

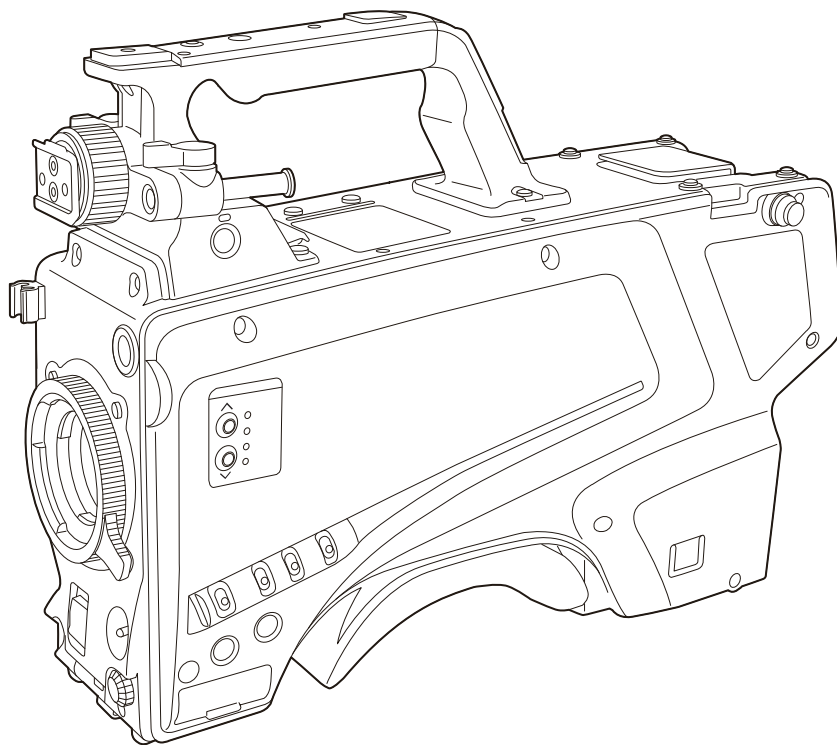
Panasonic[®]

Operating Instructions

HD Studio Camera

Model No. **AK-HC3900G**

Model No. **AK-HC3900GS**



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).

GJ GSJ

W1020MZ3033 -FJ

ENGLISH

DVQP2413WA

Read this first!
 indicates safety information.
WARNING:

This equipment must be earthed.
To ensure safe operation, make sure that the optical cable is securely connected to an earthed CCU when in use. The fact that the equipment operates satisfactorily does not imply that the power point is earthed or that the installation is completely safe. For your safety, if you are in any doubt about the effective earthing of the power point, please consult a qualified electrician.

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 memory cards (optional accessory) or accessories (camera number sheet) 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:

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:

The optical cable shall remain readily operable.
To completely disconnect this equipment from the power supply, disconnect the optical cable from the equipment.

CAUTION:

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

CAUTION:

Excessive sound pressure from earphones and headphones can cause hearing loss.

CAUTION:

Invisible Laser radiation is emitted from the Optical fiber connector when this product is turned on.
Don't look into directly into the Optical fiber connector of this product.

CAUTION:

Do not jar, swing, or shake the unit by its handle while another accessory is attached.
Due to the added weight, any strong jolt to the handle may damage the unit or result in personal injury.

CAUTION:

Do not lift the unit by its handle while the tripod is attached. When the tripod is attached, its weight will also affect the unit's handle, possibly causing the handle to break and hurting the user. To carry the unit while the tripod is attached, take hold of the tripod.

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:

This product uses a semiconductor laser system and is a Class 1 Laser Product complies with Radiation Performance Standards, 21CFR SUBCHAPTER J.
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.
Don't make any modifications.
Don't repair by yourself.
Refer servicing to qualified personnel.

FCC NOTICE (USA)

Supplier's Declaration of Conformity

Model Number: AK-HC3900G/AK-HC3900GS

Trade Name: Panasonic

Responsible Party: Panasonic Corporation of North America

Two Riverfront Plaza, Newark, NJ 07102

Support contact: 1-800-524-1448

This device complies with part 15 of the FCC Rules.

Operation is subject to the following two conditions:

(1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

FCC Note:

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

Warning:

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

NOTIFICATION (Canada)

CAN ICES-003 (A)/NMB-003(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.



S3125A

EMC NOTICE FOR THE PURCHASER/USER OF THE APPARATUS

1. Pre-requisite conditions to achieving compliance with the above standards

<1> Peripheral equipment to be connected to the apparatus and special connecting cables

- The purchaser/user is urged to use only equipment which has been recommended by us as peripheral equipment to be connected to the apparatus.
- The purchaser/user is urged to use only the connecting cables described below.

<2> For the connecting cables, use shielded cables which suit the intended purpose of the apparatus.

- Video signal connecting cables
Use double-shielded coaxial cables, which are designed for 75-ohm type high-frequency applications, for SDI (Serial Digital Interface).
Coaxial cables, which are designed for 75-ohm type high-frequency applications, are recommended for analog video signals.
- Audio signal connecting cables
If your apparatus supports AES/EBU serial digital audio signals, use cables designed for AES/EBU.
Use shielded cables, which provide quality performance for high-frequency transmission applications, for analog audio signals.
- Other connecting cables
Use shielded cables, which provide quality performance for high-frequency applications, such as connecting cables for IEEE1394 or USB.
- When connecting to the HDMI signal terminal, use multilayer shielded cables, which provide quality performance for high-frequency applications.
- When connecting to the DVI signal terminal, use a cable with a ferrite core.
- If your apparatus is supplied with ferrite core(s), they must be attached on cable(s) following instructions in this manual.

2. Performance level

The performance level of the apparatus is equivalent to or better than the performance level required by these standards.

However, the apparatus may be adversely affected by interference if it is being used in an EMC environment, such as an area where strong electromagnetic fields are generated (by the presence of signal transmission towers, cellular phones, etc.). In order to minimize the adverse effects of the interference on the apparatus in cases like this, it is recommended that the following steps be taken with the apparatus being affected and with its operating environment:

1. Place the apparatus at a distance from the source of the interference.
2. Change the direction of the apparatus.
3. Change the connection method used for the apparatus.
4. Connect the apparatus to another power outlet where the power is not shared by any other appliances.

AEEE Yönetmeliğine Uygundur.
AEEE Complies with Directive of Turkey.

Manufactured by:
Panasonic Connect Co., Ltd.
4-1-62 Minoshima, Hakata-ku, Fukuoka 812-8531, Japan

Importer:
Panasonic Connect Europe GmbH
Hagenauer Strasse 43, 65203 Wiesbaden, Germany

Authorized Representative in EU:
Panasonic Connect Europe GmbH
Panasonic Testing Centre
Winsbergring 15, 22525 Hamburg, Germany

Importer for UK:
Panasonic Connect UK,
a branch of Panasonic Connect Europe GmbH,
Maxis 2, Western Road, Bracknell, Berkshire, RG12 1RT



< Предупреждение >

Следуйте нижеприведённым правилам, если иное не указано в других документах.

1. Устанавливайте прибор на твёрдой плоской поверхности, за исключением отсоединяемых или несъёмных частей.
2. Хранить в сухом, закрытом помещении.
3. Во время транспортировки не бросать, не подвергать излишней вибрации или ударам о другие предметы.
4. Утилизировать в соответствии с национальным и/или местным законодательством.

Правила и условия реализации не установлены изготовителем и должны соответствовать национальному и/или местному законодательству страны реализации товара.

ІНФОРМАЦІЯ ПРО ПІДТВЕРДЖЕННЯ ВІДПОВІДНОСТІ ПРОДУКТУ

Виробник:	Panasonic Connect Co., Ltd.	Панасонік Коннект Ко., Лтд.
Адреса виробника:	Fukuoka, Japan	Фукуока Японія
Країна походження:	Japan	Японія

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

Примітки:

Термін служби виробу	7 років
----------------------	---------

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

Приклад: X X XXXXXXXX

Рік: остання цифра року (5 – 2015, 6 – 2016,...0 – 2020)
Місяць: А – Січень, В – Лютий... L – Грудень



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 authority, dealer or supplier.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

-
- SDXC logo is a trademark of SD-3C, LLC.
 - All other names, company names, product names, etc., contained in this instruction manual are trademarks or registered trademarks of their respective owners.
 - 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.

■ 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

- SD memory cards, SDHC memory cards, and SDXC memory cards are referred to as "SD memory cards".
- The Camera Control Unit is referred to as "CCU".
- The Remote Operation Panel is referred to as "ROP".

Contents

Read this first!	2	Chapter 6 Maintenance	93
Chapter 1 Overview	8	Troubleshooting	94
Before using the camera	9	For operations	94
Notes	11	Checking the operating time	95
Personal computer requirements	11	Warning displays	96
Disclaimer	11	Camera warning displays	96
Notes regarding network	11	Other warning displays	96
SD memory card	12	Updating the camera firmware	97
Using the camera in a system	13	Chapter 7 Specifications	98
Basic configuration devices	13	Specifications	99
Expanded configuration devices	13	Dimensions	99
System block diagram	14	Specifications	99
Accessories	15	Details of the connector signals	101
Working frequency setting	16	Index	104
Chapter 2 Description of Parts	17		
Front side	18		
Left side	19		
Right side	21		
Rear side	22		
Upper side	24		
Chapter 3 Preparation	25		
Attaching the viewfinder	26		
Attaching the viewfinder	26		
Attaching the rear viewfinder	27		
On-screen displays of the viewfinder	28		
Connecting a microphone	31		
When mounting a microphone on the viewfinder (optional) for use	31		
When mounting a microphone holder (optional) for use	32		
Using external DC power supply	33		
Data	34		
User file	34		
CAC file	34		
Chapter 4 Menu Operations	35		
Menu operations	36		
Basic operations	36		
Menu configuration	38		
[MAIN MENU]	38		
Menu list	39		
[DISPLAY SETUP]	39		
[SWITCH MODE]	43		
[RETURN SETTING]	48		
[INTERCOM SETTING]	49		
[MIC SETTING]	49		
[PAINT]	49		
[HDR-PAINT]	60		
[SYSTEM MODE]	61		
[IN/OUT SELECT]	61		
[NETWORK SETUP]	62		
[FILE]	63		
[MAINTENANCE]	65		
[DIAGNOSTIC]	67		
Chapter 5 Network Settings	68		
Setting the user account	69		
Software	69		
Use the User Account Setup Software to set the user accounts in this unit	69		
Web Screen	70		
Network settings	70		
Using EasyIP Setup Tool Plus to set the unit's settings	70		
Displaying the web screen	72		

Chapter 1 **Overview**

Before using the camera, read this chapter.

Before using the camera

■ Connecting to CCU

- Connect this camera to a designated CCU that is properly grounded.

■ 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.

■ Do not use the unit in oily-smoky or dusty places

- Performance may be adversely affected if small particles or other foreign objects get inside the product. Take extra care in environments where a special effect such as theatrical smoke is used.

■ 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

- Use a rain cover (optional), etc. to 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.
- Cover the terminals that are not in use with their protective caps.

■ 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. Avoid such locations.
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  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.

■ Optical fiber connector

- The transmission and reception conditions of optical signals will deteriorate when the optical fiber connector has become dirty. Be sure to clean the connector. (page 22)

■ Cooling fan

- The camera has an internal cooling fan.
- The cooling fan is a consumable supply. Replace it after approximately 50,000 hours of use. Be sure to contact your dealer for the replacement.

■ Peripheral devices and software

- The software of the peripheral devices (CCU and ROP) that are connected to AK-HC3900G/AK-HC3900GS may require upgrading.
- For details, contact your dealer.

■ Consult your dealer for internal cleaning of the camera approximately once a year.

- Continued use of the camera with build-up of dust inside may result in a fire or failure.

■ **Information on software used with this product**

- 1 **This product includes software licensed under GNU General Public License (GPL) and GNU Lesser General Public License (LGPL), and customers are hereby notified that they have rights to obtain, re-engineer, and redistribute the source code of these software.**
- 2 **This product includes software licensed under MIT-License.**
- 3 **This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>).**
- 4 **This product includes software licensed under OpenBSD License.**

For details on each license, refer to the terms of license.

The terms of license can be displayed using the following method.

- Select [FILE] menu → [OTHERS] → [OSS LICENSE] → [YES] and the file is written to an SD card inserted in this camera. Insert the SD card to which the file has been written into a computer and select "LICENSE.TXT".

For details on these descriptions (originally provided in English) and how to obtain the source code, visit the following website.

<https://pro-av.panasonic.net/en/>

We do not accept inquiries about the details of the source code obtained by the customer.

Excluding the open source software licensed based on GPL/LGPL, etc., transferring, copying, reverse assembling, reverse compiling, and reverse engineering of the software included in the camera is prohibited. Also, exporting of any software included in the camera against the export laws and regulations is prohibited.

Notes

Personal computer requirements

Use a host computer that satisfies the following conditions.

CPU	CPU Intel® Core™2 DUO 2.4 GHz or better is recommended
Memory	<ul style="list-style-type: none"> • Windows 1 GB or more (However, 2 GB or more for the 64-bit versions of Microsoft® Windows® 10, Microsoft® Windows® 8.1, Microsoft® Windows® 8, and Microsoft® Windows® 7)
	<ul style="list-style-type: none"> • Mac 2 GB or more
Network function	100BASE-TX 1 port
Image display function	Resolution: 1024×768 pixels or more Color generation: True Color 24-bit or better
Supported operating systems and Web browser	<ul style="list-style-type: none"> • Windows <ul style="list-style-type: none"> - Microsoft® Windows® 10 Pro 64-bit/32-bit*1 - Microsoft® Windows® 8.1 Pro 64-bit/32-bit*1 - Windows® Internet Explorer® 11.0*1*3 - Microsoft® Windows® 8 Pro 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
	<ul style="list-style-type: none"> • Mac <ul style="list-style-type: none"> - OS X 10.12 Safari 10 - OS X 10.11 Safari 9 - OS X 10.10 Safari 8.0.4 - OS X 10.9 Safari 7.0.2 - OS X 10.8 Safari 6.1.2

*1: Use the desktop version of Internet Explorer. (Internet Explorer for Windows UI is not supported.)

*2: Use is not possible in Windows® XP compatibility mode.

*3: Use is not possible with the 64-bit version of Internet Explorer®.

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.

SD memory card

With this camera, use SD memory cards that conform to the SD standard, SDHC standard, or SDXC standard.

Be sure to use this camera to format the SD memory cards.

SD memory cards having the following capacities can be used with this camera.

For the SD memory card to be used for [UPDATE], however, use an SDHC Class4 or better or an SDXC card.

- SD: 2 GB
- SDHC: 4 GB to 32 GB
- SDXC: 64 GB

For the latest information not included in these Operating Instructions, refer to the support pages at the following website.

(https://panasonic.biz/cns/sav/pass_e/)

Observe the following precautions in regard to use and storage of the camera.

- Avoid high temperatures and humidity.
- Avoid exposure to water.
- Avoid static electricity.

Using the camera in a system

An example of a standard system consisting of the HD Studio Camera (AK-HC3900G/AK-HC3900GS) and peripheral devices is as follows. For details on the connected devices, refer to the Operating Instructions of each device.

Basic configuration devices

The basic system configuration includes the lens, HD Studio Camera, viewfinder, Camera Control Unit (CCU), and Remote Operation Panel (ROP).

Part name	Part No.	Remark
1.5-inch HD viewfinder	AJ-CVF50G	This is the viewfinder for HD Studio Camera.
3.45-inch color viewfinder	AG-CVF10G AG-CVF15G AJ-CVF25G	—
7-inch LCD color viewfinder	AK-HVF75G	—
9-inch LCD color viewfinder	AK-HVF100G	This is the LCD viewfinder for HD Studio Camera.
Lens	FUJINON/CANON	—
Camera Control Unit (CCU)	AK-HCU250P/AK-HCU250PS/AK-HCU250E/ AK-HCU250ES	This is the camera control unit for HD Studio Camera. It is connected to HD Studio Camera using an optical fiber multi cable. Do not connect anything other than AK-HCU250P/ AK-HCU250PS/AK-HCU250E/AK-HCU250ES.
Remote Operation Panel (ROP)	AK-HRP1000G AK-HRP1005G AK-HRP1010G AK-HRP1015G AK-HRP250G	This is connected to the CCU using the ROP cable to remotely control the camera, CCU, and lens.

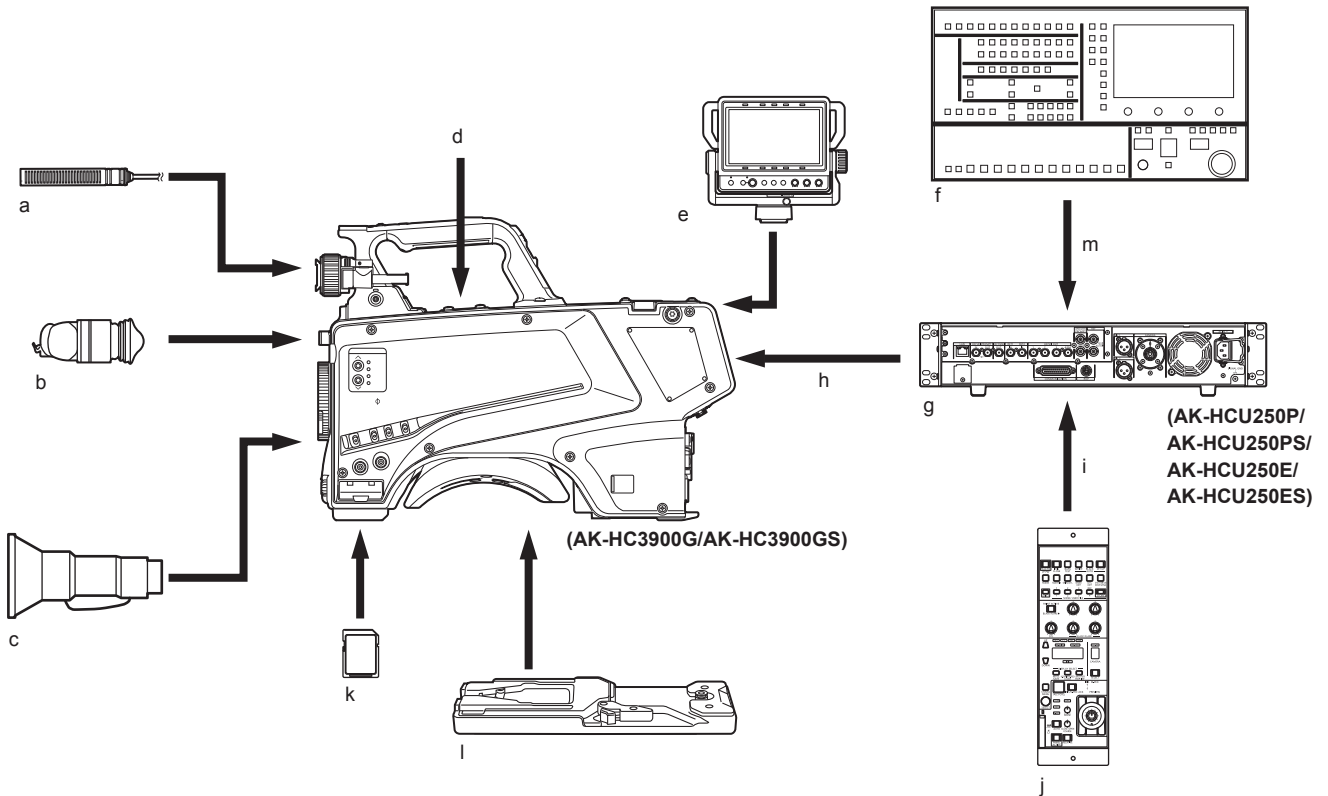
Expanded configuration devices

The following devices can also be used in addition to the basic configuration devices.

Part name	Part No.	Remark
Microphone kit	AJ-MC700P AG-MC200G	"Connecting a microphone" (page 31)
Microphone holder	AJ-MH800G	"Connecting a microphone" (page 31)
SD memory card*	Visit the support desk on the website*	"SD memory card slot" (page 19)
Master setup unit	AK-MSU1000G	The master setup unit is not necessary if multiple cameras are not to be controlled.
Tripod adaptor	SHAN-TM700	"Tripod mount" (page 18)

* For the latest information about SD memory cards not included in these Operating Instructions, refer to the support pages at the following website.
<https://pro-av.panasonic.net/en/>

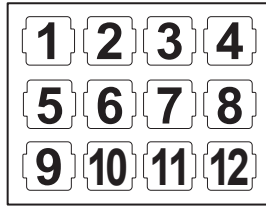
System block diagram



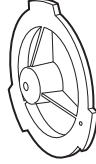
- a: Microphone kit
- b: 3.45-inch color viewfinder/1.5-inch HD viewfinder
- c: Handy lens
- d: Microphone holder
- e: 7-inch LCD color viewfinder
- f: Master setup unit
- g: Camera Control Unit (CCU)
- h: Optical fiber multi cable
- i: ROP cable
- j: Remote Operation Panel (ROP)
- k: SD memory card
- l: Tripod adaptor
- m: LAN cable

Accessories

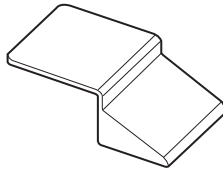
Camera number sheet (1 to 12)



Mount cap (already attached to the product)



D-sub connector cover (already attached to the product)



 **NOTE**

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

Working frequency setting

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

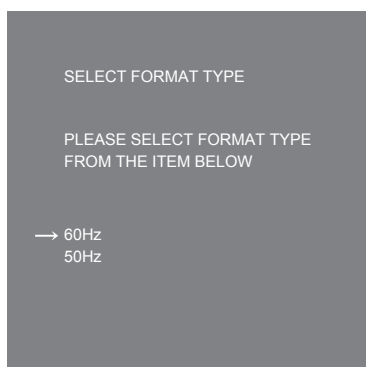


Fig. 1

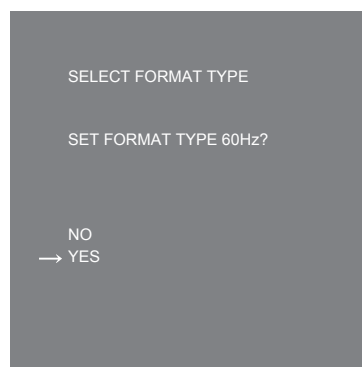


Fig. 2

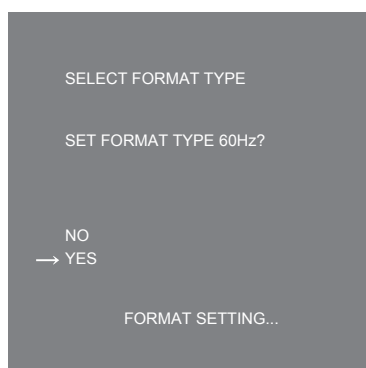


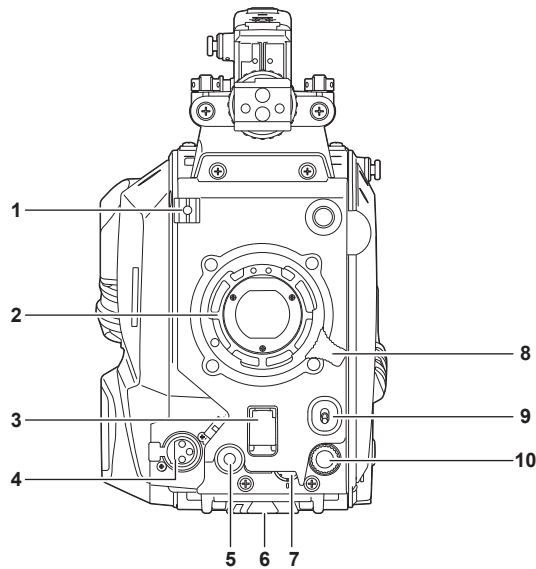
Fig. 3

- 1** Attach a viewfinder (page 26) or connect a monitor to the <HD SDI2> terminal (page 23).
- 2** Connect the DC power supply.
It will comply with the working frequency of the CCU when connected to the CCU.
- 3** Set the <POWER> switch to <ON>.
The [SELECT FORMAT TYPE] screen is displayed.
- 4** Turn the <SELECT> dial button to move the cursor (arrow) to the frequency to set. (Fig. 1)
- 5** Press the <SELECT> dial button.
The confirmation screen is displayed.
- 6** Move the cursor (arrow) to [YES] and press the <SELECT> dial button. (Fig. 2)
[FORMAT SETTING...] will flash. (Fig. 3)
The setting is completed when [FORMAT SETTING...] is turned off.
This screen is not displayed again when the power is turned on next and subsequently once this is set.
- 7** Set the <POWER> switch to <OFF>.
- 8** Set the <POWER> switch to <ON>.

Chapter 2 **Description of Parts**

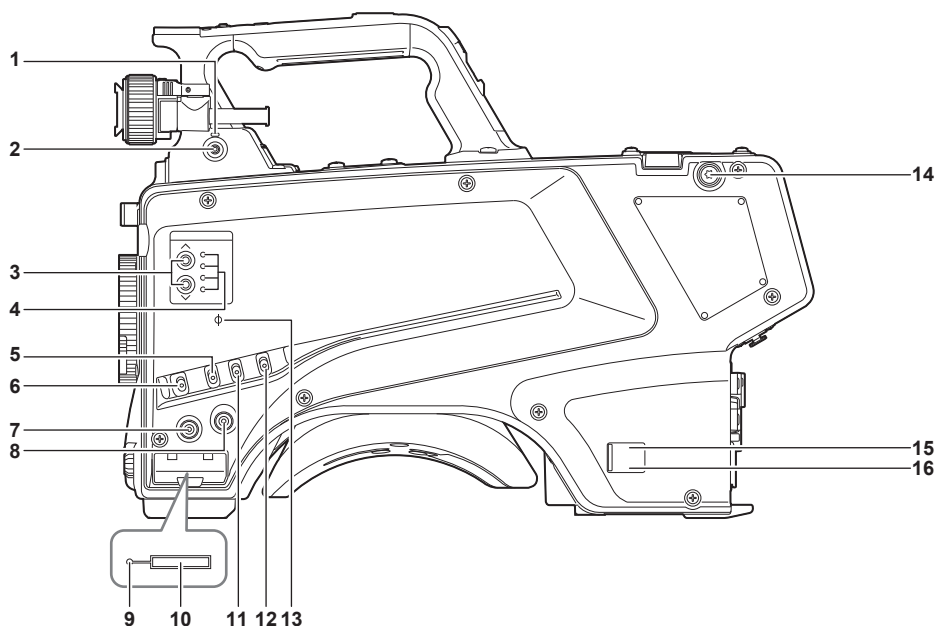
This chapter describes the names of the parts, functions, and operations of this camera.

Front side



- 1 Lens cable/microphone cable clamp**
Used for securing the lens and microphone cables.
- 2 Lens mount (Bayonet type)**
This is where the lens is mounted.
- 3 <SHUTTER> switch**
This is the electronic shutter switch.
<OFF>: Disables the electronic shutter.
<ON>: Enables the electronic shutter.
<SEL>: Switches the shutter speed within the preset range.
This switch cannot be used when the CCU or ROP is connected to the camera.
- 4 <MIC> terminal (front)**
Used to connect the microphone (optional).
When using, set the switch on the rear side as follows.
• <LINE/MIC/+48V> selector switch (<FRONT MIC>): <MIC> or <+48V> (when using a phantom microphone)
- 5 <USER 1> button**
A user-selected function can be assigned to this button. Pressing the button performs the assigned function.
- 6 Tripod mount**
Used to attach the tripod adaptor SHAN-TM700 (optional) when mounting the camera on a tripod.
- 7 <INCOM LEVEL> dial (front)**
Adjusts the volume of the intercom receiver.
Set [MAIN MENU] → [INTERCOM SETTING] → [INTERCOM] → [LEVEL VR] → [FRONT].
- 8 Lens lever**
After the lens is mounted on the lens mount, this lever can be tightened to secure the lens.
- 9 <AUTO W/B BAL> switch**
<AWB>: Automatically adjusts the white balance. When the white balance is automatically adjusted with the <WHITE BAL> switch on the side of the camera set to the <A> or position, the white balance is adjusted in several seconds and the adjusted value is stored in the memory.
<ABB>: Automatically adjusts the black balance.
The operation performed when the CCU or ROP is connected to the camera can be set from [MAIN MENU] → [SWITCH MODE] → [W/B BAL SETTING].
- 10 <SELECT> dial button**
Turning the <SELECT> dial button while the menu screen is displayed moves the cursor to a setting item. The menu setting can be confirmed by pressing the <SELECT> dial button.
For details on operations, refer to “Menu operations” (page 36).

Left side



1 <LOCAL> lamp

While this lamp is lit, the ND filter can be adjusted manually.

2 <FILTER LOCAL> switch

This switch sets whether to adjust the ND filter manually or remotely.

3 ND filter selector switch <ND FILTER>

Pressing the <^>/<v> buttons switches between the optical filters.

<^> (UP): CLEAR → 1/4 → 1/16 → 1/64...

<v> (DOWN): CLEAR → 1/64 → 1/16 → 1/4...

4 ND filter selector LED

The LED for the selected optical filter number lights up.

<1>: CLEAR

<2>: 1/4

<3>: 1/16

<4>: 1/64

5 <GAIN> switch

Switches the gain for the camera image. (<L>, <M>, <H>)

The gain can be configured with the CCU.

This switch cannot be used when the CCU or ROP is connected to the camera.

6 <DISP/MODE CHK> switch

This is a spring switch which can be used to check the shooting status etc.

- Push this switch towards <OFF> to hide all displays except for the operation status display of the viewfinder, frame display such as an area, marker, and safety zone.
- Push this switch towards <CHK> to display in the viewfinder the setting status for shooting functions, and the list of functions assigned to the <USER 1>/<USER 2>/<USER 3> buttons, etc. Pushing the switch towards <CHK> again while information is being displayed switches the display to the next information page. The mode check information display disappears after approximately three seconds.

7 <MENU> button

Press this button to display the camera's [MAIN MENU] screen.

Press the button again to return to the original image.

8 <USER 2> button

A user-selected function can be assigned to this button. Pressing the button performs the assigned function.

9 Busy (active status indicator) lamp

Indicates the active status of the SD memory card and lights up when the card is active.

NOTE

- Do not remove or insert the card while this lamp is lit. Doing so may damage the SD memory card.

10 SD memory card slot

This is the insertion slot for the SD memory card (optional).

An SD memory card is used for saving/loading the setting menus of the camera, loading CAC files, updating the software, etc. For details, refer to "Data" (page 34).

11 <OUTPUT> switch

Switches video output (<CAM>, <BARS>, <TEST>).

This switch cannot be used when the CCU or ROP is connected to the camera.

12 <WHITE BAL> switch

Selects the white balance memory. Data can be recorded to <A> or .

<PRST>: The white balance configured in [MAIN MENU] → [PAINT] → [COLOR TEMP SETTING] is set.

This switch cannot be used when the CCU or ROP is connected to the camera.

13 <Φ> mark

Indicates the focal plane of the CMOS sensor.

Use this mark as a reference to accurately measure the focal distance from the subject.

14 Shoulder strap fittings

Used to attach the shoulder strap.

15 Power indicator lamp

Lights up in green when power is supplied to the camera.

ON (green): The camera power is on

ON (red): The camera power is off while the camera is connected to the CCU which is turned on

OFF: The camera power is off with the CCU not connected, or the camera is connected to the CCU which is turned off

16 <POWER> switch

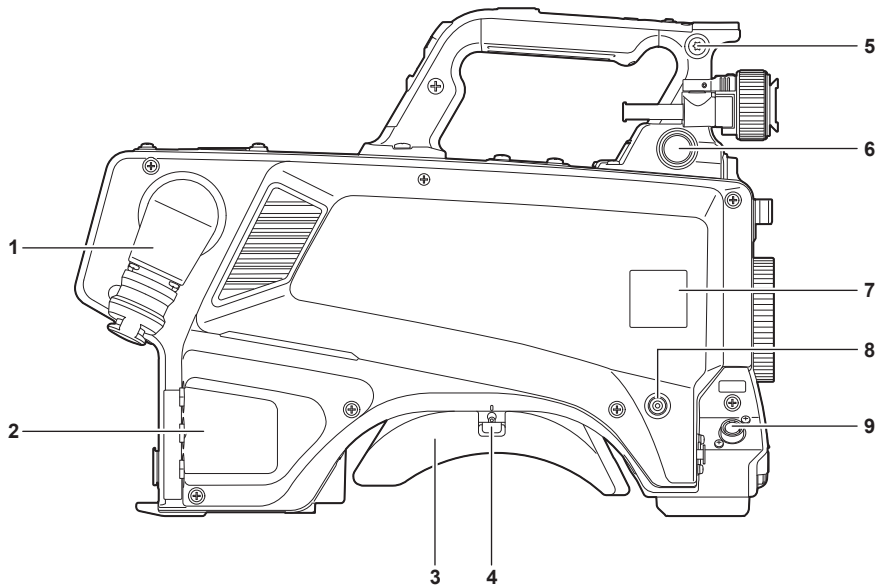
Selects the camera power input, or turns off the power.

<CCU>: When the camera is connected to the CCU, this switch turns on the power with the power supplied from the CCU.

<EXT>: When an external DC power supply is connected to the camera, this switch turns on the power with the power supplied from the external DC power supply.

Center position: Turns off the power.

Right side



1 <OPT FIBER> terminal

Used to connect with the CCU using the optical fiber multi cable. When the terminal is not in use, attach the dust cap.

2 <LAN> terminal

Used to connect the LAN cable (100BASE-TX/1000BASE-T).

 **NOTE**

- The cable connected to the <LAN> terminal should be a category 5e or better STP (Shielded Twisted Pair) cable.

3 Shoulder pad

Reduces the burden on the shoulder when the camera is carried on your shoulder.

4 Slide lock release lever

Releases this lever when changing the shoulder pad position.

5 Shoulder strap fittings

Used to attach the shoulder strap.

6 <VF> terminal

Used to connect the plug of the viewfinder.

7 Camera number sheet holder

Attach the supplied camera number sheet.

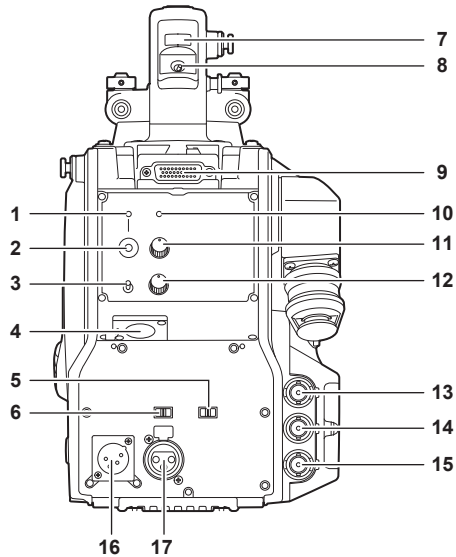
8 <USER 3> button

A user-selected function can be assigned to this button. Pressing the button performs the assigned function.

9 <LENS> terminal

Used to connect the lens cable.

Rear side



1 <CALL> lamp

Lights up in green when the call switch is pressed from the ROP or CCU.

2 <CALL> switch

While this switch is pressed, the call lamps on the ROP and CCU are lit and the ROP buzzer sounds. (When the ROP buzzer setting is enabled)



NOTE

• If the <CALL> switch is pressed when the camera is operating with an external DC power source, the ROP call lamp does not light up.

3 <TALK> switch (<INTERCOM>)

This switch is the <ON>/<OFF>/<PTT> selector switch of the intercom microphone connected to the <INTERCOM> terminal. Pushes the switch towards <ON>/<PTT> to turn on the microphone.

4 <INTERCOM> terminal

Used to connect the intercom or headset plug.

5 <LINE/MIC/+48V> selector switch (<FRONT MIC>)

Used to switch the audio input signal of the audio channel 1.

<LINE>: When connecting audio equipment with the line input

<MIC>: When connecting an external microphone

<+48V>: When supplying 48 V power to the microphone

6 <LINE/MIC/+48V> selector switch (<MIC 2>)

Used to switch the audio input signal of the audio channel 2.

<LINE>: When connecting audio equipment with the line input

<MIC>: When connecting an external microphone

<+48V>: When supplying 48 V power to the microphone

7 Back tally lamp

Lights up when the tally signal is supplied.

R tally signal: Lit in red

G tally signal: Lit in green

R and G tally signals at the same time: Lit in red

8 Back tally lamp selector switch

Used to switch the back tally lamp to on/off.

9 Rear viewfinder terminal

Used to connect the 9-inch LCD viewfinder AK-HVF100G.

This D-sub connector is used for the viewfinder interface.



NOTE

• AK-HVF70G, AK-HVF75G can also be connected to this terminal.

10 <OPT> lamp

Indicates the camera's optical signal reception status.

Normal: Lit in green

Error: Lit in red



NOTE

• When an error has occurred, turn off the power of this camera and the CCU, and then clean the optical fiber connector. If the error persists, immediately turn off the power, and contact your dealer.

11 <PGM> dial (<INTERCOM>)

Adjusts the mix level of the intercom and PGM.

12 <LEVEL> dial (<INTERCOM>)

Used to adjust the volume level of the intercom when the mixing function of the intercom connected to the <INTERCOM> terminal and the PGM is enabled. The mixing function of the intercom and the PGM can be enabled/disabled from [MAIN MENU] → [INTERCOM SETTING] → [INCOM RECEIVE SETTING] → [PGM MIX].

13 <HD SDI1> terminal (BNC)

[CAM]: Outputs camera images.

[HD PROMPT]: Outputs HD prompter video images.

Configure the output images in [MAIN MENU] → [IN/OUT SELECT] → [HD-SDI1 OUT].

 **NOTE**

- Use a cable that is 5C-FB or above.
- [HD PROMPT] can be selected only when the camera is connected to the CCU.
Please also note that the video formats available for output are 1080/59.94p/50p/59.94i/50i.

14 <HD SDI2> terminal (BNC)

[CAM]: Outputs camera images.

[VF]: Outputs viewfinder images.

[RET]: Outputs return images.

[RET1]/[RET2]: Outputs the selected images.

Configure the output images in [MAIN MENU] → [IN/OUT SELECT] → [HD-SDI2 OUT].

 **NOTE**

- Use a cable that is 5C-FB or above.
- [RET] and [RET1]/[RET2] can be selected only when the camera is connected to the CCU.

15 <AUX> terminal

This is the external device connecting terminal.

[PMT OUT]: Outputs prompter video images.

[HD TRUNK]: HD trunk input

Set this from [MAIN MENU] → [IN/OUT SELECT] → [AUX I/O].

 **NOTE**

- Use a cable that is 5C-FB or above.
- The video formats available for input to [HD TRUNK] are 1080/59.94p/50p/59.94i/50i.

16 <DC IN> terminal

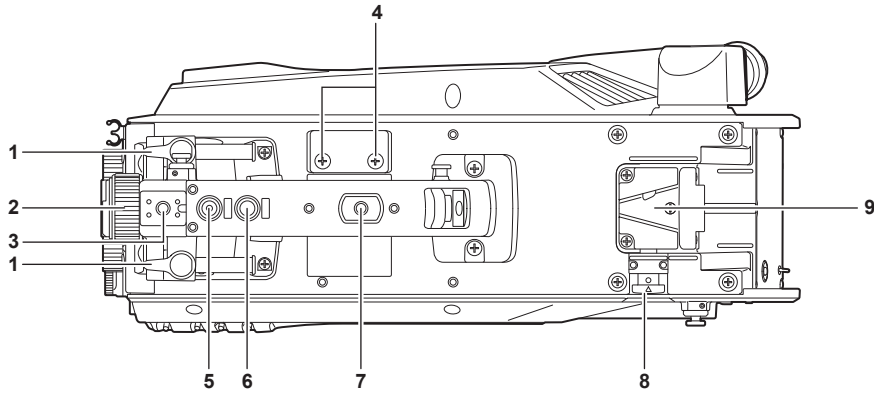
This is an input terminal for the external DC power supply. Connect an external DC power supply to this terminal. (DC 10.8 V to 17 V)

17 <MIC 2> terminal

Used to connect audio equipment or a microphone.

The power for the microphone is supplied via this terminal, enabling use of a phantom powered (48 V) microphone. Turn the power off when connecting a microphone, and then configure the settings to suit the microphone after connecting the microphone.

Upper side



1 Viewfinder front/back positioning lever

To adjust the front/back position of the viewfinder, loosen this lever and slide the viewfinder forwards or backwards to adjust the viewfinder to a position that enables easy viewing. After adjusting the viewfinder, turn the lever towards <LOCK> to lock the position.

2 Viewfinder left-right positioning ring

To adjust the left/right position of the viewfinder, loosen this lever and slide the viewfinder to the left or right to adjust the viewfinder to a position that enables easy viewing. Tighten the lever to clamp the viewfinder in place after adjusting.

3 Light shoe

Used to mount a video light, etc.

4 Microphone holder holes

Used to mount a microphone holder.

5 <PTT> switch

Used to switch the intercom microphone on/off. The function can be changed in [MAIN MENU] → [SWITCH MODE] → [USER SWITCH] → [GRIP PTT].

6 <RET> switch

Used to switch to the return A signal. The function can be changed in [MAIN MENU] → [SWITCH MODE] → [USER SWITCH] → [GRIP RET].

7 Accessory mounting hole

Used to attach accessories. This hole is used only for the purpose of attaching accessories.

- Mounting hole size

- 1/4-20 UNC (screw length 13 mm or shorter)

8 Lock release button

Used to release the lock of the V-groove.

9 V-groove

Used to attach the rear viewfinder.

Chapter 3 **Preparation**

Follow the procedures described in this chapter to mount the accessories before using the camera.

Attaching the viewfinder

Attach the viewfinder (optional).

Attaching the viewfinder

HD viewfinder AJ-CVF50G (optional) can be used with this camera.

For details on handling the HD viewfinder, refer to the Operating Instructions of the viewfinder.

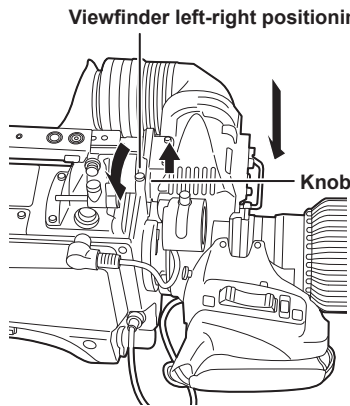


Fig. 1

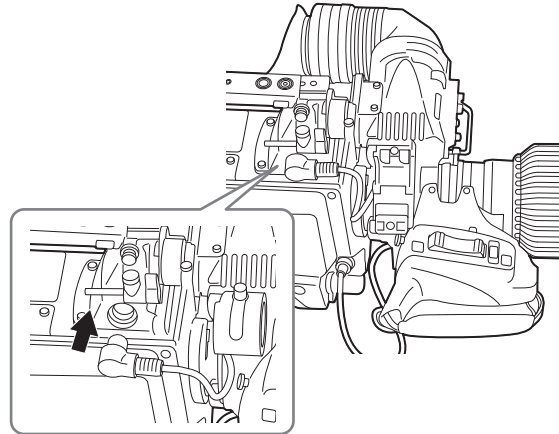


Fig. 2

- 1** Set the <POWER> switch to <OFF>.
- 2** Pull up the knob on the mounting plate and slide the plate to attach the viewfinder. (Fig. 1)
- 3** Securely tighten the viewfinder left-right positioning ring. (Fig. 1)
- 4** Connect the plug to the <VF> terminal. (Fig. 2)

NOTE

- When connecting the plug to the <VF> terminal, confirm that the plug is fully inserted in the terminal.

Removing the viewfinder

- 1** Set the <POWER> switch to <OFF>.
- 2** Remove the plug from the <VF> terminal.
- 3** Loosen the viewfinder clamping dial and then pull up the knob on the mounting plate.
- 4** Slide the viewfinder along the plate to remove it from the plate.

Attaching the rear viewfinder

LCD viewfinder AK-HVF100G (optional) can be used with this camera.

For details on handling the LCD viewfinder, refer to the Operating Instructions of the viewfinder.

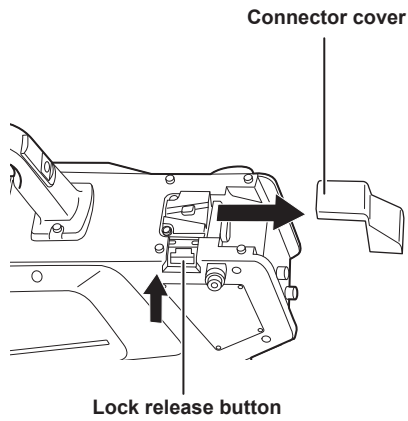


Fig. 1

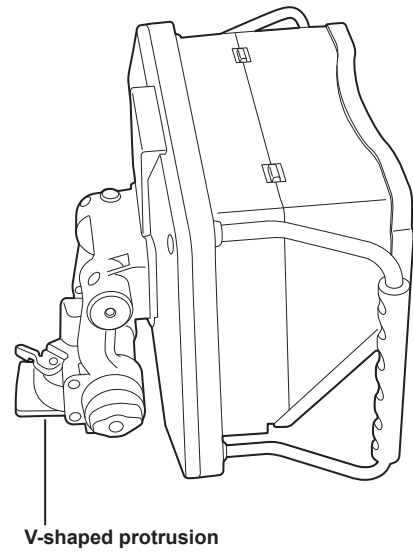
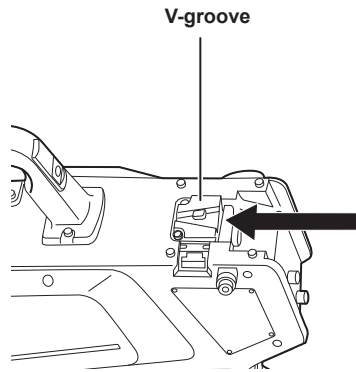


Fig. 2

- 1** Turn off the power of the camera and the LCD viewfinder.
- 2** Press the lock release button and remove the connector cover. (Fig. 1)
- 3** Align the V-shaped protrusion of the LCD viewfinder with the V-shaped groove on the camera and slide it in until the lock is engaged. (Fig. 2)

NOTE

- When attaching the viewfinder, refrain from holding the hood of the LCD viewfinder.

Removing the rear viewfinder

- 1** Turn off the power of the camera and the LCD viewfinder.
- 2** While pressing the lock release button, slide off the LCD viewfinder.

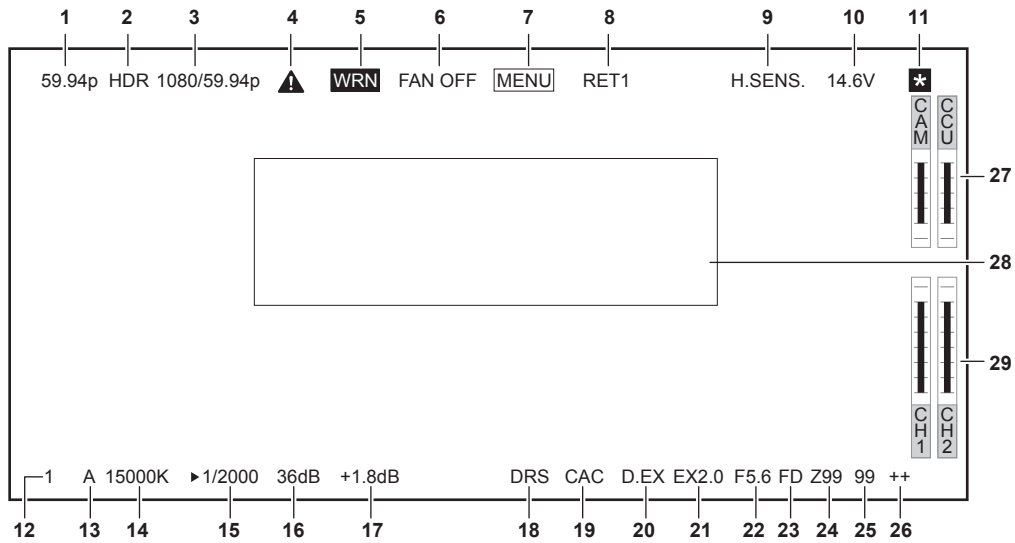
NOTE

- When removing the viewfinder, refrain from holding the hood of the LCD viewfinder.

On-screen displays of the viewfinder

HD Studio Camera settings and messages indicating operating statuses appear on the viewfinder screen.

All items that can be displayed are located as follows.



1 Camera mode display

Indicates the camera image mode.

- [59.94p]
- [50p]
- [29.97p]
- [25p]
- [23.98p]

2 HDR mode display

Displayed when the format is HDR.

3 System mode display

Indicates the system frequency.

- [2160/59.94p]
- [2160/50p]
- [2160/29.97p]
- [2160/25p]
- [2160/23.98p]
- [1080/59.94p]
- [1080/50p]
- [1080/29.97p]
- [1080/25p]
- [1080/23.98p]

4 Warning display (preheating)

Displayed when the device is being preheated at startup due to low temperature inside the device.

5 Warning display (device)

Displayed when there is an abnormality with the condition of the device.

- The fan stops abnormally.
- Internal temperature becomes high.
- DC output supply goes over. (Combined total of each output)
- There is a problem with the light reception level.

The display cannot be hidden.

6 Warning display (fan stopped)

Displayed when the fan is stopped.

7 Warning display (menu display)

Displays the camera menu in the CCU. The menu cannot be operated from the camera.

8 Return ID display

Displays the return ID of the current return output number.

The ID (character string) set in [MAIN MENU] → [RETURN SETTING] → [RETURN1 ID] to [RETURN2 ID] is displayed.

The following return IDs (character strings) are set in factory settings.

- [RET1] (When [RETURN1] is output)
- [RET2] (When [RETURN2] is output)

9 High-sensitivity mode display

Displayed when [MAIN MENU] → [SYSTEM MODE] → [SHOOTING MODE] → [HIGH SENS] is set.

10 Voltage display

Indicates the voltage coming in from the power supply.

11 Focus assist magnification display

The focus assist magnification display function is displayed while active.

12 ND filter display

Indicates the selected ND filter value.

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

13 <WHITE BAL> switch position display

Indicates the selected switch position.

- [A]: When the <WHITE BAL> switch is set to <A>
- [B]: When the <WHITE BAL> switch is set to
- [P]: When the <WHITE BAL> switch is set to <PRST>

14 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.

15 Shutter speed display

Indicates the shutter speed in accordance with each setting.

Refer to [MAIN MENU] → [SWITCH MODE] → [SHUTTER SPEED] for details about setting values.

16 Master gain display

Indicates the value set in [MAIN MENU] → [SWITCH MODE] → [GAIN SETTING] → [LOW GAIN]/[MID GAIN]/[HIGH GAIN].

- [-6dB] to [36dB]

17 Offset gain display

Indicates the value set in [MAIN MENU] → [SWITCH MODE] → [GAIN SETTING] → [OFFSET LOW GAIN]/[OFFSET MID GAIN]/[OFFSET HIGH GAIN].

- [-2.9dB] to [+2.9dB]

18 Dynamic range stretcher display

Displayed when the dynamic range stretcher function is active.

19 Chromatic aberration compensation display

Displayed when the chromatic aberration compensation function is active.

20 Digital extender display

Displayed when the digital extender is being used.

21 Lens extender display

Displayed when the lens extender is being used.

22 Iris display

Indicates the iris setting value (F value) or [OPEN]/[CLOSE]. The F value is an approximate value.

[NC] is displayed when the lens cable is not connected.

23 F drop display

Displayed when the F drop has occurred.

 **NOTE**

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

24 Zoom position display

Indicates the zoom position.

- [Z00] to [Z99]

 **NOTE**

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

25 Focus position display

Indicates the focus position.

- [00] to [99]

 **NOTE**

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

26 Focus information display

Displays the focus information of the focus.



NOTE

- This is displayed only when an auto focus lens with the function to return the focus information is mounted.

27 Optical level display

Indicates the level of the optical signals the camera will receive.

28 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.

29 Audio input channel and level meter

Indicates the audio level of the <MIC> terminal (front) (audio input 1) and <MIC 2> terminal (audio input 2).

Connecting a microphone

When mounting a microphone on the viewfinder (optional) for use

A microphone such as microphone kit AJ-MC700P (optional) can be mounted on the viewfinder.

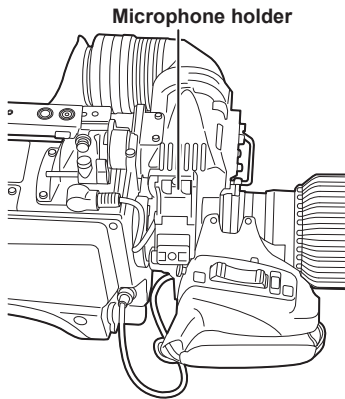


Fig. 1

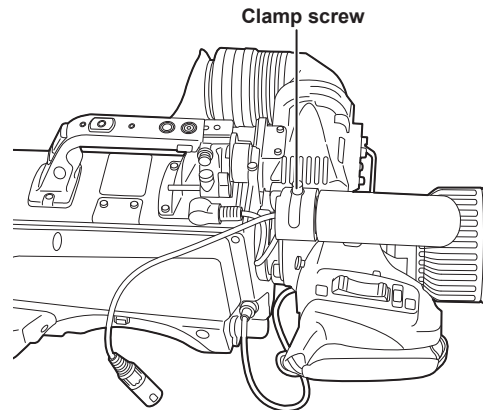
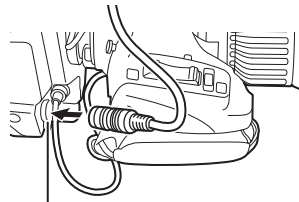


Fig. 2



<MIC> terminal (front)

Fig. 3

- 1** Open the microphone holder. (Fig. 1)
- 2** Mount the microphone and tighten the clamp screw. (Fig. 2)
- 3** Insert the microphone cable into the cable clamp and connect it to the <MIC> terminal (front). (Fig. 3)
- 4** Set the <LINE/MIC/+48V> selector switch (<FRONT MIC>) to <MIC> or <+48V>.

When mounting a microphone holder (optional) for use

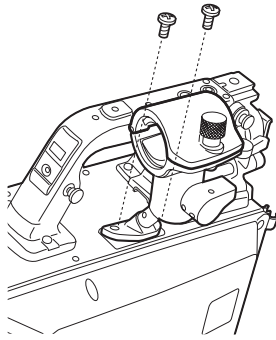


Fig. 1

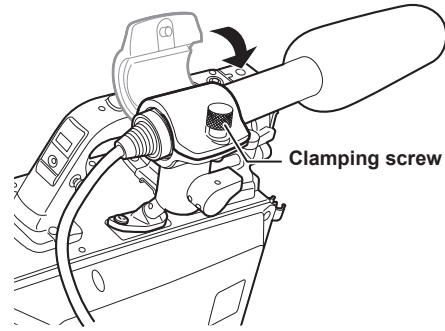


Fig. 2

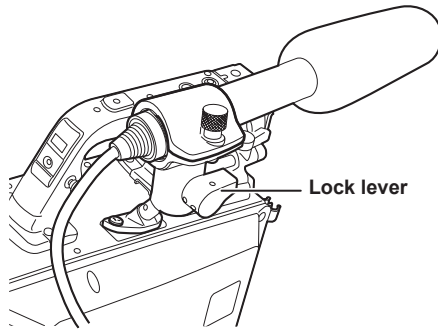


Fig. 3

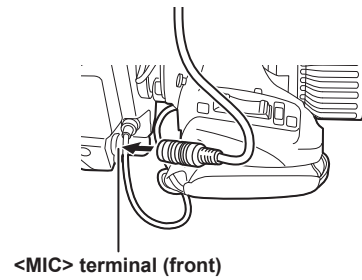
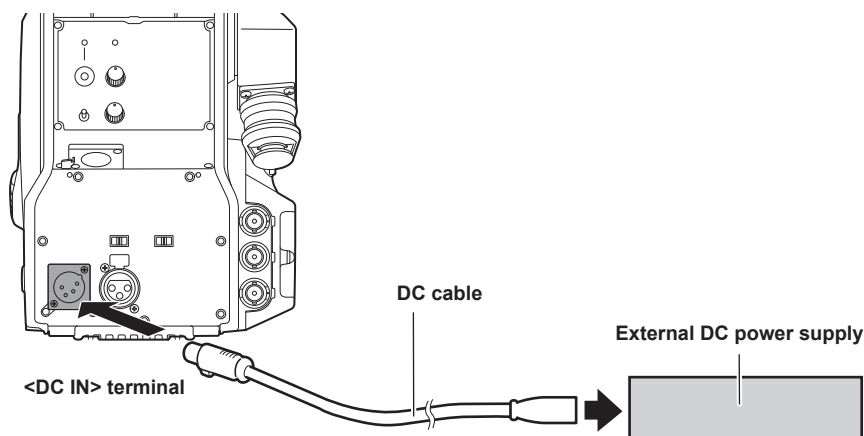


Fig. 4

- 1** Remove the screws on the microphone holder mounting position and mount the microphone holder AJ-MH800G (optional). (Fig. 1)
- 2** Mount the microphone and tighten the clamping screw. (Fig. 2)
- 3** Loosen the lock lever, adjust the angle of the microphone, and then tighten the lock lever. (Fig. 3)
- 4** Insert the microphone cable into the cable clamp and connect it to the <MIC> terminal (front). (Fig. 4)
- 5** Set the <LINE/MIC/+48V> selector switch (<FRONT MIC>) to <MIC> or <+48V>.

Using external DC power supply



- 1** Connect the external DC power supply to the <DC IN> terminal on the camera.
- 2** Turn on the <POWER> switch of the external DC power supply (if the external DC power supply has a <POWER> switch).
- 3** Set the <POWER> switch of the camera to <EXT>.

■ External DC power supply

Connect after making sure that the output voltage of the external DC power supply is compatible with the rated voltage of the camera.

Select an output amperage for the external DC power supply with a margin above the total amperage of the connected devices.

The total amperage of connected devices can be calculated with the following formula.

Total power consumption ÷ voltage

When the power of the camera is turned on, inrush current is generated. An insufficient power supply when turning on the power may lead to failure. It is recommended that you use an external DC power supply that can assure double the capacity of the total power consumption of the camera and connected devices (such as viewfinder) that are turned on by the interlock when the power of the camera is turned on. For the DC cable, use a dual-core shielded cable of AWG18 (nominal cross section area 0.824 mm²) or thicker.

- Check the pin alignment of the DC output terminal of the external DC power supply and the <DC IN> terminal on the camera, and make sure to correctly connect the polarity.

Mistakenly connecting the +12 V power supply to the GND terminal may result in a fire or failure.

DC IN	
1	UNREG GND
2	Not used
3	Not used
4	+12 V
HA16RA-4P(77) (Hirose Electric Co.)	

NOTE

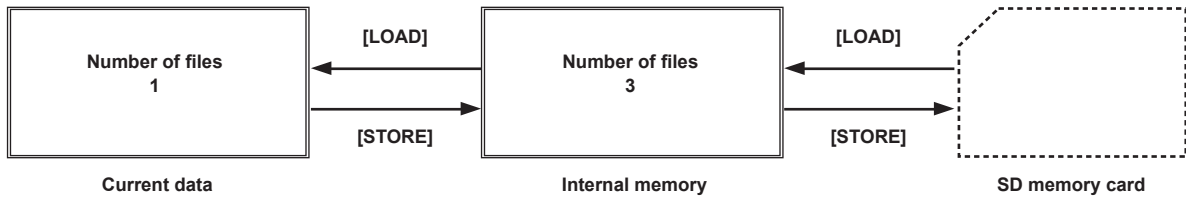
- When using external DC power supply, be sure to turn on the <POWER> switch of the external DC power supply, and then set the <POWER> switch of the camera to <EXT>. Performing these operations in the opposite order may lead to failure due to the output voltage of the external DC power supply rising too slowly.
- Even when the camera is connected to the CCU, operation from the CCU and ROP can be performed with the external DC power supply. The performance is affected by the extended distance between this camera and the CCU.
- When the camera is connected to the CCU while the external DC power supply is used, perform the following.
 - Use the optical fiber multi cable to connect to the CCU.
 - Set [MAIN MENU] → [SYSTEM MODE] → [CABLE CONNECTION] to [FIBER].

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 or 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 by [MAIN MENU] → [MAINTENANCE] → [LENS FILE ADJUST].
	CAC file	1 - 32	These files contain chromatic aberration compensation data specific to the lens. The data is managed by the camera. It can be loaded from a memory card by [MAIN MENU] → [FILE] → [CAC FILE].
	Scene file	1 - 8	These files which contain data for creating pictures are handled mainly by video engineers. The data is managed by the camera. It can be saved or loaded by [MAIN MENU] → [FILE] → [SCENE FILE].
	Operation file	1	These files which contain operation data are handled mainly by camera operators. The data is managed by the camera. It can be saved or loaded by [MAIN MENU] → [FILE] → [SD CARD] using a memory card.
	Reference file	1 - 3	These files contain data excluding the operation data from the equipment configuration data. The data is managed by the camera. It can be saved or loaded by [MAIN MENU] → [FILE] → [REFERENCE FILE].

User file

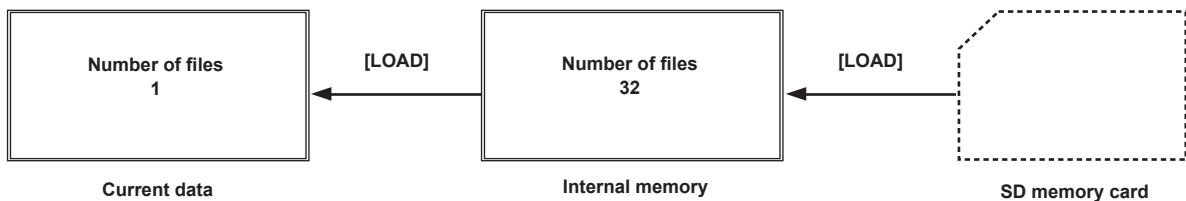


■ Loading

The operation data can be loaded to the actual operating area from the memory card inserted into the memory card slot on the camera by [MAIN MENU] → [FILE] → [SD CARD].

The operation data in the actual operating area can also be saved to the memory card.

CAC file



■ Loading

CAC files can be loaded to the internal memory from the memory card inserted into the memory card slot on the camera by [MAIN MENU] → [FILE] → [CAC FILE].

CAC file has a name specific to each lens and it can be downloaded from the website.

Refer to the Panasonic website for CAC-compatible lenses that have guaranteed operation with this unit. You can also obtain CAC files from the support pages of the Panasonic website.

<https://pro-av.panasonic.net/en/>

■ Accessing

The file is selected automatically according to the lens and accessed in the actual operating area.

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

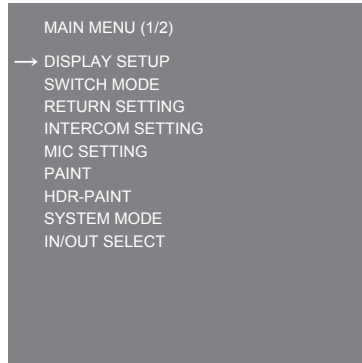
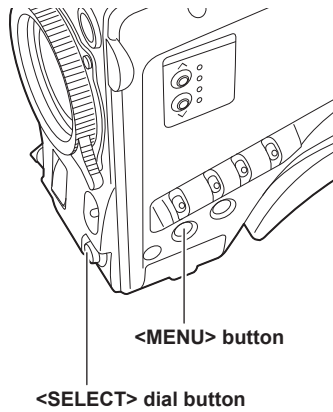


Fig. 1

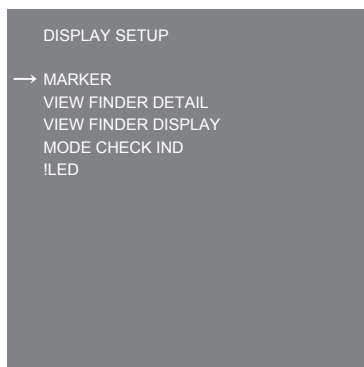


Fig. 2

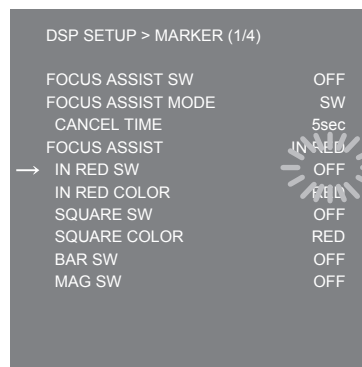


Fig. 3

1 Press the <MENU> button.

The [MAIN MENU] screen of the camera is displayed on the viewfinder or monitor. (Fig. 1)

2 Turn the <SELECT> dial button to select an item.

3 Press the <SELECT> dial button.

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

4 Turn the <SELECT> dial button to select a menu item to configure.

5 Press the <SELECT> dial button.

The setting of the item indicated by the arrow flashes. (Fig. 3)

6 Turn the <SELECT> dial button and change the setting.

7 Press the <SELECT> dial button.

The setting is confirmed.

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

Entering characters

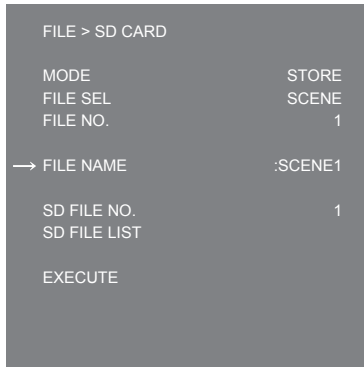


Fig. 1

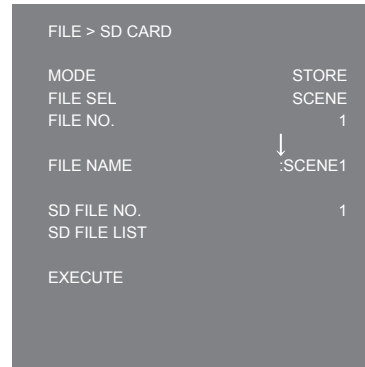


Fig. 2

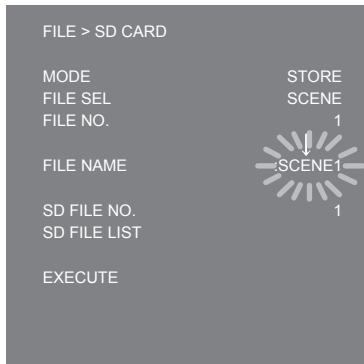


Fig. 3

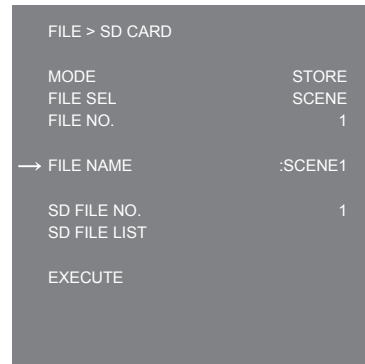


Fig. 4

1 Press the <SELECT> dial button.

The cursor changes to a downward arrow which appears over the colon (:). (Fig. 1, Fig. 2)

2 Turn the <SELECT> dial button to move the arrow to the character to be changed.

3 Press the <SELECT> dial button.

The character to be changed flashes. (Fig. 3)

4 Turn the <SELECT> dial button and change the character.

5 Press the <SELECT> dial button.

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

6 Turn the <SELECT> dial button to move the downward arrow cursor over the colon (:).

7 Press the <SELECT> 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 settings for the details to be displayed in the viewfinder.
[SWITCH MODE]	Configures the function assigned to the switch.
[RETURN SETTING]	Configures the return switch and return signal name.
[INTERCOM SETTING]	Configures the details such as gain, etc. of each intercom.
[MIC SETTING]	Configures the audio settings.
[PAINT]	Configures the image settings.
[HDR-PAINT]	Configures the image settings during HDR.
[SYSTEM MODE]	Configures the system frequency and shooting mode.
[IN/OUT SELECT]	Configures the operation mode of the external input/output and each connection.
[NETWORK SETUP]	Configures the settings for the network.
[FILE]	Performs operations regarding handling of scene files and SD memory card.
[MAINTENANCE]	Adjusts the CAC and 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.

O: Can be saved and loaded as an operation file data.

R: Can be saved and loaded as a reference file data.

[DISPLAY SETUP]

[MARKER]

Item	Description of settings
[FOCUS ASSIST SW] U O	Enables/disables the focus assist. [OFF], [ON] • Factory setting: [OFF]
[FOCUS ASSIST MODE] — U O	Sets whether to cancel the focus assist by the switch or by the duration of time. [SW], [INSTANT] • Factory setting: [SW]
[CANCEL TIME] U O	Sets the duration of time before cancelling the focus assist when [INSTANT] is selected. [1sec], [3sec], [5sec], [10sec], [20sec] • Factory setting: [5sec]
[FOCUS ASSIST] —	Displays the type of the focus assist.
[IN RED SW] U O	Enables/disables the IN RED. [OFF], [ON] • Factory setting: [OFF]
[IN RED COLOR] U O	Sets the color for IN RED. [RED], [GREEN], [BLUE], [WHITE] • Factory setting: [RED]
[SQUARE SW] U O	Enables/disables the SQUARE. [OFF], [ON] • Factory setting: [OFF]
[SQUARE COLOR] U O	Sets the color for the SQUARE. [RED], [GREEN] • Factory setting: [GREEN]
[BAR SW] U O	Enables/disables the BAR. [OFF], [ON] • Factory setting: [OFF]
[BAR MODE] U O	Sets the appearance of the focus bar. [NORMAL], [THICK] • Factory setting: [NORMAL]
[BAR COLOR] U O	Sets the color of the bar when [BAR MODE] is set to [THICK]. [WHITE], [RED], [BLUE], [GREEN] • Factory setting: [WHITE]
[BAR POSITION] U O	Sets the display position of the bar when [BAR MODE] is set to [THICK]. [UPPER], [UNDER], [RIGHT], [LEFT] • Factory setting: [UNDER]
[MAG SW] U O	Enables/disables the magnification display function. [OFF], [ON] • Factory setting: [OFF]
[ZEBRA] — U O	Enables/disables the luminance zebra. [OFF], [ON] • Factory setting: [OFF]
[ZEBRA1 LEVEL] U O	Sets the level of the luminance zebra 1. [0%]...[109%] • Factory setting: [80%]
[ZEBRA2 LEVEL] U O	Sets the level of the luminance zebra 2. [0%]...[109%] • Factory setting: [100%]
[ZEBRA PATTERN] U O	Sets the pattern of the luminance zebra. [1], [1+2], [SPOT] • Factory setting: [1]
[FRAME LEVEL SWITCH] — U O	Shows/hides the level display outside the frame marker. [OFF], [ON] • Factory setting: [OFF]
[FRAME LEVEL] U O	Sets the level to be displayed outside the frame marker. [0]...[31] • Factory setting: [31]
[FRAME MARK SWITCH] U O	Shows/hides the frame marker. [OFF], [ON] • Factory setting: [OFF]
[FRAME SIG] U O	Sets the aspect ratio of the frame marker. [4:3], [13:9], [14:9], [15:9], [16:9], [CINEMA], [VISTA] • Factory setting: [4:3]

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[SAFETY MARK1 SWITCH] UO	Shows/hides the safety marker 1. [OFF], [ON] • Factory setting: [OFF]
[SAFETY MARK1] UO	Sets the aspect ratio of safety marker 1. [16:9], [15:9], [14:9], [13:9], [4:3] • Factory setting: [16:9]
[SAFETY AREA1] UO	Sets the size of safety area 1. [80%]...[100%] • Factory setting: [80%]
[SAFETY MARK2 SWITCH] UO	Shows/hides the safety marker 2. [OFF], [ON] • Factory setting: [OFF]
[SAFETY MARK2] UO	Sets the aspect ratio of safety marker 2. [16:9], [15:9], [14:9], [13:9], [4:3] • Factory setting: [4:3]
[SAFETY AREA2] UO	Sets the size of safety marker 2. [80%]...[100%] • Factory setting: [93%]
[EFFECTIVE AREA MARK] UO	Shows/hides the effective area marker. [OFF], [ON] • Factory setting: [OFF]
[PF LENS AREA MARK] UO	Shows/hides the auto focus area marker of the PF lens. [OFF], [AUTO] • Factory setting: [OFF]
[CENTER MARK]	— UO
[CENTER MARK SELECT] UO	Sets the size of the center marker. [1]...[8] • Factory setting: [1]
[LINE WIDTH] UO	Sets the thickness of the center marker frame. [1]...[3] • Factory setting: [2]
[MARKER LEVEL] UO	Sets the brightness of the markers and on-screen display. [50%]...[100%] • Factory setting: [100%]
[USER BOX]	— UO
[MEMORY SELECT] UO	Configures the memory of the user box. [1], [2], [3] • Factory setting: [1]
[H POSITION] UO	Adjusts the horizontal position of the user box. [- 50]...[50] • Factory setting: [0]
[H OFFSET] UO	Finely adjusts the horizontal offset of the user box. [- 10]...[10] • Factory setting: [0]
[V POSITION] UO	Adjusts the vertical position of the user box. [- 50]...[50] • Factory setting: [0]
[V OFFSET] UO	Finely adjusts the vertical offset of the user box. [- 10]...[10] • Factory setting: [0]
[WIDTH] UO	Adjusts the width of the user box. [0]...[100] • Factory setting: [50]
[HEIGHT] UO	Adjusts the height of the user box. [0]...[100] • Factory setting: [50]
[BOX/CROSS] UO	Sets the shape of the user box. [BOX], [CROSS] • Factory setting: [BOX]
[EFFECT MEMORY1] UO	Configures the valid memory of the user box. [OFF], [ON] • Factory setting: [OFF]
[EFFECT MEMORY2] UO	Configures the valid memory of the user box. [OFF], [ON] • Factory setting: [OFF]
[EFFECT MEMORY3] UO	Configures the valid memory of the user box. [OFF], [ON] • Factory setting: [OFF]

[VIEW FINDER DETAIL]

Item	Description of settings
[VIEW FINDER DETAIL] U O	Adjusts the details of the viewfinder. [0]...[23] • Factory setting: [7]
[ZOOM LINK] U O	Enables/disables the details of the zoom-interlocked viewfinder. [OFF], [ON] • Factory setting: [OFF]
[ZOOM LINK LEVEL] U O	Adjusts the detail level of the zoom-interlocked viewfinder. [1]...[5] • Factory setting: [3]
[RETURN SIGNAL]	[HD PEAK FREQUENCY] U O
	Adjusts the peak frequency of the return signal. [LOW], [MID], [HIGH] • Factory setting: [LOW]
	[HD OFFSET GAIN] U O
	Adjusts the detail offset gain of the return signal. [0]...[5] • Factory setting: [0]
	[HD CRISP] U O
	Adjusts the detail crisp level of the return signal. [0]...[63] • Factory setting: [0]

[VIEW FINDER DISPLAY]

Item	Description of settings
[F NUMBER] U O	Shows/hides the iris display (F value). [OFF], [ON] • Factory setting: [OFF] This is displayed when you use a lens that outputs position information.
[ZOOM] U O	Shows/hides the zoom position display. [OFF], [ON] • Factory setting: [OFF] This is displayed when you use a lens that outputs position information.
[FOCUS] U O	Shows/hides the focus position display. [OFF], [ON] • Factory setting: [OFF] This is displayed when you use a lens that outputs position information.
[FOCUS CONDITION] U O	Shows/hides the focus information display. [OFF], [ON] • Factory setting: [OFF]
[EXTENDER] U O	Shows/hides the extender display. [OFF], [ON] • Factory setting: [OFF]
[FILTER] U O	Shows/hides the filter position display. [OFF], [ON] • Factory setting: [OFF]
[MASTER GAIN] U O	Shows/hides the master gain display. [OFF], [ON] • Factory setting: [OFF]
[OFFSET GAIN] U O	Shows/hides the offset gain display. [OFF], [ON] • Factory setting: [OFF]
[SHUTTER] U O	Shows/hides the electronic shutter display. [OFF], [ON] • Factory setting: [OFF]
[AUDIO LEVEL] U O	Shows/hides the audio level (level meter) display. [OFF], [ON] • Factory setting: [OFF]
[DIGITAL EXTENDER] U O	Shows/hides the digital extender display. [OFF], [ON] • Factory setting: [OFF]
[WHITE CHANNEL] U O	Shows/hides the white balance memory display. [OFF], [ON] • Factory setting: [OFF]
[DRS] U O	Shows/hides the dynamic range stretcher display. [OFF], [ON] • Factory setting: [OFF]
[CAC] U O	Shows/hides the chromatic aberration compensation (CAC) display. [OFF], [ON] • Factory setting: [OFF]
[OPT LEVEL] U O	Shows/hides the display of the level of the optical signal received by the camera. [OFF], [ON] • Factory setting: [OFF]

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[RETURN SELECT] U O	Shows/hides the return ID display. [OFF], [ON] • Factory setting: [OFF]
[STATUS] U O	Shows/hides the display appearing when functions are selected. [OFF], [ON] • Factory setting: [OFF]
[STATUS(AUTO)] U O	Shows/hides the display appearing when AWB/ABB/ASU are activated or deactivated. [OFF], [ON] • Factory setting: [OFF]
[SENSOR RATE] U O	Shows/hides the sensor imaging rate display. [OFF], [ON] • Factory setting: [OFF]
[VOLTAGE] U O	Shows/hides the power supply display. [OFF], [ON] • Factory setting: [OFF]
[SYSTEM MODE] U O	Shows/hides the system frequency/resolution display. [OFF], [ON] • Factory setting: [OFF]
[FAN OFF] U O	Shows/hides the status display when the fan is off. [OFF], [ON] • Factory setting: [OFF]
[COLOR TEMP] U O	Shows/hides the color temperature display. [OFF], [ON] • Factory setting: [OFF]
[FBC] U O	Shows/hides the flash band compensation display. [OFF], [ON] • Factory setting: [OFF]
[SHOOTING MODE] U O	Shows/hides the sensitivity mode display. [OFF], [ON] • Factory setting: [OFF]
[MAG] U O	Shows/hides the status display when the focus assist magnification display function is enabled. [OFF], [ON] • Factory setting: [ON]
[MENU DISP WARNING] U O	Shows/hides the menu warning display. [OFF], [ON] • Factory setting: [ON]
[F DROP ADJUST] U O	Shows/hides the F drop display. [OFF], [ON] • Factory setting: [OFF]
[HDR] U O	Shows/hides the HDR display. [OFF], [ON] • Factory setting: [OFF]
[CHARACTER SIZE] U O	Selects the character size for display on the viewfinder. [LARGE], [SMALL] • Factory setting: [SMALL]

[MODE CHECK IND]

Item	Description of settings
[AUDIO] U O	Shows/hides the [AUDIO] screen during the mode check. [OFF], [ON] • Factory setting: [ON]
[USER SW STATUS] U O	Shows/hides the [USER SW STATUS] screen during the mode check. [OFF], [ON] • Factory setting: [ON]
[!LED] U O	Shows/hides the [!LED] screen during the mode check. [OFF], [ON] • Factory setting: [ON]
[SDI OUT] U O	Shows/hides the [SDI OUT] screen during the mode check. [OFF], [ON] • Factory setting: [ON]
[CAC] U O	Shows/hides the [CAC] screen during the mode check. [OFF], [ON] • Factory setting: [ON]

[!LED]

For items whose setting is [ON], the LED in the viewfinder (▲) lights up when the operating status of the camera becomes irregular.

Item	Description of settings
[GAMMA OFF] U O	Shows/hides the status display when gamma is disabled. [OFF], [ON] • Factory setting: [OFF]
[SHUTTER] U O	Shows/hides the status display when the electronic shutter is enabled. [OFF], [ON] • Factory setting: [OFF]
[EXTENDER] U O	Shows/hides the status display when the lens extender is enabled. [OFF], [ON] • Factory setting: [OFF]
[FAN OFF] U O	Shows/hides the status display when the fan is off. [OFF], [ON] • Factory setting: [OFF]
[MASTER GAIN] U O	Shows/hides the status display when the gain is other than 0 dB. [OFF], [ON] • Factory setting: [OFF]
[BLACK GAMMA] U O	Shows/hides the status display when the black gamma is enabled. [OFF], [ON] • Factory setting: [OFF]

[SWITCH MODE]

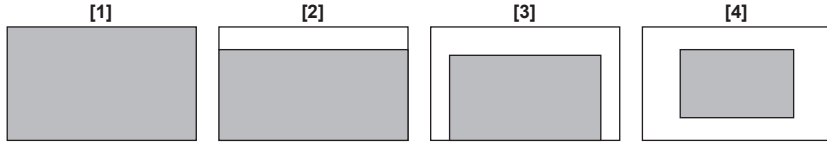
[USER SWITCH]

Item	Description of settings
[GRIP RET] U O	Selects the grip <RET> switch function. [A], [B], [C], [PTT] • Factory setting: [A]
[GRIP PTT] U O	Selects the grip <PTT> switch function. [PTT], [A], [B], [C] • Factory setting: [PTT]
[LENS VTR] U O	Selects the <VTR> switch function of the handy lens. [A], [B], [C], [PTT], [DISP], [MARK OFF], [LENS EXT], [D.EXT], [C.TEMP], [CENTER], [ASSIST], [FA_INRED], [FA_SQ], [FA_BAR], [FA_MAG], [INH] • Factory setting: [B]
[LENS RET1] U O	Selects the <RET1> switch function of the standard lens. [A], [B], [C], [PTT], [DISP], [MARK OFF], [LENS EXT], [D.EXT], [C.TEMP], [CENTER], [ASSIST], [FA_INRED], [FA_SQ], [FA_BAR], [FA_MAG] • Factory setting: [A]
[LENS RET2] U O	Selects the <RET2> switch function of the standard lens. [A], [B], [C], [PTT], [DISP], [MARK OFF], [LENS EXT], [D.EXT], [C.TEMP], [CENTER], [ASSIST], [FA_INRED], [FA_SQ], [FA_BAR], [FA_MAG] • Factory setting: [B]
[LENS RET3] U O	Selects the <RET3> switch function of the standard lens. [A], [B], [C], [PTT], [DISP], [MARK OFF], [LENS EXT], [D.EXT], [C.TEMP], [CENTER], [ASSIST], [FA_INRED], [FA_SQ], [FA_BAR], [FA_MAG] • Factory setting: [C]
[USER SWITCH1] U O	Selects the function of the <USER 1> switch. [RETURN A], [RETURN B], [RETURN C], [PTT], [DISP], [MARK OFF], [D.EXT], [C.TEMP], [ASSIST], [CALL], [FA_INRED], [FA_SQ], [FA_BAR], [FA_MAG] • Factory setting: [RETURN A]
[USER SWITCH2] U O	Selects the function of the <USER 2> switch. [RETURN A], [RETURN B], [RETURN C], [PTT], [DISP], [MARK OFF], [D.EXT], [C.TEMP], [ASSIST], [CALL], [FA_INRED], [FA_SQ], [FA_BAR], [FA_MAG] • Factory setting: [PTT]
[USER SWITCH3] U O	Selects the function of the <USER 3> switch. [RETURN A], [RETURN B], [RETURN C], [PTT], [DISP], [MARK OFF], [D.EXT], [C.TEMP], [ASSIST], [CALL], [FA_INRED], [FA_SQ], [FA_BAR], [FA_MAG] • Factory setting: [PTT]

[GAIN SETTING]

Item	Description of settings
[LOW GAIN] U S O R	Sets the amount of gain increase when <L> is selected for the <GAIN> switch. [-6dB]...[36dB] • Factory setting: [0dB]
[OFFSET LOW GAIN] U S O R	Sets the offset from [LOW GAIN]. [-2.9dB]...[+2.9dB] (0.1 dB step) • Factory setting: [0.0dB]
[MID GAIN] U S O R	Sets the amount of gain increase when <M> is selected for the <GAIN> switch. [-6dB]...[36dB] • Factory setting: [9dB]
[OFFSET MID GAIN] U S O R	Sets the offset from [MID GAIN]. [-2.9dB]...[+2.9dB] (0.1 dB step) • Factory setting: [0.0dB]
[HIGH GAIN] U S O R	Sets the amount of gain increase when <H> is selected for the <GAIN> switch. [-6dB]...[36dB] • Factory setting: [18dB]
[OFFSET HIGH GAIN] U S O R	Sets the offset from [HIGH GAIN]. [-2.9dB]...[+2.9dB] (0.1 dB step) • Factory setting: [0.0dB]

[IRIS]

Item	Description of settings
[AUTO IRIS] U O	Enables/disables the auto iris mode. [OFF], [ON] • Factory setting: [ON] (when the camera is used standalone), [OFF] (others)
[WINDOW SELECT] U O	Sets the photometric range. [1]...[4] The image of window will be as follows.  • Factory setting: [1]
[IRIS LEVEL] U O	Adjusts the target value (brightness) of the auto iris. [0]...[100] • Factory setting: [50]
[PEAK RATIO] U O	Sets the ratio of the peak value and average value of auto iris photometry. [0]...[100] • Factory setting: [50]
[IRIS RANGE] U O	Sets the fine adjustment range of the auto iris level using the iris adjustment joystick. [NORMAL], [(3/4)], [(2/4)], [(1/4)] • Factory setting: [NORMAL]
[IRIS SPEED] U O	Sets the auto iris speed. [1]...[25] • Factory setting: [15]
[IRIS GAIN] U O	Switches whether to adjust auto iris photometry speed adjustment with the iris gain volume of the lens or from the menu. Normally, set this to [LENS] and make adjustments with the iris volume of the lens. [LENS], [CAM] • Factory setting: [LENS]
[LENS EXT COMP SW] U O	Sets the ALC compensation when the lens extender is enabled. [OFF], [ON] • Factory setting: [OFF]
[EXTENDER1] U O	Sets the magnification of lens extender 1. [NONE], [0.1]...[9.9] • Factory setting: [2.0]
[LENS EXT COMP LEVEL] U O	Sets the iris compensation level when lens extender 1 is enabled. [-100]...[+100] • Factory setting: [0]
[EXTENDER2] U O	Sets the magnification of lens extender 2. [NONE], [0.1]...[9.9] • Factory setting: [NONE]
[LENS EXT COMP LEVEL] U O	Sets the iris compensation level when lens extender 2 is enabled. [-100]...[+100] • Factory setting: [0]
[EXTENDER3] U O	Sets the magnification of lens extender 3. [NONE], [0.1]...[9.9] • Factory setting: [NONE]

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[LENS EXT COMP LEVEL] U	Sets the iris compensation level when lens extender 3 is enabled. [-100]...[+100] • Factory setting: [0]
[EXTENDER4] U	Sets the magnification of lens extender 4. [NONE], [0.1]...[9.9] • Factory setting: [NONE]
[LENS EXT COMP LEVEL] U	Sets the iris compensation level when lens extender 4 is enabled. [-100]...[+100] • Factory setting: [0]

[FBC SETTING]

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

[D.EXT SETTING]

Item	Description of settings
[D.EXT] U	Enables/disables the digital extender. [OFF], [ON] • Factory setting: [OFF]

[W/B BAL SETTING]

Item	Description of settings
[W/B BAL SW] U	Sets the conditions for activating the white balance switch. [NORMAL]: Enables the switch only when the camera is operated individually. [ALWAYS]: Always enables the switch. • Factory setting: [NORMAL]
[ABB SW MODE] U	Sets the switch of the black balance. [NORMAL], [PTT] • Factory setting: [NORMAL]
[SHOCKLESS WB SW] — U	Enables/disables the shockless white balance when the color temperature is changed. [OFF], [ON] • Factory setting: [OFF]
[SHOCKLESS WB SPEED] U	Sets the speed of the shockless white balance. [1]...[5] • Factory setting: [4]

[SHUTTER SPEED]

Item	Description of settings
[SHUTTER SW] U S R	Enables/disables the shutter function. [OFF]: Disables the shutter. [ON]: Enables the shutter speed with [SHUTTER SPEED]/[SYNCHRO SCAN]. • Factory setting: [OFF]
[SHUTTER MODE] U S R	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]
[SHUTTER SPEED] U S R	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] [50i]/[50p] mode: [1/60], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] [29.97p] mode: [1/48], [1/50], [1/60], [1/96], [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] [25p] mode: [1/48], [1/50], [1/60], [1/96], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] [23.98p] mode: [1/48], [1/50], [1/60], [1/96], [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/100]

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[SYNCHRO SCAN] U S R	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] [29.97p] mode: [30.9Hz]...[2600Hz] [25p] mode: [25.7Hz]...[3130Hz] [23.98p] mode: [24.7Hz]...[2880Hz]

[SHUTTER SELECT]

Item	Description of settings
[SHUTTER OFF BY ROP] U R	Selects whether to enable the shutter mode from ROP. [ENABLE], [DISABLE] • Factory setting: [DISABLE]
[POSITION1] U S R	Sets the shutter speed of [POSITION1]. [59.94i]/[59.94p] mode: [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/100] [50i]/[50p] mode: [1/60], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/60] [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] • Factory setting: [1/60] [25p] mode: [1/48], [1/50], [1/60], [1/96], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/50] [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] • Factory setting: [1/48]
[POSITION2] U S R	Sets the shutter speed of [POSITION2]. [59.94i]/[59.94p] mode: [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/120] [50i]/[50p] mode: [1/60], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/100] [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] • Factory setting: [1/120] [25p] mode: [1/48], [1/50], [1/60], [1/96], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/100] [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] • Factory setting: [1/120]
[POSITION3] U S R	Sets the shutter speed of [POSITION3]. [59.94i]/[59.94p] mode: [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/125] [50i]/[50p] mode: [1/60], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/125] [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] • Factory setting: [1/125] [25p] mode: [1/48], [1/50], [1/60], [1/96], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/125] [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] • Factory setting: [1/125]

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[POSITION4] USR	Sets the shutter speed of [POSITION4]. [59.94i]/[59.94p] mode: [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/250] [50i]/[50p] mode: [1/60], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/250] [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] • Factory setting: [1/250] [25p] mode: [1/48], [1/50], [1/60], [1/96], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/250] [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] • Factory setting: [1/250]
[POSITION5] USR	Sets the shutter speed of [POSITION5]. [59.94i]/[59.94p] mode: [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/500] [50i]/[50p] mode: [1/60], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/500] [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] • Factory setting: [1/500] [25p] mode: [1/48], [1/50], [1/60], [1/96], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/500] [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] • Factory setting: [1/500]
[POSITION6] USR	Sets the shutter speed of [POSITION6]. [59.94i]/[59.94p] mode: [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/1000] [50i]/[50p] mode: [1/60], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/1000] [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] • Factory setting: [1/1000] [25p] mode: [1/48], [1/50], [1/60], [1/96], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/1000] [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] • Factory setting: [1/1000]
[POSITION7] USR	Sets the shutter speed of [POSITION7]. [59.94i]/[59.94p] mode: [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/1500] [50i]/[50p] mode: [1/60], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/1500] [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] • Factory setting: [1/1500] [25p] mode: [1/48], [1/50], [1/60], [1/96], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/1500] [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] • Factory setting: [1/1500]

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[POSITION8] U S R	Sets the shutter speed of [POSITION8]. [59.94i]/[59.94p] mode: [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/2000] [50i]/[50p] mode: [1/60], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/2000] [29.97p] mode: [1/48], [1/50], [1/60], [1/96], [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/2000] [25p] mode: [1/48], [1/50], [1/60], [1/96], [1/100], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/2000] [23.98p] mode: [1/48], [1/50], [1/60], [1/96], [1/100], [1/120], [1/125], [1/250], [1/500], [1/1000], [1/1500], [1/2000] • Factory setting: [1/2000]

[SHUTTER POSITION]

Item	Description of settings
[POSITION1] U S R	Enables/disables the [POSITION1] settings of the shutter position. [OFF], [ON] • Factory setting: [ON]
[POSITION2] U S R	Enables/disables the [POSITION2] settings of the shutter position. [OFF], [ON] • Factory setting: [ON]
[POSITION3] U S R	Enables/disables the [POSITION3] settings of the shutter position. [OFF], [ON] • Factory setting: [ON]
[POSITION4] U S R	Enables/disables the [POSITION4] settings of the shutter position. [OFF], [ON] • Factory setting: [ON]
[POSITION5] U S R	Enables/disables the [POSITION5] settings of the shutter position. [OFF], [ON] • Factory setting: [ON]
[POSITION6] U S R	Enables/disables the [POSITION6] settings of the shutter position. [OFF], [ON] • Factory setting: [ON]
[POSITION7] U S R	Enables/disables the [POSITION7] settings of the shutter position. [OFF], [ON] • Factory setting: [ON]
[POSITION8] U S R	Enables/disables the [POSITION8] settings of the shutter position. [OFF], [ON] • Factory setting: [ON]
[SHUTTER SELECT BY ROP] U S R	Selects whether the shutter operation from ROP follows the [POSITION1] to [POSITION8] settings. [FULL], [SELECT] • Factory setting: [SELECT]

[RETURN SETTING]

Item	Description of settings						
[RETURN MODE] U O	Sets the operation mode of the <RET> switch. [NORM], [TOGGLE], [BOX] • Factory setting: [NORM]						
[RETURN SELECT]	<table border="1" style="width: 100%; border-collapse: collapse;"> <tbody> <tr> <td style="width: 15%; text-align: center;">[RETURN A] U O</td> <td>Sets the function assigned to return A. [RETURN1], [RETURN2] • Factory setting: [RETURN1]</td> </tr> <tr> <td style="text-align: center;">[RETURN B] U O</td> <td>Sets the function assigned to return B. [RETURN1], [RETURN2] • Factory setting: [RETURN2]</td> </tr> <tr> <td style="text-align: center;">[RETURN C] U O</td> <td>Sets the function assigned to return C. [RETURN1], [RETURN2] • Factory setting: [RETURN1]</td> </tr> </tbody> </table>	[RETURN A] U O	Sets the function assigned to return A. [RETURN1], [RETURN2] • Factory setting: [RETURN1]	[RETURN B] U O	Sets the function assigned to return B. [RETURN1], [RETURN2] • Factory setting: [RETURN2]	[RETURN C] U O	Sets the function assigned to return C. [RETURN1], [RETURN2] • Factory setting: [RETURN1]
[RETURN A] U O	Sets the function assigned to return A. [RETURN1], [RETURN2] • Factory setting: [RETURN1]						
[RETURN B] U O	Sets the function assigned to return B. [RETURN1], [RETURN2] • Factory setting: [RETURN2]						
[RETURN C] U O	Sets the function assigned to return C. [RETURN1], [RETURN2] • Factory setting: [RETURN1]						
[RETURN1 ID] U O	Sets the name of return video 1. (5 characters or less) • Factory setting: [RET.1]						
[RETURN2 ID] U O	Sets the name of return video 2. (5 characters or less) • Factory setting: [RET.2]						

[INTERCOM SETTING]**[INTERCOM]**

Item	Description of settings
[INCOM TALK SETTING] [MIC TYPE] U O	Selects the type of the intercom microphone. [DYN]: Dynamic type [ECM]: Condenser type [CBN]: Carbon type • Factory setting: [DYN]
[MIC POWER] U O	Sets the on/off for the power supply to the intercom microphone. [OFF], [ON] • Factory setting: [OFF]
[MIC GAIN] U O	Sets the volume of the intercom microphone. [-12dB]...[12dB] • Factory setting: [0dB]
[SIDE TONE] U O	Sets the volume of the intercom microphone side tone. [OFF], [-36dB]...[0dB] (3 dB step) • Factory setting: [-6dB]
[LEVEL VR] U O	Switches intercom level VR. [REAR], [FRONT] • Factory setting: [REAR]
[PGM MIX] U O	Sets the on/off for the intercom PGM mix. [OFF], [ON] • Factory setting: [ON]

[MIC SETTING]

Item	Description of settings
[MIC1 (FRONT MIC) GAIN] U O	Sets the gain when there is a microphone input to the <MIC> terminal (front). [60dB], [40dB], [20dB] • Factory setting: [60dB]
[MIC1 (FRONT MIC) AMP] U O	Sets the level of the input to the <MIC> terminal (front). [-20dB]...[+20dB] • Factory setting: [0dB]
[MIC2 GAIN] U O	Sets the gain when there is a microphone input to the <MIC 2> terminal. [60dB], [40dB], [20dB] • Factory setting: [60dB]
[MIC2 AMP] U O	Sets the level of the input to the <MIC 2> terminal. [-20dB]...[+20dB] • Factory setting: [0dB]

[PAINT]**[PAINT SWITCH]**

Item	Description of settings
[BLACK SHADING] U R	Enables/disables the black shading. [OFF], [ON] • Factory setting: [ON]
[WHITE SHADING] U S R	Enables/disables the white shading (saw-toothed waveform or parabolic waveform). [OFF], [ON] • Factory setting: [ON]
[FLARE] U S R	Enables/disables flare. [OFF], [ON] • Factory setting: [ON]
[GAMMA] U S R	Enables/disables gamma. [OFF], [ON] • Factory setting: [ON]
[BLACK GAMMA] U S R	Enables/disables black gamma. [OFF], [ON] • Factory setting: [OFF]
[KNEE] U S R	Enables/disables knee. [OFF], [ON] • Factory setting: [ON]
[WHITE CLIP] U S R	Enables/disables white clips. [OFF], [ON] • Factory setting: [ON]
[DRS SW] U S R	Enables/disables dynamic range stretcher. [OFF], [ON] • Factory setting: [OFF]

Chapter 4 Menu Operations — Menu list

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

[PEDESTAL]

Item	Description of settings
[MASTER PEDESTAL] U S R	Adjusts the black level of the master pedestal. [-99]...[+99] • Factory setting: [0]
[R PEDESTAL] U S R	Sets the correction level of red to the master pedestal. [-800]...[+800] • Factory setting: [0]
[G PEDESTAL] U S R	Sets the correction level of green to the master pedestal. [-800]...[+800] • Factory setting: [0]
[B PEDESTAL] U S R	Sets the correction level of blue to the master pedestal. [-800]...[+800] • Factory setting: [0]
[PEDESTAL OFFSET] U S R	Sets whether to maintain the Rch, Gch, and Bch pedestal levels after adjusting the automatic black balance. [ON]: Maintains the values set in [R PEDESTAL], [G PEDESTAL], and [B PEDESTAL]. [OFF]: Sets [R PEDESTAL], [G PEDESTAL], and [B PEDESTAL] to [0]. • Factory setting: [OFF]
[MASTER PEDESTAL RANGE] U S R	Sets the variable amount of the master pedestal. [NORMAL]: Current variable amount [WIDE]: Double of current variable amount • Factory setting: [NORMAL]

[CHROMA]

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

[COLOR TEMP SETTING]

Item	Description of settings
[COLOR TEMP PRESET]	[COLOR TEMP PRE SWITCH] U S R Enables/disables the color temperature adjustment. [OFF], [ON] • Factory setting: [OFF]
	[COLOR TEMP] U S R Sets the color temperature when [COLOR TEMP PRE SWITCH] is [ON]. [2000K]...[15000K] • Factory setting: [3200K]
	[R GAIN] U S R Sets the correction level of red to the color temperature. [-400]...[+400] • Factory setting: [0]
	[B GAIN] U S R Sets the correction level of blue to the color temperature. [-400]...[+400] • Factory setting: [0]
	[G AXIS] U S R Sets the correction level of green to the color temperature. [-400]...[+400] • Factory setting: [0]
[COLOR TEMP ACH/ BCH]	— When the camera is connected to the system, only [COLOR TEMP ACH] can be set.
	[COLOR TEMP ACH] U S R Sets the color temperature when the <WHITE BAL> switch is <A>. [2000K]...[15000K] • Factory setting: [3200K]
	[R GAIN ACH] U S R Sets the correction level of red to the color temperature. [-400]...[+400] • Factory setting: [0]
	[B GAIN ACH] U S R Sets the correction level of blue to the color temperature. [-400]...[+400] • Factory setting: [0]
	[G AXIS ACH] U S R Sets the correction level of green to the color temperature. [-400]...[+400] • Factory setting: [0]
	[COLOR TEMP BCH] U S R Sets the color temperature when the <WHITE BAL> switch is . [2000K]...[15000K] • Factory setting: [3200K]
	[R GAIN BCH] U S R Sets the correction level of red to the color temperature. [-400]...[+400] • Factory setting: [0]
	[B GAIN BCH] U S R Sets the correction level of blue to the color temperature. [-400]...[+400] • Factory setting: [0]
	[G AXIS BCH] U S R Sets the correction level of green to the color temperature. [-400]...[+400] • Factory setting: [0]
[COLOR TEMP USER SW]	[COLOR TEMP SW] U S R Enables/disables the [COLOR TEMP USER SW] item. [OFF], [ON] • Factory setting: [OFF]
	[COLOR TEMP] U S R Sets the color temperature when any of the <USER 1>/<USER 2>/<USER 3> buttons are set to [C.TEMP] and the setting is enabled. [2000K]...[15000K] • Factory setting: [3200K]
	[R GAIN] U S R Sets the correction level of red to the color temperature. [-400]...[+400] • Factory setting: [0]
	[B GAIN] U S R Sets the correction level of blue to the color temperature. [-400]...[+400] • Factory setting: [0]
	[G AXIS] U S R Sets the correction level of green to the color temperature. [-400]...[+400] • Factory setting: [0]

[RGB GAIN CONTROL SETTING]

Item	Description of settings
[G GAIN REL CONTROL SWITCH] U S R	Enables/disables the relative value control of Gch gain. [OFF], [ON] • Factory setting: [OFF]
[RGB GAIN PRESET]	
[R GAIN] U S R	Sets the preset value of Rch gain. [-1000]...[+1000] • Factory setting: [0]
[G GAIN] U S R	Sets the preset value of Gch gain. [-1000]...[+1000] • Factory setting: [0]
[B GAIN] U S R	Sets the preset value of Bch gain. [-1000]...[+1000] • Factory setting: [0]
[RGB GAIN ACH/BCH]	—
[R GAIN ACH] U S R	When the camera is connected to the CCU, only [R GAIN ACH]/[G GAIN ACH]/[B GAIN ACH]/[GAIN OFFSET ACH] can be set. Sets the correction level of red to the gain. [-1000]...[+1000] • Factory setting: [0]
[G GAIN ACH] U S R	Sets the correction level of green to the gain. [-1000]...[+1000] • Factory setting: [0]
[B GAIN ACH] U S R	Sets the correction level of blue to the gain. [-1000]...[+1000] • Factory setting: [0]
[GAIN OFFSET ACH] U S R	Sets whether to maintain the Rch, Gch, and Bch gain levels when adjusting the automatic white balance. [ON]: Maintains the values set in [R GAIN ACH], [G GAIN ACH], and [B GAIN ACH]. [OFF]: Sets [R GAIN ACH], [G GAIN ACH], and [B GAIN ACH] to [0]. • Factory setting: [OFF]
[R GAIN BCH] U S R	Sets the correction level of red to the gain. [-1000]...[+1000] • Factory setting: [0]
[G GAIN BCH] U S R	Sets the correction level of green to the gain. [-1000]...[+1000] • Factory setting: [0]
[B GAIN BCH] U S R	Sets the correction level of blue to the gain. [-1000]...[+1000] • Factory setting: [0]
[GAIN OFFSET BCH] U S R	Sets whether to maintain the Rch, Gch, and Bch gain levels when adjusting the automatic white balance. [ON]: Maintains the values set in [R GAIN BCH], [G GAIN BCH], and [B GAIN BCH]. [OFF]: Sets [R GAIN BCH], [G GAIN BCH], and [B GAIN BCH] to [0]. • Factory setting: [OFF]

[WHITE SHADING]

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

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[V SAW B] U S R	Adjusts the white shading gain for Bch vertically using a saw-toothed waveform. [-100]...[+100] • Factory setting: [0]
[V PARA R] U S R	Adjusts the white shading gain for Rch vertically using a parabolic waveform. [-100]...[+100] • Factory setting: [0]
[V PARA G] U S R	Adjusts the white shading gain for Gch vertically using a parabolic waveform. [-100]...[+100] • Factory setting: [0]
[V PARA B] U S R	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 R	Enables/disables flare correction. [OFF], [ON] • Factory setting: [ON]
[MASTER FLARE] U S R	Adjusts the master flare. [-200]...[+200] • Factory setting: [0]
[R FLARE] U S R	Adjusts the Rch flare. [-200]...[+200] • Factory setting: [0]
[G FLARE] U S R	Adjusts the Gch flare. [-200]...[+200] • Factory setting: [0]
[B FLARE] U S R	Adjusts the Bch flare. [-200]...[+200] • Factory setting: [0]

[GAMMA/BLACK GAMMA]

Item	Description of settings
[GAMMA] U S R	Enables/disables gamma correction. This cannot be set in HDR mode. [OFF], [ON] • Factory setting: [ON]
[GAMMA MODE SELECT] U S R	Selects the type of gamma. [HD], [FILMLIKE1], [FILMLIKE2], [FILMLIKE3], [FILM REC], [VIDEO REC] • Factory setting: [HD]
[MASTER GAMMA] U S R	Adjusts the gamma characteristic. [0.35]...[0.75] • Factory setting: [0.45]
[BLACK STRETCH LEVEL] U S R	(Only when [FILM REC] is set) Sets the position of the gamma stretch. [0%]...[30%] • Factory setting: [0%]
[DYNAMIC LEVEL] U S R	(Only when [FILM REC] is set) Sets dynamic range. [200%], [300%], [400%], [500%] • Factory setting: [500%]
[KNEE POINT] U S R	(Only when [VIDEO REC] is set) Sets the knee point. [30]...[90] • Factory setting: [30]
[KNEE SLOPE] U S R	(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 R	Enables/disables black gamma. This cannot be set when [MAIN MENU] → [PAINT] → [DRS] → [DRS] → [ON] is set. [OFF], [ON] • Factory setting: [OFF]
[MASTER BLACK GAMMA] U S R	Adjusts the gamma characteristic adjacent to black. [-48]...[+48] • Factory setting: [0]
[INITIAL GAMMA] U S R	Sets the gamma initial slope. When [GAMMA MODE SELECT] is [HD]: [4.0]/[4.5]/[5.0] When [GAMMA MODE SELECT] is [FILMLIKE1]/[FILMLIKE2]/[FILMLIKE3]: [4.5] (fixed) When [GAMMA MODE SELECT] is [FILM REC]/[VIDEO REC]: [4.5] (fixed) • Factory setting: [4.5]

[KNEE]

Item	Description of settings
[KNEE] — USR	Enables/disables the knee function. This cannot be set in HDR mode. [OFF], [ON] • Factory setting: [ON]
[KNEE MASTER POINT] USR	Sets the knee point position. [080.00%]...[110.00%] (0.25% step) • Factory setting: [95.00%]
[KNEE MASTER SLOPE] USR	Sets the knee slope. [00]...[199] • Factory setting: [130]

[WHITE CLIP]

Item	Description of settings
[WHITE CLIP] USR	Enables/disables the white clip function. This cannot be set in HDR mode. [OFF], [ON] • Factory setting: [ON]
[MASTER WHITE CLIP LEVEL] USR	Sets the white clip level. [80%]...[109%] • Factory setting: [109%]
[HI-COLOR] USR	Sets whether to improve the color reproduction in high-luminance areas. [OFF], [ON] • Factory setting: [OFF]

[DRS]

Item	Description of settings
[DRS] USR	Enables/disables the dynamic range stretcher function. Set this to [ON] to automatically adjust the contrast. This cannot be set in HDR mode. [OFF], [ON] • Factory setting: [OFF]
[EFFECT DEPTH] USR	Sets the compression level of the high-luminance areas of the dynamic range stretcher function. Set a larger value to increase the compression level of the high-luminance areas. [1]...[5] • Factory setting: [5]

[DETAIL SETTING]

[DETAIL SETTING] effects are enabled only for CCU output.

Item	Description of settings
[DETAIL] USR	Enables/disables all detail functions. [OFF], [ON] • Factory setting: [ON]
[MASTER DETAIL] USR	Sets the master detail. [-31]...[+31] • Factory setting: [0]
[H DETAIL LEVEL] USR	Sets the correction level of the horizontal detail. [0]...[63] • Factory setting: [15]
[V DETAIL LEVEL] USR	Sets the correction level of the vertical detail. [0]...[63] • Factory setting: [21]
[PEAK FREQUENCY] USR	Sets the peak frequency of the horizontal detail. HD mode [0]...[29] • Factory setting: [10] UHD mode [0]...[7] • Factory setting: [3]
[V DETAIL FREQUENCY] USR	Sets the vertical detail frequency. [0]...[31] • Factory setting: [10]
[CRISP] USR	Sets the detail signal noise removal level. [0]...[31] • Factory setting: [10]
[DETAIL GAIN(+)] USR	Sets the detail level in the + (upward) direction. [-31]...[+31] • Factory setting: [0]

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[DETAIL GAIN(-)] U S R	Sets the detail level in the – (downward) direction. [–31]...[+31] • Factory setting: [0]
[KNEE APERTURE LEVEL] U S R	Adjusts the knee aperture level. This cannot be set in HDR mode. [00]...[5] • Factory setting: [0]
[DETAIL KNEE] U S R	Adjusts the detail components of knee. This cannot be set in HDR mode. [00]...[15] • Factory setting: [0]
[LEVEL DEPENDENT SWITCH] U S R	Enables/disables the function to remove details of dark areas. This cannot be set in HDR mode. [OFF], [ON] • Factory setting: [OFF]
[LEVEL DEPENDENT] U S R	Sets the level to remove details of dark areas. [00]...[15] • Factory setting: [8]

[DOWNCON SETTING]

Set the details for down-converted signals.

This is available only when the 4K OPTION board is fitted and when in the UHD mode.

[DOWNCON SETTING] effects are enabled only for CCU output.

Item	Description of settings
[CHROMA] U S R	[CHROMA LEVEL SWITCH] Enables/disables the gain adjustment of chroma. [OFF], [ON] • Factory setting: [OFF]
U S R	[CHROMA LEVEL] Sets the gain adjustment of chroma. [–100%]...[+40%] • Factory setting: [0%]
[DETAIL SETTING] U S R	[DETAIL] Enables/disables all detail functions. [OFF], [ON] • Factory setting: [ON]
U S R	[MASTER DETAIL] Sets the master detail. [–31]...[+31] • Factory setting: [0]
U S R	[H DETAIL LEVEL] Sets the correction level of the horizontal detail. [0]...[63] • Factory setting: [15]
U S R	[V DETAIL LEVEL] Sets the correction level of the vertical detail. [0]...[63] • Factory setting: [21]
U S R	[PEAK FREQUENCY] Sets the peak frequency of the horizontal detail. [0]...[29] • Factory setting: [10]
U S R	[V DETAIL FREQUENCY] Sets the vertical detail frequency. [0]...[31] • Factory setting: [10]
U S R	[CRISP] Sets the detail signal noise removal level. [0]...[31] • Factory setting: [10]
U S R	[DETAIL GAIN(+)] Sets the detail level in the + (upward) direction. [–31]...[+31] • Factory setting: [0]
U S R	[DETAIL GAIN(-)] Sets the detail level in the – (downward) direction. [–31]...[+31] • Factory setting: [0]
U S R	[KNEE APERTURE LEVEL] Adjusts the knee aperture level. This cannot be set in HDR mode. [00]...[5] • Factory setting: [0]
U S R	[DETAIL KNEE] Adjusts the detail components of knee. This cannot be set in HDR mode. [00]...[15] • Factory setting: [0]
U S R	[LEVEL DEPENDENT SWITCH] Enables/disables the function to remove details of dark areas. This cannot be set in HDR mode. [OFF], [ON] • Factory setting: [OFF]
U S R	[LEVEL DEPENDENT] Sets the level to remove details of dark areas. [00]...[15] • Factory setting: [8]

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[SKIN TONE DETAIL SETTING] U S R	Enables/disables the skin tone detail function. [OFF], [ON] • Factory setting: [OFF]
[SKIN GET] U S R	Selects whether to automatically obtain the color saturation and hue information from the cursor position. [NO], [YES]
[MEMORY SELECT] U S R	Selects the skin tone table of the subject to apply the skin tone table to. [A], [B], [C] • Factory setting: [A]
[CURSOR] U S R	Shows/hides the box cursor in the center of the screen. [OFF], [ON] • Factory setting: [OFF]
[H POSITION] U S R	Adjusts the horizontal position of the cursor. [0%]...[100%] (0.25% step) • Factory setting: [50%]
[V POSITION] U S R	Adjusts the vertical position of the cursor. [0%]...[100%] (0.25% step) • Factory setting: [50%]
[ZEBRA] U S R	Enables/disables the zebra display. [OFF], [ON] • Factory setting: [OFF]
[ZEBRA EFFECT MEMORY] U S R	Selects the table of the zebra display. [A], [B], [C], [A+B], [A+C], [B+C], [A+B+C] • Factory setting: [A+B+C]
[SKIN TONE EFFECT MEMORY] U S R	Selects the skin tone table used to apply the skin tone detail. [A], [B], [C], [A+B], [A+C], [B+C], [A+B+C] • Factory setting: [A+B+C]
[SKIN TONE CRISP] U S R	Adjusts the skin tone detail. [-63]...[+63] • Factory setting: [+63]
[I CENTER] U S R	Sets the center position on the I axis (the area where the skin tone effect is applied). [0]...[255] • Factory setting: [140]
[I WIDTH] U S R	Sets the width of the area where the skin tone effect is applied on the I axis with [I CENTER] being the center. [0]...[255] • Factory setting: [20]
[Q WIDTH] U S R	Sets the width of the area where the skin tone effect is applied on the Q axis with [I CENTER] being the center. [0]...[255] • Factory setting: [43]
[Q PHASE] U S R	Sets the phase of the area where the skin tone effect is applied with the Q axis being the reference. [0]...[359] • Factory setting: [99]

[SKIN TONE DETAIL SETTING]

Item	Description of settings
[SKIN TONE DETAIL] U S R	Enables/disables the skin tone detail function. This cannot be set if [MAIN MENU] → [PAINT] → [DETAIL SETTING] → [DETAIL] → [OFF] is set. [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 R	Selects the table used to reflect the data acquired with [SKIN GET]. [A], [B], [C] • Factory setting: [A]
[CURSOR] U S R	Shows/hides the box cursor in the center of the screen. [OFF], [ON] • Factory setting: [OFF]
[H POSITION] U S R	Adjusts the horizontal position of the cursor. [0%]...[100%] (0.25% step) • Factory setting: [50%]
[V POSITION] U S R	Adjusts the vertical position of the cursor. [0%]...[100%] (0.25% step) • Factory setting: [50%]
[ZEBRA]	— Enables/disables the zebra display. [OFF], [ON] • Factory setting: [OFF]
[ZEBRA EFFECT MEMORY] U S R	Selects the table of the zebra display. [A], [B], [C], [A+B], [A+C], [B+C], [A+B+C] • Factory setting: [A+B+C]
[SKIN TONE EFFECT MEMORY] U S R	Selects the skin tone table used to apply the skin tone detail. [A], [B], [C], [A+B], [A+C], [B+C], [A+B+C] • Factory setting: [A+B+C]

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[SKIN TONE CRISP] U S R	Adjusts the skin tone detail. HD mode [0]...[63] • Factory setting: [10] UHD mode [0]...[16] • Factory setting: [16]
[I CENTER] U S R	Sets the center position on the I axis (the area where the skin tone effect is applied). [0]...[255] • Factory setting: [140]
[I WIDTH] U S R	Sets the width of the area where the skin tone effect is applied on the I axis with [I CENTER] being the center. [0]...[255] • Factory setting: [20]
[Q WIDTH] U S R	Sets the width of the area where the skin tone effect is applied on the Q axis with [I CENTER] being the center. [0]...[255] • Factory setting: [43]
[Q PHASE] U S R	Sets the phase of the area where the skin tone effect is applied with the Q axis being the reference. [0]...[359] • Factory setting: [99]

[LINEAR MATRIX]

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

[COLOR CORRECTION]

Item	Description of settings
[MATRIX] U S R	Enables/disables the matrix function. [OFF], [ON] • Factory setting: [OFF]
[LINEAR MATRIX] U S R	— Enables/disables the linear matrix function. [OFF], [ON] • Factory setting: [OFF]

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[LINEAR TABLE] USR	Selects the table for linear matrix. [A], [B] • Factory setting: [A]
[COLOR CORRECT] USR	Enables/disables the 12-axis color correction function. [OFF], [ON] • Factory setting: [OFF]
[COLOR CORRECT TABLE] USR	Selects the table for color correction. [A], [B] • Factory setting: [A]
[R SAT] USR	Adjusts the color saturation of red. This item is not available when [COLOR CORRECT] is set to [OFF]. [-63]...[+63] • Factory setting: [0]
[R_MG SAT] USR	Adjusts the color saturation between red and magenta. This item is not available when [COLOR CORRECT] is set to [OFF]. [-63]...[+63] • Factory setting: [0]
[MG SAT] USR	Adjusts the color saturation of magenta. This item is not available when [COLOR CORRECT] is set to [OFF]. [-63]...[+63] • Factory setting: [0]
[MG_B SAT] USR	Adjusts the color saturation between magenta and blue. This item is not available when [COLOR CORRECT] is set to [OFF]. [-63]...[+63] • Factory setting: [0]
[B SAT] USR	Adjusts the color saturation of blue. This item is not available when [COLOR CORRECT] is set to [OFF]. [-63]...[+63] • Factory setting: [0]
[B_CY SAT] USR	Adjusts the color saturation between blue and cyan. This item is not available when [COLOR CORRECT] is set to [OFF]. [-63]...[+63] • Factory setting: [0]
[CY SAT] USR	Adjusts the color saturation of cyan. This item is not available when [COLOR CORRECT] is set to [OFF]. [-63]...[+63] • Factory setting: [0]
[CY_G SAT] USR	Adjusts the color saturation between cyan and green. This item is not available when [COLOR CORRECT] is set to [OFF]. [-63]...[+63] • Factory setting: [0]
[G SAT] USR	Adjusts the color saturation of green. This item is not available when [COLOR CORRECT] is set to [OFF]. [-63]...[+63] • Factory setting: [0]
[G_YL SAT] USR	Adjusts the color saturation between green and yellow. This item is not available when [COLOR CORRECT] is set to [OFF]. [-63]...[+63] • Factory setting: [0]
[YL SAT] USR	Adjusts the color saturation of yellow. This item is not available when [COLOR CORRECT] is set to [OFF]. [-63]...[+63] • Factory setting: [0]
[YL_R SAT] USR	Adjusts the color saturation between yellow and red. This item is not available when [COLOR CORRECT] is set to [OFF]. [-63]...[+63] • Factory setting: [0]
[R PHASE] USR	Adjusts the hue of red. This item is not available when [COLOR CORRECT] is set to [OFF]. [-127]...[+127] • Factory setting: [0]
[R_MG PHASE] USR	Adjusts the hue between red and magenta. This item is not available when [COLOR CORRECT] is set to [OFF]. [-127]...[+127] • Factory setting: [0]
[MG_PHASE] USR	Adjusts the hue of magenta. This item is not available when [COLOR CORRECT] is set to [OFF]. [-127]...[+127] • Factory setting: [0]
[MG_B PHASE] USR	Adjusts the hue between magenta and blue. This item is not available when [COLOR CORRECT] is set to [OFF]. [-127]...[+127] • Factory setting: [0]

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[B PHASE] U S R	Adjusts the hue of blue. This item is not available when [COLOR CORRECT] is set to [OFF]. [-127]...[+127] • Factory setting: [0]
[B_CY PHASE] U S R	Adjusts the hue between blue and cyan. This item is not available when [COLOR CORRECT] is set to [OFF]. [-127]...[+127] • Factory setting: [0]
[CY PHASE] U S R	Adjusts the hue of cyan. This item is not available when [COLOR CORRECT] is set to [OFF]. [-127]...[+127] • Factory setting: [0]
[CY_G PHASE] U S R	Adjusts the hue between cyan and green. This item is not available when [COLOR CORRECT] is set to [OFF]. [-127]...[+127] • Factory setting: [0]
[G PHASE] U S R	Adjusts the hue of green. This item is not available when [COLOR CORRECT] is set to [OFF]. [-127]...[+127] • Factory setting: [0]
[G_YL PHASE] U S R	Adjusts the hue between green and yellow. This item is not available when [COLOR CORRECT] is set to [OFF]. [-127]...[+127] • Factory setting: [0]
[YL PHASE] U S R	Adjusts the hue of yellow. This item is not available when [COLOR CORRECT] is set to [OFF]. [-127]...[+127] • Factory setting: [0]
[YL_R PHASE] U S R	Adjusts the hue between yellow and red. This item is not available when [COLOR CORRECT] is set to [OFF]. [-127]...[+127] • Factory setting: [0]

[SKIN CORRECTION]

Item	Description of settings
[SKIN AREA SW] U S R	Enables/disables the function to finely adjust the color of the skin tone area. [OFF], [ON] • Factory setting: [OFF]
[SKIN AREA TABLE] U S R	Selects the table for the skin tone area. [A], [B] • Factory setting: [A]
[SKIN AREA HUE] U S R	Finely adjusts the hue of the skin tone area. [-127]...[+127] • Factory setting: [0]
[SKIN AREA TONE] U S R	Finely adjusts the tone of the skin tone area. [-63]...[+63] • Factory setting: [0]

[DNR]

Item	Description of settings
[DNR SW] U S R	Enables/disables the noise reduction function. [OFF], [ON] • Factory setting: [ON]
[DNR LEVEL] U S R	Sets the level of noise reduction. [1]...[5] • Factory setting: [3]

[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: [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]

[ROP CONTROL]

Item	Description of settings
[CONTROL ROTATION MODE] USR	Sets the control rotation mode of ROP. [MODE1], [MODE2] • Factory setting: [MODE2]

[HDR-PAINT]

Configures the image settings during HDR.

Item	Description of settings
[HLG MODE] USR	Sets the mode of HLG. [FIX]: Fixed mode [VAR]: Variable mode • Factory setting: [FIX]
[SDR CONVERT MODE] USR	Selects the mode to convert to SDR. [FIX]: Fixed mode [VAR]: Variable mode • Factory setting: [FIX]

[GAMMA/BLACK GAMMA]

The setting will be disabled and cannot be set when [FIX] is selected for [HLG MODE].

Item	Description of settings
[BLACK GAMMA SW] USR	Enables/disables black gamma. [OFF], [ON] • Factory setting: [OFF]
[MASTER BLACK GAMMA] USR	Adjusts the gamma characteristic adjacent to black. [-32]...[+32] • Factory setting: [0]

[KNEE]

The setting will be disabled and cannot be set when [FIX] is selected for [HLG MODE].

Item	Description of settings
[KNEE SW] — USR	Enables/disables knee. [OFF], [ON] • Factory setting: [ON]
[KNEE POINT] USR	Sets the knee point position. [60.00]...[100.00] (0.25 step) • Factory setting: [80.00]
[KNEE SLOPE] USR	Sets the knee slope. [00]...[199] • Factory setting: [130]

[SDR CONVERT]



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

Item	Description of settings
[GAIN] USR	Sets the gain of SDR. [-12dB], [-11dB], [-10dB], [-9dB], [-8dB], [-7dB], [-6dB], [-5dB], [0dB] • Factory setting: [-6dB]
[POINT] USR	Sets the video level to start compression for SDR video. [000]...[100] • Factory setting: [100]
[SLOPE] USR	Sets the slope to compress video signals. [000]...[127] • Factory setting: [000]
[BLACK OFFSET] USR	Adjusts the black level offset for the SDR video. [-100]...[+100] • Factory setting: [0]

[SYSTEM MODE]

[FORMAT] cannot be selected right after the power is turned on, because boot of the camera is in progress.



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

Item	Description of settings
[FORMAT]	Sets the system format. [2160/59.94p], [2160/29.97p], [2160/23.98p], [1080/59.94p], [1080/29.97p], [1080/23.98p], [2160/50p], [2160/25p], [1080/50p], [1080/25p] • Factory setting: [1080/59.94p]
[COLORIMETRY]	Change the Y/C conversion coefficient. [BT.709], [BT.2020] • Factory setting: [BT.709]  NOTE • Fixed to [BT.709] when [FORMAT] is other than [2160]. • The outputs of HD-SDI 1 and 2 become [BT.709] when each [HDR SW] is [OFF].
[GAMUT]	Change the color gamut. [NORMAL], [WIDE_G] • Factory setting: [NORMAL]  NOTE • Fixed to [NORMAL] when [FORMAT] is other than [2160]. • The outputs of HD-SDI 1 and 2 are fixed to [NORMAL].
[HDR SW]	—
[HD_SD11 OUT(HDR)]	Enables/disables the HDR mode. [OFF], [ON] • Factory setting: [OFF]
[HD_SD12 OUT(HDR)]	Enables/disables the HDR signal from the <HD SDI1> terminal. [OFF], [ON] • Factory setting: [OFF]
[HD_SD12 OUT(HDR)]	Enables/disables the HDR signal from the <HD SDI2> terminal. [OFF], [ON] • Factory setting: [OFF]
[SHOOTING MODE] U R	Sets the shooting mode. [NORMAL], [HIGH SENS] • Factory setting: [NORMAL]
[CABLE CONNECTION] U R	Set the connection method used between the camera and CCU. [HYBRID], [FIBER] • Factory setting: [HYBRID]

[IN/OUT SELECT]

Item	Description of settings
[CALL TALLY] U R	Sets whether the rear tally lamp is to be lit up when called. [OFF]: Turned off. [R]: Red tally lights up. [T]: Up tally lights up. [R&T]: Red tally and up tally light up. • Factory setting: [OFF]
[TALLY GUARD] U R	Enables/disables automatic white balance, automatic black balance, and automatic setup when the tally lamp is lit. [OFF], [ON] • Factory setting: [OFF]
[HD-SDI1 OUT] U R	Configures the video output from the <HD SDI1> terminal. [CAM]: Outputs camera images. [HD PROMPT]: Outputs HD prompter video images. • Factory setting: [CAM]
[HD-SDI1 OUTPUT FORMAT] U R	Sets the signal format of the video output from the <HD SDI1> terminal. [1080i], [1080P], [720P] • Factory setting: [1080i]
[HD-SDI1 OUTPUT ITEM] U R	Selects details of the characters superimposed on images output from the <HD SDI1> terminal. [MENU ONLY]: Displays only on the menu. [STATUS]: Displays all characters that are the same as in the viewfinder display. • Factory setting: [MENU ONLY]
[HD-SDI1 CHAR] U R	Sets whether to superimpose characters on images output from the <HD SDI1> terminal. This cannot be set when the output format is [720P]. [OFF], [ON] • Factory setting: [OFF]
[HD-SDI1 CHAR SIZE] U R	Sets the size of the characters superimposed on images output from the <HD SDI1> terminal. [LARGE], [SMALL] • Factory setting: [SMALL]

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[HD-SDI1 3G-SDI] U R	<p>Sets the output format when [HD-SDI1 OUT] is [CAM] and when the image output from the <HD SDI1> terminal is 3G output.</p> <p>[LEVEL-A], [LEVEL-B]</p> <ul style="list-style-type: none"> • Factory setting: [LEVEL-B] <p> NOTE</p> <ul style="list-style-type: none"> • This is fixed to [LEVEL-A] when [HD-SDI1 OUT] is [HD PROMT].
[HD-SDI2 OUT] U R	<p>Configures the video output from the <HD SDI2> terminal.</p> <p>[CAM]: Outputs camera images. [VF]: Outputs viewfinder images. [RET]: Outputs return images. [RET1], [RET2]: Outputs fixed return images.</p> <ul style="list-style-type: none"> • Factory setting: [VF]
[HD-SDI2 OUTPUT FORMAT] U R	<p>Sets the signal format of the video output from the <HD SDI2> terminal.</p> <p>[1080i], [1080P], [720P]</p> <ul style="list-style-type: none"> • Factory setting: [1080i]
[HD-SDI2 OUTPUT ITEM] U R	<p>Selects details of the characters superimposed on images output from the <HD SDI2> terminal.</p> <p>[MENU ONLY]: Displays only on the menu. [STATUS]: Displays all characters that are the same as in the viewfinder display.</p> <ul style="list-style-type: none"> • Factory setting: [MENU ONLY]
[HD-SDI2 CHAR] U R	<p>Sets whether to superimpose characters on images output from the <HD SDI2> terminal. This cannot be set when the output format is [720P].</p> <p>[OFF], [ON]</p> <ul style="list-style-type: none"> • Factory setting: [OFF]
[HD-SDI2 CHAR SIZE] U R	<p>Sets the size of the characters superimposed on images output from the <HD SDI2> terminal.</p> <p>[LARGE], [SMALL]</p> <ul style="list-style-type: none"> • Factory setting: [SMALL]
[HD-SDI2 3G-SDI] U R	<p>Sets the output format when [HD-SDI2 OUT] is [CAM] and when the image output from the <HD SDI2> terminal is 3G output.</p> <p>[LEVEL-A], [LEVEL-B]</p> <ul style="list-style-type: none"> • Factory setting: [LEVEL-B] <p> NOTE</p> <ul style="list-style-type: none"> • This is fixed to [LEVEL-A] when [HD-SDI2 OUT] is other than [CAM].
[AUX I/O] U R	<p>Configures the video output from the <AUX> terminal.</p> <p>[PMT2 OUT], [HD TRUNK]</p> <ul style="list-style-type: none"> • Factory setting: [PMT2 OUT]
[T-BAR CONNECT] U R	<p>Sets whether to connect the T-BAR unit.</p> <p>[OFF], [ON]</p> <ul style="list-style-type: none"> • Factory setting: [OFF]
[LENS I/F] U R	<p>Sets the lens interface.</p> <p>[ANALOG], [SERIAL]</p> <ul style="list-style-type: none"> • Factory setting: [SERIAL]
[DISPLAY STATUS/BAR OSD]	<p>[CAM ID CHARACTER] U R</p> <p>Sets the camera name.</p>


[NETWORK SETUP]

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


[NETWORK SETUP(1/2)]

Item	Description of settings
[IP ADDRESS]	<p>Sets the IP address.</p> <ul style="list-style-type: none"> • Factory setting: [192.168.0.30]
[SUBNET MASK]	<p>Sets the subnet mask.</p> <ul style="list-style-type: none"> • Factory setting: [255.255.255.0]
[DEFAULT GATEWAY]	<p>Sets the default gateway.</p> <ul style="list-style-type: none"> • Factory setting: [192.168.0.1]
[ROP PORT]	<p>Sets the port number when connecting to ROP.</p> <p>[49152], [49200]...[49299]</p> <ul style="list-style-type: none"> • Factory setting: [49152]
[WEB CONNECTION]	<p>Sets the method to connect to the unit.</p> <p>[HTTP], [HTTPS]</p> <ul style="list-style-type: none"> • Factory setting: [HTTP]
[SET EXECUTE]	<p>Select whether to have the unit operate according to the settings made in [NETWORK SETUP(1/2)].</p> <p>[NO], [YES]</p>
[MAC ADDRESS]	<p>Displays the MAC address. (This cannot be changed.)</p>

[NETWORK SETUP(2/2)]

Item		Description of settings
[IP TALLY]	[INDEX NO]	Sets the INDEX NO set by devices that output TALLY. [1]...[65534] • Factory setting: [1]
	[PORT]	Sets the PORT number for TALLY IN. [60000]...[65535] • Factory setting: [60000]
[SET EXECUTE]		Select whether to have the unit operate according to the settings made in [NETWORK SETUP(2/2)]. [NO], [YES]  NOTE • If you close the menu without selecting [YES], the modified content returns to the original settings.

[NTP SETTING]

Item		Description of settings
[NTP SERVER ADDRESS] U S R		Input the IP address of the NTP server.
[NTP PORT] U S R		Input the port No. of the NTP server. [1]...[65535] • Factory setting: [123]  NOTE • You cannot use a port number that is being used by other functions such as [NETWORK SETUP].
[TIME ADJUSTMENT INTERVAL] U S R		Selects the interval (1 to 24 hours in 1-hour increments) for acquiring the time from the NTP server. [1h]...[24h] • Factory setting: [1h]
[SET EXECUTE]		Select whether to have the unit operate according to the settings made in [NTP SETTING]. [NO], [YES]

[FILE]**[SD CARD]**

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

Item		Description of settings
[MODE]		Selects the operation mode. [FORMAT], [LOAD], [STORE] • Factory setting: [LOAD]
[FILE SEL]		Selects a file. [ALL], [ALL SCENE], [ALL USER], [ALL LENS], [SCENE], [USER], [LENS], [OPERATION] • Factory setting: [SCENE]
[FILE NO.]		Selects a file number. [CURRENT], [1]...[8] (Scene file) [1]...[3] (User file) [1]...[32] (Lens file) [CURRENT] (Operation file) • Factory setting: [1]
[FILE NAME]		Enters a file name. (15 characters or less) • Factory setting: [SCENE1]
[SD FILE NO.]		Selects the file number of the SD memory card. [1]...[100] • Factory setting: [1]
[EXECUTE]		Selects whether to execute with the configured settings. [NO], [YES]

[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]

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[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]

[REFERENCE 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: [REFERENCE1]
[EXECUTE]	Selects whether to execute with the configured settings. [NO], [YES]

[CAC FILE]

[CAC FILE] cannot be selected right after the power is turned on, because boot of the camera is in progress.


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

Item	Description of settings
[CARD FILE SELECT]	Selects a file. [1]...[100] • Factory setting: [1]
[READ]	Loads CAC files. [NO], [YES]
[DELETE]	Deletes the CAC file in the SD memory card. [NO], [YES]

[ACCOUNT SETTING]

Item	Description of settings
[LOAD]	Loads user account information from an SD card.
[EXECUTE]	Selects load execution. [YES], [NO]
[NO.1]	Displays the account name on the SD card.
[NO.2]	Displays the account name on the SD card.
[NO.3]	Displays the account name on the SD card.
[DELETE]	Deletes the account information recorded in this camera.
[EXECUTE]	Selects delete execution. [YES], [NO]
[DELETE NO.1]	Sets the list number to be deleted. [NONE], [1]...[12] • Factory setting: [NONE]
[DELETE NO.2]	Sets the list number to be deleted. [NONE], [1]...[12] • Factory setting: [NONE]
[DELETE NO.3]	Sets the list number to be deleted. [NONE], [1]...[12] • Factory setting: [NONE]
[LIST]	Displays the account information recorded in this camera.

[OTHERS]

Item	Description of settings
[OSS LISENCE] U R	Saves OSS license terms to an SD card. [YES], [NO] • Factory setting: [NO]  NOTE • The file generated will be named "LICENSE.TXT".

[MAINTENANCE]**[CAC ADJUST]**

Item	Description of settings
[CAC CONTROL] U R	Enables/disables the chromatic aberration compensation. [OFF], [ON] • Factory setting: [ON]
[CAC FILE DELETE]	Selects a file to delete. [YES], [NO]
[CAC FILE NUMBER] U R	Selects a file. [1]...[32] • Factory setting: [1]

[LENS FILE ADJUST]

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

Chapter 4 Menu Operations — Menu list

Item	Description of settings
[W H PARA B] U R	Adjusts Bch white shading for the data selected in [FILE NO.] horizontally using a parabolic waveform. [-100]...[+100] • Factory setting: [0]
[W V SAW R] U R	Adjusts Rch white shading for the data selected in [FILE NO.] vertically using a saw-toothed waveform. [-100]...[+100] • Factory setting: [0]
[W V SAW G] U R	Adjusts Gch white shading for the data selected in [FILE NO.] vertically using a saw-toothed waveform. [-100]...[+100] • Factory setting: [0]
[W V SAW B] U R	Adjusts Bch white shading for the data selected in [FILE NO.] vertically using a saw-toothed waveform. [-100]...[+100] • Factory setting: [0]
[W V PARA R] U R	Adjusts Rch white shading for the data selected in [FILE NO.] vertically using a parabolic waveform. [-100]...[+100] • Factory setting: [0]
[W V PARA G] U R	Adjusts Gch white shading for the data selected in [FILE NO.] vertically using a parabolic waveform. [-100]...[+100] • Factory setting: [0]
[W V PARA B] U R	Adjusts Bch white shading for the data selected in [FILE NO.] vertically using a parabolic waveform. [-100]...[+100] • Factory setting: [0]
[EXTENDER1] U R	Sets the magnification of lens extender 1. [NONE], [0.1]...[9.9] • Factory setting: [2.0]
[EXTENDER2] U R	Sets the magnification of lens extender 2. [NONE], [0.1]...[9.9] • Factory setting: [NONE]
[EXTENDER3] U R	Sets the magnification of lens extender 3. [NONE], [0.1]...[9.9] • Factory setting: [NONE]
[EXTENDER4] U R	Sets the magnification of lens extender 4. [NONE], [0.1]...[9.9] • Factory setting: [NONE]

[F DROP ADJUST]

Item	Description of settings
[F DROP RANGE] U R	Sets the determination reference value for the F drop of the lens. [1]...[40] • Factory setting: [10]

[BLACK SHADING]

Item	Description of settings
[CORRECT] U R	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] U R	Sets the operation mode of the air cooling fan. [NORMAL], [POWERFUL] • Factory setting: [NORMAL]

[DATE/TIME]

Item	Description of settings
[PRESENT]	Displays the present date and time.
[DATE YY]	Sets the year. [18]...[99] • Factory setting: [18]
[DATE MM]	Sets the month. [01]...[12] • Factory setting: [01]
[DATE DD]	Sets the day. [01]...[31] • Factory setting: [01]
[TIME HH]	Sets the hour. [00]...[23] • Factory setting: [00]
[TIME MM]	Sets the minute. [00]...[59] • Factory setting: [00]
[SET EXECUTE]	Selects whether to save the configured details. [NO], [YES]
[RESET]	Selects whether to reset the settings. [NO], [YES]

[INITIALIZE]

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

Item	Description of settings
[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]

[UPDATE]

[UPDATE] cannot be selected right after the power is turned on, because boot of the camera is in progress. This is not an error. Perform operation after a while. For the SD memory card to be used for [UPDATE], use an SDHC Class4 or better or an SDXC card.

Description of settings
Updates the software. • Execute the update of the software with the update image file stored in the SD memory card. • The busy lamp (next to the SD memory card slot) and the back tally lamp flash during the update of software is executing. [YES], [NO] • Factory setting: [NO]

[DIAGNOSTIC]

[VERSION]

Item	Description of settings
[VERSION]	Displays the SYSTEM version of the camera.
[CAM FPGA]	Displays the version of the CAMERA FPGA.
[AVIO FPGA]	Displays the version of AVIO FPGA.
[CPU FPGA]	Displays the version of the CPU FPGA.
[CAM MAIN]	Displays the version of the CAM MAIN.

[HOUR METER]

Item	Description of settings
[HEAD]	Display the operating time of the camera head. [0000000]...[1193046]
[FAN]	Displays the operating time of the fan. [0000000]...[1193046]

Chapter 5 **Network Settings**

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

Setting the user account

In order to connect this unit and the ROP (AK-HRP250/AK-HRP1000/AK-HRP1005/AK-HRP1010/AK-HRP1015), you will need to register the account that has been registered on the ROP on this unit.

Use the following procedure to register the account on this unit.

Software

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

■ User Account Setup Software (AccoutGen)

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

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

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

NOTE

- The User Account Setup Software saves user account information to an SD card, so you will need to insert an SD card in preparation.
- We recommend a password for the user account that is 8 characters or more, and that includes at least 3 types of character including upper case, lower case, numerals, and special characters.
- User accounts can also be set from the web screen of this unit.
 - ➔ "ROP account settings screen [ROP account setting]" (see page 91)

Procedure for setting with the User Account Setup Software

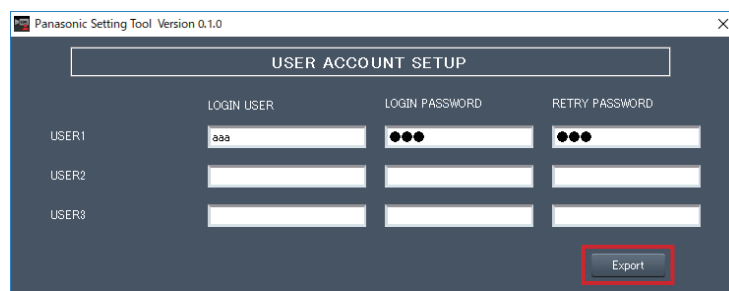


Fig. 1

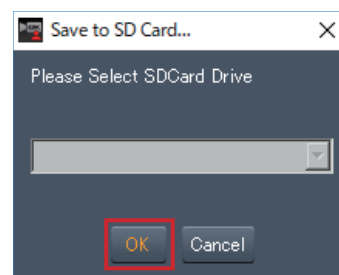


Fig. 2

- 1 Start User Account Setup Software.
- 2 Enter the account name in the LOGIN USER field and the password in the LOGIN PASSWORD and RETRY PASSWORD fields.
 You can register user accounts for a maximum of 3 people. (Fig.1)
- 3 Click the [Export] button. (Fig.1)
- 4 Select the SD card to save to and click [OK]. (Fig.2)

Setting procedure on this unit

- 1 Insert the SD card containing the user account information into this unit.
- 2 Select [ACCOUNT SETTING] in the [FILE] menu.
- 3 Select [LOAD].
- 4 Select [EXECUTE].
- 5 Select [YES].

Web Screen

Network settings

Software

Download EasyIP Setup Tool Plus from the following website and then install them. [Windows]

- **Download URL**

<https://pro-av.panasonic.net/en/>

EasyIP Setup Tool Plus

This software sets the unit's network settings.

➔ "Using EasyIP Setup Tool Plus to set the unit's settings" (see page 70)

Using EasyIP Setup Tool Plus to set the unit's settings

The settings related to the unit's network can be set using the supplied EasyIP Setup Tool Plus.

When multiple of this unit are to be set, they each need to be set individually.

If setting cannot be done using the EasyIP Setup Tool Plus, make the individual settings for this unit and the personal computer in [NETWORK SETUP] in the camera menu.

➔ "[NETWORK SETUP]" (see page 62)

NOTE

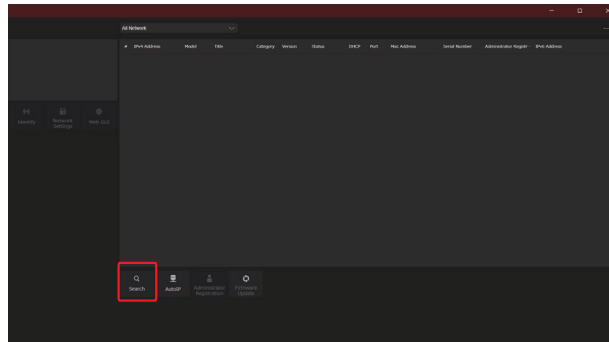
- If, after the network settings have been set, another device on the same network has the same IP address, the network operations will not be performed properly. Set the IP address in such a way that it does not duplicate an existing IP address.
- Do not set network settings from a multiple number of EasyIP Setup Tool Plus programs at the same time for a single camera. When connected from more than one PC, the settings of this unit can only be changed from the PC that was connected first.
- EasyIP Setup Tool Plus cannot be used from a different subnet via a router.
- Changes to the settings of this unit using the EasyIP Setup Tool Plus are performed with authentication from an account in the web screen, therefore changes are not possible if the initial account for the web screen is not yet set.

➔ "Displaying the web screen using a personal computer" (see page 72)

Setting Procedure

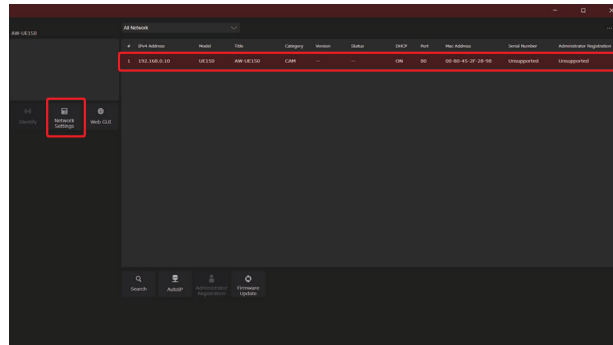
1 Start the EasyIP Setup Tool Plus.

2 Click the [Search] button.



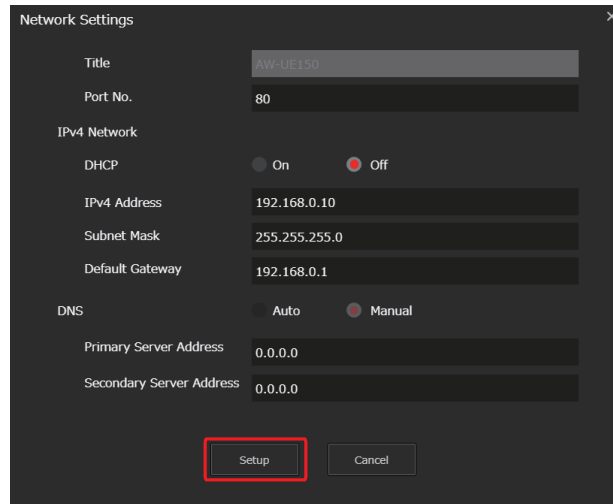
- You can set the Network to be used for the search in the selection menu at the top of the screen.

3 Select the camera to configure and click the [Network Settings] button.



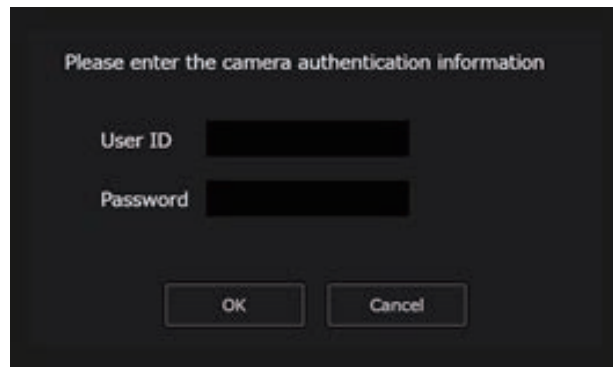
- The web screen for the selected camera is displayed when you click the [Web GUI] button.

4 Input the network items, and click the [Setup] button.



- Settings for DHCP, DNS, and Port No. are unsupported, so do not make settings for these.

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



- Enter the user name and password that was set for the initial account or was set in the User management screen [User mng.] in the web screen.
 - ➔ “Displaying the web screen using a personal computer” (see page 72)
 - ➔ “User management screen [User mng.]” (see page 92)
- After the [OK] button is clicked, it takes about 2 minutes for the settings in the unit to be completed. If this unit is turned off or the LAN cable is disconnected before the settings are completed, the settings will be invalidated. In this case, repeat the steps to set the settings.

NOTE

- The unit does not support IPv6.
- This unit does not support “Administrator Registration”, and “Firmware Update” from EasyIP Setup Tool Plus.
- When a firewall (including software) has been introduced, enable access to all the UDP ports.
- For details about EasyIP Setup Tool Plus, refer to the Help page.

Displaying the web screen

Connect the LAN connector on this unit and a personal computer and make a variety of settings in a web browser.

Use a LAN crossover cable to directly connect the LAN connector on this unit and a personal computer. When connecting via a switching hub, etc., use a LAN straight cable.

Notice regarding the Web screen

IP address and subnet mask

Select an IP address for the personal computer within the private address range while ensuring that it is different from the address of the unit. Set the subnet mask to the same address as the unit.

- **Unit's IP address and subnet mask (factory settings)**

IP address	192.168.0.30
Subnet mask	255.255.255.0

NOTE

- In the factory settings, the variable range for private addresses is between 192.168.0.1 and 192.168.0.255.

Personal computer environment required to display the Web screen

For details on the personal computer environment required to display the Web screen, refer to following page.

➔ "Personal computer requirements" (see page 11)

Displaying the web screen using a personal computer

Screens from Windows (Microsoft Edge) are used as examples in this manual. There will be some differences in how the screen appears in other browsers, but the procedures will be the same.

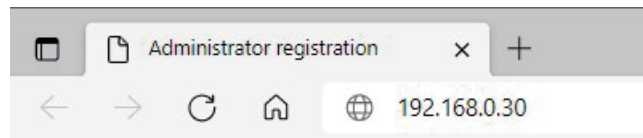
1 Start the web browser of the personal computer.

Use one of the web browsers below depending on the operating system installed in the personal computer.

Installed OS	Web browser
Windows	Microsoft Edge Internet Explorer 11 Google Chrome
macOS	Safari

2 Enter the IP address you configured on the EasyIP Setup Tool Plus in the address bar of the web browser.

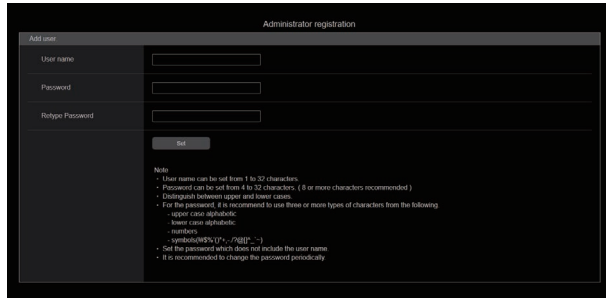
- Example of input
http://registered URL
http://192.168.0.30



- If this unit is within a local network, make the settings for the proxy server from the web browser so that the proxy server is not used for the local address.

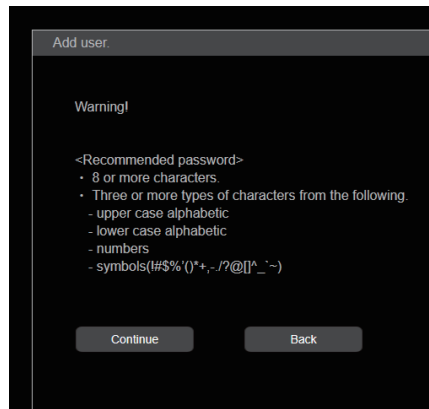
3 Sets the initial account.

If the web screen is set to be shown in the initial state, the initial account setting screen is displayed. Set the user name and password.



NOTE

- Do not use a string of characters that can be easily guessed by a third party.
 - Change your password regularly.
 - Use at least 3 of the following 4 character types in a password of at least 8-characters in length.
 - Upper case alphabet
 - Lower case alphabet
 - Numbers
 - Symbols (! # \$ % ' () * + , - . / ? @ [] ^ _ ` ~)
 - If a password is set that does not follow the above policy, the user assumes responsibility for operation, with an adequate understanding of the security risks to the installation environment, etc.
 - A warning message is displayed if you set a password that does not meet the recommended setting policy. To change the password, click the [Back] button and enter another password.
- To continue the settings after understanding the risk to security, click [Continue] and then complete the settings.
- If you have forgotten the account information you set, execute [MAINTENANCE] > [INITIALIZE] > [READ FACTORY ALL DATA] in the camera menu, and reset the user information used for network connections.
- The settings for this unit return to the factory settings when you execute [READ FACTORY ALL DATA].
- ➔ "[INITIALIZE]" (see page 67)

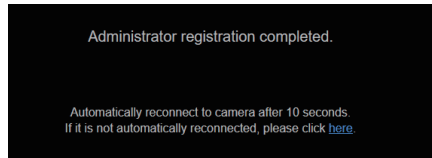


4 Complete registration of the initial account.

The following screen indicating registration completion is displayed after registration of the initial account is complete.

After about 10 seconds of showing this completion screen, the settings screen is automatically shown. If the screen does not transition to the settings screen even after 10 seconds have elapsed, click on the link in “please click here” to move to the settings screen manually.

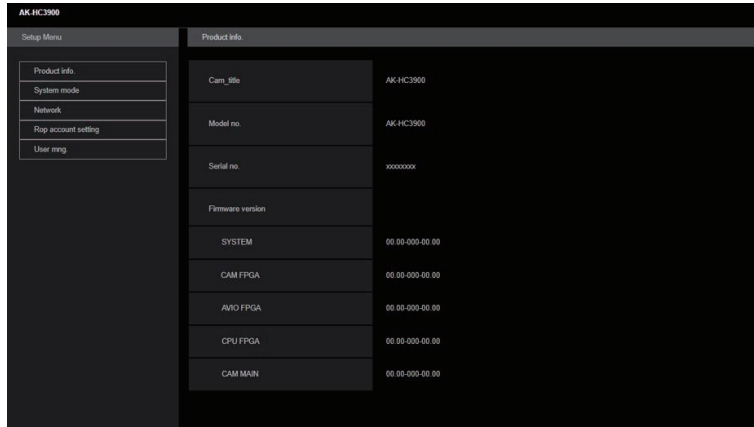
This completes the procedures for registering the initial account.



5 Display the settings screen.

The web screen is displayed.

In the initial screen, the Product information screen [Product info.] is displayed, so switch if necessary.



Logging into the web screen

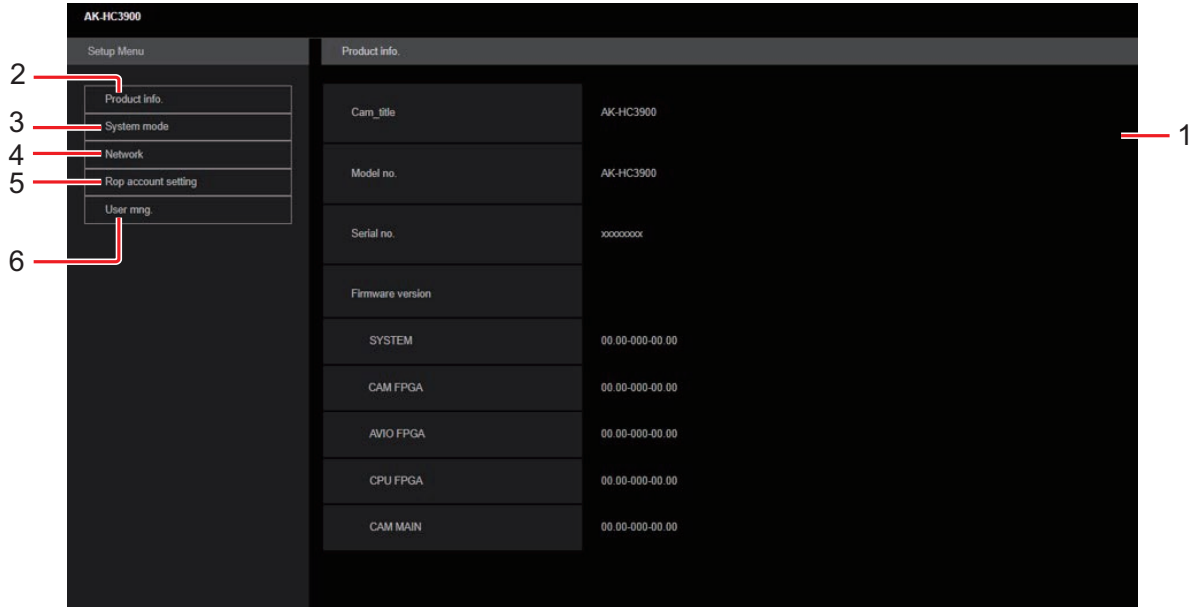
When the web screen is displayed, you need to enter the account information.

NOTE

- The account input screen appears as a pop-up window in the web browser.
- Correctly enter the user name and password that were previously registered.
- It is recommended to regularly change the password.

Web setting screen

This screen enables you to make a variety of settings for this unit.



1	Main area	The menu screen appears.
2	Product information button [Product info.]	Click the button to display the Product information screen [Product info.]. ➔ “Product information screen [Product info.]” (see page 76)
3	View system settings button [System mode]	Click the button to display the View system settings screen [System mode]. ➔ “View system settings screen [System mode]” (see page 77)
4	Network settings button [Network]	Click the button to display the Network settings screen [Network]. ➔ “Network settings screen [Network]” (see page 77)
5	ROP account settings button [ROP account setting]	Click the button to display the ROP account settings screen [ROP account setting]. ➔ “ROP account settings screen [ROP account setting]” (see page 91)
6	User management settings button [User mng.]	Click the button to display the User management screen [User mng.]. ➔ “User management screen [User mng.]” (see page 92)

NOTE

- If setting values are changed from an OSD menu or another web browser while the settings menu is being displayed, there may be a mismatch between the setting values and the displayed values. If this occurs, refresh the screen displaying the settings menu in the web browser.

Product information screen [Product info.]

The versions of the unit's software can be checked on this screen.

The [Model no.], [Serial no.], [Firmware version] and other information about the unit is displayed.

Product info.	
Cam_title	AK-HC3900
Model no.	AK-HC3900
Serial no.	xxxxxxxx
Firmware version	
SYSTEM	00.00-000-00.00
CAM FPGA	00.00-000-00.00
AVIO FPGA	00.00-000-00.00
CPU FPGA	00.00-000-00.00
CAM MAIN	00.00-000-00.00

___ indicates factory default settings.

Item	Display description
Cam_title	<u>AK-HC3900</u> Set the camera name displayed in the header of the web screen and in EasyIP Setup Tool Plus.
Model no.	Display the unit's model number.
Serial no.	Displays the unit's serial number.
Firmware version	SYSTEM Displays the SYSTEM version of the unit. CAM FPGA Displays the version of the CAMERA FPGA. AVIO FPGA Displays the version of AVIO FPGA. CPU FPGA Displays the version of the CPU FPGA. CAM MAIN Displays the version of the CAM MAIN.

View system settings screen [System mode]

View the system format of this unit, etc., in the View system settings screen [System mode].
 The View system settings screen [System mode] consists of [Main].

Main

Click [Main] in the View system settings screen [System mode].
 You can view the basic settings for the unit.



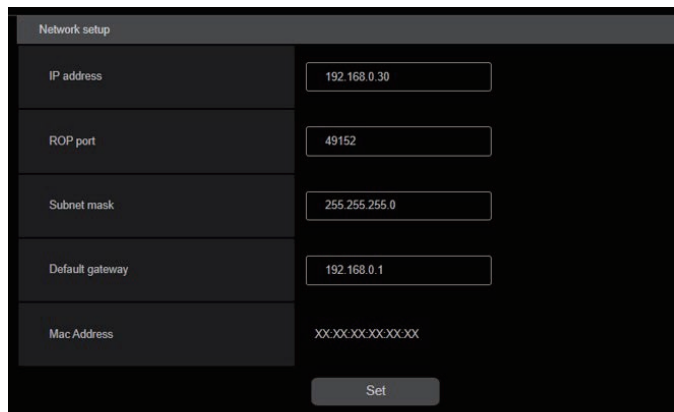
Item	Display description
Format	Displays the system format setting.

Network settings screen [Network]

Make settings related to the network in the Network settings screen [Network].
 The Network settings screen [Network] consists of [Network setup], [Tally in setting], [HTTPS], [NTP] and [Common].

Network setup

Click [Network setup] in the Network settings screen [Network].
 Make network settings.
 Confirm the settings with the [Set] button.



The following information is required to configure network settings. Consult your network administrator or Internet service provider.

- IP address
- Port
- Subnet mask
- Default gateway (when using a gateway server or router)

___ indicates factory default settings.

Item	Setting value	Setting details
IP address	192.168.0.30	Enter so that the address does not duplicate the IP addresses of the personal computer or other network cameras.
ROP port	49152 (49152, 49200 to 49299)	Enter the port number for ROP connection.
Subnet mask	255.255.255.0	Enter the subnet masks.
Default gateway	192.168.0.1	Set the default gateways.
Mac address	Display only	Display the MAC addresses.

Tally in setting

Click [Tally in setting] in the Network settings screen [Network].

Make settings related to Tally control via TSL Protocol 5.0.

Confirm the settings with the [Set] button.



___ indicates factory default settings.

Item	Setting value	Setting details
Index No.	<u>1</u> (1 to 65534)	Enter the Index No. set by devices that output Tally.
Port	<u>62000</u> (60000 to 65535)	Enter the Tally in port number.

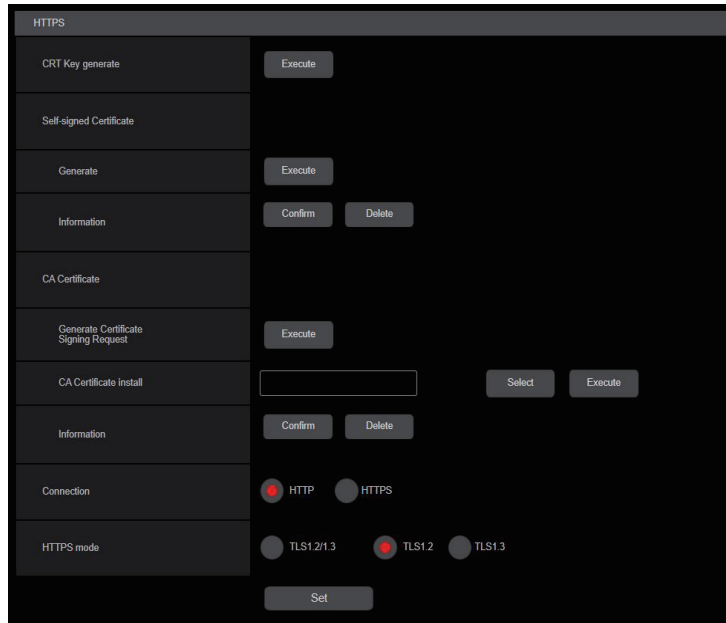
HTTPS

Click [HTTPS] in the Network settings screen [Network].

Makes settings for the HTTPS function.

The setting is confirmed with the [Set] button.

Refer to "HTTPS settings [HTTPS]" for information on how to set HTTPS.



___ indicates factory default settings.

Item	Setting value	Setting details
CRT key generate	-	A CRT key (SSL encryption key) is generated by HTTPS. Generation of the CRT key is performed with the dialog displayed when you click the [Execute] button. ➡ "Generating a CRT key (SSL encryption key) [CRT key generate]" (see page 81)
Self-signed Certificate - Generate	-	A self-signed security certificate is generated by HTTPS. (Self-signed Certificate) Generation of the self-signed certificate (security certificate) is performed with the dialog displayed when you click the [Execute] button. ➡ "Generating a self-signed certificate (security certificate) [Self-signed Certificate - Generate]" (see page 82)
Self-signed Certificate - Information	-	This displays information relating to the self-signed certificate (security certificate). When you click the [Confirm] button, the information registered in the generated self-signed certificate (security certificate) is displayed in a dialog. Click the [Delete] button to delete the generated self-signed certificate (security certificate).
CA Certificate - Generate Certificate Signing Request	-	When using a security certificate issued by the Certificate Authority (CA) as a security certificate for HTTPS, a Certificate Signing Request (CSR) is generated for application to the Certificate Authority (CA). Generation of the Certificate Signing Request (CSR) is performed with the dialog displayed when you click the [Execute] button. ➡ "Generating a Certificate Signing Request (CSR) [CA Certificate - Generate Certificate Signing Request]" (see page 84)
CA Certificate - CA Certificate install	-	This displays information relating to server certificates (security certificates) issued by the Certificate Authority (CA), which are to be or are already installed. In the [File Open] dialog, which is displayed by clicking the [Select] button, select the file of the server certificate (security certificate) issued by the Certificate Authority (CA) and click the [Execute] button to install the server certificate (security certificate). If the server certificate (security certificate) is installed, its file name will be displayed. ➡ "Installing a Server Certificate [CA Certificate - CA Certificate install]" (see page 85)
CA Certificate - Information	-	This displays information relating to the server certificate (security certificate). When you click the [Confirm] button, the information registered in the installed server certificate (security certificate) is displayed in a dialog. If the server certificate (security certificate) is not installed, the content of the generated Certificate Signing Request (CSR) is displayed. Click the [Delete] button to delete the installed server certificate (security certificate).
Connection	HTTP HTTPS	This sets the method to connect to the unit.
HTTPS mode	TLS1.2/1.3 TLS1.2 TLS1.3	This sets the encryption protocol when accessing the camera with HTTPS.

NOTE

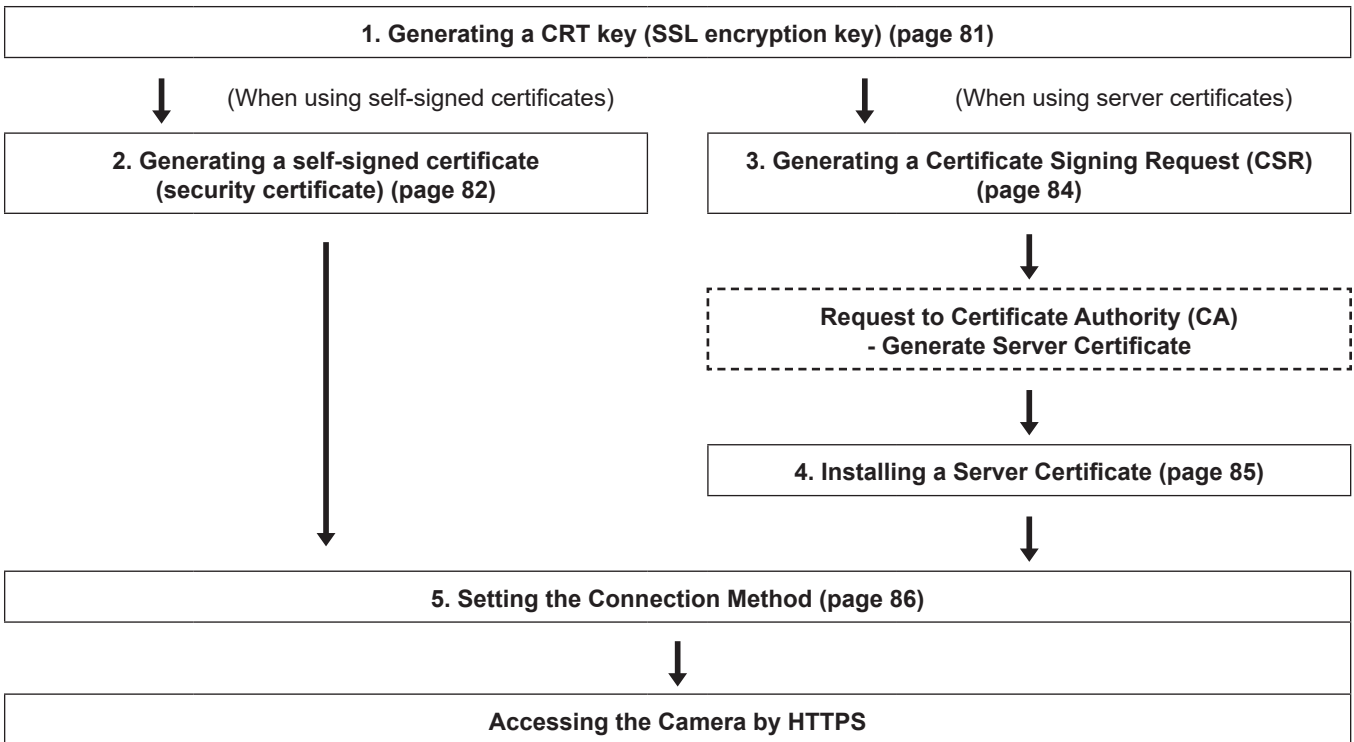
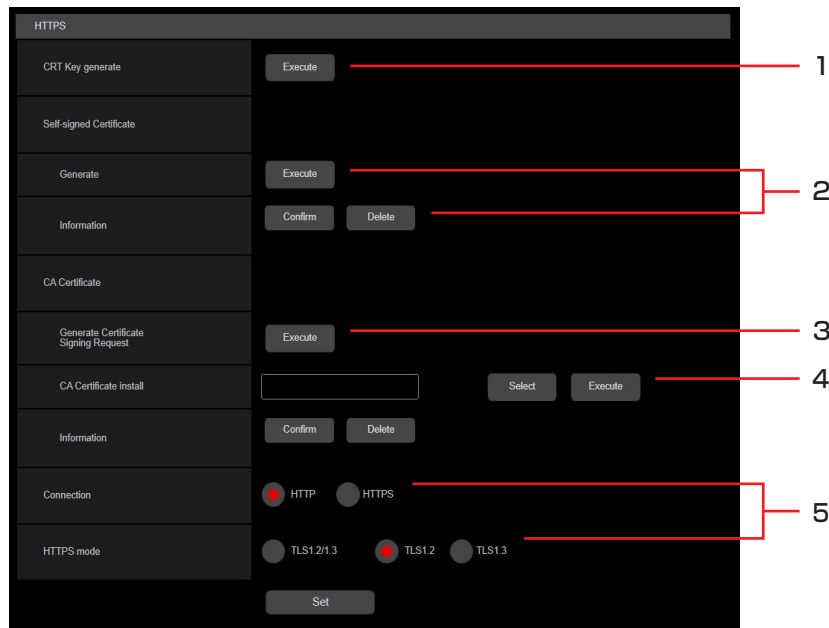
- To delete an enabled server certificate (security certificate), confirm that there is a backup to the said certificate in your personal computer or recording media. A server certificate (security certificate) will be needed to reinstall it.

■ HTTPS settings [HTTPS]

This encrypts access to the camera and sets HTTPS to improve communication safety.

Setting HTTPS is performed by following the procedures below.

The setting is confirmed with the [Set] button.



NOTE

- When using a server certificate, the process from applying to the Certificate Authority (CA) to issuing a server certificate must be performed between customers and the Certificate Authority (CA).
- Use either a self-signed certificate or server certificate. When simultaneously generating a self-signed certificate and installing a server certificate, this unit will prioritize the server certificate.

■ Generating a CRT key (SSL encryption key) [CRT key generate]

NOTE

- A CRT key cannot be generated when self-signed certificates and server certificates are enabled.
- The size of the key that can be used by the Certificate Authority (CA) differs when using a server certificate. Confirm in advance the the size of the key that can be used.
- Generating a CRT key takes about 1 minute for 1024 bit and about 2 minutes for 2048 bit. Do not operate the web browser until CRT key generation is complete. Image display and communication speed may reduce while generating a CRT key.

1 Click the [Execute] button in [CRT key generate].

The [Current CRT key] dialog is displayed.

Current CRT Key	
CRT Key	
RSA key size	
Last modified	Not generated History
CRT key generate	
RSA key size	<input type="radio"/> 1024bit <input checked="" type="radio"/> 2048bit Execute
*Generating a CRT key takes around 2 minutes.	
Close	

2 The size of the generated CRT key is selected from [1024bit]/[2048bit] in [CRT key generate] – [RSA key size].

NOTE

- When using a server certificate, the RSA key size must be in accordance with the demands of the Certificate Authority (CA) which will be applied to.

3 Click the [Execute] button.

CRT key generation starts.

When CRT key generation stops, the size of the CRT key generated by the [Current CRT key] and the date and time generation concluded will be displayed.

NOTE

- Perform procedures 1 to 3 to change (update) the generated CRT key. Because the CRT key, self-signed certificate and server certificate are enabled as a set, it will be necessary to once again generate a self-signed certificate or apply for a server certificate when the CRT key is changed.
- When the CRT key is changed, previous CRT keys are historically managed one at a time. Clicking the [History] button in the [CRT key] of the [Current CRT key] dialog displays the [Previous CRT key] dialog, allowing confirmation of the key size and the date and time generation was completed.

Clicking the [Apply] button in [Previous CRT key] allows the previous CRT key to be switched to the current CRT key.

Previous CRT key	
History	
RSA key size	2048bit
Last modified	2023/01/01 00:00:00 Apply
Close	

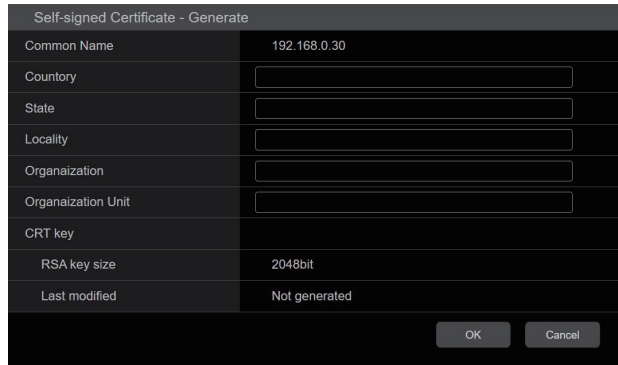
■ **Generating a self-signed certificate (security certificate) [Self-signed Certificate - Generate]**

 **NOTE**

- A self-signed certificate cannot be generated when a CRT key has not been generated.

1 Click the [Execute] button in [Self-signed Certificate] - [Generate].

[Self-signed Certificate - Generate] is displayed.



Self-signed Certificate - Generate	
Common Name	192.168.0.30
Country	<input type="text"/>
State	<input type="text"/>
Locality	<input type="text"/>
Organization	<input type="text"/>
Organization Unit	<input type="text"/>
CRT key	<input type="text"/>
RSA key size	2048bit
Last modified	Not generated

2 Input information relating to the certificate to be generated.

Items to be entered are as follows.

Item	Description	Maximum number of characters
Common Name	Sets a fixed camera IP address.	
Country	Inputs the country code. (can be abbreviated)	2 characters: country code
State	Inputs the name of the state. (can be abbreviated)	128 characters
Locality	Inputs the name of the city. (can be abbreviated)	128 characters
Organization	Inputs the name of the organization. (can be abbreviated)	64 characters
Organizational Unit	Inputs the name of the organizational unit. (can be abbreviated)	64 characters
CRT key	Displays the size of the current CRT key and the date and time generation was completed.	

 **NOTE**

- Characters that can be input for [Common Name], [Country], [State], [Locality], [Organization], [Organizational Unit] are 0 to 9, A to Z, a to z, and the following symbols: - . _ + ().
- When connecting the camera to the Internet, set the address or host name to be accessed from the Internet in [Common Name]. In this case, when accessing the camera locally, a security warning screen is displayed every time the camera is accessed even when a security certificate is installed.
- When inputting the IPv6 address in [Common Name], surround the address with [].
e.g. [2001:db8::10]

3 Click the [OK] button after inputting the address.

A self-signed certificate is generated.

NOTE

- Information relating to the generated self-signed certificate is displayed in [Self-signed Certificate] - [Information]. The following is displayed depending on the status of the self-signed security certificate.

Displayed content	Description
Not generated	When the self-signed certificate is not generated
Invalid (Reason: CA Certificate installed)	When the self-signed certificate is already generated and the server certificate is already installed <ul style="list-style-type: none"> The server certificate is enabled in this case.
[Common Name] of self-signed certificate	When the self-signed certificate is already generated and enabled

- When the [Confirm] button is clicked, the registered content of the generated self-signed certificate (security certificate) is displayed in the [Self-signed Certificate - Confirm] dialog.

Self-signed Certificate - Confirm	
Common Name	192.168.0.30
Country	
State	
Locality	
Organization	
Organization Unit	
CRT key	
RSA key size	2048bit
Last modified	2023/01/01 00:00:00
Close	

- Click the [Delete] button to delete the generated self-signed certificate (security certificate).
- When [HTTPS] is selected in [Connection], the self-signed certificate (security certificate) cannot be deleted.

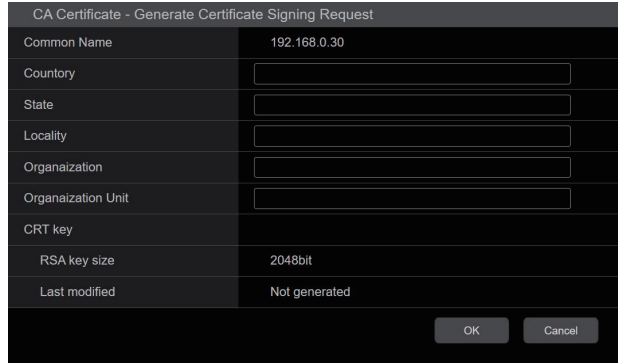
■ Generating a Certificate Signing Request (CSR) [CA Certificate - Generate Certificate Signing Request]

NOTE

- A certificate signing request (CSR) cannot be generated if a CRT key has not been generated.
- To generate a certificate signing request (CSR), perform the following settings in advance in the web browser Internet options. Perform the following settings in the [Security] tab (accessed from [Tools] in the menu bar - [Internet Options] - [Security]).
- Register the camera as a “Trusted Site”.
- In [Level Customize], go to [File Download] from [Download] and set to [Enable].
- In [Level Customize], go to [Automatically Display Dialog when Downloading File] from [Download] and set to [Enable].

1 Click the [Execute] button in [CA Certificate - Generate Certificate Signing Request].

The [CA Certificate - Generate Certificate Signing Request] dialog is displayed.



2 Input information relating to the certificate to be generated.

Items to be entered are as follows.

Item	Description	Maximum number of characters
Common Name	Sets a fixed camera IP address.	
Country	Inputs the country code.	2 characters: country code
State	Inputs the name of the state.	128 characters
Locality	Inputs the name of the city.	128 characters
Organization	Inputs the name of the organization.	64 characters
Organizational Unit	Inputs the name of the organizational unit.	64 characters
CRT key	Displays the size of the current CRT key and the date and time generation was completed.	

NOTE

- When using a server certificate, the information to be input must be in accordance with the demands of the Certificate Authority (CA), which will be applied to.
- Characters that can be input for [Common Name], [Country], [State], [Locality], [Organization], [Organizational Unit] are 0 to 9, A to Z, a to z, and the following symbols: - . _ + ().

3 Click the [OK] button after inputting the address.

The [Save As] dialog is displayed.

4 In the [Save As] dialog, assign a file name to the Certificate Signing Request (CSR) and save it in personal computer.

Apply to the Certificate Authority (CA) using the saved Certificate Signing Request (CSR).

NOTE

- A server certificate is issued for both the generated Certificate Signing Request (CSR) and CRT key. The issued server certificate can no longer be used when generating/updating the CRT key after applying to the Certificate Authority (CA).
- The Certificate Signing Request (CSR) generated by this unit is in a PEM format.

■ Installing a Server Certificate [CA Certificate - CA Certificate install]

 **NOTE**

- A server certificate (security certificate) cannot be installed if a Certificate Signing Request (CSR) has not been generated.
- The server certificate must have been issued by the Certificate Authority (CA) in order to install it.

1 Click the [Select] button in [CA Certificate - CA Certificate install].

The [Open File] dialog is displayed.

2 Select the server certificate file and click [Open]. Then click the [Execute] button.

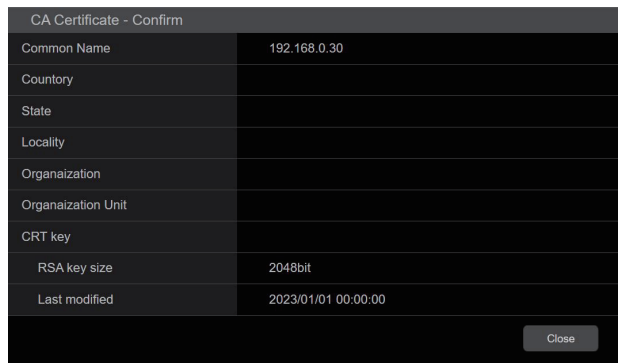
The server certificate is installed.

 **NOTE**

- The name of the host registered to the installed server certificate is displayed in [CA Certificate] - [Information]. The following is also displayed depending on the status of the server certificate.

Displayed content	Description
Invalid	When the server certificate is not installed
[Common Name] of server certificate	When the server certificate is already installed and enabled
Expired	When the effective period of the server certificate has expired

- When the [Confirm] button is clicked, the content of the installed server certificate (security certificate) is displayed in the [CA Certificate - Confirm] dialog. (An asterisk is displayed in the [Organizational Unit] field only.)



- Click the [Delete] button to delete the installed server certificate (security certificate).
- When [HTTPS] is selected in [Connection], the server certificate (security certificate) cannot be deleted.
- Perform STEP 1 to STEP 2 to update a server certificate.
- To delete an enabled server certificate (security certificate), confirm that there is a backup to the said certificate in your personal computer or recording media. A server certificate (security certificate) will be needed to reinstall it.
- The HTTPS function can no longer be used when the effective period of the server certificate has expired. In such a case, the connection method is changed to HTTP when the unit is restarted. Update the server certificate before its effective period expires.
- The effective period of the server certificate can be confirmed by double-clicking the server certificate file issued by the Certificate Authority (CA).

■ Setting the Connection Method [Connection]

1 Set the method to access the camera in [Connection].

HTTP: Only HTTP connection is possible.

HTTPS: Only HTTPS connection is possible.

NOTE

- When using an HTTPS connection, network connection with the AK-HRP1000, AK-HRP1005, AK-HRP1010, AK-HRP250, and AK-MSU1000 will be disabled.

2 Set the Port No. to be used with HTTPS in [HTTPS port].

Port No. that can be selected: 1 to 65535

The following port numbers are used by the unit so they cannot be used.

20, 21, 23, 25, 42, 53, 67, 68, 69, 80, 110, 123, 161, 162, 554, 995, 10669, 10670, 59000 to 61000

Factory settings: 443

3 Set the encryption protocol used with HTTPS in [HTTPS mode].

TLS1.2/1.3: Connection with TLS1.2/1.3 is possible.

TLS1.3: Connection with TLS1.3 is possible.

TLS1.2: Connection with TLS1.2 is possible.

4 Click the [Set] button.

The camera restarts and access to the camera via HTTPS is enabled.

NOTE

- This unit will restart if the connection method is changed.
- **Using a self-signed certificate**
A warning screen is displayed when accessing the camera by HTTPS for the first time. Install the self-signed certificate (security certificate) in your personal computer in accordance with the screen instructions.
➔ "Install the security certificate" (see page 87)
- **Using a server certificate**
Install the Certificate Authority (CA) root certificate or intermediate certificate in your web browser in advance. Follow the Certificate Authority (CA) procedures to acquire and install root certificates and intermediate certificates.
- When accessing the camera by HTTPS, the image display speed and frame rate of the moving image may reduce.
- When accessing the camera by HTTPS, it may take some time for the images to be displayed.
- When accessing the camera by HTTPS, images may be disturbed and sound may be interrupted.
- The maximum number of cameras that can be connected simultaneously depends on the maximum image size and distribution format.

■ Accessing the Camera by HTTPS

1 Launch the web browser in your personal computer.

2 Input the camera's IP address in the address bar of the web browser.

Input address: https://192.168.0.10/

NOTE

- When the HTTPS port No. is changed from "443", input "https://camera IP address: Port No." in the address bar.
E.g. https://192.168.0.11:61443
- When this unit is in a local network, set a proxy server from the web browser (menu bar: [Tools] - [Internet Options]) to ensure that a proxy server is not used for a local address.

3 Press the [Enter] key.

The live screen [Live] is displayed.

The security certificate is installed when the security warning screen is displayed.

➔ "Install the security certificate" (see page 87)

When [User auth.] is set to [On], the user name and password input screen is displayed before the live screen [Live] appears.

NOTE

- When HTTPS is used, screen and image display may slow down and image update interval (frame rate) may also slow down.

● **Install the security certificate**

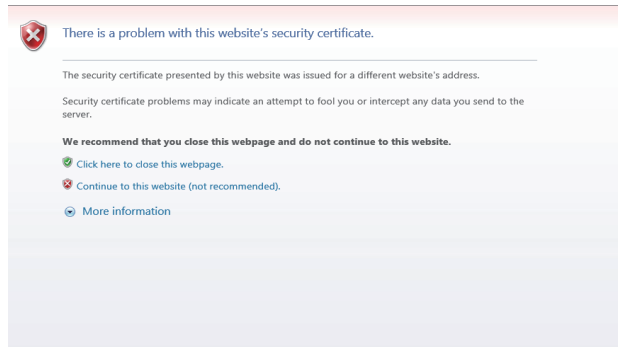
When using HTTPS to access the camera, the security warning screen will be displayed if the security certificate of the said camera has not been installed in your personal computer. To prevent this warning screen being displayed, the security certificate must be installed in accordance with the following procedures. If it is not installed, the security warning screen will be displayed every time the camera is accessed.

 **NOTE**

- The security certificate will be installed to your personal computer based on the content set for [Common Name]. The content set for the “Host Name” must therefore match that set for the address/host name used to access the camera. If the content differs, a security warning screen will be displayed every time the camera is accessed.
- A security warning screen will be displayed if the camera address/host name is changed even when a security certificate has been installed. Reinstall the security certificate.
- When connecting the camera to the Internet, set the address or host name to be accessed from the Internet in [Common Name]. In this case, when accessing the camera locally, a security warning screen is displayed every time the camera is accessed even when a security certificate is installed.
- When the security certificate is correctly installed, an icon of the key will be displayed in the address bar of the web browser accessing the camera.

1 Accessing the Camera by HTTPS.

2 When the security warning screen is displayed, click [Continue to this website (not recommended)].



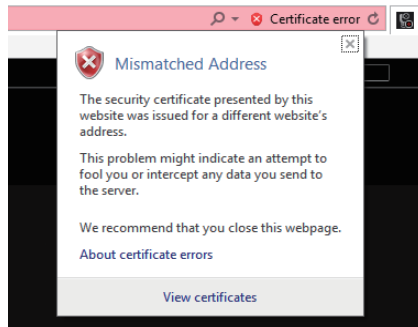
The live screen [Live] is displayed.

When the authentication screen is displayed, input the user name and password.

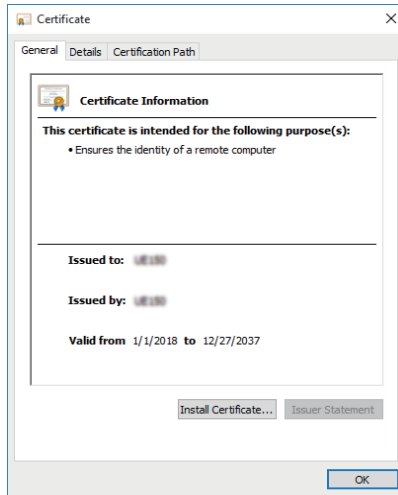
 **NOTE**

- When the above screen is displayed after accessing a device apart from the camera or a website, there may be a security problem, so check this carefully.

3 Click [Certificate error] in the URL and then click [View certificates].



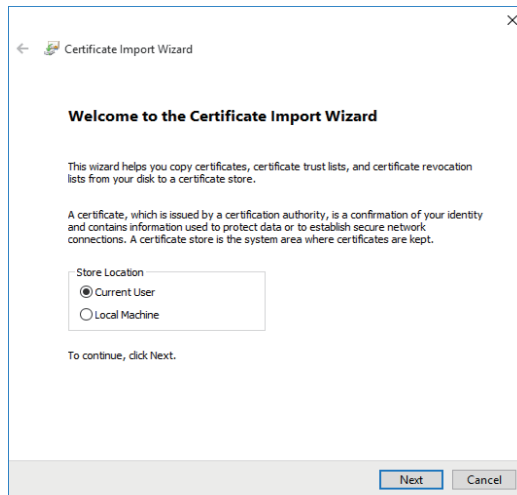
4 Click [Install Certificate...].



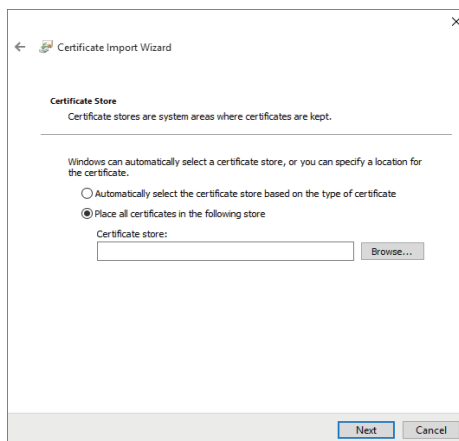
NOTE

- If [Install Certificate...] is not displayed, close Internet Explorer and restart it by selecting [Run as Administrator]. Right-click on [Start] - [Program] - [Internet Explorer] and click [Execute as Administrator (A)..].

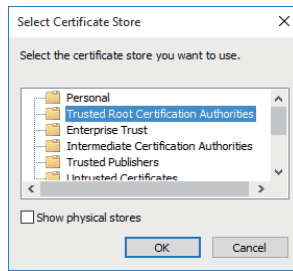
5 Click [Next], which is displayed in the certificate import wizard.



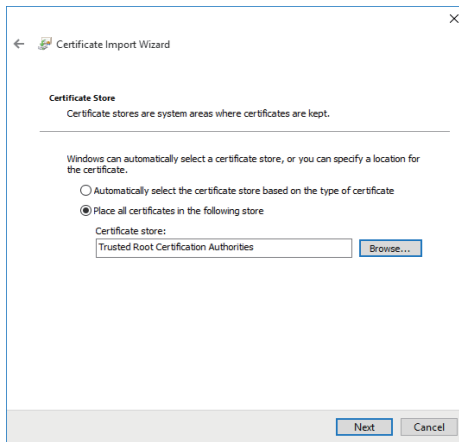
6 Select [Place all certificates in the following store] and click [Browse...].



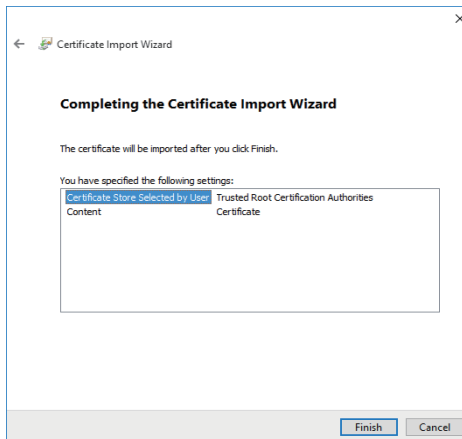
7 Select [Trusted Root Certification Authorities] and click [OK].



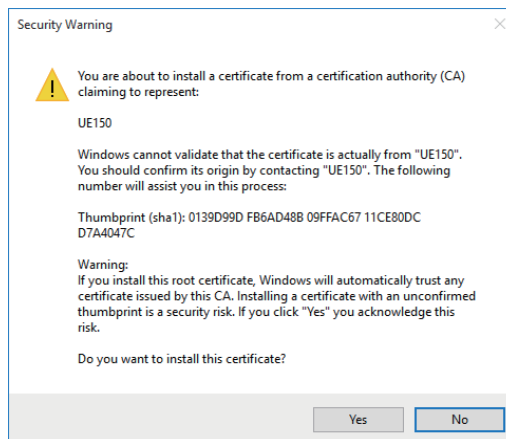
8 Click [Next].



9 Click [Finish].

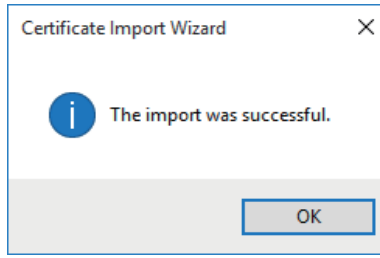


10 Click [Yes].



When importing is finished, the "The import was successful." screen is displayed.

11 Click [OK].



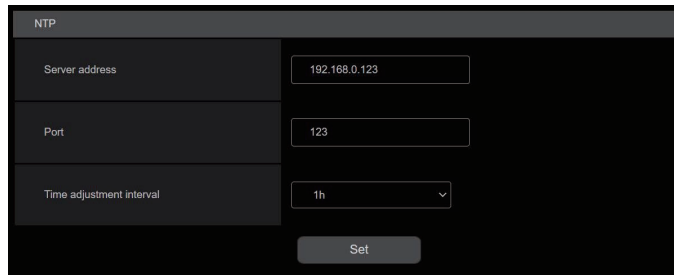
Closing the web browser after importing the certificate and reconnecting to it will stop the “Certificate error” screen being displayed.

NTP

Click [NTP] in the Network settings screen [Network].

Make settings for the NTP function.

Confirm the settings with the [Set] button.



___ indicates factory default settings.

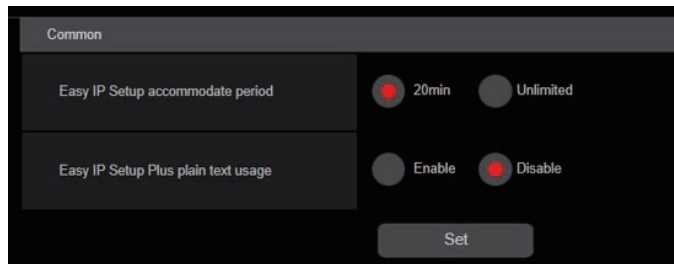
Item	Setting value	Setting details
Server address	192.168.0.123	Input the IP address of the NTP server.
Port	123	Input the port No. of the NTP server.
Time adjustment interval	1h	Selects the interval (1 to 24 hours in 1-hour increments) for acquiring the time from the NTP server.

Common

Click [Common] in the Network settings screen [Network].

Make shared network settings.

Confirm the settings with the [Set] button.



___ indicates factory default settings.

Item	Setting value	Setting details
EasyIP Setup accommodate period	20min. Unlimited	Sets the time allowed for network setting operations from EasyIP Setup Tool Plus. 20min. Allows camera setting operations on the EasyIP Setup Tool Plus for just 20 minutes after start up of this unit. Unlimited Allows camera setting operations on the EasyIP Setup Tool Plus at any time. • Camera display on the EasyIP Setup Tool Plus is enabled all the time, and the camera screen can be opened. • Consult the network administrator regarding the address settings for the different servers.
EasyIP Setup Plus plain text usage	Enable Disable	Sets whether to enable or disable encryption of communications when communicating with EasyIP Setup Tool Plus. Enable Communications are sent and received as plain messages. Disable Communications are sent and received as encrypted messages.

ROP account settings screen [ROP account setting]

Make the settings for user accounts required to connect to ROPs (AK-HRP250/AK-HRP1000/AK-HRP1005/AK-HRP1010/AK-HRP1015) from this unit in the ROP account settings screen [ROP account setting]. The accounts can also be deleted here. Up to 12 users can be registered.

The ROP account settings screen [ROP account setting] consists of [User list] and [Add user].

User list

Click [User list] in the ROP account settings screen [ROP account setting].

Information about accounts already registered is displayed.

To delete a registered user account, click the [Delete] button to the right of the relevant account.

User list	User Name	Password	
1.	user1	*****	Delete
2.	user2	*****	Delete
3.	user3	*****	Delete

Add user

Registers a user account.

Add user

User name

Password

Retype password

Set

Item	Setting details
User name	Enter the user name. <ul style="list-style-type: none"> • Maximum number of characters 1 to 8 half-size characters • Characters that can be entered <ul style="list-style-type: none"> - Half-size numeric characters: 0123456789 - Half-size alphabetical characters (upper and lower cases): ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz - Symbols: - _ #
Password Retype password	Enter the password. <ul style="list-style-type: none"> • Maximum number of characters 1 to 31 half-size characters

User management screen [User mng.]

In the User management screen [User mng.], register authentication for users that can access this unit from personal computers and mobile terminals. Up to 3 users can be registered.

The User management screen [User mng.] consists of [User list] and [Add user].

NOTE

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

User list

Click [User list] in the User management screen [User mng.].

Information about accounts already registered is displayed.

To delete a registered user account, click the [Delete] button to the right of the relevant account.

User list.	User Name	Password	
1.	user1	*****	Delete
2.	user2	*****	Delete
3.	user3	*****	Delete

NOTE

- If there is 1 registered account, you cannot delete that account.

Add user

Registers a user account.

Add user

User name

Password

Retype password

Set

Item	Setting details
User name	Enter the user name. <ul style="list-style-type: none"> • Maximum number of characters 1 to 32 half-size characters • Characters that can be entered <ul style="list-style-type: none"> - Half-size numeric characters: 0123456789 - Half-size alphabetical characters (upper and lower cases): ABCDEFGHIJKLMNOPQRSTUVWXYZ abcdefghijklmnopqrstuvwxyz - Symbols: !#\$%'^()*+,-./?@[]^_`~
Password Retype password	Enter the password. <ul style="list-style-type: none"> • Maximum number of characters 4 to 32 half-size characters

Chapter 6 **Maintenance**

This chapter describes the warning displays and after-sales services of the camera.

Troubleshooting

For operations

Problem	Cause/solution
The camera cannot be turned on.	Does the power cable plugged into the power outlet securely?
The camera cannot be operated from the ROP (AK-HRP1000G) that is connected via IP.	Is the power turned on? • If the power lamp of the camera is not lit, the power of the camera is off.
	Is a valid IP address of the camera set?
	Is the correct camera to be operated selected?
	Is the camera connected with the ROP (AK-HRP1000G) correctly? • Also refer to the Operating Instructions of AK-HRP1000G.
	The ROP (AK-HRP1000G) may require upgrading to support the camera. • Contact your dealer.

Checking the operating time

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

[HEAD]: The operating time of the camera head can be checked.

Warning displays

Warning displays appear when errors have occurred in camera's auto functions.

Camera warning displays

■ When AWB (automatic white balance) is executed

[AWB BREAK]	Automatic white balance has been interrupted.
[AWB HIGH LIGHT NG]	Automatic white balance cannot be executed because the light amount is excessive. Set the light amount to an appropriate level.
[AWB LOW LIGHT NG]	Automatic white balance cannot be executed because the light amount is insufficient. Set the light amount to an appropriate level.
[AWB NG CHECK FILTER]	Automatic white balance cannot be executed because of erroneous filter position. Set the correct filter position.
[AWB RCH OUT RANGE]	The white balance convergence for red cannot be achieved. Shoot a uniformly white object on the screen, and execute AWB.
[AWB BCH OUT RANGE]	The white balance convergence for blue cannot be achieved. Shoot a uniformly white object on the screen, and execute AWB.

■ When ABB (automatic black balance) is executed

[ABB BREAK]	Automatic black balance has been interrupted.
[ABB RCH OUT RANGE]	The black balance convergence for red cannot be achieved. Check if there are any errors in the image.
[ABB BCH OUT RANGE]	The black balance convergence for blue cannot be achieved. Check if there are any errors in the image.
[ABB GCH OUT RANGE]	The black balance convergence for green cannot be achieved. Check if there are any errors in the image.
[ABB NG]	The lens iris may not be closed.

■ Executing black shading

[BSHD]	Black shading is executing.
[BSHD BRAK]	Black shading has been interrupted.
[BSHD NG]	An error has occurred with the black shading. Check if the lens is correctly closed.

Other warning displays

[FAN OFF]	Fan has stopped.
[UPDATE ERROR!] [ERRCODE:01]	The version update file is invalid. Store the correct version update file in the SD memory card, and the execute the update again.
[UPDATE ERROR!] [ERRCODE:02]	The version update file does not exist. Store the correct version update file in the SD memory card, and the execute the update again.
[UPDATE ERROR!] [ERRCODE:03]	Mounting error of the SD memory card. The SD memory card may not be inserted, or the SD memory card may be damaged.
[UPDATE ERROR!] [ERRCODE:04]	File load error. The SD memory card may be ejected during the version update, or the version update file in the SD memory card may be corrupted.
[UPDATE ERROR!] [ERRCODE:05]	An error has occurred during the ROM erase for overwriting the version update file. Consult the dealer.
[UPDATE ERROR!] [ERRCODE:06]	An error has occurred during the ROM write for overwriting the version update file. Consult the dealer.
[UPDATE ERROR!] [ERRCODE:07]	The version update file is invalid. Store the correct version update file in the SD memory card, and the execute the update again.
[UPDATE ERROR!] [ERRCODE:08]	Other system error. (Communication error, etc.) Consult the dealer.
[TEMP OVER!] [FORCE POWER OFF!!]	The internal temperature is high. The power is turned off forcefully. Operate the fan when set to [MAIN MENU] → [MAINTENANCE] → [FAN SETTING] → [FAN] → [FAN MODE] → [OFF].

Updating the camera firmware

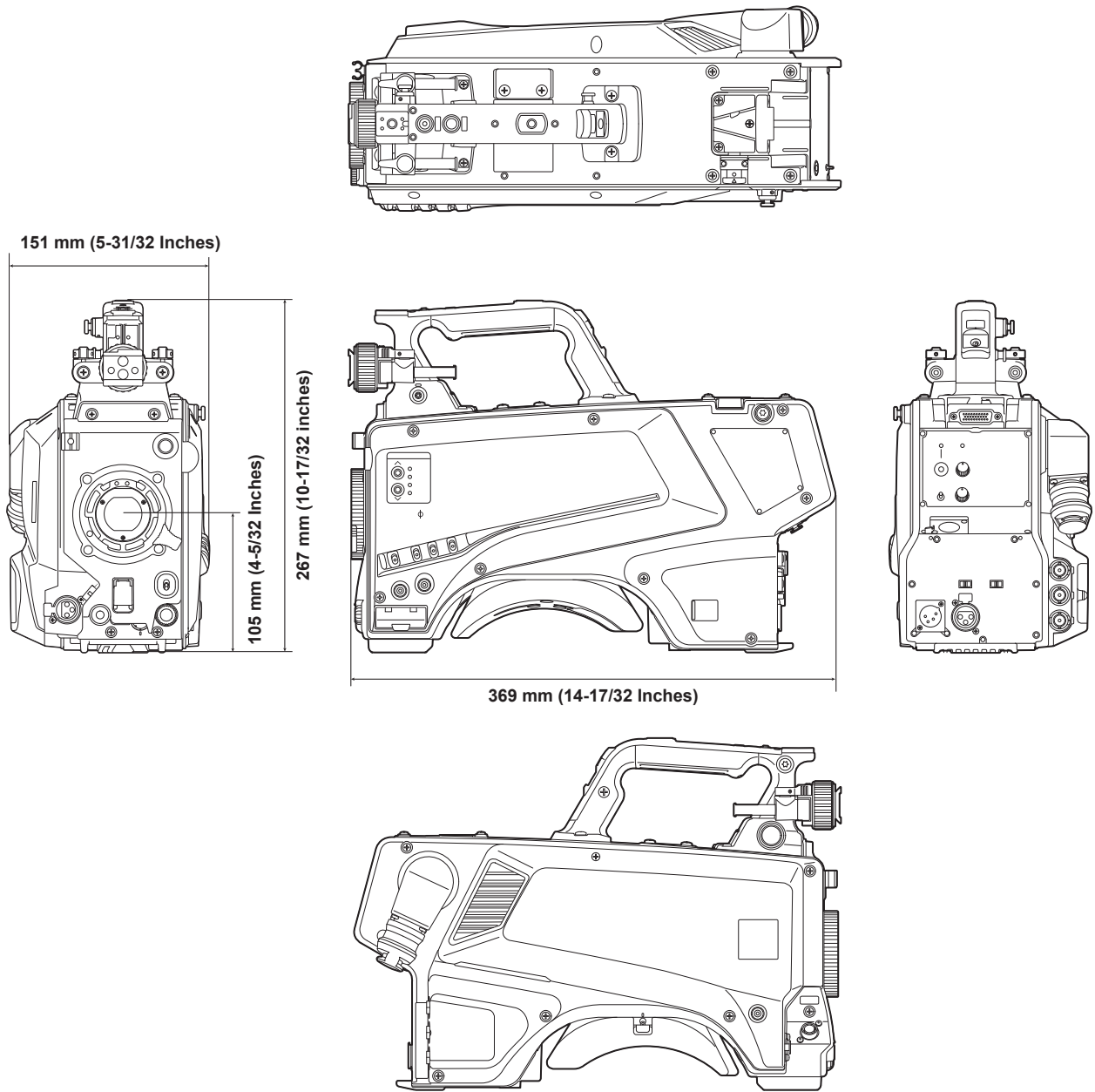
Refer to the support pages at the following website to see if there is a firmware update and for instructions.
<https://pro-av.panasonic.net/en/>

Chapter 7 **Specifications**

This chapter describes the specifications of this product.

Specifications

Dimensions



Specifications

General

Power	DC --- 12 V (when using an external power supply)
	DC --- 190 V (when AK-HCU250P/AK-HCU250PS/AK-HCU250E/AK-HCU250ES is connected)
Power consumption	82 W (maximum, when connecting to an external 12 V and including supply to an externally connected devices)
	92 W (maximum, when AK-HCU250P/AK-HCU250PS/AK-HCU250E/AK-HCU250ES is connected and including supply to an externally connected devices)

 indicates safety information.

Ambient operating temperature	-10 °C to 45 °C (14 °F to 113 °F) (Preheating required under a temperature 0 °C (32 °F) or below)
Storage temperature	-20 °C to 60 °C (-4 °F to 140 °F)
Ambient operating humidity	85% or less (relative humidity)
Weight	Approx. 4.0 kg (8.80 lbs.) (body only, excluding the accessories)

Chapter 7 Specifications — Specifications

Dimensions (W×H×D)	Body only 151 mm × 267 mm × 369 mm (5-31/32 inches × 10-17/32 inches × 14-17/32 inches) (excluding protrusions)
--------------------	--

Camera unit

Pickup device	11.14 million pixels, CMOS Sensor
Optical filter	ND: Clear, 1/4, 1/16, 1/64
Lens mount	2/3-type bayonet
Sensitivity	Two shooting modes [HIGH SENS]: F10 (59.94 Hz)/F11 (50 Hz) [NORMAL]: F6 (59.94 Hz)/F7 (50 Hz) 2000 lx, 3200 K, when white reflectivity is 89.9%
Horizontal modulation	50% or above (27.5 MHz)
S/N	62 dB or above
Horizontal resolution	HD: 1000 TV lines or above (center)
Gain switching	[NORMAL]: -6, -3, 0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36 [HIGH SENS]: -6, -3, 0, 3, 6, 9, 12, 15, 18, 21, 24, 27, 30, 33, 36
Shutter speed	<ul style="list-style-type: none"> • [59.94i]/[59.94p] mode: 1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000 • [29.97p] mode: 1/48, 1/50, 1/60, 1/96, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000 • [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 • [50i]/[50p] mode: 1/60, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000 • [25p] mode: 1/48, 1/50, 1/60, 1/96, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/1500, 1/2000
System format	1920×1080/59.94p/50p/29.97p/25p/23.98p

Video input/output

<HD SDI1> terminal	BNC × 1 3G/1.5G-SDI: 0.8 V [p-p], 75 Ω
<HD SDI2> terminal	BNC × 1 3G/1.5G-SDI: 0.8 V [p-p], 75 Ω
<AUX> terminal	BNC × 1 Functions as <HD TRUNK> terminal/<PROMPTER> terminal by switching the setting in the menu <HD TRUNK>: 3G/1.5G-SDI: 0.8 V [p-p], 75 Ω <PROMPTER>: VBS signal 1 V [p-p], 75 Ω

Audio input/output

<MIC 2> terminal	XLR × 1, 3-pin, female type <LINE>/<MIC>/<+48V> switchable <LINE>: 0 dBu <MIC>: -60 dBu, -40 dBu, or -20 dBu menu can be selected
<MIC> terminal (front)	XLR × 1, 3-pin, female type <LINE>/<MIC>/<+48V> switchable <LINE>: 0 dBu <MIC>: -60 dBu, -40 dBu, or -20 dBu menu can be selected

Intercom

<INTERCOM> terminal	XLR × 1, 5-pin, female type
---------------------	-----------------------------

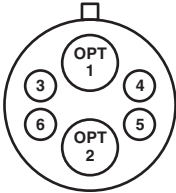
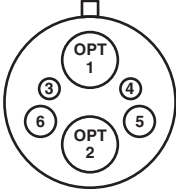
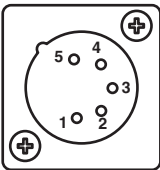
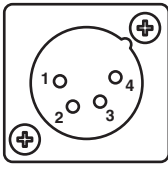
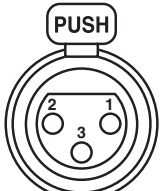
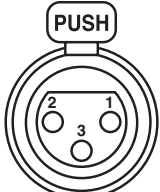
Other input/output

<OPT FIBER> terminal	Optical composite connector × 1
<LENS> terminal	12-pin × 1
<VF> terminal	20-pin × 1
<VF> terminal (rear)	29-pin × 1
<DC IN> terminal	XLR × 1, 4-pin, DC 12 V
<LAN> terminal	RJ-45 × 1

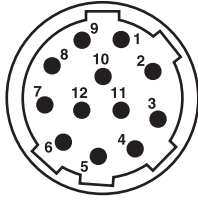
The symbols on this product (including the accessories) represent the following:

~ AC
=== DC

Details of the connector signals

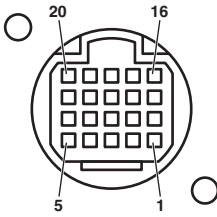
OPT FIBER		
	1	OPT-RX(Mark Band=IN)
	2	OPT-TX(Mark Band=OUT)
	3	DC190 V(C)
	4	DC190 V(H)
	5	STBY-SIG
	6	STBY-CONT
TAJIMI ELECTRONICS		
	1	OPT-RX(Mark Band=IN)
	2	OPT-TX(Mark Band=OUT)
	3	STBY-SIG
	4	STBY-CONT
	5	DC190 V(H)
	6	DC190 V(C)
LEMO		
INTERCOM		
	1	TALK GND
	2	TALK
	3	RECEIVE GND
	4	RECEIVE CH1
	5	RECEIVE CH2
HA16PRH-5S (Hirose Electric Co.)		
DC IN		
	1	UNREG GND
	2	Not used
	3	Not used
	4	+12 V
HA16RA-4P(77) (Hirose Electric Co.)		
MIC (front)		
	1	GND
	2	AUDIO IN (H)
	3	AUDIO IN (C)
HA16PRM-3SG (Hirose Electric Co.)		
MIC (rear)		
	1	GND
	2	AUDIO IN (H)
	3	AUDIO IN (C)
HA16PRM-3SG (Hirose Electric Co.)		

LENS

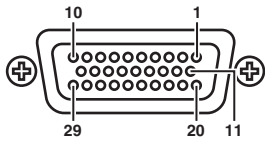


1	RET-SW
2	REC
3	GND
4	IRIS-AUTO
5	IRIS-CONT
6	UNREG +12 V
7	IRIS-POSI
8	IRIS-G-MAX
9	EXT-POSI
10	ZOOM-POSI
11	FOCUS POSI/LENS RXD
12	IRIS AUTO/LENS TXD
HR10A-10R-12SC (Hirose Electric Co.)	

VF (front)



1	UNREG -12 V
2	UNREG -12 V
3	+9 V
4	VF-P _B -OUT-GND
5	VF-P _R -OUT-GND
6	VF-Y-OUT
7	VF-Y-OUT-GND
8	VF-CLK
9	VF-WR
10	VF-DATA
11	UNREG-GND
12	ZEBRA-SW
13	PEAKING
14	TA BOX ACT
15	VF-P _B -OUT
16	VF-P _R -OUT
17	VF-SW3
18	FRONT-VR
19	TA TALLY
20	GND
HR12-14RF-20SDL (Hirose Electric Co.)	



VF (rear)

1	VF-Y-OUT
2	VF-P _B -OUT
3	VF-P _R -OUT
4	CAM DETECT
5	I2C DATA
6	R TALLY
7	T TALLY
8	UNREG +12 V
9	UNREG +12 V
10	UNREG +12 V
11	VF-Y-OUT-GND
12	VF-P _B -OUT-GND
13	VF-P _R -OUT-GND
14	AGND
15	DGND
16	Not used
17	UNREG GND
18	Not used
19	FGND
20	LCD ACT (Not used)
21	Not used
22	Not used
23	PEAKING CONT (Not used)
24	I2C CLK
25	G TALLY
26	VF P REQ
27	RESERVED
28	RESERVED
29	RESERVED

D02F-29SF-N-F0 (Japan Aviation Electronics Industry)

Index

C

CA Certificate	
CA Certificate install	85
Generate Certificate Signing Request	84
CAC file	34
Connection	86
Connector signal	101
CRT key generate	81

D

DC power supply	33
[DIAGNOSTIC]	67
[DISPLAY SETUP]	39

E

EasyIP Setup Tool Plus	70
External DC power supply	33
External power supply	33

F

[FILE]	63
--------------	----

H

[HDR-PAINT]	60
HTTPS	86

I

[IN/OUT SELECT]	61
[INTERCOM SETTING]	49

M

[MAINTENANCE]	65
Menu	
Configuration	38
Operations	36
Microphone	31
Attaching to the microphone holder	32
Attaching to the viewfinder	31
[MIC SETTING]	49

N

[NETWORK SETUP]	62
-----------------------	----

O

Operating time	95
----------------------	----

P

[PAINT]	49
---------------	----

R

[RETURN SETTING]	48
------------------------	----

S

SD memory card	12, 19
Security certificate	87
Self-signed Certificate	
Generate	82
Setting frequency	16
Setting the user account	69
User account setup software	69
Specifications	99
[SWITCH MODE]	43
[SYSTEM MODE]	61

U

User file	34
-----------------	----

V

Viewfinder	26
Attaching the rear viewfinder	27
Attaching the viewfinder	26

W

Warning displays	96
Web Screen	70

Panasonic Connect Co., Ltd.

Web Site: <https://pro-av.panasonic.net/en/>

© Panasonic Connect Co., Ltd. 2020 - 2022