

# Network Camera

## User's Guide

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

Software Version 1.1

SNC-VB770/VM772R

# HDMI

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# Features

- Through 35 mm full frame Exmor<sup>®</sup> CMOS sensor, high performance image process engine, and E-mount lens compatibility, achieves 4K (3,840 × 2,160) high-resolution at the minimum subject brightness 0.004 lx. (SNC-VB770)
- Through large 1.0 type 20 million pixel backside-illumination “Exmor R” CMOS sensor, high performance image process engine, and ×2.9 electrical high-quality zoom lens mounting, achieves 4K (3,840 × 2,160) high-resolution at the minimum subject brightness 0.1 lx. (SNC-VM772R)
- Intelligent scene capture function is available to auto-select pre-defined appropriate image settings based on typical scenes like lighting conditions, back light, spot light, night scene, and weak light.
- Intelligent cropping function is available to monitor up to 4 image specified areas with 4K resolution at the same time while watching full image with Full HD resolution.
- Intelligent coding function is available to assign large volumes of information of up to 8 interest areas to transfer.
- Evidence shot function is available to record high quality still images with 12 million pixel (4,240 × 2,832) resolution. It is suitable for scene validation and producing of evidence. (SNC-VB770)
- Evidence shot function is available to record high quality still images with 20 million pixel (5,472 × 3,648) resolution. It is suitable for scene validation and producing of evidence. (SNC-VM772R)
- Optical stabilizer function is available to achieve images with less shaking. (SNC-VM772R)
- You can adjust the camera view angle wirelessly with the USB wireless LAN module IFU-WLM3 (sold separately) and SNC toolbox mobile application.
- HDMI Interface is supported.

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# 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.

The illustrations of the camera and menu display in the User's Guide show the SNC-VM772R as an example.

## 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.

# System Requirements

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

(March 2017)

## Common

### OS

Microsoft Windows 7 (32-bit version, 64-bit version)<sup>\*1</sup>,  
Windows 8.1 Pro (32-bit version, 64-bit version),  
Windows 10 Pro (32-bit version, 64-bit version)<sup>\*2</sup>

Authorized editions:

Windows 7: Ultimate, Professional

Windows 8.1: Pro

Windows 10: Pro

Microsoft DirectX 9.0c or higher

### Web Browser

Windows Internet Explorer Ver.11.0<sup>\*3</sup>

Firefox Ver.51.0

Google Chrome Ver.56.0

### CPU

Intel Core i7, 3.4 GHz or higher

### Memory

8 GB or more

### Graphic board

#### Note

For 4K (3840 × 2160) output at 30 fps, a GPU capable of 3840 × 2160 resolution and decoding 4K/H.264 is required.

<sup>\*1</sup> Activate Aero when you output 4K 30fps on Windows 7.

<sup>\*2</sup> If you are on Windows 10, turn off tablet mode.

<sup>\*3</sup> If you are on Windows 8.1, use the Internet Explorer of desktop user interface (desktop UI).

# 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.



The live viewer window is displayed.

## Display sample



### Note

- The maximum number of users on the network who can see a viewer at the same time is 20 users. However, if the transmission function of the camera is overloaded, access to the camera may not be possible, even if there are fewer than the maximum number of users.
- If monitoring with sound, the maximum number of users is 10.

## Using the SSL function

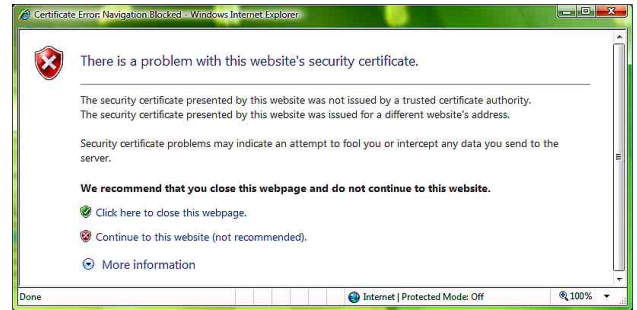
### Note

The model on sale in China does not support the SSL function.

### When Internet Explorer is used

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 live viewer window appears (in SSL communication).



### When “Allow HTTP connection for some clients” (page 38) 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/index.html?lang=en`

#### For SSL connection

`https://192.168.0.100/index.html?lang=en`

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

“Security Warning” is displayed. When you click **Yes**, ActiveX control is installed and the live 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 the setting of the proxy server, consult your network administrator.
- When you install ActiveX Control, you should be logged in to the computer as Administrator.
- When you start Internet Explorer, run as “Administrator.”

**Tips**

- The software is optimized for Internet Explorer using medium font.
- If the screen is not displayed correctly, display it again with **Reload**.

**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 with the initial conditions set for 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
Set the format of the image sent from the camera.	Video codec Tab (page 27)
Select the White balance mode according to the installation position.	White balance (page 26)
Select the brightness of the image sent from the camera.	Exposure (page 25)
Select the quality of the image sent from the camera.	Video codec Tab (page 27)
Select the view size of the image.	View size (page 12)
Select whether the audio from the external input is sent or not.	Audio Tab (page 29)
Synchronize the date and time of the camera with those of the computer.	Date & time Tab (page 20)
Make the setting for sending the monitor image attached to an e-mail.	Mail Transfer Tab (page 55)
Set the user access right for the camera.	User Tab (page 36)



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# Precautions for Preventing Access to the Camera by an Unintended Third Party

The camera may be accessed by an unintended third party on the network, depending on the usage environment. Changing the user name and password of the camera administrator from the default settings is highly recommended for security reasons. If the camera is accessed by an unintended third party, there may be an undesired effect, such as operations or settings to block monitoring, etc.

The camera can be fraudulently accessed in a network environment where a device is connected or connectable to the network without the administrator's permission, or a PC or other network device connected to the network can be used without any permission. Connect to these environments at your own risk. To prevent unauthorized access to the camera, set it according to the following steps.

Do not use the browser you use to set the camera to access other websites while you set or after setting the camera. You will remain logged in to the camera as long as the browser is open, so to prevent an unintended third party's use or execution of malicious programs, close the browser after you finish setting the camera.

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## How to set up

- 1** Set the network address of the camera using SNC toolbox.  
For details about how to use SNC toolbox, refer to the application guide.  
After this step, do not use SNC toolbox to change the network settings of the camera. Use SNC toolbox to search for the camera only.
- 2** Start the web browser and set the SSL function to **Enable** in the camera settings.  
For details, refer to “Setting the security — SSL tab on the Security menu” in the Administrator menu on page 38.
- 3** Restart the web browser and access the camera again.
- 4** Set the user name and password of the administrator of the camera.  
For details, refer to “Setting the security — User tab on the Security menu” in the Administrator menu on page 36.

- 5** Check the Referer check checkbox.  
For details, refer to “Setting the security — Referer check tab on the Security menu” in the Administrator menu on page 44.
- 6** Check the Viewer authentication box.  
For details, refer to “Setting the security — User tab on the Security menu” in the Administrator menu on page 36.

Hereafter, use the camera using the SSL connection.

### Note

The model on sale in China does not support the SSL function.

## 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 18.

## 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. The **Viewer mode** setting is used to restrict the user’s access rights.

Each type of user can use the corresponding functions below.

Function	User			
	Administrator	Full	Light	View
Monitor a live image	●	●	●	●
View the date and time	●	●	●	●
Control the frame rate (JPEG mode only)	●	●	–	–
Control the image view size	●	●	●	–
Save a still image and movie in the computer	●	●	●	–
Switch the TCP/UDP transmission mode (Available in H.264 mode only)	●	●	–	–
Receive audio	●	●	●	●
Select the codec mode	●	●	●	–
Control the setting menu	●	–	–	–
Play the recorded file in the memory card	●	●	–	–
Delete the recorded file in the memory card	●	–	–	–

- Usable function
- Not usable function

The access rights of the administrator and the user can be set in “Security Menu — Setting the Security” of the Administrator menu on page 36.

# 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.



The live viewer is displayed.

### Display sample:



#### Note

If the live 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 7 and check the security level.

## About Viewers

You can use the following viewers.

### ActiveX viewer

This viewer can monitor the camera image in any of the **JPEG** and **H.264** video codecs.

Two types of ActiveX viewer are available: Live viewer and Playback viewer.

You must install this viewer when you access the viewer for the first time.

#### Notes

- If a part of the image does not fit in the screen, set the display setting (magnification percentage) of your computer to 100%.
- When you use a display with high pixel density, the magnification percentage may have been changed automatically.
- If the images are not smoothly displayed, match the video frequency setting and the refresh rate of the computer screen.

### When you display the viewer of the camera for the first time

When you access the network camera using ActiveX viewer for the first time, the **Security Warning** appears. Click **Yes** and install ActiveX Control. You can use all the functions of the viewer with ActiveX Control.

### Plug-in free viewer

This viewer enables a browser other than Internet Explorer to display images.

#### Notes

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

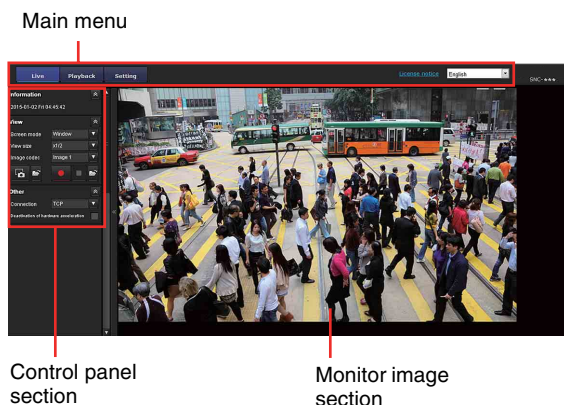
#### Tip

Every page of this software is optimized for Internet Explorer in **Medium** font.

# Configuration of Live Viewer

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

## Live viewer using ActiveX viewer



## Main menu

### Live viewer

Displays the ActiveX viewer or the Plug-in free viewer.

### Playback viewer

Click to play, save and delete the recorded movie in the memory card. (page 15)

### Setting

Click to display the Administrator menu. (page 18)  
You can operate this function only when logging in as the administrator.

### License notice

Displays the software consent agreement, etc.


### Language

Set language from pull-down.

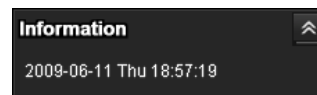
## Control panel section

You can drag the panels to the monitor screen and configure them.

To return to the control panel, drag the panel and configure the control panel.

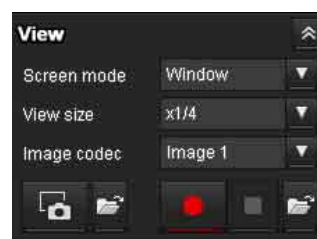
Click the  to hide the detail setting menu or click it again to show the menu.

## Information panel



Check the date and time here.

## View panel



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

### 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 **x1/4** to display images, reduced to 1/4 of the size set in **Image size**.

Select **x1/2** to display images, reduced to 1/2 of the size set in **Image size**.

Select **x1** to display images set in **Image size** (page 27) of the Video / Audio menu or Video menu.

Select **Full** to display images according to the view size.

Select **Fit** to display images according to the view size, with fixed aspect ratio.

### Image codec

Select from **Image1** to **Image5** of the video codec. The available video codec will vary depending on the output mode.


### Capture

Click to save a scene of a recorded movie as a still image file to your computer. Click  to open the folder to be saved.

**Note**

When protection mode (Windows - Control panel - Internet options - Security property) is enabled, still images cannot be captured.

**Run/ Stop Save Video**

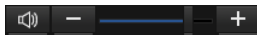
Runs and stops Save Video. Click  to open the folder to be saved.

**Note**




When protection mode (Windows - Control panel - Internet options - Security property) is enabled, videos cannot be saved.

**Volume**

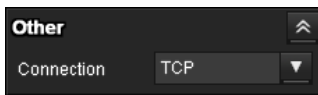
Displays when **Enable** in the Audio tab of the Video / Audio menu is checked.



Use the slide bar to adjust the volume for sound output level.

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

**Other panel**



**Connection**

Select the transmission mode of the video/audio data from **TCP**, **Unicast**, and **Multicast**. For details, see “Switching Transmission Mode” on page 14.

**Deactivation of hardware acceleration**

Check the checkbox if there are problems in video playback.

**Note**

The settings of the following items are saved automatically.  
 The camera may not operate properly depending on the environment and saving condition of the settings. Screen mode, View size, Frame rate, Volume, Audio output levels, Operation using the images on the camera control panel, Connection, and Deactivation of hardware acceleration.  
 In this case, return to the initial setting by deleting the file below.  
 For example: the main drive is C

C:\Users\User name\AppData\Roaming\Sony\SNCActiveXViewer\SNCActiveXViewer\_configuration.ini

**Monitor image**



The image shot by the camera is shown here.

**Plug-in free viewer**

**Live viewer using Plug-in free viewer**

Display sample:



Control bar      Monitor screen

**Monitor screen**

The image shot with the camera is shown here.

## Control bar

The following operation buttons are available.



- ▼ **Setting**  
You can set the image size, frame rate, and image codec.
- ▶ **Streaming start button**  
Starts streaming. (Appears while stops streaming.)
- ⏸ **Streaming stop button**  
Stops streaming. (Appears while streaming.)
- 📷 **Save still image button**  
Captures still images taken by the camera and saves them to the computer.

## Switching Transmission Mode

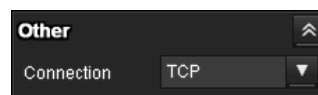
You can change the transmission mode for video/audio data.

This function can be used when the video codec mode is set to **H.264** and the ActiveX viewer in the live viewer is used.

### Note

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



**TCP:** This is normally selected.

When **TCP** is selected, HTTP communication is adopted for video/audio communications. HTTP is the protocol used for reading the usual Web page. In an environment capable of reading Web pages, you can watch or listen to video/audio by selecting the TCP port.

**Unicast:** When **Unicast** is selected, RTP (Real-time 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:** This protocol is selectable when **Multicast streaming** in the Streaming tab of the Video / Audio menu or Video menu is set to **Enable**. 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**.

## Note

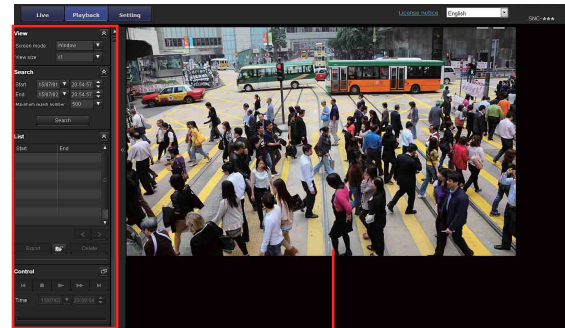
When connecting via a proxy server, neither **Unicast** nor **Multicast** can be selected.

# Playback viewer

You can play, save or delete the movies recorded in the memory card.

This function is available only in the following users.

- Administrator
- When **Viewer mode** is set to **Full**



Control panel section

Monitor image section

## Control panel section

### View panel



You can change the screen mode or view size of the image.

### Screen mode

Select Window or Full Screen.

### View size

Select the view size to be displayed.

Click the **View size** list box to select the view size.

Select **x1/4** to display images, reduced to 1/4 of the size set in **Image size**.

Select **x1/2** to display images, reduced to 1/2 of the size set in **Image size**.

Select **x1** to display images set in **Image size** (page 27) of the Video / Audio menu.

Select **Full** to display images in full size.

Select **Fit** to display images in full size with fixed aspect ratio.

## Search panel



Specify the search period.

### Start

Select the start time for searching.

### End

Select the end time for searching.

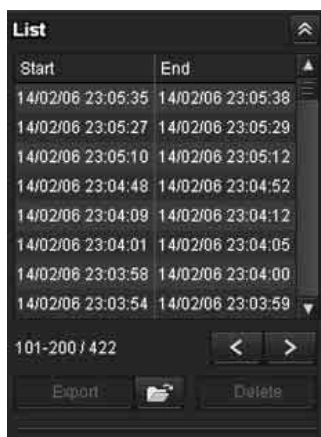
### Maximum search number

You can specify the maximum number of the search results.

### Search

Search for recorded movies in the specified period.

## Search results list



Displays the search results from the search panel. You can select the movie which you want to play, save or delete.

You can select multiple files for deletion by clicking those movies while pressing the control key.

### Range of the search results displayed in the list

101-200 / 422

Indicates the list of the total search results that is currently displayed.

### > Go to the next search result

Displays the next search results.

### < Go to the previous search result

Displays the previous search results.

### Export Save recorded movie

Save the selected movie to your computer. Click to open the folder in which the movie is to be saved.

### Delete Delete recorded movie

Delete the selected movie(s).

### Note

Only the administrator can delete movies. Deleted movies cannot be restored.

## Control panel (Basic)

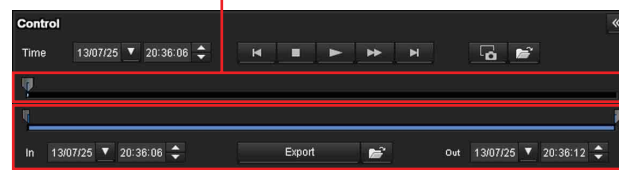


You can play, pause, stop, fast forward or jump the selected movie on the search results list. Also you can specify the start position for playback.

If you click the button, the control panel (detail) is displayed.

## Control panel (Detail)

Specify the start position for playback



Specify the playback time

You can play, pause, stop, fast forward or jump the selected movie on the search results list. Also you can specify the start position for playback, playback time, save the movie or save the captured still image.

If you click the button, the control panel (basic) is displayed.

### Specify the start position for playback

Move the start position by dragging the slider.

### Time



Specify the recorded date and time from which the movie will start playback.



**◀ Previous record**

Jump to the previous movie.

**■ Stop button**

Click this button to stop a movie playing.

**▶ Play button**

Play the movie.

Click this button to play the movie at the normal speed after pressing the fast forward button.

**⏸ Pause button**

Click this button to pause a movie playing.

**⏩ Fast forward**

Click this button to fast forward the moving being played.

**▶ Next record**

Jump to the next movie.

**📷 Still image capture**

Save the capture of a recorded movie as a still image file to your computer. Click 📁 to open the folder in which the movie is to be saved.

**Specify the playback time**

Specify the start and end position of the movie by moving the slider.

You can save the specified time to your computer.

You can also specify the start time to **In** and end time to **Out**.

**Export Save selected part of recorded movie**

Save the part of movie which is specified by the playback time to your computer. Click 📁 to open the folder in which the movie is to be saved.

## Monitor image



Play the selected movie from the search results list.

## Adminstrating the Camera

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 10.

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 clearly display only the setting options that you can currently select. Grayed out options cannot be selected.

Only supported functions are displayed.

## Basic Operations of the Administrator Menu

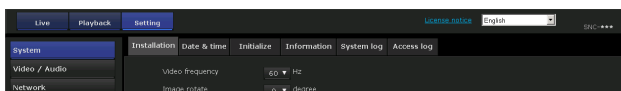
You can use the Administrator menu to set all functions to suit the user’s needs.

Click **Setting** in the viewer to display the Administrator menu.

### How to set up the Administrator menu

- 1 Log in to the homepage to display the viewer.  
For details, see “Logging in as a user” on page 11.
- 2 Click **Setting** on the main menu.  
The authentication dialog appears. Enter the user name and password for Administrator. The Administrator menu appears.  
The user name “admin” and password “admin” are set at the factory for the Administrator.  
For security, be sure to change the password from the factory setting before using the camera.  
Create a user name and password using half-width characters that do not include “,” (comma), “#”, “&”, “:” or “(space)”.
- 3 Click the menu name (example: System) on the left side of the Administrator menu.  
The clicked menu appears.

Example: “System” menu



- 4 Select the required tab above the menu, and set each setting option in the tab.

Example: “Date & time” tab of “System” menu



See page 19 for details of the menu tabs and setting options.

- 5 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 refresh the information.

### General notes on menus

- Input characters (for usernames, for example) in half-width characters on a computer. Half-width katakana cannot be used.
- After changing a setting on a menu, wait at least 60 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 live viewer, some settings cannot be restored. To reflect the change on the opening live viewer, click **Refresh** on the Web browser.

### Configuration of the Administrator menu

#### System

Displays the System menu. (“System Menu — Configuring the System” on page 19)

#### Video / Audio

Displays the Video / Audio menu for setting the camera image and audio. (“Video / Audio Menu — Setting the Camera Image and Audio” on page 22)

## Network

Displays the Network menu for setting the network connection. (“Network Menu — Configuring the Network” on page 34)

## Security

Displays the Security menu for setting the login user name and password to specify which computer(s) can connect to the camera. (“Security Menu — Setting the Security” on page 36)

## Action input

Displays the setting menu for all built-in detection functions. (“Action input Menu — Setting the Sensor input/Camera tampering detection/Motion detection” on page 45)

## Action output

Displays the Action output menu for setting an action of the functions such as e-Mail (SMTP) and Edge Storage. (“Action output Menu — Setting the Action output” on page 54)

## Schedule

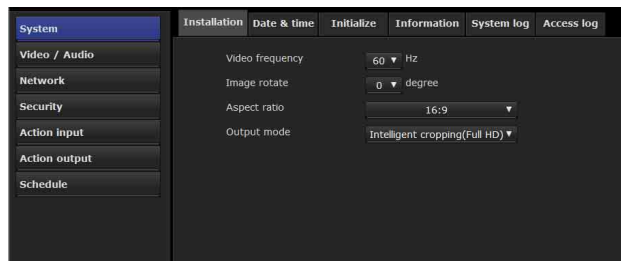
Displays the Schedule menu for the e-Mail (SMTP) function, Alarm output function, Voice alert function, etc. (“Schedule Menu — Setting the Schedule” on page 61)

# System Menu

## — Configuring the System

When you click **System** in the Administrator menu, the System menu appears.

Use this menu to perform the principal settings of the software.



## Installation Tab

### Video frequency

Select the basic frequency for internal operation. Selectable values are **50 Hz** and **60 Hz**.

#### Note

If the images are not smoothly displayed, match the video frequency setting and the refresh rate of the computer screen.

### Image rotate (SNC-VM772R)

You can rotate images and display it on the computer. Selectable rotation angles are **0 degrees** and **180 degrees**.

### Aspect ratio

Select the aspect ratio of output images. Selectable values are **4:3**, **16:9**, and **3:2**. Maximum image size changes depending on the aspect ratio.

#### Note

If you changed the aspect ratio to **4:3** or **16:9**, **4K 25fps** or **4K 30fps** for SNC-VB770, **4K Multi streaming** for SNC-VM772R will be selected as the output mode.

### Output mode

Output mode will vary depending on the aspect ratio.

**HDMI:** suitable for using uncompressed digital images other than for monitoring purposes, including educational, medical, and other content creating.

**4K 25fps** or **4K 30fps:** 4K stream can be output. It is suitable for monitoring which requiring a high frame rate (e.g. street monitoring).

Set to **4K 25fps** when the video frequency is **50 Hz**, and **4K 30fps** for **60 Hz**.

**Evidence shot:** JPEG image with the maximum resolution can be retrieved. It is suitable for monitoring requiring a high resolution to understand detailed letters or people's figures (e.g. parking lot or crowded city center).

**Intelligent cropping (Full HD):** It simultaneously displays 1 overall long shot image and 2 cropped images (Full HD) with a high resolution camera. It is suitable for installing in cities and railways.

**Intelligent cropping (VGA):** It simultaneously displays 1 overall long shot image and 4 cropped images (VGA) with a high resolution camera. It is suitable for installing in cities and railways, to achieve overall long shot and distance at once with a high resolution camera.

**4K Multi streaming:** It simultaneously displays 4 overall long shot images including the 4K resolution images with a high resolution camera.

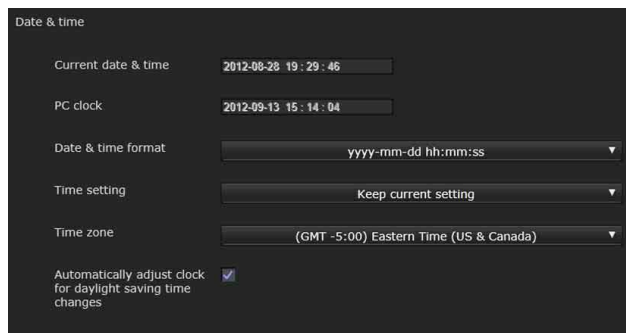
**Full HD:** can output a single Full HD stream. This supports a wide range of purposes, from those that require a high-framerate to those that require reducing the amount of data.

**Note**

Monitor images will not be displayed when **HDMI** is selected.

- Resolution setting  
Set the resolution for HDMI output.
- Color space  
Set the color space for HDMI output.

## Date & time Tab



### Current date & time

Displays the date and time set on the camera.

**Note**

After you have purchased the camera, be sure to check the date and time of the camera and set as necessary.

### PC clock

Displays the date and time set on your computer.

## Date & time format

Select the format of date and time to be displayed in the viewer from the drop-down list.

You can select the format between **yyyy-mm-dd hh:mm:ss** (year-month-day hour:minutes:seconds), **mm-dd-yyyy hh:mm:ss** (month-day-year hour:minutes:seconds), and **dd-mm-yyyy hh:mm:ss** (day-month-year hour:minutes:seconds).

## Time setting

Select how to set the day and time.

**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.

## Time zone

Set the time difference from Greenwich Mean Time in the area where the camera is installed.

Select the time zone in the area where the camera is installed from the drop-down list.

## Manual time zone

If you select **Manual** in Time zone, you can set a desired time zone that is not included in the list box. The input format is compliant with IEEE 1003.1 section 8.3 standard.

### Format:

stdoffset[dst[offset][,start[/time],end[/time]]]

**std:** 3 to 100 character strings

**offset:** time difference (displayed in +/-)

**dst:** name of summer time

**offset:** offset of summer time, default time is 1 hour

**start:** start date and time of summer time

**end:** end date and time of summer time

Values in [ ] can be omitted.

For example:

In case of (UTC-06:00) Central Standard Time (USA and Canada);

CentralStandardTime6DaylightTime1,M3.2.0,M11.1.0

The name of the time zone is CentralStandardTime and the time difference is 6 hours. The name of the summer time is DaylightTime, and the summer time offset from the time difference is 1 hour, starting from the second week on Sunday in March until the first week on Sunday in November.

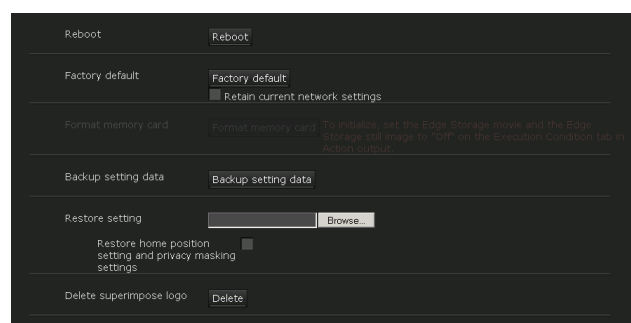
### Automatically adjust clock for daylight saving time changes

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

#### Note

If the time zone selected in **Time zone** is different from that set on the computer, the time is adjusted using the time zone difference and set on the camera.

## Initialize Tab



### Reboot

Used when rebooting the system. Click **Reboot**, and the message “This System will be rebooted. Are you sure?” appears. Click **OK** to reboot the camera.

### 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 message “This System will be rebooted. Are you sure?” appears. When you click **OK**, the network indicator on the camera starts to blink. After adjustments of the default settings have finished, the camera reboots automatically. Do not turn off the camera until the camera reboots.

#### Tip

The camera can also be reset to the factory settings by turning on the power of this unit while pressing the reset button on the camera. For details, refer to the Installation Manual.

### Format memory card

You can format a memory card (not supplied) inserted into the card slot of the camera. When you click **Format memory card**, a confirming message appears. Click **OK** to start formatting. Any files and folders stored in the memory card will be deleted.

#### Notes

- Before formatting, set **Edge Storage movie** and **Edge Storage still image** in the Execution Condition tab of the Action output menu to **Off**, to write-protect the memory card.
- Do not activate the **Format memory card** function when no card is inserted into the card slot.

### Backup setting data

Saves the setting data of the camera in a file. Click **Save**, and follow the instructions on the Web browser to specify the folder and save the setting data of the camera.

The file name preset at the factory is “snc-vm772r.cfg” for SNC-VM772R.

### 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.

### Restore privacy mask settings

If you select this, the stored setting data of the camera and privacy masking data are loaded.

#### Notes

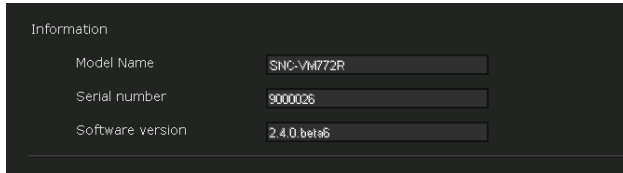
- With **Restore setting**, some items in the Network menu (page 34) cannot be restored.
- The following items cannot be stored or restored with **Backup setting data** or **Restore setting**.
  - a certificate to be used in the 802.1X function
  - a certificate to be used in the SSL function
  - superimpose logo
- After performing **Restore setting**, the restored settings may not be displayed on the screen. Restart the browser or refresh the information by clicking the **Reload** button in each setting tab.

### Delete superimpose logo

Click **Delete** to delete the superimposed logo, specified by Position in the Superimpose tab of the Video / Audio menu, from the camera.

To set whether to show or hide the superimpose logo, you need to configure the setting under the Superimpose tab.

## Information Tab



### Model Name

The model name of the camera is displayed.

### Serial number

The serial number of the camera is displayed.

### Software version

The software version of the camera is displayed.

### Hours Meter

The accumulated operating hours is displayed.

Press **Reset** to reset the operating hours to 0.

## System log Tab

The data of the software activity of the camera is recorded in this log. It includes data that is useful if a problem occurs.

Click **Reload** to reload the latest data.

Click **Log level** in the list box to adjust the importance of information to be recorded in the camera as a system log.

Set the maximum record number to be recorded in the camera in **Log size**.

Log information can be saved as a file by clicking **Download** or **Download as file**.

## Access log Tab

The access record of the camera is displayed.

Click **Reload** to reload the latest data.

Click **Log level** in the list box to adjust the importance of information to be recorded in the camera as an access log.

Set the maximum record number to be recorded in the camera in **Log size**.

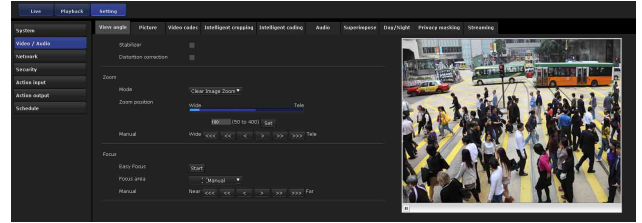
Log information can be saved as a file by clicking **Download** or **Download as file**.

## Video / Audio Menu

### — Setting the Camera Image and Audio

When you click **Video / Audio** in the Administrator menu, the Video / Audio menu appears.

Use this menu to set the functions of the camera.



## View angle Tab

### Preview screen

Preview the image and adjust the picture setting.

### Stabilizer (SNC-VM772R)

Select the checkbox to display steadier images when the camera is installed in a place subject to vibration.

#### Note

The stabilizer may not respond, depending on the amount of vibration.

### Distortion correction

Select the checkbox to display images with less distortion with an overall natural taste, even in wide viewing angle images.

#### Note

When the distortion correction function is set, the view angle of image taken will be smaller than usual. Be sure to set this function during the installation.

### Zoom

Select a suitable zoom mode for the scene to adjust zoom position manually.

Enter values and click the <<<<, <<, <, >, >>, >>>> buttons to adjust the zoom position manually.

### Mode

Set to **Digital zoom**, **Clear Image Zoom**, or **Optical zoom**.

**Digital zoom:** Select this option to prioritize magnification than image quality.

**Clear Image Zoom:** Deterioration of the image quality will lessen even if they exceed optical zoom. Digital zoom magnifications will be restricted to around the ×1 to ×2 area.

**Optical zoom:** Select this option to use only the optical area. (SNC-VM772R)

**Off:** Select this option if you do not use **Clear Image Zoom** or **Digital zoom**. (SNC-VB770)

**Note**

The modes below can be selected from the Output mode (System Menu > Installation tab).

	Output mode	Zoom mode
SNC-VB770	<ul style="list-style-type: none"> <li>• 4K Multi streaming</li> <li>• Intelligent cropping (Full HD)</li> <li>• Intelligent cropping (VGA)</li> <li>• Full HD</li> </ul>	<ul style="list-style-type: none"> <li>• Digital Zoom</li> <li>• Clear Image Zoom</li> <li>• Off</li> </ul>
	<ul style="list-style-type: none"> <li>• 4K 25fps/4K 30fps</li> <li>• HDMI</li> <li>• Evidence shot</li> </ul>	<ul style="list-style-type: none"> <li>• Off</li> </ul>
SNC-VM772R	<ul style="list-style-type: none"> <li>• 4K Multi streaming</li> <li>• Intelligent cropping (Full HD)</li> <li>• Intelligent cropping (VGA)</li> <li>• Full HD</li> </ul>	<ul style="list-style-type: none"> <li>• Digital Zoom</li> <li>• Clear Image Zoom</li> <li>• Optical zoom</li> </ul>
	<ul style="list-style-type: none"> <li>• 4K 25fps/4K 30fps</li> <li>• HDMI</li> <li>• Evidence shot</li> </ul>	<ul style="list-style-type: none"> <li>• Optical zoom</li> </ul>

**Zoom Position**

The zoom position can be set by clicking the zoom bar. The zoom position can also be set with greater accuracy by entering the value and pressing **Set**.

**Manual**

Adjust the zoom position by clicking the <<<, <<, <, >, >>, and >>> buttons.

**Focus**

Adjust manually in case Easy Focus function doesn't set to the suitable focus position due to the recording environment.

**Easy Focus**

Sets the focus position. By clicking **Start**, the focus is adjusted automatically.

**Open iris**

If you use the camera in an environment with different brightness depending on the time, select the **Open iris** check box before you click the **Start** button. (SNC-VB770)

**Note**

If the exposure mode found in the Image tab of the Video/Audio menu is set to a setting other than **Full auto**, Open iris cannot be set.

**Focus area**

Set to **Auto** or **Manual**.

**Auto:** Camera sets the area of focus automatically.

**Manual:** Sets the area to focus on.

**Manual**

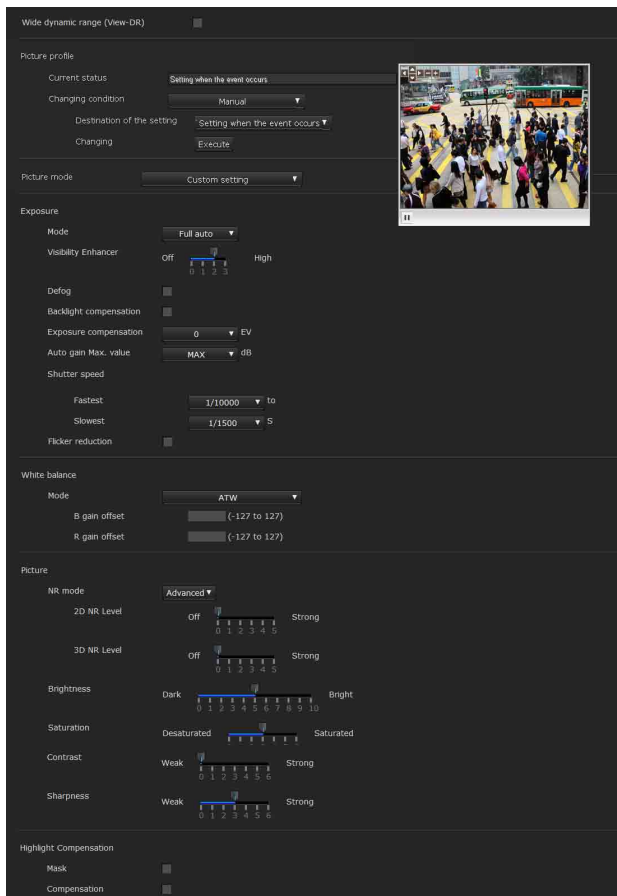
Adjust focus position manually by clicking <<<, <<, <, >, >>, >>>, in case Easy Focus function doesn't set to the suitable focus position due to the recording environment.

**Note**

When you shoot objects listed below, set to Manual and adjust focus manually.

- Objects without contrast. Ex. white wall
- Objects behind glass
- Objects with many horizontal borders
- Objects that receive strong light, like lighting or reflection
- Objects with blinking light in a dark background. Ex. night scene
- Objects with lighting or light in dark conditions with exposure adjustment or exposure correction feature.

## Picture Tab



You can set the color conditions, exposure, etc., of the camera.

### Preview screen

Preview the image and adjust the picture setting.

### Wide dynamic range (View-DR)

In high-contrast scenes such as against a back light, this function reduces overexposure and underexposure.

Select the checkbox to turn on the Wide dynamic range (View-DR) function.

#### Notes

- This function will be available, only when the Output mode on the Installation tab in the System menu is set to **4K Multi-streaming**, and Exposure is set to Full Auto.
- If the Wide dynamic range is selected, all except left/removed are available as VMF filters.

### Picture profile

This is a function to change setting value concerning brightness control, quality, and color control by synchronizing with brightness fluctuates, the schedule setting, and the sensor input.

The Image quality setting value (profile) can retain the **Normal setting** and the **Setting when the event occurs** respectively as an independent setting.

To change the **Setting when the event occurs**, select **Manual** in the **Changing condition**, and set **Setting when the event occurs** for the **Destination of the setting**, and then press the **Execute**.

After completing to change the **Setting when the event occurs**, return to the **Normal setting**.

### Current status

Displays the current profile condition. Simultaneously displays the destination of the settings.

### Changing condition

**Schedule:** Changes according to the set conditions on the Picture tab in the Schedule menu.

#### Day to Night:

Switches in accordance with the change in brightness. (SNC-VM772R)

- **Threshold:** The profile will change in the brighter environment.
- **Hold time:** Sets time to judge that the condition is fulfilled.
- **Illumination status:** Displays the query which is determined, **light** or **dark**.

**Sensor input:** Selects sensors for changing conditions, from **Sensor input 1** or **Sensor input 2**.

#### Manual:

- **Destination of the setting:** Select from **Setting when the event occurs** or **Normal setting**.
- **Changing:** Changes when you click **Execute**.

### Picture mode

Select the combination of image quality mode to suit the camera scene.

When the dialog appears, click **OK** to apply the selected picture mode.

You can change the settings of image quality individually. When you select each Intelligent scene capture, the image quality setting is automatically optimized depending on scene. (Default value: Intelligent scene capture (Standard))

#### Intelligent scene capture (Fast A)

Select this option to shoot subjects that move quickly.

#### Intelligent scene capture (Fast B)

Select this option to shoot subjects that move slowly.

#### Intelligent scene capture (Standard)

Select this option to shoot subjects not in other modes.

#### Intelligent scene capture (Low noise)

Select this option to prioritize quality.



### Sync with Motion detection

Select this check box to make granularity higher by synchronizing motion detection.

#### Note

Please set motion detection in advance.

### Preset (Low bitrate)

Select this option to shoot in less light or subjects with minuscule materials, such as leaves.

### Preset (Vivid)

Select this option to shoot subjects with a simple color tone.

### Custom setting

Select this option to set the image quality parameter individually.

### Exposure

Adjust the settings of exposure.

#### Note

To set the exposure, you need to choose the image mode from **Preset (low bitrate)**, **Preset (Vivid)**, or **Custom setting**.

### Mode

Select from **Full auto**, **Shutter priority**, **Iris priority**, and **Manual**.

**Full auto:** Camera will adjust Iris, gain, and shutter speed automatically to obtain appropriate exposure.

**Shutter priority:** Camera will adjust Iris and gain, suitable for user-selected shutter speed automatically to obtain appropriate exposure.

**Iris priority:** Camera will adjust shutter speed and gain, suitable for user-selected Iris automatically to obtain appropriate exposure.

**Manual:** Set Iris, gain, and shutter speed manually.

### Visibility Enhancer

Using the Visibility Enhancer function will make the darker part of a camera image brighter as well as automatically correct brightness and contrast to show bright parts clearly without overexposure. Higher number, stronger contrast.

### Defog

Function to improve deteriorated eyesight of the outside monitoring camera by defogging in bad weather. Higher number, stronger defog correction.

### Backlight compensation

Function to compensate backlight to shot in the appropriate exposure.  
Higher number, stronger backlight compensation.

### Exposure compensation

Function to lighten/darken the image by changing exposure from the camera adjusted appropriate exposure.  
Select from the range of +2.0 to -2.0EV.

### Auto gain Max. value

Limit the maximum value of gain-controlled automatic exposure control.  
Select from the range of 0 to Max.

### Shutter speed

Automatic exposure by auto controlling the shutter speed. Select the shutter speed's upper limit and lower limit from the list box.  
Available options are below, depending on the value of video frequency (System menu > Installation tab)

NTSC	PAL
1/10000	1/10000
1/6000	1/6000
1/4000	1/3500
1/3000	1/2500
1/2000	1/1750
1/1500	1/1250
1/1000	1/1000
1/725	1/600
1/500	1/425
1/350	1/300
1/250	1/215
1/180	1/150
1/125	1/120
1/100	1/100
1/90	1/75
1/60	1/50
1/30	1/25
1/15	1/12
1/8	1/6
1/4	1/3
1/2	1/2
1/1	1/1

### Iris

Select the iris from the list box.

**The current iris value (SNC-VB770)**

Displays the F value retrieved via the lens.

**Gain**

Select the gain from the list box.

**Flicker reduction**

Select to lessen flickers if you feel uneasy with flickering from discharge tubes including fluorescent, sodium lights, mercury lamps, and LEDs.

**White balance****Mode**

Select the White balance mode.

Select between indoor or outdoor, auto or manual, and from the followings under a certain condition.

**ATW:** Eliminates the influences caused by environmental illumination or lights. Adjust the white balance automatically to reproduce original colors of subjects (approximately 2000 K to 10000 K).

**ATW-PRO:** Automatically adjusts the color to be closest to the image you are viewing (approximately 2500 K to 7500 K).

**Indoor:** Sets a white balance suitable for indoor photography.

**Outdoor:** Sets a white balance suitable for outdoor photography.

**Fluorescent lamp:** Sets a white balance suitable for photography under three-band fluorescent lighting with a neutral white color.

**Mercury lamp:** Sets a white balance suitable for photography under a mercury lamp.

**Sodium vapor lamp:** Sets a white balance suitable for photography under a high-pressure sodium vapor lamp.

**Metal halide lamp:** Sets a white balance suitable for photography under a metal halide lamp.

**White LED:** Sets a white balance suitable for photography under the light of white LEDs.

**One push WB:** The **One push trigger** becomes active. Click **On** to adjust the white balance.

**Manual:** When this option is selected, **R gain** and **B gain** become active. Selectable gain values are from 0 to 255.

**ATW\_PRO sodium vapor:** Sets a white balance suitable for photography under a high-pressure sodium vapor lamp.

The memory card has a limited life span. It may not record correctly when used for a long period of time. In such a case, replace with a new memory card.

**NR mode**

Set to this mode to remove noise to achieve clearer images.

**Simple:** Removes noise at the same time, by setting 2D/3D noise reduction strength to the same level.

**NR (XDNR)**

It is available when NR mode is Simple. Select the level to reduce image noise.

**Advance:** remove noise at the same time, by setting 2D/3D noise reduction strength individually.

**2D NR Level**

It is available when NR mode is **Advanced**. Select the level to reduce image noise from the range of 0 to 5.

**3D NR Level**

It is available when NR mode is **Advanced**. Select the level to reduce image noise from the range of 0 to 5.

**Brightness**

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

**Saturation**

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

**Contrast**

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

**Sharpness**

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

**Highlight Compensation**

Provides an image that is easy to the eyes of operators by masking highlight areas and adjusting the exposure.

**Notes**

- When **Exposure mode** is set to **Manual**, the function does not activate.
- When **Backlight compensation** is selected, the function does not activate.

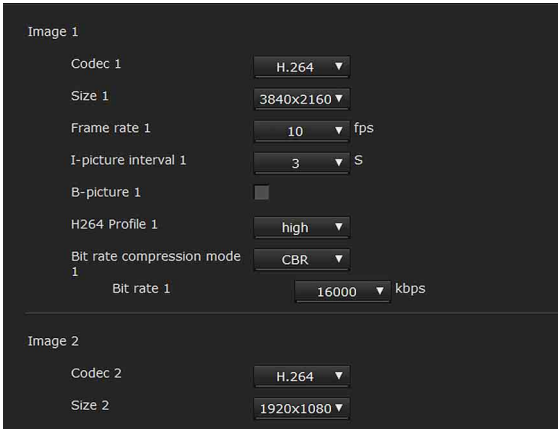
### Mask

When the checkbox is selected, detects the highlight areas automatically and masks them.

### Compensation

When the checkbox is selected, enhances the video level of dark parts and enhances visibility.

## Video codec Tab



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

### Image 1, Image 2, Image 3, Image 4, Image 5

Depending on the output modes, up to 5 image codec modes can be set. Configure the following setting for each image mode.

#### Codec

Select **H.264**, **JPEG**, or **Off**.

Codec for each output mode are shown below. (Bold letters are the default value in case multiple options are available)

Output mode	Image				
	1	2	3	4	5
4K Multi streaming	H264	H264/ <b>Off</b>	H264/ <b>Off</b>	H264/ <b>Off</b>	–
Intelligent cropping (VGA)	H264	H264/ <b>Off</b>	H264/ <b>Off</b>	H264/ <b>Off</b>	H264/ <b>Off</b>
Intelligent cropping (Full HD)	H264	H264/ <b>Off</b>	H264/ <b>Off</b>	–	–
4K 25fps 4K 30fps	H264	–	–	–	–
Evidence shot	JPEG	<b>H264/Off</b>	–	–	–
HDMI	Off	–	–	–	–
Full HD	H264	–	–	–	–

### Size

You can select the size of images sent from the camera. Image sizes for each output mode are shown below. (Bold letters are the default value in case multiple options are available)

Output mode	Aspect Ratio	Image				
		1	2	3	4	5
4K Multi streaming	16:9	3840 × 2160	<b>1920 × 1080</b> 1280 × 720	640 × 360	320 × 180	–
	4:3	2880 × 2160	<b>1440 × 1080</b> 960 × 720	640 × 480	320 × 240	–
Intelligent cropping (VGA)	16:9	1920 × 1080	640 × 480	640 × 480	640 × 480	640 × 480
	4:3	1440 × 1080	640 × 480	640 × 480	640 × 480	640 × 480
Intelligent cropping (Full HD)	16:9	1920 × 1080	1920 × 1080	1920 × 1080	–	–
	4:3	1440 × 1080	1920 × 1080	1920 × 1080	–	–
4K 25fps 4K 30fps	16:9	3840 × 2160	–	–	–	–
	4:3	2880 × 2160	–	–	–	–
Evidence shot	3:2	5472 × 3648 (SNC-VM772R) 4240 × 2832 (SNC-VB770)	1440 × 960	–	–	–
HDMI	16:9*	–	–	–	–	–
Full HD	16:9	1920 × 1080	–	–	–	–
	4:3	1440 × 1080	–	–	–	–

\* When the output mode is set to the HDMI, the output image size changes by depending on the HDMI resolution and the video frequency settings.  
 When the video frequency is 60 Hz:  
 3840 × 2160, 720 × 480  
 When the video frequency is 50 Hz:  
 3840 × 2160, 720 × 576

#### Note

The following image sizes of the still image from the action output are applied depending on the output mode:

- **4K 25fps** or **4K 30fps**: 1920 × 1080 (16:9) or 1440 × 1080 (4:3)
- **HDMI**: 1920 × 1080

## Frame rate

Set the frame rate of the image.

“fps” is a unit indicating the number of frames transmitted per second.

The frame rate of JPEG images can be changed by the setting of **Image quality**.

## I-picture interval

Set the I-picture insertion interval in seconds.

## B-picture

Select whether B-picture is available or not. Only when the image size is more than 1920 × 1080 with H.264, it can be set.

## H.264 profile

Set the profile setting for H.264 video codec to **high** or **main**. The video compression efficiency is **high** and **main** in sequence. The specified profile may not be available depending on the program you use. Select the profile which is suitable for your program.

## Bit rate compression mode

Set **CBR** or **VBR**.

If you want to keep the bit rate fixed, select **CBR**. If you want to keep the image quality fixed, select **VBR**.

### Note

The frame rate or bit rate that is actually transmitted may be different from the set values depending on image size, scene, network environment.

## Bit rate

When **Bit rate compression mode** is set to **CBR**

The bit rate of the image transmission for a line can be set. When the bit rate is set to a high level, a high image quality can be delivered.

When **Bit rate compression mode** is set to **VBR**, set the target bit rate.

## Max

When **Bit rate compression mode** is set to **VBR**, set the maximum value of bit rate.

### Note

If you reboot the camera after changing the output mode, the following parameter is initialized.

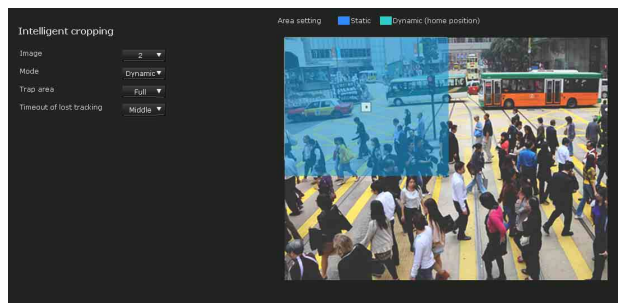
## JPEG quality

When **Codec** is set to **JPEG**, the image quality settings are enabled.

The higher the value, the higher the image quality.

## Intelligent cropping Tab

Function to crop the area of interest from a full image. You can monitor the the area of interest with a high-quality image with less bit rate by providing a full image and area of interest image cropped from 4K resolution. This option is available when **Intelligent cropping (Full HD)** and **Intelligent cropping (VGA)** are selected for output mode (System > Installation tab)



## Image

If the output mode is set to **Intelligent cropping (Full HD)**, 2 to 3 are selectable.

If the output mode is set to **Intelligent cropping (VGA)**, 2 to 5 are selectable.

### Note

Enable each image in the Video codec tab.

## Mode

Select between manual setting (**Static**) and moving object tracking (**Dynamic**).

**Static:** Crop the area which is set manually. Adjust the fixing position in the preview screen.

**Dynamic:** Waits at the home position until the moving object is detected. After detecting the moving object in the area, the cropping area will move automatically.

Adjust the home position in the preview screen.

### Note

To select the **Dynamic**, perform the motion detection settings in advance.

## Tracking monitoring range

Set the Trap area to **Specific** or **Full**.

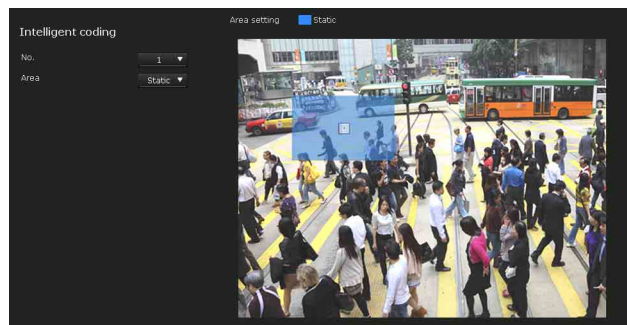
## Timeout of lost tracking

Select the time duration to wait and search moving objects after the moving object disappears from the view, and restart tracking.

## Intelligent coding Tab

Assigns bit rate by partially lowering compressibility of the full image. Ensuring large amount of information enables transferring of images which include areas of interest with high quality.

This option is available when **Evidence shot**, **4K 25fps/4K 30fps**, and **4K Multi streaming** are selected for output mode (System > Installation tab)



### No.

Selectable values are from 1 to 8.

### Area

**Static:** Assigns bit rates to improve quality automatically by camera to the set area. Adjust the position and size in the preview screen. It can be set up to all 8 positions.

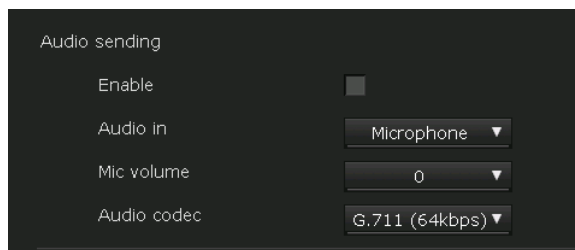
**Dynamic:** Waits in the area until a moving object is detected. After detecting a moving object in the area, assigns bit rates to the area with the moving object automatically. Adjust the position and size in the preview screen. 1 to 4 can be set.

#### Note

To select the **Dynamic**, perform the motion detection settings in advance.

**Off:** Doesn't allocate the bit rate. It can be set up to all 8 positions.

## Audio Tab



### Audio sending

Make settings for sending audio from the microphone input terminal.

#### Enable

Select the checkbox if you want to send audio from the camera.

#### Note

When you change the **Audio** setting, click **Refresh** on the Web browser to reflect the change on the opened live viewer page.

#### Audio in

Select microphone input (Microphone) or line input (Line).

#### Mic volume

When the Audio is set to microphone input, set the volume level of the audio input from the microphone input terminal or microphone. It is adjustable from **-10** to **+10**.

#### Audio codec

Select the codec type to deliver audio input from the microphone input terminal.

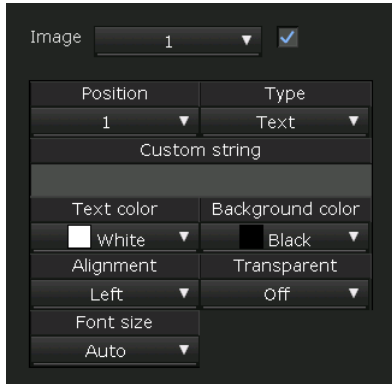
Bit rate and sampling rate for audio codec are listed below.

Audio codec	Bit rate	Sampling rate
G.711	64kbps	8kHz
G.726	16kbps	8kHz
	24kbps	8kHz
	32kbps	8kHz
	40kbps	8kHz
AAC LC	64kbps	16kHz
	128kbps	48kHz

#### Note

No audio is output if the Plug-in free viewer is used.

## Superimpose Tab



Select whether or not to superimpose the custom string and date & time characters on the image. You can set superimpose on/off, font size, and display items to display for Image 1 - 5 separately in this camera.

### Preview screen

Preview the image, and adjust the superimposed image. You can move the position of the superimposed image displayed on the preview screen by drag and drop.

### Image

Select the video codec mode to set for the superimposed image.

The setting for the superimposed image is available if you select the checkbox next to the list box. For details concerning the video codec number, set them on the Video codec tab in the Video / Audio menu.

### Position

Select the number of the display position or logo on the preview screen. When Logo is selected, the logo file setting is displayed.

#### Note

Permissible logo file specifications;  
File format: PNG8 with alpha channel  
Image size: min. 16 × 8, max. 640 × 120

### Type

Set the type of display information to codec, date & time, event, or text.

**Text:** Displays the custom string.

**Date & time:** Displays the date and time.

**Event:** Displays the event alarm information.

**Codec:** Displays the video codec information.

### Custom string

Describes the superimposed content for each position. For Type setting, codec is displayed as <codeinfo>, date & time is displayed as <datetime>, event is displayed as <event>, and you can add a custom string to it.

Use alphanumeric other than “#”, “&”, “(”, “\$“, or “?”.

### Text color

Select the font color of the superimposed text.

### Background color

Select the background color of the superimposed text.

### Alignment

Set the horizontal position of the superimposed text.

### Transparent

Select the background color transparency of the superimposed text. When you select **Off**, transparency is not available.

### Font size

Select the font size of the superimposed text. Character size can be set individually for Image 1 - 5. Images that can be set will vary depending on the output mode. When you select **Auto**, the image size will be adjusted to the suitable image size of the image number.

### Events displayed

Displayed in the menu when the type is set to **Event**. Select the type of event to be displayed superimposed.

## Day/Night Tab (SNC-VM772R)

Use this tab to set the day/night function of the camera.

### Trigger

Select the day/night mode. This function has the following modes.

#### Note

If **Exposure** on Video/Audio menu > Quality tab is set to **Manual**, **Auto** is not available.

**Auto:** Works in Day mode normally. It switches to Night mode automatically in a dark place.

### Sync with IR Illuminator

**On:** Infrared illuminator will operate synchronizing with Day/Night switching.

**Off:** Infrared illuminator will not operate.

### IR Illuminator level

This option will be available when **Sync with IR Illuminator** is set to **On**.

Sets infrared level of infrared illuminator.  
(Default value: 4, Min.: 0, Max: 4)

#### Note

When you use the IR Illuminator function, subjects in short distance may be overexposed. If you do not want white out, set **Wide dynamic range (View-DR)** in the Video/Audio menu or Image tab in Video menu to **On**.

### Brightness threshold

This option will be available when **Sync with IR Illuminator** is set to **On**.

Set the brightness level when night mode is set.  
(Default value: 1, Min.: 0, Max: 2)

### Threshold

Set the brightness level when night mode is set. This option will be available when **Sync with IR Illuminator** is set to **Off**.

(Default value: 22, Min.: 0, Max: 22)

### Hold Time

Set the reaction time of changes in brightness.

**Manual:** Switches the day/night mode manually.

If Night mode is selected, the camera works in night mode. Otherwise, the camera works in day mode.

**Timer:** Switches day/night mode by timer. It switches to night mode at the time you set in **Timer of Day/Night** in the Schedule menu.

**Sensor input:** Controls the day/night mode by synchronizing it with the sensor input. Select the synchronized sensor from **Sensor input 1** and **Sensor input 2**. While a sensor input is detected, the camera works in night mode.

### Status

Displays the day/night function status.

### Easy Focus

If you select **Sync with Day/Night**, Easy Focus will operate synchronized with day/night changing to re-adjust focus automatically.

For more information on Easy Focus, see “View angle Tab” (page 22).

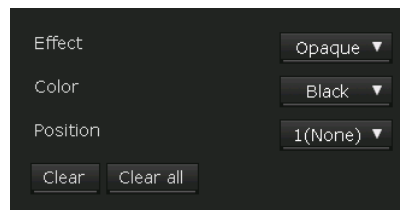
#### Notes

- Image is unfocused during Easy Focus operation.
- Motion detection alarm will not be available during Easy Focus operation.
- If you select **Sync with Day/Night**, ensure that the focus is available in day and night mode in advance.

### Near-IR compensation

Adjust the background light when using the IR lamp or when in an environment where there is a lot of near short infrared ray. Select the checkbox to increase the accuracy of Easy Focus in night mode.

## Privacy masking Tab



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

### Preview screen

This screen is for monitoring images and configuring privacy masking.

You can move the position of the privacy mask displayed on the preview screen by drag and drop.

### Effect

Set the effect of privacy masks.

### Color

Specify the color of privacy masks. This setting is common to every privacy mask.

### Position

Select the number corresponding to the display position on the preview screen.

After completing the configuration, register by clicking **OK**.

### Clear

Click the button to delete the privacy mask set in **Position**.

### Clear all

Click the button to delete all privacy masks.

### Setting a privacy mask

Operate according to the following procedure to set a privacy mask in the position of your choice:

- 1 Select the number to register from the **Position** drop-down list.

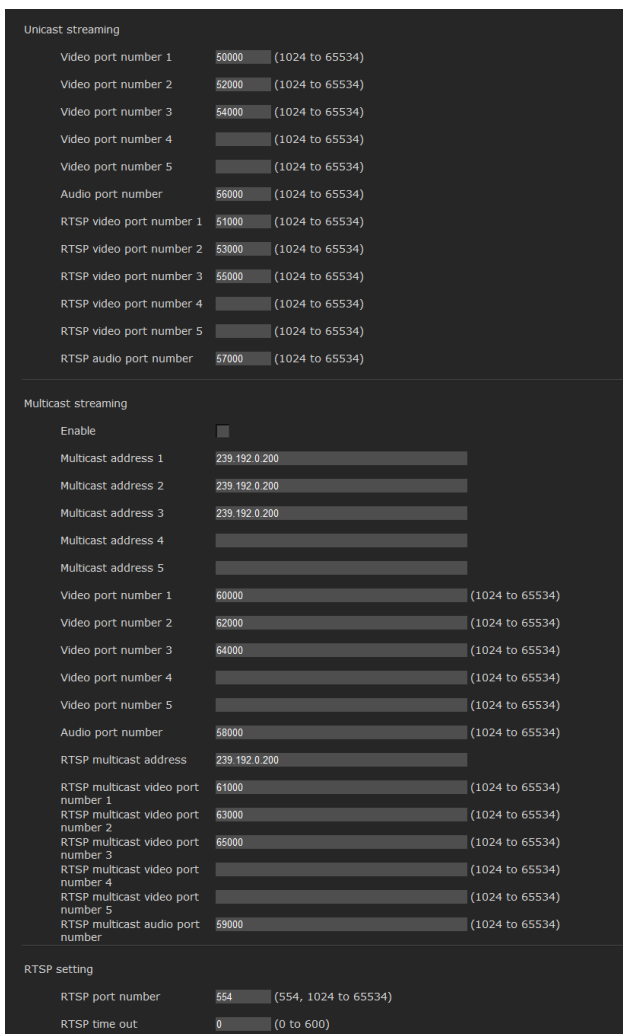
- 2 Specify the privacy mask area by dragging the mouse on the preview screen.
- 3 Select the effect and color of the mask from the **Effect** and **Color** drop-down list.

**Note**

The color is common to every privacy mask. The color selected last is applied.

- 4 Click **OK**.  
The mask is displayed on the preview screen.

## Streaming Tab



Use this tab to set the items for transmission by unicast or multicast.

## Unicast streaming

Specify the transmission port numbers of the H.264 video data and audio data to be used when **Unicast** is selected from the **Connection** drop-down list in the Other panel on the live viewer.

### Video port number 1, 2, 3, 4, 5

Specify the transmission port number of the H.264 video data. The default setting is 50000, 52000, 54000, 54010, or 54020. 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. The settings for Image 1, Image 2, Image 3, Image 4, and Image 5 apply to Video port number 1, 2, 3, 4, and 5 respectively.

### Audio port number

Specify the transmission port number of the audio data. The default setting is 56000. 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 audio 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.

**Note**

Specify different numbers for the video port number and the audio port number.

### RTSP video port number 1, 2, 3, 4, 5

Specify the H.264 video transmission port number used for RTSP unicast streaming. The default setting is 51000, 53000, 55000, 55010, or 55020. 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.

The settings for Image 1, Image 2, Image 3, Image 4, and Image 5 apply to RTSP video port number 1, 2, 3, 4, and 5 respectively.



**RTSP audio port number**

Specify the audio transmission port number used for RTSP unicast streaming. The default setting is 57000. 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 audio 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.

**Multicast streaming**

Set whether the camera uses multicast streaming for H.264 video data and audio data or not. It reduces the transmission load on the camera by having a computer of the same segment network receive the same transmitting data.

**Enable**

Select the checkbox to allow multicast sending. When you select the checkbox, set **Multicast address**, **Video port number** and **Audio port number** properly.

**Multicast address 1, 2, 3, 4, 5**

Type the multicast address used on the multicast streaming.

**Video port number 1, 2, 3, 4, 5**

Specify the H.264 video transmission port number used for the multicast streaming. The default setting is 60000, 62000, 64000, 64010, or 64020.

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.

The settings for Image 1, Image 2, Image 3, Image 4, and Image 5 apply to Video port number 1, 2, 3, 4, and 5 respectively.

**Audio port number**

Specify the audio transmission port number used for the multicast streaming. The default setting is 58000.

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 audio data communication and control.

**Note**

Specify different numbers for the video port number and the audio port number.

**RTSP multicast address**

Set the multicast address used on RTSP multicast streaming.

**RTSP multicast video port number 1, 2, 3, 4, 5**

Specify the H.264 video transmission port number used for RTSP multicast streaming. The default setting is 61000, 63000, 65000, 65010, or 65020. 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.

The settings for Image 1, Image 2, Image 3, Image 4, and Image 5 apply to Video port number 1, 2, 3, 4, and 5 respectively.

**RTSP multicast audio port number**

Specify the audio transmission port number used for RTSP multicast streaming. The default setting is 59000. 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 audio data communication and control.

**RTSP setting**

Set the RTSP setting which cannot be set in the Unicast streaming setting and Multicast streaming.

**RTSP port number**

Set the port number used for RTSP streaming. The default setting is 554.

If you change the setting, the RTSP server will be rebooted.

**RTSP time out**

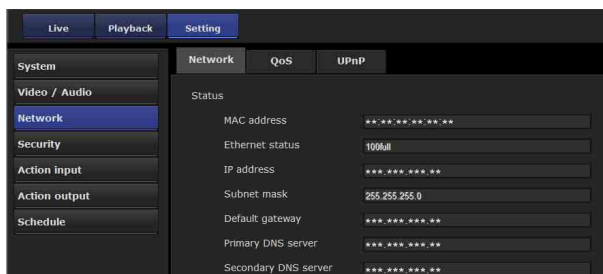
Specify the time out time of the Keep-Alive command by RTSP streaming. You can set the time out from **0** second to **600** seconds.

At the **0** setting, time out of the Keep-Alive command is not available.

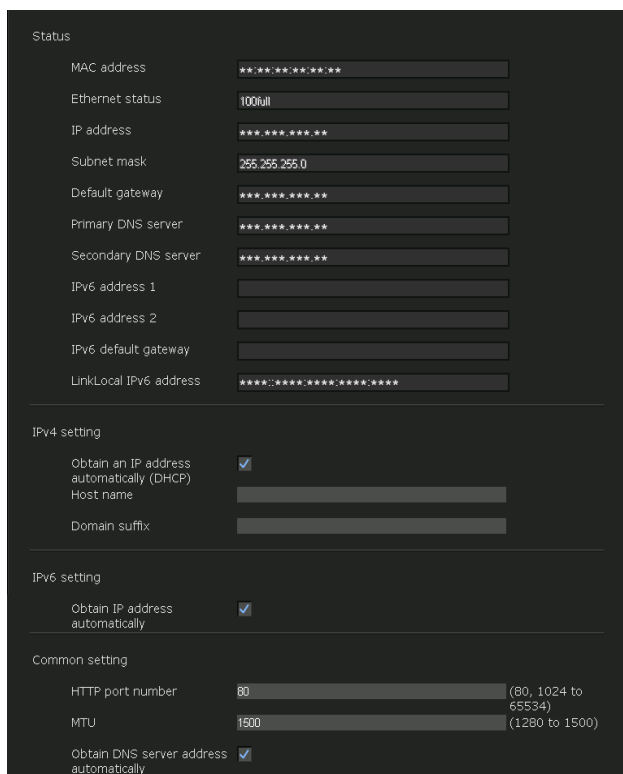
# Network Menu

## — Configuring the Network

When you click **Network** in the Administrator menu, the Network menu appears.  
Use this menu to configure the network to connect the camera and the computer.



## Network Tab



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

### Status

#### MAC address

Displays the MAC address of the camera.

#### Ethernet status

Displays the current transmission rate.

#### IP address

Displays the current IP address.

#### Subnet mask

Displays the current subnet mask.

#### Default gateway

Displays the current default gateway.

#### Primary DNS server

Displays the current primary DNS server.

#### Secondary DNS server

Displays the current secondary DNS server.

#### IPv6 address 1, 2

Displays the current IPv6 address.

#### IPv6 default gateway

Displays the current IPv6 default gateway.

#### LinkLocal IPv6 address

Displays the current link-local IPv6 address.

## 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, 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.

#### Host name

Type the host name of the camera to be transmitted to the DHCP server. This setting is valid only when **Obtain an IP address automatically (DHCP)** is selected.

#### Domain suffix

Type the domain suffix of the camera to be transmitted to the DHCP server. This setting is valid only when **Obtain an IP address automatically (DHCP)** is selected.

#### Note

The domain suffix is sent to the DHCP server as FQDN (Fully Qualified Domain Name) information when **Host name** is set.

**To specify the IP address manually**  
Deselect **Obtain an IP address automatically (DHCP)**. Type the address in the **IP address**, **Subnet mask**, and **Default gateway** boxes.

## IPv6 setting

Configure the IPv6 network setting.

**To obtain the IPv6 address automatically**  
Select **Obtain IP address automatically**.  
The IP address, prefix length, default gateway are assigned automatically.

### Note

If you select **Obtain 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.

**To specify the IPv6 address manually**  
Deselect **Obtain IP address automatically**. Type the address in the **IP address**, **Prefix length** and **Default gateway** boxes.

## Common setting

Configure the common setting for IPv4 and IPv6 network.

**HTTP port number**  
Type the HTTP port number. Normally select 80.

**MTU**  
Type the IP-MTU value for the Ethernet port.

**To obtain DNS server address automatically**  
Select **Obtain DNS server address automatically**.  
The **Primary DNS server** and **Secondary DNS server** are assigned automatically.

### Note

To obtain a DNS server address automatically, first enable **Obtain an IP address automatically (DHCP)** in the IPv4 setting, or **Obtain IP address automatically** in the IPv6 setting.  
Ask the network administrator whether a DNS server address can be obtained automatically.

**To specify the DNS server address manually**  
Deselect **Obtain DNS server address automatically**. Type the address in the **Primary DNS server** and **Secondary DNS server** boxes.

**Primary DNS server:** Type the IP address of the primary DNS server.  
**Secondary DNS server:** Type the IP address of the secondary DNS server, if necessary.

## QoS Tab

No.	Network address	Subnet	Protocol	Port	DSCP
1	0	0	TCP	0	0
2					
3					
4					
5					
6					
7					
8					
9					
10					

In this tab, you can mark the data traffic packets sent from the device and configure the settings for QoS control. Rules for the types of data traffic can be created using IPv4 address, port number, protocol, etc. A maximum of 10 rules can be registered.

## IPv4 QoS

**Enable**  
Select the checkbox to configure the QoS setting for IPv4.

**Rule**  
Used to register, edit and delete QoS.

**No.**  
Select the number to use when registering on the QoS table.  
When you select a registered number, the registered QoS information is displayed.

**Network address**  
Enter the network address of the target on which to perform QoS.

**Subnet**  
Enter the subnet mask values of the target on which to perform QoS.

### Tip

The subnet mask value represents the number of bits from the left side of the network address.

### Protocol

Select the protocol.

### Port

Enter the port number for the data traffic of the device (e.g. HTTP:80).

### DSCP

Set a value to mark the data traffic (0 ~ 63).

This value is set in the DSCP field included in the IP header of the data traffic.

### Set

Used when registering on the QoS table.

QoS is set according to the following procedure:

- 1 Select **No.** from **No.** and enter the necessary conditions for **Network address**, **Subnet**, **Protocol** and/or **Port No.**.
- 2 Enter values in **DSCP**.
- 3 Click **Set** and configure the QoS.

### Delete

Select **No.** to delete the setting and click **Delete**.

### Move up

Increases the priority of the rule.

Select a rule from the QoS table to prioritize and click **Move Up**.

### Move Down

Decreases the priority of the rule.

Select a rule from the QoS table to lower its priority and click **Move Down**.

### QoS table

Displays the list of registered QoS information. If multiple conditions match, the rule with the smallest number has priority.

---

## UPnP Tab

Set UPnP (Universal Plug and Play).

### Discovery

#### Enable

If the UPnP discovery function is enabled, you can search the camera by using UPnP.

If you want to disable this function, deselect the checkbox for the UPnP discovery function.

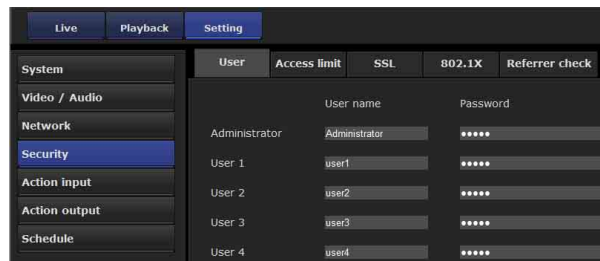
---

# Security Menu

## — Setting the Security

When you click **Security** in the Administrator menu, the Security menu appears.

Use this menu to make the settings related to security.




---

## User Tab

Set the user names and passwords of Administrator and up to 9 types of user (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.

Create a user name and password using half-width characters that do not include “,” (comma), “#”, “&”, “:” or “(space)”.

#### User name

Type a user name between 5 and 26 characters.

#### Password

Type a password between 5 and 28 characters.

To enhance security, we strongly recommend you set a password with 8 to 28 characters including both numbers and letters.

#### Re-type password

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

#### Playback

Set whether to enable using the playback viewer. Select the checkbox to enable.

#### Viewer mode

When the user is authenticated for logging in the viewer, select the viewer mode to be displayed after authentication.

**Administrator:** The user can operate all functions in this mode.

**Full:** The user can operate all functions except deleting the recorded movie in the memory card.

**Light:** In addition to the **View** mode, the user can select the image size of the viewer, select codec and capture a still image.

**View:** The user can only monitor the camera image.

For the functions available for each viewer mode, see “Administrator and User” on page 10.

## Viewer authentication

Set whether the user is authenticated or not when the viewer is displayed.

When the checkbox is selected, the viewer is displayed in accordance with the viewer mode of the authenticated user. When the checkbox is not selected, select the viewer mode of the viewer which is displayed without authentication from **Full**, **Light** or **View**.

### Note

Setting viewer authentication can prevent unintended third parties from viewing the video. Without setting the viewer authentication, people can view the video without inputting a user ID or password. To prevent unintended third parties from viewing the video, we strongly recommend for you to set viewer authentication and change the password on a regular basis.

## Authentication mode

Set the authentication method for user authentication.

**Basic authentication:** Use the basic access authentication.

**Digest authentication:** Use the digest access authentication.

### Note

If you change the settings in **Authentication mode**, close the web browser and access again.

## Access limit Tab

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

Select the checkbox to enable the access limit.

### Default policy

Select the basic policy of the limit from **Allow** and **Deny** for the computers specified in the Network address/Subnet 1 to Network address/Subnet 10 menus below.

### Network address/Subnet 1 to Subnet 10

Type the network addresses and subnet mask values that you want to allow or deny access to the camera.

You can specify up to 10 network addresses and subnet mask values. For a subnet mask, type 8 to 32.

(In the case of IPv6, enter a value between 8 and 128.)

Select **Allow** or **Deny** from the drop-down list on the right for each network address/subnet mask.

### Tip

The subnet mask value represents the bit number from the left of the network address.

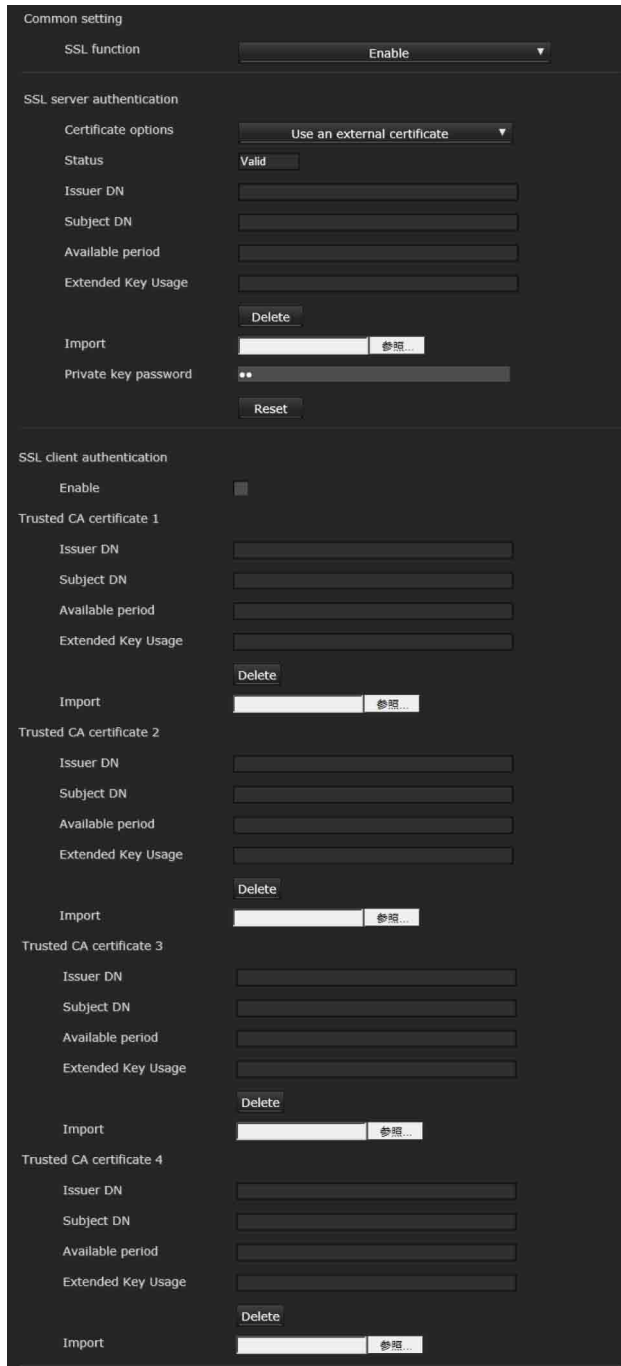
For example, the subnet mask value for “255.255.255.0” is 24.

If you set **192.168.0.0/24** and **Allow**, you can allow access from computers having an IP address between “192.168.0.0” and “192.168.0.255”.

### Note

You can access the camera even from a computer having an IP address whose access right is set to **Deny**, if you enter the user name and password set for the **Administrator** boxes in the User menu.

# SSL Tab



Configure the SSL or TLS function (called “SSL” hereafter). The settings allow the camera to communicate with the client PC by using SSL.

### Notes

- The model on sale in China does not support the SSL function.
- When using the SSL function, always configure the settings after setting the date and time of the camera. If the date and time are not correctly set, it may cause browser connection problems.

- When you use the SSL function, the transmission performance of the camera deteriorates.
- Reload the window when you change the SSL setting. Press the F5 key on the keyboard to reload.


## Common setting

### SSL function

Select **Enable** to use the SSL function.

When **Enable (Allow HTTP connection for some clients)** is selected, both HTTP and SSL connections are allowed. When **Enable** is selected, only SSL connection is allowed.

### When Internet Explorer is used

When SSL session is established,  appears in the right of the address bar on your web browser.

### When you use SSL connection for the first time

When you use SSL connection only with the SSL function **Enable**, you cannot access the camera if the SSL function does not work properly.

In this case, you must reset the camera to the factory settings. (All settings will be initialized.)


To avoid this, check that SSL connection is possible by performing the following steps.

- 1 Set the SSL function to **Enable (Allow HTTP connection for some clients)**.
- 2 Click **OK** to close the viewer and the setting window.
- 3 Display the viewer in SSL connection. Refer to “Using the SSL function” on page 6 for connection.
- 4 After confirming that SSL connection is possible, set the SSL function to **Enable**.

Even if the setting window or the browser is closed as SSL connection is impossible, http connection will be possible if **Enable (Allow HTTP connection for some clients)** is selected. First check the setting contents of SSL tab in http connection, then check the SSL connection again.

If **Enable (Allow HTTP connection for some clients)** is not selected, you will not be able to access the camera if SSL connection becomes impossible. In this case, turn on the power of the main unit while pressing the reset switch on the camera to initialize. For details, refer to the Installation Manual.

**Note**

SSL connection will load the camera down; therefore, not all images may be downloaded, and the  mark may appear when the camera accesses the setting window from the browser. In this case, reload the window. Press the F5 key on the keyboard to reload.

**SSL server authentication****Certificate options**

Select an installation mode of the certificate.

**Use an external certificate:** Uses the certificate including private key information issued by a CA. The PKCS#12 and PEM formats are supported.

**Note**

SSL is not available when **Certificate options-Use an external certificate** is selected, or certificate and private key password is not set properly even SSL is set to “**Enable**”.

**Use a self-signed certificate (For test use):** This mode uses the certificate and private key pair generated by “Self-signed certificate generation” on page 39. 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 that 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 distinguished 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.

**Notes**

- When **Use a self-signed certificate (For test use)** is selected, the **Security Alert** dialog appears on the SSL connection with a browser. For details, refer to “Using the SSL function” (page 6).
- SSL connection may be impossible due to the type of certificate installed in the camera. In this case, refer to “How to install the CA certificate” on page 41 and install.

**To import the certificate**

Click **Browse...** to select the certificate to be imported. Click the **OK** button appearing on the dialog when you select the file, to import it to the camera.

**Note**

The import process becomes invalid if the selected file is not a certificate or the imported certificate is not allowed.

**Self-signed certificate generation**

A self-signed certificate can be generated in the camera to be used when **Use a self-signed certificate (For test use)** is selected from **Certificate options**.

Click **Generate** to generate a self-signed certificate in the camera. Clicking **Generate** again after **Generate** has been clicked once will update the self-signed certificate stored in the camera.

**Note**

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 **Self-signed certificate generation**, click **OK** to select **Use a self-signed certificate (For test use)** in **Certificate options**.

**To display certificate information**

When the certificate has been set in the camera correctly, its information appears on **Status**, **Issuer DN**, **Subject DN**, **Validity Period** and **Extended Key Usage**.

**Status**

Shows if the status of the certificate is valid or invalid. The following statuses are recognised.

**Valid:** The certificate is correctly stored and set.

**Invalid:** The certificate is not correctly stored and set. Possible causes are as follows:

- **Use an external certificate** is selected and the private key password included in the certificate is not specified correctly.
- **Use an external certificate** is selected and the private key password is specified in spite of the fact that the key pair in the certificate is not encrypted.
- **Use an external certificate** is selected and the key pair is not included in the certificate.
- **Use a self-signed certificate (For test use)** is selected without the self-signed certificate being generated.

**Note**

When the certificate to be imported is of PKCS#12 format and the private key password is not set correctly, <Put correct private key password> is displayed in the boxes of **Issuer DN**, **Subject DN**, **Validity Period** and **Extended Key Usage**.

Specify the correct private key password to confirm the information of the certificate.

### To delete the imported certificate or self-signed certificate

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

### Private key password

Type the password for the private key information included in the certificate using up to 50 characters. This text box is active only when **Certificate options** is set to **Use an external certificate**.

Leave the text box blank if the private key information included in the certificate is not encrypted.

If no private key password is set in the camera, an active text field is displayed and this allows a password to be entered.

If a private key password is already set, it is displayed as an inactive text field.

### Reset

To change the private key password, click this button. The current password is cleared and the password text box becomes active to allow a new password entry.

#### Note

Click **Cancel** at the bottom of the menu if you want to cancel changing the private key password after clicking **Reset**. Doing so restores the other setting items in the Client certificate tab to the previous settings.

### SSL client authentication

In this tab, you can manage the CA certificate needed for the camera to use the client authentication of the SSL function.

#### Notes

- When using the client authentication, the personal certificate must be successfully installed on the PC to use it. If this preparation cannot be performed, do not configure settings on this tab. Otherwise, you may not be able to connect to the camera.
- The setting of SSL client authentication is available only when SSL server authentication certificates are uploaded.

### Enable

You can configure whether to enable the client authentication of the SSL function.

### Trusted CA certificate 1 to 4

You can import a trusted CA certificate (root certificate, etc.) to the camera.

Up to four certificates from trusted CAs can be imported to the camera. Only PEM format is supported.

### To import the CA certificate

- 1 Click **Browse...** to select the CA certificate to be saved in the camera.
- 2 Click the **OK** button appearing on the dialog. The selected file will be imported to the camera.

#### Note

Import process will be invalid if the selected file is not a CA certificate.

### To display the information of the CA certificate

When the CA certificate has been saved in the camera correctly, its information appears on **Issuer DN**, **Subject DN**, **Validity Period**, and **Extended Key Usage** for your reference.

### To delete the CA certificate

Click **Delete** to delete the selected CA certificate from the camera.

#### Tip

To enable a client certificate, it is recommended that the settings are configured following the procedure below:

- ① **Import the necessary CA certificate.**
- ② **Select the SSL client authentication checkbox and click OK.**

#### Note

When you set SSL client authentication to **Enable** and click **OK**, the camera will immediately operate to enable client authentication. Make sure that the personal certificate on your PC is successfully installed.



## How to install the CA certificate

The camera may not be connected because the browser (Internet Explorer) does not display whether the certificate will be accepted or not due to the type of certificate. In this case, install the CA certificate as follows.

- 1 Save in the PC the certificate of CA which has signed the certificate to be installed in the camera. The extension of the certificate file is normally “.cer”. Double-click this file. The following **Certificate** dialog appears.



- 2 Click **Installation Certificate...**. The **Certificate Import Wizard** appears.



- 3 Click **Next**.



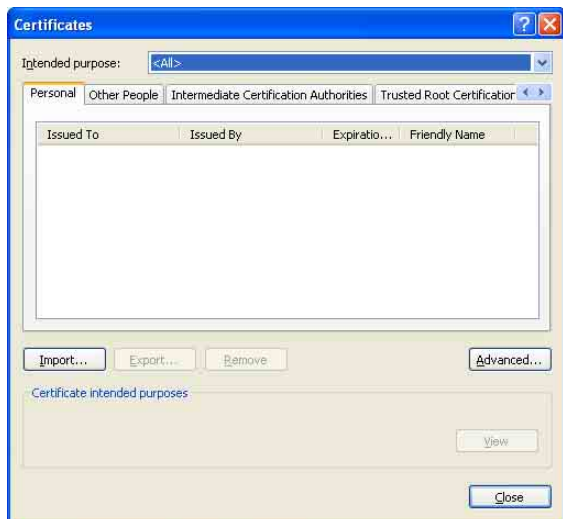
- 4 Select **Automatically selects the certificate store based on the type of certificate** and click **Next**. Completing the **Certificate Import Wizard** appears.



- 5 Check the contents, then click **Finish**. The CA certificate will be installed.

## To remove an installed CA certificate

- 1 In Internet Explorer, click in the order **Tools**, **Internet options**, **Content tab** and **Certificates**. The **Certificates** dialog appears.



- 2 Select the certificate you want to remove. The CA certificate is usually stored in **Trusted Root Certification Authorities**.
- 3 Click **Remove**. **Do you want to delete the certificate** appears to confirm.
- 4 Click **Yes**. The certificate will be removed. There may be a case that a certificate cannot be removed by the steps above due to the type of certificate. Check the installation condition and remove it following the steps below.

### Note

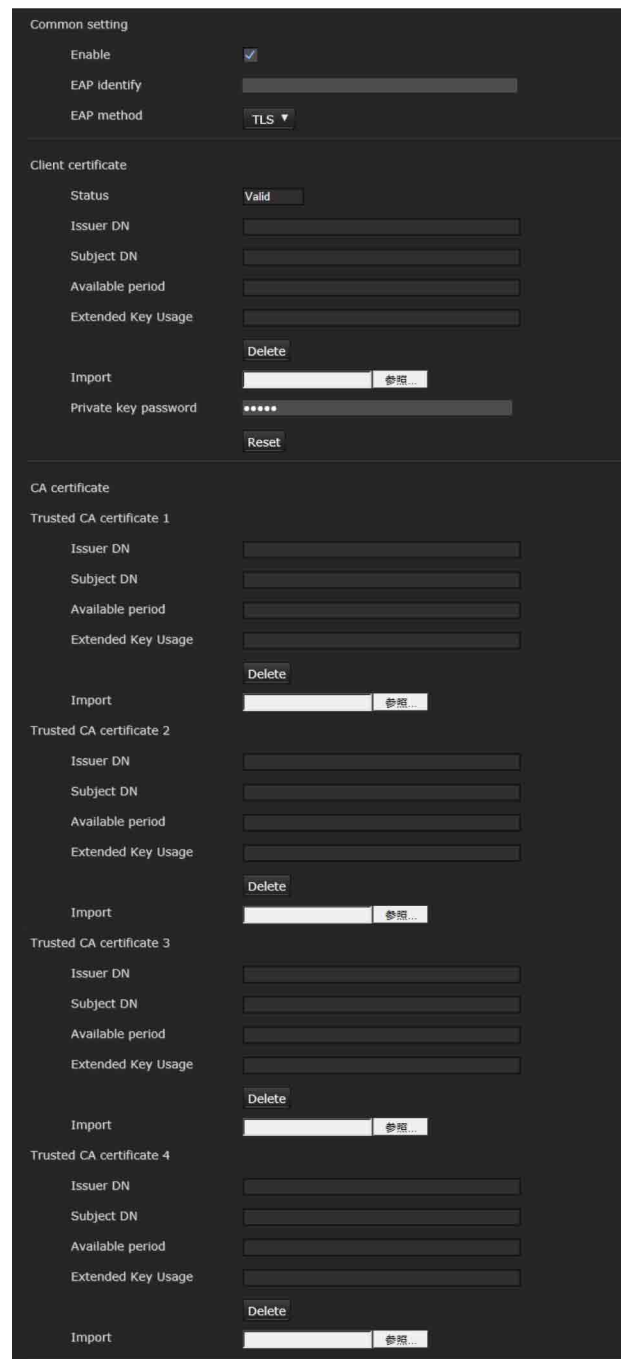
You need to log in as Administrator to perform these steps.

- 1 Open **Run...** of the Windows menu, then enter **mmc** and click **OK**.
- 2 Select **File** in the **Console 1** window and **Add/Remove Snap-in...** (when Windows XP Professional is used). **Add/Remove Snap-in...** dialog appears.
- 3 Select **Certificates** from the list, then click **Add**. **Certificate Snap-in** is displayed.
- 4 Select **Computer account** as the certificate administrated in this Snap-in, then click **Next**.

- 5 Select **Local Computer** as the computer administrated in this Snap-in, then click **Finish**.

- 6 Click **OK**, and close **Add/Remove Snap-in** dialog. The items for administrating Certificates appears in the Console Route window. Confirm the relevant certificate, then remove it.

## 802.1X Tab



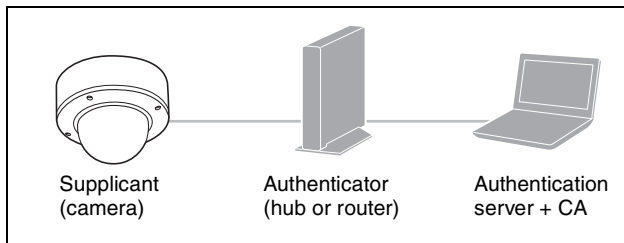
Configure the wired port-based authentication in compliance with the 802.1X standard.

**Notes**

- To use the 802.1X authentication function, you need knowledge of the 802.1X authentication and digital certificate. To establish an 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 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 802.1X network

The following figure shows a general system configuration of an 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 802.1X network. The supplicant can enter the 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 if the supplicant is a valid user or not. It can also be called 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.

## Common setting

### Enable

Select the checkbox to enable the 802.1X authentication function.

### EAP identity

Type the user name to identify the client in the 802.1X authentication server up to 250 characters.

### EAP password

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

### Reset

To change the once set EAP password, click **Reset** and clear the current password. A new password can be entered.

**Note**

After you click **Reset**, if you wish to cancel the EAP password change, click **Cancel** at the bottom of the screen. This will cancel other changes made to the settings.

### 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.

### Client certificate

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

### To import the client certificate

Click **Browse...** to select the client certificate to be imported.

Click the **OK** button appearing on the dialog, and the selected file will be imported to the camera.

**Note**

The import process becomes invalid if the selected file is not a client certificate or the imported client certificate is not allowed.

**To display the information of the client certificate**

When the client certificate has been saved in the camera correctly, its information appears on **Status**, **Issuer DN**, **Subject DN**, **Validity Period** and **Extended Key Usage**.

**Status**

Shows if the status of the client certificate is valid or invalid.

**Valid** means the client certificate is correctly stored and set.

**Invalid** means the client certificate is not correctly stored and set.

Possible causes of **Invalid** are as follows:

- The private key password included in the client certificate is not specified correctly.
- The private key password is specified in spite of the fact that the key pair in the client certificate is not encrypted.
- The key pair is not included in the client certificate.

**Note**

When the client certificate to be imported is of PKCS#12 format and the private key password is not set correctly, “<Put correct private key password>” is displayed in the boxes of **Issuer DN**, **Subject DN**, **Validity Period** and **Extended Key Usage**. Specify the correct private key password to confirm the information of the certificate.

**To delete the client certificate**

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

**Private key password**

Type the password for the private key information included in the client certificate using up to 50 characters.

Leave the text box blank if the private key information included in the client certificate is not encrypted.

If a private key password is already set, it is displayed as turned letters.

**Reset**

To change the private key password, click this button. The current password is cleared and the password text box is activated to allow new password entry.

**Note**

Click **Cancel** at the bottom of the screen if you want to cancel changing the private key password after clicking **Reset**. Doing so restores the other setting items in the Client certificate tab to their previous settings.

**CA certificate**

You can import a trusted CA certificate (server certificate or route certificate) to the camera. Up to four certificates from trusted CAs can be imported to the camera. Only the PEM format is supported.

**To import the CA certificate**

Click **Browse...** to select the CA certificate to be imported.

Click the **OK** button appearing on the dialog, and the selected file will be imported to the camera.

**Note**

Import process becomes invalid if the selected file is not a CA certificate.

**To display the information of the CA certificate**

When the CA certificate has been saved in the camera correctly, its information appears on **Issuer DN**, **Subject DN**, **Validity Period** and **Extended Key Usage**.

**To delete the CA certificate**

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

---

**Referer check tab**

Referer check checks if the web page which requires access is authorized when the camera is accessed. If the web page is not authorized, the camera denies access of the web page to the camera.

If you want to access from web pages other than the one that the camera provides, register their host names and port numbers in the **Exception list**.

## Referer check

Select the checkbox for the **Referer check**.

Referer check

Exception list

No.	Host name	Port number
1		80
2		80
3		80
4		80
5		80
6		80
7		80
8		80
9		80
10		80

Buttons: Set, Delete

## Exception list

Register the hosts that are not targeted for the **Referer check**.

### No.

Select the registered numbers of the **Exception list**.

### Host name

Type the host name or IP address of the PC that supplies the web page you want to register on the **Exception list**.

### Port No.

Type the host name or the port number of the PC that supplies the web page you want to register on the **Exception list**.

### Set

Register the values of the **Host name** and **Port No.** you typed to the list of the selected number.

### Delete

Delete the contents of the list selected in **No.**

## Action input Menu

### — Setting the Sensor input/ Camera tampering detection/ Motion detection

When you click **Action input** in the Administrator menu, the Action input Menu appears.

Live Playback Setting

System

Video / Audio

Network

Security

Action input

Action output

Schedule

Event condition

Sensor input

Camera tampering detection

Motion detection

Face detection

Network disconnection

Event condition 1: None

Event condition 2: None

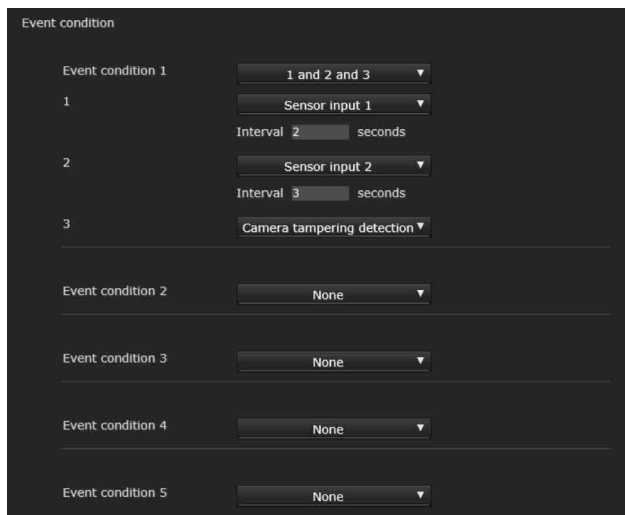
### When the Motion detection or Face detection tab is displayed for the first time

When you click **Motion detection** or **Face detection**, “Security Warning” is displayed. When you click **Yes**, ActiveX control is installed and the Motion detection or Face detection tab 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 the setting of the proxy server, consult your network administrator.
- When you install ActiveX control, you should be logged in to the computer as Administrator.
- When you start Internet Explorer, run as “Administrator.”

## Event condition Tab



Create event execute conditions for each action.

### Event condition 1, 2, 3, 4, 5

Select the event condition.

You can combine the alarm using the following event execute conditions.

- and:** detect when both conditions happen within a specified interval regardless of the sequence.
- or:** detect when either condition happens.
- then:** detect when each of the conditions happen within a specified interval in sequence.

If you set the event condition to **None**, the following alarm 1, 2, 3 menus appear.

#### 1, 2, 3

Select the alarm.

Selectable alarms are as follows.

Displayed items vary depending on the function.

**Sensor input 1:** The external sensor that is connected to sensor input 1 of the camera I/O port.

**Sensor input 2:** The external sensor that is connected to sensor input 2 of the camera I/O port.

**Camera tampering detection:** The alarm is triggered if the camera detects tampering, such as direction shifting or spray.

**Motion detection:** The alarm is triggered by the motion detection function.

**VMF:** The alarm is triggered by the VMF function.

**Face detection:** The alarm is triggered by the face detection function.

**Network disconnection:** The alarm is triggered by disconnection to a specific IP address.

#### Note

You cannot set **Camera tampering detection** and **Network disconnection** at the same time in the same event condition.

## Interval

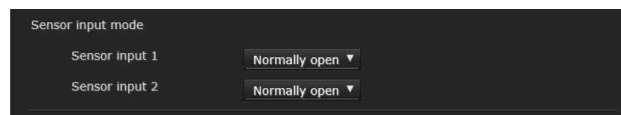
Specify the interval time used when condition is set to **and**, **then**.

In the case the condition is set as 1 and 2, the system sounds an alarm when either 1 or 2 happens, and the other happens within the specified interval.

In the case the condition is set as 1 then 2, the system sounds an alarm when 1 happens, and then 2 happens within the specified interval.

If you select “or” condition, this setting will be ignored. The maximum duration to be set is 7200 seconds.

## Sensor input Tab — Set the sensor input 1/2



### Sensor input mode

Set the direction of the detected input signal to the sensor input terminal of the camera.

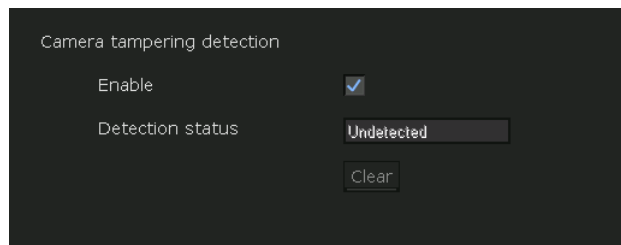
**Normally open:** Triggers an alarm when the sensor input is short-circuited.

**Normally closed:** Triggers an alarm when the sensor input is open-circuited.

#### Notes

- Allow at least two seconds for the input signal to be detected; otherwise, some events may not be detected.
- When you use video streaming via SSL connection, reduce the number of video streaming that are simultaneously transmitted, by setting the value of bit rate or frame rate to a lower value. Otherwise, some sensor input events may not be detected.

## Camera tampering detection Tab — Set the camera tampering detection



**Notes**

- Adjust Focus/Zoom or images, before using camera tampering detection.  
If you perform them during camera tampering detection, it may cause mis-detection.
- When the output mode is set to **HDMI, 4K 25fps**, or **4K 30fps**, this function cannot be set.

**Enable**

Select the checkbox to activate the function to detect camera tampering, such as direction shifting or spray.

**Detection status**

Display the tampering detection state of the time when Camera tampering detection tab is opened. To clear the detection status, click **Clear** button.

---

**Motion detection Tab — Set the motion/VMF detection**

Motion detection responds to moving objects in the camera image and triggers an alarm.  
In VMF, an alarm sounds when motion is detected under the motion detection setting, entering or passing through a specified area or inspection line. An alarm also sounds when an object has been left or removed from a specified area or inspection line.  
The detected object will be displayed on the monitor in the green frame. The removed object and left object will be displayed in the magenta frame.  
When you click the Motion detection tab, the authentication dialog appears. Enter the user name and password.  
The user name “admin” and password “admin” are set at the factory for the Administrator.  
Change the password from the factory setting for the security of your devices.

**Notes**

- Set **Image size 1** in the Video codec tab of the Video/Audio menu to the maximum rate before setting the motion detection.
- When the output mode is set to **HDMI, 4K 25fps**, or **4K 30fps**, this function cannot be set.

---

**What is VMF**

VMF stands for Video Motion Filter.  
VMF is a function for detecting an object entering or passing through a specified area or inspection line, or when an object has been left or removed from a specified area or inspection line. Video/audio recording can be performed synchronized with this alarm.

You can set the inspection methods to execute independently. Intrusion and Passing can also be set to execute in combination.

For example:

- An alarm sounds when an object enters areas A, B and C.
- An alarm sounds when an object passes through area A and enters area B.
- An alarm sounds when an object passes through areas A and B, and enters area C.
- An alarm sounds when an object enters area A, and passes through area B.

**Intrusion**

When a moving object enters the designated area, an alarm sounds.

**Passing**

A passage line is determined, and when a moving object passes the setting line, an alarm sounds.

**Existing**

Alarm will be triggered if the moving object that broke in remains within the set area for specified duration.

**Disappearance**

Alarm will be triggered if the moving object that broke in disappears from the set area.

**Capacity**

Alarm will be triggered if the number of moving objects that broke in is more than the specified capacity.

**Left object**

When a moving object has been left in the designated area, an alarm sounds.

**Removed object**

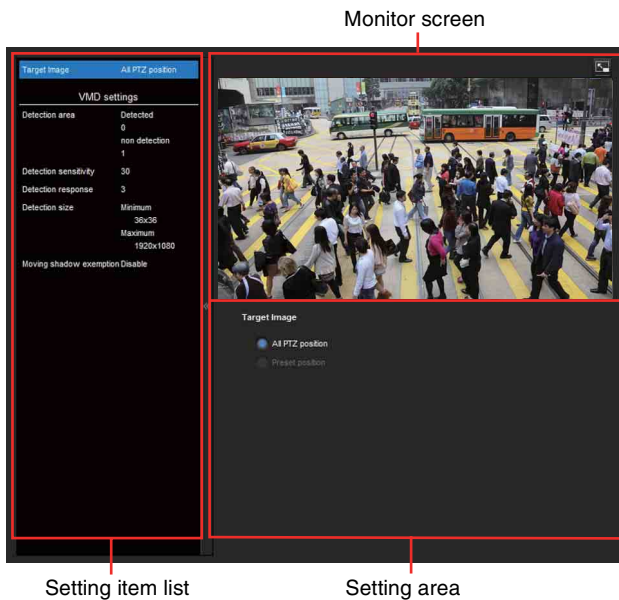
When a moving object has been removed from the designated area, an alarm sounds.

**Notes**

- Before actual use, perform an operation test and confirm that the motion detection function works correctly.
- When the privacy masking is used, detection is not performed in the masked area.
- If the Wide dynamic range is selected, settings other than left/removed are available as VMF filters.

## Setting items for motion detection

Use the settings tab to set the conditions for the motion detection function while observing camera images.

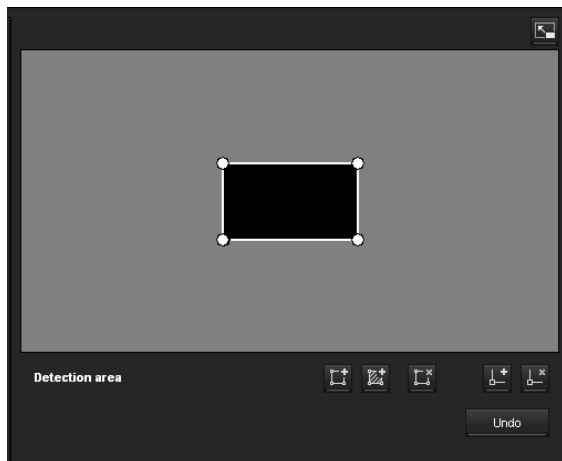


### VMD settings

VMD stands for Video Motion Detection.

#### Detection area

Specify the effective scope of motion detection.



#### Note

The frames shown on the monitor screen are not displayed on the image files sent or recorded with motion detection.

### Configuring the detection area


The following procedure is used to configure the motion detection area:

- 1 Use the following buttons to specify the active area(s) and inactive area(s).

#### Add detection area

Clicking this button will add an active area window in the center of the screen.


When you place the cursor on the area, the cursor changes to a crossed arrow, which you can drag to move the area.

When you place the cursor on the vertex of the area, the cursor changes to , which you can drag to move the vertex.

#### Add non detection area

Clicking this button will add an inactive area window in the center of the screen.

When you place the cursor on the area, the cursor changes to a crossed arrow, which you can drag to move the area.

When you place the cursor on the vertex of the area, the cursor changes to , which you can drag to move the vertex.

#### Delete Area

Clicking this button will change the cursor to a button. While the cursor is a button, click on a part of the area to delete that area.

After the deletion, the cursor will return to its original form. To exit this operation, click this button again.

It is the same function as the button displayed under VMF settings.

#### Add vertex

Clicking this button will change the cursor to a button. In that state, when you click on a part of the side of the area, a vertex is added to that point. After the addition, the cursor will return its original form. To exit this operation, click this button again.

It is the same function as the button displayed in VMF settings.

#### Delete vertex

Clicking this button will change the cursor to a button. In that state, when you click on a part of the vertex of the area, the vertex added to that point is deleted. After the deletion, the cursor will return its original form. To exit this operation, click this button again.

It is the same function as the button displayed in VMF settings.

#### Note

The vertex can be moved in an outward direction but cannot be moved toward the inside of an area.



## Reduce false detections due to the environment

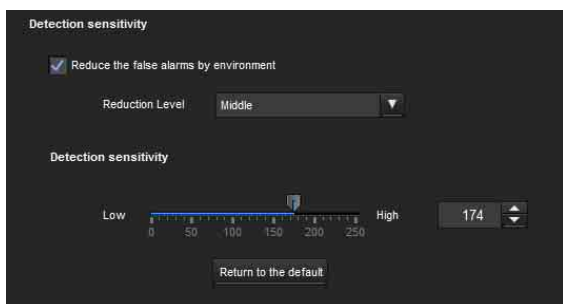
The cause of false detections, including the swinging of trees, is due to the strength of the wind. Select the checkbox to adjust the detection range automatically in accordance with these changes.

### Reduction level

Reduction level of false detection due to the environment can be set. In a normal operation environment, we recommend to set the reduction level to “Mid”. Setting to “High” can reduce false detection, however this can omit the detection of moving subjects.

### Detection sensitivity

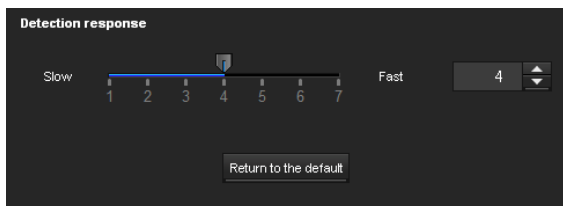
Set the sensitivity of motion detection.



A value from **1** to **256** can be specified. Clicking **Return to the default** changes the value to the default value.

### Detection response

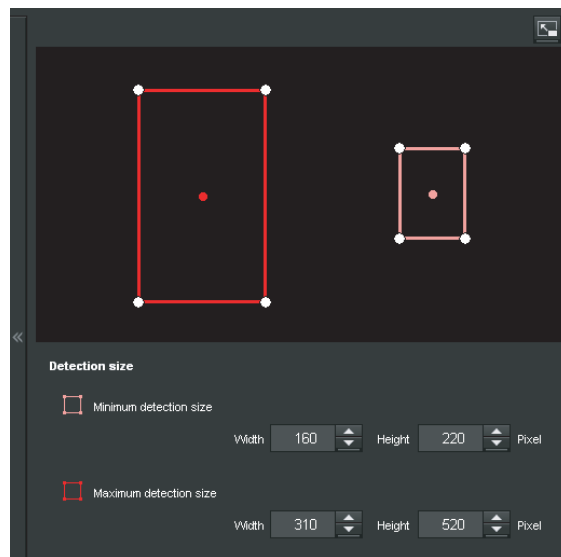
Set the response velocity of motion detection.



Specify the value from 7 levels. Clicking **Return to the default** changes the value to the default value.

## Detection size

Specify the minimum detection size and maximum detection size for motion detection. To specify the detection size, you can either enter values or drag the vertexes of the area.



The area size is measured in pixels.

- When you place the cursor on the area, the cursor changes to a crossed arrow, which you can drag to move to the minimum detection size area and maximum detection size area.
- When you place the cursor on the vertex of the area, the cursor changes to  $\leftrightarrow$ . Drag and move the vertex to adjust the detection size.

### Moving shadow exemption

Set ON/OFF for the moving shadow exemption function of motion detection.

Selecting **Do not respond to shadows** will prevent the shadows of a moving object from being recognized as moving objects.

Deselect the checkbox to disable the shadow removal function of motion detection.

### VMF settings

Set the alarm to sound when the specified conditions (**Intrusion**, **Passing**, **Left object**, **Removed object**) of the motion detection occur. You can also set the order for Intrusion or Passing, and set the alarm to sound only when the specified conditions occur in sequence.

### Filter type

Select the filter type from **Intrusion**, **Passing**, **Left object**, **Removed object** or **Off**.

### Time until left/removed object is detected

Enter the time you want to elapse before the alarm is triggered. This setting is available only when the filter type is set to **Left object** or **Removed object**.

## Filter settings

Settings for each filter can be edited here. The inspection line and active window are set to default settings. Edit according to use.

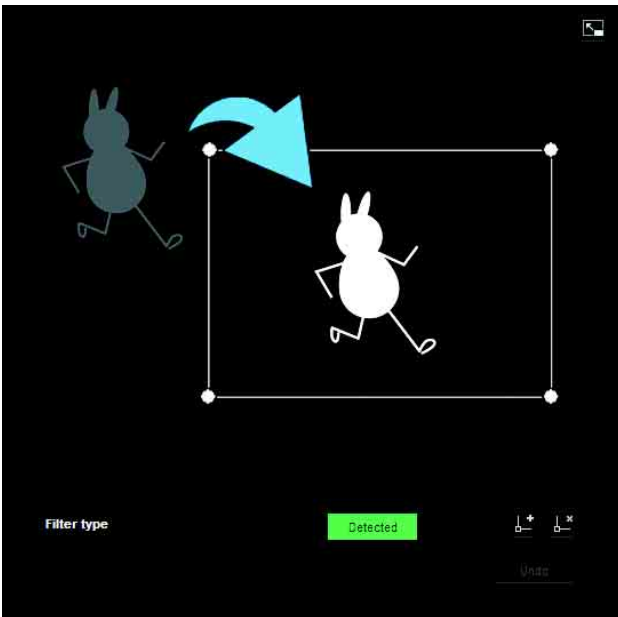
### ■ VMF status indicator of each filter

The filter is on when the set filter type conditions (**Intrusion**, **Passing**, **Left object**, **Removed object**) are met.

#### Tip

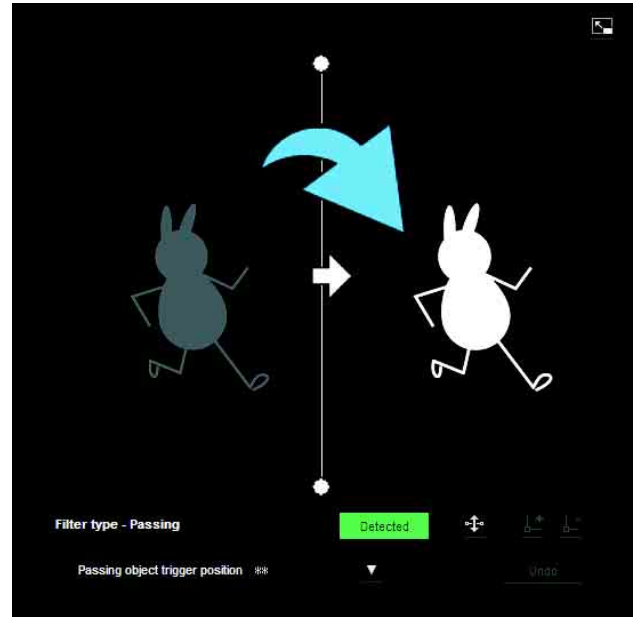
The buttons displayed on the edit screen for filter is used in the same way as those for detection setting. See page 48.

## Intrusion



This criterion is for whether a moving object exists in the trigger area. Similar to an active window, a trigger area can also be moved and vertices can be moved, added or deleted.

## Passing



Edit the pass inspection line according to the following procedure:

### Passing object trigger line

By default, one passing object trigger line is displayed. The number of vertices is 2. Placing the cursor on the line will turn the cursor into a cross, and when you drag the line, the whole line will move. Placing the cursor on the vertex will turn the cursor into  $\leftrightarrow$ , and when you drag the line, the vertex will move. The arrow displayed in the center of the passing object trigger line shows the direction of inspection. Trigger is performed when an object passes the passing object trigger position in this direction.

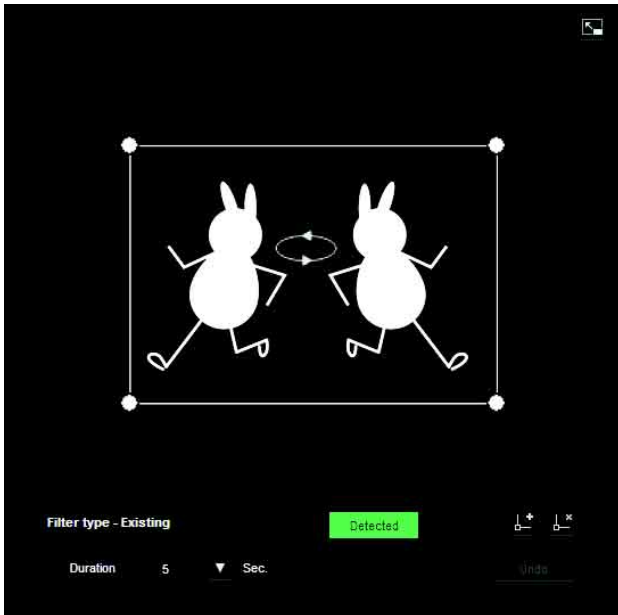
### Trigger direction setting

Each time you click  $\leftrightarrow$ , the trigger direction toggles among the directions left, right and both.

### Passing object trigger position

Select the passing object trigger position from **All sides**, **Left side**, **Top side**, **Right side** and **Bottom side**.

## Existing

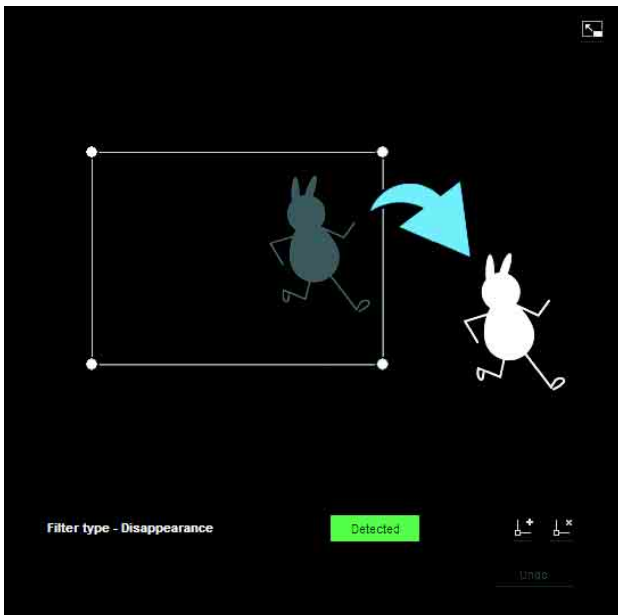


Similar to an active window, a trigger area can also be moved and vertexes can be moved/added or deleted. If an object exists within the window longer than the specified time, its existence is acknowledged.

### Duration

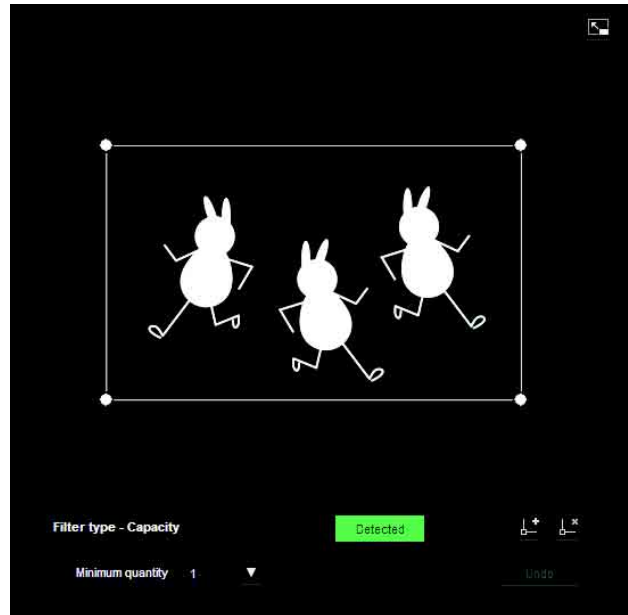
Specify the time of existence.

### Disappearance



This criterion is whether an object disappeared in the trigger area. Similar to an active window, a trigger area can also be moved and vertexes can be moved/added or deleted.

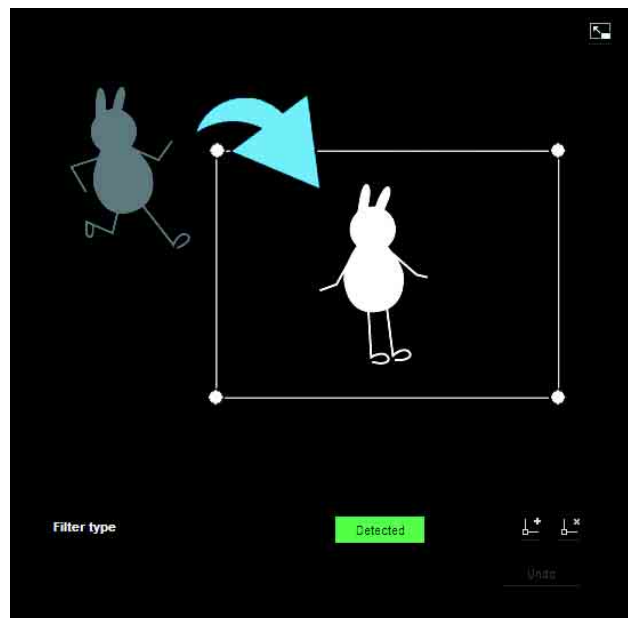
## Capacity



This criterion is the number of objects found in the trigger area. The quantity is specified from the pull-down list. Similar to an active window, the trigger area can also be moved and its vertexes can also be moved, added, or deleted.

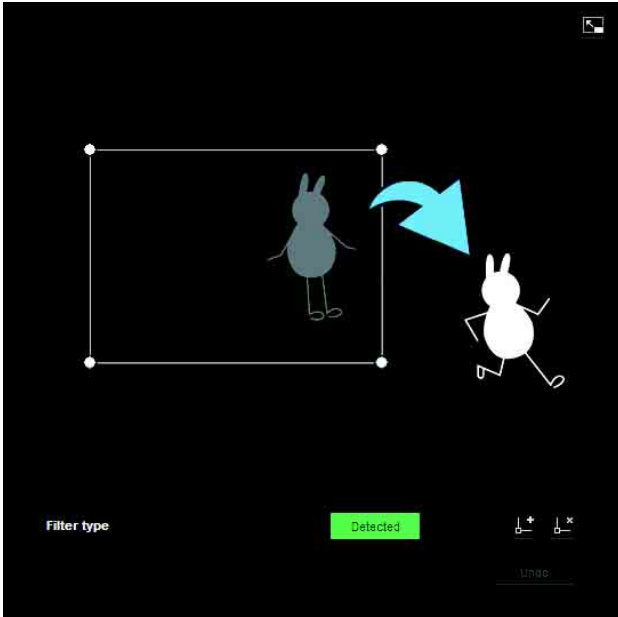
**Minimum quantity:** The quantity is specified from the “Minimum quantity” pull-down.

### Left object



This criterion is for whether a moving object has been left in the trigger area. Similar to an active window, a trigger area can also be moved and vertexes can be moved, added or deleted.

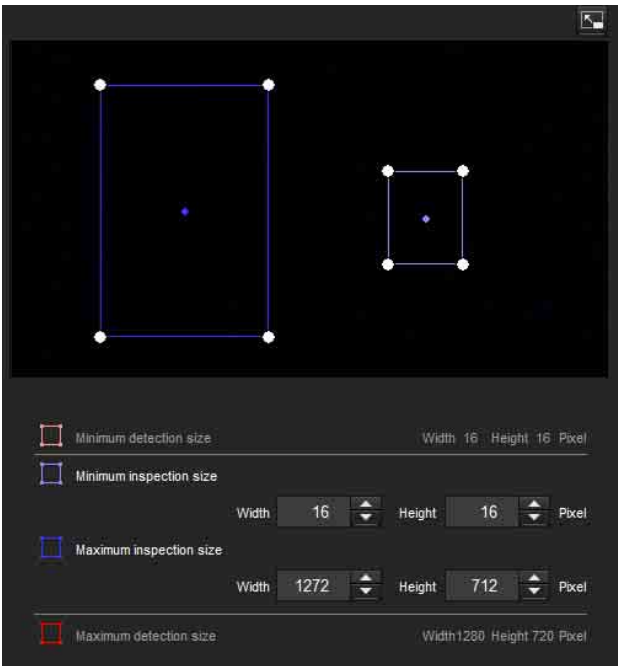
## Removed object



This criterion is for whether a moving object has been removed from the trigger area. Similar to an active window, a trigger area can also be moved and vertices can be moved, added or deleted.


## Trigger size

Specify the minimum trigger size and maximum trigger size of motion. To specify the size, you can either enter values or drag the vertices of the area.



The size of motion is measured in pixels.

- When you place the cursor on the area, the cursor changes to a crossed arrow, which you can drag to move the minimum trigger size area and maximum trigger size area.

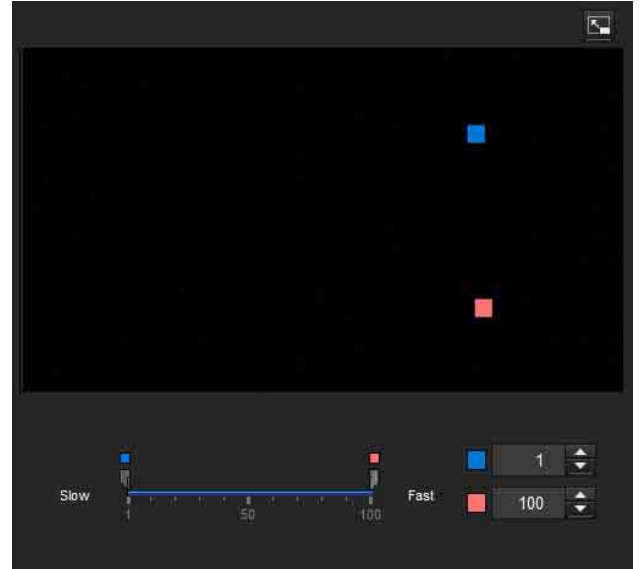
- Placing the cursor on the vertex of the minimum trigger size area or maximum trigger size area will change the cursor to , then you can drag the vertex to change the inspection size.

### Tip

The minimum and maximum detection sizes configured in the VMD setting are displayed, but the size of the area cannot be modified from here.

## Trigger speed

Specify the minimum and maximum speeds to be detected.



- Min. speed and Max. speed can be specified within a scale of 100.
- The blue marker for minimum speed cannot be set to the right of the red marker for maximum speed.
- The squares indicating Min. speed and Max. speed move on the right and left sides of the preview screen.

### Note

The set value is only valid under the conditions of **Intrusion** or **Passing**.


## Matching decision

Select the filter type you want to match and check **Use as matching condition**.

Select Filter 1, Filter 2 and Filter 3 in the list box of **Matching decision**.

Set the alarm to sound when the specified maximum 3 conditions occur in sequence. If the conditions occur in a different order, the alarm will not sound. Select the condition from **Intrusion**, **Passing** or **None**.

### Filter order switching button

Clicking  switches the order of filter between the neighbouring methods.

e.g., If you click the button between 1 and 2, they will switch order. If you click the button between 2 and 3, they will switch order.

### Specifying the time


Specify the reference interval in seconds between 1 and 2, or 2 and 3.

For example, if 1 and 2 are set and “3 seconds” is specified, an alarm will sound when the inspection conditions of 2 are met within 3 seconds from when the inspection conditions of 1 are met.


### VMF status indicator of Matching decision

The indicator is on when the set filter type conditions are met.

### Full-screen display button

Click  to display the ActiveX area in full screen. Clicking again will show the normal display.

### Stretch bar

Click  to hide the menu list on the left and enlarge the preview screen.

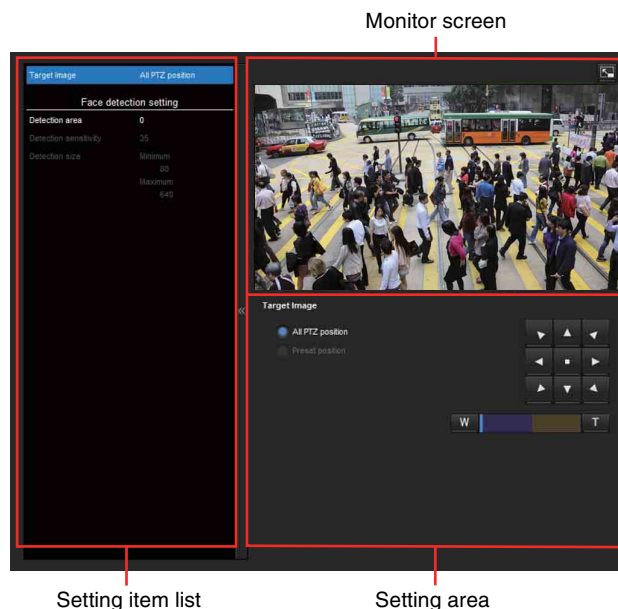
Clicking again will show the menu list as it was before.

### OK/Cancel

Click **OK** to finalize any changes made to the settings and send them to the camera.

If you click **Cancel**, changes made to the settings will be discarded and the screen will be reloaded with the current camera settings.

## Face detection Tab — Set the face detection



Face detection responds to faces in the camera image and triggers an alarm.

When you click the Face detection tab, the authentication dialog appears. Enter the user name and password.

The factory setting of the user name and password for the Administrator is set to “admin”.

Change the password from the factory setting for the security of your devices.

### Notes

- Before actual use, perform an operation test and confirm that the face detection function works correctly.
- An inactive area cannot be specified.
- A horizontal face (leaning too far sideways) cannot be detected.
- Vertices cannot be added or deleted. They are for specifying a rectangular area only.
- When privacy masking is used, the face detection function is not available for the mask areas.

### Detection area

Specify the effective scope of face detection. You can set the area in the same way as the detection area setting in VMD settings. (page 48)

A maximum of ten detection areas can be set. Similar to the detection area setting in VMD settings, a trigger area and vertices can also be moved.

### Note

When the output mode is set to **HDMI, 4K 25fps**, or **4K 30fps**, this function cannot be set.

## Detection sensitivity

Set the sensitivity of face detection. A value from **0** to **64** can be specified. Select low values to limit detection to the human face, or high values to also detect subjects that are similar the human face. This makes detection easier when the subject is far from the camera. Clicking **Return to the default** changes the value to the default value.

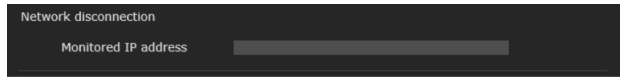
## Detection size

Specify the minimum and maximum size of face detection. You can specify the size by specifying values or by dragging vertexes to choose the area.

## OK/Cancel

Click **OK** to finalize any changes made to the settings and send them to the camera. If you click **Cancel**, changes made to the settings will be discarded and the screen will be reloaded with the current camera settings.

## Network disconnection Tab — Monitoring the connection of a specified IP address

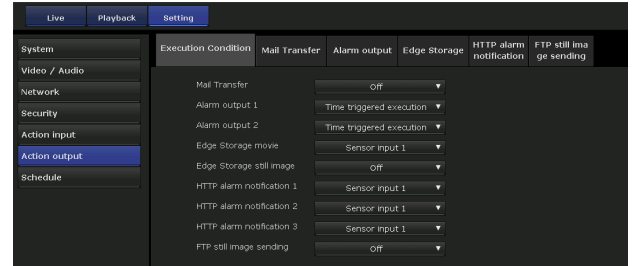


## Monitored IP address

Set the specific IP address of which the network connection status is to be monitored.

# Action output Menu — Setting the Action output

When you click **Action output** in the Administrator menu, the Action output menu appears.



## Execution Condition Tab

Set execute conditions for each action. Set the action output execute conditions when the condition created in the Event condition tab is implemented. Displayed items vary depending on the function.

- Mail Transfer:** Set the condition of mail transfer.
- Alarm output 1:** Set the condition to control alarm output of the I/O port on the rear of the camera.
- Alarm output 2:** Set the condition to control alarm output of the I/O port on the rear of the camera.
- Edge Storage movie:** Set the condition to record movies using the Edge Storage function.
- Edge Storage still image:** Set the condition to record still images using the Edge Storage function.
- HTTP alarm notification 1:** Set the condition for the HTTP alarm notification to recipient 1.
- HTTP alarm notification 2:** Set the condition for the HTTP alarm notification to recipient 2.
- HTTP alarm notification 3:** Set the condition for the HTTP alarm notification to recipient 3.
- FTP still image sending:** Set the condition for sending with the FTP still image sending function.

## Mail Transfer Tab — Setting the e-Mail (SMTP) Function

The screenshot shows the following configuration options:

- SMTP Server:** SMTP server name (text field), SMTP port number (25, range 1 to 65535), Use TLS (checked), Authentication (None dropdown).
- Address:** Recipient e-mail address 1, 2, 3 (text fields), Administrator e-mail address (text field).
- Content:** Subject (text field), Message (text area).
- Event triggered execution:** File attachment (checked), Image file name (text field), Suffix (Date & time dropdown).
- Periodical execution:** Image file name (text field), Suffix (Date & time dropdown).
- Trouble sending:** Enable (checkbox), Continuous sending (checkbox), Recipient e-mail address (text field).

### SMTP Server

#### Notes

- You cannot send an audio file by using the e-mail sending function.
- The frame rate and operability on the viewer may be reduced while a file is being transmitted by the e-Mail (SMTP) function.

#### SMTP server name

Type the SMTP server name using up to 64 characters, or the IP address of the SMTP server.

#### SMTP port number

Enter a port number from 1 to 65535. The standard port number is 25. The standard port number of SMTPs is 465, if the TLS function is enabled.

#### Use TLS

When using the encryption function of the TLS, select the checkbox.

#### Note

Models sold in China do not support the TLS function.

#### Authentication

Select whether authentication is required when you send an e-mail.

**None:** No authentication is required when an e-mail is sent.

**SMTP:** Select when SMTP authentication is required.  
**POP before SMTP:** Select when POP before SMTP authentication is required.

**Combination of POP before SMTP and SMTP:** Select when both SMTP authentication and POP before SMTP authentication is required.

#### POP mode

Select POP3 or APOP as the authentication method for POP authentication.

#### Note

The model on sale in China does not support the APOP authentication.

#### Wait time after POP

Set the waiting time in **POP before SMTP** before SMTP authentication after POP authentication is completed. Timeout can be set from 0 to 10,000 msec.

#### POP server name

This is necessary when **POP before SMTP** is selected for **Authentication**.

Type the POP (receiving mail) server name using up to 64 characters, or type the IP address of the POP server. This setting is necessary when the SMTP server that sends e-mails performs authentication using the POP user account.

#### POP port number

Enter a port number from 1 to 65535. The standard port number is 110. POPs standard port number is 995, when the TLS is enabled.

#### Authentication mode

Select **Login** or **CRAM-MD5** as the authentication method for SMTP authentication.

#### Note

The model on sale in China does not support the CRAM-MD5 authentication.

**User name, Password**

Type the user name and password of the user who owns the mail account using up to 64 characters. This setting is necessary when the SMTP server that sends e-mails performs authentication.

**Address****Recipient e-mail address 1, 2, 3**

Type the recipient e-mail address using up to 64 characters.

You can specify up to three recipient e-mail addresses.

**Administrator e-mail address**

Type the Administrator e-mail address using up to 64 characters.

This address is used for reply e-mails and sending system messages from the mail server.

**Content****Subject**

Type the subject/title of the e-mail. The length for entering letters should be within 64 characters.

When an e-mail is sent in response to an alarm detection, the following string that indicates the type of alarm that will be added in the subject.

- When the Sensor 1 detects an alarm: (Sensor 1)
- When the Sensor 2 detects an alarm: (Sensor 2)
- When the Camera tampering detection detects an alarm: (Tampering)
- When the Motion detection detects an alarm: (VMD)
- When VMF detects an alarm: (VMF)
- When the Network disconnection is detected (Disconnected)
- When the Face detection detects an alarm: (Face Detection)

(Event1 (Condition1)) is additionally available for event condition detection.

**Message**

Type the text of the e-mail.

The length for entering letters should be within 384 characters.

**Event triggered execution****File attachment**

Set whether an image file (JPEG file) is to be attached to the e-mail or not.

When the checkbox is selected, the image file made using the settings below is attached. When the checkbox is deselected, only the message is sent.

**Image file name**

Type the file name you want to assign to the image to be attached to an e-mail. You can use up to 10 alphanumeric characters, – (hyphen) and \_ (underscore) for naming.

The actual image file name will be the specified image file name with a suffix and the extension .jpg.

**Suffix**

Select a suffix to be added to the file name used when the e-mail is sent.

**None:** The name of the sent file will be the image file name.

**Date & time:** The date & time suffix is added to the image file name.

The date & time suffix consists of last two-digits of the year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits), second (2 digits), and sequential number (2 digits), thus adding 14-digit number to the image file name.

**Periodical execution**

You can set to send e-mails periodically.

**Image file name**

Type the file name of the image attached to the e-mail using up to 10 alphanumeric characters, – (hyphen) and \_ (under score).

The actual image file name will be the specified image file name with a suffix and the extension .jpg.

**Suffix**

Select a suffix to be added to the file name used when the e-mail is sent.

**None:** The name of the sent file will be the image file name.

**Date & time:** The date & time suffix is added to the image file name.

The date & time suffix consists of last two-digits the year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minutes (2 digits) and seconds (2 digits), and sequential number (2 digits), thus adding a 14-digit number to the image file name.

**Periodical execution**

You can set to send e-mails periodically.

**Image file name**

Type the file name you want to assign to the image to be attached to an e-mail. You can use up to 10 alphanumeric characters, - (hyphen), and \_ (underscore) for naming.

The actual image file name will be the specified image file name with a suffix and the extension .jpg.



### Suffix

Select a suffix to be added to the file name used when the e-mail is sent.

**None:** The name of the sent file will be the image file name.

**Date & time:** The date & time suffix is added to the image file name.

The date & time suffix consists of the last two-digits of the year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits), second (2 digits), and sequential number (2 digits), thus adding 14-digit number to the image file name.

## Trouble sending

### Enable

Select the checkbox to enable the sending of problem reports.

### Continuous sending

Set whether to enable continuous e-mail sending. When the checkbox is selected, an e-mail will be sent once an hour.

### Recipient e-mail address

Type the recipient's e-mail address within 64 characters.

## Alarm output Tab — Setting the Alarm output

You can perform settings in this menu to control the alarm output of the I/O port on the rear of the camera linked to the alarm detection function.

### Tip

For details concerning the connection of peripheral devices to the alarm output of the I/O port, refer to the Installation Manual.

## Duration

### Duration 1, 2

Enter the duration for which the alarm is output from between 1 sec. and 60 sec.

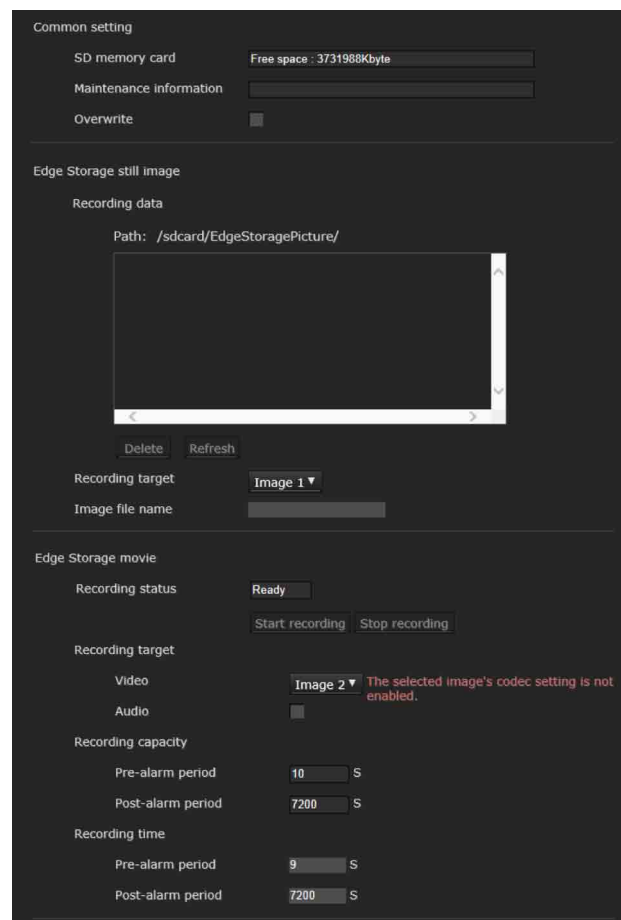
### Memory card trouble detection

Set to output the alarm when trouble of the memory card is detected.

### Output port 1, 2

Check the I/O port number that outputs the alarm when trouble of memory card is detected.

## Edge Storage Tab — Setting the Edge Storage movie and still image function



With Edge Storage, video or audio signal can be recorded from the alarm detection results, such as network block, recorded video and audio can be streamed with the same protocol as the real-time streaming.

### 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.
- When you remove a memory card, press the SD OFF switch, and check the SD MOUNT indicator is turned off. For details, refer to the Installation Manual.
- Stop the Edge Storage recording before you turn off the power of the camera with a memory card inserted.
- Before using a memory card, format it by **Format memory card** in the Initialize tab of the System menu (“Initialize Tab” on page 21).

- A maximum of 4000 movie records can be saved to a memory card. If the checkbox of **Overwrite** is not selected when the number of records reaches 4000, new recordings cannot be made. If the checkbox of **Overwrite** is selected when the number of records reaches 4000, the unit will begin to overwrite old records in ascending chronological order.
- **Overwrite** cannot be set with the memory card of less than 4GB.
- When recording H.264, the recorded data may become very large and the video/audio may be interrupted if the Adaptive rate control is set and other image codec except CBR is selected. Therefore, selecting CBR is recommended.  
If you select CBR, set the video codec as follows:
  - Set the **Bit rate** below 8000 kbps.
  - Set the **I-picture interval** to 3 seconds.
- When you record, set the codecs other than **Codec1** to **Off** in the Video codec tab of Video/Audio menu.
- When the output mode is set to **HDMI**, the Edge Storage still image and the Edge Storage movie cannot be recorded.

## Common setting

### SD memory card

Displays the available free space of external memory.

#### Note

The memory card has a limited life span. It may not record correctly when used for a long period of time. In such a case, replace with a new memory card.

### Maintenance information

Displays the status of the memory card if you are using the memory card that corresponds to displaying Maintenance information.

**Normal:** Continuous use available

**Warning:** Exchanging of the memory card is recommended.

**Error:** SD memory card does not work. Exchange the memory card.

### Overwrite

Select On to overwrite the file when there is insufficient memory space.

When you select the checkbox, overwrite is enabled. Old records will be overwritten in chronological order. When you deselect the checkbox, overwrite is prohibited, and no recording will be performed.

#### Note

Records are overwritten in chronological order, regardless of whether they are movies or still images.

## Edge Storage still image

### Recording data

You can refer to still image files recorded in the memory card. These files will be saved in a folder tree as follows.  
/sdcard/EdgeStoragePicture/00000000-99999999/00000000-99999999/

(Prefix)YYYYMMDDhhmmss00000001.jpg

**Path:** Displays the path name of the recording still image file.

When you select a file, a still image will be displayed.

**Delete:** Click **Delete** to delete the selected folder or file.

If you select a folder, any files in the folder will also be deleted.

**Refresh:** Click **Refresh** to reload the latest data.

### Recording target

Select the video codec mode you want to record.

For detailed settings of video codec mode, see the Video codec tab in the Video / Audio menu.

#### Notes

- You can record still images even if the video is specified with a codec set to H.264.
- Image quality setting for a still image can be changed only when the codec is set to JPEG.
- If you want to change the image quality of recorded still images, change the codec to JPEG.
- A folder containing no still image files may appear.

### Image file name

The file name consists of three parts: a prefix, a file number and an extension.

Set the prefix of up to 30 alphanumeric characters. You can include - (hyphen) and \_ (underscore) in the prefix. The file number and extension are assigned automatically by the camera.

The file number consists of the year (4 digits), month (2 digits), date (2 digits), hour (2 digits), minutes (2 digits), seconds (2 digits), and a sequential number (8 digits).

The Greenwich Mean Time will be used in the file name. The extension is .jpg.

## Edge Storage movie

### Recording status

Display the current recording status.

The recording status will not be updated until the screen is refreshed.

Use the **Start Recording** and **Stop Recording** button to start or stop the recording manually.

**Notes**

- When recording manually, do not set **Edge Storage movie** in the Execution Condition tab of the Action output menu to **Off**.
- Record the JPEG image for the evidence shot with Edge Storage still images.

**Recording target**

**Video:** Select the video codec mode you want to record.

For detailed settings of video codec mode, see the Video codec tab in the Video / Audio menu.

**Audio:** Set whether to record the audio signals input from the camera.

Select the checkbox to record.

**Note**

Set **Audio sending** (page 29) in the Audio tab of the Video / Audio menu to **Enable**.

**Recording capacity**

Displays the maximum recording time in the current camera setting of the video mode, image size, bit rate and frame rate.

**Pre-alarm period:** Displays the maximum recording time before the alarm is triggered.

**Post-alarm period:** Displays the maximum recording time after the alarm is triggered.

**Note**

Maximum recording time varies depending on the image size and quality setting in the Video / Audio menu.

**Recording time**

Set the recording time for the Pre-alarm image/audio and Post alarm image/audio.

**Pre-alarm period:** Type the recording time of the image/audio before alarm detection.

**Post-alarm period:** Type the recording time of the image/audio after alarm detection.

---

**HTTP alarm notification Tab**

Set to notify a specified URL of an alarm when an event is detected.

**HTTP alarm notification 1, 2, 3**

Set up to 3 recipients who you want to notify of the alarm.

**User name**

Type the user name for authentication using up to 64 characters.

**Password**

Type the password for authentication using up to 64 characters.

**Notification at the beginning of event detection**

Select the checkbox for the alarm notification when the event detection starts.

**URL**

Type the recipient of the alarm.

**Test**

If you click **Execute**, the alarm will be notified manually regardless of whether an event is detected.

**Notification at the end of event detection**

Select the checkbox for the alarm notification when the event detection ends.

**URL**

Type the recipient of the alarm.

**Test**

If you click **Execute**, the alarm will be notified manually regardless of whether an event is detected.

**Note**

If the VMF, **Camera tampering detection**, **Face detection**, **Event condition** are set as conditions for executing **HTTP alarm notification**, the **Notification at the end of event detection** cannot be set.

**Use Proxy**

Select the check box if you use a proxy server.

**Address**

Type the address of the proxy server using up to 255 characters.

**Port No.**

Type the port number of the proxy server using up to 255 characters.

**User name**

Type the user name for proxy server authentication using up to 64 characters.

**Password**

Type the password for proxy server authentication using up to 64 characters.

## FTP still image sending Tab

Set the items for the still file images that are recorded at alarm detection or recorded periodically and sent to the FTP server.

### Note

While transferring files with FTP still image sending, the frame rate and operatability of the main viewer decreases.

## FTP server

Set the items for the FTP server where files will be sent.

### Server name

Type the FTP server name of the FTP server where you want to upload the files using up to 64 characters or type the IP address of the FTP server.

### User name

Type the user name for the FTP server using up to 64 characters.

### Password

Type the password for the FTP server using up to 64 characters.

### Passive mode

Set whether to use the passive mode of the FTP server when you connect to the FTP sever. If you select the checkbox, you can connect to FTP sever in passive mode.

## Alarm sending

### Image to be sent

Select the video codec mode for the image of alarm sending.

For detailed settings of video codec mode, see the Video codec tab in the Video / Audio menu.

### Remote path

Type the path where the files will be sent using up to 64 characters.

### Image file name

Type the file name of the image that you want to send to the FTP server using up to 10 alphanumeric characters, - (hyphen) and \_ (underscore).

### Suffix

Select a suffix to be added to the file name used when the image is sent.

**None:** The name of the sent file will be the image file name.

**Date & time:** The date & time suffix is added to the image file name.

The date & time suffix consists of last two-digits of the year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits), second (2 digits), and sequential number (2 digits), thus adding 14-digit number to the image file name.

**Sequence number:** A sequential 10-digit number 0000000001-4294967295 and a sequential 2-digit number are added to the image file name to be sent.

### Sequence number clear

If you click **Clear**, the suffix of the **Sequence number** returns **1**.

### Test

If you click **Execute**, the image will be sent to the FTP server once for testing according to the settings of alarm sending.

## Periodical sending

### Image to be sent

Select the video codec mode of the image of periodical sending.

For detailed settings of video codec mode, see the Video codec tab in the Video / Audio menu.

### Remote path

Type the path where the files will be sent using up to 64 characters.

### Image file name

Type the file name of the image that you want to send to the FTP server using up to 10 alphanumeric characters, - (hyphen) and \_ (underscore).

### Suffix

Select a suffix to be added to the file name used when the image is sent.

**None:** The name of the sent file will be the image file name.

**Date & time:** The date & time suffix is added to the image file name.

The date & time suffix consists of last two-digits of the year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits), second (2 digits), and sequential number (2 digits), thus adding 14-digit number to the image file name.

**Sequence number:** A sequential 10-digit number 0000000001-4294967295 and a sequential 2-digit number are added to the image file name to be sent.

### Sequence number clear

If you click **Clear**, the suffix of the **Sequence number** returns **1**.

**Test**

If you click **Execute**, the image will be sent to the FTP server once for testing according to the settings of periodical sending.

**Manual sending**

**Image to be sent**

Select the video codec mode of the image of manual sending.

For detailed settings of video codec mode, see the Video codec tab in the Video / Audio menu.

**Remote path**

Type the path where the files will be sent using up to 64 characters.

**Image file name**

Type the file name of the image that you want to send to the FTP server using up to 10 alphanumeric characters, - (hyphen) and \_ (underscore).

**Suffix**

Select a suffix to be added to the file name used when the image is sent.

**None:** The name of the sent file will be the image file name.

**Date & time:** The date & time suffix is added to the image file name.

The date & time suffix consists of last two-digits of the year (2 digits), month (2 digits), date (2 digits), hour (2 digits), minute (2 digits), second (2 digits), and sequential number (2 digits), thus adding 14-digit number to the image file name.

**Sequence number:** A sequential 10-digit number 0000000001-4294967295 and a sequential 2-digit number are added to the image file name to be sent.

**Sequence number clear**

If you click **Clear**, the suffix of the **Sequence number** returns **1**.

**Send**

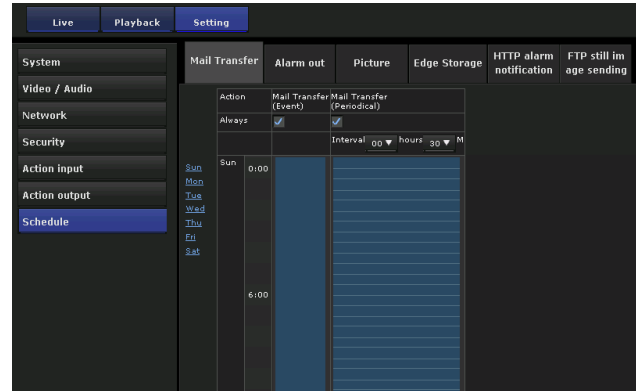
If you click **Execute**, the image will be sent to the FTP server once for testing according to the settings of manual sending.

# Schedule Menu

## — Setting the Schedule

When you click **Schedule** in the Administrator menu, the Schedule menu appears.

Use this menu to set the functions of each camera.



### Mail Transfer Tab

Set schedules to send mails.

**Action**

**Mail transfer (event):** Sends mails if it matches with event conditions.

**Mail transfer (periodical):** Sends mails periodically, by setting the sending interval.

**Always**

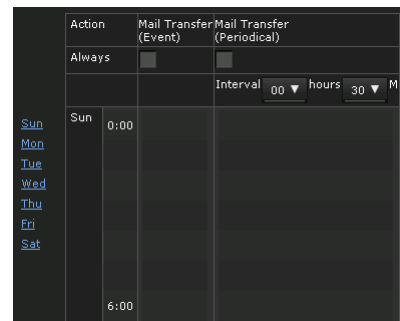
Select the checkbox to always enable.

**Note**

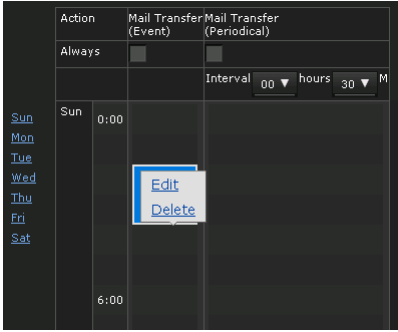
When the execution condition of Mail Transfer is set to Periodical, the interval can be set from 30 minutes to 24 hours.

### Setting the schedule

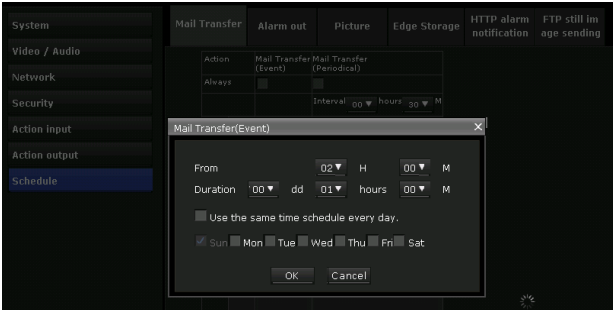
- 1 Deselects **Always**.



- Click the time you want to set and display the blue square frame. Click on the blue square frame, then select **Edit**.



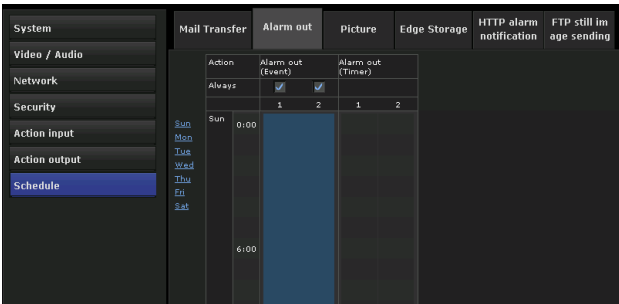
- Set **Start** time and **Duration**, then click **OK**.



**Tip**

When you click Sun, Mon, Tue, Wed, Thu, Fri, or Sat, days can be changed.

## Alarm out Tab



Sets schedule to output alarm.

### Action

- Alarm out (Event):** Output alarms if it matches with event conditions.
- Alarm out (Timer):** Output alarms by setting the time.

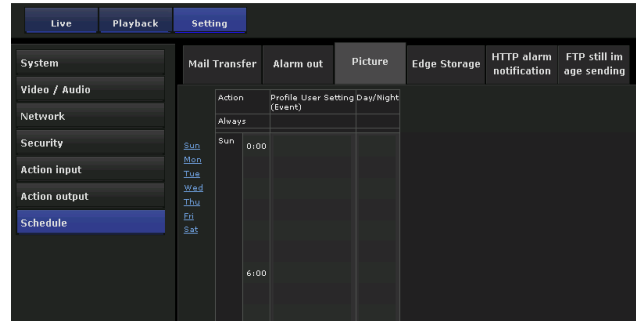
### Always

Select the checkbox to always enable. Alarm output (event) is only available.

## Setting the schedule

If you set the schedule of the Send mail tab, the setting procedure is the same. For details, see page 61.

## Picture Tab



Sets schedule to switch quality.

### Action

- Profile User Setting (Event):** Changes the picture profile if it matches with event conditions.
- Day/Night:** Changes the picture profile by setting the time.

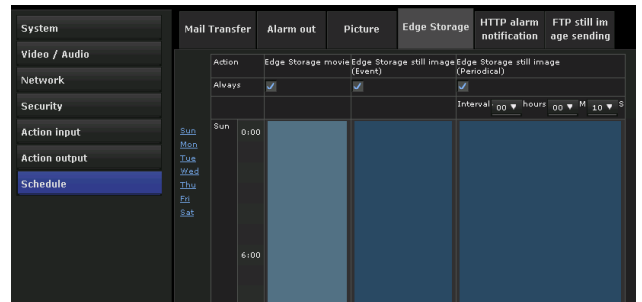
### Always

Select the checkbox to always enable. Only **Profile User Setting (Event)** is available.

## Setting the schedule

If you set the schedule of the Send mail tab, the setting procedure is the same. For details, see page 61.

## Edge Storage Tab



Sets schedule to save videos or still images on memory card.

### Action

- Edge Storage movie:** Saves movie on the memory card at the scheduled time.
- Edge Storage still image (Event):** Saves still images on the memory card if it matches the event condition.

**Edge Storage still image (periodical):** Saves still images on the memory card periodically by setting the intervals between performing.

**Always**

Select the checkbox to always enable.

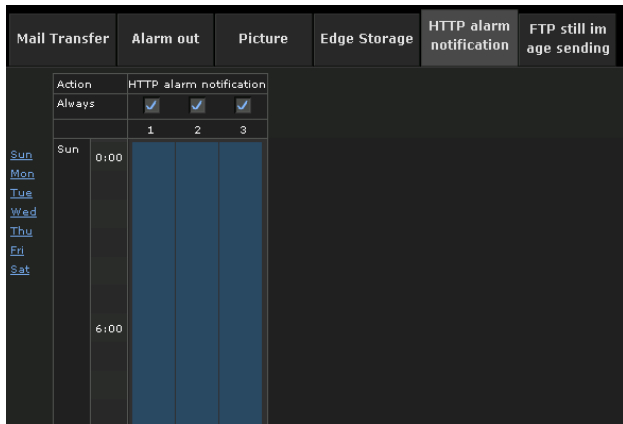
**Note**

When the execution condition of Edge Storage still image is set to **Periodical**, the interval can be set from 30 minutes to 24 hours.

**Setting the schedule**

If you set the schedule of the Send mail tab, the setting procedure is the same.  
For details, see page 61.

**HTTP alarm notification Tab**



Sets schedule to notify HTTP alarm to Web server.

**Action**

**HTTP alarm notification:** Notify the HTTP alarm at the scheduled time.

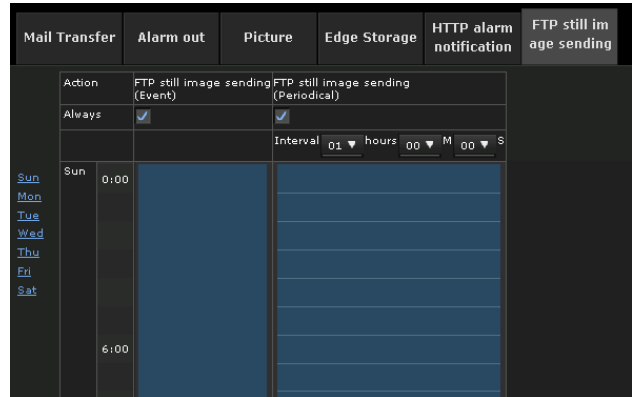
**Always**

Select the checkbox to always enable.

**Setting the schedule**

If you set the schedule of the Send mail tab, the setting procedure is the same.  
For details, see page 61.

**FTP still image sending Tab**



Sets schedule to send still image to FTP server.

**Action**

**FTP still image sending (Event):** Send the still image if it matches event conditions.

**FTP still image sending (Periodical):** Send still images periodically by setting the sending interval.

**Always**

Select the checkbox to always enable.

**Setting the schedule**

If you set the schedule of the Send mail tab, the setting procedure is the same.  
For details, see page 61.

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## 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.

### Bandwidth control

To limit the amount of transmitted data.

### 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), 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.

### MAC address

A network address that uniquely identifies each LAN card.

### 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.



## **Network bandwidth**

Bit rate that can be used for networking.

## **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.

## **QoS**

QoS stands for Quality of Service. A technology for controlling communication priority to improve network stability.

## **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.

## **VBR**

VBR stands for Variable Bit Rate control. When you select this setting, the bit rate will be adjusted to suit the camera scene.



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