

New functions and addendum

- This document contains descriptions of how to set the new functions and their restrictions.
It is recommended to read them while referring to the Operating Instructions provided with this product together.
- Depending on the model used, the screens shown in the explanations may differ to the actual camera screens.
- The model number is abbreviated in some descriptions in this manual.

About notations

The following notations are used when describing the functions limited for specified models.
The functions without the notations are supported by all models.

SFV481 : WV-SFV481, WV-SFN480

SFV781 : WV-SFV781L, WV-SPV781L

Due to software upgrade, the following functions have been added and changed to this product.

• Firmware Ver.1.11 (excluding **SFV781**)

No.	Functions	Item (Page)	Page
1	Link to "Ext. software" display	Upgrade (Maintenance)	2

• Firmware Ver.2.01

No.	Functions	Item (Page)	Page
2	Addition of "Contrast enhancement(RGB:0 to 255)" function	Basic (Basic)	3
3	Addition of "Smart Coding mode" function	JPEG/H.264 (Camera)	4

• Firmware Ver.2.40

No.	Functions	Item (Page)	Page
4	Expanded selection for "HTTPS"	Network (Network)	5
5	Addition of administrator registration window for the first time access and change to default user management values	User auth. (User mng.)	6

• Firmware Ver.2.50

No.	Functions	Item (Page)	Page
6	Expansion of [Bandwidth control(bit rate)] selections	Network (network)	7
7	Addition of "On(Mid)" and "On(High)" to [Smart Coding mode]	JPEG/H.264(Image/Audio)	8

• Firmware Ver.2.60

No.	Functions	Item (Page)	Page
8	Change in restrictions on characters for password	For administrator registration	10
9	[Drawing method], [Decoding Options], [Frame Skip Options (When PC is Heavy Processing Load)] are added to Viewer software SFV481	Basic (Basic)	11
10	Change of authentication method default setting	User auth. (User mng.)	13
11	User authentication function for host authentication is added	Host auth. (User mng.)	14
12	Change of default setting of "Bandwidth control(bit rate)"	Network (Network)	15
13	Encryption of the settings	Data (Maintenance)	16
14	"Login failure" indication added to the login-related display	About the displayed system log	17

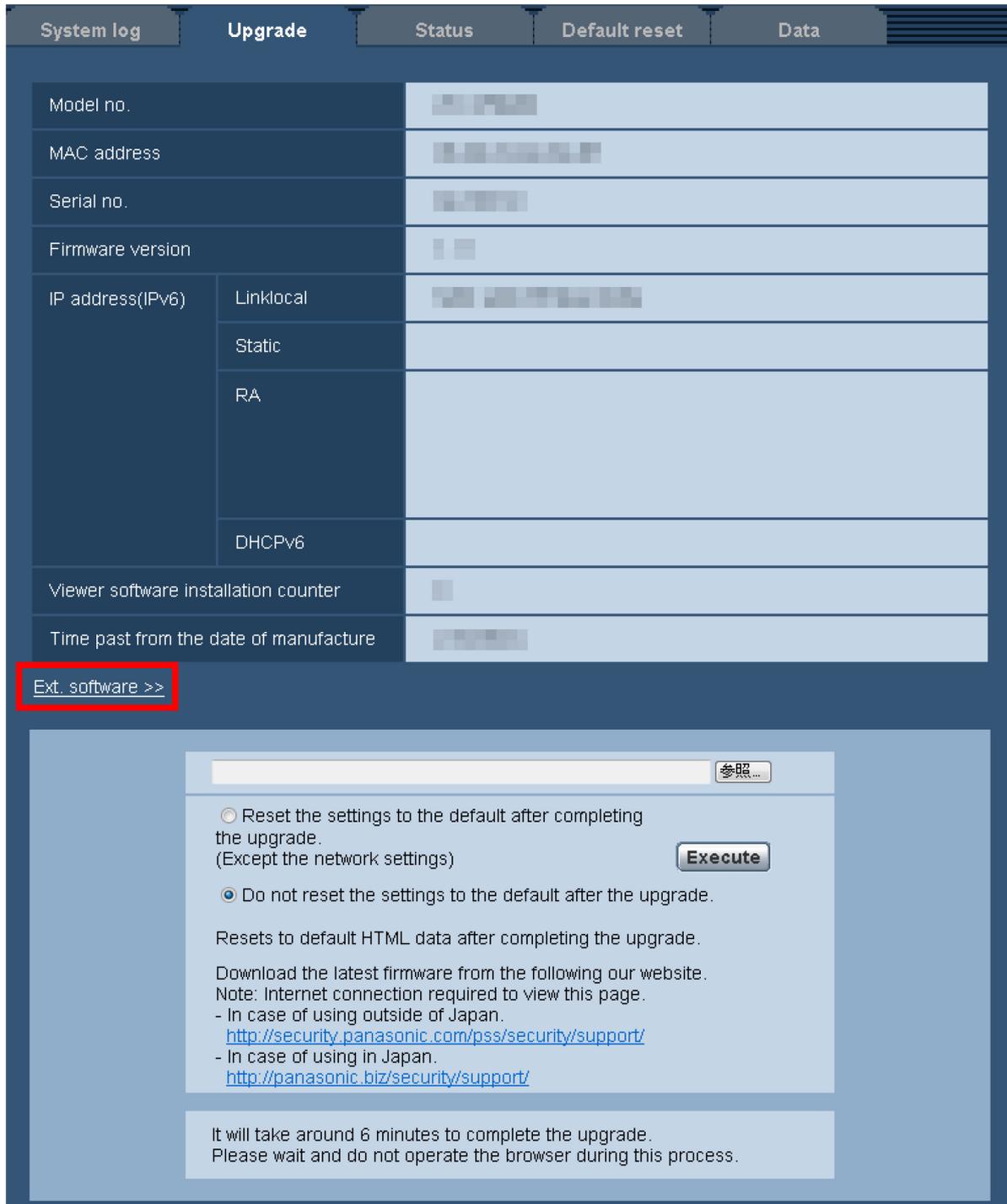
• Firmware Ver.4.00

No.	Functions	Item (Page)	Page
15	Change in encryption of the settings	Data(Maintenance)	18

1. Link to "Ext. software" display

(Operating Instructions Maintenance of the camera [Maintenance] – Upgrade the firmware [Upgrade])

The link to "Ext. software" has been added.



Note

- The optional Extension Software are designed to enhance the usefulness of network cameras. Refer to the following URL for details. <http://security.panasonic.com/pss/security/kms>

2. Addition of "Contrast enhancement(RGB:0 to 255)" function SFV481

(Operating Instructions Configure the basic settings of the camera [Basic] - Configure the basic settings [Basic])

Viewer software (nwcV4Ssetup.exe)	Automatic installation	<input checked="" type="radio"/> On	<input type="radio"/> Off
	Smoother live video display on the browser (buffering)	<input checked="" type="radio"/> On	<input type="radio"/> Off
	Contrast enhancement (RGB:0 to 255)	<input type="radio"/> On	<input checked="" type="radio"/> Off

[Contrast enhancement(RGB:0 to 255)]

Select "On" or "Off" to determine whether or not to enhance the contrast of H.264 images on the "Live" page. If "On" is selected, the range of RGB signal on display is extended from 16-235 to 0-255.

When there is a bright part in an image, the intensity may be overexposed.

Default: Off

Note

- This setting is only available when viewing images on the "Live" page with Internet Explorer.
- Even if this setting is changed, transmitted image data and data saved on the SD memory card are not changed.

3. Addition of “Smart Coding mode” function

(Operating Instructions Configure the settings relating to images and audio [Image/Audio]
– Configure the settings relating to H.264 images [JPEG / H.264])

H.264(1)	
H.264 transmission	<input checked="" type="radio"/> On <input type="radio"/> Off
Internet mode (over HTTP)	<input type="radio"/> On <input checked="" type="radio"/> Off
Image capture size	3840x2160 ▾
Transmission priority	Frame rate ▾
Frame rate*	15fps * ▾
Burst tolerance level	Low ▾
Control time period	24h ▾
Max bit rate (per client) *	Max 8192kbps * ▾ - Min 3072kbps * ▾
Image quality	Normal ▾
Smart Coding mode	<input checked="" type="radio"/> On <input type="radio"/> Off
Refresh interval	1s ▾
Transmission type	Unicast port (AUTO) ▾
Unicast port1(Image)	32004 (1024-50000)
Unicast port2(Audio)	33004 (1024-50000)
Multicast address	239.192.0.20
Multicast port	37004 (1024-50000)
Multicast TTL/HOPLimit	16 (1-254)

[Smart Coding mode]

You can turn stream transmission adjustment on and off.

This allows you to reduce the amount of data transmitted when there is little motion in the image.

Default: Off

Note

- This setting is available when “Transmission priority” is set to “VBR”.
- When “Smart Coding mode” is set to “On”, the maximum refresh interval becomes 8s.
- When “Smart Coding mode” is changed from “On” to “Off”, the “Refresh interval” setting returns to the “Off” value.
- Turning Smart Coding mode to “On” will make refresh interval variable between 1s and 8s.
If only I-frame is used for playback and display, the display interval will change.

SFV481

- When "8M Fisheye + Double Panorama", "4M Fisheye + Double Panorama", "8M Fisheye + Quad PTZ", "4M Fisheye + Quad PTZ", "Quad stream", "8M Fisheye + Panorama", or "4M Fisheye + Panorama" is selected for “Image capture mode”, “Smart Coding mode” setting is unavailable.

4. Expanded selection for “HTTPS”

(Operating Instructions Configure the network settings [Network]

– How to configure HTTPS settings)

When using HTTPS, a selection of certificate is now available.

A [Execute] button to download the root certificate when using pre-installed certificate is added.

HTTPS	
Connection	HTTP ▾
Select certificate	Pre-installed ▾
HTTPS port	443 (1-65535)
Pre-installed certificate	
Download root certificate	Execute
CA Certificate	
CRT key generate	Execute
Generate Certificate Signing Request	Execute
CA Certificate install	Browse . Execute
Information	Invalid Confirm Delete

■ [HTTPS] – [Select certificate]

Selects a certificate to be used by HTTPS.

Pre-installed : Pre-installed certificate will be selected.

CA : CA Certificate will be selected. It will be displayed only when a CA Certificate is installed.

Default : Pre-installed

Note

- The selection of CA Certificate is only available when the CA Certificate is added.

■ [Pre-installed certificate] – [Download root certificate]

When the [Execute] button is clicked, the pre-installed root certificate will be downloaded.

The signature verification of pre-installed certificate will become available when the root certificate is installed in the PC in use.

Note

- Refer to the Panasonic support website (<http://security.panasonic.com/pss/security/support/info.html>), for how to install the root certificate to the PC.

IMPORTANT

- This function is available with the cameras produced after April, 2016 (Serial No. PDxxxxxx) (when the first digit is alphabet P, Q, R, or later; or the second digit is alphabet D, E, F or later in the case of the first digit is P).

5. Addition of administrator registration window for the first time access and change to default user management values

("Configure the settings relating to the authentication [Usermng.]" - "Configure the settings relating to the user authentication [User auth.]" of the Operating Instructions)

■ Addition of "Administrator registration" window for the first time access

Administrator registration
Enter the user name and password of the administrator.

User name (1 to 32 characters)

Password (8 to 32 characters)

Retype password

Set

Note:

- (1) Distinguish between upper- and lower cases.
- (2) Entry of the following is not allowed as a user name: 2-byte characters, and 1-byte symbols " & ; \
- (3) Entry of the following is not allowed as a password: 2-byte characters, and 1-byte symbols " &
- (4) For the password, use two or more types of characters from alphabetic characters, numbers, and symbols.
- (5) Keep the user name and password at hand so as not to lose.
- (6) It is recommended to change the password periodically.

The "Administrator registration" window will be displayed when accessing a camera for the first time.

(The default of the camera's user authentication setting is On.)

Enter "User name", "Password" and "Retype password" by following the instructions displayed on the screen, and then click the [Set] button.

After completing the registration, the camera will automatically be re-connected and the authentication window will be displayed. Enter the registered user name and password to start operation.

IMPORTANT

- It is recommended to change the password periodically.

■ Made the default values for user name/password unavailable and changed the input characters limitation

The default values for user name/password were abolished in order to enhance the security. The following default values and rules for entering characters have also changed.

[User auth.]

The default has changed from "Off" to "On".

[Password] / [Retype password]

The available number of characters has changed from "4 – 32 characters" to "8 – 32 characters". Also please use at least 2 types of characters (letters, numbers, and symbols).

6. Expansion of [Bandwidth control(bit rate)] selections

("Configuring the network settings [Network]" - "Configure the network settings [Network]" of the Operating Instructions)

Common	
HTTP port	<input type="text" value="80"/> (1-65535)
Line speed	Auto ▾
Max RTP packet size	<input checked="" type="radio"/> Unlimited(1500byte) <input type="radio"/> Limited(1280byte)
HTTP max segment size(MSS)	Unlimited(1460byte) ▾
Bandwidth control(bit rate)	Unlimited ▾
Easy IP Setup accommodate period	<input checked="" type="radio"/> 20min <input type="radio"/> Unlimited
FTP access to camera	<input type="radio"/> Allow <input checked="" type="radio"/> Forbid

[Bandwidth control(bit rate)]

SFV781

Select the total bit rate for data transmission from the following.

Unlimited/ 64 kbps/ 128 kbps/ 256 kbps/ 384 kbps/ 512 kbps/ 768 kbps/ 1024 kbps/ 2048 kbps/
4096 kbps/ 8192 kbps/ 10240 kbps/ 15360 kbps/ 20480 kbps/ 25600 kbps/ 30720 kbps/ 35840 kbps/
40960 kbps/ 51200 kbps

Default : Unlimited

Note

- When selecting "64kbps", select "Off" for "Audio transmission/reception" on the [Audio] tab.
- When "AAC-LC" is selected for "Audio encoding format" on the [Audio] tab, select a larger bit rate here than the bit rate specified on the [Audio] tab.
- Select "128kbps" or a faster rate to carry out the live transmission of JPEG images and the FTP periodic image transmission simultaneously.
- When "Bandwidth control(bit rate)" is set low, taking a picture using the snap shot button may not function depending on the usage environment. In this case, select "JPEG" with the [Compression] button on the "Live" page and take a picture with the snap shot button using the lowest possible image capture size.

SFV481

Select the total bit rate for data transmission from the following.

Selections from 10240 kbps to 51200 kbps were added.

Unlimited/ 64 kbps/ 128 kbps/ 256 kbps/ 384 kbps/ 512 kbps/ 768 kbps/ 1024 kbps/ 2048 kbps/
4096 kbps/ 8192 kbps/ 10240 kbps/ 15360 kbps/ 20480 kbps/ 25600 kbps/ 30720 kbps/ 35840 kbps/
40960 kbps/ 51200 kbps

Default : Unlimited

7. Addition of “On(Mid)” and “On(High)” to [Smart Coding mode] (“Configure the settings relating to images and audio [Image/Audio]” - “Configure the settings relating to the image capture mode [JPEG/H.264]” of the Operating Instructions)

H.264(1)	
H.264 transmission	<input checked="" type="radio"/> On <input type="radio"/> Off
Internet mode (over HTTP)	<input type="radio"/> On <input checked="" type="radio"/> Off
Image capture size	3840x2160
Transmission priority	Frame rate
Frame rate*	15fps*
Burst tolerance level	Low
Control time period	24h
Max bit rate (per client) *	Max 8192kbps* - Min 3072kbps*
Image quality	Normal
Smart Coding mode	Off
Refresh interval	1s
Transmission type	Unicast port (AUTO)
Unicast port1(Image)	32004 (1024-50000)
Unicast port2(Audio)	33004 (1024-50000)
Multicast address	239.192.0.20
Multicast port	37004 (1024-50000)
Multicast TTL/HOPLimit	16 (1-254)

[Smart Coding mode]

“On(Mid)” and “On(High)” were added to the stream transmission adjustment methods.

“On(Low)” is same as “On” of Ver.2.40 or lower.

Off: Smart Coding mode is not used.

On(Low): When there is no movement in the image, the H.264 refresh interval is set to 8 seconds. By doing this the amount of data transmitted can be reduced. When there is movement in the image, the refresh interval is set to 1 second.

On(Mid): When there is no movement in the image, the H.264 refresh interval is set to 8 seconds. When there is movement in the image, the refresh interval is set to 2 seconds.

On(High): Using the Auto-VIQS technology, the amount of data transmitted can be reduced for the areas in images with no movement while keeping the high image quality of areas in the image where there is movement. In the same way as “On(Mid)”, the refresh interval is set to 8 seconds when there is no movement and 2 seconds when there is movement.

Note:

- When “On(High)” is selected for “Smart Coding mode”, VIQS on the [Image] tab of the “Camera” page cannot be used. When VIQS is selected on the [Image] tab, “On(High)” cannot be selected for “Smart Coding mode”.
- While “On(Mid)” or “On(High)” mode is higher effect of reducing amount of data than “On(Low)”, the image quality may be partially degrade.

SFV781

- When “Cropping [16:9](30fps mode)” is selected for “Image capture mode”, “On(High)” cannot be selected for “Smart Coding mode”.

SFV481

- When “8M Fisheye + Double Panorama” or “4M Fisheye + Double Panorama”, “8M Fisheye + Quad PTZ”, “4M Fisheye + Quad PTZ”, “Quad stream”, “8M Fisheye + Panorama”, “4M Fisheye + Panorama” is selected for “Image capture mode”, “On(Low)” or “On(Mid)”, “On(High)” cannot be selected for “Smart Coding mode”.
- When “Quad PTZ” or “Single PTZ”, “On(High)” cannot be selected for “Smart Coding mode”.

8. Change in restrictions on characters for password (Operating Instructions For administrator registration)

Administrator registration
Enter the user name and password of the administrator.

User name (1 to 32 characters)

Password (8 to 32 characters)

Retype password

Note:

- (1) Distinguish between upper- and lower cases.
- (2) Entry of the following is not allowed as a user name: 2-byte characters, and 1-byte symbols " & ; \
- (3) Entry of the following is not allowed as a password: 2-byte characters, and 1-byte symbols " &
- (4) For the password, use three or more types of characters from upper- and lowercase alphabetic characters, numbers, and symbols.
- (5) Keep the user name and password at hand so as not to lose.
- (6) It is recommended to change the password periodically.
- (7) Set the password which does not include the user name.

[Password (8 to 32 characters)]/[Retype password]

Enter the administrator password.

Available number of characters: 8 - 32 characters

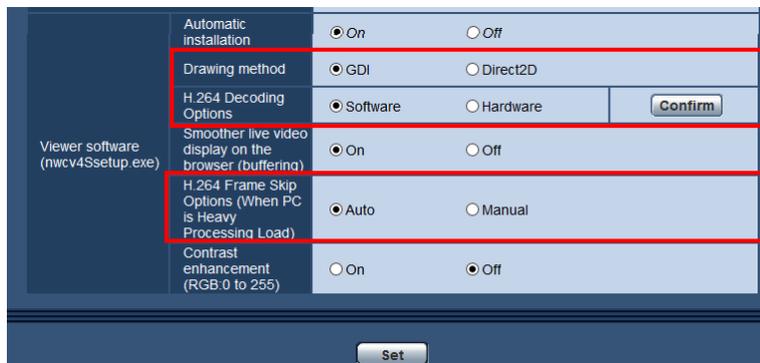
Unavailable characters: 2-byte characters, and 1-byte symbols " &

Note

- Distinguish between upper- and lower cases.
- Use three or more types of characters from upper- and lowercase alphabetic characters, numbers, and symbols.
- Set the password which does not include the user name.

9. [Drawing method], [Decoding Options], [Frame Skip Options (When PC is Heavy Processing Load)] are added to Viewer software

(Operating Instructions Configure the basic settings of the camera [Basic]- Configure the basic settings [Basic])



[Viewer software (nvcv4Ssetup.exe)] - [Drawing method]

Perform image display settings when displaying camera images with the viewer software.

- **GDI:** The drawing method generally used in Windows.
- **Direct2D:** Can reduce choppy drawing of images.
- **Default:** GDI

IMPORTANT

- Use “Direct2D” with a computer that has the latest graphic driver version installed to it.
- When using “Direct2D”, set “Smoother live video display on the browser (buffering)” to “On”.
If “Off” is selected for “Smoother live video display on the browser (buffering)”, “Direct2D” may not be very effective.

Note

- If your computer’s operating system is Windows 7 and the Aero function is disabled, “Direct2D” may not be very effective.
- When “Direct2D” is selected for “Drawing method”, video may not be displayed or the displayed image may be seen as it is partially corrupted depending on the PC in use.
- Refer to the Panasonic support website for information of PCs for which “Direct2D” is selectable.
Panasonic website (<https://security.panasonic.com/support/info/> <Control No.: C0313>)

[Viewer software (nvcv4Ssetup.exe)] - [H.264 Decoding Options]

Select the decoding method for H.264 images on the “Live” page.

- **Software:** Decoding is performed by software.
- **Hardware:** Uses the Hardware Acceleration (QSV/DXVA) function that performs fast decoding.
- **Default:** Software

IMPORTANT

- “Hardware” may not be able to be used depending on the computer used.
One of the following messages is displayed when the [Confirm] button is clicked.
 - The hardware decode is available on your PC.
*Depending on your PC environment, Video output may become impossible. In that case it is necessary to select “Software” for “H.264 Decoding Options”.
 - The hardware decode is not available on your PC. It is necessary to select "Software" for "H.264 Decoding Options".

Note

- When “Hardware” is selected for “Decoding Options”, video may not be displayed or the displayed image may be seen as it is partially corrupted depending on the PC in use.
- Refer to the Panasonic support website below for information of PCs for which “Hardware” is selectable.

Panasonic website (<https://security.panasonic.com/support/info/> <Control No.: C0313>)

[Viewer software (nwcV4Ssetup.exe)] - [Frame Skip Options (When PC is Heavy Processing Load)]

Perform settings to display camera images on the viewer software.

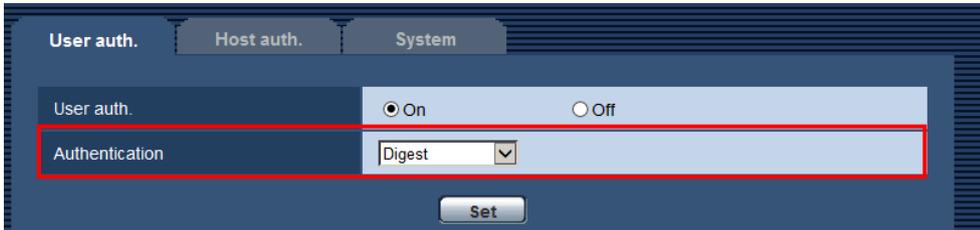
- **Auto:** If there is a delay in displaying images from the camera, the delay can be resolved by automatically skipping frames.
- **Manual:** If there is a delay in displaying images from the camera, frames are not skipped automatically.
- **Default:** Auto

Note

- When “Manual” is selected, “Off”, “1 Frame Skip”, “2 Frames Skip”, “4 Frames Skip”, “6 Frames Skip”, or “8 Frames Skip” can be selected for frame skip by right-clicking on the “Live” page. The value selected here will revert to “Off” when the browser is closed.

10. Change of authentication method default setting

(Operating Instructions Configure the settings relating to the authentication [User mng.] - Configure the settings relating to the user authentication [User auth.]



[Authentication]

Set the user authentication method.

- **Digest or Basic:** Uses “Digest or Basic” authentication.
- **Digest:** Uses “Digest” authentication.
- **Basic:** Uses “Basic” authentication.
- **Default:** Digest

IMPORTANT

■ About the system devices (Panasonic network disk recorder and others)

- When connection with a system device cannot be established, upgrade the system device.
- For information on upgrading system devices, refer to the following web site:
<https://security.panasonic.com/support/info/> <Control No.: C0701>
- Support may already be ended for some system devices (discontinuation). In such a case, it may be possible to connect by setting “Basic” for the authentication method of the user authentication.

11. User authentication function for host authentication is added

(Operating Instructions Configure the settings relating to the authentication [User mng.]- Configure the settings relating to the host authentication [Host auth.]

After the host authentication, execute the user authentication according to the setting of the "User auth." (On/Off) to allow the access subject to the authentication.

The screenshot shows the 'Host auth.' configuration page. It features three tabs: 'User auth.', 'Host auth.', and 'System'. The 'Host auth.' tab is selected. The page is divided into three main sections. The first section, 'Host auth.', has two radio buttons: 'On' and 'Off', with 'Off' being the selected option. A 'Set' button is located below these options. The second section, 'IP address', contains a single-line text input field. The third section, 'Access level', has three radio buttons labeled '1. Administrator', '2. Camera control', and '3. Live only', with '3. Live only' selected. A 'Set' button is positioned below this section. At the bottom of the page, there is a 'Host check' section with a dropdown menu (indicated by a list icon) and a 'Delete' button.

Note

When "On" is set for "User auth.":

The user authentication is required when connecting to this camera using an IP address set as the host authentication.

When "Off" is set for "User auth.":

The user authentication is not required when connecting to this camera using an IP address set as the host authentication.

However, if accessing to the outside of the access level, the user authentication is required.

IMPORTANT

- With the host set by an old version, the user authentication is not required within the access level even if the "User auth." is "On".

For the host set by an old version, asterisk (*) will be displayed at the beginning of the IP address in the "Host check" field.

12. Change of default setting of “Bandwidth control(bit rate)” (Operating Instructions Configuring the network settings [Network]- Configure the network settings [Network])

Change of default setting of “Bandwidth control(bit rate)”

The screenshot shows a network configuration interface with two tabs: 'Network' and 'Advanced'. The 'Advanced' tab is selected. The interface is divided into three sections: IPv4 network, IPv6 network, and Common. The 'Bandwidth control(bit rate)' setting in the Common section is highlighted with a red box and is set to '51200kbps'.

IPv4 network	
Network Settings	Auto(Advanced) ▾
IP address(IPv4)	192 . 168 . 0 . 10
Subnet mask	255 . 255 . 255 . 0
Default gateway	192 . 168 . 0 . 1
DNS	<input checked="" type="radio"/> Auto <input type="radio"/> Manual
Primary server address	0 . 0 . 0 . 0
Secondary server address	0 . 0 . 0 . 0

IPv6 network	
Manual	<input type="radio"/> On <input checked="" type="radio"/> Off
IP address(IPv6)	
Default gateway	
DHCPv6	<input type="radio"/> On <input checked="" type="radio"/> Off
Primary DNS server address	
Secondary DNS server address	

Common	
HTTP port	80 (1-65535)
Line speed	Auto ▾
Max RTP packet size	<input checked="" type="radio"/> Unlimited(1500byte) <input type="radio"/> Limited(1280byte)
HTTP max segment size(MSS)	Unlimited(1460byte) ▾
Bandwidth control(bit rate)	51200kbps ▾
Easy IP Setup accommodate period	<input checked="" type="radio"/> 20min <input type="radio"/> Unlimited
FTP access to camera	<input type="radio"/> Allow <input checked="" type="radio"/> Forbid

[Bandwidth control(bit rate)]

Select the total bit rate for data transmission from the following.

Unlimited/ 64kbps/ 128kbps/ 256kbps/ 384kbps/ 512kbps/ 768kbps/ 1024kbps/ 2048kbps/ 4096kbps/
8192kbps/ 10240kbps/ 15360 kbps/ 20480kbps/ 25600kbps/ 30720kbps/ 35840kbps/ 40960kbps/
51200kbps

- **Default:** 51200kbps

13. Encryption of the settings

(Operating Instructions Maintenance of the camera [Maintenance] - Settings data/backing up or restoring logs [Data])

The screenshot shows the 'Data' menu of a camera's web interface. It is divided into two main sections: 'Backup' and 'Restore'.
Under 'Backup', there are three rows:

- 'Setup data' with an 'Execute' button.
- 'Scene file' with an 'Execute' button.
- 'Logs' with an 'Execute' button.

Under 'Restore', there are three rows:

- 'Setup data' with a 'Browse...' button, two radio button options: 'Restore all settings.' (selected) and 'Restore all settings except the network settings.', and an 'Execute' button.
- 'Scene file' with a 'Browse...' button and an 'Execute' button.

At the bottom, a light blue box contains the text: 'It will take around 2 minutes to complete restoring data. Please wait and do not operate the browser during this process.'

Backup

[Setup data]

Click the [Execute] button to backup the setup data of the camera to a PC.

Note

- The settings backed up after this version of software will be encrypted. Therefore, if using the software of older version, the settings cannot be restored.

14. “Login failure” indication added to the login-related display (Operating Instructions About the displayed system log)

Error indications relating to the login errors

Category	Indication	Description
Login failure	User name	<ul style="list-style-type: none">• The user name that has failed in login will be displayed when “On” is selected for “User auth.”.• If no user is registered, “Guest User” will be displayed.

15. Change in encryption of the settings.

(Operating Instructions Maintenance of the camera [Maintenance] - Settings data/backing up or restoring logs [Data])

The screenshot shows a web interface for camera maintenance. At the top, there are tabs for 'System log', 'Upgrade', 'Status', 'Default reset', and 'Data'. The 'Data' tab is active. Below the tabs, there are two main sections: 'Backup' and 'Restore'. In the 'Backup' section, there are three rows: 'Setup data' with an 'Execute' button, 'Scene file' with an 'Execute' button, and 'Logs' with an 'Execute' button. In the 'Restore' section, there are three rows: 'Setup data' with a file input field, a 'Browse...' button, and two radio button options: 'Restore all settings.' and 'Restore all settings except the network settings.' with an 'Execute' button; 'Scene file' with a file input field, a 'Browse...' button, and an 'Execute' button. A message box at the bottom states: 'It will take around 2 minutes to complete restoring data. Please wait and do not operate the browser during this process.'

Backup

[Setup data]

Click the [Execute] button to backup the setup data of the camera to a PC.

Note

- Encryption of the settings has been changed after this version. Therefore, if you revert the software to the previous version, the settings cannot be restored.