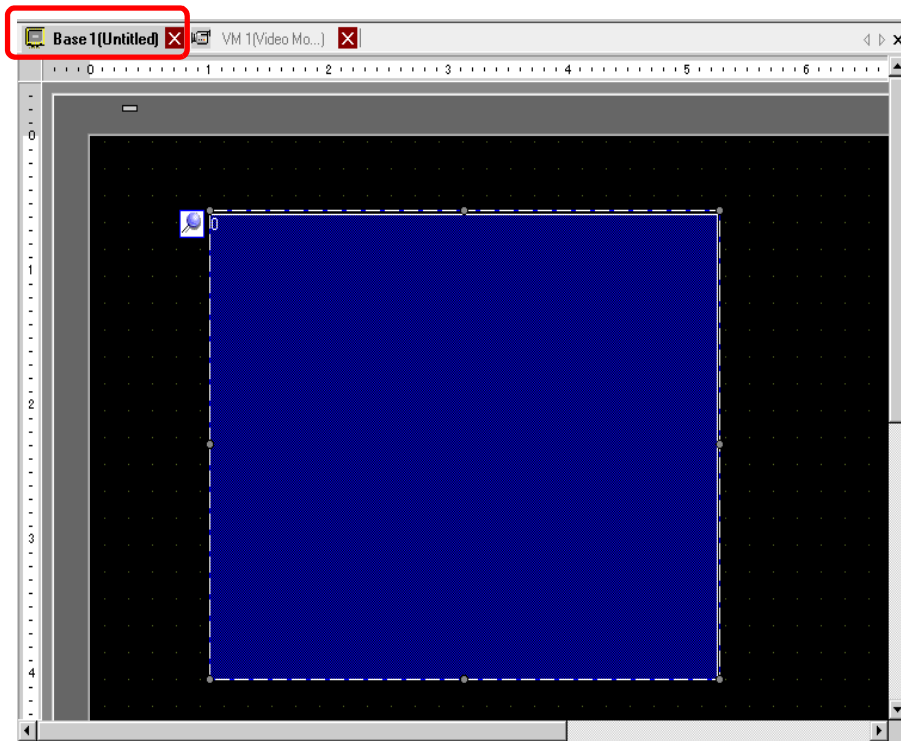


NOTE

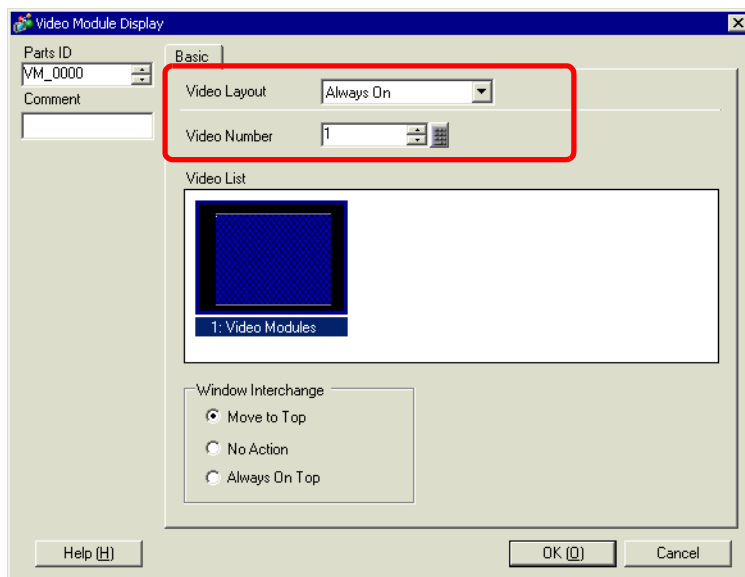
- If the selected [Display Size] is larger than the display unit or the blue display area, the entire image will not display. You can use [Video Display position] on the [Custom Settings] tab to specify which part of the input image to be displayed. If you want to display the entire image, set the [Display Size] smaller than the size of the blue display area.

- 8 Click [OK] to finish and exit the Video Module window settings.

- 9 Click [Base 1] to switch to the base screen. On the [Parts (P)] menu, select [Video Module Display (V)], or click  to place the Video Module display on the screen.



- 10 Double-click the Video Module display. The following dialog box appears. In the [Video Layout] list, select [Always ON], and specify the video screen number (for example, 1) in the [Video Number] box.

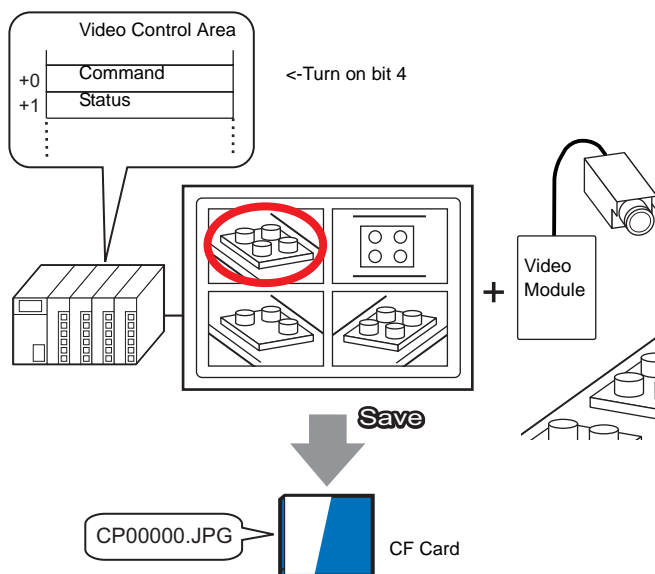


- 11 Click [OK] to complete the settings.

27.8 Saving Video Output as Still Images

27.8.1 Introduction

Install the Video Module option on the GP-3500T/3550T/3600T/3650T to capture video from channel 1 and save it on a CF Card in JPEG format.

**NOTE**

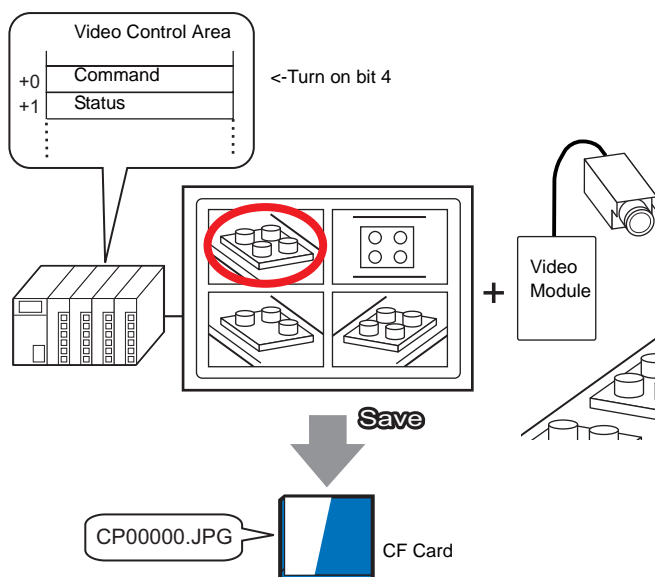
- For Video Module specifications and installation method, please refer to the "VM Unit User Manual".

27.8.2 Setup Procedure

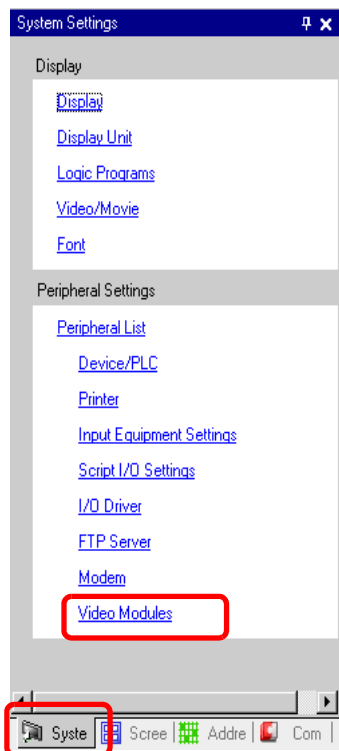
NOTE

- Please refer to the settings guide for details.
 - ☞ “27.9.6 [Video Module] Settings Guide” (page 27-124)
 - ☞ “27.9.5 Common [Video Module] Settings Guide” (page 27-115)
 - ☞ “27.9.7 Video Module Display Settings Guide” (page 27-137)
- For details about placing parts or setting addresses, shapes, colors, and labels, please refer to Editing Parts
 - ☞ “9.6.1 Editing Parts” (page 9-38)

Turn ON the screen capture address on the PLC side to save the specified image from channel 1 as a still image on a CF Card in JPEG format.

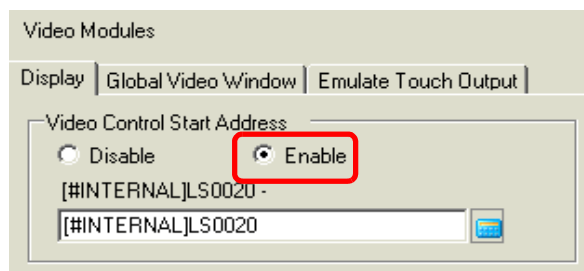


- 1 In the [System Settings], select [Video Module].

**NOTE**

- If the [System Settings] tab is not displayed in the workspace, on the [View (V)] menu, point to [Workspace (W)], and then click [System Settings (S)].

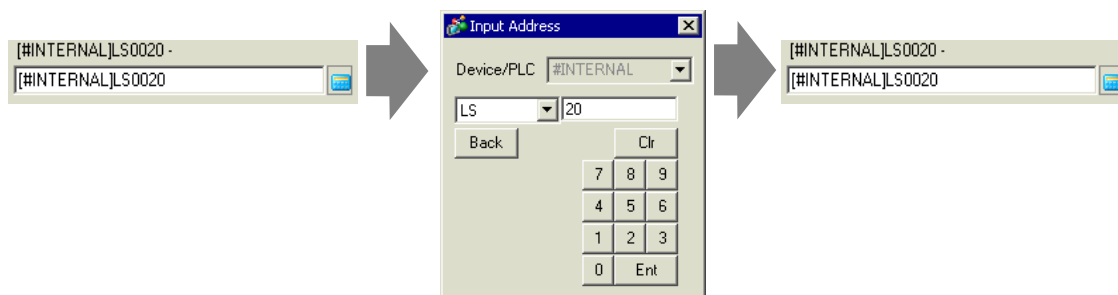
- 2 Under [Video Control Start Address], select [Enable]. 42 Words from the setup address control the video display.



3 Specify the video control start address (for example, LS20).

Click the icon to display an address input keypad.

Enter "LS" and "20".



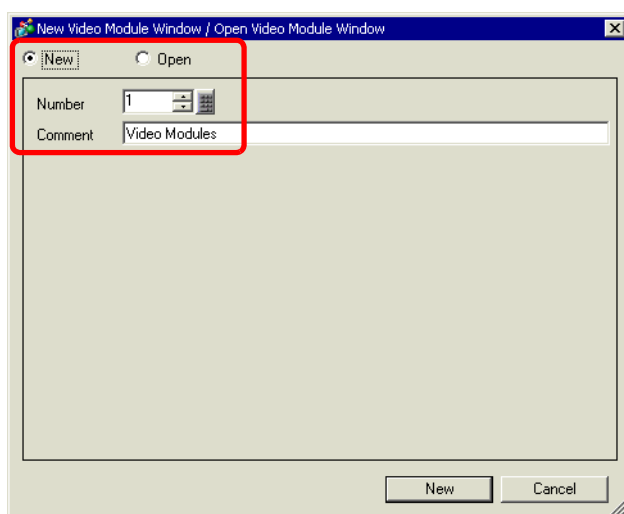
NOTE

- The settings for the [Video Control Start Address] range from LS20 - LS1989 and LS2096 - LS8957. If values outside this range are specified, none of the VM functions will operate.

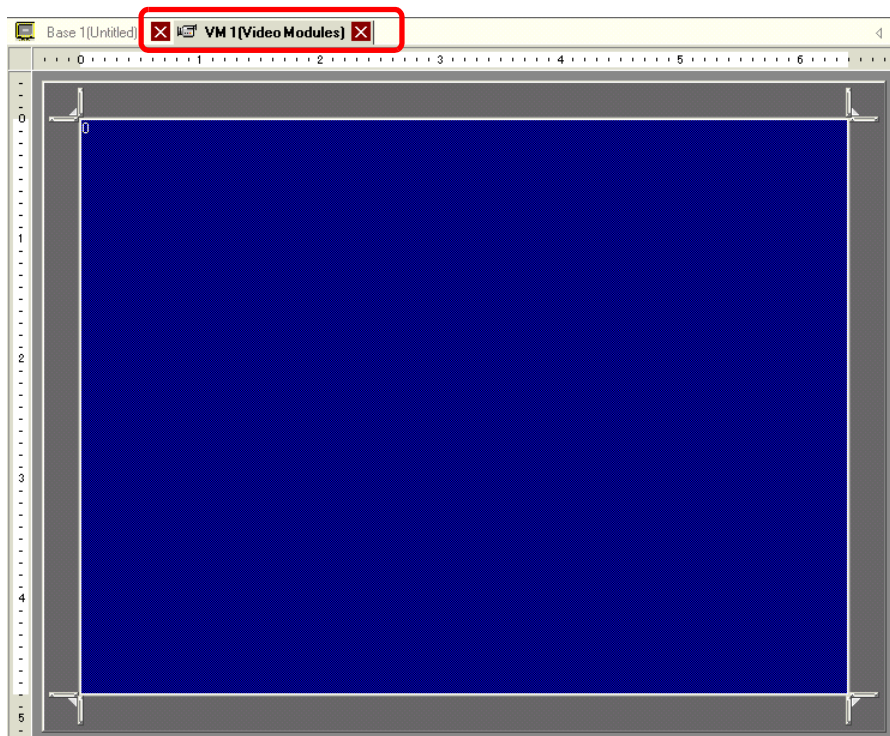
4 From [Video Signal], select [NTSC].




5 On the [Common Settings (R)] menu, select [Video Module (V)] or click to open the following dialog box. Select [New] and then specify [Number] and [Comment]. (For example, Number "1", Comment "Video")

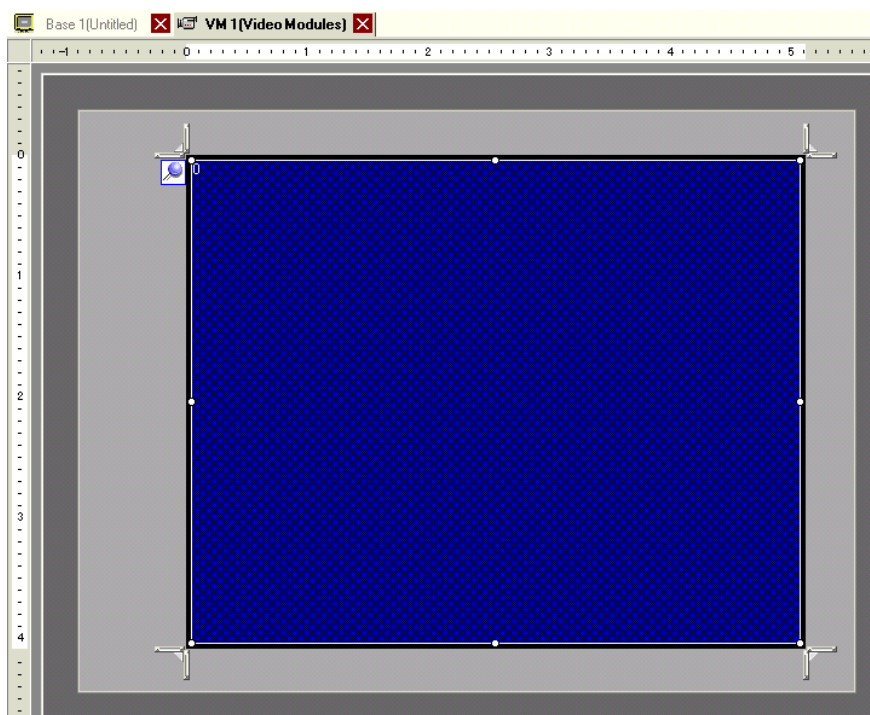



6 The video window [VM 1] appears.

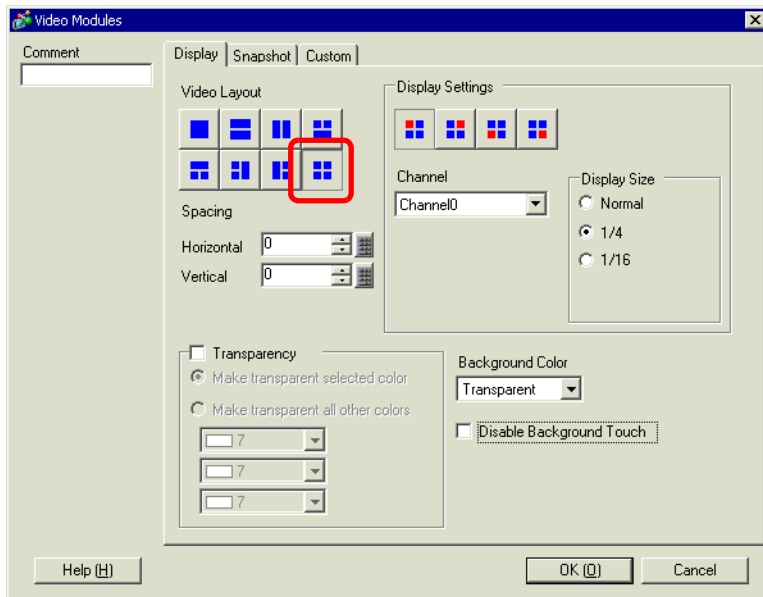



7 Adjust the [Video Module] size.

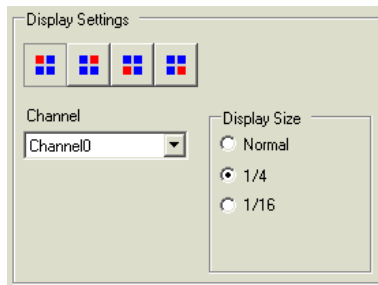
To enlarge the Window Screens, first reduce the display area (blue parts), then drag the  mark on the four corners to adjust the [Video Module] size. To enlarge, expand the window size and adjust the display area to fit the window size.



8 Double-click the blue display area. The following dialog box appears. Select [Video Layout] .



9 In the [Display] area, click , 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, 1/4).

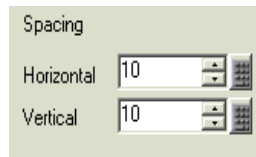


Similarly, select the channels and display sizes for the images displayed in the upper right, lower left, and lower right areas.

NOTE

- 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.

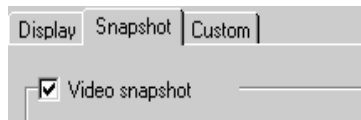
- 10 Specify the values for the space between the screens. (For example, horizontal 10, vertical 10) Click [OK] to finish and exit the Video Module window settings.



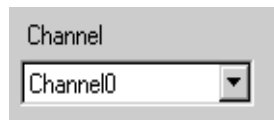
NOTE

- You can drag the dots between each screen to adjust the space between screens.
-

- 11 Open the [Snapshot] tab, and select the [Video snapshot] check box.



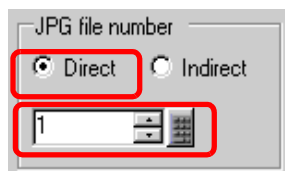
- 12 In the [Channel] list, select [Channel 0].




NOTE

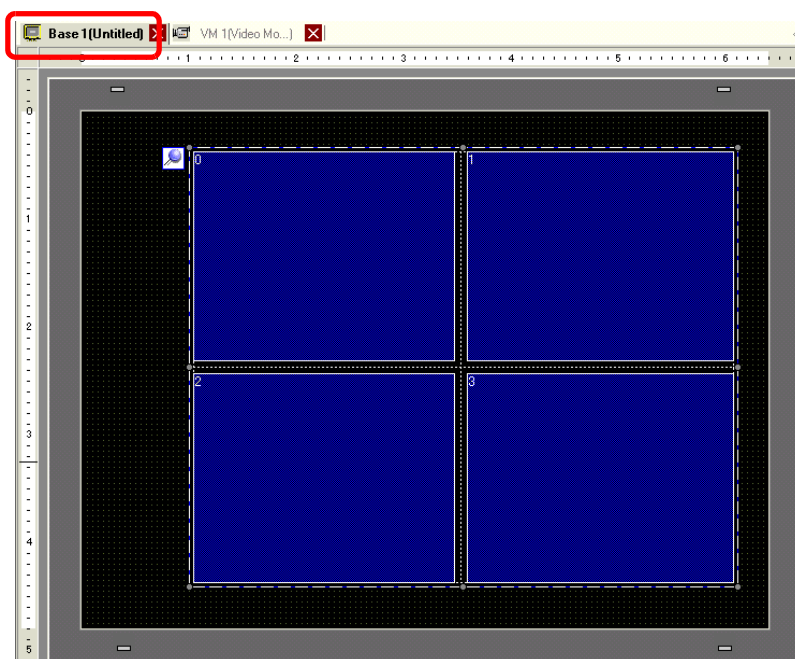
- You can use screen capture for one channel only, and only for video images.
-

- 13 Under [JPG file number], select [Fixed], and specify the JPEG file number for the file that you are creating.

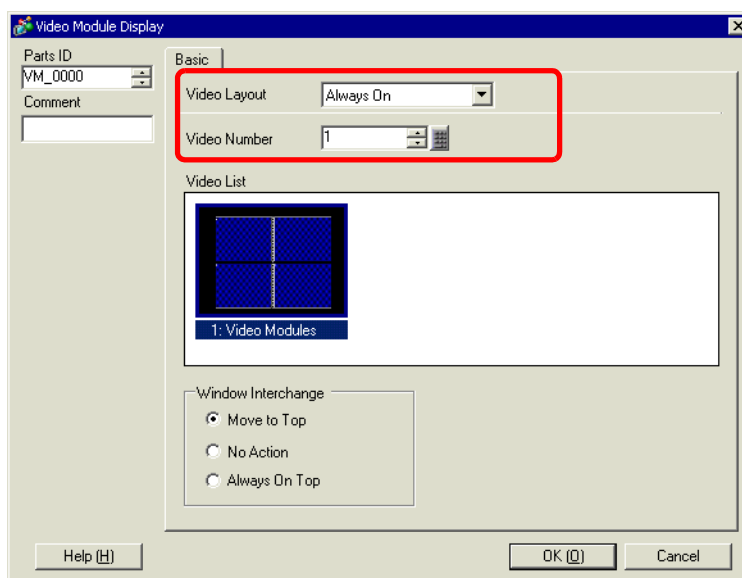


- 14 Click [OK] to exit Video Module window settings.

- 15 Open the base screen, and select [Video Module Display (V)] on the [Parts (P)] menu, or click  to place a Video Module display on the screen.



- 16 Double-click the Video Module display. The following dialog box appears. In the [Video Layout] list, select [Always ON] and in the [Video Number] list, specify the video display number (for example, 1) and click [OK].



◆ Operating Procedure

- 1 Turn on bit 4 of the [Video Control Start Address] (LS20) specified in step 3.
- 2 The image in channel 0 is captured and saved in the "CAPTURE" folder on the CF card using the file name "CP00001.JPG."

27.9 Settings Guide

27.9.1 [Video/Movie] Settings Guide

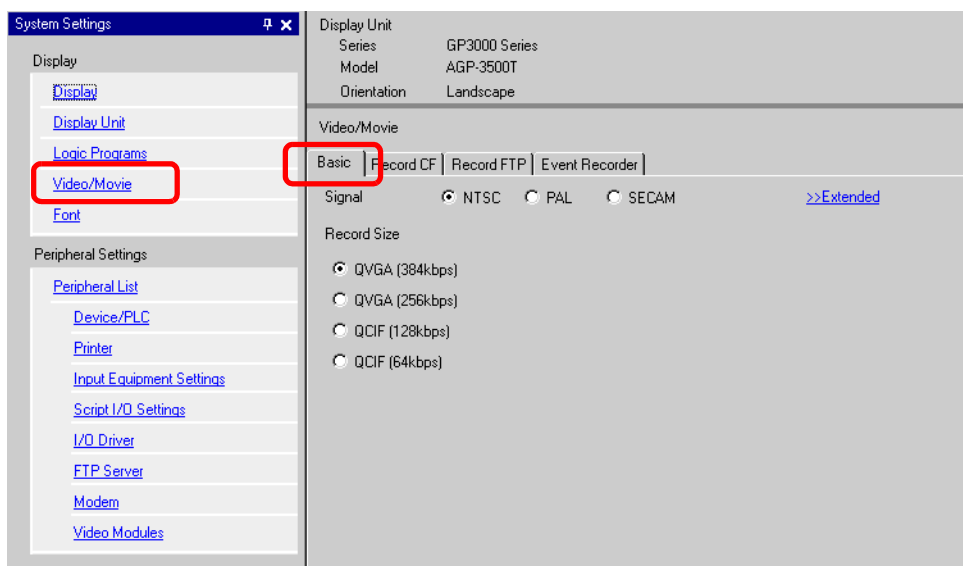
Configures the settings for video image display and movie recording.

NOTE

- To check whether this function is available for your model, please refer to the list of supported functions.

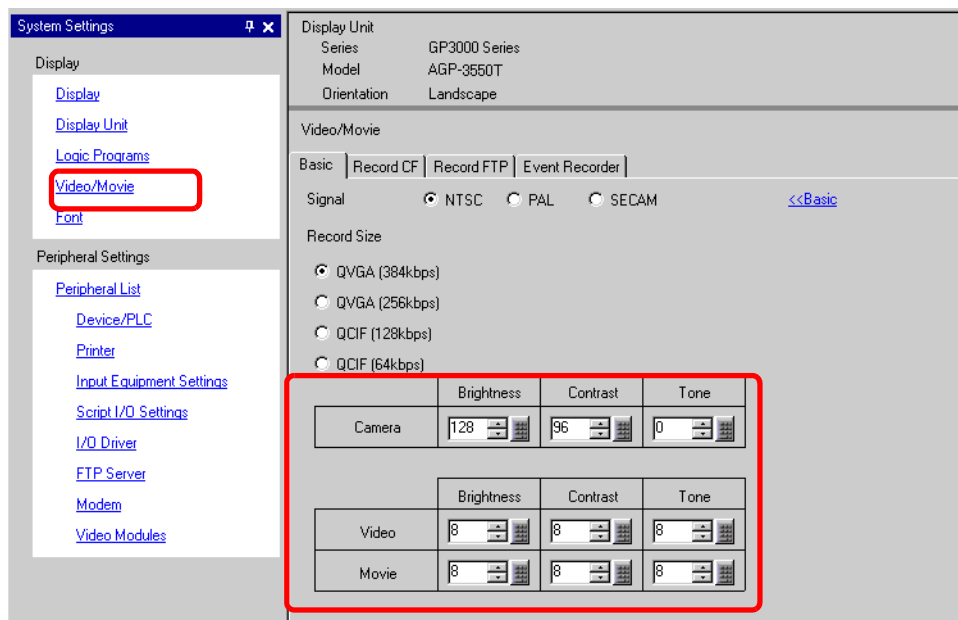
☞ “1.3 List of Supported Functions by Device” (page 1-5)

■ Basic/Basic



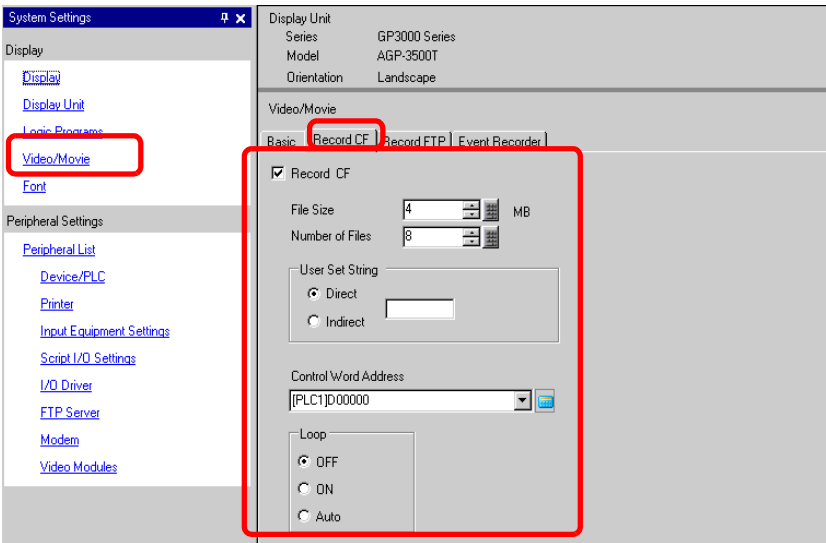
Setting	Description
Video Signal	Select the image input signal. <ul style="list-style-type: none"> • NTSC: 640 x 480 pixels • PAL: 768 x 576 pixels • SECAM: 768 x 576 pixels
Record Size	Select the record size. <ul style="list-style-type: none"> • QVGA (384kbps): 320 x 240 pixels • QVGA (256kbps): 320 x 240 pixels • QCIF (128kbps): 176 x 144 pixels • QCIF (64kbps): 176 x 144 pixels

■ Basic/Detail



Setting	Description
Camera	Image quality for a video camera connected to GP.
Brightness	Set the brightness. The setting range is 0 to 255 (Low - High).
Contrast	Set the contrast. The setting range is 0 to 255 (Low - High).
Tone	Set the colors. The setting range is 0 to 255 (Green - Red).
Video	Image quality for the real-time display on the GP.
Brightness	Set the brightness. The setting range is 0 to 15 (Low - High).
Contrast	Set the contrast. The setting range is 0 to 15 (Low - High).
Tone	Set the colors. The setting range is 0 to 15 (Green - Red).
Movie	Video quality for playing a movie on the GP.
Brightness	Set the brightness. The setting range is 0 to 15 (Low - High).
Contrast	Set the contrast. The setting range is 0 to 15 (Low - High).
Tone	Set the colors. The setting range is 0 to 15 (Green - Red).

■ Record CF



Setting	Description
Record CF	Select whether to record from a video camera and save on a CF Card.
File Size	Specify the size of each movie file, from 1 to 512 MB. Any pictures that exceed the specified file size are automatically saved in the next file. The file name is created based on the time stamp when the save operation begins (year, month, date, hours, minutes, seconds).
Number of Files	Specify the number of video files to save in a folder. The settings range from 1-100.
User set string	<p>Specify the characters used as a prefix for folder and file names of saved video files. You can specify up to two single-byte alphanumeric characters.</p> <div>NOTE</div> <ul style="list-style-type: none">The file name is the user-defined string (maximum two characters) + time stamp. For example, If the user-defined string is "MC", the date is 2006/05/27, and the time is 15:23:46, then the file name is: "MC060527_152346.SDX"If the user does not specify a string, the folder name will be "NO-NAME" and only the time stamp (year, month, day, hour, minute, second when the file was saved) will appear in the file name.
Constant	Specify the string by entering it here.
Address	<p>Specify the address to store the user-defined text. You can change the file name on the device/PLC. Use 3 sequential words from the specified address.</p> <div><div>+0</div><div>Control</div><div>+1</div><div>User set string</div><div>+2</div><div>Status</div></div>

Continued

Setting		Description
User Set String	Address	<div><div><div>150</div><div></div></div><div>String Set Bit 0 → 1 Setting Completed</div></div> <div><div><div>150</div><div></div></div><div>Previously Specified Bit 0 → 1 Setting Completed</div></div> <div><div>150</div><div>Error Bit 0 → 1 Error</div></div> <div><div>NOTE</div><div><div>• Bit 0 and bit 15 of the [Status] address are turned OFF when bit 0 of the [Control] address is turned OFF.</div><div>• If a 32-bit device is specified, only the bottom 16 bits are used.</div></div></div>
Control Word Address		<div><div><div>+0Control</div><div>+1Status</div><div>+2Number of Files Saved</div></div></div> <div><div><div>Control</div><div>Turn ON bit 0 to start recording (and saving on CF Card). Turn OFF the bit to stop recording.</div><div>☞ “◆ Timing Chart for Saving on CF” (page 27-78)</div><div><div>150</div><div></div></div><div>Resume Bit 0 → 1 Resume Request</div><div>Save Trigger Bit 0 → 1 Start 1 → 0 Stop</div></div></div>

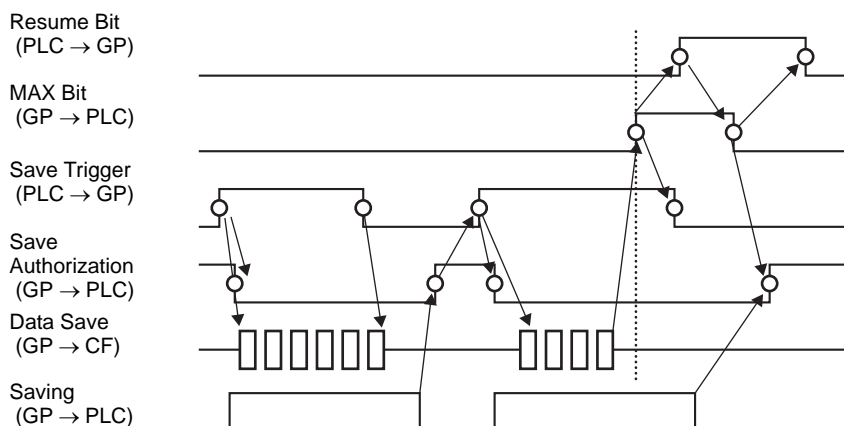
Continued

Setting	Description																											
Control Word Address	<ul style="list-style-type: none">• Status The CF save and error status are saved. <div><div><div>151180</div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div>Error Status</div><div>MAX Bit 0→1 MAX</div><div>Error Bit 0→1 Error</div><div>Saving Bit 0 Stopped 1 Saving</div><div>Save authorization bit 0 Save Not Permitted 1 Save Permitted</div></div> <p>Save authorization bits are turned ON when the GP power is turned on. The error status indicates the following conditions.</p> <p>(Error Code)</p> <table><tr><td>0</td><td>Completed Successfully</td><td>-</td></tr><tr><td>1 to 3</td><td>Reserved</td><td>-</td></tr><tr><td>4</td><td>No CF Card</td><td>The CF Card is not inserted in the GP, or the CF Card cover is not closed.</td></tr><tr><td>5</td><td>CF Write Error</td><td>Writing to the CF Card failed or there is not enough free space.</td></tr><tr><td>6</td><td>Reserved</td><td>-</td></tr><tr><td>7</td><td>CF Card Error</td><td>CF Card is invalid or the media inserted is not a CF Card.</td></tr><tr><td>8 to 13</td><td>Reserved</td><td>-</td></tr><tr><td>14</td><td>Playing</td><td>Saving to CF was initiated while movie play was in progress.</td></tr><tr><td>15</td><td>Reserved</td><td>-</td></tr></table>	0	Completed Successfully	-	1 to 3	Reserved	-	4	No CF Card	The CF Card is not inserted in the GP, or the CF Card cover is not closed.	5	CF Write Error	Writing to the CF Card failed or there is not enough free space.	6	Reserved	-	7	CF Card Error	CF Card is invalid or the media inserted is not a CF Card.	8 to 13	Reserved	-	14	Playing	Saving to CF was initiated while movie play was in progress.	15	Reserved	-
	0	Completed Successfully	-																									
	1 to 3	Reserved	-																									
	4	No CF Card	The CF Card is not inserted in the GP, or the CF Card cover is not closed.																									
	5	CF Write Error	Writing to the CF Card failed or there is not enough free space.																									
	6	Reserved	-																									
	7	CF Card Error	CF Card is invalid or the media inserted is not a CF Card.																									
	8 to 13	Reserved	-																									
	14	Playing	Saving to CF was initiated while movie play was in progress.																									
	15	Reserved	-																									
	<ul style="list-style-type: none">• Number of Files Saved If a file is successfully saved, the address is increased by one. You can see how many files have been saved up to that point. Files currently being saved are not counted. The number of files are updated when;<ul style="list-style-type: none">- The power is turned on- A CF Card is inserted- [Indirect] is selected when setting the [User Set String], or the folder name is changed.Only movie files (.SDX) are counted. <div>IMPORTANT</div> <ul style="list-style-type: none">• Do not save files in a folder that do not have the same [User Set String], file name, and number of strings as the folder name, otherwise, the files will be included in the file count number. <div>NOTE</div> <ul style="list-style-type: none">• If a 32-bit device is specified, only the bottom 16 bits are used.																											

Continued

Setting	Description
Loop	Set the operation to be initiated after the movie files have been saved as specified in [Total Files].
Disable	After all the specified files have been saved (the MAX bit is turned ON), no more files can be saved. To resume saving, delete movie files or specify files saved in another folder and turn ON the resume bit. The MAX bit turns OFF.
Enable	After all the specified files have been saved (the MAX bit is turned ON), no more files can be saved. When the resume bit is turned ON, the oldest file is deleted and a new file is saved.
Auto	Once all the specified files have been saved (the MAX bit is turned ON), the files are deleted starting with the oldest file, and new files are saved.

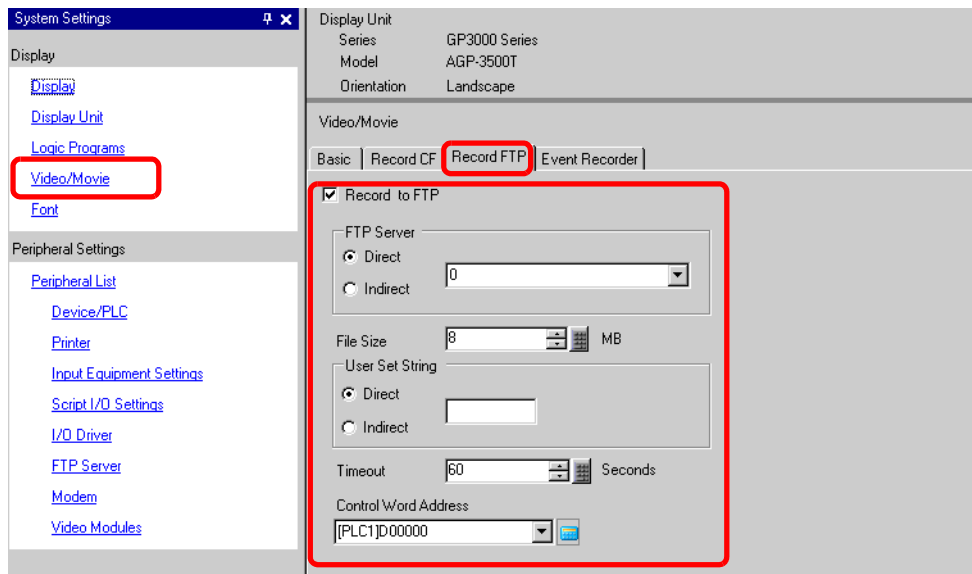
◆ Timing Chart for Saving on CF



NOTE

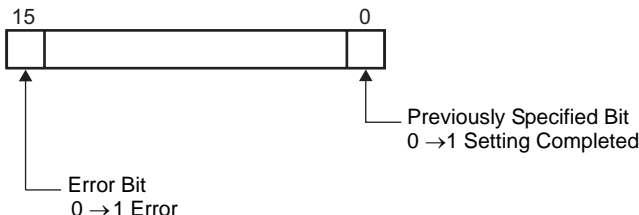
- Bit 1 (resume bit) of the [Control] address does not automatically turn OFF. Confirm that bit 2 (MAX bit) of the [Status] address is turned OFF and then turn OFF the resume bit.

■ Record FTP



Setting	Description						
Record FTP	Set whether to record from a video camera and save on an FTP server.						
FTP Server	Specify the FTP server for saving the movie files. Use the FTP server number registered in [FTP Server] in the system setting window.						
Constant	Select the FTP server number from 0-31.						
Address	<p>Specify the address for saving, and specify the connection number for the server on which the files will be saved. You can change the FTP server for saving files on the connection device.</p> <p>A sequence of three Words are used, starting from the specified address.</p> <table><tr><td>+0</td><td>Control</td></tr><tr><td>+1</td><td>Server Connection</td></tr><tr><td>+2</td><td>Number</td></tr></table> <ul style="list-style-type: none">Control Turn ON bit 0 to specify the numbers saved in the following address as the FTP server connection. <div><div>1500</div><div>Server Connection Number Set Bit 0→1 Start</div></div> <ul style="list-style-type: none">Server Connection Number Save the server connection Number before turning ON bit 0 of the [Control] address.	+0	Control	+1	Server Connection	+2	Number
+0	Control						
+1	Server Connection						
+2	Number						


Continued

Setting		Description
FTP Server	Address	<ul style="list-style-type: none"> • Status Turning ON bit 0 in the [Control] address also turns ON bit 0 in the [Status] address. Specifying the server connection Number while saving is in progress results in an error and bit 15 turns ON.  <p>NOTE</p> <ul style="list-style-type: none"> • Bit 0 and bit 15 of the [Status] address are turned OFF when bit 0 of the [Control] address is turned OFF. • If a 32-bit device is specified, only the bottom 16 bits are used.
	File Size	Specify the size for each movie file, from 1 to 2048 MB. Any pictures that exceed the specified file size are automatically saved in the next file. The file name is created based on the time stamp when the save operation begins (year, month, date, hours, minutes, seconds).
	User set string	Specify the character string (up to two single-byte alphanumeric characters) used as a prefix for video file names. <p>NOTE</p> <ul style="list-style-type: none"> • The file name is the user-defined string (maximum two characters) + time stamp. For example, If the user-defined string is "MC", the date is 2006/05/27, and the time is 15:23:46, then the file name is: "MC060527_152346.SDX"
	Constant	Directly input the settings.

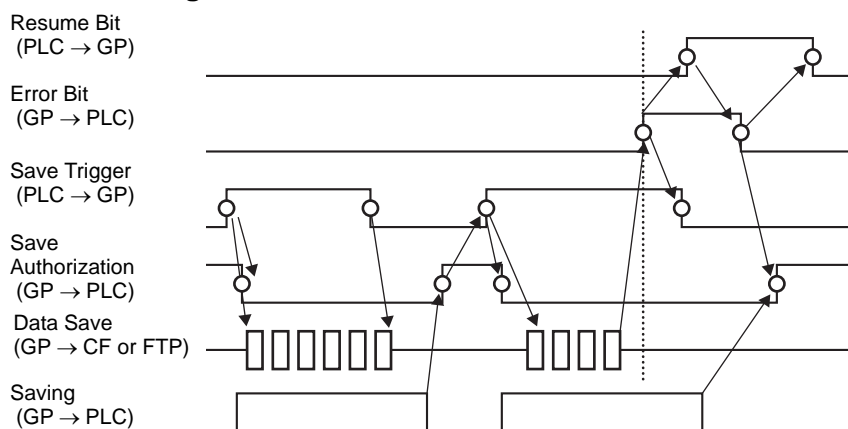
Continued

Setting	Description
User Set String	<p>Specify the address used for saving the file and for specifying the strings as user set strings. You can change any file name on the connection device. Use a sequence of three Words from the specified address.</p> <div><div>+0</div><div>Control</div></div> <div><div>+1</div><div>User set string</div></div> <div><div>+2</div><div>Status</div></div> <ul style="list-style-type: none">Control Turn ON bit 0 to save the codes in the following address as "user set string".<div><div>15</div><div></div><div>0</div><div>String Set Bit 0 → 1 Setting Completed</div></div>User Set String Save the string codes. The procedure for saving text codes differs depending on the connection devices.
	<ul style="list-style-type: none">Status Turning ON bit 0 in the [Control] address also turns ON bit 0 in the [Status] address. Specifying user set strings while saving is in progress results in an error and bit 15 turns ON.<div><div>15</div><div></div><div>0</div><div>Previously Specified Bit 0 → 1 Setting Completed</div><div>Error Bit 0 → 1 Error</div></div><div><div>NOTE</div><ul style="list-style-type: none">Bit 0 and bit 15 of the [Status] address are turned OFF when bit 0 of the [Control] address is turned OFF.If a 32-bit device is specified, only the bottom 16 bits are used.</div>
Time out	<p>Specify the queuing time for when the FTP server does not respond to an access request. The settings range from 10-120 seconds.</p>

Continued

Setting	Description																								
Control Word Address	<p>Specify the address to control save operations, which uses a sequence of two Words from the defined address.</p> <div><div>+0</div><div>Control</div></div> <div><div>+1</div><div>Status</div></div> <ul style="list-style-type: none">Control Turn ON bit 0 to start recording (start saving to FTP). Turn OFF the bit to stop recording. <p> “◆ Timing Chart for Saving to FTP” (page 27-83)</p> <div><div>15</div><div>0</div><div>Resume Bit 0→1 Resume Request</div><div>Save Trigger Bit 0→1 Start 1→0 Stop</div></div>																								
Control Word Address	<ul style="list-style-type: none">Status The FTP save and error status are saved. <div><div>15</div><div>11</div><div>8</div><div>0</div><div>Error Status</div><div>Error Bit 0→1 Error</div><div>Saving Bit 0 Stopped 1 Saving</div><div>Save authorization bit 0 Save Not Permitted 1 Save Permitted</div></div> <p>Save authorization bits are turned ON when the GP power is turned on. The error status indicates the following conditions.</p> <p>(Error Code)</p> <table><tr><td>0</td><td>Completed Successfully</td><td>-</td></tr><tr><td>1-8</td><td>Reserved</td><td>-</td></tr><tr><td>9</td><td>FTP Connection Error</td><td>The FTP server is not operating normally, or the FTP server does not exist.</td></tr><tr><td>10</td><td>FTP Login Error</td><td>The FTP user name or password is not correct.</td></tr><tr><td>11</td><td>Write Error</td><td>The logged in user does not have write privileges, or writing to the FTP server has failed, or there is not enough free space.</td></tr><tr><td>12 to 13</td><td>Reserved</td><td>-</td></tr><tr><td>14</td><td>Client functions are operating</td><td>Saving to FTP server was initiated while movie play was in progress.</td></tr><tr><td>15</td><td>Reserved</td><td>-</td></tr></table> <div><div>NOTE</div></div> <ul style="list-style-type: none">If a 32-bit device is specified, only the bottom 16 bits are used.	0	Completed Successfully	-	1-8	Reserved	-	9	FTP Connection Error	The FTP server is not operating normally, or the FTP server does not exist.	10	FTP Login Error	The FTP user name or password is not correct.	11	Write Error	The logged in user does not have write privileges, or writing to the FTP server has failed, or there is not enough free space.	12 to 13	Reserved	-	14	Client functions are operating	Saving to FTP server was initiated while movie play was in progress.	15	Reserved	-
0	Completed Successfully	-																							
1-8	Reserved	-																							
9	FTP Connection Error	The FTP server is not operating normally, or the FTP server does not exist.																							
10	FTP Login Error	The FTP user name or password is not correct.																							
11	Write Error	The logged in user does not have write privileges, or writing to the FTP server has failed, or there is not enough free space.																							
12 to 13	Reserved	-																							
14	Client functions are operating	Saving to FTP server was initiated while movie play was in progress.																							
15	Reserved	-																							

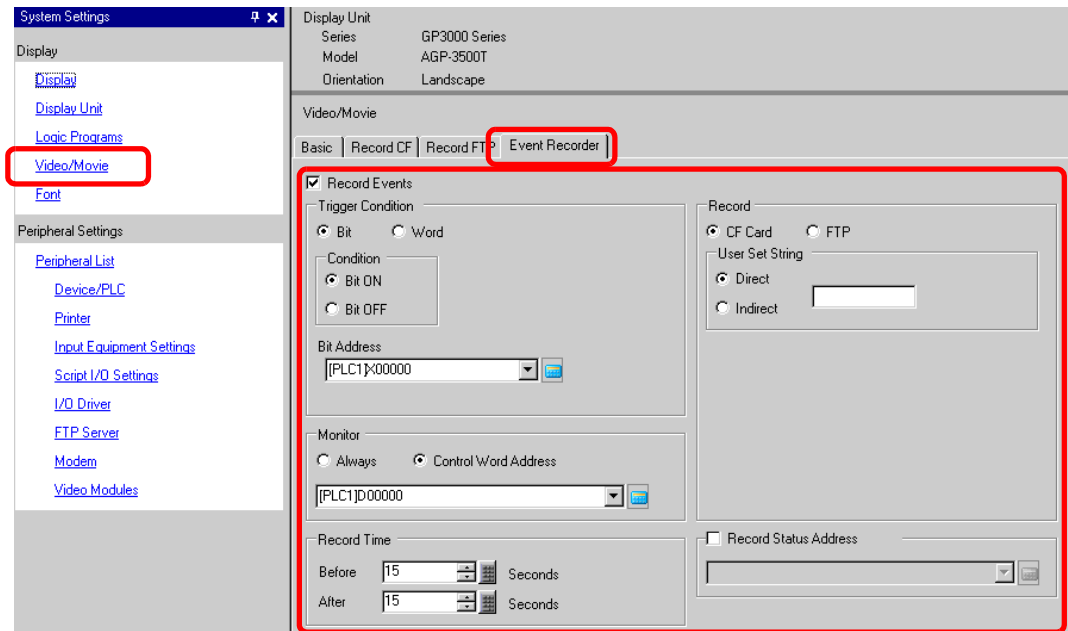
◆ Timing Chart for Saving to FTP



NOTE


- If file saving to the FTP server fails, the GP turns ON bit 15 of the [Status] address (save error bit) and no files can be saved. Once the FTP server resumes file saving, the GP turns ON bit 1 (resume bit) of the [Control] address. The GP turns OFF the error bit and begins saving files.

■ Event Recorder



Setting		Description	
Record Events		Specify whether to use the "event recorder" function for recording pictures before and after a specific event if the specified conditions are met.	
Trigger		Specify the operational conditions for the event recorder function.	
Bit	Control saving with the specified bit address.		
	Condition	Bit ON	Start saving with the bit ON.
		Bit OFF	Start saving with the bit OFF.
	Bit Address		Specify the control bit address for saving.
	Word	Control the saving operation with a value from the specified word address.	
<div>NOTE</div> <ul style="list-style-type: none">Only 16 bits, no sign, and BIN can be used.			

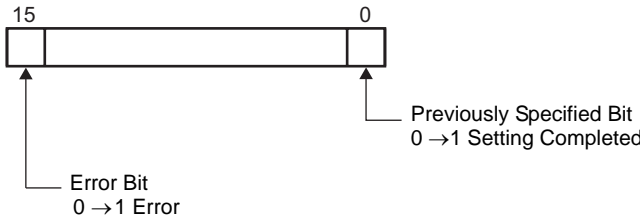
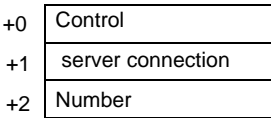
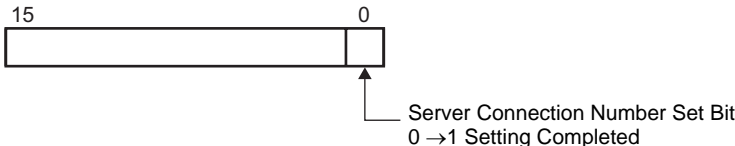
Continued

Setting				Description
Trigger	Word	Condition	Equals	Saving starts when the value in the settings matches the value on the PLC. • Number: Specify the value in the settings.
			Different	Saving starts when the value in the settings differs from the value on the PLC. • Number: Specify the value in the settings.
			Inside Range	Saving starts when the value in the settings falls in the range of values on the PLC. The specified values are included in the range. • Minimum: Set the minimum value from 0 to 65534. • Maximum: Set the maximum value from 1 to 65535.
			Out of range	Saving starts when the setting value is out of the PLC value range. The setup values are included. • Minimum: Set the minimum value from 0 to 65534. • Maximum: Set the maximum value from 1 to 65535.
	Word Address		Specify the Word address for controlling saving operations.	
Monitor			Set the monitoring conditions.	
Always			The monitoring event recorder is always ON, and the movie player is unavailable.	
Control Word Address			<p>Specify the control address for monitoring operations. Use a sequence of Two Words from the specified address. Trigger save is available only when monitoring.</p> <div><div>+0 Control</div><div>+1 Monitor Status</div></div> <ul style="list-style-type: none">Control Turn ON bit 0 to start monitoring. Turn OFF the bit to stop monitoring.  “◆ Event Recorder Timing Chart” (page 27-90) <div><div><div>150</div><div></div></div><div><div>Resume Bit 0→1 Resume Request</div><div>Monitor Start Trigger Bit 0→1 Start 1→0 Stop</div></div></div> <ul style="list-style-type: none">Monitor Status The CF save status and error status are saved. <div><div><div>150</div><div></div></div><div><div>Monitor Start Error Bit 0→1 Start Error</div><div>Monitoring Bit 0 Stopped 1 Monitoring</div></div></div>	

Continued

Setting	Description						
Record Time	Specify the time for the record. The settings range from 1-60 seconds. <ul style="list-style-type: none"> • Before: Specify the recording time before the trigger. • After: Specify the recording time after the trigger. <div data-bbox="408 282 495 320" style="border: 1px solid black; padding: 2px; width: fit-content;">NOTE</div> <ul style="list-style-type: none"> • The recording time is a total of the time set above. 						
Record	Set where to save a movie file.						
CF	Save the file on CF Card.						
User set string	Specify the character string to be included in the folder and file names for the saved video files. Specify two single-byte alphabetic letters or numbers. <div data-bbox="408 533 495 571" style="border: 1px solid black; padding: 2px; width: fit-content;">NOTE</div> <ul style="list-style-type: none"> • In "\MOVIE," a folder named with the specified string is created to save the file. • The file name is saved using the user-defined string (two characters) + time stamp. (For example, A file saved under the user set string "MC" on 2006 (year) 05 (month) 27 (day) at 15 (hour) 23 (minute) 46 (second) will be named: "MC060527_152346.SDX") • When there is no string set, the folder name is "\MOVIE\NONAME" and only the time stamp (year, month, day, hour, minute, and second when the file is saved on) is used for the file name. 						
Constant	Specify the string by entering it here.						
Address	Specify the address to store the user-defined text. You can change the file name on the device/PLC. Use 3 sequential words from the specified address. <div data-bbox="573 1103 838 1238" style="margin: 10px 0;"> <table border="1" style="border-collapse: collapse; text-align: center;"> <tr><td>+0</td><td>Control</td></tr> <tr><td>+1</td><td>User set string</td></tr> <tr><td>+2</td><td>Status</td></tr> </table> </div> <ul style="list-style-type: none"> • Control Turn ON bit 0 to save the codes in the following address as "user set string". <div data-bbox="474 1402 1112 1547" style="margin: 10px 0;"> <div style="display: flex; align-items: center; margin-top: 5px;"> <div style="border: 1px solid black; width: 200px; height: 15px; position: relative; margin-right: 10px;"> 15 0 </div> <div style="text-align: right; margin-top: 5px;"> String Set Bit 0 → 1 Setting Completed </div> </div> </div> • User Set String Save the string codes. The procedure for saving text codes differs depending on the connection devices. 	+0	Control	+1	User set string	+2	Status
+0	Control						
+1	User set string						
+2	Status						

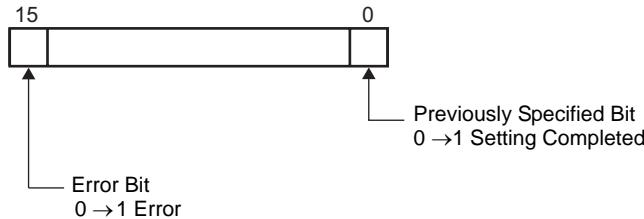
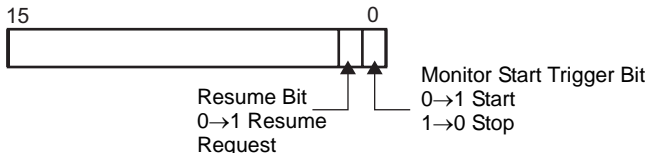
Continued

Setting			Description	
Record	CF	User Set String	<ul style="list-style-type: none">• Status Turning ON bit 0 in the [Control] address also turns ON bit 0 in the [Status] address. Specifying user set strings while saving to the CF Card is in progress will result in an error and bit 15 will turn ON. <div></div> <div>NOTE</div> <ul style="list-style-type: none">• Bit 0 and bit 15 of the [Status] address are turned OFF when bit 0 of the [Control] address is turned OFF.• If a 32-bit device is specified, only the bottom 16 bits are used.	
		FTP		Save to the FTP server.
	FTP Server	Constant		Select the FTP server number from 0-31.
		Address		<p>Specify the address for saving, and specify the connection number for the server on which the files will be saved. You can change the FTP server for saving files on the connection device. A sequence of three Words are used, starting from the specified address.</p> <div></div> <ul style="list-style-type: none">• Control Turn ON bit 0 to specify the numbers saved in the following address as the FTP server connection. <div></div> <ul style="list-style-type: none">• Server Connection Number Save the server connection Number before turning ON bit 0 of the [Control] address.

Continued

Setting			Description
Record	FTP	FTP Server	<div>Address</div> <ul style="list-style-type: none">• Status Turning ON bit 0 in the [Control] address also turns ON bit 0 in the [Status] address. Specifying the server connection Number while saving is in progress results in an error and bit 15 turns ON. <div><div>15</div><div></div><div>0</div><div>Previously Specified Bit 0 →1 Setting Completed</div><div>Error Bit 0 →1 Error</div></div> <div><div>NOTE</div><ul style="list-style-type: none">• Bit 0 and bit 15 of the [Status] address are turned OFF when bit 0 of the [Control] address is turned OFF.• If a 32-bit device is specified, only the bottom 16 bits are used.</div>
		User set string	<div>Specify the character string (up to two single-byte alphanumeric characters) used as a prefix for video file names.</div> <div><div>NOTE</div><ul style="list-style-type: none">• The file name is the user-defined string (maximum two characters) + time stamp. For example, If the user-defined string is "MC", the date is 2006/05/27, and the time is 15:23:46, then the file name is: "MC060527_152346.SDX"</div>
		Constant	Directly input the settings.
		Address	<div>Specify the address used for saving the file and for specifying the strings as user set strings. You can change any file name on the connection device. Use a sequence of three Words from the specified address.</div> <div><div>+0</div><div>Control</div><div>+1</div><div>User set string</div><div>+2</div><div>Status</div></div> <ul style="list-style-type: none">• Control Turn ON bit 0 to save the codes in the following address as "user set string". <div><div>15</div><div></div><div>0</div><div>String Set Bit 0 →1 Setting Completed</div></div> <ul style="list-style-type: none">• User Set String Save the string codes. The procedure for saving text codes differs depending on the connection devices.

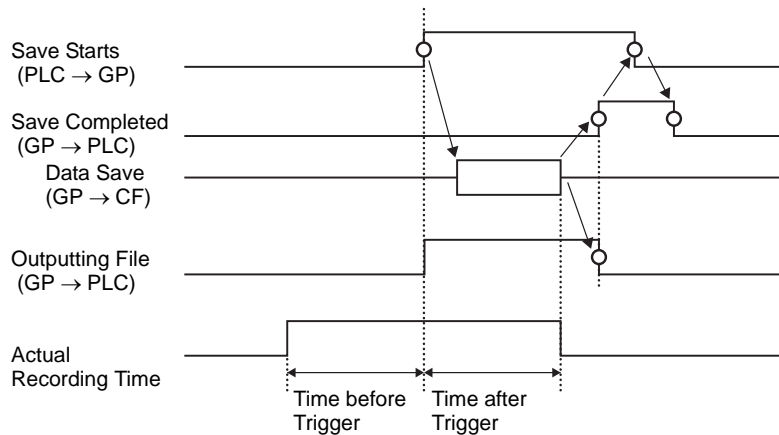
Continued

Setting				Description
Record	FTP	User Set String	Address	<ul style="list-style-type: none">• Status Turning ON bit 0 in the [Control] address also turns ON bit 0 in the [Status] address. Specifying user set strings while saving is in progress results in an error and bit 15 turns ON. <div></div> <div><div>NOTE</div><ul style="list-style-type: none">• Bit 0 and bit 15 of the [Status] address are turned OFF when bit 0 of the [Control] address is turned OFF.• If a 32-bit device is specified, only the bottom 16 bits are used.</div>
		Time out		Specify the queuing time for when the FTP server does not respond to an access request. The settings range from 10-120 seconds.
Record Status Address				<p>Specify the address for the event recorder function. Use a sequence of two Words from the specified address.</p> <div><div>+0</div><div>Control</div><div>+1</div><div>Save Monitor Status</div></div> <ul style="list-style-type: none">• Control Turn ON bit 0 to start save monitoring. Turn OFF the bit to stop monitoring. <div></div>

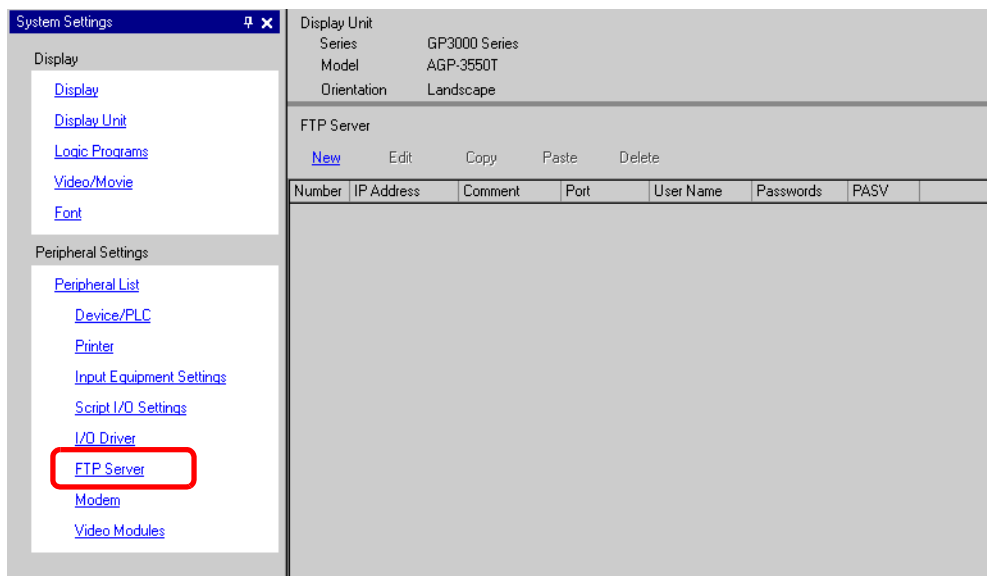
Continued

Setting	Description																																	
Record Status Address	<ul style="list-style-type: none">Save Monitor Status The event recorder save status and error status are saved. <div><div><div>15</div><div>11</div><div>8</div><div>0</div></div><div><div>↑</div><div>Error Bit 0→1 Error</div></div><div><div>↑</div><div>File Outputting Bit 0 Stopped 1 Saving</div></div><div><div>↑</div><div>Save Processing Bit 0 Save Not Permitted 1 Save Permitted</div></div></div> <p>The error status indicates the following conditions.</p> <p>(Error Code)</p> <table><tr><td>0</td><td>Completed Successfully</td><td>-</td></tr><tr><td>1 to 3</td><td>Reserved</td><td>-</td></tr><tr><td>4</td><td>No CF Card</td><td>The CF Card is not inserted in the GP, or the CF Card cover is not closed.</td></tr><tr><td>5</td><td>CF Write Error</td><td>Writing to the CF Card failed or there is not enough free space.</td></tr><tr><td>6</td><td>Reserved</td><td>-</td></tr><tr><td>7</td><td>CF Card Error</td><td>CF Card is invalid or the media inserted is not a CF Card.</td></tr><tr><td>8</td><td>Reserved</td><td>-</td></tr><tr><td>9</td><td>FTP Connection Error</td><td>The FTP server is not operating normally, or the FTP server does not exist.</td></tr><tr><td>10</td><td>FTP Login Error</td><td>The FTP user name or password is not correct.</td></tr><tr><td>11</td><td>Write Error</td><td>The logged in user does not have write privileges, or writing to the FTP server has failed, or there is not enough free space.</td></tr><tr><td>12 to 15</td><td>Reserved</td><td>-</td></tr></table> <div><div>NOTE</div><ul style="list-style-type: none">If a 32-bit device is specified, only the bottom 16 bits are used.</div>	0	Completed Successfully	-	1 to 3	Reserved	-	4	No CF Card	The CF Card is not inserted in the GP, or the CF Card cover is not closed.	5	CF Write Error	Writing to the CF Card failed or there is not enough free space.	6	Reserved	-	7	CF Card Error	CF Card is invalid or the media inserted is not a CF Card.	8	Reserved	-	9	FTP Connection Error	The FTP server is not operating normally, or the FTP server does not exist.	10	FTP Login Error	The FTP user name or password is not correct.	11	Write Error	The logged in user does not have write privileges, or writing to the FTP server has failed, or there is not enough free space.	12 to 15	Reserved	-
	0	Completed Successfully	-																															
	1 to 3	Reserved	-																															
	4	No CF Card	The CF Card is not inserted in the GP, or the CF Card cover is not closed.																															
	5	CF Write Error	Writing to the CF Card failed or there is not enough free space.																															
	6	Reserved	-																															
	7	CF Card Error	CF Card is invalid or the media inserted is not a CF Card.																															
	8	Reserved	-																															
	9	FTP Connection Error	The FTP server is not operating normally, or the FTP server does not exist.																															
	10	FTP Login Error	The FTP user name or password is not correct.																															
11	Write Error	The logged in user does not have write privileges, or writing to the FTP server has failed, or there is not enough free space.																																
12 to 15	Reserved	-																																

◆ Event Recorder Timing Chart



27.9.2 [FTP Server] Settings Guide



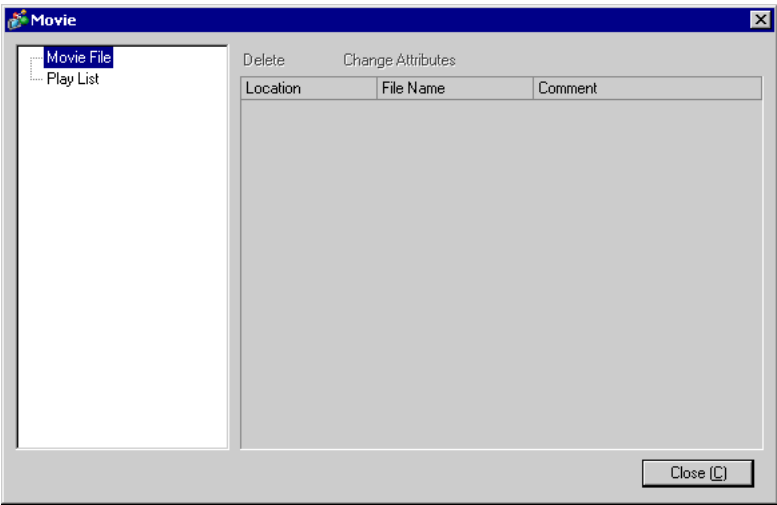
Setting	Description
Create	Display the [FTP Server] dialog box.
Edit	Edit the registered contents.
Copy	Copy the registered contents from the selected row.
Paste	Paste the copied registered contents to the selected row in the list.
Delete	Delete the selected row.

◆ FTP Server

The screenshot shows a standard Windows-style dialog box titled "FTP Server". It contains the following elements from top to bottom: a "Number" field with a spinner control currently at 0; an "IP Address" field with four segments, each containing a 0; a "Comment" text box; a "Port" field with a spinner control currently at 21; an unchecked "PASV" checkbox; a "User Name" text box; a "Password" section containing two text boxes labeled "Password" and "Confirm"; and finally, "OK (O)" and "Cancel" buttons at the bottom.

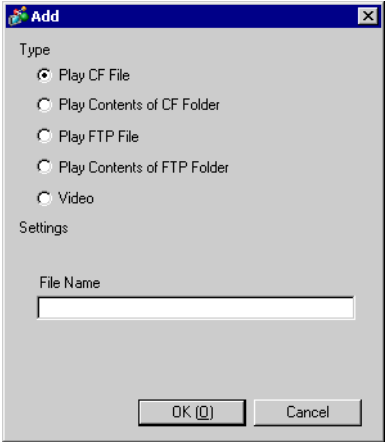
Setting		Description
Number		Specify the registry Number
IP Address		Specify the IP address to register for the FTP server.
Comment		Input comments. You can use up to 12 single-byte alphabetic letters and numbers.
Port Number		Specify the FTP server port Number
PASV		Specify whether to use PASV mode. You would typically use this option when the connection is blocked by network security.
User Name		Specify the user name for login to the FTP server. You can use up to 16 single-byte alphabetic letters and numbers.
Password	Password	Specify the password for login to the FTP server. You can use up to 16 single-byte alphabetic letters and numbers.
	Confirm	Re-enter the password for confirmation.

27.9.3 Common [Movie] Settings Guide



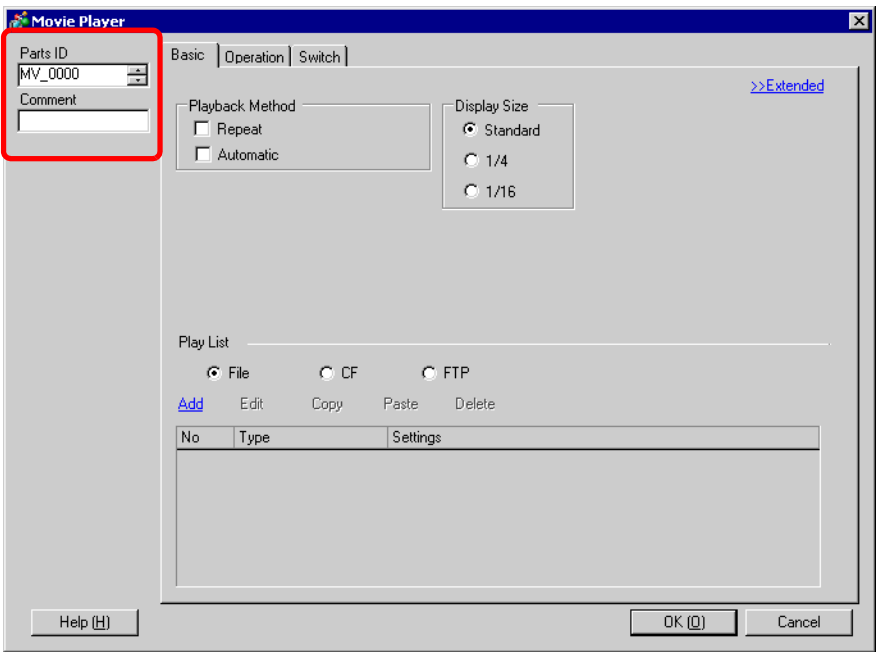
Setting	Description
Movie File	Display a list of movie files saved in the MOVIE folder in the specified "Destination Folder".
Delete	Delete the selected file from the list.
Change Attribute	Change the file name or file comment selected from the list.
Play List	Display the existing playlist files.
Create	Create a new playlist file.
Delete	Delete the selected playlist file from the list.
Change Attribute	Change the file name of a playlist file selected from the list.

Continued

Setting		Description
(File Name)		Display the contents of the created playlist file.
Add		<p>Specify a movie file or folder to add to the playlist. When the folder is specified, movie files within the folder are played in the order in which the files were created on the CF card or the FTP server.</p> 
	Type	Play CF File Add a file saved in the MOVIE folder on the CF Card to the play list. When "\MC" is entered at [File Name], "\MOVIE" and "\" are added to display "\MOVIE\MC\".
		Play Contents of CF Folder When "\MC" is entered at [Folder Name], "\MOVIE" is added to display "\MOVIE\MC\".
		Play FTP File Adds a file on the FTP server to the playlist. Select the registry Number of FTP server where the file is saved, and input the file name.
		Play Contents of FTP Folder Adds a folder on the FTP server to the playlist. Select the registry Number of the FTP server where the folder is saved, and input the folder name.
		Video Add real-time images to the playlist.
	Settings	File Name/ Folder Name Input a file name or folder name.
	Edit	Edit the settings for a file or folder selected on the list.
	Copy	Copy a file or folder selected from the list.
	Paste	Paste the copied file or folder to the list.
	Delete	Delete the selected row from the list.

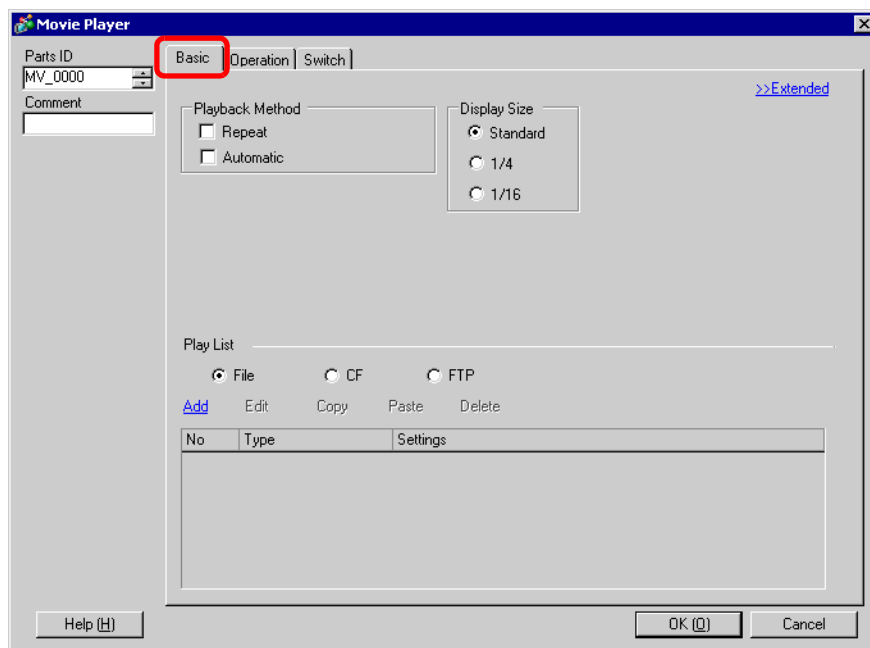
27.9.4 [Movie Player] Settings Guide

This is a component used for playing movies. Use it for displaying images from video cameras and for playing movie files. You can place only one player on a screen.



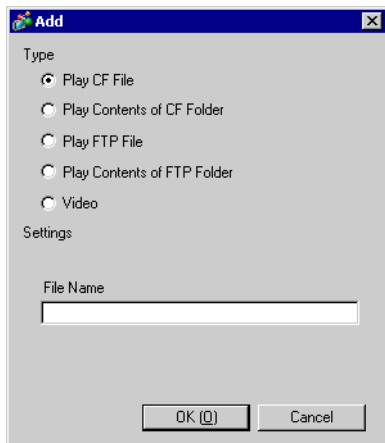
Setting	Description
Part ID	Placed parts are assigned an ID number. Part ID of Movie Player: MV_**** (four digit number) The alphabetic portion is fixed. You can change the number part within the range of 0000-9999.
Comment	The comment for each Part can be up to 20 characters long.

■ Basic

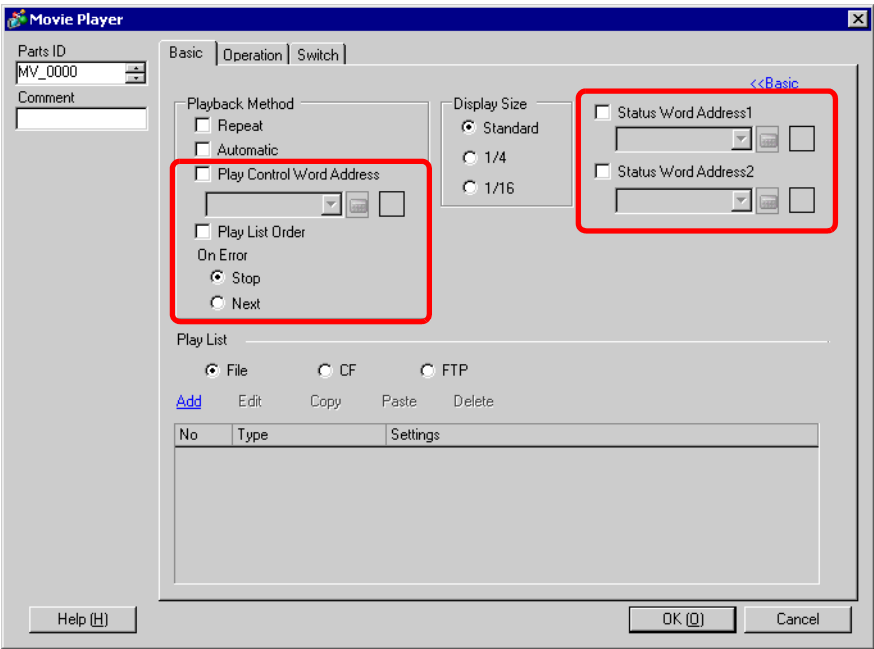


Setting	Description
Play Control	Select the play method.
Loop	Repeatedly plays movies in the playlist, until stopped.
Automatic	Play a movie immediately after the screen is switched to a screen with a movie player.
Display size	Select the image display size. Once selected, the actual display size depends on the type of image input signal.
Default	<ul style="list-style-type: none"> • For NTSC: 640 x 480 pixels • For PAL: 768 x 576 pixels • For SECAM: 768 x 576 pixels
1/4	<ul style="list-style-type: none"> • For NTSC: 320 x 240 pixels • For PAL: 384 x 288 pixels • For SECAM: 384 x 288 pixels
1/16	<ul style="list-style-type: none"> • For NTSC: 160 x 120 pixels • For PAL: 192 x 144 pixels • For SECAM: 192 x 144 pixels

Continued

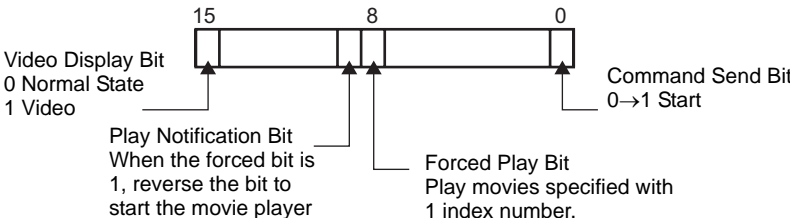
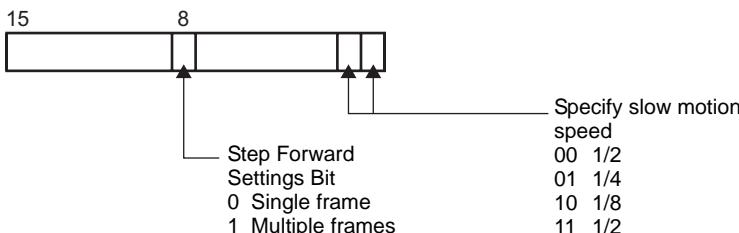
Setting		Description	
Play List		Specify the movie file to be played.	
File	Specify a file and folder to play directly from the movie player.		
	Add	Specify a movie file (or folder) to add to the list. When the folder is specified, movie files within the folder are played in the order in which the files were created on the CF card or the FTP server.	
			
		Type	Play CF File Add a file saved in the MOVIE folder on the CF Card to the play list. When "\\MC" is entered at [File Name], "\\MOVIE" and "\\" are added to display "\\MOVIE\\MC".
			Play Contents of CF Folder When "\\MC" is entered at [Folder Name], "\\MOVIE" is added o display "\\MOVIE\\MC".
			Play FTP File Add a file saved on FTP server. Select the registry Number of FTP server where the file is saved, and input the file name.
			Play Contents of FTP Folder Add a folder saved on the FTP server. Select the registry Number of the FTP server where the folder is saved, and input the folder name.
	Video Add real-time images to the playlist.		
	Settings	File Name/ Folder Name Input a file name or folder name.	
	CF Specify the playlist file (.txt) created in [Movie] in the common settings. The file is saved in the MOVIE folder on the CF Card.		
	FTP Specify the playlist file on the FTP server.		
	FTP Server Select the FTP server registry Number		
	List File Name Input the file name of the playlist on the specified FTP server. Use the FTP server route for input. (For example, "***/*.txt")		
Time out Set the wait time for when the FTP server does not respond to an access request.			

■ Basic/Detail



Setting	Description										
Play Control Word Address	<p>Control the player from the connection device. Use a sequence of five Words from the specified address.</p> <p>Play Control Word Address</p> <table><tr><td>+0</td><td>Control</td></tr><tr><td>+1</td><td>Play Mode</td></tr><tr><td>+2</td><td>Index Number</td></tr><tr><td>+3</td><td>Option</td></tr><tr><td>+4</td><td>Status</td></tr></table> <p>Refer to the following for how to operate.</p> <p>☞ “◆ Operation Procedure for Play Control Address” (page 27-103)</p> <p>☞ “◆ Timing Chart for Play Control” (page 27-103)</p>	+0	Control	+1	Play Mode	+2	Index Number	+3	Option	+4	Status
+0	Control										
+1	Play Mode										
+2	Index Number										
+3	Option										
+4	Status										

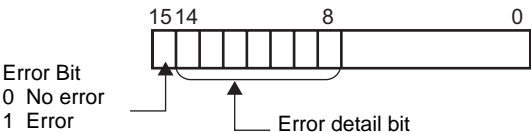
Continued

Setting		Description																				
Play Control Word Address	Play Control Word Address	<ul style="list-style-type: none">• Control<div><p>The upper bits are prioritized in each bit.</p><ul style="list-style-type: none">- When the video display bit is enabled, the selected camera picture takes over the screen from the currently playing movie. The movie continues to play unseen with the sound off. When the video display bit is disabled, the sound returns and the movie in progress is visible on the screen.- When the forced play bit is turned on, it plays the movie with the defined index. Also, when the forced play bit is on, and the play notification bit is toggled, it plays the movie with the defined index.</div>• Play Mode<p>The numbers to be specified are as follows.</p><table><tr><td>0</td><td>Stop</td><td>5</td><td>Slow Motion</td></tr><tr><td>1</td><td>Play</td><td>6</td><td>Forward 1 Frame</td></tr><tr><td>2</td><td>Pause</td><td>7</td><td>Back 1 Frame</td></tr><tr><td>3</td><td>Fast Forward</td><td>8</td><td>Specify Index</td></tr><tr><td>4</td><td>Rewind</td><td>9</td><td>Reserve Thereafter (Stop)</td></tr></table>• Index Number<p>Specifies the index number of the file to play. The number is used only when 8 is set as the [Play Mode] and, either the command send bit in [Control] is on, or the forced play bit is on.</p>• Option<p>Slow motion and 1-frame forward operations are available.</p><div></div>	0	Stop	5	Slow Motion	1	Play	6	Forward 1 Frame	2	Pause	7	Back 1 Frame	3	Fast Forward	8	Specify Index	4	Rewind	9	Reserve Thereafter (Stop)
		0	Stop	5	Slow Motion																	
1	Play	6	Forward 1 Frame																			
2	Pause	7	Back 1 Frame																			
3	Fast Forward	8	Specify Index																			
4	Rewind	9	Reserve Thereafter (Stop)																			

Continued

Setting		Description
Play Control	Play Control Word Address	<div><div><div><div><div>15</div><div>11</div><div>8</div><div>0</div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div>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Continued

Setting	Description	
Status Word Address 1	<ul style="list-style-type: none"> • Error Status  <p>The error bit is ON when an attempt to play a movie failed (for example, because a file does not exist or a connection cannot be established to the FTP server), or when a status error occurs in Movie Player (for example, a because file is corrupted during play).</p> 	
	State of the error detail bit	Description
	0	Completed Successfully Operating normally.
	1 - 3, 6, 8, 12 - 15, 17 - 127	Reserved These are reserved numbers and are not specified.
	4	No CF Card The CF Card is not inserted. The hatch is open.
	5	CF Read Error An attempt to read from the CF Card failed.
	7	CF Card Error The CF Card is defective. This is not a CF Card.
	9	FTP server connection error The FTP server cannot be accessed.
	10	FTP Login Error An attempt to log in to the FTP server failed.
	11	Write error An attempt to write data to the FTP server failed.
	16	The file is corrupt. The specified file is not in SDX format.
	<ul style="list-style-type: none"> • Display size The current display size is stored. 0Normal mode 11/4 mode 21/16 mode 3Reserve after (normal type) • Play Coordinate X/Play Coordinate Y The following table lists the coordinate ranges in which the movie plays according to the display size and the image input signal settings. 	
	Display size	Image Input Signal Settings
		NTSCPAL/SECAM
	Default	(0,0) - (639,479)(0,0) - (767,575)
	1/4	(0,0) - (319,239)(0,0) - (383,287)
	1/16	(0,0) - (159,119)(0,0) - (191,143)

Continued

Setting	Description				
Status Word Address 2	<p>Set to use the address for watching the movie playback state. Use 2 sequential words from the specified address. For a 32-bit device, use the lower 16 bits only.</p> <p>Status Word Address 2</p> <table><tr><td>+0</td><td>Play Monitor</td></tr><tr><td>+1</td><td>Slow Update Rate</td></tr></table> <ul style="list-style-type: none">• Play Monitor<p>bit 15 8 7 0</p><p>Play state bit 0 Not in the play state 1 In the play state (excluding stop state).</p><p>Action Mode</p><ul style="list-style-type: none">- The operation mode for the Play Monitor is stored in the bottom Eight bits.- The play state bit indicates that the Play Monitor is actually in the play state. There are no repeat specifications, and even when the play switch is ON, if play is completed to the end, the state changes to state other than play state.- The following lists the numbers to be specified for the Play Monitor operation mode. 0Stop 1Play 2Pause 3Fast Forward 4Rewind 5Slow Motion 0xFF Video Display Numbers other than those above are reserved.• Slow Update Rate<p>When running in slow motion, stores the play speed.</p><p>15 8</p><p>Slow motion status bit 00 1/2 01 1/4 10 1/8</p>	+0	Play Monitor	+1	Slow Update Rate
+0	Play Monitor				
+1	Slow Update Rate				

◆ Operation Procedure for Play Control Address

Normal Play

- 1 In the [Index Number] address, store the index number of the movie file you want to play.
- 2 In the [Play Mode] address store the value 8, and in the [Control] address turn on the command send bit (bit 0). This will set the index number, and stop any movie that is playing.
- 3 Turns back the command send bit to off.
- 4 In the [Play Mode] address store the value 1, and turn on the command send bit. This will play the movie with the defined index number.

Play in Forced Play Mode

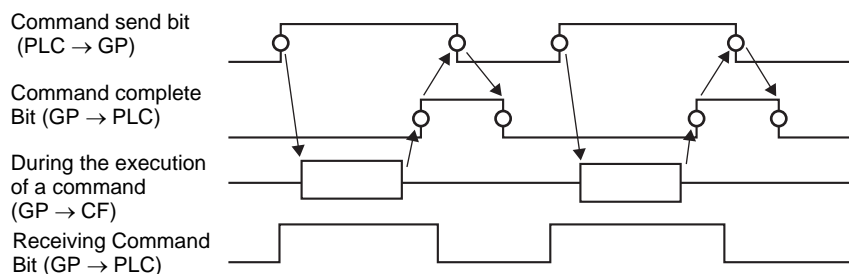
Regardless of the current movie play status, forcibly plays the movie with the specified index number.

- 1 In the [Index Number] address, store the index number of the movie file you want to play.
- 2 In the [Control] address, turn on the forced play bit (bit 8) and playback will begin.

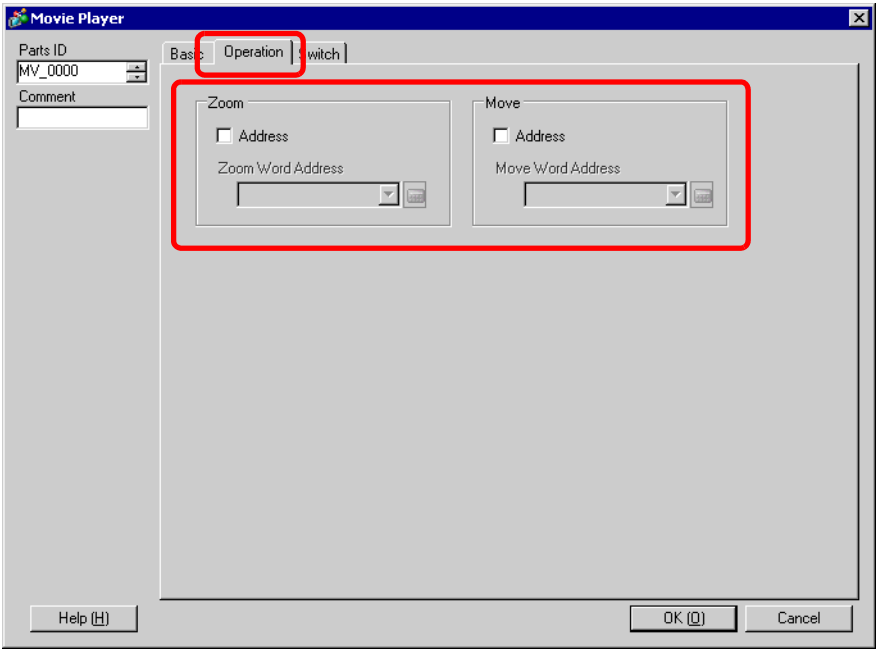
NOTE

- While the forced play bit is on, the command send bit will not turn on.
- If the play notification bit (bit 9) is toggled while the forced play bit is on, plays the movie with the current index number.
- In forced play mode, to stop the movie from playing you need to turn off the forced play bit. If neither [Loop] nor [Play List Order] is selected, movie playback stops at the end of the movie. If [Loop] is cleared and [Play List Order] is selected, movie playback stops at the end of the movie playlist.

◆ Timing Chart for Play Control



■ Operation



Setting	Description									
Zoom	Zoom display settings									
Address	Specify whether to use zoom display or not.									
Zoom Word Address	<div><p>Specify an address for zoom operations. Use a sequence of three Words from the specified address. For a 32-bit device, use only the bottom 16 bits.</p><table><tr><td>+0</td><td>Control</td><td>Control the zoom function.</td></tr><tr><td>+1</td><td>Zoom specifications</td><td>Specify the zoom size.</td></tr><tr><td>+2</td><td>Status</td><td>Display the error state, etc.</td></tr></table><p>☞ “◆ Timing Chart for Zoom Operation of Movie Player” (page 27-107)</p><ul style="list-style-type: none">Control<div><div><div>15</div><div>8</div><div></div></div><div><div></div><div></div><div></div></div></div><div><div>Zoom set bit</div><div>0 Normal</div><div>1 Zoom</div></div></div>	+0	Control	Control the zoom function.	+1	Zoom specifications	Specify the zoom size.	+2	Status	Display the error state, etc.
+0	Control	Control the zoom function.								
+1	Zoom specifications	Specify the zoom size.								
+2	Status	Display the error state, etc.								

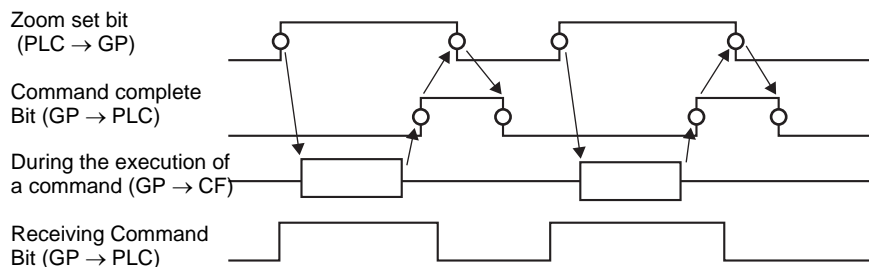
Continued

Setting	Description															
Zoom	<div>Zoom Word Address</div> <ul style="list-style-type: none"> Zoom specifications Specify the zoom by storing one of the following values: <ul style="list-style-type: none"> 0 Normal 1 1/4 2 1/16 3 - 0xFFFF Reserved (does not change) 0xFFFF Normal (return to settings on the main screen) Status <div> </div> <table> <tr> <th>State of the error detail bit</th><th>Error Name</th><th>Description</th></tr> <tr> <td>0</td><td>Completed Successfully</td><td>Operating normally.</td></tr> <tr> <td>1</td><td>The zoom specification is invalid.</td><td>The specified value is out of the acceptable range.</td></tr> <tr> <td>2</td><td>Executing an instruction from the switch</td><td>Processing a switch instruction set up on the screen. The request cannot be processed.</td></tr> <tr> <td>3 to 15</td><td>Reserved</td><td>These are reserved numbers and are not specified.</td></tr> </table> <p>☞ “◆ Screen Display When Zoom is Specified” (page 27-107)</p>	State of the error detail bit	Error Name	Description	0	Completed Successfully	Operating normally.	1	The zoom specification is invalid.	The specified value is out of the acceptable range.	2	Executing an instruction from the switch	Processing a switch instruction set up on the screen. The request cannot be processed.	3 to 15	Reserved	These are reserved numbers and are not specified.
State of the error detail bit	Error Name	Description														
0	Completed Successfully	Operating normally.														
1	The zoom specification is invalid.	The specified value is out of the acceptable range.														
2	Executing an instruction from the switch	Processing a switch instruction set up on the screen. The request cannot be processed.														
3 to 15	Reserved	These are reserved numbers and are not specified.														
Move	Settings for moving the screen position.															
Address	If a movie to be played does not fit completely on the screen, specify whether to move the movie play coordinates.															
Move Word Address	Specify an address for moving the play position. Use a sequence of two Words from the specified address. For a 32-bit device, use only the bottom 16 bits. <div> <div>+0</div> <div>Control</div> <div>+1</div> <div>Status</div> </div> <p>☞ “◆ Timing Chart for Move Operation of Movie Player” (page 27-109)</p>															

Continued

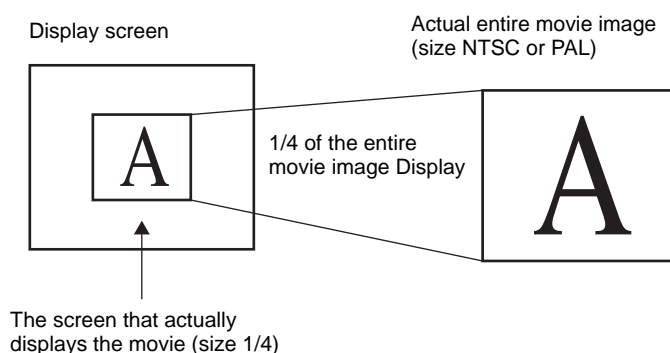
Setting		Description																								
Move	Move Word Address	<div><div><div><div>• Control</div><div><div><div>bit</div><div>0</div></div><div><div></div><div></div><div></div><div></div><div></div></div><div><div>Move forward bit</div><div>When the bit changes from 0→1, the movie moves forward.</div></div><div><div>Move downward bit</div><div>When the bit changes from 0→1, the movie moves downward.</div></div><div><div>Move right bit</div><div>When the bit changes from 0→1, the movie moves to the right.</div></div><div><div>Move left bit</div><div>When the bit changes from 0→1, the movie moves to the left.</div></div></div></div><div><p>The bit priority is higher for the upper bits and lower for the lower bits. When each allocated bit is turned ON, the movie moves according to the following dots.</p><p>If a movie cannot be moved, an error is returned to the status address.</p><table><tr><th>Direction</th><th>When playing a movie</th><th>When playing a video</th></tr><tr><td>Landscape direction</td><td>2 dots</td><td>2 dots</td></tr><tr><td>Portrait direction</td><td>Normal size 2 dot units 1/4 and 1/16 sizes 1 dot</td><td>1 dot</td></tr></table></div><div><div><div><div>15</div><div>11</div><div>8</div><div>0</div></div><div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div><div></div></div><div><div>Error detail bit</div><div>Command Complete Bit</div><div>0→1 Command Completed</div><div>Command Command Receive Bit</div><div>0 Stopped</div><div>1 Outputting</div></div></div></div><table><tr><th>State of the error detail bit</th><th>Error Name</th><th>Description</th></tr><tr><td>0</td><td>Completed Successfully</td><td>Operating normally.</td></tr><tr><td>1</td><td>The movie is at the screen edge.</td><td>The movie cannot be moved because it is at the edge of the screen.</td></tr><tr><td>2</td><td>Executing an instruction from the switch</td><td>Processing a switch instruction set up on the screen. The request cannot be processed.</td></tr><tr><td>3 to 15</td><td>Reserved</td><td>These are reserved numbers and are not specified.</td></tr></table></div></div>	Direction	When playing a movie	When playing a video	Landscape direction	2 dots	2 dots	Portrait direction	Normal size 2 dot units 1/4 and 1/16 sizes 1 dot	1 dot	State of the error detail bit	Error Name	Description	0	Completed Successfully	Operating normally.	1	The movie is at the screen edge.	The movie cannot be moved because it is at the edge of the screen.	2	Executing an instruction from the switch	Processing a switch instruction set up on the screen. The request cannot be processed.	3 to 15	Reserved	These are reserved numbers and are not specified.
		Direction	When playing a movie	When playing a video																						
Landscape direction	2 dots	2 dots																								
Portrait direction	Normal size 2 dot units 1/4 and 1/16 sizes 1 dot	1 dot																								
State of the error detail bit	Error Name	Description																								
0	Completed Successfully	Operating normally.																								
1	The movie is at the screen edge.	The movie cannot be moved because it is at the edge of the screen.																								
2	Executing an instruction from the switch	Processing a switch instruction set up on the screen. The request cannot be processed.																								
3 to 15	Reserved	These are reserved numbers and are not specified.																								

◆ Timing Chart for Zoom Operation of Movie Player

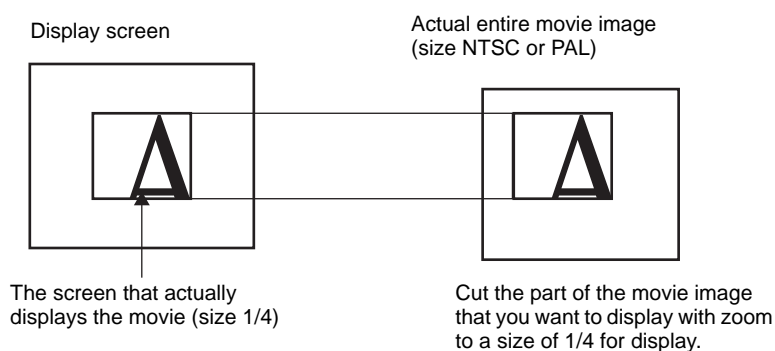


◆ Screen Display When Zoom is Specified

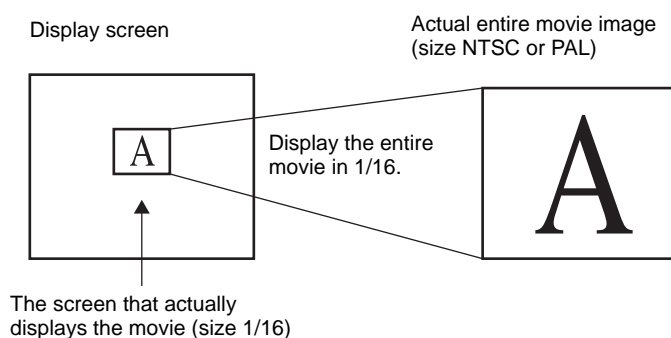
- If the Display Size is [1/4] and Screen Size is 1/4 of the movie.



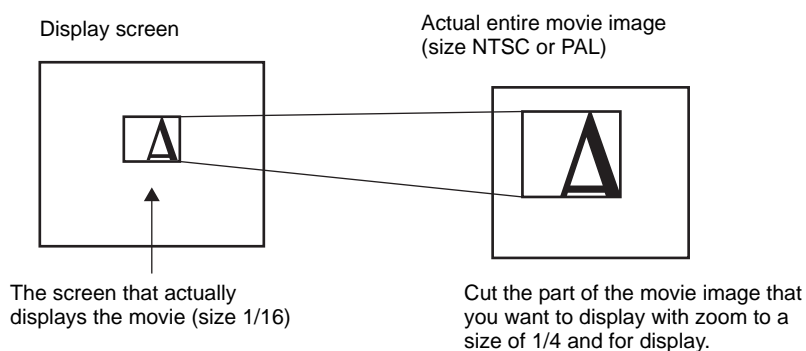
- When the display size is [Normal] and the screen size is 1/4 of the movie image



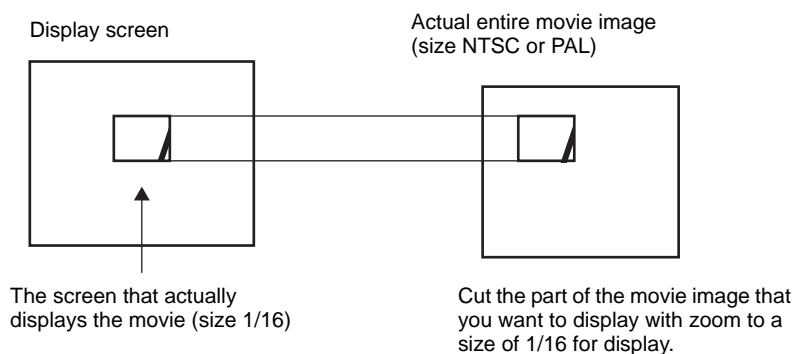
- When the display size is [1/16] and the screen size is 1/16 of the movie image



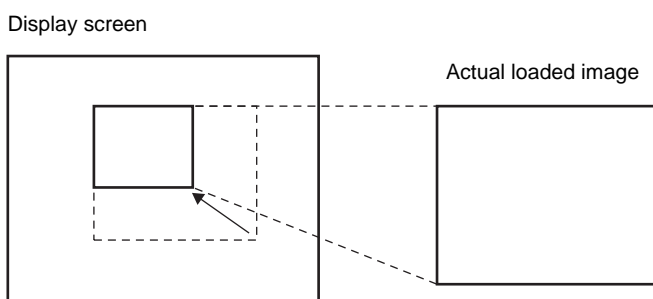
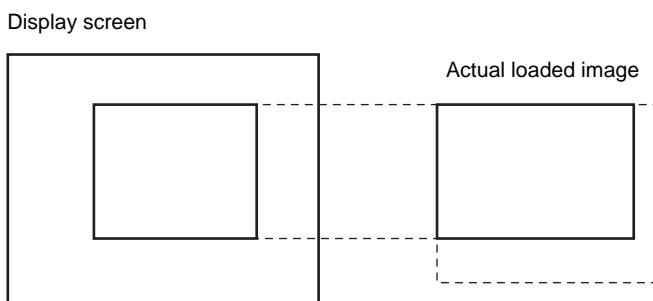
- When the display size is [1/4] and the screen size is 1/16 of the movie image



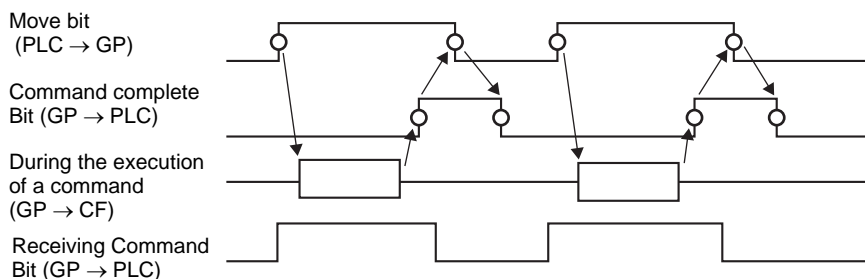
- When the display size is [Normal] and the screen size is 1/16 of the movie image



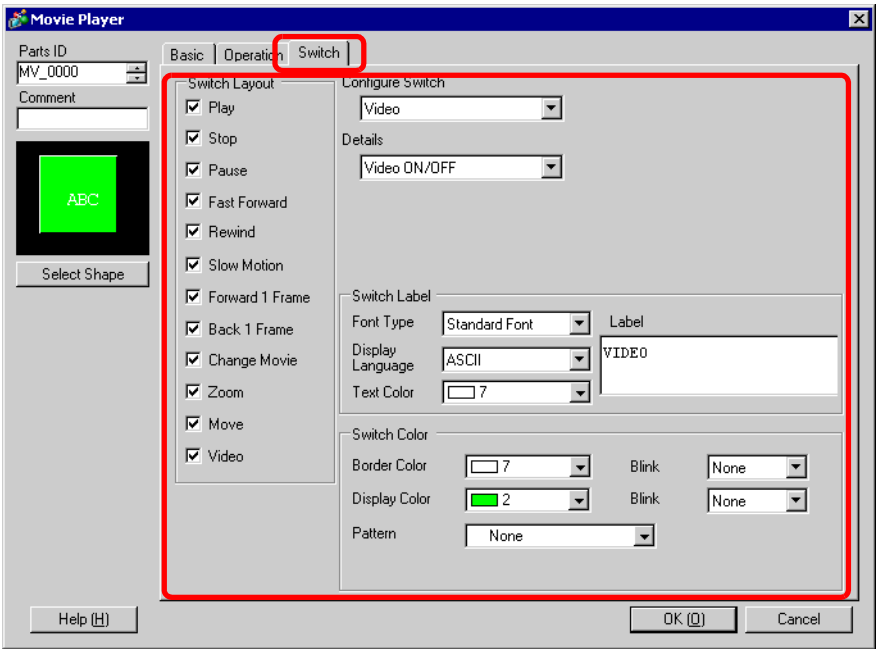
- If a movie image is zoomed and the size is smaller than the display size, the display size automatically changes to the movie image size.



◆ Timing Chart for Move Operation of Movie Player

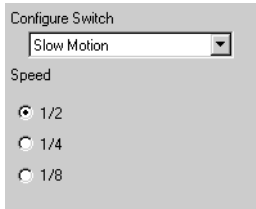


■ Switch

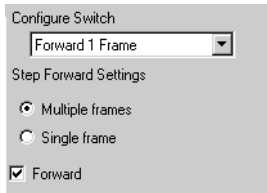
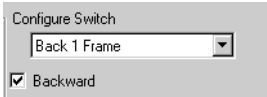
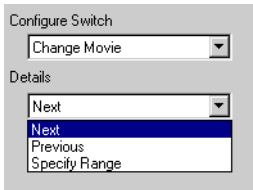


Setting	Description
Select Shape	Open the Select Shape dialog box to choose the Part shape. <div>NOTE</div> <ul style="list-style-type: none">Depending on the shape, you may not be able to change the color.

Continued

Setting	Description
Switch Layout	<p>Select the operation switch to be attached to Movie Player.</p> <ul style="list-style-type: none"> • Play Starts play. • Stop Stops playback. The next time the movie file is played, it starts from the beginning. • Pause Pauses play. • Fast Forward Plays a movie in fast forward. This switch operates even in the stop state. • Rewind Plays a movie while rewinding. This switch does not operate in the stopped state. • Slow Motion Plays a movie in slow motion. This switch operates even in the stop state. • Forward 1 Frame Forwards a movie frame by frame. This switch can be used only in the pause state. • Back 1 Frame Reverses a movie frame by frame. This switch can be used only in the pause state. • Change Movie Stops the movie and plays the [Next] movie, [Previous] movie, or movie with the specified number. • Zoom Enlarges/reduces the movie display. • Move Moves the movie display position. • Video Switch the video camera picture being displayed.
Configure Switch	From among the switches on the screen, select a switch for specifying the details and labels.
Speed	<p>This item is displayed only when [Slow Motion] is selected in [Configure Switch]. Select the speed for slow motion from [1/2], [1/4] or [1/8].</p> 


Continued

Setting	Description
Step Forward Settings	<p>This item is displayed only when [Forward 1 Frame] is selected in [Configure Switch]. Select the frame width.</p> <p>Multiple Frames: Forward a movie by "I" frames.</p> <p>Single Frame: Forward a movie by one frame.</p> 
Forward	<p>This item is displayed only when [Forward 1 Frame] is selected in [Configure Switch]. While pressing the switch, specify whether to continuously forward a movie frame by frame.</p>
Backward	<p>This item is displayed only when [Back 1 Frame] is selected in [Configure Switch]. While pressing the switch, specify whether to continuously reverse a movie frame by frame.</p> 
Detail Action	<p>This item is displayed only when [Change Movie] is selected in [Configure Switch]. Select the operation for switching movies.</p> <ul style="list-style-type: none"> -Next -Previous -Play List 
Loop	<p>This item is displayed only when [Change Movie] is selected in [Configure Switch], and [Next] or [Previous] is selected in [Details]. Specify whether to perform a loop operation.</p>
Index Number	<p>This item is displayed only when [Change Movie] is selected in [Configure Switch], and [Play List] is specified in [Details]. Specify the Index Number of the movie file to be played. The settings range from 0 to 99.</p>
Action Mode	<p>This item is displayed only when [Zoom] is selected in [Configure Switch]. Select how to specify the display size from either [Fixed] or [Indirect].</p>

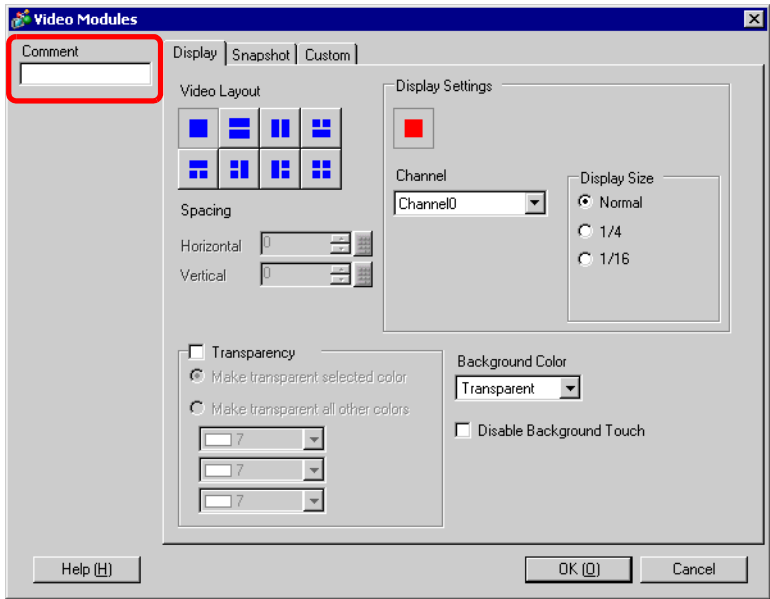
Continued

Setting		Description
Mode	Constant	<p>Select the display size from [Standard], [1/4], [1/16], or [Zoom].</p> <p>For [Zoom], every time the switch is pressed, the movie is zoomed in the following steps.</p> <p>Standard to→1/4→1/16→1/4→Standard</p> <div data-bbox="676 320 980 540"></div> <div data-bbox="407 571 493 612">NOTE</div> <ul style="list-style-type: none">• When [Loop] is specified, the order is Standard→1/4→1/16→Standard→1/4.
	Address	<p>Specify the address for storing the display size to indirectly zoom the movie.</p> <p>The following lists the values to be stored.</p> <p>0Standard 11/4 21/16 3 - 0xFFFFE Reserved (does not change) 0xFFFFReturns to the original screen size.</p> <p>If a value other than the above is stored, the movie will not zoom.</p> <div data-bbox="654 1008 997 1164"></div> <div data-bbox="407 1197 493 1238">NOTE</div> <ul style="list-style-type: none">• For a 32-bit device, only the bottom 16 bits are used.
	Detail Action	<p>This item is displayed only when [Move] is selected in [Configure Switch].</p> <div data-bbox="703 1379 959 1545"></div>

Continued

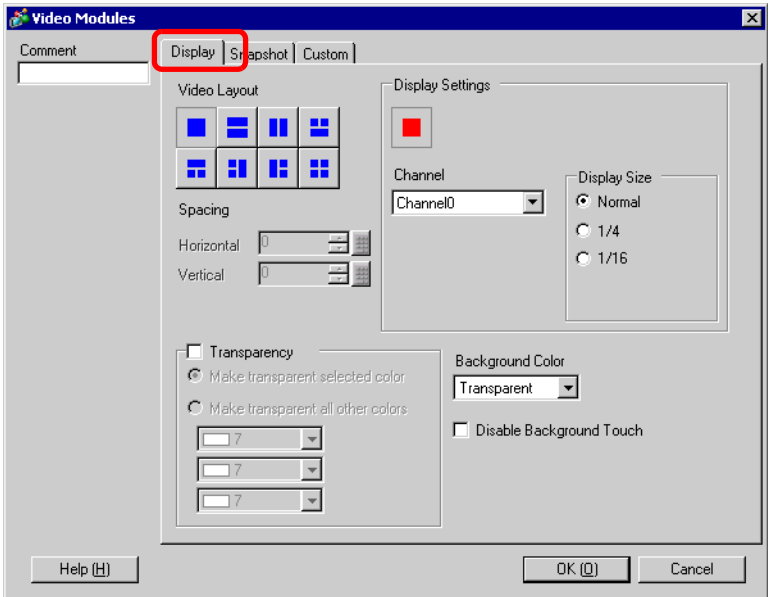
Setting		Description										
	Details	Select the direction to move the movie from [Up], [Down], [Left], or [Right]. The following describes the range in which a movie can be moved at one time.										
			<table><tr><th></th><th>When playing a movie</th><th>When displaying video</th></tr><tr><td>Landscape direction</td><td>2 dots</td><td>2 dots</td></tr><tr><td>Portrait direction</td><td>Normal size : 2 dot units 1/4, 1/16 size : 1 dot units</td><td>1 dot</td></tr></table>		When playing a movie	When displaying video	Landscape direction	2 dots	2 dots	Portrait direction	Normal size : 2 dot units 1/4, 1/16 size : 1 dot units	1 dot
			When playing a movie	When displaying video								
		Landscape direction	2 dots	2 dots								
	Portrait direction	Normal size : 2 dot units 1/4, 1/16 size : 1 dot units	1 dot									
Continuous	While pressing the switch, specify whether to continuously move a movie.											
Switch Label	Font Type	<p>Select the font type for the label displayed on the switch.</p> <ul style="list-style-type: none">• Standard Font The vertical and horizontal dimensions of a character can be specified in bitmap font. When a character is enlarged or reduced, the outline of the character may appear grainy or smudged.• Stroke Font This is the outline font (with the lines defined together) for which the vertical and horizontal dimensions of a character are fixed. Even when a character is enlarged or reduced, the outline is displayed clearly. However, due to the large required capacity, this font may put a burden on the GP.										
	Display Language	Select the display language for the label displayed on the switch from among [ASCII], [Japanese], [Chinese (Traditional)], [Chinese (Simplified)], [Korean], [Cyrillic Alphabet], or [Thai].										
	Text Color	Select a color for the label text.										
	Label	Enter the text to be displayed on the switch.										
Switch color	Border Color	If the Part Shape is set to have a border, select a color for it.										
	Clear Color	Select the Switch color.										
	Pattern	Select from the eight patterns or choose [No Pattern].										
	Blink	<p>Specify whether or not to use a blinking display, and the blinking speed. Specify [Border Color] and [Display Color].</p> <div>NOTE</div> <ul style="list-style-type: none">• There are cases where you can and cannot set Blink depending on the Main Unit and System Settings [Color].  “9.5.1 Setting Colors ■ List of Available Colors” (page 9-34)										

27.9.5 Common [Video Module] Settings Guide



Setting	Description
Comment	The comment for each Part can be up to 20 characters long.

■ Display



Setting	Description																
Video Layout	<p>Select the window display type.</p> <table><tr><td><Single screen></td><td><Two screens placed horizontally></td><td>< Two screens placed vertically ></td><td><Three screens (One screen on the bottom)></td></tr><tr><td></td><td></td><td></td><td></td></tr><tr><td>< Three screens(One screen on the top) ></td><td>< Three screens(One screen on the right) ></td><td>< Three screens(One screen on the left) ></td><td>< Four screens ></td></tr><tr><td></td><td></td><td></td><td></td></tr></table>	<Single screen>	<Two screens placed horizontally>	< Two screens placed vertically >	<Three screens (One screen on the bottom)>					< Three screens(One screen on the top) >	< Three screens(One screen on the right) >	< Three screens(One screen on the left) >	< Four screens >				
<Single screen>	<Two screens placed horizontally>	< Two screens placed vertically >	<Three screens (One screen on the bottom)>														
< Three screens(One screen on the top) >	< Three screens(One screen on the right) >	< Three screens(One screen on the left) >	< Four screens >														
Spacing	<p>Specify this setting when two or more screens are displayed simultaneously.</p> <ul style="list-style-type: none">• Landscape: Specify the horizontal dots between windows from 0 to 320.• Portrait: Specify the vertical dots between windows from 0 to 273.																

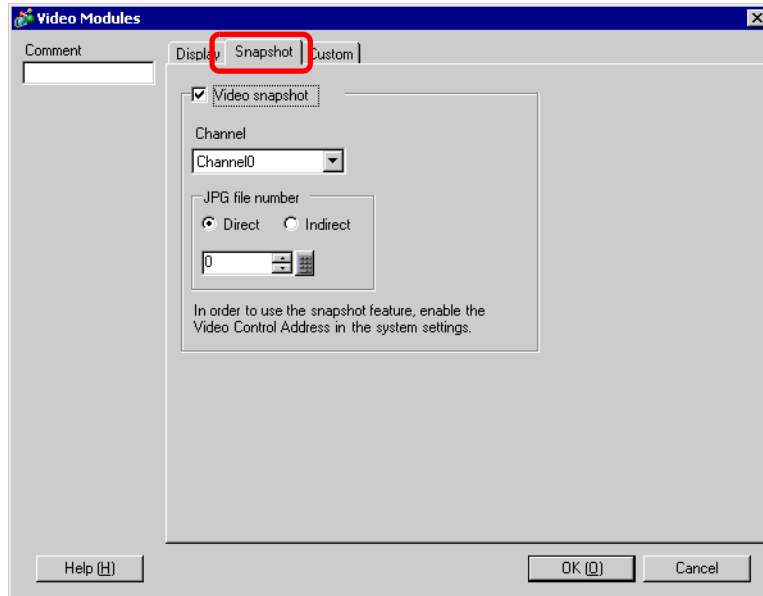
Continued

Setting	Description					
Basic	Specify the display settings for each screen according to the selected window type.					
Channel	Select a Channel Number on which the display settings are to be specified.					
Channels 0 - 3	Displays the video camera image input to the specified channel.					
Display size	Disp. Size	NTSC		PAL		
		AGP-35*0T	AGP-36*0T	AGP-35*0T	AGP-36*0T	
		Normal	640 x 480 pixels	640 x 480 pixels	640 x 480 pixels* ¹	768 x 576 pixels
		1/4	320 x 240 pixels	320 x 240 pixels	384 x 288 pixels	384 x 288 pixels
		1/16	160 x 120 pixels	160 x 120 pixels	192 x 144 pixels	192 x 144 pixels
*1 When selecting [PAL] and [Normal] in the AGP-35*0T, some parts of the picture will appear.						
RGB (IN)	Displays an image from a device connected via an RGB interface.					
Emulate Touch	Sends the screen touch information to an external device connected via serial communication. The following lists the maximum effective area of the X/Y coordinates for the entire screen display. For AGP-35* X coordinate: 0 - 799 Y coordinate: 0 - 599 For AGP-36*0T X coordinate: 0 - 639 Y coordinate: 0 - 479					
Display size	Disp. Size	AGP-35*0T		AGP-36*0T		
		VGA	SVGA	VGA	SVGA	
		Normal	640 x 480 pixels* ¹	640 x 480 pixels	640 x 480 pixels	800 x 600 pixels
		1/4	320 x 240 pixels	320 x 240 pixels	400 x 300 pixels	400 x 300 pixels
		1/16	160 x 120 pixels	160 x 120 pixels	200 x 150 pixels	200 x 150 pixels
*1 When using AGP-35*T, if the display mode is set to SVGA, part of the image will not be displayed in [Normal] size..						
JPG	Display JPEG files on the CF card. You can specify multiple settings for displaying JPEG images on the same screen and select [JPGFile Number] redundantly. <div>NOTE</div> <ul style="list-style-type: none">• Even if an attempt is made to turn OFF the video screen while a JPEG image is displayed, the screen will not turn OFF until the display processing has completed.					
JPG file number	Specify the JPEG file number for the file you want to display from 0 to 65535.					

Continued

Setting				Description
			Display size	Select the screen display size from [Normal], [1/4], [1/16] and [1/64]. The percentage of reduction is based on the display screen size, not the display mode.
Transparency				From the color pallet, select the color that will be seen through the window from the display on the GP screen. It is not possible to set the colors for each image to be displayed. <ul style="list-style-type: none">• Make transparent selected color: Up to three colors can be selected.• Make transparent all other colors: Only one color can be selected.
Background Color				Select the background color for the VM Unit Window.
Disable Background Touch				Specify whether to enable the touch switch on the GP screen displayed behind VM Unit Window.

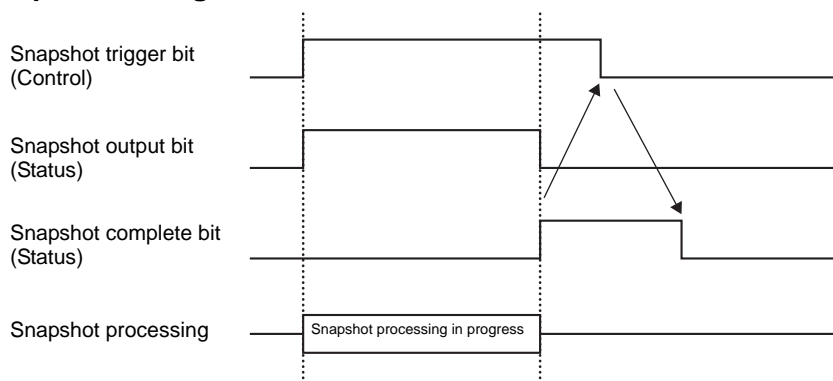
■ Snapshot



Setting		Description
Video snapshot		<p>Takes a snapshot of the video from a single channel and specifies whether to save it to the CF card as a .jpg file.</p> <p>Using Snapshot Output, the picture from the channel specified in the [Video Module] is output as a JPEG. The size of the output image is 640x480 pixels for NTSC and 768x576 for PAL signals.</p> <p>IMPORTANT</p> <ul style="list-style-type: none"> To use the video capture feature, in the System Settings window's [Video Module] page, enable the [Video Control Start Address]. In the defined video address, turn on bit 4 to initiate the video snapshot.
	Snapshot Channel	Select the channel.
JPG file number	Constant	<p>Set a number to be the JPEG file name. The settings range from 0 to 65535.</p> <p>The saved file name is "CPXXXXXX.JPG" (XXXXXX is the specified value). The file will be stored in the "CAPTURE" folder the CF card.</p> <p>NOTE</p> <ul style="list-style-type: none"> The file is always saved using the file name defined here. If a file with the same name already exists in the CF card, that file is overwritten.
	Address	<p>Stores the file number to: [Video Control Address] + 2. Define the [Video Control Address] in the System Settings window's [Video Module] page.</p> <p>NOTE</p> <ul style="list-style-type: none"> You can automatically add and delete file numbers in the System Settings. In the System Settings, select [Main Unit] then click the [Mode] tab. From [Screen Capture Settings], go to [Screen/Video Capture Settings] to set up your options.

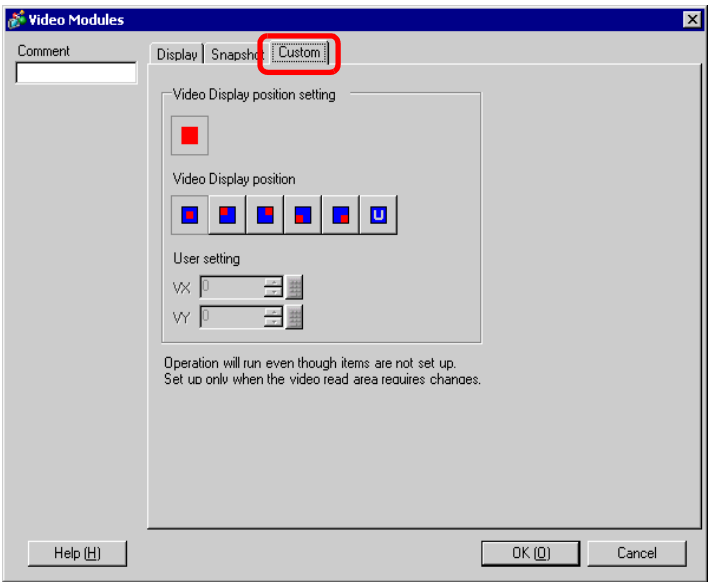
Continued

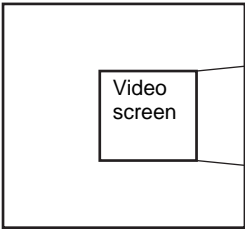
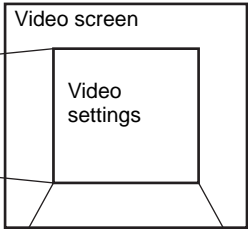
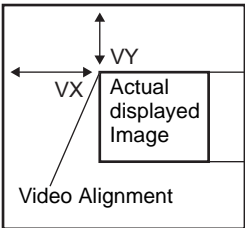
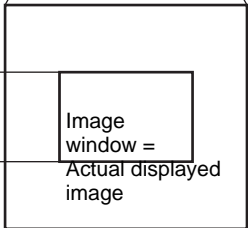
Setting		Description		
Video snapshot JPG file number	Address	< JPEG error code >		
		No	Summary	Detail
		0	Completed Successfully	Processing successfully completed.
		1	The JPEG image size exceeds 1024 x 768 pixels.	An attempt was made to display a JPEG image with an image size of 1024 x 768 pixels or more.*1
		2	Unsupported sample ratio	An attempt was made to display a JPEG image created with an unsupported sample ratio.
		3	Other compression/decompression error	An internal error occurred due to an unknown reason while taking a snapshot (compressing) of a JPEG image or while displaying (expanding) a JPEG image.
		4	No CF Card	A CF Card was not inserted at the time of displaying or taking a snapshot of a JPEG image, or the CF Card hatch was open.
		5	CF Write Error	The CF Card capacity was not sufficient at the time of taking the JPEG image snapshot, or the CF Card was ejected while it was being written.
		6	CF Read Error	A display file did not exist at the time of displaying the JPEG image, or the CF Card was ejected while it was being read.
		7	CF Card Error	The CF Card is not formatted.
		8	The video image cannot be saved.	When saving a video image in PAL, only the actual image size can be specified. If the size is specified as 1/4 or 1/16, the video image cannot be saved. If the revision Number of the VM Unit is Rev.A-2 or higher, an error will not occur and the video image can be saved.
		9	Automatic increment file count error	When the [File Automatic Increment Function] is enabled in the system settings, and the JPEG file Number of the video capture was indirectly designated, an error will occur if the file Number exceeds 65535.
		*1 An error occurs when the size of the expanded JPEG file exceeds 1024 x 768 pixels. It does not depend on the original JPEG image file. An error does not occur for JPEG files with 1024 x 768 pixels or more if the size is below 1024 x 768 pixels in the 1/4, 1/16, or 1/64 setting.		

◆ Video Capture Timing Chart

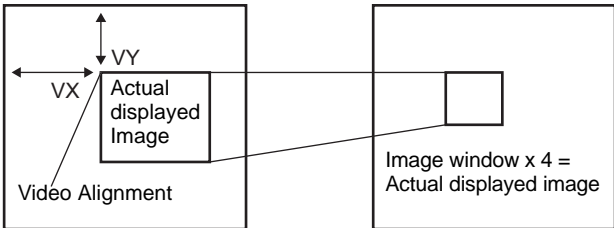







The snapshot complete bit turns OFF at its scheduled time even if the snapshot trigger bit turns OFF while the snapshot complete bit is ON.

■ Custom Settings



Setting	Description
Video Alignment	<p>Specify which part of the actual image should be displayed.</p> <ul style="list-style-type: none">• To display normally Creates a movie window for the movie size starting from (0,0)• To display part of the movie Specifies the necessary position and creates a video window. <div><div><p>Base</p><p>The video screen is displayed on the base screen.</p></div><div><p>Relationship Between the Video Screen and Video Settings</p><p>The part called video settings is placed on the video screen, and the image is displayed only in the video settings.</p></div><div><p>(0, 0)</p></div><div><p>Image window = Actual displayed image</p></div><div><p>Video settings (1 channel display, normal)</p><p>When the display size is normal, the size of the actual displayed image is equal to the size of the image window in the video settings.</p></div></div>

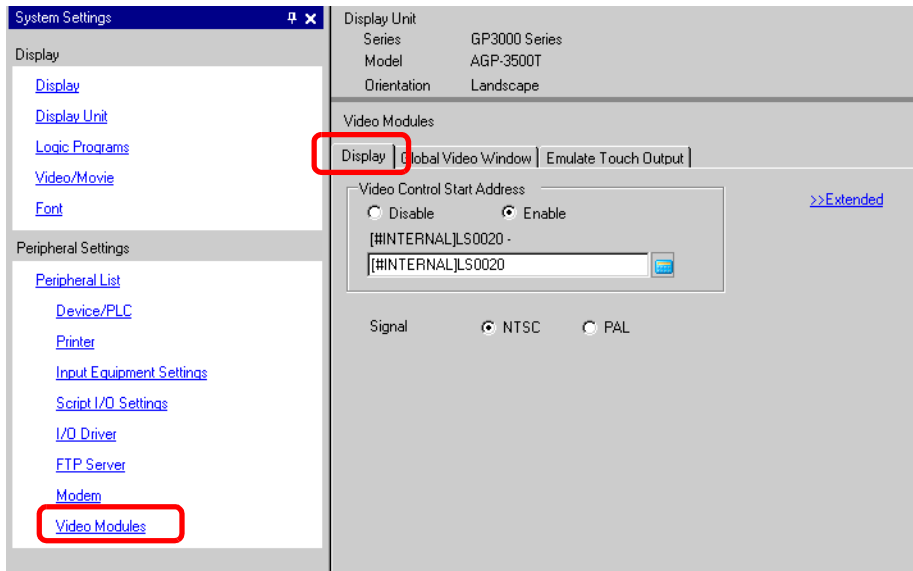
Continued

Setting	Description
Video Display Position Setting	<div><p>Video image/RGB image</p><p>Video settings channel display, 1/4 (reduced display)</p><p>When the display size is reduced (1/4), the size of the actual displayed image is four times as large as the size of the image window in the video settings (for 1/16, the size is 16 times larger).</p></div>
Video Display position	<p>For each display screen, select the video display position from  ,</p> <p> ,  ,  ,  , and  .</p> <p>If  is selected, the X/Y coordinates can be specified.</p> <ul style="list-style-type: none">• VX: Specify from 0 to 767.• VY: Specify from 0 to 575.

27.9.6 [Video Module] Settings Guide

This section describes the basic settings of the optional Video Module.

■ Display/Base



Setting	Description
Video Control Start Address	Specifies whether or not to use the control address.
Disable	Does not use the control address.
Enable	<p>Set the GP internal device address for controlling the display of the VM Unit Window. Use a sequence of 4two Words from the specified address. The settings range between LS20 - 1989 and 2096 - 8957.</p> <p>☞ “◆ Video Control Area” (page 27-124)</p> <p>NOTE</p> <ul style="list-style-type: none"> • If an address is specified outside of the settings range, the VM function will not run.
Video Signal	<p>Select the image input signal.</p> <ul style="list-style-type: none"> • NTSC: 640 x 480 pixels • PAL: 768 x 576 pixels

◆ Video Control Area

The sequence of 42 Words from the specified [Video Control Start Address] is called the "video control area". The following tables lists what each address controls.

NOTE

- The video control area processes data in 16 bits.
- The settings specified in [VM Unit Window Settings] in the Common Settings are written in the video control area.

Word Address	Summary	Bit	Detail
+0	Video common control command	0	Transparency (0: OFF, 1: ON)
		1	Transparent execution mode (0: Transparently displays colors other than those specified, 1: Transparently displays the specified color.)
		2	Touch input is prohibited in the window. (0: Enables input, 1: Prohibits input.)
		3	Unused (Reserved)
		4	Snapshot output (0: None, 1: Starts)
		5 to 15	Unused (Reserved)
+1	Video common control status	0 to 1	Snapshot status (0: None, 1: Snapshot in progress, 2: Snapshot complete.)
		2 to 11	Unused (Reserved)
		12 to 15	JPEG error codes
+2	JPEG file Number	0 to 65535	
+3	Transparent color 1	0 - 255, 0x8001 - 0x800C (E1 - E12)	
+4	Transparent color 2	0 - 255, 0x8001 - 0x800C (E1 - E12)	
+5	Transparent color 3	0 - 255, 0x8001 - 0x800C (E1 - E12)	
+6	Image window display control	0 to 3	Image window 0 0: External input device, 1: JPEG normal, 2: JPEG 1/4 expanded, 3: JPEG 1/16 expanded, 4: JPEG1 1/64 expanded, 5 - F: Reserved
		4 to 7	Image window 1 0: External input device, 1: JPEG normal, 2: JPEG 1/4 expanded, 3: JPEG 1/16 expanded, 4: JPEG1 1/64 expanded, 5 - F: Reserved
		8 to 11	Image window 2 0: External input device, 1: JPEG normal, 2: JPEG 1/4 expanded, 3: JPEG 1/16 expanded, 4: JPEG1 1/64 expanded, 5 - F: Reserved
		12 to 15	Image window 3 0: External input device, 1: JPEG normal, 2: JPEG 1/4 expanded, 3: JPEG 1/16 expanded, 4: JPEG1 1/64 expanded, 5 - F: Reserved
+7	Image window 0	JPEG file Number	

Continued

Word Address	Summary	Bit	Detail
+8	Image window 1	JPEG file Number	
+9	Image window 2	JPEG file Number	
+10	Image window 3	JPEG file Number	
+11	Internal image window control flag (When the bit is ON, the operation described on the right is performed.)	0	Updates the coordinate position.
		1	Unused (Reserved)
		2	UP
		3	DOWN
		4	RIGHT
		5	LEFT
		6	Unused (Reserved)
		7	Unused (Reserved)
		8	Updates the color value.
		9	Unused (Reserved)
		10	Increases the color value by increments.
		11	Decreases the color value by increments.
		12	Brightness adjustment mode
		13	Contrast adjustment mode
		14	Color tone adjustment mode
		15	Unused (Reserved)
+12	Internal video control channel Number	0: Channel 0 1: Channel 1 2: Channel 2 3: Channel 3 4: RGB display	

Continued

Word Address	Summary	Bit	Detail	
+13	Video window control command*1	Video channel 0 information	0	Video display mode (0: Normal mode, 1: 1/4 mode, 2: 1/16 mode, 3: Reserved)
			1	
			2	Still (video still image) (0: Movie, 1: Still image)
			3 to 15	Unused (Reserved)
+14	Video alignment (VX)		NTSC: 0 - 639, PAL: 0 - 767	
+15	Video alignment (VY)		NTSC: 0 - 479, PAL: 0 - 575	
+16	Brightness		(Low⇔High: 0 - 15)	
+17	Contrast		(Low⇔High: 0 - 15)	
+18	Tone		(Green⇔Red: 0 - 15)	
+19	Video window control command*1	Video channel 1 information	0	Video display mode (0: Normal mode, 1: 1/4 mode, 2: 1/16 mode, 3: Reserved)
			1	
			2	Still (video still image) (0: Movie, 1: Still image)
			3 to 15	Unused (Reserved)
+20	Video alignment (VX)		NTSC: 0 - 639, PAL: 0 - 767	
+21	Video alignment (VY)		NTSC: 0 - 479, PAL: 0 - 575	
+22	Brightness		(Low-High: 0 - 15)	
+23	Contrast		(Low-High: 0 - 15)	
+24	Tone		(Green⇔Red: 0 - 15)	
+25	Video window control command*1	Video channel 2 information	0	Video display mode (0: Normal mode, 1: 1/4 mode, 2: 1/16 mode, 3: Reserved)
			1	
			2	Still (video still image) (0: Movie, 1: Still image)
			3 to 15	Unused (Reserved)

Continued

Word Address	Summary	Bit	Detail	
+26	Video alignment (VX)		NTSC: 0 - 639, PAL: 0 - 767	
+27	Video alignment (VY)		NTSC: 0 - 479, PAL: 0 - 575	
+28	Brightness		(Low↔High: 0 - 15)	
+29	Contrast		(Low↔High: 0 - 15)	
+30	Tone		(Green↔Red: 0 - 15)	
+31	Video window control command*1	Video channel 3 information	0	Video display mode (0: Normal mode, 1: 1/4 mode, 2: 1/16 mode, 3: Reserved)
			1	
			2	Still (video still image) (0: Movie, 1: Still image)
			3 to 15	Unused (Reserved)
+32	Video alignment (VX)		NTSC: 0 - 639, PAL: 0 - 767	
+33	Video alignment (VY)		NTSC: 0 - 479, PAL: 0 - 575	
+34	Brightness		(Low↔High: 0 - 15)	
+35	Contrast		(Low↔High: 0 - 15)	
+36	Tone		(Green↔Red: 0 - 15)	
+37	Video window control command*1	RGB display information	0	Video display mode (0: Normal mode, 1: 1/4 mode, 2: 1/16 mode, 3: Reserved)
			1	
			2	Still (video still image) (0: Movie, 1: Still image)
			3 to 15	Unused (Reserved)
+38	RGB alignment (VX)		VGA: 0 - 639, SVGA: 0 - 799	
+39	RGB alignment (VY)		VGA: 0 - 479, SVGA: 0 - 599	
+40	Reserved		Unused (Reserved)	
+41	Reserved		Unused (Reserved)	
+42	Reserved		Unused (Reserved)	

*1 When using a video window control command, note the following points

IMPORTANT

- The size of the video display cannot be changed while the video is paused and a still image is displayed.
- If an attempt is made to output a snapshot while the video is paused and a still image is displayed, a snapshot of the still screen will be taken.
- While the video is paused to display a still image, after switching the image window display settings from video picture to JPEG display, in order to switch the settings back to video picture, first cancel the still image and then switch the settings.

<Video common control command (Word Address + 0)>

The video common control command (address + 0) is used to control the operations in the VM Unit Window. The following describes the operations that are controlled.

- When the window is displayed, this address area is initialized to the specified value by the video modules.
- The following describes the settings when Transparency is enabled.
 - The color specified for transparency uses the data from the Word Addresses +3 to +5. If the color does not use the data, FFFF(h) is stored in the Word Addresses +3 to +5. Also, when using the mode for transparently displaying a color other than the specified color, only the transparent color 1 (Word Address + 3) is valid.
 - The range for a color specified for transparency is from 0 to 255 and from E1 to E12. When specifying from E1 to E12, set 0x8000 + number. (For example, for E5 set 0x8005.)
 - The transparent color is acquired from the most significant bit and lower eight bits. Other bits are disabled. Also, when specifying E0 and from E13 to E255, the transparent color is disabled.
- While taking a snapshot, processing of parts and video display are stopped.
- If the same file exists on the CF Card, the existing file will be overwritten.
- It takes approximately three to five seconds to take a snapshot (when the image quality is 80).

<Video common control status (Word Address +1)>

The video common control status (address + 1) writes the results of the operation in the Video Window.

- The snapshot status is ON when taking a snapshot of a JPEG file.
 - When an error occurs during a snapshot or JPEG image display, the error code is stored. This error code is stored until the next capture.
- For details on JPEG error codes, refer to “**■ Snapshot**” (page 27-119)

<Image window display control (Word Address +6)>

Specify an image to be displayed in Video Window.

- Select the video picture or JPEG image on the CF card. If you select a video picture, it is displayed on the specified channel by the Video Modules. For JPEG images, specify the JPEG file number for each channel. You can select to zoom out from the JPEG image.
- The Video Module can display a JPEG image up to 1024 x 768. If the JPEG image is larger than this, then the image is reduced to 1024 x 768 or to the display size specified of either 1/4, 1/6, or 1/64. For an SVGA model, a display size up to 800 x 600 can be accommodated and for a VGA model, a display size up to 640 x 480 can be accommodated. If the image size exceeds the screen size, only part of the image that fits on the screen can be displayed.

When JPEG is set as the initial display, it is not possible to switch between video image and JPEG image using the window display image control flag.

- When a JPEG image is being saved, it is not possible to zoom out (reduce).

< Internal Image Window Screens Control Flag (Word Address+11) / Internal Video Control Channel Number (Word Address+12) >

This is the address area for changing the display state of a video picture.

After storing in the internal video channel number in Word Address+12, the control flag is changed to Word Address+11.

- Once the coordinate position update bit is ON, the display changes to real time at the coordinate value until the bit turns OFF. When the show window is ON, the area is 0 and cleared.
- The video picture display is changed to the settings specified in the bits for UP, DOWN, RIGHT, LEFT, and the plus/minus color value.
- When the Color Value Update Bit is ON, it changes the specified values for brightness, contrast and color of the display that are written in the video channel information (Word Address +13 to +36) until the bit turns OFF.
- The bit for the plus/minus color value changes the settings for the parameters that are turned ON among the bits for brightness, contrast, and color tone. (These three parameters can be changed simultaneously.)
- After prohibiting touch-panel input in the Video Window, if the Video Module display is OFF, touch-panel input is enabled.

< Video Channel Information (Word Address +13 to +36) /RGB Display Information (Word Address +37 to +42) >

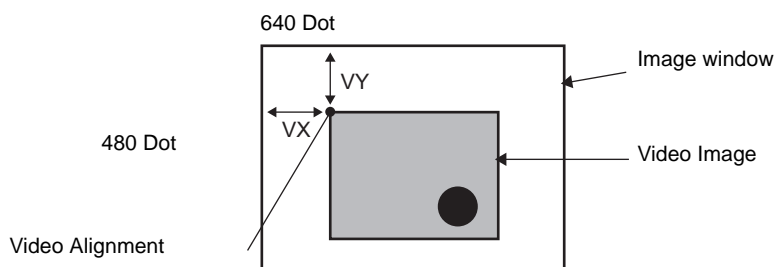
Set the display origin, brightness, contrast and color of each video channel 0 - 3 and RGB display.

- Specify which part of the image is displayed by defining the display origin (VX,VY). Specify the size and coordinates based on the video mode and window size.

In case of Video Input "NTSC", Display Size "Normal"

Specify the Width of Video Image + Display Origin (VX) and Height of Video Image + Display Origin (VY) so as to not exceed the window size.

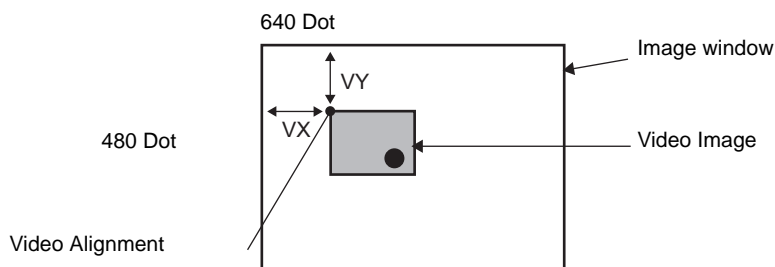
(Width of Video Image + VX<=640, Width of Video Image + VY<=480)



In case of Video Input "NTSC", Display Size "1/4".

Specify the Double Width of Video Image + Display Origin (VX) and Double Height of Video Image + Display Origin (VY) so as to not exceed the window size.

(Width of Video Image \times 2+VX<=640, Width of Video Image \times 2+VY<=480)

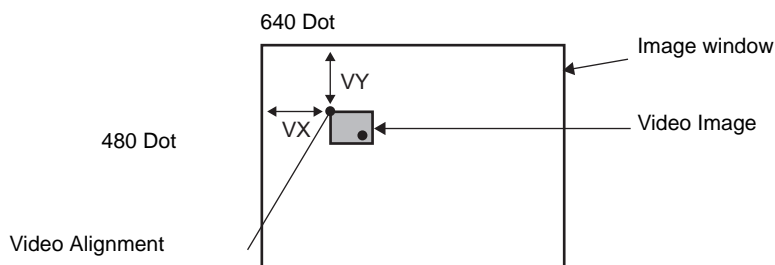


In case of Video Input "NTSC", Display Size "1/16".

Specify the Quadruple Width of Video Image + Display Origin (VX) and Quadruple Width of Video Image + Display Origin (VY) so as to not exceed the window size.

(Width of Video Image \times 4+VX<=640, Width of Video Image \times 4+VY<=480)

(For example, Video Input "NTSC")

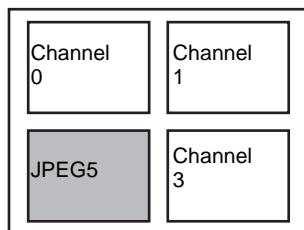


◆ Example use of the Video Control Area

This section gives an example of an operation using the video control area.

< Displaying the JPEG file on the CF Card >

Display the video capture image "CP00005" saved on the CF Card on Channel 2.



1. Write the JPEG file number "5" in [Video Control Start Address]+9 (Image Window2).
2. Write the display size "2" (JPEG 1/4 extension) in the bit 8 -11 of [Video Control Start Address]+6 (Image Window Display Control).

< Changing the display size of the Image Window Screen >

Change the display size of Channel2 from Standard to 1/4.

1. Write "1" (Display Size:1/4 mode) the bit 0 - 1 of [Video Control Start Address]+25 (Video Window Control Command).

< Creating a still image >

Create a still image from an image on Channel 2.

1. Turn ON bit 2 of [Video Control Start Address]+25 (Video Window Control Command of Channel2).

< Changing the Video Display position settings >

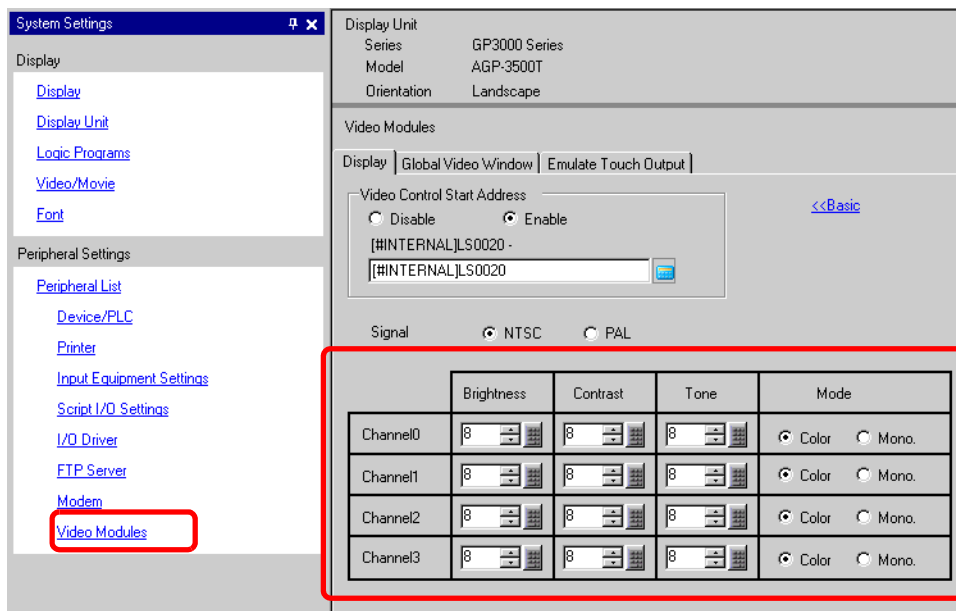
Change the Channel 2 display origin from (0,0) to (100,100).

1. Turn ON bit 0 (Coordinate Position Update) of [Video Control Start Address]+11 (Internal Image Window Screens Control Flag).
2. Write "100" in [Video Control Start Address]+26 (Video Display position settings VX of Channel 2) and +27 (Video Display position settings VY of Channel 2).

< Changing the Transparent Color >

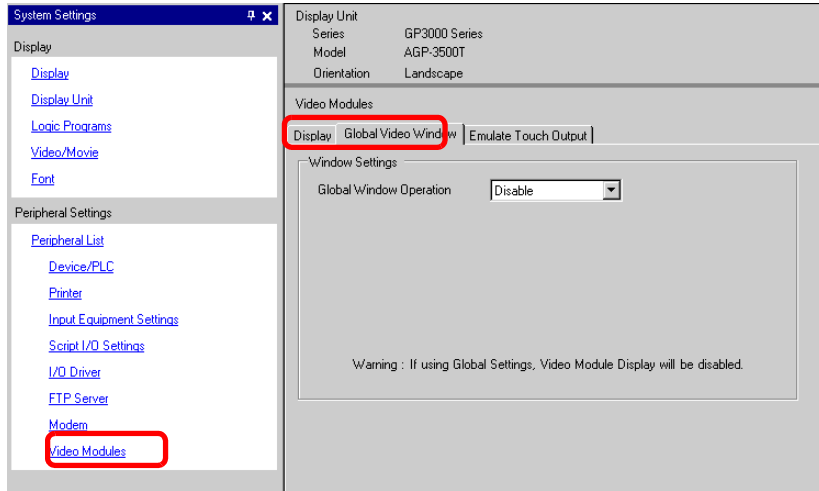
1. Turn ON bit 0 (Transparency) of [Video Control Start Address]+0 (Video Common Control Command).
2. Turn ON bit 1 (Specified Color in Transparency) [Video Control Start Address]+0.
3. Write the color code in [Video Control Start Address]+3 - 5.

■ Display/Detail



Setting	Description
Channels 0 - 3	Set the screen display state for each channel that has been set in Common [Video Modules].
Brightness	Settings range from 0 to 15.
Contrast	Settings range from 0 to 15.
Tone	Settings range from 0 to 15.
Mode	Video input mode from either [Color] or [Mono].

■ Global Video Window



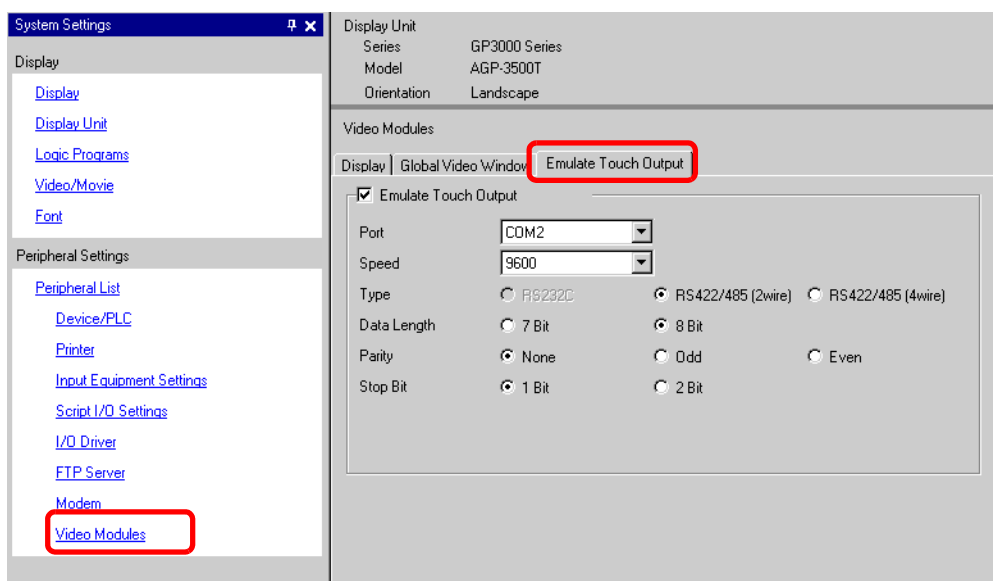
Setting		Description
Global Window Operation	Disable	Does not use Global Video Window.
	Constant	Specify a fixed video module number and display position.
	Control Bit Address	Specify the address for displaying/hiding a window.
	Window Number	Specify the Video Window Number The settings range from 1 to 512.
	Display Position X-Coordinate	Specifies the window display position's X coordinate, from 0 to 1020. The range differs depending on the model of your display unit.
	Display Position Y-Coordinate	Specifies the window display position's Y coordinate, from 0 to 767. The range differs depending on the model of your display unit.
	Window Interchange	Specifies whether to switch from the foreground to the background by touching the windows when the windows overlap. By selecting [Always On Top], the Video Window is always displayed on top regardless of the order in which the windows were displayed.
	Address	By specifying the stored address for the Video Module numbers and Display Position, you can change the display position and window number on the device/PLC.
	Control Word Address	Specifies a window to be displayed or displays/hides the window using the sequence of four Words from the specified address. After storing the display position and the video module number you want to view, turn on bit 0 in the control address to enable the display.
	Data Type	Select the data format for value, [Bin] or [BCD].

■ Emulate Touch Output

This allows you to output touch coordinates to a PC using serial communication. To use the PC mouse cursor to emulate touches on the GP, install on the PC mouse emulation software so the PC can receive touch information sent from the GP.

IMPORTANT

- For the touch output, have the following ready.
 - Mouse emulation software manufactured by Digital Electronics Corporation of Japan. You can download the software from the support site "Otasuke Pro!" (<http://www.pro-face.com/otasuke/>.)
 - RGB cable (commercially available)
 - Serial cable, cross (commercially available)



Setting	Description
Emulate Touch Output	Using RGB inputs, select whether or not to output touch coordinates to external devices over serial communication lines.
Port	Select a port for the touch output from either [COM1] or [COM2]. NOTE <ul style="list-style-type: none"> • When specifying the port Number to be used, mark ("Duplicate Port") is displayed.
Communication Speed	Select a communication speed from [2400], [4800], [9600], [19200], [38400], [57600] or [115200].
Communication Method	Select the communication method from [RS232C], [RS422/485(two wire)], or [RS422/485(4 wire)]
Data Length	Select the data length from either [7] or [8].
Parity	Select the parity bit from [None], [Odd], or [Even].
Stop Bit	Select the stop bit from either [1] or [2].
Flow Control	Select the flow control from [None], [RTS/CTS], or [ER (DTR/CTS)].

◆ **Setup Procedure**

- 1 In the System Settings window's [Video Module] page, select the [Emulate Touch Output] check box, and configure the mouse emulation settings on the PC.
- 2 Select the Common [Video Module] and create the new screen. Double-click the displayed screen and open the Settings dialog box. Select [Channel] and then select [RGB Input Image]. Select the [Touch Output] check box.
- 3 Draw the video module display on the base screen, and set up the window display settings.

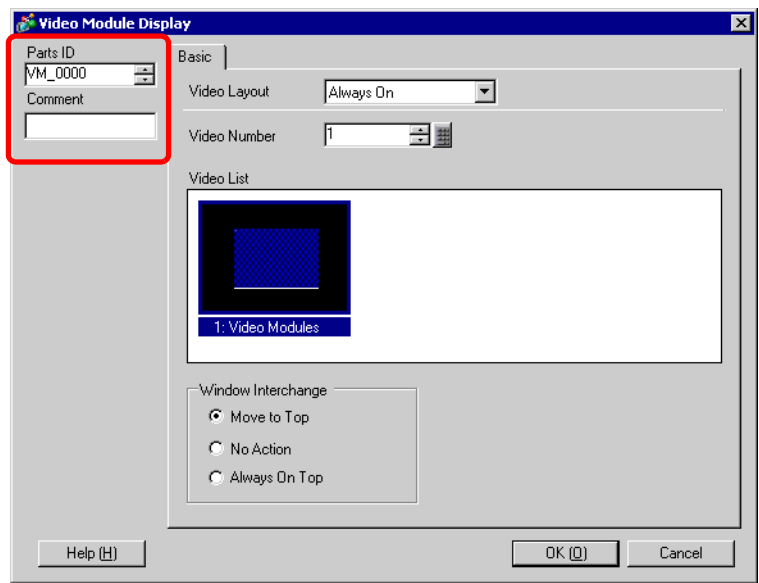
Operation Method

Write "1" to GP internal device address LS9230 to enable touch emulation and output touch information to addresses LS9231 to LS9233.

LS9230	Allowed/Not	0: Not allowed, 1: Allowed
	allowed	
LS9231	Touch State	0: Touch ON 1: Touch OFF
LS9232	X Coordinate	0 - 1023
LS9233	Y Coordinate	0 - 1023

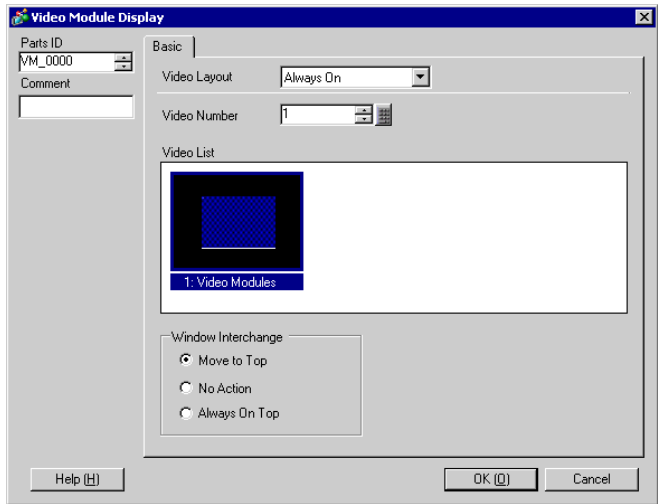
27.9.7 Video Module Display Settings Guide

The Video Module Display is the part for displaying the Video Window on the screen. The Video Module Display shows the details specified in [Video Module Display] according to the position and operation specified in the Common [Video Module].



Setting	Description
Part ID	An ID Number is assigned to the parts placed on the screen. Movie Player Part ID: VM_**** (4 digit number) The alphabetic portion is fixed. You can change the number part within the range of 0000-9999.
Comment	The comment for each Part can be up to 20 characters long.

■ Basic



Setting	Description								
Video Layout	Select the display operation for the Video Window.								
Always	Always displays the Video Window.								
Window On/Off	Displays/hides the window in [Window Display Bit Address].								
Address	<p>Four consecutive words from the defined [Window Display Word Address] control which video module to display, and to show or hide the display. Use the addresses to define the video module number, the display coordinates, and show the window (by turning on bit 0 in the control address.)</p> <table><tr><td>+0</td><td>Control</td></tr><tr><td>+1</td><td>Window Number</td></tr><tr><td>+2</td><td>Display coordinate (X)</td></tr><tr><td>+3</td><td>Display coordinate (Y)</td></tr></table>	+0	Control	+1	Window Number	+2	Display coordinate (X)	+3	Display coordinate (Y)
+0	Control								
+1	Window Number								
+2	Display coordinate (X)								
+3	Display coordinate (Y)								
Video Number	Specifies the number of the video module to display (0 to 512) when the [Window Type] is set to [Always On] or [ON/OFF Display].								
Window Display Bit Address	When the [Window Type] is set to [Always ON] or [ON/OFF Display], you can specify the video module using thumbnails, or specify the video window from a list.								
Video List	When the [Window Type] is set to [Always ON] or [ON/OFF Display], you can specify the video module using thumbnails, or specify the video window from a list.								
Window Interchange	Selects the window display action: [Move to Top], [No Action], or [Always On Top]. Available when [Window Type] is set to [Always On] or [ON/OFF Display].								
Window display word address	When you select [Indirect] under [Video Layout], you can specify the displaying video modules number, display position and control address for display/erase.								
Data Type	When you select [Indirect] under [Video Layout], you can specify the data type of value stored in [Window display word address] from [Bin] or [BCD].								

27.10 Restrictions

■ Differences Between Movie Function and Video Module Function

Detail	Movie play function	VM unit function
Camera for displaying objects	1-ch camera input with AGP-3*50T Movie file on the CF/FTP server	4-ch camera input on VM Unit RGB input on the VM Unit
Setup part	Movie Player	Video Module Display
Number of simultaneous camera displays	Displays only one image.	The display area can be divided into four areas and the number of images to be displayed can be selected.
Movie recording function	Enable	Disable
Snapshot function for JPEG	Disable	Enable
Camera input signal format	NTSC/PAL/SECAM	NTSC/PAL

27.10.1 Restrictions on Movie Function

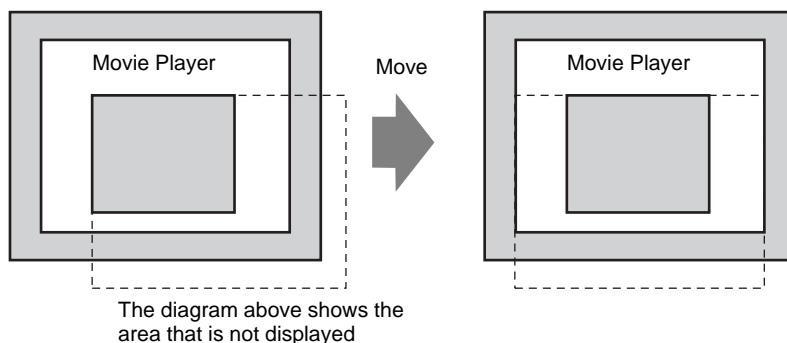
■ Movie Player

- Only one Movie Player can be placed on one Base Screen or Window Screen.
- The width (X coordinate) of the Movie Player can be specified in multiples of four pixels.
- If the size of the Movie Player is smaller than the video input image, part of the area that does not fit the screen will not be displayed. To view the entire image, move the image using the move switch.

For example, GP-3550T (640 x 480)

The video signal is [NTSC] (640 x 480)

[Size] of Movie Player is [Normal]



- The following table lists the video signal settings, operable cameras, and movie files.

Video Signal Setting	Video Signal	Movie Player File	Movie Record File
NTSC	NTSC	NTSC	NTSC
PAL	PAL	PAL	PAL
SECAM	SECAM	PAL	PAL

- When returning online after moving to offline mode or transfer mode while a video is being displayed or played, all functions stop. (The picture will not be displayed.) Touch the video display switch or the play switch to display the video.

■ Video Display

- There will be no sound when displaying real-time video. Video that has been recorded in a movie file will play with sound.
- The video display function can be used simultaneously with the movie recording function for recording on a CF Card or FTP server, but the video display function cannot be used simultaneously with the play function.

■ Recording

- You cannot save another file until one file is saved successfully. You can save the file onto a CF card and FTP server simultaneously.
- It is not possible to play a movie while it is being recorded.
- When the operation of the event recorder function is specified as [Always], the play function cannot be used.
- Record to CF and Record to FTP can be operated simultaneously while using the event recorder function. However, the writing speed slows and saving will take longer to complete.
- The folder or file name in which a movie is recorded cannot be changed during recording.
- If an error occurs during recording, turn ON bit 1 (resume bit) of the specified [Control Address]. The error will be corrected, and bit 1 (save enable bit) of the status address will turn ON. Directly turning ON the save enable bit will not correct the error.
- When starting to save a movie on the CF Card, the number of files in the Save To folder is confirmed. If the predefined number of files have already been saved, an error will occur. However, if [Loop] is set to [Auto], an error does not occur. The oldest file is deleted and a new file is saved.
- If the destination folder contains files with any of the following characteristics, you cannot save to the CF card.
 - A file with a name in which the number of characters do not match the specified number.
 - A file with a name in which the first two characters (the user specifiable string) do not match the specified characters.
 - A file with an extension other than ".SDX"
- Do not place a file that was arbitrarily created under the "MOVIE" folder on the CF Card. An error may occur during saving to the CF Card, or the file may be deleted.
- Do not operate a screen configured with a CF Card if the CF Card is not inserted in the GP. The screen will not operate properly.

- The number of times that data can be written on a CF Card is limited. (Approximately 100,000 times for rewriting 500 KB.)
- Up to 32 FTP servers can be registered.
- The number of movie files to be saved on a FTP server differs depending on the specifications of the FTP server.
- If an error is returned from a FTP server, the saving operation will stop.
- The server connection number cannot be changed while a movie is being saved on the FTP server.
- When switching to offline mode or transfer mode during recording, the save function stops and the pictures that have been recorded at that time are saved.

■ Playing a Movie

- You cannot record video while playing a movie.
- When [Play List] is specified as [CF] or [FTP] in Movie Player, Movie Player will not operate if the movie playlist file does not exist. If the playlist file was deleted, use Special Data Display [File Manager] to play the movie.
- Only SDX format movie files can be played.
- While you are playing a video file saved on the FTP server, functions such as pause, fast forward, rewind, slow motion play, or frame-by-frame forward/reverse play cannot be used to change the playback speed.
- You can change file names but that will not affect the play order. Movie files are played in the order in which they were created on the CF card or FTP server.
- While a logic program is running, the video recording or movie may stop. When using video recording or movie playing together with logic, input logic wait (LWA) instructions in the logic program.

■ CF Card Usage Warnings

- When ejecting a CF Card, make sure that the CF Card access LED lamp turns OFF. Otherwise, the data on the CF Card may be damaged.
- When accessing a CF Card, be sure not to power OFF or reset the GP, or eject the CF Card. Create an application screen on which the CF Card cannot be accessed, and on that application screen, you may power OFF or reset the GP, open and close the CF Card cover, and eject the CF Card.
- When inserting a CF Card, check the front and back sides and the connector position of the card. If the CF Card is inserted the wrong way, the data, the CF Card, or the GP may be damaged.
- Use a CF Card manufactured by Digital Electronics Corporation. If a CF Card manufactured by another company is used, the contents of the CF Card may be damaged.
- Please make sure to back up all CF Card data.
- Please refrain from doing the following, as it can result in damage to data and equipment:
 - Bending the CF Card
 - Dropping the CF Card
 - Spilling water on the card
 - Touching the CF Card's connectors directly
 - Disassembling or modifying the CF Card

27.10.2 Restrictions on Video Module Functions

- For AGP-3500T and AGP-3550T, Extended Unit and Video Module of SGMU features are mutually exclusive. Install one or the other only.
- When the Video Module is installed, the GP display colors are reduced to 32K colors.
- The Video Module display cannot be placed on a window.
- Multiple Video Module displays can be placed on a Base Screen. However, only one Video Module display can be displayed on the GP screen.
- The Video Module can display a JPEG image up to 1024 x 768. If the JPEG image is larger than this, then the image is reduced to 1024 x 768 or to the display size specified of either 1/4, 1/6, or 1/64. For an SVGA model, a display size up to 800 x 600 can be accommodated and for a VGA model, a display size up to 640 x 480 can be accommodated. If the image size exceeds the screen size, only part of the image that fits on the screen can be displayed.

■ Saving JPEG

- Only one channel of Video Signal can be used for saving JPEG.
- It is not possible to take a snapshot of the RGB input screen.
- While taking a snapshot, processing of parts and video display are stopped.
- It takes approximately three to five seconds to take a snapshot.
<When acquiring display data>
After the data acquisition processing is complete, the screen is turned OFF. A file will not be created on the CF Card.
<When saving to a CF Card>
After saving is complete, the screen is turned OFF. A file is created on the CF Card.