# Panasonic

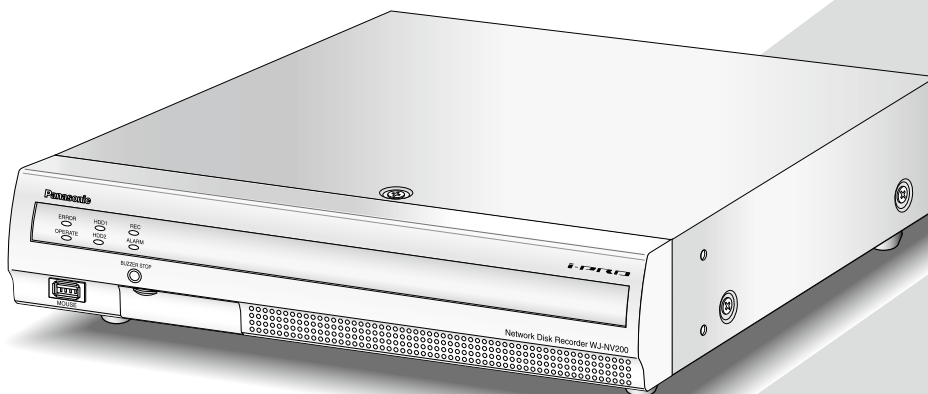## Operating Instructions

## Network Disk Recorder

Model No. WJ-NV200K

## WJ-NV200K/G

SDHC™    HDMI®
HIGH-DEFINITION MULTIMEDIA INTERFACE

Before attempting to connect or operate this product,
please read these instructions carefully and save this manual for future use.

The model number is abbreviated in some descriptions in this manual.

# CONTENTS

# Preface

The network disk recorders WJ-NV200K and WJ-NV200K/G (hereinafter, recorders) are designed for use within a surveillance system, and record images/audio from up to 16 network cameras (hereinafter, cameras) on the hard disk drives. Up to 16 cameras can be registered.
This recorder supports HDMI (High-Definition Multimedia Interface) standard which allows displaying playback/live images with superior quality when connecting to a high-definition monitor using an HDMI cable (option). It is possible to operate cameras from this recorder to display images from multiple cameras or switch cameras from which images are to be displayed, etc.
The recorders described in this installation guide are the models that are compatible as of July, 2010. Contact your dealer for further information.
* No hard disk drive is supplied with this recorder. For purchasing the hard disk drive, contact your dealer.

## About the user manuals

There are 3 sets of operating instructions for the WJ-NV200K, WJ-NV200K/G as follows.

| | |
|---|---|
| Installation Guide: | Contains descriptions of how to install/connect this product and how to configure the required settings. |
| Operating Instructions (PDF) (this document): | Contains descriptions of how to operate this product. (Both operations using the interface on the product and using a PC via a network are provided) |
| Quick Reference Guide: | Contains descriptions of how to operate functions frequently used. |

Adobe® Reader® is required to read the PDF files on the provided CD-ROM. When Adobe® Reader® is not installed on the PC, download the latest Adobe® Reader® from the Adobe web site and install it.
Depending on descriptions, the model name of this recorder may be omitted as "NV200" in the manuals and on the setup.
The screens used in these operating instructions show the case in which WJ-NV200K is used and 16 cameras are connected.
Refer to "readme.txt" on the provided CD-ROM for further information about the optional dedicated software that receives and displays the event and error information, compatible cameras and their versions.

## System requirements for a PC

It is recommended to operate this product using a PC that meets the following system requirements.

| | |
|---|---|
| OS and web browser: | Windows® Internet Explorer® 8.0*1 (Microsoft® Windows® 7 Professional (32-bit)*2 Windows® Internet Explorer® 7.0 (Microsoft® Windows Vista® Business SP1 (32-bit)) |
| CPU: | Intel® Core™ 2 Duo 2.66 GHz or faster |
| Memory: | 1 GB or more |
| Monitor: | 1 024 x 768 pixels or more, 24-bit True color or better |
| Network interface: | 10BASE-T/100BASE-TX/1000BASE-T 1 port |
| Audio: | Sound card (When using the audio function) |
| Others: | CD-ROM drive: It is necessary to refer to the operating instructions on the provided CD-ROM. DirectX® 9.0c or later Adobe® Reader®: It is necessary to refer to the operating instructions on the provided CD-ROM. |

*1 Windows® Internet Explorer® 8.0 (64-bit) is unavailable.
*2 Windows® XP compatibility mode is unavailable.

**Important:**
- If using a PC that does not meet the above system requirements, it may cause problems such as slow imaging or the browser becomes inoperable.
- Audio will not be heard when a sound card is not installed on a PC.

**Note:**
- Refer to "Notes on Windows Vista® / Windows® 7" (PDF) for further information about system requirements for a PC and precautions when using Microsoft® Windows® 7 or Microsoft® Windows Vista®.

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# Abbreviations

The following abbreviations are used in this manual.
Microsoft® Windows® 7 Professional (32-bit) is described as Windows 7.
Microsoft® Windows Vista® Business SP1 (32-bit) is described as Windows Vista.
Windows® Internet Explorer® 8.0 and Windows® Internet Explorer® 7.0 are described as Internet Explorer.
SDHC/SD memory card is described as SD card or SD memory card.
Network cameras are described as cameras.

# Restrictions when using this product

When using this product, some functions have the following restrictions. Before using this product, keep the following in mind.

## When displaying live images from the camera

- Black screen may be displayed for the first several seconds (*) when the following operations are performed while displaying live images.
  - When live images are displayed (by switching camera, etc.)
  - When image is zoomed in or out

## When playing recorded images

- First several seconds (*) may be skipped when the following operations are performed while playing recorded images.
  - When cameras are switched
  - When image is zoomed in or out (When operating to zoom in/out a paused recorded image, image of several seconds later than the displayed image may be zoomed in.)
  - When the [PLAY] button is clicked again while playing images
  - When the first frame is displayed by starting the frame by frame playback during pausing
- Playback may be performed in several seconds intervals (*) when the following operations are performed. Refer to the "Functions during playback" section on pages 26 and 67 for how to control playback.
  - Reverse playback
  - Fast playback/Fast reverse playback
  - Reverse frame playback
- When playing images by designating time and date, playback may start from a point several seconds (*) before/after the specified time or from the first frame of the next record.
- When searching for the latest recorded image data, playback may not start exactly from the latest image but 10 seconds earlier.

## When recording images

- The actual time of recording trigger (event occurrence time, start time of the schedule recording, etc.) and the recording start time (time displayed on the recording event list) may not exactly be the same.
- When pre-event recording is set to be performed, pre-event recording duration may be longer than the set duration.

## When copying images

Copying of recorded images may start from a point several seconds (*) before the designated start time when copying recorded images.

## When downloading recorded images

Downloading of recorded images may start from a point several seconds (*) earlier than the designated start time.

\* Time (seconds) differs depending on the frame rate for recording.

# Before using this product

## Face matching function

Face recognition refers to a function that uses a connected camera supporting this function to detect facial features of people and matches them against similar facial features recorded earlier or contained in live images. The matching accuracy varies depending on installation, settings and adjustment of the camera, ambient environment and object. Matching of facial features may therefore not work under the following conditions:
  • When illumination is not uniform, for example, outdoors
  • When the face is partially concealed (mask, sunglasses, helmet, etc.)
  • When the face is not facing the camera
  • When a subject is moving very fast
  • Under the influence of strong external light (such as the headlights of a car, rising sunlight or setting sunlight)
  * Configure the settings of the camera supporting this function before attempting to use the face matching function.

## Motion detection (VMD) function

The motion detection (VMD) function of cameras detects motions referring to changes of luminance (brightness) in areas set in advance.
The motion detection function will not effectively work in the following situations or may sometimes be malfunctioning.
  • When there is a very little difference in luminance (brightness) between a background and a subject
  • When brightness of images is low such as at night
  • When a subject moves very slow
  • When a subject is very small
  • When the amount of rays of light incidence changes frequently such as at a window or outdoors.
  • When light such as sunlight or car headlight comes from outside
  • When a fluorescent lamp flickers
  • When a subject has depth
When configuring the motion detection settings, check the function performance both in daytime and at night after appropriately configuring the area settings and the sensitivity settings according to the camera installation conditions and possible movement of subjects. When the detection function does not work or false detection occurs, use a sensor separately. Refer to the operating instructions of the camera for further information.

## Time display of recorded images

When displaying recorded images, the displayed time and date may sometimes skips. This is not malfunction. The displayed time and date on the monitor and the recorder may sometimes not be exactly the same. This is also not malfunction.

# Black screen displayed when playing recorded images

In the following cases, a black screen may be displayed during playing recorded images. However, this is not malfunction.
- When changing cameras or screen patterns during playback or pausing
- When skipping/reverse skipping during playback
- When fast forwarding/reverse fast forwarding during playback
- When the [Go to last] button is cliked during playback on a multiscreen
- When going to the next recording event list by fast forwarding/reverse fast forwarding or skipping/reverse skipping during playback
- When playback operation is affected by another operation (such as when receiving multiple alarms sequentially or when copying is being performed simultaneously)

# Recording operation (recording mode)

It is possible to connect up to 16 cameras to the recorder and record images from them on the hard disk drives. The following recording operations are available.

Schedule recording:      Recording that is automatically performed at the designated time range on the designated day(s) of the week

Event recording:      Recording that is automatically performed when an event occurs (such as terminal alarm/camera site alarm, etc.)

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**Important:**
- Recording may not be performed for around 3 seconds in the following cases. However, this is not a malfunction.
- When the settings are changed and the setup menu is closed during recording
- When the resolution, image quality or the recording rate is changed during recording
- When event recording starts or ends during recording

---

# Event type

The following event recording types are displayed in list form on the web browser:
SCH:    Schedule recording

The following are detailed event recording types.
COM:    Displayed when a command alarm occurred
TRM:    Displayed when a terminal alarm occurred
SITE:    Displayed when a camera site alarm occurred
FACE    Displayed when a face matching alarm occurred
PRE:    Pre-event recording

# Use an SD memory card

## Insert an SD memory card (option)

**Step 1**

Open the SDHC/SD memory card slot cover.

Pull the tab down.

SDHC/SD memory card slot cover
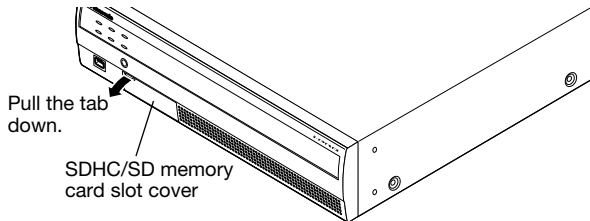
**Step 2**

Insert a SD memory card to the slot until it clicks. Hearing a click means that the card is properly inserted.
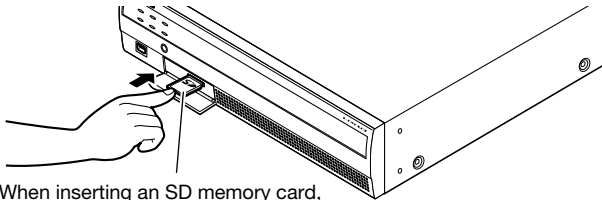
When inserting an SD memory card, confirm that the label on the SD memory card is upside and only the upper right corner of the card has different shape.

**Step 3**

Close the SDHC/SD memory card slot cover.

**Note:**
• When removing the SD memory card from the slot, push the card until it clicks and pull it up straight.

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# Operation window

The recorder can be operated using the provided mouse connected to the mouse connection port on the front side of the recorder. When operating the recorder using a web browser, refer to "Configure the network settings" (☞ page 52)

## Ctrl (control) screen display

The control screen is the default screen at startup. The main operations of the recorder are performed from this screen.
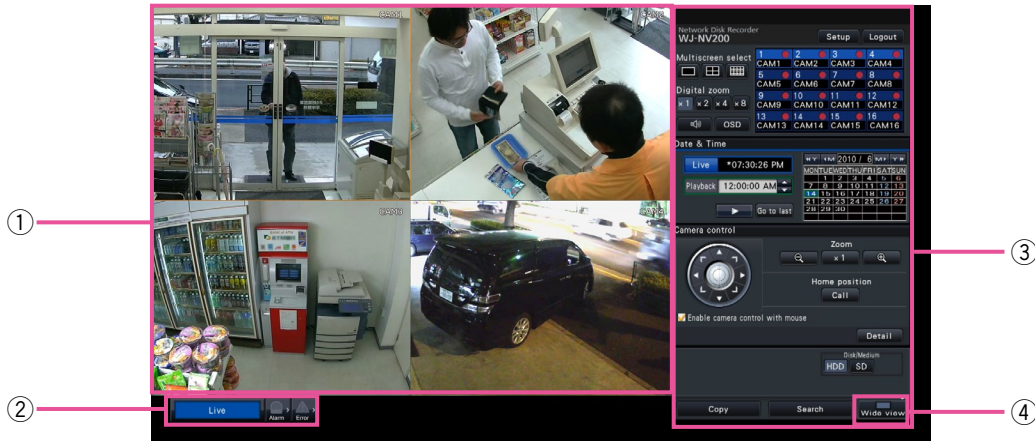


① **Image display area**
Displays images from the camera. (☞ Page 18)

② **Status display panel**
Displays the statuses of the recorder. Also displays alarm/error status and remedies.
(☞ Page 13)

③ **Operation panel**
Used to switch between screens, to play back recordings, operate the camera and so on.
Displays the current date and time. While summer time is activated, the time will be displayed with an asterisk (*).

④ **[Wide view] button**
Switches the main monitor to wide view display.

## Wide view display

This view offers a large image display area, especially suited for monitoring live images. However, operations are restricted (no playback of recorded images).



① **Image display area**
Displays images from the camera. (☞ Page 18)

② **Status display panel**
Displays the statuses of the recorder. Also displays alarm/error status and remedies.
(☞ Page 16)
When clicking alarm button or error button, this panel may be displayed overlapped on the operation panel.

③ **Operation panel**
Switches between screens and screen patterns. Displays the current date and time. While summer time is activated, the time will be displayed with an asterisk (*).

④ **[Ctrl screen] button**
Switches the main monitor to control screen display.

## Image display area

Displays live images and playback images on the control screen. Only live images can be displayed on the wide view screen.



Camera selection frame    Time & date    Camera title
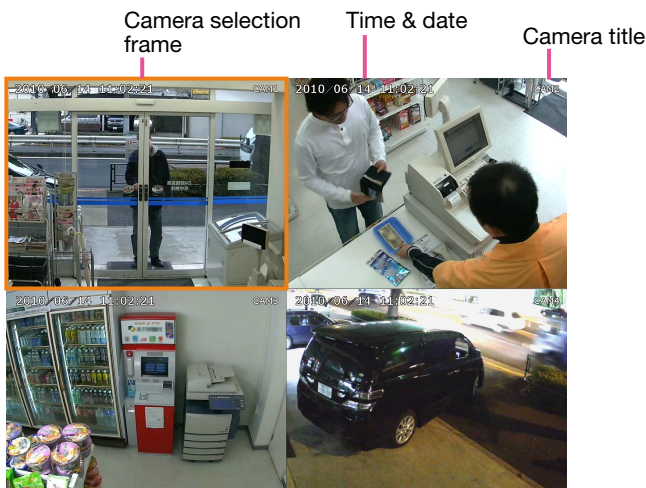
**Camera title/time & date**
The set camera title will be displayed. The display position can be selected from upper-left ("L-Upper"), lower-left ("L-Lower"), upper-right ("R-Upper") and lower-right ("R-Lower"). The default display position is "R-Upper". (Default: Upper right). Time and date will be displayed as set on the camera.

**Camera selection frame**
Displays the camera being operated. When using 1-screen/4-screen display (☞ pages 19 and 20), the cameras can be operated with the mouse.

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**Image display area**

The number of images that can be displayed on the multiscreen differs for the control screen and the wide view screen. Playback of images on a 16-screen is not possible while working with the control screen.

The default screen on startup (default screen) can be set for each login user in the image display area.
The following screen patterns can be selected. Refer to the Installation Guide for further information about the settings of the default screen.
Camera 1 to 16: Each camera displayed on a 1-screen
4Screen-A:       Camera 1 to 4 displayed on a 4-screen
4Screen-B:       Camera 5 to 8 displayed on a 4-screen
4Screen-C:       Camera 9 to 12 displayed on a 4-screen
4Screen-D:       Camera 13 to 16 displayed on a 4-screen
16Screen:        Camera 1 to 16 displayed on a 16-screen

**Note:**
• If "16Screen" has been selected as default screen, the 4-screen displaying Camera 1 to Camera 4 automatically becomes the default screen of the web browser on the PC.

## Status display panel

### Normal operation



### In case of alarm/error



① **Status display area**

Recorder status indications and their details are shown in the table below. In the event that the recorder enters several statuses at the same time, these are displayed in their order of priority. If both statuses have the same priority, the one that occurred last will be displayed.

| Status | Description | Example | Priority |
|---|---|---|---|
| Live | Live images are being displayed. | Live | 5 (Low) |
| Playback | Recorded images are being displayed. | Playback | 5 |
| Copying | Data is being copied. Copying progress is displayed in %. | Copying : 20% | 4 |
| Formatting SD | SD memory card is being formatted. | Formatting SD | 4 |
| Formatting HDD | HDD is being automatically formatted. | Formatting HDD | 3 |
| In the alarm state | Indicates an alarm occurrence. Detailed information of the alarm will be displayed. | Face matching :Cam.1 | 2 |
| In the error state | Indicates that an error has occurred. A detailed description of the error content will be displayed. | HDD Removed :HDD1 | 1 (High) |

② **Alarm button** 

Indicate that an alarm has occurred. Turn red in the alarm state. Clicking the buttons will toggle between displaying/not displaying buttons such as the alarm log button and the alarm reset button.

**<Face matching function>**

If the face matching function has been configured for use, the following display functions and operations are available:

Face matching stopped and Face matching alarm off

Face matching stopped and Face matching in alarm state

Face matching in operation and Face matching alarm off

Face matching in operation and Face matching in alarm state

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③ **Error button** 🔺 ⚠
Indicates that an alarm has occurred. Turn yellow in the error state. Clicking the buttons will toggle between displaying/not displaying buttons such as the error log button and the error reset button.

④ **Alarm log display button**
The alarm log display button is displayed on the operation panel of the control screen.

⑤ **Alarm reset button**
Cancels the alarm action. Clickable only in the alarm state.

⑥ **Error log button**
The alarm log display button is displayed on the operation panel of the control screen.

⑦ **Error reset button**
Cancels the error action. Clickable only in the error state.

⑧ **Face matching start/stop button**
Start/stop face matching actions manually. Face matching will resume when this button is clicked during pause. Face matching will stop when this button is clicked during face matching actions.

⑨ **Face display (Thumbnail) button**
The latest face matching results are displayed on the operation panel of the control screen. (☞ Page 43)

# Live monitor (monitor for display of live images only)

**Important:**
• Configuration and operation of the recorder from the live monitor is not possible.

Live images from a camera set up in advance can be displayed on a 1-screen on the live monitor. When several cameras are selected, camera images will be switched sequentially at the selected switching interval (sequence display ☞ Installation Guide).

**Note:**
• Multiscreen display is not possible.
• The camera title and time & date are not displayed on the live screen.
• The time & date and camera also appear on the camera image displayed on the live monitor, but some characters may be cut off.
• To display images, it is necessary to select the cameras to be displayed in the setup menu in advance. The recorder is not configured to display camera images by default.
• Depending on the selected switching interval, a black screen may appear before camera images are displayed.
• When the secret view function is selected, the image selected for the main monitor will not be displayed.
• The image of a camera where an error has occurred will not be displayed.

# Basic operation
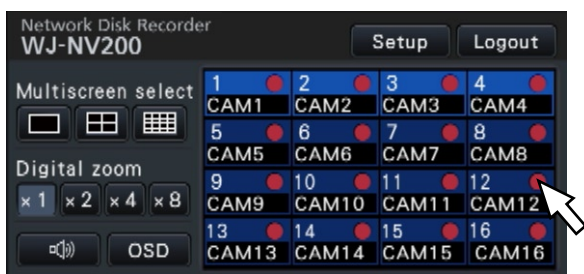


To operate, use the mouse connected to the recorder to move the mouse cursor displayed on the main monitor and left-click the buttons or tabs displayed on the screen. (Hereinafter, "Left-click..." will be described as "Click..." in this document.)

In lines where the [▲]/[▼] buttons are displayed, the value on which the cursor is placed can be changed by turning the mouse wheel. For example, when setting time and date, the hours, minutes and seconds can be changed.

The shape of the mouse cursor will change as follows depending on the display screen and mouse operation.
   ▸ : Normal operation
   ▸ : When dragging a camera number panel (wide view screen)

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**Note:**
• When no operation is made for 10 seconds or more, the mouse cursor will be hidden. The mouse cursor will be displayed again when the mouse is moved.
• It is impossible to connect a mouse to the mouse connection port if the connector from the mouse is upside down. When it is hard to connect, check the upside down position of the connector from the mouse.

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## About the operation of on-screen keyboard

Setting items can be entered using the on-screen keyboard. When clicking the [⌨] icon beside the entry field, the on-screen keyboard will be displayed, and it will become possible to enter characters by clicking the character keys on the keyboard.

Entry field



Language selection pull-down menu
Click the [▼] button to select the language for character entry.
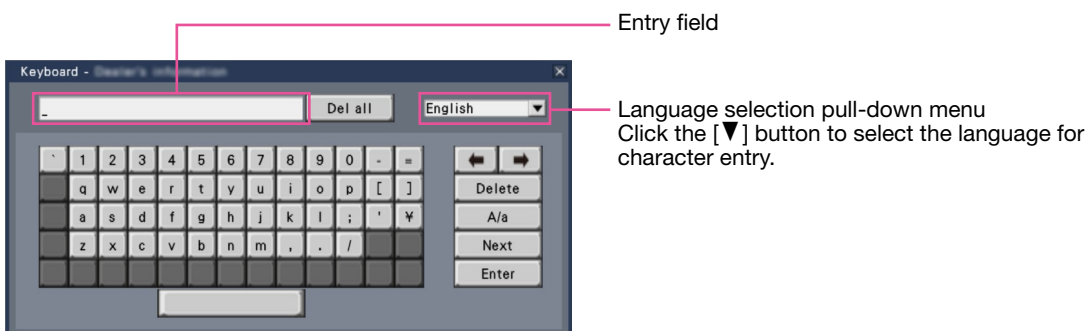
**[Del all] button**
Deletes all the characters in the entry field.

**[←]/[→] button**
Move the cursor in the entry field to either direction.

**[Delete] button**
Deletes a character pointed by the cursor in the entry field.

**[A/a] button**
This button changes the characters to be entered between capital letters and small letters.

**[Next] button**
Changes the keys to be displayed for character entry. The displayed keys are changed as follows: Keys for the language selected by the language selection pull-down menu

down menu → Combination characters → Special characters

**[Enter] button**
Determines the entered characters and closes the on-screen keyboard.

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**Note:**
- Basic operations are also applied to the "Login" window and registration window for license.
- Click the [×] button to close the window without determining the entered characters.
- Depending on the windows for character entry such as the camera title, capital letters may be displayed on the on-screen keyboard instead of small letters.

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# Display the setup menu

Click the [Setup] button.
→ The setup menu will be displayed. For certain user levels, the login window will be displayed.
   Refer to the Installation Guide for further information about the settings.

---

**Note:**
- If changes are made to the setup and the setup menu is closed while recording is underway, recording will be interrupted for approx. 3 seconds.
- When changes are made to the setup, all users logged into the recorder will be forcibly logged out.

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# Logout

Click the [Logout] button. To log out, click the [OK] button in the confirmation window displayed.

# Login operation at startup

When "Off" is selected for "Auto login", the recorder will start up in the logged out state after completing the system check.
When the operation window is displayed on the main monitor, enter a user name and password as follows:

### Step 1

Click the [Login] button on the operation screen.
→ The "Login" window will be displayed.

### Step 2

Enter a user name and password. For character input, refer to "Input from the on-screen keyboard" ☞ page 15.



- Refer to the Installation Guide for how to register users.

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**Note:**
- When "On" is selected for "Quick login", the user name can be selected from the pull-down menu. The password entered will be displayed as "*" marks.
- When a user tries to operate a function for which he/she is not authorized when logging out, the login window will be displayed.

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### Step 3

Click the [OK] button.
→ When the entered user name and password are correct, the login window will disappear and the login button will change to the logout button. When the entered user name and password are incorrect, the error window will be displayed. Close the error window and log in again.

---

**Note:**
- The default administrator name and password are as follows.
  Administrator name: ADMIN
  Password: 12345
- To enhance the security, change the default administrator name and password before running the recorder. Change the password periodically. Refer to the Installation Guide for how to change the password.
- To log out, click the [Logout] button on the operation screen.
- Logging out during copying
  When logging out from the recorder: The copying operation continues
  When logging out from the web browser: The copying operation is stopped.
- Displaying images in the logged-out state
  After startup with "Auto login" set to "Off", the "4Screen-A" will be displayed.
  When logging out during the login process, the same screen as right before logout will be displayed.
  (Which camera images the user is authorized to display depends on the user level set up.)

---

# Monitor live images

When the recorder started up, live images from cameras will be displayed according to the configured settings. Live images from cameras are displayed via the recorder.

Network cameras

Image data

Main monitor

Recorder

Monitor for live screen
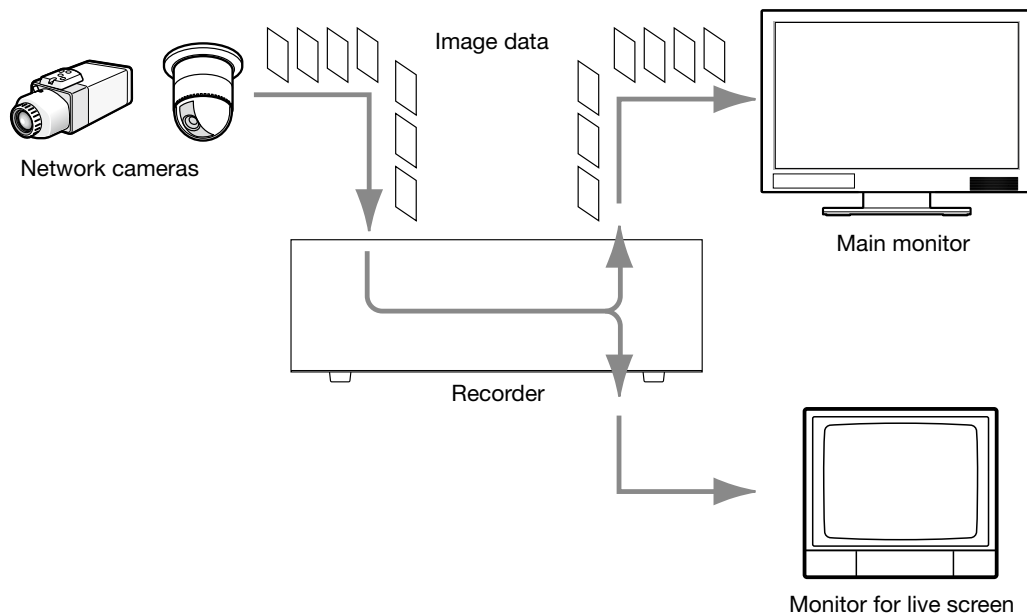
It is possible to display live images on a 1-screen or on a multiscreen. Depending on the configuration of the live screen monitor, cameras can be switched automatically and the respective camera image can be displayed on a 1-screen. (☞ Installation Guide)
The audio will be output when images from the camera to which the audio is assigned are displayed on a 1-screen or a multiscreen on the main monitor. (☞ Installation Guide)

## Operation panel

Operations with live images differ depending on whether they are performed on the control screen or on the wide view screen.

### Control screen / Operation panel
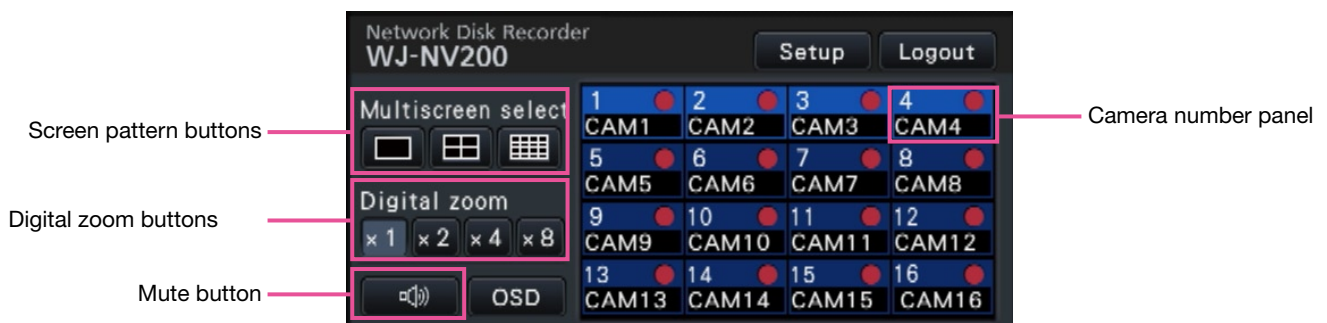
Screen pattern buttons

Digital zoom buttons

Mute button

Camera number panel

**Camera number panel**

The camera number panel shows all camera-related information, such as registration status, camera title and recording status.

Camera number:
(Character color)
White: Camera is registered.
Gray: Camera is not registered.
(Background color)
Light blue: Image display area is displaying images
Gray: Recording not possible or camera not registered

Camera title: Shows the first 8 characters of the previously input camera title.
(Character color)
Same as camera number
(Background color)
Red: In the alarm state
Gray: Camera is not registered.

Recording indicator: Lights red when recording is being performed. Display of [ ] indicates a connection error.

**Screen pattern buttons**

The 1-screen/4-screen/16-screen buttons are displayed.

**Digital zoom button**

When displaying images on a 1-screen or 4-screen, the images can be enlarged/reduced (☞ page 23).

**Mute button**

Each click of this button toggles between mute and mute cancel of the camera audio.

# 1-screen display (control screen only)

To display live images on a 1-screen, take the following procedures.

## Displaying images on a 1-screen

**Step 1**

Click the camera number panel of the desired image from the camera.
→ The background color of the selected camera number will turn aqua blue, and live images will be displayed.

## Displaying images on a multiscreen

**Step 1**

Click the 1-screen button for the screen pattern.
→ The image display area will be displayed on a 1-screen.

**Step 2**

→ The background color of the selected camera number will turn aqua blue, and live images will be displayed.

**Note:**
- Another way to display images on a 1-screen is to double-click the camera number panel of the camera to be selected in the image display area.
- Double-clicking the camera number panel while displaying images is also possible to display an image on a 1-screen.
- In the multiscreen display area, double-clicking the camera selection frame is also possible to display an image on a 1-screen.
- The audio of the camera whose images are being displayed will be output.
- Depending on the image size displayed, the audio may be delayed.
- Each click of the mute button toggles between mute and mute cancel.

## Display images from cameras on a multiscreen (control screen)

Live images from cameras can be displayed on a multiscreen (4-screen, 16-screen).

**Step 1**

Click the 4-screen or 16-screen button.
- 4-Screen button
  Each click of a button switches to the next 4 screens in the sequence: camera 1 to 4 → camera 5 to 8 → camera 9 to 12 → camera 13 to 16.
- 16-Screen button
  The images of camera 1 to 16 will be displayed.

→ Live images from cameras will be displayed on a multiscreen.

**Note:**
- After having switched from multiscreen to 1-screen display, double-clicking the image display area will display the multiscreen displayed before switching screens.
- It is also possible to switch the images displayed on the 4-screen by clicking the camera number panel with the 4-screen displayed. (When the panel of camera 5 is clicked with the 1- to 4-screen displayed, the images of camera 5 to 8 will be displayed)
- The audio of the selected camera will be output.
- Audio output may be delayed depending on the size of the displayed image.

# Display camera images on a full screen (wide view)

Camera images will be displayed in wide view on a multiscreen (3-screen/6-screen/9-screen/16-screen).

### Step 1

Click the [Wide view] button (☞ page 10) on the operation window.

→ Images from the camera will be displayed on a full screen. The 3-screen is displayed by default.

### Step 2

To return from the full screen to the control screen, click the [Ctrl screen] button.

→ The display reverts to the control screen. The image display area corresponds to the default screen set up by the login user.

**Note:**
• Clicking the [Wide view] button again will switch to the multiscreen displayed before.

## Wide view operation panel
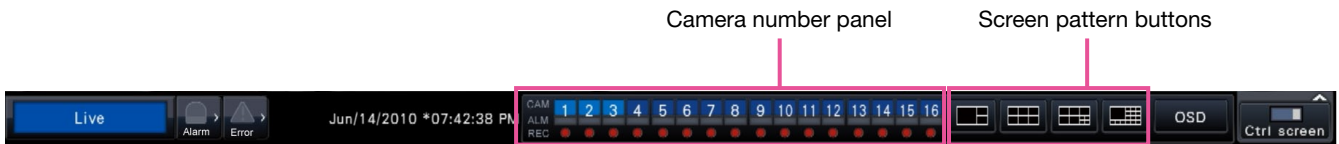
Camera number panel          Screen pattern buttons



**Camera number panel**
The camera number panel shows all camera-related information, such as registration status, alarm status and recording status.
Camera number [CAM]:
  (Character color)
    White: Camera is registered.
    Gray: Camera is not registered.
  (Background color)
    Light blue: Image display area is displaying images
    Gray: Recording not possible or camera not registered
Alarm display [ALM]: The background turns red in the alarm state.
Recording indicator [REC]: Lights red when recording is being performed.

**Screen pattern buttons**
The 3-screen, 6-screen, 9-screen and 16-screen buttons are displayed.
The screen pattern in wide screen view can be switched by clicking the screen pattern buttons.

## Change the camera display position on the screen

The default camera display positions are as follows:

| 3-screen | 9-screen | 9-screen | 16-screen |
|---|---|---|---|

| 1 | 2 |
|---|---|
|   | 3 |

| 1 | 2 | 3 |
|---|---|---|
| 4 | 5 | 6 |

| 1 | 2 | 3 |     |
|---|---|---|---|
| 4 | 5 | 6 | 7 |
|   |   | 8 | 9 |

| 1 |    | 2  | 3  | 4  |
|---|---|---|---|---|
|    |    | 5  | 6  | 7  |
|    |    | 8  | 9  | 10 |
| 11 | 12 | 13 | 14 | 15 | 16 |

It is possible to change the camera image by dragging & dropping the number of the camera assigned to the screen segment (1 to 16) onto the desired display position.

**Note:**
- When a camera is assigned to a screen segment to which another camera is already assigned, the image of the camera originally assigned to that position will disappear.
- The assigned camera position is retained even if the recorder is rebooted (note however that initializing the settings will also reset the camera positions to the defaults).
- The audio of the camera assigned to the top left position will be output.
- Audio output may be delayed depending on the size of the displayed image.
- If "Mute" was selected on the control screen, no audio will be output.

# Display or hide the camera title

It is possible to display/hide the camera title displayed on the monitor.

**Step 1**

Each time the [OSD] button is clicked, the camera title will be displayed/hidden.

**Note:**
- The setting to display/hide the camera title will be retained until the power is turned off. Once the power is turned off and on again, the camera title will be displayed on system start.

# Use digital zoom (control screen only)

Images on the 1-screen and 4-screen can be digitally zoomed. It is also possible to move the zoomed area within the displayed image.

---

**Note:**
- Digital zoom is not available on the wide view screen and on the 9-screens/16-screens.
- To use this function on the 4-screen, do so after first selecting the desired camera image. To select a camera, click the camera number panel or the camera image. Once a camera has been selected, the selection frame will be displayed around the camera image.

---

### Step 1

Confirm that the image display area is displayed on the 1-screen or 4-screen.
(when displaying on the 4-screen, select the camera whose image is to be zoomed)

### Step 2

Click the digital zoom buttons [×2] [×4] [×8].
→ The displayed image will be enlarged x2/x4/x8 centering on the center point of the screen.

---

**Note:**
- Clicking a point in the zoomed image makes the clicked point the center of the image.

---

### Step 3

Click the digital zoom button [x1] to cancel the digital zooming.

---

**Note:**
- Digital zoom is automatically canceled by other operations such as selecting another camera or changing the screen pattern.
- If "Enable camera control with mouse" on the camera control panel (☞ page 46) is not checked, the digital zoom factor can also be changed by placing the cursor on the image in the image display area and turning the mouse wheel. In this case, the point where the mouse cursor is positioned will become the zoom center.

---

# Record images

Live images can be recorded on the recorder. Images from up to 6 cameras can be simultaneously recorded with this recorder.
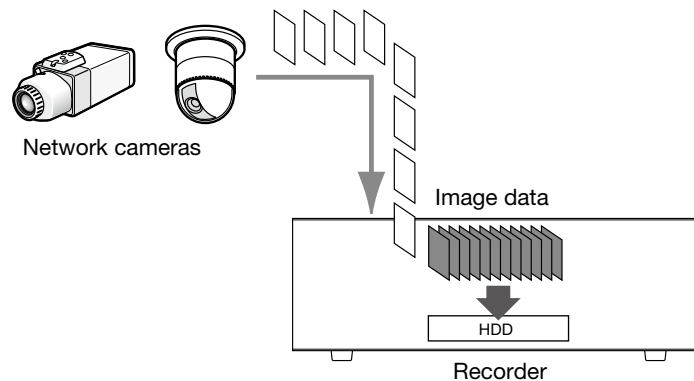


## Record images (schedule recording)

Recording can be automatically started and stopped according to a previously specified schedule. Refer to the Installation Guide for schedule recording.

**Note:**
- When event recording is triggered by an alarm during the schedule recording, event recording has the higher priority. Refer to the "Recording mode and its priority" section below for further information about the priority of the recording mode.
- To stop schedule recording, stop the recording on the setup menu. Refer to the Installation Guide for further information.
- In case of a network error, the image of the camera where the communication error has occurred will not be recorded. Recording starts when the network error is recovered.
- Schedule-recorded image data will be divided into multiple files every hour on the hour. In that moment, recording may sometimes be interrupted around for 1 second.

### Recording mode and its priority

There are 3 recording modes. The recording modes and their priority levels are as follows.
When two or more recordings with different recording modes started simultaneously, only recording with the higher priority will start.

| Recording mode | Priority |
|---|---|
| Event recording | 1 |
| Schedule recording | 2 |
| Pre-event recording | 3 |

# Play recorded images

Display the images recorded on the recorder's hard disk on the main monitor.
Playback operation can be made while recording. Playback of images can be controlled from the operation display area.



Image data

Main monitor

HDD

Recorder

---
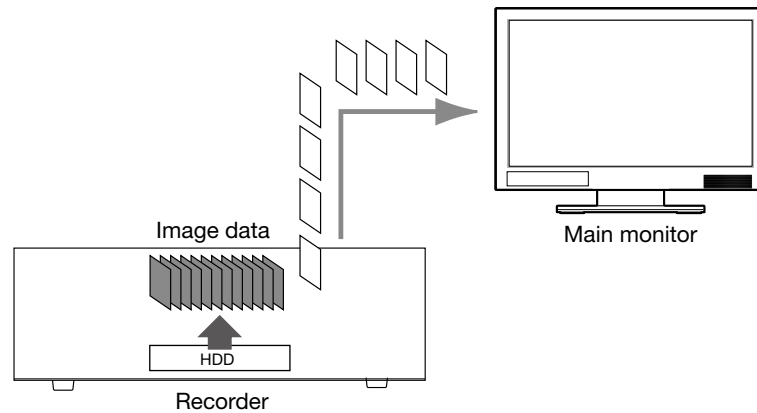
**Note:**
- When playing recorded images on a 1-screen, audio recorded together with these images will be output.
- When displaying recorded images on a 4-screen, audio from the camera to be displayed on a screen will be heard.
- No audio will be output when playing back in fast forward/fast reverse.
- The camera image can be changed by clicking the camera number (1 to 16) during playback.
- The Multiscreen select button, digital zoom button, Mute button and OSD button remain effective during playback. Refer to "Monitor live images" (☞ page 18) for further information.
- When displaying images recorded at SVXGA resolution (1280×960) and a frame rate of 15 or 30 ips on a 4-screen, the images will be played back with the selected refresh interval.
- Different values selected for resolution and frame rate will cause the data size of the playback images on the 4-screen to differ considerably, which may result in non-synchronized playback. In this case, pause and then restart playback (☞ page 26).

---

## Playback operation panel

In playback mode, operation buttons are displayed on the playback operation panel. In addition to the operation buttons, the playback operation panel displays the playback status.
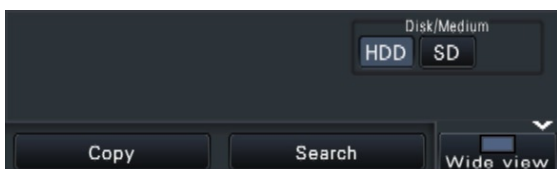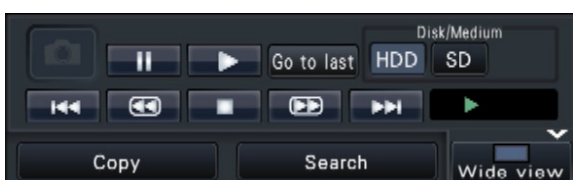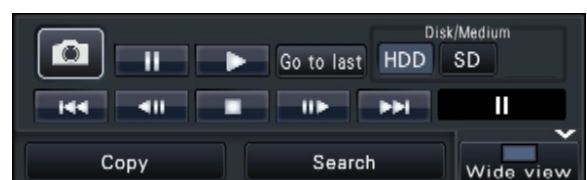
**Normal status (during display of live images)**



**Image playback status**



**Playback pause status**



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The functions of the playback buttons are as follows:

| Function | Example | Operation |
|---|---|---|
| Playback button | | Plays recorded images.<br>Clicking this button while playback is paused will cancel the pause status.<br>When the playback button is clicked during fast playback/fast reverse playback, the playback speed will be x1. |
| Stop button | | Playback will stop and live images will be displayed when this button is clicked during playback/pause. |
| Pause button | | Playback will be paused when this button is clicked during playback.<br>Pause will be canceled when this button is clicked during playback/pause. |
| Captured Image button | | Saves images paused during playback on SD memory card.<br>Clickable only while playback is paused. ("About captured image" ☞ page 34) |
| Next image/<br>Previous image button | | When the next image button is clicked during pausing, the next frame is played and paused.<br>When the previous image button is clicked during a pause, the previous frame is played and paused.<br><br>**Note:**<br>    When playing H.264/MPEG-4 images, some frames of recorded images will not be displayed. Reverse frame-by-frame playback will be performed with the refresh interval set for the camera. |
| Fast forward/<br>Fast reverse button | | Playback speed of fast playback will be changed in the following order each time the fast forward button is clicked:<br>Step2 (Approx. 2x) → Step3 (Approx. 4x) →<br>Step4 (Approx. 8x) → Step5 (Approx. 16x) →<br>Step6 (Approx. 32x) → Step7 (Approx. 48x)<br>Playback speed of fast reverse playback will be changed in the following order each time the fast reverse button is clicked:<br>Step2 (Approx. 2x) → Step3 (Approx. 4x) →<br>Step4 (Approx. 8x) → Step5 (Approx. 16x) →<br>Step6 (Approx. 32x) → Step7 (Approx. 48x)<br>The playback speed will be displayed on the playback status display.<br><br>**Note:**<br>    When playing H.264/MPEG-4 images, some frames of recorded images will not be displayed. Except for x2 fast playback speed, fast playback/fast reverse playback will be performed with the refresh interval set for the camera. |
| Next record/<br>Previous record button | | Clicking the next record button will play back the next later recording.<br>Clicking the previous record button will play back the next earlier recording.<br>When there is no next/previous recorded image to be skipped to, the current playback will continue. |
| [Go to last] button | Go to last | When this button is pressed, playback from the top of the latest recorded data will start. Recording will start from a point approx. 10 seconds before the playback start time of the latest recorded images. |
| Playback status display | | The status of the recorder such as the playback status, pause status etc. will be displayed.<br>The playback speed will be displayed in fast forward/fast reverse mode. |

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# Play images from a designated point

It is possible to start playback from a designated time and date or the latest recorded image.

## Play image recorded at a designated time and date

Start playback by designating the time and date of a recorded image on the date & time operation panel.

**Date & time operation panel (normal display)**

Play button          Calendar
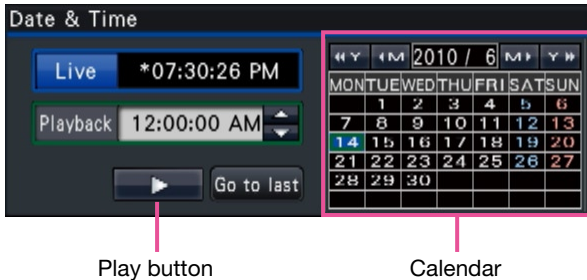
### Step 1

Click the [▲]/[▼] button in the [Playback] box to set the time and date to be played.

### Step 2

Select the month from the calendar in which time and date of the image to play back is included.
Click the [<<Y]/[Y>>] button to change the year and the [<M]/[M>] button to change the month.

**Note:**
• The current date is displayed in blue.

### Step 3

Click the time and date of the image to play back from the calendar.
→ The frame around the selected date turns green, and playback starts at the designated time and date.
The date & time operation panel will change to playback display (☞ page 29). At the same time, the playback operation panel (☞ page 25) is displayed at the bottom of the date & time operation panel.

**Note:**
• Unless you want to change the time and date on the calendar, click the playback button.

### Step 4

To stop playback and return to live images, click the [Live] button or the stop button on the playback operation panel.
→ Playback will stop, and live images will be displayed.

**Note:**
• Playback can also be stopped and live images displayed by the following operations:
    • Clicking the [x] button on the date & time operation panel (playback display)
    • Changing the playback medium
• When there is no image stored under the entered time and date, proceed as follows:
    • When there are images recorded after the designated time and date, the oldest image recorded after the designated time and date will be played.
    • When there are no images recorded after the designated time and date, the newest image recorded before the designated time and date will be played.

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# Play the latest recorded image

Play the latest among recorded images (from 10 seconds before playback end).

**Date & time operation panel (normal display)**



**Step 1**

Click the [Go to last] button.

→ Playback of latest recorded images will start. The date & time operation panel will change to playback display (☞ page 29). At the same time, the playback operation panel (☞ page 25) is displayed at the bottom of the date & time operation panel.

**Step 2**

To stop playback and return to live images, click the [Live] button or the stop button on the playback operation panel.

→ Playback will stop, and live images will be displayed.

---

**Note:**
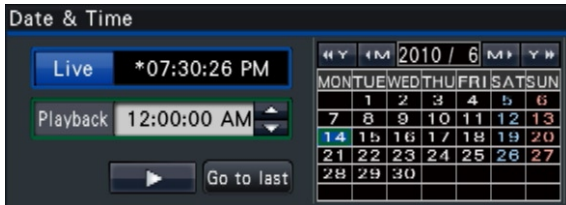- Playback can also be stopped and live images displayed by the following operations:
  - Clicking the [x] button on the date & time operation panel (playback display)
  - Changing the playback medium
- When clicking the [Go to last] button while displaying images on a 4-screen, the recorded image may not be displayed depending on the timing. In this case, click the [Go to last] button again.

---

# Playback by designating a timeline

When playback starts, the date & time operation panel will change to playback display.
This section explains how to use the timeline display to designate a playback time and date by operating the playback slider.

**Date & time operation panel (playback display)**
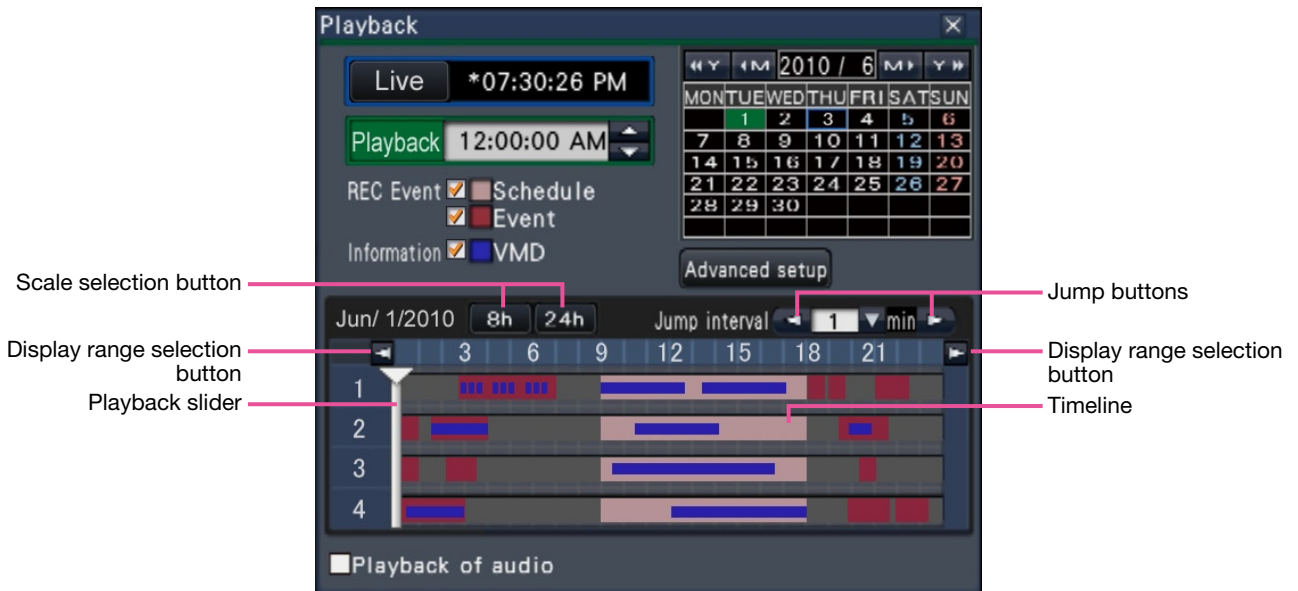


The playback display shows available recorded images and displays these on a timeline sorted by type. It is possible to change the type of recorded images displayed on the timeline, change the timeline scale, and designate the recorded image to play.

**[REC Event]**
Mark the checkboxes of different types of recorded images and display them on a timeline. If changes are made during playback, playback will be paused and a new search will be performed.
Schedule: Schedule-recorded images will be displayed in pink
Event: Event-recorded images will be displayed in red

**[Information/VMD]**
When this box is checked, the time zone recorded when the VMD function was activated (motion was detected in an image) will be displayed in blue on the timeline. (Playback will be paused.)
Periods for which no recorded images are available will be displayed in black.

**Note:**
• To display the result of the motion detection search, it is necessary to configure the settings of the connected cameras that support the motion detection search function in advance.
Refer to the "readme.txt" on the provided CD-ROM about supported cameras. Refer to the operating instructions of the camera in use for further information.

**[Advanced setup] button**
Display the advanced setup panel and change event types and other information displayed on the timeline. (☞ Page 30)

**Scale selection button**
Select between a timeline display covering 8 hours (8 h) and one covering 24 hours (24 h).

**Display range selection button**
The timeline will be displayed on 8-hour or 24-hour basis depending on the setting of the scale selection button.

**[Playback slider]**

Displays the time during playback. Drag and drop the playback slider to a desired time to start playback from that time.

**[Jump interval]/Jump buttons**

Move the playback point by a given amount of time and play back from that point. Clicking the [<] / [>] buttons will move the playback point by the amount of time specified under [Jump interval].

Available ranges: 1min/ 3 min/ 5 min/ 10 min/
15 min/ 30 min

**[Playback of audio]**

This item is displayed when the recorder is set up to lock in a camera with audio output. If this checkbox is marked, the audio associated with the displayed image will be output. (☞ Installation Guide)

## Change event types and other information displayed on the timeline [Advanced setup]
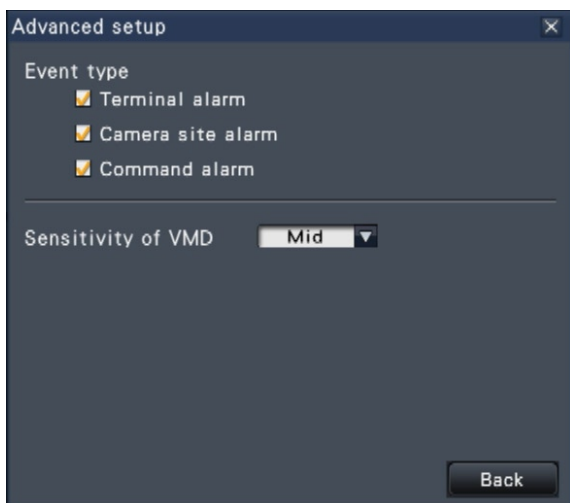


**[Event type]**

Set event types to be displayed on the timeline. To display event-recorded images on a timeline, mark their checkboxes.
Refer to the Installation Guide for further information about alarms.

**[VMD sensitivity adjustment]**

Set the sensitivity for the motion detection displayed on the timeline. Sensitivity increases in the steps shown below.

Low → Mid → High → All

**[Back] button/[X] button**

Click this button to return to the date & time operation panel (playback display).

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# Search and play

Search a desired recorded image and play it. There are the following 2 searching methods.
- Play images selected from alarm and error logs (Log search)
- Search and play images recorded triggered by the motion detection of the camera (VMD search)
  Searched images will be played on a 1-screen on the main monitor. To display on a multiscreen, switch to multiscreen display after playback has started.

## Play images selected from logs (log search)

Display the alarm log list or error log list, and click a time and date to play the corresponding recorded images.

### Step 1

Click the [Alarm] button or [Error] button on the status display panel.
→ The corresponding [Log] buttons will be displayed.
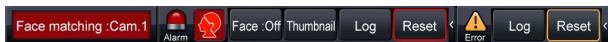
### Step 2

Click the [Log] button.
→ The date & time operation panel and camera control panel are changed over to the alarm log panel or error log panel.

| Alarm log | | | ✕ |
|---|---|---|---|
| No. | Date & Time | | Log |
| 1 | Jun/07/2010 | *01:15:02 PM | Terminal :1 |
| 2 | Jun/07/2010 | *12:06:05 PM | Terminal :1 |
| 3 | Jun/07/2010 | *12:04:51 PM | Terminal :1 |
| 4 | Jun/07/2010 | *12:04:48 PM | Terminal :1 |

▲Previous    Total: 4    Next ▼

| Error log | | | ✕ |
|---|---|---|---|
| No. | Date & Time | | Log |
| 1 | Jun/14/2010 | *07:12:11 PM | Communication recovered :Cam.1 |
| 2 | Jun/14/2010 | *07:10:05 PM | Communication error :Cam.1 |
| 3 | Jun/14/2010 | *07:05:04 PM | Communication recovered :Cam.14 |
| 4 | Jun/14/2010 | *07:05:04 PM | Communication recovered :Cam.10 |
| 5 | Jun/14/2010 | *07:05:04 PM | Communication recovered :Cam.6 |
| 6 | Jun/14/2010 | *07:05:03 PM | Communication recovered :Cam.9 |
| 7 | Jun/14/2010 | *07:05:03 PM | Communication recovered :Cam.13 |
| 8 | Jun/14/2010 | *07:05:02 PM | Communication recovered :Cam.12 |
| 9 | Jun/14/2010 | *07:05:02 PM | Communication recovered :Cam.8 |
| 10 | Jun/14/2010 | *07:05:01 PM | Communication recovered :Cam.3 |

▲Previous    Total: 413    Next ▼

Remedy
Recording images may not have been performed from the time of the error occurrence until the recovery. Check the data.

### Step 3

Select the line with the desired time and date, and click the [Play] button on the playback operation panel. (☞ Page 25)
→ Playback will start from the time and date selected.

#### Note:
- Playback can also be started by double-clicking the desired time and date line.

### Step 4

To stop playback and return to live images, click the stop button on the playback operation panel. (☞ Page 25)
→ Playback will stop, and live images will be displayed.

#### Note:
- Playback can also be stopped and live images displayed by the following operations:
  - Clicking the [x] button on the date & time operation panel (playback display)
  - Changing the playback medium

# Search and play recorded images triggered by motion detection (VMD search)

Search images recorded with a camera supporting the VMD search function by the date motion was detected and play them. Click a time and date on the result list to play corresponding recorded images.

---

**Important:**
- To perform the motion detection search, it is necessary to configure the settings of the connected cameras that support the motion detection search function in advance. Refer to the "readme.txt" on the provided CD-ROM about the supported camera. Refer to the operating instructions of the camera in use for further information.

---

### Step 1

Display the images from the camera to search on a 1-screen. (☞ Page 19)

### Step 2

Click the [Search] button on the playback operation panel. (☞ Page 25)
→ The VMD search panel is displayed.



### Step 3

Designate the time range to search.
Set the year, month, day and time of the start and end point by clicking the respective [▲] / [▼] buttons.

### Step 4

Click the [Search] button.
→ This will run a VMD search within the designated search range and display a list of results. Switch between list pages by clicking the [Prev page]/ [Next page] buttons.



---
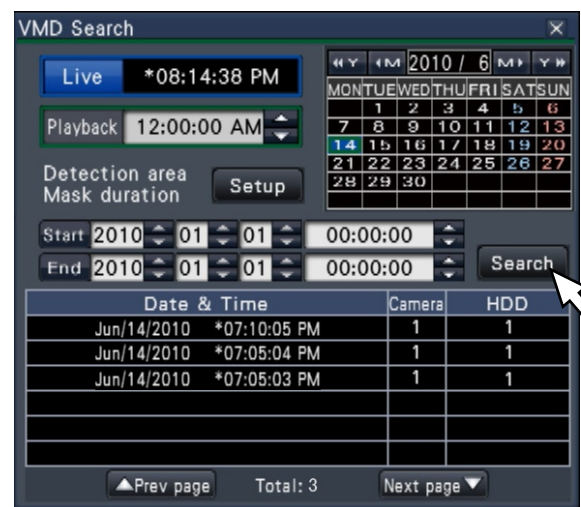
**Note:**
- The VMD search function searches the entire camera image by default. To designate a search area, click the [Setup] button next to [Detection area / Mask duration] on the "VMD search setup" panel. (☞ Page 33)
- It may take some time until the search results are displayed.

---

### Step 5

Select the line with the desired list, and click the play button on the playback operation panel. (☞ Page 25)
→ Playback will start from the time and date selected.

---

**Note:**
- Playback can also be started by double-clicking the desired time and date line.

---

### Step 6

To stop playback and return to live images, click the stop button on the playback operation panel.
→ Playback will stop, and live images will be displayed.

**Note:**
- Playback can also be stopped and live images displayed by the following operations:
  - When pressing the [x] button on the date & time operation panel (playback display).
  - Changing the playback medium

## Set up VMD areas, etc. [VMD search setup]

Set up VMD areas within images and a mask duration.

### Step 1

Display the images from the camera to search on a 1-screen. (☞ Page 19)

### Step 2

Click the [Setup] button next to [Detection area / Mask duration].
→ The "VMD search setup" panel will be displayed.
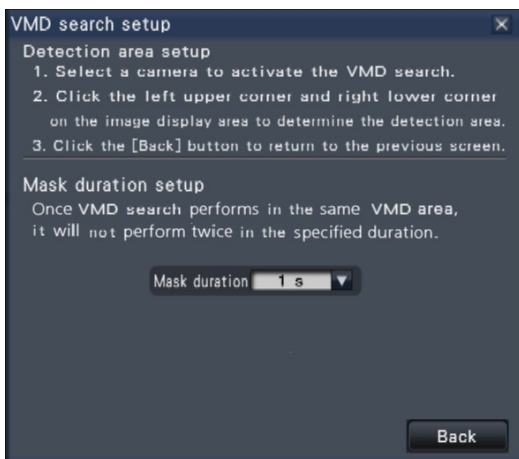


### Step 3

On the displayed image, click the upper left and lower right corner of the square that will become the VMD area.
→ The area set up for VMD search turns gray.

**Note:**
- As the detection areas will be set up to match the image display area divided into 16x16 segments, the top left and bottom right detection areas may not be exactly as designated.



### Step 4

If VMD search takes too much time or the search produces too many results, set a mask duration to reduce the search frequency. When mask duration is set, no motion detection will be performed from the time motion is detected to the time mask duration is set.
To set, click the [▼] button next to [Mask duration setup] on the advances setup panel.

    Mask duration: 1s/ 5s/ 10s/ 30s/ 1min/ 5min/ 10min

**Default:** 1s

### Step 5

Click the [Back] button or the [x] button.
→ The display returns to the VMD search panel.

## About captured images

When the captured image button (☞ page 26) is clicked to display data saved on SD memory card on a PC, the data format and destination to save are as follows:

File format for recorded images: JPEG (DPOF-compatible)

Destination to save: SD memory card

    [DCIM]\100_PANA\P1000001.JPG

                     P1000002.JPG, ...

  * The folder will be created from 100_PANA to 999_PANA. If the folder already contains the file P1000999. JPG, a folder with a new number will be created.

# Play back copied images

Display a list of recorded images copied onto SD memory card (copied data), select recorded images from the list, and play them. It is possible to search for copied data using filters.

### Step 1

Insert an SD memory card into the recorder.
(☞ Page 9)

### Step 2

Click the [SD] button on the playback operation panel to select the playback media.
→ The media playback panel will be displayed.
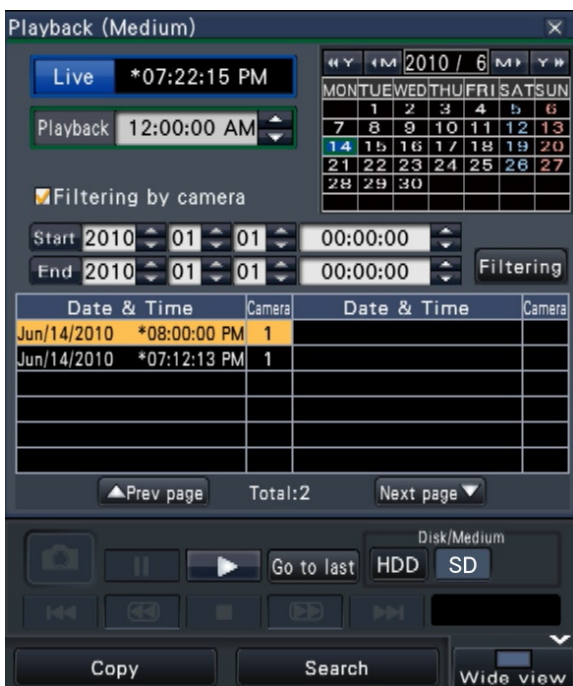


### Step 3

To filter the number of items displayed on the copied data list, proceed as described below.
To play back without filtering, proceed to Step 5.

**Filtering by camera**
Mark the checkbox for [Filterring by camera]. Filtering will be applied to the camera whose image is displayed.

**Filter by designating time and date**
Specify the filter range by designating a time and date. To specify the filter range, set the year, month, day and time of the start and end point by clicking the respective [▲]/[▼] buttons.

> **Note:**
> • To set the start point and end point of the filter range, select the playback time by specifying the year, month, date and time and click the [Start]/[End] buttons.

### Step 4

Click the [Filtering] button.
→ A list of search results for the specified filter criteria is displayed. Switch between list pages by clicking the [Prev page]/[Next page] buttons.

### Step 5

Select the line with the desired list, and click the play button on the playback operation panel.
→ Playback will start from the time and date selected. If the multiscreen was displayed, it will change to the 1-screen.

> **Note:**
> • Playback can also be started by double-clicking the desired time and date line.
> • If the selected copied data is password protected, the password entry screen will be displayed. Enter the assigned password, and click the [OK] button. If the wrong password is entered, the copied data cannot be played back. For character input, refer to "Input from the on-screen keyboard" (☞ page 15).

### Step 6

To stop playback and return to live images, click the stop button on the playback operation panel.
→ Playback will stop, and live images will be displayed.

# Event function

The recorder will take an event action when any of the following events occur.
- Terminal alarm: An event when an alarm input signal is supplied from an external device such as a door sensor to the alarm input terminal on the rear of the recorder.
- Camera site alarm: An event when an alarm (camera terminal alarm, etc.) is detected by a camera.
- Command alarm: An alarm when receiving an alarm from a PC, etc. via a network.
- Face matching alarm: Alarm issued when a face contained in a live image matches an already registered facial image.

**Note:**
- **About face matching alarm**
  For setting conditions and limitations applicable to the face matching alarm, refer to the Installation Guide.
  Face matching alarm is available when this function has been configured for use.

# Event action

When the recorder recognizes an event, it will take an event action according to the set action mode.

## Event action mode

In the event modes shown below, the recorder takes one of the following event actions when an event occurs.
The event action mode can be configured on the setup menu.
Recording & alarm action (A): Performs all event actions according to the settings.
Recording only (B): Performs only recording, filing alarm logs, and moving to camera presets.
Alarm action (C): Performs only alarm actions according to the settings.
Off (D): Files only alarm logs.
  * Mode C (alarm actions only) is applicable only to face matching alarm.

A different event action will be taken depending on the selected event action mode. Refer to a system administrator for further information.

| Event action | | Description | Mode[1] | | | |
|---|---|---|---|---|---|---|
| | | | A | B | C | D |
| Recording | Start event recording | Recording will start according to the recording duration configured on the setup menu. | ● | ● | × | × |
| | Define pre-event recording | Camera images recorded before an event occurs can be associated with the event and saved on the hard disk. | ● | ● | × | × |
| Alarm action | Move the camera to the preset position | Move the camera to the preset position registered in advance. | ● | ● | × | × |
| | Blink the alarm indicator | The alarm indicator on the front panel will start blinking. | ○ | × | ○ | × |
| | Sound the buzzer | The buzzer will start sounding for the duration set in advance. | ● | × | ● | × |
| | Send alarm output signals | Output signals will be sent from the ALARM/CONTROL connector at the rear of the recorder. | ● | × | ● | × |
| | Display event information on the main monitor | The event type and terminal/camera number will be displayed on the status display panel. At the same time, the alarm button turn red. | ○ | × | ○ | × |

| Event action | | Description | Mode[1] | | | |
|---|---|---|---|---|---|---|
| | | | A | B | C | D |
| Alarm action | Display the alarm icon on a web browser | The alarm icon will be displayed on the event error display area of the web browser. | ○ | × | ○ | × |
| | Display the alarm message on a web browser | A window that notifies of an event occurrence will be displayed on the web browser.<br>* The alarm message displayed last has priority. To close the window, click the [x] button. | ● | × | ● | × |
| | Record the alarm logs | Time and date of the event and event information will be recorded in a log list. | ○ | ○ | ○ | ○[2] |
| | Send a mail that notifies of an event occurrence | An e-mail notifying of the event and its time and date (alarm mail) will be sent to registered e-mail addresses (up to 4). | ● | × | ● | × |
| | Provide an alarm notification to a PC according to the Panasonic alarm protocol setting | When an event occurs, a notification will be sent to a PC in accordance with the settings made under [Panasonic alarm protocol]. (☞ Installation Guide) | ● | × | ● | × |

[1] ○: Takes action regardless of the setting, ●: takes action in accordance with the setting, ×: takes no action
[2] Since no check is carried out when the action mode "Face matching alarm only" is set to [Off], there is no entry made into the log either.

# Stop buzzer beeping

The buzzer sounding to announce an alarm or error can be stopped from the recorder's front panel.

**Step 1**

Press the [BUZZER STOP] button.
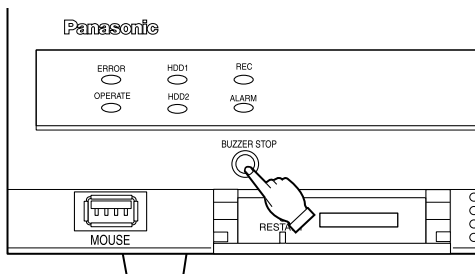


→ The buzzer will stop.

**Note:**
• The buzzer can also be stopped by resetting the alarm action or error action. The [BUZZER STOP] button does not reset any of the other alarm actions.

# Cancel the alarm action

The recorder will take an alarm action according to the settings configured in advance when an event occurs in the alarm mode (ALM). Information of the occurred alarm will be displayed on the status display panel of the main monitor. (☞ Page 13)

To reset the alarm action, click the [Alarm] button on the status display panel, and click the alarm [Reset] button.

When an item other than "Off" is selected for "Auto reset time" on the "Event setup" tab under "REC & event" on the setup menu (☞ Installation Guide), the following actions will automatically be taken, unless the alarm action is canceled by pressing the alarm [Reset] button.
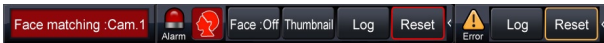
* The alarm indicator on the front panel will stop blinking and light steadily.
* The alarm status display on the main monitor will disappear.
* The sounding buzzer and the alarm output will stop.

**Step 1**

Click the [Alarm] button displayed on the main monitor, and click the alarm [Reset] button.



→ The alarm action will be canceled and the alarm indicator will go off.

---

**Note:**
* When the alarm action is canceled, the event recording will stop and return to the operational status just before the event occurred.

---

# Cancel the error action

When an error (trouble) occurred on the recorder, the recorder will take the error action. Information of the occurred error will be displayed on the status display panel of the main monitor. (☞ Page 13)

To cancel an error action, first click the [Error] button on the status display panel and then the displayed error [Reset] button.

---

**Note:**
* When an error occurs, take remedial action by following the instructions displayed on the error log panel (☞ page 31). The error lamp on the front of the recorder will go off when the cause of the error has been eliminated.

---

# Copy recorded images

It is possible to manually copy images recorded in the recorder onto an SD memory card.
It is recommended to make back-up copies on a regular basis for unexpected situations such as malfunction of the hard disk drives.
It is impossible to copy recorded images when the recorder is in the following statuses.
  • When the copy window is being opened by other user via a network
  • When the SD memory card is being selected by another user via a network
  • When the setup menu is being displayed
  • When the media other than hard disk drives is selected
The copied recorded images can be played on the recorder or on a PC using the dedicated viewer software.
The viewer software will be automatically copied to an SD memory card on which recorded images are copied.
Refer to page 83 for how to operate the viewer software.
Refer to page 35 for how to play the copied recorded images on the recorder.

---

**Note:**
  • Pause the playback before starting copying when playing recorded images on the recorder.
  • To copy recorded images onto an SD memory card, it is necessary to format the SD memory card in advance. Refer to page 42 for how to format an SD memory card.
  • Required time for copying varies depending on the data size to be copied. It will take longer time to copy recorded images when they were recorded with a larger image capture size, in a higher quality or at a higher recording rate even though the same number of cameras and the same duration are set for copying.
  • Copying of recorded images may sometimes be performed incorrectly when there exist 2 or more images recorded at the same time and date resulting in change of the time and date setting or the auto time adjustment function.
  • In the following cases, the copying currently being performed will stop.
    • When any of the settings of the recorder is changed
    • When a user who started manual copy logged out (It will take around 90 seconds until copying is stopped after the web browser is closed.)
    • When the original data (source for copying) is lost (overwritten or malfunction of the hard disk drive)
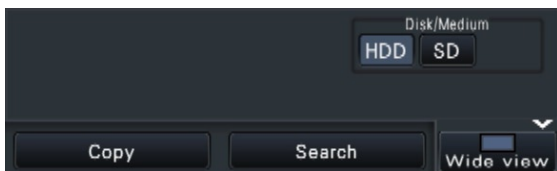
---

### Step 1

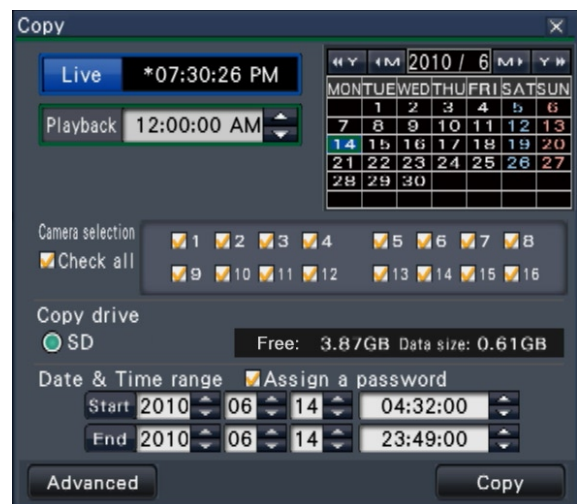Insert an SD memory card into the recorder.
(☞ Page 9)

### Step 2

Click the [Copy] button on the operation panel of the main monitor.



→ The copy panel will be displayed (if in playback mode, playback will be paused).

**Step 3**

The following items can be set up for copying of recorded data:

| Item | Description |
|------|-------------|
| Camera selection | Check the number of the camera whose recorded data is to be copied. Checking [Check all] will copy the recorded data of all cameras. |
| Copy drive | Indicates the copy destination. |
| Date & Time range | Specify times and dates to define the range for copying recorded data. Set the year, month, date and time of the start point and end point. Specify the time and date for copying to start/end by clicking the [Start]/[End] button. |
| Assign a password | Check this item to assign a password to the copied data. The password will be required to play back copied data that is password protected. |
| Free | The remaining space of the storage medium will be displayed. |
| Data size | The total volume of all recorded images to be copied (including the viewer software) will be displayed.<br>* Indicated as *.** GB while the data volume is being calculated. |
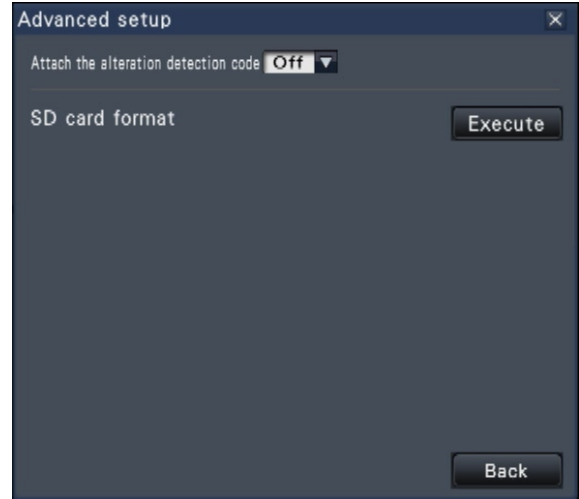
- Clicking the [Back] button will return to the copy panel.

**Step 4**

Click the [Copy] button on the copy panel.
→ If the [Assign a password] checkbox has been marked, the password entry screen will be displayed.
Otherwise proceed to Step 6.



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**Step 5**

Enter the password, and then click the [Next] button.
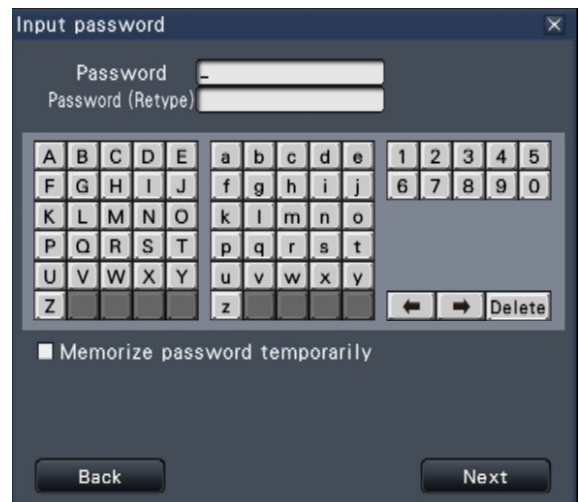- Enter 5 to 8 alphanumeric characters for a password.
- To confirm the password, enter the same password again into the "Confirm" column.
- To save the entered password, check "Memorize password temporarily". The next time data is copied, the password entry window will open with the password already filled in. The password will be retained in memory until the power of the recorder is turned off

→ The copy start confirmation window will be displayed.

**Step 6**

Click the [OK] button in the copy start confirmation window.
→ "Copying" is displayed in the status display area, and copying will start. When copying is completed, "Copying" will go off.

---

**Important:**
- Do not remove the SD memory card during copying data onto the SD memory card. Otherwise the data stored on the SD memory card could be lost.
- If the copy destination lacks sufficient remaining storage capacity, copying will continue until the medium is full. Use a medium with sufficient storage capacity to avoid left over data that is not copied.
- Copying will be performed in the following order: Viewer Software → Images → Audio Depending on the designated time range for copying and the remaining space of the storage medium, images and audio may not be copied.
- Clicking the [Copy] button during the copying process will display the copy cancel confirmation window, allowing you to cancel copying. Copying continues while the copy cancel confirmation window is displayed.
- Do not turn off the power of the recorder while copy is in progress. If the power is turned off while copying, the storage media copied on will become unusable.

---

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# Format SD memory card

To copy recorded images on SD memory card, the SD memory card first needs to be formatted. Note that formatting the SD memory card will delete all data stored on it.

**Important:**
- Formatting will delete all data and setup information stored on an SD memory card. Image data once deleted cannot be restored.

**Step 1**

Click the [Copy] button on the operation panel of the main monitor. (☞ Page 39)
→ The copy start confirmation window will be displayed.

**Step 2**

Click the [Advanced] button.
→ The "Advanced setup" window will be displayed.
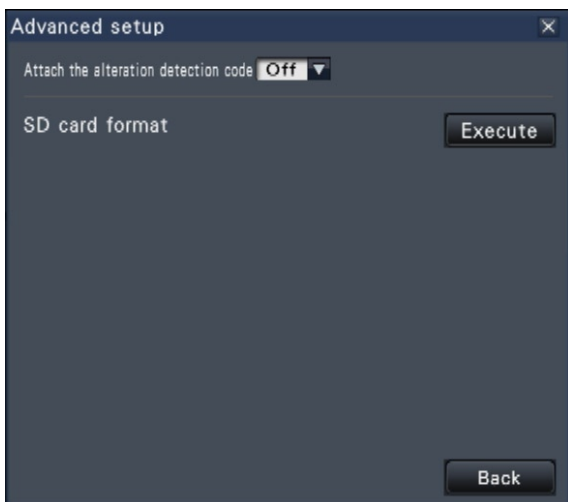


**Step 3**

Click the [Execute] button for "SD card format".
→ The confirmation window will be displayed.

**Step 4**

Click the [OK] button.
→ Formatting of the SD memory card will start, and a window indicating that formatting is in progress will be displayed.
  When formatting is completed, the format completion window will be displayed.

**Important:**
- Do not turn off the power of the recorder while formatting is in progress.

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# About the face matching function

When the face matching function is activated, it detects facial features of people in images, matches them against similar facial features recorded earlier or contained in live images, and issues an alarm when a match is found.

**Important:**
- Face matching does not work while playing back images.
- When using the face matching function on the operation screen, the display changes to 1-screen or 4-screen display, on the wide view screen, it changes to 3-screen display. It will not work on the multiscreen.
- While using the face matching function, sequence display on the live monitor will stop.
- When several people appear in images at the same time, face matching may take time, or it may not be possible to match all facial images.
- Refer to the installation guide for setup and further information about the face matching function.

## Face matching alarm actions

When a face matching alarm occurs, the following notifications will be issued:

**An alarm indication and the name of the facial image (name of detected person) will be displayed in the status display area.**



**The latest face matching result will be displayed**



Registered facial image      Matched facial image
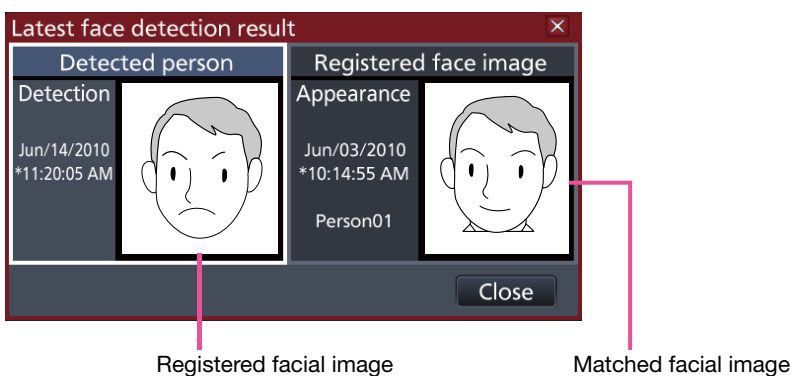
**Note:**
- When displaying images in wide view, the operation panel will open automatically.
- When copying or playing back images, the face matching result window will not be displayed.
- The face matching result window shows the latest matched facial image.

**Other alarm actions**
- The alarm indicator on the front panel of the recorder will blink.
- The buzzer sounds.
- A face matching alarm is output from a terminal on the rear panel (if set up).
- An alarm e-mail is sent (if set up).

# Reset face matching alarm

Proceed as described below to cancel the face matching alarm.

### Step 1

Click the [Alarm] button on the status display panel.
→ The alarm [Reset] button will be displayed.

Face matching :Cam.1  Alarm  Face :Off  Thumbnail  Log  Reset  Error

### Step 2

Click the alarm [Reset] button.
→ The face matching alarm indication disappears. Alarm actions (buzzer/terminal output) will be stopped at the same time.

**Note:**
• To close the face matching result window, click the [x] button.

# Display the face matching thumbnail again

Proceed as described below to display the face matching result window again after having closed it once.

### Step 1

Click the [Alarm] button on the status display panel.
→ The [Thumbnail] button will be displayed.

Face matching :Cam.1  Alarm  Face :Off  Thumbnail  Log  Reset  Error
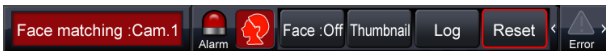
### Step 2

Click the [Thumbnail] button.
→ Click this button to display the face matching result window.

**Note:**
• The face matching result window display the latest matching facial images found. The face matching results are updated even while the fact matching result window is opened.

# Start/stop face matching actions manually

The face matching actions can be changed manually.

### Step 1

Press the [Alarm] button on the status display panel.
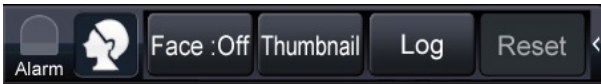


→ When face matching is stopped, the [Start face matching] button is displayed, when it is in progress, the [Stop face matching] button appears.

 : Face matching in progress

 : Face matching stopped

### Step 2

Click the [Face :On] button or the [Face :Off] button.

→ This starts or stops face matching.

---

**Note:**

• When using the face matching function on the operation window, the display changes to 1-screen or 4-screen display (camera 1 to 4) , on the wide view screen, it changes to 3-screen display. The function will not work on the multi-screen. In addition, the sequence display on the live monitor stops at image of the camera with the lowest number set up for sequence display.

• Face matching will stop when playback of recorded images is started during face matching. The face matching operation is resumed, when playback is stopped.

---

# Operate the camera

When displaying live images from a camera with the panning/tilting function on a 1-screen or 4-screen, the following camera operations are available.

**Note:**
- Operations are performed from the operation window. When working with the wide view screen, open a 1-screen or 4-screen operation window by clicking the [Ctrl screen] button in the bottom right corner of the screen.
- For a fixed camera, the buttons on the camera control panel and other controls will be disabled.

## Camera control panel

Operate the cameras displayed as selected (inside selection frame) in the image display area. On the 1-screen, the camera whose image is currently displayed, can be operated. On the 4-screen, click the camera number panel on the operation panel, or select a camera image by clicking it in the image display area.



**Control buttons**
Move (pan/tilt) the camera in the clicked direction. Keeping the button pressed will move the camera continuously.

**[Zoom] button**
Adjusts the zoom factor.

**[Home position/Call] button**
Move the camera to the home position.

**[Enable camera control with mouse] checkbox**
When this item is checked, pan/tilt (clicking) and zoom (mouse wheel) can be controlled with the mouse on the selected camera image.

**Note:**
- When this checkbox is marked, digital zooming (☞ page 23) by turning the mouse wheel operation is not possible. When the camera control panel is inoperable for the fixed camera, the digital zoom can be performed by turning the mouse wheel even when the checkbox is checked.

**[Detail] button**
Display the "Camera control [Advanced]" panel, and perform any of the following camera operations:



- **[Focus] button**
  Adjust the focal point.

- **[Brightness] button**
  Adjusts the lens iris of the camera.
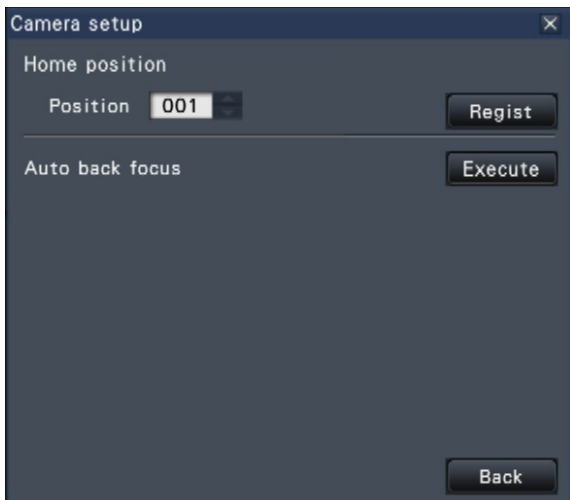
- **Auto mode function of the camera**
  Controls the auto mode function of the camera.

- **[Position]**
  Registers the current orientation of the camera as a preset position. Moves the camera to a previously registered preset position.

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- **[Setup] button**
  Displays the camera setup window for registering a home position (☞ page 51) and executing auto back focus (☞ page 51).



- **[Back] button**
  Closes the "Camera control [Advanced]" and returns to the camera control panel.

---

**Note:**
- Controlling the cameras is not possible on the wide view screen and on the 9- to 16-screens.
- Depending on the model of the camera, some operations may not work.
- Some of the operations in the "Camera control [Advanced]" panel are available only with Panasonic cameras. Refer to the "readme.txt" for compatible cameras.

---

# Panning/Tilting

Adjusts the horizontal/vertical position of the camera.

### Step 1

When displaying the images on a 4-screen, select the desired cameras.

### Step 2

Click the [Control] button.
Click the desired point to be located at the center of the angular field of view. The camera will move to locate the clicked point as the center point in the image display area.

---

**Note:**
- To enable operations in the displayed camera image from the recorder, check "Enable camera control with mouse" on the camera control panel.

---

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# Zooming

Zoom the displayed camera image in/out by zooming the camera lens. Depending on the models of the connected cameras, the available zooming factors may be different. Refer to the operating instructions of the camera for further information.

**Step 1**

When displaying the images on a 4-screen, select the desired cameras.

**Step 2**

Click the [–] button or the [+] button.
Alternatively, adjust the zoom by placing the mouse pointer on the image and turning the mouse wheel.
Click the [x1] button to reset zoom.

**Note:**
- To enable operations in the displayed camera image from the recorder, check "Enable camera control with mouse" on the camera control panel.

# Move to home position

Move the camera to a previously registered home position. The home position needs to be registered in advance. (☞ Page 51)

**Step 1**

When displaying the images on a 4-screen, select the desired cameras.

**Step 2**

Click the [Call] button to move to the home position.

# Focus adjustment

Adjust the focal point. The auto focus function is available.

**Step 1**

When displaying the images on a 4-screen, select the desired cameras.

**Step 2**

Click the [Detail] button.
→ The "Camera control [Advanced]" panel will be displayed. (☞ Page 46)

**Step 3**

Press the [Near] or [Far] button.
The auto focus function can be performed by clicking the [Auto] button.

# Iris (brightness) adjustment

Adjusts the lens iris of the camera.

### Step 1

When displaying the images on a 4-screen, select the desired cameras.

### Step 2

Click the [Detail] button.
→ The "Camera control [Advanced]" panel will be displayed. (☞ Page 46)

### Step 3

Press the [–] or [+] button.
It is possible to reset the set brightness by clicking the [Reset] button.


# Auto mode function of the camera

Activate the auto function of the camera according to the settings of the camera.

### Step 1

When displaying the images on a 4-screen, select the desired cameras.

### Step 2

Click the [Detail] button.
→ The "Camera control [Advanced]" panel will be displayed. (☞ Page 46)

### Step 3

Click the auto mode button [▼] of the camera, and select one of the following auto modes:
Auto track/ Auto pan/ Preset sequence/ Patrol

### Step 4

Click the [Start] button to start the selected auto mode function.

---

**Note:**
- Click the [Stop] button to turn off the auto mode function of the camera.
- Refer to the operating instructions of the connected camera for further information about the auto mode function of the camera.

---

# Register camera preset positions

Register the current camera position as a preset position. The preset positions can be registered only when using a camera supporting the preset position function.

### Step 1

When displaying the images on a 4-screen, select the desired cameras.

### Step 2

Click the [Detail] button.
→ The "Camera control [Advanced]" panel will be displayed. (☞ Page 46)

### Step 3

Perform the pan/tilt operation to move the camera to the position to be registered. (☞ Page 47)

### Step 4

Click the [▲]/[▼] button in the [Position] box to select a preset number. Select a preset number (1 - 256) to be registered.

**Note:**
- On some Panasonic camera models, preset position number 0 is registered as home position. Refer to the "readme.txt" on the provided CD-ROM about supported cameras.

### Step 5

Click the [Regist] button.
→ The camera direction will be registered to the selected preset position number.

# Move camera preset positions

Move the camera to the registered preset position. It is necessary to register preset positions in advance.

### Step 1

When displaying the images on a 4-screen, select the desired cameras.

### Step 2

Click the [Detail] button.
→ The "Camera control [Advanced]" panel will be displayed. (☞ Page 46)

### Step 3

Click the [▲]/[▼] button in the [Position] box to select a preset number. Select a preset number (0 - 256) to be registered. Selecting preset position number 0 will move the camera to home position.

### Step 4

Click the [Call] button.
→ The camera direction will move to the preset position corresponding to the selected preset position number.

**Note:**
- A non-registered preset number can be selected, but the camera will not move even if the [Call] button is clicked.

# Register home position

The home position is set with the camera positioned at an already registered preset position.

**Step 1**

Register the camera preset positions on the "Camera control [Advanced]" panel. (☞ Page 46)

**Step 2**

Click the [Setup] button.
→ The camera setup window will be displayed. (☞ Page 47)

**Step 3**

Click the [▲]/[▼] button in the [Position] box to select a preset number to register as the home position. Select a preset number (1 - 256) to register.

**Step 4**

Click the [Regist] button.
→ The selected preset number will be registered as the home position.

**Step 5**

Click the [Back] button.
→ The camera setup window closes, and the display returns to the "Camera control [Advanced]" panel.

# Execute auto back focus

The auto back focus function starts to automatically adjust back focus based on a subject located in the center of the screen by clicking the execute button. For further information about this function, refer to the operating instructions of the camera in use.

**Step 1**

When displaying the images on a 4-screen, select the desired cameras.

**Step 2**

Display the "Camera control [Advanced]" panel (☞ page 46), and click the [Setup] button.
→ The camera setup window (☞ page 47) will be displayed.

**Step 3**

Click the [Execute] button next to "Execute auto back focus function.".

**Step 4**

Click the [Back] button.
→ The camera setup window closes, and the display returns to the "Camera control [Advanced]" panel.

# Configure the network settings

The recorder can be operated using a mouse connected to the front of the unit or from a web browser on a PC (excluding operations in the setup menu and certain other functions). On the following pages, operation from a web browser, setting up the PC and related matters will be described.

When operating the recorder using a web browser, it is necessary in advance to configure the network settings of the recorder and a PC.
When the network settings of the PC are as follows, it is unnecessary to configure the settings. It is possible to configure the settings and operate the recorder using a web browser after completing the connection.
IP address: 192.168.0.2 - 192.168.0.249, 192.168.0.251 - 192.168.0.254
Subnet mask: 255.255.255.0
Default gateway: 192.168.0.1
When the settings are configured differently from the above, configure the network settings of the recorder or a PC.

## Configure the network settings of the recorder

The network settings of the recorder can be configured on the "Network" page - the [Basic] tab of the setup menu.
Refer to the chapter relating to the [Basic] tab of "Network" of the setup menu for how to operate (☞ Installation Guide).

## Configure the network settings of the PC

The TCP/IP setting of the PC shall be changed to conform to the settings of the recorder. When using the recorder with the default (IP address:192.168.0.250), set the IP address of the PC to "192.168.1.xxx (a number from 2 to 254 except 250 (this recorder))".
The settings described in these operating instructions are based on the standard settings for Windows 7. Refer to the operating instructions of the respective OS for further information.
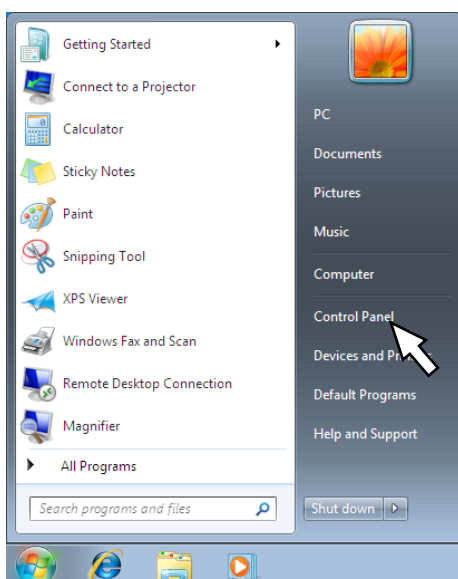
**Step 1**

Click "Control Panel" on the start menu.
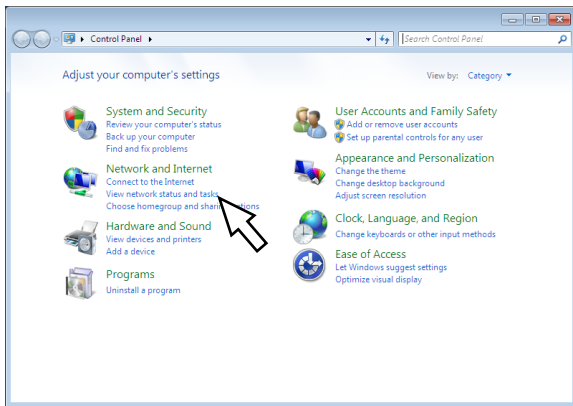


→ "Control panel" will be displayed.

**Important:**
• Log in to the PC as an administrator.

Click "View network status and tasks".



→ The "Network and Sharing Center" window will be displayed.

## Step 3

Click "Local Area Connection".
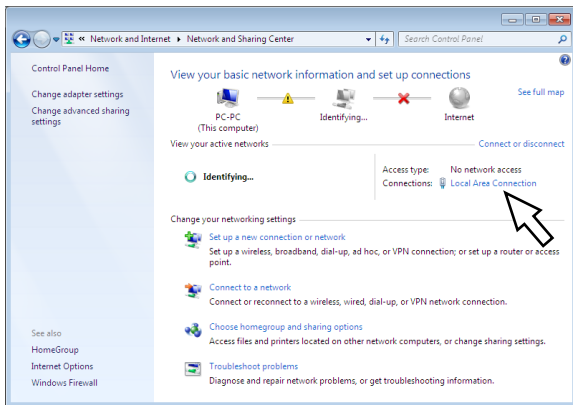


→ The "Local Area Connection Status" window will be displayed.

## Step 4

Click [Properties]
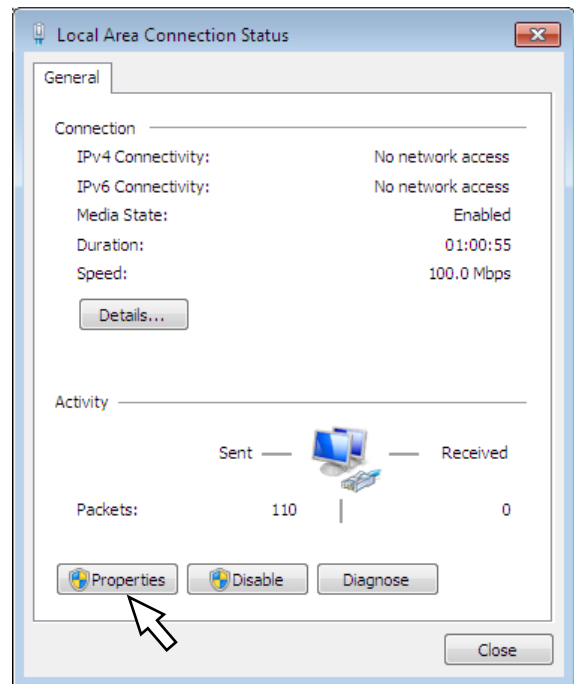


→ The "Local Area Connection Properties" window will be displayed.

## Step 5

Click "Internet Protocol Version 4 (TCP/IPv4)", and then [Properties].
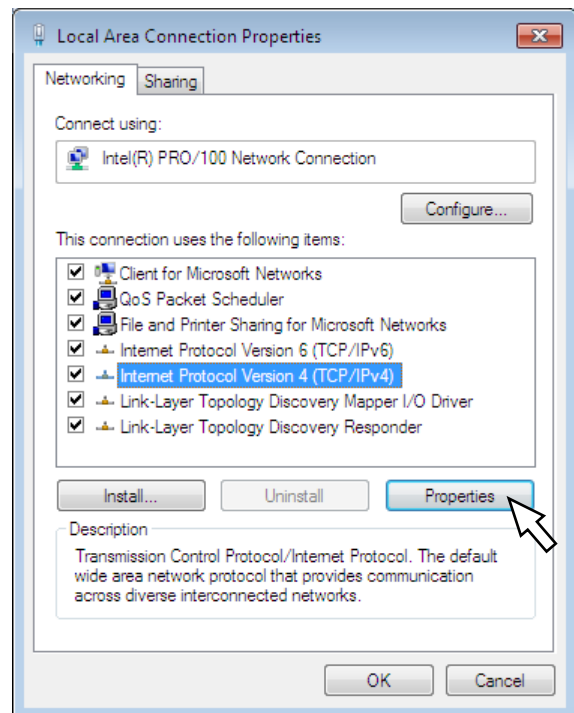


→ The "Internet Protocol Version 4 (TCP/IPv4) Properties" window will be displayed.

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**Step 6**

Click [Use the following IP address] and set "IP address" and "Subnet mask" as follows:
- IP address: 192.168.0.9
- Subnet mask: 255.255.255.0
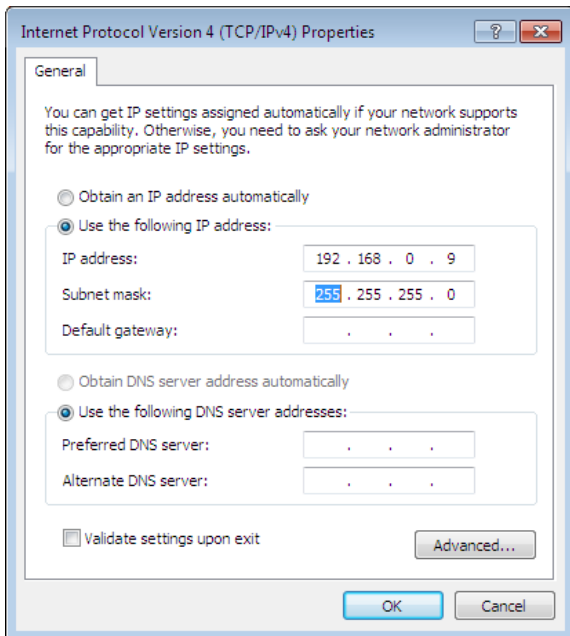


Depending on the network configuration, it is necessary to configure "Default gateway". Refer to a system administrator for further information about the settings.

**Step 7**

Click the [OK] button and close the window.

# Network security of the recorder

## The security function of the recorder

① Access restriction by the user authentication
It is possible to restrict users to access the recorder by selecting "On" for "User authentication". (☞ Installation Guide)

② Access restriction by changing the HTTP port number
By changing the HTTP port number, it is possible to prevent illegal access such as a port scanning, etc. (☞ Installation Guide)

---

**Important:**
- Design and enhance security countermeasures to prevent leakage of information such as image data, authentication information (user name and password), alarm mail information, FTP server information, DDNS server information, etc. Perform the countermeasure such as the access restriction using the user.
- After the unit is accessed by the administrator, make sure to close the web browser for added security.
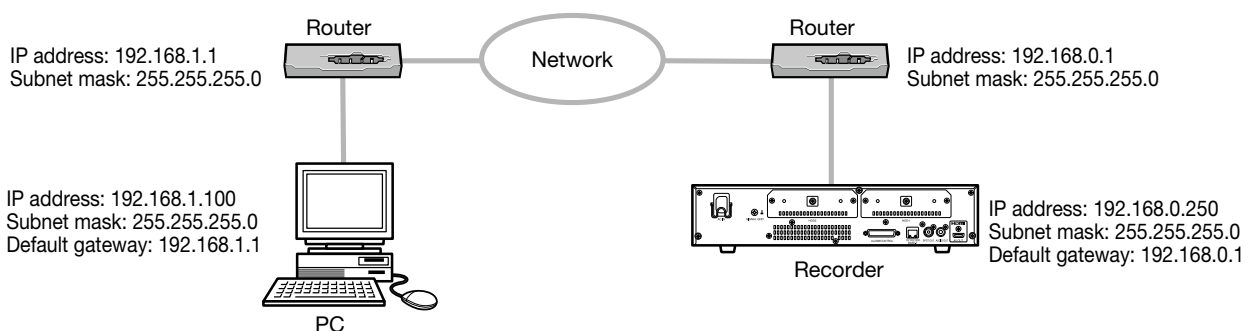- Change the administrator password periodically for added security.

---

## Enhance network security

It is possible to enhance the network security by dividing the subnet using a router to authenticate users twice (by the recorder and by the router). When connecting the recorder to an unsecured network, secure the network connection by installing a VPN (Virtual Private Network) device, etc. between the recorder and the host PC.

---

**Important:**
- The settings for the network security vary depending on the network to which the recorder is to be connected such as an intranet or Internet service provider. Refer to a network administrator for further information about the network security.

---

**[Connection example]**



Router
IP address: 192.168.1.1
Subnet mask: 255.255.255.0

Network

Router
IP address: 192.168.0.1
Subnet mask: 255.255.255.0

IP address: 192.168.1.100
Subnet mask: 255.255.255.0
Default gateway: 192.168.1.1

IP address: 192.168.0.250
Subnet mask: 255.255.255.0
Default gateway: 192.168.0.1

Recorder

PC

By using a firewall, etc., it is possible to use packet filtering and protocol filtering to enhance the network security.

Firewall

Router

IP address: 192.168.1.1
Subnet mask: 255.255.255.0

Network

Router

IP address: 192.168.0.1
Subnet mask: 255.255.255.0

Switching hub

IP address: 192.168.1.100
Subnet mask: 255.255.255.0
Default gateway: 192.168.1.1

PC

Recorder
IP address: 192.168.0.250
Subnet mask: 255.255.255.0
Default gateway: 192.168.0.1
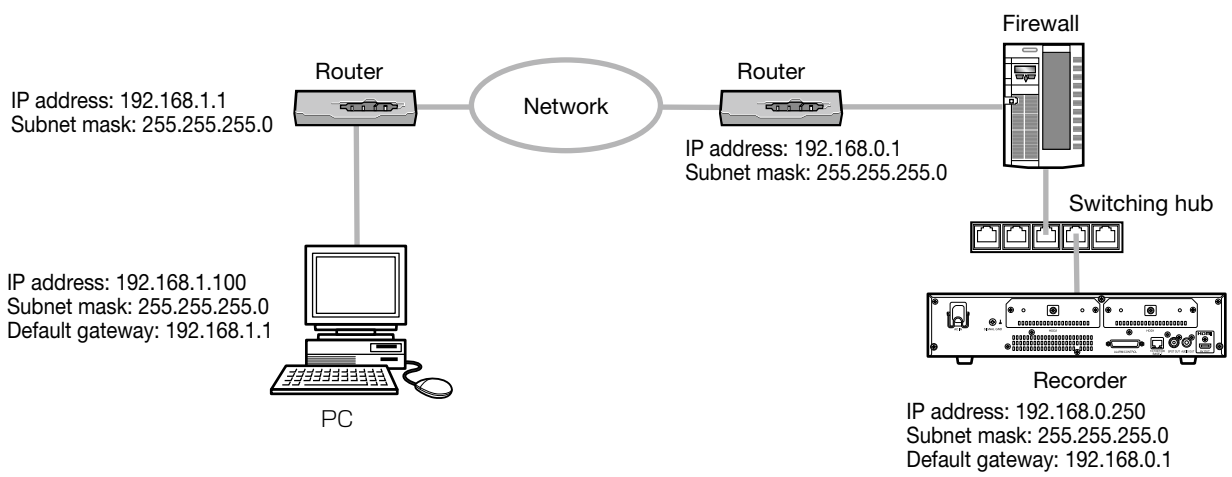
# Display the operation window

Boot the PC and operate the recorder using a web browser.

### Step 1

Start the web browser.

### Step 2

Enter the IP address or URL assigned to the recorder into the [Address] box, and then press the [Enter] key.
→ The authentication window will be displayed. The authentication window will not be displayed when "Off" is selected for "User authentication" on the [Basic] tab of "User management" of the setup menu.

---

**Important:**
- Refer to a system administrator for further information about the set IP address.
- Do not attach "0" before the numbers when entering IP address.
  Example: ○ 192.168.0.50
  × 192.168.0.050
- If a message is displayed on the information bar, see page 92.

---

**Note:**
- When the top page is displayed for the first time, the install wizard of the ActiveX control required to display images from the camera will be displayed. Follow the instructions of the wizard.
- The ActiveX control and the viewer software (☞ page 82) will be installed at the same time.
- Follow the instructions of the wizard to complete the installation. When any ActiveX for a Panasonic recorder other than this product is already installed, uninstall "WebVideo ActiveX" from "Uninstall a program" and then install ActiveX for this product. (☞ Page 82)
- When the installation wizard is displayed each time displaying other page even though installation of ActiveX for this product has been completed, reboot the PC.
- The viewer software used on each PC should be licensed individually. Refer to your dealer for the software licensing.

### Step 3

Enter the user name and password registered in the recorder, and then click the [Login] button.
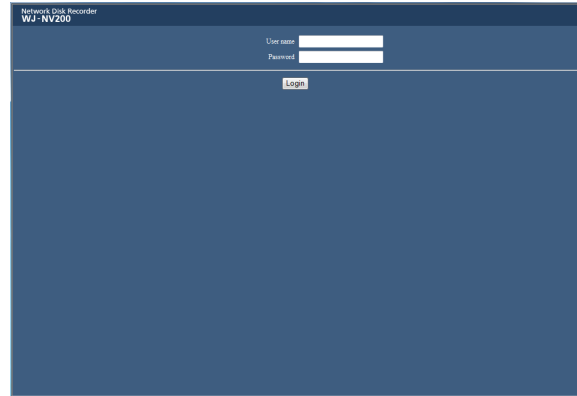


→ The top page will be displayed.



---
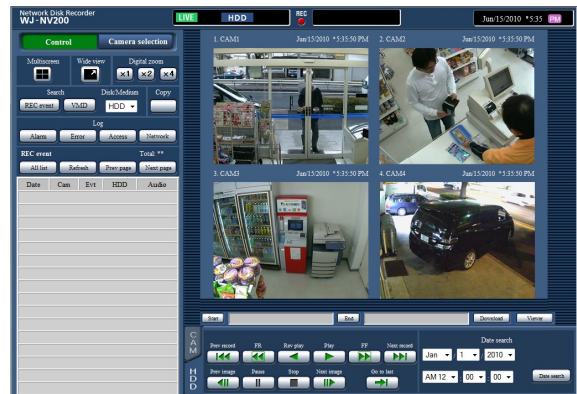
**Important:**
- Refer to a network administrator for the set user name and password.
- Refer to the Installation Guide for how to register users.
- The default administrator name and password are as follows.
  Administrator name: ADMIN
  Password: 12345
- To enhance the security, change the administrator name and password before running the recorder. Change the password periodically. Refer to the Installation Guide for how to change the password.
- Refer to page 92 when a message is displayed on the information bar or when an unnecessary status bar or scroll bar is displayed on the window.

---

# About the operation window

## Top Page



Status display area

Current time display area

Image display area

Download operation area

[CAM] tab

[HDD] tab

**[Control] button**
Displays operations such as searching for and copying recorded images, search results and log information. It can also be used to switch camera images between display of live images on a multiscreen, wide screen, etc.

**[Camera selection] button**
Can be used for camera operations such as switching camera images.

**Status display area**
The current status of the recorder such as playback status, recording status, etc. will be displayed.

**Current time display area**
The current time and date will be displayed.

**Image display area**
Playback images and live images will be displayed. The camera title is displayed at the upper left and the time and date (the current time and date of the camera's clock when displaying live images and the time and date when the images were recorded when playing recorded images) at the upper right. Clicking the camera title during displaying images on a multiscreen will display images from the respective camera on a 1-screen.

**Download operation area**
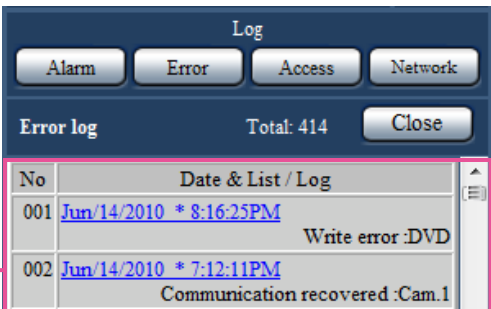Downloads the images currently being played and the viewer software.

**[CAM] tab**
Camera operations such as zooming, focusing, auto functions, etc. can be performed on this tab.

**[HDD] tab**
Can be used to play back or operate recorded images.

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# Control panel

The following operation panels will be displayed when the [Control] button is clicked.



List display area

## [Multiscreen] box
Images recorded using up to 4 cameras can be played simultaneously on a multi-screen. Each click of the button switches to the next 4 screens in the sequence: camera 1 to 4→camera 5 to 8→camera 9 to 12→camera 13 to 16.

## [Wide view] box
Displays live or recorded images on a full-screen.

## [Digital zoom] box
Camera images will be displayed in the proportion of the clicked zoom ratio button.
   [x1]: x1, [x2]: x2, [x4]: x4

## [Search] box
Use this button to search recorded images. The search result will be displayed in the list display area.

## [REC event] button
Select [HDD] for "Disk/Medium" to display this button. The recording event search window will be displayed.

## [VMD] button
Select [HDD] for "Disk/Medium" to display this button. The motion detection search window will be displayed.

## [Copy data] button
Select [SD] for "Disk/Medium" to display this button. The copy data serch window will be displayed.

## Disk/Medium
Select a destination folder to store the current playing images.
   HDD/ SD

## [Copy] box
Select [HDD] for "Disk/Medium" to display this button. The copy data window will be displayed by clicking this button. Use this button to manually copy recorded images onto SD memory card.

## [Log] box
Select a log for display.
Clicking the buttons will display the respective logs in the list display area.
   Displayed logs: Alarm log, error log, access log, and network log

## [Close] button
Close the window displaying log information.

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**List display area**

Number of data: Displays the total number of listed data.
When more than 10000 data matched, the ">10000" indication will be displayed.

No.: The log number will be displayed.
Date & Time: The time when an event occurred will be displayed.
Description: Details of the occurred event are displayed.

Clicking time and date in the list tol start playback from that time and date.

To display search results or a list of copied data, refer to "Search and play recording events" (☞ page 69) and "Check a list of copied recorded images" (☞ page 73), respectively.

# Camera selection panel

Clicking the [Camera selection] button will display the operation panel shown below. Switch the image display area and select camera images.
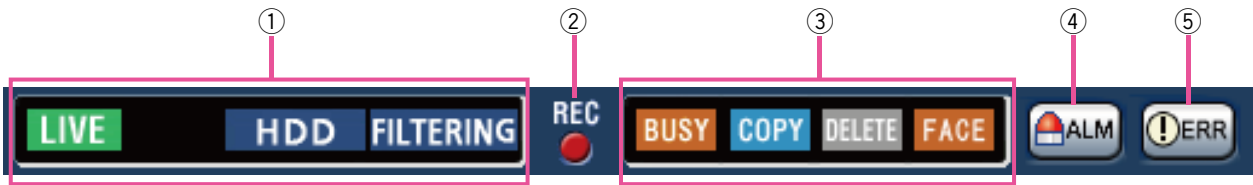


Camera selection box
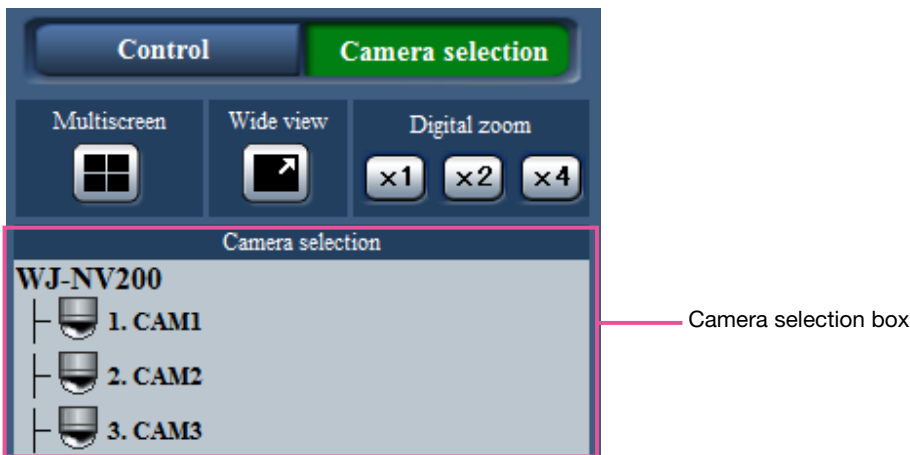
For the [Multiscreen] box, [Wide view] box and [Digital zoom] box, refer to "Control Panel" (☞ page 59).

**Camera selection box**
Clicking the camera title will display images from the selected camera on a 1-screen in the image display area.

# Status display area

① ② ③ ④ ⑤

**LIVE** **HDD** **FILTERING** **REC** ● **BUSY** **COPY** **DELETE** **FACE** **ALM** **ERR**

① **Live/playback status display area**
The status of an image (live image/recorded image) will be displayed. The following information will be displayed:
- **LIVE** : Indicates that live images are being displayed.
- ▶ : Indicates that playback images are being displayed.
- ◀ : Indicates that reverse playback images are being displayed.
- ▶▶ : Indicates that fast playback images are being displayed.
- ◀◀ : Indicates that fast reverse playback images are being displayed.
- ‖ : Indicates that a paused image is being displayed.
- **DL** : Indicates that recorded images/audio are being downloaded.
- **END** : Indicates that downloading of recorded images/audio is completed.

[Step 1] - [Step 7]: Indicates the playback speed.
- **Step 1** : Normal playback speed (1x)
- **Step 2** : Approx. 4x playback speed
- **Step 3** : Approx. 8x playback speed
- **Step 4** : Approx. 16x playback speed
- **Step 5** : Approx. 32x playback speed
- **Step 6** : Approx. 48x playback speed
- **Step 7** : Approx. 96x playback speed

- **HDD** : Indicates that the HDD is selected as playback media.
- **SD** : Indicates that the SD memory card is selected as playback media.
- **FORMAT** : Formatting of SD memory card or HDD is in progress.
- **FILTERING** : Indicates filtering of recording events.

② **Recording indicator**
Indicates the status of recording.
- **REC** ● : Indicates that recording is being performed.
- **REC** ○ : Indicates that recording is not being performed.

③ **Other status display area**
Indicates the following statuses.
- **BUSY** : Indicates that the camera is inoperable since a user with a higher priority is currently operating the camera.
- **COPY** : Indicates that copying is being performed.
- **DELETE** : Indicates that recorded images are being deleted. (Auto deletion only)
- **FACE** : Indicates that face matching is being performed (only if the face matching function has been set up).

④ **Alarm button [ALM]** **ALM**
This button will be displayed when an event occurs. The alarm action will be canceled by clicking this button.

⑤ **Error button [ERR]** **ERR**
Indicates that an error has occurred. The alarm action will be canceled by clicking this button.

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# Download operation area

### [Start]/[End] setup
Specify the time range for downloading images and audio by setting a start and end time. This operation on a 1-screen is available only during playback.

### [Download] button
Downloads recorded images and audio at the designated time and date.

### [Viewer] button
Download the viewer software for playing the downloaded images and audio.

# [CAM] tab

When displaying live images from a camera with the panning/tilting function, the following camera controls are available. Depending on the model of the camera, some operations may not work.
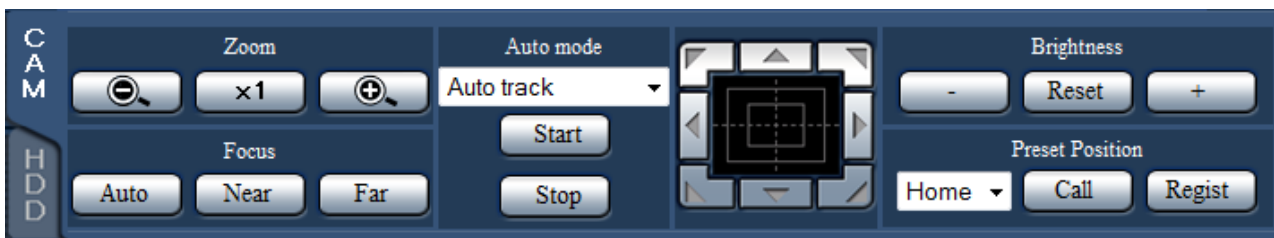


### [Zoom] box
Zooming can be adjusted by clicking the [–] button (wide) or the [+] button (tele). Click the [x1] button to reset zoom.

### [Focus] box
Focusing can be adjusted by clicking the [Near] button or the [Far] button. The auto focus function can be performed by clicking the [Auto] button.

### [Auto mode] box
Activate the designated auto function of the camera. Select the auto mode function (auto track, auto pan, preset sequence, or patrol) of the camera by clicking the [▼] button, and then click the [Start] button. Click the [Stop] button to stop the auto mode function.

### Control pad/buttons

Clicking the buttons around the control pad can move (pan/tilt) a camera in the clicked direction. Clicking inside the control pad also can adjust the vertical/horizontal position (pan/tilt) of the displayed images. Panning/ tilting speed will be faster if a clicked point gets farther from the center point of the control pad.

### [Brightness] box
The brightness (lens iris) can be adjusted by clicking the [–] (darker) button or the [+] (brighter) button. It is possible to reset the adjusted brightness by clicking the [Reset] button.

**[Preset Position] box**
- **[Regist] button**
  Registers the current camera position as a preset position.
  Select a preset position number (1 - 256) by clicking the [▼] button after moving the camera to a position to be registered as a preset position, and then click the [Regist] button. It is impossible to register the position as "Home".

---

**Note:**
- Some Panasonic cameras allow you to register a [Home] position. Refer to the "readme.txt" on the provided CD-ROM about the supported camera.

---

**[Call] button**
Moves the camera to the preset position registered in advance.
Select a preset position number (Home, 1 - 256) by clicking the [▼] button, and then click the [Call] button. It is necessary to register preset positions in advance to move the camera to the preset positions.

# [HDD] tab
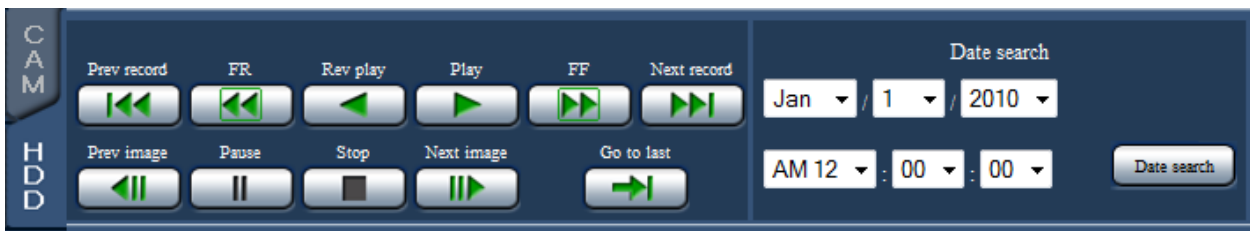


**[Play] button/[Rev play] button**
Plays recorded images in forward or reverse.

**[FF] button/[FR] button**
Plays recorded images at high speed in forward or reverse.
Playback speed of fast playback will change in the following order each time this button is clicked:
Step2 (Approx. 4x) → Step3 (Approx. 8x) → Step4 (Approx. 16x) → Step5 (Approx. 32x) → Step6 (Approx. 48x) → Step7 (Approx. 96x)

**[Next record] button/[Prev record] button**
Skips to the next recorded image or previous recorded image and plays it.

**[Next image] button/[Prev image] button**
Clicking this button during playback/pausing will display the next or previous frame and playback will be paused.

**[Pause] button**
Playback will be paused when this button is clicked during playback. Playback will resume when this button is clicked during pause.

**[Stop] button**
Stops playback and displays live images.

**[Go to last] button**
Click this button to skip to a point that is the start time of the latest recorded image using the camera currently being displayed and start playback.

**[Date search] box**
Start playback by designating the desired time and date of a recorded image. Click the [▼] button and determine the desired time and date.
Clicking the [Date search] button will play back the images corresponding to the selected date.

# Monitor live images from cameras

Live images will be displayed in the web browser window. It is possible to display live images on a 1-screen or a 4-screen (multiscreen) and to expand the image display area across the full screen.

## Display images on a 1-screen

To display live images on a 1-screen, take the following procedures.

| Step 1 |
| --- |

Click the [Camera selection] button. (☞ Page 60)
→ A list of the registered cameras will be displayed in the [Camera selection] box.
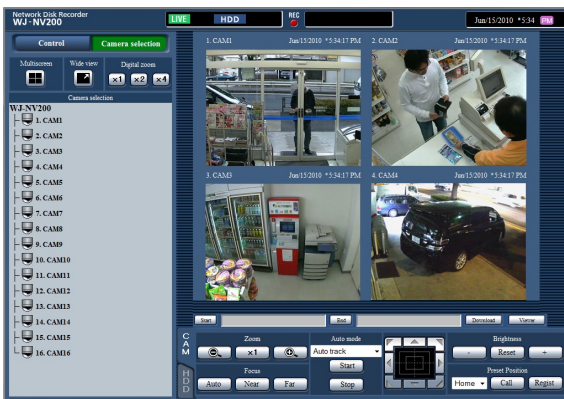


| Step 2 |
| --- |

Select the title of the camera.
→ Live images from the selected camera will be displayed.

**Note:**
- Selecting a camera from the right-click pop-up menu also will display images from the selected camera.

### Use digital zoom

Enlarges the displayed live images.
When playing recorded images on a 1-screen, click a button in the [Digital zoom] box.
    [x1] button: Displays live images with x1 zoomed size.
    [x2] button: Displays live images with x2 zoomed size.
    [x4] button: Displays live images with x4 zoomed size.
Clicking a point in the zoomed image moves the zoomed image by positioning the clicked point as the center point.

### Display images in wide view

Display live images across the full screen. When working on a 1-screen, click the [Wide view] button (the operation panel will disappear).
To return the wide view image to the original size, right-click on the image and select "Ctrl screen" from the displayed menu.

**Note:**
- To enlarge the displayed live images, also right-click on the live images and select "Wide view" from the displayed menu.
- Clicking the [Go to last] button while displaying live images will start playback from a point approx. 10 seconds before the latest recorded image.

# Display images on a 4-screen (multiscreen)

Live images from cameras will be displayed on a 4-screen.

### Step 1

Click the [Camera selection] button. (☞ Page 60)
→ A list of the registered cameras will be displayed in the [Camera selection] box.

### Step 2

Click the [Multiscreen] button.
→ Live images from the cameras (registered as a group) will be displayed on a 4-screen.

### Step 3

Each click of the [Multiscreen] button switches to the next 4 screens in the sequence: camera 1 to 4→camera 5 to 8→camera 9 to 12→camera 13 to 16...

### Step 4

Click a camera title in the [Camera selection] box or the camera title displayed on the image to display on a 1- screen again.
→ The display returns to the 1-screen.

---

**Note:**

- To change the screen pattern to a multi-screen, right-click on the live images and select "Multiscreen [1-4]" from the displayed menu.
- Selecting "Wide view" from the right-click menu will enlarge the displayed images on a 4-screen.
- Clicking the [Go to last] button while displaying live images will start playback from a point approx. 10 seconds before the latest recorded image. before the latest recorded image.
- When playing recorded images on a 4-screen, the audio of the camera assigned to the top left screen segment will be output.
- When starting VMD search while displaying images on a multiscreen, the camera image displayed in the top left screen segment will be searched.

---

# Play recorded images

Display camera images recorded on the recorder's hard disk. There are 2 ways to play recorded images as follows.
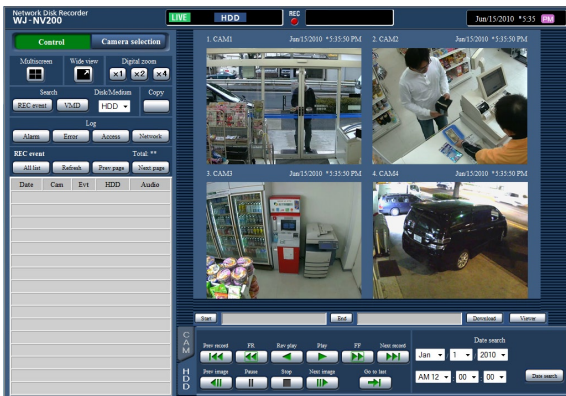- Play image recorded at a designated time and date
- Search and play recorded images

Playback operation can be made while recording.

## Step 1

Click the [HDD] tab on the top page of the operation window.
→ The [HDD] tab will be displayed.



## Step 2

Click the [Play] button.
→ Playback of a recorded image will be performed. The "Playback" indication and the "Step 1" indication will be displayed on the status display area.

Playback will start from the point at which the last playback was stopped (time and date).

## Step 3

Click the [Stop] button on the [HDD] tab.
→ "Playback" and "Step 1" will disappear from the status display area, and playback will stop. Live images from the camera will be displayed on the image display area.

**Note:**
- When displaying images on a 1-screen, audio assigned to the camera from which images are currently being displayed will be heard. When displaying images on a multiscreen, audio assigned to the camera from which images are displayed on the upper left corner will be heard.
- When starting playback for the first time after login, playback will start from a point approx. 10 seconds before the latest recorded image.
- When both a web browser and the viewer software are active, playback of audio may not be performed correctly. To play audio correctly, use either the web browser or the viewer software and close the other.
- When load to be processed is too heavy for the recorder (such as when many cameras are connected, images (live/playback) are displayed on many windows (segments)), playback speed may become slow or playback may stop for a while.
- When displaying images on a multiscreen, playback will be performed while skipping the actual recording.
- When playing images recorded at a higher recording rate and images recorded at a lower recording rate together on a multiscreen, there will be a widening gap between the displayed times.
- Playback of images and audio may sometimes not be synchronized.
- The camera image can be changed by clicking the [Camera selection] button and the camera title during playback.
- It is possible to switch 1-screen to a multi-screen during playback by clicking the [Multiscreen select] button.
- When clicking a camera title on the image displayed on a multiscreen, images from the camera whose camera title is clicked will be displayed on a 1-screen.

## About playback operation

The following operations are available during playback:

| Function | Example | Operation |
|----------|---------|-----------|
| [Play]/[Rev play] button | ▶ / ◀ | • Plays recorded images.<br>• Plays back recorded images in reverse.<br>\* Playback and reverse playback may not work when the [Play] or [Rev play] button is clicked while recording images at a lower recording rate. |
| [Stop] button | ■ | • Playback will stop and live images will be displayed when this button is clicked during playback. |
| [Pause] button | ‖ | • Playback will be paused when this button is clicked during playback.<br>• Playback will resume when this button is clicked during pause. |
| [FF]/[FR] button | ▶▶ / ◀◀ | • Playback speed of fast playback will be changed in the following order each time the [FF] button is clicked:<br>Step2 (Approx. x4) → Step3 (Approx. x8) →<br>Step4 (Approx. x16) → Step5 (Approx. x32) →<br>Step6 (Approx. x48) → Step7 (Approx. x96)<br>• Playback speed of fast reverse playback will be changed in the following order each time the [FR] button is clicked:<br>Step2 (Approx. x4) → Step3 (Approx. x8) →<br>Step4 (Approx. x16) → Step5 (Approx. x32) →<br>Step6 (Approx. x48) → Step7 (Approx. x96)<br>• The playback speed will be displayed on the playback status display.<br>• When playing H.264/MPEG-4 images, some frames of recorded images will not be displayed. Fast playback/fast reverse playback of images will be performed with the refresh interval set for the camera. |
| [Next record]/<br>[Prev record] button | ▶▶⏐ / ⏐◀◀ | • When the [Next record] button is clicked, playback point will skip to the start time of the next recorded images.<br>• When the [Prev record] button is clicked, playback point will skip to the start time of the previous recorded images.<br>• When there is no next/previous recorded image to be skipped to, the current playback will continue. In this case, playback time of the current playback may sometimes be displayed as around for 1 minute ago. |
| [Next image]/<br>[Prev image] button | ▶⏐ / ⏐◀ | • The next frame will be displayed when the [Next image] button is clicked during playback/pause, and playback will pause.<br>• The previous frame will be displayed when the [Prev image] button is clicked during playback/pause, and playback will pause.<br>• When playing H.264/MPEG-4 images, some frames of recorded images will not be displayed. Reverse frame by frame playback will be performed with the set refresh interval of the camera. |
| [Go to last] button | ▶⏐ | • Skips to a playback point approx. 10 seconds before the start time of the previous recorded images, and plays back the images.<br>\* When the [Go to last] button is clicked while recording images at a lower recording rate, playback of the latest recorded images may be paused or images may not be displayed. |

Refer to the page 59 for further information about the [Multiscreen], [Digital zoom] and [Wide view].

# Play image recorded at a designated time and date

Start playback by designating the desired time and date of a recorded image. Playback operation can be made while recording.

### Step 1

Click the [Camera selection] button on the top page of the operation window, and select a camera for playback from the camera selection box.
(☞ Page 60)

### Step 2

Click the [HDD] tab. (☞ Page 58)

### Step 3

Click the [▼] button and determine the time and date of the desired images.
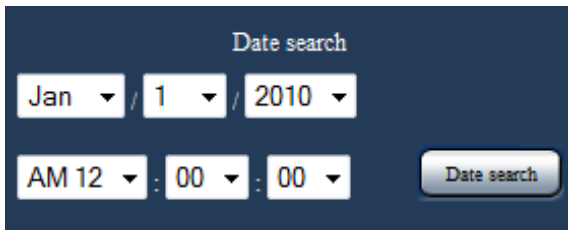


### Step 4

Click the [Date search] button.
→ "Playback" and "Step 1" will be displayed in the status display area, and playback will start from the image corresponding to the designated time and date.
(Playback operation: "Playback Downloaded Images" (☞ page 66))

---

**Note:**
- When playing H.264/MPEG-4 image by designating time and date, playback may start from a point several seconds before or after the designated time and date.
- When no recorded image found at the designated time and date, playback of images recorded after and at the closest to the designated time and date will start.

---

# Search and play recording events (REC event search)

Search the recording event list for a recording event and play it back.

---
**Important:**
- To use recording event search, "HDD" must be selected for [Disk/Medium].
  It is also possible to filter recording events using the search filters.
- Face matching alarm cannot be played back by recording event search on the web browser. Start playback from the alarm log list. (☞ Page 59)
---

### Step 1

Click the [Control] button on the top page (☞ page 58) of the operation window, and click the [REC event] button in the [Search] box.
→ The recording event search window will be displayed.



### Step 2

Specify the search conditions (filters).

**[Date & time range]**
Select a time range by designating a start and end time and date. The designated time range will be searched.

**[REC event]**
Searches for images recorded by the selected recording mode only. Check the checkbox corresponding to the desired event type. When the checkbox for [All] is marked, the checkboxes of all of the following events can be marked:

Schedule [SCH]: Recording by the schedule recording event
Terminal alarm [TRM]: Recording triggered by a terminal alarm
Command alarm [COM]: Recording triggered by a command alarm
Camera site alarm [CAM]: Recording triggered by camera site alarm

**[Camera]**
Searches for images recorded using the selected camera. Mark the checkbox corresponding to the desired camera. When the checkbox for [All] is marked, the checkboxes of all cameras can be marked.

### Step 3

Click the [OK] button.
→ [Filtering] appears in the status display area, and the filtered result will be displayed in the list display area.



**[Total]**
Displays the total number of searched data. When more than 10000 data matched, the ">10000" indication will be displayed.

**[All list] button**
Cancels filtering and displays all recording events.

**[Refresh] button**
Updates the list to the latest one.

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**[Prev page] button**
Displays the previous page of the list.

**[Next page] button**
Displays the next page of the list.

**[Date & Time]**
Start time of recording will be displayed.

**[Cam]**
The camera which recorded the images will be displayed.

**[Evt]**
Event type will be displayed.

**[HDD]**
The hard disk drive number in which the corresponding recorded images are stored will be displayed.

**[Audio]**
When audio is attached to recorded images, the audio icon will be displayed.

---

**Note:**
- The [All list] button will become unavailable during playback. To use the [All list] button, stop playback and click it.
- When many cameras are connected, the recording start time of each camera may sometimes not be the same.

---

**Step 4**

Click the time and date of the desired recording event.
→ Playback of recorded images of the selected recording event will start. (About playback operation (☞ page 67))

# Motion detection search and playback (VMD search)

Search for recorded images from images recorded triggered by the VMD function of cameras by designating a time range. Click a time and date on the result list to play corresponding recorded images.

---

**Important:**
- To perform the VMD search, it is necessary to configure the settings of the connected cameras that support the motion detection function in advance. Refer to the "readme.txt" on the provided CD-ROM about cameras supporting the VMD search function. Refer to the operating instructions of the camera in use for further information.

---

### Step 1

Click the [Control] button on the top page (☞ page 58) of the operation window, and click the [VMD] button in the [Search] box.
→ The "VMD search" window will be displayed. Display of live images and display of playback images will be paused.
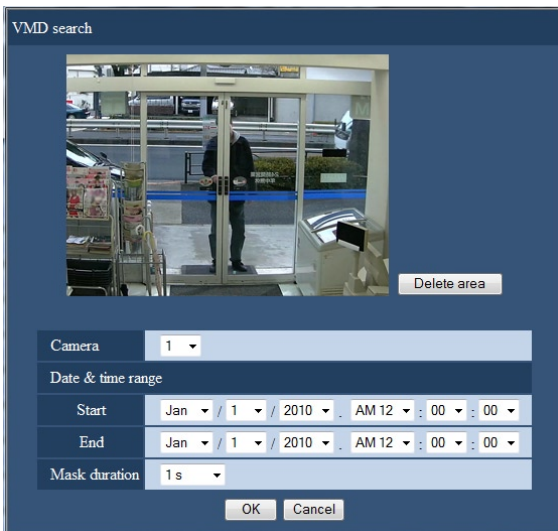


### Step 2

Specify the search conditions (filters).

**[Camera]**
Select the camera for VMD search.

**[Date & time range]**
Select a time range by designating a start and end time and date. The designated time range will be searched.

**[Mask duration]**
Select the time span to be searched.

### Step 3

Set up a VMD area. Drag the mouse on the screen.
→ A frame will be displayed, and the area within the frame will be set as VMD search area.



---
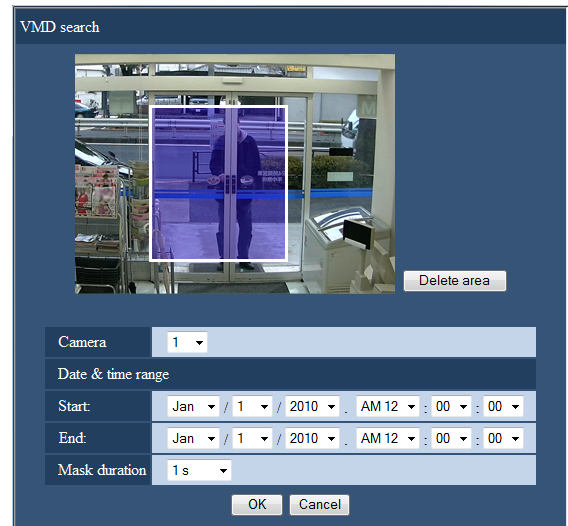
**Note:**
- To delete the created motion detection area, click the [Delete area] button.

---

### Step 4

Click the [OK] button.
→ The VMD search will start. The search result will be displayed in the list display area. (☞ Page 69) It may sometimes take time to complete the search.

---

**Important:**
- In the result list of the VMD search, the audio icon will not be displayed in the "Audio" column even if audio is attached to the recorded images.

---

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Click the time and date of the desired recording event.

→ Playback of recorded images of the selected recording event will start. (About playback operation (☞ page 67))

---

**Note:**
- Recorded images will be played on a 1-screen. To play on a multi-screen, click the [Multiscreen Select] button after starting playback.
- When starting the VMD search while displaying images on a multiscreen, the camera whose images are displayed at the upper left corner will become subject to the VMD search.

---

# Check a list of copied recorded images

Display a list of data (recorded images) copied on an SD memory card, and then select a recorded image to play from the list. It is possible to search for copied data using filters. Available filters are "Date & time range" and "Camera".
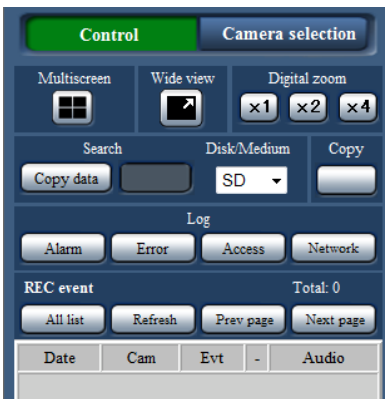
### Step 1

Insert an SD memory card on which recording data is copied into the SDHC/SD memory card slot. (☞ Page 9)

### Step 2

Click the [Control] button on the top page (☞ page 58) of the operation window.

### Step 3

Select "SD" for "Disk/Medium" in the [Search] box, and then click the [Copy data] button.



→ The copy data search window will be displayed.

### Step 4

Specify the search conditions (filters).
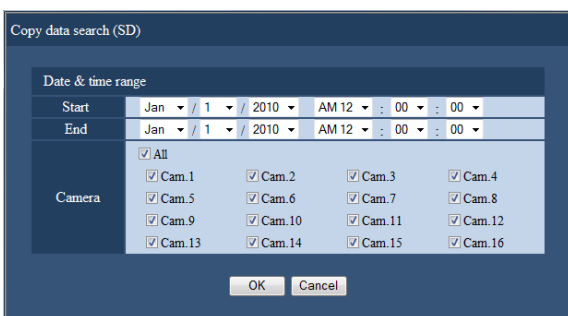


**[Date & time range]**
Searches for images recorded with each selected camera. Mark the checkbox corresponding to the desired camera.

**[Camera]**
Searches for images recorded with each selected camera. Mark the checkbox corresponding to the desired camera. When the checkbox for [All] is marked, the checkboxes of all cameras can be marked.

### Step 5

Click the [OK] button.
→ Copied data matching the search criteria will be displayed on the list display window.



**[Total]**
Displays the total number of searched data. When more than 10000 data matched, the ">10000" indication will be displayed.

**[All list] button**
Cancels filtering and displays all recording events.

**[Refresh] button**
Updates the list to the latest one.

**[Prev page] button**
Displays the previous page.

**[Next page] button**
Displays the next page.

**[Date & Time]**
Start time of recording will be displayed.

**[Cam]**
A camera used for recording will be displayed.

**[Evt]**
Event type will be displayed. (☞ Page 69)

**[Audio]**
Nothing will be displayed here.

---

**Important:**
- Do not remove the SD memory card during play-back of copied data on the SD memory card. It may damage data on the SD memory card.

---

**Note:**
- When checking a list after inserting the other SD memory card, select "HDD" for "Disk/Medium" in the [Search] box first and then select "SD". Refer to page 81 for information on how to play copied images.

# Event function

The recorder will take an event action when any of the following events occur.

Terminal alarm: An event when an alarm input signal is supplied from an external device such as a door sensor to the alarm input terminal on the rear of the recorder.

Camera site alarm: An event when an alarm (camera terminal alarm, etc.) is detected by a camera.

Command alarm: An alarm when receiving an alarm from a PC, etc. via a network.

Face matching alarm*: Alarm issued when a face matches an already registered facial image.

* Only for models supporting the face matching function

---

**Note:**
- Operations such as registration of facial images, display of face matching results, and starting and stopping the face matching function are not possible from a web browser, regardless of whether the recorder is set up for use of this function. For setting conditions and limitations applicable to the face matching alarm, refer to the Installation Guide.

---

## Event action

When the recorder recognizes an event, it will take an event action according to the set action mode.
Refer to the "Event action" (☞ page 36) for further information about the event action and action mode.
The actions that can be set up and checked from a PC when an event occurs are described below.

### Display the alarm message

A window that notifies of an event occurrence will be displayed.
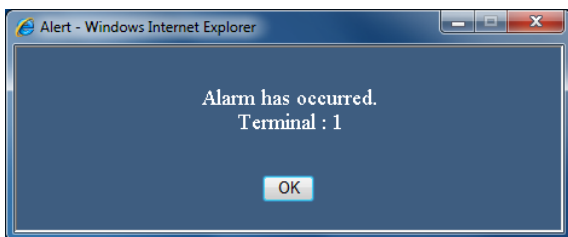


Click the [OK] button or the [x] button to close the window. When several events occur at the same time, the information for the event that occurred last will be displayed.

**Display the alarm button**
The [ALM] button will be displayed in the status display area. The alarm action will be canceled by clicking [ALM] button. (☞ Page 76)

**Display the error button**
The [ERR] button will be displayed in the status display area. The alarm action will be canceled by clicking [ERR] button. (☞ Page 76)

**Send a mail that notifies of an event occurrence**
A mail that notifies of the event occurrence with the time and date of the event occurrence will be sent (Alarm mail).
Up to 4 destination addresses for the alarm mail can be registered. (☞ Installation Guide)

**Provide an alarm notification to a PC according to the Panasonic alarm protocol setting**
When an event or an error occurs, information about the event/ error will automatically be notified to the registered PC according to the "Panasonic alarm protocol" setting. To receive a notification and display the contents of it, it is necessary to install the optional dedicated software.
Refer to the "readme.txt" on the provided CD-ROM about the dedicated software.

# Cancel the alarm action

To cancel the alarm action manually, click the [ALM] button in the status display area.



→ The alarm action will be canceled. The event recording will stop and return to the operational status just before the event occurred.

# Cancel the error action

When an error occurred, this recorder will take an error action. An error display window providing information on the error that occurred will be displayed on the web browser. To cancel the error action manually, close the error display window, and click the [ERR] button in the status display area.



→ The error action will be canceled.

**Note:**
• When an error occurs, take remedial action by following the instructions displayed on the error log panel (☞ page 35). The error indicator on the front of the recorder will go off when the cause of the error has been eliminated.

# Copy recorded images

Copy images recorded by the recorder on an SD memory card. It is recommended to make back-up copies on a regular basis for unexpected situations such as malfunction of the hard disk drives.
Refer to page 39 for further information about the copy function. Refer to page 81 for information on how to play copied images.

## Step 1

Click the [Control] button on the top page (☞ page 58) of the operation window.

## Step 2

Click the button in the [Copy] box.
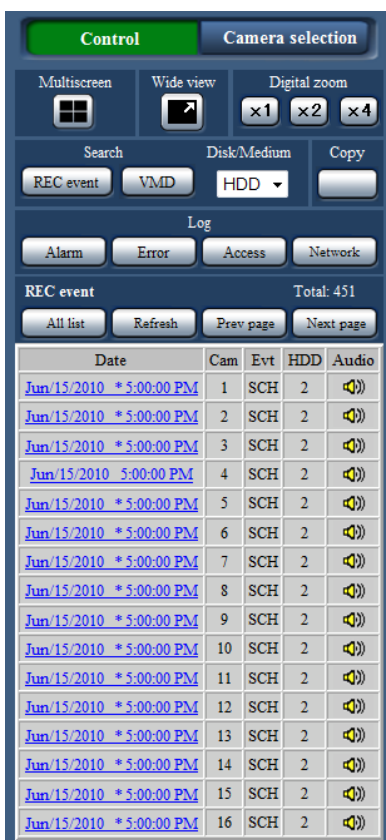


→ The "Copy" window will be displayed.

## Step 3

Specify the detailed conditions of recorded images to be copied. Specify the information to be set as conditions.
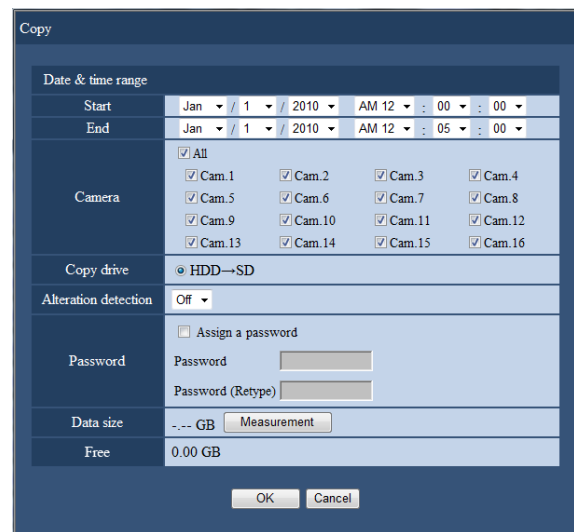


**[Date & time range]**
Designate the start time and date and the end time and date of recorded images to be copied. Click the [▼] button, and then designate time and date.

**[Camera]**
Select the camera you wish to copy. Mark the checkbox next to the desired camera. When the checkbox for [All] is marked, the checkboxes of all cameras can be marked.

**[Copy drive]**
Make sure that "HDD→SD" is selected as destination medium.

**[Alteration detection]**
Determine whether or not to attach the alteration detection code to the recorded images to be copied. When the alteration detection code is attached, it is possible to check if the copied recorded images have been altered or not when playing the copied recorded images using the viewer software. Click the [▼] button, and then select "On" or "Off".

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**[Password]**
To copy with password protection, mark the corresponding checkbox and input a password. The password will be required to play back the copied data.

**[Data size]**
When the [Measurement] button is clicked, size of the data to be copied will be displayed.

**[Free]**
The remaining capacity of the destination medium (SD memory card) will be displayed.

**Step 4**

Click the [OK] button. The confirmation window will be displayed. Then, click the [OK] button of the window.
→ The data copy window will close. Copying will start and the icon will be displayed in the status display area. When copying is complete, the [COPY] icon will disappear.

---

**Important:**
- Do not remove the SD memory card during copying on the SD memory card. It may damage data on the SD memory card.
- When the copy end time is set earlier than the start time, copying will not start even when the [Copy] button is clicked.
- When copy medium lacks enough storage space, data will be copied until the copy medium is full. Use a medium with sufficient storage capacity to avoid left over data that is not copied.
- Copying will be performed in the following order: Viewer Software → Images → Audio Depending on the designated time range for copying and the remaining space of the storage medium, images and audio may not be copied.
- When clicking the button in the [COPY] box during copying, the confirmation window for cancellation of the current copying will be displayed. It is possible to cancel the current copying on this window.
- Do not turn off the power of the recorder while copy is in progress. If the power is turned off while copying, the storage media copied on will become unusable.
- When another user operating the recorder has opened the copy panel or when the destination medium has been selected by another user, the copy window cannot be displayed.

# Download recorded images currently being played

Designate the start point and the end point of recorded images currently being played and download images to a PC.
When downloading recorded images, recorded images and audio will be downloaded as an image data file (filename.n3r) and an audio data file (filename.n3a) respectively. Refer to page 81 for information on how to play downloaded recorded images.

---

**Important:**
- Note when downloading that, due to limitations of Internet Explorer, the free disk space of the PC must be 2 or more times the size of the file to be downloaded.
- When download is canceled in the process of the download, it is impossible to properly play the downloaded file on a PC.

---

### Step 1

Click the [HDD] tab on the top page (☞ page 58) of the operation window.

### Step 2

Play back the recorded images on a 1-screen.
Click the [Start] button in the download operation area at the playback point where the download is to start. Another way to start the download is to click the start time box and enter time and date.
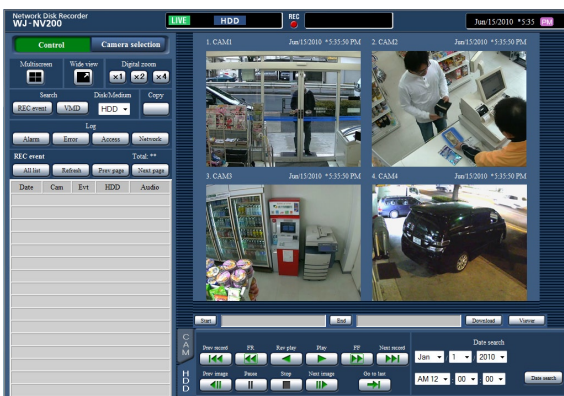


→ The time and date of the start point will be displayed next to the [Start] button.

### Step 3

Click the [End] button in the download operation area at the playback point where the download is to end. Another way to end the download is to click the end time box and enter time and date.
→ The time and date of the end point will be displayed next to the [End] button.

---

**Note:**
- It is possible to designate up to 20 minutes of the time range per download.

---

### Step 4

Click the [Download] button.
→ The "Download" window will be displayed.

### Step 5

Select "On" or "Off" for "Password" to determine whether or not to download images with audio and to determine whether or not to attach an alteration detection code to recorded images to be downloaded, then click the [OK] button.
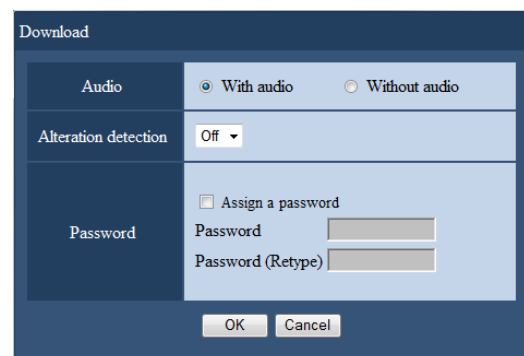


→ The file download window will be displayed.

### Step 6

Click the [Save] button.
→ The "Save As" window will be displayed.

### Step 7

Create a new folder in the desired directory and click the [Save] button.
→ Recorded images and audio will be downloaded as an image data file (filename.n3r) and an audio data file (filename.n3a) respectively.

**Note:**

- When "With audio" is selected, the "Download" window will be displayed again after the download is complete.
- If a message is displayed on the information bar of Internet Explorer, see page 92.
- When playing on a multiscreen, it is impossible to download recorded images.

# Play the copied/downloaded recorded images

When recorded images are copied/downloaded, recorded images and audio will be copied/downloaded as an image data file (filename.n3r) and an audio data file (filename.n3a) respectively into the copy/download destination. It is possible to play, save and print the copied/downloaded data files using the dedicated viewer software.

## Play recorded images copied on an SD memory card

To play images copied on an SD memory card, double-click the executable file (ND_Viewer.exe) to launch the viewer software. The executable folder is copied in the following folder together with recorded images.
Folder: [Drive]: \PRIVATE \MEIGROUP \PSS \NVR \ND_Viewer
Refer to page 83 for how to use the viewer software.

---

**Note:**
• The viewer software copied onto an SD memory card can be launched without installation on a PC. When copying the viewer software to another folder or another PC, copy all the files contained in ND_Viewer.exe.

---

## Play recorded images downloaded using a web browser

To play back images downloaded from the web browser, start the installed viewer software.
If the PC used for downloading has ActiveX control installed, the viewer software will have been installed at the same time (☞ page 57).
If another PC is used for playback, it is necessary to download the viewer software and install it on the PC.
Refer to page 83 for how to use the viewer software.

### Download the viewer software

**Step 1**

Click the [Viewer] button in the download operation area on the top page (☞ page 58) of the operation window. (☞ Page 62)
→ The file download window will be displayed.
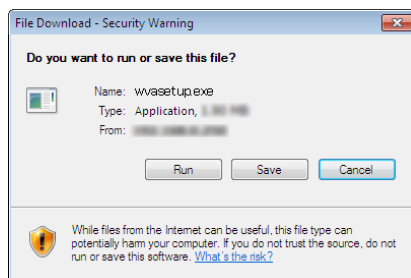


**Step 2**

Click the [Save] button.
→ The "Save As" window will be displayed.

**Step 3**

Create a new folder in the desired directory and click the [Save] button.
→ The viewer software will be downloaded.

# Install the viewer software

When the older version of the viewer software is installed on a PC, uninstall it before installing the newer version.

### Step 1

Double-click the downloaded file (wvasetup.exe).
→ The installer launches. Follow the instructions of the installation wizard.

---

**Note:**
- When agreed to the displayed license agreement, click the checkbox of "I accept the terms in the license agreement".
- Installation is possible even if [User name] and [Organization] on the "Customer information" page are left blank. Click the checkbox next to "Anyone who uses this computer (all users)".
- Select [Complete] for the setup type.

---

### Step 2

Click the [Install] button.
→ The Installation will start. When installation is complete and the completion window is displayed, click the [Finish] button.

---

**Note:**
- When the viewer software is installed, the ActiveX control will be installed at the same time.

---

# Uninstall the viewer software

### Step 1

Open "Uninstall a program" in "Control Panel".

### Step 2

Select "WebVideo ActiveX" (the program to be deleted) from the presently installed programs, and then right-click on it. Select "Uninstall and Change" from the displayed right-click menu.
→ The uninstaller launches.

### Step 3

Complete the uninstallation by following the instructions of the wizard.

---

**Note:**
- When the viewer software is uninstalled, the ActiveX control will be uninstalled at the same time.

---

# How to use the viewer software

Select "ND_Viewer" from the start menu ("All programs" – "Panasonic" – "Network Disk Recorder" – "ND_Viewer") or double-click the ND_Viewer icon on the desktop.
For images copied on an SD memory card, double-click the executable file (ND_Viewer.exe) to launch the viewer software (see page 81 for the filing location of the executable file).
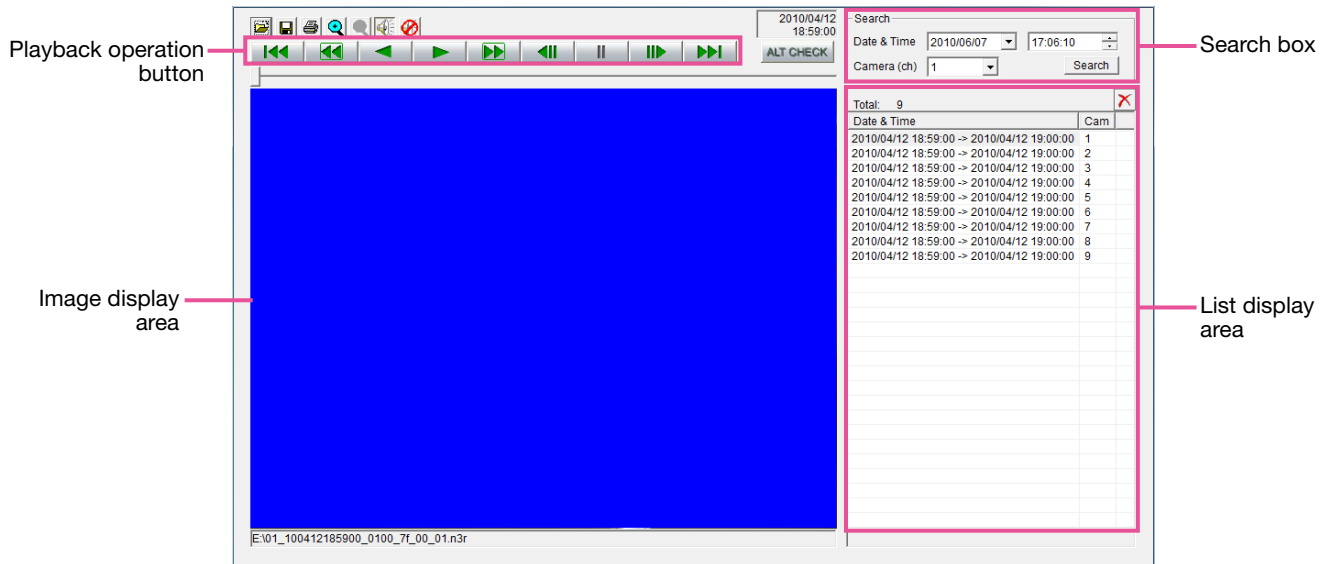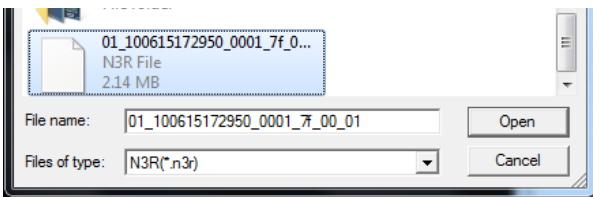


## Select recorded images currently being played

### STEP1

Click the 📂 button.
- The "Open" window will be displayed.



### Step 2

Select the downloaded image data file (filename.n3r), and click the [Open] button. Another way to select a file is to drag and drop it onto the viewer software without first displaying the window for opening files,
→ The information on the file selected in the list display area will be displayed.

　　Date & Time: Displays a start time and an end time for copying the recorded images.
　　Cam: Displays the camera number.

**Note:**
- It is possible to select multiple files (up to 100 files) by clicking the desired files while holding down the [Ctrl] key or the [Shift] key and display all of them in a list by drag & drop.
- The files can be sorted by start time and date in ascending or descending order by clicking the header of the list display area,
- To add image data to the list display area, right-click the list and select [Add file] from the menu displayed. When the window for opening files is displayed, proceed to Step 2. The image data added will be displayed on the sorted list.
- When the number of displayed image data files has reached 100, no more files can be added. The total number of selected image data files is displayed under [Total:] on the list.
- Clicking the ✖ button will delete all data displayed on the list. Another way to clear the list is to right-click the list and select [Clear all list].

## Playback Downloaded Images

Use the playback operation button to play downloaded images. If the same camera channel is displayed on the list, the next list image in playback mode or the previous list image in reverse playback mode will be played back consecutively. If the same camera channel is not displayed on the list, playback will stop, the image display area will turn black and playback will be paused.

---

**Note:**
- When starting playback of password protected data, the password entry screen will be displayed. Enter the required password.
- Clicking the ▶▶ button in playback (or the ◀◀ button in reverse playback) will play the next (or previous) images on the list of the camera whose images are currently being played back.
- Clicking the 🔍 button will enlarge the image to twice its size. Clicking the 🔍 button will reset the image to its original size.
- If there is audio data (filename.n3a), the 🔊 /🚫 buttons will be displayed. Click these buttons to play back with or without audio.
- When a web browser and the viewer software are running at the same time, audio may not be played properly. To play audio correctly, use either the web browser or the viewer software and close the other.
- Playback images and audio may sometimes not be synchronized exactly.
- When the [Search] button is clicked after selecting [Date & Time] and [Camera(ch)] in the search box, playback of the image data of the selected camera data will start from the top of the data corresponding to the selected time and date.

---

## Alteration detection

It is possible to detect alterations in data (☞ page 79) if a code for alteration detection has been attached to the downloaded data.
When data to which the alteration code has been added is selected, the [ALT CHECK] button will be displayed. Clicking the button starts alteration detection and displays the result in a window.
[OK (Not Altered)]: No alteration was detected.
[NG (Altered)]: Alteration was detected.

## Save still images

Save an image displayed in the image display area as a JPEG file on a PC.

| Step 1 |
| --- |

Click the 💾 button.
→ The [Save As] window will be displayed.
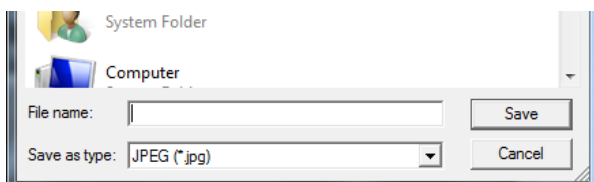


| Step 2 |
| --- |

Enter the file name and select "Save as type: JPEG (*.jpg)". Designate the folder and click the [Save] button.
→ The image data will be saved.

## Save image data (copy)

Save selected image data (filename.n3r) in any folder on the PC.

**Step 1**

Right-click the list and select [Copy] from the displayed menu.
→ The [Save As] window will be displayed.

**Step 2**

Designate the folder name and destination drive and click the [Save] button.
→ The image will be copied and saved.

## Print the displayed image

Print the image displayed in the image display area.
Pause playback at the desired point and click the 🖨 button. When printing an image whose extension is "n3r", the time and date when paused using the viewer software will be printed.

# Operate the camera

When displaying live images from a camera with the panning/tilting function, the following camera controls are available. It may be impossible to operate the camera or some functions may be inoperable depending on the model of the camera.

- Panning/Tilting: Adjusts the horizontal/vertical position of the camera.
- Zoom: Zoom in/out the displayed image.
- Focus: Adjust the focal point.
- Brightness: Adjusts the lens iris of the camera.
- Preset position operation: Move the camera to the preset position (that is determined on the camera's setup menu and registered in the recorder).
- Auto mode: Activate the designated auto function of the camera.

To operate the camera, display the [CAM] tab of the top page.
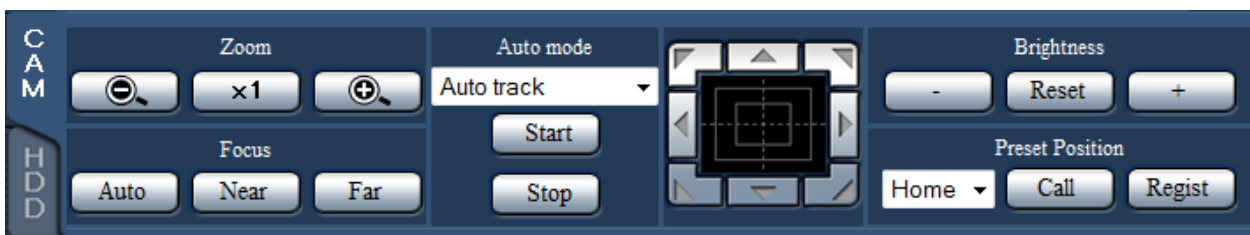


## Panning/Tilting

When displaying live images on a 1-screen, moves a camera horizontally/vertically in the following ways.

**Control buttons**
Click to move (pan/tilt) a camera in the clicked direction.

**Control pad**
Click to move (pan/tilt) a camera in the clicked direction. Panning/ tilting speed will be faster if a clicked point gets farther from the center point of the control pad.

**Image display area**
Click the desired point to be located at the center of the angular field of view. The camera will move to locate the clicked point as the center point in the image display area.

## Zooming

Zoom in/out the displayed image. Depending on the models of the connected cameras, the available zooming factors may be different. Refer to the operating instructions of the camera for further information.
Zooming can be adjusted by clicking the [–] button (wide) or the [+] button (tele). Click the [x1] button to reset the zoom factor to x1.

---

**Note:**
- It is possible to adjust zooming by turning the mouse wheel.

---

# Focus adjustment

Adjust the focal point. The auto focus function is available.
Focusing can be adjusted by clicking the [Near] button or the [Far] button.
The auto focus function can be performed by clicking the [Auto] button.

# Iris (brightness) adjustment

Adjusts the lens iris of the camera.
The brightness (lens iris) can be adjusted by clicking the [–] (darker) button or the [+] (brighter) button. It is possible to reset the adjusted brightness by clicking the [Reset] button.

# Register preset positions

Register the current camera position as a preset position. The preset positions can be registered only when using a camera supporting the preset position function.

### Step 1

Perform the pan/tilt operation to move the camera to the position to be registered.

### Step 2

Click the [▼] button in the [Preset Position] box to select a preset number (1 - 256).

---

**Note:**
• It is impossible to register the position as "Home". Some Panasonic cameras allow you to register a [Home] position. Refer to the "readme.txt" on the provided CD-ROM about the supported camera.

---

### Step 3

Click the [Regist] button.
→ The preset position will be registered under the selected preset number.

# Move to preset positions

Move the camera to the preset position registered in advance. Preset positions need to be registered in advance.

### Step 1

Click the [▼] button in the [Preset Position] box to select a preset number (Home, 1 - 256).

### Step 2

Click the [Call] button.
→ The camera moves to the registered preset position respective to the selected preset number.

# Auto functions (auto panning, etc.)

Activate the auto function of the camera according to the settings of the camera.

### Step 1

Click the [▼] button in the [Auto mode] box, and then select the desired auto function from the following.

Auto track: The camera will automatically track an object moving on the screen.

Auto pan: The camera direction will automatically move (pan) between the start point and end point set in advance.

Preset sequence: The camera will move (pan) to the preset positions registered in advance in order of the preset position number (numerical order).

Patrol: The camera will trace the manually recorded panning pattern.

### Step 2

Click the [Start] button to start the selected auto mode function.
Click the [Stop] button to turn off the auto mode function.

**Note:**
• Refer to the operating instructions of the connected camera for further information about the auto mode function of the camera.

# Notification by e-mail

## Alarm mail

The address of the recorder contained in an alarm mail as follows.

Contents of the alarm mail: NV200 (192.168.0.250), alarm was occurred.
Alarm date: xxx-x-x xx:xx:xx xx:xx (Example: 2010-1-1 12:00:00)
Cause of alarm: Displays an event type and a camera or an alarm number (Example: SITE ALARM 5ch)
URL: http://192.168.0.250/

## Warning mail

The following mail will be sent to notify of a trouble occurrence to a registered address when the trouble occurs.

NV200 (192.168.0.250) STATUS REPORT
DATE: 2010-1-1 12:00:00
STATUS: The description of the trouble will be displayed. (Ex. THERMAL ERROR)
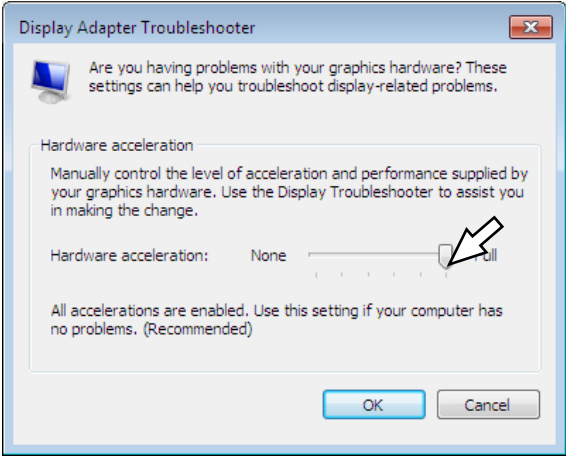
| Indication | Description |
| --- | --- |
| Time and date | Time and date when the trouble occurred will be displayed. |
| STATUS | The description of the trouble will be displayed. xx is the camera number, y is the disk number and f is the cooling fan number. |
| | Thermal trouble : THERMAL ERROR |
| | Alteration detected : ALTERED xxch |
| | HDD smart warning : HDDy SMART WARNING |
| | HDD hour meter warning : HDDy HOUR METER WARNING |
| | Auto remove of link : HDDy LOGICALLY REMOVED |
| | Cooling fan error : FANf ERROR |
| | NW link error : NETWORK LINK ERROR |
| | NW camera error detection : CAM xx COMMUNICATION ERROR |
| | Network camera error detection (audio) : CAM xx COMMUNICATION ERROR(AUDIO) |
| | NW camera error recovery : CAM xx COMMUNICATION RECOVERED |
| | Network camera error detection (audio) : CAM xx COMMUNICATION RECOVERED(AUDIO) |
| | HDD remove error : HDDy SWAP WARNING |

# Troubleshooting

Before asking for repairs, check the symptoms with the following table.
Contact your dealer if a problem cannot be solved even after checking and trying the solution in the table or a problem is not described below.

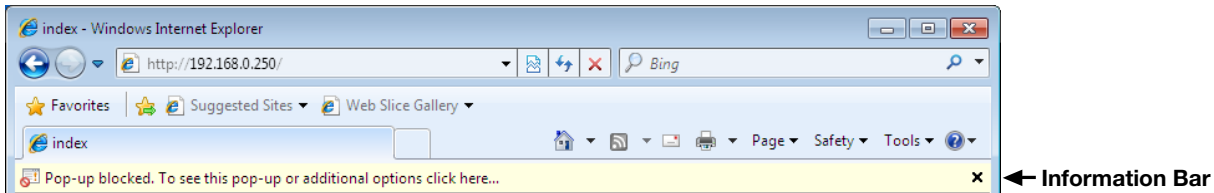| Symptom | Cause/solution | Reference pages |
|---|---|---|
| Cannot access from the browser. | • Is the Ethernet cable firmly connected to the 10BASE-T, 100BASE-Tx or 1000BASE-T port? Confirm the cable is firmly connected. | Installation Guide |
| | • Is the connection indicator of the 10BASE-T/100BASE-TX port lit? When it is not lit, connection to a LAN is not established or a network is not working correctly. Confirm that the connection indicator of the 10BASE-T/100BASE-TX port is lit. Refer to the system administrator if it is not lit. | Installation Guide |
| | • Are the set IP addresses valid? Refer to a system administrator for further information about the settings. | Installation Guide |
| | • Are you accessing the wrong IP address? Check the connection as follows. >ping "IP address of this unit" If there is reply from this unit, the connection is normal. If not, check the settings of the IP address and the subnet mask. | – |
| | • Is the same IP address provided to other devices? Refer to a system administrator for further information about the settings. | Installation Guide |
| | • Are there contradictions between the address and the network subnet to be accessed? When the recorder and the client (PC) are on the same subnet, is the same subnet set for the IP addresses of the recorder and the PC? Or is "Use Proxy Server" for the settings of the browser checked? When accessing the recorder in the same subnet, entering the address of the recorder in the "Don't Use Proxy For These Addresses" box is recommended. | Installation Guide |
| The image displayed on the browser is not being refreshed. | • Depending on the traffic of the network, there might be difficulties in displaying images. Press the [F5] button on the keyboard to request images. | – |
| Image refresh of the browser is slow. Response of the browser is slow. | • Isn't the network traffic heavy? These symptoms may occur when the network traffic is heavy. | – |
| A pop-up is not displayed on the browser. | • It may be possible that a pop-up blocker other than Internet Explorer is activating. Check the installed software and cancel the pop-up blocker. | – |
| Cannot close the authentication window displayed when displaying the basic operation window. | • Are the correct user name and password entered? Confirm the correct user name and password. | Installation Guide |
| Audio is interrupted during playback using the viewer software. | • When playing images recorded at a higher recording rate, audio may sometimes be played interrupted. | – |

| Symptom | Cause/solution | Reference pages |
|---|---|---|
| Cannot play the downloaded recorded images. | • When any setting of the setup menu has been changed during the download, the download will be canceled automatically. In this case, the downloaded file is not a complete file and it is impossible to play it. | – |
| An error message is displayed when trying to launch the viewer software by dragging and dropping multiple files onto it. | • Try to launch by dragging and dropping several files or launch the viewer software first by double-clicking. | – |
| When displaying images on a multiscreen, images from two cameras or more are displayed in sequence on a screen of multiscreen. | • This may occur due to the display adapter and driver combination. When this occurred, update the driver of the display adapter to the latest version first.<br>• If updating the driver does not solve the problem, adjust the hardware acceleration as follows. The following are descriptions when using Windows 7.<br>  1. After closing all web browser windows, right-click on the desktop and select "Screen resolution" from the displayed pop-up menu.<br>  2. Click "Advanced settings" on the "Screen resolution" window.<br>  3. Select the [Troubleshoot] tab, and click the [Change settings] button.<br>  4. Disable the DirectDraw acceleration by adjusting the performance level of "Hardware acceleration" on the "Display Adapter Troubleshooter" window.<br><br> | – |

## Message displayed on the information bar

Depending on the operation system in use, the following may occur. Follow the instructions below when the following occurred. By performing the following solutions, other applications may not be affected.

The "Information Bar" expressed in the following symptom and solutions will be displayed just below the address bar only when there is information to communicate.



← **Information Bar**

| Symptom | Cause/solution | Reference pages |
|---------|----------------|-----------------|
| The following message is displayed on the information bar. "Pop-up blocked. To see this pop-up or additional options, click here…" | • Click the information bar and select "Always Allow Pop-ups from This Site". The dialog window saying "Allow pop-ups from this site?" will be displayed. Click the [Yes] button. | – |
| The following message is displayed on the information bar. "This site might require the following Active X control: 'wvasetup2.exe' from 'Panasonic System Networks Co., Ltd.'. Click here to install..." | • Click the information bar and select "Install ActiveX Control...". Click the "Install" button on the displayed "Security Warning" window. | – |
| The following message is displayed on the information bar. "To help protect your security, Internet Explorer blocked this site from downloading files to your computer. Click here for options..." | • Click the information bar and select "Download File...". When downloading fails even though you selected "Download File...", perform the following operation. Click "Internet Options" on the Tools menu of Internet Explorer, and then click the [Security] tab. Then, click the [Custom Level…] button to open the "Security Setting" window. Under "Downloads", select "Enable" for "Automatic prompting for file downloads". Then click the [OK] button. When the warning window is displayed, click the [Yes] button. | – |
| The following message is displayed on the information bar when tried to execute a downloaded file. "The publisher could not be verified. Are you sure you want to run this software?" | • Click the [Run] button. | – |
| Unnecessary status bar or scroll bar is displayed on the pop-up window. An URL is displayed on the pop-up title bar and the title is not displayed completely. | • Click "Internet Options" on the Tools menu of Internet Explorer, and then click the [Security] tab. Then, click the [Custom Level…] button to open the "Security Setting" window. Under "Miscellaneous", select "Enable" for "Allow script-initiated windows without size or position constraints". Click the [OK] button. When the warning window is displayed, click the [Yes] button. • In addition, when using Internet Explorer 7.0, select "Enable" for "Allow websites to open windows without address or status bars". | – |

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# Glossary

**ActiveX Control**
A software module developed by Microsoft. It is used to add functions, downloaded from a web server via the Internet or intranet, to Internet Explorer. The recorder uses it to display video.

**Bit rate**
Indicates how many bits of data can be processed or transmitted in a unit of time. Generally, the units are in bps, or bits per second. Used to indicate the compression rate of video and audio data, and how much data a communications line can send and receive in 1 second.

**Broadband router**
Router used to access the Internet via high-speed ADSL or fiber optic lines.

**Camera operation**
Operations of the camera connected to the recorder such as pan and tilt (horizontal and vertical position), zooming, focusing, brightness (iris adjustment), preset motions (movement towards a set horizontal and vertical position) and auto functions (automatic camera rotation, etc.).

**DDNS (Dynamic DNS)**
A technology for dynamically translating DNS server information to enable the transfer of only differences in information between DNS servers (refer to "DNS").

**Default gateway**
Network device used as a gateway for networks, such as a local network, to access PCs on an external network.

**DHCP (Dynamic Host Configuration Protocol)**
A protocol that enables PCs to automatically get information from a server needed for accessing a network.

**Digital zoom**
The function that enlarges live images and playback images during playback. The digital zoom enlarges the images by the recorder and is separate from the zoom function included as part of the camera operations for enlarged images.

**DNS (Domain Name System)**
The long lists of numbers or IP addresses that are used in network environments are difficult to remember, which makes them impractical. This is why PCs are given an easy-to-follow name (domain name) which is converted to an IP address before they are communicated with. The DNS provides translation between domain names and IP addresses.

**Event action**
A specific action to be taken at an event occurrence. When "ALM" is selected, the occurrence of an event is announced by displaying a notification on the monitor, lighting the status indicators and sounding the buzzer. When "ADM" is selected, the occurrence of an event will not be announced and only recording and filing of event logs will be performed. In OFF mode, only an event log is filed.

**Event recording**
Function for starting recording automatically when an event occurs. Event recording includes Pre-event recording that records images before the event and event recording that records images after the event.

**Event**
Indicates an occurrence that causes the recorder to take an event action. Events include terminal alarm, command alarm, camera site alarm and face matching alarm, etc.

**Face matching**
Refers to a function that detects facial features of people in images and matches them against similar facial features recorded earlier. The recorder can be set up to output an alarm signal when the detection result is positive.

**Firewall**
A type of security used when accessing outside networks like the Internet. A PC is used to prevent computers outside a local network from accessing the network.

**Frame rate (ips)**
Refers to the unit that determines the smoothness with which the recorded images are played back. "ips" indicates the number of recorded frames in 1 second. The higher the number, the smoother the movement, but the available recording time becomes shorter.

**FTP (File Transfer Protocol)**
A protocol that is commonly used for transferring files over the Internet.

**Full duplex**
Communications method that allows simultaneous sending and receiving by transmitting in both directions using an independent sending line and receiving line.

**Global (IP) address**
IP address assigned to each device connected to the Internet that is equivalent to an address on the Internet. IP address is required for Internet communications. In contrast, IP address freely available to assigned to each device within an intranet is called as "Private (IP) address".

**H.264**
One of the compression methods of moving images.

**Half duplex**
Communications method that switches between sending and receiving using a single communications line.

**HDD**
Stands for Hard Disk Drive (a high capacity storage device). This product uses hard disk drives instead of video tapes for recording.

**Image quality**
Image quality varies depending on the compression rate. In this product, the following image qualities (compression rates) are available and they can be selected for each camera. SF (Super Fine: Super high quality), FQ (Fine: High quality), NQ (Normal: Standard quality)

**Internet**
A global system of interconnected computer networks. It is required to contract with an Internet service provider to connect to the Internet.

**IP address (Internet Protocol Address)**
The identification number assigned to PCs connected via IP networks such as the Internet or an Intranet, or to individual communications devices. Do not assign the same address to multiple devices, especially on the Internet.

**LAN (Local Area Network)**
A communications network for connecting PCs, printers and other network devices in a relatively small area such as in a building or floor of a building or campus in which data is transferred.

**MAC address (Media Access Control address)**
Fixed physical address assigned to network devices. Devices send and receive data based on this.

**VMD (Video motion detection) search**
The function that automatically detects motion in images. In this product, it is possible to search for time and date of motion detection in recorded images.

**Multiscreen display**
This product can display multiple camera simultaneously while displaying live images or playback images. Displaying of images from 4 cameras or from 16 cameras simultaneously is called as the 4-screen display or 16-screen display respectively.

**NAT (Network Address Translation)**
A technology for sharing a single global address between two or more PCs.

**NTP (Network Time Protocol)**
A protocol developed to accurately maintain time among hosts on the Internet.

**Plug-in software**
Small programs used to add functions to application software.

**POP 3 Server**
A server that supports POP3, currently the most widely used mail sending protocol.

**POP 3**
A protocol for receiving e-mail stored on a server on the Internet or an Intranet.

**Port number**
A sub address set below the IP address to connect multiple parties simultaneously for communication (TCP, UDP, etc.) on the Internet.

**Primary (DNS) server**
DNS servers usually have more than 2 systems and the primary server is the main system.

**Private (IP) address**
IP address assigned when connecting primarily to LAN. Private IP addresses can be assigned freely on a network and do not require a formal application. However, because private IP addresses cannot be used to access the Internet, a router or other device it is necessary to assign a global IP address.

**Protocol**
A set of rules that allows the exchange of data amongst different types PCs with information. The Internet uses the TCP/IP protocol as its base and information is transferred following http and ftp protocols depending on the application.

**QVGA**
Resolution with 320 x 240 pixels.

**Resolution (Image capture size)**
Resolution refers to the degree of fineness and quality of the camera pictures recorded by this product. In this product, it indicates the number of pixels used in the image displayed on the screen. A horizontal resolution of 720 pixels and a vertical resolution of 480 pixels is expressed as 720x480.

**Router**
Placed in between different networks, a router sends data to the proper destination via network. If data on the network is addressed to an external network, routers send the data to the outside of the network after judging the optimum sending route.

**Schedule recording**
Function that automatically starts video and audio recording on a preset time schedule.

**SD memory card (Secure Digital memory card)**
A small, lightweight and removable storage device having a large capacity.

**Secondary (DNS) server**
DNS servers usually have more than 2 systems and the secondary server is the sub system. If there is trouble with the primary server, the secondary server takes over.

**SMTP (Simple Mail Transfer Protocol)**
A protocol for sending e-mail on the Internet or an Intranet. Used when transferring mail between servers or when clients send mail to the server.

**SMTP authentication (Simple Mail Transfer Protocol authentication)**
SMTP mail transfer protocol appended with a user authentication function. It authenticates passwords and user accounts between SMTP servers and clients. Both SMTP servers and clients must support SMTP authentication.

**SMTP server**
A server that supports SMTP, currently the most widely used mail transfer protocol.

**SNMP (Simple Network Management Protocol)**
A protocol for monitoring and managing networked communications devices, such as routers, PCs, cameras and Network Disk Recorders via a network.

**Subnet mask/Subnet prefix length**
Numerical value to define whether to use several bits for a network address to distinguish among subnet IP addresses in a network. According to the values, devices can determine which part of the address is the network address and which part is the host address.

**Subnet**
A small network used as a unit of administration when a larger network is divided into smaller networks. Large networks in corporations, for example, the network can be broken down into smaller networks called "subnets" to make the network more manageable and lines used more efficiently. In this case, these smaller networks are called subnets.

**SXVGA**
Refers to a resolution of 1280x960 pixels.

**TCP/IP (Transmission Control Protocol/Internet Protocol)**
The standard network protocol for the Internet and Intranets.

**Time zone**
A time zone is a region or a country that has uniform standard time.

**URL (Uniform Resource Locator)**
An address for locating information resources such as documents and images on the Internet.

**VGA (Video Graphic Array)**
Resolution with 640 x 480 pixels.

**VPN**
Service used to make public lines as private lines. Many companies are using this as a new medium of communication instead of costly private lines. Depending on service, VPN also provides a secure line using authentication technology and encryption.

**WAN**
Allows physically separated PCs, such as between the head office and a branch office, to connect via a phone line or private line data for exchanging.

**Web browser**
A software application which enables to display web pages. Microsoft Internet Explorer is one of the most widely used web browser.

**For U.S. and Canadian fields:**

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