Network Camera

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

SNC-HM662
Software Version 1.2 or later

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Overview

Features

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

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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.

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

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

System Requirements

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

Common

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

Microsoft DirectX 9.0c or higher

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

CPU
Intel Core i7, 2.8 GHz or higher

Memory
2 GB or more

* In case of Windows 8, use the Internet Explorer desktop user interface (desktop UI) edition.
Accessing the Camera Using the Web Browser

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

1. Start the web browser on the computer and type the IP address of the camera in the URL address bar.

   ![Address](http://192.168.0.100)

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

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

   For security, be sure to change the password from the factory setting before using the camera.

   ![Display sample](image)

   **Note**

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

   **Using the SSL function**

   **Note**

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

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

   The welcome page appears (in SSL communication).

   ![Security Warning](image)

   **When “HTTP & HTTPS” (page 27) is checked**

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

   **For HTTP connection**

   http://192.168.0.100/

   **For SSL connection**

   https://192.168.0.100/

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

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

   ![Security Warning](image)

   **Notes**

   - If **Automatic configuration** is enabled in the Local Area Network (LAN) settings of Internet Explorer, the image may not be displayed. In that case, disable **Automatic configuration** and set the proxy server manually. For setting the proxy server, consult your network administrator.

   - When you install ActiveX Control, you should be logged in to the computer as Administrator.

   **Tip**

   The software is optimized for Internet Explorer using medium font.
To display the viewer correctly
To operate the viewer correctly, set the security level of Internet Explorer to Medium or lower, as follows:

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

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

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

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

You can monitor the camera image by logging in to this network camera. You can also set various functions according to the installing position, network conditions or purpose of the camera.

We recommend you configure the following items before monitoring images from the camera.

<table>
<thead>
<tr>
<th>Setting contents</th>
<th>Setting menu</th>
</tr>
</thead>
<tbody>
<tr>
<td>Select the mount type of the camera.</td>
<td>Video Settings (page 19)</td>
</tr>
<tr>
<td>Set the format of the image sent from the camera.</td>
<td>Video codec (page 21)</td>
</tr>
<tr>
<td>Select the White balance mode according to the installation position.</td>
<td>White balance (page 19)</td>
</tr>
<tr>
<td>Select the brightness of the image sent from the camera.</td>
<td>Exposure (page 20)</td>
</tr>
<tr>
<td></td>
<td>Brightness (page 19)</td>
</tr>
<tr>
<td>Select the quality of the image sent from the camera.</td>
<td>Video codec (page 21)</td>
</tr>
<tr>
<td>Select the view size of the image.</td>
<td>View size (page 13)</td>
</tr>
<tr>
<td>Select whether the audio from the internal microphone or the external input, or to the line output is sent or not.</td>
<td>Audio (page 21)</td>
</tr>
<tr>
<td>Synchronize the date and time of the camera with those of the computer.</td>
<td>Date &amp; time (page 17)</td>
</tr>
<tr>
<td>Set the user access right for the camera.</td>
<td>User (page 27)</td>
</tr>
</tbody>
</table>
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.

**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 — Security Menu” in the Administrator menu on page 27.

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 — Security Menu” in the Administrator menu on page 27.

5. Check the Referer check checkbox.
   For details, refer to “Setting the Security — Security Menu” in the Administrator menu on page 27.

Hereafter, use the camera using the SSL connection. If you use the FTP still image sending function, the SSL function will be disabled, and communication content will not be coded. Do not use the FTP still image sending function if the camera is at risk of unauthorized access.

**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 16.

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.

Each type of user can use the corresponding functions below.

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

● Usable function
– Not usable function

The access rights of the administrator and the user can be set in “Setting the Security — Security Menu” of the Administrator menu on page 27.
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.

   ![Address](http://192.168.0.100)

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

   **Display sample:**

   ![Display sample](image)

**Note**

If the main viewer does not start correctly, the security level of the Internet Explorer may be set to higher than Medium. See “To display the viewer correctly” on page 6 and check the security level.

Configuration of the Viewer Screen

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

**Viewer screen**

**Main menu**

- **Viewer**
  Displays the ActiveX viewer.

- **Setting**
  Click to display the Administrator menu. (page 16)
  You can operate this function only when logged in as the administrator.

- **Language**
  Set the language from the pull-down list.
Control panel section

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

View panel

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

Display mode

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

1O - One Original view.
1P - One Panoramic view
1R - One Regional view
2P - Two Panoramic views
1O-3R - One Original and three Regional views
4R - Four Regional views
4Ri - Four Regional views

When one view area changes, the other three views change.

1O-8R - One Original and eight Regional views

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

See the following detailed explanations of these modes.

1O (Original view) mode:

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

1P (Single Panoramic view) mode:

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

1R (Single Regional view) mode:

In the 1R mode, the image is displayed as the specified and trimmed area in a hemispheric screen. You can zoom in or out (using the mouse wheel or camera control panel), or move around other areas within the hemisphere using simple mouse clicks and drags. A single-click on any part of the screen will position it in the center of the view window.
2P (Dual Panoramic View) mode:
In 2P mode, the hemispheric image is displayed as the 360° panoramic screen which is converted the same as 1P mode. Two screens, above and below, are displayed separately, each with a 180° view. You can move the screen horizontally and smoothly by using the mouse. The zoom in or out function cannot be used in this mode.

1O-3R (One Original & Three Regional) mode:
In the 1O-3R mode, four screens; the original view and three regional views are displayed. The FOV indicators (#1 to #3) display the position of each regional view. You can zoom in or out and move the position to other areas within the hemisphere using the methods as previously described in the 1R mode.

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

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

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

1O-8R (One Original and Eight Regional) mode:
The 1O-8R mode displays the original view and eight regional views.

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

1P-2R (One Panoramic and Two Regional) mode: 1P-3R (One Panoramic and Three Regional) mode:
These two modes are only available when Mount type is set to Wall. The Mount type configuration is found in Setting > Video/Audio > Picture > Video Settings. See to page 19 for details. The operating methods of these
two modes are identical to those described for the 10-3R mode.

**1080p Mode**

In the 1080p mode, the compensated image from the original hemispheric image is displayed in 16:9, Full HD video signal.

When the 1080p mode is selected, you cannot use any of the display modes of the fisheye mode. The pan, tilt and zoom function also cannot be used.

**Memo**

Switches to 1080p mode in Setting > Video / Audio > Video Codec > FOV. For details, see page 21.

**Image**

Select Image1, Image2 and Image3.

**Screen mode**

Select Window or Full Screen.

**View size**

Selects the view size to be displayed.

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

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

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

Select ×1 to display images set in Image size of the Image menu. (page 21)

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

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

**Capture**

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

**Run/**Stop Save Video**

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

**Notes**

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

**Volume**

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

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

**Note**

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

**Mic volume**

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

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

**Camera control panel**

This panel allows you to control the camera’s pan/tilt/home position and zoom (page 31).

**Go to**

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

**Pan/Tilt control**

Click the arrow button the direction in which you want to move the camera.

To return to the home position, click .
Zoom control
Press \( W \) to zoom out, and press \( T \) to zoom in.

Pano. (Auto Pano): When mounting the camera on a ceiling, the camera rotates 360° through a regional view. When mounting the camera on a wall, the camera moves 180° by panning in the horizontal angle automatically.

Note
This function cannot be used on the panoramic views.

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

Note
The split-screen images that are not selected are also switched in the tour display.

Pan speed
Sets the pan speed.
\(-5\) is the slowest and \(5\) is the fastest.

Tilt speed
Sets the tilt speed.
\(-5\) is the slowest and \(5\) is the fastest.

Zoom speed
Sets the movement of zooming in or out when \( W \) or \( T \) is clicked.
\(-5\) is the smallest and \(5\) is the largest.

Panoramic speed
Sets the speed when the auto panoramic functions. \(1\) is the slowest and \(5\) is the fastest.

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

<table>
<thead>
<tr>
<th>Tuor speed</th>
<th>Staying time (second)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>1.5</td>
</tr>
<tr>
<td>5</td>
<td>1.2</td>
</tr>
</tbody>
</table>

Other panel

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

Alarm output
Select the checkbox to enable the Alarm output.

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

Each click switches the transmission mode of the video/audio data between Unicast mode, Multicast mode, TCP mode, and HTTP mode (page 15).
Switching Connection

You can change the connection for video/audio data.

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

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

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

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

**TCP**: When **TCP** is selected, use the port number specified in **RTSP port number** (page 25) for operating the video/audio communications.
Administering 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 9.

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

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

Basic Operations of the Administrator Menu

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

How to set up the Administrator menu

1. Input the user name of the administrator and password, and then log in.
The view window is displayed.
For details, see “Logging in as a user” on page 10.

2. Click Setting on the main menu.

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

Example: “System” menu

4. Click the submenu name.
The clicked menu appears.

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

Example: “Picture” tab of “Video/Audio” menu

See page 17 for details of the menu tabs and setting options.

6. After setting, click OK.
The settings you have made become active.
Click Cancel to nullify the set values and return to the previous settings.

Buttons common to every menu
The following buttons are displayed on all the menus.

OK
Click this button to confirm the settings.

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

Close
Click this button to close the window.

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

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

Configuration of the Administrator menu

System
Displays the System menu. (“Configuring the System — System Menu” on page 17)

Video / Audio
Displays the menu for setting the camera image and audio. (“Setting the Camera Image and Audio — Video / Audio Menu” on page 19)
Network
Displays the menu for setting the network connection. (“Configuring the Network — Network Menu” on page 22)

Security
Displays the menu for setting the login user name and menu to specify which computer(s) can connect to the camera. (“Setting the Security — Security Menu” on page 27)

PTZ
Displays the PTZ control menu. (“Setting the PTZ control — PTZ Menu” on page 31)

Event
Displays the menu for setting events. (“Setting the Event — Event Menu” on page 33)

Applications
Displays the setting menu for all built-in detection functions. (“Other settings — Application Menu” on page 36)

Recording
Displays the setting menu for recording. (“Settings on the Recording — Recording Menu” on page 37)

Edge storage
Displays the menu for setting SD memory card and for reference to recording data . (“Setting the Edge storage function — Edge storage Menu” on page 38)

Configuring the System — System Menu

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

Date & time

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

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

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

NTP server
Synchronize with the selected NTP server address.

Note

Time slip can readily occur in low or high temperature environments. In this case, select Synchronize with NTP.
OK/Cancel
See “Buttons common to every menu” on page 16.

Log

— System Log Tab
Describes the information of the camera software function. Records useful information when a problem occurs. Click Reload to load the latest information.

— Access Log Tab
Displays the camera access history. Click Reload to load the latest information.

Initialize

— Initialize Tab

Reboot
Used to reboot the system.

Factory default
Resets the camera to the factory settings.

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

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

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

— Backup/Restore Setting Data Tab

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

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

Backup daylight saving time rules
Saves the Daylight Saving Time rule in a file. Click Backup Setting Data to save the Daylight Savings Time rule.

Restore daylight savings time rules
Loads the Daylight Saving Time rule. Click Browse... and select the file in which the Daylight Savings Time rule is stored. Click OK, and the selected Daylight Savings Time rule is applied.
Setting the Camera Image and Audio
— Video / Audio Menu

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

Picture

— Video Settings Tab

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

Power line frequency
Select when you want to reduce the flicker on images. Set according to power frequency (50 Hz or 60 Hz) of the lighting you use.

Eflip
If you select this, you can display images on the computer inverted.

OK/Cancel
See “Buttons common to every menu” on page 16.

— Picture Settings Tab

White balance
Select the White balance mode.

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

Picture

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

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

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

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

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

Note
If the wide dynamic range function is enabled, you cannot set the contrast settings.

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

OK/Cancel
See “Buttons common to every menu” on page 16.

Profile of picture settings

Activated period
Select the checkbox and the mode. The setting is enabled when you select the mode. For other settings, see “Picture Settings Tab” on page 19.

OK/Cancel/Close
See “Buttons common to every menu” on page 16.
— Exposure Tab
Adjust the exposure settings.

### Measurement Window

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

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

**Backlight compensation**
Enables the backlight compensation function. If you select **Backlight compensation**, a BLC frame is displayed. When a high luminance object is outside the frame, backlight compensation operates.

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

**Shutter speed**
Set the range of the shutter speed.

**Gain control**
Set the range of the gain control.

**Day/Night**

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

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

**Auto mode**: Normally works in day mode; switches automatically to night mode in a dark place. If you set Auto mode, set the sensitivity for the camera to automatically switch to night mode.

**Day mode**: Works in day mode at all times.

**Night mode**: Works in night mode at all times.

**Sensor input**: Controls the day/night mode by the active sensor input. While a sensor input is detected, the camera works in night mode.

**Timer**: Switches between day and night modes at set times. Set a start time and end time of day mode.

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

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

### OK/Cancel
See “Buttons common to every menu” on page 16.

### Profile of exposure settings

#### Activated period
Select the checkbox and the mode. The setting will be enabled when you select the mode. For other settings, see “Exposure Tab” on page 20.

### OK/Cancel/Close
See “Buttons common to every menu” on page 16.

— Privacy masking Tab

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

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

1. Click **New**. A text box appears allowing you to enter a name for the mask.
2. Enter a name for the mask in a window name.
3. Click on four points on the preview screen to specify the privacy mask area.
4. Select the **Enable privacy masking** checkbox.
5. Click OK. The mask is reflected.

**Note**

Up to five privacy masks can be set.

**Delete privacy masking**

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

---

### Video codec

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

---

**— FOV Tab**

Select Display mode for the image.

**Fisheye mode**

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

**1080P mode**

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

**Notes**

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

---

**— Image Tab**

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

**Image codec**

Select H.264 or JPEG.

**Note**

Depending on the bitrate value settings of Image 1, Image 2 and Image 3, the following symptoms may occur.

- The image is delayed more than usual.
- The frame is skipped when playing an image.
- The voice is broken.

---

**Image size**

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

**Frame rate**

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

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

Set the I-picture insertion interval in seconds.

**Video quality**

**CBR**

Select when you want to compress an image by a constant bit rate.

You can set the average bit rate of image transmission for a line. When the bit rate is set to a high level, better image quality can be enjoyed.

When Customized is selected, set the bit rate from 4 Kbps to 16000 Kbps.

**Image quality**

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

**OK/Cancel**

See “Buttons common to every menu” on page 16.

---

### Audio

Make settings for audio.

**Enable**

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

**Audio in**

Select the internal microphone or external input.

**Internal microphone input gain**

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

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

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

OK/Cancel
See “Buttons common to every menu” on page 16.

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

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

— Network Tab

IPv4 setting
Configure the IPv4 network setting.

To obtain the IP address automatically from a DHCP server
Select Obtain an IP address automatically (DHCP). The IP address, subnet mask and default gateway are assigned automatically.

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

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

**Subnet mask**
Type the subnet mask.

**Default gateway**
Type the default gateway.

**Primary DNS server**
Type the IP address of the primary DNS server.

**Secondary DNS server**
Type the IP address of the secondary DNS server.

**IPv6 setting**
Configure the IPv6 network setting.

To link to the IPv6 address, follow the procedure below.

1. Open your web browser.

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

   **Memo**
   
   The address format should be:
   
   ```
   http://[2001:cf8:1:1117:0:dddd:27b8:b0ce]/
   ```

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

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

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

   **Secondary HTTP port**

To specify the fixed IPv6 address manually
Select **Use fixed IP address**. Type the address in the **IP address / Prefix length**, **Default gateway** and **Primary DNS server**.

**IP address / Prefix length**
Type the IP address of the camera and the prefix length value.

**Default gateway**
Type the default gateway.

**Primary DNS server**
Type the IP address of the primary DNS server.

**OK/Cancel**
See “Buttons common to every menu” on page 16.

---

**Port Tab**
Audio Port
Type the port number (from 1025 to 65535) for the audio port.

OK/Cancel
See “Buttons common to every menu” on page 16.

Streaming protocols

HTTP streaming

Authentication mode
Set an authentication system to be used for the user authentication of the HTTP streaming.
Basic authentication: use the basic authentication
Digest authentication: use the digest authentication
When you changed the Authentication mode, close the web browser, and access the camera by using the web browser again.

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

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

OK/Cancel
See “Buttons common to every menu” on page 16.

Unicast streaming

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

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

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

Multicast streaming

Enable
Select the checkbox to allow multicast sending.

Multicast address 1, 2, 3
Type the multicast address used on the multicast streaming.

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

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

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

Authentication mode
Set an authentication system to be used for the user authentication of the RTSP streaming.

Basic authentication: use the basic authentication
Digest authentication: use the digest authentication
Disable: do not use the user authentication

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

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

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

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

Note
In software version 1.1 or later, the video port number specified for unicast streaming (page 24) is displayed.

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

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

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

Enable
Select the checkbox to allow RTSP multicast sending.

Multicast address
The multicast address used for RTSP multicast streaming.
The address set for multicast streaming (page 24) is displayed.

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

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

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

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

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

OK/Cancel
See “Buttons common to every menu” on page 16.

SNMP
SNMP configuration

Enable SNMPv1, SNMPv2c
Select the checkbox to enable SNMPv1 and SNMPv2c.

Read/Write community
Enter the name of Read/Write community.

Read only community
Enter the name of Read only community.

Enable SNMPv3
Select the checkbox to enable SNMPv3.

Read/Write security name
Enter the name of Read/Write security name.

Authentication type
Select the authentication method.

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

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

Encryption password
Enter a password for encryption (at least 8 characters).
Setting the Security — Security Menu

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

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

**Administrator, User 1 to 9**
Specify *User name*, *Password*, *Re-type password* and *Viewer mode* for each user ID.

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

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

**Password**
Type a password between 5 and 28 characters.

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

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

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

For the functions available for each viewer mode, see “Administrator and User” on page 9.

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

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

### OK/Cancel
See “Buttons common to every menu” on page 16.

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

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

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

**Create self-signed certificate**

1. Select the checkbox of SSL function.

2. Select a connection mode.

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

**Notes**

- Make sure to set the date and time on the camera correctly before performing this operation. If the date and time are not correctly set, it may cause browser connection problems.

Before selecting **Generate** in **Create self-signed certificate**, select **Create self-signed certificate (For test use)** in **Method**, then click **OK**.

- If the connection does not automatically change to an encrypted connection, click **Viewer** to return to the viewer window. Change the URL address from "http:" to "https:" in the address bar, then press **Enter** on your keyboard. Some Security Alert dialogs will pop up. Click OK or **Yes** to enable HTTPS.

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

**SSL server authentication**

**Method**
Select an authentication method of the certificate.

**Create self-signed certificate (For test use)**: This mode uses the certificate and private key pair generated by "Create self-signed certificate" on page 27. Private key information corresponding to the certificate is stored in the camera. You do not need to install an external certificate. However, you cannot execute the existence proof, which is one of the SSL functions, for the following reasons.
- The private key generated in the camera is self-signed by the camera.
- A prepared value is set for a distinct name (Common name, etc).
- The certificate is not issued by a trusted CA.

For reasons of security, we recommend using this mode only when there is no problem even if perfect security is not saved.

**Note**

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

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

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

**Note**

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

**OK/Cancel**
See “Buttons common to every menu” on page 16.

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

**Enable access list filtering**
Select the checkbox to enable access list filtering.

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

**Add IP addresses to the access restriction**

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

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

**Single**
You can add an IP address.
Network
You can assign the network mask corresponding to a network address.

Range
You can assign a range of addresses.

Note
Range is only applied to IPv4.

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

Note
The access restriction for IPv6 can be displayed only when IPv6 setting is enabled. See Network on page 33 for detailed information.

OK/Cancel
See “Buttons common to every menu” on page 16.

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

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

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

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

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

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

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

Note
This camera supports EAP mode, in which the supplicant and the server authenticate using the
certificate. This mode requires a CA to issue the certificate.

**IEEE 802.1X**

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

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

**TLS:** By this method, the supplicant and the server authenticate each other using a certificate. This enables secure port authentication.

**PEAP:** By this method, an EAP password is used for the supplicant authentication and a certificate is used for server authentication.

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

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

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

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

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

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

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

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

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

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

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

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

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

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

**Referer check**
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**.

**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.

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

PTZ settings

Select stream
Select a stream to configure preset or tour.

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

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

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

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

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

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

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

To configure preset positions

1. Select a stream.

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

3. Type the preset name up to 40 characters.

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

5. Click OK to configure the setting.

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

To configure preset tour

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

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

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

<table>
<thead>
<tr>
<th>Tour speed</th>
<th>Staying time (second)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td>2</td>
<td>3</td>
</tr>
<tr>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>4</td>
<td>1.5</td>
</tr>
<tr>
<td>5</td>
<td>1.2</td>
</tr>
</tbody>
</table>

3. Click OK to save the setting.

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

Misc settings

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

OK/Cancel
See “Buttons common to every menu” on page 16.
Setting the Event
— Event Menu

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

Event settings

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

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

Event settings screen

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

To set the event

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

1. Schedule

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

2. Trigger

Select the trigger for performing the event.

Motion detection

When motion is detected, perform the event. When the Motion detection is selected, select the checkbox of the window name to be used. The setting of Motion detection is required to enable this function. For details, see “Motion detection” on page 36.

Memo

Multiple Motion detection settings can be made.

Periodically

Performs the event after a certain period. Input the trigger interval of the event (1 to 999 minutes).
Sensor Input
The sensor input is set as the trigger for performing the event.
Active: Performs the event while the sensor input is active.
Normal to Active: Performs the event when the sensor input shifts to the active status from the normal status.
Active to Normal: Performs the event when the sensor input shifts to the normal status from the active one.

System boot
Performs the event when the camera is being turned on.

Camera tampering detection
The camera tampering detection is set as the trigger for performing the event.
Select the Camera tampering detection checkbox to enable this function.
For details, see “Camera tampering detection” on page 37.

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

3. Action
Set the action to be performed when the trigger is activated.

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

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

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

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

File format
Select the format of the file to be saved.

Add Action
Add the action setting.
When the trigger functions, Still image, Video clip or System log is sent by email.
You can set up to 5 actions.

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

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

OK/Close
See “Buttons common to every menu” on page 16.

Add file format
Adds the file format.
Set the action file format of when the trigger functions.
Select the radio button of Still image, Video clip or System log.
Select the radio button for detailed settings.
You can set up to 5 file formats.

### Setting name
Input the name of the file format setting.

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

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

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

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

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

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

### OK/Close
See “Buttons common to every menu” on page 16.

---

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

#### Setting name
Input the name of the file format setting.

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

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

**Memo**
A still image is saved every second.

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

**Memo**
A still image is saved every second.

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

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

### Video clip
Select when the video clip is to be saved in Edge storage, or sent via email.
Other settings — Application Menu

When you click \( \text{Applications} \) in the Administrator menu, the submenus of the Applications menu appear. The application menu consists of Motion detection, Sensor input, and Camera tampering detection.

Motion detection

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

Enable motion detection
Select the checkbox to enable the motion detection.

To set the motion detection window

1. Click New.
2. Input the name of the motion detection window in the Window name.
3. Set the motion detection area on the preview screen by clicking the area’s four points.
4. Set the Detection sensitivity by the slide bar, and the Percentage.

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

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

5. Select the Enable motion detection checkbox.
6. Click OK to enable the setting.

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

Profile

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

OK/Cancel

See “Buttons common to every menu” on page 16.

Profile of motion detection setting

Enable and apply this profile
Select the checkbox to select a mode.
For the other settings, see “Motion detection” (page 36).

OK/Cancel/Close

See the “Buttons common to every menu” (page 16).

Sensor input

Sensor input mode

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

Normally open: Detects the alarm when the signal is short circuited.

Normally closed: Detects the alarm when the signal is open circuited.

OK/Cancel

See the “Buttons common to every menu” (page 16).
**Camera tampering detection**

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

OK/Cancel
See the “Buttons common to every menu” (page 16).

---

**Settings on the Recording**

— Recording Menu

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

**Recording Settings**

The Recording Settings which are set are displayed.

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

**Name:** Displays the recording name.

**Status:** Displays whether the recording settings are valid or not.

**Sun/Mon/Tue/Wed/Thu/Fri/Sat:** Displays [V] on the days of the week that the recording settings are valid.

**Time:** Displays the period of time for that the recording settings are valid.

**Image:** Displays the recording image (Image 1 to image 3).

**Destination:** Displays where the files are recorded.

**Delete:** Deletes the recording settings.

**Recording name:** Input the name of the recording settings.

**Enable this recording:** Select this checkbox to enable the event settings.

**Priority:** Select the importance of the recording settings (High/Normal/Low). The highest priority Event settings are performed first.

**Image:** Selects the recording image (Image 1 to image 3).

---

**Setting the recording settings**

To set the event, you need to set the items of the Trigger and Destination in the recording settings screen.
1. **Trigger**
Select the trigger for performing the recording settings.

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

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

2. **Destination**
Set the place where the files are to be recorded.

**Destination**
The place where the files are to be recorded.

**Memo**
You cannot select other than SD (microSD card).

**Recording file management**

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

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

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

**OK/Close**
See “Buttons common to every menu” on page 16.

---

### Setting the Edge storage function — Edge storage Menu

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

#### Notes

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

### SD memory card

<Insert image of SD memory card initialization process>

**Initializing the SD memory card**

Initializes the microSD memory card which is inserted to this unit’s micro SD card slot.

Click **Format SD memory card** to start the initializing. The files and folders which are stored in the SD memory card are erased.

#### Notes

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

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

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

**OK**
Click this after completing the setting.

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

**Contents Management**

Refers to the data stored in the SD memory card.

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

**Trigger time**
Displays the effective time of the trigger.

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

**Refresh/View/Download/Lock/Unlock/Delete**

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

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

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

**Bit rate**
The rate at which data bits are transmitted.

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

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

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

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

**Default gateway**
Device that can be used to access another network.

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

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

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

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

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

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

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

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

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

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

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

**Primary DNS server**
One of the DNS servers that can first reply to a request by connected devices or other DNS servers.
**Proxy server**
A server or software that acts as an intermediary between a local network and the Internet so that it can connect to the Internet in place of a computer on a local network.

**Saturation**
The degree to which a color is pure.

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

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

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

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

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

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

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

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