SONY®

Network Camera

User's Guide

Before operating the unit, please read this manual thoroughly
and retain it for future reference.

SNC-HM662

Software Version 1.0 or later

IPELA

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Overview

Features

- High-quality 5 MP (2560 × 1920) real-time monitoring, up to 13 fps.
- Full HD (1080P) live images from the camera can be monitored at a maximum frame rate of 30 fps.
- Dewarping (distortion correction) against a variety of the video management software (VMS), using an ImmerVision.
- Various View modes enabling you to look at objects in detail.
- Used with other Sony security cameras, this camera can be used to confirm a large area, while other cameras are used to confirm specific details.
- For indoor/outdoor use (compatible with IP66, IK10).
- The built-in microphone, the connector for an external microphone, and the connector for audio output, enables the transmission and reception of audio signals.
- Two video compression technologies (video codec) of JPEG/H.264 are used.
- Selectable operating modes from among 3 codecs.
- "Edge storage" for recording video or audio signals based on alarm detection (such as network block) to a microSD card.
- Motion detection and camera tampering detection functions.
- Up to 10 users can view images from one camera at the same time.
- PoE (Power over Ethernet) compliant.

How to Use This User's Guide

This User's Guide explains how to operate the Network Camera from a computer.
The User's Guide is designed to be read on the computer display.
This section gives tips on making the most of the User's Guide. Read it before you operate the camera.

Jumping to a related page

When you read the User's Guide on the computer display, you can click on a sentence to jump to a related page.

Software display examples

Note that the displays shown in the User's Guide are explanatory examples. Some displays may be different from the ones that appear in actual use.

Printing the User's Guide

Depending on your system, certain displays or illustrations in the User's Guide, when printed out, may differ from those that appear on your screen.

Installation Manual (printed matter)

The supplied Installation Manual describes the names and functions of parts and controls of the Network Camera, connection examples, and how to set up the camera. Be sure to read the Installation Manual before hand.

System Requirements

The following computer environment is necessary for the computer to display images and the controls of the camera.
(January 2014)

Common

OS

Microsoft Windows XP, Windows Vista (32-bit version), Windows 7 (32-bit version, 64-bit version) or Windows 8
Authorized editions:
    Windows XP: Professional
    Windows Vista: Ultimate, Business
    Windows 7: Ultimate, Professional
    Windows 8: Windows 8, Pro

Microsoft DirectX 9.0c or higher

Web Browser
Windows Internet Explorer Ver. 8.0, Ver. 9.0, Ver. 10.0*

CPU
Intel Core i7, 2.8 GHz or higher

Memory
2 GB or more

* In case of Windows 8, use the Internet Explorer desktop user interface (desktop UI) edition.

Accessing the Camera Using the Web Browser

After the IP address has been assigned to the camera, check that you can actually access the camera using the web browser installed on your computer.

1 Start the web browser on the computer and type the IP address of the camera in the URL address bar.
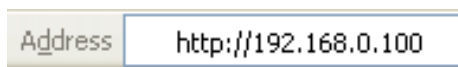
2 Enter the user ID and password. The authentication dialog appears. When you enter the user name and password for Administrator in the dialog, the viewer window is displayed.
The factory setting of the user name and password for the Administrator is set to **admin**.
For security, be sure to change the password from the factory setting before using the camera.

Display sample
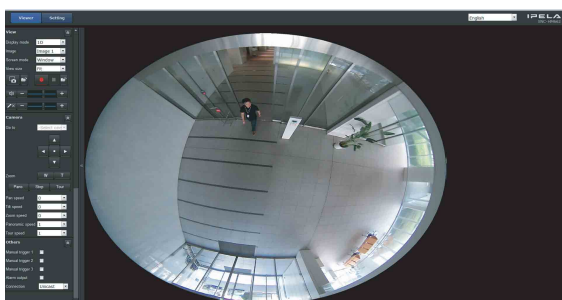
Note

The maximum of users on the network who can see a viewer concurrently is 10. However, if the transmission ability of the camera is overloaded, access to the camera may not be possible, even if there are fewer than 10 users.

Using the SSL function

Note

The model sold for China does not have the SSL function.

When you enter the camera IP address, "Certificate Error" may appear according to the status of the certificate set on the camera.
In this case, click **Continue to this website (not recommended).** to continue.

The welcome page appears (in SSL communication).
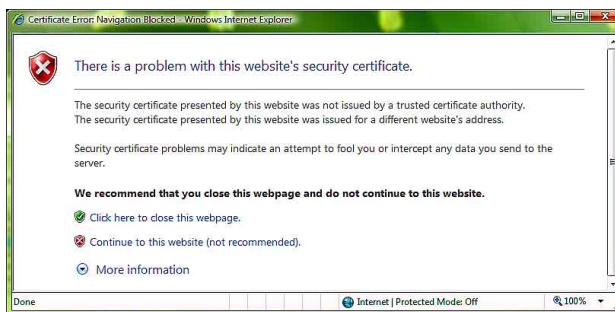
When "HTTP & HTTPS" (page 26) is checked

To use HTTP and SSL connections separately to access, enter the following in the address box of the browser.

For HTTP connection

http://192.168.0.100/

For SSL connection

https://192.168.0.100/

When the viewer of the camera is displayed for the first time

"Security Warning" is displayed. Click **Yes**, ActiveX control is installed and the viewer is displayed.

Notes

- If **Automatic configuration** is enabled in the Local Area Network (LAN) settings of Internet Explorer, the image may not be displayed. In that case, disable **Automatic configuration** and set the proxy server manually. For setting the proxy server, consult your network administrator.
- When you install ActiveX Control, you should be logged in to the computer as Administrator.

Tip

The software is optimized for Internet Explorer using medium font.

To display the viewer correctly

To operate the viewer correctly, set the security level of Internet Explorer to **Medium** or lower, as follows:

1 Select **Tools** from the menu bar for Internet Explorer, then select **Internet Options** and click the **Security** tab.

2 Click the **Internet** icon (when using the camera via the Internet), or **Local intranet** icon (when using the camera via a local network).

3 Set the slider to **Medium** or lower. (If the slider is not displayed, click **Default Level**.)

When using antivirus software, etc., on the computer

- When you use antivirus software, security software, personal firewall or pop-up blocker on your computer, the camera performance may be reduced. For example, the frame rate for displaying the image may be lower.
- The web-page displayed when you log in to the camera uses JavaScript. The display of the web-page may be affected if you use antivirus software or other software described above on your computer.

Basic Configuration by the Administrator

You can monitor the camera image by logging in to this network camera. You can also set various functions according to the installing position, network conditions or purpose of the camera.
We recommend you configure the following items before monitoring images from the camera.

Setting contents	Setting menu
Select the mount type of the camera.	Video Settings (page 18)
Set the format of the image sent from the camera.	Video codec (page 20)
Select the White balance mode according to the installation position.	White balance (page 18)
Select the brightness of the image sent from the camera.	Exposure (page 19) Brightness (page 18)
Select the quality of the image sent from the camera.	Video codec (page 20)
Select the view size of the image.	View size (page 12)
Select whether the audio from the internal microphone or the external input, or to the line output is sent or not.	Audio (page 20)
Synchronize the date and time of the camera with those of the computer.	Date & time (page 16)
Set the user access right for the camera.	User (page 26)

Operating the Camera

This section explains how to monitor the image from the camera using your web browser.

The functions of the camera should be set by the Administrator. For the setting of the camera, see "Administering the Camera" on page 15.

Each type of user can use the corresponding functions below.

Function	Administrator	View
Monitor a live image	●	●
View the date and time	●	●
Control the image view size	●	●
Save a still image and movie in the computer	●	●
Switch the connection	●	●
Perform the pan/tilt/zoom operation	●	●
Receive audio	●	●
Select the codec mode	●	●
Control the setting menu	●	–

● Usable function
– Not usable function

The access rights of the administrator and the user can be set in "Setting the Security — Security Menu" of the Administrator menu on page 26.

Administrator and User

This network camera identifies those who log in as the **Administrator** or **User**.
The **Administrator** can use all the functions of this network camera, including camera settings. The **User** can use the functions for monitoring the image and audio from the camera, and control the camera.

Logging in to System

Logging in as a user

1 Start the Web browser on your computer and type the IP address of the camera you want to monitor.

2 Enter the user ID and password. The authentication dialog appears. When you enter the user name and password in the dialog, the viewer window is displayed.

Display sample:
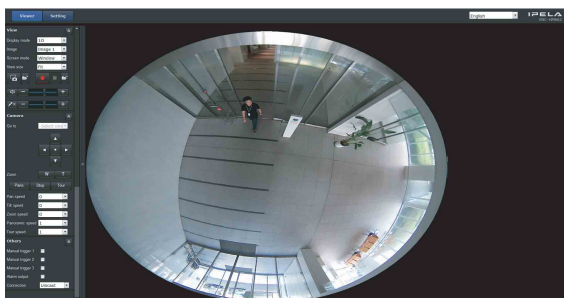
> **Note**
>
> If the main viewer does not start correctly, the security level of the Internet Explorer may be set to higher than **Medium**. See "To display the viewer correctly" on page 6 and check the security level.

Configuration of the Viewer Screen

This section explains the functions of the parts and controls of the main viewer. For a detailed explanation on each part or control, see the specified pages.

Viewer screen

Main menu
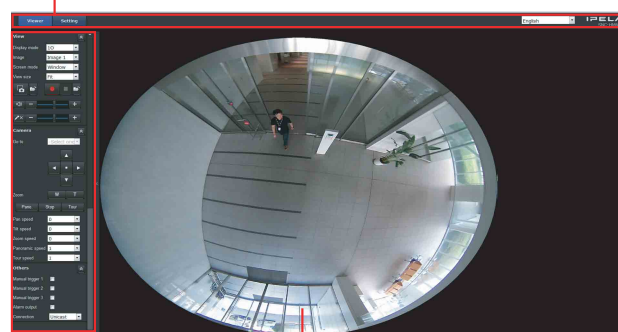
Control panel section   Monitor image section

Main menu

Viewer

Displays the ActiveX viewer.

Setting

Click to display the Administrator menu. (page 15)
You can operate this function only when logged in as the administrator.

Language

Set the language from the pull-down list.

Control panel section

Click ⊗ to hide the detail setting menu or click it again to show the menu.

View panel

You can change the display mode, image, screen mode and image size. Also, still images and movies can be saved (movie saving can also be stopped) from here. Audio output and microphone levels can be adjusted.

Display mode

The following display modes can be used in the fisheye mode.

1O - One Original view.
1P - One Panoramic view
1R - One Regional view
2P - Two Panoramic views
1O-3R - One Original and three Regional views
4R - Four Regional views
4Ri - Four Regional views
When one view area changes, the other three views change.
1O-8R - One Original and eight Regional views

* When **Wall** is set in **Setting** > **Video / Audio** > **Picture** > **Video Settings** > **Mount type**, **2P**, **4Ri** and **1O-8R** cannot be selected. **1P-2R** and **1P-3R** can be selected instead.
See the following detailed explanations of these modes.

1O (Original view) mode:
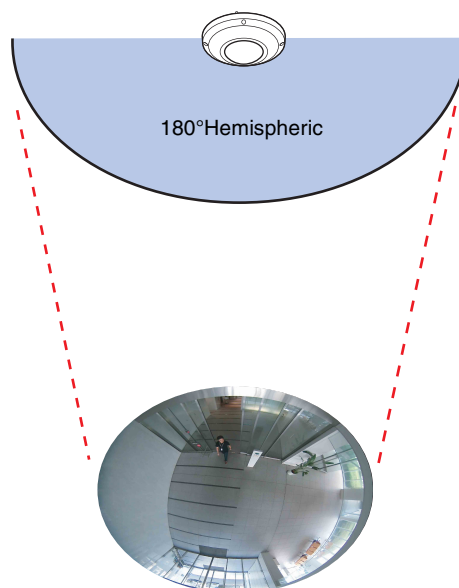
The 1O mode is suitable for taking an over-view glimpse of a surveillance area with a ceiling mount camera. In the other display modes, the compensated images will be displayed from 1O mode.

1P (Single Panoramic view) mode:

In 1P mode, the hemispheric image is displayed as a 360° panoramic screen. When the camera is installed on a wall, the image is displayed as a 180° screen. You can move the screen horizontally and smoothly by using the mouse. The zoom in or out function cannot be used in this mode.
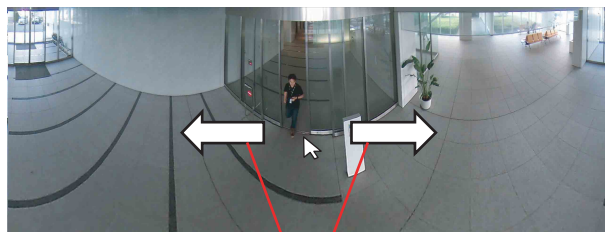
Move horizontally with the mouse

1R (Single Regional view) mode:

In the 1R mode, the image is displayed as the specified and trimmed area in a hemispheric screen.
You can zoom in or out (using the mouse wheel or camera control panel), or move around other areas within the hemisphere using simple mouse clicks and drags. A single-click on any part of the screen will position it in the center of the view window.

1R View
— Zoom In
— Zoom Out

Zoom in/out
&
all-directional
navigation control

Zoom In
Zoom Out

FOV
indicators

Current
screen
selection

Click to bring into
center of view

Pan or tilt

2P (Dual Panoramic View) mode:

In 2P mode, the hemispheric image is displayed as the 360° panoramic screen which is converted the same as 1P mode. Two screens, above and below, are displayed separately, each with a 180° view.
You can move the screen horizontally and smoothly by using the mouse.
The zoom in or out function cannot be used in this mode.

Extended to rectilinear view (Dewarp)
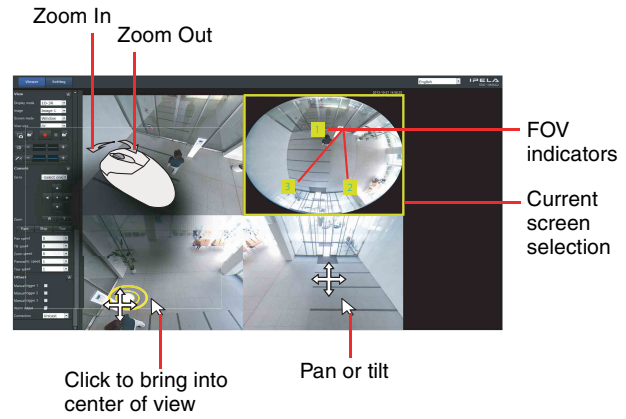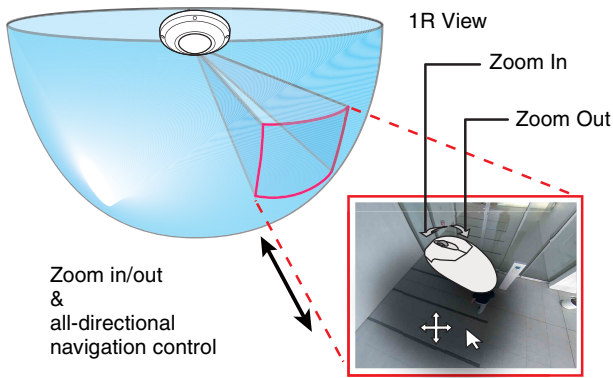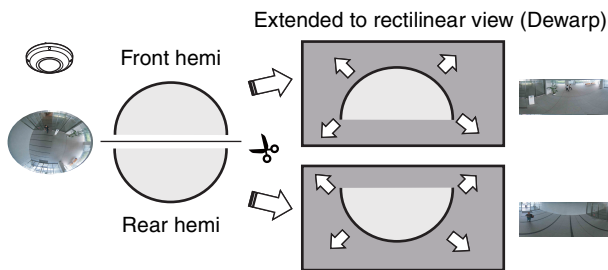
Front hemi

Rear hemi

1O-3R (One Original & Three Regional) mode:

In the 1O-3R mode, four screen; the original view and three regional views are displayed.
The FOV indicators (#1 to #3) display the position of each regional view.

You can zoom in or out and move the position to other areas within the hemisphere using the methods as previously described in the 1R mode.

You can also change the locations of Regional views by dragging the FOV indicators on the "Original" round-shape oval view.

4R (Four Regional) mode:

The 4R mode displays four regional views.
In this mode, the original view cannot be displayed. This differs from the 1O-3R mode.

4Ri (Four Regional Interactive) mode:

In the 4Ri mode, all four view windows rotate at the same time when one view window's displayed area is changed. The zoom in or out, and tilt operation cannot be used in this mode.

1O-8R (One Original and Eight Regional) mode:

The 1O-8R mode displays the original view and eight regional views.
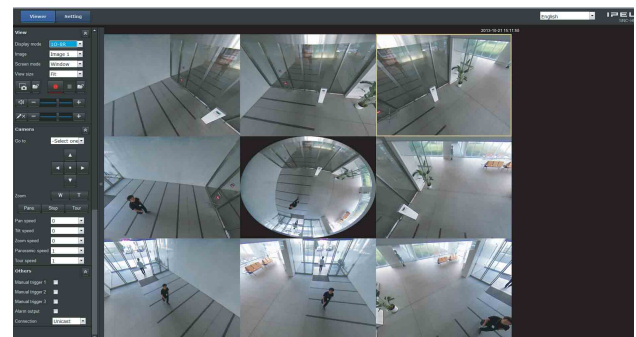
Note

The position of view will not be saved.
Changing the display mode will return the layout to its initial position.

1P-2R (One Panoramic and Two Regional) mode: 1P-3R (One Panoramic and Three Regional) mode:

These two modes are only available when **Mount type** is set to **Wall**. The Mount type configuration is found in **Setting > Video/Audio > Picture > Video Settings**. See to page 18 for details. The operating methods of these

two modes are identical to those described for the 1O-3R mode.

1080p Mode

In the 1080p mode, the compensated image from the original hemispheric image is displayed in 16:9, Full HD video signal.
When the 1080p mode is selected, you cannot use any of the display modes of the fisheye mode. The pan, tilt and zoom function also cannot be used.

Memo

Switches to 1080p mode in **Setting** > **Video / Audio** > **Video Codec** > **FOV**. For details, see page 20.

Image

Select Image1, Image2 and Image3.

Screen mode

Select Window or Full Screen.

View size

Selects the view size to be displayed.
Click **View size** list box to select the view size.
Select **×1/4** to display images, reduced to 1/4 of the size set in Image size.
Select **×1/2** to display images, reduced to 1/2 of the size set in Image size.
Select **×1** to display images set in Image size of the Image menu. (page 20)
Select **Full** to display images according to the view size.
Select **Fit** to display images according to the view size, with fixed aspect ratio.

Capture

Click to capture a still image shot by the camera and to store it in the computer. Click to open the folder to be saved.

Run/ Stop Save Video

Runs and stops Save Video. Click to open the folder to be saved.

Notes

- Movies are saved in 1O (Original view).
- When **G.711** is selected for audio codec, the recorded video cannot be played on QuickTime Player. Select **AAC** for recording when you want to play the video on QuickTime Player.
- The recorded file cannot be played on Windows Media Player. Install required codec to play the video on Windows Media Player.

Volume

Use the +/– buttons to adjust the PC's audio output volume which is input from the camera's microphone.

When you click , the icon changes to and the output from the speaker stops. To output sound from the speaker, click again.

Note

When **JPEG** is selected in the image tab of the video codec, the microphone input cannot be used.

Mic volume

Use the +/– buttons to adjust the microphone input volume from the PC.

When you click , the icon changes to and the microphone input stops. To receive input from the microphone, click again.

Camera control panel

This panel allows you to control the camera's pan/tilt/home position and zoom (page 30).

Go to

Select a preset position from the pull-down list. The camera will move to the position according to the preset settings.

Pan/Tilt control

Click the arrow button the direction in which you want to move the camera.
To return to the home position, click .

Zoom control

Press [W] to zoom out, and press [T] to zoom in.

Pano. (Auto Pano): Rotates 360° through a regional view.

Note

This function cannot be used on the panoramic views.

Stop: Stops Auto Pano and Tour.
Tour: Commands the camera to consecutively display views of the preset positions according to the preset settings.

Pan speed
Sets the pan speed.
–5 is the slowest and **5** is the fastest.

Tilt speed
Sets the tilt speed.
–5 is the slowest and **5** is the fastest.

Zoom speed
Sets the movement of zooming in or out when [W] or [T] is clicked.
–5 is the smallest and **5** is the largest.

Panoramic speed
Sets the speed when the auto panoramic functions.
1 is the slowest and **5** is the fastest.

Tuor speed
Sets the pause time for each pre-set position.

Tuor speed	Staying time (second)
1	6
2	3
3	2
4	1.5
5	1.2

Other panel
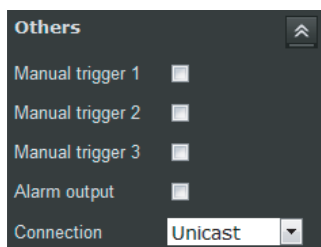
Manual triggers

When the manual trigger is set to the event trigger in the Event settings, you can enable the trigger by selecting the checkbox.

Alarm output

Select the checkbox to enable the Alarm output.

Connection

You can switch between TCP and UDP (Unicast/Multicast).

Each click switches the transmission mode of the video/audio data between Unicast mode, Multicast mode, TCP mode, and HTTP mode (page 14).

Switching Connection

You can change the connection for video/audio data.

The function may not operate correctly if you use personal firewall software or antivirus software on your computer. In that case, disable the software or select the TCP mode.

1 Select **Unicast**, **Multicast**, **TCP** or **HTTP** from the **Connection** drop-down list in the Other panel.

Others	≫
Manual trigger 1	▣
Manual trigger 2	▣
Manual trigger 3	▣
Alarm output	▣
Connection	Unicast ▾
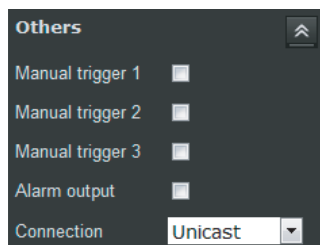
Unicast: When **Unicast** is selected, RTP (Realtime Transport Protocol) is adopted for video/audio communications. Since RTP is the protocol for running video/audio data, the video/audio playback is smoother than when TCP (HTTP) is selected. If a firewall is installed between the camera and the computer, or depending on the network environment, video/audio may not play back properly when **Unicast** is selected. In this case, select **TCP**.

Multicast: When **Multicast** is selected as the transmission port, RTP (Real-time Transport Protocol) and UDP multicast techniques are adopted for video/audio transmission. By selecting it, the network transmission load of the camera can be reduced. If a router that does not correspond to a multicast or firewall is installed between the camera and the computer, video/audio may not play back properly. In this case, select **TCP** or **Unicast**.

HTTP: This is normally selected.
When **HTTP** is selected, HTTP communication is adopted for video/audio communications. HTTP is the protocol usually used for reading webpages. In an environment capable of reading webpages, you can watch or listen to video/audio by selecting the HTTP port.

TCP: When **TCP** is selected, use the port number specified in **RTSP port number** (page 24) for operating the video/audio communications.

• When connecting via a proxy server, neither **Unicast** nor **Multicast** can be selected.
• Select **HTTP** to use the SSL function.

This section explains how to set the functions of the camera by the Administrator.
For details about monitoring the camera image, see "Operating the Camera" on page 8.

This section explains the basic operations and each option of the Administrator menu.

Note on the display of menu options
The setting menus of this unit will only enable options that you can currently select. Grayed out options cannot be selected.
Only supported functions are displayed.

# Basic Operations of the Administrator Menu

You can use the Administrator menu to set all functions to suit the user's needs.
Click **Setting** in the viewer to display the Administrator menu.

How to set up the Administrator menu

1 Input the user name of the administrator and password, and then log in.
The view window is displayed.
For details, see "Logging in as a user" on page 9.

2 Click **Setting** on the main menu.

3 Click the main menu name (example: System) on the left side of the Administrator menu.
Click the menu to expand its submenus.
Click again to collapse the submenus.

Example: "System" menu
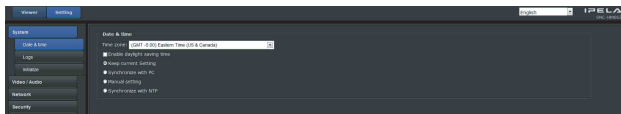
4 Click the submenu name.
The clicked menu appears.

5 Select the tab above the menu, then set each setting option in the tab.

Example: "Picture" tab of "Video/Audio" menu

See page 16 for details of the menu tabs and setting options.

6 After setting, click **OK**.
The settings you have made become active.

Click **Cancel** to nullify the set values and return to the previous settings.

Buttons common to every menu
The following buttons are displayed on all the menus.
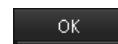
Click this button to confirm the settings.

Click this button to nullify the set values and return to the previous settings.
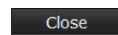
Click this button to close the window.

> **Note**
>
> If you click **Cancel** or **Close** without clicking **OK**, the setting will not be applied.

General notes on menus
- After changing a setting on a menu, wait at least 30 seconds before turning off the power of the camera. If the power is turned off immediately, the new setting may not be stored correctly.
- If the camera settings are changed while watching the main viewer, some settings cannot be restored. To reflect the change on the opening main viewer, click **Refresh** on the web browser.

Configuration of the Administrator menu

System
Displays the System menu. ("Configuring the System — System Menu" on page 16)

Video / Audio
Displays the menu for setting the camera image and audio. ("Setting the Camera Image and Audio — Video / Audio Menu" on page 18)

Network

Displays the menu for setting the network connection. ("Configuring the Network — Network Menu" on page 21)

Security

Displays the menu for setting the login user name and menu to specify which computer(s) can connect to the camera. ("Setting the Security — Security Menu" on page 26)

PTZ

Displays the PTZ control menu. ("Setting the PTZ control — PTZ Menu" on page 30)

Event

Displays the menu for setting events. ("Setting the Event — Event Menu" on page 32)

Applications

Displays the setting menu for all built-in detection functions. ("Other settings — Application Menu" on page 35)

Recording

Displays the setting menu for recording. ("Settings on the Recording — Recording Menu" on page 36)

Edge storage

Displays the menu for setting SD memory card and for reference to recording data . ("Setting the Edge storage function — Edge storage Menu" on page 37)

Configuring the System — System Menu

When you click `System` in the Administrator menu, the submenus of the System menu expand.
Use this menu to perform the principal settings of the software.
The System menu consists of the following tabs: **Date & time**, **Logs**, **Initialize**.

Date & time
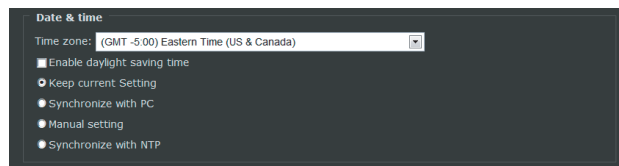
Time zone

Set the time difference from Greenwich Mean Time for the area where the camera is installed.
Select the time zone for the area where the camera is installed from the drop-down list.

Enable daylight saving time

When selected, the clock is automatically adjusted according to the daylight saving time of the selected time zone.

Keep current setting: Select if you do not need to set the date and time.
Synchronize with PC: Select if you want to synchronize the camera's date and time with the computer.
Manual setting: Select if you want to set the camera's date and time manually.
Select the year, month, date, hour, minutes and seconds from each drop-down list.
Synchronize with NTP: Select if you want to synchronize the camera's date and time with those of the time server called NTP server (Network Time Protocol).
Set the NTP server when **Synchronize with NTP** is selected.

NTP server

Synchronize with the selected NTP server address.

Note

Time slip can readily occur in low or high temperature environments. In this case, select **Synchronize with NTP**.

OK/Cancel

See "Buttons common to every menu" on page 15.

Log

— System Log Tab

Describes the information of the camera software function. Records useful information when a problem occurs.
Click **Reload** to load the latest information.

— Access Log Tab

Displays the camera access history.
Click **Reload** to load the latest information.

Initialize

— Initialize Tab
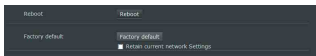
Reboot

Used to reboot the system.

Factory default

Resets the camera to the factory settings.

Retain current network settings

When this item is checked, only the current network settings will be retained after reset.
Click **Factory default**, and the camera reboots automatically. Do not turn off the camera until the camera has restarted.

> **Tip**
>
> The camera can also be reset to the factory settings by pressing and holding the reset button (for a few seconds) on the camera. For details, refer to the supplied Installation Manual.

> **Note**
>
> When the unit is re-started or reset to the factory settings, the alarm is output for about 40 seconds.

— Backup/Restore Setting Data Tab
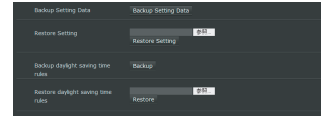
Backup setting data

Saves the setting data of the camera in a file.
Click **Backup Setting Data** to save the setting data of the camera.

Restore setting

Loads the stored setting data of the camera.
Click **Browse...** and select the file in which the setting data is stored. Click **OK**, and the camera is adjusted according to the loaded data.

Backup daylight saving time rules

Saves the Daylight Saving Time rule in a file.
Click **Backup Setting Data** to save the Daylight Savings Time rule.

Restore daylight savings time rules

Loads the Daylight Saving Time rule.
Click **Browse...** and select the file in which the Daylight Savings Time rule is stored. Click **OK**, and the selected Daylight Savings Time rule is applied.

Setting the Camera Image and Audio
— Video / Audio Menu

When you click the `Video / Audio` menu in the Administrator menu, the submenus of the Video / Audio menu appear.
Use this menu to perform the camera function settings.
The Video / Audio menu consists of **Picture**, **Video codec** and **Audio**.

Picture

— Video Settings Tab
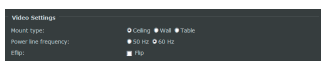

Video Settings

Mount type
Select the mount type of the camera.
Ceiling: Select when you mount the camera on a ceiling.
Wall: Select when you mount the camera on a wall.
Table: Select when you use the camera on a table.

Power line frequency
Select when you want to reduce the flicker on images.
Set according to power frequency (50 Hz or 60 Hz) of the lighting you use.
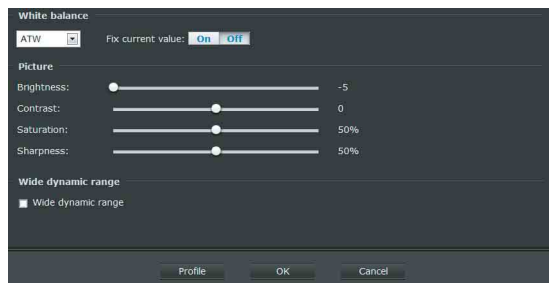
Eflip
If you select this, you can display images on the computer inverted.

OK/Cancel
See "Buttons common to every menu" on page 15.

— Picture Settings Tab

White balance
Select the White balance mode.

ATW: Adjusts the color automatically towards the original color (approx. 2800 K to 10000 K) which is hard to be influenced by the illumination.
Fix current value: Select **On**, the current white balance is fixed.
Manual: Select this to set **RGain** and **BGain**. The gain value can be in the range 0% to 100%.

Picture

Brightness
Set the brightness. Select high values to make the image brighter, low values to make the image darker.

Contrast
Set the contrast. Select high values to make the image contrast stronger, low values to make the image contrast softer.

Saturation
Set the saturation. Select high values to make the image color stronger, low values to make the image color weaker.

Sharpness
Set the sharpness. Select high values to make the image edges sharper, low values to make the image edges smoother.

Wide dynamic range
In high-contrast scenes, this function reduces overexposure and underexposure. Select the checkbox to enable the wide dynamic range function.

Profile
The profile of the picture setting opens in a new window.

OK/Cancel
See "Buttons common to every menu" on page 15.

Profile of picture settings

Activated period
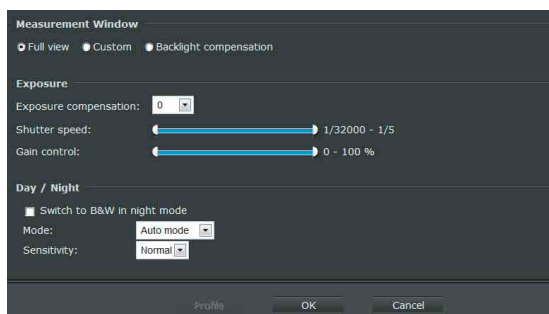Select the checkbox and the mode. The setting is enabled when you select the mode.
For other settings, see "Picture Settings Tab" on page 18.

OK/Cancel/Close
See "Buttons common to every menu" on page 15.

— Exposure Tab

Adjust the exposure settings.

Measurement Window

Full view
Measures the light intensity of the full range of view.

Custom
You can manually specify areas to be measured (Measurement Window) and areas not to be measured (exclusive area).
You can specify 10 photometric areas and exclusive areas in total.

Backlight compensation
Enables the backlight compensation function.

Exposure

Select the exposure correction value from the list box to adjust the target brightness for the automatic exposure setting. A larger value brightens the image, and a smaller value darkens the image.

Shutter speed
Set the range of the shutter speed.

Gain control
Set the range of the gain control.

Day/Night

Switch to B&W in night mode
When the checkbox is selected, the camera switches to BLACK AND WHITE display during the night mode.

Mode
Select the day/night mode. This function has the following modes.
Auto mode: Normally works in day mode; switches automatically to night mode in a dark place.
If you set Auto mode, set the sensitivity for the camera to automatically switch to night mode.
Day mode: Works in day mode at all times.

Night mode: Works in night mode at all times.
Sensor input: Controls the day/night mode by the active sensor input. While a sensor input is detected, the camera works in night mode.
Timer: Switches between day and night modes at set times.
Set a start time and end time of day mode.

Profile

The profile of the exposure setting opens in a new window.

> **Note**

When **Day/night** mode is set to **Auto mode**, the profile of the exposure setting cannot be set.

OK/Cancel

See "Buttons common to every menu" on page 15.

Profile of exposure settings

Activated period
Select the checkbox and the mode. The setting will be enabled when you select the mode.
For other settings, see "Exposure Tab" on page 19.

OK/Cancel/Close
See "Buttons common to every menu" on page 15.

— Privacy masking Tab

Using the privacy masking enables you to hide images by masking specified parts of the images when streaming.

Setting a privacy mask
To set a privacy mask in the position of your choice:

1 Click **New**.
A text box appears allowing you to enter a name for the mask.

2 Enter a name for the mask in a window name.

3 Click on four points on the preview screen to specify the privacy mask area.

4 Select the **Enable privacy masking** checkbox.

5 Click **OK**. The mask is reflected.

> **Note**

Up to five privacy masks can be set.

Delete privacy masking

To delete privacy masks, click ✖ on the right side of the window name, then click **OK**.

Video codec

Use this tab to set the items for the video codec.

— FOV Tab

Select Display mode for the image.

Fisheye mode

Select if you want to display the image in the fisheye mode.

1080P mode

Select if you want to display the image in the 1080p mode.

> **Notes**
>
> • When the mode is changed, the settings of **Motion detection**, **Privacy masking**, **User preset locations** and **Measurement Window** are initialized.
> • 1080p mode is available only in the ActiveX Viewer. If you use the system of another company, select the **Fisheye mode**.

— Image Tab

Up to three image codec modes can be set. Configure the following setting for each image mode.
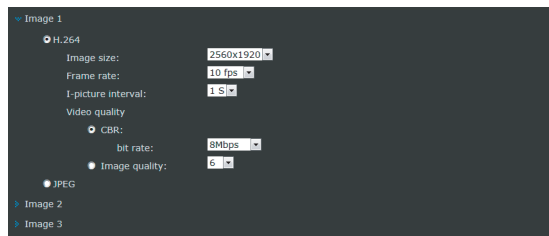

Image codec

Select **H.264** or **JPEG**.

> **Note**
>
> Depending on the bitrate value settings of Image 1, Image 2 and Image 3, the following symptoms may occur.
> • The image is delayed more than usual.
> • The frame is skipped when playing an image.
> • The voice is broken.
> • The response of the camera to commands is delayed.

Image size

You can select the size of images sent from the camera.

Frame rate

Set the frame rate of the image.
"fps" is a unit indicating the number of frames transmitted per second.

I-picture interval (Only when H.264 is selected)

Set the I-picture insertion interval in seconds.

Video quality

CBR

Select when you want to compress an image by a constant bit rate.
You can set the average bit rate of image transmission for a line. When the bit rate is set to a high level, better image quality can be enjoyed.
When **Customized** is selected, set the bit rate from **4** Kbps to **16000** Kbps.

Image quality

Select if you want to maintain image quality.
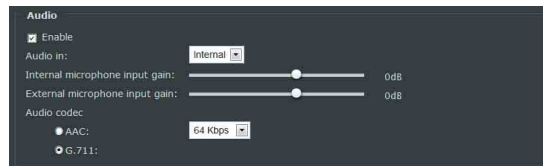Selectable values are from **1** to **10**.
When **10** is selected, the best image quality is achieved.

OK/Cancel

See "Buttons common to every menu" on page 15.

Audio

Make settings for audio.

Enable

Select the checkbox if you want to send audio from the internal microphone or the external input, or to the line output.

Audio in

Select the internal microphone or external input.

Internal microphone input gain

Set the volume level of the audio input from the internal microphone. It is adjustable from **–33** dB to **+21** dB.

External microphone input gain

Set the volume level of the audio input from the external input. It is adjustable from **–33** dB to **+21** dB.

Audio codec

Select the audio codec type.
Select the bit rate from the pull-down menu when **AAC** is selected.

> **Note**
>
> Movies recorded in **G.711** cannot be played on QuickTime Player.

OK/Cancel

See "Buttons common to every menu" on page 15.

Configuring the Network — Network Menu

When you click Network in the Administrator menu, the submenus of the Network menu appear.
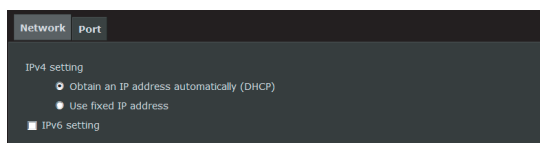Use this menu to configure the network to connect the camera and the computer.
The Network menu consists of the **Network Settings**, **Streaming protocols**, **QoS** and **SNMP**.

Network Settings

This section provides the menus for connecting the camera through the network cable.

— Network Tab

IPv4 setting

Configure the IPv4 network setting.

To obtain the IP address automatically from a DHCP server

Select **Obtain an IP address automatically (DHCP)**.
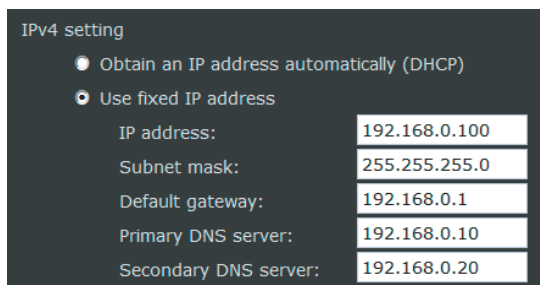The IP address, subnet mask and default gateway are assigned automatically.

> **Note**
>
> When you select **Obtain an IP address automatically (DHCP)**, make sure that a DHCP server is operating on the network.

To specify the fixed IP address manually

Select **Use fixed IP address**.
Type the address in the **IP address**, **Subnet mask**, **Default gateway**, **Primary DNS server** and **Secondary DNS server**.

IP address

Type the IP address of the camera.

Subnet mask

Type the subnet mask.

Default gateway
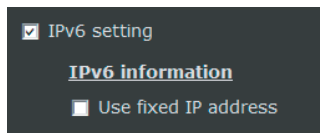
Type the default gateway.

Primary DNS server

Type the IP address of the primary DNS server.

Secondary DNS server

Type the IP address of the secondary DNS server.

IPv6 setting

Configure the IPv6 network setting.

Select the checkbox to enable the IPv6 setting.

To obtain the IPv6 address automatically

Deselect **Use fixed IP address**.

The IP address, prefix length and default gateway are assigned automatically.

Note

If you obtain an IP address automatically, ask the network administrator whether an IPv6 address can be assigned.

This function is not available in a multi-prefix environment. The transmission may not work properly.

IPv6 information

Click **IPv6 information** to obtain its information.

Refers to Ethernet   Link-local IPv6 address/network mask

Link-global IPv6 address/network mask
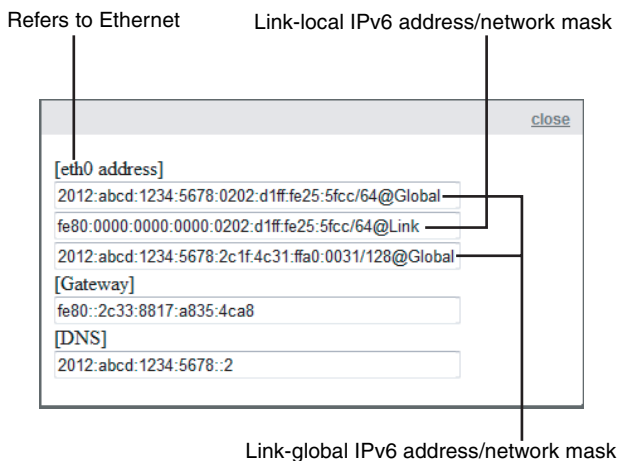
To link to the IPv6 address, follow the procedure below.

1 Open your web browser.

2 Enter the link-global or link-local IPv6 address in the address bar of your web browser.

Memo

The address format should be:

http://[2001:cf8:1:1117:0:dddd:27b8:b0ce]/

3 Press **Enter** on the keyboard or click the **Refresh** button to refresh the webpage.

Note

If you have a Secondary HTTP port (the default value is 8080), you can also link to the webpage in the following address format: (See **HTTP streaming** for detailed information.)

IPv6 address

http://[2001:cf8:1:1117:0:dddd:27b8:b0ce]/:8080

Secondary HTTP port
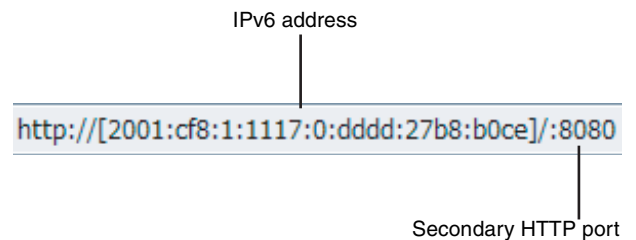
To specify the fixed IPv6 address manually

Select **Use fixed IP address**. Type the address in the **IP address / Prefix length**, **Default gateway** and **Primary DNS server**.

IP address / Prefix length

Type the IP address of the camera and the prefix length value.

Default gateway

Type the default gateway.

Primary DNS server

Type the IP address of the primary DNS server.

OK/Cancel

See "Buttons common to every menu" on page 15.

— Port Tab

Audio Port

Type the port number (from 1025 to 65535) for the audio port.

OK/Cancel

See "Buttons common to every menu" on page 15.

Streaming protocols

HTTP streaming

| HTTP port number: | 80 |
| Secondary HTTP port number: | 8080 |

HTTP port number

Type the port number (from 1025 to 65535) for the HTTP port.

Secondary HTTP port number

Type the port number (from 1025 to 65535) for the secondary HTTP port.

OK/Cancel

See "Buttons common to every menu" on page 15.

Unicast streaming

Video port number

Specify the transmission port number of the H.264 video data. Specify an even number from **1024** to **65534**. Two port numbers (the number specified here and an odd number with 1 added to the specified number) are actually used for video data communication and control. When performing simultaneous multi-transmission, a different port number will be used for every transmission, based on the port number specified here.

Audio port number

Specify the transmission port number of the audio data. Specify an even number from **1024** to **65534**. Three port numbers (the number specified here and an odd number with 1 added to the specified number) are used for audio data communication and control. When operating multi-transmission at the same time, a different port number will be used in every transmission based on the port number specified here.

Notes

- Specify different numbers for the video port number and the audio port number.
- Software Version 1.1 or later is required for Unicast streaming.

Multicast streaming

Enable

Select the checkbox to allow multicast sending.

Multicast address 1, 2, 3

Type the multicast address used on the multicast streaming.

Video port number 1, 2, 3

Specify the H.264 video transmission port number used for the multicast streaming. Specify an even number from **1024** to **65534**. Two port numbers (the number specified here and an odd number with 1 added to the specified number) are used for video data communication and control.
The settings for Image 1, Image 2 and Image 3 apply to Video port number 1, 2 and 3 respectively.

Audio port number

Specify the audio transmission port number used for the multicast streaming. Specify an even number from **1024** to **65534**. Two port numbers (the number specified here and an odd number with 1 added to the specified number) are used for audio data communication and control.

Notes

- Specify different numbers for the video port number and the audio port number.
- Software Version 1.1 or later is required for Multicast streaming.

RTSP streaming

Access name for image 1-3
Type access names for image 1-3.

RTSP port number
Set the port number used for RTSP streaming.

Memo

The port specified here is used when TCP is selected in other settings on the viewer window.

RTP video port number
Specify the transmission port number of the video data. Specify an even number from **1024** to **65534**. Two port numbers are used for video data communication and control. These are, the even number specified, and the next odd number (RTCP video port number).

Note

In software version 1.1 or later, the video port number specified for unicast streaming (page 23) is displayed.

RTP audio port number
Specify the transmission port number of the audio data. Specify an even number from **1024** to **65534**. Two port numbers are used for audio data communication and control. These are, the even number specified, and the next odd number (RTCP audio port number).

Note

Be sure to specify different numbers for the video port number and audio port number.

Multicast image 1-3 (RTSP)
Click the items to configure the settings for multicast image 1-3.

Multicast address: 239.128.1.99
Video port number: 5560
RTCP video port number: 5561
Audio port number: 5562
RTCP audio port number: 5563
Multicast TTL [1~255]: 15

Enable
Select the checkbox to allow RTSP multicast sending.

Multicast address
The multicast address used for RTSP multicast streaming.
The address set for multicast streaming (page 23) is displayed.

Video port number
Specify the H.264 video transmission port number used for the RTSP multicast streaming. Specify an even number from **1024** to **65534**. Two port numbers are used for video data communication and control. These are, the even number specified, and the next odd number (RTCP video port number).

Audio port number
Specify the audio transmission port number used for the RTSP multicast streaming. Specify an even number from **1024** to **65534**. Two port numbers are used for audio data communication and control. These are, the even number specified, and the next odd number (RTCP audio port number).

Note

Be sure to specify different numbers for the video port number and audio port number.

OK/Cancel
See "Buttons common to every menu" on page 15.

QoS

You can mark the data traffic packets sent from the device and configure the settings for QoS control.

QoS/DSCP

QoS/DSCP
☐ Enable QoS/DSCP

Enable QoS/DSCP

Select the checkbox to configure the QoS/DSCP.
Set values (0-63) to mark the data traffic.

OK/Cancel

See "Buttons common to every menu" on page 15.

SNMP

SNMP configuration

Enable SNMPv1, SNMPv2c

Select the checkbox to enable SNMPv1 and SNMPv2c.

Read/Write community

Enter the name of Read/Write community.

Read only community

Enter the name of Read only community.

Enable SNMPv3

Select the checkbox to enable SNMPv3.

Read/Write security name

Enter the name of Read/Write security name.

Authentication type

Select the authentication method.

Authentication password

Enter the password for authentication (at least 8 characters).

Encryption password

Enter a password for encryption (at least 8 characters).

Read only security name

Enter the name of Read/Write security name.

Authentication type

Select the authentication method.

Authentication password

Enter the password for authentication (at least 8 characters).

Encryption password

Enter a password for encryption (at least 8 characters).

Setting the Security
— Security Menu

When you click **Security** in the Administrator menu, the submenus of the Security menu expand.
The Security menu consists of **User**, **SSL**, **Access restriction**, and **IEEE 802.1X**.

User

Set the user names and passwords of Administrator and up to 9 users (User 1 to User 9), and the viewer mode of each user.

Administrator, User 1 to 9

Specify **User name**, **Password**, **Re-type password** and **Viewer mode** for each user ID.

User name
Type a user name between 5 and 16 characters.

> **Memo**
>
> The administrator name is fixed as admin.

Password
Type a password between 5 and 28 characters.

Re-type password
To confirm the password, retype the password that you typed in the **Password** box.

Viewer mode
When the user logs in to the main viewer, select the viewer mode to be displayed.

Administrator: The user can operate all functions.
View: The user can only operate the viewer screen.

For the functions available for each viewer mode, see "Administrator and User" on page 8.

Streaming user authentication

Select the checkbox to enable streaming user authentication.
If the checkbox is selected, user authentication will be required in order to watch video streaming by the others viewers.

> **Note**
>
> To watch video streaming by the viewer screen of this viewer, user authentication is required whether the checkbox is selected or not.

OK/Cancel

See "Buttons common to every menu" on page 15.

SSL

Configure the SSL function. The settings allow the camera to communicate with the client PC by using SSL.

SSL function
Select the checkbox to use the SSL function.

Mode
Select the connecting mode.
You can use HTTP and SSL connection simultaneously when **HTTP & HTTPS** is selected. If **HTTPS only** is selected, only SSL connection will be allowed.

Create self-signed certificate

1 Select the checkbox of SSL function.

2 Select a connection mode.

3 Select **Create self-signed certificate (For test use)** for authentication, then click **Generate** to generate a certificate.
The Certificate Information will be displayed.
Click **Certificate properties** to view detailed information about the certificate.

4 Click **OK** to save your configuration. The camera changes to the encrypted connection.

Notes

- Make sure to set the date and time on the camera correctly before performing this operation. If the date and time are not correctly set, it may cause browser connection problems.
  Before selecting **Generate** in **Create self-signed certificate**, select **Create self-signed certificate (For test use)** in **Method**, then click **OK**.
- If the connection does not automatically change to an encrypted connection, click **Viewer** to return to the viewer window. Change the URL address from "http://" to "https://" in the address bar, then press **Enter** on your keyboard.
  Some Security Alert dialogs will pop up. Click **OK** or **Yes** to enable HTTPS.

To delete an imported certificate or self-signed certificate

Click **Delete** to delete a certificate or self-signed certificate imported to the camera.

SSL server authentication

Method

Select an authentication method of the certificate.

Create self-signed certificate (For test use): This mode uses the certificate and private key pair generated by "Create self-signed certificate" on page 26. Private key information corresponding to the certificate is stored in the camera.
You do not need to install an external certificate. However, you cannot execute the existence proof, which is one of the SSL functions, for the following reasons.
  – The private key generated in the camera is self-signed by the camera.
  – A prepared value is set for a distinct name (Common name, etc).
  – The certificate is not issued by a trusted CA.
For reasons of security, we recommend using this mode only when there is no problem even if perfect security is not saved.

Note

When **Create self-signed certificate** is selected, the **Security Alert** dialog appears on the SSL connection with a browser.
For details, see "Using the SSL function" (page 5).

To upload an external certificate

Select **Use an external certificate** for authentication.
Click **Browse...** to select the certificate to be uploaded.

Set the password which is included in the certificate. Click the **Upload** button to upload the file to the camera.

Note

The upload will fail if the selected file is not a certificate or is an invalid certificate.

OK/Cancel

See "Buttons common to every menu" on page 15.

Access restriction

This allows you to control which computers can have access to the camera.
Likewise, when using IPv6, security settings can be configured for each network.

Enable access list filtering

Select the checkbox to enable access list filtering.

Filter type

Select the filter type.
If you select **Allow**, only those computers whose IP addresses are on the access restriction can access the camera.
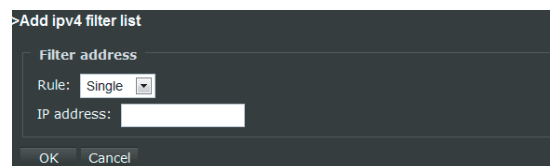The other computers cannot access the camera.
If you select **Deny**, those computers whose IP addresses are on the access restriction are not allowed to access the camera.
The other computers can access the camera.

Add IP addresses to the access restriction

1 Click **Add**.
  The filter address window opens in a new window.

2 Select a rule for the IP addresses on the access restriction.

Single

You can add an IP address.

Network

You can assign the network mask corresponding to a network address.

Range

You can assign a range of addresses.

Note

Range is only applied to IPv4.

Delete from the access restriction

Select the access restriction that you want to delete, then click **Delete**.

Note

The access restriction for IPv6 can be displayed only when **IPv6 setting** is enabled.
See **Network** on page 32 for detailed information.

OK/Cancel

See "Buttons common to every menu" on page 15.
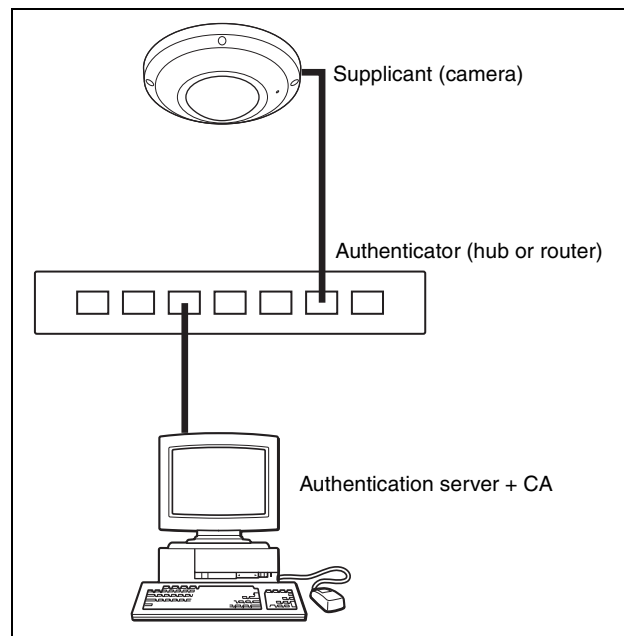
IEEE 802.1X

Configure the wired port-based authentication in compliance with the IEEE 802.1X standard.

Notes

- To use the IEEE 802.1X authentication function, you need knowledge of the IEEE 802.1X authentication and digital certificate. To establish an IEEE 802.1X network, you need to configure the authenticator, authentication server and other elements. For details on these settings, refer to the manual of the corresponding equipment.
- When using the IEEE 802.1X authentication function, always configure the settings after setting the date and time of the camera. If the date and time are incorrect, port authentication may not be performed correctly.

System configuration of IEEE 802.1X network

The following figure shows a general system configuration of an IEEE 802.1X network.

Supplicant

A supplicant is a device that connects to the authentication server to join the network. This camera serves as a supplicant in the IEEE 802.1X network. The supplicant can enter the IEEE 802.1X network after appropriate authentication by the authentication server.

Authenticator

An authenticator forwards certificate request data or response data that the supplicant or authentication server issues to the other party. Normally a hub, router or access point serves as an authenticator.

Authentication server

An authentication server has a database of connecting users and verifies whether the supplicant is a valid user or not. It can also be called a RADIUS server.

CA (Certificate Authority)

A CA issues and manages certificates of the authentication server (CA certificates) and user certificates. The CA is essential for certificate-based user authentication. Normally a CA is located inside an authentication server.

Note

This camera supports EAP mode, in which the supplicant and the server authenticate using the

certificate. This mode requires a CA to issue the certificate.

IEEE 802.1X

Enable
Select the checkbox to enable the IEEE 802.1X authentication function.

EAP method
You can select the authentication method used with the authentication server. This device supports TLS and PEAP.

TLS: By this method, the supplicant and the server authenticate each other using a certificate. This enables secure port authentication.
PEAP: By this method, an EAP password is used for the supplicant authentication and a certificate is used for server authentication.

EAP identity
Type the user name to identify the client in the IEEE 802.1X authentication server.

EAP password
A supplicant EAP password must be input when PEAP is selected with EAP condition. The password can contain half-width characters and the length should be within 50 characters.

CA certificate

You can upload a trusted CA certificate (server certificate or route certificate). Only the PEM format is supported.

To upload the CA certificate
Click **Browse…** to select the CA certificate to be imported.
Click the Upload button, and the selected file will be imported to the camera.

> **Note**

The upload will fail if the selected file is not a CA certificate.

To delete the CA certificate
Click **Delete**, and the CA certificate stored in the camera will be deleted.

Client certificate

When TLS is selected as the EAP method, the client certificate is imported, displayed or deleted for the camera authentication.

To upload the client certificate
Click **Browse…** to select the client certificate to be uploaded.
Click the Upload button, and the selected file will be uploaded to the camera.

> **Note**

The upload will fail if the selected file is not a client certificate.

To delete the client certificate
Click **Delete**, and the client certificate stored in the camera will be deleted.

Client private key

When TLS is selected as the EAP method, the private key is uploaded, displayed or deleted.

To upload a client private key
Click **Browse...** to select the client private key to be uploaded.
Click the **Upload** button to upload the file to the camera.

> **Note**

The upload will fail if the selected file is not a client private key.

To delete the client private key
Click **Delete**, and the client private key stored in the camera will be deleted.

Setting the PTZ control
— PTZ Menu

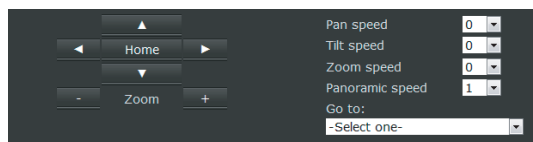When you click **PTZ** in the Administrator menu, the submenus of the PTZ menu expand.
The PTZ menu consists of **PTZ settings**.
You can make settings for the camera's pan/tilt/zoom positions and for preset tour actions.

PTZ settings

Select stream
Select a stream to configure preset or tour.

Pan/Tilt control
Click the arrow button for the direction in which you want to move the camera.
To return to the home position, click **Home**.

Zoom control
Press [+] to zoom in, and press [–] to zoom out.

Pan speed
Sets the pan speed.
–5 is the slowest and **5** is the fastest.

Tilt speed
Sets the tilt speed.
–5 is the slowest and **5** is the fastest.

Zoom speed
Sets the movement of zooming in or out.
–5 is the smallest and **5** is the largest.

Panoramic speed
Sets the speed for the auto panoramic function.
1 is the slowest and **5** is the fastest.

Go to
Select a preset position from the pull-down list. The camera will move to the position according to the preset settings.

## Preset and tour settings

To configure preset positions
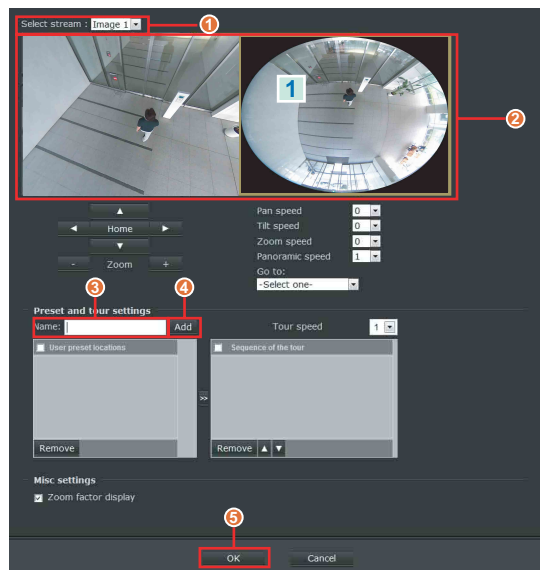
① Select a stream.

② Move the camera to the position to be saved using the mouse while you are checking the image on the preview screen.

③ Type the preset name up to 40 characters.

④ Click **Add** to set the preset position.
The preset positions will be listed on the **User preset locations**.
(To add more positions, repeat steps 1 to 4.)

⑤ Click **OK** to configure the setting.

To delete a preset position
Select the preset position to be deleted, then click **Delete**.

To configure preset tour
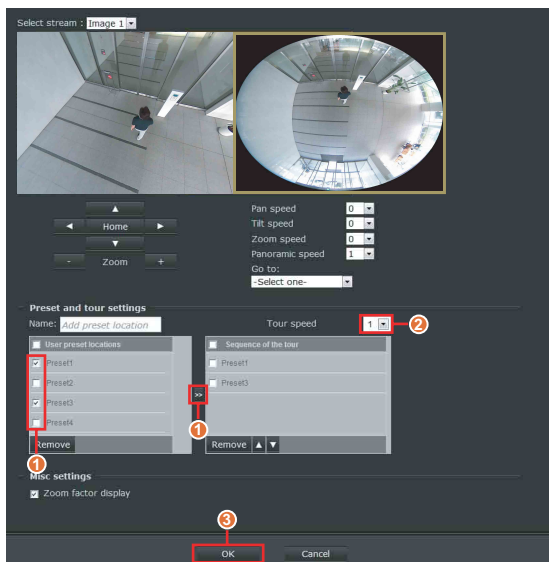
① Select one of the preset tour positions listed in **User preset locations**, then click the move button (>>). The list is displayed in the **Sequence of the tour**.

> **Memo**
>
> Sequence of the tour is from top to bottom. You can change the order using the ▲▼ buttons.

② Set a period of time from the pull-down list for which the camera is to stay at each preset position.

Tuor speed	Staying time (second)
1	6
2	3
3	2
4	1.5
5	1.2

③ Click **OK** to save the setting.

To delete a preset tour
Select the preset position to be deleted listed in **Sequence of the tour**, then click **Delete**.

Misc settings

Zoom factor display
Select the checkbox to display the zoom factor on the viewer screen.

OK/Cancel

See "Buttons common to every menu" on page 15.

Setting the Event
— Event Menu

When you click **Event** in the Administrator menu, the submenus of the Event menu expand.
The Event menu consists of **Event settings**.

Event settings

The Event settings which are set are displayed.
Click **Add** to set up a new Event.
You can set up to 3 events.

Name: Displays the event name.
Status: Displays whether the event is valid or not.
Sun/Mon/Tue/Wed/Thu/Fri/Sat/: Displays [V] on the day(s) of the week that the event is enabled.
Time: Displays the period of time that the event is enabled.
Trigger: Displays the event trigger.
Delete: Deletes the event settings.

Event settings screen

Event name: Input the Event settings name.
Enable this event: Select this checkbox to enable the Event settings.
Priority: Select the priority of these Event's settings (High/Normal/Low). The highest priority Event settings are performed first.
Detect next motion detection or digital input after [ ] second(s).: Input the time in seconds before disabling the motion detection or sensor input after they have activated.

To set the event

Set each item of **Schedule**, **Trigger**, **Action** in the Event settings screen to set the event.

1. Schedule
Set the day(s) of the week or the period of time for enabling the event.

2. Trigger
Select the trigger for performing the event.

Motion detection
When motion is detected, perform the event. When the **Motion detection** is selected, select the checkbox of the window name to be used. The setting of **Motion detection** is required to enable this function. For details, see "Motion detection" on page 35.

Memo

Multiple Motion detection settings can be made.

Periodically
Performs the event after a certain period. Input the trigger interval of the event (1 to 999 minutes).

Sensor Input

The sensor input is set as the trigger for performing the event.

Active: Performs the event while the sensor input is active.

Normal to Active: Performs the event when the sensor input shifts to the active status from the normal status.

Active to Normal: Performs the event when the sensor input shifts to the normal status from the active one.

System boot

Performs the event when the camera is being turned on.

Camera tampering detection

The camera tampering detection is set as the trigger for performing the event.

Select the **Camera tampering detection** checkbox to enable this function.

For details, see "**Camera tampering detection**" on page 36.

Manual triggers

Performs the event according to the checkboxes of the manual triggers 1, 2, 3 for the viewer screen is set. Set the checkbox for corresponding manual trigger number.

3. Action

Set the action to be performed when the trigger is activated.
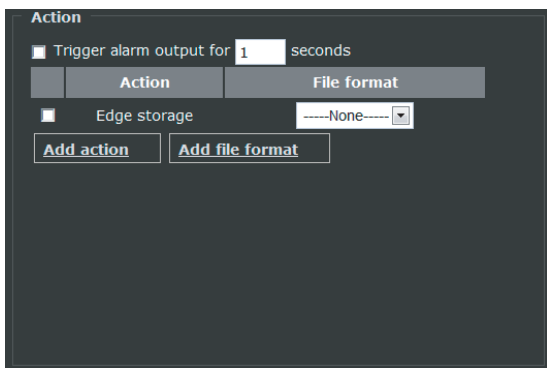
Trigger alarm output for [ ] seconds

Select the checkbox to output the alarm when the trigger is activated. Set the time in seconds for alarm to be output.

Action

Edge storage: Select the checkbox to enable the event action.

Memo

If the file is to be saved in a microSD memory card, select the **Edge storage** checkbox.

File format

Select the format of the file to be saved.

Add Action

Add the action setting.

When the trigger functions, **Still image**, **Video clip** or **System log** is sent by email.

You can set up to 5 actions.

Action name: Input the action name.
Administrator e-mail address: Input the administrator's email address (sender).
Recipient e-mail address: Input the receiver's email address.
SMTP server name: Input the domain name or the IP address of the email address.
User name: Input the user name of the e-mail account.
Password: Input the password of the e-mail account.
SMTP port number: Input the port number. The standard port number is 25.

Memo

Click **Test** to confirm that the email setting is set correctly. The result is displayed in another window. When the email with the result is received, the **Test** is successful.

OK/Close

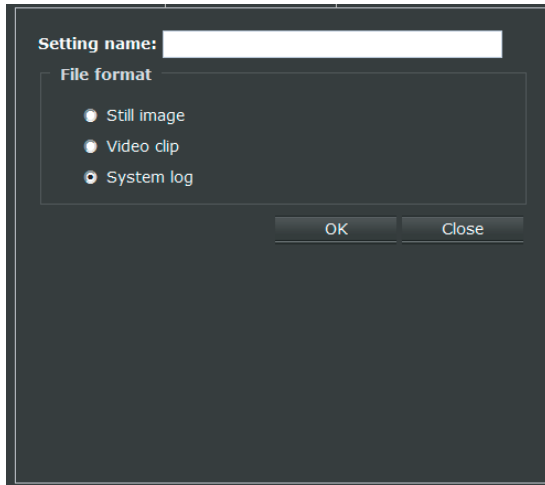See "Buttons common to every menu" on page 15.

Add file format

Adds the file format.
Set the action file format of when the trigger functions. Select the radio button of **Still image**, **Video clip** or **System log**.
Select the radio button for detailed settings.

You can set up to 5 file formats.

Still Image
Select whether the still image file is to be saved in **Edge storage**, or sent via email.

Setting name
Input the name of the file format setting.

Image
Select the image for making the still image from Image 1 to Image 3.

Send [ ] pre-event image(s) [0~7]
Before the trigger is activated, input the number of image files (0 to 7) to be saved when the trigger is activated.

Memo

A still image is saved every second.

Send [ ] post-event image(s) [0~7]
After the trigger is activated, input the number of image files (0 to 7) to be saved when the trigger is activated.

Memo

A still image is saved every second.

File name prefix
Input the text to be added before the file name.

Add date and time suffix to file name
Select the checkbox to add the date and time to the file name.

Video clip
Select when the video clip is to be saved in **Edge storage**, or sent via email.

Setting name
Input the name of the file format setting.

Source
Select the image for making the video clip from Stream 1 to Stream 3.

Pre-event recording:
When the trigger is activated, you can record the image before being activated the trigger. Input the recording time (0 to 9 seconds).

Post-event recording:
When the trigger is activated, input the time (0 to 20 seconds) for recording the image after the trigger has been activated.

Maximum file size:
Input the maximum file size for the recording data (50 KB to 6144 KB).

File name prefix
Input the text which is to be added before the file name.

System log
Select when the system log is to be saved in **Edge storage**, or sent via email.

OK/Close

See "Buttons common to every menu" on page 15.

Other settings — Application Menu

When you click `Applications` in the Administrator menu, the submenus of the Applications menu appear.
The application menu consists of **Motion detection**, **Sensor input**, and **Camera tampering detection**.

Motion detection

Motion detection responds to moving objects in the camera image and triggers an alarm. You can set up to 5 Motion detection windows.
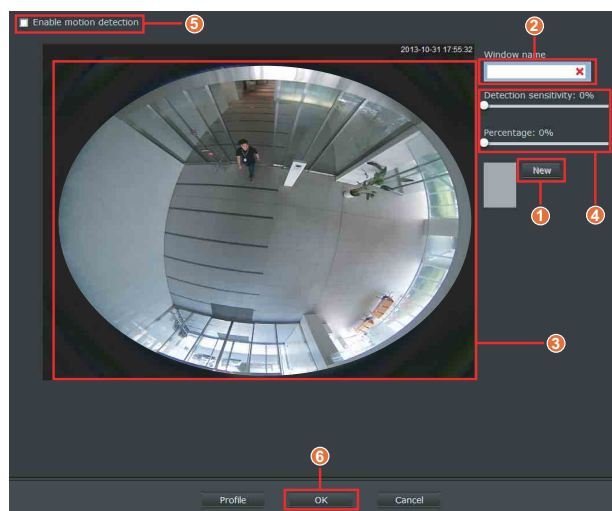
Enable motion detection
Select the checkbox to enable the motion detection.

To set the motion detection window

① Click **New**.

② Input the name of the motion detection window in the **Window name**.

③ Set the motion detection area on the preview screen by clicking the area's four points.

④ Set the **Detection sensitivity** by the slide bar, and the **Percentage**.

　　Detection sensitivity: Set the sensitivity for detecting the moving objects.

　　Percentage: Set the area ratio which is detected the moving objects against the whole screen. The motion detection is the threshold value for triggering the event.

⑤ Select the **Enable motion detection** checkbox.

⑥ Click **OK** to enable the setting.

Memo

You can confirm the status of the motion detection by the indicator. When the **Percentage** value is exceeded, the indicator lights in red.
When the Percentage is not exceeded, the indicator lights in green.
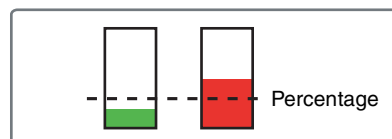
Profile

The profile of the motion detection setting opens in a new window.

OK/Cancel

See "Buttons common to every menu" on page 15.

Profile of motion detection setting
Enable and apply this profile
Select the checkbox to select a mode.
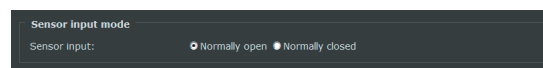For the other settings, see "Motion detection" (page 35).

OK/Cancel/Close

See the "Buttons common to every menu" (page 15).

Sensor input

Sensor input mode

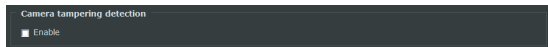Set the direction for detection by the camera sensor input terminal.

Normaly open: Detects the alarm when the signal is short circuited.
Normaly closed: Detects the alarm when the signal is open circuited.

OK/Cancel

See the "Buttons common to every menu" (page 15).

Camera tampering detection

Enable

To detect tampering, such as spraying, select the checkbox.

OK/Cancel

See the "Buttons common to every menu" (page 15).

Settings on the Recording
— Recording Menu

When you click **Recording** in the Administrator menu, the submenus of the recording menu expand.
The recording menu consists of the **Recording Settings**.

Recording Settings

The **Recording Settings** which are set are displayed.

Click **Add** to add an event. You can set up to two **Recording Settings**.

Name: Displays the recording name.
Status: Displays whether the recording settings are valid or not.
Sun/Mon/Tue/Wed/Thu/Fri/Sat: Displays [V] on the days of the week that the recording settings are valid.
Time: Displays the period of time for that the recording settings are valid.
Image: Displays the recording image (Image 1 to image 3).
Destination: Displays where the files are recorded.
Delete: Deletes the recording settings.
Recording name: Input the name of the recording settings.
Enable this recording: Select this checkbox to enable the event settings.
Priority: Select the importance of the recording settings (High/Normal/Low). The highest priority Event settings are performed first.
Image: Selects the recording image (Image 1 to image 3).

Setting the recording settings

To set the event, you need to set the items of the **Trigger** and **Destination** in the recording settings screen.

1. Trigger

Select the trigger for performing the recording settings.

Schedule

Sets the days of the week or the period of the time for which the recording settings are enabled.

Network fail

Select when a problem occurs in the network and the recording setting is enabled.

2. Destination

Set the place where the files are to be recorded.

Destination

The place where the files are to be recorded.

> **Memo**

You cannot select other than SD (microSD card).

Recording file management

Maximum duration

Input the maximum recording time (1 to 60 minutes) when the trigger set in the **1. Trigger** functions.

Maximum file size

Input the maximum file size (100 to 2000 MB) when the trigger set in the **1. Trigger** functions.

File name prefix

Input the text to be added before the file name.

OK/Close

See "Buttons common to every menu" on page 15.

Setting the Edge storage function — Edge storage Menu

When you click **Edge storage** in the Administrator menu, the submenus of the Edge storage menu expand. The Edge storage menu consists of the **SD memory card** and **Content management**.

> **Notes**

- The frame rate and operability on the main viewer may be reduced during movie or still image recording.
- The actual interval of recording a still image may be longer than the interval you set.
- Stop the Edge storage recording before you turn off the power of the camera with a microSD memory card inserted.
- Before you remove or insert a card, stop the Edge storage recording and turn off the power of the camera.
- The supplied ActiveX viewer is not used for streaming the recorded video or audio data. For details on supported applications, contact an authorized Sony dealer.

SD memory card
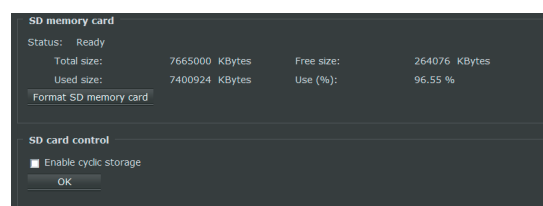
Initializing the SD memory card

Initializes the microSD memory card which is inserted to this unit's micro SD card slot.
Click **Format SD memory card** to start the initializing. The files and folders which are stored in the SD memory card are erased.

> **Notes**

- Before using the SD memory card, initialize it using your computer or click **Format SD memory card** to initialize it.
- Do not operate **Format SD memory card** without inserting the SD memory card to the SD card slot.

SD Memory Card Control

Enable cyclic storage

When the micro SD card does not have the enough free space, select whether the data should be overwritten or not.

When you check this, the setting allows to overwrite, and then the recorded data from the oldest one will be overwritten. If you do not select this, the old data is not overwritten and the new data is not recorded.

OK

Click this after completing the setting.

> **Note**

If you do not click **OK**, the setting is not saved.

Contents Management

Refers to the data stored in the SD memory card.

You can sort the trigger time, file format, trigger type, or locked backup. You can also search for data with character input in the search window.

Trigger time

Displays the effective time of the trigger.

File format: Displays the file format.
Trigger type: Displays the trigger type.
Locked: Displays **Yes** when the file is locked, **No** when the file is not locked.

Refresh/View/Download/Lock/Unlock/ Delete

Refresh: Displays the latest information.
View: Plays the high-lighted item.
Download: Downloads the high-lighted item. Specify the place you want to save to.
Lock/Unlock: Locks or unlocks the selected item.
Delete: Deletes the selected item.

> **Note**

It may take several tens of minutes for **View** or **Download** to respond depending on the file size or network environment.

Glossary

ActiveX control

A component program object that can be used with web pages or other application programs. The technology for creating ActiveX control is part of software developed by Microsoft.

Bit rate

The rate at which data bits are transmitted.

Capture

To send audio and video converted to digital data from video devices to a computer.

CBR

CBR stands for Constant Bit Rate control. When you select this setting, bits will be consumed at a constant rate.

Codec

Software/hardware for coding/decoding video and audio data.

Contrast

The difference in tone between the lightest and darkest portions of the image.

Default gateway

Device that can be used to access another network.

DHCP server

Acronym for Dynamic Host Configuration Protocol server. The IP address of a terminal without an individual IP address can be automatically distributed by the Dynamic Host Configuration Protocol (DHCP). The DHCP server assigns the IP addresses to the terminals.

Digital certificate

An electronic certificate that a CA (Certificate Authority) attests that a public key to cancel a secret code is issued by an authentic publisher.

DNS server

Acronym for Domain Name System server. As an IP address required for connecting to the device on an IP network is numerical and difficult to remember, the Domain Name System was established. A domain name is alphabetic and is easier to remember. When a client computer uses a domain name to connect to another computer, it asks a DNS server to translate the name into the corresponding IP address. The client computer can then obtain the IP address of the computer to be connected.

Frame rate

The number of frames of a moving image that can be transmitted per a second.

HTTP port

A port used to communicate between the web server and the web client, such as a web browser.

H.264

An image compression format. The standard written by the JVT (Joint Video Team) a joint organization for standardization (composed of ISO and ITU-T. H.264), is capable of transmitting video data at a higher compression rate than that of MPEG4.

IP address

Acronym for Internet Protocol Address. An individual IP address is basically assigned to each piece of equipment connected to the Internet.

JPEG

Acronym for Joint Photographic Expert Group. The still image compression technology or standards of ISO (International Organization for Standardization) and ITU-T. Popularly used as an image compression format on the Internet, etc.

Multicast

The class D IP address assigned between 224.0.0.0 and 239.255.255.255. Using this IP address enables you to transmit the same data to multiple equipment.

Network address

The portion that identifies the local network (subnet) in an IP address.

NTP server

Network time server that transmits and receives time information over the networks.

Primary DNS server

One of the DNS servers that can first reply to a request by connected devices or other DNS servers.

Proxy server

A server or software that acts as an intermediary between a local network and the Internet so that it can connect to the Internet in place of a computer on a local network.

Saturation

The degree to which a color is pure.

Secondary DNS server

Subsidiary DNS server used when a primary DNS server cannot be used.

Sharpness

The degree to which the boundary of two portions is clearly distinguished.

SMTP Server

A server for sending or relaying e-mail messages between servers.

SSL

Acronym for Secure Sockets Layer. This is a protocol developed by Netscape Communications Corporation to be used for communications of encrypted data on the Internet.

Subnet mask

32-bit stream used to distinguish the subnet address from an IP address.

TCP

Acronym for Transmission Control Protocol. A standard protocol used for Internet connection. Compared with the other protocol, UDP, TCP provides reliable communication but communication speed is slower.

UDP

Acronym for User Datagram Protocol. A standard protocol used for Internet connection. Compared with the other protocol, TCP, UDP can transmit data faster, but reliable communication is not guaranteed.

Unicast

Transmission of data to specified equipment on a network by specifying a single address.

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Others

Others