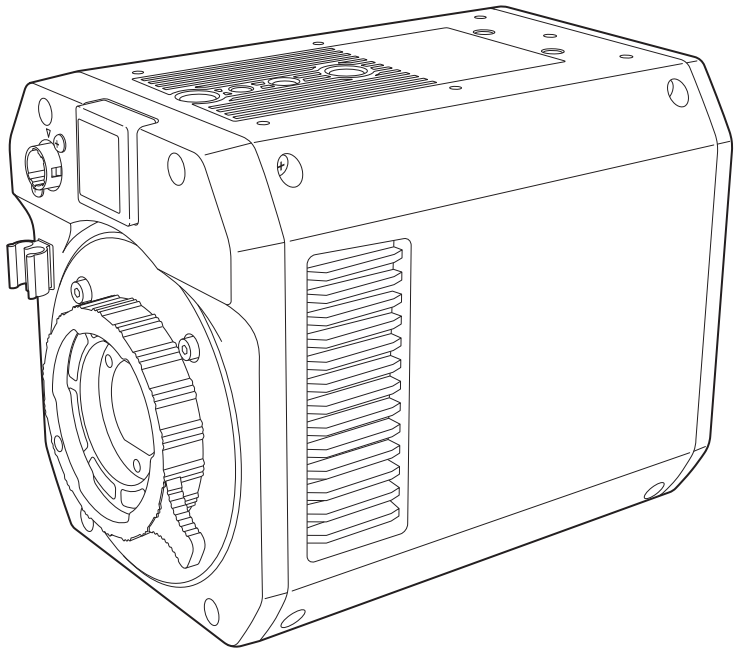
Panasonic

Operating Instructions

4K Multi-purpose Camera

Model No. AK-UBX100G



Before operating this product, please read the instructions carefully and save this manual for future use.
Before using this product, be sure to read “Read this first!” (pages 2 to 5).

W1225YM0 -FJ
Issued in December 2025

ENGLISH
DPQP1726ZA

Read this first!

indicates safety information.

WARNING:

- To reduce the risk of fire or electric shock, do not expose this equipment to rain or moisture.
- To reduce the risk of fire or electric shock, keep this equipment away from all liquids. Use and store only in locations which are not exposed to the risk of dripping or splashing liquids, and do not place any liquid containers on top of the equipment.

WARNING:

Always keep accessories (camera number sheet, mounting screw for wire) out of the reach of babies and small children.

WARNING:

This equipment is compliant with Class A of CISPR 32.
In a residential environment this equipment may cause radio interference.

CAUTION:

To reduce the risk of fire or electric shock and annoying interference, use the recommended accessories only.

CAUTION:

Do not remove panel covers by unscrewing.
To reduce the risk of electric shock, do not remove the covers. No user serviceable parts inside.
Refer servicing to qualified service personnel.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

CAUTION:

Check the installation at least once a year.
An improper installation could cause the unit to fall off resulting in personal injury.

CAUTION:

Do not pick up and move the unit while the tripod is attached.
The fitting may break under the weight of the tripod, which may result in injury.

CAUTION:

Do not leave the unit in direct contact with the skin for long periods of time when in use.
Low temperature burn injuries may be suffered if the high temperature parts of this unit are in direct contact with the skin for long periods of time.
When using the equipment for long periods of time, make use of the tripod.

CAUTION:

Naked flame sources, such as lighted candles, should not be placed on the apparatus.

CAUTION:

A coin type battery is installed inside of the unit.
Do not store the unit in temperatures over 60 ºC (140 ºF).
Do not leave the unit in an automobile exposed to direct sunlight for a long period of time with doors and windows closed.

indicates safety information.

FCC NOTICE (USA)

Supplier's Declaration of Conformity
Model Number: AK-UBX100G
Trade Name: Panasonic
Responsible Party: Panasonic Corporation of North America
Two Riverfront Plaza, Newark, NJ 07102
Support contact: 1-800-524-1448

This device complies with part 15 of the FCC Rules.
Operation is subject to the following two conditions:
(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Note:
This equipment has been tested and found to comply with the limits for a class A digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference when the equipment is operated in a commercial environment. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instruction manual, may cause harmful interference to radio communications. Operation of this equipment in a residential area is likely to cause harmful interference in which case the user will be required to correct the interference at his own expense.

Warning:
To assure continued FCC emission limit compliance, the user must use only shielded interface cables when connecting to external units. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate it.

NOTIFICATION (Canada)

CAN ICES(A)/NMB(A)

For Turkey

AEEE Yönetmeliğine Uygundur.
AEEE Complies with Directive of Turkey.

ІНФОРМАЦІЯ ПРО ПІДТВЕРДЖЕННЯ ВІДПОВІДНОСТІ ПРОДУКТУ

Виробник:	Panasonic Entertainment & Communication Co., Ltd.	Панасонік Ентертейнмент енд Коммюнікейшн Ко., Лтд.
Адреса виробника:	Moriguchi City, Osaka, Japan	Моріґучі Осака Японія
Країна походження:	Japan	Японія

Уповноважений Представник:	ТОВ “ПАНАСОНІК УКРАЇНА ЛТД”
Адреса Уповноваженого Представника:	вул. Васильківська, буд. 30, м. Київ, 03022, Україна

Примітки:

Термін служби виробу	7 років

Дату виготовлення можна визначити за комбінацією букв і цифр серійного номера, що розташований на маркувальній табличці виробу.

Приклад: X X XXXXXXX

Рік: остання цифра року (0 - 2020, 1 - 2021,…9 - 2029)
Місяць: A – Січень, B – Лютий… L – Грудень

Manufactured by:
Panasonic Entertainment & Communication Co., Ltd.
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Importer:
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Importer for UK:
Panasonic Connect UK,
a branch of Panasonic Connect Europe GmbH,
Maxis 2, Western Road, Bracknell, Berkshire, RG12 1RT

TO REMOVE BATTERY

Back-up Battery (Lithium Battery)

- For the removal of the battery for disposal at the end of its service life, please consult your dealer.

WARNING:

THIS PRODUCT CONTAINS A COIN BATTERY

- INGESTION HAZARD: This product contains a button cell or coin battery.
- DEATH or serious injury can occur in 2 hours or less if swallowed or placed inside any part of the body.
- The battery is hazardous, KEEP new and used batteries OUT OF REACH of CHILDREN.
- Seek immediate medical attention if a battery is suspected to be swallowed or inserted inside any part of the body.

Battery recycling symbol (valid only in Taiwan)

臺灣限定的廢電池回收標識。

廢電池請回收

CE

The CE mark covers battery(ies) supplied with the product and that this battery(ies) comply with the requirements of the Battery Regulation (EU) 2023/1542.

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- Transferring, copying, disassembling, decompiling, reverse engineering, and exporting in violation of export laws of any software included with this product are strictly prohibited.

How to read this document

■ Illustrations

- Illustrations of the camera, menu screens, and other items, may vary from the actual products.
- Screenshots are used according to guidelines provided by Microsoft Corporation.

■ Conventions used in this manual

- Words and phrases in [ ] brackets indicate content displayed in the viewfinder or monitor.
- Words and phrases in < > brackets indicate design text used on this camera, such as button names.

■ Reference pages

- Reference pages in this document are indicated by (page 00).

■ Terminology

- Windows® Internet Explorer® 11 32/64-bit is abbreviated to “Internet Explorer”.
- The Remote Operation Panel is referred to as “ROP”.

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Chapter 1 Overview

Before using the camera, read this chapter.

Before using the camera

■ Use appropriate lighting when shooting to capture images with clear color

- To make the color of images clear, use appropriate lighting for shooting.
- Colors may not be reproduced correctly under fluorescent lighting. Select appropriate lighting as necessary.
- Use the ND filter in excessively bright locations.

■ Turn off the power before connecting or disconnecting the cables

- Turn off the power of the devices before connecting or disconnecting the cables.

■ Handling of the camera

- Do not drop or add strong impact or vibration to the camera. Doing so may lead to failure.

■ Do not touch optical system parts

- The optical system parts are the “life” of the camera. Do not touch the optical systems on occasions such as when the lens is removed. In the event that dust has adhered, use a blower for cameras or lens cleaning paper to gently remove the dust.

■ Do not shoot images toward sunlight or a laser beam

- Shooting toward sunlight or a laser beam for a long period of time may result in damage of the MOS.

■ When using the camera in rain or snow, or on a beach or shore

- Prevent water from splashing on or entering the camera.

■ Humidity and dust

- The internal parts of the camera are more easily damaged in humid and dusty locations. Avoid such locations.

■ Temperature range for use

- Using the camera under the following conditions may have negative effects on the image quality or internal parts of the camera.
  Cold places where the temperature is –10 °C (14 °F) or below
  Hot places where the temperature is 45 °C (113 °F) or above
- Preheating is required in a low-temperature environment. Confirm ⚠ display is not lit before using the camera.

■ Cleaning

- Turn off the power and clean the camera with a dry cloth. If the dust cannot be removed with a dry cloth, try soaking the cloth with kitchen detergent to gently wipe off the dust.
- Use lens cleaning paper (for use with glasses or cameras) when cleaning the lens.

■ Cooling fan

- The camera has an internal cooling fan.
- The cooling fan is a consumable supply. Be sure to contact your dealer for the replacement.

■ Peripheral devices and software

- The software of the peripheral device that is connected to the camera may require updating.
- For details, contact your dealer.

■ Information on software used with this product

- This product includes GNU General Public License (GPL) and GNU Lesser General Public License (LGPL) licensed software, and the customer is entitled to obtain, modify, or redistribute the source code for the software.
  This product includes MIT Licensed software.
  This product includes BSD Licensed software.
  For details on obtaining the source codes, visit the following website.
  https://pro-av.panasonic.net/en/
  However, do not contact Panasonic for questions regarding obtained source codes.

Notes

Required environment for computer

CPU	7th Generation Intel® Core™ (Kaby Lake or later) recommended
Memory	**For Windows:** 4 GB or more **For Mac:** 4 GB or more
Network function	100BASE-T/TX or 1000BASE-T, RJ-45 connector
Image display	Resolution: 1920 × 1080 pixels or more Color generation: True Color 24-bit or more
Supported operating systems and web browsers	**For Windows:** Microsoft® Windows® 11 Microsoft® Windows® 10 Microsoft Edge (most recent version) Google Chrome
	For Mac: macOS15 macOS14 macOS13 Safari Google Chrome

IMPORTANT

- **Failure to provide the required personal computer environment may slow down the delineation of the images on the screen, make it impossible for the web browser to work and cause other kinds of problems.**

NOTE

- Depending on the software version of the unit, an update may be necessary.
- For the latest information on compatible operating systems and web browsers, visit the support page at the following website.
  https://pro-av.panasonic.net/en/

Disclaimer

In any case, Panasonic will not liable for any of the following:

- Incidental, special, or consequential damage or harm caused directly or indirectly in regard to the camera
- Trouble or malfunctions caused by the misuse or careless use of a user
- Disassembly, repair, or modification of the camera performed by a user
- Inconvenience, damage, or harm arising from the inability to display images as a result of any reason or cause including failure or malfunction of the camera
- Malfunctions arising from a system that has been combined with a third party device or any inconvenience, damage, or harm caused as a result thereof
- Inconvenience, damage, or harm caused by such as improper installation or any reason other than a defect of the camera
- Any loss of stored information due to any reason
- Any damage or claim regarding loss or leakage of image data or setting data saved in the camera or computer

Notes regarding network

As the unit intended to be used while connected to a network, the following security risks exist.

1. Leakage or theft of information through the unit
2. Unauthorized operation of the unit by persons with malicious intent
3. Interference with or stoppage of the unit by persons with malicious intent

It is your responsibility to take precautions, such as those described below, to protect yourself against the above network security risks. Panasonic does not accept any responsibility for damage of this type.

- Use the unit in a network secured by a firewall, etc.
- If the unit is connected to a network that includes personal computers, make sure that the system is not infected by computer viruses or other malicious programs (using a regularly updated antivirus program, anti-spyware program, etc.).
- Protect your network against unauthorized access by restricting users to those who log in with an authorized user name and password.
- After accessing the unit as an administrator, be sure to close all web browsers.
- Change the administrator password periodically.
- To avoid passwords that can be guessed easily by third parties, set a password of at least 8 characters in length, including at least 3 different types of characters, such as upper case, lower case, numbers, and symbols.
- Restrict access to the unit by authenticating the users, for example, to prevent setting information stored on the unit from leaking over the network.
- Do not install the unit in locations where the unit, cables, and other parts can be easily damaged or destroyed by persons with malicious intent.
- Avoid connections that use public lines.

NOTE

Notes on user authentication

- User authentication on the unit can performed via digest authentication or basic authentication. If basic authentication is used without the use of a dedicated authentication device, password leaks may occur.
  We recommend using digest authentication or host authentication.

Usage restrictions

- We recommend connecting the unit, controller, and any computers to the same network segment.
  Events based on settings inherent to the network devices, for example, may occur in connections that include different segments, so be sure to perform checks prior to operation.
- When using the ROP, set [Wait time mode] to [Mode2] when using digest authentication. (page 111)
  Smooth operation may be diminished when [Wait time mode] is set to [Mode1].

Using the camera in a system

An example of a standard system configured with the 4K Multi-purpose Camera (AK-UBX100G) and peripheral devices is as follows.
For details on the connected devices, refer to the Operating Instructions of each device.
Refer to the following website for the latest information other than the information described in the Operating Instructions.
https://pro-av.panasonic.net/en/

Basic configuration devices

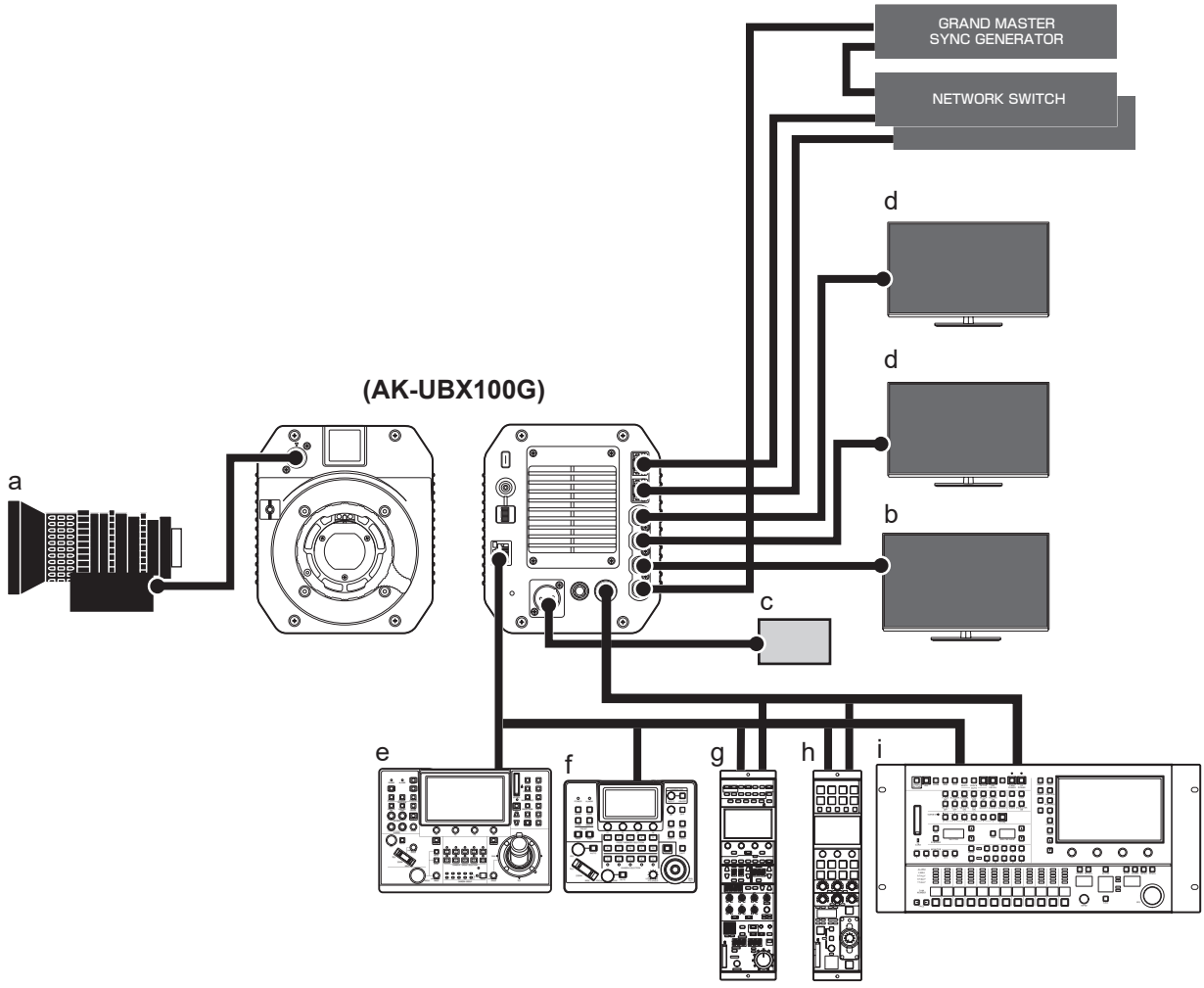
The following are the basic configuration devices of this camera, such as lens.

Part name	Part No.	Remark
Lens	FUJINON/CANON	—
Remote camera controller	AW-RP60N/AW-RP60E/AW-RP150G	This is the controller to control this camera and the pan/tilt head.
Remote operation panel (ROP)	AK-HRP1010G/AK-HRP1015G	This is the controller to control this camera.
Master setup unit	AK-MSU1000G	This is the controller to control this camera.

System block diagram

One-to-one configuration

This is the configuration to connect one AK-UBX100G and one remote camera controller or the remote operation panel (ROP).



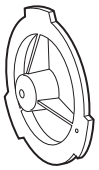
a: Remote control lens
b: HD monitor (for HD monitor)
c: External DC power supply
d: UHD/HD monitor (for UHD/HD main line)
e: AW-RP150G
f: AW-RP60N/AW-RP60E
g: AK-HRP1010G
h: AK-HRP1015G
i: AK-MSU1000G

NOTE

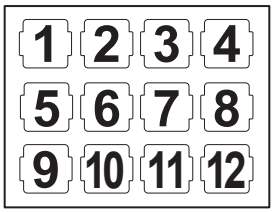
- Pressing the <MENU> button will display the menu in the output from the <HD SDI OUT> terminal.

Accessories

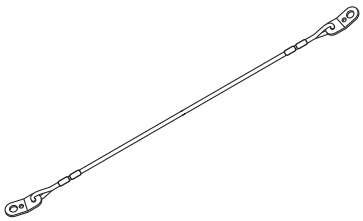
Mount cap (already attached to the product)



Camera number sheet (1 to 12)



Drop prevention wire (x 1)



Product side wire mounting screw (XYN4+J10FJK) (x 1) (already attached to the product)

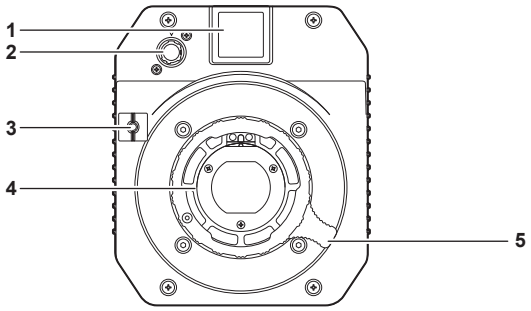
NOTE

- Properly dispose of the packaging materials after unboxing the product.

Chapter 2 Description of Parts

This chapter describes the names of the parts, functions, and operations of this camera.

Front side



1 Front tally lamp
Lights up when the tally signal is supplied.
Blinks red when indicating warnings or during firmware updates.
A camera number sheet can be attached to the front.

NOTE

- The brightness can be set with [ALL MENU] → [BASIC CONFIG] → [TALLY] → [FRONT TALLY]. Blinks in red [LOW] regardless of setting during the firmware update.

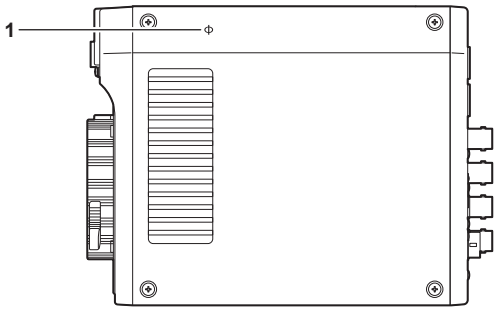
2 <LENS> terminal
Used to connect the lens cable.

3 Lens cable clamp
This clamp is used to secure the lens cable.

4 Lens mount (2/3 type bayonet)
This is where the lens is mounted.

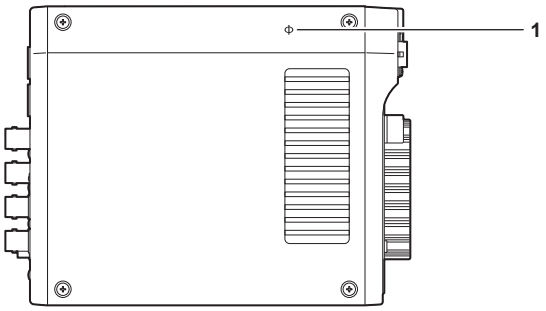
5 Lens fixing lever
Fix the lens by turning the lever clockwise after mounting the lens to the lens mount.

Left side



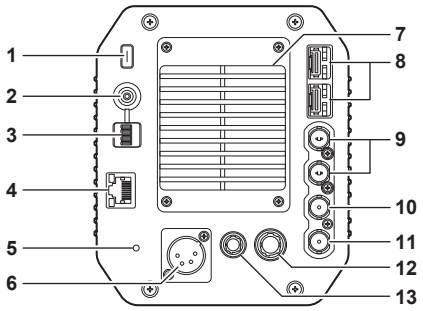
1 <ϕ> mark
Indicates the imaging plane inside the camera.

Right side



1 <ϕ> mark
Indicates the imaging plane inside the camera.

Rear side



1 Back tally lamp
Lights up when the tally signal is supplied.
Blinks red when indicating warnings or during firmware updates.

NOTE

- The brightness can be set with [ALL MENU] → [BASIC CONFIG] → [TALLY] → [BACK TALLY]. Blinks in red [LOW] regardless of setting during the firmware update.

2 <MENU> button
Press this button to display the camera's [ALL MENU] screen.
Press the button again to return to the original image.

3 Jog dial button
This will perform the navigation of setting menu pages, and selection or setting of the item when the setting menu is displayed.
The cursor will move down when the jog dial button is turned downward. The cursor will move up when turned upward.
Press the jog dial button to fix the settings.

4 <LAN> terminal
Used to connect the LAN cable.

NOTE

- Use a shielded cable when connecting a cable to the <LAN> terminal.

5 <DC IN> lamp
This will illuminate in green when power is supplied to the camera.

6 <DC IN> terminal
This is an input terminal for the external DC power supply. Connects to the external DC power supply. (DC 11 V to 17 V)

7 Cooling fan
This is the fan for cooling the unit.

8 <SFP+/28 1>/<SFP+/28 2> slots
These slots are for the ST2110 output transceiver.

9 <12G SDI OUT 1>/<12G SDI OUT 2> terminal
These are the UHD and HD SDI main line output terminals.

NOTE

- Use a cable for 12G SDI.

10 <HD SDI OUT> terminal
This is the monitor output terminal dedicated for HD SDI.

NOTE

- Use a cable that is 5C-FB or above.

11 <G/L IN> terminal
This is the reference signal input terminal when applying external synchronization to the camera.

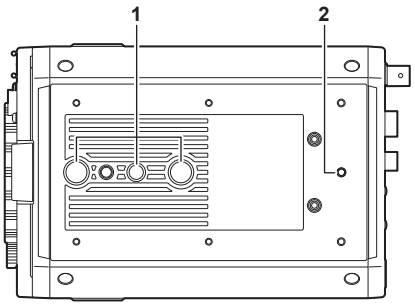
NOTE

- Supply a composite signal (black burst) or a tri-level SYNC as the input signal.

12 <REMOTE> terminal
Used to connect the remote control unit (optional) which can control some of the functions.

13 <TALLY OUT> terminal
Outputs R tally and G tally.

Upper side



1 Mounting screw holes

This is used when installing in a camera housing, etc.

- Mounting hole size
  - 1/4-20 UNC (Tripod screw) (x 1)
  - 3/8-16 UNC (Tripod screw) (x 2)
  - M3 screw (x 6)

NOTE

- Depth of the screw hole is 9 mm. Use mounting screws 9 mm or shorter.

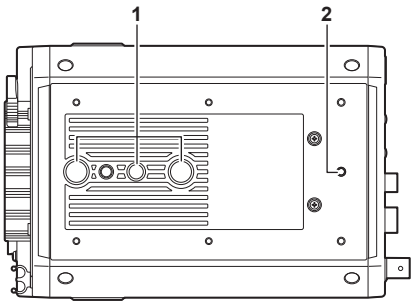
2 Drop prevention wire mounting screw hole

- Mounting hole size
  - M4

NOTE

- The wire mounting screw has been attached to the product.
  It can be removed if you will not be using the drop prevention wire. Keep it somewhere safe if you do remove it.

Bottom side



1 Mounting screw holes

This is used when installing in the camera housing, or attaching the pan/tilt head or the tripod.

- Mounting hole size
  - 1/4-20 UNC (Tripod screw) (x 1)
  - 3/8-16 UNC (Tripod screw) (x 2)
  - M3 screw (x 6)

NOTE

- Depth of the screw hole is 9 mm. Use mounting screws 9 mm or shorter.

2 Drop prevention wire mounting screw hole

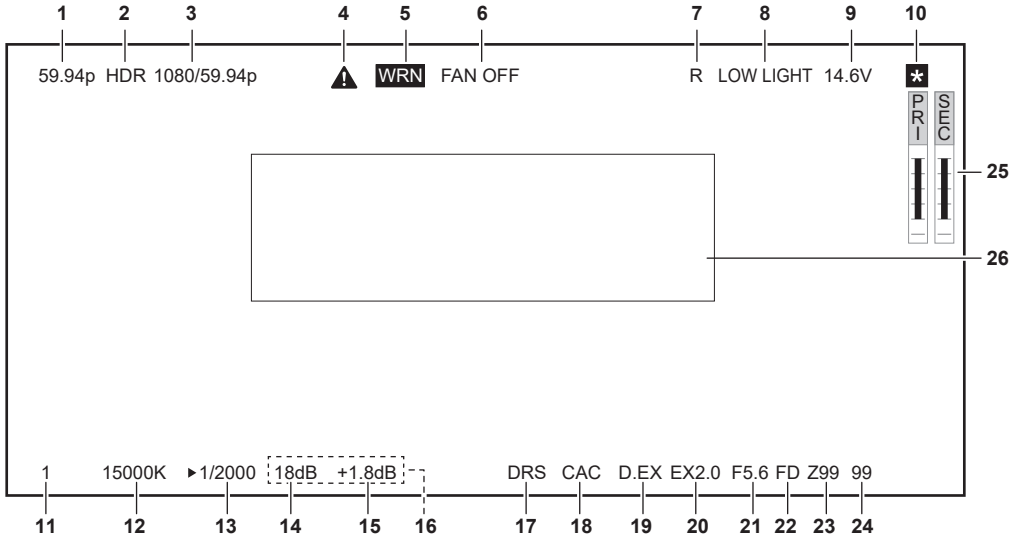
- Mounting hole size
  - M4

Chapter 3 Operation

This chapter describes the operation of this camera.

On-screen displays of the monitor

The setting and the operation status of the 4K Multi-purpose Camera are displayed in the monitor screen.
All items that can be displayed are located as follows.



1 Sensor rate display
Indicates the camera image mode.
- [59.94p]
- [50p]
- [29.97p]
- [25p]
- [23.98p]

The [FPS] value is shown when [BASIC CONFIG] – [FPS SW] is [ON].
- [60p]
- [30p]
- [24p]

2 HDR/V-LOG mode display
Displayed when the format is HDR or V-LOG.
- [HDR]
- [V-LOG]

3 System mode display
Indicates the system frequency.
- [2160/59.94p]
- [2160/50p]
- [2160/29.97p]
- [2160/25p]
- [2160/23.98p]
- [1080/59.94p]
- [1080/50p]
- [1080/29.97p]
- [1080/25p]
- [1080/23.98p]

4 Warning display (preheating)
Displayed when the device is being preheated at startup due to low temperature inside the device.

5 Warning display (device)
Displayed when there is an abnormality with the condition of the device.
- The fan stops abnormally.
- Internal temperature becomes high.
- The voltage of the power source is wrong.

The display cannot be hidden.

6 Warning display (fan stopped)
Displayed when the fan is stopped.

7 TALLY (RGY) display

R, G, and Y TALLY are each displayed independently.

- [R]
- [G]
- [Y]

8 High-sensitivity mode display

Displayed when [ALL MENU] → [BASIC CONFIG] → [SHOOTING MODE] → [LOW LIGHT] is set.

9 Voltage display

Indicates the voltage coming in from the power supply.

10 Focus assist magnification display

The focus assist magnification display function is displayed while active.

11 ND filter display

Indicates the selected ND filter value.

- [1]
- [2]
- [3]
- [4]
- [5]

12 Color temperature display

Indicates the color temperature that is set on the camera.
This can be either the memory value when automatic white balance is performed or the value configured in the menu.

13 Shutter speed display

Indicates the shutter speed in accordance with each setting.
This is displayed as time (a fraction) when [ALL MENU] → [PAINT] → [SHUTTER SPEED] → [SHUTTER DISP] is set to [sec], and as aperture angle when set to [deg].
When the display is [sec]
When [ALL MENU] → [PAINT] → [SHUTTER SPEED] → [SHUTTER SW] → [ON] is set, and also [ALL MENU] → [PAINT] → [SHUTTER SPEED] → [SHUTTER MODE] → [STEP] is set

- [1/48] (in [23.98p] mode only)
- [1/50] (in [25p] mode only)
- [1/60] (in [50i]/[50p]/[29.97p]/[25p]/[23.98p] mode only)
- [1/96] (in [29.97p]/[25p]/[23.98p] mode only)
- [1/100] (not available in HS mode)
- [1/120] (in [59.94i]/[59.94p]/[29.97p]/[23.98p] mode only)
- [1/125]
- [1/250]
- [1/500]
- [1/1000]
- [1/1500]
- [1/2000]

When [ALL MENU] → [PAINT] → [SHUTTER SPEED] → [SHUTTER SW] → [ON] is set, and also [ALL MENU] → [PAINT] → [SHUTTER SPEED] → [SHUTTER MODE] → [SYNCHRO] is set

- [60.0Hz] to [7200Hz] (in [59.94i]/[59.94p] mode only)
- [50.0Hz] to [7200Hz] (in [50i]/[50p] mode only)
- [30.0Hz] to [7200Hz] (in [29.97p] mode only)
- [25.0Hz] to [7200Hz] (in [25p] mode only)
- [24.0Hz] to [7200Hz] (in [23.98p] mode only)

When the display is [deg]

- [3.0d] to [357.0d]

When [ALL MENU] → [PAINT] → [SHUTTER SPEED] → [SHUTTER SW] → [OFF] is set

- [SH.OFF]

14 Master gain display

When [ALL MENU] → [PAINT] → [GAIN SETTING] → [GAIN/ISO MODE] → [dB], the value set in [ALL MENU] → [PAINT] → [GAIN SETTING] → [GAIN] is displayed.

- [–6dB] to [18dB]

15 Offset gain display

When [ALL MENU] → [PAINT] → [GAIN SETTING] → [GAIN/ISO MODE] → [dB], the value set in [ALL MENU] → [PAINT] → [GAIN SETTING] → [OFFSET GAIN] is displayed.

- [–2.9dB] to [+2.9dB]

16 ISO display

Displayed when [ALL MENU] → [PAINT] → [GAIN SETTING] → [GAIN/ISO MODE] → [ISO] is set.

- [ISO 400], [ISO 500], [ISO 640], [ISO 800], [ISO 1000], [ISO 1250], [ISO 1600], [ISO 2000], [ISO 2500], [ISO 3200], [ISO 4000], [ISO 5000], [ISO 6400], [ISO 8000], [ISO 10000], [ISO 12800]

NOTE

- The master gain display and the offset gain display cannot be shown together.

17 Dynamic range stretcher display

Displayed when the dynamic range stretcher function is active.

18 Chromatic aberration compensation display

Displayed when the chromatic aberration compensation function is active.

19 Digital extender display

Displayed when the digital extender is being used.

20 Lens extender display

Displayed when the lens extender is being used.

21 Iris display

Indicates the iris setting value (F value) or [OPEN]/[CLOSE]. The F value is an approximate value.
[NC] is displayed when the lens cable is not connected.

22 F drop display

Displayed when the F drop has occurred.

NOTE

- The display may not be supported depending on the lens model.
  For details, consult the lens manufacturer.

23 Zoom position display

Indicates the zoom position.

- [Z00] to [Z99]

NOTE

- The zoom position is displayed when using a lens having a zoom position output.

24 Focus position display

Indicates the focus position.

- [00] to [99]: Displayed when [ALL MENU] → [DISPLAY SETUP] → [STATUS INDICATOR]→ [FOCUS DISP] → [NUMBER] is set.
- [***.*ft]: Displayed when [ALL MENU] → [DISPLAY SETUP] → [STATUS INDICATOR]→ [FOCUS DISP] → [FEET] is set.
- [***.*m]: Displayed when [ALL MENU] → [DISPLAY SETUP]→ [STATUS INDICATOR]→ [FOCUS DISP] → [METER] is set.

NOTE

- The focus position is displayed when using a lens having a focus position output.

25 Optical level display

Indicates the level of the optical signals the camera will receive.
Indicates the received level for the SFP 1 terminal (display is [PRI])/SFP 2 terminal (display is [SEC]).

26 Camera warning and information display area

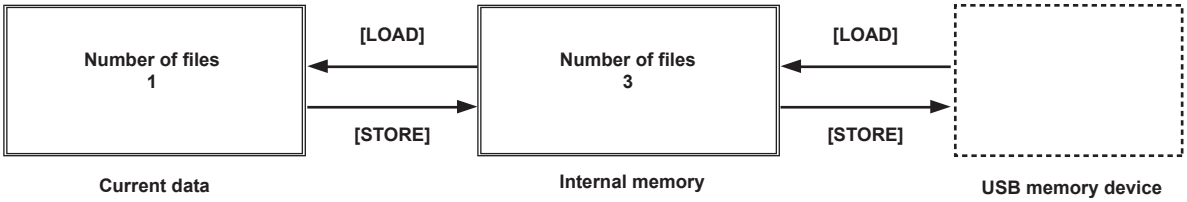
Displays a message indicating the occurrence of an error, the camera settings, the progress made in the adjustments, or the adjustment results for about three seconds.

Data

The following shows the data handled in the camera.

Managed system component	Name	Quantity	Description
Camera	User file	1 - 3	These files contain equipment configuration data held by the camera, set in [ALL MENU]. The data is managed by the camera. It can be saved or loaded by [ALL MENU] → [FILES] → [USER FILE].
	Lens file	1 - 32	These files contain data used by video engineers to correct characteristics specific to each lens. The data is managed by the camera. It can be saved or loaded by [ALL MENU] → [MAINTENANCE] → [LENS FILE ADJUST].
	Scene file	1 - 8	These files which contain data for creating pictures are handled mainly by video engineers. The data is managed by the camera. It can be saved or loaded by [ALL MENU] → [FILES] → [SCENE FILE].
	Operation file	1	These files which contain operation data are handled mainly by camera operators. The data is managed by the camera. It can be saved or loaded in the [Maintenance] – [Backup] of the web setup screen [Setup].
	Reference file	1 - 3	These files contain data excluding the operation data from the equipment configuration data. The data is managed by the camera. It can be saved or loaded by [ALL MENU] → [FILES] → [REFERENCE FILE].

User file



Adjustment for shooting

Genlock adjustment

External reference signal format

The external reference signal formats that each system format can apply genlock are as follows.

Genlock cannot be applied when there is no external reference signal input into the <G/L IN> terminal.

- ✓: Can lock.
- —: Cannot lock.

[BASIC CONFIG]	Input signal into the <G/L IN> terminal					
[FORMAT]	1080/59.94i	1080/50i	1080/23.98p	1080/23.98PsF	525/59.94i	625/50i
[2160/59.94p]	✓	—	—	—	✓	—
[2160/29.97p]	✓	—	—	—	✓	—
[2160/23.98p]	—	—	✓	✓	—	—
[1080/23.98p]	—	—	✓	✓	—	—
[1080/59.94p]	✓	—	—	—	✓	—
[1080/29.97p]	✓	—	—	—	✓	—
[2160/50p]	—	✓	—	—	—	✓
[2160/25p]	—	✓	—	—	—	✓
[1080/50p]	—	✓	—	—	—	✓
[1080/25p]	—	✓	—	—	—	✓

Multi-formats

List of output formats (<12G SDI OUT 1>/<12G SDI OUT 2> terminals)

[FORMAT]	[12G SDI OUT1]/[12G SDI OUT2] [FORMAT SELECT]	<12G SDI OUT 1>/<12G SDI OUT 2> terminal
[2160/59.94p]	[2160p]	2160/59.94p
	[1080p]	1080/59.94p
	[1080i]	1080/59.94i
[2160/29.97p]	[2160p]	2160/29.97p
	[1080p]	1080/29.97p
[2160/23.98p]	[2160p]	2160/23.98p
	[1080p]	1080/23.98p
[1080/59.94p]	[1080p]	1080/59.94p
	[1080i]	1080/59.94i
[1080/29.97p]	[1080p]	1080/29.97p
[1080/23.98p]	[1080p]	1080/23.98p
[2160/50p]	[2160p]	2160/50p
	[1080p]	1080/50p
	[1080i]	1080/50i
[2160/25p]	[2160p]	2160/25p
	[1080p]	1080/25p
[1080/50p]	[1080p]	1080/50p
	[1080i]	1080/50i
[1080/25p]	[1080p]	1080/25p

List of output formats (<HD SDI OUT> terminal)

[FORMAT]	[HD SDI OUT] [FORMAT SELECT]	<HD SDI OUT> terminal
[2160/59.94p]	[1080p]	1080/59.94p
	[1080i]	1080/59.94i
[2160/29.97p]	[1080p]	1080/29.97p
[2160/23.98p]	[1080p]	1080/23.98p
[1080/59.94p]	[1080p]	1080/59.94p
	[1080i]	1080/59.94i
[1080/29.97p]	[1080p]	1080/29.97p
[1080/23.98p]	[1080p]	1080/23.98p
[2160/50p]	[1080p]	1080/50p
	[1080i]	1080/50i
[2160/25p]	[1080p]	1080/25p
[1080/50p]	[1080p]	1080/50p
	[1080i]	1080/50i
[1080/25p]	[1080p]	1080/25p

List of output formats (ST2110 MAIN VIDEO TX)

[FORMAT]	[OPT MODE]	[MAIN VIDEO TX] [FORMAT]	MAIN VIDEO TX
[2160/59.94p]	[ST2110_25G]	[2160/59.94p]	2160/59.94p
	[ST2110_10G]	[1080/59.94p]	1080/59.94p
[2160/29.97p]	[ST2110_25G]	[2160/29.97p]	2160/29.97p
	[ST2110_10G]	[1080/29.97p]	1080/29.97p
[2160/23.98p]	[ST2110_25G]	[2160/23.98p]	2160/23.98p
	[ST2110_10G]	[1080/23.98p]	1080/23.98p
[1080/59.94p]	[ST2110_25G]	[1080/59.94p]	1080/59.94p
		[1080/59.94i]	1080/59.94i
	[ST2110_10G]	[1080/59.94p]	1080/59.94p
		[1080/59.94i]	1080/59.94i
[1080/29.97p]	[ST2110_25G]	[1080/29.97p]	1080/29.97p
	[ST2110_10G]	[1080/29.97p]	1080/29.97p
[1080/23.98p]	[ST2110_25G]	[1080/23.98p]	1080/23.98p
	[ST2110_10G]	[1080/23.98p]	1080/23.98p
[2160/50p]	[ST2110_25G]	[2160/50p]	2160/50p
	[ST2110_10G]	[1080/50p]	1080/50p
[2160/25p]	[ST2110_25G]	[2160/25p]	2160/25p
	[ST2110_10G]	[1080/25p]	1080/25p
[1080/50p]	[ST2110_25G]	[1080/50p]	1080/50p
		[1080/50i]	1080/50i
	[ST2110_10G]	[1080/50p]	1080/50p
		[1080/50i]	1080/50i

List of output formats (ST2110 MONI VIDEO TX)

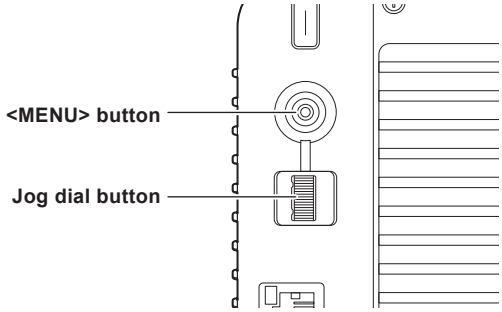
[FORMAT]	[HD SDI OUT] [FORMAT SELECT]	MoIP MONI VIDEO TX
[2160/59.94p]	[1080p]	1080/59.94p
	[1080i]	1080/59.94i
[2160/29.97p]	[1080p]	1080/29.97p
[2160/23.98p]	[1080p]	1080/23.98p
[1080/59.94p]	[1080p]	1080/59.94p
	[1080i]	1080/59.94i
[1080/29.97p]	[1080p]	1080/29.97p
[1080/23.98p]	[1080p]	1080/23.98p
[2160/50p]	[1080p]	1080/50p
	[1080i]	1080/50i
[2160/25p]	[1080p]	1080/25p
[1080/50p]	[1080p]	1080/50p
	[1080i]	1080/50i
[1080/25p]	[1080p]	1080/25p

Chapter 4 Menu Operations

This chapter describes how to operate the camera menus and the structure and details of the setting menu.

Menu operations

Basic operations



1 Press the <MENU> button.

The [ALL MENU] of the camera is displayed in the image output from the <HD SDI OUT> terminal.

2 Turn the jog dial button to select an item.

3 Press the jog dial button.

The menu of the selected item is accessed.

4 Turn the jog dial button to select an item.

5 Press the jog dial button.

The menu of the selected item is accessed.

6 Turn the jog dial button to select a menu item to configure.

7 Press the jog dial button.

The setting of the item indicated by the arrow flashes.

8 Turn the jog dial button to change the setting.

9 Press the jog dial button.

The setting is confirmed.
Pressing the <MENU> button to exit the menu screen also reflects the setting.

Entering characters

1 Press the jog dial button.

The cursor changes to arrow pointing down, and the cursor can be moved to next character (previous character) by turning the jog dial button.

2 Turn the jog dial button to move the arrow over the character to be changed.

3 Press the jog dial button.

The character to be changed flashes.

4 Turn the jog dial button to change the character.

5 Press the jog dial button.

The setting is confirmed.
Perform the same operation for all characters to be changed.

6 Turn the jog dial button to move the arrow cursor to beginning of the menu items.

7 Press the jog dial button.

The cursor changes to a horizontal arrow and another item can be selected.

Menu configuration

[ALL MENU]

BASIC CONFIG	Set basic configuration items for the camera (system configuration items).
NETWORK	Set basic configuration items related to networks.
OUTPUT	Set items for the various output connectors.
IP SIGNAL	Set items related to IP related image/audio output.
PAINT	Set items related to camera images.
LENS	Set items related to lenses.
DISPLAY SETUP	Set items for status indicators/indication displays, etc.
TRACKING DATA OUTPUT	Set items related to tracking data output.
FILES	Set items related to SCENE file or the USB memory device.
MAINTENANCE	Set items related to maintenance.

NOTE

- Immediately after turning on the power, the unit is starting up, so some menu items cannot be selected. This is not an error. Perform operation after a while.
- Setting values may not be updated if you turn the power off immediately after making changes to menu settings. Turn the power off after waiting 10 seconds or more after making the settings to ensure the values are updated.

Menu list

S: Can be saved and loaded as a scene file data.
U: Can be saved and loaded as a user file data.
O: Can be saved and loaded as an operation file data.
R: Can be saved and loaded as a reference file data.
N: Can be saved and loaded as a network file data.

[BASIC CONFIG]

[FREQUENCY] cannot be selected right after the power is turned on, because boot of the camera is in progress.
This is not an error. Perform operation after a while.

Item	Description of settings
[FREQUENCY]	Sets the system frequency. **[59.94Hz], [50Hz]** • Factory setting: [59.94Hz]
[FORMAT]	Sets the system format. **[2160/59.94p], [2160/29.97p], [2160/23.98p], [1080/59.94p], [1080/29.97p], [1080/23.98p], [2160/50p], [2160/25p], [1080/50p], [1080/25p]** • Factory setting: [2160/59.94p]
[FPS SW]	Enables/disables the FPS function. **[OFF], [ON]** • Factory setting: [OFF] ***NOTE*** ・This can be set only when [FORMAT] is [2160/59.94p] or [1080/59.94p].
[FPS]	Set the frame rate of the MOS sensor when [FPS SW] is [ON]. **[60], [30], [24]** • Factory setting: [60]
[OPT MODE]	Sets the OPT mode. **[ST2110_25G], [ST2110_10G]** • Factory setting: [ST2110_25G]
[SFP FEC]	Enables/disables the error correcting function of SFP mode. **[25G-FEC], [25G]** • Factory setting: [25G-FEC]
[V-LOG] U R	Enables/disables the V-LOG mode. **[OFF]:** Enables fine image quality adjustments from the camera as with previous studio cameras. **[ON]:** Uses a gamma curve which can achieve a wide range of tone and exposure. Color grading will be necessary after shooting. • Factory setting: [OFF] ***NOTE*** ・[V-LOG] cannot be selected when [HDR] is [ON].
[V-LOG PAINT SW] U R	Selects whether to make it possible to make settings in the [PAINT] menu when [V-LOG] is [ON]. **[OFF], [ON]** • Factory setting: [OFF] ***NOTE*** Even if [V-LOG PAINT SW] is set to [ON], the following functions cannot be set. ・[GAMMA], [GAMMA MODE SELECT], [MASTER GAMMA], [R GAMMA], [B GAMMA], and [INITIAL GAMMA] in [GAMMA/BLACK GAMMA] ・[DRS] and [EFFECT DEPTH] in [DRS] ・[PRESET MATRIX] in [LINEAR MATRIX] ・[PRESET MATRIX] in [COLOR CORRECTION]
[HDR] U R	Enables/disables the HDR mode. **[OFF], [ON]** • Factory setting: [OFF] ***NOTE*** ・[HDR] cannot be selected when [V-LOG] is [ON].
[GAMUT] U R	Change the color gamut when [HDR] is [ON]. **[NORMAL], [WIDE_G2]** • Factory setting: [NORMAL]
[SHOOTING MODE] U R	Sets the shooting mode. **[NORMAL], [LOW LIGHT]** • Factory setting: [NORMAL]

Item		Description of settings
[COLOR BAR SETTING] U R	[COLOR BAR SW]	Enables/disables the color bar function.
	[COLOR BAR TYPE]	Sets the type of color bar to display. **[TYPE1]:** SMPTE **[TYPE2]:** FULL **[TYPE3]:** ARIB (FHD) **[TYPE4]:** ARIB (UHD) **[TYPE5]:** ARIB (BT.2020/HLG) ● Factory setting: [TYPE1] ***NOTE*** ・Color bars of IP transmissions (H.264/H.265/M-JPEG) do not conform with SMPTE. ・With [TYPE4]/[TYPE5], the 709 format is used for output when using a 709 setting.
[TALLY]	[FRONT TALLY] U R	Enables/disables the front tally. **[ENABLE], [DISABLE]** ● Factory setting: [ENABLE]
	[BACK TALLY] U R	Enables/disables the back tally. **[ENABLE], [DISABLE]** ● Factory setting: [ENABLE]
	[FRONT TALLY BRIGHTNESS] U R	Sets the brightness of the front tally. **[LOW], [HIGH]** ● Factory setting: [LOW]
	[BACK TALLY BRIGHTNESS] U R	Sets the brightness of the back tally. **[LOW], [HIGH]** ● Factory setting: [LOW]
	[TALLY GUARD] U R	Enables/disables automatic white balance and automatic black balance when the tally lamp is lit. **[OFF], [ON]** ● Factory setting: [OFF]
	[TSL5.0]	Make settings related to Tally control via TSL Protocol 5.0.
	[INDEX NO.]	Sets the INDEX NO. that is set by devices that receive TALLY. **[1] … [65534]** ● Factory setting: [1]
	[PORT]	Sets the PORT number. **[1] … [65535]** ● Factory setting: [62000]
[SYNC SIGNAL]	[REF SIGNAL] U R	Sets the input terminal for reference signals. **[BBS/TRI-LEVEL SYNC], [PTP]** ● Factory setting: [BBS/TRI-LEVEL SYNC] ***NOTE*** ・When [IP SIGNAL] – [ST2110 COMMON] – [MOIP MODE] is [OFF], this is fixed to [BBS/TRI-LEVEL SYNC].
	[GEN-LOCK]	—
	[IN/ OUT SEL] U R	Sets the <G/L IN/REF OUT> terminal. **[GENLOCK IN], [REF OUT]** ● Factory setting: [GENLOCK IN]
	[H PHASE-COARSE] U R	Roughly adjusts the phase of horizontal synchronization. **[–100] … [+100]** ● Factory setting: [0]
	[H PHASE-FINE] U R	Finely adjusts the phase of horizontal synchronization. **[–100] … [+100]** ● Factory setting: [0]
	[PTP]	—
	[CLOCK TYPE] U R	Sets the CLOCK TYPE for PTP. **[BC], [E2E TC], [P2P TC]** ● Factory setting: [BC]
	[DOMAIN] U R	Sets the DOMAIN number. **[0] … [127]** ● Factory setting: [127]
	[GMID]	Displays GRANDMASTER ID notified from the PTP server.
[BAR ID]	[BAR ID] U R	Enables/disables the camera ID on the color bar. **[OFF], [ON]** ● Factory setting: [OFF]
	[BRIGHTNESS] U R	Sets the text color for the camera ID on the color bar. **[0%] … [100%]** ● Factory setting: [100%]
	[ID1 POSITION V] U R	Sets the display start position (vertical direction) of the camera ID1 on the color bar. **[0] … [5]** ● Factory setting: [0]
	[ID1 POSITION H] U R	Sets the display start position (horizontal direction) of the camera ID1 on the color bar. **[0] … [15]** ● Factory setting: [0]
	[ID1] U R	Sets the camera ID1. Maximum 16 characters (Alphanumeric characters, spaces, ! # % & ' ( ) * + , - . / : ; < = > ? [ ] _ ~ $ @ |)

Item		Description of settings
	[ID2 POSITION V] U R	Sets the display start position (vertical direction) of the camera ID2 on the color bar. **[0] … [5]** • Factory setting: [1]
	[ID2 POSITION H] U R	Sets the display start position (horizontal direction) of the camera ID2 on the color bar. **[0] … [15]** • Factory setting: [0]
	[ID2] U R	Sets the camera ID2. Maximum 16 characters (Alphanumeric characters, spaces, ! # % & ' ( ) * + , - . / : ; < = > ? [ ] _ ~ $ @ |)
	[OFFSET V] U R	Specifies in pixels the origin point (above left) for the area for writing of characters in the vertical direction. **[0] … [89]** • Factory setting: [0]
	[OFFSET H] U R	Specifies in pixels the origin point (above left) for the area for writing of characters in the horizontal direction. **[0] … [79]** • Factory setting: [0]

[NETWORK]

Item	Description of settings
[LAN]	Sets the network for the <LAN> terminal.
[DHCP]	Enables/disables DHCP. **[OFF], [ON]** • Factory setting: [OFF]
[IP ADDRESS]	Sets the IP address. • Factory setting: [192.168.0.40]
[SUBNET MASK]	Sets the subnet mask. • Factory setting: [255.255.255.0]
[DEFAULT GATEWAY]	Sets the default gateway. • Factory setting: [192.168.0.1]
[MAC ADDRESS]	Displays the MAC address.
[SET EXECUTE]	Select this to save the set content.
[SFP PRIMARY]	Sets the network for the <SFP 1> terminal.
[DHCP]	Enables/disables DHCP. **[OFF], [ON]** • Factory setting: [OFF]
[IP ADDRESS]	Sets the IP address. • Factory setting: [192.168.1.40]
[SUBNET MASK]	Sets the subnet mask. • Factory setting: [255.255.255.0]
[DEFAULT GATEWAY]	Sets the default gateway. • Factory setting: [192.168.1.1]
[MAC ADDRESS]	Displays the MAC address.
[SET EXECUTE]	Select this to save the set content.
[SFP SECONDARY]	Sets the network for the <SFP 2> terminal.
[DHCP]	Enables/disables DHCP. **[OFF], [ON]** • Factory setting: [OFF]
[IP ADDRESS]	Sets the IP address. • Factory setting: [192.168.2.40]
[SUBNET MASK]	Sets the subnet mask. • Factory setting: [255.255.255.0]
[DEFAULT GATEWAY]	Sets the default gateway. • Factory setting: [192.168.2.1]
[MAC ADDRESS]	Displays the MAC address.
[SET EXECUTE]	Select this to save the set content.
[COMMON SETTING]	—
[DNS] N	Sets the method for acquiring the address for the DNS server. **[MANUAL], [AUTO]** • Factory setting: [MANUAL]
[PRIMARY] N	Sets the DNS PRIMARY address. Display only (The settings cannot be changed in the OSD menu, so change them from the web screen if they are to be changed.)
[SECONDARY] N	Sets the DNS SECONDARY address. Display only (The settings cannot be changed in the OSD menu, so change them from the web screen if they are to be changed.)
[DOMAIN] N	The value allocated by the DHCP server is displayed. Display only (The settings cannot be changed in the OSD menu, so change them from the web screen if they are to be changed.)
[HTTP PORT] N	Sets the port number when using with HTTP. **[1] … [65535]** The following port numbers cannot be set because they are used by this unit. [20], [21], [23], [25], [42], [53], [67], [68], [69], [110], [123], [161], [162], [443], [546], [547], [554], [995], [5960] … [5985], [7960] … [8060], [10669], [10670], [59000] … [61000] • Factory setting: [80]
[HTTPS PORT] N	Sets the port number when using with HTTPS. **[1] … [65535]** The following port numbers cannot be set because they are used by this unit. [20], [21], [23], [25], [42], [53], [67], [68], [69], [80], [110], [123], [161], [162], [546], [547], [554], [995], [5960] … [5985], [7960] … [8060], [10669], [10670], [59000] … [61000] • Factory setting: [443]
[WEB CONNECTION] N	Sets the method to connect to the unit. **[HTTP], [HTTPS]** • Factory setting: [HTTP]
[ROP PORT] N	Sets the port number when connecting to ROP. **[49152], [49200] … [49299]** • Factory setting: [49152]

Item			Description of settings
	[ROP AUTH MODE] N		Sets the algorithm used for user authentication. **[SHA2&MD5], [SHA2]** • Factory setting: [SHA2&MD5]
	[SET EXECUTE]		Select this to save the set content.
	[NTP]		—
		[SYNCHRONIZATION WITH NTP] U R N	Enables/disables NTP server synchronizing. **[ON], [OFF]** • Factory setting: [OFF]
		[NTP SERVER ADDRESS SETTING] U R N	Sets the method for acquiring the address for the NTP server. **[AUTO], [MANUAL]** • Factory setting: [MANUAL]
		[NTP SERVER ADDRESS] N	Sets the IP address for the NTP server when [NTP SERVER ADDRESS SETTING] is [MANUAL]. Maximum 128 characters (Alphanumeric characters, : . _ -)
		[NTP PORT] N	Sets the port number of the NTP server to be connected. **[1] … [65535]** The following port numbers cannot be set because they are used by this unit. [20], [21], [23], [25], [42], [53], [67], [68], [69], [80], [110], [161], [162], [443], [546], [547], [554], [995], [5960] … [5985], [7960] … [8060], [10669], [10670], [59000] … [61000] • Factory setting: [123]
		[TIME ADJUSTMENT INTERVAL] U R N	Sets the access interval for the NTP server. **[1h] … [24h]** • Factory setting: [1h]
		[SET EXECUTE]	Select this to save the set content.
	[NMOS]		—
		[NMOS] U R N	Enables/disables the NMOS function. **[ON], [OFF]** • Factory setting: [OFF] ***NOTE*** ・ When [IP SIGNAL] – [MOIP MODE] is [OFF], this is fixed to [OFF].
		[STATUS] N	Displays the NMOS operation status, such as RDS connection status. **[UNREGISTERED], [REGISTERING], [REGISTERED], [P2P MODE], [---]**
		[PORT(IS-04)] N	Sets the port number on the camera for IS-04 Node API. **[1024] … [65535]** • Factory setting: [50040]
		[PORT(IS-05)] N	Sets the port number on the camera for IS-05 Connection API. **[1024] … [65535]** • Factory setting: [50050]
		[RDS IP ADDR] N	Displays the IP address automatically discovered.
		[RDS PORT] N	Displays the port number automatically discovered.
		[LABEL SETTING] U R N	Sets whether the label name is to be acquired automatically or input manually. **[AUTO], [MANUAL]** • Factory setting: [AUTO]
		[LABEL PREFIX] U R N	Sets the prefix appended which is shared with NMOS resource names on this unit. Maximum 16 characters (Alphanumeric characters, spaces, ! # % ( ) + - . / = [ ] _) • Factory setting: [UBX100_****] (asterisks are the last four digits of the MAC address)
		[SET EXECUTE]	Select this to save the set content.
		[DISCOVERY] U R N	Sets the method for NMOS resource discovery. **[Auto], [mDNS], [uniDNS], [Manual]** • Factory setting: [Auto]
		[RDS IP ADDR MANUAL] N	Enter the IP address to be entered manually. • Factory setting: [192.168.0.130]
		[RDS PORT MANUAL] N	Sets the port number to be entered manually. **[1024] … [65535]** • Factory setting: [8010]
		[SET EXECUTE]	Select this to save the set content.

[OUTPUT]

Item		Description of settings
[12G SDI OUT1]	[OUTPUT SELECT]	Setting status for output of the <12G SDI OUT 1> terminal. **[CAM]:** Outputs camera images.
	[FORMAT SELECT] U R	Sets the signal format of the video output from the <12G SDI OUT 1> terminal. **[2160p], [1080p], [1080i]** • Factory setting: [2160p]
	[HDR OUTPUT SELECT] U R	Sets the signal output from the <12G SDI OUT 1> terminal when [HDR] is [ON]. **[SDR(709)], [HDR(709)], [HDR(2020)]** • Factory setting: [HDR(2020)] ***NOTE*** ・ [HDR(2020)] can be selected only when [BASIC CONFIG] – [GAMUT] is [WIDE_G2].
	[V-LOG OUTPUT SELECT] U R	Sets the signal output from the <12G SDI OUT 1> terminal when [V-LOG] is [ON]. **[V-LOG], [V-709], [BC709]** • Factory setting: [V-LOG]
	[OUTPUT ITEM] U R	Selects details of the characters superimposed on images output from the <12G SDI OUT 1> terminal. **[MENU ONLY]:** Displays on-screen menus only. **[STATUS]:** Displays on-screen menus and status indicators. • Factory setting: [MENU ONLY]
	[CHAR] U R	Sets whether to superimpose characters on images output from the <12G SDI OUT 1> terminal. **[OFF], [ON]** • Factory setting: [OFF]
[12G SDI OUT2]	[OUTPUT SELECT]	Setting status for output of the <12G SDI OUT 2> terminal. **[CAM]:** Outputs camera images.
	[FORMAT SELECT] U R	Sets the signal format of the video output from the <12G SDI OUT 2> terminal. **[2160p], [1080p], [1080i]** • Factory setting: [2160p]
	[HDR OUTPUT SELECT] U R	Sets the signal output from the <12G SDI OUT 2> terminal when [HDR] is [ON]. **[SDR(709)], [HDR(709)], [HDR(2020)]** • Factory setting: [HDR(2020)] ***NOTE*** ・ [HDR(2020)] can be selected only when [BASIC CONFIG] – [GAMUT] is [WIDE_G2].
	[V-LOG OUTPUT SELECT] U R	Sets the signal output from the <12G SDI OUT 2> terminal when [V-LOG] is [ON]. **[V-LOG], [V-709], [BC709]** • Factory setting: [V-LOG]
	[OUTPUT ITEM] U R	Selects details of the characters superimposed on images output from the <12G SDI OUT 2> terminal. **[MENU ONLY]:** Displays on-screen menus only. **[STATUS]:** Displays on-screen menus and status indicators. • Factory setting: [MENU ONLY]
	[CHAR] U R	Sets whether to superimpose characters on images output from the <12G SDI OUT 2> terminal. **[OFF], [ON]** • Factory setting: [OFF]
[HD SDI OUT]	[OUTPUT SELECT]	Setting status for output of the <HD SDI OUT> terminal. **[MONI]:** Monitor output
	[FORMAT SELECT] U R	Sets the signal format of the video output from the <HD SDI OUT> terminal. **[1080p], [1080i]** • Factory setting: [1080i]
	[HDR OUTPUT SELECT] U R	Setting status of the signal output from the <HD SDI OUT> terminal when [HDR] is [ON]. **[SDR(709)]**
	[V-LOG OUTPUT SELECT] U R	Sets the signal output from the <HD SDI OUT> terminal when [V-LOG] is [ON]. **[V-709], [BC709]** • Factory setting: [V-709]
	[OUTPUT ITEM] U R	Setting status of the characters overlaid on the images output from the <HD SDI OUT> terminal. **[STATUS]:** Displays on-screen menus and status indicators.
	[CHAR] U R	Setting status of whether characters are overlaid on the images output from the <HD SDI OUT> terminal. **[ON]**

[IP SIGNAL]

Item		Description of settings
[START/STOP]		Starts/stops transmission of streaming. **[START], [STOP]** • Factory setting: [STOP]
[STREAMING COMMON]	[STREAMING MODE] U R N	Sets the streaming mode. **[SRT(H.264)], [SRT(H.264 UHD)], [SRT(H.265)], [SRT(H.265 UHD)], [NDI High Bandwidth]** • Factory setting: [SRT(H.264)] ***NOTE*** ・ Support for [SRT(H.264 UHD)] and [SRT(H.265 UHD)] is planned for the future. ・ UHD streaming mode can be selected only when [BASIC CONFIG] – [FORMAT] is UHD.
	[SET EXECUTE]	Select this to save the set content.
	[TIMECODE OVERLAY] U R N	Sets whether timecode information is overlayed on IP transmission data. **[ENABLE], [DISABLE]** • Factory setting: [DISABLE]
	[HDR/V-LOG MODE] U R N	Sets the HDR/V-LOG mode. **[V-LOG], [V-709], [BC709], [SDR/709], [HDR/709], [HDR/2020]** • Factory setting: [SDR/709] when HDR is ON, [V-709] when V-LOG is ON
	[OUTPUT ITEM] U R N	Selects details of the characters superimposed on output images. **[MENU ONLY]:** Displays on-screen menus only. **[STATUS]:** Displays on-screen menus and status indicators. • Factory setting: [MENU ONLY]
	[CHAR] U R N	Sets whether to superimpose characters on output images. **[OFF], [ON]** • Factory setting: [ON]
[JPEG(1)]		Makes settings for JPEG(1) images.
	[JPEG TRANSMISSION] U R N	Enables/disables transmission of JPEG(1) images. **[ON], [OFF]** • Factory setting: [ON]
	[IMAGE CAPTURE SIZE] U R N	Sets the image resolution for the display of JPEG(1) images. **[1920 x 1080], [1280 x 720], [640 x 360], [320 x 180]** • Factory setting: [1280 x 720]
	[REFRESH INTERVAL] U R N	Sets the refresh rate for JPEG(1) images. [59.94Hz] **[1fps], [5fps], [15fps], [30fps]** [50Hz] **[1fps], [5fps], [12.5fps], [25fps]** [23.98Hz] **[1fps], [4fps], [12fps], [24fps]** • Factory setting: [30fps]
	[IMAGE QUAULITY] U R N	Sets the image quality for JPEG(1) images. **[FINE], [NORMAL]** • Factory setting: [FINE]
	[SET EXECUTE]	Select this to save the set content.
[JPEG(2)]		Makes settings for JPEG(2) images. This cannot be set when [STREAMING MODE] is [NDI HIGH BANDWIDTH].
	[JPEG TRANSMISSION] U R N	Enables/disables transmission of JPEG(2) images. **[ON], [OFF]** • Factory setting: [ON]
	[IMAGE CAPTURE SIZE] U R N	Sets the image resolution for the display of JPEG(2) images. **[640 x 360], [320 x 180]** • Factory setting: [640 x 360]
	[REFRESH INTERVAL] U R N	Sets the refresh rate for JPEG(2) images. [59.94Hz] **[1fps], [5fps], [15fps], [30fps]** [50Hz] **[1fps], [5fps], [12.5fps], [25fps]** [23.98Hz] **[1fps], [4fps], [12fps], [24fps]** • Factory setting: [30fps]
	[IMAGE QUAULITY] U R N	Sets the image quality for JPEG(2) images. **[FINE], [NORMAL]** • Factory setting: [FINE]
	[SET EXECUTE]	Select this to save the set content.
[JPEG(3)]		Makes settings for JPEG(3) images. This cannot be set when [STREAMING MODE] is [NDI HIGH BANDWIDTH].
	[JPEG TRANSMISSION] U R N	Enables/disables transmission of JPEG(3) images. **[ON], [OFF]** • Factory setting: [ON]
	[IMAGE CAPTURE SIZE] U R N	Sets the image resolution for the display of JPEG(3) images. **[640 x 360], [320 x 180]** • Factory setting: [320 x 180]

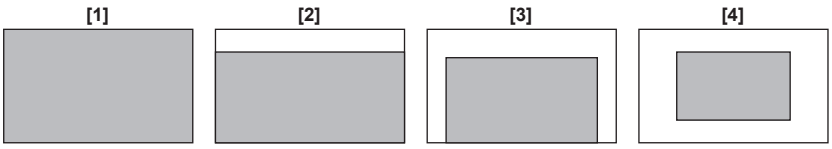
Item		Description of settings
	[REFRESH INTERVAL] U R N	Sets the refresh rate for JPEG(3) images. [59.94Hz] **[1fps], [5fps], [15fps], [30fps]** [50Hz] **[1fps], [5fps], [12.5fps], [25fps]** [23.98Hz] **[1fps], [4fps], [12fps], [24fps]** • Factory setting: [30fps]
	[IMAGE QUAULITY] U R N	Sets the image quality for JPEG(3) images. **[FINE], [NORMAL]** • Factory setting: [FINE]
	[SET EXECUTE]	Select this to save the set content.
[SRT]		Makes settings for SRT transmissions.
	[SRT TRANSMISSION] U R N	Enables/disables SRT transmissions. **[ON], [OFF]** • Factory setting: [ON]
	[BIT DEPTH] U R N	Sets the video bit count for SRT transmissions. **[10bit], [8bit]** • Factory setting: [10bit]
	[PROFILE TYPE] U R N	Sets the profile for when H.264 images are transmitted. This cannot be set when H.265 is selected. **[HIGH], [MAIN], [BASELINE]** • Factory setting: [HIGH] ***NOTE*** ・When [BIT DEPTH] is [10bit] or [IMAGE CAPTURE SIZE] is [3840 x 2160], this is fixed to [HIGH].
	[IMAGE CAPTURE SIZE] U R N	Sets the video resolution for SRT transmissions. SRT(H264) **[1920 x 1080], [1280 x 720]** SRT(H264 UHD) **[3840 x 2160]** SRT(H265) **[1920 x 1080], [1280 x 720]** SRT(H265 UHD) **[3840 x 2160]** • Factory setting: SRT(H264): [1920 x 1080] SRT(H264 UHD): [3840 x 2160] SRT(H265): [1920 x 1080] SRT(H265 UHD): [3840 x 2160] ***NOTE*** ・Support for SRT(H.264 UHD) and SRT(H.265 UHD) is planned for the future.
	[CBR/VBR] U R N	Sets the video bit rate control mode for SRT transmissions. **[CBR], [VBR]** • Factory setting: [VBR]
	[FRAME RATE] U R N	Sets the video frame rate for SRT transmissions. [59.94Hz] **[30fps], [60fps]** [50Hz] **[25fps], [50fps]** [23.98Hz] **[24fps]** • Factory setting: 59.94Hz: [60fps] 50Hz: [50fps] 23.98Hz: [24fps]

Item		Description of settings
	[MAX BIT RATE] U R N	Sets the bit rate per client. SRT(H.264) When [BIT DEPTH] is [10bit], [IMAGE CAPTURE SIZE] is [1920 x 1080], and [FRAME RATE] is [60fps]/[50fps]: **[36864(36Mbps)], [30720(30Mbps)], [21504(21Mbps)], [15360(15Mbps)], [12288(12Mbps)]** • Factory setting: [36864(36Mbps)] When [BIT DEPTH] is [10bit], [IMAGE CAPTURE SIZE] is [1920 x 1080], and [FRAME RATE] is [30fps]/[25fps]/[24fps]: **[21504(21Mbps)], [15360(15Mbps)], [12288(12Mbps)]** • Factory setting: [12288(12Mbps)] When [BIT DEPTH] is [10bit], [IMAGE CAPTURE SIZE] is [1280 x 720], and [FRAME RATE] is [60fps]/[50fps]: **[21504(21Mbps)], [15360(15Mbps)], [12288(12Mbps)]** • Factory setting: [12288(12Mbps)] When [BIT DEPTH] is [10bit], [IMAGE CAPTURE SIZE] is [1280 x 720], and [FRAME RATE] is [30fps]/[25fps]/[24fps]: **[12288(12Mbps)]** • Factory setting: [12288(12Mbps)] When [BIT DEPTH] is [8bit], [IMAGE CAPTURE SIZE] is [1920 x 1080], and [FRAME RATE] is [60fps]/[50fps]: **[24576(24Mbps)], [20480(20Mbps)], [14336(14Mbps)], [10240(10Mbps)], [8192(8Mbps)]** • Factory setting: [8192(8Mbps)] When [BIT DEPTH] is [8bit], [IMAGE CAPTURE SIZE] is [1920 x 1080], and [FRAME RATE] is [30fps]/[25fps]/[24fps]: **[14336(14Mbps)], [10240(10Mbps)], [8192(8Mbps)]** • Factory setting: [8192(8Mbps)] When [BIT DEPTH] is [8bit], [IMAGE CAPTURE SIZE] is [1280 x 720], and [FRAME RATE] is [60fps]/[50fps]: **[14336(14Mbps)], [10240(10Mbps)], [8192(8Mbps)]** • Factory setting: [8192(8Mbps)] When [BIT DEPTH] is [8bit], [IMAGE CAPTURE SIZE] is [1280 x 720], and [FRAME RATE] is [30fps]/[25fps]/[24fps]: **[8192(8Mbps)]** • Factory setting: [8192(8Mbps)] SRT(H.264 UHD) When [BIT DEPTH] is [10bit], [IMAGE CAPTURE SIZE] is [3840 x 2160], and [FRAME RATE] is [60fps]/[50fps]/[30fps]/[25fps]/[24fps]: **[112640(110Mbps)], [76800(75Mbps)], [36864(36Mbps)], [18432(18Mbps)]** • Factory setting: [36864(36Mbps)] When [BIT DEPTH] is [8bit], [IMAGE CAPTURE SIZE] is [3840 x 2160], and [FRAME RATE] is [60fps]/[50fps]/[30fps]/[25fps]/[24fps]: **[76800(75Mbps)], [51200(50Mbps)], [25600(25Mbps)], [12800(12.5Mbps)], [10240(10Mbps)] , [8192(8Mbps)]** • Factory setting: [8192(8Mbps)] SRT(H.265) When [BIT DEPTH] is [10bit]/[8bit], [IMAGE CAPTURE SIZE] is [1920 x 1080], and [FRAME RATE] is [60fps]/[50fps]: **[24576(24Mbps)], [20480(20Mbps)], [14336(14Mbps)], [10240(10Mbps)], [8192(8Mbps)]** • Factory setting: [14336(14Mbps)] When [BIT DEPTH] is [10bit]/[8bit], [IMAGE CAPTURE SIZE] is [1920 x 1080], and [FRAME RATE] is [30fps]/[25fps]/[24fps]: **[14336(14Mbps)], [10240(10Mbps)], [8192(8Mbps)]** • Factory setting: [14336(14Mbps)] When [BIT DEPTH] is [10bit]/[8bit], [IMAGE CAPTURE SIZE] is [1280 x 720], and [FRAME RATE] is [60fps]/[50fps]: **[14336(14Mbps)], [10240(10Mbps)], [8192(8Mbps)]** • Factory setting: [14336(14Mbps)] When [BIT DEPTH] is [10bit]/[8bit], [IMAGE CAPTURE SIZE] is [1280 x 720], and [FRAME RATE] is [30fps]/[25fps]/[24fps]: **[8192(8Mbps)]** • Factory setting: [8192(8Mbps)] SRT(H.265 UHD) When [BIT DEPTH] is [10bit]/[8bit], [IMAGE CAPTURE SIZE] is [3840 x 2160], and [FRAME RATE] is [60fps]/[50fps]/[30fps]/[25fps]/[24fps]: **[76800(75Mbps)], [51200(50Mbps)], [25600(25Mbps)], [12800(12.5Mbps)], [10240(10Mbps)], [8192(8Mbps)]** • Factory setting: [76800(75Mbps)] ***NOTE*** ・ Support for SRT(H.264 UHD) and SRT(H.265 UHD) is planned for the future.
	[SET EXECUTE]	Select this to save the set content.
	[MODE] U R N	Selects the method to connect to the SRT compatible decoder or service. **[CLIENT(CALLER)], [LISTENER]** • Factory setting: [LISTENER]

Item		Description of settings
	[DESTINATION URL] N	When [CLIENT(CALLER)] is set in [MODE], enter the IP address. Images and audio will be sent to the specified IP address. • Factory setting: [192.168.0.3]
	[DESTINATION PORT] N	When [CLIENT(CALLER)] is set in [MODE], enter the port number (used when transmitting images from this unit). Connection is to the specified port number. **[1] … [65535]** • Factory setting: [7002]
	[STREAM ID] N	When [CLIENT(CALLER)] is set in [MODE], enter the STREAM ID. The information entered is notified to the connection destination when SRT transmission is started. • Factory setting: [#!::m=publish,r=PanasonicStream]
	[CLIENT(CALLER)] N	When [LISTENER] is set in [MODE], enter the port number (used when this unit is waiting for a connection). • Factory setting: [2020]
	[TTL/HOP LIMIT] N	Enter the TTL/HOP Limit value for multicast. **[1] … [254]** • Factory setting: [16]
	[LATENCY] N	Sets the time (ms) between when images and audio are sent and when they are played on the receiving device. **[0] … [65535]** • Factory setting: [120]
	[ENCRYPTION] N	Sets whether to encrypt the transmitted IP image. **[OFF], [AES-128], [AES-256]** • Factory setting: [OFF]
	[PASSPHRASE] N	Sets the phrase used for decoding the encrypted IP images.
	[SET EXECUTE]	Select this to save the set content.
[NDI HIGH BANDWIDTH]		Makes settings for NDI transmissions.
	[FORMAT SELECT] U R N	Sets the format for NDI transmissions.
	[SOURCE NAME] N	Sets the device name displayed when this unit is detected by software applications and hardware compatible with NDI. Maximum 32 characters (Alphanumeric characters, : - _) • Factory setting: [NDI_Device-[Serial No]]
	[PROTOCOL] N	Sets the format of unicast transmission to be used. **[TCP], [UDP], [RUDP]** • Factory setting: [RUDP]
	[MULTICAST TRANSMIT] N	Sets whether to perform multicast transmission of images for the software applications and hardware compatible with NDI. **[ON], [OFF]** • Factory setting: [OFF]
	[ADDRESS] N	Enter the multicast IP address. Images and audio will be sent to the specified IP address. **[224.0.0.0] … [239.255.255.255]** Factory setting: [239.192.0.30]
	[SUBNET] N	Enter the subnet mask. • Factory setting: [255.255.255.255]
	[TTL/HOP LIMIT] N	Enter the TTL/HOPLimit value for multicast. **[1] … [254]** • Factory setting: [16]
	[SET EXECUTE]	Select this to save the set content.
	[GROUP] N	Sets whether to use the grouping function when performing NDI transmission. **[ENABLE], [DISABLE]** • Factory setting: [DISABLE]
	[NAME] N	Sets the group name for use when grouping function is used. Maximum 63 characters (Alphanumeric characters, : - _)
	[USE DISCOVERY SERVER] N	Sets whether to use the discovery server when performing NDI transmission. **[ENABLE], [DISABLE]** • Factory setting: [DISABLE]
	[SERVER ADDRESS] N	Sets the IPv4 address of the server when using the discovery server.
	[SET EXECUTE]	Select this to save the set content.
[ST2110 COMMON]		
	[MOIP MODE] U R N	Enables/disables MOIP (SMPTE ST2110 video/audio input/output). **[OFF], [ON]** • Factory setting: [OFF]
	[ST2110 PORT] U R N	Enter the port number for SMPTE ST2110 (used when transmitting SMPTE ST2110 from this unit). 10670 cannot be set as a port number. • Factory setting: [49330]
	[MAIN VIDEO TX]	—
	[FORMAT] U R N	Sets the image format of the MAIN video signal of SMPTE ST2110 (uncompressed).
	[HDR/V-LOG MODE] U R N	You can confirm the signal setting status of the SMPTE ST2110 (uncompressed) MAIN video signal.
	[MONI VIDEO TX]	—

Item		Description of settings
	[FORMAT] U R N	You can confirm the image format of the SMPTE ST2110 (uncompressed) MONI video signal. The image format conforms with HD SDI OUT. ***NOTE*** ・ SMPTE ST2110-21 is not supported.
	[HDR/V-LOG MODE] U R N	You can confirm the signal setting status of the SMPTE ST2110 (uncompressed) MONI video signal.
[ST2110 PRIMARY TX]		Makes SMPTE ST2110 (uncompressed) PRIMARY transmission settings.
	[MAIN VIDEO TX]	—
	[DEST ADDR] N	Enter the IP address of the transmission destination for [MAIN VIDEO]. First octet: 0 to 239 Second octet: 0 to 255 Third octet: 0 to 255 Fourth octet: 0 to 255 You cannot set 0.0.0.0, 224.0.0.0 to 224.0.1.255, or a 127 IP address for the first octet. • Factory setting: [230.1.0.1]
	[DEST PORT] N	Enter the [MAIN VIDEO] transmission destination port number. **[1024] … [65535]** 10670 cannot be set as a port number. • Factory setting: [49101]
	[MONI VIDEO TX]	—
	[DEST ADDR] N	Enter the IP address of the transmission destination for [MONI VIDEO]. Refer to [MAIN VIDEO TX] for setting contents. • Factory setting: [230.1.0.3]
	[DEST PORT] N	Enter the [MONI VIDEO] transmission destination port number. Refer to [MAIN VIDEO TX] for setting contents. • Factory setting: [49103]
	[SET EXECUTE]	Select this to save the set content.
[ST2110 SECONDARY TX]		Makes SMPTE ST2110 (uncompressed) SECONDARY transmission settings.
	[MAIN VIDEO TX]	Refer to [ST2110 PRIMARY TX] for setting contents. • The factory setting for [DEST ADDR] and [DEST PORT] is different to [ST2110 PRIMARY TX]. Instead of [230.1.xx.x], read [230.2.xx.x], and instead of [491xx] read [492xx].
	[DEST ADDR] N	
	[DEST PORT] N	
	[MONI VIDEO TX]	
	[DEST ADDR] N	
	[DEST PORT] N	
	[SET EXECUTE]	

[PAINT]

Item		Description of settings
[AUTO]	[AGC] U S O	Enables/disables auto gain control. **[OFF], [ON]** • Factory setting: [OFF]
	[AUTO IRIS] U S O	Enables/disables auto iris adjustment. **[OFF], [ON]** • Factory setting: [OFF]
	[ATW] U S O	Enables/disables the auto tracking white balance function. **[OFF], [ON]** • Factory setting: [OFF]
	[KNEE MODE] U S R	Sets the operating mode for gradation compression (knee). **[AUTO], [MANUAL]** • Factory setting: [MANUAL]
[GAIN SETTING]	[GAIN/ISO MODE]	Sets the units for gain value. **[dB], [ISO]** • Factory setting: [dB]
	[GAIN] U S O R	Sets the amount of gain increase. [dB mode] **[-6dB] … [18dB]** [ISO mode] **[ISO 400], [ISO 500], [ISO 640], [ISO 800], [ISO 1000], [ISO 1250], [ISO 1600], [ISO 2000], [ISO 2500], [ISO 3200], [ISO 4000], [ISO 5000], [ISO 6400], [ISO 8000], [ISO 10000], [ISO 12800]** • Factory setting: [dB mode] 0dB [ISO mode] ISO 800
	[OFFSET GAIN] U S O R	Sets the offset from [GAIN]. **[–2.9dB]…[+2.9dB]** (0.1 dB step) • Factory setting: [0.0dB]
	[AGC] U S O R	Sets the behavior of auto gain control. **[OFF], [ON]** • Factory setting: [OFF]
	[AGC MAX GAIN] U S O R	Sets the maximum amount of gain when [AGC] is working. **[6dB], [12dB], [18dB]** • Factory setting: [6dB]
[IRIS]	[AUTO IRIS] U S O	Enables/disables the auto iris mode. **[OFF], [ON]** • Factory setting: [ON] (when the camera is used standalone), [OFF] (others)
	[WINDOW SELECT] U S O	Sets the photometric range. **[1] … [5]** The image of window will be as follows.  • Factory setting: [1] ***NOTE*** ・A window area can be specified when [5] is selected. The area can be specified using a web browser.
	[IRIS LEVEL] U O	Adjusts the target value (brightness) of the auto iris. **[0] … [100]** • Factory setting: [50]
	[PEAK RATIO] U S O	Sets the ratio of the peak value and average value of auto iris photometry. **[0] … [100]** • Factory setting: [30]
	[IRIS RANGE] U O	Sets the fine adjustment range of the auto iris level using the iris adjustment joystick. **[NORMAL], [(3/4)], [(2/4)], [(1/4)]** • Factory setting: [NORMAL]
	[IRIS SPEED] U S O	Sets the auto iris speed. **[1] … [25]** • Factory setting: [15]
	[IRIS GAIN] U O	Switches whether to adjust auto iris photometry speed adjustment with the iris gain volume of the lens or from the menu. Normally, set this to [LENS] and make adjustments with the iris volume of the lens. **[LENS], [CAM]** • Factory setting: [LENS]
[W/B BAL SETTING]	[AWB SET]	Automatic white balance is executed. **[NO], [YES]**
	[ABB SET]	Automatic black balance is executed. **[NO], [YES]**

Item		Description of settings
	[ATW] U S O	Enables/disables the auto tracking white balance function. **[OFF], [ON]** • Factory setting: [OFF]
	[ATW SPEED] U S O	Sets the control speed of the auto tracking white balance function. **[NORMAL], [SLOW], [FAST]** • Factory setting: [NORMAL]
	[ATW TARGET R] U S	Make fine adjustments to the Rch output when converging with the auto tracking white balance operation. **[–10] … [10]** • Factory setting: [0]
	[ATW TARGET B] U S	Make fine adjustments to the Bch output when converging with the auto tracking white balance operation. **[–10] … [10]** • Factory setting: [0]
	[SHOCKLESS WB SW] U S O	Enables/disables shockless white balance. **[OFF], [ON]** • Factory setting: [OFF]
	[SHOCKLESS WB SPEED] U S O	Sets the speed of the shockless white balance. **[1] … [5]** • Factory setting: [4]
[SHUTTER SPEED]	[SHUTTER SW] U S R	Enables/disables the shutter function. **[OFF]:** Disables the shutter. **[ON]:** Enables the shutter speed with [SHUTTER SPEED]/[SYNCHRO SCAN]. • Factory setting: [OFF]
	[SHUTTER DISP] U S R	Sets the display of the shutter. **[sec], [deg]** • Factory setting: [sec]
	[SHUTTER MODE] U S R	Selects the operation mode of the shutter. **[STEP]:** Sets the shutter speed to that configured for [SHUTTER SPEED]. **[SYNCHRO]:** Sets the shutter speed to that configured for [SYNCHRO SCAN]. • Factory setting: [STEP]
	[SHUTTER SPEED] U S R	Sets the shutter speed when [SHUTTER MODE] is [STEP]. This is displayed as time (a fraction) when [SHUTTER DISP] is set to [sec], and as aperture angle when set to [deg]. When the display is [sec] [59.94i]/[59.94p] mode: **[1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000]** [50i]/[50p] mode: **[1/60], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000]** [29.97p] mode: **[1/48], [1/50], [1/60], [1/96], [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000]** [25p] mode: **[1/48], [1/50], [1/60], [1/96], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000]** [23.98p] mode: **[1/48], [1/50], [1/60], [1/96], [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000]** When the display is [deg] **[HALF SHUTTER], [11.5d], [22.5d], [45.0d], [90.0d], [120.0d], [144.0d], [172.8d], [180.0d], [270.0d], [357.0d]** • Factory setting: [1/100]
	[SYNCHRO SCAN] U S R	Sets the shutter speed when [SHUTTER MODE] is [SYNCHRO]. This is displayed as time (a fraction) when [SHUTTER DISP] is set to [sec], and as aperture angle when set to [deg]. When the display is [sec] [59.94i]/[59.94p] mode: **[60.0Hz] … [7200Hz]** • Factory setting: [60.0Hz] [50i]/[50p] mode: **[50.0Hz] … [7200Hz]** [29.97p] mode: **[30.0Hz] … [7200Hz]** [25p] mode: **[25.0Hz] … [7200Hz]** [23.98p] mode: **[24.0Hz] … [7200Hz]** When the display is [deg] **[3.0 deg] … [357.0 deg]**
[PEDESTAL]	[MASTER PEDESTAL] U S R	Adjusts the black level of the master pedestal. **[–200] … [+200]** • Factory setting: [0]
	[R PEDESTAL] U S R	Sets the correction level of red to the master pedestal. **[–800]…[+800]** • Factory setting: [0]
	[G PEDESTAL] U S R	Sets the correction level of green to the master pedestal. **[–800]…[+800]** • Factory setting: [0]
	[B PEDESTAL] U S R	Sets the correction level of blue to the master pedestal. **[–800]…[+800]** • Factory setting: [0]

Item			Description of settings
	[PEDESTAL OFFSET] U S R		Sets whether to maintain the Rch, Gch, and Bch pedestal levels after adjusting the automatic black balance. **[ON]:** Maintains the values set in [R PEDESTAL], [G PEDESTAL], and [B PEDESTAL]. **[OFF]:** Sets [R PEDESTAL], [G PEDESTAL], and [B PEDESTAL] to [0]. • Factory setting: [OFF]
[CHROMA]	[CHROMA LEVEL SWITCH] U S R		Enables/disables the gain adjustment of chroma. **[OFF], [ON]** • Factory setting: [OFF]
	[CHROMA LEVEL] U S R		Sets the gain adjustment of chroma. **[–100%]…[+80%]** • Factory setting: [0%]
[COLOR TEMP SETTING]	[COLOR TEMP PRESET]		—
	[COLOR TEMP PRE SWITCH] U S R		Enables/disables the color temperature adjustment. **[OFF], [ON]** • Factory setting: [OFF]
	[COLOR TEMP] U S R		Sets the color temperature when [COLOR TEMP PRE SWITCH] is [ON]. **[2000K]…[15000K]** • Factory setting: [3200K]
	[R GAIN] U S R		Sets the correction level of red to the color temperature. **[–400]…[+400]** • Factory setting: [0]
	[B GAIN] U S R		Sets the correction level of blue to the color temperature. **[–400]…[+400]** • Factory setting: [0]
	[G AXIS] U S R		Sets the correction level of green to the color temperature. **[–400]…[+400]** • Factory setting: [0]
	[COLOR TEMP]		When the camera is connected to the system, only [COLOR TEMP] can be set.
	[COLOR TEMP] U S R		Sets the color temperature. **[2000K] … [15000K]** • Factory setting: [3200K]
	[R GAIN] U S R		Sets the correction level of red to the color temperature. **[–400]…[+400]** • Factory setting: [0]
	[B GAIN] U S R		Sets the correction level of blue to the color temperature. **[–400]…[+400]** • Factory setting: [0]
	[G AXIS] U S R		Sets the correction level of green to the color temperature. **[–400]…[+400]** • Factory setting: [0]
[RGB GAIN CONTROL SETTING]			
	[G GAIN REL CONTROL SW] U S R		Enables/disables the relative value control of Gch gain. **[OFF], [ON]** • Factory setting: [OFF]
	[RGB GAIN PRESET]		—
		[R GAIN] U S R	Sets the preset value of Rch gain. **[–1000]…[+1000]** • Factory setting: [0]
		[G GAIN] U S R	Sets the preset value of Gch gain. **[–1000]…[+1000]** • Factory setting: [0]
		[B GAIN] U S R	Sets the preset value of Bch gain. **[–1000]…[+1000]** • Factory setting: [0]
	[RGB GAIN]		—
		[R GAIN] U S R	Sets the correction level of red to the gain. **[–1000]…[+1000]** • Factory setting: [0]
		[G GAIN] U S R	Sets the correction level of green to the gain. **[–1000]…[+1000]** • Factory setting: [0]
		[B GAIN] U S R	Sets the correction level of blue to the gain. **[–1000]…[+1000]** • Factory setting: [0]
		[GAIN OFFSET] U S R	Sets whether to maintain the Rch, Gch, and Bch gain levels when adjusting the automatic white balance. **[ON]:** Maintains the values set in [R GAIN], [G GAIN], and [B GAIN]. **[OFF]:** Sets [R GAIN], [G GAIN], and [B GAIN] to [0]. • Factory setting: [OFF]
[FLARE]	[FLARE] U S R		Enables/disables flare correction. **[OFF], [ON]** • Factory setting: [ON]

Item		Description of settings
	[MASTER FLARE] USR	Adjusts the master flare. **[–200]…[+200]** • Factory setting: [0]
	[R FLARE] USR	Adjusts the Rch flare. **[–200]…[+200]** • Factory setting: [0]
	[G FLARE] USR	Adjusts the Gch flare. **[–200]…[+200]** • Factory setting: [0]
	[B FLARE] USR	Adjusts the Bch flare. **[–200]…[+200]** • Factory setting: [0]
[GAMMA/BLACK GAMMA]	[GAMMA] USR	Enables/disables gamma correction. This cannot be set in HDR mode. **[OFF], [ON]** • Factory setting: [ON]
	[GAMMA MODE SELECT] USR	Selects the type of gamma. **[HD]:** Video gamma characteristics conforming to Panasonic broadcasting devices. **[NORMAL]:** Gamma characteristics that emphasize face tones. **[CINEMA1]:** High contrast gamma characteristic. **[CINEMA2]:** Sedate gamma characteristic. • Factory setting: [HD]
	[MASTER GAMMA] USR	Adjusts the gamma characteristic. **[0.15]…[0.75]** (0.01 step) • Factory setting: [0.45]
	[OFFSET GAMMA] USR	Finely adjusts the gamma characteristic. **[–10]…[+10]** • Factory setting: [0]
	[R GAMMA] USR	Adjusts the gamma characteristic of red to the master gamma. **[–75]…[+75]** • Factory setting: [0]
	[B GAMMA] USR	Adjusts the gamma characteristic of blue to the master gamma. **[–75]…[+75]** • Factory setting: [0]
	[BLACK GAMMA] USR	Enables/disables black gamma. This cannot be set when [V-LOG] is [ON], or [HDR] is [ON]. **[OFF], [ON]** • Factory setting: [OFF]
	[MASTER BLACK GAMMA] USR	Adjusts the gamma characteristic adjacent to black. **[–48]…[+48]** • Factory setting: [0]
	[R BLACK GAMMA] USR	Adjusts the gamma characteristic of red adjacent to black to the master gamma. **[–20]…[+20]** • Factory setting: [0]
	[B BLACK GAMMA] USR	Adjusts the gamma characteristic of blue adjacent to black to the master gamma. **[–20]…[+20]** • Factory setting: [0]
	[BLACK GAMMA RANGE] USR	Sets the maximum level of compression/expansion for the gamma curve for dark areas. **[1]:** About 20% **[2]:** About 30% **[3]:** About 40% • Factory setting: [3]
	[INITIAL GAMMA] USR	Sets the gamma initial slope. When [GAMMA MODE SELECT] is [HD]: **[4.0]/[4.5]/[5.0]** This cannot be set when [GAMMA MODE SELECT] is [NORMAL], [CINEMA1], or [CINEMA2]. • Factory setting: [4.5]
[KNEE]	[KNEE] USR	Enables/disables the knee function. This cannot be set in HDR mode. When [DRS] is enabled, the [KNEE] setting is disabled. **[OFF], [ON]** • Factory setting: [ON]
	[KNEE MODE] USR	Sets the operating mode for gradation compression (knee). **[AUTO], [MANUAL]** • Factory setting: [MANUAL]
	[KNEE MASTER POINT] USR	Sets the knee point position. **[80.00%]…[110.00%]** (0.25% step) • Factory setting: [95.00%]
	[KNEE R POINT] USR	Adjusts the knee point of red to [KNEE MASTER POINT]. **[–25.00%]…[25.00%]** (0.25% step) • Factory setting: [0.00%]
	[KNEE B POINT] USR	Adjusts the knee point of blue to [KNEE MASTER POINT]. **[–25.00%]…[25.00%]** (0.25% step) • Factory setting: [0.00%]
	[KNEE MASTER SLOPE] USR	Sets the knee slope. **[0]…[199]** • Factory setting: [130]

Item		Description of settings
	[KNEE R SLOPE] U S R	Adjusts the knee slope of red to [KNEE MASTER SLOPE]. **[–99]…[+99]** • Factory setting: [0]
	[KNEE B SLOPE] U S R	Adjusts the knee slope of blue to [KNEE MASTER SLOPE]. **[–99]…[+99]** • Factory setting: [0]
	[AUTO KNEE RESPONSE] U S R	Sets the auto knee response speed. The smaller the setting value the faster the response speed. **[1] … [8]** • Factory setting: [4]
[WHITE CLIP]	[WHITE CLIP] U S R	Enables/disables the white clip function. This cannot be set in HDR mode. **[OFF], [ON]** • Factory setting: [ON]
	[MASTER WHITE CLIP LEVEL] U S R	Sets the white clip level. **[80%]…[109%]** • Factory setting: [109%]
	[R WHITE CLIP LEVEL] U S R	Adjusts red to [MASTER WHITE CLIP LEVEL]. **[–15%]…[+15%]** • Factory setting: [0%]
	[B WHITE CLIP LEVEL] U S R	Adjusts blue to [MASTER WHITE CLIP LEVEL]. **[–15%]…[+15%]** • Factory setting: [0%]
	[HI-COLOR] U S R	Sets whether to improve the color reproduction in high-luminance areas. When [DRS] is enabled, the [HI-COLOR] setting is disabled. **[OFF], [ON]** • Factory setting: [OFF]
	[HI-COLOR LEVEL] U S R	Sets the level of the mode that expands the color dynamic range. **[1]…[32]** • Factory setting: [32]
[DRS]	[DRS] U S R	Enables/disables the dynamic range stretcher function. Set this to [ON] to automatically adjust the contrast. This cannot be set when [V-LOG] is [ON]. **[OFF], [ON]** • Factory setting: [OFF]
	[EFFECT DEPTH] U S R	Sets the compression level of the high-luminance areas of the dynamic range stretcher function. Set a larger value to increase the compression level of the high-luminance areas. **[1]…[5]** • Factory setting: [5]
[DETAIL SETTING]	[DETAIL] U S R	Enables/disables all detail functions. **[OFF], [ON]** • Factory setting: [ON]
	[MASTER DETAIL] U S R	Sets the master detail. **[–31]…[+31]** • Factory setting: [0]
	[PEAK FREQUENCY] U S R	Sets the peak frequency of the horizontal detail. **[1] … [8]** • Factory setting: [6]
	[CRISP] U S R	Sets the detail signal noise removal level. **[0] … [63]** • Factory setting: [0]
	[DETAIL GAIN(+)] U S R	Sets the detail level in the + (upward) direction. **[–31] … [+31]** • Factory setting: [0]
	[DETAIL GAIN(–)] U S R	Sets the detail level in the – (downward) direction. **[–31] … [+31]** • Factory setting: [0]
	[DETAIL CLIP(+)] U S R	Adjust the detail clip to reduce glare produced by an excess of details. **[0] … [63]** • Factory setting: [0]
	[DETAIL CLIP(–)] U S R	Adjusts the length of the undershoot of the detail edge component. **[0] … [63]** • Factory setting: [0]
	[KNEE APERTURE LEVEL] U S R	Adjusts the knee aperture level. **[0] … [39]** • Factory setting: [0]
	[DETAIL KNEE] U S R	Adjusts the detail components of knee. **[0] … [15]** • Factory setting: [0]
	[LEVEL DEPENDENT SW] U S R	Enables/disables the function to remove details of dark areas. **[OFF], [ON]** • Factory setting: [OFF]
	[LEVEL DEPENDENT] U S R	Sets the level to remove details of dark areas. **[0] … [15]** • Factory setting: [8]

Item			Description of settings
		[DARK DETAIL SW] USR	Enables/disables the function to emphasize details of dark areas. **[OFF], [ON]** • Factory setting: [OFF]
		[DARK DETAIL] USR	Sets the level to emphasize details of dark areas. **[0] … [7]** • Factory setting: [3]
[DOWNCON SETTING]	This cannot be set in HD mode.		
	[CHROMA]	[CHROMA LEVEL SW] USR	Enables/disables the gain adjustment of chroma. **[OFF], [ON]** • Factory setting: [OFF]
		[CHROMA LEVEL] USR	Sets the gain adjustment of chroma. **[–100%]…[+80%]** • Factory setting: [0%]
	[DETAIL SETTING]	[DETAIL] USR	Enables/disables all detail functions. **[OFF], [ON]** • Factory setting: [ON]
		[MASTER DETAIL] USR	Sets the master detail. **[–31]…[+31]** • Factory setting: [0]
		[H DETAIL LEVEL] USR	Sets the correction level of the horizontal detail. **[0]…[63]** • Factory setting: [15]
		[V DETAIL LEVEL] USR	Sets the correction level of the vertical detail. **[0]…[63]** • Factory setting: [15]
		[PEAK FREQUENCY] USR	Sets the peak frequency of the horizontal detail. **[12.4MHz], [12.5MHz], [12.7MHz], [12.9MHz], [13.0MHz], [13.3MHz], [13.6MHz], [13.9MHz], [14.2MHz], [14.6MHz], [15.0MHz], [15.5MHz], [16.1MHz], [16.7MHz], [17.3MHz], [18.3MHz], [18.6MHz], [18.8MHz], [19.0MHz], [19.2MHz], [19.5MHz], [19.9MHz], [20.3MHz], [20.9MHz], [21.5MHz], [22.4MHz], [23.6MHz], [25.4MHz], [28.6MHz], [37.1MHz]** • Factory setting: [15.0MHz]
		[V DETAIL FREQUENCY] USR	Sets the vertical detail frequency. **[0]…[31]** • Factory setting: [10]
		[CRISP] USR	Sets the detail signal noise removal level. **[0]…[63]** • Factory setting: [10]
		[DETAIL CLIP(+)] USR	Adjust the detail clip to reduce glare produced by an excess of details. **[0]…[63]** • Factory setting: [0]
		[DETAIL CLIP(–)] USR	Adjusts the length of the undershoot of the detail edge component. **[0]…[63]** • Factory setting: [0]
		[KNEE APERTURE LEVEL] USR	Adjusts the knee aperture level. **[0] … [39]** • Factory setting: [0]
		[DETAIL KNEE] USR	Adjusts the detail components of knee. **[0] … [15]** • Factory setting: [0]
		[LEVEL DEPENDENT SW] USR	Enables/disables the function to remove details of dark areas. **[OFF], [ON]** • Factory setting: [OFF]
		[LEVEL DEPENDENT] USR	Sets the level to remove details of dark areas. **[0] … [15]** • Factory setting: [8]
		[DARK DETAIL SWITCH] USR	Enables/disables the function to emphasize details of dark areas. **[OFF], [ON]** • Factory setting: [OFF]
		[DARK DETAIL] USR	Sets the level to emphasize details of dark areas. **[0] … [7]** • Factory setting: [2]
	[SKIN TONE DETAIL SETTING]	[SKIN TONE DETAIL] USR	Enables/disables the skin tone detail function. **[OFF], [ON]** • Factory setting: [OFF]
		[MEMORY SELECT] USR	Selects the skin tone table of the subject to apply the skin tone table to. **[A], [B], [C]** • Factory setting: [A]
		[ZEBRA] USR	Enables/disables the zebra display. **[OFF], [ON]** • Factory setting: [OFF]
		[ZEBRA EFFECT MEMORY] USR	Selects the table of the zebra display. **[A], [B], [C], [A+B], [A+C], [B+C], [A+B+C]** • Factory setting: [A+B+C]

Item			Description of settings
		[SKIN TONE EFFECT MEMORY] U S R	Selects the skin tone table used to apply the skin tone detail. **[A], [B], [C], [A+B], [A+C], [B+C], [A+B+C]** • Factory setting: [A+B+C]
		[SKIN TONE CRISP] U S R	Adjusts the skin tone detail. **[0]…[8]** • Factory setting: [8]
		[I CENTER] U S R	Sets the center position on the I axis (the area where the skin tone effect is applied). **[0]…[255]** • Factory setting: [65]
		[I WIDTH] U S R	Sets the width of the area where the skin tone effect is applied on the I axis with [I CENTER] being the center. **[0]…[255]** • Factory setting: [63]
		[Q WIDTH] U S R	Sets the width of the area where the skin tone effect is applied on the Q axis with [I CENTER] being the center. **[0]…[255]** • Factory setting: [32]
		[Q PHASE] U S R	Sets the phase of the area where the skin tone effect is applied with the Q axis being the reference. **[0]…[359]** • Factory setting: [90]
[SKIN TONE DETAIL SETTING]		[SKIN TONE DETAIL] U S R	Enables/disables the skin tone detail function. This cannot be set if [ALL MENU] → [PAINT] → [DETAIL SETTING] → [DETAIL] → [OFF] is set. **[OFF], [ON]** • Factory setting: [OFF]
		[SKIN GET] U S R	Selects whether to automatically obtain the color saturation and hue information from the cursor position. **[NO], [YES]**
		[MEMORY SELECT] U S R	Selects the skin tone table of the subject to apply the skin tone table to. **[A], [B], [C]** • Factory setting: [A]
		[CURSOR] U S R	Shows/hides the box cursor in the center of the screen. **[OFF], [ON]** • Factory setting: [OFF]
		[H POSITION] U S R	Adjusts the horizontal position of the cursor. **[0%]…[100%]** (0.25% step) • Factory setting: [50%]
		[V POSITION] U S R	Adjusts the vertical position of the cursor. **[0%]…[100%]** (0.25% step) • Factory setting: [50%]
		[ZEBRA] U S R	Enables/disables the zebra display. **[OFF], [ON]** • Factory setting: [OFF]
		[ZEBRA EFFECT MEMORY] U S R	Selects the table of the zebra display. **[A], [B], [C], [A+B], [A+C], [B+C], [A+B+C]** • Factory setting: [A+B+C]
		[SKIN TONE EFFECT MEMORY] U S R	Selects the skin tone table used to apply the skin tone detail. **[A], [B], [C], [A+B], [A+C], [B+C], [A+B+C]** • Factory setting: [A+B+C]
		[SKIN TONE CRISP] U S R	Adjusts the skin tone detail. **[–63]…[+63]** • Factory setting: [+63]
		[I CENTER] U S R	Sets the center position on the I axis (the area where the skin tone effect is applied). **[0]…[255]** • Factory setting: [65]
		[I WIDTH] U S R	Sets the width of the area where the skin tone effect is applied on the I axis with [I CENTER] being the center. **[0]…[255]** • Factory setting: [63]
		[Q WIDTH] U S R	Sets the width of the area where the skin tone effect is applied on the Q axis with [I CENTER] being the center. **[0]…[255]** • Factory setting: [32]
		[Q PHASE] U S R	Sets the phase of the area where the skin tone effect is applied with the Q axis being the reference. **[0]…[359]** • Factory setting: [90]

Item		Description of settings
[LINEAR MATRIX]	[PRESET MATRIX] U S R	Sets the preset matrix. **[HD]:** Matrix setting conforming to Panasonic broadcasting devices. Set [GAMMA] to [HD] for use. **[NORMAL]:** Matrix setting that puts emphasis on outdoor settings. Set [GAMMA] to [NORMAL] for use. **[STD1]:** Matrix setting conforming to Panasonic studio camera AK-UC4000G (NORM-NORMAL). Set [GAMMA] to [HD] for use. **[STD2]:** Matrix setting conforming to Panasonic studio camera AK-UC4000G (NORM-0E.11). Set [GAMMA] to [HD] for use. **[CINEMA1]:** High contrast matrix setting. Set [GAMMA] to [CINEMA1] for use. **[CINEMA2]:** Sedate matrix setting. Set [GAMMA] to [CINEMA2] for use. **[USER]:** Matrix setting conforming to Panasonic remote camera AW-UE150. Set [GAMMA] to [HD] for use. • Factory setting: [STD1]
	[MATRIX] U S R	Enables/disables the matrix function (linear matrix, 12-axis color correction). **[OFF], [ON]** • Factory setting: [OFF]
	[LINEAR MATRIX] U S R	Enables/disables the linear matrix function. **[OFF], [ON]** • Factory setting: [OFF]
	[LINEAR TABLE] U S R	Selects the table for linear matrix. **[A], [B]** • Factory setting: [A]
	[COLOR CORRECT] U S R	Enables/disables the 12-axis color correction function. **[OFF], [ON]** • Factory setting: [OFF]
	[COLOR CORRECT TABLE] U S R	Selects the table for color correction. **[A], [B]** • Factory setting: [A]
	[MATRIX (R-G)_N] U S R	Adjusts the linear matrix between red and green. This item is not available when [MATRIX] is set to [OFF]. **[–31]…[+31]** • Factory setting: [0]
	[MATRIX (R-G)_P] U S R	Adjusts the linear matrix between red and green. This item is not available when [MATRIX] is set to [OFF]. **[–31]…[+31]** • Factory setting: [0]
	[MATRIX (R-B)_N] U S R	Adjusts the linear matrix between red and blue. This item is not available when [MATRIX] is set to [OFF]. **[–31]…[+31]** • Factory setting: [0]
	[MATRIX (R-B)_P] U S R	Adjusts the linear matrix between red and blue. This item is not available when [MATRIX] is set to [OFF]. **[–31]…[+31]** • Factory setting: [0]
	[MATRIX (G-R)_N] U S R	Adjusts the linear matrix between green and red. This item is not available when [MATRIX] is set to [OFF]. **[–31]…[+31]** • Factory setting: [0]
	[MATRIX (G-R)_P] U S R	Adjusts the linear matrix between green and red. This item is not available when [MATRIX] is set to [OFF]. **[–31]…[+31]** • Factory setting: [0]
	[MATRIX (G-B)_N] U S R	Adjusts the linear matrix between green and blue. This item is not available when [MATRIX] is set to [OFF]. **[–31]…[+31]** • Factory setting: [0]
	[MATRIX (G-B)_P] U S R	Adjusts the linear matrix between green and blue. This item is not available when [MATRIX] is set to [OFF]. **[–31]…[+31]** • Factory setting: [0]
	[MATRIX (B-R)_N] U S R	Adjusts the linear matrix between blue and red. This item is not available when [MATRIX] is set to [OFF]. **[–31]…[+31]** • Factory setting: [0]
	[MATRIX (B-R)_P] U S R	Adjusts the linear matrix between blue and red. This item is not available when [MATRIX] is set to [OFF]. **[–31]…[+31]** • Factory setting: [0]
	[MATRIX (B-G)_N] U S R	Adjusts the linear matrix between blue and green. This item is not available when [MATRIX] is set to [OFF]. **[–31]…[+31]** • Factory setting: [0]

Item		Description of settings
	[MATRIX (B-G)_P] U S R	Adjusts the linear matrix between blue and green. This item is not available when [MATRIX] is set to [OFF]. **[–31]…[+31]** • Factory setting: [0]
[COLOR CORRECTION]	[PRESET MATRIX] U S R	Sets the preset matrix. **[HD]:** Matrix setting conforming to Panasonic broadcasting devices. Set [GAMMA] to [HD] for use. **[NORMAL]:** Matrix setting that puts emphasis on outdoor settings. Set [GAMMA] to [NORMAL] for use. **[STD1]:** Matrix setting conforming to Panasonic studio camera AK-UC4000G (NORM-NORMAL). Set [GAMMA] to [HD] for use. **[STD2]:** Matrix setting conforming to Panasonic studio camera AK-UC4000G (NORM-0E.11). Set [GAMMA] to [HD] for use. **[CINEMA1]:** High contrast matrix setting. Set [GAMMA] to [CINEMA1] for use. **[CINEMA2]:** Sedate matrix setting. Set [GAMMA] to [CINEMA2] for use. **[USER]:** Matrix setting conforming to Panasonic remote camera AW-UE150. Set [GAMMA] to [HD] for use. • Factory setting: [STD1]
	[MATRIX] U S R	Enables/disables the matrix function (linear matrix, 12-axis color correction). **[OFF], [ON]** • Factory setting: [OFF]
	[LINEAR MATRIX] U S R	Enables/disables the linear matrix function. **[OFF], [ON]** • Factory setting: [OFF]
	[LINEAR TABLE] U S R	Selects the table for linear matrix. **[A], [B]** • Factory setting: [A]
	[COLOR CORRECT] U S R	Enables/disables the 12-axis color correction function. **[OFF], [ON]** • Factory setting: [OFF]
	[COLOR CORRECT TABLE] U S R	Selects the table for color correction. **[A], [B]** • Factory setting: [A]
	[G SAT] U S R	Adjusts green color saturation. **[–127]…[+126]** • Factory setting: [0]
	[G PHASE] U S R	Adjusts green hue. **[–127]…[+126]** • Factory setting: [0]
	[G_CY SAT] U S R	Adjusts the color saturation between green and cyan. **[–127]…[+126]** • Factory setting: [0]
	[G_CY PHASE] U S R	Adjusts the hue between green and cyan. **[–127]…[+126]** • Factory setting: [0]
	[CY SAT] U S R	Adjusts cyan color saturation. **[–127]…[+126]** • Factory setting: [0]
	[CY PHASE] U S R	Adjusts cyan hue. **[–127]…[+126]** • Factory setting: [0]
	[CY_B SAT] U S R	Adjusts the color saturation between cyan and blue. **[–127]…[+126]** • Factory setting: [0]
	[CY_B PHASE] U S R	Adjusts the hue between cyan and blue. **[–127]…[+126]** • Factory setting: [0]
	[B SAT] U S R	Adjusts blue color saturation. **[–127]…[+126]** • Factory setting: [0]
	[B PHASE] U S R	Adjusts blue hue. **[–127]…[+126]** • Factory setting: [0]
	[B_MG SAT] U S R	Adjusts the color saturation between blue and magenta. **[–127]…[+126]** • Factory setting: [0]
	[B_MG PHASE] U S R	Adjusts the hue between blue and magenta. **[–127]…[+126]** • Factory setting: [0]
	[MG_SAT] U S R	Adjusts magenta color saturation. **[–127]…[+126]** • Factory setting: [0]

Item			Description of settings
		[MG_PHASE] U S R	Adjusts magenta hue. **[–127]…[+126]** • Factory setting: [0]
		[MG_R SAT] U S R	Adjusts the color saturation between magenta and red. **[–127]…[+126]** • Factory setting: [0]
		[MG_R PHASE] U S R	Adjusts the hue between magenta and red. **[–127]…[+126]** • Factory setting: [0]
		[R SAT] U S R	Adjusts red color saturation. **[–127]…[+126]** • Factory setting: [0]
		[R PHASE] U S R	Adjusts red hue. **[–127]…[+126]** • Factory setting: [0]
		[R_YE SAT] U S R	Adjusts the color saturation between red and yellow. **[–127]…[+126]** • Factory setting: [0]
		[R_YE PHASE] U S R	Adjusts the hue between red and yellow. **[–127]…[+126]** • Factory setting: [0]
		[YE SAT] U S R	Adjusts yellow color saturation. **[–127]…[+126]** • Factory setting: [0]
		[YE PHASE] U S R	Adjusts yellow hue. **[–127]…[+126]** • Factory setting: [0]
		[YE_G SAT] U S R	Adjusts the color saturation between yellow and green. **[–127]…[+126]** • Factory setting: [0]
		[YE_G PHASE] U S R	Adjusts the hue between yellow and green. **[–127]…[+126]** • Factory setting: [0]
[DNR]		[DNR] U S R	Enables/disables the noise reduction function. **[OFF], [ON]** • Factory setting: [ON]
		[DNR LEVEL] U S R	Sets the level of noise reduction. **[1]…[5]** • Factory setting: [3]
[ROP CONTROL]		[CONTROL ROTATION MODE] U S R	Sets the control rotation mode of ROP. **[MODE1], [MODE2]** • Factory setting: [MODE2]
[V-LOG PAINT]		This can be set when [BASIC CONFIG] – [V-LOG] is [ON] and [V-LOG PAINT SW] is [OFF].	
	[COLOR TEMP SETTING]	[COLOR TEMP PRESET]	—
		[COLOR TEMP PRE SWITCH] U S R	Enables/disables the color temperature adjustment. **[OFF], [ON]** • Factory setting: [OFF]
		[COLOR TEMP] U S R	Sets the color temperature when [COLOR TEMP PRE SWITCH] is set to [ON]. **[2000K] … [15000K]** • Factory setting: [3200K]
		[R GAIN] U S R	Sets the correction level of red to the color temperature. **[–400]…[+400]** • Factory setting: [0]
		[B GAIN] U S R	Sets the correction level of blue to the color temperature. **[–400]…[+400]** • Factory setting: [0]
		[G AXIS] U S R	Sets the correction level of green to the color temperature. **[–400]…[+400]** • Factory setting: [0]
		[COLOR TEMP]	—
		[COLOR TEMP] U S R	Sets the color temperature. **[2000K] … [15000K]** • Factory setting: [3200K]
		[R GAIN] U S R	Sets the correction level of red to the color temperature. **[–400]…[+400]** • Factory setting: [0]
		[B GAIN] U S R	Sets the correction level of blue to the color temperature. **[–400]…[+400]** • Factory setting: [0]
		[G AXIS] U S R	Sets the correction level of green to the color temperature. **[–400]…[+400]** • Factory setting: [0]

Item			Description of settings
[DNR]		[DNR] U S R	Enables/disables the noise reduction function. **[OFF], [ON]** • Factory setting: [ON]
		[DNR LEVEL] U S R	Sets the level of noise reduction. **[1]…[5]** • Factory setting: [3]
[HDR PAINT]		This can be set when [BASIC CONFIG] – [HDR] is [ON].	
[HLG MODE] U S R			Sets the mode of HLG. **[FIX]:** Fixed mode **[VAR]:** Variable mode • Factory setting: [FIX]
[SDR CONVERT MODE] U S R			Selects the mode to convert to SDR. **[FIX]:** Fixed mode (Gain fixed to −10 dB) **[VAR]:** Variable mode • Factory setting: [FIX]
[GAMMA/BLACK GAMMA]		This cannot be set when [HLG MODE] is [FIX].	
		[BLACK GAMMA] U S R	Enables/disables black gamma. **[OFF], [ON]** • Factory setting: [OFF]
		[MASTER BLACK GAMMA] U S R	Adjusts the gamma characteristic adjacent to black. **[−32]…[+32]** • Factory setting: [0]
		[R BLACK GAMMA] U S R	Adjusts the gamma characteristic of red adjacent to black to the master gamma. **[−32]…[+32]** • Factory setting: [0]
		[B BLACK GAMMA] U S R	Adjusts the gamma characteristic of blue adjacent to black to the master gamma. **[−32]…[+32]** • Factory setting: [0]
[KNEE]		This cannot be set when [HLG MODE] is [FIX].	
		[KNEE] U S R	Enables/disables knee. **[OFF], [ON]** • Factory setting: [ON]
		[KNEE POINT] U S R	Sets the knee point position. **[60.00]…[100.00]** (0.25 step) • Factory setting: [100.00]
		[KNEE SLOPE] U S R	Sets the knee slope. **[0]…[199]** • Factory setting: [0]
[SDR CONVERT]		This cannot be set when [SDR CONVERT MODE] is [FIX].	
		[GAIN] U S R	Sets the gain of SDR. **[−12dB], [−11dB], [−10dB], [−9dB], [−8dB], [−7dB], [−6dB], [−5dB], [0dB]** • Factory setting: [−6dB]
		[POINT] U S R	Sets the video level to start compression for SDR video. **[0]…[100]** • Factory setting: [100]
		[SLOPE] U S R	Sets the slope to compress video signals. **[0]…[127]** • Factory setting: [0]
		[BLACK OFFSET] U S R	Adjusts the black level offset for the SDR video. **[-100]…[+100]** • Factory setting: [0]
[PAINT SWITCH]		[FLARE] U S R	Enables/disables flare. **[OFF], [ON]** • Factory setting: [ON]
		[GAMMA] U S R	Enables/disables gamma. **[OFF], [ON]** • Factory setting: [ON]
		[BLACK GAMMA] U S R	Enables/disables black gamma. **[OFF], [ON]** • Factory setting: [OFF]
		[KNEE] U S R	Enables/disables knee. **[OFF], [ON]** • Factory setting: [ON]
		[WHITE CLIP] U S R	Enables/disables white clips. **[OFF], [ON]** • Factory setting: [ON]
		[DRS] U S R	Enables/disables dynamic range stretcher. **[OFF], [ON]** • Factory setting: [OFF]
		[DETAIL] U S R	Enables/disables the detail. **[OFF], [ON]** • Factory setting: [ON]

Item		Description of settings
	[SKIN TONE DETAIL] U S R	Enables/disables the skin tone detail. **[OFF], [ON]** • Factory setting: [OFF]
	[MATRIX] U S R	Enables/disables matrix (linear matrix/12-axis color correction). **[OFF], [ON]** • Factory setting: [OFF]
	[LINEAR MATRIX] U S R	Enables/disables linear matrix. **[OFF], [ON]** • Factory setting: [OFF]
	[COLOR CORRECT] U S R	Enables/disables 12-axis color correction. **[OFF], [ON]** • Factory setting: [OFF]

[LENS]

Item	Description of settings
[DIGITAL EXTENDER] U O	Sets the ratio for the digital extender. **[OFF], [x1.4], [x2.0]** • Factory setting: [OFF]
[ND FILTER] S U	Selects the ND filter. **[THROUGH], [1/4], [1/16], [1/64]** • Factory setting: [THROUGH]
[IRIS]	—
[LENS EXT COMP SW] U O	Sets the ALC compensation when the lens extender is enabled. **[OFF], [ON]** • Factory setting: [OFF]
[EXTENDER1] U O R	Sets the magnification of lens extender 1. **[NONE], [0.1]…[9.9]** • Factory setting: [2.0]
[LENS EXT COMP LEVEL] U O	Sets the iris compensation level when lens extender 1 is enabled. **[−100]…[+100]** • Factory setting: [0]
[EXTENDER2] U O R	Sets the magnification of lens extender 2. **[NONE], [0.1]…[9.9]** • Factory setting: [NONE]
[LENS EXT COMP LEVEL] U O	Sets the iris compensation level when lens extender 2 is enabled. **[−100]…[+100]** • Factory setting: [0]
[EXTENDER3] U O R	Sets the magnification of lens extender 3. **[NONE], [0.1]…[9.9]** • Factory setting: [NONE]
[LENS EXT COMP LEVEL] U O	Sets the iris compensation level when lens extender 3 is enabled. **[−100]…[+100]** • Factory setting: [0]
[EXTENDER4] U O R	Sets the magnification of lens extender 4. **[NONE], [0.1]…[9.9]** • Factory setting: [NONE]
[LENS EXT COMP LEVEL] U O	Sets the iris compensation level when lens extender 4 is enabled. **[−100]…[+100]** • Factory setting: [0]
[LENS OPERATION MODE]	—
[ZOOM CONTROL] U O	Switches the zoom control of the lens. **[LENS]:** Zoom demand control **[REMOTE]:** Camera control • Factory setting: [LENS]
[FOCUS CONTROL] U O	Switches the focus control of the lens. **[LENS]:** Focus demand control **[REMOTE]:** Camera control **[CAM]:** Both focus demand control and camera control • Factory setting: [CAM]

[DISPLAY SETUP]

Item		Description of settings
[FOCUS ASSIST]	[FOCUS ASSIST SW] U O	Enables/disables the focus assist. **[OFF], [ON]** • Factory setting: [OFF]
	[FOCUS ASSIST MODE] U O	Sets whether to cancel the focus assist by the switch or by the duration of time. **[SW], [INSTANT]** • Factory setting: [SW]
	[CANCEL TIME] U O	Sets the duration of time before cancelling the focus assist when [INSTANT] is selected. **[1sec], [3sec], [5sec], [10sec], [20sec]** • Factory setting: [5sec]
	[IN RED SW] U O	Enables/disables the IN RED. **[OFF], [ON]** • Factory setting: [OFF]
	[IN RED COLOR] U O	Sets the color for IN RED. **[RED], [GREEN], [BLUE], [WHITE]** • Factory setting: [RED]
	[SQUARE SW] U O	Enables/disables the SQUARE. **[OFF], [ON]** • Factory setting: [OFF]
	[SQUARE COLOR] U O	Sets the color for the SQUARE. **[RED], [GREEN]** • Factory setting: [GREEN]
	[BAR SW] U O	Enables/disables the BAR. **[OFF], [ON]** • Factory setting: [OFF]
	[BAR MODE] U O	Sets the appearance of the focus bar. **[NORMAL], [THICK]** • Factory setting: [NORMAL]
	[BAR COLOR] U O	Sets the color of the bar when [BAR MODE] is set to [THICK]. **[WHITE], [RED], [BLUE], [GREEN]** • Factory setting: [WHITE]
	[BAR POSITION] U O	Sets the display position of the bar when [BAR MODE] is set to [THICK]. **[UPPER], [UNDER], [RIGHT], [LEFT]** • Factory setting: [UNDER]
	[MAG SW] U O	Enables/disables the magnification display function. **[OFF], [ON]** • Factory setting: [OFF]
	[FOCUS GUIDE SW] U O	Enables/disables the focus guide function. **[OFF], [ON]** • Factory setting: [OFF]
[EXPOSURE ASSIST]	[ZEBRA] U O	Enables/disables the luminance zebra. **[OFF], [ON]** • Factory setting: [OFF]
	[ZEBRA1 LEVEL] U O	Sets the level of the luminance zebra 1. **[0%]…[109%]** • Factory setting: [80%]
	[ZEBRA2 LEVEL] U O	Sets the level of the luminance zebra 2. **[0%]…[109%]** • Factory setting: [100%]
	[ZEBRA PATTERN] U O	Sets the pattern of the luminance zebra. **[1], [1+2], [SPOT]** • Factory setting: [1]
[MARKER]	[MARKER LEVEL] U O	Sets the brightness of the markers and on-screen display. **[50%] …[100%]** • Factory setting: [100%]
	[CENTER MARK] U O	Shows/hides the center marker. **[OFF], [ON]** • Factory setting: [OFF]
	[CENTER MARK SELECT] U O	Sets the size of the center marker. **[1]…[8]** • Factory setting: [1]
	[LINE WIDTH] U O	Sets the thickness of the center marker frame. **[1]…[3]** • Factory setting: [2]
	[SAFETY MARK1 SWITCH] U O	Shows/hides the safety marker 1. **[OFF], [ON]** • Factory setting: [OFF]
	[SAFETY MARK1] U O	Sets the aspect ratio of safety marker 1. **[16:9], [15:9], [14:9], [13:9], [4:3]** • Factory setting: [16:9]
	[SAFETY AREA1] U O	Sets the size of safety area 1. **[80%]…[100%]** • Factory setting: [80%]

Item		Description of settings
	[SAFETY MARK2 SWITCH] U O	Shows/hides the safety marker 2. **[OFF], [ON]** • Factory setting: [OFF]
	[SAFETY MARK2] U O	Sets the aspect ratio of safety marker 2. **[16:9], [15:9], [14:9], [13:9], [4:3]** • Factory setting: [16:9]
	[SAFETY AREA2] U O	Sets the size of safety marker 2. **[80%]…[100%]** • Factory setting: [80%]
	[FRAME LEVEL SWITCH] U O	Shows/hides the level display outside the frame marker. **[OFF], [ON]** • Factory setting: [OFF]
	[FRAME LEVEL] U O	Sets the level to be displayed outside the frame marker. **[0]…[31]** • Factory setting: [31]
	[FRAME MARK SWITCH] U O	Shows/hides the frame marker. **[OFF], [ON]** • Factory setting: [OFF]
	[FRAME SIG] U O	Sets the aspect ratio of the frame marker. **[4:3], [13:9], [14:9], [15:9], [16:9], [CINEMA], [VISTA]** • Factory setting: [4:3]
	[EFFECTIVE AREA MARK] U O	Shows/hides the effective area marker. **[OFF], [ON]** • Factory setting: [OFF]
	[PF LENS AREA MARK] U O	Shows/hides the auto focus area marker of the PF lens. **[OFF], [AUTO]** • Factory setting: [OFF]
	[USER BOX] U O	Shows/hides the user box. **[OFF], [ON]** • Factory setting: [OFF]
	[MEMORY SELECT] U O	Configures the memory of the user box. **[1], [2], [3]** • Factory setting: [1]
	[H POSITION] U O	Adjusts the horizontal position of the user box. **[–50]…[50]** • Factory setting: [0]
	[H OFFSET] U O	Finely adjusts the horizontal offset of the user box. **[–10]…[10]** • Factory setting: [0]
	[V POSITION] U O	Adjusts the vertical position of the user box. **[–50]…[50]** • Factory setting: [0]
	[V OFFSET] U O	Finely adjusts the vertical offset of the user box. **[–10]…[10]** • Factory setting: [0]
	[WIDTH] U O	Adjusts the width of the user box. **[0]…[100]** • Factory setting: [50]
	[HEIGHT] U O	Adjusts the height of the user box. **[0]…[100]** • Factory setting: [50]
	[BOX/CROSS] U O	Sets the shape of the user box. **[BOX], [CROSS]** • Factory setting: [BOX]
	[EFFECT MEMORY1] U O	Configures the valid memory of the user box. **[OFF], [ON]** • Factory setting: [OFF]
	[EFFECT MEMORY2] U O	Configures the valid memory of the user box. **[OFF], [ON]** • Factory setting: [OFF]
	[EFFECT MEMORY3] U O	Configures the valid memory of the user box. **[OFF], [ON]** • Factory setting: [OFF]
[MONITOR DARK GAIN]	[DARK GAIN SW]	Enables/disables dark gain. **[OFF], [ON]** • Factory setting: [OFF]
	[DARK GAIN LEVEL]	Sets the level by which dark areas are emphasized. **[1] … [3]** • Factory setting: [2]

Item		Description of settings
[STATUS INDICATOR]		For items whose setting is [ON], the LED in the viewfinder (⚠) lights up when the operating status of the camera becomes irregular.
	[F NUMBER] U O	Shows/hides the iris display (F value). **[OFF], [ON]** • Factory setting: [OFF] This is displayed when you use a lens that outputs position information.
	[ZOOM] U O	Shows/hides the zoom position display. **[OFF], [ON]** • Factory setting: [OFF] This is displayed when you use a lens that outputs position information.
	[FOCUS] U O	Shows/hides the focus position display. **[OFF], [ON]** • Factory setting: [OFF] This is displayed when you use a lens that outputs position information.
	[FOCUS CONDITION] U O	Shows/hides the focus information display. **[OFF], [ON]** • Factory setting: [OFF]
	[EXTENDER] U O	Shows/hides the extender display. **[OFF], [ON]** • Factory setting: [OFF]
	[FILTER] U O	Shows/hides the filter position display. **[OFF], [ON]** • Factory setting: [OFF]
	[MASTER GAIN] U O	Shows/hides the master gain display. **[OFF], [ON]** • Factory setting: [OFF]
	[OFFSET GAIN] U O	Shows/hides the offset gain display. **[OFF], [ON]** • Factory setting: [OFF]
	[SHUTTER] U O	Shows/hides the electronic shutter display. **[OFF], [ON]** • Factory setting: [OFF]
	[DIGITAL EXTENDER] U O	Shows/hides the digital extender display. **[OFF], [ON]** • Factory setting: [OFF]
	[DRS] U O	Shows/hides the dynamic range stretcher display. **[OFF], [ON]** • Factory setting: [OFF]
	[CAC] U O	Shows/hides the chromatic aberration compensation (CAC) display. **[OFF], [ON]** • Factory setting: [OFF]
	[OPT LEVEL] U O	Shows/hides the display of the level of the optical signal received by the camera. **[OFF], [ON]** • Factory setting: [OFF]
	[STATUS] U O	Shows/hides the display appearing when functions are selected. **[OFF], [ON]** • Factory setting: [OFF]
	[STATUS(AUTO)] U O	Shows/hides the display appearing when AWB/ABB are activated or deactivated. **[OFF], [ON]** • Factory setting: [OFF]
	[VOLTAGE] U O	Shows/hides the power supply display. **[OFF], [ON]** • Factory setting: [OFF]
	[FORMAT] U O	Shows/hides the system frequency/resolution display. **[OFF], [ON]** • Factory setting: [OFF]
	[SENSOR RATE] U O	Shows/hides the sensor imaging rate display. **[OFF], [ON]** • Factory setting: [OFF]
	[FAN OFF] U O	Shows/hides the status display when the fan is off. **[OFF], [ON]** • Factory setting: [OFF]
	[COLOR TEMP] U O	Shows/hides the color temperature display. **[OFF], [ON]** • Factory setting: [OFF]
	[SHOOTING MODE] U O	Shows/hides the sensitivity mode display. **[OFF], [ON]** • Factory setting: [OFF]
	[MAG] U O	Shows/hides the status display when the focus assist magnification display function is enabled. **[OFF], [ON]** • Factory setting: [ON]

Item		Description of settings
	[MENU DISP WARNING] U O	Shows/hides the menu warning display. **[OFF], [ON]** • Factory setting: [ON]
	[F DROP ADJUST] U O	Shows/hides the F drop display. **[OFF], [ON]** • Factory setting: [OFF]
	[HDR] U O	Shows/hides the HDR display. **[OFF], [ON]** • Factory setting: [OFF]
	[V-LOG] U O	Shows/hides the V-LOG display. **[OFF], [ON]** • Factory setting: [OFF]
	[TALLY CHAR] U O	Shows/hides the TALLY character display. **[OFF], [ON]** • Factory setting: [OFF]
	[FOCUS DISP] U O	Switches the focus value unit display. **[FEET], [METER], [NUMBER]** • Factory setting: [NUMBER]

[TRACKING DATA OUTPUT]

Make settings related to the output of tracking data used in virtual studio systems, etc.

Item	Description of settings
[IP] U R	Enables/disables the function which outputs with UDP the tracking data such as Zoom data via IP output and synchronizes it with the GENLOCK signal. **[OFF], [ON]** • Factory setting: [OFF]
[CAMERA ID] U R	Sets the Camera ID for tracking data. **[0x00] … [0xFF]** • Factory setting: [0xFF] This can be set between [0] and [255] in the web screen.

[FILES]

Item		Description of settings
[SCENE FILE]	[MODE]	Selects the operation mode. **[LOAD], [STORE]** • Factory setting: [LOAD]
	[FILE NO.]	Selects a file number. When [MODE] is [LOAD]: **[OFF], [1]…[8]** When [MODE] is [STORE]: **[1]…[8]** • Factory setting: [OFF]
	[FILE NAME] U S R	Enters a file name. (15 characters or less) • Factory setting: [SCENE1]
	[LIST]	The file names set for the SCENE files are shown in a list. Up to 3 can be shown in the list at a time, and then the list can be scrolled.
	[EXECUTE]	Selects whether to execute with the configured settings. **[NO], [YES]**
[USER FILE]	[MODE]	Selects the operation mode. **[LOAD], [STORE]** • Factory setting: [LOAD]
	[FILE NO.]	Selects a file. **[1], [2], [3]** • Factory setting: [1]
	[FILE NAME] U R	Enters a file name. (15 characters or less) • Factory setting: [USER1]
	[LIST]	The file names set for the SCENE files are shown in a list. Up to 3 can be shown in the list at a time, and then the list can be scrolled.
	[EXECUTE]	Selects whether to execute with the configured settings. **[NO], [YES]**
[REFFERENCE FILE]		
[MODE]		Selects the operation mode. **[LOAD], [STORE]** • Factory setting: [LOAD]
[FILE NO.]		Selects a file. **[1], [2], [3]** • Factory setting: [1]
[FILE NAME] U R		Enters a file name. (15 characters or less) • Factory setting: [REFERENCE]
[LIST]		The file names set for the REFERENCE files are shown in a list. Up to 3 can be shown in the list at a time, and then the list can be scrolled.
[EXECUTE]		Selects whether to execute with the configured settings. **[NO], [YES]**
[ACCOUNT SETTING]		
[ROP]		—
[LIST]		Press the <SELECT> dial button to display a list of accounts recorded in the device.

NOTE

- If files names listed in [FILE NAME] contains characters that cannot be used on this unit, they will be replaced with "_" when displayed.

[MAINTENANCE]

Item		Description of settings
[CAC ADJUST]	[CAC CONTROL] U R	Enables/disables the chromatic aberration compensation. **[OFF], [ON]** • Factory setting: [ON]
[LENS FILE ADJUST]		
	[LENS FILE SW]	Switches the enable/disable of the lens file. **[OFF], [ON]** • Factory setting: [OFF]
	[LENS FILE MODE]	Selects the operation mode. **[LOAD], [STORE], [CANCEL]** • Factory setting: [LOAD]
	[FILE NO.]	Selects a file. When [LENS FILE MODE] is [LOAD]: **[1]…[32]** When [LENS FILE MODE] is [STORE]: **[1]…[32]** • Factory setting: [1]
	[FILE NAME]	Enters a file name. (15 characters or less) • Factory setting: [LENS FILE 1]
	[EXECUTE]	Selects whether to execute. **[NO], [YES]**
	[FLARE R] U R	Adjusts Rch flare of the data selected in [FILE NO.]. **[–100]…[+100]** • Factory setting: [0]
	[FLARE G] U R	Adjusts Gch flare of the data selected in [FILE NO.]. **[–100]…[+100]** • Factory setting: [0]
	[FLARE B] U R	Adjusts Bch flare of the data selected in [FILE NO.]. **[–100]…[+100]** • Factory setting: [0]
	[GAIN R] U R	Adjusts Rch gain of the data selected in [FILE NO.]. **[–100]…[+100]** • Factory setting: [0]
	[GAIN B] U R	Adjusts Bch gain of the data selected in [FILE NO.]. **[–100]…[+100]** • Factory setting: [0]
	[W H SAW R] U R	Adjusts Rch white shading for the data selected in [FILE NO.] horizontally using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[W H SAW G] U R	Adjusts Gch white shading for the data selected in [FILE NO.] horizontally using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[W H SAW B] U R	Adjusts Bch white shading for the data selected in [FILE NO.] horizontally using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[W H PARA R] U R	Adjusts Rch white shading for the data selected in [FILE NO.] horizontally using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[W H PARA G] U R	Adjusts Gch white shading for the data selected in [FILE NO.] horizontally using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[W H PARA B] U R	Adjusts Bch white shading for the data selected in [FILE NO.] horizontally using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[W V SAW R] U R	Adjusts Rch white shading for the data selected in [FILE NO.] vertically using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[W V SAW G] U R	Adjusts Gch white shading for the data selected in [FILE NO.] vertically using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[W V SAW B] U R	Adjusts Bch white shading for the data selected in [FILE NO.] vertically using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[W V PARA R] U R	Adjusts Rch white shading for the data selected in [FILE NO.] vertically using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[W V PARA G] U R	Adjusts Gch white shading for the data selected in [FILE NO.] vertically using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[W V PARA B] U R	Adjusts Bch white shading for the data selected in [FILE NO.] vertically using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]

Item		Description of settings
	[EXTENDER1] U O R	Sets the magnification of lens extender 1. **[NONE], [0.1]…[9.9]** • Factory setting: [2.0]
	[EXTENDER2] U O R	Sets the magnification of lens extender 2. **[NONE], [0.1]…[9.9]** • Factory setting: [NONE]
	[EXTENDER3] U O R	Sets the magnification of lens extender 3. **[NONE], [0.1]…[9.9]** • Factory setting: [NONE]
	[EXTENDER4] U O R	Sets the magnification of lens extender 4. **[NONE], [0.1]…[9.9]** • Factory setting: [NONE]
[F DROP ADJUST]	[F DROP RANGE] U R	Sets the determination reference value for the F drop of the lens. **[1] … [40]** • Factory setting: [10]
[FAN SETTING]	[FAN] U R	Sets the operation mode of the air cooling fan. **[NORMAL], [POWERFUL]** • Factory setting: [NORMAL]
[DATE/TIME]	[PRESENT]	Displays the present date and time.
	[DATE YY]	Sets the year. **[00]…[99]** • Factory setting: [24]
	[DATE MM]	Sets the month. **[01]…[12]** • Factory setting: [01]
	[DATE DD]	Sets the day. **[01]…[31]** • Factory setting: [01]
	[TIME HH]	Sets the hour. **[00]…[23]** • Factory setting: [00]
	[TIME MM]	Sets the minute. **[00]…[59]** • Factory setting: [00]
	[TIME SS]	Sets the second. **[00] … [59]** • Factory setting: [00]
	[SET EXECUTE]	Selects whether to save the configured details. **[NO], [YES]**
	[RESET]	Selects whether to reset the settings. **[NO], [YES]**

NOTE

• The clock is not set at the time of shipment. Set the clock with these items before use.

[INITIALIZE]	[MENU INITIALIZE]	Restores the value of [ALL MENU] to their factory settings. **[NO], [YES]**
	[ALL DATA INITIALIZE]	Restores the values of [ALL MENU], scene file and user file to their factory settings. **[NO], [YES]**
	[READ FACTORY ALL DATA]	Restores the values of [ALL MENU], scene file, user file, and the factory adjusted values to their factory settings. **[NO], [YES]**
[VERSION]	[SYSTEM VERSION]	Displays the version for overall system of the unit.
[HOUR METER]	[OPERATION]	Displays the cumulative hours of operation of the unit.
	[FAN]	Displays the cumulative hours of operation of the cooling fan.
[ERROR STATUS]	[FAN]	Displays the error status of the cooling fan.
	[TEMPERATURE]	Displays the temperature related error statuses. **[HIGH TEMPERATURE]:** Indicates a high temperature state. **[SENSOR ERROR]:** Displays a temperature sensor abnormality.
[WHITE SHADING]	[CORRECT] U R	Enables/disables the white shading (saw-toothed waveform or parabolic waveform) correction. **[OFF], [ON]** • Factory setting: [ON]
	[W H SAW R] U R	Adjusts the white shading gain for Rch horizontally using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[W H SAW G] U R	Adjusts the white shading gain for Gch horizontally using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[W H SAW B] U R	Adjusts the white shading gain for Bch horizontally using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]

Item		Description of settings
	[W H PARA R] U R	Adjusts the white shading gain for Rch horizontally using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[W H PARA G] U R	Adjusts the white shading gain for Gch horizontally using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[W H PARA B] U R	Adjusts the white shading gain for Bch horizontally using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[W V SAW R] U R	Adjusts the white shading gain for Rch vertically using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[W V SAW G] U R	Adjusts the white shading gain for Gch vertically using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[W V SAW B] U R	Adjusts the white shading gain for Bch vertically using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[W V PARA R] U R	Adjusts the white shading gain for Rch vertically using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[W V PARA G] U R	Adjusts the white shading gain for Gch vertically using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[W V PARA B] U R	Adjusts the white shading gain for Bch vertically using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
[BLACK SHADING]	[CORRECT] U R	Enables/disables black shading (saw-toothed waveform or parabolic waveform) correction. **[OFF], [ON]** • Factory setting: [ON]
	[B H SAW R] U R	Adjusts the black shading gain for Rch horizontally using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[B H SAW G] U R	Adjusts the black shading gain for Gch horizontally using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[B H SAW B] U R	Adjusts the black shading gain for Bch horizontally using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[B H PARA R] U R	Adjusts the black shading gain for Rch horizontally using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[B H PARA G] U R	Adjusts the black shading gain for Gch horizontally using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[B H PARA B] U R	Adjusts the black shading gain for Bch horizontally using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[B V SAW R] U R	Adjusts the black shading gain for Rch vertically using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[B V SAW G] U R	Adjusts the black shading gain for Gch vertically using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[B V SAW B] U R	Adjusts the black shading gain for Bch vertically using a saw-toothed waveform. **[–100]…[+100]** • Factory setting: [0]
	[B V PARA R] U R	Adjusts the black shading gain for Rch vertically using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[B V PARA G] U R	Adjusts the black shading gain for Gch vertically using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
	[B V PARA B] U R	Adjusts the black shading gain for Bch vertically using a parabolic waveform. **[–100]…[+100]** • Factory setting: [0]
[LENS I/F] U R		Sets the lens interface. **[ANALOG], [SERIAL]** • Factory setting: [SERIAL]

Chapter 5 Connecting to External Devices

This chapter describes the external devices that can be connected to the camera.

Connecting the remote camera controller (AW-RP60N/AW-RP60E/AW-RP150G)

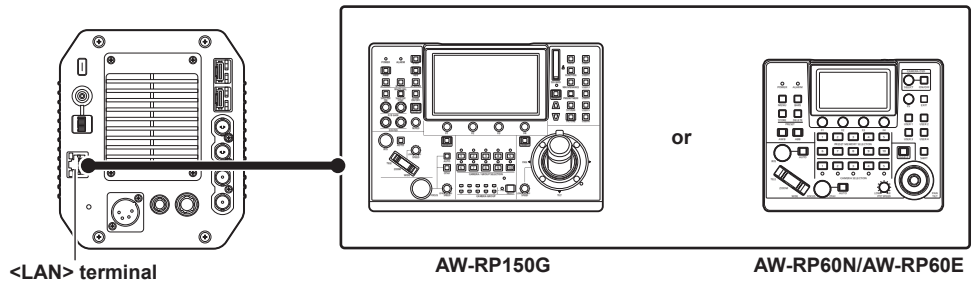
- Some of the functions can be controlled remotely by connecting the remote camera controller AW-RP60N/AW-RP60E/AW-RP150G (optional).
- The unit can be controlled without using the pan/tilt head by the direct connection control of the remote camera controller AW-RP60N/AW-RP60E/AW-RP150G.

NOTE

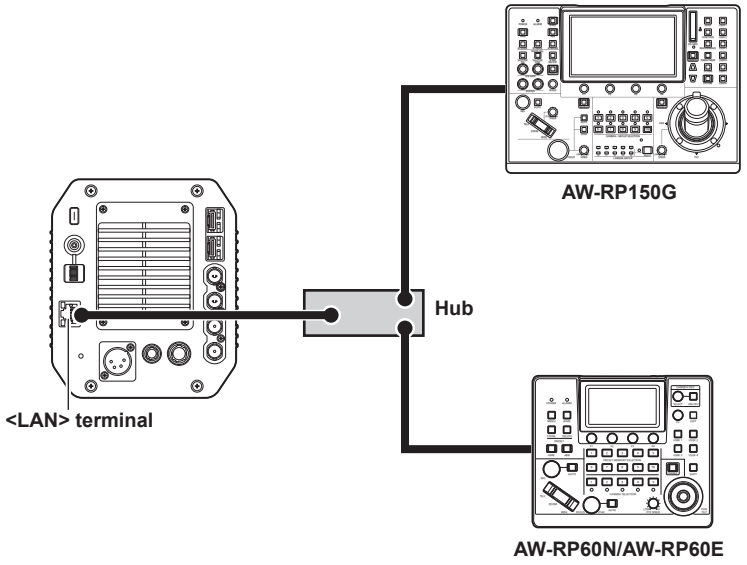
- Update the version of the remote camera controller.
- For details, refer to the operating instructions of the remote camera controller and supplied flyer.

IP connection with the <LAN> terminal

(Example 1) When connecting without going through a hub



(Example 2) When connecting going through a hub



1 Connect the <LAN> terminal of this unit to the <LAN> terminal of the remote camera controller AW-RP60N/AW-RP60E/AW-RP150G.

- Use the LAN cross cable when connecting without going through a hub.
- Use the LAN straight cable when connecting going through a hub.

2 Set the [CONNECT SETTING] menu to [LAN] with the remote camera controller.

■ Functions that can be controlled

The same functions as the serial connection can be used.

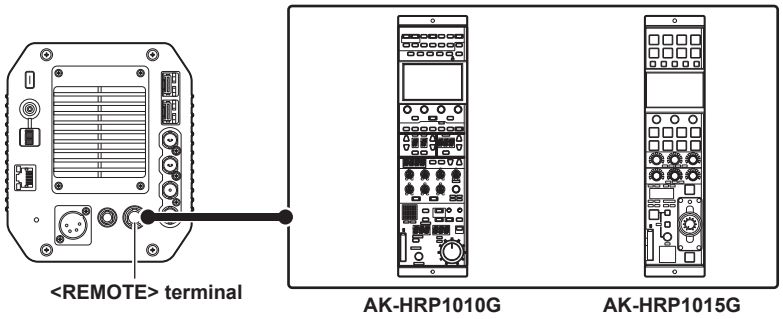
Connecting the remote operation panel (AK-HRP1010G/AK-HRP1015G)

- Some of the functions can be controlled remotely by connecting the remote operation panel (ROP) AK-HRP1010G/AK-HRP1015G (optional).

NOTE

- Update the version of the ROP.
- For details, refer to the operating instructions of the ROP and supplied flyer.

Serial connection with the <REMOTE> terminal

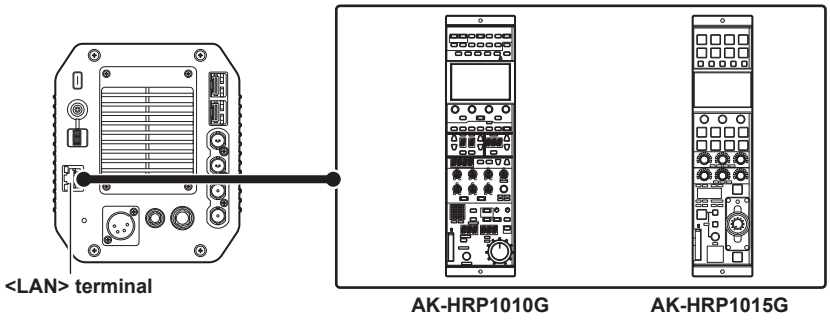


1 Connect the <REMOTE> terminal of this unit and the <CCU> terminal on a remote operation panel AK-HRP1010G/AK-HRP1015G using an ROP cable (optional).

2 Set the [CONNECT SETTING] menu to [Ser(UBX)] with the remote operation panel AK-HRP1010G/AK-HRP1015G.

For the functions that will operate, refer to the operating guide in following website.
https://pro-av.panasonic.net/en/

IP connection with the <LAN> terminal



1 Connect the <LAN> terminal of this camera to the <LAN> terminal of the remote operation panel AK-HRP1010G/AK-HRP1015G.

- Use the LAN cross cable when connecting without going through a hub.
- Use the LAN straight cable when connecting going through a hub.

2 Set the [CONNECT SETTING] menu to [LAN(UBX)] with the remote operation panel AK-HRP1010G/AK-HRP1015G.

■ Functions that can be controlled

The same functions as the serial connection can be used.

NOTE

- Supply the power of the remote operation panel AK-HRP1010G/AK-HRP1015G from the <LAN> terminal.
- Use an Ethernet hub and the PoE injector when supplying PoE power from the <LAN> terminal.
- For the Ethernet hub and the PoE injector that the operation have been confirmed, contact your dealer.

Chapter 6 Web Screen

This chapter describes how to configure the settings from a computer.

Setting the user account

In order to connect this unit and the ROP, you will need to register the account that has been registered on the ROP on this unit.
Use the following procedure to register the account on this unit.

Software

To install the software, download User Account Setup Software (Account Gen) from the following website. (Windows)
https://pro-av.panasonic.net/en/

■ **User Account Setup Software (Account Gen)**

User account setting of this unit can be set using User Account Setup Software.

Use the User Account Setup Software to set the user accounts in this unit

User account setting of this unit can be set using User Account Setup Software.

NOTE

- The User Account Setup Software saves user account information to a USB memory device, so you will need to insert a USB memory device in preparation.
- We recommend a password for the user account that is 8 characters or more, and that includes at least 3 types of character including upper case, lower case, numerals, and special characters.
- User accounts can also be set from the web screen of this unit. (page 113)

Procedure for setting with the User Account Setup Software

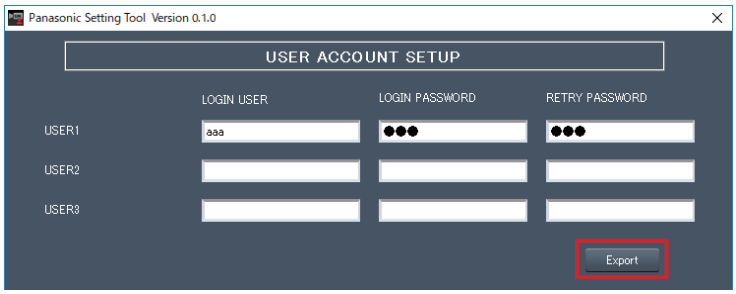


Fig. 1

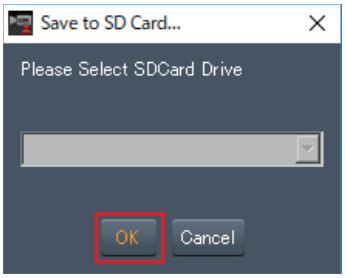


Fig. 2

1 Start User Account Setup Software.

2 Enter the account name in the LOGIN USER field and the password in the LOGIN PASSWORD and RETRY PASSWORD fields.
You can register user accounts for a maximum of 3 people. (Fig.1)

3 Click the [Export] button. (Fig.1)

4 Select the USB memory device to save to and click [OK]. (Fig.2)

Setting procedure on this unit

1 Insert the USB memory device containing the user account information into this unit.

2 Select [ACCOUNT SETTING] in the [ALL MENU] → [FILES] menu.

3 Select [LOAD].

4 Select [EXECUTE].

5 Select [YES].

Setting the network

Software

To install the software, download EasyIP Setup Tool Plus from the following website. (Windows)
https://pro-av.panasonic.net/en/

■ EasyIP Setup Tool Plus

This software is used for configuring the network settings of the camera. (page 69)

Configuring the camera using EasyIP Setup Tool Plus

Network setting of this unit can be set using EasyIP Setup Tool Plus.
To configure multiple cameras, settings must be configured for each.
Set the setting of this unit and the computer individually with [ALL MENU] → [NETWORK] when it cannot be set with EasyIP Setup Tool Plus.

NOTE

- After the network has been configured, if an IP address conflicts with another device in the same network, the camera does not operate properly. Be sure to avoid IP address conflicts.
- Do not configure the network of a single camera simultaneously from multiple computers running EasyIP Setup Tool Plus.
- EasyIP Setup Tool Plus cannot be used from a separate subnet via a router.
- Changes to the settings of this unit using the EasyIP Setup Tool Plus are performed with authentication from an account in the web screen, therefore changes are not possible if the initial account for the web screen is not yet set. (page 71)

Setting procedure

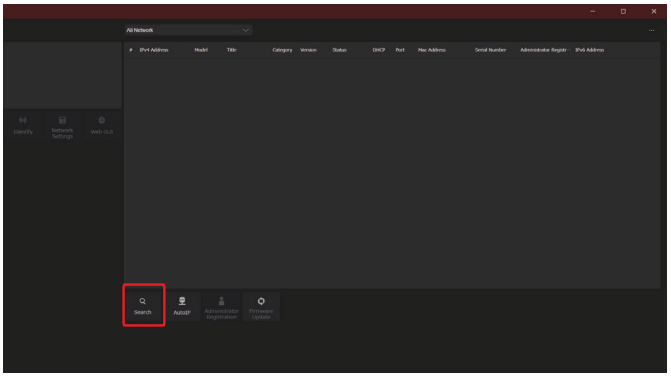


Fig. 1

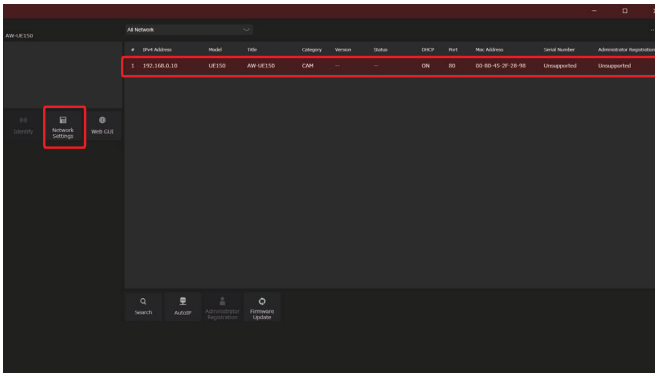


Fig. 2

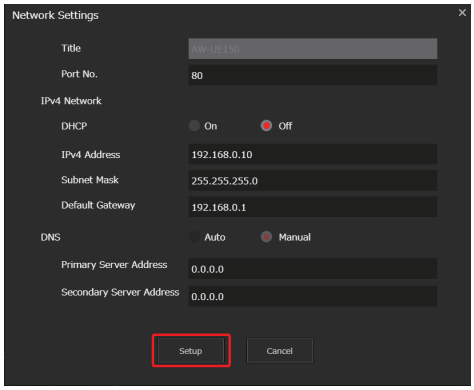


Fig. 3

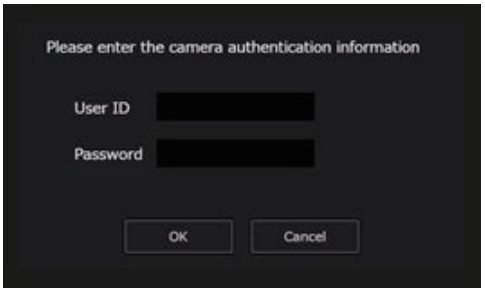


Fig. 4

1 Start the EasyIP Setup Tool Plus.

2 Click the [Search] button. (Fig. 1)

- You can set the Network to be used for the search in the selection menu at the top of the screen.

3 Select the camera to configure and click the [Network Settings] button. (Fig. 2)

- The web screen for the selected camera is displayed when you click the [Web GUI] button.

4 Input the network items, and click the [Setup] button. (Fig. 3)

- Port No. settings are not supported, so do not set.

5 Enter the user name and password registered in the web screen, then click the [OK] button. (Fig. 4)

- Enter the user name and password that was set for the initial account or was set in the User management screen [Access mng.] in the web screen. (page 71, page 111)
- After the [OK] button is clicked, it takes about 2 minutes for the settings in the unit to be completed. If this unit is turned off or the LAN cable is disconnected before the settings are completed, the settings will be invalidated. In this case, repeat the steps to set the settings.

NOTE

- If a firewall (including software) is used, set access permission to all UDP ports.

Displaying the web screen

You can connect the camera to a computer to view IP images of the camera on a web browser or to configure various settings.

To connect the camera's IP control LAN terminal and a computer directly, use a crossover LAN cable.

To connect via a switching hub, etc., use a straight-through LAN cable.

Notes on the web screen

IP address and subnet mask

Set the IP address of your computer to a different one from that of the camera within the private address range, and set the subnet mask address to the same as that of the camera.

IP address and subnet mask of the camera (factory settings)

<LAN>

- IP address: 192.168.0.40
- Subnet mask: 255.255.255.0
- Private address range: 192.168.0.0 to 192.168.0.255

<SFP 1>

- IP address: 192.168.1.40
- Subnet mask: 255.255.255.0
- Private address range: 192.168.1.0 to 192.168.1.255

<SFP 2>

- IP address: 192.168.2.40
- Subnet mask: 255.255.255.0
- Private address range: 192.168.2.0 to 192.168.2.255

Computer environment required to display the web screen

For details on the computer environment required to display the web screen, refer to "Required environment for computer" (page 10).

Some of the functions on the web setting screen are only available on computers operating on Windows. Such functions are not available for computers operating on macOS (Mac).

Functions that are only available for Windows are indicated with (Windows).

Web screen display on computer

The screen shots in this manual are based on those of Windows (Microsoft Edge). The procedures for Mac (Safari) are the same. The screen displays differ in part.

1 Start the web browser on your computer.

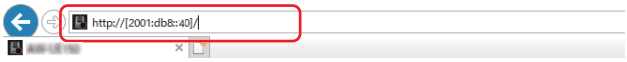
Depending on the OS on your computer, use the following web browser.

- Windows: Microsoft Edge (most recent version)
  Google Chrome
- macOS: Safari

2 Enter the IP address set on EasyIP Setup Tool Plus in the address field of the web browser.

IPv4 address entry example:
http://[URL registered with IPv4 address]
http://192.168.0.40/

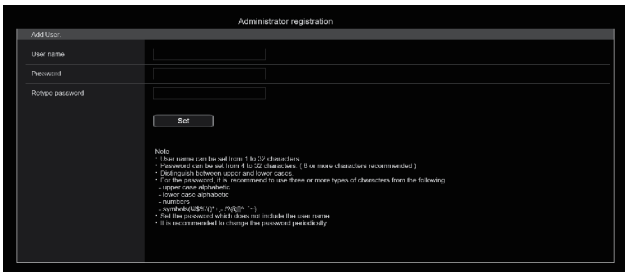
IPv6 address entry example:
http://[URL registered with IPv6 address]
http://[2001:db8::40]/



- If the HTTP port number has been changed and differs from "80", enter "http://camera's IP address:port number" in the address field.
  Example: http://192.168.0.40:8080 (when the port number is set to 8080)
- If the camera is on a local network, configure the proxy server from the web browser ([Tools] - [Internet Options] on the menu bar), so that the proxy server is not used for the local addresses.
- For details on when [HTTPS] - [Connection] (page 119) is set to [HTTPS] in the [Advanced] of the network setup screen [Network], see "Accessing the Camera by HTTPS" (page 127).

3 Set the initial account.

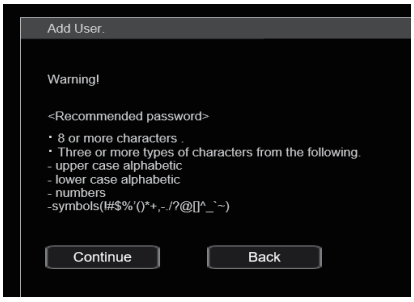
In the initial state, the initial account setting screen is displayed when the web screen is displayed.
Set a user name and password.



NOTE

- Do not set character strings that can be easily guessed by third parties.
- Change the password at regular intervals.
- The password must use at least 3 of the following 4 character types and be 8 characters or longer.
  Alphabet upper cases
  Alphabet lower cases
  Numerals
  Symbols (! $ % ' ( ) * + , - . / ? @ [ ] ^ _ ` ~)
- When a password is set that does not adhere to the above policy, take responsibility for use of the device with due consideration for the security risks in the installation environment, etc.

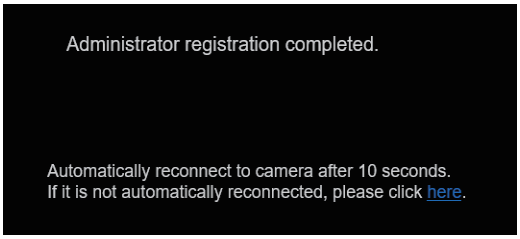
- A warning is displayed if the set password goes against the recommended setting policy. When changing the password, click the [Back] button and set the password again.
  When continuing with the setting with full understanding of the security risks, click [Continue] to complete the setting.



4 Completing registration of the initial account

After completing registration of the initial account, the following registration completed screen is displayed.
The live screen [Live] is automatically displayed after about 10 seconds elapse after the completed screen is displayed.
If the live screen [Live] is not displayed after 10 seconds elapse, manually move to the live screen [Live] by clicking the “please click here” link.

This completes the process of registering the initial account.

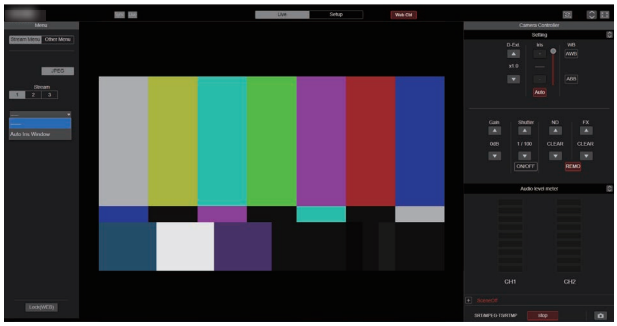


NOTE

- Network connection with the ROP requires setup of an initial account. When an initial account is not set up, the ROP can detect but cannot control this unit.

5 Display the live screen [Live].

The web screen is displayed.
The initial screen is the live screen [Live]. Switch this to the web setup screen [Setup] as necessary. (page 73)



NOTE

- Depending on the firewall settings on your personal computer, transmitted images may not be displayed. If this occurs, change the firewall settings and change the settings to permit communications with your web browser.
- If you attempt to display multiple IP videos on a single computer, the IP images may not be displayed depending on the specifications of the computer. (Windows)
- The maximum number of users that can simultaneously access the camera is 14, including users receiving IP images.
  However, access may be restricted to less than 14 users depending on the network bandwidth used by the camera.
  When the number of users accessing the camera has exceeded the maximum of 14 users, a message indicating excessive access appears.
- The refresh rate for JPEG images may decrease depending on the network environment, computer specification, subject, and the number of users accessing the camera.
- While IP video transmission (M-JPEG streaming) is being performed, there may be some delays in timing of the rendering of the OSD menu. Smooth rendering of the OSD menu becomes possible when you set [IP SIGNAL] – [STREAMING COMMON] – [CHAR] to [OFF].

Switching between the Live screen [Live] and Web setup screen [Setup]

When the live screen [Live] 

is displayed, click the [Setup] button 

at the top of the live screen [Live].

For details on the web setup screen [Setup], see “Web setup screen [Setup]” (page 78).

When the web setup screen [Setup] 

is displayed, click the [Live] button 

at the top of the web setup screen [Setup].

For details on the live screen [Live], see “Live screen [Live]” (page 74).

Logging into the Web screen

When user authentication is enabled

When displaying the live screen [Live]

You need to enter account information for a user with Camera control or Administrator privileges.

When displaying the web setup screen [Setup]

You need to enter account information for a user with Administrator privileges.

When user authentication is disabled

When displaying the live screen [Live]

It is not necessary to enter account information.

When displaying the web setup screen [Setup]

You need to enter account information for a user with Administrator privileges.

NOTE

- The account input screen is displayed in a pop up screen from your web browser.
- Correctly enter the user name and password that has already been registered.
- It is recommended that the password be changed at regular intervals.

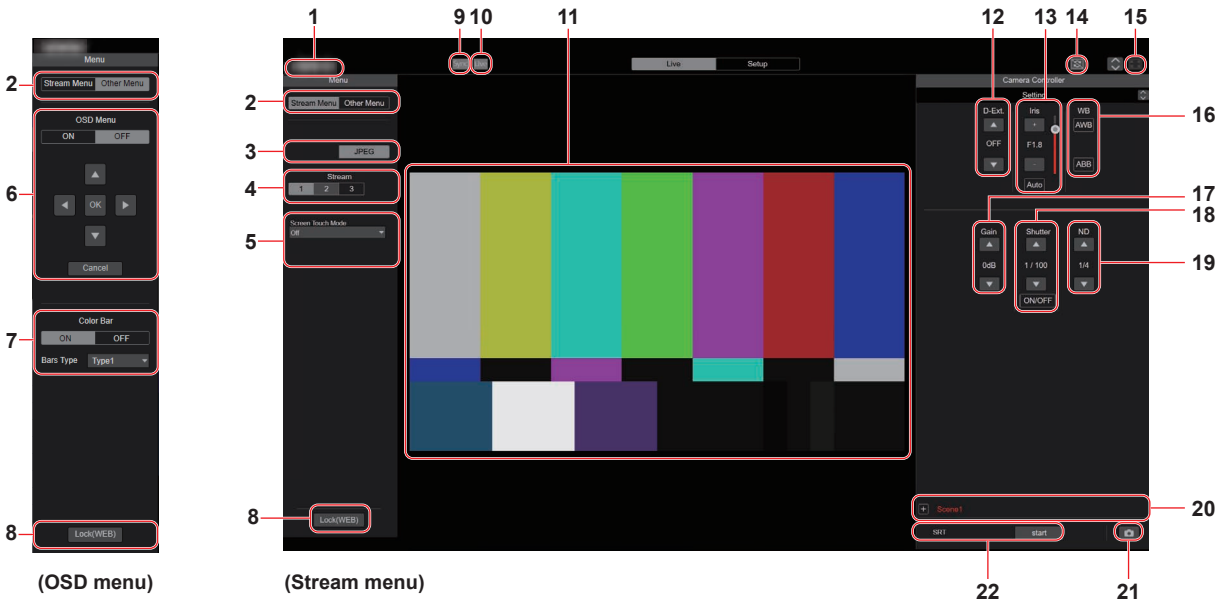
Web screen operations

Live screen [Live]

You can display images from the camera on a personal computer and perform camera operations, such as iris and shutter control.

Operation screen display buttons
Displays screen with larger operation buttons.

Expansion panel display button
(page 77)



(OSD menu) (Stream menu)

1. Camera title display area

The name for the unit configured in [Camera title] in [Live page] in the System screen [System] (page 84) appears.

2. Menu switching [Stream Menu]/[Other Menu]

Switch between menu displays.
Clicking [Other Menu] when the Stream menu is displayed displays the Other menu.
Clicking [Stream Menu] when the Other menu is displayed displays the Stream menu.

3. Compression button [Compression]

JPEG [JPEG]	JPEG images are displayed.

4. Stream buttons [Stream]

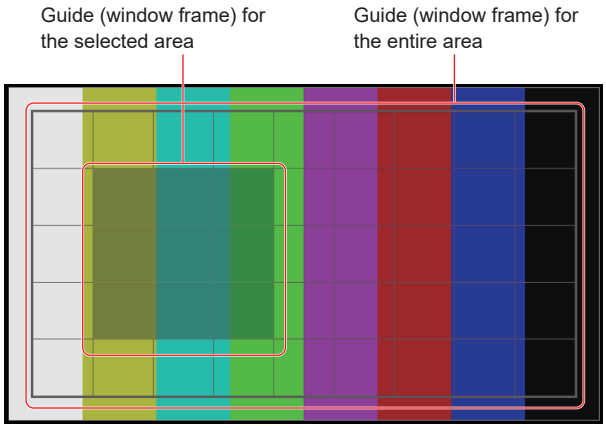
1 [1]	When selected, the button turns gray, and the images in the main area appear according to the settings configured for [JPEG(1)]. (page 88)
2 [2]	When selected, the button turns gray, and the images in the main area appear according to the settings configured for [JPEG(2)]. (page 88)
3 [3]	When selected, the button turns gray, and the images in the main area appear according to the settings configured for [JPEG(3)]. (page 88)

NOTE

- The resolution selected with [JPEG(1)], [JPEG(2)], and [JPEG(3)] (page 88) under [JPEG] in the [Video over IP] will be used.
- If the resolution is set to [1920×1080] or [1280×720], the image may be compressed depending on the size of the web browser window.
- In the following cases, the selection status of the [Image Capture Size] buttons will return to the setting configured in the [Video over IP] - [Initial display setting] - [Stream] (page 87).
  - When returning from another screen
  - When the screen is updated

5. Auto Iris Window

This is only enabled when [PAINT] – [IRIS] – [WINDOW SELECT] is set to [5].



6. OSD Menu Operation [OSD Menu]

ON OFF [ON] [OFF]	Use this to select whether the camera's on-screen displays are to be shown.
Cancel [Cancel]	It cancels the selection of the setting which is being changed. It restores the pre-change setting.
OK [▲] [▼] [◀] [▶] [OK]	Use these to perform the menu operations. The items are selected using the [▲][▼][◀][▶] buttons. If a selected item has a sub menu, this sub menu is displayed by pressing the [OK] button. When the cursor is moved to any item on the bottom-level setting screen and the [OK] button is pressed, the setting of the selected item starts flashing. A setting for a regular menu item is reflected immediately if it is changed while it is still flashing. However, there are a number of menu items whose setting is reflected only after the [OK] button has been pressed, causing the setting to stop flashing and the new setting to be entered.

NOTE

- During IP video transmission (H.264/H.265/M-JPEG), there may be some delays in OSD menu operations. Smooth OSD menu operations become possible when you set [IP SIGNAL] – [STREAMING COMMON] – [CHAR] to [OFF].

7. Color bar button [Color Bar]

ON OFF [ON] [OFF]	Switch the color bar signal displayed or hide.
Bars Type SMPTE [SMPTE] [FULL] [ARIB FHD] [ARIB UHD] [ARIB 2020/HLG]	Switch the displayed color bar between TYPE1:SMPTE, TYPE2:FULL, TYPE3:ARIB(FHD), TYPE4:ARIB(UHD), and TYPE5:ARIB(2020/HLG). This is only enabled when [Color Bar] is set to [ON].

8. Operation lock button [Lock]

Lock(WEB) [Lock(WEB)]	This prevents erroneous operation by locking operations such as iris, gain, and shutter in the live screen [Live]. The button turns red while locked, and the lock is released when the button is clicked again.
Lock(CAM) [Lock(CAM)]	This is displayed when the unit is locked with the camera lock function on the ROP, and you can unlock the camera by clicking this.

NOTE

- When locked using a [Lock(WEB)] function, the status is maintained by the web browser, so the lock is released by redisplaying the web browser.
- The lock status using the [Lock(CAM)] function is maintained by the camera itself, so you need to either release the camera lock function using the ROP or release [Lock(CAM)] from the web browser while the camera is locked.
- It is not possible to enable the [Lock(CAM)] function from the web browser.

9. SYNC status indicator [Sync]

Sync	This unit uses a REF SIGNAL to synchronize with external synchronizing sources.
Sync	This unit is not synchronized with an external synchronizing source.

NOTE

- Depending on the time setting of this unit, it may take a few minutes until this unit synchronizes from when there is input from the external synchronizing source.

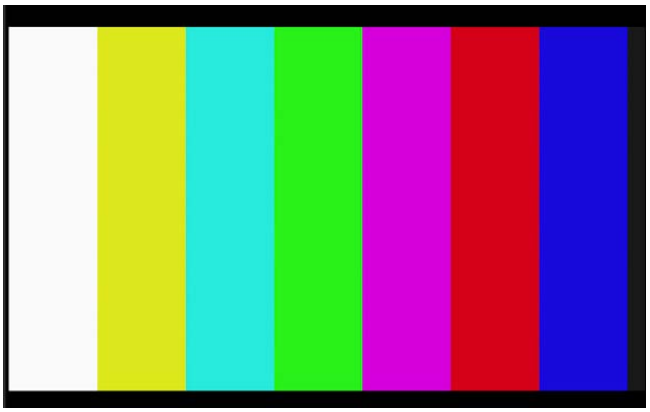
10. Streaming status indicator [Live]

Live	This unit is currently streaming over IP to an external device (software).
Live	This unit is not currently streaming over IP to an external device (software).

NOTE

- The transmission statuses of M-JPEG and ST2110 are not included.

11.Main area (IP video display area)

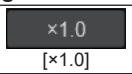
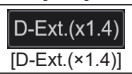
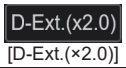


The IP video of the connected camera will be displayed.
When the tally lamp of the camera is on, a red and a green lines are displayed at the top of the videos. When receiving a red tally signal a red line is displayed. When receiving the green tally signal a green line is displayed. When receiving the yellow tally signal a yellow line is displayed.
When the tally lamp is off, the display area will return to normal.

NOTE

- When the shooting scenes vary significantly, restrictions imposed by the graphics processing (GDI) of the operating system installed may give rise to a phenomenon called “screen tearing” (where parts of the picture are not displayed in synchronization) although this will depend on the personal computer used.
- The speed at which the JPEG images are refreshed may be reduced depending on the network environment, performance of the personal computer used, subjects and number of access users.
- A total of 14 users, including users receiving IP video, can access the unit simultaneously.
  However, when the IP video transmission bandwidth reaches its upper limit, access may be restricted to less than 14 users.
- When [IP(UDP)] of [Tracking Data Output] is set to [On], video transmission via IP may be delayed or the video may suffer frame loss. (page 109)
  We recommend setting [IP(UDP)] of [Tracking Data Output] to [Off] to avoid the delay or frame loss due to the video transmission via IP.
- During IP video transmission (M-JPEG), there may be some delays in OSD menu operations. Smooth OSD menu operations become possible when you set [IP SIGNAL] – [STREAMING COMMON] – [CHAR] to [OFF].

12.Digital extender [D-Ext]

 [×1.0]	Use this to adjust the zoom (magnification) to x1.0.
 [D-Ext.(×1.4)]	Use this to enable or disable digital extender x1.4.
 [D-Ext.(×2.0)]	Use this to enable or disable digital extender x2.0.

13.Brightness [Iris]

 [+] [–]	[+]: Operates in stages in the direction of iris opening. It does not work during automatic adjustments. [–]: Operates in stages in the direction of iris closing. It does not work during automatic adjustments. The F value is displayed in the center.
 [Auto]	Use this to switch the iris adjustment between auto and manual. When Auto is selected, the picture brightness is adjusted automatically.

14.Button for switching real time updating

	Frame dropping in images may be observed depending on the operating performance of the personal computer running the web browser. You can improve this problem by pressing this button to disable the real time updating function. Data items subject to real time updating are as follows. - Iris - WB - Gain - Shutter - ND

NOTE

- The middle-click function is disabled if the button is enabled.
- The Audio Level Meter function is disabled if the button is enabled.

15.Full-screen display button

	Display the image in full-screen mode. To return to the live screen [Live], press the [Esc] key on the personal computer while the image is displayed in full-screen mode. The aspect ratio of the displayed image will be adjusted according to the monitor size.

16.White balance [WB]

AWB [AWB]	Automatic white balance (AWB) is executed and the white balance is reset.
ABB [ABB]	Automatic black balance (ABB) is executed and the black balance is reset.

17.Gain [Gain]

▲	Increase the gain of the images.
▼	Decrease the gain of the images.

NOTE

- The current setting is displayed in the middle of the button.

18.Shutter [Shutter]

▲	Switch the shutter mode in the order [Off], [Step], [Synchro], [Auto].
▼	Switch the shutter mode in the order [Auto], [Synchro], [Step], [Off].

NOTE

- The current setting is displayed in the middle of the button.

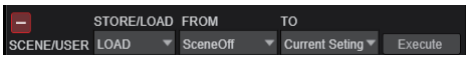
19.ND filter [ND]

▲	Switch the transmittance of the ND filter in the order [THROUGH], [1/4], [1/16], [1/64].
▼	Switch the transmittance of the ND filter in the order [1/64], [1/16], [1/4], [THROUGH].

NOTE

- The current setting is displayed in the middle of the button.

20.Scene/User [Scene/User]

 [Scene1] to [Scene8], [User1] to [User3]
Select [Scene1] to [Scene8] or [User1] to [User3] to switch the shooting mode.

+	**Expansion panel display button for Scene/User** Display the pull-down menu for switching scene/user files. The button changes to [–] while the menu is being displayed, and the menu is hidden again when you press the button again.

NOTE

- Immediately after displaying the live screen [Live], the pull-down menu for switching scene/user files is not displayed. It is displayed when the [Expansion panel display button for Scene/User] is pressed.

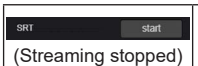
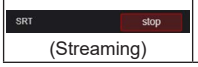
21.Snapshot button

📷	Capture a snapshot (single still image), and display it in a separate window.

NOTE

- Depending on the network environment, for example, if snapshot capture takes longer than a certain amount of time, the image may not appear.
- If [JPEG transmission(1)] - [JPEG transmission(3)] (page 88) are all set to [Off], the image captured with the snapshot button will be black.

22.SRT

 (Streaming stopped)  (Streaming)	Starts streaming to the transmission destination that was pre-registered. The button turns red during transmission, and transmission stops when the button is clicked again.

NOTE

- This button can be used only when [Streaming mode] is [SRT(H.264)], [SRT(H.264 UHD)]*, [SRT(H.265)], or [SRT(H.265 UHD)]*.
- When [Streaming mode] is [SRT(H.264)], [SRT(H.264 UHD)]*, [SRT(H.265)], or [SRT(H.265 UHD)]*, transmission can be started by clicking this button only when the Client(Caller) mode is set.

* Support for [SRT(H.264 UHD)] and [SRT(H.265 UHD)] is planned for the future.

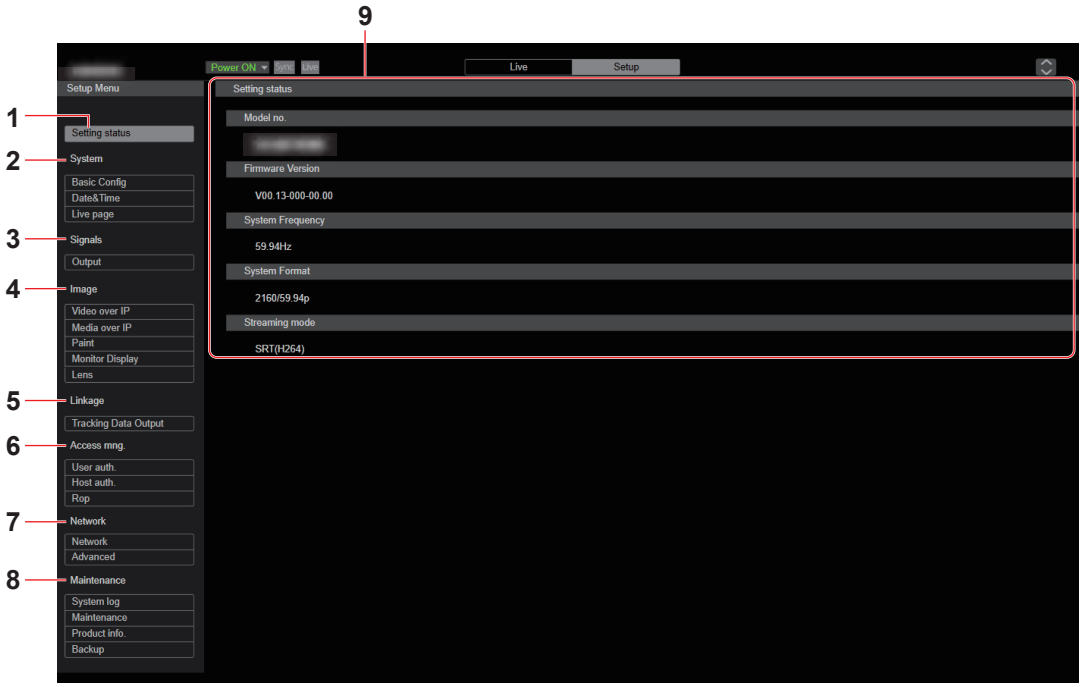
Web screen configurations

Web setup screen [Setup]

The settings for the unit are selected on this screen.

NOTE

- The setting menu operations can be performed only by users whose access level is “1.Administrator”.
  For the procedure used to set the access level, refer to page 111.
- If the value of a setting is changed using the OSD menu or a different web browser, the setting value and the displayed value may not match. In that case, update the setup menu display screen of that web browser.



1. Setting status [Setting status]

The setting status screen [Setting status] is displayed when the button is clicked. (page 80)

2. System settings [System]

Basic setting button [Basic Config]

The basic setting screen [Basic Config] is displayed when the button is clicked. (page 80)

Date&Time button [Date&Time]

The Date & time screen [Date&Time] is displayed when the button is clicked. (page 84)

Live page button [Live page]

The live page screen [Live page] is displayed when the button is clicked. (page 84)

3. Signal settings [Signals]

Output button [Output]

The output setting screen [Output] is displayed when the button is clicked. (page 85)

4. Image screen [Image]

IP video settings button [Video over IP]

The IP video settings screen [Video over IP] is displayed when the button is clicked. (page 86)

MoIP settings button [Media over IP]

The MoIP settings screen [Media over IP] is displayed when the button is clicked. (page 92)

Paint settings button [Paint]

The paint settings screen [Paint] is displayed when the button is clicked. (page 95)

Monitor display settings button [Monitor Display]

The monitor display settings screen [Monitor Display] is displayed when the button is clicked. (page 108)

Lens button [Lens]

The Lens setting screen [Lens] is displayed when the button is clicked. (page 109)

5. Collaboration capability [Linkage]

Tracking data output setting button [Tracking Data Output]
The tracking data output setting screen [Tracking Data Output] is displayed when the button is clicked. (page 109)

6. User management settings [Access mng.]

User authentication button [User auth.]
The user authentication screen [User auth.] is displayed when the button is clicked. (page 111)

Host authentication button [Host auth.]
The host authentication screen [Host auth.] is displayed when the button is clicked. (page 112)

ROP authentication button [Rop]
The ROP authentication screen [Rop] is displayed when the button is clicked. (page 113)

7. Network settings [Network]

Network setup button [Network]
The network setup screen [Network] is displayed when the button is clicked. (page 114)

Advanced network setting button [Advanced]
The advanced network setting screen [Advanced] is displayed when the button is clicked. (page 118)

8. Maintenance [Maintenance]

System log button [System log]
The system log screen [System log] is displayed when the button is clicked. (page 130)

Maintenance button [Maintenance]
The maintenance screen [Maintenance] is displayed when the button is clicked. (page 131)

Product information button [Product Info.]
The product information screen [Product info.] is displayed when the button is clicked. (page 131)

Back up button [Backup]
The back up screen [Backup] is displayed when the button is clicked. (page 132)

9. Main area

The menu screen is displayed.

Setting status screen [Setting status]

Model no.
The model number of the unit is displayed.

Firmware Version
The firmware version of the unit is displayed.
Refer to the product information screen [Product info.] for detailed version information.

System Frequency
The frame frequency of the unit is displayed.

System Format
The video format of the unit is displayed.

Streaming mode
The streaming mode of the unit is displayed.

System screen [System]

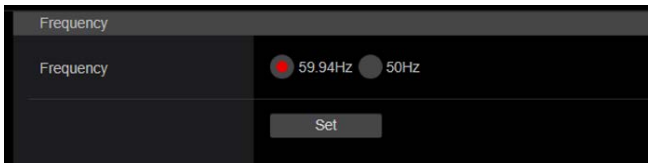
Basic setting screen [Basic Config]

■ Setting status

Frequency
The frame frequency setting is displayed.

Format
The video format setting is displayed.

■ Frequency



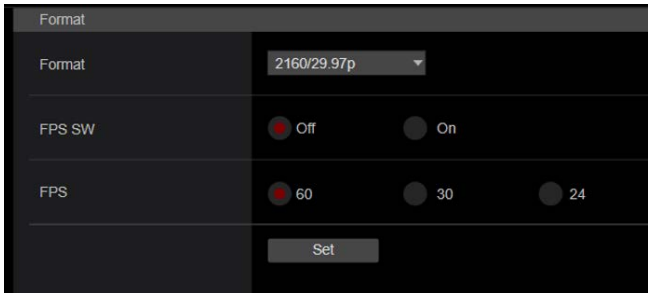
Frequency [59.94Hz, 50Hz]
This item is selected to switch the frame frequency.
The setting is confirmed with the [Set] button.
Factory settings: 59.94Hz

NOTE

- When the frame frequency is switched, the unit automatically restarts.

■ Format

The setting is confirmed with the [Set] button.



Format
For [59.94Hz]
2160/59.94p, 2160/29.97p, 2160/23.98p, 1080/59.94p, 1080/29.97p, 1080/23.98p
For [50Hz]
2160/50p, 2160/25p, 1080/50p, 1080/25p

The video format is changed on this screen.

NOTE

- Streaming stops when changing the system format.
- In order to select [SRT(H.264 UHD)] and [SRT(H.265 UHD)] in [Streaming mode] for [Video over IP], you need to select the 4K format here.
  (Support for [SRT(H.264 UHD)] and [SRT(H.265 UHD)] is planned for the future.)

FPS SW [Off, On]

Enables/disables the FPS function.

Factory settings: Off

NOTE

- This can be set only when [Basic Config] – [Format] is [2160/59.94p] or [1080/59.94p].

FPS [60, 30, 24]

Set the frame rate of the MOS sensor when [FPS SW] is [ON].

Factory settings: 60

■ Opt Mode

Set the operating mode for the Opt connector.

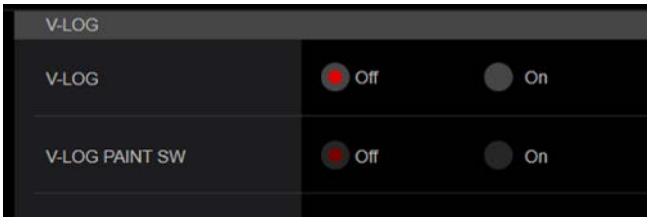
Opt Mode [ST2110_25G, ST2110_10G]

Factory settings: ST2110_25G

NOTE

- This unit automatically restarts when [Opt Mode] is changed.

■ V-LOG



V-LOG [Off, On]

Set the V-LOG mode.

Off	This setting allows detailed picture quality adjustments on the camera.
On	Set a gamma curve that provides broad tones and a wide range of latitude (exposure range). Grading will be necessary after shooting.

Factory settings: Off

NOTE

- This cannot be set when the [Basic Config] – [HDR] is [On].
- Functions to adjust picture quality are limited when [Basic Config] – [V-LOG] is [On].

V-LOG PAINT SW [Off, On]

Selects whether to make it possible to make settings in the [PAINT] menu when [Basic Config] – [V-LOG] is [On].

Factory settings: Off

NOTE

- This cannot be set when the [Basic Config] – [V-LOG] is [Off].

■ HDR

HDR [On, Off]

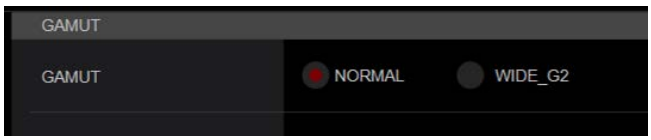
Enables/disables the HDR mode.

Factory settings: Off

NOTE

- This cannot be set when the [Basic Config] – [V-LOG] is [On].

■ GAMUT



GAMUT [NORMAL, WIDE_G2]

Sets the color gamut.

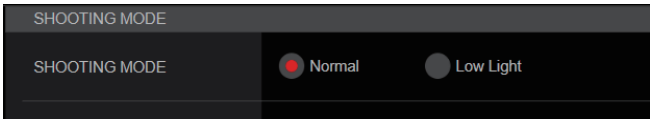
NORMAL	BT.709 equivalent color gamut.
WIDE_G2	BT.2020 equivalent color gamut.

Factory settings: WIDE_G2

NOTE

- This cannot be set when the [Basic Config] – [HDR] is [Off].

■ SHOOTING MODE



SHOOTING MODE [Normal, Low Light]

Select the shooting mode according to the shooting environment.

Normal	Select this when shooting in an environment with normal brightness.
Low Light	Select this for high sensitivity shooting. (Suited to shooting in dark environments.)

Factory settings: Normal

■ BAR

Bar [Off, On]

Off	Outputs camera images.
On	Outputs the color bar.

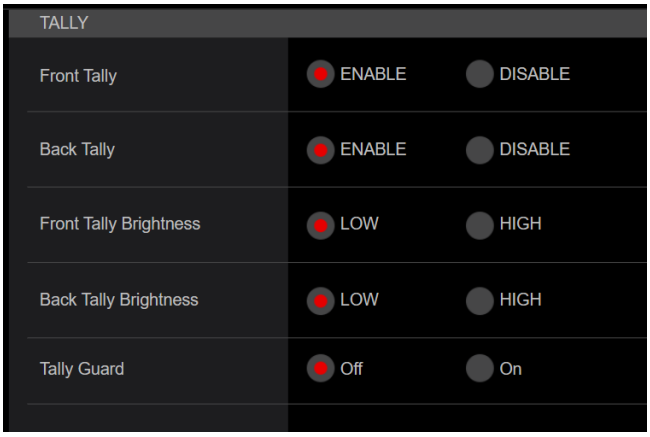
Factory settings: Off

Color Bar Type [TYPE1:SMPTE, TYPE2:FULL, TYPE3:ARIB(FHD), TYPE4:ARIB(UHD), TYPE5:ARIB(2020/HLG)]
Select the type of color bar to display.
Factory settings: TYPE1:SMPTE

NOTE

- When [Bar] is [On], irrespective of the HDR/GAMUT/V-LOG setting values, color bars output are all [HDR] are [Off]/[V-LOG] are [Off] color bars.
- Color bars of IP transmissions (M-JPEG) do not conform with SMPTE.
- With [TYPE4:ARIB(UHD)]/[TYPE5:ARIB(2020/HLG)], the 709 format is used for output when using a 709 setting.
- TYPE3:ARIB(FHD)/TYPE4:ARIB(UHD)/TYPE5:ARIB(2020/HLG) are not output with IP transmission modes (M-JPEG).

■ TALLY



Front Tally [ENABLE, DISABLE]
Back Tally [ENABLE, DISABLE]

Set whether to enable [ENABLE]/disable [DISABLE] the function that makes the tally lamps turn on or turn off with the tally control signal.
This can be set separately for each of the Front/Back tally lamps.
Factory settings: ENABLE

Front Tally Brightness [LOW, HIGH]
Back Tally Brightness [LOW, HIGH]

Adjust the brightness of the tally LEDs.
This can be set separately for each of the Front/Back tally lamps.
Factory settings: LOW

Tally Guard [Off, On]

The following functions are suppressed during input of only the tally signal:
- Automatic white balance and automatic black balance operation
Factory settings: Off

■ SYNC SIGNAL

Make settings to synchronize video/audio output signals.

REF SIGNAL

BBS/TRI-LEVEL SYNC	Synchronization is according to the analog reference signal from the G/L connector.
PTP	Synchronization is according to the PTP from the SFP 1/SFP 2 connector.

Factory settings: BBS/TRI-LEVEL SYNC

NOTE

- [PTP] cannot be selected when [ALL MENU] → [IP SIGNAL] → [ST2110 COMMON] → [MOIP MODE] → [OFF] is set on the camera.

GENLOCK

This item is selected to perform the phase adjustments.

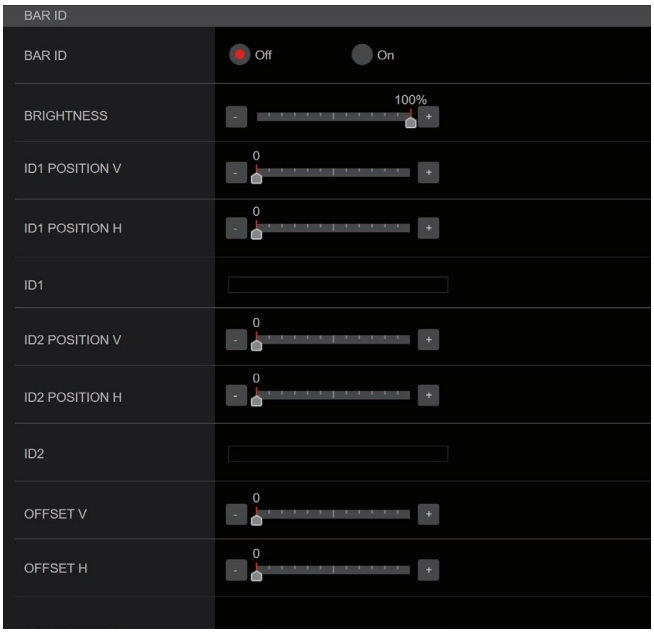
H PHASE-COARSE [–100 to 100]
This is used to adjust the horizontal phase during genlock.
Factory settings: 0

H PHASE-FINE [–100 to 100]
Make fine adjustments to horizontal phase in genlock.
Factory settings: 0

NOTE

- This cannot be set when the [Basic Config] – [SYNC SIGNAL] – [REF SIGNAL] is [PTP].

■ BAR ID



BAR ID [Off, On]

Select Off/On for the ID display on the color bar.
Factory settings: Off

BRIGHTNESS [0 to 100%]

Set the text color for the camera ID on the color bar.
Factory settings: 100%

ID1 POSITION V [0 to 5]

Specify the font units for the start position for display of the camera ID1 (vertically: line number) on the color bar.
Factory settings: 0

ID1 POSITION H [0 to 15]

Specify the font units for the start position for display of the camera ID1 (horizontally: column number) on the color bar.
Factory settings: 0

ID1

Set the character string for the [BAR ID].
Maximum 16 characters
(Alphanumeric characters, spaces, ! # % & ' ( ) * + , - . / : ; < = > ? [ ] _ ~ $ @ |)

ID2 POSITION V [0 to 5]

Specify the font units for the start position for display of the camera ID2 (vertically: line number) on the color bar.
Factory settings: 1

ID2 POSITION H [0 to 15]

Specify the font units for the start position for display of the camera ID2 (horizontally: column number) on the color bar.
Factory settings: 0

ID2

Set the character string for the [BAR ID].
Maximum 16 characters
(Alphanumeric characters, spaces, ! # % & ' ( ) * + , - . / : ; < = > ? [ ] _ ~ $ @ |)

OFFSET V [0 to 89]

Make fine adjustments to the display position of the [BAR ID] (offset position of the pixels in the font: vertically).
Factory settings: 0

OFFSET H [0 to 79]

Make fine adjustments to the display position of the [BAR ID] (offset position of the pixels in the font: horizontally).
Factory settings: 0

NOTE

- BAR ID is displayed only through the SDI, SMPTE ST2110, and NDI High Bandwidth outputs. It is not displayed with IP transmission (SRT).

Date & time screen [Date&Time]

Make clock settings.
You can set using one of three types [PC Synchronization], [NTP], or [Manual].
The setting is confirmed with the [Set] button.

Auto

PC Synchronization

If you click the [Execute] button, the settings are configured by synchronizing the unit to the date and time of the connected personal computer.

NOTE

- The time zone of the personal computer is not reflected on the unit.

NTP

If you click [NTP>>], the settings screen for the NTP server appears. (page 118)

Manual

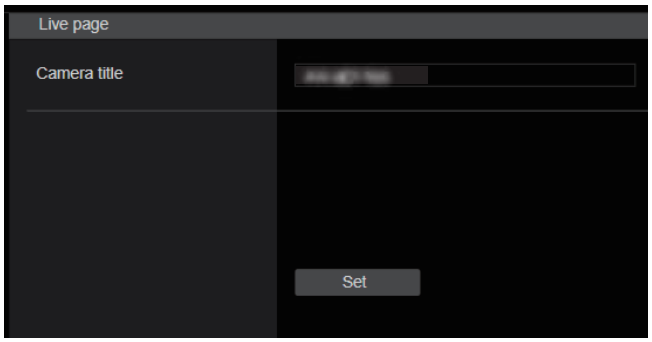
Date/Time

Configure the settings for the month, day, and year and for the hour, minute, and second.

NOTE

- The time is in the 24-hour format.
- The clock is not set at the time of shipment. Set the clock with these items before use.

Live page screen [Live page]



Camera title

Input the name of the camera here.
When the [Set] button is clicked, the input name appears in the camera title display area.

- The factory default setting is the model number of the unit.
- You can enter between 0 to 20 characters.
- The following characters can be displayed.

Numeric characters	0123456789
Alphabetical characters (upper and lower cases)	ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz
Symbols	! #$%´()*+,-./:;<=>?@[]^_`{|}~\

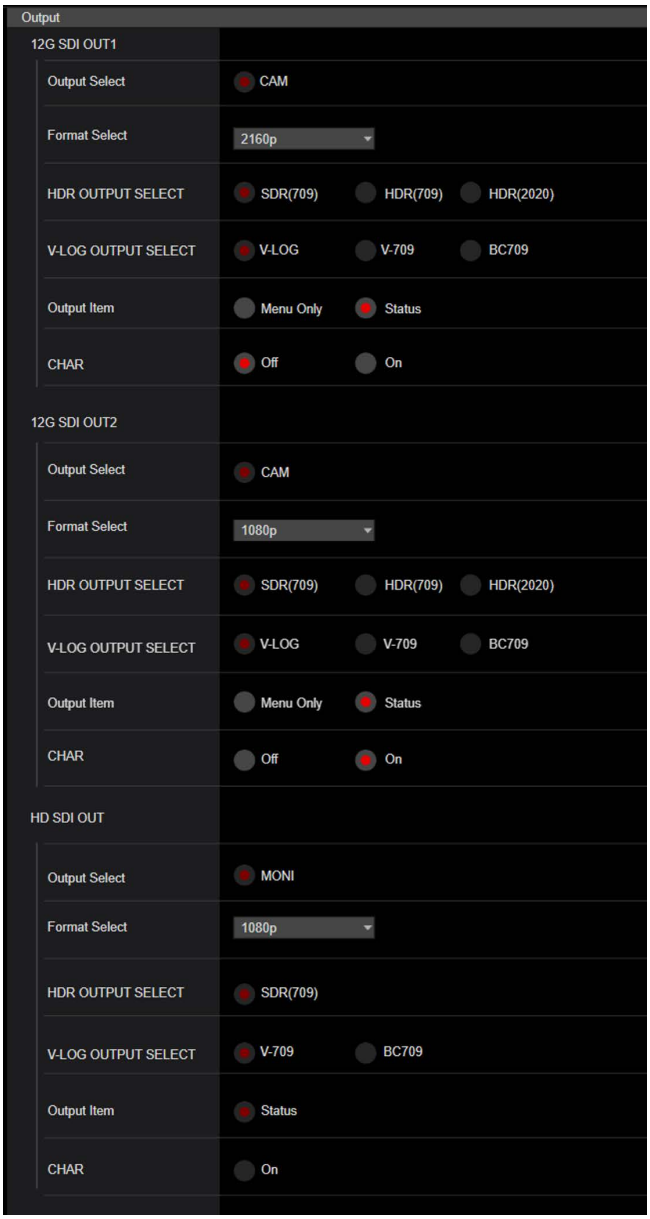
NOTE

- Camera names displayed on clients with NDI High Bandwidth are also supported.

Signal settings screen [Signals]

Output settings screen [Output]

■ Output



12G SDI OUT1

Make the settings for output from the <12G SDI OUT 1> connector.

Output Select [CAM]

CAM	Outputs camera images.

Format Select [2160p, 1080p, 1080i]
Set the output format.
Factory settings: 2160p

HDR OUTPUT SELECT [SDR(709), HDR(709), HDR(2020)]
Select the signal output when [HDR] is [On].

SDR(709)	Selects the SDR output signal.
HDR(709)	Selects the HDR output signal (BT.709 equivalent color gamut).
HDR(2020)	Selects the HDR output signal (BT.2020 equivalent color gamut).

Factory settings: HDR(2020)

NOTE

- This cannot be set when the [Basic Config] – [HDR] is [Off].
- [HDR(2020)] can be selected only when [Basic Config] – [GAMUT] is [WIDE_G2].

V-LOG OUTPUT SELECT [V-LOG, V-709, BC709]
Select the signal output when [V-LOG] is [On].

V-LOG	Output with a gamma curve that has a wide range of tones and latitude (exposure range).
V-709	Converted for output to images suited to previewing.
BC709	Converted for output to images suited to broadcasting.

Factory settings: V-LOG

NOTE

- This cannot be set when the [Basic Config] – [V-LOG] is [Off].

Output Item [Menu Only, Status]
Select the type of OSD to be superimposed on output video.

Menu Only	Displays the OSD menu only.
Status	Displays the OSD menu and OSD status.

Factory settings: Menu Only

CHAR [Off, On]
Set whether to superimpose the OSD.
Factory settings: On

12G SDI OUT2

Make the settings for output from the <12G SDI OUT 2> connector.

Output Select [CAM]

CAM	Outputs camera images.

Format Select [2160p, 1080p, 1080i]
Set the output format.
Factory settings: 2160p

HDR OUTPUT SELECT [SDR(709), HDR(709), HDR(2020)]
Select the signal output when [HDR] is [On].

SDR(709)	Selects the SDR output signal.
HDR(709)	Selects the HDR output signal (BT.709 equivalent color gamut).
HDR(2020)	Selects the HDR output signal (BT.2020 equivalent color gamut).

Factory settings: HDR(2020)

NOTE

- This cannot be set when the [Basic Config] – [HDR] is [Off].
- [HDR(2020)] can be selected only when [Basic Config] – [GAMUT] is [WIDE_G2].

V-LOG OUTPUT SELECT [V-LOG, V-709, BC709]
Select the signal output when [V-LOG] is [On].

V-LOG	Output with a gamma curve that has a wide range of tones and latitude (exposure range).
V-709	Converted for output to images suited to previewing.
BC709	Converted for output to images suited to broadcasting.

Factory settings: V-LOG

NOTE

- This cannot be set when the [Basic Config] – [V-LOG] is [Off].

Output Item [Menu Only, Status]
Select the type of OSD to be superimposed on output video.

Menu Only	Displays the OSD menu only.
Status	Displays the OSD menu and OSD status.

Factory settings: Menu Only

CHAR [Off, On]
Set whether to superimpose the OSD.
Factory settings: On

HD SDI OUT

Make the settings for output from the <HD SDI OUT> connector.

Output Select [MONI]

MONI	Outputs monitor video.

Format Select [1080p, 1080i]
Set the output format.
Factory settings: 1080i

HDR OUTPUT SELECT [SDR(709)]

SDR(709)	Selects the SDR output signal.

V-LOG OUTPUT SELECT [V-709, BC709]
Select the signal output when [V-LOG] is [On].

V-709	Converted for output to images suited to previewing.
BC709	Converted for output to images suited to broadcasting.

Factory settings: V-709

NOTE

- This cannot be set when the [Basic Config] – [V-LOG] is [Off].

Output Item [Status]

Status	Displays the OSD menu and OSD status.

CHAR [On]

Image screen [Image]

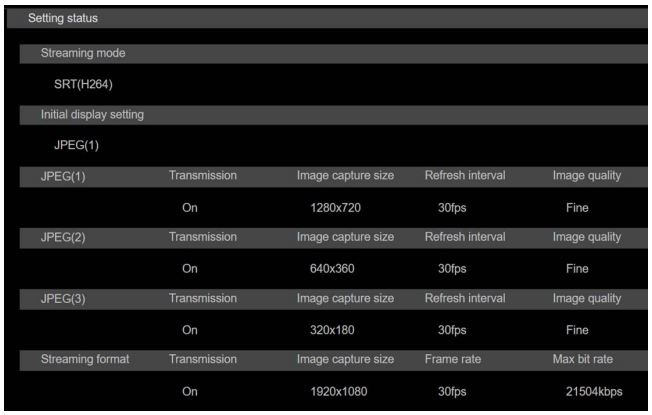
IP video settings screen [Video over IP]

Make IP image settings and settings related to image quality.

NOTE

- IP control can be performed but if you do not want to perform IP image transmission, set [JPEG transmission] and [SRT transmission] to [Off].
- During IP video transmission, disconnecting the network cable connected to this unit or changing the network settings may cause the transmission to stop.

■ Setting status



Streaming mode
The streaming mode setting is displayed.

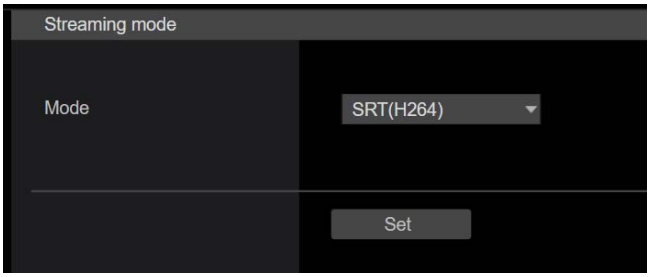
Initial display setting
The setting for the image displayed when the live screen [Live] is open.

JPEG
The JPEG transmission settings are displayed.

Streaming format
The transmission status and format information for the IP images are displayed.

■ Streaming mode

It is possible to perform IP transmission operations suited to the application by switching the [Streaming mode] on this unit.
The setting is confirmed with the [Set] button.



Mode [SRT(H.264), SRT(H.264 UHD), SRT(H.265), SRT(H.265 UHD), NDI High Bandwidth]

SRT(H.264)	Full HD images are transmitted via IP in the H.264 format to the SRT compatible decoder or service.
SRT(H.264 UHD)	4K images are transmitted via IP in the H.264 format to the SRT compatible decoder or service.
SRT(H.265)	Full HD images are transmitted via IP in the H.265 format to the SRT compatible decoder or service.
SRT(H.265 UHD)	4K images are transmitted via IP in the H.265 format to the SRT compatible decoder or service.
NDI High Bandwidth	Videos are sent to software applications and hardware compatible with NDI High Bandwidth over a network.

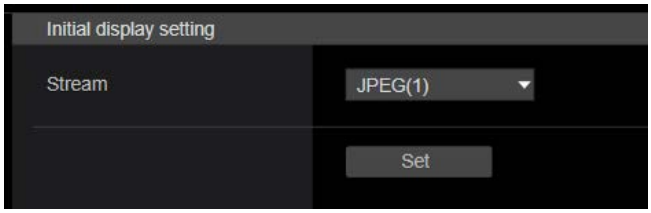
Factory settings: SRT(H.264)

NOTE

- Support for [SRT(H.264 UHD)] and [SRT(H.265 UHD)] is planned for the future.
- When [IP(UDP)] of [Tracking Data Output] is set to [On], video transmission via IP may be delayed or the video may suffer frame loss. (page 109)
  We recommend setting [IP(UDP)] of [Tracking Data Output] to [Off] to avoid the delay or frame loss due to the video transmission via IP.

■ Initial display setting

Set initial display settings for the Live screen [Live].
The setting is confirmed with the [Set] button.



Stream [JPEG(1), JPEG(2), JPEG(3)]

Select the type of images to display in the Live screen [Live].

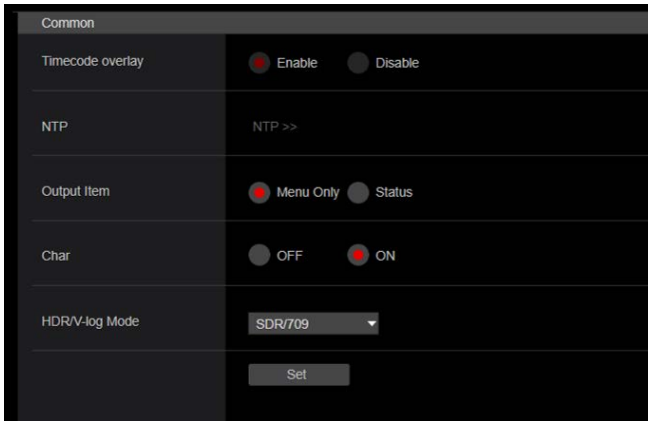
JPEG(1)	Display still images (JPEG(1)).
JPEG(2)	Display still images (JPEG(2)).
JPEG(3)	Display still images (JPEG(3)).

Factory settings: JPEG(1)

NOTE

- This setting may switch automatically according to the [Streaming mode].

■ Common



Timecode overlay [Enable, Disable]

Set whether timecode information is overlayed on IP transmission data.
Factory settings: Disable

NOTE

- This function can be set only when NTP is enabled.
- This function overlays the time information synchronized with NTP.

NTP

If you click [NTP>>], the settings screen for the NTP server appears. (page 118)

Output Item [Menu Only, Status]

Selects details of the characters superimposed on output images.

Menu Only	Displays on-screen menus only.
Status	Displays all characters that are the same as in the viewfinder display.

Factory settings: Menu Only

Char [OFF, ON]

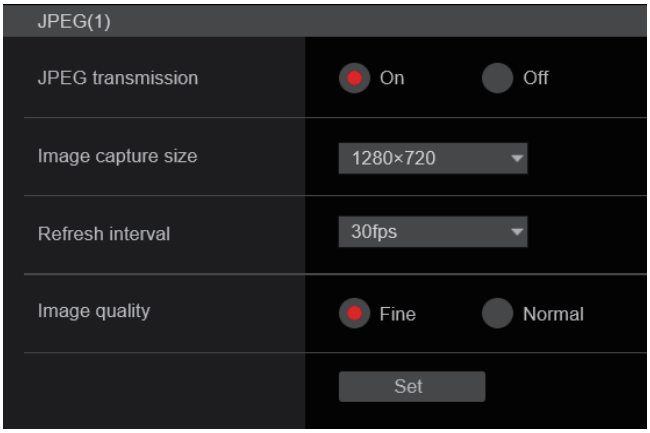
Sets whether to superimpose characters on output images.
Factory settings: ON

HDR/V-log Mode [V-LOG, V-709, SDR/709, HDR/709, HDR/2020]

Sets the HDR/V-LOG mode.
Factory settings:
[SDR/709] when HDR is ON, [V-709] when V-LOG is ON

■ JPEG

Set JPEG image settings.
The setting is confirmed with the [Set] button.
There are a total of 3 channels available for JPEG image setting.



NOTE

- [JPEG(2)] and [JPEG(3)] cannot be set when the [Streaming mode] is [NDI High Bandwidth].

JPEG transmission [On, Off]

Set whether to transmit JPEG images.
Factory settings: On

Image capture size [1920×1080, 1280×720, 640×360, 320×180]

When displaying JPEG images, select the resolution for image display from the following.

JPEG(1)	1920×1080, 1280×720, 640×360, 320×180
JPEG(2)	640×360, 320×180
JPEG(3)	640×360, 320×180

Factory settings:
JPEG(1): 1280×720
JPEG(2): 640×360
JPEG(3): 320×180

Refresh interval [1fps, 4fps, 5fps, 12fps, 12.5fps, 15fps, 24fps, 25fps, 30fps]

Select the frame rate for JPEG images.

59.94Hz	1fps/5fps/15fps/30fps
50Hz	1fps/5fps/12.5fps/25fps
23.98Hz	1fps/4fps/12fps/24fps

Factory settings:
For 59.94Hz:
JPEG(1): 30fps
JPEG(2): 5fps
JPEG(3): 30fps
For 50Hz:
JPEG(1): 25fps
JPEG(2): 5fps
JPEG(3): 25fps
For 23.98Hz:
JPEG(1): 24fps
JPEG(2): 4fps
JPEG(3): 24fps

NOTE

- The frame rate may be slower depending on the network environment, resolution, image quality, access volume, etc.
- If images are not transmitted at the specified frame rate, lowering the resolution or image quality may result in transmissions closer to the specified value.

Image quality [Fine, Normal]

Specify the JPEG image quality for each resolution.
Factory settings: Fine

■ SRT

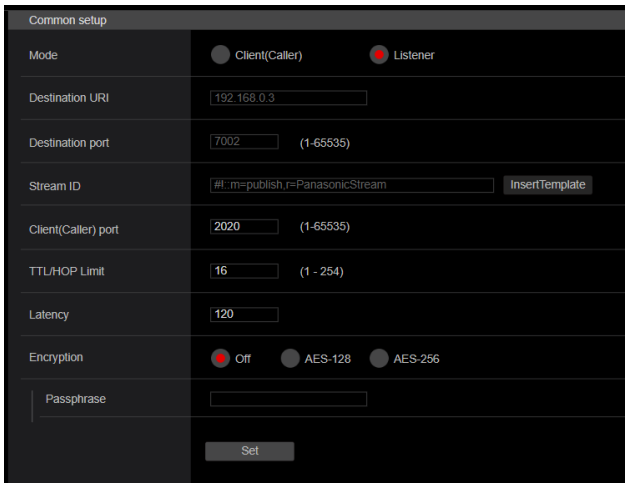
Make SRT transmission settings.

NOTE

- When starting SRT transmissions in the [Listener] mode, set the decoder and application to [Client(Caller)] mode and set the following URL:
  srt://[unit's IP address]:[value set in Client(Caller) port]
- When performing SRT transmissions in the [Client(Caller)] mode, set the IP address and port number of the decoder and application to [Destination URI] and [Destination port], and then click the [start] button for [SRT] in the live screen [Live].

Common setup

The setting is confirmed with the [Set] button.



Mode [Client(Caller), Listener]

Selects the method to connect to the SRT compatible decoder or service.

Client(Caller)	Specify the transmission destination IP address and port number when starting transmission from this unit.
Listener	Specify the listener port when awaiting the external request to start transmission.

Factory settings: Listener

Destination URI

When [Client(Caller)] is set in [Mode], enter the IP address.
Images and audio will be sent to the specified IP address.
Factory settings: 192.168.0.3

NOTE

- Only IPv4 can be set as the IP address.

Destination port [1 to 65535]

When [Client(Caller)] is set in [Mode], enter the port number (used when transmitting images from this unit).
Connection is to the specified port number.
Factory settings: 7002

Stream ID

When [Client(Caller)] is set in [Mode], enter the Stream ID.
The information entered is notified to the connection destination when SRT transmission is started.
If the [InsertTemplate] button is clicked, the following template is inserted in the input fields.
#!::m=publish,r=PanasonicStream

- The following characters can be displayed.

Numeric characters	0123456789
Alphabetical characters (upper and lower cases)	ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz
Symbols	!"#$%'()=-~^|\`@[]{}*:+;<>,.?/_

Factory settings: #!::m=publish,r=PanasonicStream

Client(Caller) port [1 to 65535]

When [Listener] is set in [Mode], enter the port number (used when this unit is waiting for a connection).
The following port numbers are used by the unit so they cannot be used.
20, 21, 23, 25, 42, 53, 67, 68, 69, 80, 110, 123, 161, 162, 443, 546, 547, 554, 995, 5960 to 5985, 7960 to 8060, 10669, 10670, 11900, 59000 to 61000
Factory settings: 2020

TTL/HOP Limit

Enter the TTL/HOP Limit value for multicast.
Factory settings: 16

Latency

Sets the time between when images and audio are sent and when they are played on the receiving device in a range between 0 and 65535 (ms).
Factory settings: 120

NOTE

- In some cases, the set time is not guaranteed depending on the network band.

Encryption [Off, AES-128, AES-256]

Sets whether to encrypt the transmitted IP image. (10 to 24 characters)

Off	Transmits unencrypted IP images.
AES-128	Encrypts IP images in AES-128 before transmitting.
AES-256	Encrypts IP images in AES-256 before transmitting.

Factory settings: Off

- The following characters can be displayed.

Numeric characters	0123456789
Alphabetical characters (upper and lower cases)	ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz
Symbols	!"#$%'()=-~^|\`@[]{}*:+;<>,.?/_

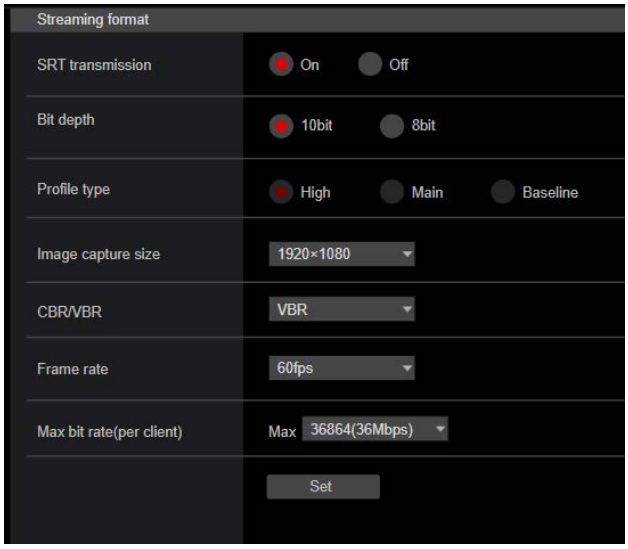
Passphrase

Sets the phrase used for decoding the encrypted IP images.

Streaming format

Makes settings for H.264 or H.265 images for use in SRT transmission.

The setting is confirmed with the [Set] button.



NOTE

- [Streaming format] settings cannot be changed during SRT transmissions.
- When [IP(UDP)] of [Tracking Data Output] is set to [On], video transmission via IP may be delayed or the video may suffer frame loss. (page 109)
  We recommend [IP(UDP)] of [Tracking Data Output] is set to [Off] during SRT transmission.

SRT transmission [On, Off]

Set whether to make SRT transmissions.

Factory settings: On

Bit depth [10bit, 8bit]

Sets the video bit count for SRT transmissions.

Factory settings: 10bit

Profile type [High, Main, Baseline]

Set the profile for when H.264 images are transmitted.

This cannot be set when H.265 is selected.

Factory settings: High

NOTE

- When [Bit depth] is [10bit] or [Image capture size] is [3840×2160], this is fixed to [High].

Image capture size [3840×2160, 1920×1080, 1280×720]

Sets the video resolution for SRT transmissions.

SRT(H264)	1920×1080, 1280×720
SRT(H264 UHD)	3840×2160
SRT(H265)	1920×1080, 1280×720
SRT(H265 UHD)	3840×2160

Factory settings:

SRT(H264): 1920×1080

SRT(H264 UHD): 3840×2160

SRT(H265): 1920×1080

SRT(H265 UHD): 3840×2160

CBR/VBR [CBR, VBR]

Sets the video bit rate control mode for SRT transmissions.

CBR	Transmit with the bit rate set in [Max bit rate(per client)].
VBR	Vary the bit rate for transmission according to the bit rate set in [Max bit rate(per client)] and the images to be recorded.

Factory settings: VBR

Frame rate [24fps, 25fps, 30fps, 50fps, 60fps]

Sets the video frame rate for SRT transmissions.

59.94Hz	30fps/60fps
50Hz	25fps/50fps
23.98Hz	24fps

Factory settings:

For 59.94Hz: 60fps

For 50Hz: 50fps

For 23.98Hz: 24fps

NOTE

- [60fps(50fps)] cannot be selected when the video format is [29.97p(25p)].

Max bit rate(per client)

[76800(75Mbps), 51200(50Mbps), 25600(25Mbps), 14436(14Mbps), 12800(12.5Mbps), 10240(10Mbps), 8192(8Mbps)]

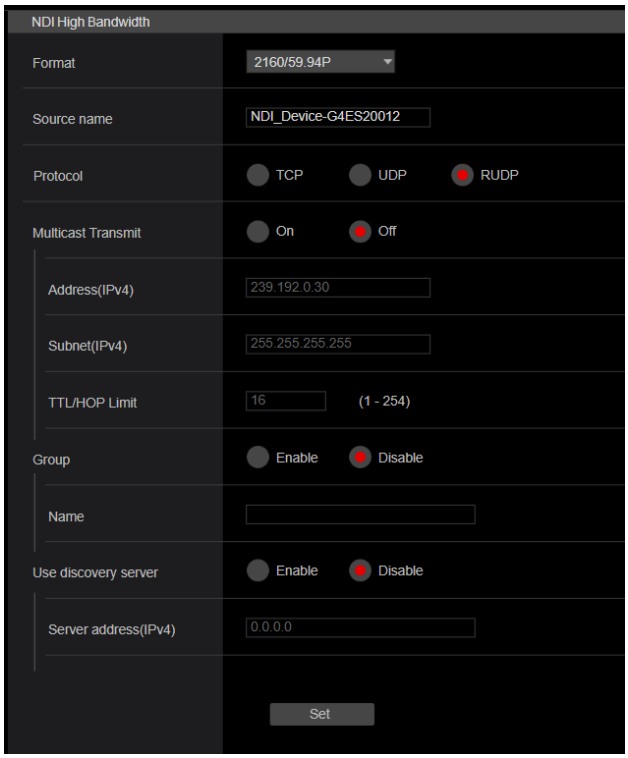
Specify the bit rate per client.

SRT(H264)	36864(36Mbps), 30720(30Mbps), 21504(21Mbps), 15360(15Mbps), 12288(12Mbps)
SRT(H264 UHD)	112640(110Mbps), 76800(75Mbps), 36864(36Mbps), 18432(18Mbps)
SRT(H265)	24576(24Mbps), 20480(20Mbps), 14336(14Mbps), 10240(10Mbps), 8192(8Mbps)
SRT(H265 UHD)	76800(75Mbps), 51200(50Mbps), 25600(25Mbps), 12800(12.5Mbps), 10240(10Mbps), 8132(8Mbps)

■ NDI High Bandwidth

Make NDI transmission settings.
The setting is confirmed with the [Set] button.

NDI High Bandwidth



Format
Displays the resolution of NDI images.

Source name
Set the image source name displayed when this unit is detected by software applications and hardware compatible with NDI.
Factory settings: NDI Device [serial number of this unit]

Protocol [TCP, UDP, RUDP]
Sets the format of unicast transmission to be used.
Factory settings: RUDP

Multicast Transmit [On, Off]
Sets whether to perform multicast transmission of images for the software applications and hardware compatible with NDI.
Factory settings: Off

Address(IPv4)
[IPv4 : 224.0.0.0 to 239.255.255.255]
Enter the multicast IP address.
Images and audio will be sent to the specified IP address.
Factory settings: 239.192.0.30

NOTE

- Verify usable multicast IP addresses before entering this setting.

Subnet(IPv4)
Enter the subnet mask.
Factory settings: 255.255.255.255

NOTE

- [Address(IPv4)] and [Subnet(IPv4)] clarify the multicast address ranges randomly set during multicast transmissions.
- When [Address (IPv4)] is set to [239.255.0.0] and [Subnet (IPv4)] is set to [255.255.0.0], multiple addresses are allocated randomly in the range between [239.255.0.0] and [239.255.255.252].

TTL/HOP Limit
The same as [SRT] [TTL/HOP Limit] (page 89).

Group [Enable, Disable]
Sets whether to use the grouping function when performing NDI transmission.
Factory settings: Disable

Name
Sets the group name for use when grouping function is used.

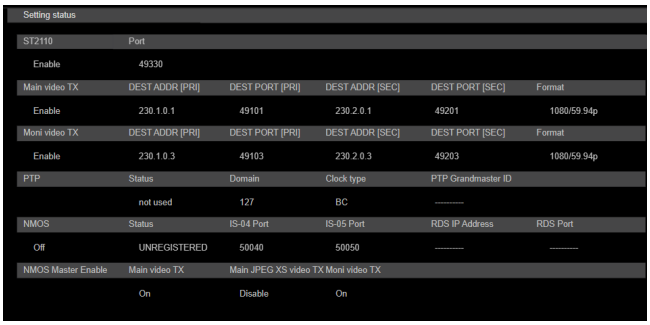
Use discovery server
Sets whether to use the discovery server when performing NDI transmission.

Server address(IPv4)
Sets the IPv4 address of the server when using the discovery server.

MoIP settings screen [Media over IP]

Make settings related to MoIP (SMPTE ST2110/NMOS/PTP).

■ Setting status



ST2110

Displays the Off/On status of the SMPTE ST2110 function and the port number used for SMPTE ST2110 transmissions.

Main video TX

Displays the transmission settings for [Main video TX] (uncompressed).

Moni video TX

Displays the transmission settings for [Moni video TX] (uncompressed).

PTP

Display the [PTP] settings.

NMOS

Display the [NMOS] settings.

NMOS Master Enable

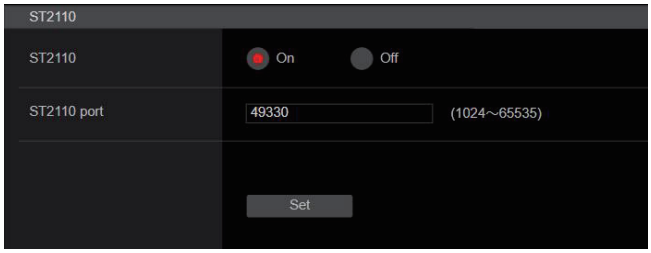
Display the [NMOS Master Enable] settings.
This setting can be switched from an NMOS controller that is on the same network as the camera. It is a setting to enable/disable SMPTE ST2110 transmitting and receiving.

NOTE

- The camera starts with this setting [On] when it is started. The setting value cannot be saved.

■ ST2110

SMPTE ST2110 can be transmitted and received from <SFP 1> and <SFP 2> terminal with this unit.
The setting is confirmed with the [Set] button.



ST2110 [On, Off]

Set On/Off for SMPTE ST2110 transmitting and receiving.
Factory settings: Off

ST2110 port [1024 to 65535]

Enter the port number for SMPTE ST2110 (used when transmitting SMPTE ST2110 from this unit).
10670 cannot be set as a port number.
Factory settings: 49330

■ ST2110 TX

Make SMPTE ST2110 (uncompressed) transmission settings.
The setting is confirmed with the [Set] button.

NOTE

- This menu is not displayed when [ST2110] is [Off].

Main video
Moni video

NOTE

- This is not output when [ST2110] is [Off].
- Camera images without overlays such as OSD menus are output from [Main video].
- [Moni video] outputs the same images as the MONI output from the <HD SDI OUT> terminal. 12G SDI is not output.
- The following shows the factory setting for Primary. For the Secondary factory settings, instead of [230.1.xx.x], read [230.2.xx.x], and instead of [491xx] read [492xx].

Format
Sets/displays the output format.

DEST ADDR
Enter the IP address of the transmission destination.
IP addresses can be set in the following ranges:

First octet	0 to 239
Second octet	0 to 255
Third octet	0 to 255
Fourth octet	0 to 255

You cannot set 0.0.0.0, 224.0.0.0 to 224.0.1.255, or a 127 IP address for the first octet.
Factory settings:
Primary
Main video: 230.1.0.1
Moni video: 230.1.0.3

DEST PORT [1024 to 65535]
Enter the port number of the transmission destination.
10670 cannot be set as a port number.
Factory settings:
Main video: 49101
Moni video: 49103

■ PTP

Make PTP settings.

Domain

Enter the PTP domain number.
Factory settings: 127

NOTE

- The domain number needs to be set in conjunction with the grand master. Consult the network administrator regarding settings for the grand master.
- This can only be set when [Sync signal] is [PTP].

Clock type [BC, E2E TC, P2P TC]

Sets the CLOCK TYPE for PTP.
Factory settings: BC

Sync signal

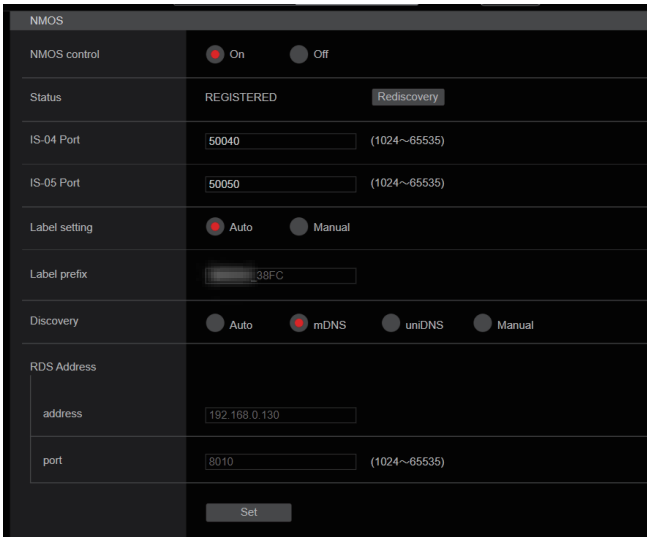
The screen for setting the synchronization signal for video/audio is displayed when you click [Sync signal>>]. (page 82)

■ NMOS

Make NMOS settings.

NOTE

- This menu is not displayed when [ST2110] is [Off].



NMOS control [On, Off]

Set Off/On for the NMOS function.

Factory settings: Off

Status

Displays the connection status of the NMOS RDS server.

UNREGISTERED	Not connected
REGISTERING	Currently discovering RDS server
REGISTERED	Registered to RDS server
P2P MODE	Connected via P2P with NMOS controller

IS-04 Port [1024 to 65535]

Enter the port number for NMOS IS-04.

Factory settings: 50040

IS-05 Port [1024 to 65535]

Enter the port number for NMOS IS-05.

Factory settings: 50050

Label setting

Select the automatic/manual label name used with NMOS.

Auto	The label name is a fixed value.
Manual	The user enters the label name manually.

Factory settings: Auto

NOTE

- The label name when set to Auto is “UBX100_****” (asterisks are the last four digits of the MAC address).

Label prefix

Enter the label name used with NMOS.

This cannot be changed if the Label setting is Auto.

Factory settings: UBX100_**** (asterisks are the last four digits of the MAC address)

Discovery

Set the RDS server discovery method.

Auto	Discover automatically in the order of uniDNS/mDNS.
mDNS	Discover with mDNS.
uniDNS	Discover with unicast DNS.
Manual	Discover manually.

Factory settings: Auto

NOTE

- If an RDS server cannot be discovered in any of the modes, the mode automatically switches to P2P.

RDS Address

Enter when specifying the RDS address.

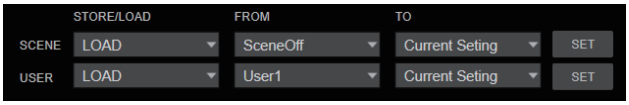
address	Set the address of the RDS to be connected.
port	Set the port of the RDS to be connected.

Factory settings: address:192.168.0.130/port:8010

Paint settings screen [Paint]

Adjust the image quality.
The settings in this screen (with the exception of [Scene] and [Matrix]) are applied immediately. After selecting the settings for [Scene] and [Matrix], you need to press the [Set] button to execute.

SCENE [Scene1 to Scene8]
USER [User1 to User3]



Switch the shooting mode depending on the shooting environment.
Select a shooting mode based on the shooting conditions or preference.
Select a shooting mode from the pull-down menu, and click the [SET] button to switch to the selected mode.

Scene1 to Scene8, User1 to User3	Modes that allow you to adjust detailed settings manually for various shooting conditions and preferences.

Camera control/Setup Menu button

You can display the camera control screen by clicking the [Camera control] button.
You can control the camera while adjusting the image quality.

BRIGHTNESS

■ GAIN SETTING

GAIN/ISO MODE [dB, ISO]

Sets the units for gain value.
Factory settings: dB

GAIN/ISO

Make adjustments to the gain of images.
Factory settings:
–6 to 18 (dB)
400 to 12800 (ISO)

AGC [Off, On]

Sets the behavior of auto gain control.
Factory settings: Off

AGC MAX GAIN [6dB, 12dB, 18dB]

Sets the maximum amount of gain when [AGC] is working.
Factory settings: 18dB

■ IRIS

AUTO IRIS [Off, On]

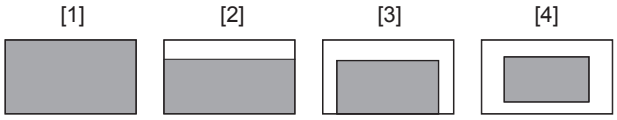
Select whether to turn auto iris adjustment OFF/ON.

Off	Do not adjust iris automatically.
On	Adjust iris automatically.

Factory settings: Off

WINDOW SELECT [1 to 4]

Set the photometry range when [AUTO IRIS] is on.
The window images appear as follows when [1] to [4] are selected:



A window area can be specified when [5] is selected.
The area can be specified using a web browser. (page 75)
Factory settings: 1

IRIS LEVEL [0 to 100]

Set the target picture level for automatic exposure compensation.
Factory settings: 50

PEAK RATIO [0 to 100]

Set the peak value and average value ratio of the photometry when [AUTO IRIS] is on.
The larger the number in the setting value, the more there is a reaction to the peak within the iris detection window.
The smaller the number in the setting value, the more there is a reaction to the average value within the iris detection window.
Factory settings: 0

IRIS SPEED [1 to 25]

Set the control speed of the iris function.
Factory settings: 15

■ SHUTTER SPEED

SHUTTER SW [Off, On]

Set On/Off for the shutter function.

SHUTTER DISP [sec, deg]

Sets the display of the shutter.
Factory settings: sec

SHUTTER MODE [STEP, SYNCHRO]

Select the shutter mode.

STEP	The step shutter is set (the steps can be changed).
SYNCHRO	The synchro shutter is set (the setting can be changed continuously).

SHUTTER SPEED

Sets the shutter speed when [SHUTTER MODE] is [STEP]. This is displayed as time (a fraction) when [SHUTTER DISP] is set to [sec], and as aperture angle when set to [deg].

When the display is [sec]

59.94i/59.94p mode	1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000
50i/50p mode	1/60, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000
29.97p mode	1/48, 1/50, 1/60, 1/96, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000
25p mode	1/48, 1/50, 1/60, 1/96, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000
23.98p mode	1/48, 1/50, 1/60, 1/96, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000

When the display is [deg]

HALF SHUTTER, 11.5d, 22.5d, 45.0d, 90.0d, 120.0d, 144.0d, 172.8d, 180.0d, 270.0d, 357.0d

Factory settings: [1/100]

SYNCHRO SCAN

Sets the shutter speed when [SHUTTER MODE] is [SYNCHRO]. This is displayed as time (a fraction) when [SHUTTER DISP] is set to [sec], and as aperture angle when set to [deg].
When a higher shutter speed is selected, fast-moving subjects do not become blurred easily but the images will be darker.

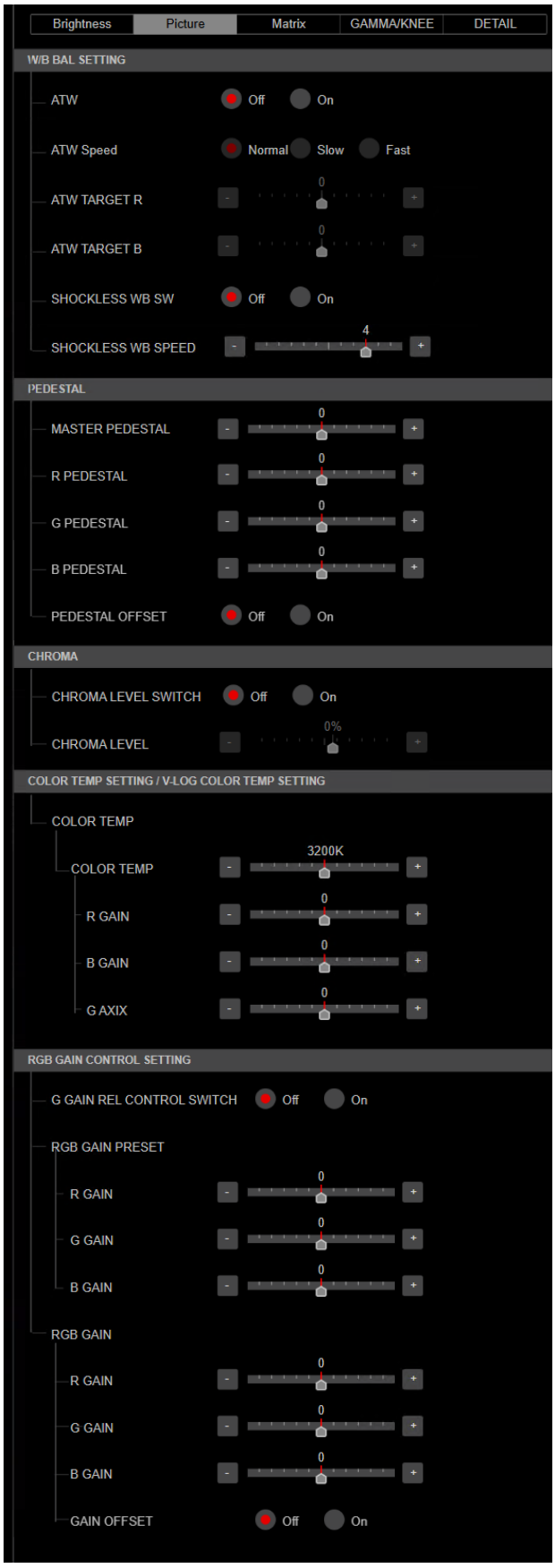
When the display is [sec]

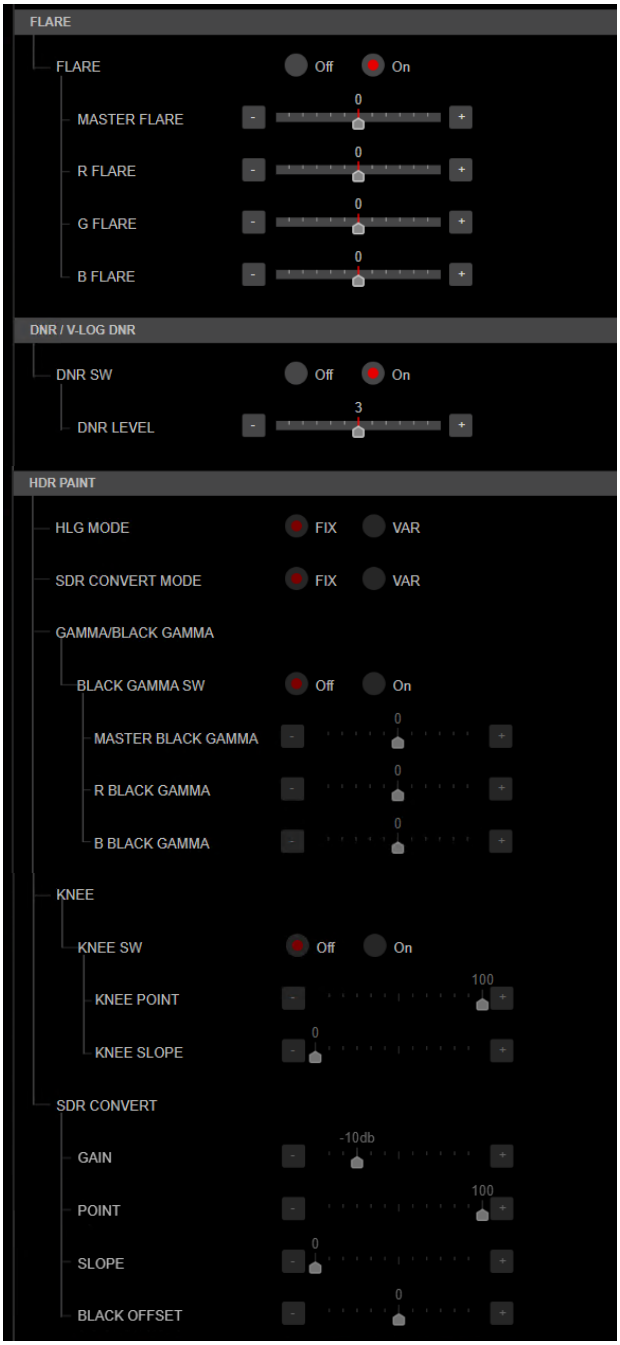
59.94i/59.94p mode	60.0Hz to 7200Hz
50i/50p mode	50.0Hz to 7200Hz
29.97p mode	30.0Hz to 7200Hz
25p mode	25.0Hz to 7200Hz
23.98p mode	24.0Hz to 7200Hz

When the display is [deg]

3.0 deg to 357.0 deg

PICTURE


Brightness
Picture
Matrix
GAMMA/KNEE
DETAIL
W/B BAL SETTING
ATW
Off
On
ATW Speed
Normal
Slow
Fast
ATW TARGET R
ATW TARGET B
SHOCKLESS WB SW
SHOCKLESS WB SPEED
PEDESTAL
MASTER PEDESTAL
R PEDESTAL
G PEDESTAL
B PEDESTAL
PEDESTAL OFFSET
CHROMA
CHROMA LEVEL SWITCH
CHROMA LEVEL
COLOR TEMP SETTING / V-LOG COLOR TEMP SETTING
COLOR TEMP
3200K
R GAIN
B GAIN
G AXIX
RGB GAIN CONTROL SETTING
G GAIN REL CONTROL SWITCH
RGB GAIN PRESET
G GAIN
RGB GAIN
GAIN OFFSET


FLARE
MASTER FLARE
R FLARE
G FLARE
B FLARE
DNR / V-LOG DNR
DNR SW
DNR LEVEL
HDR PAINT
HLG MODE
FIX
VAR
SDR CONVERT MODE
GAMMA/BLACK GAMMA
BLACK GAMMA SW
MASTER BLACK GAMMA
R BLACK GAMMA
B BLACK GAMMA
KNEE
KNEE SW
KNEE POINT
KNEE SLOPE
SDR CONVERT
GAIN
-10db
POINT
SLOPE
BLACK OFFSET

■ W/B BAL SETTING

ATW [Off, On]

Set the behavior of the auto tracking white balance function.
When set to [On], the white balance is continuously and automatically adjusted, with compensation done automatically even if the light source and color temperature change.

ATW Speed [Normal, Slow, Fast]

Sets the control speed of the auto tracking white balance function.

Normal	Tracked at a normal speed.
Slow	Tracked at a speed slower than [Normal].
Fast	Tracked at a speed faster than [Normal].

This is enabled when [ATW] is set to [On].
Factory settings: Normal

ATW TARGET R [–10 to +10]

Make fine adjustments to the Rch output when converging with the auto tracking white balance operation.
Factory settings: 0

ATW TARGET B [–10 to +10]

Make fine adjustments to the Bch output when converging with the auto tracking white balance operation.
Factory settings: 0

SHOCKLESS WB SW [Off, On]

Set the control that either transitions instantly or transitions gradually when [WHITE BALANCE MODE] is switched.
Factory settings: Off

SHOCKLESS WB SPEED [1 to 5]

When switching [WHITE BALANCE MODE], set the speed until it transitions.
Factory settings: 4

■ PEDESTAL

NOTE

- For all of the PEDESTAL items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].

MASTER PEDESTAL [–200 to +200]

This item is used to adjust the black level (adjust the pedestal).
These parts become darker when a negative setting is selected and, conversely, lighter when a positive setting is selected.
Factory settings: 0

R PEDESTAL [–800 to +800]

This enables the R pedestal to be adjusted.
Factory settings: 0

G PEDESTAL [–800 to +800]

This enables the G pedestal to be adjusted.
Factory settings: 0

B PEDESTAL [–800 to +800]

This enables the B pedestal to be adjusted.
Factory settings: 0

PEDESTAL OFFSET [Off, On]

Set the pedestal level of the Rch, Gch, and Bch when the auto black balance has been adjusted.

Off	Set the pedestal level to [0] for [R PEDESTAL], [G PEDESTAL], and [B PEDESTAL].
On	Maintain the values set for each of [R PEDESTAL], [G PEDESTAL], and [B PEDESTAL].

Factory settings: Off

■ CHROMA

NOTE

- For all of the CHROMA items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].

CHROMA LEVEL SWITCH [Off, On]

Select Off/On for the color intensity setting for images.

Off	Set the color intensity setting for images to Off.
On	Set the color intensity setting for images to On.

CHROMA LEVEL [–100% to 40%]

Set here the color intensity (chroma level) of the images.
Factory settings: 0%

■ COLOR TEMP SETTING / V-LOG COLOR TEMP SETTING

NOTE

- For all of the COLOR TEMP SETTING / V-LOG COLOR TEMP SETTING items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].

COLOR TEMP

COLOR TEMP [2000K to 15000K]

Sets the color temperature.
Factory settings: 3200K

R GAIN [–400 to +400]

Sets the correction level of red to the color temperature.
Factory settings: 0

B GAIN [–400 to +400]

Sets the correction level of blue to the color temperature.
Factory settings: 0

G AXIS [–400 to +400]

Sets the correction level of green to the color temperature.
Factory settings: 0

■ RGB GAIN CONTROL SETTING

NOTE

- For all of the RGB GAIN CONTROL SETTING items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].

G GAIN REL CONTROL SWITCH [Off, On]

Set On/Off for the relative value control of the G gain.
Factory settings: Off

RGB GAIN PRESET

R GAIN [–1000 to +1000]
This enables the R gain to be adjusted.
Factory settings: 0

G GAIN [–1000 to +1000]
This enables the G gain to be adjusted.
Factory settings: 0

B GAIN [–1000 to +1000]
This enables the B gain to be adjusted.
Factory settings: 0

RGB GAIN

R GAIN [–1000 to +1000]
This enables the R gain to be adjusted.
Factory settings: 0

G GAIN [–1000 to +1000]
This enables the G gain to be adjusted.
Factory settings: 0

B GAIN [–1000 to +1000]
This enables the B gain to be adjusted.
Factory settings: 0

GAIN OFFSET [Off, On]

Off	Makes the [R GAIN] and [B GAIN] values [0].
On	Leaves the values set in [R GAIN] and [B GAIN] as they are.

Factory settings: Off

■ FLARE

NOTE

- For all of the FLARE items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].

FLARE [Off, On]

Set Off/On for flare compensation.
Factory settings: Off

MASTER FLARE [–200 to 0 to +200]
Adjust the master flare.
Factory settings: 0

R FLARE [–200 to 0 to +200]
Adjust the Rch flare.
Factory settings: 0

G FLARE [–200 to 0 to +200]
Adjust the Gch flare.
Factory settings: 0

B FLARE [–200 to 0 to +200]
Adjust the Bch flare.
Factory settings: 0

■ DNR / V-LOG DNR

NOTE

- For all of the DNR / V-LOG DNR items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].

DNR SW [Off, On]

Select OFF/ON for the digital noise reduction effect which can achieve output of bright, clear images without noise, even at night and low-light conditions.
Factory settings: Off

DNR LEVEL [1 to 5]
Set the digital noise reduction level.
Factory settings: 3

■ HDR PAINT

HLG MODE [FIX, VAR]

Select image quality setting mode for HDR.
Factory settings: FIX

NOTE

- This is disabled when [V-LOG] is [On].

SDR CONVERT MODE [FIX, VAR]

Select the mode for converting to SDR.

FIX	Fixed mode (Gain fixed to –10 dB)
VAR	Variable mode

Factory settings: FIX

GAMMA/BLACK GAMMA

BLACK GAMMA SW [Off, On]
Select On/Off for the gamma curve for dark areas.
Factory settings: Off

MASTER BLACK GAMMA [–32 to +32]
Adjust the master black gamma correction level.
Factory settings: 0

R BLACK GAMMA [–32 to +32]
Make adjustments to the black gamma correction level for the Rch.
Factory settings: 0

B BLACK GAMMA [–32 to +32]
Make adjustments to the black gamma correction level for the Bch.
Factory settings: 0

KNEE

NOTE

- For all of the KNEE items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].
- For all of the KNEE items, setting is not possible when [HDR] is [On].
- When [DRS] is enabled, the knee setting is disabled.

KNEE SW [Off, On]
Set On/Off for the operating mode for gradation compression (knee).
Factory settings: On

KNEE POINT [–25.00% to 25.00% (0.25% step)]
Set the compression level (knee point) position for high-brightness video signals.
This is only enabled when [KNEE SW] is set to [On].
Factory settings: 0

KNEE SLOPE [–25.00% to 25.00% (0.25% step)]
Set the incline of knee.
This is only enabled when [KNEE SW] is set to [On].
Factory settings: 0

SDR CONVERT

The setting is disabled when [FIX] is selected in [SDR CONVERT MODE] and it cannot be set.

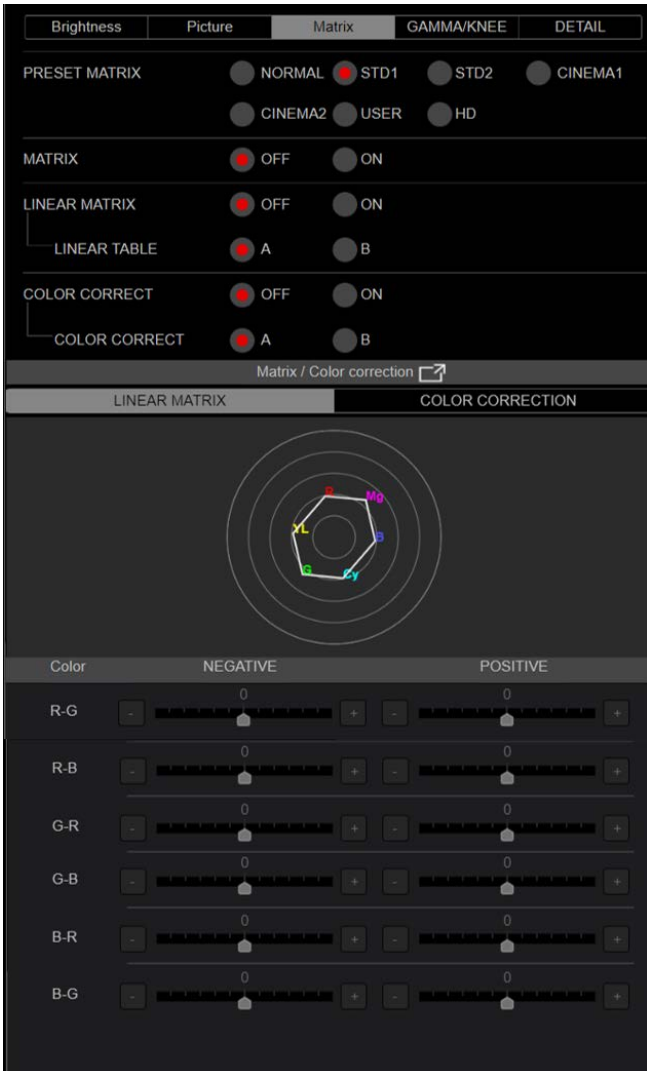
GAIN [0dB, –5dB, –6dB, –7dB, –8dB, –9dB, –10dB, –11dB, –12dB]
Set the gain of SDR images.
Factory settings: –6

POINT [0 to 100]
Set the image level to start SDR image compression.
Factory settings: 0

SLOPE [0 to 127]
Set the incline for compression of SDR images.
Factory settings: 0

BLACK OFFSET [–100 to +100]
Adjust the black level offset of SDR images.
Factory settings: 0

MATRIX



NOTE

- The [LINEAR MATRIX] and [COLOR CORRECTION] setting screen opens in a separate window when you click the icon next to [Matrix/Color correction].

PRESET MATRIX [NORMAL, STD1, STD2, CINEMA1, CINEMA2, USER, HD]

Select the type of matrix.

NORMAL	Matrix setting that puts emphasis on outdoor settings. Set [GAMMA] to [NORMAL] for use.
STD1	Matrix setting conforming to Panasonic studio camera AK-UC4000G (NORM-NORMAL). Set [GAMMA] to [HD] for use.
STD2	Matrix setting conforming to Panasonic studio camera AK-UC4000G (NORM-0E.11). Set [GAMMA] to [HD] for use.
CINEMA1	High contrast matrix setting. Set [GAMMA] to [CINEMA1] for use.
CINEMA2	Sedate matrix setting. Set [GAMMA] to [CINEMA2] for use.
USER	Matrix setting conforming to Panasonic remote camera AW-UE150. Set [GAMMA] to [HD] for use.
HD	Matrix setting conforming to Panasonic broadcasting devices. Set [GAMMA] to [HD] for use.

Factory settings: HD

MATRIX [OFF, ON]

Set ON/OFF for the matrix (linear matrix/color correction).
Factory settings: OFF

LINEAR MATRIX [OFF, ON]

Set ON/OFF for the linear matrix function.
Factory settings: OFF

LINEAR TABLE [A, B]

Select the table for the linear matrix.
Factory settings: A

COLOR CORRECT [OFF, ON]

Set ON/OFF for the color correction function.
Factory settings: OFF

COLOR CORRECT [A, B]

Select the table for color correction.
Factory settings: A

LINEAR MATRIX

Make adjustments to the linear matrix.

NOTE

- For all of the LINEAR MATRIX items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].

COLOR R-G

NEGATIVE [–31 to +31]	Set N direction of R-G.
POSITIVE [–31 to +31]	Set P direction of R-G.

COLOR R-B

NEGATIVE [–31 to +31]	Set N direction of R-B.
POSITIVE [–31 to +31]	Set P direction of R-B.

COLOR G-R

NEGATIVE [–31 to +31]	Set N direction of G-R.
POSITIVE [–31 to +31]	Set P direction of G-R.

COLOR G-B

NEGATIVE [–31 to +31]	Set N direction of G-B.
POSITIVE [–31 to +31]	Set P direction of G-B.

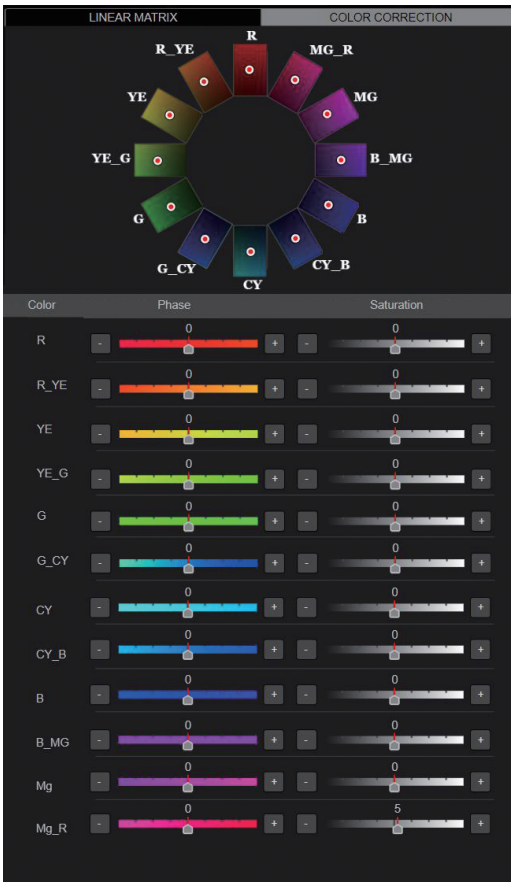
COLOR B-R

NEGATIVE [–31 to +31]	Set N direction of B-R.
POSITIVE [–31 to +31]	Set P direction of B-R.

COLOR B-G

NEGATIVE [–31 to +31]	Set N direction of B-G.
POSITIVE [–31 to +31]	Set P direction of B-G

Factory settings: 0



COLOR CORRECTION

Make adjustments to the color saturation and hue.

NOTE

- For all of the COLOR CORRECTION items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].

COLOR R

PHASE [–127 to 0 to 126]	Adjusts the hue of red.

COLOR R_YE

PHASE [–127 to 0 to 126]	Adjusts the hue between red and yellow.

COLOR YE

PHASE [–127 to 0 to 126]	Adjusts the hue of yellow.

COLOR YE_G

PHASE [–127 to 0 to 126]	Adjusts the hue between yellow and green.

COLOR G

PHASE [–127 to 0 to 126]	Adjusts the hue of green.

COLOR G_CY

PHASE [–127 to 0 to 126]	Adjusts the hue between green and cyan.

COLOR CY

PHASE [–127 to 0 to 126]	Adjusts the hue of cyan.

COLOR CY_B

PHASE [–127 to 0 to 126]	Adjusts the hue between cyan and blue.

COLOR B

PHASE [–127 to 0 to 126]	Adjusts the hue of blue.

COLOR B_MG

PHASE [–127 to 0 to 126]	Adjusts the hue between blue and magenta.

COLOR MG

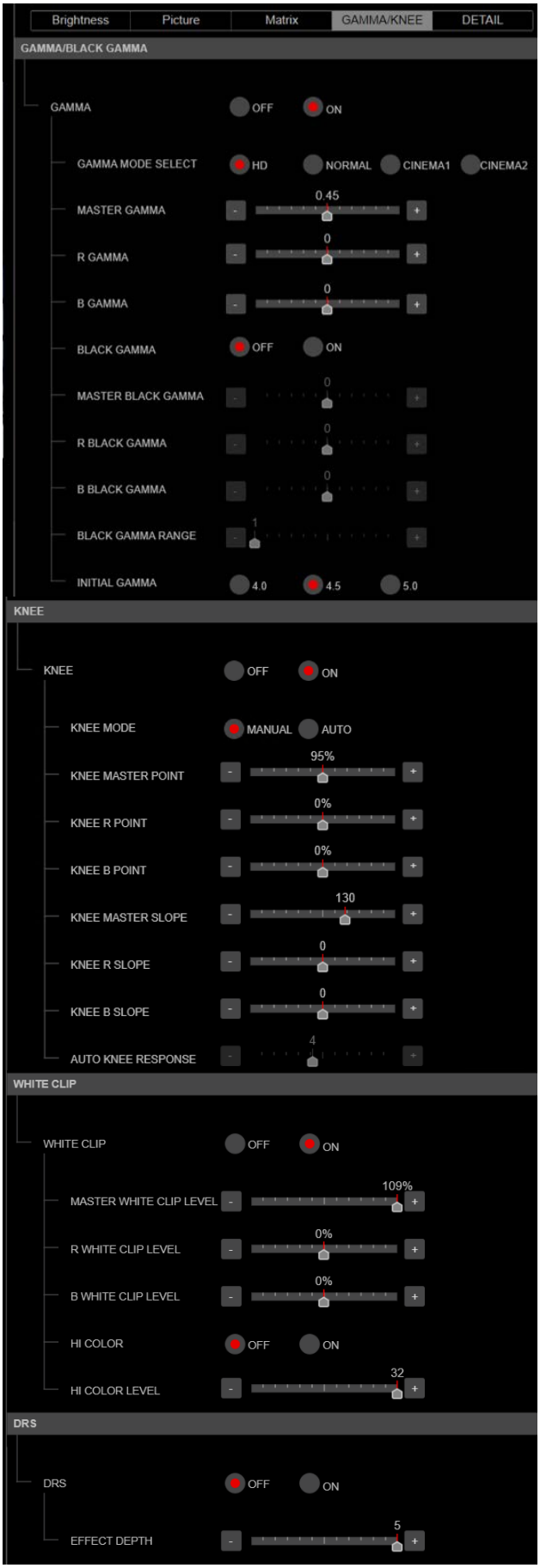
PHASE [–127 to 0 to 126]	Adjusts the hue of magenta.

COLOR MG_R

PHASE [–127 to 0 to 126]	Adjusts the hue between magenta and red.

Factory settings: 0

GAMMA/KNEE



■ GAMMA/BLACK GAMMA

NOTE

- For all of the GAMMA/BLACK GAMMA items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].
- For all of the GAMMA/BLACK GAMMA items, setting is not possible when [HDR] is [On].

GAMMA [OFF, ON]

Select ON/OFF for the gamma mode.
Factory settings: OFF

GAMMA MODE SELECT
[HD, NORMAL, CINEMA1, CINEMA2]
Select the gamma curve type.

HD	Video gamma characteristics conforming to Panasonic broadcasting devices.
NORMAL	Gamma characteristics that emphasize face tones.
CINEMA1	High contrast gamma characteristic.
CINEMA2	Sedate gamma characteristic.

Factory settings: HD

MASTER GAMMA [0.15 to 0.75]
Adjust the master gamma correction level.
Factory settings: 0.45

R GAMMA [–75 to +75]
Set the gamma for the Rch.
Factory settings: 0

B GAMMA [–75 to +75]
Set the gamma for the Bch.
Factory settings: 0

BLACK GAMMA [OFF, ON]
Select ON/OFF for the gamma curve for dark areas.
Factory settings: OFF

MASTER BLACK GAMMA [–48 to +48]
Adjust the master black gamma correction level.

–48 to –1	Compresses dark parts.
+1 to +48	Expands dark parts.

Factory settings: 0

R BLACK GAMMA [–20 to +20]
Make adjustments to the black gamma correction level for the Rch.
Factory settings: 0

B BLACK GAMMA [–20 to +20]
Make adjustments to the black gamma correction level for the Bch.
Factory settings: 0

BLACK GAMMA RANGE [1 to 3]
Set the maximum level of compression/expansion for the gamma curve for dark areas.

1	About 20%
2	About 30%
3	About 40%

Factory settings: 3

INITIAL GAMMA [4.0, 4.5, 5.0]
Set the rising slope for the gamma curve.
This is only enabled when [GAMMA MODE SELECT] is set to [HD].
Factory settings: 4.0

■ KNEE

NOTE

- For all of the KNEE items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].
- For all of the KNEE items, setting is not possible when [HDR] is [On].

KNEE [OFF, ON]

Set ON/OFF for the operating mode for gradation compression (knee).
Factory settings: ON

KNEE MODE [AUTO, MANUAL]
Sets the operating mode for gradation compression (knee).

AUTO	Automatically set the knee point and knee slope.
MANUAL	Manually set the knee point and knee slope.

Factory settings: MANUAL

KNEE MASTER POINT
[80.00% to 110.00% (0.25% step)]
Set the compression level (knee point) position for high-brightness video signals.
This is only enabled when [KNEE MODE] is set to [MANUAL].
Factory settings: 0.95

KNEE R POINT
[–25.00% to 25.00% (0.25% step)]
Make positional settings for the compression level (knee point) of the Rch against the [KNEE MASTER POINT].
This is only enabled when [KNEE MODE] is set to [MANUAL].
Factory settings: 0

KNEE B POINT
[–25.00% to 25.00% (0.25% step)]
Make positional settings for the compression level (knee point) of the Bch against the [KNEE MASTER POINT].
This is only enabled when [KNEE MODE] is set to [MANUAL].
Factory settings: 0

KNEE MASTER SLOPE [0 to 199]
Set the incline of knee.
This is only enabled when [KNEE MODE] is set to [MANUAL].
Factory settings: 130

KNEE R SLOPE [–99 to +99]
Set the incline of the Rch against the [KNEE MASTER SLOPE].
This is only enabled when [KNEE MODE] is set to [MANUAL].
Factory settings: 0

KNEE B SLOPE [–99 to +99]
Set the incline of the Bch against the [KNEE MASTER SLOPE].
This is only enabled when [KNEE MODE] is set to [MANUAL].
Factory settings: 0

AUTO KNEE RESPONSE [1 to 8]
Sets the auto knee response speed. The smaller the setting value the faster the response speed.
Factory settings: 4

■ WHITE CLIP

NOTE

- For all of the WHITE CLIP items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].
- For all of the WHITE CLIP items, setting is not possible when [HDR] is [On].

WHITE CLIP [OFF, ON]

Set ON/OFF for the white clip function.
Factory settings: OFF

MASTER WHITE CLIP LEVEL [80% to 109%]
Set the master white clip level.
Factory settings: 1.09

R WHITE CLIP LEVEL [–15% to +15%]
Set the white clip level of the Rch against the [MASTER WHITE CLIP LEVEL].
This is only enabled when [WHITE CLIP] is set to [ON].
Factory settings: 0

B WHITE CLIP LEVEL [–15% to +15%]
Set the white clip level of the Bch against the [MASTER WHITE CLIP LEVEL].
This is only enabled when [WHITE CLIP] is set to [ON].
Factory settings: 0

HI COLOR [OFF, ON]
Set the control of the mode to expand the dynamic range of colors. This improves the color reproducibility in very bright parts.
Factory settings: OFF

HI COLOR LEVEL [1 to 32]
Set the level of the mode to expand the dynamic range of colors.
Factory settings: 32

■ DRS

NOTE

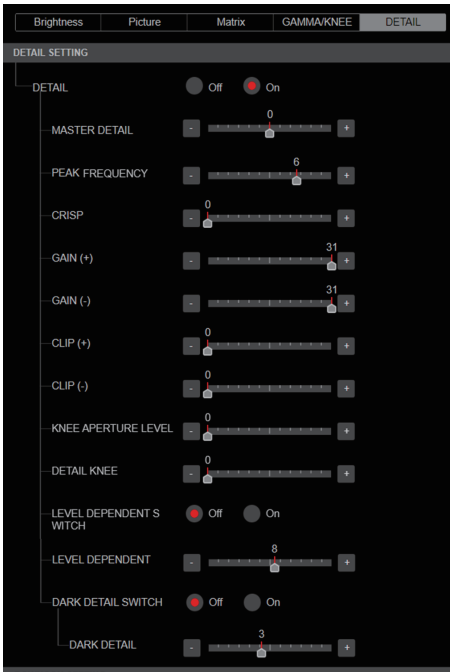
- For all of the DRS items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].

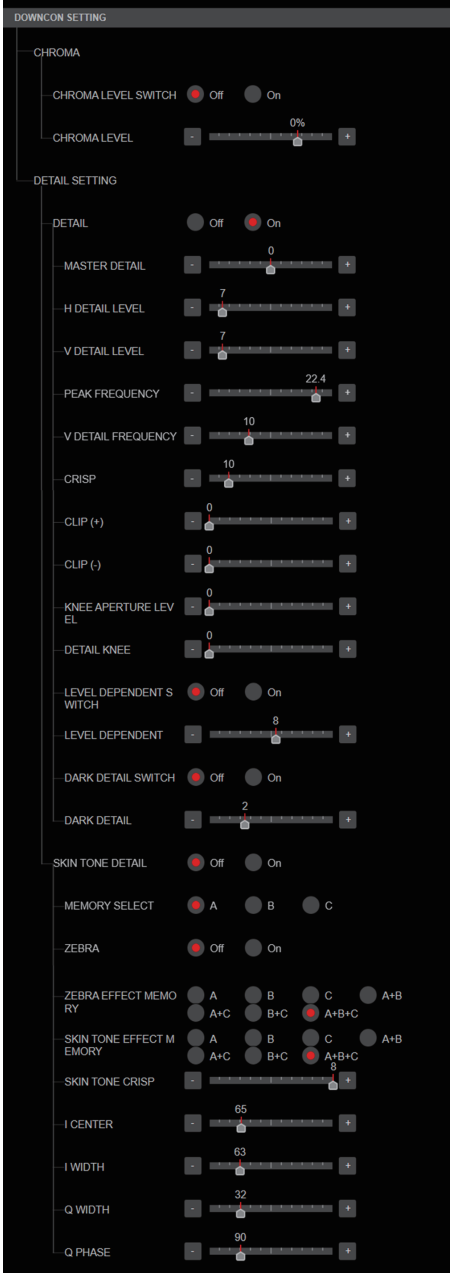
DRS [OFF, ON]

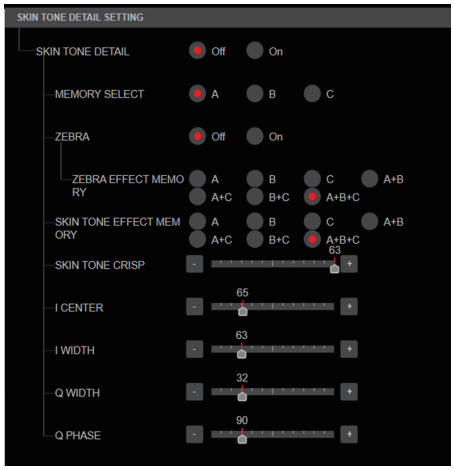
Set ON/OFF for the DRS function which makes appropriate corrections when recording video that has a large light/dark contrast.
Factory settings: OFF

EFFECT DEPTH [1 to 5]
Set the effect level of the DRS function. The effect level increases as the number increases.
Factory settings: 5

DETAIL







■ DETAIL SETTING

NOTE

- For all of the DETAIL SETTING items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].

DETAIL [Off, On]

Set On/Off for image contour (image sharpness) adjustments.
Factory settings: On

MASTER DETAIL [–31 to +31]
Adjust the contour correction level (master).
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

PEAK FREQUENCY [1 to 8]
Set the boost frequency of detail.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 6

CRISP [0 to 63]
Set the level of noise reduction for the detail signal.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

GAIN(+) [–31 to +31]
Set the level of the detail signal in the plus direction (brighter direction).
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

GAIN(–) [–31 to +31]
Set the level of the detail signal in the minus direction (darker direction).
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

CLIP(+) [0 to 63]
Set the level of clipping of the detail signal in the plus direction (brighter direction).
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

CLIP(–) [0 to 63]
Set the level of clipping of the detail signal in the minus direction (darker direction).
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

KNEE APERTURE LEVEL [0 to 39]
Adjust the level of detail for very bright parts.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

DETAIL KNEE [0 to 15]
Adjust the detail component of knee.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

LEVEL DEPENDENT SWITCH [Off, On]
Set On/Off for the level of reduction in detail in dark parts.
This is only enabled when [DETAIL] is set to [On].
Factory settings: Off

LEVEL DEPENDENT [0 to 15]
Set the level of reduction in detail in dark parts.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

DARK DETAIL SWITCH [Off, On]
Set On/Off for the control that adds detail in dark parts.
This is only enabled when [DETAIL] is set to [On].
Factory settings: Off

DARK DETAIL [0 to 7]
Set the level of detail in dark parts.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 3

■ DOWNCON SETTING

Adjust the contours and colors of images down-converted from 4K to HD.
This is enabled when [Format] is one of the following:
2160/59.94p, 2160/29.97p, 2160/23.98p, 2160/50p, 2160/25p

NOTE

- For all of the DOWNCON SETTING items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].

CHROMA

CHROMA LEVEL SWITCH [Off, On]
Set On/Off for the chroma level control.
Factory settings: Off

CHROMA LEVEL [–100% to 80%]
Set here the color intensity (chroma level) of the images.
Factory settings: 0

DETAIL SETTING

DETAIL [Off, On]
Turn On/Off the contour (sharpness of images) adjustment of images.
Factory settings: On

MASTER DETAIL [–31 to +31]
Make adjustments the contour correction level (master).
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

H DETAIL LEVEL [0 to 63]
Adjust the contour correction level in the horizontal direction.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 7

V DETAIL LEVEL [0 to 63]
Adjust the contour correction level in the vertical direction.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 7

PEAK FREQUENCY [12.4MHz to 37.1MHz]
Set the boost frequency of detail.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 22.4MHz

V DETAIL FREQUENCY [0 to 31]
Set the boost frequency of detail (vertically).

0: Low frequency
to
31: High frequency

When a high frequency is selected, the detail effect is added to subjects with more definition.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 10

CRISP [0 to 63]
Set the level of noise reduction for the detail signal.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 10

CLIP(+) [0 to 63]
Set the level of clipping of the detail signal in the plus direction (brighter direction).
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

CLIP(–) [0 to 63]
Set the level of clipping of the detail signal in the minus direction (darker direction).
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

KNEE APERTURE LEVEL [0 to 39]
Adjust the level of detail for very bright parts.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

DETAIL KNEE [0 to 15]
Adjust the detail component of knee.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 0

LEVEL DEPENDENT SWITCH [Off, On]
Set On/Off for the level of reduction in detail in dark parts.
This is only enabled when [DETAIL] is set to [On].
Factory settings: Off

LEVEL DEPENDENT [0 to 15]
Set the level of reduction in detail in dark parts.
This is only enabled when [DETAIL] is set to [On].
Factory settings: 8

DARK DETAIL SWITCH [Off, On]
Set On/Off for the control that adds detail in dark parts.
This is only enabled when [DETAIL] is set to [On].
Factory settings: Off

DARK DETAIL [0 to 7]
Set the level of detail in dark parts.
Factory settings: 2

SKIN TONE DETAIL [Off, On]

This function smooths skin and produces a more beautiful image.
Set On/Off for the skin tone detail function.
Factory settings: Off

MEMORY SELECT [A, B, C]
Select the skin tone table of the subject for the skin tone effect.
Factory settings: A

ZEBRA [Off, On]
Set On/Off for the zebra display of the skin tone area.
The zebra pattern is displayed only on devices connected to the SDI OUT2 connector.
Factory settings: Off

NOTE

- This cannot be set when [ZEBRA] in [SKIN TONE DETAIL SETTING] is [On].

ZEBRA EFFECT MEMORY
[A, B, C, A+B, A+C, B+C, A+B+C]
Select the skin tone table for the zebra display.
Factory settings: A+B+C

SKIN TONE EFFECT MEMORY
[A, B, C, A+B, A+C, B+C, A+B+C]
Select the skin tone table for the skin tone effect.
Factory settings: A+B+C

SKIN TONE CRISP [0 to 8]
Adjust the skin tone detail.
Factory settings: 8

I CENTER [0 to 255]
Set the central position above the I axis (area where skin tone is to take effect).
Factory settings: 65

I WIDTH [0 to 255]
Set the width of the area where the skin tone is to take effect above the I axis, centered on [I CENTER].
Factory settings: 63

Q WIDTH [0 to 127]
Set the width of the area where the skin tone is to take effect above the Q axis, centered on [I CENTER].
Factory settings: 32

Q PHASE [0 to 359]
Set the phase of the area where skin tone is to take effect based on the Q axis.
Factory settings: 90

■ SKIN TONE DETAIL SETTING

NOTE

- For all of the SKIN TONE DETAIL SETTING items, setting is not possible when [V-LOG] is [On] and [V-LOG PAINT SW] is [Off].

SKIN TONE DETAIL [Off, On]

This function smooths skin and produces a more beautiful image.
Set On/Off for the skin tone detail function.
Factory settings: Off

MEMORY SELECT [A, B, C]
Select the skin tone table of the subject for the skin tone effect.
Factory settings: A

ZEBRA [Off, On]
Set On/Off for the zebra display of the skin tone area.
The zebra pattern is displayed only on devices connected to the SDI OUT2 connector.
Factory settings: Off

NOTE

- This cannot be set when [ZEBRA] in [DOWNCON SETTING] is [On].

ZEBRA EFFECT MEMORY
[A, B, C, A+B, A+C, B+C, A+B+C]
Select the skin tone table for the zebra display.
Factory settings: A+B+C

SKIN TONE EFFECT MEMORY
[A, B, C, A+B, A+C, B+C, A+B+C]
Select the skin tone table for the skin tone effect.
Factory settings: A+B+C

SKIN TONE CRISP [–63 to 0 to +63]
Adjust the skin tone detail.
Factory settings: 63

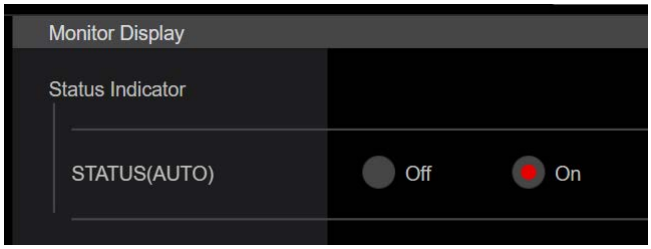
I CENTER [0 to 255]
Set the central position above the I axis (area where skin tone is to take effect).
Factory settings: 65

I WIDTH [0 to 255]
Set the width of the area where the skin tone is to take effect above the I axis, centered on [I CENTER].
Factory settings: 63

Q WIDTH [0 to 255]
Set the width of the area where the skin tone is to take effect above the Q axis, centered on [I CENTER].
Factory settings: 32

Q PHASE [0 to 359]
Set the phase of the area where skin tone is to take effect based on the Q axis.
Factory settings: 90

Monitor display setting display [Monitor Display]



Status Indicator

For items that have been set to [On], when the designated status is reached and where [CHAR] is [ON], the statuses are displayed in the images of connectors where [OUTPUT ITEM] is set to [STATUS].

STATUS(AUTO) [Off, On]
When [On], the following status indications are displayed on the OSD:
- Display of the results after automatic white balance is run
- Display of the results after automatic black balance is run
- Error display when an error occurs

Factory settings: Off

Lens setting screen [Lens]

The setting is confirmed with the [Set] button.

Digital Extender [Off, ×1.4, ×2.0]

Make settings for the digital extender function.

Off	Turn the digital extender function Off.
×1.4	The digital zoom will be fixed at 1.4×.
×2.0	The digital zoom will be fixed at 2.0×.

Factory settings: Off

ND Filter [THROUGH, 1/4, 1/16, 1/64]

This dial selects the filter to suit the brightness of the subject.

THROUGH	Does not use the ND filter.
1/4	Reduces the amount of light entering the MOS sensor to 1/4.
1/16	Reduces the amount of light entering the MOS sensor to 1/16.
1/64	Reduces the amount of light entering the MOS sensor to 1/64.

Factory settings: THROUGH

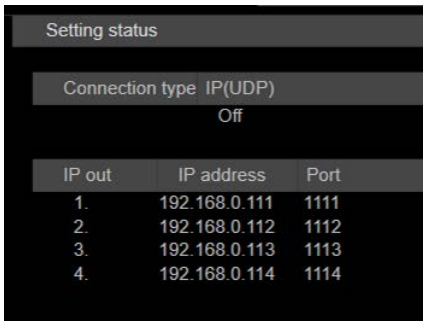
Collaboration capability [Linkage]

Tracking data output settings screen [Tracking Data Output]

Select the output mode of the tracking data and the communication destination in the IP mode.
Up to four addresses can be specified when the IP mode is enabled.

■ Setting status

Displays the destinations in IP mode.



■ Connection type

Camera ID [0 to 255]

Sets the Camera ID for tracking data.
The setting is confirmed with the [Set] button.
Factory settings: 255

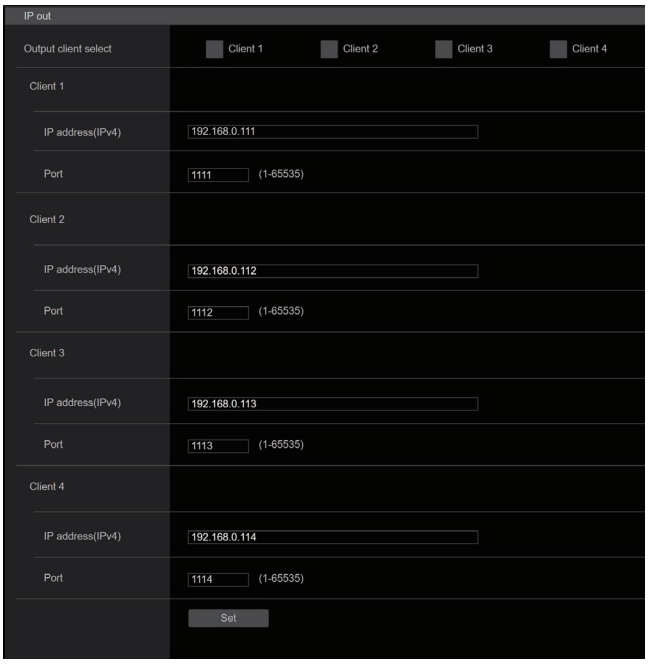
IP(UDP) [On, Off]

Sets the UDP output function [On] or [Off] to output tracking data, such as Zoom or other information from the IP output, synchronized with the Genlock signal. (page 59)
When [IP(UDP)] is set to [On], a warning message is displayed. Click the [OK] button to enable the settings.
Factory settings: Off

NOTE

- When [IP(UDP)] is [On], video transmission via IP may be delayed or the video may suffer frame loss.
  We recommend setting [IP(UDP)] to [Off] to avoid the delay or frame loss due to the video transmission via IP.
- In the following cases, the tracking data output may be delayed or the value may not be updated.
  - When performing video transmission via IP (M-JPEG/NDI/SRT)
  - When opening the web screen (live screen [Live] or the web setting screen [Setup])
  - While viewing the OSD menu
  - When executing AWB/ABB
  - When a red or a green tally signal input has been changed between Off and On
  - After switching [SCENE]
  - After switching [IRIS]
  - After switching [WHITE BALANCE MODE]
  - After switching each item of [COLOR TEMP SETTING]
  - After switching [Gamma]
  - After switching [MATRIX]
  - After switching [DIGITAL EXTENDER]
  - After switching [FAN SETTING]
  - When executing [Reset to the default (Except the network settings)] of [Maintenance]

■ IP out



Output client select [Client 1 to 4]

Enable or disable up to four clients to forward the tracking data when [IP(UDP)] is [On].
Forwards the tracking data via UDP such as Zoom or other information to the clients that are set to enable on this screen.
The setting is confirmed with the [Set] button.

Factory settings:

Client1: Disable
Client2: Disable
Client3: Disable
Client4: Disable

NOTE

- Disable the client that does not require the forwarding of the tracking data because the UDP packet is transmitted to the enabled client at the system frequency interval.
- When multiple clients are enabled, the timing of transmitting the UDP packet to the second and subsequent clients will always be delayed relative to the Genlock signal.
  (Approximately 200 to 300 µs delay will occur for each client. The latency may be increased depending on the system status or the network environment of the unit.)

Client1 to 4

IP address(IPv4)

Sets the destination IP address to forward the tracking data such as Zoom or other information via UDP.
The setting is confirmed with the [Set] button.

Factory settings:

Client1: 192.168.0.111
Client2: 192.168.0.112
Client3: 192.168.0.113
Client4: 192.168.0.114

NOTE

- The address to forward the tracking data can only be configured as IPv4.
- A multicast address cannot be specified for the destination address.

Port

Sets the destination port number to forward the tracking data such as Zoom or other information via UDP.
The setting is confirmed with the [Set] button.
The following port numbers are used by the unit so they cannot be used.
20, 21, 23, 25, 42, 53, 67, 68, 69, 80, 110, 123, 161, 162, 443, 554, 995, 10669, 10670, 59000 to 61000

Factory settings:

Client1: 1111
Client2: 1112
Client3: 1113
Client4: 1114

NOTE

- You cannot set up clients having a combination of two or more IP addresses with duplicated ports.

User management screen [Access mng.]

The users and personal computers (IP addresses) that can access the unit from personal computers and mobile terminals are registered in the User management screen [Access mng.].
The User management screen [Access mng.] consists of [User auth.], [Host auth.] and [Rop].

User authentication screen [User auth.]

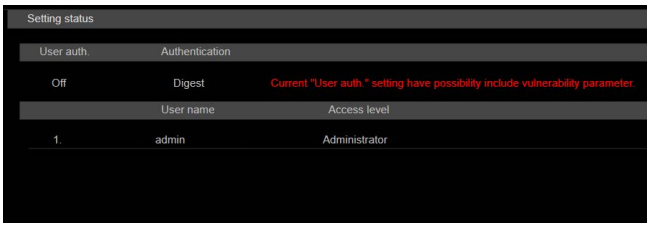
Click the [User auth.] of User management screen [Access mng.].
Configure the user authentication settings for the personal computers and mobile terminals that can access the unit.
Up to 9 users can be registered.

NOTE

- If user authentication fails more than 8 times within a 30-second period from the same IP address (personal computer), access to the unit will be disabled for a certain period.

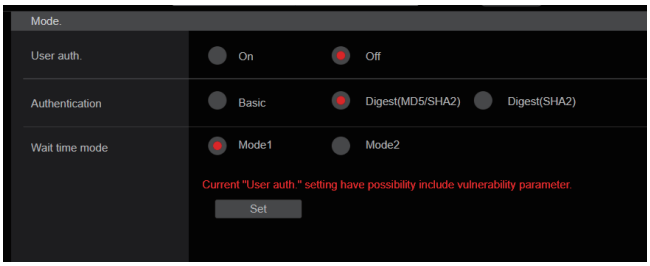
■ Setting status

The current user authentication settings and user authentication method are displayed. The currently registered account information is also displayed.



■ Mode

The setting is confirmed with the [Set] button.



User auth. [On, Off]

User authentication is set to [On] or [Off] here.
Factory settings: Off

Authentication [Basic, Digest(MD5/SHA2), Digest(SHA2)]

Specify the method of user authentication to use.

Basic	Use basic authentication.
Digest(MD5/SHA2)	Use digest authentication which enables connection to both MD5 and SHA2.
Digest(SHA2)	Use digest authentication which enables connection to just SHA2.

Factory settings: Digest(MD5/SHA2)

Wait time mode [Mode1, Mode2]

Set the wait time mode for re-entry of user authentication after authentication fails when controlling the unit from a personal computer or a Panasonic controller.

Mode1	The wait time for re-entry is longer compared to [Mode2]. This is the setting recommended if security is to be prioritized.
Mode2	The wait time for re-entry is shorter. This is the setting recommended if operability is to be prioritized.

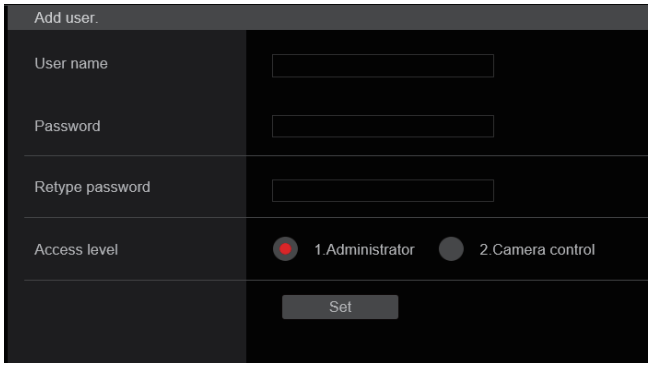
Factory settings: Mode1

NOTE

- When using the ROP, set [Wait time mode] to [Mode2] when using digest authentication.
  Smooth operation may be diminished when [Wait time mode] is set to [Mode1].
- Depending on the web browser you are using, you may not be able to access properly using digest authentication.

■ Add user

The setting is confirmed with the [Set] button.



User name
[1 to 32 characters]

The user name is input here.

- The following characters can be displayed.

Numeric characters	0123456789
Alphabetical characters (upper and lower cases)	ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz
Symbols	! $ % ' ( ) * + , - . / ? @ [ ] ^ _ ` ~

Password
Retype password
[4 to 32 characters]

The password is input here.

Access level [1.Administrator, 2.Camera control]

Select the user access level.

1.Administrator	This access level allows the user to perform all the unit's operations.
2.Camera control	This access level allows only live screen [Live] operations to be performed.

Factory settings: 1.Administrator

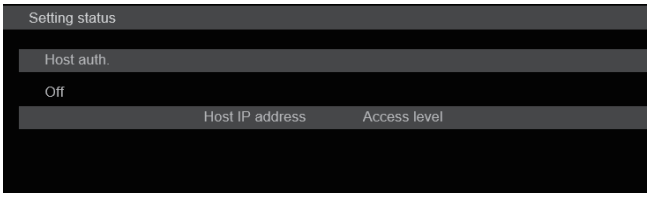
■ Delete user

Delete the user accounts registered in the unit.
You can delete selected users by clicking the [Delete] button at the right.

Host authentication screen [Host auth.]

Click the [Host auth.] of User management screen [Access mng.]. Configure the host authentication settings that restrict the personal computers (IP addresses) that can access the unit.

■ Setting status

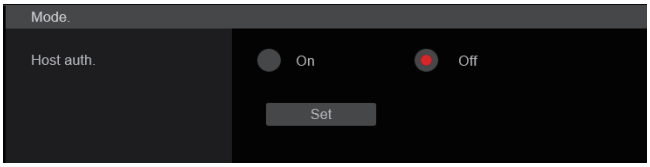


Host auth.
The host authentication settings are displayed.

Host IP address
The host IP address is displayed.

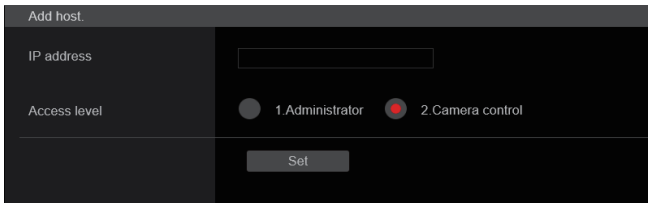
Access level
The host access level is displayed.

■ Mode



Host auth. [On, Off]
Host authentication is set to [On] or [Off] here.
The setting is confirmed with the [Set] button.
Factory settings: Off

■ Add host



IP address
The IP address of the personal computer from which access to the camera is allowed is input here. The host name cannot be input as the IP address.

NOTE

- When the “IP address/subnet mask length” is input, the personal computers which are allowed to access the camera can be restricted on a subnet by subnet basis.
  If, for instance, “192.168.0.1/24” has been input and the [2. Camera control] setting has been selected as the [Access level] setting, the personal computers from “192.168.0.1” to “192.168.0.254” will be able to access the camera at the [2. Camera control] access level.
- When an already registered IP address is input and the [Set] button is clicked, the host information will be overwritten.

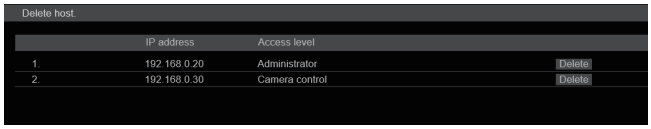
Access level [1.Administrator, 2.Camera control]
Select the host access level.
The setting is confirmed with the [Set] button.

1.Administrator	This access level allows the user to perform all the unit’s operations.
2.Camera control	This access level allows you to display images and control the unit. The unit cannot be set.

Factory settings: 2.Camera control

■ Delete host

Delete the host information registered in the unit.
You can delete selected host information by clicking the [Delete] button at the right.



ROP authentication screen [Rop]

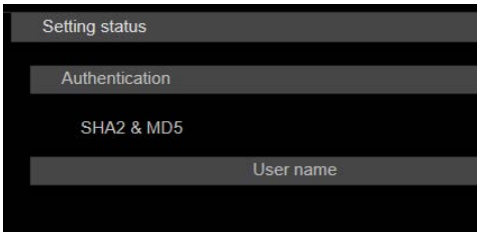
Click the [Rop] of User management screen [Access mng.].
Configure the ROP authentication settings for the ROP that can access the unit.
Up to 9 users can be registered.

NOTE

- If ROP authentication fails more than 8 times within a 30-second period from the same IP address (personal computer), access to the unit will be disabled for a certain period.

■ Setting status

The current user authentication settings and user authentication method are displayed. The currently registered account information is also displayed.



■ Mode

Rop auth. [SHA2 & MD5, SHA2]

Specify the method of user authentication to use.
The setting is confirmed with the [Set] button.

SHA2 & MD5	Setting that enables access to both SHA2 and MD5.
SHA2	Setting that enables access to SHA2 only.

Factory settings: SHA2 & MD5

■ Add user

The setting is confirmed with the [Set] button.

User name
[1 to 8 characters]

The user name is input here.

- The following characters can be displayed.

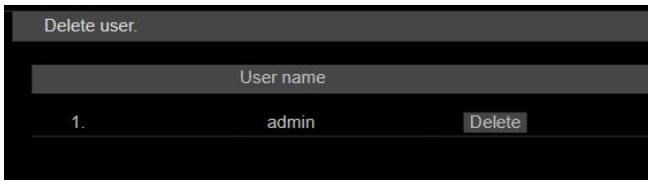
Numeric characters	0123456789
Alphabetical characters (upper and lower cases)	ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz
Symbols	- _ #

Password
Retype password
[1 to 31 characters]

The password is input here.

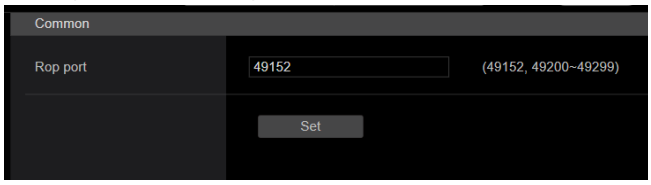
■ Delete user

Delete the user accounts registered in the unit.
You can delete selected users by clicking the [Delete] button at the right.



■ Common

Set the port number to accept ROP access.



Rop port [49152, 49200 to 49299]

The setting is confirmed with the [Set] button.
Factory settings: 49152

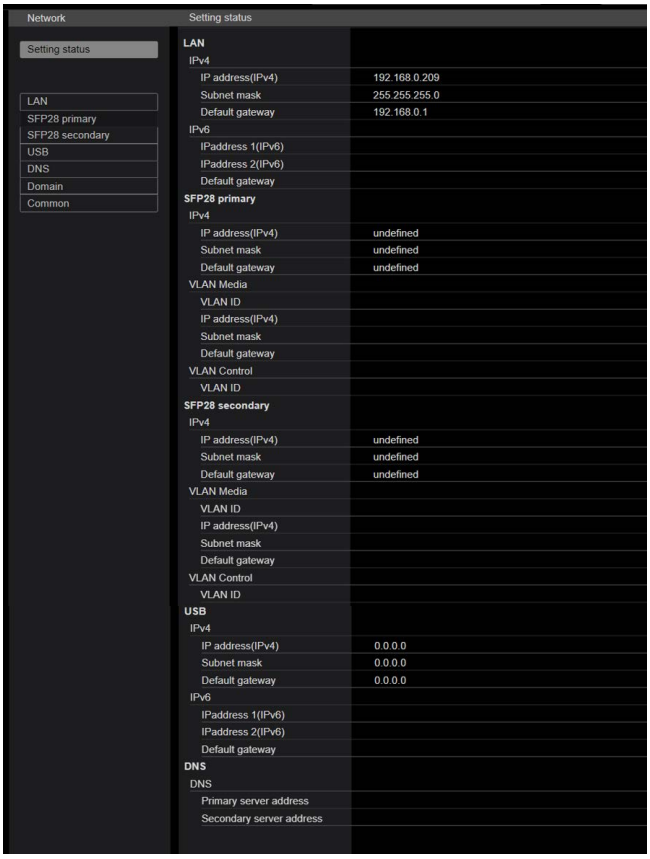
Network setup screen [Network]

Configure network settings in the Network setup screen [Network].
The Network setup screen [Network] consists of [Network] and [Advanced].

Network setup screen [Network]

Click the [Network] of the Network setup screen [Network].
Make the settings on the pages for the items.
The following information is required to configure network settings.
Consult your network administrator or Internet service provider.

- IP address
- Subnet mask
- Default gateway (when using a gateway server or router)
- HTTP port
- DNS primary and secondary server addresses (when using DNS), domain



NOTE

- If the subnet of the IP address set for the LAN, SFP Primary, SFP Secondary, and USB is duplicated, the network connectivity of the unit cannot be guaranteed, so take note of the IP addresses set manually and the IP addresses allocated by the DHCP.
- When connecting to IP addresses that have differing subnets, set so the metric of the interface to be used is the minimum value.
  For example, when connecting to IP addresses where the domain name has been resolved, set the metric of the interface to be used to the minimum value.
- When multicast transmission is to be used, set the metric of the interface to be used to the minimum value.
- Multicast transmissions other than with the Media over IP function using the SFP Primary/SFP Secondary interface are not possible.
- If the same subnet was set and you cannot access this unit, set an IP address with a different subnet with the EasyIP Setup tool, then revise the settings again from the web page.
- If the metric values are set to the same values for each of the interfaces, the network connectivity of the unit cannot be guaranteed, so take note of the IP addresses set manually and the IP addresses allocated by the DHCP.

■ LAN

IPv4 network

DHCP [On, Off]
Select the method in which the IP address is configured.
Factory settings: Off

NOTE

- When [DHCP] is set to [On], the ROP's automatic configuration of IP address (AUTO IP) cannot be used.

IP address(IPv4)
Input the unit's IP address here when the DHCP function is not going to be used. Input an address that will not duplicate an existing IP address which has been set for a personal computer or another network camera.
Factory settings: 192.168.0.40

NOTE

- Multiple IP addresses cannot be used even when the DHCP function is used. For details on the DHCP server settings, consult your network administrator.

Subnet mask
Input the unit's subnet mask here if the DHCP function is not going to be used.
Factory settings: 255.255.255.0

Default gateway
Input the unit's default gateway if the DHCP function is not going to be used.
Factory settings: 192.168.0.1

NOTE

- Multiple IP addresses cannot be used for the default gateway even when the DHCP function is used.
  For details on the DHCP server settings, consult your network administrator.

IPv6 network

Manual [On, Off]

Enable or disable manual configuration of the IPv6 address.

On	Enter the IPv6 address manually.
Off	Disable manual entry of the IPv6 address.

Factory settings: Off

IP address(IPv6)

When [Manual] is set to [On], the IPv6 address must be entered manually.

Be sure to enter an address unique from other devices.

NOTE

- When connecting to the manually specified IP address through a router, use an IPv6-compatible router, and enable the automatic configuration function for the IPv6 address. Be sure to configure an IPv6 address that includes the prefix information provided by the IPv6-compatible router. For details, refer to the operating instructions for the router.
- Link local address cannot be set.

Default gateway

When [Manual] is set to [On] for [IPv6 network], enter the default gateway for the unit's IPv6 network.

Factory settings: blank

NOTE

- It is not possible to set the default gateway when [DHCPv6] is [On].

DHCPv6 [On, Off]

Enable or disable use of the IPv6 DHCP function.

Configure the DHCP server so that the same IP address is not configured for a personal computer that does not use the DHCP function and other network cameras. For details on server settings, consult your network administrator.

On	Use the IPv6 DHCP function.
Off	Do not use the IPv6 DHCP function.

Factory settings: Off

Metric [100 to 110]

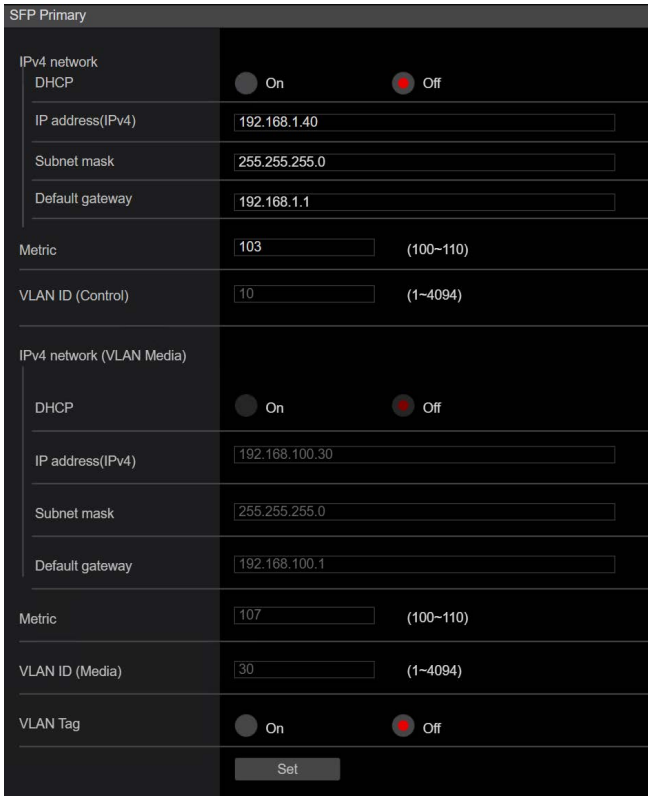
Set the LAN interface priority for this unit.

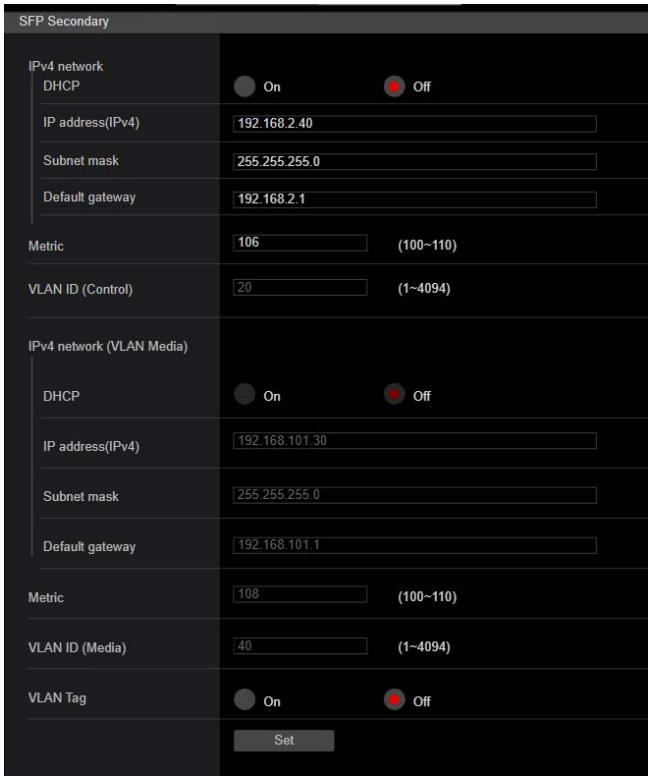
Packets are output with priority to the interface with the lower number compared to the value set in [SFP 1]/[SFP 2]/[USB].

Factory settings: 100

■ SFP Primary/SFP Secondary

The setting is confirmed with the [Set] button.





IPv4 network

DHCP [On, Off]

Select the method for setting the IP address.

Factory settings: Off

NOTE

- When [DHCP] has been set to [On], it is not possible to use the automatic IP address setting (AUTO IP) from the ROP.

IP address(IPv4)

When not using the DHCP function, enter the unit's IP address.
Enter so that the address does not duplicate the IP addresses of the personal computer or other network cameras.

Factory settings: 192.168.0.40

NOTE

- Even when using the DHCP function, it is not possible to use multiple IP addresses. Consult the network administrator regarding the settings for the DHCP server.

Subnet mask

When not using the DHCP function, enter the unit's subnet mask.

Factory settings: 255.255.255.0

Default gateway

When not using the DHCP function, enter the unit's default gateway.

Factory settings: 192.168.0.1

NOTE

- Even when using the DHCP function, it is not possible to use multiple IP addresses with the default gateway.
  Consult the network administrator regarding the settings for the DHCP server.

Metric [100 to 110]

Set the priority of the interface for SFP Primary on this unit.
Packets are output with priority to the interface with the lower number compared to the value set in [LAN]/[SFP Primary/Secondary]/[USB].

Factory settings: 103

VLAN ID (Control) [1 to 4094]

Set the VLAN ID for control.

Factory settings: 10

IPv4 network (VLAN Media)

DHCP [On, Off]

Select the method for setting the IP address.

Factory settings: Off

NOTE

- When [DHCP] has been set to [On], it is not possible to use the automatic IP address setting (AUTO IP) from the ROP.

IP address(IPv4)

When not using the DHCP function, enter the unit's IP address.
Enter so that the address does not duplicate the IP addresses of the personal computer or other network cameras.

Factory settings: 192.168.0.40

NOTE

- Even when using the DHCP function, it is not possible to use multiple IP addresses. Consult the network administrator regarding the settings for the DHCP server.

Subnet mask

When not using the DHCP function, enter the unit's subnet mask.

Factory settings: 255.255.255.0

Default gateway

When not using the DHCP function, enter the unit's default gateway.

Factory settings: 192.168.0.1

NOTE

- Even when using the DHCP function, it is not possible to use multiple IP addresses with the default gateway.
  Consult the network administrator regarding the settings for the DHCP server.

Metric [100 to 110]

Set the priority of the interface for SFP on this unit.
Packets are output with priority to the interface with the lower number compared to the value set in [LAN]/[SFP Primary/Secondary]/[USB].

Factory settings: 103

VLAN ID (Media) [1 to 4094]

Set the VLAN ID for media transmission.

Factory settings: 30

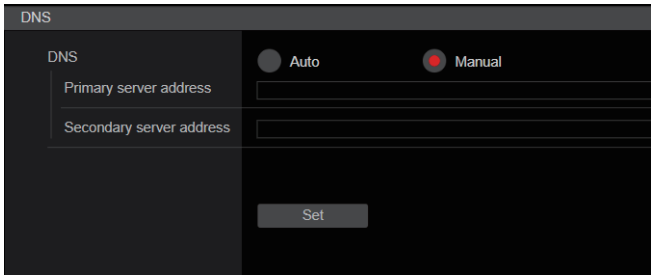
VLAN Tag [On, Off]

Set to [On] when setting a VLAN with both control and media within the same interface.

Factory settings: Off

■ DNS

The setting is confirmed with the [Set] button.



DNS [Auto, Manual]

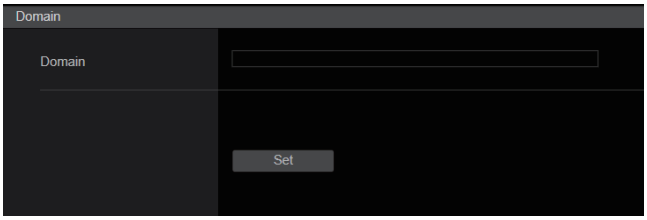
Select the method for setting the DNS server.
Consult the system administrator regarding the settings.
Factory settings: Manual

Primary server address

Secondary server address
Enter the IPv4/IPv6 address for the DNS server.
Consult the system administrator regarding the IPv4/IPv6 address for the DNS server.

■ Domain

The setting is confirmed with the [Set] button.

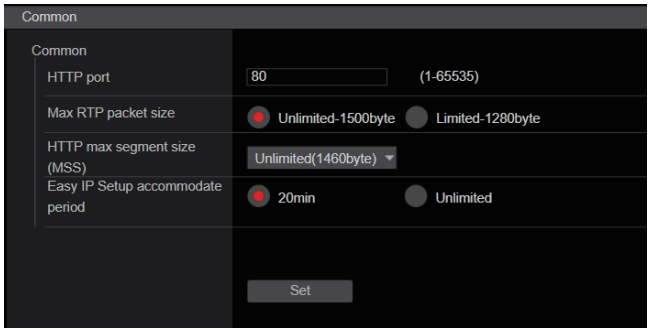


Domain

Set the domain that this unit belongs to.

■ Common (to IPv6/IPv4)

The setting is confirmed with the [Set] button.



HTTP port [1 to 65535]

Port numbers are allocated separately.
The following port numbers are used by the unit so they cannot be used.
20, 21, 23, 25, 42, 53, 67, 68, 69, 110, 123, 161, 162, 443, 546, 547, 554, 995, 5960 to 5985, 7960 to 8060, 10669, 10670, 11900, 59000 to 61000
Factory settings: 80

Max RTP packet size [Unlimited-1500byte, Limited-1280byte]

Specify whether to limit the size of RTP packets sent from the camera when using RTP to view camera images.

Unlimited-1500byte	Unlimited (1500 byte)
Limited-1280byte	Limited (1280 byte)

Factory settings: Unlimited-1500byte

Normally, it is recommended that the [Unlimited-1500byte] setting be used.
Select [Limited-1280byte] when the packet size of the used communication line is limited. For details on the maximum packet size of communication lines, consult your network administrator.

HTTP max segment size (MSS) [Unlimited(1460byte), Limited(1280byte), Limited(1024byte)]

Select whether to limit the maximum segment size (MSS) transmitted by a camera when viewing camera images using HTTP.

Unlimited(1460byte)	Unlimited (1460 byte)
Limited(1280byte)	Limited (1280 byte)
Limited(1024byte)	Limited (1024 byte)

Factory settings: Unlimited(1460byte)

Normally, it is recommended that the default setting be used.
Select [Limited(1024byte)]/[Limited(1280byte)] when the maximum segment size (MSS) of the used communication line is limited. For details on the maximum segment size (MSS) of communication lines, consult your network administrator.

Easy IP Setup accommodate period [20min, Unlimited]

Sets the time allowed for network setting operations from EasyIP Setup Tool Plus. You can set either [20min] from the time this unit is started or [Unlimited].

20min	Allows camera setting operations on the EasyIP Setup Tool Plus for just 20 minutes after start up of this unit.
Unlimited	Allows camera setting operations on the EasyIP Setup Tool Plus at any time.

Factory settings: 20min

NOTE

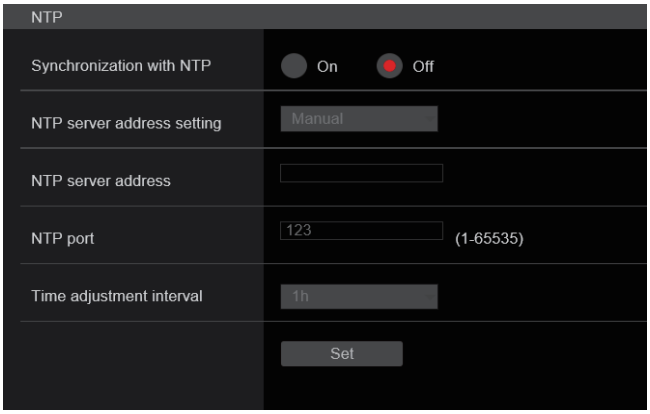
- Camera display on the EasyIP Setup Tool Plus is enabled all the time, and the camera screen can be opened.
- For details on the address settings of each server, consult your network administrator.
- The port forwarding function converts a global IP address to a private IP address, and includes “static IP masquerade” and “network address translation (NAT)”. This function is set to the router.
- To access the camera via the Internet after connecting it to a router, it will be necessary to set an individual HTTP port No. for each network camera and to convert the address using the router’s port forwarding function. For details, refer to the operating instructions for the router.

Advanced network setting screen [Advanced]

Click the [Advanced] in the network setup screen [Network].
Settings relating to the NTP and HTTPS functions are performed here.
Click the links to each item to move to the respective setting page.

■ NTP

Settings relating to the NTP server address and port No. are performed here.
The setting is confirmed with the [Set] button.



Synchronization with NTP [On, Off]

On	The time adjusted automatically through synchronization with the NTP server will be used as this unit's standard time.
Off	The time set in Date & time screen [Date&Time] will be used as this unit's standard time.

Factory settings: Off

NTP server address setting [Auto, Manual]

Select the method to acquire the NTP server address.

Auto	Acquires the NTP server address from the DHCP server.
Manual	Sets the address by inputting the NTP server address in [NTP server address].

Factory settings: Manual

NOTE

- To acquire the NTP server address from the DHCP server, [DHCP] or [DHCPv6] must be set to [On] in the [Network] of the network setup screen [Network]. (page 114)

NTP server address

When [Manual] is selected in the [NTP server address setting], input the IP address or host name of the NTP server.

Maximum number of characters	1 to 128 characters
Characters that can be entered	Alphanumeric characters, symbols : . _ -

Factory settings: blank

NOTE

- To input the [NTP server address] host name, the [DNS] setting must be selected on the [Network] of the network setup screen [Network]. (page 114)
- This does not work when link local address is set in [NTP server address].

NTP port [1 to 65535]

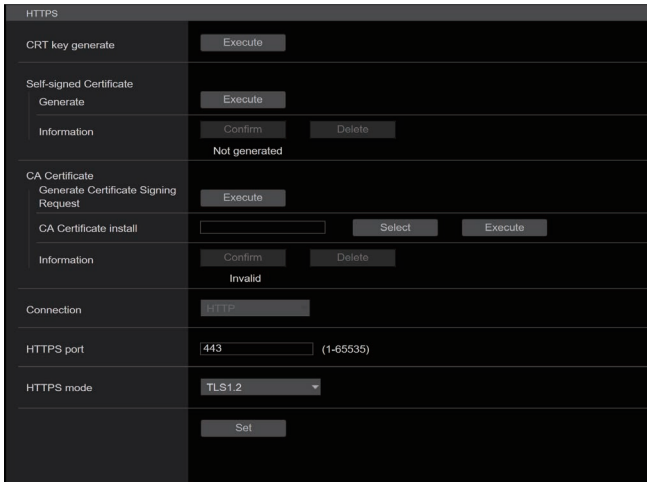
Input the port No. of the NTP server.
The following port numbers are used by the unit so they cannot be used.
20, 21, 23, 25, 42, 53, 67, 68, 69, 80, 110, 161, 162, 443, 546, 547, 554, 995, 5960 to 5985, 7960 to 8060, 10669, 10670, 11900, 59000 to 61000
Factory settings: 123

Time adjustment interval [1h to 24h]

Selects the interval (1 to 24 hours in 1-hour increments) for acquiring the time from the NTP server.
Factory settings: 1h

■ HTTPS

Using the HTTPS function enables access to the camera to be encrypted and communication safety to be improved.
The setting is confirmed with the [Set] button.
See page 123 for details on the HTTPS setup method.



CRT key generate

A CRT key (SSL encryption key) is generated by HTTPS.
To generate a CRT key, click the [Execute] button to display the [CRT key generate] dialog.
For details, refer to "Generating a CRT key (SSL encryption key)" (page 124).

Self-signed Certificate - Generate

A self-signed security certificate is generated by HTTPS. (Self-signed Certificate)
To generate a self-signed certificate (security certificate), click the [Execute] button to display the [Self-signed Certificate - Generate] dialog and perform the operation.
For details, refer to "Generating a self-signed certificate (security certificate)" (page 124).

Self-signed Certificate - Information

This displays information relating to the self-signed certificate (security certificate).
When the [Confirm] button is clicked, the registered content of the generated self-signed certificate (security certificate) is displayed in the [Self-signed Certificate - Confirm] dialog.
Click the [Delete] button to delete the generated self-signed certificate (security certificate).

CA Certificate - Generate Certificate Signing Request

When using a security certificate issued by the Certificate Authority (CA) as a security certificate for HTTPS, a Certificate Signing Request (CSR) is generated for application to the Certificate Authority (CA).
To generate a Certificate Signing Request (CSR), click the [Execute] button to display the [CA Certificate - Generate Certificate Signing Request] dialog and perform the operation.
For details, refer to “Generating a Certificate Signing Request (CSR)” (page 125).

CA Certificate - CA Certificate install

This displays information relating to server certificates (security certificates) issued by the Certificate Authority (CA), which are to be or are already installed.
In the [File Open] dialog, which is displayed by clicking the [Select] button, select the file of the server certificate (security certificate) issued by the Certificate Authority (CA) and click the [Execute] button to install the server certificate (security certificate).
If the server certificate (security certificate) is installed, its file name will be displayed.
For details, refer to “Installing a Server Certificate” (page 126).

CA Certificate - Information

This displays information relating to the server certificate (security certificate).
When the [Confirm] button is clicked, the registered content of the installed server certificate (security certificate) is displayed in the [Server Certificate - Confirm] dialog. If the server certificate (security certificate) is not installed, the content of the generated Certificate Signing Request (CSR) is displayed.
Click the [Delete] button to delete the installed server certificate (security certificate).

NOTE

- To delete an enabled server certificate (security certificate), confirm that there is a backup to the said certificate in your personal computer or recording media. A server certificate (security certificate) will be needed to reinstall it.

Connection [HTTP, HTTPS]

This sets the method to connect to the unit.

HTTP	Only HTTP connection is possible.
HTTPS	Only HTTPS connection is possible.

Factory settings: HTTP
For details, refer to “Setting the Connection Method” (page 127).

NOTE

- When using an HTTPS connection, network connection with the ROP will be disabled.

HTTPS port [1 to 65535]

This sets the Port No. to be used with HTTPS.
The following port numbers are used by the unit so they cannot be used.
20, 21, 23, 25, 42, 53, 67, 68, 69, 80, 110, 123, 161, 162, 546, 547, 554, 995, 5960 to 5985, 7960 to 8060, 10669, 10670, 11900, 59000 to 61000
Factory settings: 443

NOTE

- This unit will restart if the connection method is changed.
- When using a self-signed certificate:
  A warning screen is displayed when accessing the camera by HTTPS for the first time. Install the self-signed certificate (security certificate) in your personal computer in accordance with the screen instructions. (page 128)
- When using a server certificate:
  Install the Certificate Authority (CA) root certificate or intermediate certificate in your web browser in advance.
  Follow the Certificate Authority (CA) procedures to acquire and install root certificates and intermediate certificates.
- When accessing the camera by HTTPS, the image display speed and frame rate of the moving image may reduce.
- When accessing the camera by HTTPS, it may take some time for the images to be displayed.
- When accessing the camera by HTTPS, images may be disturbed and sound may be interrupted.
- The maximum number of cameras that can be connected simultaneously depends on the maximum image size and distribution format.

HTTPS mode [TLS1.0/1.1/1.2/1.3, TLS1.2, TLS1.3]

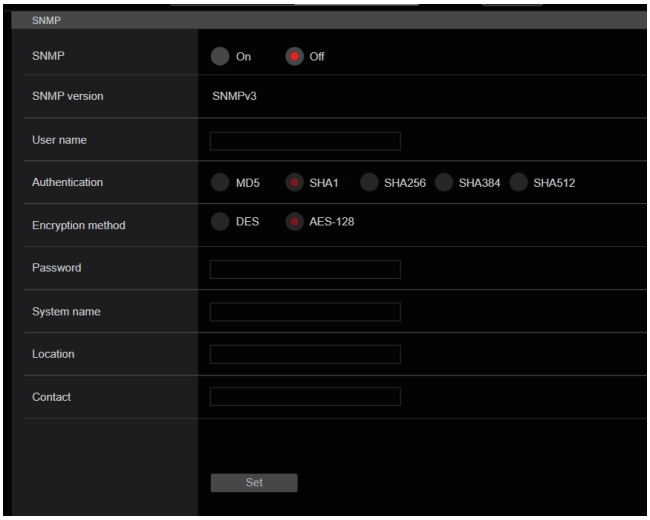
This sets the encryption protocol when accessing the camera with HTTPS.

TLS1.0/1.1/1.2/1.3	Permits connection with TLS1.0/1.1/1.2/1.3 when HTTPS is enabled.
TLS1.2	Permits connection with TLS1.2 when HTTPS is enabled.
TLS1.3	Permits connection with TLS1.3 when HTTPS is enabled.

Factory settings: TLS1.2

■ SNMP

Make SNMP functionality related settings. You can check the status of the unit by using the SNMP manager to connect.
The setting is confirmed with the [Set] button.



SNMP [On, Off]

Sets whether to use the SNMP function.
Factory settings: Off

User name

Sets the user name used for user authentication.
You need to specify the same user name that you set here in the SNMPv3 manager.

Maximum number of characters	0 to 32 characters
Characters that cannot be entered	Double-byte

Authentication

Sets the algorithm used for user authentication.

MD5	MD5 is used as the algorithm for user authentication.
SHA1	SHA1 is used as the algorithm for user authentication.
SHA256	SHA256 is used as the algorithm for user authentication.
SHA384	SHA384 is used as the algorithm for user authentication.
SHA512	SHA512 is used as the algorithm for user authentication.

Factory settings: SHA1

Encryption method

Sets the encryption method used for communications.

DES	DES is used as the encrypted communication method for SNMPv3.
AES-128	AES-128 is used as the encrypted communication method for SNMPv3.

Factory settings: AES-128

Password

Sets the password used for user authentication.
You need to specify the same password that you specified here in the SNMPv3 manager.

Maximum number of characters	When [Authentication] is set to [MD5]: 8 to 16 characters When [Authentication] is set to [SHA1]: 8 to 20 characters
Characters that cannot be entered	Double-byte

System name

Enter the device name used to manage this unit using SNMP functionality.

Maximum number of characters	0 to 32 characters
Characters that cannot be entered	Double-byte

Location

Sets the location where this unit has been installed.

Maximum number of characters	0 to 32 characters
Characters that cannot be entered	Double-byte

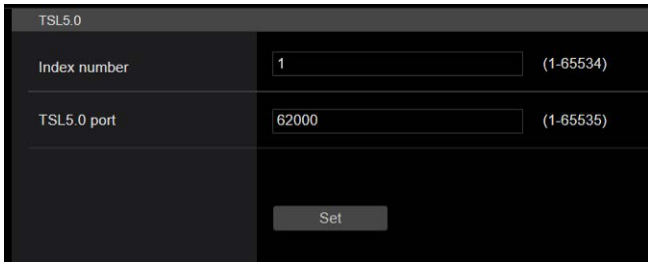
Contact

Enter the email address or phone number of the administrator.

Maximum number of characters	0 to 255 characters
Characters that cannot be entered	Double-byte

■ TSL5.0

Make settings related to TSL protocol version 5.0. Set the information required to control the tallies of this unit from a device that supports the TSL5.0 protocol with the TSL5.0 function.
The setting is confirmed with the [Set] button.



Index number [1 to 65534]

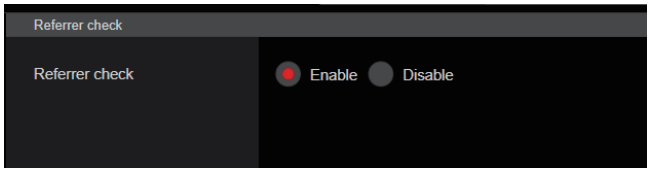
By matching the INDEX set on the TSL5.0 control device and the Index number of this unit, you can control the tallies of this unit individually.
Factory settings: 1

TSL5.0 port [1 to 65535]

Sets the port number that will receive controls via the TSL 5.0 protocol.
Factory settings: 62000

■ Referrer check

By enabling Referrer check, you can confirm that the device requesting access to the camera is legitimate.
Access is refused if it is determined that the device attempting access is unauthorized.
Depending on the environment in which the unit is being used, it may not be possible to access the unit when Referrer check is enabled.
If this occurs, you can access the unit by disabling Referrer check, but you will no longer be able to determine if the device attempting access is unauthorized.

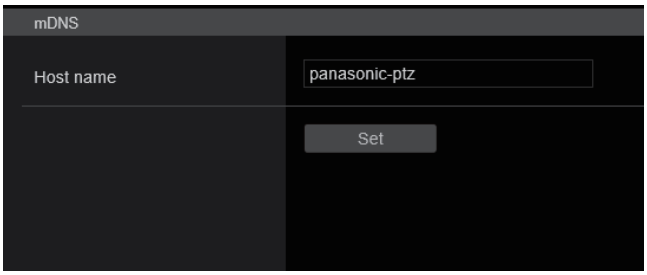


Enable	The Referrer check function is used.
Disable	The Referrer check function is not used.

Factory settings: Enable

■ mDNS

By setting an [mDNS] [Host name], it is possible to access this unit via http://Host name.local.
The setting is confirmed with the [Set] button.



Maximum number of characters	63 characters
Characters that can be entered	Alphanumeric characters, symbols : -

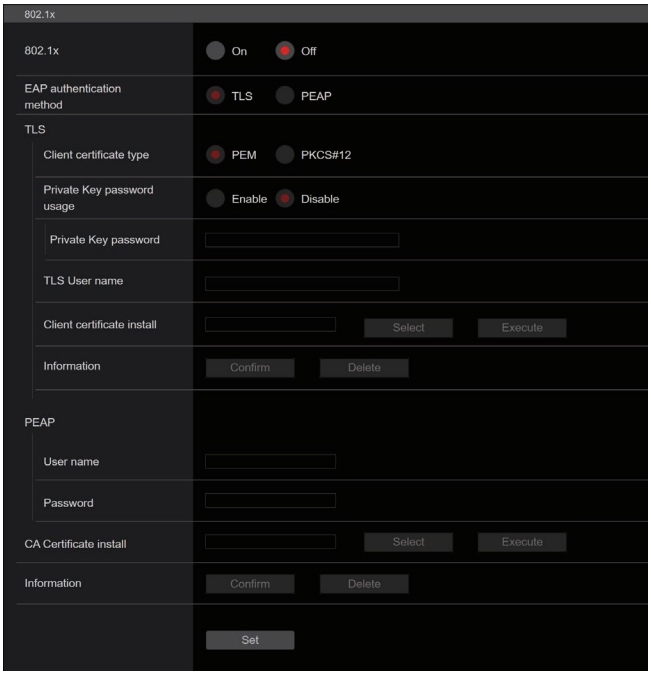
Factory settings: panasonic-ptz

NOTE

- Proper operation cannot be guaranteed if there is another camera with the same settings in the same network.

■ 802.1X

Makes settings for the IEEE 802.1X client.
The setting is confirmed with the [Set] button.



NOTE

- You will require 802.1X knowledge in order to complete the settings. Consult the network administrator for details.
- It is necessary to make settings for an authentication server and Authenticator separately when building a system that uses this function.
  Consult the network administrator for details.
- In a system configuration where 802.1X is enabled, it is not possible to control the camera from the ROP.
- Before setting, go to either the [Date&Time] settings screen or the [NTP] settings screen to set the time for this unit.
  Proper operation may not be possible if the time has not be set correctly for the unit.
- Before setting, in the [Date&Time] settings screen, set [Memory] to [Enable].

802.1x [On, Off]

Sets whether to use the 802.1X function.
Factory settings: Off

EAP authentication method [TLS, PEAP]

Makes settings for the authentication method used for the 802.1X function.
This unit supports authentication methods using TLS or PEAP.
Factory settings: TLS

NOTE

- Proper operation may not be possible if it does not match the authentication method permitted by the authentication server.

TLS

Makes settings for when the TLS authentication method is used.

Client certificate type [PEM, PKCS#12]

Makes settings for the client certificate method used with TLS authentication.
This unit supports the PEM and PKCS#12 methods.

NOTE

- When a private key is to be used, the private key information must be included in the client certificate.
  Set [Private Key password usage] to [Enable] and set the correct password.
- When installing a client certificate with the PKCS#12 method, it is necessary to set [Private Key password usage] to [Enable] and to set the correct password.
- If the PKCS#12 method is selected, the PKCS#12 password and the [Private Key password] need to match.

Private Key password usage [Enable, Disable]

Sets whether to use a private key in the client certificate.

Enable	Select when a private key is to be used.
Disable	Select when a private key is not to be used.

NOTE

- If [Enable] is selected, the correct value needs to be set for [Private Key password].

Private Key password

Makes settings for the password set in the private key.

NOTE

- When installing a PKCS#12 method client certificate, enter the same password as the one set for PKCS#12.

TLS User name

Sets a user name permitted by TLS authentication.

NOTE

- Consult the network administrator regarding valid user names.

Client certificate install

Installs the client certificate.

NOTE

- The client certificate installed must be the correct one issued by the certificate authority.
- Before installing the certificate, check that the settings for [Client certificate type], [Private Key password usage], and [Private Key password] have been completed.
  The certificate may not be installed correctly if the above settings have not been completed.

PEAP

Makes settings for when the PEAP authentication method is used.

User name

Sets a user name permitted by PEAP authentication.

NOTE

- Consult the network administrator regarding valid user names.

Password

Sets the password attached to the User name in PEAP authentication.

NOTE

- Consult the network administrator regarding valid passwords.

CA Certificate install

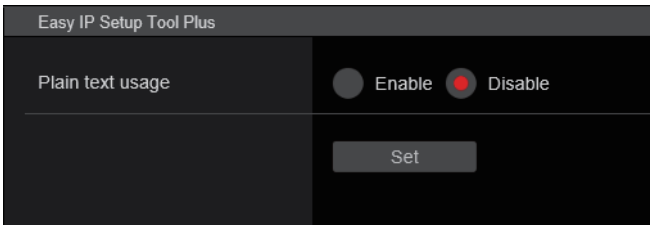
Installs the CA certificate used in IEEE 802.1X authentication.

NOTE

- The CA certificate installed must be one issued by the correct certificate authority.

■ Easy IP Setup Tool Plus

Makes settings related to Easy IP Setup Tool Plus.
The setting is confirmed with the [Set] button.

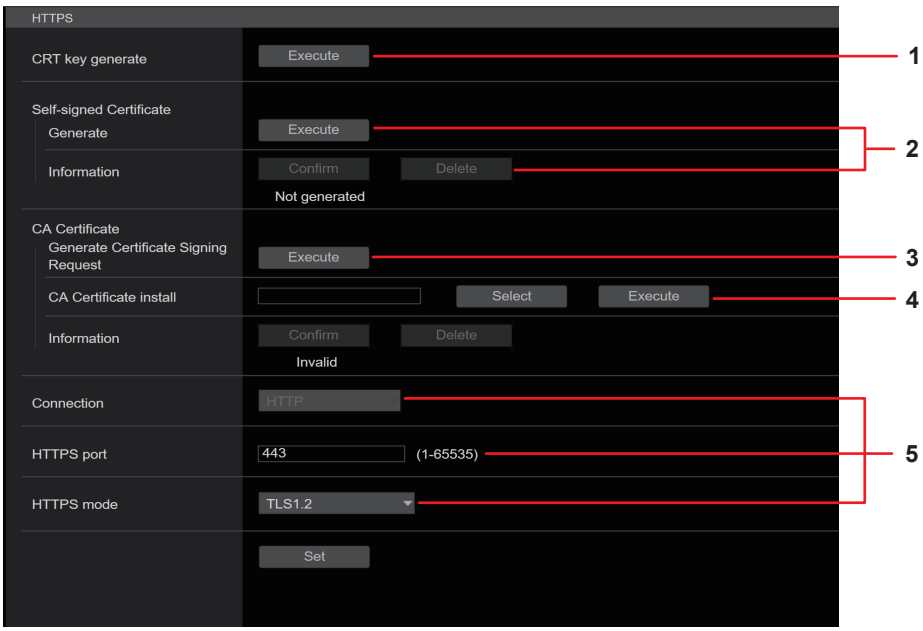


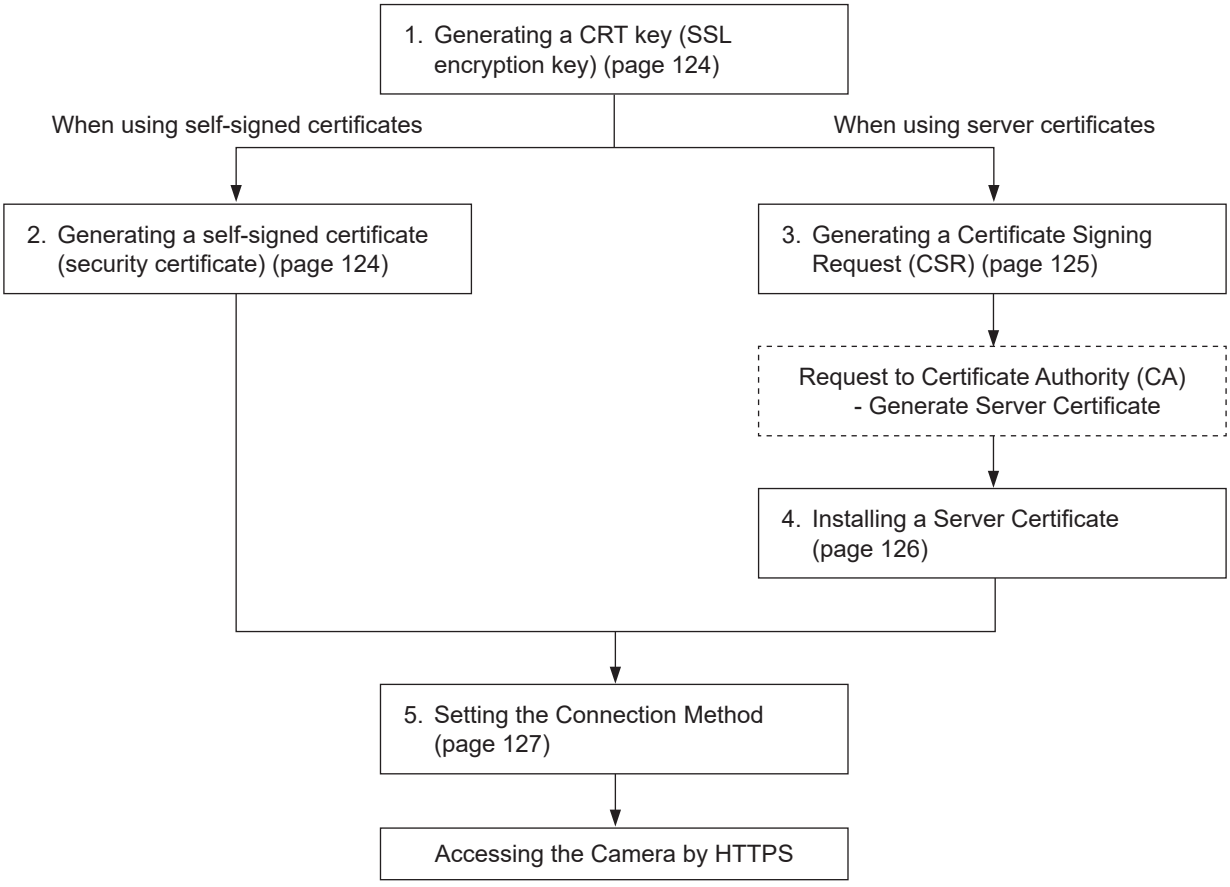
Plain text usage [Enable, Disable]

Sets whether to encrypt the communications with Easy IP Setup Tool Plus.
Factory settings: Disable

HTTPS settings [HTTPS]

This encrypts access to the camera and sets HTTPS to improve communication safety.
Setting HTTPS is performed by following the procedures below.
The setting is confirmed with the [Set] button.





NOTE

- When using a server certificate, the process from applying to the Certificate Authority (CA) to issuing a server certificate must be performed between customers and the Certificate Authority (CA).
- Use either a self-signed certificate or server certificate. When simultaneously generating a self-signed certificate and installing a server certificate, this unit will prioritize the server certificate.

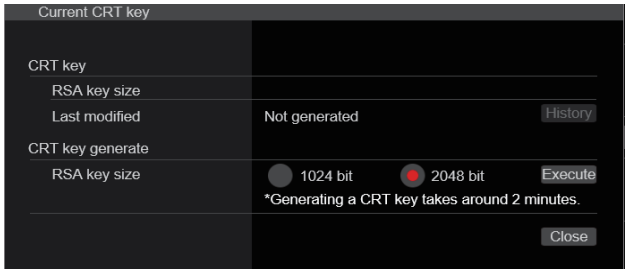
Generating a CRT key (SSL encryption key) [CRT key generate]

NOTE

- A CRT key cannot be generated when self-signed certificates and server certificates are enabled.
- The size of the key that can be used by the Certificate Authority (CA) differs when using a server certificate. Confirm in advance the the size of the key that can be used.
- Generating a CRT key takes about 1 minute for 1024 bit and about 2 minutes for 2048 bit. Do not operate the web browser until CRT key generation is complete. Image display and communication speed may reduce while generating a CRT key.

1. Click the [Execute] button in [CRT key generate].

The [Current CRT key] dialog is displayed.



2. The size of the generated CRT key is selected from [1024bit]/[2048bit] in [CRT key generate] – [RSA key size].

NOTE

- When using a server certificate, the RSA key size must be in accordance with the demands of the Certificate Authority (CA) which will be applied to.

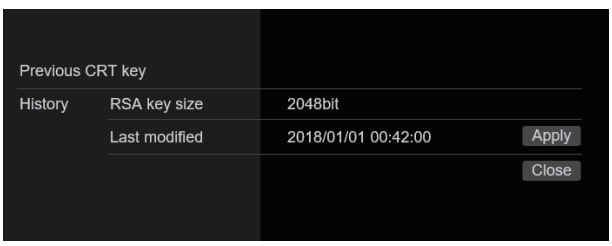
3. Click the [Execute] button.

CRT key generation starts.

The length of the generated CRT key and the date/time that generation completed are displayed in [Current CRT key] when CRT key generation finishes.

NOTE

- Perform procedures 1 to 3 to change (update) the generated CRT key. Because the CRT key, self-signed certificate and server certificate are enabled as a set, it will be necessary to once again generate a self-signed certificate or apply for a server certificate when the CRT key is changed.
- When the CRT key is changed, previous CRT keys are historically managed one at a time. Clicking the [History] button in the [CRT key] of the [Current CRT key] dialog displays the [Previous CRT key] dialog, allowing confirmation of the key size and the date and time generation was completed.
  Clicking the [Apply] button in [Previous CRT key] allows the previous CRT key to be switched to the current CRT key.



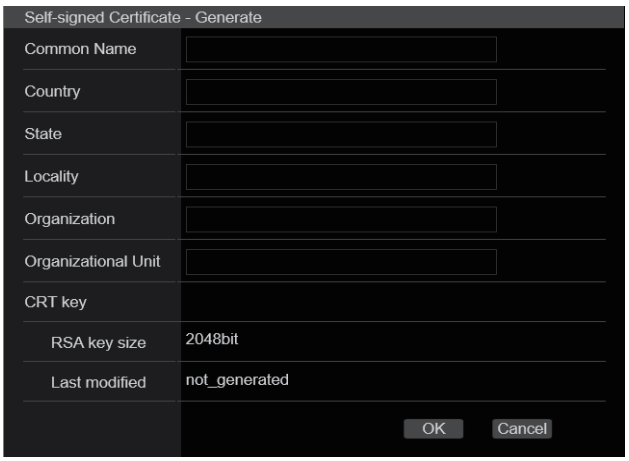
Generating a self-signed certificate (security certificate) [Self-signed Certificate - Generate]

NOTE

- A self-signed certificate cannot be generated when a CRT key has not been generated.

1. Click the [Execute] button in [Self-signed Certificate] - [Generate].

[Self-signed Certificate - Generate] is displayed.



2. Input information relating to the certificate to be generated.

Items to be entered are as follows.

Item	Description	Maximum number of characters
Common Name	Inputs the camera address or host name.	64 characters
Country	Inputs the country code. (May be omitted)	2 characters: country code
State	Inputs the name of the state. (May be omitted)	128 characters
Locality	Inputs the name of the city. (May be omitted)	128 characters
Organization	Inputs the name of the organization. (May be omitted)	64 characters
Organizational Unit	Inputs the name of the organizational unit. (May be omitted)	64 characters
CRT key	Displays the size of the current CRT key and the date and time generation was completed.	

NOTE

- Characters that can be input for [Common Name], [Country], [State], [Locality], [Organization], [Organizational Unit] are 0 to 9, A to Z, a to z, and the following symbols: -. _ , + / ( ).
- When connecting the camera to the Internet, set the address or host name to be accessed from the Internet in [Common Name]. In this case, when accessing the camera locally, a security warning screen is displayed every time the camera is accessed even when a security certificate is installed.
- When inputting the IPv6 address in [Common Name], surround the address with [ ].
  e.g. [2001:db8::10]

3. Click the [OK] button after inputting the address.
A self-signed certificate is generated.

NOTE

- Information relating to the generated self-signed certificate is displayed in [Self-signed Certificate] - [Information]. The following is displayed depending on the status of the self-signed certificate (security certificate).

Displayed content	Description
Not generated	When the self-signed certificate is not generated
Invalid (Reason: CA Certificate installed)	When the self-signed certificate is already generated and the server certificate is already installed • The server certificate is enabled in this case.
[Common Name] of self-signed certificate	When the self-signed certificate is already generated and enabled

- When the [Confirm] button is clicked, the registered content of the generated self-signed certificate (security certificate) is displayed in the [Self-signed Certificate - Confirm] dialog.

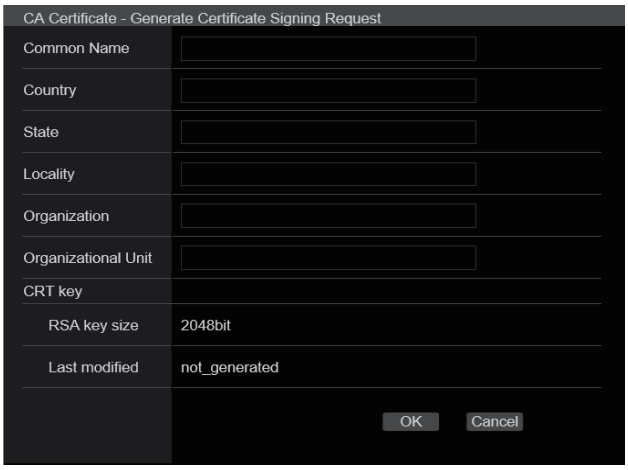
- Click the [Delete] button to delete the generated self-signed certificate (security certificate).
- When [HTTPS] is selected in [Connection], the self-signed certificate (security certificate) cannot be deleted.

Generating a Certificate Signing Request (CSR) [CA Certificate - Generate Certificate Signing Request]

NOTE

- A certificate signing request (CSR) cannot be generated if a CRT key has not been generated.
- To generate a certificate signing request (CSR), perform the following settings in advance in the web browser Internet options. Perform the following settings in the [Security] tab (accessed from [Tools] in the menu bar - [Internet Options] - [Security]).
- Register the camera as a “Trusted Site”.
- In [Level Customize], go to [File Download] from [Download] and set to [Enable].
- In [Level Customize], go to [Automatically Display Dialog when Downloading File] from [Download] and set to [Enable].

1. Click the [Execute] button in [CA Certificate - Generate Certificate Signing Request].
The [CA Certificate - Generate Certificate Signing Request] dialog is displayed.



2. Input information relating to the certificate to be generated.
Items to be entered are as follows.

Item	Description	Maximum number of characters
Common Name	Inputs the camera address or host name.	64 characters
Country	Inputs the country code.	2 characters: country code
State	Inputs the name of the state.	128 characters
Locality	Inputs the name of the city.	128 characters
Organization	Inputs the name of the organization.	64 characters
Organizational Unit	Inputs the name of the organizational unit.	64 characters
CRT key	Displays the size of the current CRT key and the date and time generation was completed.	

NOTE

- When using a server certificate, the information to be input must be in accordance with the demands of the Certificate Authority (CA), which will be applied to.
- Characters that can be input for [Common Name], [Country], [State], [Locality], [Organization], [Organizational Unit] are 0 to 9, A to Z, a to z, and the following symbols: -. _ , + / ( ).

3. Click the [OK] button after inputting the address.
The [Save As] dialog is displayed.

4. In the [Save As] dialog, assign a file name to the Certificate Signing Request (CSR) and save it in personal computer.
Apply to the Certificate Authority (CA) using the saved Certificate Signing Request (CSR).

NOTE

- A server certificate is issued for both the generated Certificate Signing Request (CSR) and CRT key. The issued server certificate can no longer be used when generating/updating the CRT key after applying to the Certificate Authority (CA).
- The Certificate Signing Request (CSR) generated by this unit is in a PEM format.

Installing a Server Certificate [CA Certificate - CA Certificate install]

NOTE

- A server certificate (security certificate) cannot be installed if a Certificate Signing Request (CSR) has not been generated.
- The server certificate must have been issued by the Certificate Authority (CA) in order to install it.

1. Click the [Select] button in [CA Certificate - CA Certificate install].
The [Open File] dialog is displayed.

2. Select the server certificate file and click [Open]. Then click the [Execute] button.
The server certificate is installed.

NOTE

- The name of the host registered to the installed server certificate is displayed in [CA Certificate] - [Information]. The following is also displayed depending on the status of the server certificate.

Displayed content	Description
Invalid	When the server certificate is not installed
[Common Name] of server certificate	When the server certificate is already installed and enabled
Expired	When the effective period of the server certificate has expired

- When the [Confirm] button is clicked, the content of the installed server certificate (security certificate) is displayed in the [CA Certificate - Confirm] dialog. (An asterisk is displayed in the [Organizational Unit] field only.)

- Click the [Delete] button to delete the installed server certificate (security certificate).
- When [HTTPS] is selected in [Connection], the server certificate (security certificate) cannot be deleted.
- Perform STEP 1 to STEP 2 to update a server certificate.
- To delete an enabled server certificate (security certificate), confirm that there is a backup to the said certificate in your personal computer or recording media. A server certificate (security certificate) will be needed to reinstall it.
- The HTTPS function can no longer be used when the effective period of the server certificate has expired. In such a case, the connection method is changed to HTTP when the unit is restarted. Update the server certificate before its effective period expires.
- The effective period of the server certificate can be confirmed by double-clicking the server certificate file issued by the Certificate Authority (CA).

Setting the Connection Method [Connection]

1. Set the method to access the camera in [Connection].

HTTP: Only HTTP connection is possible.
HTTPS: Only HTTPS connection is possible.

NOTE

- When using an HTTPS connection, network connection with the ROP will be disabled.

2. Set the Port No. to be used with HTTPS in [HTTPS port].

Port No. that can be selected: 1 to 65535
The following port numbers are used by the unit so they cannot be used.
20, 21, 23, 25, 42, 53, 67, 68, 69, 80, 110, 123, 161, 162, 443, 546, 547, 554, 995, 5960 to 5985, 7960 to 8060, 10669, 10670, 11900, 59000 to 61000
Factory settings: 443

3. Set the encryption protocol used with HTTPS in [HTTPS mode].

TLS1.0/1.1/1.2: Connection with TLS1.0/1.1/1.2 is possible.
TLS1.2: Connection with TLS1.2 is possible.

4. Click the [Set] button.

The camera restarts and access to the camera via HTTPS is enabled.

NOTE

- This unit will restart if the connection method is changed.
- **Using a self-signed certificate**
  A warning screen is displayed when accessing the camera by HTTPS for the first time. Install the self-signed certificate (security certificate) in your personal computer in accordance with the screen instructions. (page 128)
- **Using a server certificate**
  Install the Certificate Authority (CA) root certificate or intermediate certificate in your web browser in advance. Follow the Certificate Authority (CA) procedures to acquire and install root certificates and intermediate certificates.
- When accessing the camera by HTTPS, the image display speed and frame rate of the moving image may reduce.
- When accessing the camera by HTTPS, it may take some time for the images to be displayed.
- When accessing the camera by HTTPS, images may be disturbed and sound may be interrupted.
- The maximum number of cameras that can be connected simultaneously depends on the maximum image size and distribution format.

Accessing the Camera by HTTPS

1. Launch the web browser in your personal computer.

2. Input the camera's IP address in the address bar of the web browser.

Input address: https://192.168.0.40/

NOTE

- When the HTTPS port No. is changed from "443", input "https:// camera IP address: Port No." in the address bar.
  E.g. https://192.168.0.11:61443
- When this unit is in a local network, set a proxy server from the web browser (menu bar: [Tools] - [Internet Options]) to ensure that a proxy server is not used for a local address.

3. Press the [Enter] key.

The live screen [Live] is displayed.
The security certificate is installed when the security warning screen is displayed. (page 128)
When [User auth.] is set to [On], the user name and password input screen is displayed before the live screen [Live] appears.

NOTE

- When HTTPS is used, screen and image display may slow down and image update interval (frame rate) may also slow down.

■ Install the security certificate

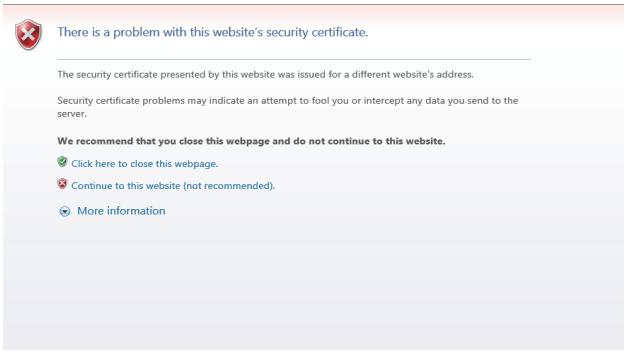
When using HTTPS to access the camera, the security warning screen will be displayed if the security certificate of the said camera has not been installed in your personal computer. To prevent this warning screen being displayed, the security certificate must be installed in accordance with the following procedures. If it is not installed, the security warning screen will be displayed every time the camera is accessed.

NOTE

- The security certificate will be installed to your personal computer based on the content set for [Common Name]. The content set for the “Host Name” must therefore match that set for the address/ host name used to access the camera. If the content differs, a security warning screen will be displayed every time the camera is accessed.
- A security warning screen will be displayed if the camera address/ host name is changed even when a security certificate has been installed. Reinstall the security certificate.
- When connecting the camera to the Internet, set the address or host name to be accessed from the Internet in [Common Name]. In this case, when accessing the camera locally, a security warning screen is displayed every time the camera is accessed even when a security certificate is installed.
- When the security certificate is correctly installed, an icon of the key will be displayed in the address bar of the web browser accessing the camera.

1. Accessing the Camera by HTTPS.

2. When the security warning screen is displayed, click [Continue to this website (not recommended).].

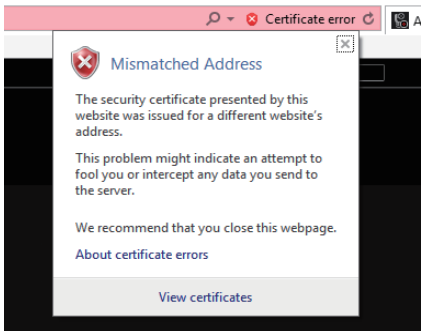


The live screen [Live] is displayed.
When the authentication screen is displayed, input the user name and password.

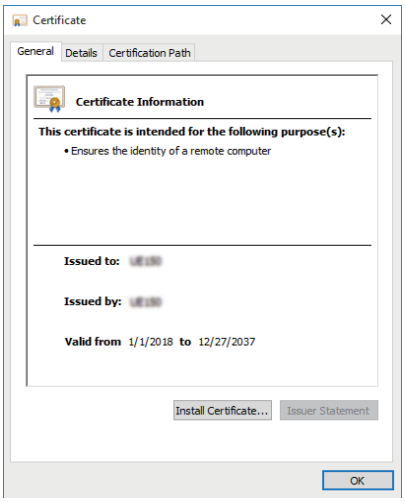
NOTE

- When the above screen is displayed after accessing a device apart from the camera or a website, there may be a security problem, so check this carefully.

3. Click [Certificate error] in the URL and then click [View certificates].



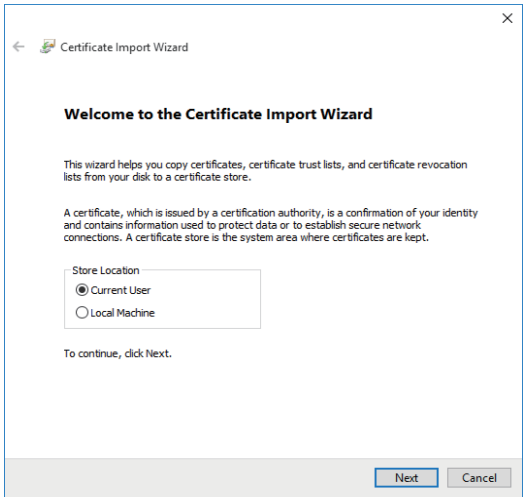
4. Click [Install Certificate...].



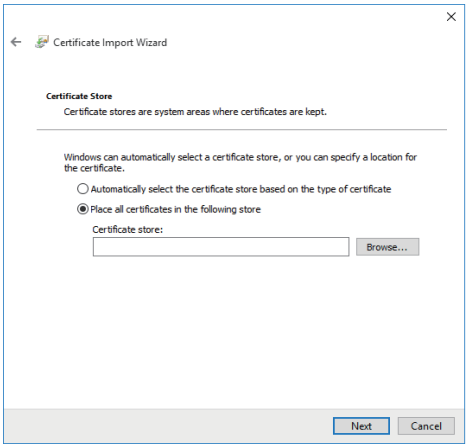
NOTE

- If [Install Certificate...] is not displayed, close Internet Explorer and restart it by selecting [Run as Administrator].
  Right-click on [Start] - [Program] - [Internet Explorer] and click [Execute as Administrator (A)..].

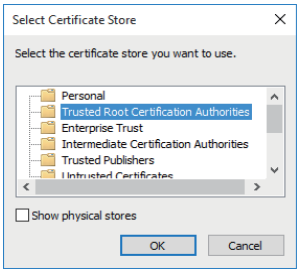
5. Click [Next], which is displayed in the certificate import wizard.



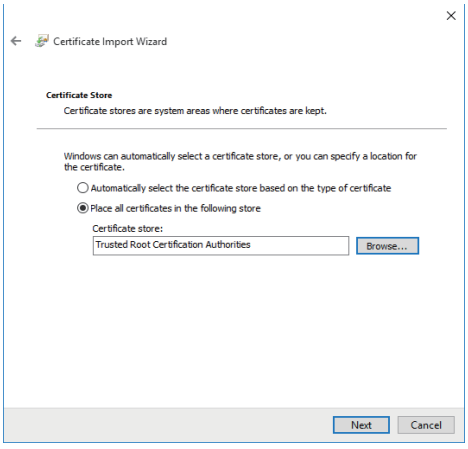
6. Select [Place all certificates in the following store] and click [Browse...].



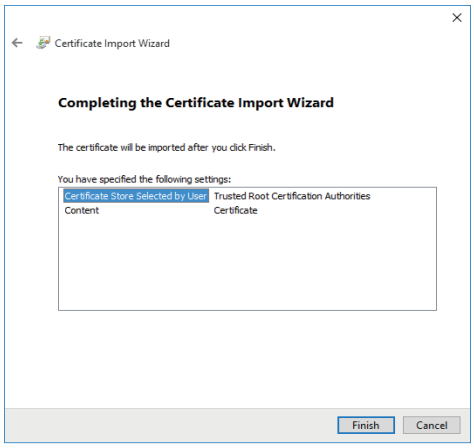
7. Select [Trusted Root Certification Authorities] and click [OK].



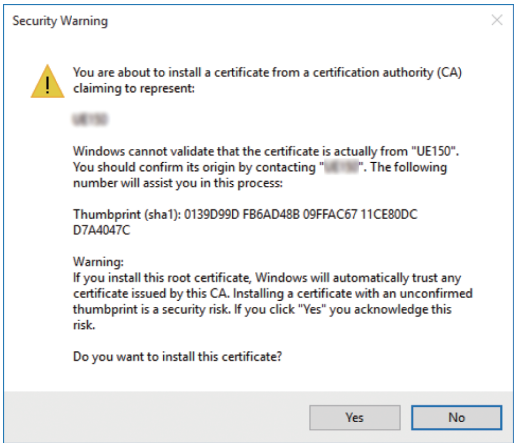
8. Click [Next].



9. Click [Finish].

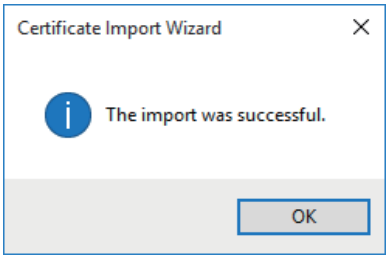


10. Click [Yes].



When importing is finished, the “The import was successful.” screen is displayed.

11. Click [OK].



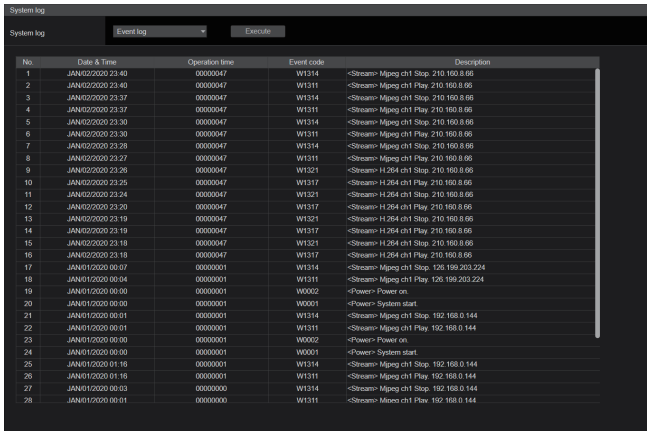
Closing the web browser after importing the certificate and reconnecting to it will stop the “Certificate error” screen being displayed.

Maintenance screen [Maintenance]

On this screen, you can check the system logs, check the version of the software, initialize the unit, etc.
The Maintenance screen consists of four settings: [System log], [Maintenance], [Product info.] and [Backup].

System log screen [System log]

A maximum of 1000 event logs and a maximum of 100 error logs can be stored in the unit's internal memory.
When this maximum number has been exceeded, the old logs are overwritten successively by the new logs.
The logs are cleared when the unit's power is turned off.



NOTE

• When the system log screen is displayed, the event log is displayed.

System log [Event log, Error log1, Error log2]

Switch the display between event logs and error logs.
The event log display is updated when you click the [Execute] button.

Event log	Displays the event logs.
Error log1	Displays the error logs.
Error log2	Displays the error logs.

[Event log]

No.

Displays the log sequence numbers.
"1" indicates the latest information, and up to 1000 logs can be saved.

Date & Time

Displays the dates and times when the events occurred.
The dates and times when the events occurred are indicated in 24-hour format according to the clock of the unit.

Operation time

Displays the dates and times when the events occurred.
The dates and times when the events occurred are indicated with the hour meter (0h to 99999h) of the unit.

Event code

Displays the event code numbers.

Description

Displays the event descriptions.
Display examples:
– <Power> Power on.
– <Stream> H.264 ch1 Play.
– <Stream> H.264 ch1 Stop.

[Error log1, Error log2]

No.

Displays the log sequence numbers.
"1" indicates the latest information, and up to 100 logs can be saved.

Date & Time

Displays the dates and times when the errors occurred.
The dates and times when the errors occurred are indicated in 24 hour format according to the clock of the unit.

Operation time

Displays the dates and times when the errors occurred.
The dates and times when the errors occurred are indicated with the hour meter (0h to 99999h) of the unit.

Error code

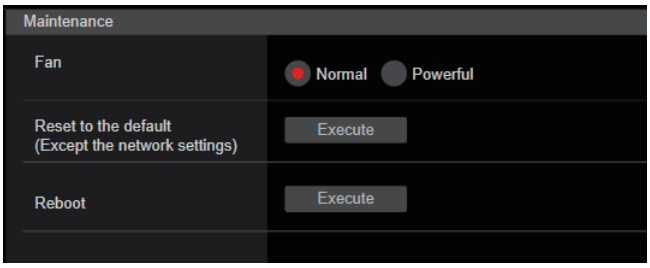
Displays the error code numbers.

Error description

Displays the error descriptions.
Display examples:
– Temp Sensor Error

Maintenance screen [Maintenance]

Initialize the setting data of the unit, reboot the unit, etc.



Fan [Normal, Powerful]

Set the behavior of cooling fan.

Reset to the default (Except the network settings)

When the [Execute] button is clicked, the unit's settings are returned to their defaults.

When the initialization operation is started, the unit is restarted so no operations can be undertaken for about 2 minutes.

NOTE

- The following setting items will not be returned to defaults.
  - [Live page - Automatic installation of viewer software]
  - [Live page - Smoother live video display on the browser(buffering)]
  - All settings under [Access mng.]
  - All settings under [Network - Network]
  - [HTTPS - Connection]
  - [HTTPS - HTTPS port]
  - [HTTPS - HTTPS mode]
  - HTTPS: CRT key, server certificate
  - All settings under [UPnP]
- [AWB] and [ABB] adjustment values will not be returned to defaults.
- The settings for [Format] and [Frequency] (page 80) are not initialized.

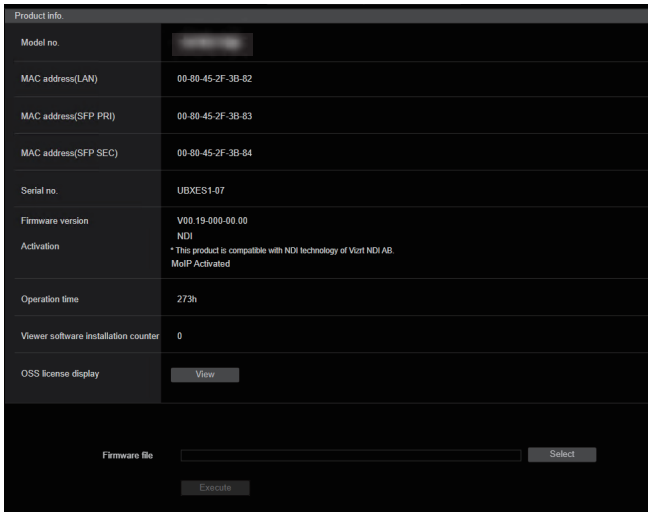
Reboot

When the [Execute] button is clicked, the unit is rebooted.

After the unit has been rebooted, no operations can be undertaken for about 2 minutes as is the case when the unit's power is turned on.

Product information screen [Product info.]

The versions of the unit's software can be checked on this screen. The [Model no.], [MAC address(LAN)], [MAC address(SFP PRI)], [Serial no.], [Firmware version] and other information about the unit is displayed.



Model no.

Display the unit's model number.

MAC address(LAN)

Display the MAC address of the LAN of this unit.

MAC address(SFP PRI)

Display the MAC address of the SFP1 of this unit.

MAC address(SFP SEC)

Display the MAC address of the SFP2 of this unit.

Serial no.

Display the unit's serial number.

Firmware version

Display the overall system version of the unit.

Activation

Display information on the activated function.

Operation time

Display the hours the unit has been operating.

Viewer software installation counter

The number of plug-in viewer software applications which have been installed automatically from the unit is displayed by this counter.

OSS license display

When you press the [View] button, the OSS license appears.

Press the [Close] button to close the OSS license display screen.

Firmware file

Upgrade the firmware.

For details on how to upgrade, see "Upgrading the firmware (Firmware file)" (page 132).

■ **Upgrading the firmware (Firmware file)**

1. Download the latest software to your personal computer.

NOTE

- Keep the maximum combined number of characters to be used for the name of the directory in which the software will be stored and for the name of the software which has been downloaded to less than 250 characters.

2. Click the [Select] button, and specify the downloaded software.

3. Click the [Execute] button.

The software upgrade check screen is displayed.
After upgrading the software version, be absolutely sure to delete the temporary Internet files.

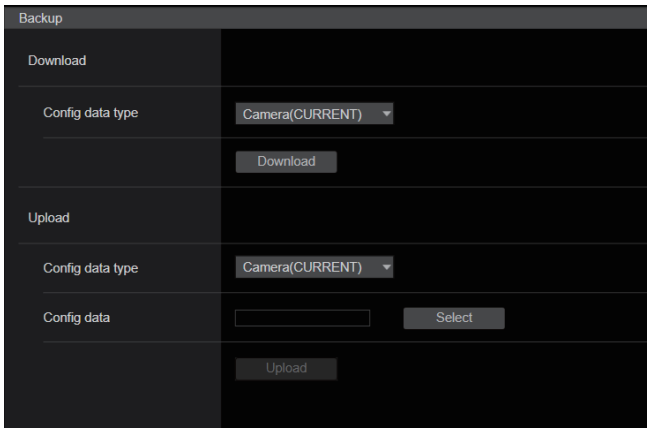
NOTE

- An upgrade progress bar appears after you click the [Execute] button, and the process will take about 1 minute.
- Use the personal computer on the same subnet as the camera to upgrade the software version.
- Before using the version upgrading software, be absolutely sure to check the precautions to be observed, and follow the instructions.
- Use the following files specified by Panasonic Connect Co., Ltd. as the software used for version upgrading.

  UPDATE.bin
- While upgrading, the status display lamp of the unit appears as follows:
  - Blinking orange: files being transferred
  - Blinking red: data being written
- Do not turn off the unit's power while a software version is being upgraded. (A pop-up screen will appear to indicate that the process is complete.)
- While a software version is being upgraded, do not attempt to execute any other operations until the version has been upgraded.
- Close the web browser once after performing a version upgrade.
- A maximum of about one hour may be required to upgrade the firmware of the unit.
- If the version is upgraded while [DHCP] is [On], the IP address of the unit may be changed after the restart of the unit after version upgrading. If this occurs, the pop-up screen indicating completion of the version upgrade will not be shown in the web browser, and a timeout may occur. Use the status display lamp of the unit to confirm that the version upgrade is complete.

Back up screen [Backup]

On this screen, the unit's settings can be saved to a personal computer or settings saved in a personal computer can be loaded into the unit for use.



Download

Config data type
[Camera(CURRENT), Camera(SCENE1) to Camera(SCENE8), Camera(USER1) to Camera(USER3), Camera(LENS1) to Camera(LENS32), Camera(OPERATION), Network, Camera(All), Camera(All Scene), Camera(All User), Camera(All Lens)]
Specify the type of settings to save when saving the unit's configuration data on the personal computer.

Setting value	Content to be saved	Extension of saving file
Camera(CURRENT)	Current settings	.cs
Camera(SCENE1)	Settings for Scene1	.cs
⋮	⋮	⋮
Camera(SCENE8)	Settings for Scene8	.cs
Camera(USER1)	Settings for User1	.us
Camera(USER2)	Settings for User2	.us
Camera(USER3)	Settings for User3	.us
Camera(LENS1)	Settings for LENS1	.lns
⋮	⋮	⋮
Camera(LENS32)	Settings for LENS32	.lns
Camera(OPERATION)	Settings for Operation	.ope
Network	Settings of the Web screen Network settings	.nal
Camera(All)	Settings for all of Scene, User, and LENS	.cs .us .lns
Camera(All Scene)	Settings for Scene1 to 8	.cs
Camera(All User)	Settings for User1 to 3	.us
Camera(All Lens)	Settings for LENS1 to 32	.lns

Download
Save the unit's settings onto the personal computer.
When the destination dialog box appears after clicking the [Download] button, specify the destination folder.

NOTE

- After the [Download] button is clicked, the amount of time it takes for the destination dialog box to appear is about 50 seconds for a camera settings file and about 10 seconds for a network settings file.
- Depending on the status of the unit, it may not be possible to download configuration files. In this case, the unit automatically restarts.

Upload

Config data type
[Camera(CURRENT), Camera(SCENE1) to Camera(SCENE8), Camera(USER1) to Camera(USER3), Camera(LENS1) to Camera(LENS32), Camera(OPERATION), Network, Camera(All), Camera(All Scene), Camera(All User), Camera(All Lens)]
Specify the type of configuration data when reflecting the configuration data saved on a personal computer to this unit.

Setting value	File extension suitable for upload
Camera(CURRENT)	.cs
Camera(SCENE1)	.cs
⋮	⋮
Camera(SCENE8)	.cs
Camera(USER1)	.us
Camera(USER2)	.us
Camera(USER3)	.us
Camera(LENS1)	.lns
⋮	⋮
Camera(LENS32)	.lns
Camera(OPERATION)	.ope
Network	.nal
Camera(All)	.cs .us .lns
Camera(All Scene)	.cs
Camera(All User)	.us
Camera(All Lens)	.lns

Upload
The unit's setting files, which were saved in the personal computer by the download function, are uploaded.
Click the [Select] button to display the dialog box, and specify the saved file.
When you click the [OK] button in the message dialog box that appears after you click the [Upload] button, uploading starts.
Another message dialog box appears after uploading is complete.
When you click the [OK] button, the unit will restart automatically.

NOTE

- Use the files downloaded by the unit as the data to be used for uploading.
- Do not turn off the unit's power while downloading or uploading is underway.
- Do not attempt to perform any operations while downloading or uploading is underway. Instead, wait until the downloading or uploading is completed.
- It takes about 3 minutes for the upload complete dialog box to appear for camera settings files.

Chapter 7 Maintenance

This chapter describes the warning displays and after-sales services of the camera.

Troubleshooting

For operations

Problem	Cause/solution
The camera cannot be turned on.	Does the power cable plugged into the power outlet securely?
The camera cannot be operated from the ROP that is connected via IP.	Is the power turned on? • If the power lamp of the camera is not lit, the power of the camera is off.
	Is a valid IP address of the camera set?
	Is the correct camera to be operated selected?
	Is the camera connected with the ROP correctly? • Also refer to the Operating Instructions of the ROP.
	Has digest authentication for this unit been set to ON ([User auth.] is [On] and [Authentication] is [Digest]) and the [Wait time mode] has been set to [Mode1]? • When using the ROP, set [Wait time mode] to [Mode2] when using digest authentication. Smooth operation may be diminished when [Wait time mode] is set to [Mode1].
	The ROP may require upgrading to support the camera. • Contact your dealer.
The camera cannot be accessed from the web browser.	Is the camera connected via the <LAN> terminal using a LAN cable of category 5e or higher?
	Is the lamp of the <LAN> terminal lit? • If it is not lit, the camera may not be connected to LAN correctly, or the connected network is not functioning properly. Check the contact and wiring of the LAN cable.
	Is the power turned on? • If the <POWER> lamp of the camera is not lit, the power of the camera is off.
	Is a valid IP address of the camera set?
	Does the camera access a wrong IP address? (Windows) • Execute >ping [the IP address set for the camera] on Windows command prompt. If the camera responds, the camera is operating normally. If the camera does not respond, restart the camera and change its IP address within 20 minutes using EasyIP Setup Tool Plus.
	Does the camera access a wrong IP address? (Mac) • Execute >ping -c 10 [the IP address set for the camera] on Terminal of OS X. If the camera respond, the camera is operating normally. If the camera does not respond, restart the camera and change its IP address within 20 minutes using EasyIP Setup Tool Plus.
	Are you accessing via "http://" while the HTTPS function is enabled? • Perform access via "https://" when using the HTTPS function. Entry of the port number is also required.
	Is the port number set to 554? • Set an HTTP port number other than the following port numbers that are used by the camera. [20], [21], [23], [25], [42], [53], [67], [68], [69], [110], [123], [161], [162], [554], [995], [10669], [10670], [49152], [59000]…[59999], [60000]…[61000]
	Does the set IP address conflict with another device? • Check the IP addresses of the camera, access devices (computer, controller, etc.), and other cameras.
	Does the set subnet mask match the subnet of the network where the camera is installed? • Check the subnet mask set for the camera and access devices, and consult your network administrator.
	Is [Use a proxy server] set on the web browser? (When the camera and computer are connected to the same subnet) • If a proxy server is set in [Proxy settings] of the web browser, it is recommended that an address that is excluded from proxy is set for the IP address.
	Is the default gateway set for the camera wrong? (When the camera and computer are connected to separate subnets) • Check the default gateway set for the camera, and consult your network administrator.
The setting values on the web setup screen [Setup] are not updated successfully or not displayed.	Press the F5 key on the keyboard of your computer to request update of the setting values. (Windows)
	Press the Command + R keys on the keyboard of your computer to request update of the setting values. (Mac)
	Delete the temporary Internet files as described below. (Windows) 1) Select […] - [History] in Microsoft Edge. 2) Select […] - [Clear browsing data]. 3) Select the [Browsing history], [Download history], [Cookies and other site data], and [Cached images and files] checkboxes and click [Clear now].
	Perform the following procedure to delete Internet temporary files (cache). (Mac) 1) Select [Safari] - [Empty Cache] on Safari. 2) Click the [Delete] button under [Browsing history].
	The port of the camera may be filtered by the firewall function of the anti-virus software, etc. • Change the HTTP port number of the camera to another port number that is excluded from filtering.
The setting file cannot be downloaded.	Are pop-up windows blocked? (Windows) Perform the following. 1) In Microsoft Edge, select [...]-[Settings]. 2) Select [Cookies and site permissions]. 3) Select [Pop-ups and redirects]. 4) Turn off [Block(recommended)].

Problem	Cause/solution
The screen for authentication is displayed continuously.	Has the user name or password been changed? • While accessing the camera, if the user name or password for the user who has logged in from a separate web browser is changed, the screen for authentication appears every time the screen is switched. Close the web browser and access the camera again.
	Has the setting for user authentication method been changed? • If the setting of [User auth.] - [Authentication] has been changed, close the web browser and access again.
It takes long before the image is displayed.	Is the camera on the same local network accessed via proxy? • Configure your web browser so that the camera is not accessed via proxy.
	Is access being performed in HTTPS mode? • Screen displays may take a while to appear in HTTPS mode due to signal processing.
	Are multiple users viewing the IP images on the camera at the same time? • When multiple users access the IP images on the camera at the same time, it may take longer to display the images on the screen, or the refresh rate of IP images may decrease.

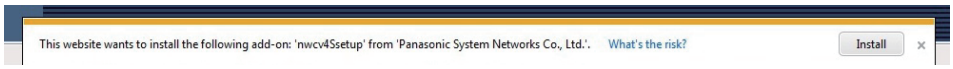
For IP images

Problem	Cause/solution
The image is blurry.	Has the focus been adjusted properly? • Check the focus adjustment.
The screen does not update images.	Troubles in image updating may occur depending on the web browser or version being used. Crowded network or heavy access to the camera may interrupt image display. If the IP image setting of the camera has been changed, the image may be interrupted temporarily. • Check the access status to the camera and terminate accesses that can be disconnected. Press the F5 key on the keyboard of your computer to request update of the setting values. (Windows) • Check the access status to the camera and terminate accesses that can be disconnected. Then, press the Command + R keys on the keyboard of your computer to request update of the setting values. (Mac)
Images are not updated successfully or not displayed.	Delete the temporary Internet files as described below. (Windows) 1) Select […] - [History] in Microsoft Edge. 2) Select […] - [Clear browsing data]. 3) Select the [Browsing history], [Download history], [Cookies and other site data], and [Cached images and files] checkboxes and click [Clear now].
	Perform the following procedure to delete Internet temporary files (cache). (Mac) 1) Select [Safari] - [Empty Cache] on Safari. 2) Click the [Empty] button in the [Are you sure you want to empty the cache?] pop-up window.
	The port of the camera may be filtered by the firewall function of the anti-virus software, etc. • Change the HTTP port number of the camera to another port number that is excluded from filtering.
Images are interrupted.	Image information may not be transmitted properly due to congestion in the transmission path, etc., causing the images to be interrupted. • Consult your network administrator.
	The sequence of packets may be changed in the transmission path, causing the images to be interrupted. • It may be avoided by using the same Internet service provider on the camera and on the computer. Consult your network administrator.
Images stop in applications that support NDI High Bandwidth	When a personal computer and this unit are connected via a commercially available USB LAN conversion adaptor, the images may stop due to network problems on the personal computer side. • If this phenomena occurs, firstly disable the network adaptor that is connecting the personal computer to this unit, then change [Streaming mode] in [Video over IP] to [H.264]. After this, re-enable the network adaptor that you disabled and the images will be output when you change the [Streaming mode] to [NDI High Bandwidth].

Web screen

The following problems may occur depending on the OS of your computer. When these problems occur, take the respective measures.
These measures do not affect on the operation of other applications.
“Information bar” described in this section refers to the message bar displayed on Microsoft Edge. (Windows)

■ Microsoft Edge



The “Information bar” will be displayed under the address bar of Microsoft Edge.

Problem	Cause/solution
Frame dropping is observed in images	The personal computer may be lacking in performance. • Check the requirements for the personal computer environment.
	This phenomenon may be improved by pressing the button for switching real time updating to disable the web browser real time updating function.
The following message appears in the information bar. [This webpage wants to run the following add-on: 'WebVideo Module' from 'Panasonic System Networks Co.,Ltd.'.]	Perform the following procedure to grant the permission. 1) Select [Grant(A)].
The following message appears in the information bar. [This website wants to install the following add-on: 'nwcv4SSetup.exe' from 'Panasonic System Networks Co.,Ltd.'.]	Perform the following procedure to grant the permission. 1) Select [install(I)]. A security warning screen appears. 2) Click the [install(I)] button.
IP images do not match the display frame.	When the DPI setting for image is set to 120 DPI or above, the image may not be displayed properly. Perform the following setting. 1) Right-click on the computer screen and click [Display settings] - [Change the size of text, apps, and other items]. 2) Set it to [100% (Recommended)].
	When the zoom level for the zooming function of Microsoft Edge is set to other than 100%, the image may not be displayed properly. Perform the following setting. 1) Go to […] - [Zoom] in Microsoft Edge and click [-] and [+] to set to [100%].

Checking the operating time

The operating time can be checked in [ALL MENU] → [MAINTENANCE] → [HOUR METER].

Warning displays

Content of the warning is displayed in the output from the <HD SDI OUT> terminal when an error is detected while operating.

■ When AWB (automatic white balance) is executed

[AWB BREAK]	Automatic white balance has been interrupted.
[AWB HIGH LIGHT NG]	Automatic white balance cannot be executed because the light amount is excessive. Set the light amount to an appropriate level.
[AWB LOW LIGHT NG]	Automatic white balance cannot be executed because the light amount is insufficient. Set the light amount to an appropriate level.
[AWB NG]	Automatic white balance failed. Try again.
[AWB NG CHECK FILTER]	Automatic white balance cannot be executed because there is a problem with the filter position.
[AWB RCH OUT RANGE]	The white balance convergence for red cannot be achieved. Shoot a uniformly white object on the screen, and execute AWB.
[AWB BCH OUT RANGE]	The white balance convergence for blue cannot be achieved. Shoot a uniformly white object on the screen, and execute AWB.
[ATW NG]	Automatic white balance cannot be executed while auto tracking white balance is working.

■ When ABB (automatic black balance) is executed

[ABB BREAK]	Automatic black balance has been interrupted.
[ABB RCH OUT RANGE]	The black balance convergence for red cannot be achieved. Check if there are any errors in the image.
[ABB BCH OUT RANGE]	The black balance convergence for blue cannot be achieved. Check if there are any errors in the image.
[ABB GCH OUT RANGE]	The black balance convergence for green cannot be achieved. Check if there are any errors in the image.
[ABB NG]	The lens iris may not be closed.

■ Other warning displays

[FIRMWARE UPDATE FAILED] [ERRCODE:01]	The version update file is missing or may be corrupt. Try updating again with the correct version update file.
[FIRMWARE UPDATE FAILED] [ERRCODE:02]	An error occurred when overwriting the version update file. Try updating again with the correct version update file.
[FIRMWARE UPDATE FAILED] [ERRCODE:03]	Other system error. (Communication error, etc.) Try updating again after confirming and restarting this unit and the external DC power supply.
[FIRMWARE UPDATE FAILED] [ERRCODE:04]	A fan error has occurred. Check if the fan has stopped. If there is no problem, restart the unit and try again.
[FIRMWARE UPDATE FAILED] [ERRCODE:05]	A power supply error has occurred. Try updating again after confirming and restarting this unit and the external DC power supply.
[FAN ROTATION STOP]	The fan has stopped.
[TEMP WARNING : HIGH/***]	The internal temperature is high.
[TEMP WARNING : OVER/***]	The internal temperature is high. The power is forcibly turned off after this is displayed.
[VOLTAGE OUT OF RANGE/***]	The voltage of the external DC power supply is out of the rated range.
[DATE/TIME HAS BEEN RESET]	The clock function was reset because the internal battery for the clock was temporarily low. Reset [DATE/TIME]. (page 62, page 84) It is recommended to regularly supply power to the camera.

Updating the camera firmware

Refer to the following website for new updates of the firmware and for operating instructions.
https://pro-av.panasonic.net/en/

Chapter 8 Specifications

This chapter describes the specifications of this product.

Specifications

General

Power
DC ⎓ 12 V (DC 11 V–17 V)
Power consumption
40 W (body only, when 12G SDI is output)
60 W (maximum power when all accessories are connected and each output terminal is outputting at maximum)

⚠ indicates safety information.

Ambient operating temperature	–10 °C – 45 °C (14 °F – 113 °F) (Preheating required under a temperature 0 °C (32 °F) or below)
Storage temperature	–20 °C – 60 °C (–4 °F – 140 °F)
Ambient operating humidity	85% or less (relative humidity)
Weight	Approx. 1.9 kg (4.19 lbs.) (body only)
Dimensions (W×H×D)	Body only 118 mm×140 mm×175 mm (4-21/32 inches×5-17/32 inches×6-7/8 inches) (excluding protrusions)

Camera unit

Pickup device	19,290,000 pixels, MOS×1
Lens mount	2/3-type bayonet
ND filter	THROUGH, 1/4, 1/16, 1/64
Gain	–6, –3, 0, 3, 6, 9, 12, 15, 18 dB
Shutter speed	• [59.94i]/[59.94p] mode: 1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000 seconds • [29.97p] mode: 1/48, 1/50, 1/60, 1/96, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000 seconds • [23.98p] mode: 1/48, 1/50, 1/60, 1/96, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000 seconds • [50i]/[50p] mode: 1/60, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000 seconds • [25p] mode: 1/48, 1/50, 1/60, 1/96, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000 seconds
Synchro scan shutter	[60.0Hz] to [7200Hz] ([59.94i]/[59.94p] mode) [50.0Hz] to [7200Hz] ([50i]/[50p] mode) [30.0Hz] to [7200Hz] ([29.97p] mode) [25.0Hz] to [7200Hz] ([25p] mode) [24.0Hz] to [7200Hz] ([23.98p] mode)
Sensitivity	2 shooting modes [LOW LIGHT]: F10 (59.94 Hz)/F11 (50 Hz) [NORMAL]: F6 (59.94 Hz)/F7 (50 Hz) 2000 lx, 3200 K, when the rate of white reflectance is 89.9%
Image S/N	62 dB (standard) ([DNR] = [ON])
Horizontal resolution	HD: 1000 TV lines or above (center) UHD: 2000 TV lines or above (center)
System format	• UHD 3840×2160/59.94p 3840×2160/29.97p 3840×2160/23.98p 3840×2160/50p 3840×2160/25p • HD 1080/59.94p, 1080/29.97p, 1080/23.98p, 1080/50p, 1080/25p

Video input/output

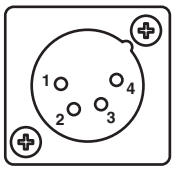
<HD SDI OUT> terminal	BNC × 1 3G/1.5G SDI: 0.8 V [p-p], 75 Ω
<12G SDI OUT 1> terminal	BNC×1 12G/6G/3G/1.5G SDI: 0.8 V [p-p], 75 Ω
<12G SDI OUT 2> terminal	BNC×1 12G/6G/3G/1.5G SDI: 0.8 V [p-p], 75 Ω

Other input/output

<G/L IN> terminal	BNC×1, 1.0 V [p-p], 75 Ω
<REMOTE> terminal	10-pin×1
<TALLY OUT> terminal	4-pin×1, DC 12 V (dependent on input voltage of DC IN terminal), 0.5 A
<LENS> terminal	12-pin×1
<LAN> terminal	RJ45×1
<DC IN> terminal	XLR×1, 4-pin, DC 12 V (DC 11 V – 17 V)
<SFP+/28 1> slot	SFP+/28
<SFP+/28 2> slot	SFP+/28

Details of the connector signals

DC IN



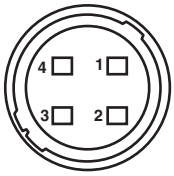
1	GND
2	Not used
3	Not used
4	+12 V

XLR-4-32-F512 (ITT Cannon)

NOTE

- Use the external power supply with correct polarity.

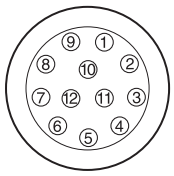
TALLY OUT



1	GND
2	R TALLY (open collector)
3	G TALLY (open collector)
4	+12 V (max. 0.5 A)

HR10A-7R-4SC (73) (Hirose Electric Co.)

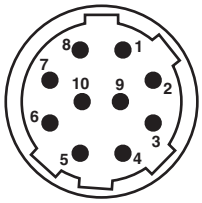
LENS



1	Return control
2	REC-START/STOP
3	GND
4	Iris manual switching
5	Iris control
6	+12 V (max. 0.75 A)
7	IRIS-POSI
8	IRIS-G-MAX
9	EXT-POSI
10	Zoom position information
11	LENS-RXD
12	LENS-TXD

HR10A-10R-12SC (71) (Hirose Electric Co.)

REMOTE



1	CAM DATA (H)
2	CAM DATA (C)
3	CAM CONT(H)
4	CAM CONT(C)
5	Not used
6	Not used
7	Not used
8	Not used
9	+12 V
10	GND

HR10A-10R-10SC (Hirose Electric Co.)

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Disposal of Old Equipment and Batteries
Only for European Union and countries with recycling systems
These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries must not be mixed with general household waste.
For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points in accordance with your national legislation.
By disposing of them correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment.
For more information about collection and recycling, please contact your local municipality, dealer or supplier.
Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

Note for the battery symbol (bottom symbol):
This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

Panasonic Entertainment & Communication Co., Ltd.
Web Site: https://pro-av.panasonic.net/en/