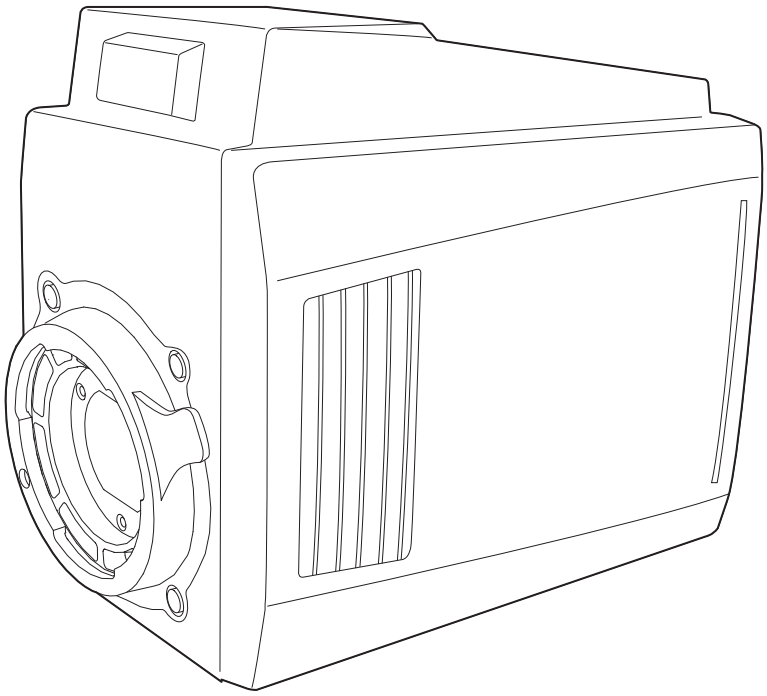
Panasonic

Operating Instructions

Multi-Purpose Camera

Model No. AK-UB300G



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).

W1116HM2067 -YI

ENGLISH

DVQP1279XA

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 the drop-prevention wire (optional accessory) or accessories (flange nut, 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.

indicates safety information.

FCC NOTICE (USA)

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.

CAUTION:

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.

FCC Warning:

To assure continued FCC emission limit compliance, follow the attached installation instructions and the user must use only shielded interface cables when connecting to host computer or peripheral devices. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate this device.

NOTIFICATION (Canada)

CAN ICES-3(A)/NMB-3(A)

IMPORTANT SAFETY INSTRUCTIONS

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.

13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

The rating plate is on the underside of the unit.

For Turkey

AEEE Yönetmeliğine Uygundur.
AEEE Complies with Directive of Turkey.

Декларація про Відповідність
Вимогам Технічного Регламенту Обмеження Використання деяких Небезпечних Речовин в електричному та електронному обладнанні
(затвердженого Постановою №1057 Кабінету Міністрів України)

Виріб відповідає вимогам Технічного Регламенту Обмеження Використання деяких Небезпечних Речовин в електричному та електронному обладнанні (ТР ОВНР).

Вміст небезпечних речовин у випадках, не обумовлених в Додатку №2 ТР ОВНР, :
1. свинець(Pb) – не перевищує 0,1 % ваги речовини або в концентрації до 1000 частин на мільйон;
2. кадмій (Cd) – не перевищує 0,01 % ваги речовини або в концентрації до 100 частин на мільйон;
3. ртуть(Hg) – не перевищує 0,1 % ваги речовини або в концентрації до 1000 частин на мільйон;
4. шестивалентний хром (Cr^{6+}) – не перевищує 0,1 % ваги речовини або в концентрації до 1000 частин на мільйон;
5. полібромбіфеноли (PBB) – не перевищує 0,1 % ваги речовини або в концентрації до 1000 частин на мільйон;
6. полібромдефенілові ефіри (PBDE) – не перевищує 0,1 % ваги речовини або в концентрації до 1000 частин на мільйон.

Manufactured by: Panasonic Corporation, Osaka, Japan
Importer's name and address of pursuant to EU rules:
Panasonic Marketing Europe GmbH
Panasonic Testing Centre
Winsbergring 15, 22525 Hamburg, Germany

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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

- Microsoft® Windows® 7 Professional SP1 32/64-bit is referred to as Windows 7.
- Microsoft® Windows® 8 Professional 32/64-bit is referred to as Windows 8.
- Microsoft® Windows® 8.1 Professional 32/64-bit is referred to as Windows 8.1.
- Microsoft® Windows® 10 Professional 32/64-bit is referred to as Windows 10.
- Windows® Internet Explorer® 8.0, Windows® Internet Explorer® 9.0, Windows® Internet Explorer® 10.0, and Windows® Internet Explorer® 11.0 are referred to as Internet Explorer.
- The format displayed in the 2160/∗∗ is referred to as the UHD mode.
- The format displayed in the ∗∗∗/∗∗ CROP is referred to as the UHD CROP mode.
- The format displayed in the 1080/∗∗, 720/∗∗ is referred to as the HD mode.

Contents

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. Replace it after approximately 60,000 hours of use. 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.
  http://pro-av.panasonic.net/
  However, do not contact Panasonic for questions regarding obtained source codes.

Notes

Required environment for computer

Use a host computer that satisfies the following requirements.

■ CPU

Intel® Core™ 2 DUO 2.4 GHz or above recommended

■ Memory

- Windows

  1 GB or above

  However, 2 GB or larger for Microsoft® Windows® 10/Microsoft® Windows® 8.1/Microsoft® Windows® 8/Microsoft® Windows® 7 64-bit
- Mac

  2 GB or above

■ Network function

10BASE-T or 100BASE-TX

1 port

■ Image display function

Resolution: 1024×768 pixels or above

Color: True Color 24-bit or above

■ Supported OS and web browsers

- Windows

  Microsoft® Windows® 10 Professional 64-bit/32-bit*1

  Microsoft® Windows® 8.1 Professional 64-bit/32-bit*1

  Windows® Internet Explorer® 11.0*1*3

  Microsoft® Windows® 8 Professional 64-bit/32-bit*1

  Windows® Internet Explorer® 10.0*1*3

  Microsoft® Windows® 7 Professional SP1 64-bit/32-bit*2

  Windows® Internet Explorer® 11.0/10.0/9.0/8.0*3

  *1 Use Internet Explorer for desktop. (Internet Explorer for Windows UI is not supported.)

  *2 The Windows® XP compatibility mode cannot be used.

  *3 Internet Explorer® 64-bit cannot be used.
- Mac

  OS X 10.11 Safari 9.0

  OS X 10.10 Safari 8.0.4

  OS X 10.9 Safari 7.0.2

  OS X 10.8 Safari 6.1.2

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, memory card, or computer

Notes regarding network

This camera is provided with functions which are used upon connecting to a network.

When the camera is used while connected to a network, there are the following potential risks.

- Leakage or disclosure of information via the camera
- Manipulation of the camera by a malicious third party
- Interference or interruption of the camera caused by a malicious third party

To prevent such risks, users are responsible for implementing sufficient network security measures inclusive of the following.

- Use the camera over a network where safety is ensured with the installation of a firewall, etc.
- When the camera is used in a system to which a computer is connected, be sure to perform regular checks or detections for computer viruses and malware.

In addition, be sure to observe the following precaution.

- Do not install the camera or cables in a place where they may easily be damaged.

Using the camera in a system

An example of a standard system configured with the Multi-Purpose Camera (AK-UB300G) 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.
http://pro-av.panasonic.net/

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-RP50N/AW-RP50E/AW-RP120G	This is the controller to control this camera and the pan/tilt head.
Remote operation panel	AK-HRP200G	This is the controller to control this camera.
	AK-HRP1000G/AK-HRP1005G	

Expanded configuration devices

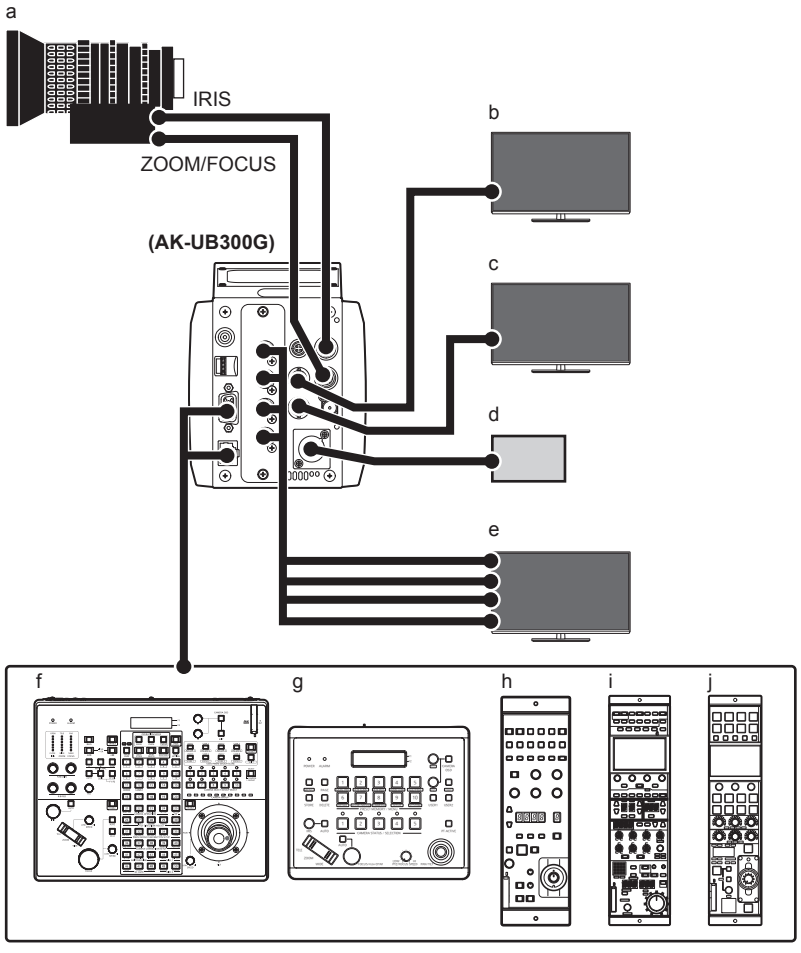
In addition to the basic configuration devices, following devices can be connected.

Part name	Part No.	Remark
Indoor pan/tilt head	AW-PH400P/AW-PH400E	—
Protocol converter	AW-IF400G	This is the converter to control the indoor pan/tilt head from the remote camera controller.
12G output board	AK-UHD12G	The 12G SDI signal or the 3G SDI signal can be output by installing to the camera.

System block diagram

One-to-one configuration

This is the configuration to connect one AK-UB300G and one remote camera controller or the remote operation panel.



a: Remote control lens

b: HD monitor (for HD main line)

c: HD monitor (for HD monitor)

d: External DC power supply

e: UHD/HD monitor (for UHD/HD main line)

f: AW-RP120G

g: AW-RP50N/AW-RP50E

h: AK-HRP200G

i: AK-HRP1000G

j: AK-HRP1005G

- Video output

  For UHD mode

  - For UHD main line: Use the output from the <UHD/HD SDI OUT 1> to <UHD/HD SDI OUT 4> terminals.
  - For HD main line: Use the output from the <HD SDI OUT 1> terminal.
  - For HD monitor: Use the output from the <HD SDI OUT 2> terminal.

  For UHD CROP mode/HD mode

  - For HD main line: Use the output from the <HD SDI OUT 1> terminal, or the output from the <UHD/HD SDI OUT 1>/<UHD/HD SDI OUT 2> terminal.
  - For HD monitor: Use the output from the <HD SDI OUT 2> terminal.

NOTE

- Pressing the <MENU> button will display the menu in the output from the <HD SDI OUT 2> terminal.

- Remote camera controller

  Connect AW-RP50N/AW-RP50E or AW-RP120G to the <I/F> terminal or the <LAN> terminal.

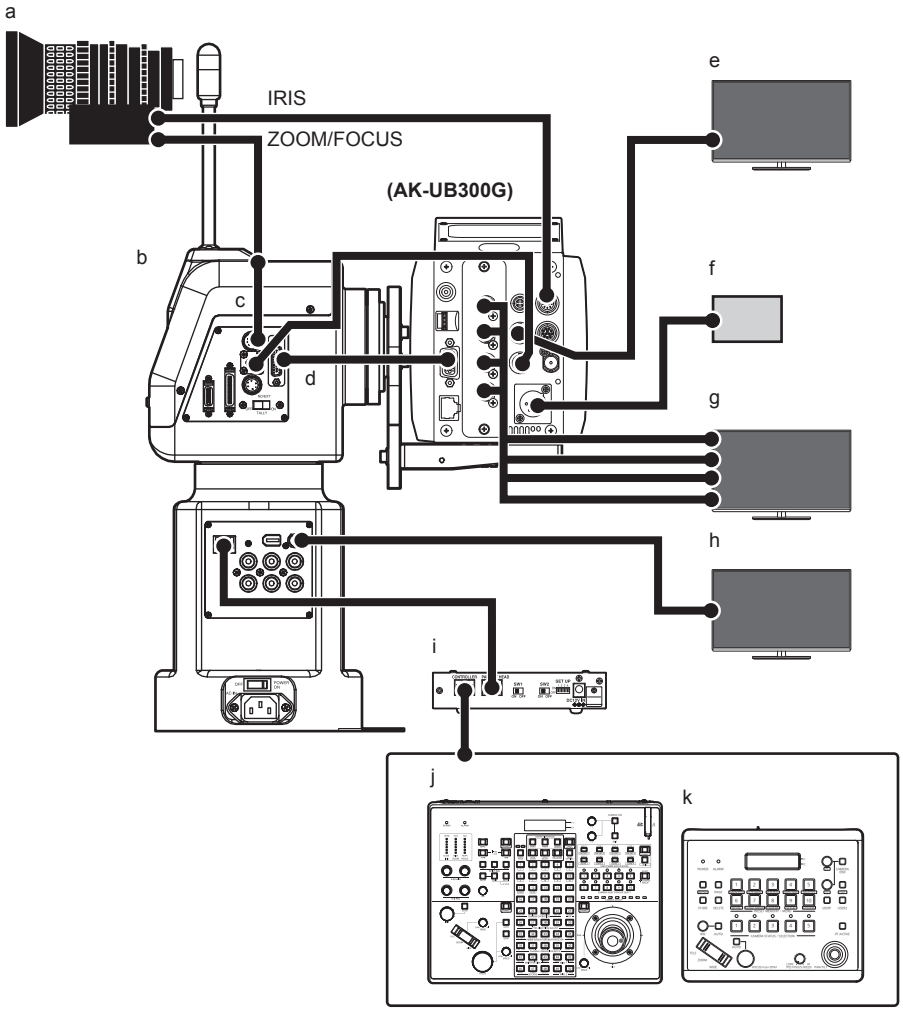
- Remote operation panel

  Connect AK-HRP200G, AK-HRP1000G, or AK-HRP1005G to the <I/F> terminal or the <LAN> terminal.

Configuration using the indoor pan/tilt head

This is the configuration to connect one AK-UB300G, indoor pan/tilt head, and one remote camera controller.

■ **AW-PH400P/AW-PH400E**



a: Remote control lens

b: AW-PH400P/AW-PH400E

c: Relay cable
Use the relay cable when connecting the zoom/focus control cable of the remote control lens to AW-PH400P/AW-PH400E. The device may be damaged when connected directly.

d: AW-CA15H29G

e: HD monitor (for HD main line)

f: External DC power supply

g: UHD/HD monitor (for UHD/HD main line)

h: HD monitor (for HD main line/monitor)

i: AW-IF400G

j: AW-RP120G

k: AW-RP50N/AW-RP50E

- Video output

For UHD mode

- For UHD main line: Use the output from the <UHD/HD SDI OUT 1> to <UHD/HD SDI OUT 4> terminals.
- For HD main line: Use the output from the <HD SDI OUT 1> terminal.
- For HD main line/monitor: Use the output from the <SDI> terminal of AW-PH400P/AW-PH400E.

For UHD CROP mode/HD mode

- For HD main line: Use the output from the <HD SDI OUT 1> terminal, or the output from the <UHD/HD SDI OUT 1>/<UHD/HD SDI OUT 2> terminal.
- For HD main line/monitor: Use the output from the <SDI> terminal of AW-PH400P/AW-PH400E.

NOTE

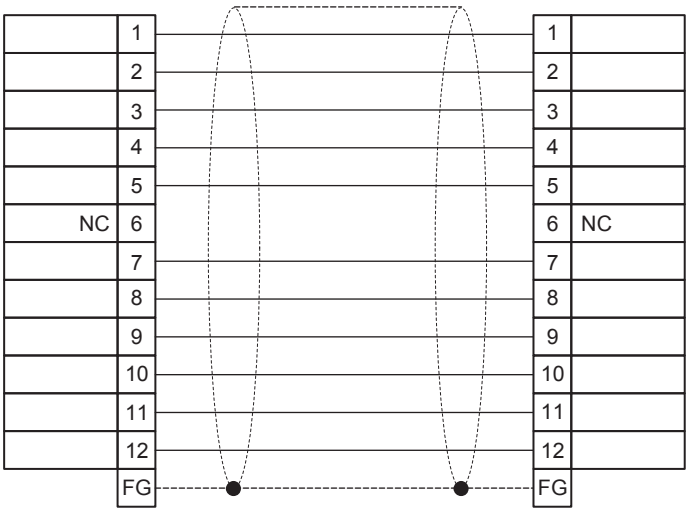
- Pressing the <MENU> button will display the menu in the output from the <HD SDI OUT 2> terminal.

- Remote camera controller

Connect AW-RP50N/AW-RP50E or AW-RP120G to the <IP/RP> terminal of AW-PH400P/AW-PH400E.

■ Relay cable specification

Do not connect the pin number 6.

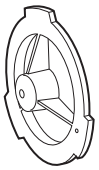


HR10A-10P-12S(73)
(Hirose Electric Co.)

HR10A-10J-12P(73)
(Hirose Electric Co.)

Accessories

Mount cap (already attached to the product)



Flange nut (x 1)

Wire mounting screws (x 2)

NOTE

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

Frame frequency setting

When the camera is shipped, the frame frequency is not set. Before using the camera for the first time, follow the steps below to set the frame frequency.

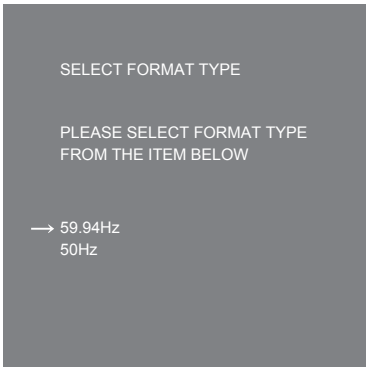


Fig. 1

Fig. 2

1 Connect a monitor to the <HD SDI OUT 2> terminal (page 21).

2 Connect the DC power supply.

The [SELECT FORMAT TYPE] screen is displayed.

3 Turn the jog dial button to move the cursor (arrow) to the frequency to set. (Fig. 1)

4 Press the jog dial button.

The confirmation screen is displayed.

5 Move the cursor (arrow) to [YES] and press the jog dial button. (Fig. 2)

The menu screen is displayed, and the setting is completed.
This screen is not displayed again when the power is turned on next and subsequently once this is set.

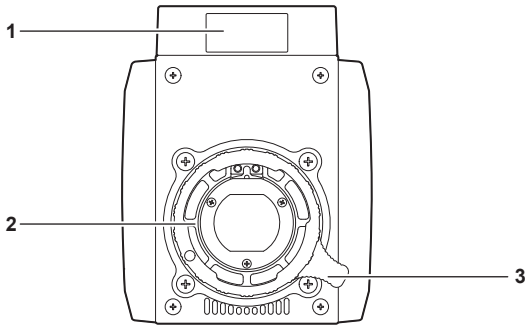
6 Disconnect the DC power supply.

7 Turn on the DC power supply.

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 in red while displaying warning, and blinks in green during the firmware update.

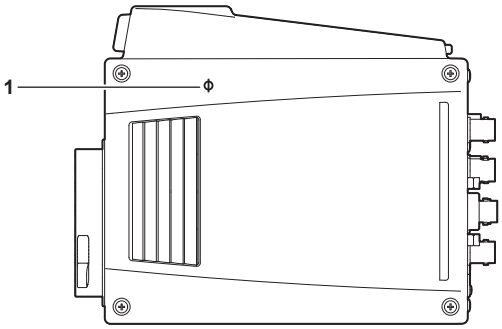
NOTE

- The brightness can be set with [MAIN MENU] → [SWITCH MODE] → [TALLY] → [FRONT TALLY]. Blinks in green [LOW] regardless of setting during the firmware update.

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

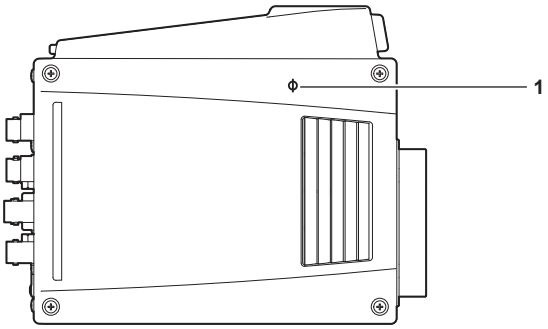
3 Lens fixing lever
Fix the lens by turning the lever clockwise after mounting the lens to the lens mount.

Left side



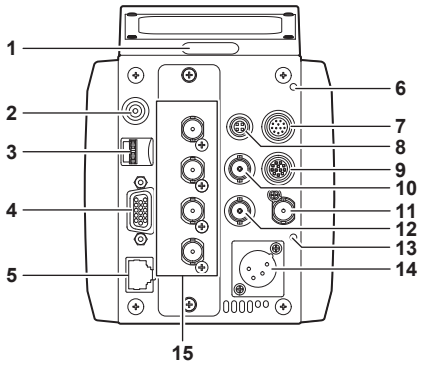
1 <ϕ> mark
Indicates the imaging plane inside the camera.

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 in red while displaying warning, and blinks in green during the firmware update.

NOTE

- The brightness can be set with [MAIN MENU] → [SWITCH MODE] → [TALLY] → [BACK TALLY]. Blinks in green [LOW] regardless of setting during the firmware update.

2 <MENU> button
Press this button to display the camera's [MAIN 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 <I/F> terminal
Connect the cable for the external synchronization signal and the control signal to the camera.
For specification of the connection cable, refer to "Details of the connector signals" (page 115).

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

NOTE

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

6 <WARNING> lamp
This will illuminate in red when a problem occurs.

7 <IRIS> terminal
Used to connect the lens iris control cable.

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

9 <ZOOM/FOCUS> terminal
Used to connect the lens zoom/focus control cable.

10 <HD SDI OUT 1> terminal
This is the main line 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 <HD SDI OUT 2> terminal
This is the monitor output terminal dedicated for HD SDI.

NOTE

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

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

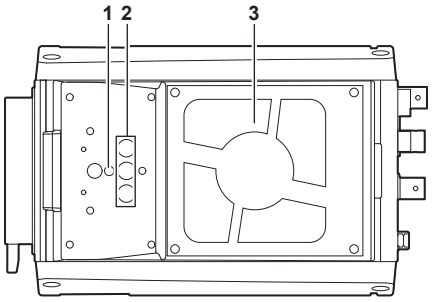
14 <DC IN> terminal
This is an input terminal for the external DC power supply. Connects to the external DC power supply. (DC 11 V to 17 V)

15 <UHD/HD SDI OUT 1>/<UHD/HD SDI OUT 2>/<UHD/HD SDI OUT 3>/<UHD/HD SDI OUT 4> terminal
These are the UHD and HD SDI main line output terminals.

NOTE

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

Upper side



1 Drop prevention wire mounting screw hole

- Mounting hole size
  - M4

2 Mounting screw holes

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

- Mounting hole size
  - 1/4-20 UNC (x 3)

NOTE

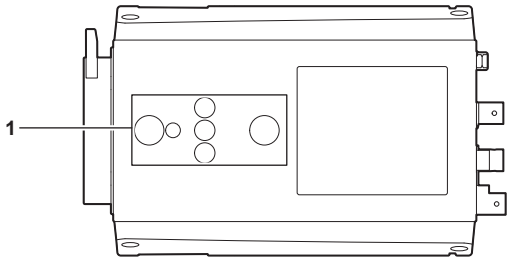
- Depth of the screw hole is 10 mm. Use mounting screws 10 mm or shorter.

3 Cooling fan

This is the fan for cooling the unit.

- Do not block or disturb the ventilation while operation. Doing so may cause fire due to overheating.
- Expected life of this fan is approximately 60,000 hours. (When used at room temperature of 25 ºC) Replace when it reaches the expected life.
- Be sure to contact your dealer for the replacement.

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 (x 3)
  - 3/8-16 UNC (x 2)

NOTE

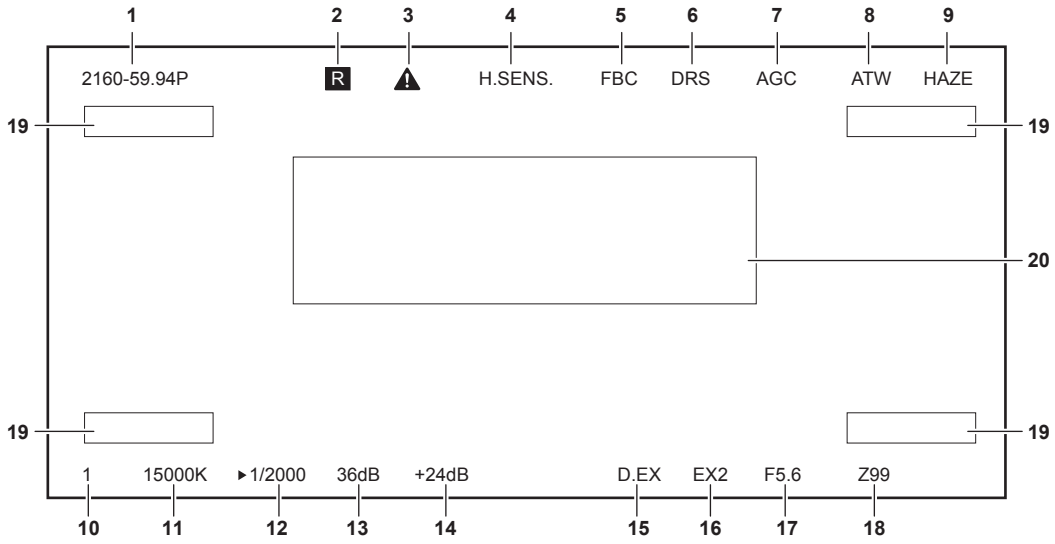
- Depth of the screw hole is 10 mm. Use mounting screws 10 mm or shorter.

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 Multi-Purpose Camera are displayed in the monitor screen.
All items that can be displayed are located as follows.



1 System mode display
Indicates the system frequency.
- [2160/60p]
- [2160/59.94p]
- [2160/50p]
- [2160/29.97p]
- [2160/29.97PsF]
- [2160/25p]
- [2160/25PsF]
- [2160/23.98p]
- [2160/23.98PsF]
- [1080/60p]
- [1080/59.94p]
- [1080/59.94p CROP]
- [1080/59.94i]
- [1080/59.94i CROP]
- [1080/50p]
- [1080/50p CROP]
- [1080/50i]
- [1080/50i CROP]
- [1080/29.97PsF]
- [1080/25PsF]
- [1080/23.98p]
- [1080/23.98PsF]
- [720/60p]
- [720/59.94p]
- [720/50p]

2 Tally display
This is displayed when a tally signal is sent.

3 Warm up warning
This is displayed when the internal temperature is low.

4 High-sensitivity mode display
This is displayed when set to [MAIN MENU] → [SYSTEM MODE] → [SHOOTING MODE] → [HIGH SENS].

5 Flash band compensation display
This is displayed when set to [MAIN MENU] → [SWITCH MODE] → [FBC SETTING] → [FBC] → [ON].

6 Dynamic range stretcher display
This is displayed when the dynamic range stretcher function is active.

7 Auto gain control display
This is displayed when the auto gain control function is enabled.

8 Auto tracking white balance
This is displayed when the auto tracking white balance function is enabled.

9 Haze elimination function display
This is displayed when the haze elimination function is enabled.

10 ND filter display
Indicates the selected ND filter value.
- [1]
- [2]
- [3]
- [4]

11 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.

12 Shutter speed display
Current shutter speed is displayed.

13 Master gain display
Current gain value is displayed.
- [–6dB] to [36dB]

14 Frame mix (total gain) display
The value of total gain is displayed when it is operating.
- [+6dB]/[+12dB]/[+18dB]/[+24dB]

15 Digital extender display
Displayed when the digital extender is being used.

16 Lens extender display
Displayed when the lens extender is being used.

17 Iris display
The iris setting (F value) is displayed. The F value is an approximate value.

18 Zoom position display
Indicates the zoom position.
- [00] to [99]

NOTE

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

19 Camera ID
The camera ID is displayed. The display position can be selected from the four corners.

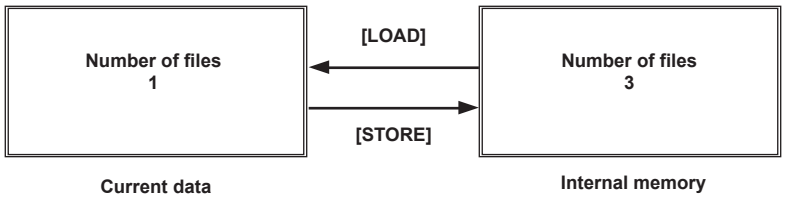
20 Camera warning and information display area
Displays a message indicating the occurrence of an error, the camera settings, the progress made in the adjustments, or the adjustment results for about three seconds.

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 [MAIN MENU]. The data is managed by the camera. It can be saved and loaded by [MAIN MENU] → [FILE] → [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 from [MAIN 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 loaded by [MAIN MENU] → [FILE] → [SCENE FILE].

User file



Operation procedure

1 Turn on the power of each device.

2 Illuminate the subject appropriately.

3 Adjust the lens flange back and adjust the iris and focus.

Always perform the lens flange back adjustment when using the camera for the first time or when the lens is changed.

4 Adjust the white balance.

This is necessary when the camera is used for the first time or when it was not used for a long time.
This is necessary when the illumination condition or the brightness has changed.
Once the white balance is adjusted, it is not necessary to adjust again under the same condition.

5 Adjust the black balance.

This is necessary when the camera is used for the first time or when it was not used for a long time.
This is necessary when the ambient temperature has drastically changed or when the season has changed.
Once the black balance is adjusted, it is not necessary to adjust again under the same condition.

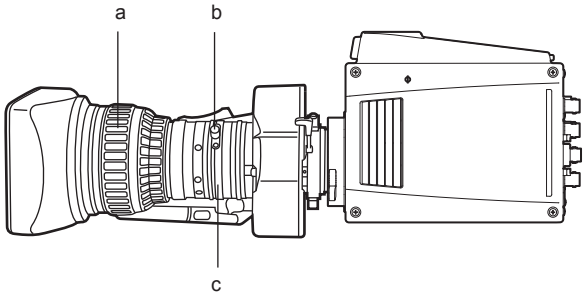
6 Shoot.

Turn off the power of each connected device when the shooting is completed.

Adjustment for shooting

Lens flange back adjustment

The lens flange back is an adjustment to focus in all ranges from the most telephoto to the most wide-angle of the zoom lens. Adjustment is necessary when using a zoom lens.



a: Focus ring

b: Lens flange back fixing knob

c: Lens flange back adjustment ring

1 Shoot a dark subject and open the iris all the way.

2 Set the distance to the subject to 2 m or more, and loosen the lens flange back fixing knob on the lens.

3 Set the lens to the most telephoto, and adjust the focus with the focus ring.

4 Set the lens to the most wide-angle, and adjust the focus with the lens flange back adjustment ring.

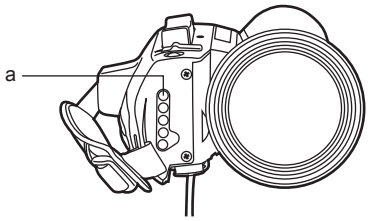
5 Adjust repeatedly with the focus ring and the lens flange back adjustment ring until it is focused within the zoom range.

6 Tighten the lens flange back fixing knob after the adjustment is completed.

Iris gain volume adjustment

There is an iris gain adjustment hole (displayed as G or S) at the front of the lens housing. Adjust the iris gain volume inside the lens using a screwdriver.

■ **Example for the iris automatic adjustment power zoom lens**



a: Iris gain adjustment volume

1 Set the iris selection switch on the lens to A (AUTO) side.

2 Turn the iris gain adjustment volume so the gain will be at maximum in the range that will not cause hunting.

NOTE

- This can be adjusted with [MAIN MENU] → [SWITCH MODE] → [IRIS] → [IRIS SPEED] when set to [MAIN MENU] → [SWITCH MODE] → [IRIS] → [IRIS GAIN] → [CAM].

White balance adjustment

Adjust the white balance by shooting a white subject in 50% or more of the screen.

The white balance adjustment may not function correctly when the signal level of white is 100% or more, or 50% or less.

Black balance adjustment

Perform adjustment with the lens closed.

The lens will become closed automatically when the black balance is adjusted if the motor drive lens is controlled from the camera.

Genlock adjustment

The video signal output from the camera can be locked to the reference signal supplied from an external source.

This camera can receive the external reference signal from the <G/L IN> terminal or the <I/F> terminal.

1 Select [MAIN MENU] → [IN/OUT SELECT] → [GEN-LOCK].

2 Select the input source of the synchronization signal in [GEN-LOCK INPUT].

3 Coarsely adjust the phase of the synchronization signal input and the video signal output in [H PHASE-COARSE].

4 Finely adjust the phase of the synchronization signal input and the video signal output in [H PHASE-FINE].

NOTE

- If the phase of the video output signal is adjusted using [H PHASE-COARSE] or [H PHASE-FINE] while the 12G output board AK-UHD12G is installed, the image output from the 12G output board AK-UHD12G may be interrupted for a moment. This is not a malfunction.

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 or the <I/F> terminal.

- ✓: Can lock.
- —: Cannot lock.

[MAIN MENU]	Input signal into the <G/L IN> terminal or the <I/F> terminal			
[FORMAT]	1080/60i	1080/59.94i	1080/50i	1080/23PsF
[2160/60p]	✓	—	—	—
[2160/59.94p]	—	✓	—	—
[2160/50p]	—	—	✓	—
[2160/29.97p]	—	✓	—	—
[2160/29.97PsF]	—	✓	—	—
[2160/25p]	—	—	✓	—
[2160/25PsF]	—	—	✓	—
[2160/23.98p]	—	—	—	✓
[2160/23.98PsF]	—	—	—	✓
[1080/60p]	✓	—	—	—
[1080/59.94p]	—	✓	—	—
[1080/59.94p CROP]	—	✓	—	—
[1080/59.94i]	—	✓	—	—
[1080/59.94i CROP]	—	✓	—	—
[1080/50p]	—	—	✓	—
[1080/50p CROP]	—	—	✓	—
[1080/50i]	—	—	✓	—
[1080/50i CROP]	—	—	✓	—
[1080/29.97PsF]	—	✓	—	—
[1080/25PsF]	—	—	✓	—
[1080/23.98p]	—	✓	—	—
[1080/23.98PsF]	—	—	—	✓
[720/60p]	—	—	—	—
[720/59.94p]	—	—	—	—
[720/50p]	—	—	—	—

[MAIN MENU]	Input signal into the <G/L IN> terminal or the <I/F> terminal				
[FORMAT]	720/60p	720/59.94p	720/50p	525/59.94i	625/50i
[2160/60p]	—	—	—	—	—
[2160/59.94p]	—	—	—	✓	—
[2160/50p]	—	—	—	—	✓
[2160/29.97p]	—	—	—	✓	—
[2160/29.97PsF]	—	—	—	✓	—
[2160/25p]	—	—	—	—	✓
[2160/25PsF]	—	—	—	—	✓
[2160/23.98p]	—	—	—	—	—
[2160/23.98PsF]	—	—	—	—	—
[1080/60p]	—	—	—	—	—
[1080/59.94p]	—	—	—	✓	—
[1080/59.94p CROP]	—	—	—	✓	—
[1080/59.94i]	—	—	—	✓	—
[1080/59.94i CROP]	—	—	—	✓	—
[1080/50p]	—	—	—	—	✓
[1080/50p CROP]	—	—	—	—	✓
[1080/50i]	—	—	—	—	✓
[1080/50i CROP]	—	—	—	—	✓

[MAIN MENU]	Input signal into the <G/L IN> terminal or the <I/F> terminal				
[FORMAT]	720/60p	720/59.94p	720/50p	525/59.94i	625/50i
[1080/29.97PsF]	—	—	—	✓	—
[1080/25PsF]	—	—	—	—	✓
[1080/23.98p]	—	—	—	✓	—
[1080/23.98PsF]	—	—	—	—	—
[720/60p]	✓	—	—	—	—
[720/59.94p]	—	✓	—	✓	—
[720/50p]	—	—	✓	—	✓

Shutter mode

Fixed shutter speed

This is used in the following cases.

- To eliminate flickers caused by illumination
- To clearly shoot the fast moving subject

Synchro scan mode

This is used in the following cases.

- To shoot with less horizontal banding when shooting the monitor screen
- To shoot with effect in the motion of the subject

Shutter mode/speed setting

It is possible to limit the range of shutter speed selection or to use the synchro scan mode in advance with [MAIN MENU] → [SWITCH MODE] → [SHUTTER SPEED] → [SHUTTER SPEED]/[SHUTTER MODE].

The selected shutter speed will be maintained even after the power of the unit is turned off.

NOTE

- Whichever mode the electronic shutter is used in, the higher the shutter speed, the lower the sensitivity of the camera becomes.
- When the aperture is in the automatic mode, it will increasingly open and the depth of focus will become shallower as the shutter speed is increased.
- Under lighting conditions using fluorescent lighting or other discharge tube, horizontal stripes might appear on screen. If this happens, this can be improved by adjusting the shutter speed.
- A subject that quickly crosses the camera may appear distorted when shot. This is due to the method applied for reading the signals from the pickup device (MOS sensor), and is not a malfunction.
- The shutter mode is turned off when the intelligent function is operating.

Shutter related screen display

For details, refer to “On-screen displays of the monitor” (page 25).

Synchro scan mode setting

1 Set it to [MAIN MENU] → [SWITCH MODE] → [SHUTTER SPEED] → [SHUTTER MODE] → [SYNCHRO].

2 Set the shutter for the synchro scan in [MAIN MENU] → [SWITCH MODE] → [SHUTTER SPEED] → [SYNCHRO SCAN].

The shutter speed display of the synchro scan mode can be switched between second and angle in [MAIN MENU] → [SWITCH MODE] → [SHUTTER SPEED] → [SYNCHRO SCAN DISP].

Image quality adjustment

The image quality of the video to be recorded can be set in [MAIN MENU] → [PAINT]. Measurement equipment such as vector scope is necessary to set in a higher level.

Detail function

This function thickens or weakens the outlines of images. It effectively softens or sharpens images, but in some cases, the whole image may become coarse due to emphasized noise and edges.

To avoid such phenomenon, it is necessary not to add this effect on parts where emphasizing is not needed and keep the details of the parts.

■ General settings

[MASTER DETAIL]: Sets the level of the detail effect of the whole part.

[CRISP]: Sets the level of signal (including noise) not to activate the detail effect.

■ Advanced settings

Set this in [MAIN MENU] → [PAINT] → [DETAIL SETTING].

[DETAIL]: Sets [ON]/[OFF] of the detail function.

[V DETAIL LEVEL]: Sets the intensity of the detail level in the vertical direction.

[PEAK FREQUENCY]: Sets the thickness of detail in the horizontal direction.

[V DETAIL FREQUENCY]: Sets the thickness of detail in the vertical direction.

[LEVEL DEPENDENT]: Detail in the darker area is compressed when the detail of luminosity signal is emphasized. Detail of bright area is also compressed more when the value set for [LEVEL DEPENDENT] is larger.

[KNEE APERTURE LEVEL]: Sets the detail level of high luminosity areas (high-brightness areas).

[DETAIL GAIN(+)]: Sets the detail level toward the + direction (making brighter).

[DETAIL GAIN(–)]: Sets the detail level toward the – direction (making darker).

Skin tone function

This function makes human skin look smoother in images.

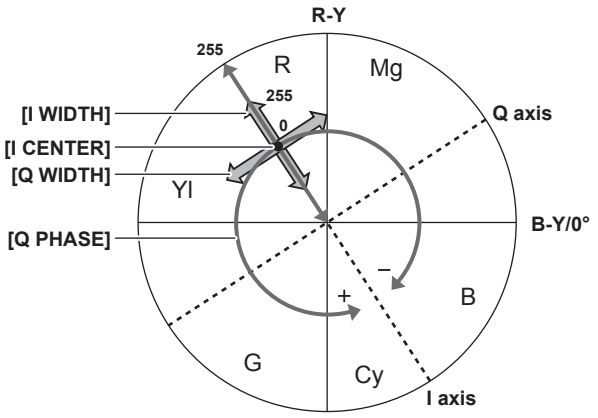


Fig. 1

■ General settings

[SKIN TONE EFFECT MEMORY]: Select from three data for which skin tone to perform the skin tone detail function. It can be set alone or in combination.

[ZEBRA]: A zebra pattern is displayed in the area of selected skin tone when [SKIN TONE DETAIL] is enabled. The zebra pattern displays the area selected in [ZEBRA EFFECT MEMORY].

■ Advanced settings

Set in [MAIN MENU] → [PAINT] → [SKIN TONE DETAIL SETTING].

[MEMORY SELECT]: Selects the skin color table of the subject on which the skin tone table is applied.

[SKIN GET]: Acquires the color information of [A], [B], or [C] selected in [MEMORY SELECT] from inside the adjusted box cursor. Data from [I CENTER] to [Q PHASE] are automatically obtained when executed.

[SKIN TONE CRISP]: Sets the effect level of the skin tone detail.

- The color composition of the video signal (R/G/B) will be as of (Fig. 1) when replaced with color difference signal (R-Y/B-Y).

  Within those ranges, set the area on which the following skin tone is applied, using the axis across red and cyan (I axis) and the axis across green and magenta (Q axis).

  [I CENTER]: Sets the center position on the I axis (the area where the skin tone applied).

  [I WIDTH]: Sets the area width where the skin tone is applied, along the I axis with [I CENTER] in the center.

  [Q WIDTH]: Sets the area width where the skin tone is applied, along the Q axis with [I CENTER] in the center.

  [Q PHASE]: Sets the phase where the skin tone is applied, with the Q axis being the reference.

RB gain control function

This is a function to set to add or reduce intensity of red and blue.
This operates with automatic white balance. This will not operate with auto tracking white balance.

■ General settings

Use the camera with the factory settings.

■ Advanced settings

Set in [MAIN MENU] → [PAINT] → [RB GAIN CONTROL SETTING].

- When [RB GAIN PRESET] is selected
  [R GAIN]: Sets to add or reduce intensity in red.
  [B GAIN]: Sets to add or reduce intensity in blue.
- When [RB GAIN] is selected
  [R GAIN]: Sets to add or reduce intensity in red.
  [B GAIN]: Sets to add or reduce intensity in blue.
  [GAIN OFFSET]: Sets whether to maintain the value set in [R GAIN] and [B GAIN], or to reset when the automatic white balance is performed.

Chroma setting function

This function sets color saturation and phase. It applies effects on whole images. It cannot be set to individual color hue.

■ General settings

[CHROMA LEVEL]: Sets the chroma level for the P_R signal and the P_B signal.
When the vector scope is used, the distance from the center (no color) increases or decreases in the whole image.

■ Advanced settings

No setting items are provided.

Matrix function

This function sets the image color representation by selecting the matrix table.
If the settings are changed, the representation of all the colors in the image will also be changed.

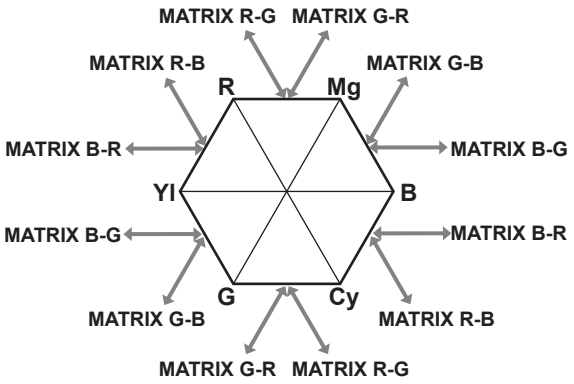


Fig. 1

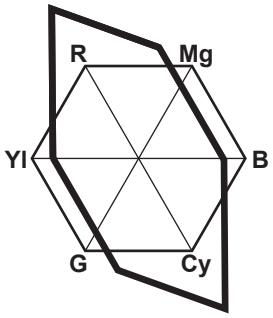


Fig. 2

■ General settings

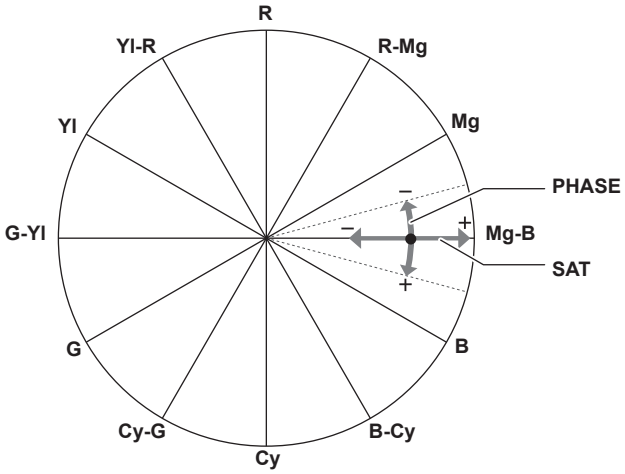
[MATRIX]: Enables the matrix function and represents the color at the time of shooting.

■ Advanced settings

Set in [MAIN MENU] → [PAINT] → [LINEAR MATRIX].
It performs the fine adjustment relatively against the matrix table selected in [LINEAR TABLE]. (Fig. 1)
(Example) When [MATRIX (R-G)_P] is adjusted to the positive side and [MATRIX (B-G)_N] is adjusted to the negative side (Fig. 2)

Color correction function

This function sets color saturation and phase. It applies individual effect on 12 phases in an image.
It can be set to individual color hue.



■ General settings

Use the camera with the factory settings.

■ Advanced settings

[G PHASE]/[CY-G PHASE]/[CY PHASE]/[B-CY PHASE]/[B PHASE]/[MG-B PHASE]/[MG_PHASE]/[R-MG PHASE]/[R PHASE]/[YL-R PHASE]/[YL PHASE]/[G-YL PHASE]: Changes the phase. + makes it go clockwise, and − makes it go counterclockwise.

[G SAT]/[CY-G SAT]/[CY SAT]/[B-CY SAT]/[B SAT]/[MG-B SAT]/[MG_SAT]/[R-MG SAT]/[R SAT]/[YL-R SAT]/[YL SAT]/[G-YL SAT]: Changes the saturation.

Black control function

This function sets the black level that is to be the reference of luminance.
Set in [MAIN MENU] → [PAINT] → [PEDESTAL].

■ General settings

[MASTER PEDESTAL]: Sets the reference black level. RGB also operates simultaneously with this setting. − makes the black darker, and + makes it less dark.

■ Advanced settings

[R PEDESTAL]: Sets the pedestal level of Rch.

[G PEDESTAL]: Sets the pedestal level of Gch.

[B PEDESTAL]: Sets the pedestal level of Bch.

[PEDESTAL OFFSET]: Sets whether to maintain the value set in each item of [R PEDESTAL], [G PEDESTAL], and [B PEDESTAL], or to reset when the automatic black balance is performed.

Gamma function

This function optimizes the tone of images.
Set in [MAIN MENU] → [PAINT] → [GAMMA/BLACK GAMMA].

■ General settings

[GAMMA MODE SELECT]: Selects a gamma mode from six types.

■ Advanced settings

[MASTER GAMMA]: Sets the master gamma in 0.0020 or 0.0025 steps.

- When [FILM REC] is selected in [GAMMA MODE SELECT]

  [DYNAMIC LEVEL]: Sets dynamic range.

  [BLACK STRECH LEVEL]: Sets black stretch.

- When [VIDEO REC] is selected in [GAMMA MODE SELECT]

  [KNEE SLOPE]: Sets knee slope.

  [KNEE POINT]: Sets knee point.

[BLACK GAMMA]: Sets the gamma curve compression and expansion of dark areas.

Knee function

This function sets the compression of video signals to prevent halation in images.

■ General settings

Use the camera with the factory settings.

■ Advanced settings

Set in [MAIN MENU] → [PAINT] → [KNEE].

- When [AUTO] is selected in [MAIN MENU] → [PAINT] → [KNEE] → [KNEE]

  [AUTO KNEE RESPONSE]: Sets the speed of response. The smaller the setting value, the faster the response speed.

- When [MANUAL] is selected in [MAIN MENU] → [PAINT] → [KNEE] → [KNEE]

  [KNEE MASTER POINT]: Sets the knee point position in 0.25% steps.

  [KNEE MASTER SLOPE]: Sets the knee inclination.

  [KNEE R SLOPE]: Sets the knee inclination of Rch.

  [KNEE B SLOPE]: Sets the knee inclination of Bch.

High color function

This function sets the color dynamic range.

■ General settings

[HI-COLOR]: Selects [ON]/[OFF] of the mode that expands the color dynamic range.

[HI-COLOR LEVEL]: Selects the level of mode that expands the color dynamic range.

■ Advanced settings

Use the camera in a general setting.

White clip function

This function sets the brightest part of video signals to be not brighter than a certain level.

■ General settings

Use the camera with the factory settings.

■ Advanced settings

Sets in [MAIN MENU] → [PAINT] → [WHITE CLIP].

[WHITE CLIP]: Selects [ON]/[OFF] of the white clip function. The [MASTER WHITE CLIP LEVEL] setting value is enabled when set to [ON].

[MASTER WHITE CLIP LEVEL]: Sets the white clip level.

[R WHITE CLIP LEVEL]: Sets the clip level of Rch for white clips.

[B WHITE CLIP LEVEL]: Sets the clip level of Bch for white clips.

Intelligent function

The brightness and color temperature changes drastically in the morning → day time → dusk → night at the outdoor where the camera is used.

The intelligent function will automatically correct the image level and color temperature in accordance with the change at outdoor.

Outdoor will drastically change as follows.

- Brightness change of 10 to sixth power from 0.01 lx with crescent moon to 10,000 lx during sunny day
- Color temperature change of 5000 K from 3000 K right after the sunrise to 8000 K during bright sunny day

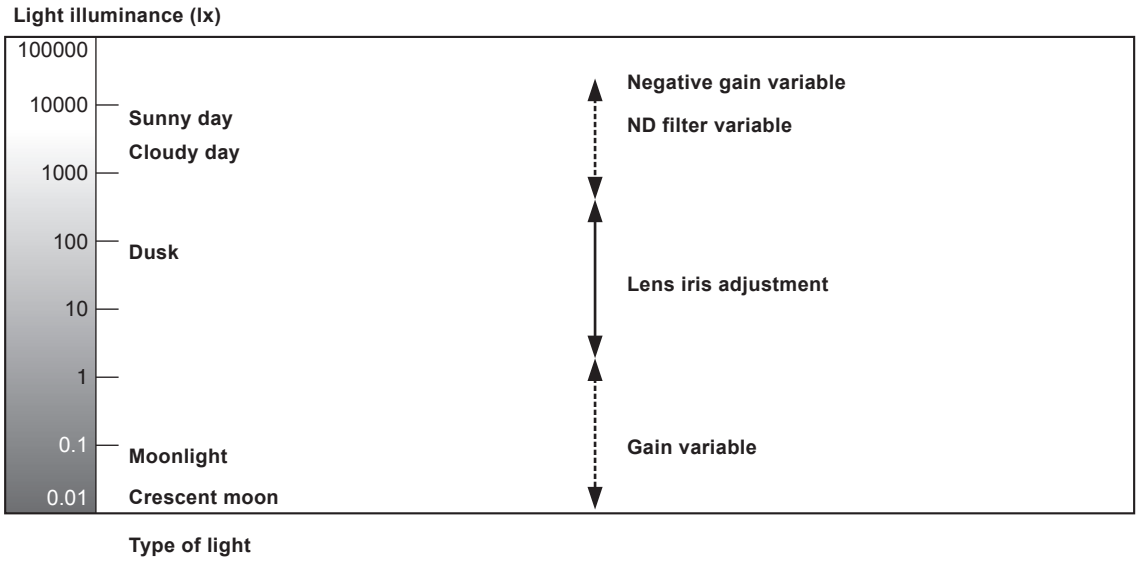
Conventionally, this was taken care by manually adjusting gain, lens aperture, ND filter, and negative gain for the image level adjustment, and gain adjustment and CC filter for the color temperature adjustment.

However, if manual adjustment is required every time, there will be a problem of not being able to shoot an image during the emergency such as an earthquake.

This problem can be resolved by using the intelligent function.

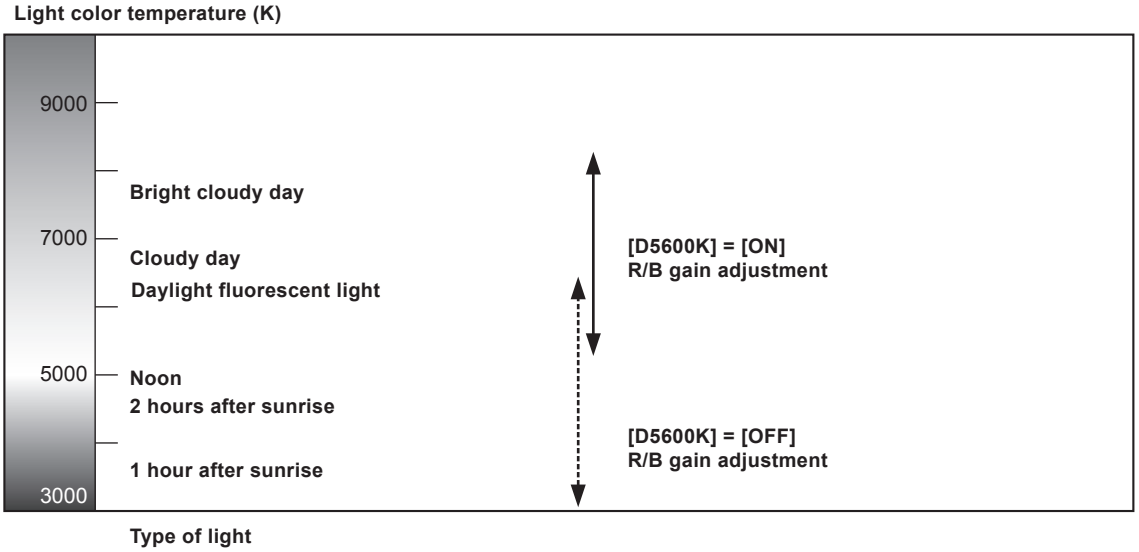
The intelligent function is set in [MAIN MENU] → [INTELLIGENT].

■ **Automatic image level adjustment**



Automatic adjustment is performed by controlling the lens aperture, gain (including frame addition), ND filter, and negative gain.

■ **Automatic color temperature adjustment**



Color temperature is automatically adjusted by controlling the R and B gains with the [OFF] or [ON] setting value in [D5600K].

NOTE

- The condition set with the intelligent function may be different for the shooting conditions with same brightness or color temperature depending on the camera setting, and it may not be the optimum setting.
- A shock noise will occur at the time of switching when the enable/disable of [FRAME MIX] switches while the automatic gain control is operating.
- A hunting may occur when [SHUTTER SW] is set to [ON], or [SHUTTER MODE] is set to [SYNCHRO] and the enable/disable of [FRAME MIX] switches.
- The color temperature following may not be correct in a special shooting condition such as backlight, reflection, or sunset.

Multi-formats

The video output method for UHD, HD crop (UHD CROP) from UHD and HD can be selected with [MAIN MENU] → [SYSTEM MODE] → [FORMAT].

- The output from the <HD SDI OUT 1> terminal and the <UHD/HD SDI OUT 1> to <UHD/HD SDI OUT 4> terminals are used for the main line.
- The output from the <HD SDI OUT 2> terminal is used for the monitor.

Superimposing of character

Characters to be superimposed to output of each terminal are as follows.

- ✓: Superimposed.
- —: Not superimposed.

Output terminal	Character to superimpose	
	Camera ID	Menu and status
<UHD/HD SDI OUT 1> to <UHD/HD SDI OUT 4> terminals	—	—
<HD SDI OUT 1> terminal	✓*1	✓*1
<HD SDI OUT 2> terminal	✓	✓
<LAN> terminal	✓*2	✓*2

*1 Character is superimposed when [MAIN MENU] → [IN/OUT SELECT] → [HD-SDI1 CHAR] → [ON] is set.

*2 Character is superimposed when [MAIN MENU] → [IN/OUT SELECT] → [LAN CHAR] → [ON] is set.

NOTE

- The method to display the menu when [MAIN MENU] → [IN/OUT SELECT] → [HD-SDI1 CHAR] is set to [OFF] is as follows.
  - Connect a monitor to the <HD SDI OUT 2> terminal.
  - Connect a PC to the <LAN> terminal, and use the UB300 Setting Tool.

List of output formats (<UHD/HD SDI OUT 1> to <UHD/HD SDI OUT 4> terminals)

Use following BNC cable in accordance to the signal to be output.

- 12G or 6G signal: 12G BNC cable
- Signal other than above: 5C-FB or higher BNC cable

UHD

■ When the 12G output board AK-UHD12G is used, and [UHD-SDI S-LINK] is set to [ON]

- [UHD SDI OUT TYPE] and [HD-SDI 3G SDI] are displayed as [---], and cannot be selected.

[MAIN MENU]	<UHD/HD SDI OUT 1> to <UHD/HD SDI OUT 4> terminals			
[FORMAT]	1	2	3	4
[2160/60p]	2160/60p (12GSL)	2160/60p (12GSL)	No output	
[2160/59.94p]	2160/59.94p (12GSL)	2160/59.94p (12GSL)	No output	
[2160/29.97p]	2160/29.97p (6GSL)	2160/29.97p (6GSL)	No output	
[2160/23.98p]	2160/23.98p (6GSL)	2160/23.98p (6GSL)	No output	
[2160/50p]	2160/50p (12GSL)	2160/50p (12GSL)	No output	
[2160/25p]	2160/25p (6GSL)	2160/25p (6GSL)	No output	

■ When the 12G output board AK-UHD12G is used, and [UHD-SDI S-LINK] is set to [OFF], or when the standard equipment board is used

[MAIN MENU]		<UHD/HD SDI OUT 1> to <UHD/HD SDI OUT 4> terminals	
[FORMAT]	[UHD SDI OUT TYPE]	1, 2	3, 4
[2160/60p]	[SQARE]	2160/60p (3GQL SQD)	
	[2 SAMPLE INT]	2160/60p (3GQL 2SI)	
[2160/59.94p]	[SQARE]	2160/59.94p (3GQL SQD)	
	[2 SAMPLE INT]	2160/59.94p (3GQL 2SI)	
[2160/29.97p]	[SQARE]	2160/29.97p (1.5GQL SQD)	
	[2 SAMPLE INT]	2160/29.97p (3GDL 2SI)	No output
[2160/23.98p]	[SQARE]	2160/23.98p (1.5GQL SQD)	
	[2 SAMPLE INT]	2160/23.98p (3GDL 2SI)	No output
[2160/50p]	[SQARE]	2160/50p (3GQL SQD)	
	[2 SAMPLE INT]	2160/50p (3GQL 2SI)	

[MAIN MENU]		<UHD/HD SDI OUT 1> to <UHD/HD SDI OUT 4> terminals	
[FORMAT]	[UHD SDI OUT TYPE]	1, 2	3, 4
[2160/25p]	[SQARE]	2160/25p (1.5GQL SQD)	
	[2 SAMPLE INT]	2160/25p (3GDL 2SI)	No output

■ **When [FORMAT] is set to [2160/29.97PsF]/[2160/23.98PsF]/[2160/25PsF]**

• [UHD-SDI S-LINK] and [UHD SDI OUT TYPE] are displayed as [---], and cannot be selected.

[MAIN MENU]	<UHD/HD SDI OUT 1> to <UHD/HD SDI OUT 4> terminals			
[FORMAT]	1	2	3	4
[2160/29.97PsF]	2160/29.97PsF (1.5GQL SQD)			
[2160/23.98PsF]	2160/23.98PsF (1.5GQL SQD)			
[2160/25PsF]	2160/25PsF (1.5GQL SQD)			

UHD CROP

• [UHD-SDI S-LINK] will not display. Setting of [UHD SDI OUT TYPE] will be disabled.

[MAIN MENU]	<UHD/HD SDI OUT 1> to <UHD/HD SDI OUT 4> terminals			
[FORMAT]	1	2	3	4
[1080/59.94p CROP]	1080/59.94p	1080/59.94p	No output	
[1080/59.94i CROP]	1080/59.94i	1080/59.94i	No output	
[1080/50p CROP]	1080/50p	1080/50p	No output	
[1080/50i CROP]	1080/50i	1080/50i	No output	

HD

• [UHD-SDI S-LINK] will not display. Setting of [UHD SDI OUT TYPE] will be disabled.

[MAIN MENU]	<UHD/HD SDI OUT 1> to <UHD/HD SDI OUT 4> terminals			
[FORMAT]	1	2	3	4
[1080/60p]	1080/60p	1080/60p	No output	
[1080/59.94p]	1080/59.94p	1080/59.94p	No output	
[1080/59.94i]	1080/59.94i	1080/59.94i	No output	
[1080/29.97PsF]	1080/29.97PsF	1080/29.97PsF	No output	
[1080/23.98PsF]	1080/23.98PsF	1080/23.98PsF	No output	
[1080/23.98p]	1080/23.98p over 59.94i	1080/23.98p over 59.94i	No output	
[1080/50p]	1080/50p	1080/50p	No output	
[1080/50i]	1080/50i	1080/50i	No output	
[1080/25PsF]	1080/25PsF	1080/25PsF	No output	
[720/60p]	720/60p	720/60p	No output	
[720/59.94p]	720/59.94p	720/59.94p	No output	
[720/50p]	720/50p	720/50p	No output	

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

UHD

[MAIN MENU]		<HD SDI OUT 1>/<HD SDI OUT 2> terminal	
[FORMAT]	[SDI1 OUT FMT]	1	2
[2160/60p]	[1080/60p]	1080/60p	1080/60i
	[1080/60i]	1080/60i	1080/60i
	[720/60p]	720/60p	720/60p*
[2160/59.94p]	[1080/59.94p]	1080/59.94p	1080/59.94i
	[1080/59.94i]	1080/59.94i	1080/59.94i
	[720/59.94p]	720/59.94p	720/59.94p*
[2160/29.97p]	[1080/29.97PsF]	1080/29.97PsF	1080/29.97PsF
[2160/23.98p]	[1080/29.98PsF]	1080/23.98PsF	1080/23.98p over 59.94i
	[1080/23.98p over]	1080/23.98p over 59.94i	1080/23.98p over 59.94i
[2160/29.97PsF]	[1080/29.97PsF]	1080/29.97PsF	1080/29.97PsF
[2160/23.98PsF]	[1080/23.98PsF]	1080/23.98PsF	1080/23.98p over 59.94i
	[1080/23.98p over]	1080/23.98p over 59.94i	1080/23.98p over 59.94i
[2160/50p]	[1080/50p]	1080/50p	1080/50i
	[1080/50i]	1080/50i	1080/50i
	[720/50p]	720/50p	720/50p*

[MAIN MENU]		<HD SDI OUT 1>/<HD SDI OUT 2> terminal	
[FORMAT]	[SDI1 OUT FMT]	1	2
[2160/25p]	[1080/25PsF]	1080/25PsF	1080/25PsF
[2160/25PsF]	[1080/25PsF]	1080/25PsF	1080/25PsF

* 720p signal will be output from the <HD SDI OUT 2> terminal too when [720/60p]/[720/59.94p]/[720/50p] is selected in [SDI1 OUT FMT].

UHD CROP

• [SDI1 OUT FMT] will not display.

[MAIN MENU]	<HD SDI OUT 1>/<HD SDI OUT 2> terminal	
[FORMAT]	1	2
[1080/59.94p CROP]	1080/59.94p	1080/59.94i
[1080/59.94i CROP]	1080/59.94i	1080/59.94i
[1080/50p CROP]	1080/50p	1080/50i
[1080/50i CROP]	1080/50i	1080/50i

HD

• [SDI1 OUT FMT] will not display.

[MAIN MENU]	<HD SDI OUT 1>/<HD SDI OUT 2> terminal	
[FORMAT]	1	2
[1080/60p]	1080/60p	1080/60i
[1080/59.94p]	1080/59.94p	1080/59.94i
[1080/59.94i]	1080/59.94i	1080/59.94i
[1080/29.97PsF]	1080/29.97PsF	1080/29.97PsF
[1080/23.98PsF]	1080/23.98PsF	1080/23.98p over 59.94i
[1080/23.98p]	1080/23.98p over 59.94i	1080/23.98p over 59.94i
[1080/50p]	1080/50p	1080/50i
[1080/50i]	1080/50i	1080/50i
[1080/25PsF]	1080/25PsF	1080/25PsF
[720/60p]	720/60p	720/60p
[720/59.94p]	720/59.94p	720/59.94p
[720/50p]	720/50p	720/50p

Convenient shooting functions

Scan reverse shooting

Image can be displayed reversed vertically or horizontally by setting [MAIN MENU] → [SYSTEM MODE] → [SCAN REVERSE].

NOTE

- The scan reverse in vertical direction will not operate for the output image from the <LAN> terminal in following cases.
  - [MAIN MENU] → [SYSTEM MODE] → [FORMAT] → [2160/60p], and [MAIN MENU] → [IN/OUT SELECT] → [SDI1 OUT FMT] → [720/60p]
  - [MAIN MENU] → [SYSTEM MODE] → [FORMAT] → [2160/59.94p], and [MAIN MENU] → [IN/OUT SELECT] → [SDI1 OUT FMT] → [720/59.94p]
  - [MAIN MENU] → [SYSTEM MODE] → [FORMAT] → [2160/50p], and [MAIN MENU] → [IN/OUT SELECT] → [SDI1 OUT FMT] → [720/50p]

Displaying the zebra pattern

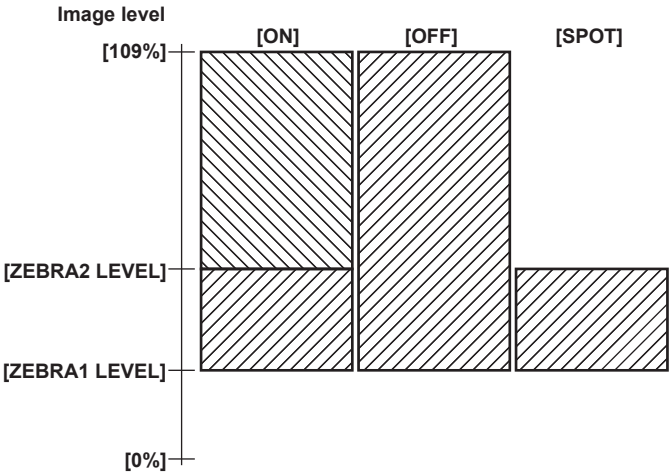
The camera can display two types of zebra patterns.

The zebra pattern set by the menu is displayed by setting [MAIN MENU] → [DISPLAY SETUP] → [MARKER] → [ZEBRA] → [ON].

The level for zebra pattern display can be set in [MAIN MENU] → [DISPLAY SETUP] → [MARKER] → [ZEBRA].

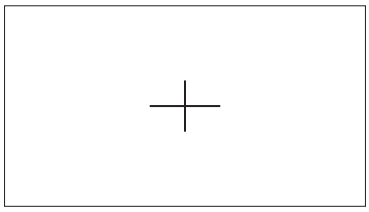
Item	Description of settings
[ZEBRA1 LEVEL]	Sets the level of the luminance zebra 1. **[0%] - [109%]** • Factory setting: [80%]
[ZEBRA2 LEVEL]	Sets the level of the luminance zebra 2. **[0%] - [109%]** • Factory setting: [100%]
[ZEBRA PATTERN]	Sets the pattern of the luminance zebra. **[1], [1+2], [SPOT]** • Factory setting: [1]

[SPOT]: The image level from the setting value of [ZEBRA1 LEVEL] to the setting value of [ZEBRA2 LEVEL] is displayed in the zebra pattern.



Displaying the center marker

Displays when set to [MAIN MENU] → [DISPLAY SETUP] → [MARKER] → [CENTER MARK] → [ON].



Displaying the safety zone marker

The one selected in [MAIN MENU] → [DISPLAY SETUP] → [MARKER] → [SAFETY MARK] is displayed.

The size of the safety zone marker can be changed in [MAIN MENU] → [DISPLAY SETUP] → [MARKER] → [SAFETY AREA].

Displaying the frame marker

Displays when set to [MAIN MENU] → [DISPLAY SETUP] → [MARKER] → [FRAME MARK SWITCH] → [ON].

Sets the angle of view in [MAIN MENU] → [DISPLAY SETUP] → [MARKER] → [FRAME SIG].

Sets the outside level in [MAIN MENU] → [DISPLAY SETUP] → [MARKER] → [FRAME MARK SWITCH] → [FRAME LEVEL].

Dynamic range stretcher function

You can increase the dynamic range by compressing the image signal for the extremely bright areas that are overexposed during normal shooting while maintaining contrast.

The knee function or the black gamma function will not operate when the dynamic range stretcher function is enabled.

A slight difference in coloring might occur by switching the dynamic range stretcher function enable/disable.

The level of compression can be change in [MAIN MENU] → [PAINT] → [DRS] → [EFFECT DEPTH].

NOTE

- This will only operate in the HD mode. This will not operate in the UHD mode/UHD CROP mode.

Color bar

The color bar convenient to adjust the image quality of a TV or an external monitor can be displayed.

Three types of color bar type ([FULL]/[SMPTE]/[ARIB]) can be selected in [MAIN MENU] → [SWITCH MODE] → [BAR SETTING] → [BAR SELECT].

Focus assist function

The focus assist function enables you to focus the target easily.

Expanded display, focus assist color display (display where the contour of the image is bordered with the selected color), and focus bar can be displayed in the output from the <HD SDI OUT 2> terminal.

Focus assist color display

Set to [MAIN MENU] → [DISPLAY SETUP] → [MARKER] → [FOCUS ASSIST] → [IN RED SW] → [ON] in advance.

Select either of [RED]/[GREEN] in [MAIN MENU] → [DISPLAY SETUP] → [MARKER] → [FOCUS ASSIST] → [IN RED COLOR].

The contour of the image is bordered with the selected color when set to [MAIN MENU] → [DISPLAY SETUP] → [MARKER] → [FOCUS ASSIST] → [IN RED SW] → [ON]. At this time, the screen frame will be in the selected color.

Adjust the focus so that the contour of the subject to focus will turn into the selected color.

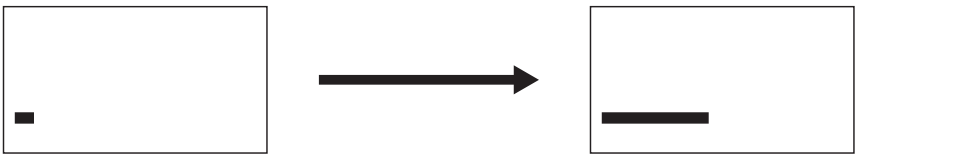
NOTE

- Displayed only in the output from the <HD SDI OUT 2> terminal.

Focus bar display

The focus bar is displayed when set to [MAIN MENU] → [DISPLAY SETUP] → [MARKER] → [FOCUS ASSIST] → [BAR SW] → [ON].

The degree of focus is indicated by the length of the bar.



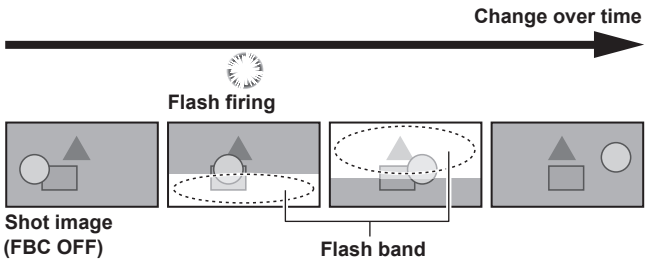
Not in focus

The bar extends to the right when the viewfinder is in-focus.

- White bar: Focus bar display
- Green line: Peak display

Flash band compensation (FBC) function

The camera is equipped with a function for compensating and reducing band-like interference (called “flash band”) that occurs due to the MOS pickup device when shooting in environments where flash strobe light such as a still camera is present.



The flash band compensation function is enabled when set to [MAIN MENU] → [SWITCH MODE] → [FBC SETTING] → [FBC] → [ON]. The flash strobe light such as a still camera is detected and can be compensated.

When the flash band compensation function is enabled, [FBC] is displayed on the status screen.

Not displayed when set to [OFF].

H.SENS. (FBC) DRS

NOTE

- When the flash strobe lights, the following phenomena may occur. These are due to the flash band compensation function and are not malfunctions.

- Moving subjects look as if they have been stopped for a moment.
- The resolution drops when the flash strobe lights.
- Horizontal lines appear in the video when the flash strobe lights.
- Flash bands appear only in images shot at the time the flash strobe lights.

Using the flash band compensation function

The flash band compensation function is activated when there are large changes in brightness at the bottom of the screen regardless of whether there is flash strobe light.

The flash band compensation function may be activated depending on the shooting environment such as where a bright window has zoomed in and then out. We recommend use of this function in shooting environments where flash strobe lighting is anticipated.

Sufficient flash band compensation function effect may not be obtained in some shooting environments if flash is generated.

Flash band compensation function operation conditions

- The flash band compensation function can be used when all of the following conditions are met.
  - One of 59.94i, 59.94P, 50i, or 50P mode (only operates in the HD mode, does not operate in the UHD mode/UHD CROP mode)
  - Scan reverse and digital zoom functions are not operating
  - When set to [MAIN MENU] → [SWITCH MODE] → [SHUTTER SPEED] → [SHUTTER SW] → [OFF]
- Even if the flash band compensation function is enabled, the flash band compensation function is forcibly disabled when the camera is changed to a mode where the flash band compensation function cannot be used.

  To use it again, return to the mode that the flash band compensation function can be used, and set to [MAIN MENU] → [SWITCH MODE] → [FBC SETTING] → [FBC] → [ON].
- Even if the flash band compensation function is enabled, the flash band compensation function is temporarily disabled when set to [MAIN MENU] → [SWITCH MODE] → [SHUTTER SPEED] → [SHUTTER SW] → [ON].

  The flash band compensation function is enabled again when set to [MAIN MENU] → [SWITCH MODE] → [SHUTTER SPEED] → [SHUTTER SW] → [OFF] again.

UHD crop function

HD crop image from the UHD signal can be output to the <HD SDI OUT 1> terminal, <UHD/HD SDI OUT 1>/ <UHD/HD SDI OUT 2> terminal, and <LAN> terminal when [MAIN MENU] → [SYSTEM MODE] → [FORMAT] → [1080/59.94p CROP]/[1080/59.94i CROP]/[1080/50p CROP]/[1080/50i CROP] is selected (Fig. 2)

At this time, the HD signal with UHD aspect ratio is output to the image from the <HD SDI OUT 2> terminal, and crop frame is displayed. (Fig. 1)

To output the HD crop image to the image from the <HD SDI OUT 2> terminal, select [MAIN MENU] → [IN/OUT SELECT] → [UHD CROP] → [HD-SDI2 OUT SEL] → [CROP].

To display the crop frame of the UHD aspect ratio on the image from the <LAN> terminal, select [MAIN MENU] → [IN/OUT SELECT] → [UHD CROP] → [LAN OUT SEL] → [FULL].

Fig. 1 **Fig. 2**

- The cropped image to be output can be selected from three types in [MAIN MENU] → [IN/OUT SELECT] → [UHD CROP] → [CROP OUT SEL].

  The selected crop frame is displayed bright, and it is confirmed by pressing the jog dial.

  [YL]: Image of yellow crop frame is output.

  [G]: Image of green crop frame is output.

  [MG]: Image of magenta crop frame is output.
- Displaying of the crop frame can be selected in [MAIN MENU] → [IN/OUT SELECT] → [UHD CROP] → [CROP MARKER SEL].

[YL]: Only the yellow crop frame is displayed.

[G]: Only the green crop frame is displayed.

[MG]: Only the magenta crop frame is displayed.

[YL+**G]:** The yellow and green crop frames are displayed.

[YL+**MG]:** The yellow and magenta crop frames are displayed.

[G+**MG]:** The green and magenta crop frames are displayed.

[YL+**G**+**MG]:** The yellow, green, and magenta crop frames are displayed.

If the crop frame is overlapping in the same position, the crop frame selected in [CROP OUT SEL] will be prioritized, and then it is displayed in the order of [YL], [G], and [MG].

To move the crop frame

- Selects the color of the crop frame in [MAIN MENU] → [IN/OUT SELECT] → [UHD CROP] → [CROP ADJ SEL].

  [YL]: Sets the position of yellow crop frame.

  [G]: Sets the position of green crop frame.

  [MG]: Sets the position of magenta crop frame.
- Sets the position of the crop frame in [MAIN MENU] → [IN/OUT SELECT] → [UHD CROP] → [CROP H POSITION]/[CROP V POSITION].

  [CROP H POSITION]: Moves horizontally.

  [CROP V POSITION]: Moves vertically.

NOTE

- The automatic functions such as the auto iris or the automatic white balance will operate in the UHD aspect ratio before cropping. The subject outside the crop frame may affect the cropped image when the auto function is operating.
- The setting of [MAIN MENU] → [PAINT] → [WHITE CLIP]/[DOWNCON DETAIL SETTING]/[SKIN TONE DETAIL SETTING] is not reflected to the image from the <HD SDI OUT 2> terminal or the <LAN> terminal when [FULL] is selected in [MAIN MENU] → [IN/OUT SELECT] → [UHD CROP] → [HD-SDI2 OUT SEL]/[LAN OUT SEL].
- When [MAIN MENU] → [PAINT] → [SKIN TONE DETAIL SETTING] → [SKIN GET] → [CURSOR] → [ON] is set in the UHD CROP mode, go through [MAIN MENU] → [IN/OUT SELECT] → [UHD CROP] → [HD-SDI2 OUT SEL]/[LAN OUT SEL], and select [CROP].

Haze elimination function

This is a function to eliminate haze and make it easier to see the subject that is low in contrast due to haze.

Intensity of haze elimination can be changed in [MAIN MENU] → [PAINT] → [HAZE REDUCTION] → [HAZE REDUCTION LEVEL] depending on the density of the haze.

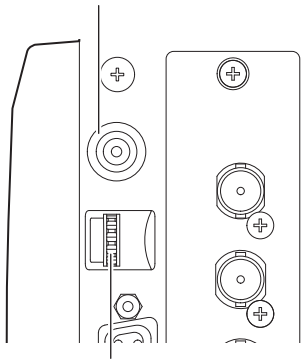
[GAMMA], [KNEE], [DETAIL], [DRS], or [DNR] cannot be set when the haze elimination function is enabled.

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



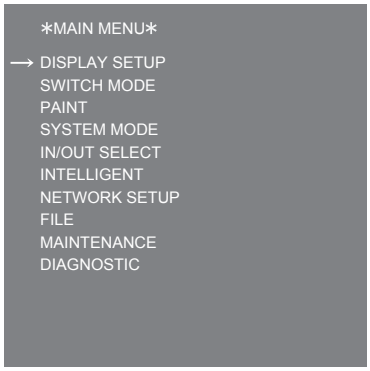


Fig. 1

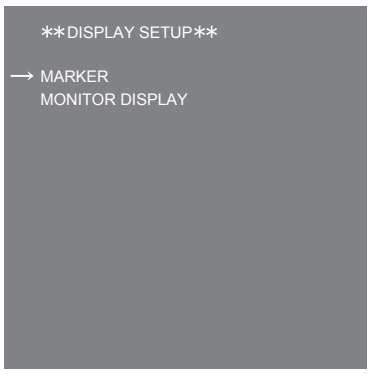


Fig. 2

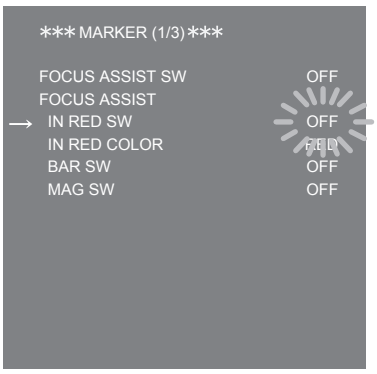


Fig. 3

1 Press the <MENU> button.

The [MAIN MENU] of the camera is displayed in the image output from the <HD SDI OUT 2> terminal. (Fig. 1)

2 Turn the jog dial button to select an item.

3 Press the jog dial button.

The menu of the selected item is accessed. (Fig. 2)

4 Turn the jog dial button to select an item.

5 Press the jog dial button.

The menu of the selected item is accessed. (Fig. 3)

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. (Fig. 3)

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.

NOTE

- This can be changed quickly by pressing and turning the jog dial button.

Entering characters

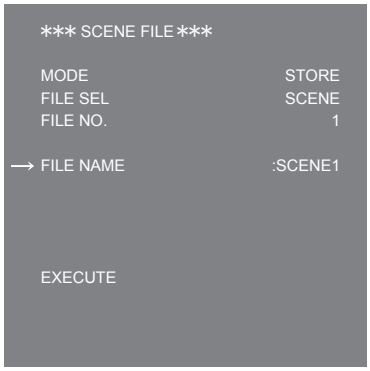


Fig. 1

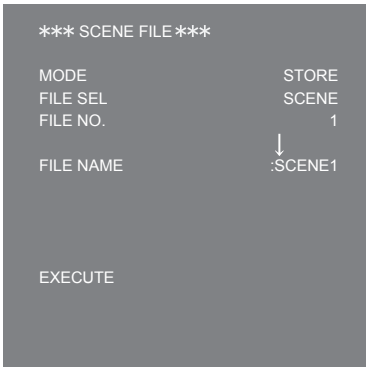


Fig. 2

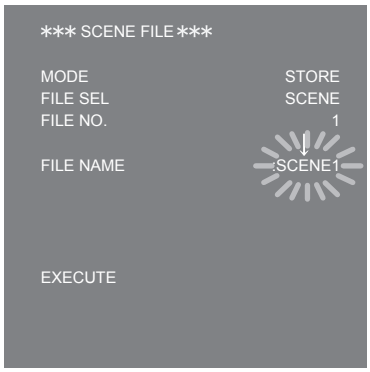


Fig. 3

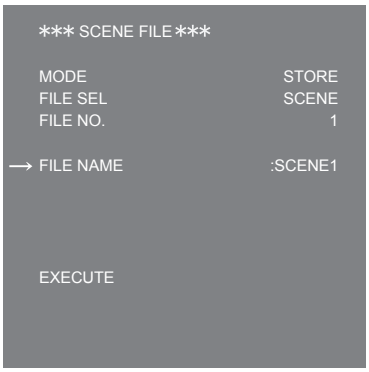


Fig. 4

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. (Fig. 1, Fig. 2)

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. (Fig. 3)

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. (Fig. 4)

Menu configuration

[MAIN MENU]

[DISPLAY SETUP]	Configures the setting regarding what to be displayed in the monitor.
[SWITCH MODE]	Configures the function assigned to the switch.
[PAINT]	Configures the image settings.
[SYSTEM MODE]	Configures the system frequency and shooting mode.
[IN/OUT SELECT]	Configures the operation mode of the external input/output and each connection.
[INTELLIGENT]	Adjusts the automatic image level and color temperature.
[NETWORK SETUP]	Configures the settings for the network.
[FILE]	Performs the operation regarding handling of the scene file.
[MAINTENANCE]	Adjusts the lens files.
[DIAGNOSTIC]	Displays the firmware version and energized time of the unit.

Menu list

S: Can be saved and loaded as a scene file data.
U: Can be saved and loaded as a user file data.

[DISPLAY SETUP]

[MARKER]

Item		Description of settings
[FOCUS ASSIST SW] U		Enables/disables the focus assist switch. **[OFF], [ON]** • Factory setting: [OFF]
[FOCUS ASSIST]	—	Displays the type of the focus assist.
	[IN RED SW] U	Enables/disables the IN RED switch. **[OFF], [ON]** • Factory setting: [OFF]
	[IN RED COLOR] U	Sets the color for IN RED. **[RED], [GREEN]** • Factory setting: [RED]
	[BAR SW] U	Enables/disables the BAR switch. **[OFF], [ON]** • Factory setting: [OFF]
	[MAG SW] U	Enables/disables the magnification display function. **[OFF], [ON]** • Factory setting: [OFF]
[ZEBRA]	— U	Enables/disables the luminance zebra. **[OFF], [ON]** • Factory setting: [OFF]
	[ZEBRA1 LEVEL] U	Sets the level of the luminance zebra 1. **[0%] - [109%]** • Factory setting: [80%]
	[ZEBRA2 LEVEL] U	Sets the level of the luminance zebra 2. **[0%] - [109%]** • Factory setting: [100%]
	[ZEBRA PATTERN] U	Sets the pattern of the luminance zebra. **[1], [1+2], [SPOT]** • Factory setting: [1]
[FRAME LEVEL SWITCH]	— U	Shows/hides the level display outside the frame marker. **[OFF], [ON]** • Factory setting: [OFF]
	[FRAME LEVEL] U	Sets the level to be displayed outside the frame marker. **[0] - [15]** • Factory setting: [15]
[FRAME MARK SWITCH] U		Shows/hides the frame marker. **[OFF], [ON]** • Factory setting: [OFF]
[FRAME SIG] U		Sets the aspect ratio of the frame marker. **[4:3], [13:9], [14:9], [15:9], [16:9], [CINEMA], [VISTA]** • Factory setting: [4:3]
[SAFETY MARK SWITCH] U		Shows/hides the safety marker. **[OFF], [ON]** • Factory setting: [OFF]
[SAFETY MARK] U		Sets the aspect ratio of the safety marker. **[16:9], [15:9], [14:9], [13:9], [4:3]** • Factory setting: [16:9]
[SAFETY AREA] U		Sets the size of the safety area. **[80%] - [100%]** • Factory setting: [80%]
[CENTER MARK]	— U	Shows/hides the center marker. **[OFF], [ON]** • Factory setting: [OFF]
	[CENTER MARK SELECT] U	Sets the size of the center marker. **[1] - [7]** • Factory setting: [1]
[MARKER LEVEL] U		Sets the brightness of the markers and on-screen display. **[50%], [60%], [70%], [80%], [90%], [100%]** • Factory setting: [100%]

[MONITOR DISPLAY]

Item	Description of settings
[F NUMBER] U	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	Shows/hides the zoom position display. **[OFF], [ON]** • Factory setting: [OFF] This is displayed when you use a lens that outputs position information.
[EXTENDER] U	Shows/hides the extender display. **[OFF], [ON]** • Factory setting: [OFF]
[FILTER] U	Shows/hides the filter position display. **[OFF], [ON]** • Factory setting: [OFF]
[MASTER GAIN] U	Shows/hides the master gain display. **[OFF], [ON]** • Factory setting: [OFF]
[SHUTTER] U	Shows/hides the electronic shutter display. **[OFF], [ON]** • Factory setting: [OFF]
[DIGITAL EXTENDER] U	Shows/hides the digital extender display. **[OFF], [ON]** • Factory setting: [OFF]
[DRS] U	Shows/hides the dynamic range stretcher display. **[OFF], [ON]** • Factory setting: [OFF]
[STATUS(AUTO)] U	Shows/hides the display appearing when AWB/ABB are activated or deactivated. **[OFF], [ON]** • Factory setting: [OFF]
[SYSTEM MODE] U	Shows/hides the system frequency/resolution display. **[OFF], [ON]** • Factory setting: [OFF]
[COLOR TEMP] U	Shows/hides the color temperature display. **[OFF], [ON]** • Factory setting: [OFF]
[FBC] U	Shows/hides the flash band compensation display. **[OFF], [ON]** • Factory setting: [OFF]
[SHOOTING MODE] U	Shows/hides the sensitivity mode display. **[OFF], [ON]** • Factory setting: [OFF]
[MAG] U	Shows/hides the focus assist expanded display. **[OFF], [ON]** • Factory setting: [ON]
[TALLY] U	Shows/hides the tally display. **[OFF], [ON]** • Factory setting: [OFF]
[FRAME MIX] U	Shows/hides the frame mix (total gain) display. **[OFF], [ON]** • Factory setting: [OFF]
[AGC] U	Shows/hides the auto gain control display. **[OFF], [ON]** • Factory setting: [OFF]
[ATW] U	Shows/hides the auto tracking white balance display. **[OFF], [ON]** • Factory setting: [OFF]
[HAZE REDUCTION] U	Shows/hides the haze elimination mode display. **[OFF], [ON]** • Factory setting: [OFF]

[SWITCH MODE]

[ND FILTER]

Item	Description of settings
[ND FILTER] US	Selects the ND filter. **[CLEAR], [1/4], [1/16], [1/64]** • Factory setting: [CLEAR]

[DIGITAL EXTENDER]

Item	Description of settings
[DIGITAL EXTENDER] U S	Enables/disables the function to double the image by digital process. **[OFF], [ON]** • Factory setting: [OFF]

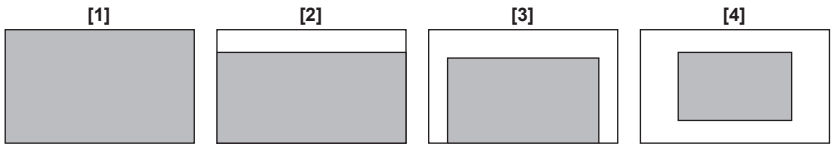
[GAIN SETTING]

Item	Description of settings
[GAIN SELECT] U S	Switches the gain switch. **[LOW], [MID], [HIGH], [S.GAIN1], [S.GAIN2], [S.GAIN3]** • Factory setting: [LOW]
[LOW GAIN] U S	Sets the gain increase volume when [LOW] is selected in [GAIN SELECT]. **[–6dB] - [36dB]** (3 dB steps) • Factory setting: [0dB]
[MID GAIN] U S	Sets the gain increase volume when [MID] is selected in [GAIN SELECT]. **[–6dB] - [36dB]** (3 dB steps) • Factory setting: [9dB]
[HIGH GAIN] U S	Sets the gain increase volume when [HIGH] is selected in [GAIN SELECT]. **[–6dB] - [36dB]** (3 dB steps) • Factory setting: [18dB]

[SUPER GAIN]

Item	Description of settings
[MEMORY SELECT] U S	Selects the save table for the super gain. **[S.GAIN1], [S.GAIN2], [S.GAIN3]** • Factory setting: [S.GAIN1]
[TOTAL GAIN]	Displays the total of [GAIN] and [FRAME MIX].
[GAIN] U S	Sets the gain increase volume. **[0dB] - [36dB]** (3 dB steps) • Factory setting: [30dB] ([S.GAIN1]), [36dB] ([S.GAIN2]), [36dB] ([S.GAIN3])
[FRAME MIX] U S	Sets the gain increase volume by accumulation. **[OFF], [+6dB] - [+24dB]** (6 dB steps) • Factory setting: [OFF] ([S.GAIN1]), [+12dB] ([S.GAIN2]), [+24dB] ([S.GAIN3])
[H DETAIL LEVEL] U S	Sets the level of the horizontal detail. **[0] - [63]** • Factory setting: [20] (UHD mode), [15] (HD mode)
[CRISP] U S	Sets the detail signal noise removal level. **[0] - [63]** • Factory setting: [5] (UHD mode), [0] (HD mode)
[LEVEL DEPENDENT SWITCH] U S	Enables/disables the function to eliminate the detail in the dark areas. **[OFF], [ON]** • Factory setting: [ON]
[LEVEL DEPENDENT] U S	Eliminates the detail in the dark areas. The larger the value, the range to eliminate is larger. **[0] - [15]** • Factory setting: [8]
[PEAK FREQUENCY] U S	Sets the peak frequency of the horizontal detail. UHD mode: **[0] - [4]** HD mode: **[0] - [31]** • Factory setting: [3] (UHD mode), [18] (HD mode)
[MASTER GAMMA] U S	Adjusts the gamma characteristic. When [MAIN MENU] → [PAINT] → [GAMMA/BLACK GAMMA] → [GAMMA MODE SELECT] is set to [HD]: **[0.150] - [0.750]** (0.0020 steps) When [MAIN MENU] → [PAINT] → [GAMMA/BLACK GAMMA] → [GAMMA MODE SELECT] is set to [FILMLIKE1]/[FILMLIKE2]/[FILMLIKE3]: **[0.300] - [0.750]** (0.0025 steps) When [MAIN MENU] → [PAINT] → [GAMMA/BLACK GAMMA] → [GAMMA MODE SELECT] is set to [FILE REC]/[VIDEO REC]: **[0.150] - [0.750]** (0.0020 steps) When [MAIN MENU] → [PAINT] → [DRS] → [DRS] is set to [ON]: **[0.150] - [0.750]** (0.0020 steps) • Factory setting: [0.50] ([S.GAIN1]), [0.60] ([S.GAIN2]), [0.60] ([S.GAIN3])
[MASTER PEDESTAL OFFSET] U S	Adjusts the black level. **[–200] - [+200]** • Factory setting: [000]
[R PEDESTAL OFFSET] U S	Adjusts the compensation value of the pedestal of Rch. **[–200] - [+200]** • Factory setting: [000]
[B PEDESTAL OFFSET] U S	Adjusts the compensation value of the pedestal of Bch. **[–200] - [+200]** • Factory setting: [000]

[IRIS]

Item	Description of settings
[WINDOW SELECT] U	Sets the photometric range. **[1] - [4]** The image of window will be as follows.  • Factory setting: [1]
[IRIS LEVEL] U	Adjusts the target value (brightness) of the auto iris. **[0] - [100]** • Factory setting: [50]
[PEAK RATIO] U	Sets the ratio of the peak value and average value of auto iris photometry. **[0] - [100]** • Factory setting: [50]
[IRIS RANGE] U	Sets the fine adjustment range of the auto iris level by ROP. **[NORMAL], [(3/4)], [(2/4)], [(1/4)]** • Factory setting: [NORMAL]
[IRIS SPEED] U	Sets the auto iris speed. **[1] - [25]** • Factory setting: [15]
[IRIS GAIN] U	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 adjustment with the iris gain volume of the lens. **[LENS], [CAM]** • Factory setting: [LENS]
[LENS EXT COMP SW] U	Sets the iris compensation when the lens extender is enabled. **[OFF], [ON]** • Factory setting: [OFF]
[LENS EXT COMP LEVEL] U	Sets the iris compensation value when the lens extender is enabled. **[–100] - [+100]** • Factory setting: [0]
[IRIS OFFSET SW] U	Enables/disables the compensation against the iris control value. **[OFF], [ON]** • Factory setting: [OFF]
[IRIS OFFSET] U	Compensates the iris control value from the camera. **[–100] - [+100]** • Factory setting: [0]

[FBC SETTING]

It is displayed as [---] in the UHD mode/UHD CROP mode.

Item	Description of settings
[FBC] U	Enables/disables the flash band compensation. **[OFF], [ON]** • Factory setting: [OFF]

[W/B BAL SETTING]

Item	Description of settings
[AWB SET]	Executes the automatic white balance. **[NO], [YES]**
[ABB SET]	Executes the automatic black balance. **[NO], [YES]**

[SHUTTER SPEED]

Item	Description of settings
[SHUTTER SW] U S	Enables/disables the shutter function. **[OFF]:** Disables the shutter. **[ON]:** Enables the shutter speed with [SHUTTER SPEED]/[SYNCHRO SCAN]. • Factory setting: [OFF]
[SHUTTER MODE] U S	Selects the operation mode of the shutter. **[SHUTTER]:** Sets the shutter speed to that configured for [SHUTTER SPEED]. **[SYNCHRO]:** Sets the shutter speed to that configured for [SYNCHRO SCAN]. • Factory setting: [SHUTTER]

Item	Description of settings
[SHUTTER SPEED] U S	Sets the shutter speed when [SHUTTER MODE] is [SHUTTER]. [59.94i]/[59.94p] mode: **[1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000], [180.0deg], [172.8deg], [144.0deg], [120.0deg], [90.0deg], [45.0deg]** [50i]/[50p] mode: **[1/60], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000], [180.0deg], [172.8deg], [144.0deg], [120.0deg], [90.0deg], [45.0deg]** [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], [180.0deg], [172.8deg], [144.0deg], [120.0deg], [90.0deg], [45.0deg]** [25p] mode: **[1/48], [1/50], [1/60], [1/96], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000], [180.0deg], [172.8deg], [144.0deg], [120.0deg], [90.0deg], [45.0deg]** [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], [180.0deg], [172.8deg], [144.0deg], [120.0deg], [90.0deg], [45.0deg]** • Factory setting: [1/100]
[SYNCHRO SCAN DISP] U S	Sets the unit to display the synchro scan mode. **[SEC]:** Displays in time. **[DEG]:** Displays at shutter open angle. • Factory setting: [SEC]
[SYNCHRO SCAN] U S	Sets the shutter speed when [SHUTTER MODE] is [SYNCHRO]. [59.94i]/[59.94p] mode: **[61.7Hz] - [6130Hz]** • Factory setting: [61.7Hz] [50i]/[50p] mode: **[51.5Hz] - [6250Hz]** • Factory setting: [51.5Hz] [29.97p] mode: **[30.9Hz] - [2600Hz]** • Factory setting: [30.9Hz] [25p] mode: **[25.7Hz] - [3130Hz]** • Factory setting: [25.7Hz] [23.98p] mode: **[24.7Hz] - [2880Hz]** • Factory setting: [24.7Hz] When [DEG] is displayed: **[3.0deg] - [359.5deg]** • Factory setting: [180.0deg]

[TALLY]

Item	Description of settings
[FRONT TALLY] U	Sets enable/disable and brightness of the front tally lamp. **[OFF], [LOW], [HIGH]** • Factory setting: [LOW]
[BACK TALLY] U	Sets enable/disable and brightness of the back tally lamp. **[OFF], [LOW], [HIGH]** • Factory setting: [LOW]

[BAR SETTING]

Item	Description of settings
[BAR SW] U	Enables/disables the color bar. **[OFF], [ON]** • Factory setting: [OFF]
[BAR SELECT] U	Sets the type of the color bar. **[FULL], [SMPTE], [ARIB]** • Factory setting: [FULL]

[PAINT]

[PAINT SWITCH]

Item	Description of settings
[WHITE SHADING] U S	Enables/disables the white shading (saw-toothed waveform or parabolic waveform). **[OFF], [ON]** • Factory setting: [ON]
[FLARE] U S	Enables/disables flare. **[OFF], [ON]** • Factory setting: [ON]

Item	Description of settings
[GAMMA] US	Enables/disables gamma. **[OFF], [ON]** • Factory setting: [ON]
[BLACK GAMMA] US	Enables/disables black gamma. **[OFF], [ON]** • Factory setting: [OFF]
[KNEE] US	Enables/disables knee. **[OFF], [MANUAL], [AUTO]** • Factory setting: [MANUAL]
[WHITE CLIP] US	Enables/disables white clips. **[OFF], [ON]** • Factory setting: [ON]
[DRS SW] US	Enables/disables dynamic range stretcher. **[OFF], [ON]** It is displayed as [---] in the UHD mode/UHD CROP mode. • Factory setting: [OFF]
[DETAIL] US	Enables/disables the detail. **[OFF], [ON]** • Factory setting: [ON]
[SKIN TONE DETAIL] US	Enables/disables the skin tone detail. **[OFF], [ON]** • Factory setting: [OFF]
[MATRIX] US	Enables/disables matrix (linear matrix/12-axis color correction). **[OFF], [ON]** • Factory setting: [OFF]
[LINEAR MATRIX] US	Enables/disables linear matrix. **[OFF], [ON]** • Factory setting: [OFF]
[COLOR CORRECT] US	Enables/disables 12-axis color correction. **[OFF], [ON]** • Factory setting: [OFF]

[PEDESTAL]

Item	Description of settings
[MASTER PEDESTAL] US	Adjusts the black level of the master pedestal. **[−99] - [99]** • Factory setting: [0]
[R PEDESTAL] US	Sets the correction level of red to the master pedestal. **[−800] - [+800]** • Factory setting: [0]
[G PEDESTAL] US	Sets the correction level of green to the master pedestal. **[−800] - [+800]** • Factory setting: [0]
[B PEDESTAL] US	Sets the correction level of blue to the master pedestal. **[−800] - [+800]** • Factory setting: [0]
[PEDESTAL OFFSET] US	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]

Item	Description of settings
[CHROMA LEVEL SWITCH] US	Enables/disables the gain adjustment of chroma. **[OFF], [ON]** • Factory setting: [OFF]
[CHROMA LEVEL] US	Sets the gain adjustment of chroma. **[−100%] - [+40%]** • Factory setting: [0%]

[COLOR TEMP SETTING]

Item		Description of settings
[COLOR TEMP PRESET]	[COLOR TEMP PRE SWITCH] US	Enables/disables the color temperature adjustment. **[OFF], [ON]** • Factory setting: [OFF]
	[COLOR TEMP] US	Sets the color temperature when [COLOR TEMP PRE SWITCH] is [ON]. **[2000K] - [15000K]** • Factory setting: [3200K]

Item		Description of settings
	[R GAIN] U S	Sets the correction level of red to the color temperature. **[–400] - [+400]** • Factory setting: [0]
	[B GAIN] U S	Sets the correction level of blue to the color temperature. **[–400] - [+400]** • Factory setting: [0]
	[G AXIS] U S	Sets the correction level of green to the color temperature. **[–400] - [+400]** • Factory setting: [0]
[COLOR TEMP]	[COLOR TEMP] U S	Sets the color temperature when the white balance is executed. **[2000K] - [15000K]** • Factory setting: [3200K]
	[R GAIN] U S	Sets the correction level of red to the color temperature. **[–400] - [+400]** • Factory setting: [0]
	[B GAIN] U S	Sets the correction level of blue to the color temperature. **[–400] - [+400]** • Factory setting: [0]
	[G AXIS] U S	Sets the correction level of green to the color temperature. **[–400] - [+400]** • Factory setting: [0]

[RB GAIN CONTROL SETTING]

Item		Description of settings
[RB GAIN PRESET]	[R GAIN] U S	Sets the preset value of Rch gain. This is not available when [COLOR TEMP PRE SWITCH] is set to [OFF]. **[–1000] - [+1000]** • Factory setting: [0]
	[B GAIN] U S	Sets the preset value of Bch gain. This is not available when [COLOR TEMP PRE SWITCH] is set to [OFF]. **[–1000] - [+1000]** • Factory setting: [0]
[RB GAIN]	[R GAIN] U S	Sets the correction level of red to the gain. **[–1000] - [+1000]** • Factory setting: [0]
	[B GAIN] U S	Sets the correction level of blue to the gain. **[–1000] - [+1000]** • Factory setting: [0]
	[GAIN OFFSET] U S	Sets if the gain levels of Rch and Bch are maintained when the automatic white balance is adjusted. **[ON]:** Maintains the values set with [R GAIN] and [B GAIN]. **[OFF]:** The values for [R GAIN] and [B GAIN] is set to [0]. • Factory setting: [OFF]

[WHITE SHADING]

Item	Description of settings
[CORRECT] U S	Enables/disables the white shading (saw-toothed waveform or parabolic waveform) correction. **[OFF], [ON]** • Factory setting: [ON]
[H SAW R] U S	Adjusts the white shading gain for Rch horizontally using a saw-toothed waveform. **[–100] - [+100]** • Factory setting: [0]
[H SAW G] U S	Adjusts the white shading gain for Gch horizontally using a saw-toothed waveform. **[–100] - [+100]** • Factory setting: [0]
[H SAW B] U S	Adjusts the white shading gain for Bch horizontally using a saw-toothed waveform. **[–100] - [+100]** • Factory setting: [0]
[H PARA R] U S	Adjusts the white shading gain for Rch horizontally using a parabolic waveform. **[–100] - [+100]** • Factory setting: [0]
[H PARA G] U S	Adjusts the white shading gain for Gch horizontally using a parabolic waveform. **[–100] - [+100]** • Factory setting: [0]
[H PARA B] U S	Adjusts the white shading gain for Bch horizontally using a parabolic waveform. **[–100] - [+100]** • Factory setting: [0]
[V SAW R] U S	Adjusts the white shading gain for Rch vertically using a saw-toothed waveform. **[–100] - [+100]** • Factory setting: [0]

Item	Description of settings
[V SAW G] U S	Adjusts the white shading gain for Gch vertically using a saw-toothed waveform. **[–100] - [+100]** • Factory setting: [0]
[V SAW B] U S	Adjusts the white shading gain for Bch vertically using a saw-toothed waveform. **[–100] - [+100]** • Factory setting: [0]
[V PARA R] U S	Adjusts the white shading gain for Rch vertically using a parabolic waveform. **[–100] - [+100]** • Factory setting: [0]
[V PARA G] U S	Adjusts the white shading gain for Gch vertically using a parabolic waveform. **[–100] - [+100]** • Factory setting: [0]
[V PARA B] U S	Adjusts the white shading gain for Bch vertically using a parabolic waveform. **[–100] - [+100]** • Factory setting: [0]

[FLARE]

Item	Description of settings
[FLARE] U S	Enables/disables flare correction. **[OFF], [ON]** • Factory setting: [ON]
[MASTER FLARE] U S	Adjusts the master flare. **[–100] - [+100]** • Factory setting: [0]
[R FLARE] U S	Adjusts the Rch flare. **[–100] - [+100]** • Factory setting: [0]
[G FLARE] U S	Adjusts the Gch flare. **[–100] - [+100]** • Factory setting: [0]
[B FLARE] U S	Adjusts the Bch flare. **[–100] - [+100]** • Factory setting: [0]

[GAMMA/BLACK GAMMA]

Item	Description of settings
[GAMMA] U S	Enables/disables gamma correction. **[OFF], [ON]** • Factory setting: [ON]
[GAMMA MODE SELECT] U S	Selects the type of gamma. **[HD], [FILMLIKE1], [FILMLIKE2], [FILMLIKE3], [FILM REC], [VIDEO REC]** • Factory setting: [HD]
[MASTER GAMMA] U S	Adjusts the gamma characteristic. When [GAMMA MODE SELECT] is [HD]: **[0.150] - [0.750]** (0.0020 step) When [GAMMA MODE SELECT] is [FILMLIKE1]/[FILMLIKE2]/[FILMLIKE3]: **[0.3000] - [0.7500]** (0.0025 step) When [GAMMA MODE SELECT] is [FILE REC]/[VIDEO REC]: **[0.150] - [0.750]** (0.0020 step) When [MAIN MENU] → [PAINT] → [DRS] → [DRS] is [ON]: **[0.150] - [0.750]** (0.0020 step) • Factory setting: [0.450]
[R GAMMA] U S	Adjusts the gamma characteristic of red to the master gamma. **[–75] - [+75]** • Factory setting: [0]
[B GAMMA] U S	Adjusts the gamma characteristic of blue to the master gamma. **[–75] - [+75]** • Factory setting: [0]
[BLACK STRECH LEVEL] U S	(Only when [FILM REC] is set) Sets the position of the gamma stretch. **[0%] - [30%]** • Factory setting: [0%]
[DYNAMIC LEVEL] U S	(Only when [FILM REC] is set) Sets dynamic range. **[200%], [300%], [400%], [500%]** • Factory setting: [500%]
[KNEE POINT] U S	(Only when [VIDEO REC] is set) Sets the knee point. **[30] - [90]** • Factory setting: [30]
[KNEE SLOPE] U S	(Only when [VIDEO REC] is set) Sets the knee slope. **[150%]/[200%]/[250%]/[300%]/[350%]/[400%]/[450%]/[500%]/[550%]/[600%]** • Factory setting: [150%]
[BLACK GAMMA] U S	Enables/disables black gamma. This cannot be set when [MAIN MENU] → [PAINT] → [DRS] → [DRS] → [ON] is set. **[OFF], [ON]** • Factory setting: [OFF]

Item	Description of settings
[MASTER BLACK GAMMA] U S	Adjusts the gamma characteristic adjacent to black. **[–32] - [+32]** • Factory setting: [0]
[R BLACK GAMMA] U S	Adjusts the gamma characteristic of red adjacent to black to the master gamma. **[–20] - [+20]** • Factory setting: [0]
[B BLACK GAMMA] U S	Adjusts the gamma characteristic of blue adjacent to black to the master gamma. **[–20] - [+20]** • Factory setting: [0]

[KNEE]

The setting becomes disabled and cannot be set in the following cases.

- When [GAMMA/BLACK GAMMA] → [GAMMA MODE SELECT] is set to [FILE REC]/[VIDEO REC]
- When [MAIN MENU] → [PAINT] → [DRS] → [DRS] is set to [ON]

Item		Description of settings
[KNEE]	— U S	Enables/disables the knee function. **[OFF], [MANUAL], [AUTO]** • Factory setting: [MANUAL]
	[KNEE MASTER POINT] U S	Sets the knee point position. **[080.00%] - [110.00%]** (0.25% step) • Factory setting: [95.00%]
	[KNEE R POINT] U S	Adjusts the knee point of red to [KNEE MASTER POINT]. **[–25.00%] - [25.00%]** (0.25% steps) • Factory setting: [0.00%]
	[KNEE B POINT] U S	Adjusts the knee point of blue to [KNEE MASTER POINT]. **[–25.00%] - [25.00%]** (0.25% steps) • Factory setting: [0.00%]
	[KNEE MASTER SLOPE] U S	Sets the knee slope. **[00] - [199]** • Factory setting: [130]
	[KNEE R SLOPE] U S	Adjusts the knee slope of red to [KNEE MASTER SLOPE]. **[–99] - [+99]** • Factory setting: [0]
	[KNEE B SLOPE] U S	Adjusts the knee slope of blue to [KNEE MASTER SLOPE]. **[–99] - [+99]** • Factory setting: [0]
	[AUTO KNEE POINT] U S	Sets the break position of the auto knee. **[080.00%] - [107.00%]** • Factory setting: [95%]
	[AUTO KNEE LEVEL] U S	Sets the maximum level of the auto knee. **[100%] - [109%]** • Factory setting: [108%]
	[AUTO KNEE RESPONSE] U S	Sets the response speed of the auto knee. The smaller the setting value, the faster the response speed. **[1] - [8]** • Factory setting: [4]

[WHITE CLIP]

Item	Description of settings
[WHITE CLIP] U S	Enables/disables the white clip function. **[OFF], [ON]** • Factory setting: [ON]
[MASTER WHITE CLIP LEVEL] U S	Sets the white clip level. **[80%] - [109%]** • Factory setting: [109%]
[R WHITE CLIP LEVEL] U S	Adjusts red to [MASTER WHITE CLIP LEVEL]. **[–15%] - [+15%]** • Factory setting: [0%]
[B WHITE CLIP LEVEL] U S	Adjusts blue to [MASTER WHITE CLIP LEVEL]. **[–15%] - [+15%]** • Factory setting: [0%]
[HI-COLOR] U S	Sets whether to improve the color reproduction in high-luminance areas. **[OFF], [ON]** • Factory setting: [OFF]
[HI-COLOR LEVEL] U S	Sets the level of the mode that expands the color dynamic range. **[1] - [32]** • Factory setting: [32]

[DRS]

Item	Description of settings
[DRS] U S	Enables/disables the dynamic range stretcher function. Set this to [ON] to automatically adjust the contrast. **[OFF], [ON]** It is displayed as [---] in the UHD mode/UHD CROP mode. • Factory setting: [OFF]
[EFFECT DEPTH] U S	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]** It is displayed as [---] in the UHD mode/UHD CROP mode. • Factory setting: [5]

[DETAIL SETTING]

Item	Description of settings
[DETAIL] U S	Enables/disables all detail functions. **[OFF], [ON]** • Factory setting: [ON]
[MASTER DETAIL] U S	Sets the master detail. **[−31] - [+31]** • Factory setting: [0]
[H DETAIL LEVEL] U S	Sets the correction level of the horizontal detail. **[00] - [63]** • Factory setting: [20] (UHD mode/UHD CROP mode), [15] (HD mode)
[V DETAIL LEVEL] U S	Sets the correction level of the vertical detail. **[00] - [63]** • Factory setting: [32] (UHD mode/UHD CROP mode), [27] (HD mode)
[PEAK FREQUENCY] U S	Sets the peak frequency of the horizontal detail. UHD mode/UHD CROP mode: **[0] - [4]** HD mode: **[00] - [31]** • Factory setting: [3] (UHD mode/UHD CROP mode), [18] (HD mode)
[V DETAIL FREQUENCY] U S	Sets the vertical detail frequency. UHD mode/UHD CROP mode: **[0] - [4]** HD mode: **[00] - [31]** • Factory setting: [3] (UHD mode/UHD CROP mode), [18] (HD mode)
[CRISP] U S	Sets the detail signal noise removal level. **[00] - [63]** • Factory setting: [5] (UHD mode/UHD CROP mode), [0] (HD mode)
[DETAIL GAIN(+)] U S	Sets the detail level in the + (upward) direction. It is displayed as [---] in the UHD mode/UHD CROP mode. **[−31] - [+31]** • Factory setting: [0]
[DETAIL GAIN(−)] U S	Sets the detail level in the − (downward) direction. It is displayed as [---] in the UHD mode/UHD CROP mode. **[−31] - [+31]** • Factory setting: [0]
[DETAIL CLIP+] U S	Adjust the detail clip to reduce glare produced by an excess of details. **[00] - [63]** • Factory setting: [0]
[DETAIL CLIP−] U S	Adjusts the length of the undershoot of the detail edge component. **[00] - [63]** • Factory setting: [0]
[DETAIL SOURCE] U S	Sets the RGB signal component ratio to create the detail. **[(G+R)/2], [(G+B)/2], [(2G+B+R)/4], [(3G+R)/4], [R], [G]** It is displayed as [---] in the UHD mode/UHD CROP mode. • Factory setting: [(G+R)/2]
[KNEE APERTURE LEVEL] U S	Adjusts the knee aperture level. **[00] - [39]** • Factory setting: [0] (UHD mode/UHD CROP mode), [5] (HD mode)
[LEVEL DEPENDENT SWITCH] U S	Enables/disables the function to remove details of dark areas. **[OFF], [ON]** • Factory setting: [ON] (UHD mode/UHD CROP mode), [OFF] (HD mode)
[LEVEL DEPENDENT] U S	Sets the level to remove details of dark areas. **[00] - [15]** • Factory setting: [8]

[DOWNCON DETAIL SETTING]

This item is not displayed in the HD mode.

Item	Description of settings
[DETAIL] U S	Enables/disables all detail functions. **[OFF], [ON]** • Factory setting: [ON]
[MASTER DETAIL] U S	Sets the master detail. **[–31] - [+31]** • Factory setting: [0]
[H DETAIL LEVEL] U S	Sets the correction level of the horizontal detail. **[00] - [63]** • Factory setting: [15]
[V DETAIL LEVEL] U S	Sets the correction level of the vertical detail. **[00] - [63]** • Factory setting: [15]
[PEAK FREQUENCY] U S	Sets the peak frequency of the horizontal detail. **[00] - [31]** • Factory setting: [10]
[V DETAIL FREQUENCY] U S	Sets the vertical detail frequency. **[00] - [31]** • Factory setting: [10]
[CRISP] U S	Sets the detail signal noise elimination level. **[00] - [63]** • Factory setting: [10]
[DETAIL GAIN(+)] U S	Sets the detail level in the + (upward) direction. **[–31] - [+31]** • Factory setting: [0]
[DETAIL GAIN(–)] U S	Sets the detail level in the – (downward) direction. **[–31] - [+31]** • Factory setting: [0]
[DETAIL CLIP+] U S	Adjust the detail clip to reduce glare produced by an excess of details. **[00] - [63]** • Factory setting: [0]
[DETAIL CLIP–] U S	Adjusts the length of the undershoot of the detail edge component. **[00] - [63]** • Factory setting: [0]
[DETAIL SOURCE] U S	Sets the RGB signal component ratio to create the detail. **[(G+R)/2], [(G+B)/2], [(2G+B+R)/4], [(3G+R)/4], [R], [G]** • Factory setting: [(G+R)/2]
[KNEE APERTURE LEVEL] U S	Adjusts the knee aperture level. **[00] - [39]** • Factory setting: [00]
[LEVEL DEPENDENT SWITCH] U S	Enables/disables the function to eliminate the detail in the dark areas. **[OFF], [ON]** • Factory setting: [OFF]
[LEVEL DEPENDENT] U S	Sets the level to eliminate the detail in the dark areas. **[00] - [15]** • Factory setting: [8]

[SKIN TONE DETAIL SETTING]

Item		Description of settings
[SKIN TONE DETAIL] U S		Enables/disables the skin tone detail function. **[OFF], [ON]** • Factory setting: [OFF]
[SKIN GET]	—	Selects whether to automatically obtain the color saturation and hue information from the cursor position. **[NO], [YES]**
	[MEMORY SELECT] U S	Selects the skin tone table of the subject to apply the skin tone table to. **[A], [B], [C]** • Factory setting: [A]
	[CURSOR] U S	Shows/hides the box cursor in the center of the screen. **[OFF], [ON]** • Factory setting: [OFF]
	[H POSITION] U S	Adjusts the horizontal position of the cursor. **[0%] - [100.00%]** (0.25% steps) • Factory setting: [50.00%]
	[V POSITION] U S	Adjusts the vertical position of the cursor. **[0%] - [100.00%]** (0.25% steps) • Factory setting: [50.00%]
[ZEBRA]	— U S	Enables/disables the zebra display. **[OFF], [ON]** • Factory setting: [OFF]

Item		Description of settings
	[ZEBRA EFFECT MEMORY] U S	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		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		Adjusts the skin tone detail. **[–63] - [+63]** • Factory setting: [+63]
[I CENTER] U S		Sets the center position on the I axis (the area where the skin tone effect is applied). **[0] - [255]** • Factory setting: [87] (UHD mode/UHD CROP mode), [18] (HD mode)
[I WIDTH] U S		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: [20] (UHD mode/UHD CROP mode), [8] (HD mode)
[Q WIDTH] U S		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: [43]
[Q PHASE] U S		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]

[LINEAR MATRIX]

Item		Description of settings
[MATRIX] U S		Enables/disables the matrix function. **[OFF], [ON]** • Factory setting: [OFF]
[LINEAR MATRIX]	— U S	Enables/disables the linear matrix function. **[OFF], [ON]** • Factory setting: [OFF]
	[LINEAR TABLE] U S	Selects the table for linear matrix. **[A], [B]** • Factory setting: [A]
[COLOR CORRECT]	— U S	Enables/disables the 12-axis color correction function. **[OFF], [ON]** • Factory setting: [OFF]
	[COLOR CORRECT TABLE] U S	Selects the table for color correction. **[A], [B]** • Factory setting: [A]
[MATRIX (R-G)_N] U S		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		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		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		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		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		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		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		Adjusts the linear matrix between green and blue. This item is not available when [MATRIX] is set to [OFF]. **[–31] - [+31]** • Factory setting: [0]

Item	Description of settings
[MATRIX (B-R)_N] U S	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	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	Adjusts the linear matrix between blue and green. This item is not available when [MATRIX] is set to [OFF]. **[−31] - [+31]** • Factory setting: [0]
[MATRIX (B-G)_P] U S	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]

Item		Description of settings
[MATRIX] U S		Enables/disables the matrix function. **[OFF], [ON]** • Factory setting: [OFF]
[LINEAR MATRIX]	— U S	Enables/disables the linear matrix function. **[OFF], [ON]** • Factory setting: [OFF]
	[LINEAR TABLE] U S	Selects the table for linear matrix. **[A], [B]** • Factory setting: [A]
[COLOR CORRECT]	— U S	Enables/disables the 12-axis color correction function. **[OFF], [ON]** • Factory setting: [OFF]
	[COLOR CORRECT TABLE] U S	Selects the table for color correction. **[A], [B]** • Factory setting: [A]
[G SAT] U S		Adjusts green color saturation. **[−127] - [+126]** • Factory setting: [0]
[CY-G SAT] U S		Adjusts the color saturation between green and cyan. **[−127] - [+126]** • Factory setting: [0]
[CY SAT] U S		Adjusts cyan color saturation. **[−127] - [+126]** • Factory setting: [0]
[B-CY SAT] U S		Adjusts the color saturation between cyan and blue. **[−127] - [+126]** • Factory setting: [0]
[B SAT] U S		Adjusts blue color saturation. **[−127] - [+126]** • Factory setting: [0]
[MG-B SAT] U S		Adjusts the color saturation between blue and magenta. **[−127] - [+126]** • Factory setting: [0]
[MG_SAT] U S		Adjusts magenta color saturation. **[−127] - [+126]** • Factory setting: [0]
[R-MG SAT] U S		Adjusts the color saturation between magenta and red. **[−127] - [+126]** • Factory setting: [0]
[R SAT] U S		Adjusts red color saturation. **[−127] - [+126]** • Factory setting: [0]
[YL-R SAT] U S		Adjusts the color saturation between red and yellow. **[−127] - [+126]** • Factory setting: [0]
[YL SAT] U S		Adjusts yellow color saturation. **[−127] - [+126]** • Factory setting: [0]
[G-YL SAT] U S		Adjusts the color saturation between yellow and green. **[−127] - [+126]** • Factory setting: [0]
[G PHASE] U S		Adjusts green hue. **[−127] - [+127]** • Factory setting: [0]

Item	Description of settings
[CY-G PHASE] U S	Adjusts the hue between green and cyan. **[–127] - [+127]** • Factory setting: [0]
[CY PHASE] U S	Adjusts cyan hue. **[–127] - [+127]** • Factory setting: [0]
[B-CY PHASE] U S	Adjusts the hue between cyan and blue. **[–127] - [+127]** • Factory setting: [0]
[B PHASE] U S	Adjusts blue hue. **[–127] - [+127]** • Factory setting: [0]
[MG-B PHASE] U S	Adjusts the hue between blue and magenta. **[–127] - [+127]** • Factory setting: [0]
[MG_PHASE] U S	Adjusts magenta hue. **[–127] - [+127]** • Factory setting: [0]
[R-MG PHASE] U S	Adjusts the hue between magenta and red. **[–127] - [+127]** • Factory setting: [0]
[R PHASE] U S	Adjusts red hue. **[–127] - [+127]** • Factory setting: [0]
[YL-R PHASE] U S	Adjusts the hue between red and yellow. **[–127] - [+127]** • Factory setting: [0]
[YL PHASE] U S	Adjusts yellow hue. **[–127] - [+127]** • Factory setting: [0]
[G-YL PHASE] U S	Adjusts the hue between yellow and green. **[–127] - [+127]** • Factory setting: [0]

[SKIN CORRECTION]

Item	Description of settings
[SKIN AREA SW] U S	Enables/disables the function to finely adjust the color of the skin tone area. **[OFF], [ON]** • Factory setting: [OFF]
[SKIN AREA TABLE] U S	Selects the table for the skin tone area. **[A], [B]** • Factory setting: [A]
[SKIN AREA HUE] U S	Finely adjusts the hue of the skin tone area. **[–127] - [+127]** • Factory setting: [0]
[SKIN AREA TONE] U S	Finely adjusts the tone of the skin tone area. **[–127] - [+126]** • Factory setting: [0]

[DNR]

Item	Description of settings
[DNR SW] U S	Enables/disables the noise reduction function. **[OFF], [ON]** • Factory setting: [ON]
[DNR LEVEL] U S	Sets the level for the noise reduction. The larger the value, the stronger the noise reduction effect. **[1] - [5]** • Factory setting: [3]

[HAZE REDUCTION]

Item	Description of settings
[HAZE REDUCTION] U S	Enables/disables the haze elimination function. **[OFF], [ON]** • Factory setting: [OFF]
[HAZE REDUCTION LEVEL] U S	Sets the level of the haze elimination. The larger the value, the stronger the haze elimination effect. **[1] - [3]** • Factory setting: [1]

[SCENE FILE]

Item	Description of settings
[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]	Enters a file name. (15 characters or less) • Factory setting: [SCENE1]
[EXECUTE]	Selects whether to execute with the configured settings. **[NO], [YES]**

[SYSTEM MODE]

[FORMAT] cannot be selected right after the power is turned ON, or when 59.94, 29.97, 23.98 and 50, 25 in [FORMAT] are switched since the unit is starting up.

This is not an error. Perform operation after a while.

Item	Description of settings
[FORMAT]	Sets the system format. **[2160/60p], [2160/59.94p], [2160/50p], [2160/29.97p], [2160/29.97PsF], [2160/25p], [2160/25PsF], [2160/23.98p], [2160/23.98PsF], [1080/60p], [1080/59.94p], [1080/59.94p CROP], [1080/59.94i], [1080/59.94i CROP], [1080/50p], [1080/50p CROP], [1080/50i], [1080/50i CROP], [1080/29.97PsF], [1080/25PsF], [1080/23.98p], [1080/23.98PsF], [720/60p], [720/59.94p], [720/50p]** • Factory setting: [2160/59.94p]
[SHOOTING MODE] U	Sets the shooting mode. **[NORMAL], [HIGH SENS]** • Factory setting: [NORMAL]
[SCAN REVERSE] U	Sets the scan method of the image output. **[OFF], [H], [V], [H+V]** • Factory setting: [OFF]

[IN/OUT SELECT]

Item	Description of settings
[HD-SDI 3G SDI] U	Sets the output format for HD SDI 3G output. **[LEVEL-A], [LEVEL-B]** • Factory setting: [LEVEL-A]
[SDI1 OUT FMT] U	Sets the output format of the <HD SDI OUT 1> terminal. When [FORMAT] is [2160/60p]: **[1080/60p], [1080/60i], [720/60p]** When [FORMAT] is [2160/59.94p]: **[1080/59.94p], [1080/59.94i], [720/59.94p]** When [FORMAT] is [2160/29.97p]: **[1080/29.97PsF]** When [FORMAT] is [2160/23.98p]: **[1080/23.98p], [1080/23.98p over]** When [FORMAT] is [2160/29.97PsF]: **[1080/29.97PsF]** When [FORMAT] is [2160/23.98PsF]: **[1080/23.98PsF], [1080/23.98p over]** When [FORMAT] is [2160/50p]: **[1080/50p], [1080/50i], [720/50p]** When [FORMAT] is [2160/25p]: **[1080/25PsF]** When [FORMAT] is [2160/25PsF]: **[1080/25PsF]** • Factory setting: [1080/59.94p]
[HD-SDI1 CHAR] U	Sets if the character is imposed to the output image of the <HD SDI OUT 1> terminal. **[OFF], [ON]** • Factory setting: [OFF]
[HD-SDI OUT ITEM] U	Sets the content of the character superimposed to the output image from the <HD SDI OUT 1>/<HD SDI OUT 2> terminal. **[MENU ONLY]:** Displays only on the menu. **[STATUS]:** Displays all characters that are the same as displayed in the monitor. • Factory setting: [MENU ONLY]
[UHD-SDI S-LINK] U	Switches the output signal when the 12G output board AK-UHD12G (optional) is installed. **[ON]**: Outputs the 12G SDI signal. **[OFF]**: Outputs the 3G SDI signal. • Factory setting: [ON] Displayed only when the 12G output board AK-UHD12G (optional) is installed.

Item		Description of settings
[UHD-SDI OUT TYPE] U		Sets the output format of UHD. **[SQUARE], [2 SAMPLE INT]** • Factory setting: [SQUARE]
[UHD-SDI 3G SDI] U		Sets the output format for UHD SDI 3G output. **[LEVEL-A], [LEVEL-B]** • Factory setting: [LEVEL-A]
[LAN CHAR] U		Sets if the character is superimposed to the output signal from the <LAN> terminal. **[OFF], [ON]** • Factory setting: [OFF]
[UHD CROP]	[HD-SDI2 OUT SEL] U	Sets the output image of the <HD SDI OUT 2> terminal during cropping. **[FULL], [CROP]** • Factory setting: [FULL]
	[LAN OUT SEL] U	Sets the output image of the <LAN> terminal during cropping. **[FULL], [CROP]** • Factory setting: [CROP]
	[CROP OUT SEL] U	Sets the crop output image during cropping. **[YL], [G], [MG]** • Factory setting: [YL]
	[CROP MARKER SEL] U	Sets the crop frame to display during cropping. **[YL], [G], [MG], [YL**+**G], [YL**+**MG], [G**+**MG], [YL**+**G**+**MG]** • Factory setting: [YL+G+MG]
	[CROP ADJ SEL] U	Sets the crop frame to adjust the position during cropping. **[YL], [G], [MG]** • Factory setting: [YL]
	[CROP H POSITION] U	Sets the horizontal position of crop during cropping. **[**−**50.00%] - [**+**50.00%]** (0.25% steps) • Factory setting: [0.00%]
	[CROP V POSITION] U	Sets the vertical position of crop during cropping. **[**−**50.00%] - [**+**50.00%]** (0.25% steps) • Factory setting: [0.00%]
[DISPLAY STATUS/BAR OSD]	[CAM ID SWITCH] U	Sets the status display to superimpose in the main line signal. **[OFF]:** Camera ID is not displayed. **[BAR]:** Camera ID is displayed only when set to [BAR]. **[ON]:** Camera ID is constantly displayed. • Factory setting: [OFF]
	[CAM ID CHARACTER] U	Sets the camera name.
	[CAM ID POSI] U	Sets the display position of the camera ID. **[0]:** Top left **[1]:** Top right **[2]:** Bottom left **[3]:** Bottom right • Factory setting: [1]
[GEN-LOCK]	[GEN-LOCK INPUT] U	Sets if the synchronization signal input is input from BNC or from D-SUB. **[BNC], [DSUB]** • Factory setting: [BNC]
	[H PHASE-COARSE] U	Roughly adjusts the phase of horizontal synchronization. **[**−**5] - [**+**5]** • Factory setting: [0]
	[H PHASE-FINE] U	Finely adjusts the phase of horizontal synchronization. **[**−**100] - [**+**100]** • Factory setting: [0]
[PROTCOL]	[PROTCOL] U	Sets the type of the protocol. **[1]:** Information camera communication protocol (EIA422) **[2]:** Information camera communication protocol (EIA232) **[3]:** Compatible personal computer control protocol (EIA422) **[4]:** Compatible personal computer control protocol (EIA232) • Factory setting: [3]

[INTELLIGENT]

[INTELLIGENT MEMORY]

Item	Description of settings
[MEMORY] U	Switches the target memory for the intelligent function. **[1], [2]** • Factory setting: [1]
[MASTER GAIN]	Displays the current total of gain.
[ND FILTER]	Displays the current position of the ND filter.

Item	Description of settings
[INTELLIGENT] U	Sets the operation mode of the intelligent function. **[OFF]:** Operates with the setting from the menu or the camera controller. **[ON]:** Performs the automatic exposure and auto tracking white balance. **[LOCK]:** Maintains the automatic exposure and auto tracking white balance adjustment status of the point when [ON] is switched to [LOCK]. • Factory setting: [OFF]
[INTELLIGENT MODE] U	Sets the control item of the intelligent function. **[AE]:** Controls the gain (including [FRAME MIX]) and the automatic exposure by changing the ND filter when it cannot be adjusted within the range of [IRIS RANGE]. **[ATW]:** Adjusts the white balance automatically when it is determined that there is white subject. **[AE+ATW]:** Performs [AE] and [ATW] simultaneously. • Factory setting: [AE+ATW]
[ND FILTER SELECT] U	Sets the ND filter that is in operation for automatic exposure. Control from the camera control cannot be performed during operation for automatic exposure. **[CLEAR], [1/4], [1/16], [1/64], [AUTO]** • Factory setting: [AUTO]
[AGC SPEED] U	Sets the convergence time for the auto gain control. The larger the value, the faster the convergence time. **[1] - [5]** • Factory setting: [3]
[AGC GAIN STEP] U	Sets the steps for gain increase or gain decrease for the auto gain control. **[NORMAL]:** Gain is increased in fine steps from 0 dB to the value set in [AGC MAX GAIN] when underexposed. Gain is decreased in fine steps from the value set in [AGC MAX GAIN] to 0 dB when overexposed. **[MAX]:** Gain is increased in coarse steps from 0 dB to the value set in [AGC MAX GAIN] when underexposed. Gain is decreased in coarse steps from the value set in [AGC MAX GAIN] to 0 dB when overexposed. Set [AGC MAX GAIN] so it will not exceed the movable range of the lens iris when set to [MAX]. • Factory setting: [NORMAL]
[HIGH LIGHT DETECT] U	Sets the level of ignorance in 10 steps when a spot light enters the valid image. The larger the value, the more it will response to spot light. **[1] - [10]** • Factory setting: [5]
[IRIS LIMIT] U	Sets the iris control range for the auto gain control operation. **[1]:** F2.0 - F8 **[2]:** F2.0 - F11 **[3]:** F2.0 - F16 • Factory setting: [2]
[ATW SPEED] U	Sets the convergence time for the auto tracking white balance in 5 steps. The larger the value, the faster the convergence time. **[1] - [5]** • Factory setting: [3]
[ATW WIDTH] U	Sets the range of color temperature to follow with the auto tracking white balance. **[1] - [5]** • Factory setting: [5]
[D5600K] U	Sets if the center value of the auto tracking white balance is to be set to 5600 K. **[OFF], [ON]** • Factory setting: [ON]
[AGC MODE] U	Sets the control mode for the auto gain control. **[NORMAL]:** Increases the gain up to +18 dB by the control of the auto gain control. **[SPORTS]:** Controls in accordance with an image with fast movement. **[SN]:** Controls by prioritizing SN. • Factory setting: [NORMAL]
[AGC MAX GAIN]	Displays the maximum gain increase of the auto gain control.
[FRAME MIX]	Displays the amount of maximum frame addition by the auto gain control.

[INTELLIGENT SETTING]

Item	Description of settings
[INTELLIGENT] U	Switches the intelligent mode. **[OFF]:** Both [INTELLIGENT1] and [INTELLIGENT2] will be manual. **[INTEL1]:** [INTELLIGENT1] will be auto and [INTELLIGENT2] will be manual. **[INTEL2]:** [INTELLIGENT1] will be manual and [INTELLIGENT2] will be auto. • Factory setting: [OFF]
[IRIS ON LOCK] U	Selects the operating condition of the iris when the intelligent function is locked. **[LOCK]:** Maintains the iris in the lock start condition. **[MANUAL]:** Switches to manual operation. **[PANEL]:** Switches the auto/manual of the iris operation by the control from the camera controller. • Factory setting: [LOCK]

[NETWORK SETUP]

[NETWORK SETUP] cannot be selected right after the power is turned ON, or when 59.94, 29.97, 23.98 and 50, 25 in [FORMAT] are switched since the unit is starting up.

This is not an error. Perform operation after a while.

Item	Description of settings
[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]
[HTTP PORT]	Sets the port number of HTTP (port number when accessing with a browser). **[1] - [65535]** • Factory setting: [80]
[SET EXCUTE]	Selects whether to execute with the configured settings. **[NO], [YES]**
[MAC ADDRESS]	Displays the MAC address. (This cannot be changed.)

[FILE]

[SCENE FILE]

Item	Description of settings
[MODE]	Selects the operation mode. **[LOAD], [STORE]** • Factory setting: [LOAD]
[FILE NO.]	Selects a file. When [MODE] is set to [LOAD]: **[OFF], [1] - [8]** • Factory setting: [OFF] When [MODE] is set to [STORE]: **[1] - [8]** • Factory setting: [1]
[FILE NAME]	Enters a file name. (15 characters or less) • Factory setting: [SCENE1]
[EXECUTE]	Selects whether to execute with the configured settings. **[NO], [YES]**

[USER FILE]

Item	Description of settings
[MODE]	Selects the operation mode. **[LOAD], [STORE]** • Factory setting: [LOAD]
[FILE NO.]	Selects a file. **[1], [2], [3]** • Factory setting: [1]
[FILE NAME]	Enters a file name. (15 characters or less) • Factory setting: [USER1]
[EXECUTE]	Selects whether to execute with the configured settings. **[NO], [YES]**

[MAINTENANCE]

[LENS FILE ADJUST]

Item	Description of settings
[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. **[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	Adjusts Rch flare of the data selected in [FILE NO.]. **[−100] - [+100]** • Factory setting: [0]

Item	Description of settings
[FLARE G] U	Adjusts Gch flare of the data selected in [FILE NO.]. **[–100] - [+100]** • Factory setting: [0]
[FLARE B] U	Adjusts Bch flare of the data selected in [FILE NO.]. **[–100] - [+100]** • Factory setting: [0]
[GAIN R] U	Adjusts Rch gain of the data selected in [FILE NO.]. **[–100] - [+100]** • Factory setting: [0]
[GAIN B] U	Adjusts Bch gain of the data selected in [FILE NO.]. **[–100] - [+100]** • Factory setting: [0]
[W H SAW R] U	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	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	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	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	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	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	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	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	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	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	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	Adjusts Bch white shading for the data selected in [FILE NO.] vertically using a parabolic waveform. **[–100] - [+100]** • Factory setting: [0]

[BLACK SHADING]

Item	Description of settings
[CORRECT] U	Enables/disables the auto correction function of black shading. **[OFF], [ON]** • Factory setting: [ON]
[DETECTION]	Selects whether to execute auto correction function of black shading. **[NO], [YES]**
[SAVE]	Selects whether to save the auto correction data. **[NO], [YES]**
[CLEAR]	Selects whether to clear the auto correction data. **[NO], [YES]**

[FAN SETTING]

Item	Description of settings
[FAN MODE] U	Sets the operation mode of the air cooling fan. **[AUTO], [LOW]** • Factory setting: [AUTO] ***NOTE*** • Use in an environment with ambient temperature of 30 °C (86 °F) or less when using in [LOW].

[INITIALIZE]

[READ FACTORY ALL DATA] cannot be selected right after the power is turned ON, or when 59.94, 29.97, 23.98 and 50, 25 in [FORMAT] are switched since the unit is starting up.

This is not an error. Perform operation after a while.

Item	Description of settings
[MENU INITIALIZE]	Restores the value of [MAIN MENU] to their factory settings. **[YES], [NO]**
[READ USER ALL DATA]	Restores the values of [MAIN MENU], scene file and user file to their factory settings. **[YES], [NO]**
[READ FACTORY ALL DATA]	Restores the values of [MAIN MENU], scene file, user file, and the factory adjusted values to their factory settings. **[YES], [NO]**

[DIAGNOSTIC]

[VERSION]

Item	Description of settings
[VERSION]	Displays the version of all the firmware.
[CAM MAIN]	Displays the software version of the camera.
[NETWORK]	Displays the version of the network software.
[ROM TABLE]	Displays the version of the camera table.
[CAM FPGA]	Displays the FPGA version of the camera.
[AVIO FPGA]	Displays the version of AVIO FPGA.

[HOUR METER]

Item	Description of settings
[FAN]	Display the operating time of the fan. **[0000000] - [1193046]**
[OPERATION]	Display the operating time of the camera head. **[0000000] - [1193046]**

Chapter 5 Connecting to External Devices

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

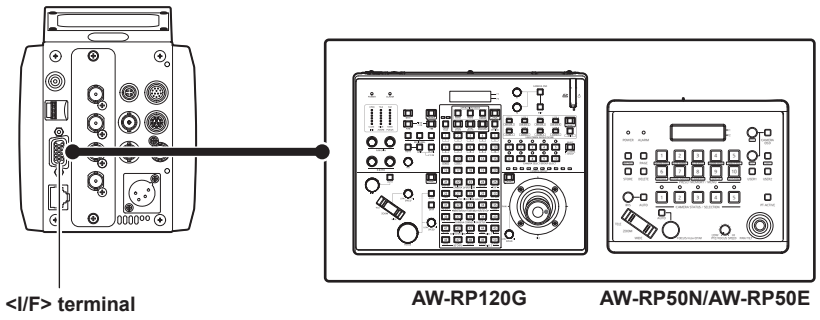
Connecting the remote camera controller (AW-RP50N/AW-RP50E/AW-RP120G)

- Some of the functions can be controlled remotely by connecting the remote camera controller AW-RP50N/AW-RP50E/AW-RP120G (optional).
- The unit can be controlled without using the pan/tilt head by the direct connection control of the remote camera controller AW-RP50N/AW-RP50E/AW-RP120G.

NOTE

- Update the version of the remote camera controller as described below.
  AW-RP50N/AW-RP50E: 3.30.00 or later
  AW-RP120G: 2.40.00 or later
- For details, refer to the operating instructions of the remote camera controller and supplied flyer.

Serial connection with the <I/F> terminal



1 Connect the <I/F> terminal of this unit to the <TO PAN/TILT HEAD> terminal of the remote camera controller AW-RP50N/AW-RP50E/AW-RP120G.

2 Select [3] in [MAIN MENU] → [IN/OUT SELECT] → [PROTCOL] → [PROTCOL].

3 Set the remote camera controller to direct connection control (CAM_Direct).

NOTE

- For the connection cable, refer to the “I/F cable specification” in “Details of the connector signals”. (page 116)

■ **Functions that can be controlled**

Function	Description	Setting value
GAIN	Switching the gain mode	[LOW], [MID], [HIGH], [S.GAIN1], [S.GAIN2], [S.GAIN3]
PED	Adjusting the master pedestal	[–99] - [+99]
R GAIN/B GAIN	Adjusting the Rch and Bch gains	[–1000] - [+1000]
R PED/B PED	Adjusting the Rch and Bch pedestals	[–800] - [+800]
AWB	Executing the automatic white balance	—
ABB	Executing the automatic black balance	—
SHUTTER	Switching the mode	[OFF], [STEP], [SYNCHRO]
	Setting the step speed	For 59.94 Hz [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000], [180.0deg], [172.8deg], [144.0deg], [120.0deg], [90.0deg], [45.0deg]
DETAIL	Switching enable/disable	—
MASTER DETAIL	Adjusting the master detail	[–31] - [+31]
SCENE	Loading the data	AW-RP50N/AW-RP50E: [CURRENT], [SCENE1] - [SCENE8] AW-RP120G: [CURRENT], [SCENE1] - [SCENE3] • Corresponding buttons are as follows. <SCENE1> button: [CURRENT] <SCENE2> button: [SCENE1] <SCENE3> button: [SCENE2] <SCENE4> button: [SCENE3]
BARS	Switching the bar display	—
ND FILTER	Setting the ND filter	[CLEAR], [1/4], [1/16], [1/64]
AUTO	Enabling/disabling the auto iris	—
CAMERA OSD	Showing/hiding of the menu	—
EXIT (AW-RP50N/AW-RP50E only)	Going back 1 level of menu	—
IRIS	Adjusting the iris	—
ZOOM/FOCUS	Adjusting the zoom/focus	—
CROP OUT SEL	Setting the crop output image during cropping	[YL], [G], [MG]
CROP ADJ SEL	Setting the crop frame to adjust the position during cropping	[YL], [G], [MG]
CROP H/V POSITION	Adjusting the position of the crop frame during cropping	—

Controlling the UHD cropping function

■ **Controlling by AW-RP50N/AW-RP50E**

1 Press the <MENU> button to illuminate the button.

2 Press the <9 SETUP> button in <PRESET MEMORY/MENU> to illuminate the button.

3 Turn the <F1> dial to display [[2] SW LINK] in the LCD panel, and press the <F1> dial.

4 Turn the <F1> dial to display [1.SWLINK], and select [Off] with the <F2> dial.

5 Press the <8 CAMERA> button in <PRESET MEMORY/MENU> to illuminate the button.

6 Turn the <F1> dial to display [[5] CROP] in the LCD panel, and press the <F1> dial.

7 Turn the <F1> dial to display [3.P/T LEVER], and select [CROP] with the <F2> dial.

8 Turn the <F1> dial to display [1.OUT SEL], and select the frame of the image to crop and output from [YL], [G], or [MG] with the <F2> dial.

9 Turn the <F1> dial to display [2.ADJ SEL], and select the frame of the image to adjust the crop position from [YL], [G], or [MG] with the <F2> dial.

10 Adjust the cropping position using the <PAN/TILT> lever and the <PTZ/FOCUS SPEED> dial.

■ **Controlling by AW-RP120G**

1 Press the <MENU> button to illuminate the button.

2 Press the <42 FUNCTION> button in <SWITCHER LINK> to illuminate the button.

3 Turn the <F1> dial to display [1.SWLINK] in the LCD panel, and select [Off] with the <F2> dial.

4 Press the <23 FUNCTION> button in <CAMERA OPERATION> to illuminate the button.

5 Turn the <F1> dial to display [12.CROP P/T LVR], and select [CROP] with the <F2> dial.

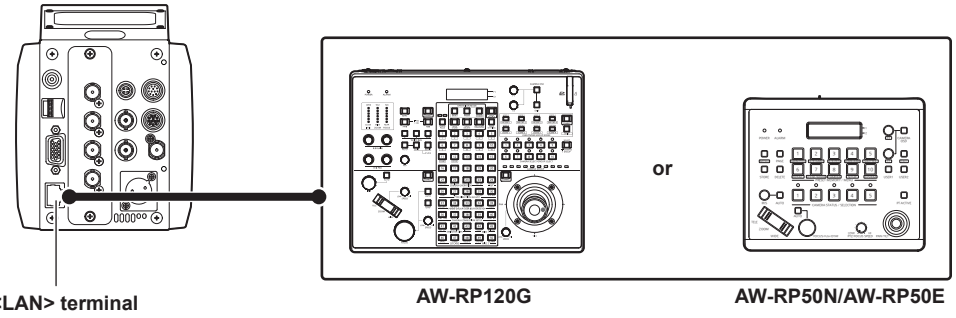
6 Turn the <F1> dial to display [10.CROP OUT SEL], and select the frame of the image to crop and output from [YL], [G], or [MG] with the <F2> dial.

7 Turn the <F1> dial to display [11.CROP ADJ SEL], and select the frame of the image to adjust the crop position from [YL], [G], or [MG] with the <F2> dial.

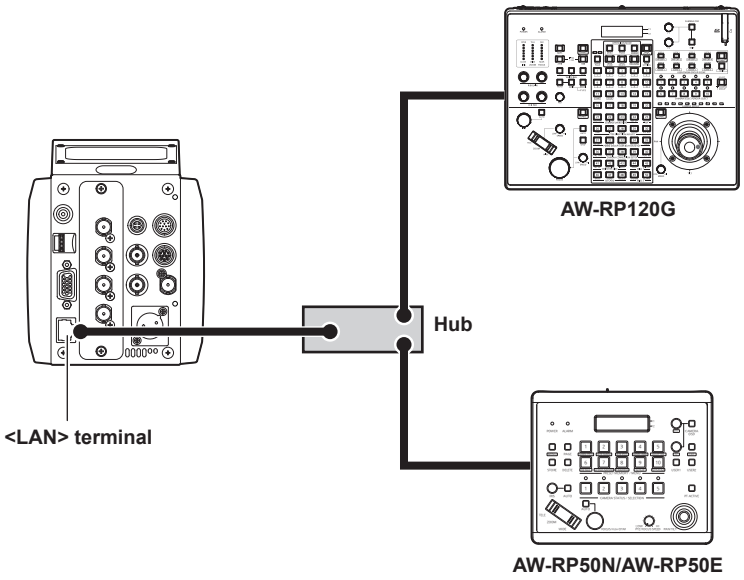
8 Adjust the position using the <PAN/TILT> lever and the <PAN/TILT SPEED> dial.

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-RP50N/AW-RP50E/ AW-RP120G.

- 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 remote camera controller to IP direct connection control (IP_Direct).

■ Functions that can be controlled

The same functions as the serial connection can be used.

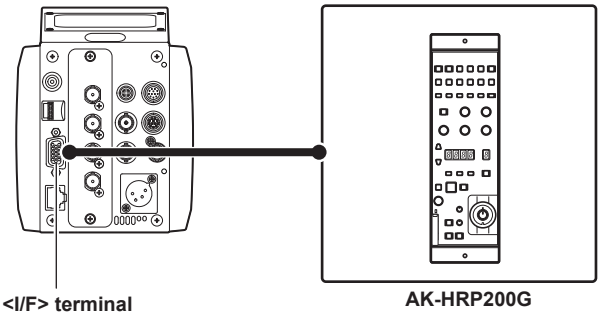
Connecting the remote operation panel (AK-HRP200G)

- Some of the functions can be controlled remotely by connecting the remote operation panel AK-HRP200G (optional).

NOTE

- Update the version of the remote operation panel as described below.
  5.10-00-1.07 or later
- For details, refer to the operating instructions of the remote operation panel and supplied flyer.

Serial connection with the <I/F> terminal



1 Connect the <I/F> terminal of this camera to the <RS-422> terminal of the remote operation panel AK-HRP200G.

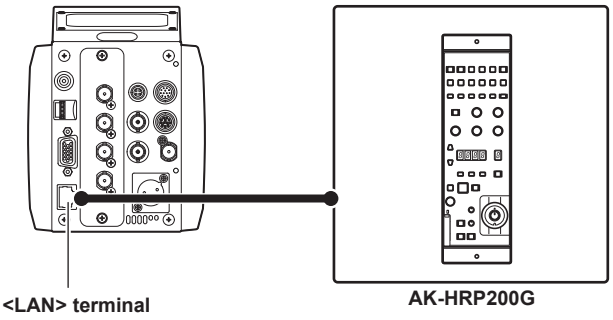
2 Select [3] in [MAIN MENU] → [IN/OUT SELECT] → [PROTCOL] → [PROTCOL].

For the functions that will operate, refer to the supported function list in following website.
http://pro-av.panasonic.net/

NOTE

- For the connection cable, refer to the “I/F cable specification” in “Details of the connector signals”. (page 116)

IP connection with the <LAN> terminal



1 Connect the <LAN> terminal of this camera to the <LAN> terminal of the remote operation panel AK-HRP200G.

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

■ Functions that can be controlled

The same functions as the serial connection can be used.

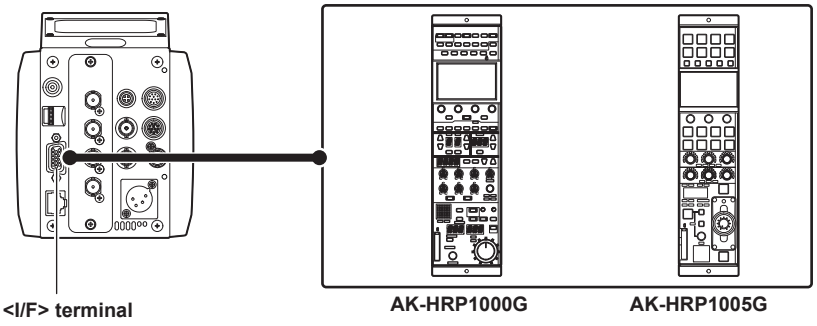
Connecting the remote operation panel (AK-HRP1000G/AK-HRP1005G)

- Some of the functions can be controlled remotely by connecting the remote operation panel AK-HRP1000G/AK-HRP1005G (optional).

NOTE

- Update the version of the remote operation panel as described below.
  AK-HRP1000G: 4.21-00-0.00 or later
  AK-HRP1005G: 4.21-00-0.00 or later
- For details, refer to the operating instructions of the remote operation panel and supplied flyer.

Serial connection with the <I/F> terminal



1 Connect the <I/F> terminal of this camera to the <CCU> terminal of the remote operation panel AK-HRP1000G/AK-HRP1005G.

2 Select [3] in [MAIN MENU] → [IN/OUT SELECT] → [PROTCOL] → [PROTCOL].

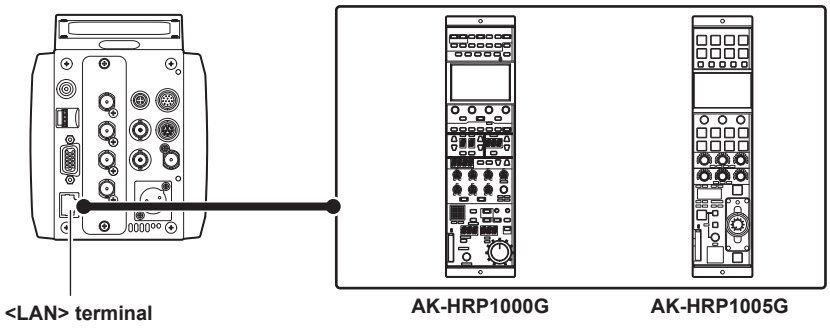
3 Set the [CONNECT SETTING] menu to [Serial(AW)] with the remote operation panel AK-HRP1000G/AK-HRP1005G.

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

NOTE

- For the connection cable, refer to the “I/F cable specification” in “Details of the connector signals”. (page 116)

IP connection with the <LAN> terminal



1 Connect the <LAN> terminal of this camera to the <LAN> terminal of the remote operation panel AK-HRP1000G/AK-HRP1005G.

- 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(AW)] with the remote operation panel AK-HRP1000G/AK-HRP1005G.

■ 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-HRP1000G/AK-HRP1005G 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.

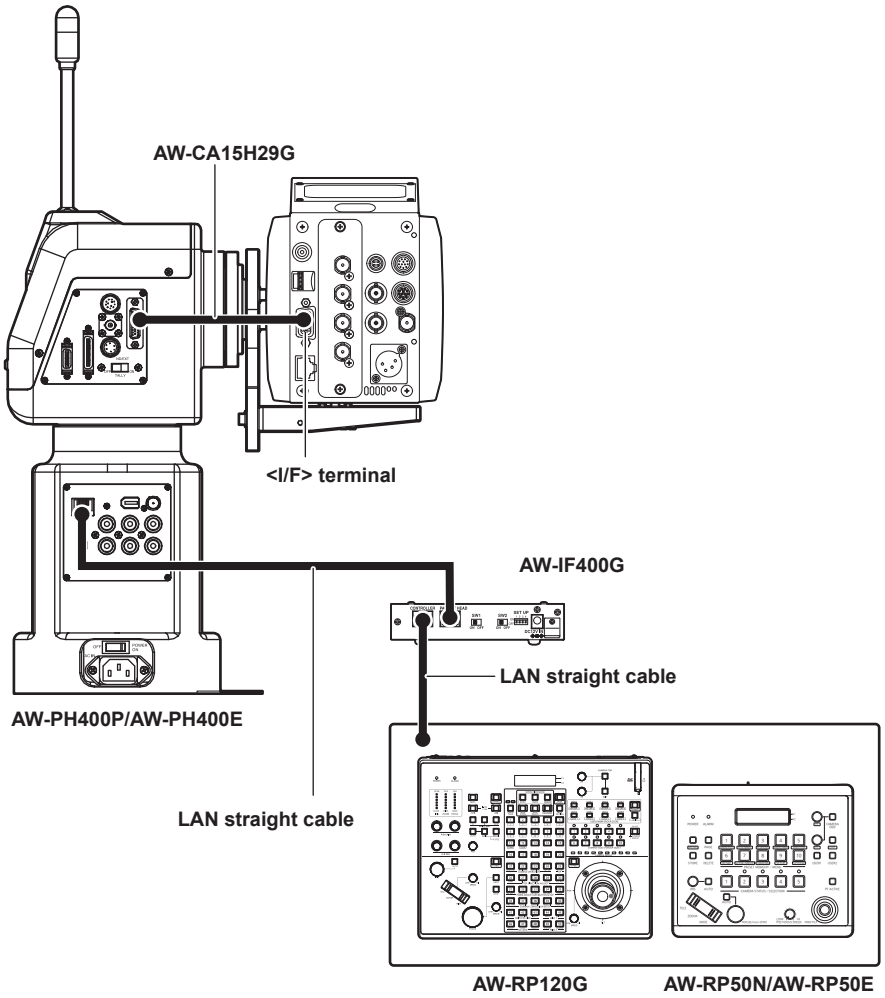
Connecting the indoor pan/tilt head (AW-PH400P/AW-PH400E)

- Some of the functions of this camera mounted on the indoor pan/tilt head can be remotely controlled by connecting the indoor pan/tilt head AW-PH400P/AW-PH400E (optional), protocol converter AW-IF400G (optional), and remote camera controller AW-RP50N/AW-RP50E/AW-RP120G (optional).

NOTE

- For the version of the remote camera controller, contact your dealer.
- For details, refer to the operating instructions of the indoor pan/tilt head, the protocol converter, and the remote camera controller, and supplied flyer.

Connecting with the <I/F> terminal



1 Connect the <I/F> terminal of this camera to the <CAMERA I/F> terminal of the indoor pan/tilt head AW-PH400P/AW-PH400E.

2 Connect the <PAN-TILT HEAD> terminal of the protocol converter AW-IF400G to the <IP/RP> terminal of the indoor pan/tilt head AW-PH400P/AW-PH400E.

3 Connect the <TO PAN/TILT HEAD> terminal of the remote camera controller AW-RP50N/AW-RP50E/AW-RP120G to the <CONTROLLER> terminal of the protocol converter AW-IF400G.

4 Select [4] in [MAIN MENU] → [IN/OUT SELECT] → [PROTCOL] → [PROTCOL].

5 Select [Serial] in the connection setting of the remote camera controller AW-RP50N/AW-RP50E/AW-RP120G.

6 In the remote camera controller AW-RP50N/AW-RP50E/AW-RP120G, press and hold the <CAMERA STATUS/SELECTION> or <CAMERA SELECT/GROUP SELECT> button where this camera is assigned.

The camera model number is displayed at the top, and the [POWER] at the bottom of the LCD panel.

7 In the remote camera controller AW-RP50N/AW-RP50E/AW-RP120G, select [ON] by turning the <F2> dial while holding down the <CAMERA STATUS/SELECTION> or <CAMERA SELECT/GROUP SELECT> button, and press the <F2> dial.

For the functions that will operate, refer to the AW-RP50N/AW-RP50E/AW-RP120G supported function list in following website.
http://pro-av.panasonic.net/
However, the UHD crop function cannot be controlled.

NOTE

- Use AW-CA15H29G (optional) for the cable to connect this camera to the indoor pan/tilt head.

- Perform one of the following operations to operate the auto iris of this camera using the remote camera controller AW-RP50N/AW-RP50E/AW-RP120G.
  - Connect the remote camera controller AW-RP50N/AW-RP50E/AW-RP120G directly to the camera, and set the IRIS setting to AUTO using the remote camera controller AW-RP50N/AW-RP50E/AW-RP120G.
  - Connect the remote operation panel AK-HRP200G/AK-HRP1000G/AK-HRP1005G directly to the camera, and set the IRIS setting to AUTO using the remote operation panel AK-HRP200G/AK-HRP1000G/AK-HRP1005G.
  - Connect a PC to the camera, start up UB300 Setting Tool, and set the IRIS setting to AUTO using UB300 Setting Tool.
- Set the IRIS setting of the remote camera controller AW-RP50N/AW-RP50E/AW-RP120G to AUTO once to establish the operation of the IRIS when the protocol converter AW-IF400G and the indoor pan/tilt head AW-PH400P/AW-PH400E are started after the IRIS setting is changed.
- Set IRIS setting to AUTO in the remote camera controller AW-RP50N/AW-RP50E/AW-RP120G when using the intelligent function.
- Set the switch at the rear of the protocol converter AW-IF400G as follows.
  <SW1>switch: <OFF>
  <SW2>switch: <OFF>
  <SET UP> switch
  - <1>: <ON>
  - <2>: <OFF>
  - <3>: <ON> (300°) or <OFF> (190°)
  - <4>: <OFF>

Chapter 6 Web Screen

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

Setting the network

Software

Download EASY IP Setup Software (EasyIPSetup.exe) from the following website, and install it. (Windows)
http://pro-av.panasonic.net/

■ EASY IP Setup Software (EasyIPSetup.exe)

This software is used for configuring the network settings of the camera. (page 77)

■ Plugin software for the display

Install the plugin software (Network Camera View 4S) required to display the IP images of the camera on a web browser. (page 78)

Configuring the camera using EASY IP Setup Software

Network setting of this unit can be set using EASY IP Setup Software.
To configure multiple cameras, settings must be configured for each.
Set the setting of this unit and the computer individually with [MAIN MENU] → [NETWORK SETUP] when it cannot be set with EASY IP Setup Software.

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 EASY IP Setup Software.
- EASY IP Setup Software cannot be used from a separate subnet via a router.
- This camera will not be displayed and configured on previous versions of EASY IP Setup Software (Ver.4.25 and earlier).

Setting procedure

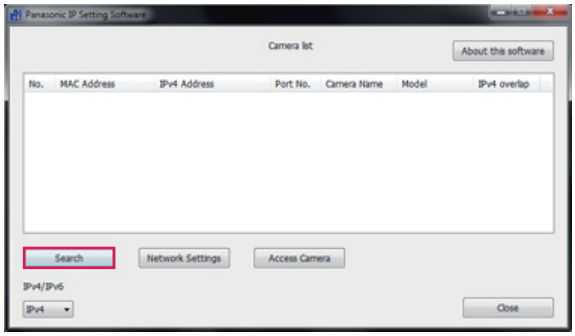


Fig. 1

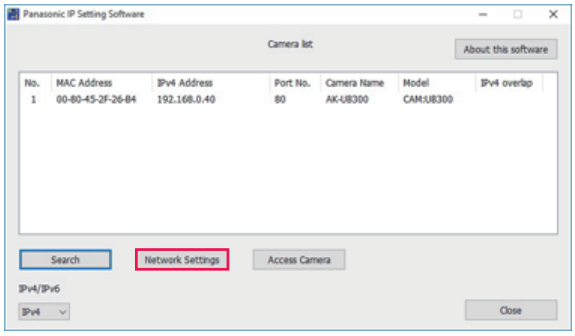


Fig. 2

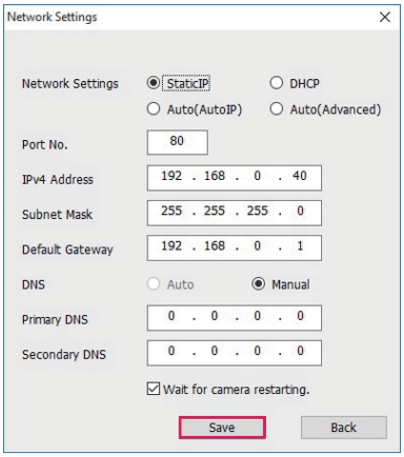


Fig. 3

1 Start EASY IP Setup Software.

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

3 Click the MAC address/IPv4 address of the camera to configure, and then click the [Network settings] button. (Fig. 2)

- If there is an IP address conflict, the number of the camera with the conflicted address is displayed in the [Duplicate IPv4 address] field of the corresponding camera.
- Click the [Access Camera] button to display the [Live] screen of the selected camera.

4 Enter each item for the network, and then click the [Save] button. (Fig. 3)

- This camera only supports the [Fixed IP] connection mode. As DHCP is not supported, do not set the connection mode to DHCP.

- After clicking the [Save] button, it will take approximately two minutes to complete configuration of the camera.
  Disconnecting the AC adaptor or LAN cable before the configuration has been completed will invalidate the settings. In such a case, configure the settings again.

NOTE

- This camera does not support IPv6.
- If a firewall (including software) is used, set access permission to all UDP ports.
- This camera does not support DNS.

Installing the plugin software for display

To display the IP images of the camera on the web browser, the plugin software for display Network Camera View 4S (ActiveX®) must be installed. Install the plugin software for display from this camera directly.

- [Automatic installation of viewer software] is set to [On] in the factory settings, which allows installation from the camera directly.
  If a message appears on the information bar of the web browser, refer to “Troubleshooting” (page 106).
- When the [Live] screen is displayed for the first time on a computer, the installation screen for the plugin software for display (ActiveX®) appears. Install the software by following the on-screen instructions.
- If the installation screen appears every time you switch the screen even after the plugin software for display (ActiveX®) has been installed, restart your computer.
- To uninstall the plugin software for display, select [Control Panel] - [Program] - [Uninstall programs] on Windows, and uninstall Network Camera View 4S.
- The plugin software for display requires a license for each computer.
  The number of times that the plugin software for display has been automatically installed can be viewed in the [Maintenance] screen. (page 95)
  For details on licenses, contact your dealer.

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)

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

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 11).

Some of the functions on the [Setup] screen are only available on computers operating on Windows. Such functions are not available for computers operating on OS X (Mac).

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

To display the IP images of the camera on a computer running Windows, the plugin software for display, Network Camera View 4S, must be installed. This is not necessary with computers operating on OS X (Mac). (page 78)

Web screen display on computer

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

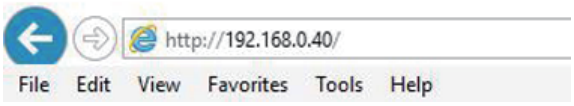


Fig. 1

Fig. 2

1 Start the web browser on your computer.

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

- Windows: Internet Explorer
- OS X (Mac): Safari

2 Enter the IP address set on EASY IP Setup Software in the address field of the web browser. (Fig. 1)

- Example: http://192.168.0.40
- 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.

3 Press the [Enter] key.

The web screen is displayed. (Fig. 2)

The initial screen is the [Live] screen. Switch this to the [Setup] screen as necessary. (page 80)

NOTE

- With a computer on which the plugin software for display is not installed, a confirmation message for installation appears before the [Live] screen is displayed.
  If this message appears, install the software by following the on-screen instructions. (Windows) (page 78)
- A screen to input the user name and the password is displayed before displaying the [Live] screen when [User auth.] (page 92) is set to [On].
  The initial user name and password are as follows.
  User name: admin
  Password: 12345
- While using the initial user name and password, a message prompting to change the user name and password appears after authentication.
  To ensure security, the password for the user name "admin" must be changed.

It is also recommended that the password is changed regularly.

- If you attempt to display multiple H.264 videos on a single computer, the IP images may not be displayed depending on the specifications of the computer. (Windows)
- Clicking on an underlined item on the screen opens a separate window showing an entry example.
- The maximum number of users that can simultaneously access the camera is 14, which is the total of users receiving H.264 images and users receiving JPEG images.
  However, access may be restricted to less than 14 users depending on the settings of [Bandwidth control (bitrate)] and [Max bit rate (per client)].
  When the number of users accessing the camera has exceeded the maximum of 14 users, a message indicating excessive access appears.
  When [Transmission type] of [H.264] is set to [Multicast port], the second and later users that receive the H.264 images are not counted in the number of users accessing the camera.
- When [H.264 transmission] (page 89) is set to [On], the H.264 images are displayed. When this is set to [Off], JPEG images are displayed.
  JPEG images can be displayed even when [H.264 transmission] is set to [On]. However, the maximum refresh rate for JPEG images is restricted to 5 fps. (Windows)
- The refresh rate for JPEG images may decrease depending on the network environment, computer specification, subject, and the number of users accessing the camera.
  JPEG image refresh rate
  When [H.264 transmission] is [On]: 5 fps maximum
  When [H.264 transmission] is [Off]: 30 fps maximum

Switching [Live]/[Setup] screens

Click the [Setup] button while the [Live] screen is displayed.

For details on the [Setup] screen, refer to “[Setup] screen” (page 86).

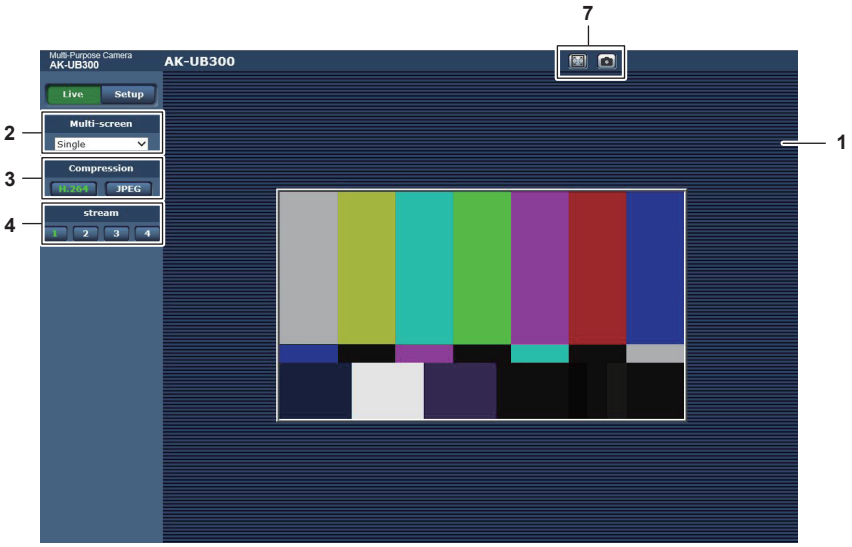
Click the [Live] button while the [Setup] screen is displayed.

For details on the [Live] screen, refer to “[Live] screen (single display mode)” (page 81).

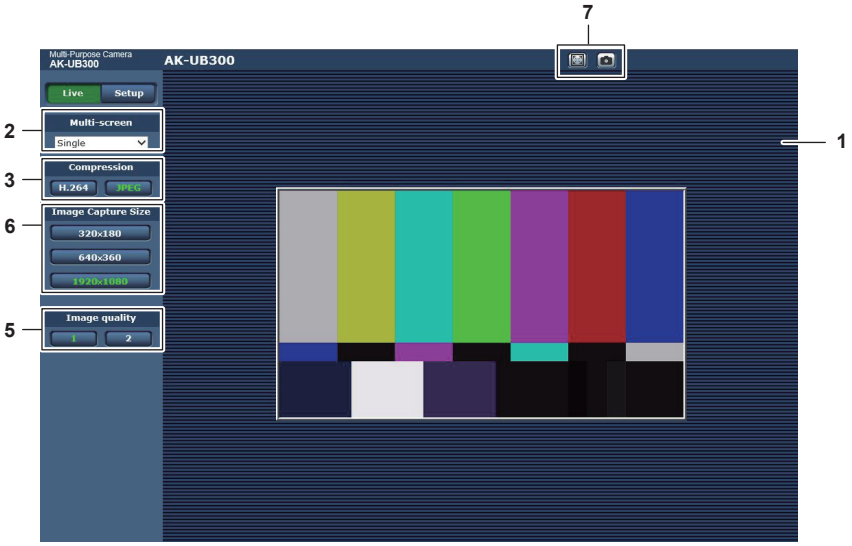
[Live] screen (single display mode)

The camera image can be displayed on the computer.
The items displayed differ between when [H.264] is selected and when [JPEG] is selected with the [Compression] button.

■ **H.264**



■ **JPEG**

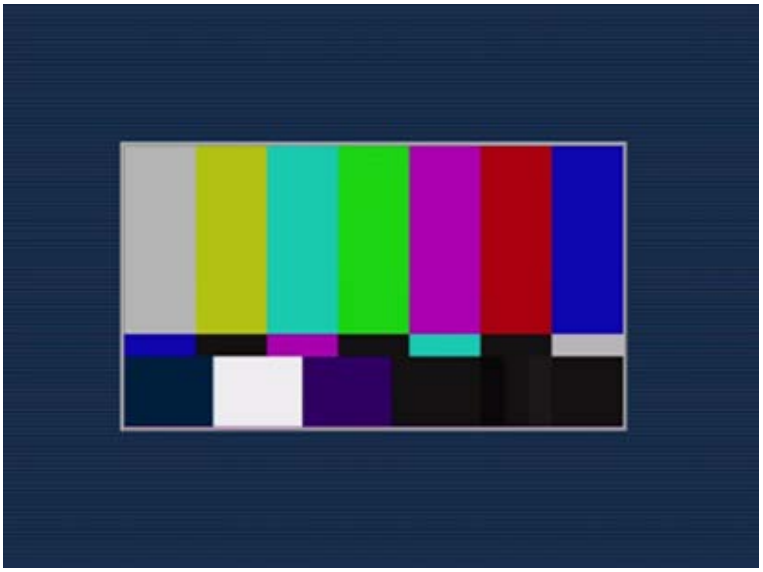


1 Main area (IP image display area) (page 82)
2 [Multi-screen] button (page 82)
3 [Compression] button (page 82)
4 [Stream] button (page 83)
5 [Image quality] button (page 83)
6 [Image capture size] button (page 83)
7 Full screen display button/snapshot button (Windows) (page 84)

Names and functions of parts ([Live] screen)

Main area (IP image display area)

This area displays the IP images of the connected camera.
You can use the digital zoom of the plugin software for display by operating the mouse wheel in the area. (Windows)



- Depending on the computer being used, the drawing processor (GDI) of the OS may have restrictions and the images may cause tearing (part of images show deviated display) at major changes of shooting scenes.
- On a Windows computer, when [H.264 transmission] is set to [On], the H.264 videos or JPEG images are displayed. When set to [Off], only the JPEG images are displayed.
  Also, only JPEG image can be displayed on a computer with OS X (Mac) regardless of the [H.264 transmission] setting. H.264 video cannot be displayed. (page 89)
- If [H.264 transmission] is set to [On], regardless of whether an H.264 video is being transmitted or not, the refresh rate of JPEG images may decrease.
- The refresh rate for JPEG images may decrease depending on the network environment, computer specification, subject, and the number of users accessing the camera.
- The maximum number of users that can simultaneously access the camera is 14, which is the total of users receiving H.264 images and users receiving JPEG images.
  However, access may be restricted to less than 14 users depending on the settings of [Bandwidth control (bitrate)] and [Max bit rate (per client)].
- When the number of users has exceeded the upper limit, a message indicating excessive access appears. (Windows)
- The area border of the main area (IP image display area) is displayed in red when a tally signal (R tally) is input to the unit. However, the red border is displayed only in the single display mode. Red border is not displayed in the multi display mode.

[Multi-screen] button

Selects the display method of the [Live] screen.

1 [Single]
Displays the IP image of the connected camera.

2 [4Split 1/4 Group], [4Split 2/4 Group], [4Split 3/4 Group], [4Split 4/4 Group], [16Split]
Multiple IP images can be displayed in a single screen by setting the cameras to display in multi-screen with multi-screen setting screen [Multi-screen setup] in advance. (Multi display mode)

[Compression] button

This button is used to switch the display between H.264 images and JPEG images.
The characters on the selected button change to green.

1 [H.264]
Displays H.264 images. (Windows)
Set [H.264 transmission] for [H.264(1)] to [H.264(4)] to [On] in the IP video settings to enable the [H.264] button. (page 89)

2 [JPEG]
Displays JPEG images.

In the following cases, the selection status of the [Compression] button returns to the setting in [Stream] for [Initial display settings for "Live" page] in the [Video over IP] tab. (Windows)

- When a screen has been exited to move to another
- When a screen has been refreshed

[Stream] button

This button is displayed only when H.264 images are displayed. (Windows)

The display shows images as set in [H.264(1)]/[H.264(2)]/[H.264(3)]/[H.264(4)].

The characters on the selected button change to green.

1 [1]
The main area image is displayed as set in [H.264(1)]. (page 89)

2 [2]
The main area image is displayed as set in [H.264(2)]. (page 89)

3 [3]
The main area image is displayed as set in [H.264(3)]. (page 89)

4 [4]
The main area image is displayed as set in [H.264(4)]. (page 89)

In the following cases, the selection status of the [Stream] button returns to the setting in [Stream] for [Initial display settings for "Live" page] in the [Video over IP] tab. (Windows)

- When a screen has been exited to move to another
- When a screen has been refreshed

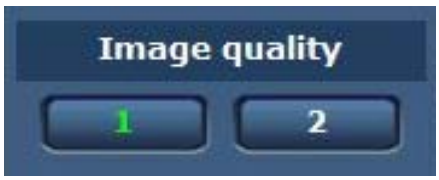
If the resolution of the selected H.264 image is set to [1920×1080] or [1280×720], the displayed image may be smaller than the actual size, depending on the screen size of your web browser.

[Image quality] button

This button is displayed only when JPEG images are displayed.

The display shows images as set in [Image quality(JPEG)].

The characters on the selected button change to green.



1 [1]
The display shows images as set in [Quality1] for [Image quality(JPEG)]. (page 88)

2 [2]
The display shows images as set in [Quality2] for [Image quality(JPEG)]. (page 88)

In the following cases, the selection status of the [Image quality] button returns to the setting in [Image quality(JPEG)] for [Initial display settings for "Live" page] in the [Video over IP] tab.

- When a screen has been exited to move to another
- When a screen has been refreshed

[Image capture size] button

This button is displayed only when JPEG images are displayed.

It switches the size of the image displayed in the main area.

The characters on the selected button change to green.

1 [1920×1080]
The image in the main area is displayed in the resolution of 1920 × 1080.

2 [1280×720]
The image in the main area is displayed in the resolution of 1280 × 720.

3 [640×360]
The image in the main area is displayed in the resolution of 640 × 360.

4 [320×180]
The image in the main area is displayed in the resolution of 320 × 180.

5 [160×90]
The image in the main area is displayed in the resolution of 160 × 90.

The image is displayed in the resolution set in [JPEG(1)], [JPEG(2)], and [JPEG(3)] in the [Video over IP] tab - [JPEG].

If the resolution is set to [1920×1080] or [1280×720], the displayed image may be smaller than the actual size, depending on the screen size of your web browser.

In the following cases, the selection status of the [Image capture size] button returns to the setting in [Stream] for [Initial display settings for "Live" page] in the [Video over IP] tab.

- When a screen has been exited to move to another
- When a screen has been refreshed

Full screen display button/snapshot button

The images are displayed in full screen. (Full screen display button)

It captures snapshots. (Snapshot button)

1 Full screen display button (left)
Displays the images in full screen.
When the image in the main area is displayed in a reduced size, pressing this button once displays the image in its actual resolution in the main area.
When the image is displayed in its original resolution, it will be displayed in full screen.
To return to the [Live] screen, press the Esc key on the keyboard of your computer while in full screen display.
Or, right-click the mouse while it is displaying in full screen, and click [Back].

2 Snapshot button (right)
Captures a snapshot (one still image) and shows the image on a separate window.
Right-clicking this button displays a pop-up menu, and you can save the image on your computer by selecting [Save].
Selecting [Print] outputs the image to a printer.

NOTE

- The following configuration may be required.
  From the menu bar on Internet Explorer, select [Trusted site] in [Tools] - [Internet Options] - [Security] tab, and then click [site]. Add the address of the camera to “Websites” in “Trusted sites”.
- Depending on the network environment, etc., if capturing of a snapshot takes longer than a certain period of time, the image may not be displayed.

[Live] screen (multi display mode)

Confirms images from multiple cameras in a single screen (multi-screen).
Up to four or 16 camera images can be confirmed at once.
[Live] screen of corresponding camera in single display mode is displayed in a separate window by clicking the camera title in each image.
To use the multi-screen, it is necessary to set the camera to display in multi-screen in advance.
Maximum of four groups with four cameras in each group (total of 16 cameras) can be registered.

4 cameras

16 cameras

[Multi-screen] button

Selects the display method of the [Live] screen.

1 [Single]
Displays the IP image of the connected camera.

2 [4Split 1/4 Group], [4Split 2/4 Group], [4Split 3/4 Group], [4Split 4/4 Group], [16Split]
Multiple IP images can be displayed in a single screen by setting the cameras to display in multi-screen with multi-screen setting screen [Multi-screen setup] in advance. (Multi display mode)

NOTE

- The IP image displayed in the multi-screen is only JPEG.
- The image in multi-screen will be stretched vertically to match the display frame with aspect ratio of 4:3.
- It is not possible to transfer from the [Live] screen to the multi-screen in the following cases.
  - When the power of this unit is turned off while displaying the IP image
  - When the network cable is disconnected
- The IP image display border is not displayed in red even if a tally signal (R tally) is input to the unit in the multi-screen.

[Setup] screen

Various settings of this camera can be configured.

The setup menu is only available to users set as [1. Administrator] in [Access level]. (page 93)

Logging in to the [Setup] screen

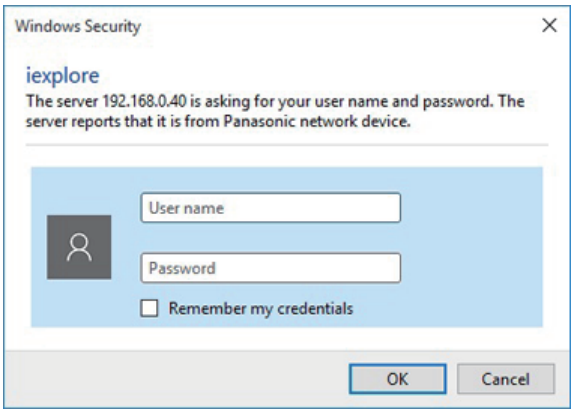


Fig. 1

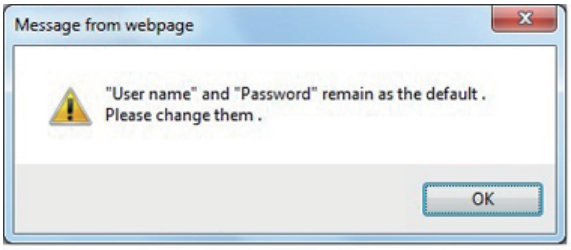


Fig. 2

1 Click the [Setup] button.

The login screen is displayed. (Fig. 1)

2 Enter the user name and password.

The user name and password in the factory settings are as follows.
User name: admin
Password: 12345

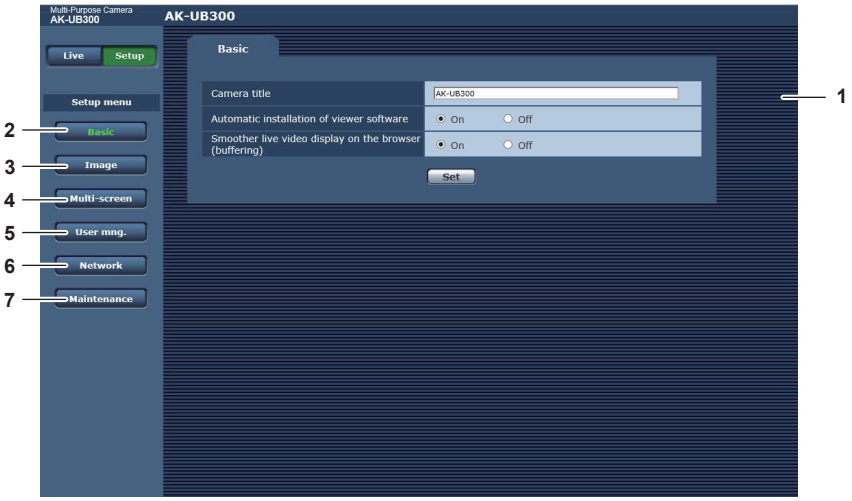
3 Click the [OK] button.

A message screen is displayed.

4 Click the [OK] button.

While using the initial user name and password, a message prompting to change the user name and password appears after authentication. (Fig. 2)
To ensure security, the password for the user name “admin” must be changed. It is also recommended that the password is changed regularly.

Names and functions of parts ([Setup] screen)



1 Main area
The menu screen is displayed.

2 [Basic] button
Clicking this button displays the [Basic] screen in the main area. (page 87)

3 [Image] button
Clicking this button displays the [Image] screen in the main area. (page 87)

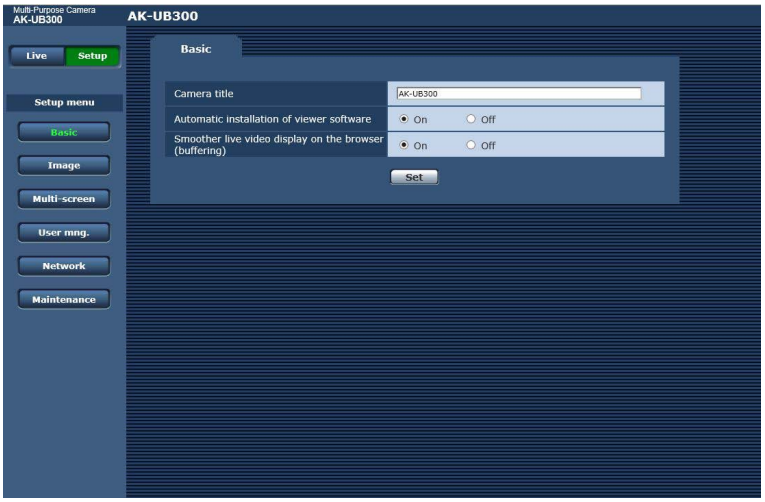
4 [Multi-screen] button
Clicking this button displays the [Multi-screen] screen in the main area. (page 91)

5 [User mng.] button
Clicking this button displays the [User mng.] screen in the main area. (page 92)

6 [Network] button
Clicking this button displays the [Network] screen in the main area. (page 93)

7 [Maintenance] button
Clicking this button displays the [Maintenance] screen in the main area. (page 95)

[Basic] screen



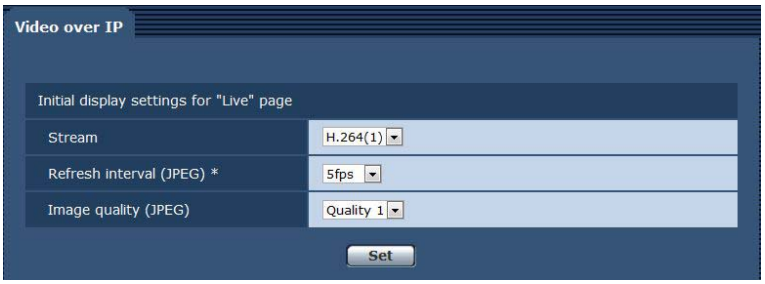
Item	Description of settings
[Camera title]	Enter the name of the camera. Clicking the [Set] button displays the entered name on the camera title display area. The factory setting value is the product number of the camera. You can enter 0 to 20 single-byte characters. **Characters that can be used** • Single-byte numbers: 0123456789 • Single-byte alphabet (upper/lower case): ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz • Single-byte symbols: !#$%'()*+,-./:;<=>?@[]^_`{|}~\
[Automatic installation of viewer software]	Configures automatic installation of the plugin software for display. **[On]:** Installs the plugin software for display automatically. **[Off]:** Does not install the plugin software for display automatically. • Factory setting: [On]
[Smoother live video display on the browser (buffering)]	Configures settings for display of images on the camera using the plugin software for display. **[On]:** Stores images on the camera to the computer temporarily to make images to be displayed smoother. **[Off]:** Does not store images on the camera to the computer and displays images in real time. Image display and audio playback are not available on a computer where the plugin software for display Network Camera View 4S is not installed. The number of times that the plugin software for display has been installed can be viewed in the [Product info.] tab of the [Maintenance] menu in the [Setup] screen. • Factory setting: [On]

[Image] screen

You can configure the settings for JPEG images, H.264 images, and image quality.

■ [Initial display settings for "Live" page]

Configures initial settings for display on the [Live] screen.



Item	Description of settings
[Stream]	Selects the image to be displayed on the [Live] screen. **[H.264(1)]:** Displays movie (H.264 (1)). **[H.264(2)]:** Displays movie (H.264 (2)). **[H.264(3)]:** Displays movie (H.264 (3)). **[H.264(4)]:** Displays movie (H.264 (4)). **[JPEG(1)]:** Displays still image (JPEG (1)). **[JPEG(2)]:** Displays still image (JPEG (2)). **[JPEG(3)]:** Displays still image (JPEG (3)). • Factory setting: [H.264(1)]
[Refresh interval (JPEG)]	Sets the refresh rate for JPEG images. At 59.94 Hz **[1fps], [2fps], [3fps], [5fps], [6fps]*, [10fps]*, [15fps]*, [30fps]*** • Factory setting: [5fps] At 50 Hz **[1fps], [2fps], [5fps], [10fps]*, [12.5fps]*, [25fps]*** • Factory setting: [5fps] The image refresh rate may decrease to lower than the configured value depending on the network environment, resolution, image quality, and number of users simultaneously accessing the camera. If the configured image refresh rate cannot be realized, setting a lower resolution or image quality may increase the refresh rate to be closer to the configured value. * When [H.264 transmission] is set to [On], the image refresh rate may decrease to lower than the configured value.
[Image quality(JPEG)]	Configures the image quality of the first image when JPEG image is displayed on the [Live] screen. **[Quality1]:** Image quality 1 **[Quality2]:** Image quality 2 • Factory setting: [Quality1]

■ JPEG

Configure [Image capture size] and [Image quality] for [JPEG(1)], [JPEG(2)], and [JPEG(3)].

NOTE

- Different resolution must be each selected for [JPEG(1)], [JPEG(2)], and [JPEG(3)]. The same resolution cannot be selected for different JPEG image setting.

Item	Description of settings
[Image capture size]	Sets the resolution of the displayed image when JPEG images are displayed **[1920×1080], [1280×720], [640×360], [320×180], [160×90]** • Factory setting: [1920×1080] ([JPEG(1)]), [640×360] ([JPEG(2)]), [320×180] ([JPEG(3)])
[Image quality]	Sets two types of the image quality for JPEG images in each resolution. **[0 Super fine], [1 Fine], [2], [3], [4], [5 Normal], [6], [7], [8], [9 Low]** • Factory setting: [5 Normal] ([Quality1]), [8] ([Quality2])

■ H.264

Set [Max bit rate (per client)], [Image capture size], [Image quality], etc. for H.264 image. (Windows)
The following screen shows an example of [H.264(1)].

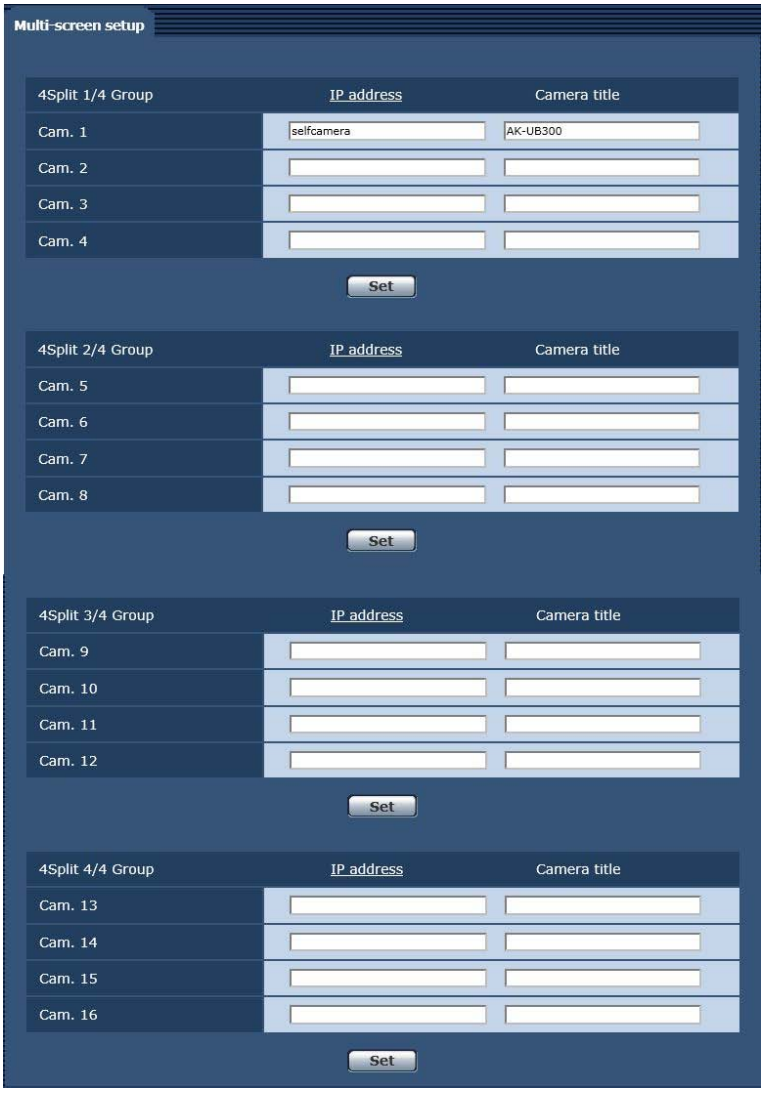
Item	Description of settings
[H.264 transmission]	Sets whether to transmit H.264 images. **[On]:** Transmits H.264 images. **[Off]:** Does not transmit H.264 images. When [H.26 transmission] is set to [On], both H.264 and JPEG images can be displayed on the [Live] screen. When [H.26 transmission] is set to [On], the refresh rate of JPEG images may decrease. • Factory setting: [On]
[Internet mode (over HTTP)]	Sets whether to transmit H.264 images over the Internet. The broadband router setting can be kept the same as that for JPEG images when transmitting H.264 images. **[On]:** Transmits H.264 image using the HTTP port. For setting the HTTP port number, refer to [HTTP port] (page 94). **[Off]:** Transmits H.264 image using the UDP port. When set to [On], the transmission type is restricted to [Unicast port (AUTO)]. When set to [On], the H.264 images will be displayed after a lapse of a few seconds. When set to [On], the H.264 images may not be displayed depending on the number of users simultaneously accessing the camera or the existence of audio data. • Factory setting: [Off]
[Image capture size]	Sets the resolution of the H.264 image. The options are restricted depending on the selected resolution. For [H.264(1)] **[1920×1080], [1280×720]** • Factory setting: [1920×1080] For [H.264(2)] **[1920×1080], [1280×720], [640×360], [320×180], [160×90]** • Factory setting: [640×360] For [H.264(3)] **[1280×720], [640×360], [320×180], [160×90]** • Factory setting: [320×180] For [H.264(4)] **[1280×720], [640×360], [320×180], [160×90]** • Factory setting: [160×90]
[Transmission priority]	Sets the transmission mode of H.264 images. **[Constant bit rate]:** Transmits H.264 images in the bitrate set in [Max bit rate (per client)]. **[Frame rate]:** Transmits H.264 images in the bitrate set in [Frame rate]. **[Best effort]:** Transmits H.264 images in a variable bitrate between the maximum and minimum values set in [Max bit rate (per client)]. **[Advanced VBR]:** Transmits H.264 images in the bitrate set in [Frame rate]. Images are transmitted so that the average transmission amount in the duration set for [Control time period] will be the bitrate set in [Max bit rate (per client)]. When [Transmission priority] is set to [Frame rate] or [Advanced VBR], the number of users allowed to be connect may decrease. • Factory setting: [Frame rate]
[Burst tolerance level]	Sets how much further the H.264 bitrate can exceed [Max bit rate (per client)]. **[High], [Middle], [Low]** This can only be set when [Advanced VBR] is selected in [Transmission priority]. • Factory setting: [Low]

Item	Description of settings
[Control time period]	Sets the duration for which the H.264 bitrate is controlled. Images are transmitted so that the average transmission amount in the selected duration will be the bitrate set in [Max bit rate (per client)]. **[1h]:** 1 hour **[6h]:** 6 hours **[24h]:** 1 day (24 hours) **[1week]:** 1 week This can only be set when [Advanced VBR] is selected in [Transmission priority]. • Factory setting: [24h]
[Frame rate]	Sets the frame rate of the H.264 images. At 59.94 Hz **[5fps], [15fps], [30fps], [60fps]** • Factory setting: [30fps] At 50 Hz **[5fps], [12.5fps], [25fps], [50fps]** • Factory setting: [25fps] [Frame rate] is restricted by [Max bit rate (per client)]. The actual frame rate may decrease to lower than the configured value. This can only be set when [Frame rate] or [Advanced VBR] is selected in [Transmission priority]. For [H.264(1)], the value is fixed to [60fps] (59.94 Hz) or [50fps] (50 Hz). For [H.264(2)] to [H.264(4)], [60fps] (59.94 Hz) or [50fps] (50 Hz) cannot be selected.
[Max bit rate (per client)]	Sets the H.264 bitrate per client. When [Best effort] is selected for [Transmission priority], set the maximum ([Max]) and minimum ([Min]). **[64kbps], [128kbps], [256kbps], [384kbps], [512kbps], [768kbps], [1024kbps], [1536kbps], [2048kbps], [3072kbps], [4096kbps], [6144kbps], [8192kbps], [10240kbps], [12288kbps], [14336kbps], [16384kbps], [20480kbps], [24576kbps]** The H.264 bitrate is restricted by [Bandwidth control (bitrate)] in the [Network] tab of the [Network] screen. A bitrate of other than [64kbps] may decrease to lower than the configured value. ([Bandwidth control (bitrate)]) The range of the H.264 bitrate that can be configured differs depending on the resolution. For [160×90]: [64kbps] to [2048kbps] For [320×180] and [640×360]: [64kbps] to [4096kbps] For [1280×720]: [256kbps] to [8192kbps] For [1920×1080]: [512kbps] to [14336kbps] For [1920×1080] (60 fps) and [1280×720] (60 fps): [1024kbps] to [24576kbps] • Factory setting: [4096kbps] ([H.264(1)]), [1536kbps] ([H.264(2)]), [1024kbps] ([H.264(3)]), [512kbps] ([H.264(4)])
[Image quality]	Sets the image quality of H.264 image. This can only be set when [Constant bit rate] or [Best effort] is selected in [Transmission priority]. [Low (Motion priority)], [Normal], [Fine (Image quality priority)] • Factory setting: [Normal]
[Refresh interval]	Sets the interval (I frame interval: 0.2 to 5 seconds) at which to refresh H.264 images. If many errors occur in your network environment, setting a shorter refresh interval will cause less noise in the images. However, this may lower the image refresh rate. At 59.94 Hz **[0.2s], [0.25s], [0.33s], [0.5s], [1s], [2s], [3s], [4s], [5s]** • Factory setting: [1s] At 50 Hz **[0.2s], [0.5s], [1s], [2s], [3s], [4s], [5s]** • Factory setting: [1s]
[Transmission type]	Sets the transmission type of the H.264 images. **[Unicast port (AUTO)]:** A single camera can be simultaneously accessed by a maximum of 14 users. When images are transmitted from the camera, [Unicast port1 (Image)] will be set automatically. If a fixed port number for H.264 image transmission is not necessary in cases such as when the camera is used within a network, it is recommended that this is set to [Unicast port (AUTO)]. **[Unicast port (MANUAL)]:** A single camera can be simultaneously accessed by a maximum of 14 users. When images are transmitted from the camera, [Unicast port1 (Image)] must be set manually. When H.264 images are transmitted over the Internet, set a fixed port number for the broadband router (referred to as a router hereafter) to permit communication. ([HTTP port] (page 94)) For details, refer to the Operating Instructions of your router. **[Multicast port]:** A single camera can be simultaneously accessed by an unlimited number of users. To send H.264 images in multicast, enter [Multicast address], [Multicast port], and [Multicast TTL/HOP Limit]. To transmit the H.264 image in multicast, specify the destination using a router, etc., supporting the multicast. At that time, set so the H.264 image is not transmitted to other connected device (such as AW-RP50N/AW-RP50E/AW-RP120G). The IP communication with the camera may become disabled when a H.264 image is transmitted to AW-RP50N/AW-RP50E/AW-RP120G. • Factory setting: [Unicast port (AUTO)] **Maximum number of simultaneous accesses** The maximum number of users that can simultaneously access the camera is 14, which is the total of users receiving H.264 images and users receiving JPEG images. However, access may be restricted to less than 14 users depending on the settings of [Bandwidth control (bitrate)] and [Max bit rate (per client)]. When the number of users accessing the camera has exceeded the maximum of 14 users, a message indicating excessive access appears. When [Transmission type] of [H.264] is set to [Multicast port], the second and later users that receive the H.264 images are not counted in the number of users accessing the camera.

Item	Description of settings
[Unicast port1 (Image)]	Sets the unicast port number (to be used when images are transmitted from the camera). This item must be configured when [Transmission type] is set to [Unicast port (MANUAL)]. **[1024] - [50000]** Only even numbers can be configured. 10670 cannot be set as a port number. • Factory setting: [32004] ([H.264(1)]), [32014] ([H.264(2)]), [32024] ([H.264(3)]), [32034] ([H.264(4)])
[Multicast address]	Sets the IP address of the multicast. The images are transmitted to the specified IP address. This item must be configured when [Transmission type] is set to [Multicast port]. Before setting, check if it can be used as a multicast IP address. **[224.0.0.0] - [239.255.255.255]** • Factory setting: [239.192.0.20] ([H.264(1)]), [239.192.0.21] ([H.264(2)]), [239.192.0.22] ([H.264(3)]), [239.192.0.23] ([H.264(4)])
[Multicast port]	Enter the multicast port number (to be used when images are transmitted from the camera). This item must be configured when [Transmission type] is set to [Multicast port]. Only even numbers can be configured. 10670 cannot be set as a port number. **[1024] - [50000]** • Factory setting: [37004]
[Multicast TTL/HOP Limit]	Enter the TTL/HOP Limit value of the multicast. This item must be configured when [Transmission type] is set to [Multicast port]. **[1] - [254]** • Factory setting: [16] When H.264 images are transmitted via Internet, the transmitted images may not be displayed depending on the settings for the proxy server, firewall, etc. In this case, consult your network administrator. When multicast images are to be displayed using a computer where multiple LAN cards are installed, disable the LAN cards that are not to be used for reception.

[Multi-screen setup] screen

[Multi-screen setup] screen sets the camera to display in the multi-screen.



Item	Description of settings
[IP address]	Enter the IP address of the camera to display in the multi-screen. Maximum of four groups with four cameras in each group (16 cameras) can be registered. Enter as follows when the HTTP port number of the camera to display is changed. (Example) 192.168.0.40:8080 • Factory setting: [selfcamera] ([Cam1]), no registration ([Cam2] to [Cam16]) ***NOTE*** ・ [IP address] is set with this unit for the camera displaying [selfcamera] as the IP address.
[Camera title]	Enter the title of the camera. Entered title of the camera is displayed in the multi-screen screen. You can enter 0 to 20 single-byte characters. • Factory setting: parts No. display ([Cam1]), blank ([Cam2] to [Cam16]) **Characters that can be used** • Single-byte numbers: 0123456789 • Single-byte alphabet (upper/lower case): ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz • Single-byte symbols: !#$%'()*+,-./:;<=>?@[]^_`{|}~\ ***NOTE*** ・ Only part of the camera title may display when 16 screen multi-screen is selected. ・ Display of the multi-screen will be 4:3.

[User mng.] screen

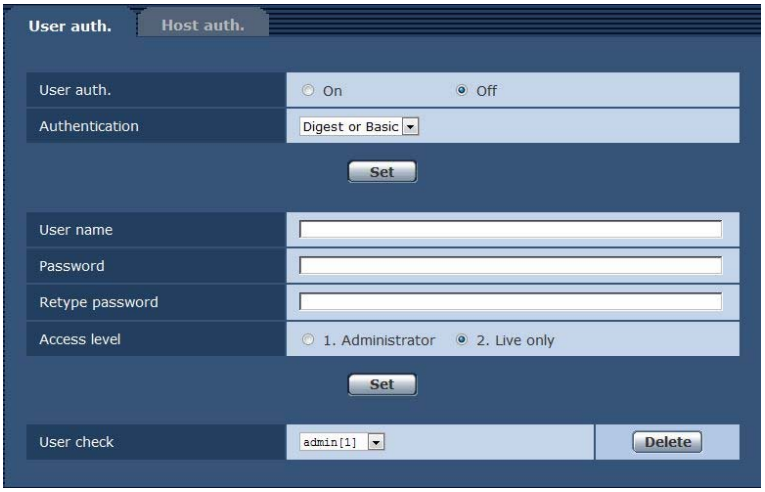
The [User mng.] screen performs the authentication registration to limit the user or computer (IP address) that can access this unit from a computer.
The [User mng.] screen consists of the [User auth.] tab and [Host auth.] tab.

[User auth.] tab

Performs the authentication registration to limit the user that can access this unit from a computer.
A maximum of 24 users can be registered.

NOTE

・ When authentication of a computer with an identical IP address has been failed eight times or more in 30 seconds (authentication error), the camera cannot be accessed for a while.

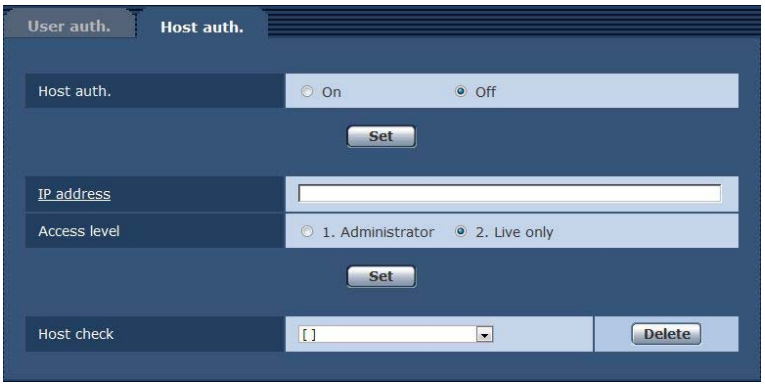


Item	Description of settings
[User auth.]	Sets whether to authenticate users. **[On]:** Authenticates the users. **[Off]:** Does not authenticate the users. • Factory setting: [Off]
[Authentication]	Sets the authentication method to be used for user authentication. **[Digest or Basic]:** Uses Digest authentication or Basic authentication. **[Digest]:** Uses Digest authentication. **[Basic]:** Uses Basic authentication. Following operation is required when the [Authentication] setting is changed. • Close the web browser once and connect again. • Clear the connection once and connect it again if the remote camera controller AW-RP50N/AW-RP50E/AW-RP120G and the remote operation panel AK-HRP200G/AK-HRP1000G/AK-HRP1005G are connected via IP connection. The UB300 Setting Tool cannot be connected to the camera when [Digest] is selected for [Authentication] and [User auth.] is set to [On]. • Factory setting: [Digest or Basic]

Item	Description of settings
[User name]	Enter a user name. Number of characters that can be entered: 1 to 32 Characters that cannot be entered: Double-byte and single-byte symbols " & : ; \ Entering a user name that has been already registered and clicking the [Set] button overwrites the user information.
[Password] [Retype password]	Enter a password. Number of characters that can be entered: 4 to 32 Characters that cannot be entered: Double-byte and single-byte symbols " &
[Access level]	Sets the access level for users. **[1. Administrator]:** Allows full operation of the camera. **[2. Live only]:** Allows only to display the [Live] screen. No operation and setting of the camera is available. • Factory setting: [2. Live only]
[User check]	Click ▼ in [User check] to check the registered users. A registered user is indicated as “registered user name[Access level]”. (Example: admin[1]) Clicking the [Delete] button on the right deletes the selected user.

[Host auth.] tab

Register host authentication information to restrict computers (IP addresses) that can access the camera.



Item	Description of settings
[Host auth.]	Sets whether to authenticate hosts. **[On]:** Authenticates the hosts. **[Off]:** Does not authenticate the hosts. • Factory setting: [Off]
[IP address]	Enter the IP address of the computer to permit its access to the camera. A host name cannot be entered as an IP address. If the IP address/mask length of subnet is entered, computers that can access the camera can be restricted per subnet. When 192.168.0.1/24 is entered and [1. Administrator] is selected for [Access level], computers with 192.168.0.1 to 192.168.0.254 can access the camera in the access level [1. Administrator]. Entering an IP address that has been already registered and clicking the [Set] button overwrites the host information.
[Access level]	Sets the access level for hosts. **[1. Administrator]:** Allows full operation of the camera. **[2. Live only]:** Allows only to display the [Live] screen. No operation and setting of the camera is available. • Factory setting: [2. Live only]
[Host check]	Click ▼ of [Host check] to check the IP addresses of the registered hosts. A host is indicated as “registered IP address and access level”. (Example: 192.168.0.21[1]) Clicking the [Delete] button on the right deletes the selected host (IP address).

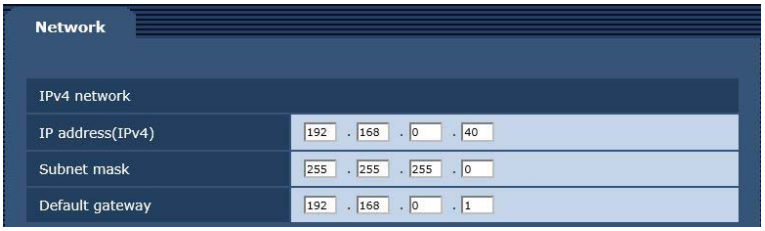
[Network] screen

Configure the settings for network in the [Network] screen.

The following information is necessary to configure the network settings. Consult your network administrator or internet service provider.

- IP address
- Subnet mask
- Default gateway (when gateway server and router are to be used)
- HTTP port

[IPv4 network]



Item	Description of settings
[IP address(IPv4)]	Enter the IP address of the camera. Enter an IP address that does not conflict with the ones set for computers or other network cameras. • Factory setting: [192.168.0.40]
[Subnet mask]	Enter the subnet mask of the camera. • Factory setting: [255.255.255.0]
[Default gateway]	Enter the default gateway of the camera. Multiple IP addresses cannot be used for the default gateway. • Factory setting: [192.168.0.1]

[Common]

Item	Description of settings
[HTTP port]	Assigns the port number of HTTP individually (port number when accessing with a browser). **[1] - [65535]** • Factory setting: [80] The following port numbers are used by the camera. Do not use them. [20]/[21]/[23]/[25]/[42]/[53]/[67]/[68]/[69]/[110]/[123]/[161]/[162]/[443]/[554]/[995]/[10669]/[10670]/[49152]/[49200] - [49299]/[59000] - [61000]
[Line speed]	Sets data transmission speed. **[Auto]:** Sets the transmission speed automatically. **[100M-Full]:** 100 Mbps full-duplex **[100M-Half]:** 100 Mbps half-duplex **[10M-Full]:** 10 Mbps full-duplex **[10M-Half]:** 10 Mbps half-duplex It is recommended to use the initial setting [Auto] for normal use. • Factory setting: [Auto]
[Max RTP packet size]	Sets whether to limit the RTP packet size transmitted from the camera while viewing camera images using RTP. **[Unlimited (1500byte)]:** Unlimited (1500 bytes) **[Limited (1280byte)]:** Limited (1280 bytes) It is recommended to set [Unlimited (1500byte)] for normal use. Select [Limited (1280byte)] when the packet size of the communication line to be used is limited. For the maximum packet size of your communication line, consult your network administrator. • Factory setting: [Unlimited (1500byte)]
[HTTP max segment size (MSS)]	Sets whether to limit the maximum segment size (MSS) transmitted from the camera while viewing camera images using HTTP. **[Unlimited (1460byte)]:** Unlimited (1460 bytes) **[Limited (1280byte)]:** Limited (1280 bytes) **[Limited (1024byte)]:** Limited (1024 bytes) It is recommended to set [Unlimited (1460byte)] for normal use. Select [Limited (1024byte)] or [Limited (1280byte)] when the maximum segment size (MSS) of the communication line to be used is limited. For the maximum segment size (MSS) of your communication line, consult your network administrator. • Factory setting: [Unlimited (1460byte)]

Item	Description of settings
[Bandwidth control (bitrate)]	Sets data transmission amount. **[Unlimited], [64kbps], [128kbps], [256kbps], [384kbps], [512kbps], [768kbps], [1024kbps], [2048kbps], [4096kbps], [8192kbps]** When a low [Bandwidth control (bitrate)] is set, the snapshot button may not function depending on the environment of use. In this case, use the [Compression] button in the [Live] screen to select [JPEG], and take snapshots in an environment where images are transmitted in the smallest resolution. • Factory setting: [Unlimited]
[Easy IP Setup accommodate period]	Sets the time period that the network setting operations from EASY IP Setup Software is to be enabled. **[20min]:** Enables camera setting operations in EASY IP Setup Software for only 20 minutes after the camera has started up. **[Unlimited]:** Enables camera setting operations in EASY IP Setup Software invariably. Since camera display is always enabled in EASY IP Setup Software, the camera images can be displayed. For the address setting of each server, consult your network administrator. • Factory setting: [Unlimited]
[Recommended network setting for internet]	Sets the recommended configuration for making the camera public on the Internet. When the [Set] button is clicked, a dialog box appears indicating the setting configuration of the item is to be changed. After checking it, click the [OK] button. [Image] screen • [JPEG(1)] **[Image capture size]:** [640×360] • [JPEG(2)] **[Image capture size]:** [320×180] • [JPEG(3)] **[Image capture size]:** [160×90] • [H.264(1)]/[H.264(2)]/[H.264(3)]/[H.264(4)] (Windows) **[Internet mode (over HTTP)]:** [On] **[Transmission priority]:** [Best effort] • [H.264(1)] (Windows) **[Image capture size]:** [1280×720] **[Max bit rate (per client)]:** [Max1024 kbps], [Min1024 kbps] • [H.264(2)] (Windows) **[Image capture size]:** [640×360] **[Max bit rate (per client)]:** [Max1024 kbps], [Min128 kbps] • [H.264(3)] (Windows) **[Image capture size]:** [320×180] **[Max bit rate (per client)]:** [Max1024 kbps], [Min128 kbps] • [H.264(4)] (Windows) **[Image capture size]:** [160×90] **[Max bit rate (per client)]:** [Max1024 kbps], [Min128 kbps] [Network] screen **[Max RTP packet size]:** [Limited (1280byte)] **[HTTP max segment size (MSS)]:** [Limited (1280byte)]

[Maintenance] screen

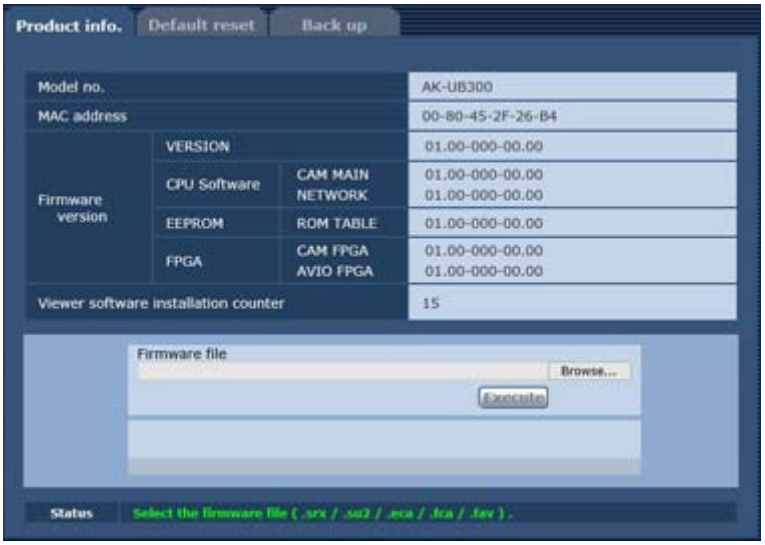
Check system logs, confirm software versions, or initialize the camera.

The screen consists of three tabs, [Product info.], [Default reset], and [Back up].

[Product info.] tab

Displays the software version of the camera.

Displays information of the camera such as [Model no.], [MAC address], [Serial no.], and [Firmware version].



Item	Description of settings
[Model no.]	Displays the model number of the camera.
[MAC address]	Displays the MAC address of the camera.
[Firmware version]	**[VERSION]:** Displays the system version of the camera. **[CPU Software - CAM MAIN]:** Displays the camera's main software version. **[CPU Software - NETWORK]:** Displays the software version of the network component. **[EEPROM - ROM TABLE]:** Displays the version of the camera table. **[FPGA - CAM FPGA]:** Displays the camera's FPGA version. **[FPGA - AVIO FPGA]:** Displays the FPGA version of the image processing component.
[Viewer software installation counter]	Displays the number of plugin software for display that has been installed automatically from the camera.
[Firmware file]	Updates the firmware.
[Status]	Displays the current status of the unit.

■ **Update method of the firmware**

1 Contact your dealer and download the latest software to the hard disc of the personal computer.

2 Click the [Browse...] button to specify the downloaded software.

3 Click the [Execute] button.

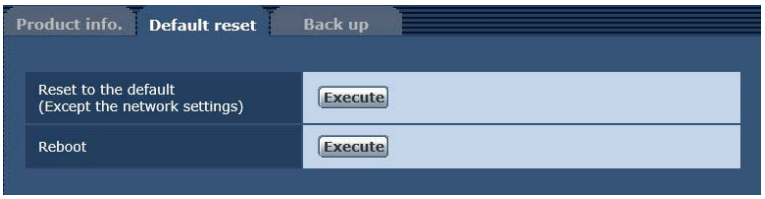
The confirmation screen of the update execution is displayed.
Always delete the Internet temporarily files after updating.

NOTE

- Space or double-byte character cannot be used as the save directory name.
- Make the total number of characters for the save directory name and the downloaded software name 250 characters or less.
- Always perform the update of the firmware from a personal computer within the same network (LAN) as the device to update.
- The time it takes for the progress bar to display the update processing after the [Execute] button is pressed is as follows.
  - CAM FPGA: Approx. one minute
  - NETWORK and AVIO FPGA: Approx. two minutes
  - Others: 30 seconds or less
- Use the following files specified by Panasonic as the software for update.
  - CPU Software - CAM MAIN
    RX_SOFT.srx
  - CPU Software – Network
    US2_SOFT.su2
  - EEPROM - ROM TABLE
    CAM_TABLE.eca
  - FPGA - CAM FPGA
    CAM_FPGA.fca
  - FPGA - AVIO FPGA
    AVIO_FPGA.fav
- Do not turn off the power of the unit during the update until the progress bar disappears.
- Do not perform any operation during the update until the update is completed.

[Default reset] tab

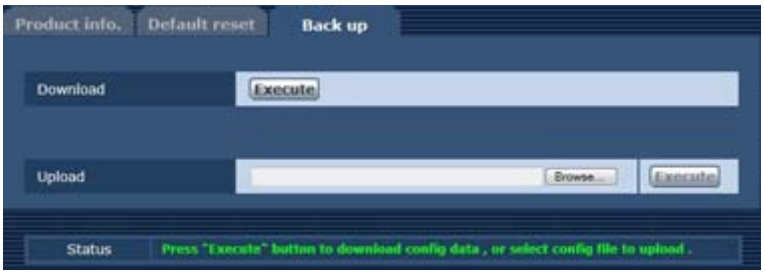
Initialize the setting data of the camera and restart the camera.



Item	Description of settings
[Reset to the default (Except the network settings)]	By clicking the [Execute] button, resets the configuration of the camera to its default settings. The user name and password used for login are also reset to their default values (admin/12345). After executing the reset operation, the camera cannot be operated for approximately three minutes. The following setting items will not be reset. • All items for [IPv4 network] • [HTTP port] • [Line speed] • [Bandwidth control (bitrate)]
[Reboot]	Clicking the [Execute] button will restart the unit. Once the unit is restarted, it cannot be operated for approximately one minute as when the power of the unit is turned on.

[Back up] tab

You can save network-related settings to a computer, or apply the settings saved in a computer to the camera.



Item	Description of settings
[Download]	Saves the network-related settings of the camera to a computer. (page 97)
[Upload]	Uploads the setting file of the camera saved in a computer using the download function. (page 97)

■ Saving the network-related settings of the camera to a computer ([Download])

Perform the following procedure to save the network-related settings of the camera to a computer.

Do not turn off the power of the camera while the download operation is in process.

Do not perform any operation from the start of the download operation until its end.

1 Click the [Execute] button for [Download].

A dialog box for saving destination appears.

2 Specify a saving destination folder, and then click the [OK] button.

The data will be saved.

■ Applying the settings saved in a computer to the camera ([Upload])

Perform the following procedure to upload the setting file of the camera saved in a computer using the download function [Download] to apply the settings to the camera.

Use the file downloaded with the camera when uploading data.

Do not change the extension (.ndt) of a downloaded file.

Do not turn off the power of the camera while the upload operation is in process.

Do not perform any operation from the start of the upload operation until its end.

1 Click the [Browse...] button on [Upload] to specify the downloaded setting file.

2 Click the [Execute] button.

A message dialog box appears.

3 Click the [OK] button.

Uploading will start.
When uploading has finished, a message dialog box appears.

4 Click the [OK] button.

The camera will be restarted automatically.

Chapter 7 UB300 Setting Tool

This chapter describes the changing of setting menu and updating the firmware using the UB300 Setting Tool.

Introduction

UB300 Setting Tool is dedicated for AK-UB300G.

This operates in Windows and Macintosh.

Changing of the setting menu and updating of the firmware for AK-UB300G are possible.

■ Description in this document

Description in this document is common for both Windows and Macintosh. Unless it is noted specially, the contents of description is common for both Windows and Macintosh.

The screenshots used in this document are for Windows 7. The screen construction is common for both Windows and Macintosh, but the following parts will differ.

- The “minimize” and “close” buttons at the top of the window
  Displayed position will be different for Windows and Macintosh.
- The [OK] and [Cancel] buttons in the dialog
  The display order will be different for Windows and Macintosh.

Also, the capture screen described in this document may differ from actual.

NOTE

- Usage with multiple UB300 Setting Tool started simultaneously is not supported.
- Open the receive port on the local host to operate the UB300 Setting Tool.
  The receive port can be arbitrarily specified in the setting screen of UB300 Setting Tool.

Function of the UB300 Setting Tool

Connection setting

It can connect to any AK-UB300G by setting the connection information.

The items that can be set are as follows.

■ Camera information

- IP address: Specify the IP address of AK-UB300G to connect.
- Port number: Specify the port number of AK-UB300G to connect. The default for camera side is 80.

■ Authentication information

- User name: Specify the account name with administrator privilege to be used at the time of connection.
- Password: Specify the password for the account with administrator privilege to be used at the time of connection.

■ Local host information

- Port number: Specify the port number that UB300 Setting Tool will use when it is to connect. It is not necessary to change if it is not required.

Once these items are set, click the [Connect] button to connect to the specified AK-UB300G.

Firmware update function

Update can be performed on the connected AK-UB300G by specifying an arbitrary firmware.

The firmware that can be updated are as follows.

- CAM MAIN
- NETWORK
- ROM TABLE
- CAM FPGA
- AVIO FPGA
- Option (enabled only when an option board is added)

Setting menu operation

Setting menu of the connected AK-UB300G can be operated.

The status of the displayed setting menu is synchronized with the connected AK-UB300G.

However, all setting menu items cannot be operated from this tool.

OSD operation function

The buttons for OSD menu operation for AK-UB300G can be executed.

Use this when performing OSD operation while viewing the image output from AK-UB300G.

Setup

Installation

For Windows

Perform the installation logged in as a user with the administrator privilege.

1 Double-click the downloaded file.

The file is expanded and setup.exe is displayed.
The UB300 Setting Tool can be downloaded from the following site:
http://pro-av.panasonic.net/

2 Double-click setup.exe.

The introduction screen is displayed.
From hereafter, install following the instruction of the installer.

NOTE

- A restart may be required depending on the environment of the personal computer. If so, use the UB300 Setting Tool after restarting the personal computer.

■ **To uninstall**

1 Select [Control Panel] → [Program] → [Programs and Features].

2 Select [UB300 Setting Tool] from the program list, and click [uninstall].

The confirmation screen is displayed.

3 Click [Yes].

It will be uninstalled.

For Macintosh

Perform the installation logged in as a user with the administrator privilege.

1 Double-click the downloaded file.

The file is expanded and UB300SettingTool.app is displayed.

2 Move UB300SettingTool.app to the Application folder.

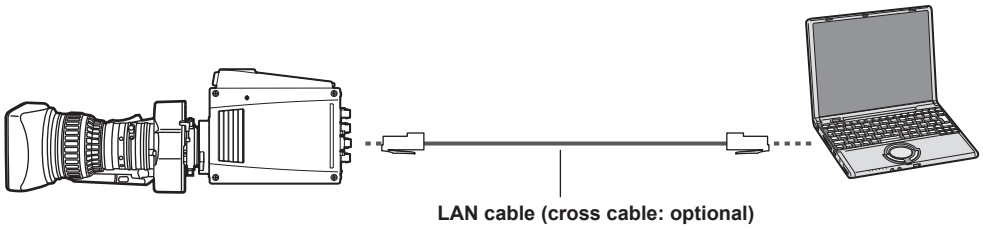
Move to appropriate location as necessary.

■ **To uninstall**

1 Delete by dragging UB300SettingTool.app to the trash can.

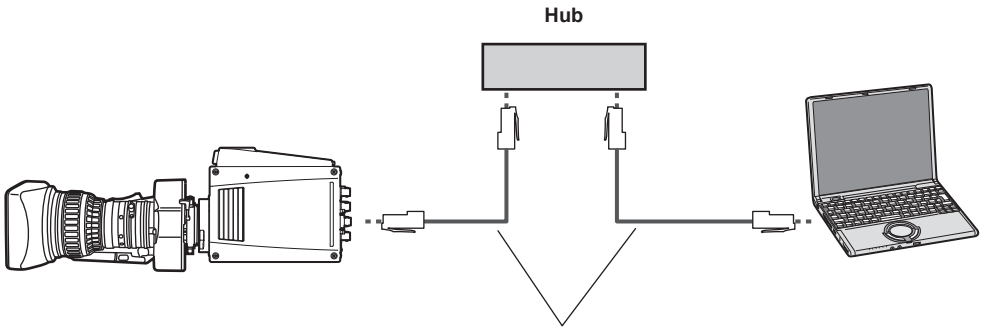
Connection

Connect the personal computer to operate the UB300 Setting Tool and AK-UB300G as follows.



LAN cable (cross cable: optional)

When hub is used



LAN cable (straight cable: optional)

Set the IP address of the personal computer with a separate address of AK-UB300G within the range of private address.
Set the subnet mask to the same address as AK-UB300G.
(Example)

- Personal computer: 192.168.0.100
- AK-UB300G: 192.168.0.40

Operation

Startup

For Windows

1 Click [Start] → [Program] → [Panasonic] → [UB300 Setting Tool].

NOTE

- A security warning may be displayed when UB300 Setting Tool is started up without setting the port opening. In such case, follow the instruction in the warning to allow the access by UB300 Setting Tool.

■ **To exit**

1 Click [×] at top right while operating.

For Macintosh

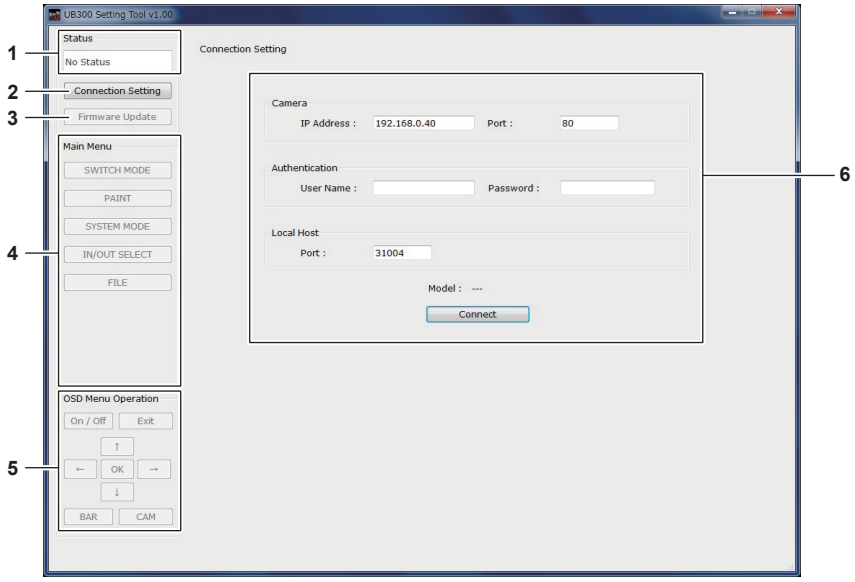
1 Double-click the [UB300 Setting Tool] icon in the Application folder from [Finder].

■ **To exit**

1 Click the red button at the left while operating.

Top screen

This is the screen displayed during startup.



1 [Status]
Displays the connection status of AK-UB300G and contents of the occurred error.

2 [Connection Setting] button
Displays the connection setting screen to the AK-UB300G. The connection setting screen is automatically displayed right after the startup.

3 [Firmware Update] button
Displays the firmware update execution screen of AK-UB300G.

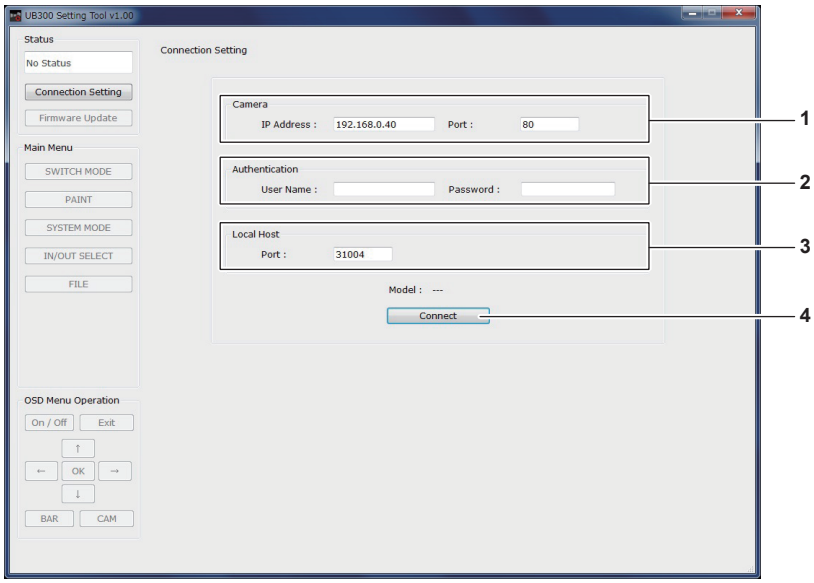
4 [Main Menu] button
Selects the setting menu to change in the connected AK-UB300G.

5 [OSD Menu Operation] button
This is the button for the OSD operation. This can display the OSD menu or operate the cursor against the output image of AK-UB300G.

6 Menu setting screen
Displays the setting menu for the category selected by the [Main Menu] button. The content of the setting can be changed.

Connection setting screen

This is the screen displayed when the [Connection Setting] button is clicked. This is also displayed during startup.



1 [Camera]

- [IP Address]

  Sets the IP address of AK-UB300G to be connected.

- [Port]

  Sets the port number of AK-UB300G to be connected.

  This setting is not necessary when the HTTP port number at the AK-UB300G side is not changed from its default.

2 [Authentication]

- [User Name]

  Specifies the account name used to connect to AK-UB300G. Specify the account with the administrator privilege.

- [Password]

  Specifies the password for the account to be used when connecting.

3 [Local Host]

- [Port]

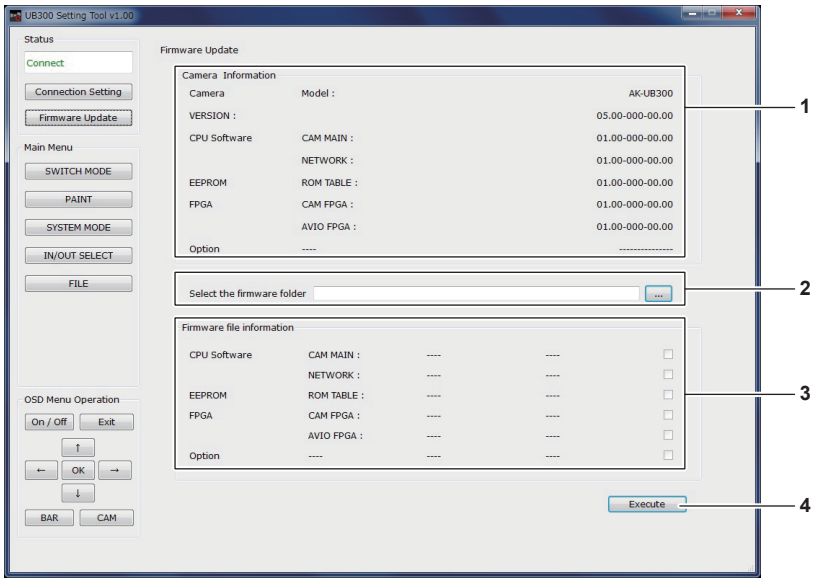
  Specifies the communication port number of the personal computer where the UB300 Setting Tool is to operate.

4 [Connect] button

Connection to AK-UB300G will start when the [Connect] button is clicked after setting [IP Address]/[Port]/[User Name]/[Password].
[AK-UB300] is displayed in [Model] when the connection is successful.

Firmware update function screen

This is the screen displayed when the [Firmware Update] button is clicked.



1 [Camera Information]

Displays the version of the firmware for the connected AK-UB300G.
Version information is displayed in [Option] only when an optional board is added to AK-UB300G.

2 [Select the firmware folder]
Displays the folder storing the firmware file to write to AK-UB300G.

3 [Firmware file information]
Displays the firmware version of the selected firmware file.

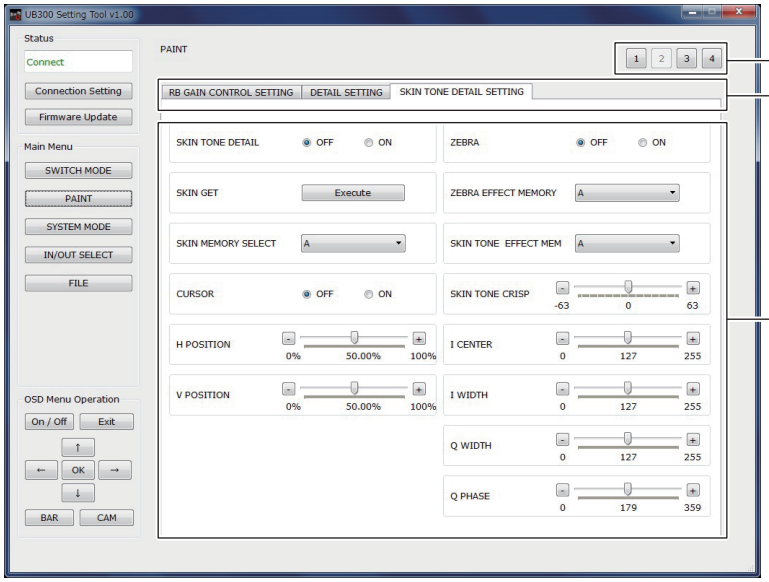
4 [Execute]
Clicking the [Execute] button will start the update of AK-UB300G with the selected firmware file.
A progress bar is displayed during the update.

NOTE

- The unit may reset or output image may be disrupted during the update.

Setting menu screen

This is the screen displayed when any button in [Main Menu] is clicked.
(Example) When the [PAINT] button is clicked



1 Tab page switch button
A tab is assigned for multiple pages for the menu with many items in the setting menu. Pages are switched by this button.

2 Menu tab
The category of the displayed setting menu is assigned for each tab.
Clicking the tab will switch to the category to display.

3 Setting area
This is the area for the setting menu. There are combo box, slider, radio button, push button, etc., depending on the setting value. The displayed setting value is synchronized with the setting value in AK-UB300G.

NOTE

- Not all the setting menus are supported in [Main Menu] of the UB300 Setting Tool. Change those at AK-UB300G itself.
- Confirm the actual displayed screen for the items that can be changed by [Main Menu] of UB300 Setting Tool.
- The items that can be changed from [Main Menu] of UB300 Setting Tool may change without prior notice.
- The setting value of the displayed setting menu may not match with the connected AK-UB300G depending on the network environment or the status of the operating personal computer. In such case, confirm if there is any problem in the operation environment.

Chapter 8 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?
Operation from the IP connected remote camera controller is not possible	Is the power turned on? • If the <DC IN> 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 remove camera controller connected correctly? • Also refer to the Operating Instructions of the remote camera controller.
	Update of the firmware for the remote camera controller to support this unit may be required. • 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 5 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 <DC IN> 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 xxx.xxx.x.xx (xxx.xxx.x.xx is 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 EASY IP Setup Software.
	Does the camera access a wrong IP address? (Mac) • Execute >ping -c 10 xxx.xxx.x.xx (xxx.xxx.x.xx is the IP address set for the camera) on Terminal of OS X. 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 EASY IP Setup Software.
	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 [Setup] screen 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)
	Perform the following procedure to delete Internet temporary files. (Windows) 1) Select [Tools] - [Internet Options] on Internet Explorer. 2) Click the [General] tab, and then click the [Del] button on [Browsing history]. 3) On the [Delete browsing history] dialog box, set the [Temporary Internet Files] check box to on and click the [Del] button. 4) Click the [OK] button.
	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.
	For Internet temporary file configuration, set [Check for newer versions of stored pages] to [Every time I visit the webpage]. (Windows) Perform the following procedure to set. 1) Select [Tools] - [Internet Options] on Internet Explorer. 2) Click the [General] tab, and then click the [settings] button on [Browsing history]. 3) On the [Temporary Internet Files and History Settings] dialog box, set the [Every time I visit the webpage] radio button of [Check for newer versions of stored pages] to on. 4) Click the [OK] button.
	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.

Problem	Cause/solution
The setting file cannot be downloaded.	Is the file download function disabled? (Windows) Perform the following procedure to set. 1) Select [Tools] - [Internet Options] on Internet Explorer. 2) Click the [Security] tab, and then click the [Custom Level…] button on [Security level for this zone]. 3) On the [Security Setting] dialog box, set the [Enable] radio button of [Download file] to on. 4) Set the [Enable] radio button of [Automatic prompting for file downloads] to on. (Internet Explorer 8 only) 5) Click the [OK] button. 6) Click the [OK] button.
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.
	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 screen does not show images.	Has the plugin software for display been installed? (Windows) • Install the plugin software for display.
	If the IP image on the [Live] screen is not displayed, set [Check for newer versions of stored pages] to [Every time I visit the webpage] in the Internet temporary file configuration. (Windows) Perform the following procedure to set. 1) Select [Tools] - [Internet Options] on Internet Explorer. 2) Click the [General] tab, and then click the [settings] button on [Browsing history]. 3) On the [Temporary Internet Files and History Settings] dialog box, set the [Every time I visit the webpage] radio button of [Check for newer versions of stored pages] to on. 4) Click the [OK] button.
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.	Perform the following procedure to delete Internet temporary files. (Windows) 1) Select [Tools] - [Internet Options] on Internet Explorer. 2) Click the [General] tab, and then click the [Del] button on [Browsing history]. 3) On the [Delete browsing history] dialog box, set the [Temporary Internet Files] check box to on and click the [Del] button. 4) Click the [OK] button.
	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.
The screen does not show H.264 images.	If the plugin software for display, Network Camera View 4S, has been uninstalled in an environment where the plugin software for display, Network Camera View 3, is installed, H.264 image display is disabled. In this case, uninstall Network Camera View 3, and then install Network Camera View 4S.
	Are the camera and computer connected via Internet? • Set [Internet mode (over HTTP)] to [On].
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.

Problem	Cause/solution
When multiple web browsers are running to display H.264 images, one of the web browsers show shifted multiple camera images.	Some combinations of the computer's display adaptor and driver may cause this problem. (Windows) • If it occurs, update the driver of the display adaptor to its latest version first. If the problem persists, perform the following procedure to adjust the function of [Hardware Acceleration]. An example for Windows 7 is described here. The settings may not be able to be changed depending on your environment. 1) Right-click the mouse on the desktop, and select [Screen Resolution] from the menu. 2) Click [advanced]. 3) Select the [Troubleshoot] tab and click [Change Settings]. 4) If the [User Account Control] dialog box appears, click [Yes]. If you have logged in with an account other than the administrator, enter the password and the username if necessary, and click [Yes]. 5) Change the item for [Hardware Acceleration] to the leftmost [None], and then click the [OK] button.

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 Internet Explorer. (Windows)

■ Internet Explorer

The "Information bar" will be displayed under the address bar of Internet Explorer.

Problem	Cause/solution
The information bar indicating the following message appears on Internet Explorer 9.0/10.0/11.0. [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 information bar indicating the following message appears on Internet Explorer 8.0. [Pop-up blocked. To see this pop-up or additional options click here…]	Perform the following procedure to grant the permission. 1) Click the information bar and select [Always Allow Pop-ups from This Site(A)…]. [Allow pop-ups from this site?] screen appears. 2) Click the [Yes(Y)] button.
The information bar indicating the following message appears on Internet Explorer 9.0/10.0/11.0. [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.
The information bar indicating the following message appears on Internet Explorer 8.0. [This site might require the following ActiveX control:'nwcv4SSetup.exe' from 'Panasonic System Networks Co.,Ltd.'. Click here to install…]	Perform the following procedure to grant the permission. 1) Click the information bar and select [Install ActiveX Control…]. A security warning screen appears. 2) Click the [install(I)] button.
Unnecessary status bar or scroll bar appears on a pop-up window.	Perform the following procedure to grant the permission. 1) Open the security setting screen on Internet Explorer, and select [internet]. 2) Click the [Custom Level…] button. 3) Select [Enable] in [Allow script-initiated windows without size or position constraints] of [More], and click the [OK] button. A warning screen appears. 4) Click the [Yes(Y)] 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 [Screen Resolution] - [Make text and other items larger or smaller]. 2) Set it to [Smaller-100% (default)].
	When the zoom level for the zooming function of Internet Explorer is set to other than 100%, the image may not be displayed properly. Perform the following setting. 1) Select [View(V)] - [Zoom(Z)] on the menu bar of Internet Explorer, and click [100%].
The display layout is corrupted, or some buttons on the screen cannot be operated.	Configure the settings so that the camera is not displayed in the compatibility view. 1) Select [Tools(T)] - [Compatibility View Settings(B)] on the menu bar of Internet Explorer.

Checking the operating time

The operating time can be checked in [MAIN MENU] → [DIAGNOSTIC] → [HOUR METER].

[OPERATION]: Displays the total time of this unit powered up.

[FAN]: Displays the run time of the fan.

Warning displays

Content of the warning is displayed in the output from the <HD SDI OUT 2> terminal when an error is detected while operating.

Camera warning displays

■ When AWB (automatic white balance) is executed

[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 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.

■ When ABB (automatic black balance) is executed

[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.

■ Executing black shading

[BSHD NG]	An error has occurred with the black shading. Check if the lens is correctly closed.

Other warning displays

Together with the displaying the content of the warning, the <WARNING> lamp will illuminate in red, and the front tally lamp and the back tally lamp will blink in red.

[FAN NG]	There is a problem in the fan.
[HIGH TEMPERATURE]	The internal temperature is high.
[LOW VOLTAGE]	The voltage of the external DC power supply is low.
[SHUTDOWN SOON]	The internal temperature is rising more than expected. Or, the voltage of the external DC power supply has lowered beyond the operation guarantee. The power is turned off forcefully in 30 seconds.

Updating the camera firmware

Refer to the following website for new updates of the firmware and for operating instructions.
http://pro-av.panasonic.net/

Chapter 9 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 3G SDI×4 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. 1.6 kg (3.53 lbs.) (body only)
Dimensions (W×H×D)	Body only 110 mm×140 mm×160 mm (4-11/32 inches×5-17/32 inches×6-5/16 inches) (excluding protrusions)

Camera unit

Pickup device	11 million pixels, MOS×1
Lens mount	2/3-type bayonet
ND filter	CLEAR, 1/4, 1/16, 1/64
Gain	–6, –3, 0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36 dB
Total gain	Selectable from 6, 12, 18, 24 dB
Shutter speed	• [60p]/[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 • 180.0 deg, 172.8 deg, 144.0 deg, 120.0 deg, 90.0 deg, 45.0 deg
Synchro scan shutter	• [60p]/[59.94i]/[59.94p] mode: 1/61.7 to 1/6130 seconds • [29.97p] mode: 1/30.9 to 1/2600 seconds • [23.98p] mode: 1/24.7 to 1/2880 seconds • [50i]/[50p] mode: 1/51.5 to 1/6250 seconds • [25p] mode: 1/25.7 to 1/3130 seconds
Shutter open angle	3 deg to 359.5 deg (can be set in 0.5 deg steps)
Sensitivity	[NORMAL]: F6 (2000 lx, 3200 K, 89.9% reflection, 1080/59.94i)/F7 (2000 lx, 3200 K, 89.9% reflection, 1080/50i) [HIGH SENS]: F10 (2000 lx, 3200 K, 89.9% reflection, 1080/59.94i)/F11 (2000 lx, 3200 K, 89.9% reflection, 1080/50i)
Minimum subject brightness	Approx. 0.01 lx (50%, F1.4, +36 dB (gain), +24 dB (total gain), 29.97p/59.94 Hz, 25p/50 Hz)
Image S/N	60 dB (standard) ([DNR] = [ON])
Horizontal resolution	HD: 1000 TV lines or above (center) UHD: 1800 TV lines or above (center)

System format	• UHD 3840×2160/60p 3840×2160/59.94p 3840×2160/29.97p 3840×2160/29.97PsF 3840×2160/23.98p 3840×2160/23.98PsF 3840×2160/50p 3840×2160/25p 3840×2160/25PsF • HD 1080/60p, 1080/59.94p, 1080/59.94i 1080/29.97PsF, 1080/23.98PsF, 1080/23.98p (over 59.94i) 1080/50p, 1080/50i, 1080/25PsF 720/60p, 720/59.94p, 720/50p

Video input/output

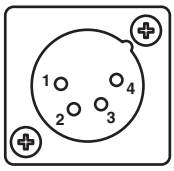
<HD SDI OUT 1> terminal	BNC × 1 3G/1.5G HD SDI: 0.8 V [p-p], 75 Ω
<HD SDI OUT 2> terminal	BNC × 1 1.5G HD SDI: 0.8 V [p-p], 75 Ω
<UHD/HD SDI OUT 1> terminal	BNC×1 3G/1.5G HD SDI: 0.8 V [p-p], 75 Ω
<UHD/HD SDI OUT 2> terminal	BNC×1 3G/1.5G HD SDI: 0.8 V [p-p], 75 Ω
<UHD/HD SDI OUT 3> terminal	BNC×1 3G/1.5G HD SDI: 0.8 V [p-p], 75 Ω
<UHD/HD SDI OUT 4> terminal	BNC×1 3G/1.5G HD SDI: 0.8 V [p-p], 75 Ω

Other input/output

<G/L IN> terminal	BNC×1, 1.0 V [p-p], 75 Ω
<I/F> terminal	D-SUB×1, 15-pin
<TALLY OUT> terminal	4-pin×1
<IRIS> terminal	12-pin×1
<ZOOM/FOCUS> terminal	12-pin×1
<LAN> terminal	100BASE-TX/10BASE-T
<DC IN> terminal	XLR×1, 4-pin, DC 12 V (DC 11 V – 17 V)

Details of the connector signals

DC IN



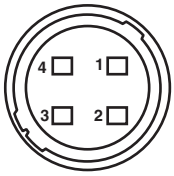
1	UNREG GND
2	Not used
3	Not used
4	+12 V

HA16RA-4P(77) (Hirose Electric Co.)

NOTE

- Use the external power supply with correct polarity.

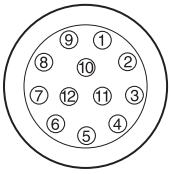
TALLY OUT



1	GND
2	R TALLY (open collector)
3	G TALLY (open collector)
4	UNREG+12 V (max. 0.5 A)

HR10A-7R-4SC (73) (Hirose Electric Co.)

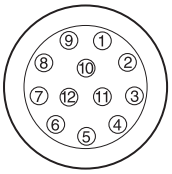
IRIS



1	Return control
2	REC-START/STOP
3	GND
4	Iris manual switching
5	Iris control
6	UNREG +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

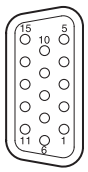
HR10A-10R-12SC (71) (Hirose Electric Co.)

ZOOM/FOCUS



1	Focus control switching
2	Zoom control switching
3	GND
4	Not used
5	Not used
6	Not used
7	Not used
8	Focus control
9	Zoom control
10	Not used
11	COM+V voltage
12	COM–V voltage

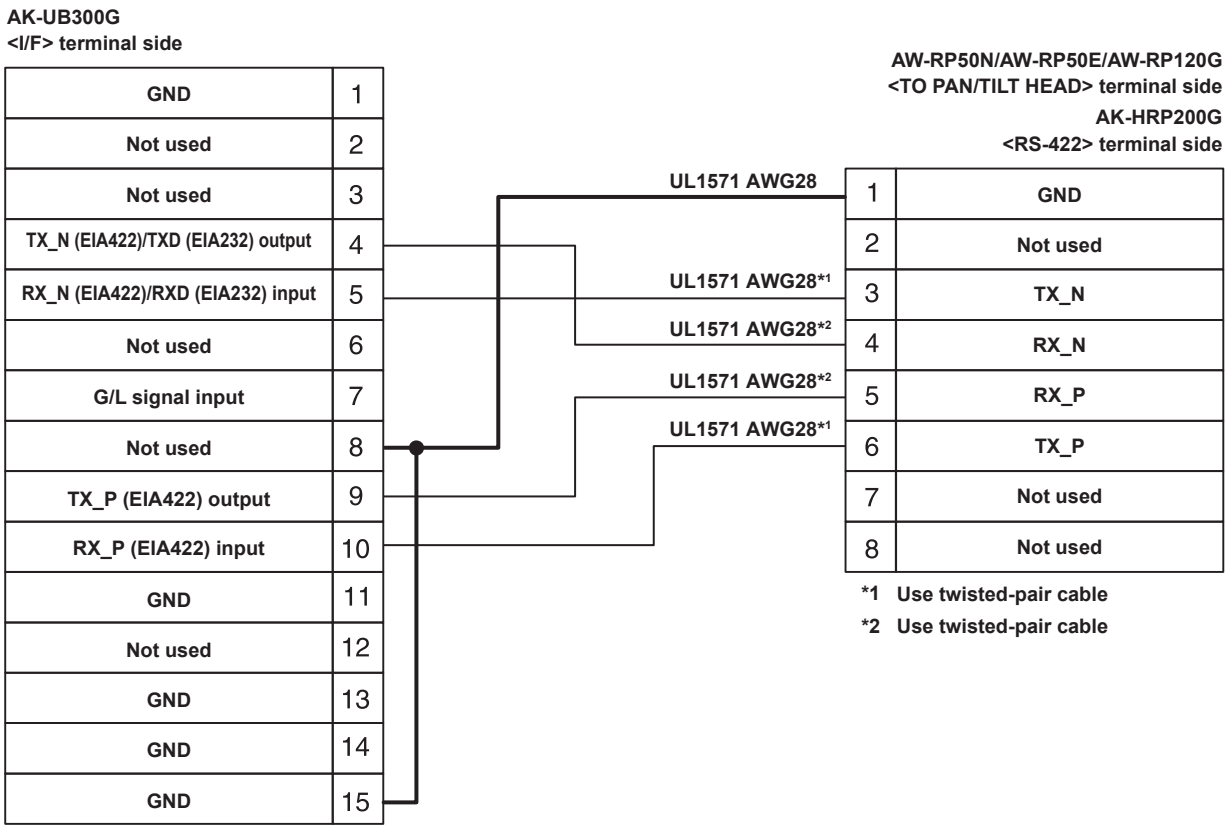
HR10A-10R-12PC(71) (Hirose Electric Co.)

I/F		
	1	GND
	2	Not used
	3	Not used
	4	TX_N (EIA422)/TXD (EIA232) output
	5	RX_N (EIA422)/RXD (EIA232) input
	6	Not used
	7	G/L signal input
	8	Not used
	9	TX_P (EIA422) output
	10	RX_P (EIA422) input
	11	GND
	12	Not used
	13	GND
	14	GND
	15	GND
	D02-M15SAG-20L9E (Japan Aviation Electronics Industry)	

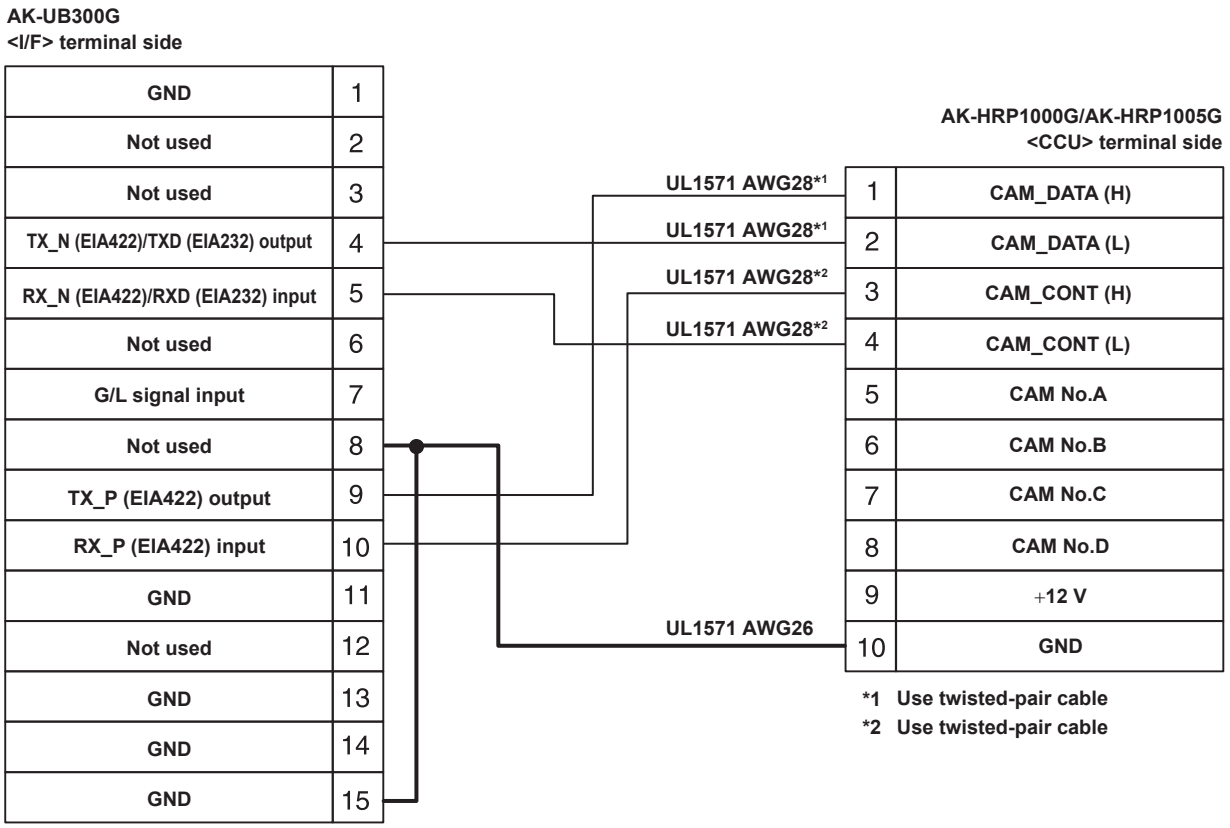
■ I/F cable specification

Use a cable equivalent or higher performance than the following description.

- Connect with AW-RP50N/AW-RP50E/AW-RP120G/AK-HRP200G



• Connecting with AK-HRP1000G/AK-HRP1005G



NOTE

- For the connector of the connecting destination of the I/F cable, refer to the operating instruction of the corresponding device.

Index

Disposal of Old Equipment
Only for European Union and countries with recycling systems
This symbol on the products, packaging, and/or accompanying documents means that used electrical and electronic products must not be mixed with general household waste.
For proper treatment, recovery and recycling of old products, 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.

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