

Canon

Remote Camera Controller
User Manual

RC-IP1000 Firmware ver. 1.2.0

ENGLISH

Important Safety and Handling Instructions

Safety Instructions

Be sure to read these instructions in order to operate the product safely. Follow these instructions to prevent injury or harm to the operator of the product or others.

In case of emergency (troubleshooting under abnormal situations)

- If smoke, strange smells or abnormal noises are detected.
- If the product fell and was damaged.
- If foreign objects (metallic objects, liquids, etc.) get inside the product.

If any of the following situations occurs, immediately unplug the power cable from the power outlet.

Continuing to use the product under such circumstances may cause fire or electric shock. Contact a Canon sales representative as soon as possible.



WARNING Denotes the risk of serious injury or death.

Installation

- Do not install the product in a location where there is the risk of ignition or combustion.

Installing the product in a location where flammable gases are produced or concentrated may cause ignition and result in fire.

Power supply

Cautions related to the power supply or the power cable should be followed in the same way when using LAN cables with PoE power.

- Make sure to turn off the product before connecting/ disconnecting power cables.
- Ensure the power cable is fully inserted into the power outlet.
- Do not handle the power connector with wet hands.
- Do not unplug the product by pulling the cord.
- Always keep the power connector easily accessible. Do not place obstructing objects around it.
- Do not expose the power connector or terminal to dirt or let them come into contact with metallic pins or other metal objects.
- Do not place heavy objects on the power cable. Do not damage, break or modify the power cable.
A damaged power cable can lead to fire or electric shock.
- Periodically wipe the power cable and power terminal with a dry cloth to remove dust buildup.

- When using DC power supplies, make sure to use a power cable that is suitable for the installation conditions (authorized products, environmental regulations) and conforms to the product's power specifications.

Using an unsuitable power cable may cause electric shock and fire.

- Turn off the power when the product is not used for a long period of time.

Failing to follow the instructions may result in fire or electric shock.

- Do not leave the product plugged in for extended periods of time in locations exposed to high levels of dust, moisture or oily smoke.

Doing so may cause insulation failures and even fires.

- When thunder starts to sound, do not touch the power cable of connected devices or any connected cables. Failing to follow the instructions may result in electric shock.

Handling

- Do not get the product wet. Do not allow liquids or foreign matter inside the unit.
- Do not expose the product to strong shocks or vibration.

Maintenance and Inspection

- Turn the power off before cleaning the product using a dry cloth.
Cleaning it using a wet cloth when the product is turned on may cause electric shock.
- Do not use organic solvents such as alcohol, benzene or paint thinner to clean the product.
- Do not disassemble or modify the product.
 - Contact with parts inside the product may cause injury or electric shock.
 - Foreign objects or dust entering into the product may cause malfunctions.
 - In surroundings exposed to high temperatures and humidity, humid air entering inside the product may cause malfunctions.

⚠ CAUTION Follow the cautions below. Otherwise physical injury or property damage may result.

Installation

- Do not install the product on an unstable surface or in locations exposed to severe vibration.
This may cause the product to topple over or fall down, resulting in injury.
- Do not install the product in locations directly exposed to salt water or where corrosive gases or oily smoke are present.
Contact with such substances may corrode and degrade the mountings, causing the product to fall down and cause injury.

Handling Precautions

Installation

- Do not install the product in a location exposed to direct sunlight or high temperatures.
This may cause malfunctions.
- Do not install the product outdoors.
The product is for indoor use only.
- Do not use or store the product outside the operating or storage environment.
Failure to do so may result in damage due to the degradation of image quality or internal components.
- Be sure to connect the ground wire to the GND terminal.
To prevent electrical shocks caused by electrical leakage, be sure to connect a ground wire during installation.

LCD Panel

- Wipe the screen with a soft cloth.
If water droplets get on the screen in an area with severe temperature difference, or if the screen becomes dirty, wipe it with a soft dry cloth such as an eyeglasses cleaning cloth.

Handling

- When moving the product, make sure to disconnect the power connector and any other connected cables.
Damaging the cables may cause fire or electric shock.
- Do not place heavy objects on top of the product.
Doing so may lead to injury, deformation of the product, fire or electric shock.
- Do not block the intake/exhaust ventilation outlet.
Doing so may lead to heat building up inside the product, burns or fire.

- Do not leave the product in places with high temperatures or humidity for a long time.
This may cause irregularities in the display quality.
- When the same image is displayed for a long time, it may remain as an afterimage when the image changes.
This is a characteristic of the LCD panel and is not a fault. The afterimage may disappear if you display a different image for a while.

Handling

- Do not hold and lift the product by the PAN / TILT lever.
Do not use excessive force.
This may cause malfunctions.
- Do not connect a PoE power supply LAN cable to the RS-422 terminal.
This may cause malfunctions.

Disposal

- Dispose of the product according to local laws and regulations.
- When disposing of the product, initialize it from SYSTEM menu > [Initialize] (P. 68) in order to delete settings information such as network settings and passwords.

Disclaimers

- Canon shall bear no responsibility for damage resulting from improper operation of this product by the customer.
- Regarding this product's quality, functionality or instruction manual, Canon shall make no guarantees about its marketability or suitability for the customer's purpose. Moreover, Canon shall not be liable for any damage, direct or incidental, that results from using the product for the customer's purpose.
- Canon shall bear no responsibility for any loss, damage, direct or indirect, or any incidental loss, damage (including filming expenses and loss of filming earnings) arising out of the failure of this product or arising out of the use of this product.

- The product specifications, configuration, and appearance are subject to change without prior notice.
- For further information on repairs, maintenance, or adjustments not mentioned in this instruction manual, contact a Canon sales representative.
- Note that Canon may be unable to undertake servicing or repair of a product if it is modified without consulting Canon or your Canon sales representative.

■ Network Security

The user is responsible for the network security of this product and its use. Take appropriate network security measures to avoid security breaches.

To the full extent permitted by laws and regulations, neither Canon Inc. nor any of its subsidiaries or affiliates shall be liable for any losses, direct, incidental or consequential damages, or liabilities that may be incurred as a result of network security incidents such as unauthorized accesses.

<Network Security Recommendations>

- Register a strong administrator password that cannot be easily guessed by a third party.
- For HTTP communication, change the port number.
- Use HTTPS communication and change the port number.

For additional network security recommendations, please refer to the Canon website.

-India only-

This product is not to be disposed of with your household waste. This product should be handed over to a designated collection point. For more information regarding return and recycling of WEEE products, please visit

<https://in.canon/en/consumer/web/e-waste> or write to us at cipl.ewaste@canon.co.in

Also, this product including its components, consumables, parts and spares complies with the "E-Waste (Management) Rules, 2022" and prohibits use of lead, mercury, hexavalent chromium, polybrominated biphenyls or polybrominated diphenyl ethers in concentrations exceeding 0.1 % by weight and 0.01 % by weight for Cadmium, except for the exemptions set in Schedule II of the Rules.

Table of Contents

	Important Safety and Handling Instructions	2
	Safety Instructions.....	2
	Handling Precautions.....	3
	Disclaimers	4
Chapter1	Introduction	
	About this Manual.....	8
	Included Items	8
	How to Use This Document	8
	Names of Parts and their Functions	9
	Operation Area.....	9
	Terminals Area	17
Chapter 2	Preparations	
	Installation.....	19
	Embedding the Device in a Desktop	19
	Connections.....	21
	IP Connection System Example (Multiple Remote Cameras).....	21
	IP Connection System Example (Single Remote Camera)	22
	Serial Connection System Example	23
	Connecting to the Power Supply	23
	Turning On/Off the Device	24
	Checking Screen Displays and Basic Operations	25
	Checking/Operating the Top Menu	25
	Changing Settings on the Menu	32
	Checking Video on the PICTURE Screen	35
	Connection Settings for the Device	39
	Network Settings for the Device.....	39
	Camera Connection Settings.....	40
	Registering Multiple IP Connected Cameras Automatically	40
	Registering Cameras Individually (IP/Serial Connection)	41
	Initial Setup For Multiple Factory-Set Cameras At Once	44
	Controlling Camera Power: On / Standby	45
	Operating the Menu to Control Camera Power: On / Standby	45
	Using the CAMERA / PRESET Select Buttons to Control Camera Power: On / Standby	45
Chapter 3	Operation	
	Checking the Basic Operation Procedure.....	47
	Selecting a Camera Group / Camera / Preset Group / Preset	48
	Selecting a Camera Group	48
	Selecting a Camera	49
	Selecting a Preset Group	49
	Selecting a Preset	49

Chapter 4	Changing Camera Settings	50
	Changing the Camera's Menu Settings	50
	Setup/Control using the Touch Functions	51
	Adjusting the Focus from the LCD Panel	52
	Displaying/Adjusting the Auto Tracking Frame on the LCD Panel	53
	Controlling Multiple Cameras Simultaneously	54
	Operating Buttons/Dials/Levers of Multiple Cameras (Multi Control)	54
	Executing Presets on Multiple Cameras Simultaneously (Multi Preset)	54
	Changing Power and Basic Settings for Multiple Cameras	55
	Video Input/Output	56
	Output Formats	56
	Outputting IP Multi View or the Preset/Trace List	58
	Crop Settings for Camera Output Video	59
	Displaying the Cropping Frame on the Screen	59
	Adjusting the Cropping Frame's Position/Size	59
	Selecting the Cropping Frame to be Applied to the Camera's Output Video	60
	Operating the Device Using the Multi-Camera Management Application	61
	Allowing Access for the Multi-Camera Management Application	61
Chapter 4	Menu	63
	Menu List	63
	SYSTEM Menu	64
	PRESET / TRACE Menu	77
	CAMERA Menu	80
Chapter 5	Appendix	90
	Troubleshooting	90
	Power	90
	Operation	90
	Displays and Lamps	91
	Network Connections	91
	Output	91
	Error Messages	92
	Specifications	93
	System	93
	Terminals	93
	Power / Others	93
	Control Interface for External Devices	94
	GPIO 1 Terminal / GPIO 2 Terminal Pin Arrangement	94
	RS-422 1 / 2 / 3 / 4 / 5 Terminal Pin Arrangement	97
	DC IN 12V Terminal Pin Arrangement	97
	Dimensions	98
	Others	99
	Trademarks	99
	Index	100

Chapter 1

Introduction

This section explains how to read this manual, as well as the names of parts of the device and their functionality.

About this Manual

This "User Manual" explains the product's settings and operations. Read this document carefully before using the product to ensure correct use. Be sure to keep this document for future reference. For details on the camera and the attached lenses, refer to their respective instruction manuals. In case the product does not operate normally, refer to "Troubleshooting" (P. 90).

For the latest information related to the product (firmware, software, instruction manuals, operating environment, etc.) and supported cameras, please visit your local Canon website.

Included Items

Remote camera controller, printed materials.

How to Use This Document

■ Caution

- 1 Unauthorized reprinting of part or the whole of the contents of this document is strictly forbidden.
- 2 Contents of the manual may be subject to future changes without prior notice.
- 3 We have taken all possible measures to ensure the accuracy of the contents in this manual. However, should you have any comments concerning the information, please contact our customer service center.
- 4 Notwithstanding 2 and 3 above, we shall not be liable for any impact resulting from the use of this product.

Note

- Some cameras (and the connection method in use) may not support functions corresponding to this device's buttons/dials or menu setting items. Therefore, some operations may differ. Be sure to update the camera/device to the latest firmware before use.
- For information about third party software, refer to "Third Party Software" (PDF) on the download page of this User Manual.

■ Illustrations and Screenshots

Illustrations and screenshots shown in this document may differ from the actual product.

■ Symbols Used in This Document

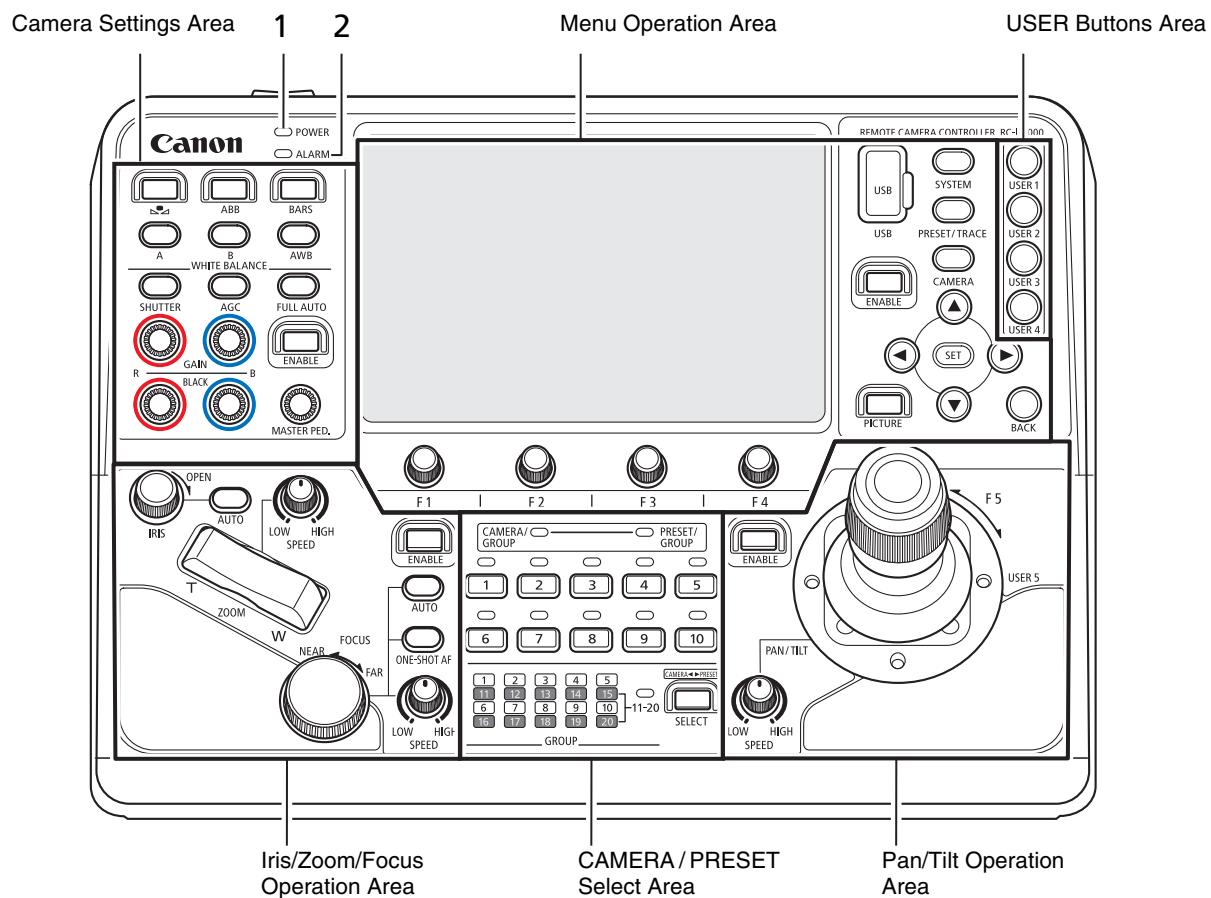
Symbol	Meaning
 Important	Cautions and restrictions during operation. Be sure to read these carefully.
 Note	Supplementary descriptions and reference information.

- Screen: refers to the LCD monitor's screen.
- Remote camera: refers to a camera with pan/tilt/zoom functionality.
- Camera: refers to a remote camera, cinema camera or video camera (excepting mentions of specific models).
- Group: camera groups may be referred to as "groups".
- Serial connection: refers to serial connection using the NU protocol.

Names of Parts and their Functions

This section explains the names of parts of the device and their functionality. Some buttons light up under certain conditions (explained in this manual).

Operation Area



1 **POWER** Lamp

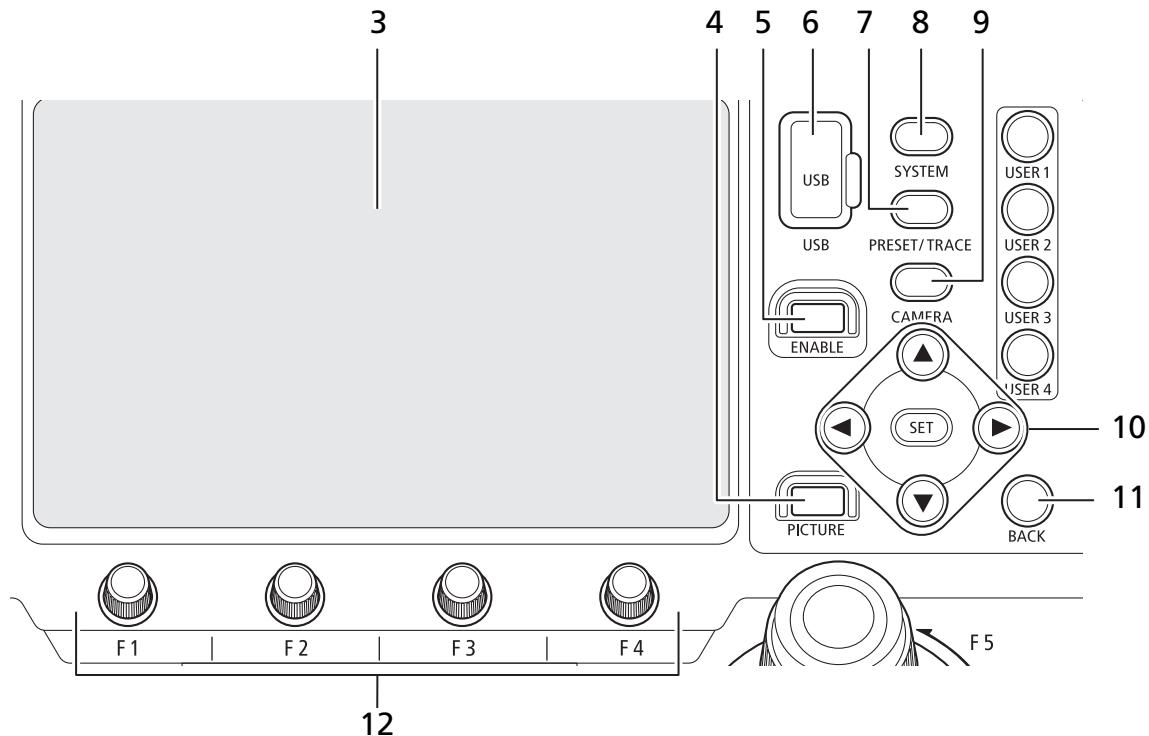
Indicates the startup status of the device. It is also used in conjunction with the ALARM lamp to indicate an error condition.

2 **ALARM** Lamp

Lights or flashes when an error occurs in the camera or this device (P. 91).

Condition	Illumination
POWER ON (Preparing to start)	● (Green / Flashing: 1/sec.)
POWER ON (Startup)	● (Green light on)

■ Menu Operation Area



3 LCD Panel

For display of video from the camera and menu screens.

You can perform various operations by touching the screen (touch panel).

4 PICTURE Button

Displays the picture screen (P. 35). Press it again to return to the previous screen (before pressing the PICTURE button).

Additionally, you can press and hold the button to switch the operation target of the **▲** / **▼** / **◀** / **▶** / **SET** buttons between the LCD screen and the external output screen.

Condition/ Operation target	Illumination
During display / LCD	● (Orange light on)
No display / LCD	● (Off)
During display / external output	● (Blue light on)
No display / external output	● (Green light on)

5 Menu Operation Area **ENABLE** Button

Enables or disables operation of the menu operation area and the touch panel.

Additionally, pressing and holding down the button turns on/off display on the LCD panel.

Condition	Illumination
Operation is enabled	● (Orange light on)

6 USB Terminal (Front)

You can connect an external device or a USB memory to the terminal. You can use a USB memory formatted with FAT32 or exFAT.

7 PRESET / TRACE Menu Button

Displays the PRESET / TRACE menu (P. 77). Press it again to return to the top menu.

Condition	Illumination
During display	● (Orange light on)

8 SYSTEM Menu Button

Displays the SYSTEM menu (P. 64). Press it again to return to the top menu.

Condition	Illumination
During display	● (Orange light on)

9 CAMERA Menu Button

Displays the CAMERA menu (P. 80). Press it again to return to the top menu.

Condition	Illumination
During display	● (Orange light on)

10 ▲ / ▼ / ◀ / ▶ / SET Buttons

These buttons are used in cases such as when operating menus (P. 32). Press the corresponding button to move the onscreen cursor in the desired direction (▲ / ▼ / ◀ / ▶) when operating menus. Press the SET button to confirm a selection.

Condition	Illumination
Button can be used	● (Orange light on)

11 BACK Button

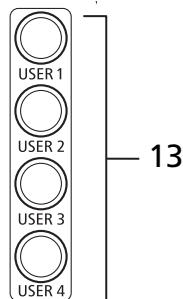
Used in cases such as when going back to the previous menu level.

Condition	Illumination
Button can be used	● (Orange light on)

12 F1 / F2 / F3 / F4 Dials

Used to operate elements displayed in the lower part of the LCD panel, such as menu items. The dials can be operated by turning or pressing them.

■ USER Buttons Area

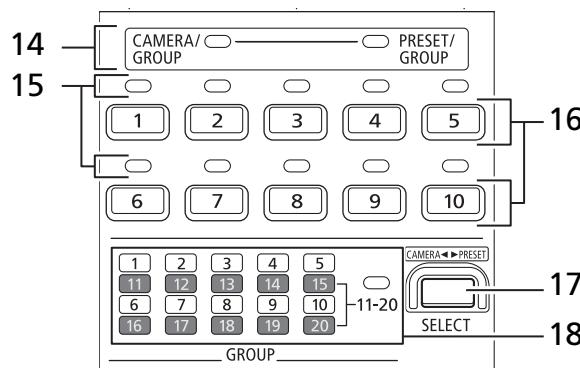


13 USER 1 / USER 2 / USER 3 / USER 4 Buttons

Used to perform the function assigned to each USER button.

Condition	Illumination
Depends on the assigned function	● (Orange light on)

■ CAMERA / PRESET Select Area



14 CAMERA / GROUP Lamp, PRESET / GROUP

CAMERA / GROUP Lamp

Indicates the current selection: CAMERA / CAMERA GROUP or PRESET / PRESET GROUP.

PRESET / GROUP Lamp

Condition	Illumination
Selection target: CAMERA	● (Green light on)

Condition

Condition	Illumination
Selection target: CAMERA GROUP	● (Blue light on)

PRESET / GROUP Lamp

Condition	Illumination
Selection target: PRESET	● (Green light on)
Selection target: PRESET GROUP	● (Blue light on)

15 CAMERA / PRESET Status Lamps

Indicate the status of the camera/preset corresponding to each number in the currently selected camera group/preset group.

CAMERA / GROUP Select Mode

Camera Status	Illumination
Connected	● (Green light on)
On Standby	● (Orange light on)
Receiving ALARM	● (Red light on)
Without connection, powered off.	● (Off)

PRESET / GROUP Select Mode

Camera Status	Illumination
Registered preset available	● (Green light on)
No registered preset	● (Off)

16 CAMERA / PRESET Select Buttons 1 to 10

Select the camera, camera group, preset and preset group controlled by the device. Use the SELECT button to change the selection.

CAMERA GROUP / PRESET GROUP Select

Selects the CAMERA GROUP / PRESET GROUP. During group 11-20 selection mode (the 11-20 lamp illuminates), groups 11 to 20 can be selected.

Condition	Illumination
Selected	● (Orange light on)
Not selected	● (Blue light on)

- Once a group is selected, the mode changes to CAMERA or PRESET selection mode.

CAMERA Select

Selects the cameras to be controlled by the device.

When the camera is on standby, pressing and holding down the button starts the camera.

When the top menu is being displayed and the camera is on, pressing and holding down the button puts the camera on standby.

Condition	Illumination
Selected	● (Orange light on)
PGM Tally ON (Not selected)	● (Red light on)
PVW Tally ON (Not selected)	● (Green light on)

- Illuminates in orange if a camera (when the tally is on) is selected.
- Illuminates in red if both PGM tally and PVW tally are on.

PRESET Select

Selects/executes a preset.

Pressing and holding down a button without an assigned preset registers the current settings in the preset.

Pressing a button while the F1 dial is pressed registers (and overwrites) the button's preset. Pressing a button while the F4 dial is pressed deletes the button's preset.

Condition	Illumination
Selected	● (Orange light on)

17 SELECT Button

Used to choose the selection target for CAMERA / PRESET Select Buttons 1-10. Every time the SELECT button is pressed, the target selection changes in the following order.

CAMERA / GROUP Select Mode

CAMERA → CAMERA GROUP 1-10 → CAMERA GROUP 11-20 → back to the beginning.

PRESET / GROUP Select Mode

PRESET → PRESET GROUP 1-10 → back to the beginning.

Additionally, pressing and holding down the button switches between CAMERA / GROUP selection mode and PRESET / GROUP selection mode.

Condition	Illumination
Selection target: GROUP	● (Orange light on)
Selection target: CAMERA or PRESET	● (Off)

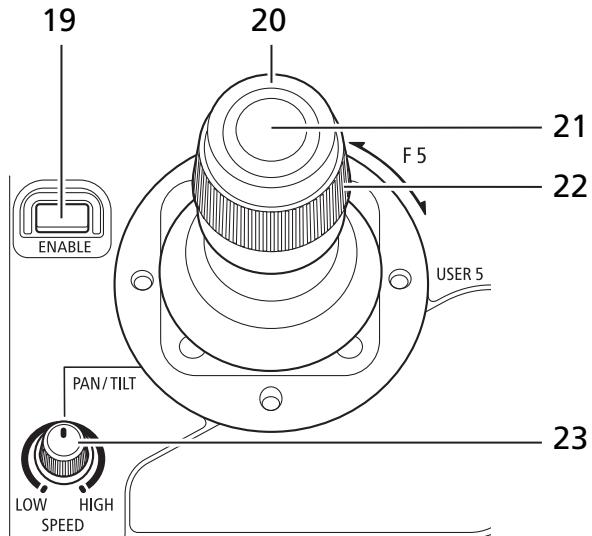
- You can switch between the SELECT button's normal press and long press operations from [SELECT] (P. 64) in the SYSTEM menu.

18 Group Lamps 1 to 10, 11-20 Lamp

Indicates the selected group. When the 11-20 lamp is illuminated, the group lamps 1 to 10 indicate the status of groups 11 to 20.

Condition	Illumination
Selected	● (Green light on)

■ Pan/Tilt Operation Area



19 Pan/Tilt Operation Area **ENABLE** Button

Switches the pan/tilt operation mode between pan/tilt mode and cropping frame adjustment mode.

Additionally, pressing and holding down the button disables operation of the pan/tilt operation area.

Condition	Illumination
Pan/tilt mode	● (Orange light on)
Cropping frame adjustment mode	● (Green light on)
Operation disabled	● (Off)

21 **USER 5** Button

Performs the function assigned to the button.

22 **F5** Dial

Performs the function assigned to the dial. The operation direction and speed of the assigned function is adjusted from [F5 Direction] / [F5 Speed] (P. 67) in the SYSTEM menu.

23 Pan/Tilt **SPEED** Dial

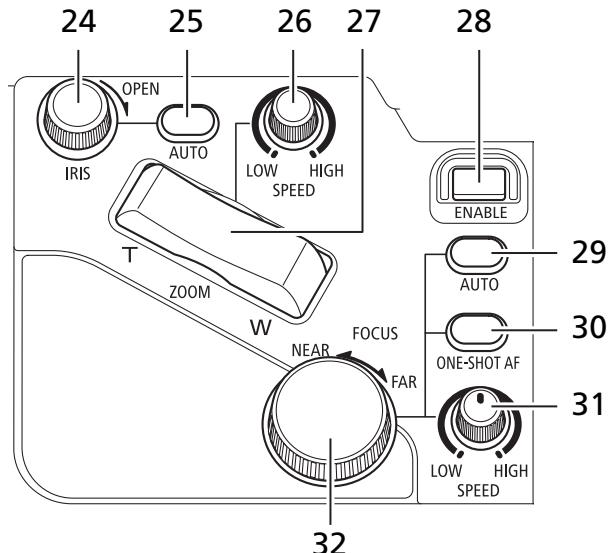
Adjusts the operation speed of the PAN / TILT lever (for pan/tilt adjustment and cropping frame position adjustment).

20 **PAN / TILT** Lever

Pan/tilt control. The pan/tilt operation speed changes according to the pan/tilt SPEED dial settings and the inclination of the PAN / TILT lever.

- You can change the operation direction for [Pan Direction] and [Tilt Direction] (P. 67) in the SYSTEM menu.
- During cropping frame adjustment mode (P. 59), it is used to adjust the position of the cropping frame.

Iris/Zoom/Focus Operation Area



24 IRIS Dial

Used to adjust the iris manually (during manual iris). Turning the dial clockwise or counter-clockwise, you can respectively open up or close down the aperture.

- The operation direction can be changed from [Iris Direction] (P. 67) in the SYSTEM menu.

25 AUTO Iris Button

Switches the iris adjustment method between automatic and manual.

Condition	Illumination
Auto iris	● (Orange light on)
Manual iris	● (Off)

26 Zoom SPEED Dial

Adjusts the zooming speed when operating the ZOOM rocker.

27 ZOOM Rocker

Adjusts the zoom position. The zoom operation speed changes according to the zoom SPEED dial settings and the amount of pressure on the rocker.

- The operation direction can be changed from [Zoom Direction] (P. 67) in the SYSTEM menu.
- During cropping frame adjustment mode (P. 59), it is used to adjust the size of the cropping frame.

28 Iris/Zoom/Focus Operation Area ENABLE

Button

Enables or disables operation of the Iris/Zoom/Focus Operation Area.

Condition	Illumination
Operation is enabled	● (Orange light on)

29 AUTO Focus Button

Switches the focus adjustment method between automatic and manual. During autofocus, operation of the FOCUS dial is disabled.

Condition	Illumination
Autofocus	● (Orange light on)
Manual focus	● (Off)

30 ONE-SHOT AF Button

Pressing this button allows you to automatically adjust the focus temporarily.

Condition	Illumination
In execution	● (Orange light on)

31 Focus SPEED Dial

Adjusts the operation speed when adjusting the focus with the FOCUS dial.

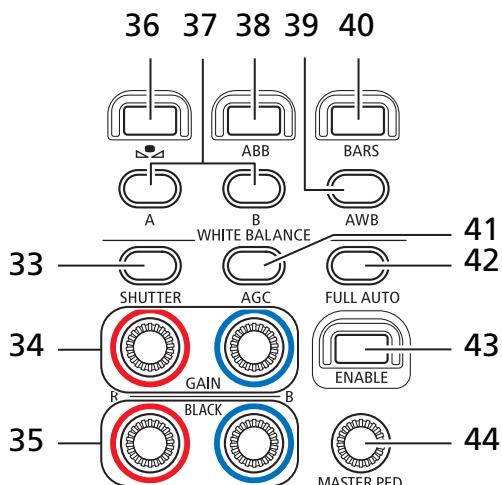
32 FOCUS Dial

During manual focus, adjusts the focus manually. Turning the dial clockwise or counter-clockwise, you can respectively focus farther or closer.

- The operation direction can be changed from [Focus Direction] (P. 67) in the SYSTEM menu.

■ Camera Settings Area

Perform settings on the selected camera.



33 SHUTTER Button

Switches the shutter mode.

Condition	Illumination
Shutter Mode set to an option other than off	● (Orange light on)

34 R GAIN Dial / B GAIN Dial

Adjusts the CAMERA menu > [White Balance: R Gain] / [B Gain] (P. 83) settings. Turning the dial clockwise increases the value. Pressing the dial resets the value to 0.

35 BLACK R Dial / BLACK B Dial

Adjusts the CAMERA menu > [Master Black Red] / [Master Black Blue] (P. 82) settings. Turning the dial clockwise increases the value. Pressing the dial resets the value to 0.

36 (Custom White Balance) Button

When the white balance mode is Set A or Set B, you can press the button to register the standard white balance on the selected camera.

Condition	Illumination
In execution	● (Orange light on)

37 A (Set A) Button / B (Set B) Button

Switches the white balance mode to Set A or Set B. Additionally, pressing and holding down the A or B button respectively sets the white balance to tungsten (approx. 3,200 K) or daylight (approx. 5,600 K).

Condition	Illumination
Using registered white balance	● (Orange light on)
A Button: Tungsten in use B Button: Daylight in use	● (Green light on)

38 ABB Button

Used to perform the assigned function.

Condition	Illumination
Depends on the assigned function	● (Orange light on)

39 AWB Button

Switches the white balance mode to automatic. Pressing and holding down the button switches the color temperature to the one set for [Color Temperature (K)] (P. 81) in the CAMERA menu.

Condition	Illumination
AWB is on	● (Orange light on)
Specified color temperature	● (Green light on)

40 BARS Button

Switches video output from the camera to color bars.

Condition	Illumination
Color bars output	● (Orange light on)
Shooting video output	● (Off)

41 AGC (Auto Gain Control) Button

Switches the ISO/Gain adjustment method between automatic and manual.

Condition	Illumination
AGC is on	● (Orange light on)

42 FULL AUTO Button

Switches the camera to Full Auto mode.

Condition	Illumination
Full Auto mode on	● (Orange light on)

43 Camera Settings Area **ENABLE Button**

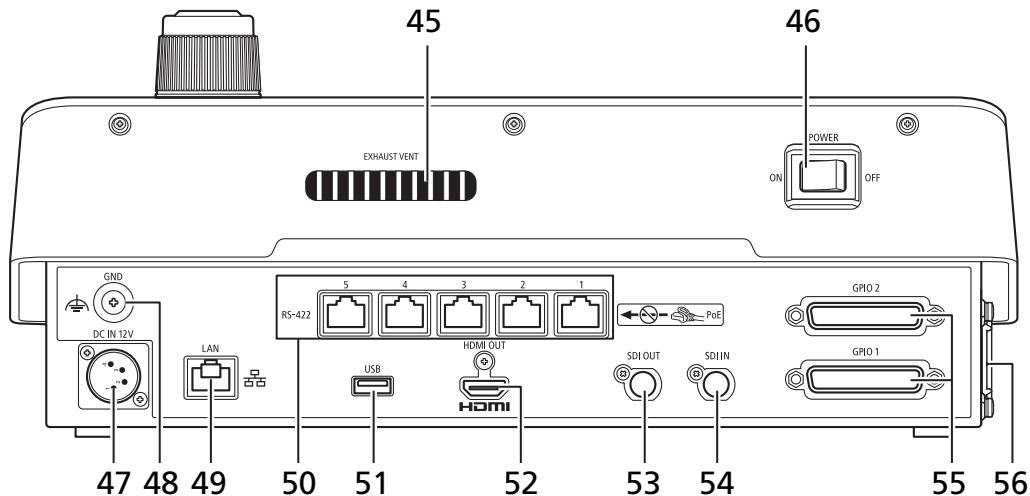
Enables or disables operation of the Camera Settings Area.

Condition	Illumination
Operation of the Camera Settings Area enabled	● (Orange light on)

44 **MASTER PED. Dial**

Adjusts the CAMERA menu > [Black: Master Pedestal] (P. 82) settings. Turning the dial clockwise increases the value. Pressing the dial resets the value to 0.

Terminals Area



45 EXHAUST VENT

Important

While the cooling fan is running, warm air is discharged through the EXHAUST VENT. Do not block the EXHAUST VENT using tape or other objects.

46 POWER Switch

Turns the device on/off.

47 DC IN 12V Terminal (P. 23)

Power terminal for use with an external DC power supply.

48 GND Terminal

The device's ground terminal.

49 LAN Terminal

Terminal used for network connection (RJ-45 connector). You can connect it to a hub compatible with PoE+ (Power over Ethernet+) to supply power to the device (P. 24).

Use a LAN cable of category 5e or higher. When supplying power via PoE+, use an STP cable. The use of STP cables is recommended even if PoE+ power supply is not used.

50 RS-422 1 / 2 / 3 / 4 / 5 Terminals (P. 97)

Serial terminal with RS-422 support (RJ-45 connector). Use of category 5e or higher STP cables is recommended.

Important

Do not connect a PoE power supply LAN cable to the RS-422 terminals. This may cause malfunctions.

51 USB Terminal (Rear)

You can connect an external device or a USB memory to the terminal. You can use a USB memory formatted with FAT32 or exFAT.

52 HDMI OUT Terminal

Terminal for HDMI output.

53 SDI OUT Terminal

Terminal for SDI output.

54 SDI IN Terminal

Terminal for SDI input.

55 GPIO 1 Terminal, GPIO 2 Terminal (P. 94)

You can connect to an external device to send and receive tally information, CAMERA / PRESET selection information and GROUP selection information. Use shielded cables for connection with this terminal.

56 AIR INTAKE / Intake Fan

Important

Do not block the AIR INTAKE using tape or other objects.

Chapter 2

Preparations

This chapter explains the installation, connection and initialization of the device.

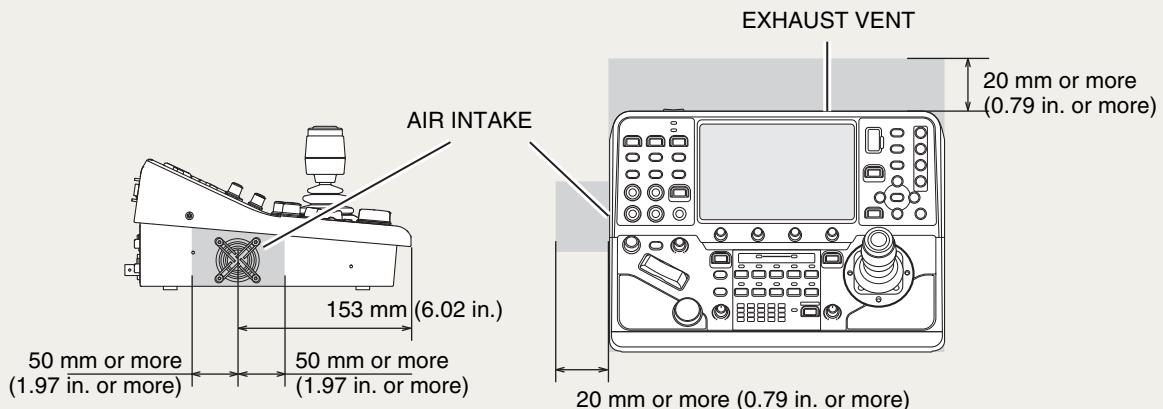
Installation

When installing the device, make sure to follow the cautions listed in "Safety Instructions" (P. 2) and "Handling Precautions".

Important

When installing the device, make sure to allow for ventilation by leaving space for the EXHAUST VENT and the AIR INTAKE as follows.

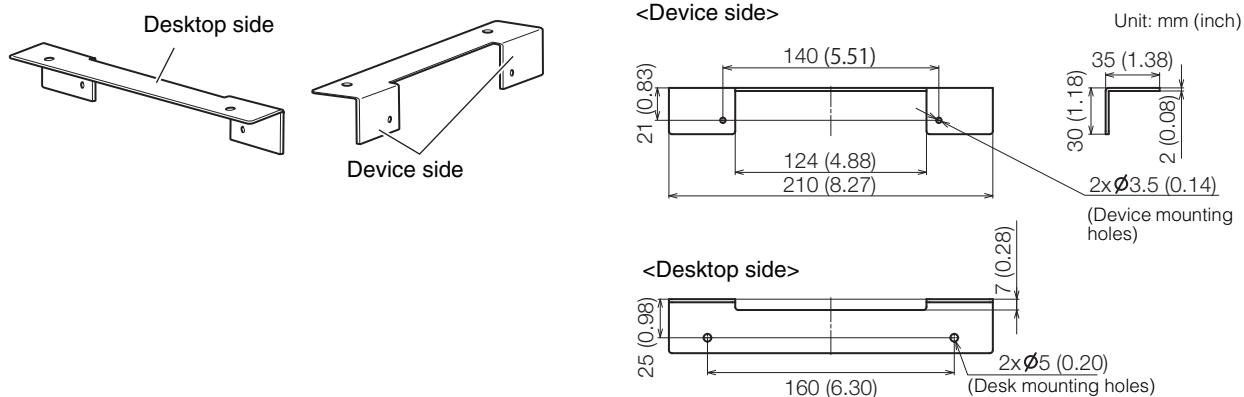
- AIR INTAKE: 20 mm (0.79 in.) or more (50 mm (1.97 in.) or more around the center of the fan)
- EXHAUST VENT: 20 mm (0.79 in.) or more



Embedding the Device in a Desktop

You can embed the device in a desktop. For desktop dimensions and screw sizes, refer to the specifications of the desktop.

- 1 Make mounting angles for the installation (see the reference diagram below).



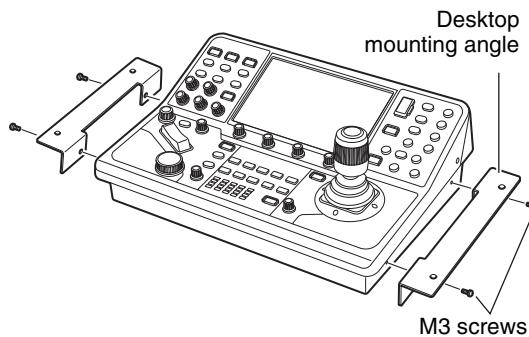
- Refer to "Dimensions" (P. 98) for details on the device's dimensions.

Important

The mounting angles should be arranged so that they do not block the EXHAUST VENT.

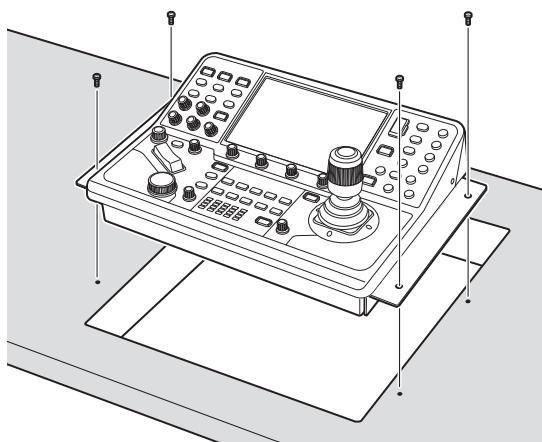
2 Attach the mount angles to both sides of the device (using four 6 mm (0.24 in.)* long M3 screws).

* Recommended length for mounting angles with a thickness of 2 mm (0.08 in.).



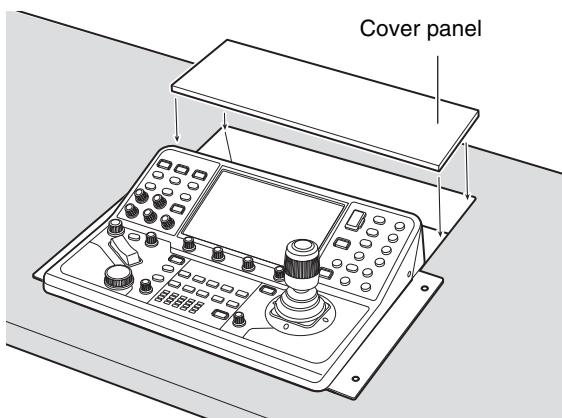
- Do not over-tighten the screws. Doing so may damage the device.

3 Insert the device into the desktop hole, then fix it in place using four screws.



- Be sure to use screws suitable for the desktop mounting holes (e.g. ϕ 5 mm (0.02 in.)).
- Make sure that cables can be connected or disconnected from each terminal after being embedded in the desktop.

4 If necessary, make and attach a panel to cover the rest of the hole.



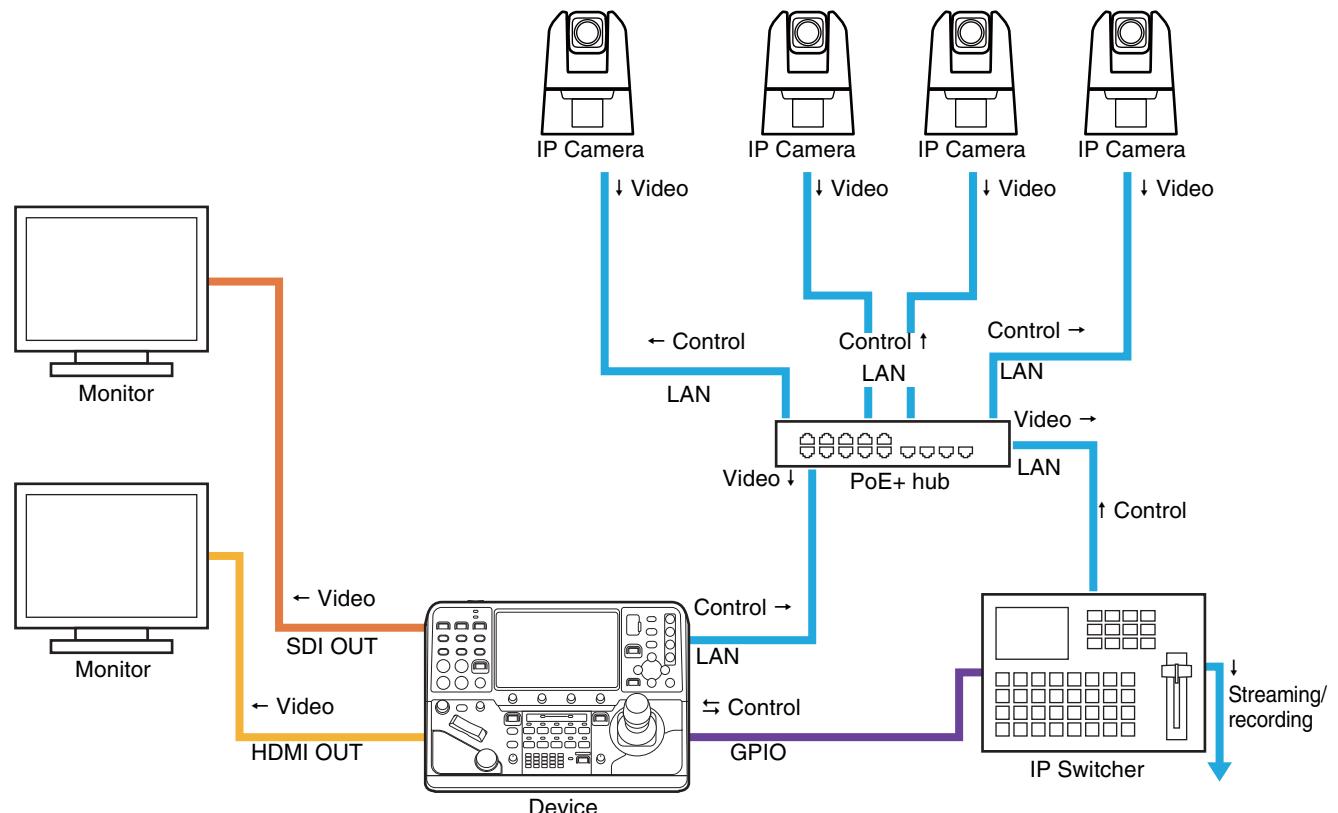
Connections

This section explains system configuration examples, as well as power supply methods. Communication with cameras* is done using XC protocol for IP connections, and NU protocol for serial connections.

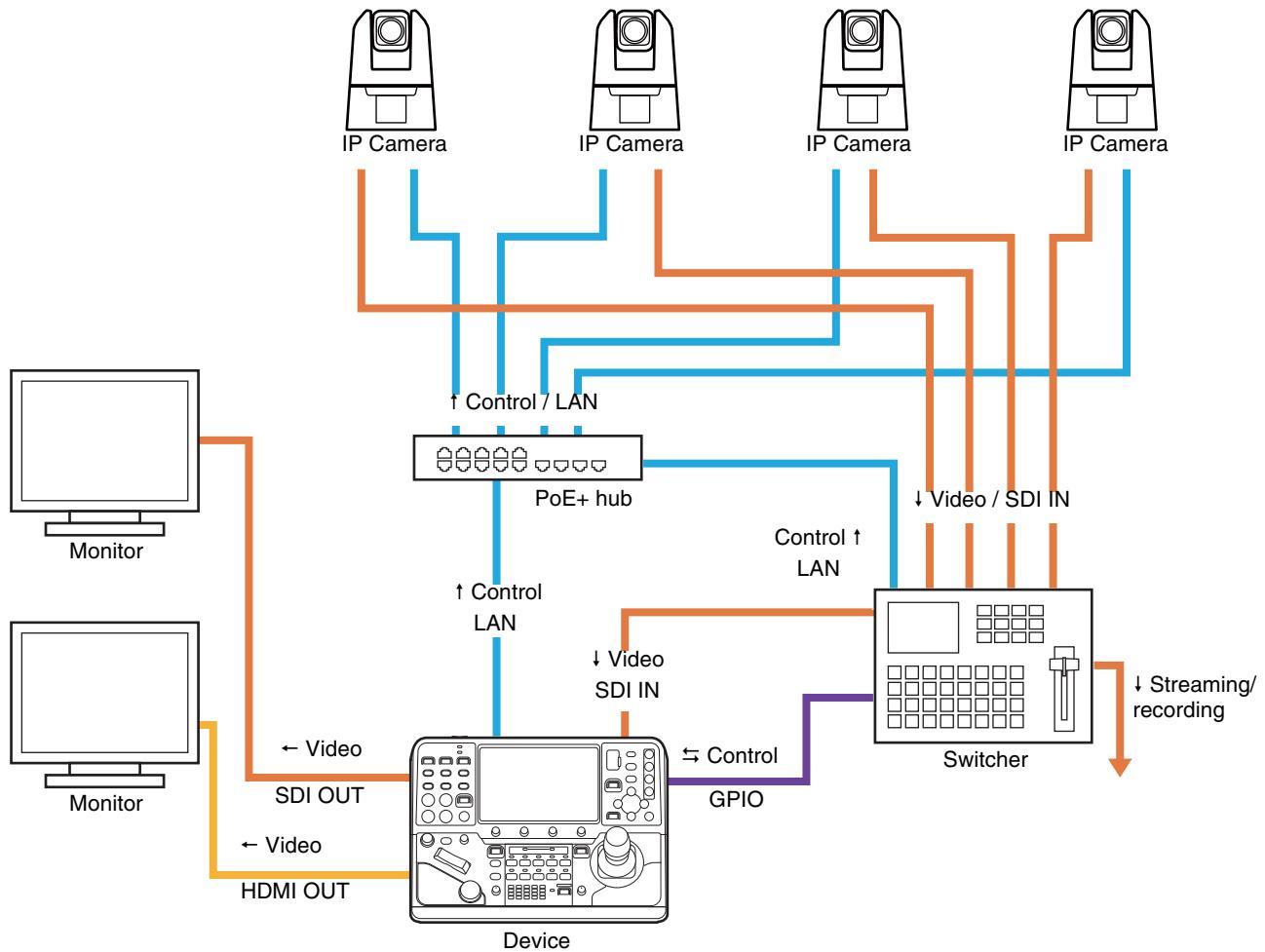
* In the example below, the terms "IP camera" and "serial camera" are used for convenience depending on the connection type for communication with the camera.

IP Connection System Example (Multiple Remote Cameras)

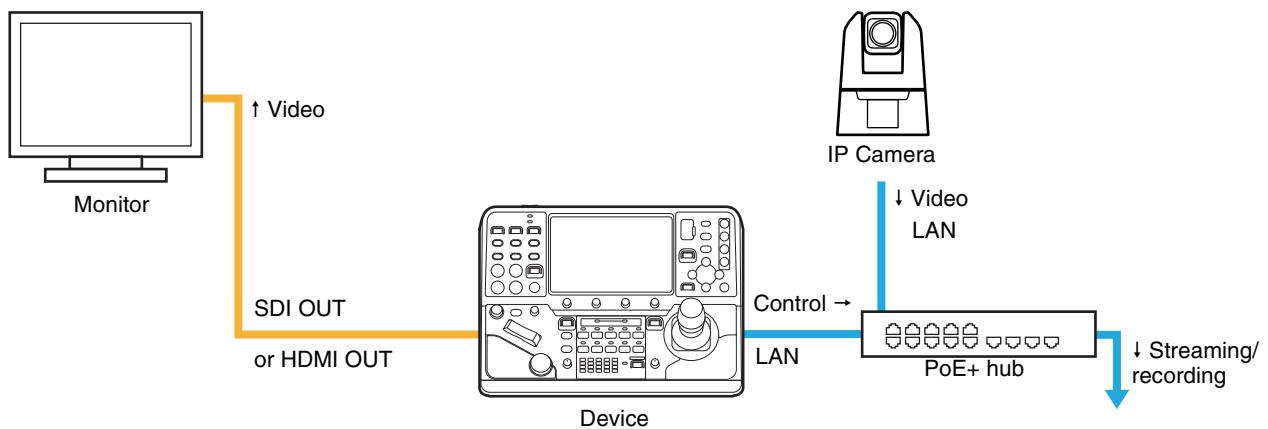
For IP Video Transmission



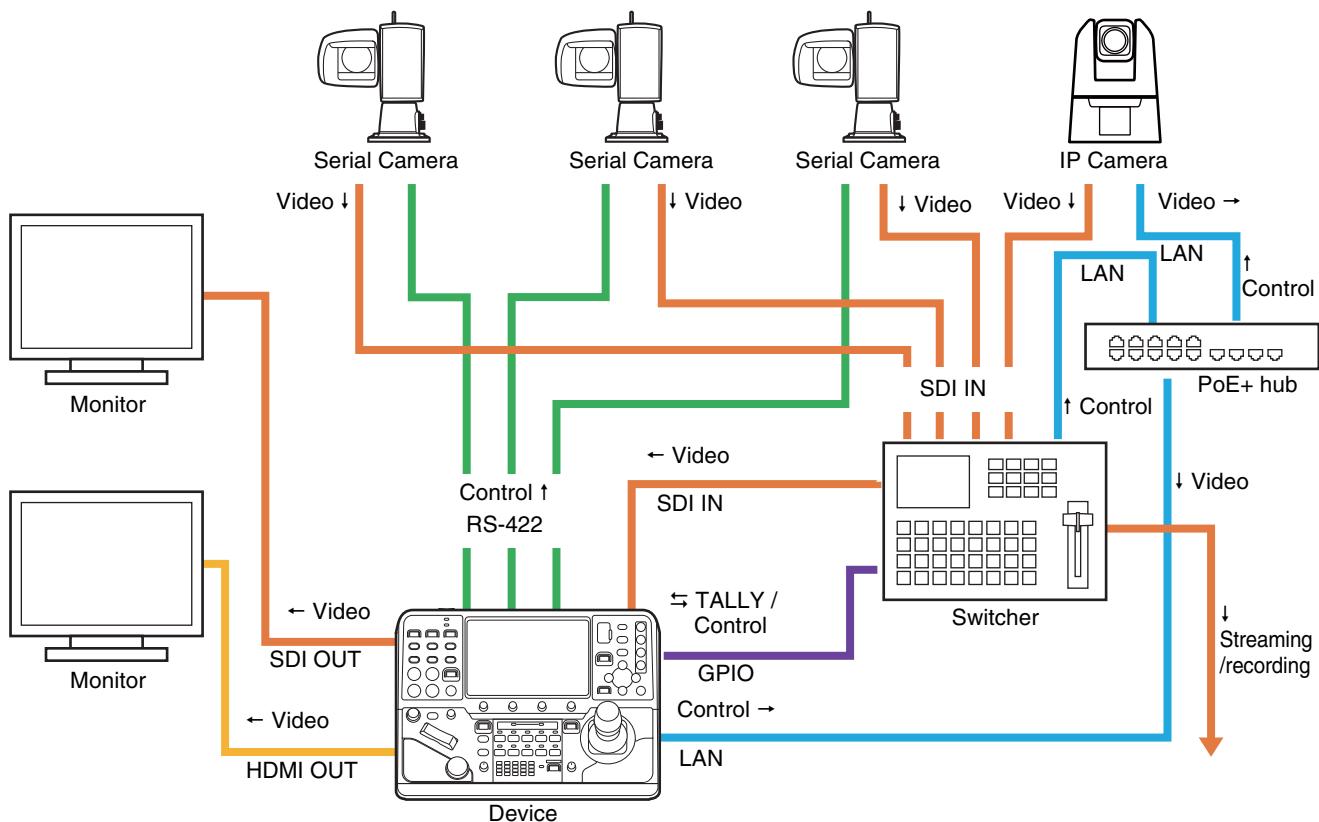
■ For SDI Video Transmission



IP Connection System Example (Single Remote Camera)



Serial Connection System Example

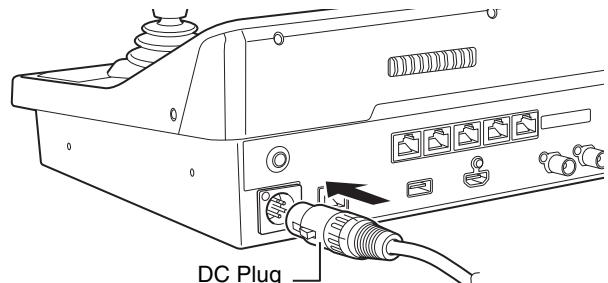


Connecting to the Power Supply

Power can be supplied to the device through the DC IN 12V terminal or the LAN terminal (PoE+).

■ DC Power Supply from the DC IN 12V Terminal

Connect an external DC power supply to the DC IN 12V terminal (P. 93, 97) to supply power to the device.



Important

- Connect to a power supply that meets the installation site requirements (approved products and the environment) and product specifications.
- Inrush current may cause the power supply to be insufficient and cause failure when power is turned on. Therefore, it is recommended to use a power supply with a power capacity of two to three times the rated capacity or more.
- Make sure to turn the device off when connecting or disconnecting the connector of the DC IN 12V terminal.

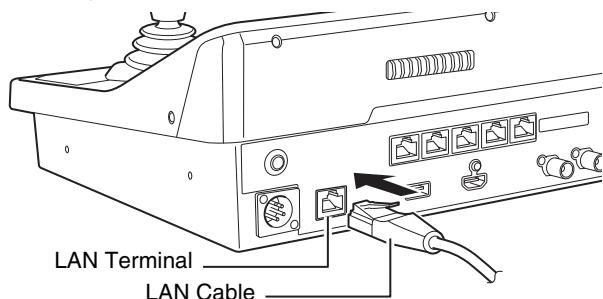
Note

During PoE+ power supply, when a power supply has been connected to the DC IN 12V terminal, power is supplied from the DC IN 12V terminal after the power is turned off.

■ Power Supply from the LAN Terminal (PoE+)

The LAN terminal's built-in PoE+ (Power over Ethernet+) function allows the device to be powered by a PoE+ hub that complies with IEEE802.3at Type 2 via a LAN cable (P. 93).

Use a category 5e (or higher) STP LAN cable, up to 100 m (328 ft.) in length.



Important

- Some PoE+ hubs can limit the power for each port, but applying limits may interfere with performance. In this case, do not limit the power.
- Some PoE+ hubs have limits for the total power consumption for the ports, which can interfere with performance when multiple ports are in use. For details, refer to the instruction manual of the corresponding PoE+ hub.

Note

- When supplying power from both the DC power supply and the PoE+ hub, the DC power supply takes priority. If the DC power supply stops while both are connected, power supply will switch to PoE+ and the device will be restarted.
- Some functions are restricted when using PoE+ power supply. You can select the restricted functions from [PoE+ Restrictions] (P. 68) in the SYSTEM menu.

Turning On/Off the Device

■ Turning On the Device

1 Set the POWER switch to ON.

- The device is started and the POWER lamp illuminates.
- The status page of the top menu is displayed on the LCD panel when startup is complete. You can change the displayed screen from [Initial Screen] in the SYSTEM menu (P. 68).

Note

After turning on the power, do not operate the device until the top menu is displayed on the LCD panel. If you touch the joystick or zoom rocker, the center position check is not performed correctly during power on.

■ Turning Off the Device

1 Set the POWER switch to OFF.

- The device is stopped and the POWER lamp goes out.
- Turning off the device will not turn off any connected cameras.

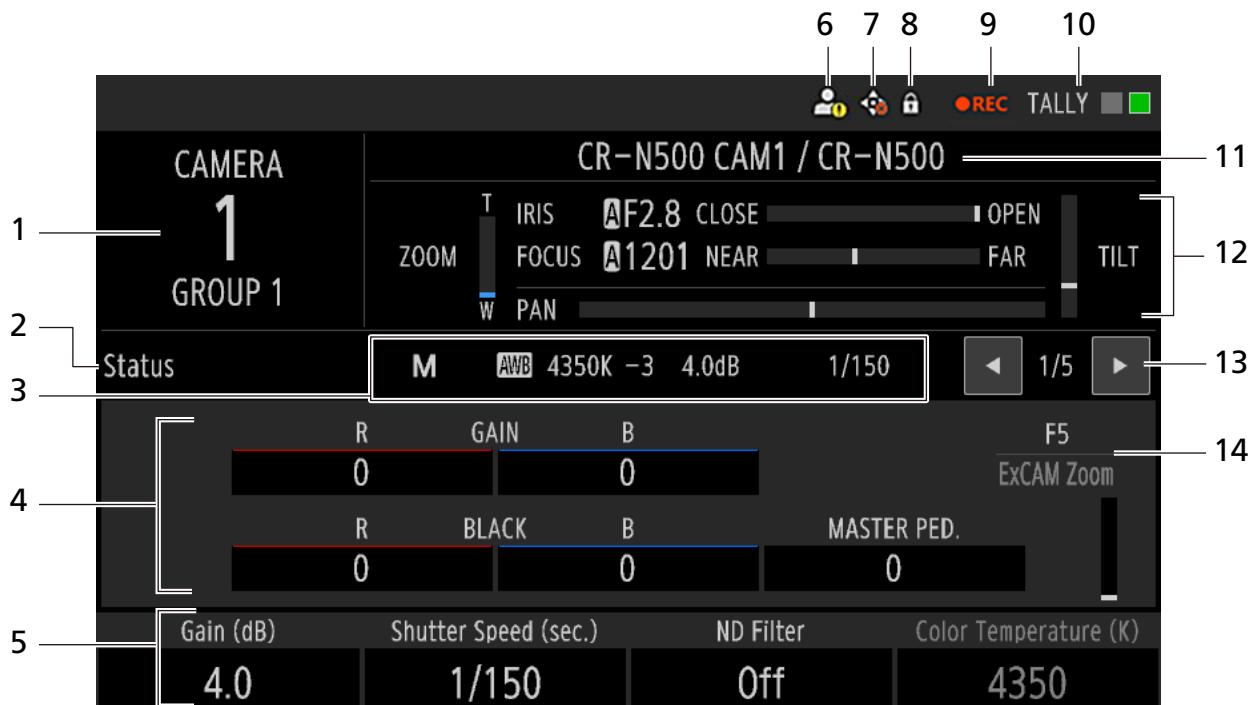
Checking Screen Displays and Basic Operations

This section describes each screen displayed on the device's LCD panel. If character strings received from a connected device contain characters that cannot be displayed by the device, they may be replaced with characters that can be displayed.

Checking/Operating the Top Menu

■ Displaying/Operating the Status Screen

The status screen of the top menu is displayed on the LCD panel when you turn on the device.



1 Camera Number, Group Name

The selected camera number and group name are displayed.

2 Screen Name

The screen name of the currently displayed top menu is displayed.

3 Direct Setting Mode (P. 32)

Shooting mode, white balance, ISO/gain and shutter speed settings are displayed and can be changed.

4 Color Adjustment Settings

White balance (R gain/B gain), Master Black (Red/Blue) and Master Pedestal setting values are displayed.

5 Assigned Functions for the F1-F4 Dials and Setting Values

Turning each dial adjusts the values of the corresponding functions. Displayed in gray when disabled. If the selected camera is not equipped with the corresponding function, or if disconnected, “-” is displayed.

6 Authentication Warning

Displayed when the currently selected camera could not be authenticated with the administrator/user name and password. Additionally,  is displayed on SYSTEM menu > [Camera Connect. Details] tab > [Administrator Name/User Name] and [Password].

7 Camera Error

If a pan/tilt operation error occurs on the selected camera,  is displayed.

If a high temperature warning occurs on the selected camera,  is displayed.

8 Protect

Displayed when [Operation Mode] (P. 68) is set to an option other than [Full Control].

9 Shooting Status

The camera's shooting status is displayed.

Display	Meaning
 REC	Shooting
(no display)	<ul style="list-style-type: none">• Shooting paused• The camera is unable to record• The camera has no recording function

10 TALLY Status

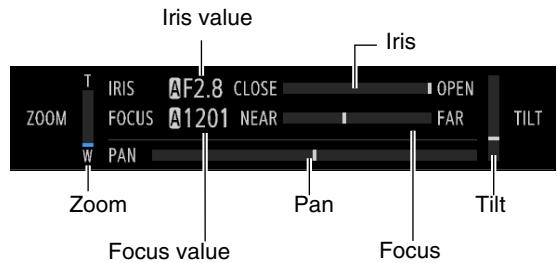
The camera's tally status is displayed.

Display	Meaning
TALLY 	PGM Tally + PVW Tally
TALLY 	PVW Tally
TALLY 	PGM Tally
TALLY 	No tally

11 Camera Name, Model Number

12 Iris, Focus, PTZ Information

Iris value, focus value, and the approximate settings for iris, focus, pan, tilt and zoom are displayed.



13 Screen Switch / Buttons, Current Screen Position/Total Screen Number

Pressing the  button switches to the next screen in the following order (pressing the  button switches to the previous screen).

Status → USER 1-10 → Camera List → Control
→ Preset List → Back to the beginning.

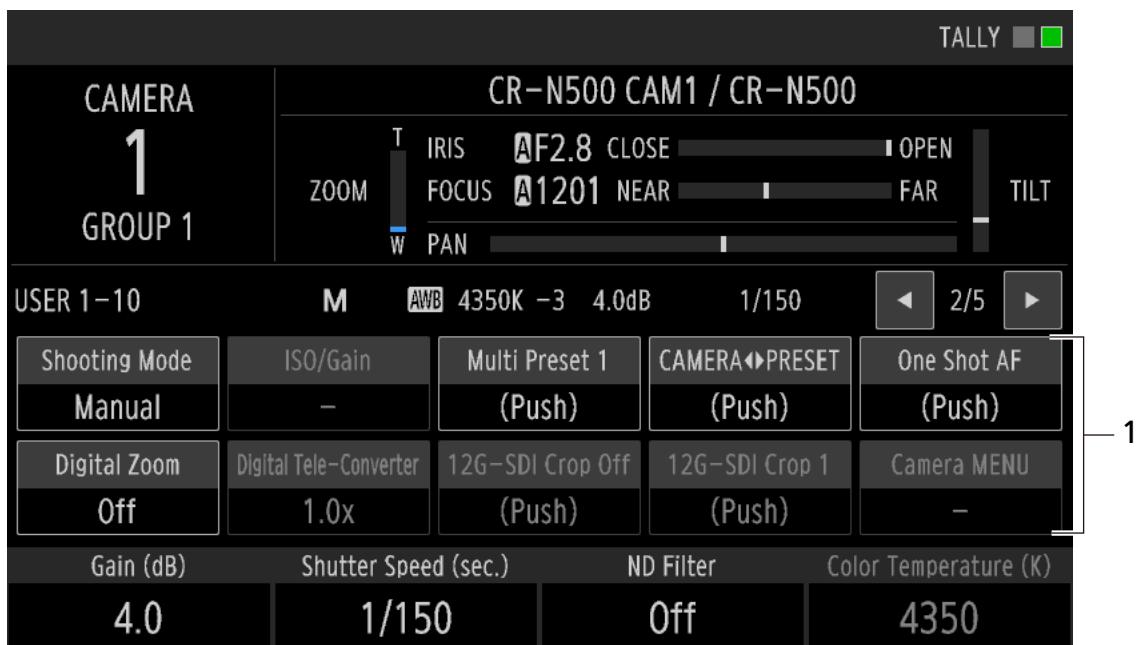
You can also switch screens using the  /  buttons on the menu operation area.

14 F5 Dial Assigned Function

When [ExCAM] is set, a bar indicates the approximate setting value of the function assigned to [ExCAM].

USER 1-10 Screen Display/Operation

This section explains about the display/operation of the USER 1-10 screen.



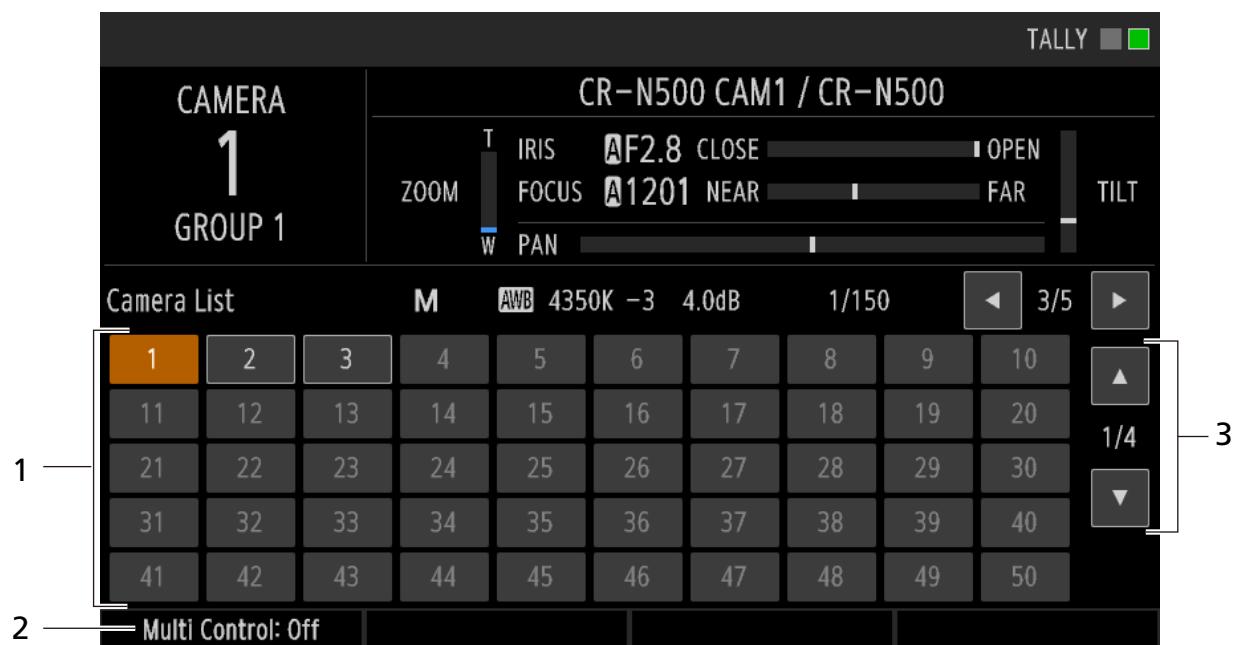
1 USER 1 to USER 10 Buttons

Functions assigned to buttons USER 1 to USER 10 are displayed. Press the desired button to execute the assigned function or to switch the setting value.

- In the case of functions with an “on/off” status, when set to on, the background color will change to orange.
- When set to off, it will change to gray. If the selected camera is not equipped with the corresponding function, or if disconnected, “-” is displayed.

■ Camera List Screen Display/Operation

This section explains about the display/operation of the Camera List screen.



1 CAMERA Select Buttons

Camera selection buttons (showing the camera number) are displayed. 50 buttons are displayed per page.

You can touch the buttons to select the desired camera.

	Normal (Multi Control: Off)	Multi Control
1	Camera registered (not selected)	Camera registered (not selected)
2	Camera registered (selected)	Camera registered Control target
1	–	Camera registered (selected)
8	Camera not registered (not selected)	Camera not registered (not selected)
22	Camera not registered (selected)	Camera not registered Control target
21	–	Camera not registered (selected)

Operation of the CAMERA select buttons depends on the [Multi Control] settings.

Multi Control	Setting values / Description
Off Group	If you press a CAMERA select button in the same group as the currently selected camera: The corresponding camera is selected. If you press a CAMERA select button in a different group from the currently selected camera: The corresponding camera is selected, and the camera group is switched.
Select	If you press a CAMERA select button in the same group as the currently selected camera: The corresponding camera is selected for Multi Control. Press the button again to cancel the selection. If you press a CAMERA select button in a different group from the currently selected camera: The corresponding camera is selected, and the camera group is switched.

2 Multi Control

Turning the F1 dial switches the Multi Control mode. The settings are common to the [Multi Control] setting on the PICTURE screen.

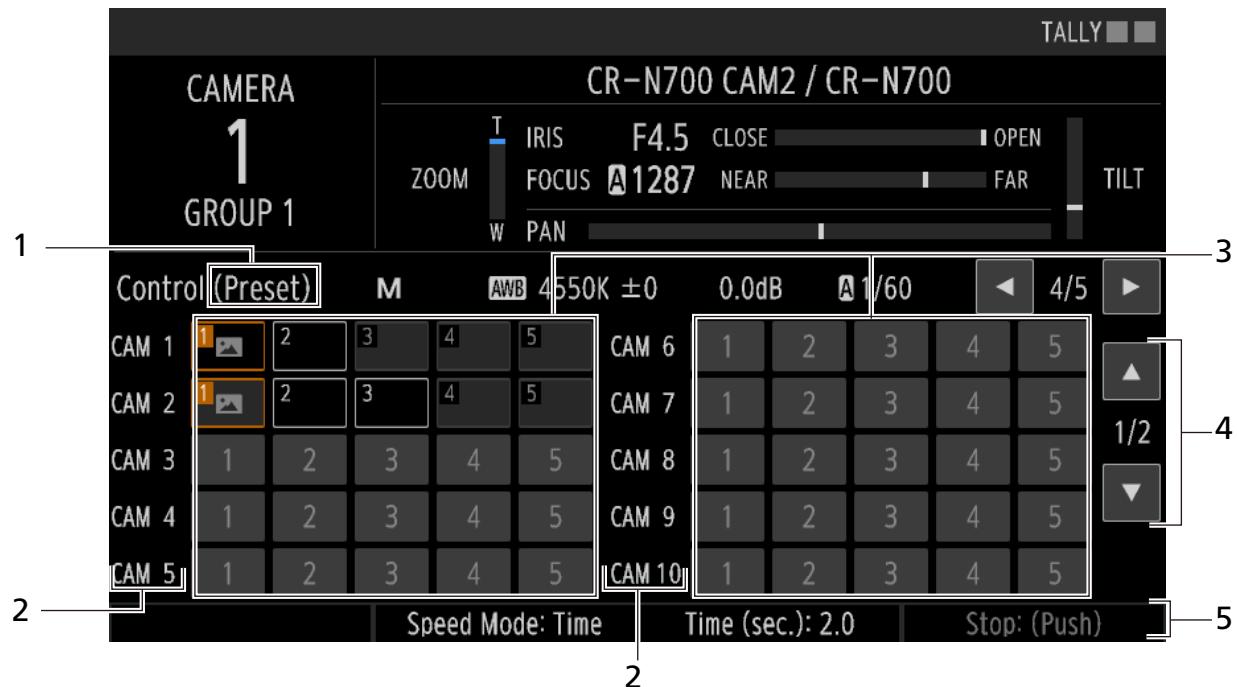
3 Page Switch ▲ / ▼ Buttons, Current Page Position/Total Page Number

Switches to the previous/next page. You can also switch lists using the ▲ / ▼ buttons on the menu operation area.

Control Screen Display/Operation

This section explains about the display/operation of the control screen. The control screen has a preset page and a trace page, which display a list of 10 cameras belonging to the selected group and 1 to 5 presets or 1 to 4 traces registered to them. The desired preset/trace can be executed.

Preset Page Display/Operation



1 Page Name

Displays the page name.

2 Camera Number

The camera number of 10 cameras in the currently selected group is displayed.

3 Preset Button

You can execute presets 1 to 5 registered on each camera. Selects/executes a preset. Pressing and holding down a button without an assigned preset registers the current settings in the preset. Buttons are displayed in the same way as in the preset list screen (P. 31).

4 Page Switch Buttons

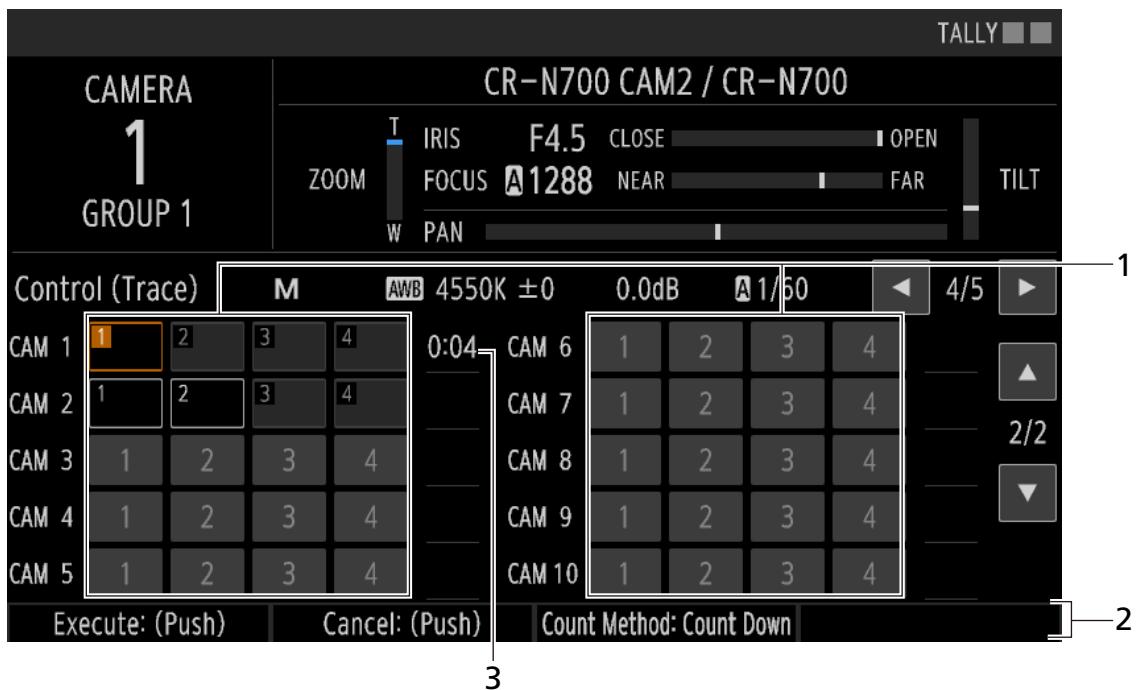
Switch between the preset page and the trace page.

5 Assigned Functions (F2-F4) and Setting Values

Turning each dial adjusts the values of the corresponding functions. Setting items are the same as in the [Preset List] tab in the PRESET / TRACE menu.

F4 ([Stop: (Push)]) is executed at once for all cameras in the group that are currently running a preset.

Trace Page Display/Operation



1 Trace Button

You can select trace 1 to 4 registered on each camera. Buttons are displayed in the same way as in the [Trace List] tab (P. 78) in the PRESET / TRACE menu. Pressing a button prepares tracing on the corresponding camera. Pressing the F1 dial ([Execute]) executes tracing simultaneously on cameras that are ready to trace.

2 Assigned Functions (F1-F3) and Setting Values

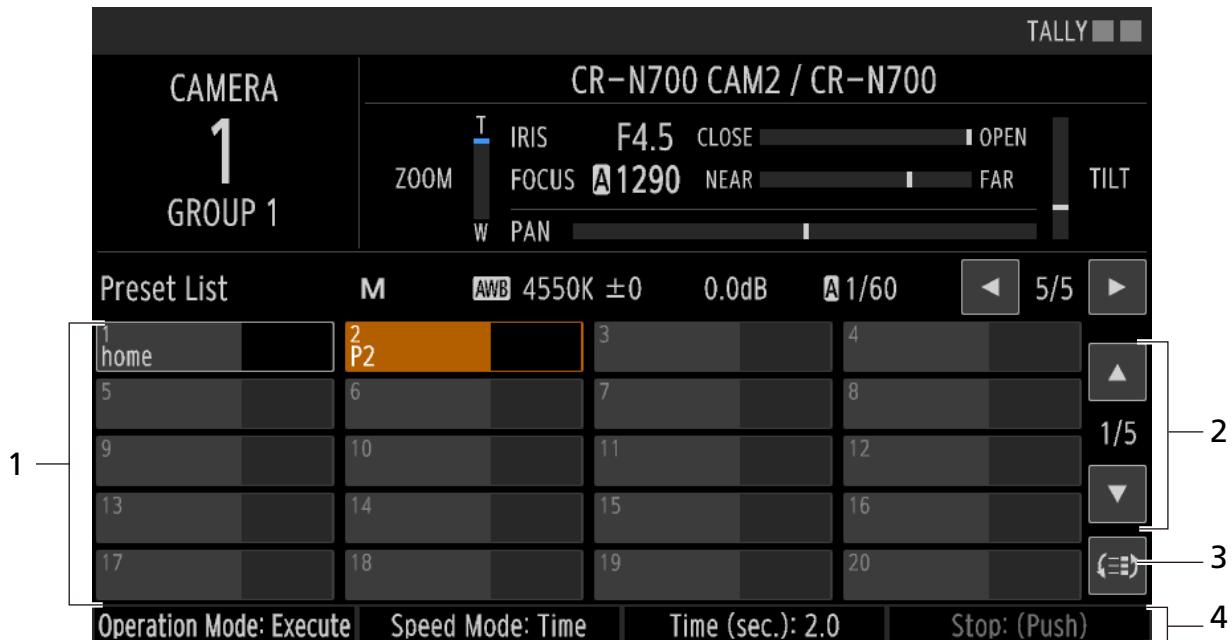
Turn the dials to change the settings, and press them to execute a function. Setting items are the same as in the [Trace List] tab in the PRESET / TRACE menu.

3 Trace Execution Time

The trace execution time is displayed when trace is selected. A count up or count down timer (depending on the count method) is displayed when trace execution starts, and disappears when trace ends.

■ Preset List Screen Display/Operation

This section explains about the display/operation of the preset list screen.



1 PRESET Select Buttons

Preset selection buttons (showing the preset number and name) are displayed. 20 buttons are displayed per page.

Pressing a button selects and executes a preset. When [Operation Mode] is set to [Execute], pressing and holding a button with no preset registered will register the current settings as a preset. If a preset is already registered, you can overwrite it after the confirmation screen is displayed.

Display	Meaning
1 home	Not selected
2 P2	Selected (Executing)
3	Preset not registered
4	Preset not registered (when [Operation Mode] is set to [Add])

When a thumbnail is registered to a preset, it is displayed on the button.

2 Page Switch ▲ / ▼ Buttons, Current Page Position/Total Page Number

Switches to the previous/next page. You can also switch lists using the ▲ / ▼ buttons on the menu operation area.

3 Preset Display Number Switch Button

Switches the amount of preset buttons shown per page between 9, 20 and 50. When showing 50 buttons, only the preset number is displayed on each button.



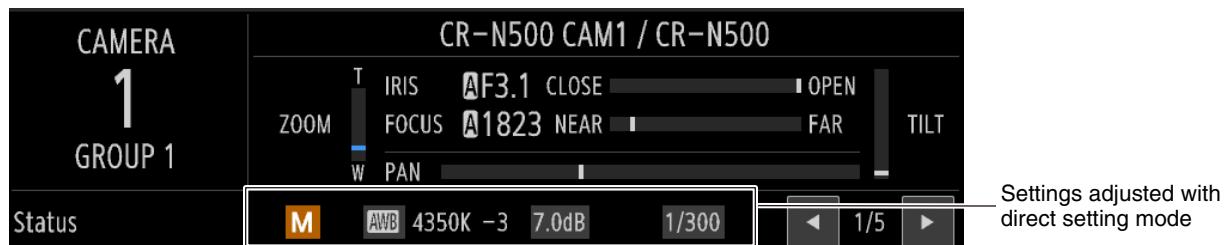
4 Assigned Functions (F1-F4) and Setting Values

Turn the dials to change the settings, and press them to execute a function. Setting items are the same as in the [Preset List] tab in the PRESET / TRACE menu.

■ Changing Shooting Settings with Direct Setting Mode

You can directly adjust exposure/white balance settings* on the top menu. The **▲**, **▼**, **◀**, **▶**, SET and BACK buttons are used for this operation.

* Shooting mode, white balance (mode, color temperature, CC, R gain, B gain), ISO/gain and shutter speed.



1 Press the SET button while the top menu is displayed.

- Direct setting mode is enabled and the background color of adjustable items changes to orange.

2 Press the **◀** / **▶** buttons to select the desired setting.

3 Press the **▲** / **▼** buttons to select the setting values.

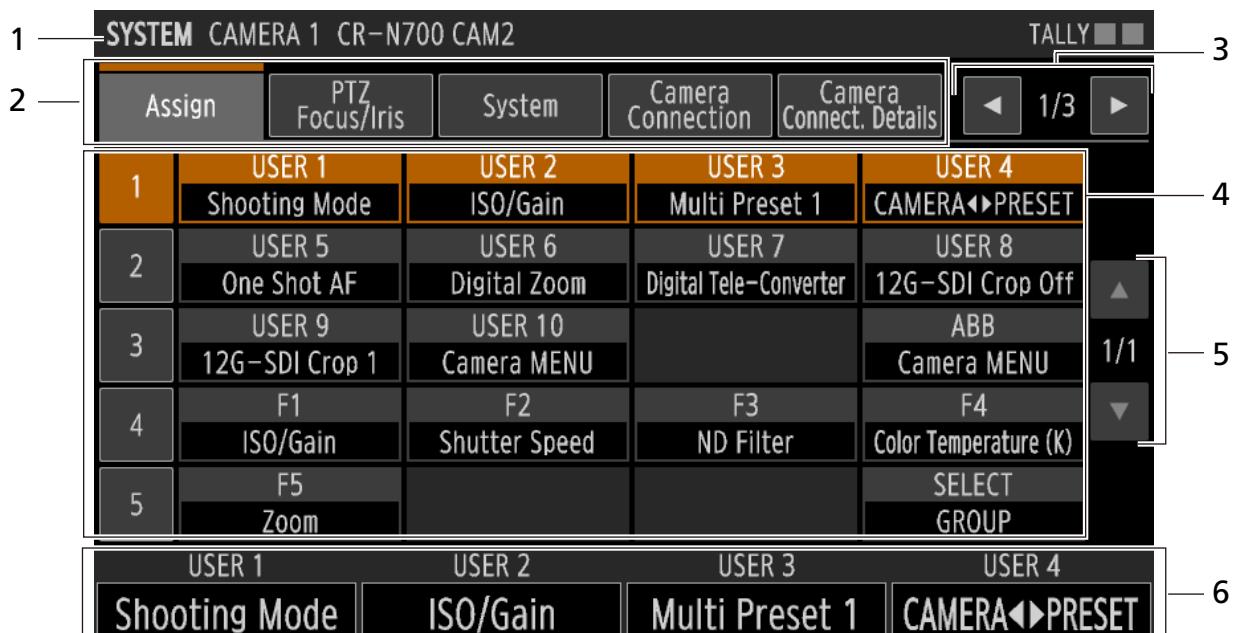
- The selected setting value is changed.

4 Press the SET button to end direct setting mode.

- You can also press the BACK button.

Changing Settings on the Menu

You can set various functions of the device using the menu. This section explains basic menu operations.



1 Menu Name, Camera Number, Camera Name

The current menu name and the selected camera number/name are displayed.

2 Tab Buttons

Touching a tab button switches the menu tab. The color of the selected button changes to orange. Up to five tab buttons are displayed per page.

3 Tab Page Switch **◀ / ▶** Buttons, Current Tab Page Position/Total Tab Page Number
Switches to the previous/next tab page.

4 Setting Items List
One line number button on the left and four setting item buttons are displayed per line (up to five lines are displayed per page).
Each setting item button contains the setting name (top part) and the current setting value (bottom part).

Display	Meaning
	Disabled
	Enabled (Can be set)
	Enabled (Can be set) The last setting has not been applied.
	Enabled. Multiple settings are applied at once.

5 Page Switch **▲ / ▼** Buttons, Current Page Position/Total Page Number
Switches to the previous/next page.

6 FUNCTIONS
Setting items of the currently selected line are displayed, and can be assigned to the F1-F4 dials.

■ Operating the Menu

You can use the LCD panel and the buttons on the menu operation area to operate the menu. Touch operation is also possible on the LCD panel. For details on the setting items, refer to *Menu List* (P. 63).

1 Press the desired menu button.

- SYSTEM Menu Button
- PRESET / TRACE Menu Button
- CAMERA Menu Button

2 Press the **◀ / ▶** buttons on the menu operation area to select the desired tab button.

- An orange bar will be displayed on the selected tab.
- Touch the tab page switch [**◀**] / [**▶**] buttons to switch the page, or touch the desired tab button.

3 Press the **▲ / ▼** buttons on the menu operation area to select the desired line.

- The line number button and setting items of the selected line will be displayed in orange, and the current setting values will be displayed under FUNCTION.
- Touch the page switch [**▲**] / [**▼**] buttons to switch the setting items page, or touch the desired line number button.

4 To adjust without displaying the list or slider, turn the F1-F4 dials to select the setting value.

- The selected value is set.
- Continue to step 7.

5 Press the desired F1-F4 dial or touch the desired setting item button.

- The corresponding list of setting items or slider will open (or, depending on the item, the function is executed).
- When the keyboard screen (P. 34) is displayed, perform the necessary input by touching the onscreen letters/numbers, then touch [OK].

6 Turn the dial operated on step 5 to select the desired setting value, then press the SET button (or touch the desired value on the screen to select it).

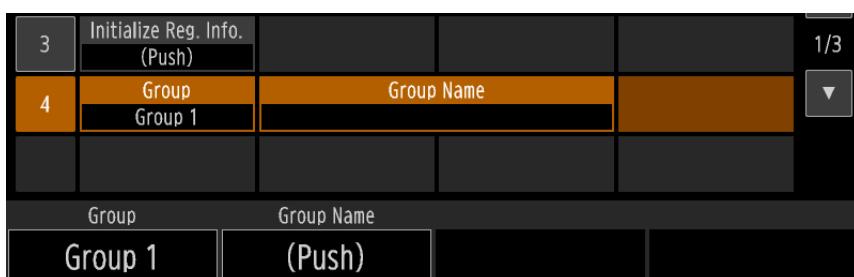
- The selected value is set.
- You can also press the **▲** / **▼** (for lists) or **◀** / **▶** (for sliders) buttons on the menu operation area, or touch the **[+]** / **[−]** buttons on the slider to perform this operation.
- To go back to the menu screen, press the BACK button or touch outside of the setting values list.

7 On the start screen, if you press the BACK button you will return to the top menu.

■ Inputting Characters

Input characters using the keyboard screen when setting names, such as group names or preset names.

1 Select the setting item line to input text.



2 Touch the desired setting item or press the corresponding F1-F4 dial.

- The keyboard screen is displayed.



3 Touch the onscreen keys to input characters.

Onscreen key	Function
A ↔ #	Switches between letters/numbers and symbols.
↑	Switches between upper and lower case characters.
□	Inputs a space.
☒	Deletes one character to the left of the cursor.
◀	Moves the input area's cursor.
▶	

- The input text is displayed in the input area at the top of the screen.
- Characters that cannot be used for setting items (displayed in gray) cannot be entered.

4 Touch [OK] or press the SET button.

- The menu screen reappears.
- If you touch [Cancel] or press the BACK button the input operation will be interrupted.

Checking Video on the PICTURE Screen

You can check camera video input to the SDI IN terminal or the LAN terminal (IP connection) on the device's LCD panel. For IP connected cameras, you can simultaneously display video of up to 9 cameras.

1 Press the PICTURE button.

- The PICTURE screen is displayed.

2 Turn the F1 dial to select the input ([SDI], [IP] or [IP Multi View]).

- You can select Multi View for IP input.

3 Use the dial corresponding to the desired setting item on the screen (F1 to F4) to change the setting.

- Turning the dials allows you to change the settings, and pressing the dials switches the options in order. The current setting value is displayed to the right of the colon (":") in the setting item.
- For items with sub-setting items ([Focus], [Crop], [Add-On]), press the dial to access the settings. To go back, select [Back].

■ Single View Checking

Display input video from the SDI IN terminal or input video of the selected camera (IP connection) on the LCD panel.



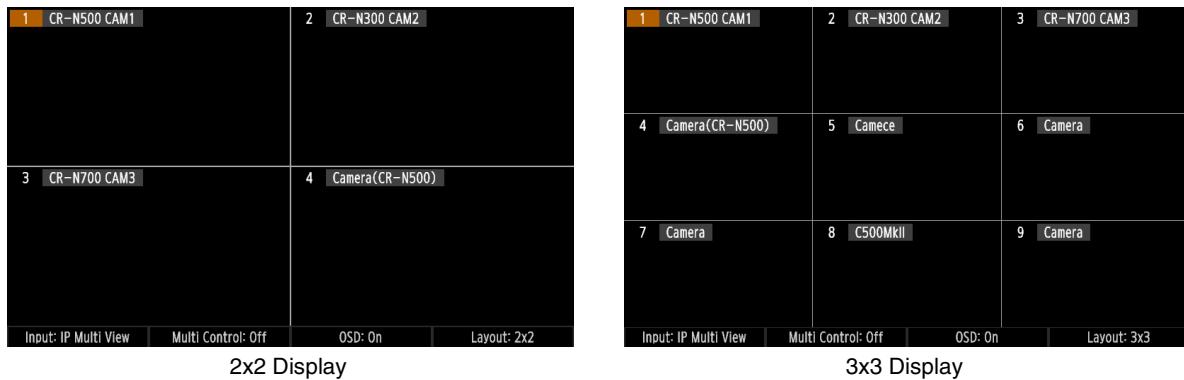
Functions operated with the F1-F4 dials.

Setting item	Setting Values / Description
Input:	SDI, IP, IP Multi View Input selection options. [SDI] and [IP] are single display settings, while [IP Multi View] allows for multiple display.
Focus	Changes the AF frame size and performs face detection and tracking operations.

Setting item	Setting Values / Description
AF Frame Size:	Same as the item of the same name in the CAMERA menu (P. 81).
Focus Guide:	
Face AF: (Face Detection:)	
Cancel Tracking:	
Crop	Sets cropping for the camera's output video.
Frame Display:	All, Crop 1, Crop 2, Vertical Crop Selects the crop frame to be displayed.
Output Selection:	12G-SDI, HDMI / 3G-SDI, IP Selects the output destination.
12G-SDI:	Same as the item of the same name in the CAMERA menu (P. 83).
HDMI / 3G-SDI:	
IP:	
Add-On	Controls Add-On applications.
Auto Tracking:	Same as the item of the same name in the CAMERA menu (P. 84).
Status:	
Auto Loop:	

Multi View Checking

For IP connected cameras, you can simultaneously display the video of 4 or 9 cameras. Setting [Input] to [IP Multi View] switches to Multi View.



Setting item	Setting Values / Description
Input:	Same as for Single View.
Multi Control:	Group: Simultaneously controls cameras belonging to the currently selected group. Select: Simultaneously controls the currently selected camera and the camera selected by touching the onscreen video. Off: Multi Control is not performed.
OSD:	Auto: Onscreen displays are shown (but disappear approximately 3 seconds after operation). On: Onscreen displays are always shown. Off: Onscreen displays are not shown.
Layout:	2x2: Displays video of 4 cameras. 3x3: Displays video of 9 cameras.

Switching the Displayed Cameras

If you press the ▼ / ▲ buttons on the menu operation area, you can switch the displayed cameras.

Note

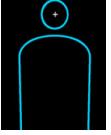
IP Multi View can be outputted to the SDI OUT terminal/HDMI OUT terminal (P. 58). During output, "Outputting IP Multi View to External Outputs." is displayed on the LCD panel, and the PICTURE screen is not displayed.

PICTURE Screen Onscreen Displays

Various onscreen displays such as the status and tally frame of each camera are displayed on the PICTURE screen*1.

*1 The displayed frame differs depending on the camera.

Icon / Display	Description
 1 Camera	Camera number / Selection status and name
Camera Status	
	Not connected
	Standby
	Serial Connection
	IP Video Display Off
Tally Status	
	PGM tally (red)
	PVW tally (green)
	PGM+PVW tally (amber)
Crop frame*2 (P. 59)	
 1	Crop 1
 2	Crop 2
 3	Vertical Crop

Icon / Display	Description
Focus frame*2 (P. 52)	
	AF frame or face frame
	Face frame (main subject)
	Face frame (secondary subjects)
	Eye frame
	Tracking frame
	Touch focus
	Focus Guide
	Silhouette*2

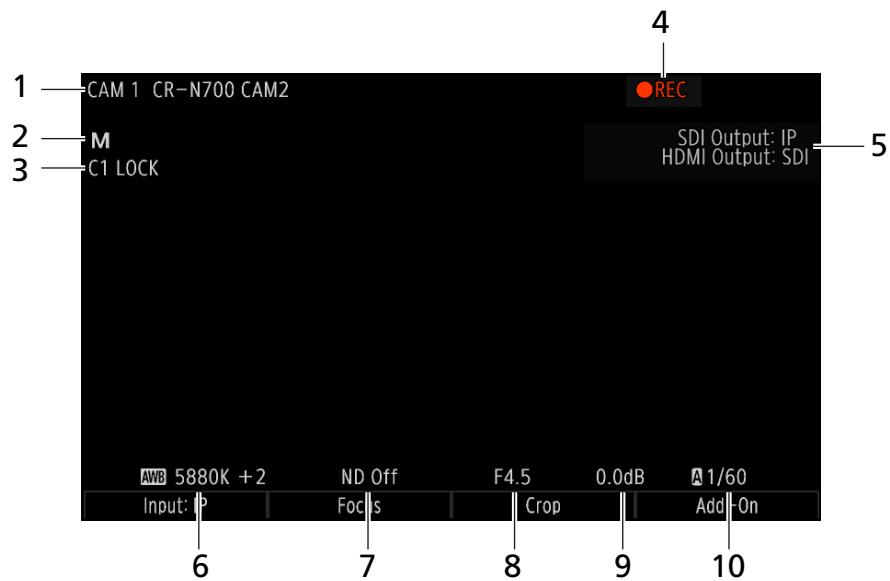
*2 For Single View only

Note

The display position of the focus frame and cropping frame is relative to the entire viewing angle. Therefore, frames will not be displayed in the correct position if the viewing angle is not displayed entirely, such as when cropped SDI input video is displayed.

Shooting Information

You can display camera shooting information around the image displayed on the PICTURE screen (Single View). Use the [DISP] touch function (P. 51) to display/hide shooting information.



1 Camera Name / Model Name

6 White Balance

2 Shooting Mode

7 ND Filter

3 Custom Picture

8 Iris

4 Shooting state

9 ISO/Gain

5 SDI/HDMI output in progress

10 Shutter Speed

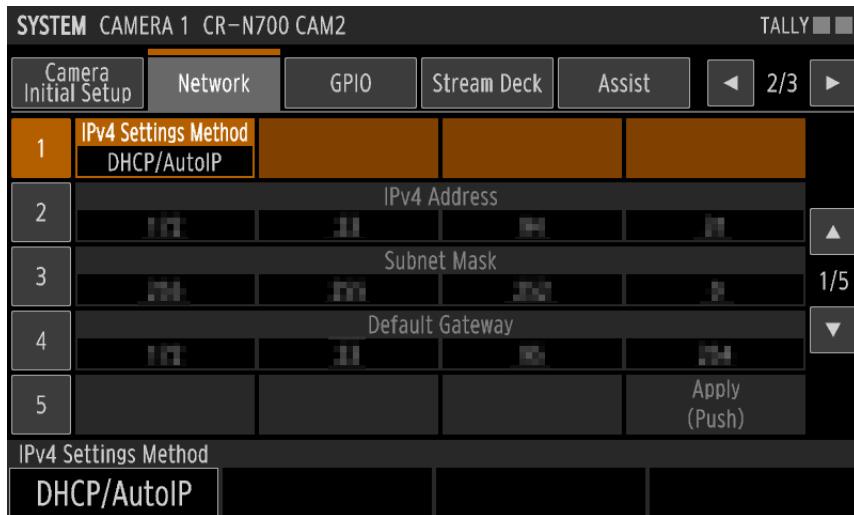
Note

- Shooting information is not displayed while the focus/cropping/Add-On frames or silhouettes are displayed.

Connection Settings for the Device

Network Settings for the Device

Perform network settings on the device in order to control IP connected cameras.



1 Select the SYSTEM menu > [Network] tab.

2 Select [DHCP/AutoIP] for [IPv4 Settings Method].

- The IPv4 address obtained with DHCP or AutoIP is set automatically.
- When setting the IPv4 address manually, select [Manual] and perform the following settings.
 - [IPv4 Address]
 - [Subnet Mask]
 - [Default Gateway]

For reference: “Inputting the IP Address” (P. 42)

3 Select [Apply].

4 When connecting to an IPv6 network, select [Apply] after performing the following settings.

- [IPv6 Address]
- [Prefix Length]
- [Default Gateway]

Note

For settings information when performing manual settings, contact the system administrator.

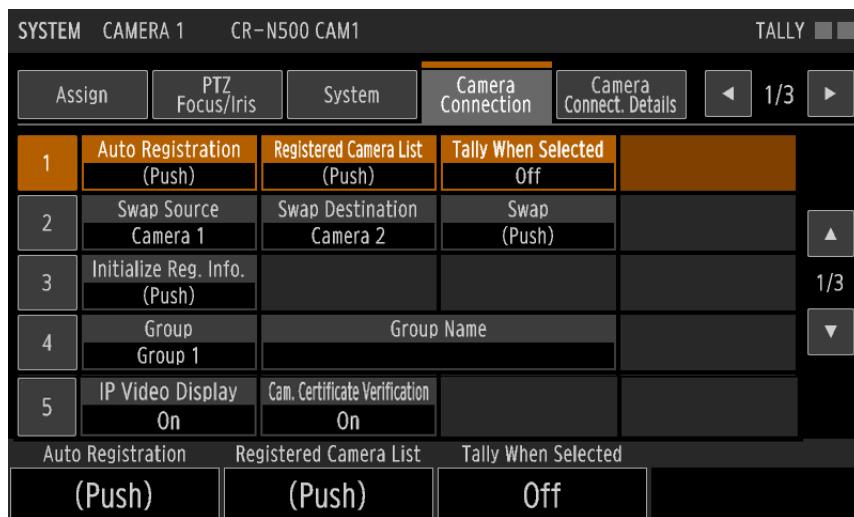
Camera Connection Settings

Perform connection settings (registration) for the cameras to be controlled by the device, and register them to each camera's unique number (camera number). You can search for IP connected cameras on the same network as the device and register them automatically. Each camera can also be registered individually. Cameras connected by serial connection are configured individually.

A unique number (camera number) is assigned to each camera.

Registering Multiple IP Connected Cameras Automatically

Configured (initial setup) cameras connected to the same network as the device are registered automatically in one go via IP connection. Up to 200 cameras (connected via IP connection) can be registered.



1 Select the SYSTEM menu > [Camera Connection] tab.

2 Select [Auto Registration].

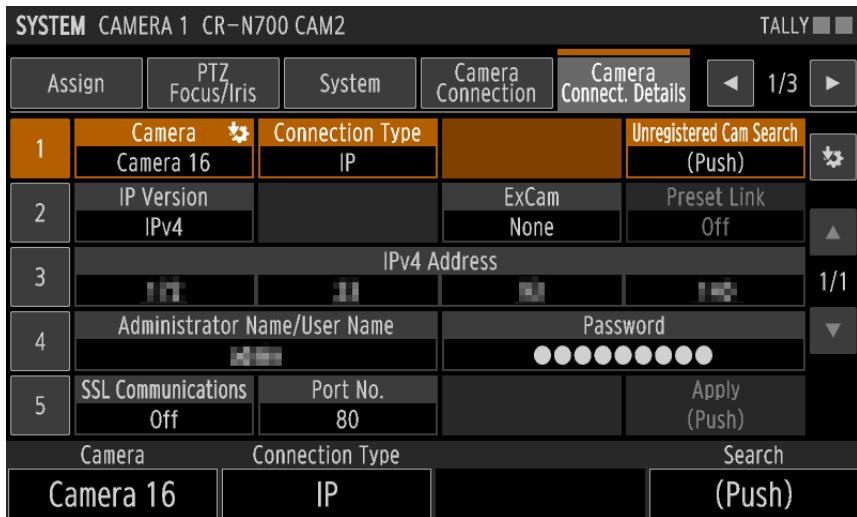
- The device searches for configured (initial setup) cameras on the same network and automatically registers cameras that have not yet been registered.
- Auto Registration is performed sequentially for unused camera numbers*.

* Camera numbers set to SYSTEM menu > [Camera Connect. Details] tab > [Connection Type] > [None].

- You can check the registered cameras from [Registered Camera List].

Registering Cameras Individually (IP/Serial Connection)

Connect and register an individual camera via IP or serial connection. Serial connections allow up to five cameras to be registered.



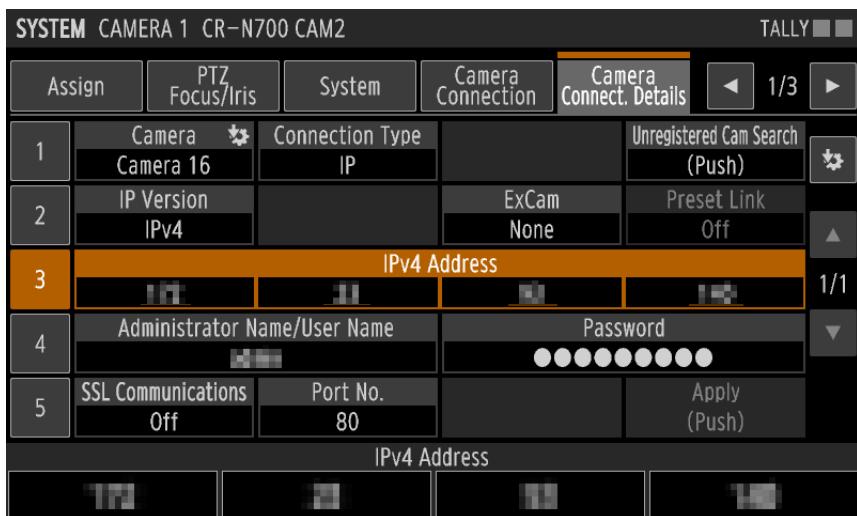
- 1** Select the SYSTEM > [Camera Connect. Details] tab.
- 2** Select the registration destination (camera number) from [Camera].
 - For cameras connected by serial connection, select Camera 1 (RS-422 1 terminal) to Camera 5 (RS-422 5 terminal), depending on the RS-422 terminal used for connection.
 - Touch  on the right of the screen to apply the camera number of the currently selected camera.
- 3** Select [Connection Type] > [IP], [Serial (NU)], or [None].
 - Subsequent steps are not required for options other than IP connection.
- 4** Select [Unregistered Cam Search].
 - Configured (initial setup) cameras in the same network that are not registered to the selected group are searched and displayed in a list.
 - When configuring network settings manually, proceed to step 6.
- 5** Select a camera from the list.
 - Selects the cameras to be registered.
- 6** Input the required network settings manually.
 - [IP Version]
 - [IPv4 Address]
 - [IPv6 Address]
 - [Administrator Name/User Name]
 - [Password]
 - [SSL Communications]
 - [Port No.]
 - For reference: “Inputting the IP Address” (P. 42)
“Inputting Characters” (P. 34)
- 7** Select [Apply].

8 Set a certificate in case of SSL communication (P. 43).

Note

- To unregister a camera.
 - Set [Connection Type] to [None] to unregister a camera.

Inputting the IP Address

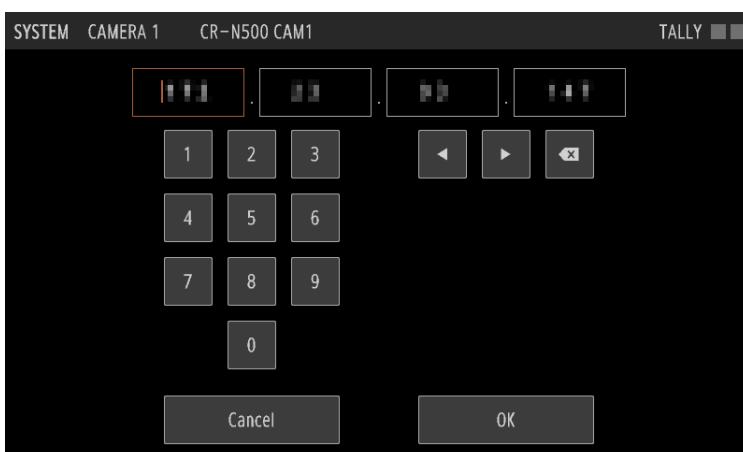


1 Select the [IPv4 Address] line.

- Here, you can also turn the F1-F4 dials to input numbers.

2 Press the F1-F4 dials or touch the desired IPv4 address.

- The IPv4 address input screen is displayed.



3 Touch the onscreen numbers to input the four numbers of the IPv4 address.

- If you press the F1-F4 dials, the cursor moves to the beginning of the corresponding number.
- Touch to delete a character to the left of the cursor.
- You can also turn the F1-F4 dials to input numbers.

4 Touch [OK] or press the SET button.

- If you touch [Cancel] or press the BACK button the input operation will be interrupted.

Note

When inputting an IPv6 address, select [IPv6 Address] to display the IPv6 address input screen. Touch the onscreen numbers, letters (A to F) and colon (":") to input the IPv6 address, then touch [OK].

■ Setting a Certificate for Camera Communication

It is required to set up a certificate to communicate with a camera over SSL (HTTPS) communication.

When using the certificate verification function for SSL communication, you need to use a self-signed certificate for the camera with the camera's IP address set in the [Common Name (CN)]. Refer to the camera's manual for instructions on creating a self-signed certificate with the camera.

1 Select the SYSTEM menu > [Camera Connection] tab (P. 70).

2 Connect the USB memory containing the camera certificate file to the USB terminal.

3 Select [On] or [Off] for [Cam. Certificate Verification].

- If [Cam. Certificate Verification] is set to [Off], SSL communication can be used even if the camera's self-signed certificate is not imported.



Important

Use [Off] only when security is ensured, such as when operating within a network that does not allow external communication. If [Cam. Certificate Verification] is set to [Off], the setting is retained until you turn it back to [On]. Be sure to set it back to [On] when the verification function is needed.

4 Select the certificate file from [Select Camera Communication Certificate File].

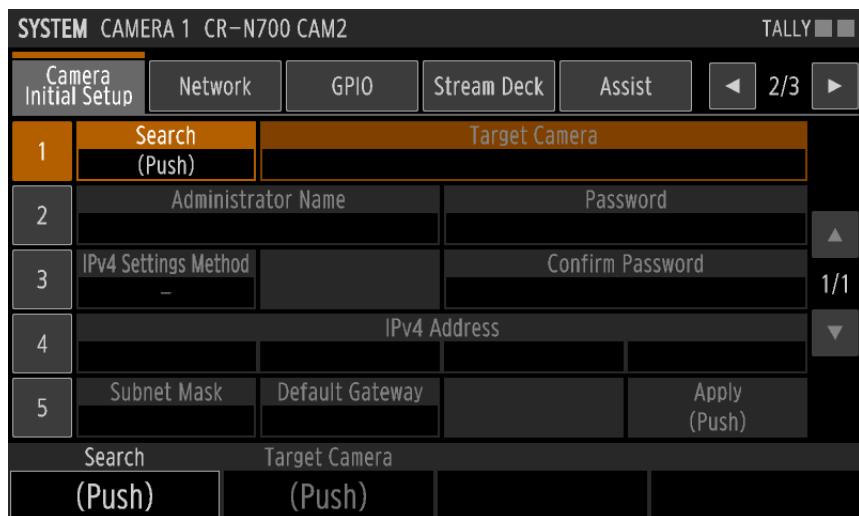
5 Input the certificate file's password in [Password].

6 Select [Import].

- The certificate for camera communication is imported into the camera.
- [Issued by], [Issued to], [Validity Period Start Date] and [Validity Period End Date] for the imported certificate are displayed.

Initial Setup For Multiple Factory-Set Cameras At Once

From the device, you can perform the initial setup of multiple factory-set remote cameras at once. Once the initial setup is completed, remote cameras are configured with an administrator account and network information, and are ready to use.



- 1** Connect the cameras to be configured (initial setup) to the same network as the device.
- 2** Select the SYSTEM menu > [Camera Initial Setup] tab.
- 3** Select [Search].
 - The device will search for factory-set cameras. You can check the cameras found from [Target Camera].
- 4** Select the camera to configure (initial setup) from [Target Camera].
 - To perform the initial setup on all cameras found, select [All].
- 5** Input [Administrator Name], [Password] and [Confirm Password] (P. 34).
- 6** Select [Auto (DHCP)] or [Manual] for [IPv4 Settings Method].
 - If [Auto (DHCP)] is selected, proceed to step 8.
- 7** Input the required network settings manually (P. 42).
 - [IPv4 Address]
 - [Subnet Mask]
 - [Default Gateway]
- 8** Select [Apply].
 - The target cameras will be initial set up.
 - If all cameras are to be configured (initial setup) and an IPv4 address is specified, the address is set by adding one or more to the input value. IP addresses that are in use (by the device and registered cameras) or cannot be set are not used.
 - Once the initial setup is completed, the cameras are automatically registered to an unused camera number.
 - If you cannot connect to a camera using an IPv4 address, register using an IPv6 address.

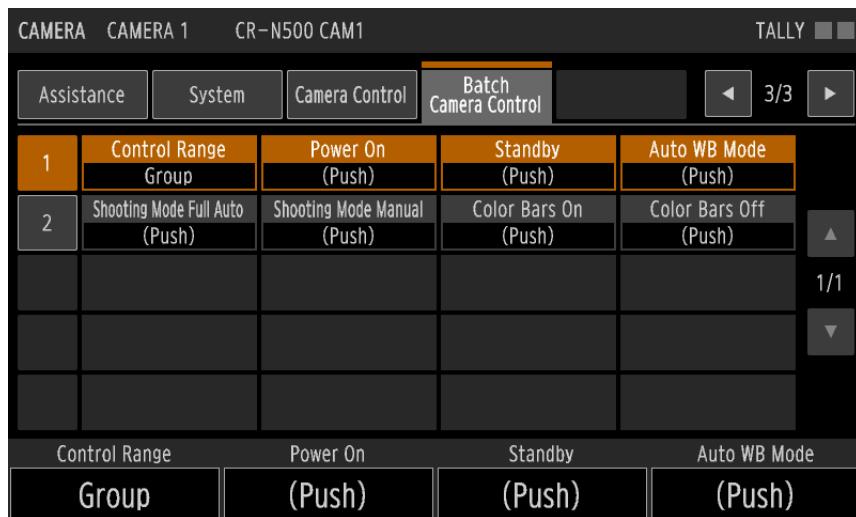
Note

- After the initial setup, some system settings such as the output signal format can be set from the CAMERA menu > [System] tab. Use the camera's Settings Page for settings that cannot be configured from the device, such as [Date and Time].
- If the IP address is set using [Manual] during the initial camera setup, it may be duplicated with the IP address being used by another device. Check that the IP address is not duplicated.

Controlling Camera Power: On / Standby

Operating the Menu to Control Camera Power: On / Standby

From the device, you can switch the power of cameras between on and standby. The cameras to be controlled can be selected from the currently selected camera, cameras belonging to the currently selected group, or all cameras that have been registered.



Controlling the power of the selected camera

- 1 Select the CAMERA menu > [Camera Control] tab.
 - Proceed to step 3.

Controlling the power of a camera group or all cameras

- 1 Select the CAMERA menu > [Batch Camera Control] tab.
- 2 Select [Control Range].
 - You can choose between controlling the selected group, or all cameras.
- 3 Select [Power On] or [Standby].
 - When selecting [Standby], touch [OK] once the confirmation screen is displayed.
 - The power of the cameras specified as target will change to on or standby.

Using the CAMERA / PRESET Select Buttons to Control Camera Power: On / Standby

During camera selection mode, you can use the CAMERA / PRESET Select buttons to switch the power of the cameras between on and standby from the device.

Condition	CAMERA / PRESET Select button operation
Camera on standby	Press down and hold the button to turn on the power.
Camera powered on, when the top menu is displayed	Press down and hold the button → touch OK to set the camera to standby.

Chapter 3

Operation

This chapter explains basic operations of the device, CAMERA / PRESET selection, and camera operation.

Checking the Basic Operation Procedure

1 Turning on the device (P. 24).

- If there are already registered cameras in the selected group, connection will be automatic.

2 Turning on the power of the cameras (P. 45).

3 Selecting cameras (P. 28, P. 48).

- The lamps on the CAMERA / PRESET Select area (P. 11) allow you to check the CAMERA / PRESET selection status.
- You can control multiple cameras simultaneously (P. 54).

4 Displaying camera video on the LCD panel (P. 35).

5 Adjusting the camera's orientation (P. 13).

6 Adjusting the zoom (P. 14).

7 Adjusting the exposure (P. 14, P. 80).

8 Adjusting the focus (P. 14, P. 81).

9 Turning off the device (P. 24).

- Turning off the device will not turn off connected cameras.
- For details on camera power control refer to "Controlling Camera Power: On / Standby" (P. 45).
- The last camera/group selected is remembered.

Selecting a Camera Group / Camera / Preset Group / Preset

This section explains how to select the camera group, camera, preset group or preset to be controlled in the CAMERA / PRESET select area.

Selecting a Camera Group

Up to 200 cameras (camera numbers 1-200) can be registered on the device. Cameras are assigned in groups of 10, and switching between groups allows you to switch the cameras to be controlled.

Camera groups are selected as follows.

Camera Group Number	Camera Number	Camera Group Number	Camera Number
1	1-10	11	101-110
2	11-20	12	111-120
3	21-30	13	121-130
4	31-40	14	131-140
5	41-50	15	141-150
6	51-60	16	151-160
7	61-70	17	161-170
8	71-80	18	171-180
9	81-90	19	181-190
10	91-100	20	191-200

- 1** Check that CAMERA / GROUP Select mode is activated (the CAMERA / GROUP lamp illuminates) (P. 12).
 - If a different mode is activated, press and hold the SELECT button to switch it. You can also press a USER button assigned to [CAMERA◀▶PRESET].
- 2** Press the SELECT button.
 - The SELECT button illuminates and the camera group select mode (CAMERA / GROUP lamp illuminated in blue) is activated.
 - The non-selected CAMERA / PRESET Select buttons illuminate in blue.
 - To select camera groups from number 11 onwards, press the SELECT button again (the 11-20 lamp will illuminate). When illuminated, the CAMERA / PRESET Select buttons 1-10 and the GROUP lamps 1-10 indicate camera groups 11 to 20.
- 3** Press a CAMERA / PRESET Select button to select a camera group.
 - The camera group is selected and the corresponding GROUP lamp 1-10 is illuminated.
 - CAMERA Select mode is activated automatically.

Selecting a Camera

Select a camera (belonging to the currently selected camera group) to be controlled.

- 1** Check that CAMERA select mode is activated (the CAMERA / GROUP lamp illuminates).
 - If the CAMERA / GROUP lamp is not illuminated, press and hold the SELECT button until the CAMERA / GROUP lamp illuminates (P. 12).
 - When the CAMERA / GROUP lamp is illuminated in blue, press and hold the SELECT button until the lamp illuminates in green.
- 2** Press a CAMERA / PRESET Select button to select the camera to be controlled.
 - The pressed button will illuminate in orange.

Note

- You can also select cameras with the CAMERA Select button on the camera list screen in the top menu (P. 28). The camera group is switched automatically.
- During Multi View (PICTURE screen), when [Multi Control] is set to an option other than [Select], you can select a camera by touching the image on the LCD panel.

Selecting a Preset Group

Up to 100 presets can be registered on a single camera. Starting from number 1, preset groups are assigned in groups of 10 presets, and switching between groups allows you to switch the selected presets.

- 1** Press and hold the SELECT button to switch to PRESET / GROUP Select mode (P. 12).
 - The PRESET / GROUP lamp illuminates in green.
 - You can also press a USER button assigned to [CAMERA◀▶PRESET].
- 2** Press the SELECT button.
 - The SELECT button illuminates, and the preset group select mode (PRESET / GROUP lamp illuminated in blue) will be activated.
 - The non-selected CAMERA / PRESET Select buttons illuminate in blue.
- 3** Press a CAMERA / PRESET Select button to select a preset group.
 - The preset group is selected and the corresponding GROUP lamp 1-10 is illuminated.
 - PRESET Select mode is activated automatically.

Selecting a Preset

From the device, you can select and execute a preset registered on the currently selected camera.

- 1** Check that PRESET select mode is activated (PRESET / GROUP lamp illuminates in green).
 - If the PRESET / GROUP lamp is not illuminated, press and hold the SELECT button until the PRESET / GROUP lamp illuminates (P. 12).
 - When the PRESET / GROUP lamp is illuminated in blue, press the SELECT button.
- 2** Press a CAMERA / PRESET Select button to select the desired preset.
 - The pressed button will illuminate in orange.

Note

You can also execute presets from the preset list screen in the top menu, or from the [Preset List] tab in the PRESET/TRACE menu (P. 31).

Changing Camera Settings

Changing the Camera's Menu Settings

For cameras that allow you to change settings from the menu, you can operate the camera's menu and change the camera's settings from the device.

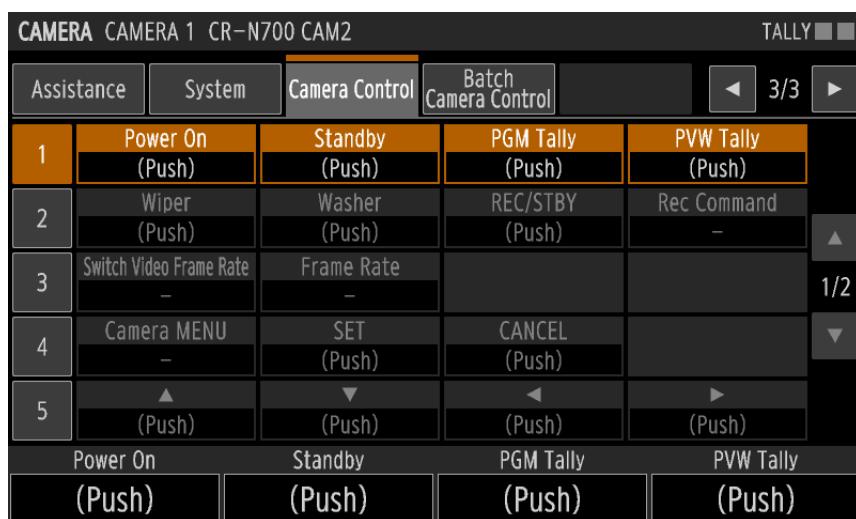
■ Displaying the camera's menu on the LCD panel to change camera settings

You can display the camera's menu on the device's LCD panel and operate it to change camera settings.

- 1** Connect the camera's SDI output to the device's SDI IN terminal.
- 2** Display the PICTURE screen (P. 35).
- 3** Press a USER button assigned to [Camera MENU] (P. 64) to display the camera menu.
 - The selected menu is displayed on the LCD panel's camera image.
 - Each time you press the USER button, the displayed menu will change.
- 4** Use the **▲, ▼, ◀, ▶, SET** and BACK buttons on the menu operation area to perform settings on the camera's menu.
- 5** When menu settings are finished, press the USER button assigned to [Camera MENU] to close the menu.

■ Displaying the camera's menu on an external monitor to change camera settings

You can operate a camera's menu displayed on an external monitor to change camera settings from the device.

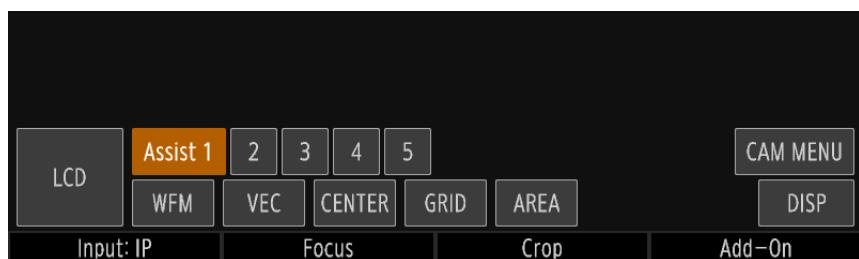


- 1** Connect the camera's SDI output to the device's SDI IN terminal.
- 2** Connecting an External Monitor to the Device's SDI OUT or HDMI OUT Terminal
- 3** Select SYSTEM menu > [System] tab > [SDI Output] or [HDMI Output], then [Through], [SDI], or [Auto (SDI Priority)].

- 4 Select the CAMERA menu > [Camera Control] tab.
- 5 Select [Camera MENU] > the desired menu.
 - The selected menu appears on the camera image displayed on the external monitor.
- 6 Select the [\blacktriangle], [\blacktriangledown], [\blacktriangleleft], [\blacktriangleright], [SET] or [CANCEL] buttons (in the [Camera Control] tab) to operate the camera's menu.
- 7 When menu settings are finished, select [Camera MENU] > [Off].
 - The menu on the camera's image disappears.

Setup/Control using the Touch Functions

You can display and operate the touch functions at the bottom of the PICTURE screen (Single View).



- 1 Touch the screen to display the touch functions.
 - Touch one of the four corners of the screen when using an operation mode that requires touch operation, such as when selecting a tracking target.
- 2 Touch the desired touch function button.
- 3 Touch any part of the screen other than the buttons to turn off the touch functions.

Touch Function Setting Items

Setting item	Setting values/description
Assist 1 to Assist 5	Selects a preset for the assistance settings.
LCD	Switches the output destination in the following order: [LCD] > [SDI] > [HDMI].
WFM	Waveform Monitor switch (On/Off).
VEC	Vector Scope switch (On/Off).
CENTER	Center Marker switch (On/Off).
GRID	Grid Marker switch (On/Off).
AREA	Area Marker switch (On/Off).
CAM MENU	Camera MENU display switch (On/Off).
DISP	Camera information display switch (On/Off).

Touch Function Setting Items (When [Add-On] is Selected)

Setting item	Setting values/description
Auto Tracking	Auto Tracking switch (On/Off).
1 to 5	Selects the Auto Tracking number.
Silhouette	Silhouette switch (On/Off).
Crop_View	The displayed cropping frame is switched in the following order: [Crop 1], [Crop 2], [Vertical Crop], [All], [Crop Off].
Auto Loop	Auto Loop switch (On/Off).
1 to 5	Selects the Auto Loop number.

Adjusting the Focus from the LCD Panel

From the device, you can control Face AF/tracking settings, touch focus and move the AF frame. You can also display the focus guide from [Focus Guide] on the CAMERA menu and adjust the focus manually.

1 Display the PICTURE screen (Single View) (P. 35).

2 Press the F2 dial ([Focus!]).

- CAMERA menu > [Focus] tab > [Frame Display] switches to [On], and superimposing onscreen displays to the output of the SDI OUT/HDMI OUT terminal is enabled.

Adjusting with Subject/Person Face Detection & Tracking

3 Turn the F2 dial ([Subject Det. AF] or [Face AF]) to select an option other than [Off].

- When a subject (such as a person's face) is detected within the camera's field of view, a frame is displayed on the corresponding face.
- The main subject is determined automatically when multiple subjects are detected.
- You can press the **◀** / **▶** buttons to switch the main subject.
- When [Eye Detection] (P. 81) is set to [On] a frame is displayed on the detected eyes, and you can press the **◀** / **▶** buttons to switch the main eye.
- You can touch a frame to start tracking. In case [XXX & Det. Priority] or [Face Det. & Tracking] is selected, you can touch a subject to start tracking. Press the F2 dial ([Cancel Tracking]) to cancel tracking.
- Proceed to step 6.

Touch Focus Adjustment (During Manual Focus on a Compatible Camera)

4 Touch a subject on the screen.

-  appears on the touched position and focus is performed.
- Proceed to step 6.

Moving the AF Frame (During Auto Focus)

4 Turn the F2 dial ([Subject Det. AF] or [Face AF]) and select [Off], then turn the F1 dial ([AF Frame Size]) and select an option other than [Whole Area].

- An AF frame corresponding to the selected AF frame size is displayed.

5 Touch the screen to move the AF frame.

- Focus is performed on the subject in the AF frame.

6 Press the F4 dial ([Back]).

- CAMERA menu > [Focus] tab > [Frame Display] switches to [Off], and superimposing onscreen displays to the output of the SDI OUT/HDMI OUT terminal is disabled.
- You will return to the previous menu level.

Displaying/Adjusting the Auto Tracking Frame on the LCD Panel

You can view and adjust various frames and silhouettes of the Auto Tracking Application.

1 Display the PICTURE screen (Single View) (P. 35).

2 Press the F2 dial ([Add-On↓]).

- CAMERA menu > [Add-On] tab > [Frame Display] switches to [On], and superimposing onscreen displays to the output of the SDI OUT/HDMI OUT terminal is enabled.

Adjusting the Silhouette

3 Set CAMERA menu > [Add-On] tab > [Silhouette View] to [On].

- The silhouette is displayed.

4 Touch the LCD panel to move the silhouette.

Changing the Target of Automatic Tracking Frame

3 Set CAMERA menu > [Add-On] tab > [Silhouette View] to [Off] to hide silhouettes.

4 Touch the face frame on the LCD panel to switch the tracking target.

Displaying Cropping Frames

3 Set CAMERA menu > [Add-On] tab > [Crop Frame Display] to an option other than [Off].

- If there is a display-enabled crop frame, that crop frame will be displayed.

Controlling Multiple Cameras Simultaneously

Operating Buttons/Dials/Levers of Multiple Cameras (Multi Control)

You can select multiple cameras on the top menu's camera list or the PICTURE screen to control them simultaneously.

■ Selecting and controlling cameras from the PICTURE screen

From the PICTURE screen, you can select cameras to be controlled with Multi Control and control them.

1 Display the PICTURE screen (Multi View) (P. 35).

- The currently selected camera number is displayed in orange ().

2 Turn the F2 dial ([Multi Control:]) to select Multi Control.

Off: Only the currently selected camera is controlled.

Select: The currently selected camera and cameras selected within the same group are controlled.

Group: The currently selected camera and cameras in the same group are controlled.

- If an option other than [Off] is selected, the number display of the selected camera changes to  .

3 If set to [Select], touch the video image of cameras to be added to Multi Control.

- The touched cameras are selected and the background of the camera numbers changes to orange ().
- Touch again to cancel the selection.

4 Control the cameras as required.

- Operating the Camera Settings Area, Iris/Zoom/Focus Operation Area, CAMERA / PRESET Select Area and Pan/Tilt Operation Area allows you to control multiple target cameras simultaneously.

 **Note**

Depending on the function, control is performed using the status of the currently selected camera as the base. If the model or status of cameras to be controlled is different, the operated function may not work.

■ Selecting cameras to be controlled from the top menu's camera list

You can also select cameras to be operated with Multi Control from the top menu's camera list. For details, refer to "Camera List Page Display/Operation" (P. 28)

Executing Presets on Multiple Cameras Simultaneously (Multi Preset)

You can register a camera group and presets of cameras belonging to that group as Multi Preset. Using Multi Preset allows you to execute presets of multiple cameras simultaneously. You can register up to five Multi Presets.

Additionally, you can execute the presets of all cameras simultaneously.

1 Select the PRESET / TRACE menu > [Multi Preset] tab (P. 79).

2 Select the registration destination from [Multi Preset].

3 Select [Control Range].

Group: Cameras belonging to the specified camera group are controlled.

All: All registered cameras are controlled.

4 Select [Group].

5 Select the preset number of each camera to be controlled from [Camera (number)].

- When [Control Range] is set to [All], repeat steps 4 and 5 to select the presets of all cameras.
- If you select [Auto Setup], the preset selected on each camera is set automatically.

6 Press [Execute].

- The presets of each controlled camera are executed simultaneously. If you selected [Control Range] > [Group], the group switches to the selected group.

 **Note**

When [Control Range] is set to [All], execution and automatic setting may take some time.

Changing Power and Basic Settings for Multiple Cameras

You can simultaneously power on/off or change various settings of either cameras in the selected group, or all cameras.

1 Select the CAMERA menu > [Batch Camera Control] tab.

2 Select [Control Range].

Group: Cameras belonging to the selected group are controlled.

All: All registered cameras are controlled.

3 Select the function to be controlled (P. 88).

 **Note**

When [Control Range] is set to [All], execution may take some time.

Video Input/Output

Video input to the device's SDI IN terminal (SDI input video) or LAN terminal (IP input video) can be output from the SDI OUT terminal or HDMI OUT terminal. The output video type is selected from the menu. For IP input video, video of the currently selected camera is output.

- 1 Select the SYSTEM menu > [System] tab.
- 2 Select [SDI Output] or [HDMI Output] (P. 68).

Output Formats

■ Formats Supported by the SDI IN / SDI OUT Terminal

The following formats can be input/output.

Transmission standard	Format
12G-SDI	3840x2160 / 59.94p YCbCr422 10-bit 3840x2160 / 50.00p YCbCr422 10-bit 3840x2160 / 29.97p YCbCr422 12-bit 3840x2160 / 29.97p RGB444 12-bit/10-bit 3840x2160 / 29.97p YCbCr444 12-bit/10-bit 3840x2160 / 25.00p YCbCr422 12-bit 3840x2160 / 25.00p RGB444 12-bit/10-bit 3840x2160 / 25.00p YCbCr444 12-bit/10-bit 3840x2160 / 23.98p YCbCr422 12-bit 3840x2160 / 23.98p RGB444 12-bit/10-bit 3840x2160 / 23.98p YCbCr444 12-bit/10-bit
6G-SDI	3840x2160 / 29.97p YCbCr422 10-bit 3840x2160 / 25.00p YCbCr422 10-bit 3840x2160 / 23.98p YCbCr422 10-bit
3G-SDI Level A/B	1920x1080 / 59.94p YCbCr422 10-bit 1920x1080 / 59.94i RGB444 12-bit/10-bit 1920x1080 / 59.94i YCbCr444 12-bit/10-bit 1920x1080 / 59.94i YCbCr422 12-bit 1920x1080 / 50.00p YCbCr422 10-bit 1920x1080 / 50.00i RGB444 12-bit/10-bit 1920x1080 / 50.00i YCbCr444 12-bit/10-bit 1920x1080 / 50.00i YCbCr422 12-bit 1920x1080 / 29.97p RGB444 12-bit/10-bit 1920x1080 / 29.97p YCbCr444 12-bit/10-bit 1920x1080 / 29.97p YCbCr422 12-bit 1920x1080 / 25.00p RGB444 12-bit/10-bit 1920x1080 / 25.00p YCbCr444 12-bit/10-bit 1920x1080 / 25.00p YCbCr422 12-bit 1920x1080 / 23.98p RGB444 12-bit/10-bit 1920x1080 / 23.98p YCbCr444 12-bit/10-bit 1920x1080 / 23.98p YCbCr422 12-bit

Transmission standard	Format
HD-SDI	1920x1080 / 59.94i YCbCr422 10-bit 1920x1080 / 50.00i YCbCr422 10-bit 1920x1080 / 29.97p YCbCr422 10-bit 1920x1080 / 25.00p YCbCr422 10-bit 1920x1080 / 23.98p YCbCr422 10-bit 1280x720 / 59.94p YCbCr422 10-bit 1280x720 / 50.00p YCbCr422 10-bit

Note

- When outputting IP input video.
 - Video is output as 3G-SDI Level A 1920x1080 YCbCr422 10-bit 59.94p.
 - Only video is output. No additional information such as audio or time code is output.
- Superimposing onscreen displays (focus frame, cropping frame, etc.) on SDI input video and outputting it from the SDI OUT terminal.
 - Only video is output. No additional information such as audio or time code is output.
 - When the input video is interlaced, it is output as 3G-SDI Level A 1920x1080 YCbCr422 10-bit, progressive.
 - Switching superimposed displays interrupts the video momentarily.
 - You can also use SYSTEM menu > [SDI 2K Only] (P. 68) to prevent flickering when switching between OSD outputs by fixing the output resolution.

■ Formats Supported by the HDMI OUT Terminal

Only video is output from the HDMI™ OUT terminal. Audio is not output. Switch the output format according to the supported format of the connected device.

Format
1920x1080 / 60.00p YCbCr422 12-bit
1920x1080 / 60.00p RGB444 8-bit

■ Format Supported for IP Input Video (LAN Terminal)

Transmission standard	Format
JPEG	Differs depending on the camera

Outputting IP Multi View or the Preset/Trace List

You can output the PICTURE screen's IP Multi View and the Preset/Trace List.



IP Multi View



Preset/Trace List

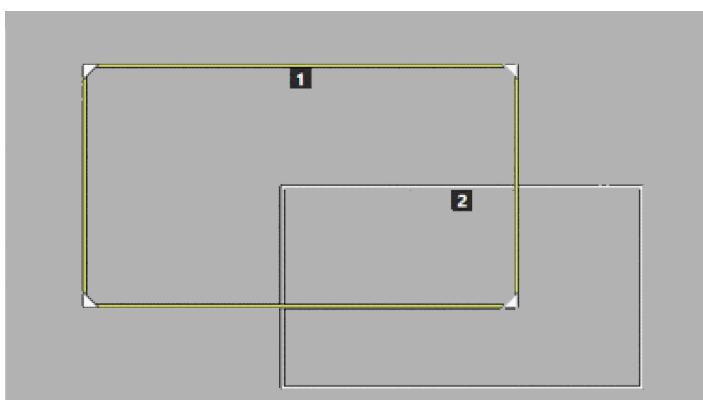
- 1** Select SYSTEM menu > [System] > [SDI Output] or [HDMI Output].
- 2** Select [IP Multi View] or [Preset/Trace List].
 - The screen selected in step 2 will be output to the output destination selected in step 1.
- 3** Press and hold the PICTURE button.
 - The PICTURE button illuminates in blue or green when the operation target is switched to external output (P. 10).
- 4** Press the **▲** / **▼** / **◀** / **▶** / SET buttons to operate the screen.

Crop Settings for Camera Output Video

For cameras equipped with the output video cropping function, you can select the cropping frame to be applied (and adjust its position/size) from the PICTURE screen.

Displaying the Cropping Frame on the Screen

- 1** Display the PICTURE screen (Single View) (P. 35).
- 2** Press the F3 dial ([Crop ↓]).
 - CAMERA menu > [Crop] tab > [Frame Display] switches to [On], and superimposing onscreen displays to the output of the SDI OUT/HDMI OUT terminal is enabled.
- 3** Turn the F1 dial ([Frame Display]) to select the cropping frame displayed on the screen.



- 4** Press the F4 dial ([Back]) to remove the cropping frame.
 - CAMERA menu > [Crop] tab > [Frame Display] switches to [Off], and superimposing onscreen displays to the output of the SDI OUT/HDMI OUT terminal is disabled.
 - The menu goes back to the previous level.

Adjusting the Cropping Frame's Position/Size

- 1** Display the cropping frame on the screen (P. 59).
- 2** Press the **◀ / ▶** buttons to select the cropping frame to be operated.
 - The selected cropping frame is displayed in yellow or green.
 - Frames with **▼ / ▲ / ▲ / ▼** corner icons can be resized.
- 3** Press the pan/tilt operation area **ENABLE** button to activate the crop adjustment mode (illuminates in green).
- 4** Adjust the position of the cropping frame using the **PAN / TILT** lever.
 - You can also touch the LCD panel (the cropping frame will be moved and centered on the touched position).

5 For cropping frames with adjustable size, press the ZOOM rocker to adjust the size.

- You can also turn the F5 dial ([Zoom]) to adjust it.

6 Press the pan/tilt operation area ENABLE button to end the crop adjustment mode (illuminates in orange).

Selecting the Cropping Frame to be Applied to the Camera's Output Video

1 Adjust the cropping frame's position/size (P. 59).

2 Turn the F2 dial ([12G-SDI]) or F3 dial ([HDMI / 3G-SDI]) to select the cropping frame.

- The output terminal's video will be cropped using the selected frame.

 **Note**

You can also display/select the cropping frame, or select the frame to be operated from the CAMERA menu > [Crop] tab (P. 83).

Operating the Device Using the Multi-Camera Management Application

You can register/remove cameras, swap connection settings, and initialize camera registration information from the Multi-Camera Management Application.

For details, refer to the Multi-Camera Management Application's instruction manual.

Allowing Access for the Multi-Camera Management Application

Perform settings required to control the device from the Multi-Camera Management Application (hereafter referred to as "application").

- 1** Select the SYSTEM menu > [Network] tab (P. 72).
- 2** Select [HTTPS] or [HTTP/ HTTPS] for [Application Control].
 - Select a communication protocol that can be used to communicate with the application.
 - Select [Off] to disable control from the application
- 3** Set [User Name] and [Password].
 - Set the user name and password of the device. Used when accessing from the application.
For reference: "Inputting Characters" (P. 34).
- 4** Set [Controller Name] as necessary.
 - Specify a name that can be identified from the application in case multiple devices are on the same network.
- 5** Import and enable the server certificate when communicating over HTTPS.
- 6** Select [Apply].

Chapter 4

Menu

This chapter explains the menu settings of the device.

Menu List

Menu	Tab	Description	Page
SYSTEM Menu	Assign	Function assignment for the USER buttons 1-10, the F1-F5 dials, etc.	64
	PTZ Focus/Iris	Pan/tilt/zoom characteristics and operation direction, focus/iris operation direction, etc.	67
	System	Screen settings, language, video output, etc.	68
	Camera Connection	Multiple camera registration, group name, certificates, etc.	70
	Camera Connect. Details	Individual camera registration.	71
	Camera Initial Setup	Initial setup/registration of multiple factory-set cameras.	71
	Network	Network settings of the device.	72
	GPIO	GPIO modes and function/camera assignment.	73
	Stream Deck	Elgato's Stream Deck settings.	74
	Assist	Assistance display settings.	75
	Information	Display of the device's system information.	76
PRESET / TRACE Menu	Preset List	Preset list display, movement speed settings, executing/adding/deleting/stopping.	77
	Edit/Set Preset	Adding/editing/deleting preset settings, movement speed settings, etc.	77
	Trace List	Trace list display, execution.	78
	Edit Trace	Start/stop trace recording, recording settings, etc.	79
	Multi Preset	Multi Preset registration, execution, etc.	79
CAMERA Menu	Exposure	Shooting mode, exposure settings.	80
	White Balance	White balance settings.	81
	Focus	Auto focus settings, face detection, tracking settings, etc.	81
	Custom Picture	Custom picture selection, basic settings, Look Files, etc.	82
	Image Quality	Custom picture settings.	82
	PTZ/IS	Digital zoom/tele-converter settings, image stabilizer settings, etc.	83
	Crop	Crop settings.	83
	Add-On	Add-On applications settings.	84
	Monitoring	Settings for the LUT/View Assistance applied to the output video, range settings.	85
	OSD	Settings for the onscreen displays applied to the output video.	85
	Assistance	Settings for peaking and markers applied to the output video.	86
	System	Video output signal format, camera network settings, etc.	86
	Camera Control	REC / STBY, tally, wiper, washer, menu operation, etc.	87
	Batch Camera Control	Simultaneous operation/settings of target cameras.	88

SYSTEM Menu

Perform basic settings such as device-camera connections and assigning functions to the assignable buttons/dials.

■ Assign

Setting item	Setting values/description
USER 1-USER 10	Function assignment for each USER 1-USER 10 button or ABB button. Default values: 1: Shooting Mode, 2: ISO/Gain, 3: Multi Preset 1, 4: CAMERA◀▶PRESET, 5: One-Shot AF, 6: Digital Zoom, 7: Digital Tele-Converter, 8: 12G-SDI Crop Off, 9: 12G-SDI Crop 1, 10: Camera Menu, ABB: Camera MENU
ABB	
F1-F5	Function assignment for the F1-F5 dials. The assigned functions are used in the status screen of the top menu and the USER 1-10 screen. Default values: 1: ISO/Gain, 2: Shutter Speed, 3: ND Filter, 4: Color Temperature (K), 5: Zoom
SELECT	Select the SELECT button's normal press operation (the other operation is performed by pressing and holding down the button). GROUP : Switches the group select mode. CAMERA◀▶PRESET : Switches CAMERA Select and PRESET Select.

Functions assignable to the USER 1-4 / USER 6-10 / ABB buttons

Function	Description	Function	Description
Shooting Mode	Operates the menu item of the same name.	12G-SDI: Crop Off	Crop Off: Video of the output destination is not cropped.
Infrared		12G-SDI: Crop 1	Crop 1, Crop 2, Vertical Crop: Video of the output destination is cropped (Crop 1, Crop 2 or Vertical Crop).
ND 1/4		12G-SDI: Crop 2	
ND 1/16		12G-SDI: Vertical Crop	
ND 1/64		HDMI/3G: Crop Off	
ND 1/256		HDMI/3G: Crop 1	
ND 1/1024		HDMI/3G: Crop 2	
ISO/Gain		HDMI/3G: Vertical Crop	
High Sensitivity Mode		IP: Crop Off	
Manual WB Mode	Sets [White Balance] tab > [Mode] to [Manual].	IP: Crop 1	
Focus Frame Display	Operates [Focus] tab > [Frame Display].	IP: Crop 2	
Gamma	Operates the menu item of the same name.	IP: Vertical Crop	
Color Space		Crop Target Frame	Operates [Crop] tab > [Target Frame].
HLG Color		Crop Frame Display	Operates [Crop] tab > [Frame Display].
Knee: Activate		Auto Tracking	Operates the menu item of the same name.
Knee: Automatic		Auto Loop	
NR: Automatic		OSD Output: 12G-SDI	
Digital Zoom		OSD Output: 3G-SDI	
Digital Tele-Converter		OSD Output: HDMI	
Image Stabilizer		REC/STBY	
		PGM Tally	
		PVW Tally	
		Camera MENU	
		Wiper	
		Washer	
		Home Position	Moves the camera's pan/tilt position to the home position.

Function	Description
Preset 1 to Preset 20	Executes the specified preset.
Stop Preset	Stops the preset in execution.
Multi Preset 1 to Multi Preset 5	Executes the specified Multi Preset.
Save Camera Settings	Saves settings such as camera angle, exposure, and custom picture settings to the camera.
Assist 1 to Assist 5	Select the shooting assistance setting.
Waveform Monitor	Operates the menu item of the same name.
Vector Scope	
SDI Out.: Through	
SDI Out.: Auto (SDI Prio.)	
SDI Out.: Auto (IP Prio.)	
SDI Out.: IP Multi View	
SDI Out.: Preset/Trace List	

Function	Description
HDMI Out.: SDI	Operates the menu item of the same name.
HDMI Out.: Auto (SDI Prio.)	
HDMI Out.: Auto (IP Prio.)	
HDMI Out.: IP Multi View	
HDMI Out.: Preset/Trace List	
IP Video Display	
CAMERA◀▶PRESET	Switches the selection target for the CAMERA / PRESET Select area.
Multi Control: Group	Sets [Multi Control] (top menu > [Camera List] screen) to [Group].
Multi Control: Select	Sets [Multi Control] (top menu > [Camera List] screen) to [Select].

Functions assignable to the USER 5 button

Function	Description
One-Shot AF	Executes One-Shot AF.
Push AF/MF	During manual focus, auto focus is performed only while the button is pressed. During auto focus, manual focus is performed only while the button is pressed.
REC/STBY	Operates the menu item of the same name.

Function	Description
Push PTZ Max Speed	While pressed, operates pan/tilt/zoom at maximum speed regardless of the pan/tilt SPEED dial and zoom SPEED dial settings.
Home Position	See the previous table.
Preset 1 to Preset 5	
CAMERA◀▶PRESET	

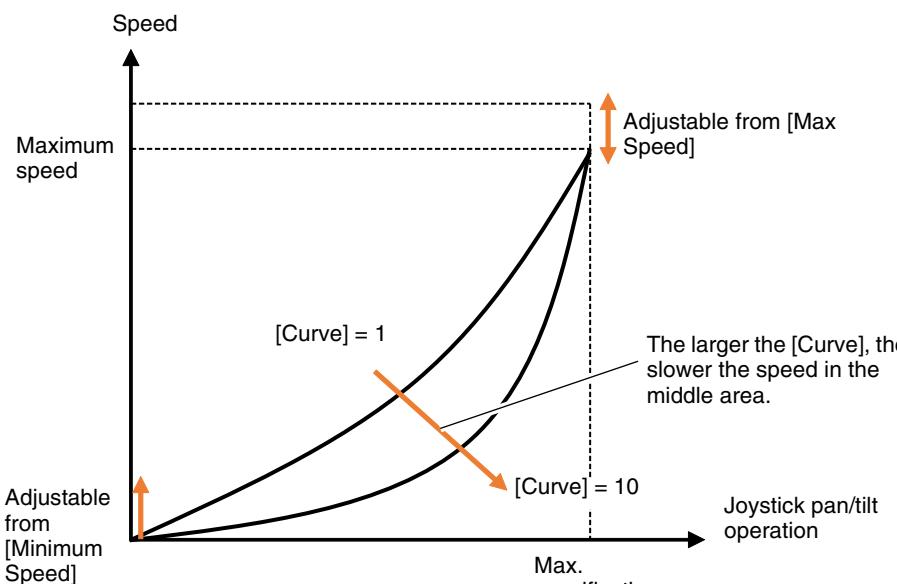
Functions assignable to the F1-F5 dials

Function	Description
ND Filter	Operates the menu item of the same name.
Shutter Speed	
ISO/Gain	
AGC Limit	
AE Shift	
Color Temperature (K)	
WB CC	
CP File	
Black: Master Black G	
Black Gamma: Level	
Black Gamma: Range	
Black Gamma: Point	
Knee: Slope	
Knee: Point	
Sharpness: Level	
Sharpness: Limit	
WB: G Gain	
Assist	

Function	Description
Group	Switches the group.
Zoom*	Operates the zoom (turning clockwise zooms to telephoto).
Focus*	Adjusts the focus.
Iris*	Adjusts the iris.
ExCAM Pan*	Operates the pan function of the extended camera.
ExCAM Tilt*	Operates the tilt function of the extended camera.
ExCAM Zoom*	Operates the zoom function of the extended camera.
None*	No function has been assigned.

* Only assignable to the F5 dial.

■ PTZ Focus/Iris

Setting item	Setting values/description
Pan/Tilt Settings	Selects the pan/tilt moving speed setting target. Common: Set for all cameras. Specify Individually: Set for an individual camera.
Camera	Camera 1 to Camera 200, All Selects the target camera for [Pan/Tilt Settings] > [Specify Individually].
Speed Control	Selects the pan/tilt moving speed. Linked to Zoom Position: The more you zoom to the telephoto side, the slower the pan/tilt operation will be. Set Speed: Operation is performed at the speed specified on the device regardless of the zoom position.
Curve	1 to 15 (1) Selects the characteristics of the pan/tilt operation speed. The higher the number, the slower the speed in the middle area. 
Minimum Speed	0 to 15 (0) Sets the minimum pan/tilt speed. The higher the number, the faster.
Max Speed	-7 to 7 (0) Sets the maximum pan/tilt speed. The higher the number, the faster.
Direction Settings	Selects the operation direction settings for pan, tilt, zoom, focus, and iris, and the setting target for the F5 dial. Common: Set for all controlled cameras. Specify Individually: Set for an individual camera.
Camera	Camera 1 to Camera 200, All Selects the target camera for [Direction Settings] > [Specify Individually].
Pan Direction Tilt Direction Zoom Direction Focus Direction Iris Direction	Normal , Reverse Selects the operation direction for the corresponding function.
F5 Direction	Normal, Reverse, Conform to Assign Func. Selects the operation direction when controlling the function assigned to the F5 dial. If set to [Conform to Assign Func.], the operation direction is the one set for the function assigned to the F5 dial.
F5 Speed	0 to 30, Conform to Assign Func. Selects the operation speed when controlling the function assigned to the F5 dial. If set to [Conform to Assign Func.], the operation speed is the one set for the function assigned to the F5 dial.

System

Setting item	Setting values/description
Initial Screen	Status , USER 1-10, Camera List, Control, Preset List Selects the top menu's screen to be displayed at startup.
Language 	English , 日本語, 简体中文 Selects the displayed language.
Operation Mode	Selects functions that can be operated, in order to prevent accidental operation. Full Control : All operations are possible. Camera Control: Allows control for all camera settings. PTZ Control: In addition to the PTZ operator, PTZ-related settings such as preset/trace editing are available. PTZ Operator: Only pan/tilt/zoom/focus/iris controls can be operated.
PoE+ Restrictions	Selects restricted functions when using PoE+ to supply power to the device. Disable Rear USB : The rear USB terminal cannot be used. Disable Front USB: The front USB terminal cannot be used. LCD/LED Bright. Restrict.: [LCD Brightness] and [LED Brightness] are restricted to a maximum value of 10 and 7 respectively.
LCD Brightness	1 to 20 (10) Selects the brightness of the LCD panel.
LED Brightness	0 to 15 (7) Selects the brightness of self-illuminated buttons.
Operation Volume	0 to 5 (2) Selects the operation volume.
SDI Output	Selects the SDI OUT terminal's output video selection method. Through: Outputs SDI video as is (no onscreen displays). Auto (SDI Priority) : If there is SDI input video, it is output. If there is no SDI input video, IP input video is output. Auto (IP Priority): In case of IP camera connection, IP input video is output. Otherwise, SDI input video is output. IP Multi View: Outputs the IP Multi View of the PICTURE screen. Preset/Trace List: Outputs the Preset/Trace List.
SDI 2K Only	Selects how to determine output resolution for SDI output of SDI input video. Auto : Outputs SDI input video as is. Only video is output when OSD are superimposed. On: Fixes the output resolution to 2K (1920x1080). Prevents screen flickering when switching OSD outputs.
HDMI Output	Selects the HDMI OUT terminal's output video selection method. SDI: SDI input video is output as is. Superimposing onscreen displays (focus frame, cropping frame, etc.) is possible. Auto (SDI Priority) : Same as [SDI Output]. Auto (IP Priority): Same as [SDI Output]. IP Multi View: Same as [SDI Output]. Preset/Trace List: Same as [SDI Output].
Export	Saves device settings information (rcip1000.dat) to the USB memory. Settings that are not recorded when the power is turned off are not saved.
Import Target	All , Non-Network Selects which settings loaded from the USB memory are applied to the device. If [Non-Network] is selected, all settings are applied except for those of the [Network] tab.
Import	Loads settings information (rcip1000.dat) stored on the USB memory and updates the device's settings.
Initialize	Resets the device to default settings.
Update Firmware	Updates the device's firmware (P. 69).
LCD White Balance	R Gain, G Gain, B Gain: -100 to 0 (0) Adjusts the LCD panel's white balance (P. 69).

Updating the Device's Firmware

To update the firmware, you can use a USB memory or use the Multi-Camera Management Application.

This section explains how to perform the update using a USB memory.

For details about the Multi-Camera Management Application, refer to the Multi-Camera Management Application User Manual.

Important

- Do not turn off the device while the firmware update is in progress, as it may cause abnormal operations.

1 Format the USB memory to FAT32 or exFAT.

2 Copy the firmware update file to the root folder of the USB memory.

3 Connect the USB memory to a USB terminal on the device.

- Enable the USB terminal to be used from SYSTEM menu > [System] > [PoE+ Restrictions].

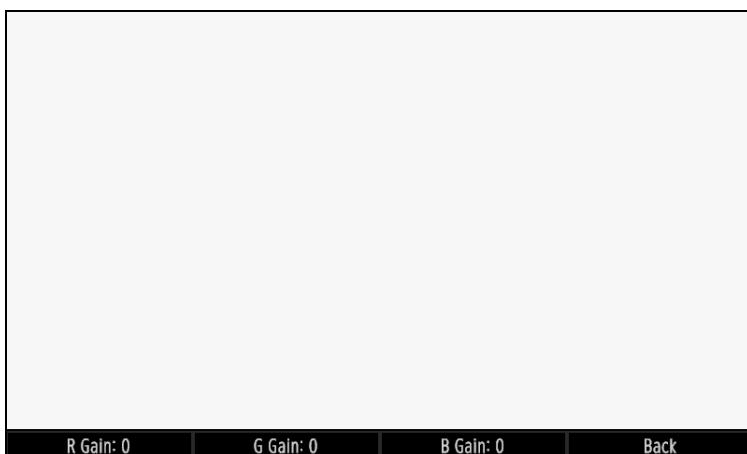
4 Select SYSTEM menu > [System] > [Update Firmware] > [OK] to perform the update.

- The POWER lamp blinks (twice / sec.) during the update.
- The device will restart automatically after the update is complete.
- Check the firmware version displayed after startup, then select [OK] to complete the update.

Adjusts the LCD panel's white balance

1 Select the SYSTEM menu > [System] tab.

2 Select [LCD White Balance].



- A white screen for adjusting the white balance appears.

3 Turn the F1-F3 dials to adjust [R Gain], [G Gain] and [B Gain].

- Adjust as desired while checking the screen (adjustments are reflected on the screen).
- Press the dials to reset the values to zero.

4 Once the adjustment is finished, press the F4 dial ([Back]).

■ Camera Connection

Automatically register unregistered cameras, swap between camera numbers, and manage certificates.

Setting item	Setting values/description
Auto Registration	Automatically sets up/registers detected unregistered cameras.
Registered Camera List	Displays a list of registered cameras. Example: Camera 1 192.168.100.1 Camera 2 Serial (NU)
Tally When Selected	On, Off Turns on the PGM tally (red) of the camera selected from [Registered Camera List], [Swap Source] or [Swap Destination].
Swap Source	Camera 1 to Camera 200 (Camera 1) Selects a source camera for swapping connection settings between camera numbers.
Swap Destination	Camera 1 to Camera 200 (Camera 2) Selects the destination camera for swapping connection settings between camera numbers.
Swap	Swaps connection settings ([Camera Connect. Details]) between camera numbers set for [Swap Source] and [Swap Destination].
Initialize Reg. Info.	Deletes registration information of all cameras and restores the default settings.
Group	Group 1 to Group 20 (Group 1) Selects the camera group to be renamed.
Group Name	Sets the name (up to 15 alphanumeric characters or symbols) of the camera group selected in [Group].
IP Video Display	On, Off Outputs IP video to the PICTURE screen and output terminals.
Cam. Certificate Verification	On, Off Selects whether to use the verification function for the camera's self-signed certificate when communication with the camera is set to SSL.
Select Camera Communication Certificate File	Selects a server certificate file from the list of certificate files stored on the root folder of the USB memory. Certificate files that can be imported: Format: PKCS12 or PEM format. Extension: ".p12", ".pfx", ".pem", ".crt" or ".cer". Signature algorithm (key length): RSA (2048 to 4096 bit) or ECDSA (224 to 384 bit).
Password	Sets the certificate password (up to 64 characters).
Import	Imports the certificate used to communicate with the camera from the selected camera communication certificate file.
Certificates	1 to 100 (number of loaded certificates) Selects the certificate number.
Delete	Deletes the certificate selected from [Certificates].
Issued by	Displays the certificate's "Issued by" information.
Issued to	Displays the certificate's "Issued to" information.
Validity Period Start Date	Displays the certificate validity period start date.
Validity Period End Date	Displays the certificate's expiration date.
Startup Date/Time: Year, Month, Day, Hour	Sets the date and time when the device starts up. This date and time is set every time the device starts up. After the first IP connection with a camera, the camera's date and time settings are used for the device.

Important

- When using the certificate verification function for SSL communication, you need to use the camera's self-signed certificate with the camera's IP address set in [Common Name (CN)].
- If [Cam. Certificate Verification] is set to [Off], SSL communication can be used even if the camera's certificate is not imported.

■ Camera Connect. Details

Perform connection settings for individual cameras.

Setting item	Setting values/description
Camera	Camera 1 to Camera 200 (Camera 1) Selects the registration camera number for the camera. Touch  on the right of the screen to apply the camera number of the currently selected camera.
Connection Type	Selects the connection type (Protocol) for the selected camera. IP: IP connection (XC Protocol). Serial (NU): Serial connection (NU Protocol). Can only be selected for Camera 1 to Camera 5. None : No camera registered.
Unregistered Cam Search	Searches for cameras on the same network, and displays a list of detected cameras not registered in the selected group. The camera selected from the list is registered.
IP Version	IPv4 , IPv6 Selects the IP version of the connection destination.
ExCAM	CAM 1 to CAM 200, None Selects a camera in the same group to be linked with the currently selected camera.
Preset Link	On, Off Performs the same preset control as the camera selected in [ExCAM] in conjunction with the Preset Execute/Register/Delete operation of the currently selected camera.
IPv4 Address	0.0.0.0 to 255.255.255.255 (192.168.100.1) Inputs the IPv4 address.
IPv6 Address	Inputs the IPv6 address (up to 39 lowercase letters, numbers and ":").
Administrator Name/User Name	Inputs the IP connection administrator name or user name (5 to 15 alphanumeric characters).
Password	Inputs the IP connection password (8 to 32 characters – must contain two of the following: letters, numbers or symbols).
SSL Communications	On, Off Selects whether to use HTTPS or not when connecting to an IP address.
Port No.	SSL communications off: 1024 to 65535 (80) SSL communications on: 1024 to 65535 (443) Inputs the port number to use for the IP connection.
Apply	Applies the specified connection information to the camera selected in [Camera].

■ Camera Initial Setup

Perform the initial setup for factory-set remote cameras connected to the network in one go.

Setting item	Setting values/description
Search	Searches for factory-set cameras among cameras on the same network. Found cameras are reflected in the [Target Camera] list.
Target Camera	When performing the initial setup for only one camera, selects the camera to be set up from the factory-set cameras found using [Search].
Administrator Name	Inputs the administrator name to be set for the camera (5 to 15 alphanumeric characters and symbols).
Password	Inputs the password to be set for the camera (8 to 32 characters – must contain two of the following: letters, numbers or symbols).
IPv4 Setting Method	Auto (DHCP) , Manual Selects an IPv4 address setting method.
Confirm Password	Inputs the password for verification.
IPv4 Address	0.0.0.0 to 255.255.255.255 Inputs the starting IPv4 address.
Subnet Mask	Inputs the subnet mask.
Default Gateway	Inputs the default gateway. If 0.0.0.0 is input, it will be set to "none".

Setting item	Setting values/description
Apply	Performs the initial setup for the camera selected in [Target Camera] or all found cameras at once. For all found cameras, if [IPv4 Settings Method] is [Manual], the IP addresses of the second and subsequent cameras are set in order by adding 1 (or more) to the address set in [IPv4 Address].

■ Network

Perform the device's network settings.

Setting item	Setting values/description
IPv4 Setting Method	DHCP / AutoIP , Manual Selects an IPv4 address setting method.
IPv4 Address	0.0.0.0 to 255.255.255.255 (192.168.100.254) Inputs the IPv4 address.
Subnet Mask	0.0.0.0 to 255.255.255.255 (255.255.255.0) Inputs the subnet mask.
Default Gateway	0.0.0.0 to 255.255.255.255 (0.0.0.0) Inputs the default gateway address.
Apply	Saves the device's IPv4 address settings.
IPv6 Address	Inputs the IPv6 address (up to 39 lowercase letters, numbers and ":").
Prefix Length	16 to 128 (64) Inputs the IPv6 prefix length.
Default Gateway	Inputs the IPv6 default gateway address (up to 39 lowercase letters, numbers and ":").
Apply	Saves the device's IPv6 address settings.
Application Control	HTTPS, HTTP/HTTPS, Off Selects whether to allow control of the controller from an external device and the available communication protocol.
User Name	Inputs the device's user name (5-15 alphanumeric characters or symbols) when accessing from an external device.
Password	Inputs the device's password (8 to 32 characters – at least two character classes from letters, numbers or symbols are required) for access from an external device.
Controller Name	Up to 15 alphanumeric characters/symbols (Controller). Inputs the controller name.
XC Server Authn.	Enable, Disable Enable or disable user name/password authentication for XC server functions when [Application Control] is enabled and [User Name] and [Password] have been entered.
Select Server Certificate File	Selects a server certificate stored on the root folder of the USB memory. Certificate files that can be imported are the same as certificate files used for camera communications (P. 70).
Password	Sets the password (up to 64 characters) for importing/exporting server certificates.
Import	Imports a server certificate from the selected server certificate file.
Certificates	1 to 4 (1) Selects the server certificate.
Status	Enable, Disable Enables or disables the server certificate selected in [Certificates].
Export	Exports the selected certificate to a USB memory.
Delete	Deletes the selected certificate.
Common Name (CN)	Displays the certificate's issuer name.
Validity Period Start Date	Displays the certificate validity period start date.
Validity Period End Date	Displays the selected certificate's expiration date.
Country (C)	Inputs an ISO3166-1 alpha-2 country code as the distinguished name for the certificate.

Setting item	Setting values/description
State/Province (ST) Locality (L) Organization (O) Common Name (CN)	Inputs each name (up to 64 alphanumeric characters, spaces and printable characters) as the distinguished name of the certificate. For [Common Name (CN)], a host name in FQDN format should be input (required).
Valid Period Start Year, Month, Day Valid Period End Year, Month, Day	Year: 2023 to 2037 Month: 1 to 12 Day: 1 to 31 Inputs the validity period for the certificate to be created Initial settings: Start: 2023.1.1, End: 2037.12.31
Generate Certificate Signing Request	Generates a signing request and saves it to the USB memory (rcip1000.csr).
Create Self-Signed Certificate	Creates a self-signed certificate. It is required to input [Country (C)], [State/Province (ST)], [Locality (L)], [Organization (O)], [Common Name (CN)], [Valid Period Start Year] / [Month] / [Day], [Valid Period End Year] / [Month] / [Day].

Important

- When [XC Server Authn.] is set to [Disable], communication is possible without user name/password authentication. Use [Disable] only when security is ensured, such as when operating within a network that does not allow external communication. The setting will be retained until you set it back to [Enable]. Be sure to select [Enable] if the authentication function is needed.
- Self-signed certificates should be used in cases that do not require full security, such as for operational tests. During full-scale system operation, it is recommended to obtain and install a server certificate issued by a CA office.

GPIO

Perform GPIO operations and group/camera assignment. For details on GPIO, refer to “GPIO 1 Terminal / GPIO 2 Terminal Pin Arrangement” (P. 94).

Setting item	Setting values/description
Mode	Mode 1 , Mode 2, Mode 3 Selects the GPIO mode.
Setting Target	For [Mode 1] Tally In , Camera In, Camera Out For [Mode 2] Tally In , Multi Preset In, Group Out, Preset In, Camera In For [Mode 3] Tally In The setting targets differ depending on the selected mode.
Tally Control	On , Off Selects whether to output the tally control information to the camera.
Tally In 1 to Tally In 10 Camera In 1 to Camera In 10	Camera 1 to 200 (Camera 1 to 10) Selects cameras to consider as input when receiving [Tally In] or [Camera In].
Preset In 1 to Preset In 10	Preset 1 to 100 (Preset 1 to 10) Selects presets to consider as input when receiving [Preset In].
Multi Preset In 1 to Multi Preset In 4	Multi Preset 1 to Multi Preset 5 (Multi Preset 1 to 4) Selects Multi Presets to consider as input when receiving [Multi Preset In].
Camera Out 1 to Camera Out 10	Camera 1 to 200 (Camera 1 to 10) When a camera is selected, [Camera Out] is output or the corresponding camera is selected.
Group Out 1 to Group Out 5	Group 1 to 20 (Group 1 to 5) When a group is selected, [Group Out] is output or the corresponding group is selected.

Note

Tally control information is output only to cameras belonging to the selected group. For other cameras, even if there is input, information is not output.

Stream Deck

You can connect an Elgato Stream Deck unit to this device's USB terminal and perform several functions, by assigning the desired functions beforehand. You can save and switch between three sets (pages) of key assignments. For supported Stream Deck products, please refer to the Canon website.



Important

If there are changes in the specifications of the Stream Deck, connection may not be possible.

Setting item	Setting values/description
Device	Displays the name of the connected device.
Brightness	5 to 100 (50) Selects the brightness of the key in increments of 5.
Page	Page 1 to Page 3 Selects the key assignment preset.
Setting Target	Assign , Name, Color (Off), Color (On) Selects settings to set for Key 1 to Key 32
Key 1 to Key 32 (Assign)	CAM 1 to CAM 10, Preset 1 to Preset 32, Multi Preset 1 to Multi Preset 5, Assist 1 to Assist 5, Ext Output Up, Ext Output Down, Ext Output Left, Ext Output Right, Ext Output SET, Page, None Selects the function to be assigned to Key 1 to Key 32. The maximum number of available keys is the number of buttons on the Stream Deck in use.
Key 1 to Key 32 (Name)	Enters the key name (up to 18 characters) to be displayed at the top of the key. Default: Key xx
Key 1 to Key 32 (Color (Off))	Black , Orange, Red, Green, Blue, Yellow Selects a key background color (when set to Off).
Key 1 to Key 32 (Color (On))	Black, Orange , Red, Green, Blue, Yellow Selects a key background color (when set to On).
Pedal Center	Selects the function to be assigned to Pedal Center. Assignable functions are the same as [Key 1 to Key 32 (Assign)].
Pedal L / R	ExCAM Pan, ExCAM Tilt, ExCAM Zoom Selects the function to be assigned to the Stream Deck Pedals.
Pedal Direction	Normal , Reverse Selects the operation direction when controlling the functions assigned to the Stream Deck Pedals.
Pedal Speed	0 to 30, Conform to Assign Func. Selects the operation speed when controlling the functions assigned to the Stream Deck Pedals. If you select [Conform to Assign Func.], the operating speed will be the same as that set for the assigned function.

Stream Deck Assignable Functions (Keys 1 to 32 / Pedal Center)

Function	Description
CAM 1 to CAM 10	Selects the specified camera.
Preset 1 to Preset 32	Executes the specified preset.
Multi Preset 1 to Multi Preset 5	Executes the specified Multi Preset.
Assist 1 to Assist 5	Selects the specified shooting assistance setting.
Ext Output Up	Operates ▲ / ▼ / ◀ / ▶ / SET when the operation target is an external output.
Ext Output Down	
Ext Output Left	
Ext Output Right	
Ext Output SET	
Page	Selects a set of key assignments (switches sequentially with each press).
None	No function assigned.

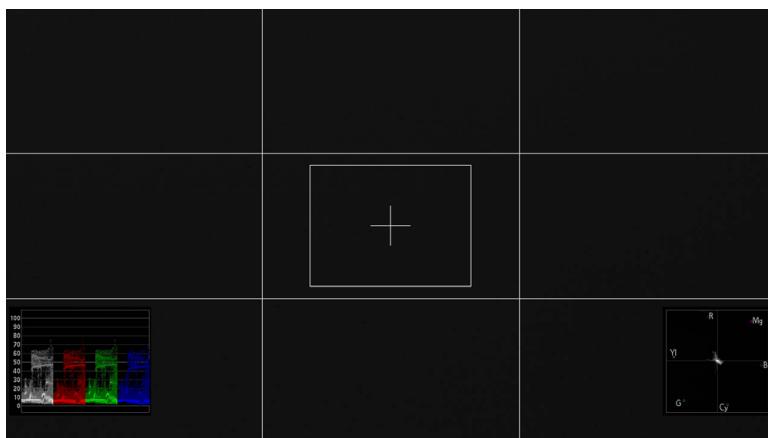
Default Values for Key Assignment Presets (Pages)

Number of Keys	Assigned Keys	Page 1	Page 2	Page 3
6	Key 1 to Key 6	Preset 1 to 5, Page	Ext Output Left, Ext Output Up, Ext Output Right, Ext Output SET, Ext Output Down, Page	CAM 1 to 3, Multi Preset 1 to 2, Page
15	Key 1 to Key 15	Preset 1 to 14, Page	Ext Output Up, Ext Output Left, Ext Output SET, Ext Output Right, Ext Output Down, Page	CAM 1 to 3, Multi Preset 1 to 2, Preset 1 to 9, Page
32	Key 1 to Key 32	Preset 1 to 31, Page	Ext Output Up, Ext Output Left, Ext Output SET, Ext Output Right, Ext Output Down, Page	CAM 1 to 5, Multi Preset 1 to 2, Preset 1 to 23, Page
3 (Pedal)	Center L / R	Preset 1, ExCAM Pan	Preset 1, ExCAM Tilt	Preset 1, ExCAM Zoom

Assist

You can specify the assistance displays to be superimposed on the LCD panel of the device and video output from the SDI OUT terminal/HDMI OUT terminal.

You can save and switch between five assistance display settings.



Setting item	Setting values/description
Assist	Assist 1 to Assist 5, Off Selects an assistance settings preset.
Display Target	LCD, SDI, HDMI Selects the output destination for assistance displays.
Waveform Monitor	On, Off Displays the Waveform Monitor.
Select Signal	Y, RGB, YRGB Selects the Waveform Monitor signal.
Size	Large, Small Selects the Waveform Monitor size.
Vector Scope	On, Off Displays the Vector Scope.
Size	Large, Small Selects the Vector Scope size.
Grid Marker	On, Off Displays the Grid Marker.
Center Marker	On, Off Displays the Center Marker.

Setting item	Setting values/description
Area Marker	On, Off Displays the Area Marker.
H Position	0 to 1920 (760) Area Marker position (X coordinates)
V Position	0 to 1080 (390) Area Marker position (Y coordinates)
Width	10 to 1920 (400) Area Marker width.
Height	10 to 1080 (300) Area Marker height.

Default Values for Assistance Settings Presets

Assist	Default values				
	Assist 1	Assist 2	Assist 3	Assist 4	Assist 5
Display Target	LCD	LCD	LCD	SDI	HDMI
Waveform Monitor	On	—	—	On	On
Vector Scope	—	On	—	On	On
Grid Marker	—	—	On	On	On
Center Marker	—	—	On	On	On
Area Marker	—	—	On	On	On

—: [Off]

■ Information

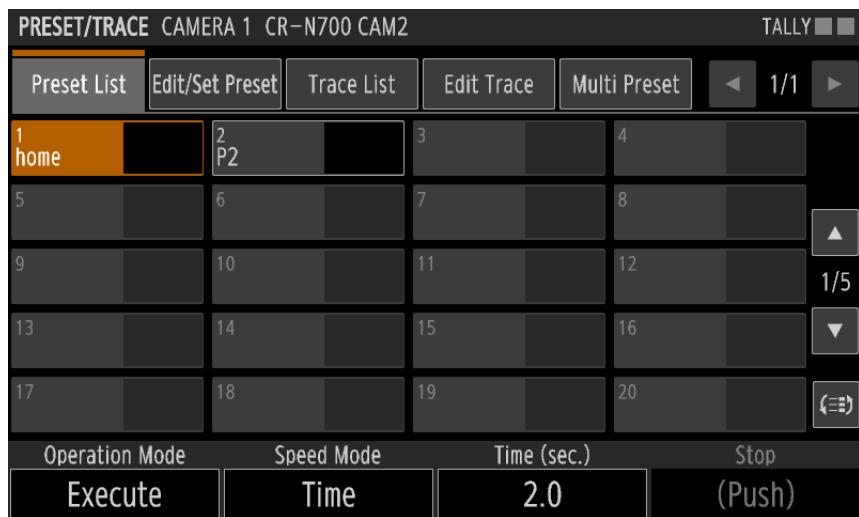
Display the device's serial number, firmware version, network information, etc.

Setting item	Setting values/description
Firmware Version	Displays the firmware version.
Serial Number	Displays the serial number.
MAC Address	Displays the MAC address.
IPv4 Address	Displays the IPv4 address.
Subnet Mask	Displays the subnet mask.
IPv6 Address / Prefix	Displays the IPv6 address and prefix.

PRESET / TRACE Menu

Perform preset and trace settings, preset group settings, etc.

■ Preset List



Setting item	Setting values/description
1 xxxx to 100 xxxx	Selects the preset to be operated. "xxxxx" represents the preset name when one has been set. Display and operation of the list are the same as on "Preset List Screen Display/Operation" (P. 31).
Operation Mode	Execute , Add, Delete Selects the operation for the selected preset.
Speed Mode	Time , Speed Level, Speed (at Regist.) Select how to determine the preset execution speed when [Operation Mode] is [Execute]. On a serial connection (NU protocol), or if the camera does not support the specified [Speed Mode], the preset will operate with [Time (sec.)].
Register	Sets the items to be registered for the preset when [Operation Mode] is set to [Add]. Same as [Edit/Set Preset] > [Register].
Time (sec.)	2.0 to 99.0 (2.0) When [Operation Mode] is [Execute] and [Speed Mode] is set to [Time], sets the preset travel time (in seconds, with 0.5 second increments).
Speed Level	1 to 100 (100) When [Operation Mode] is [Execute] and [Speed Mode] is set to [Speed Level], sets the preset movement speed.
Speed Level at Regist.	When [Operation Mode] is [Execute] and [Speed Mode] is set to [Speed (at Regist.)], the speed registered in the preset is displayed.
Time (sec.) at Regist.	When [Operation Mode] is [Execute] and [Speed Mode] is set to [Speed (at Regist.)], the time registered in the preset is displayed.
Stop	Stops the preset's execution.

■ Edit/Set Preset

Edit and set the presets registered to the camera.

Setting item	Setting values/description
Preset	Preset 1 to Preset 100 (Preset 1) Selects the preset (by number) to be edited.
Preset Name	Inputs the preset name (up to 40 characters).

Setting item	Setting values/description
Register	PTZF , Camera Settings, All Select the operation/settings registered in the preset. If set to [All], both [PTZF] (pan, tilt, zoom, focus) and [Camera Settings] (image quality, etc.) are registered.
Registration mode	Speed Level, Time (sec.) Sets the mode of presets to be registered.
Speed Level*	1 to 100 (100) Sets the preset speed level.
Time (sec.)*	2.0 to 99.0 (2.0) Sets the preset travel time (in seconds, with 0.5 second increments).
Create Thumbnail	On, Off Saves the camera image during preset registration as a thumbnail.
Add	Registers the preset.
Registered at Regist.	Displays the items registered at preset registration.
Speed Level at Regist.	Displays the movement speed at preset registration.
Time (sec.) at Regist.	Displays the time at preset registration.
Delete	Deletes the currently selected preset.
Delete All	Deletes all presets (2 to 100) with the exception of Preset 1 ([home] on the remote camera). It may take some time if the number of registered presets is high.
Freeze Image During Movement	On, Off , Conform to Camera Set. Freezes the camera image (when movement starts) for display during preset execution. If you select [Conform to Camera Set.], it is set according to the camera's settings.

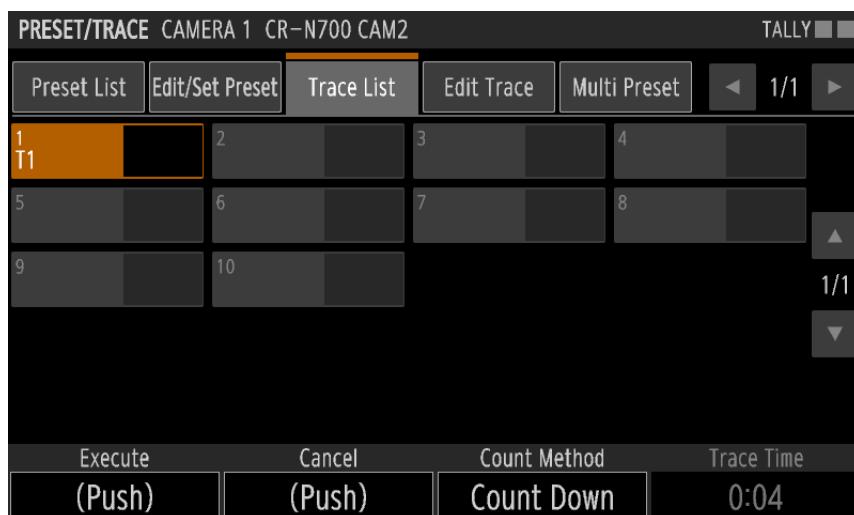
* Only shown when selected in [Registration mode].

Note

If you use [Delete] / [Delete All] to delete a preset used by an Add-On application, the Add-On application will not work correctly.
Caution

■ Trace List

Executes traces registered on the camera.



Setting item	Setting values/description
1 xxxx to 10 xxxx	Touch to select the trace to be executed. If touched, the corresponding camera will prepare for trace. "xxxx" represents the trace name when one has been set. When a thumbnail is registered to a trace, it is displayed on the button.
Execute	Executes the selected trace.
Cancel	The trace operation is canceled.

Setting item	Setting values/description
Count Method	Count Up, Count Down Selects the count method during trace execution.
Trace Time	Displays the trace execution time depending on the [Count Method] setting.

■ Edit Trace

Edit traces registered on the camera.

Setting item	Setting values/description
Trace	Trace 1 to Trace 10 (Trace 1) Selects the trace number.
Trace Name	Inputs the trace name (up to 40 characters).
Trace Time	Displays the trace execution time. Displays the elapsed recording time while a trace is being recorded.
Record Camera Settings	On , Off If set to [On], records the camera settings at the start of the trace.
Create Thumbnail	On , Off Saves the camera image at the start of trace registration as a thumbnail.
Start Recording	Starts trace recording.
Stop Recording	Stops trace recording.
Cancel	Stops the trace operation.
Delete	Deletes the trace corresponding to the trace number selected in [Trace].

■ Multi Preset

Registers a camera group and presets of each camera in the group as Multi Preset (P. 54). Up to five Multi Presets can be registered. If a Multi Preset is executed, you can simultaneously execute the presets set for each registered camera.

Setting item	Setting values/description
Multi Preset	Multi Preset 1 to Multi Preset 5 (Multi Preset 1) Select the Multi Preset number.
Execute	Executes the preset of each camera controlled by the selected Multi Preset. Cameras with presets set to [None] will not execute presets.
Control Range	Selects the cameras to be controlled. Group : Camera group (selected in [Group]) All: All cameras (Camera 1 to Camera 200).
Auto Setup	Sets the selected preset of each camera to be controlled to the selected Multi Preset in one go.
Group	Group 1 to Group 20 (Group 1) Selects the camera group. Depending on the selected camera group, switches to a set of 10 cameras ([Camera (number)] to [Camera (number+9)]). If [Control Range] is set to [Group], it is set as a Multi Preset camera group.
Camera 1 to Camera 200	Preset 1 to Preset 100, None Selects the preset for cameras in the camera group currently selected in [Group]. When [Control Range] is set to [All], selects it for all cameras.

CAMERA Menu

Control various settings and functions for the currently selected camera. Available setting items differ depending on the camera. For details on the setting items, refer to the camera's instruction manual. For details on the connection method (protocol), contact the distributor. The initial value of each setting item displays the setting values of the camera.

■ Exposure

Setting item	Setting values/description
Shooting Mode	Full Auto, Program AE, Shutter Priority AE, Iris Priority AE, Manual, Portrait, Sports, Low Light, Spotlight
Infrared	Off, On
ND Filter ND Filter (Stop) ND Filter (Transmittance) ND Filter (Optical Density)	Selects the ND filter value.
Enhanced ND Filter	Off, 1/4, 1/16, 1/32, 1/64
ND Filter Mode	Manual, Auto, Fixed
Extended ND Range	Off, On
Shutter Mode	Auto, Speed, Slow, Clear Scan, Angle, Manual, Off
Shutter Speed (sec.) Shutter Speed (Hz) Shutter Speed (°)	Depending on [Shutter Mode], selects the shutter speed value from seconds, Hz, or degrees (°).
Base ISO	Use [Automatic Switching] or a numeric value to select the base sensitivity (Base ISO) value.
ISO/Gain	ISO, Gain Selects the sensitivity setting method.
AGC	On, Off Adjusts ISO or gain automatically.
ISO	Selects the ISO sensitivity value.
Gain (dB)	Selects the gain value.
AGC Limit AGC Limit (dB)	When [AGC] is set to on, select the sensitivity upper limit.
High Sensitivity Mode	Off, On
Gain Boost	Off, On
ISO/Gain Extended Range	Off, On
Light Metering	Standard, Spotlight, Backlight
AE Shift	Selects the exposure compensation value.
AE Response	Low, Normal, High
Shockless Gain	Off, High, Normal, Low
Iris Limit	Off, On
Slow Shutter for IR Shooting	Off, On
Iris Increment	1/2, 1/3, 1/4
Fine Increment	Off, On
Shutter Increment	1/3, 1/4
ISO Increment	1/1, 1/3
Gain Increment	Normal, Fine
Flicker Reduction	Off, On
Diffraction Correction	Off, On

White Balance

Setting item	Setting values/description
Mode	Auto, Manual, Set A, Set B, Daylight, Tungsten, Color Temperature
AWB Lock	Off, On
Color Temperature (K)	Selects the color temperature (in kelvins).
CC	Selects the white balance color correction value.
R Gain	Selects the R Gain value for white balance.
B Gain	Selects the B Gain value for white balance.
Shockless WB	Off, On
AWB Response	Low, Normal, High
C. Temp. Increment	Kelvin, Mired

Focus

Setting item	Setting values/description
AF Mode	[AF Mode] Continuous, AF-Boost, AF-Boosted MF, One-Shot
Lens Action if cannot AF	[Lens Action if cannot AF] Continue Focus Search, Stop
AF Frame Size	Whole Area, Large, Small, Small Zone, Zone, Large Zone (V), Large Zone (H), Flexible Zone1, Flexible Zone2, Flexible Zone3
AF Frame Position	Selectable, Center Frame
Frame Display	Off , On
Focus Guide	Off , On
AF Lock	Off, On
Subject Det. AF, Face AF, Face Detection	For AF: [Subject Det. AF] Off, People & Det. Limited, People & Det. Priority, Animal & Det. Limited, Animal & Det. Priority [Face AF] Off, Face Only, Face Det. & Tracking For MF: [Subject Det. AF] Off, People & Det. Priority, Animal & Det. Priority [Face Detection] Off, On
Eye Detection	Off, On, Left Eye Priority, Right Eye Priority
Face Detection AE	Off, On
Touch Operation	Normal, Select Tracked Object
Change Subject (◀) Change Subject (▶)	Switches the main subject to the previous or next subject.
Start Tracking	Starts tracking mode.
Cancel Tracking	Ends tracking mode.
AF Speed	Low, Normal, High / -7 to 2. 1 to 10 for some cameras.
AF Response	Low, Normal, High / -3 to 3
Focus Limit	Off, On

■ Custom Picture

Setting item	Setting values/description
CP File	Selects the custom picture file.
Protect	Off, On
Gamma Color Space	Selects a combination of gamma curve and color space, or each setting individually.
Color Matrix	Video, Neutral, Production Camera Selects the color matrix.
HLG Color	Vivid, BT.2100 Selects the quality of color reproduction when using HLG.
Look File	Off, On
Look File Name	Displays the set Look File name of the currently selected custom picture file.
Original	Displays the gamma/color space when selecting a Look File.
With Look File	Displays the gamma/color space after applying a Look File.
Look File Strength (%)	Displays the intensity of image quality adjustment using the currently set Look File.
Setting	10 to 100 Sets the intensity of image quality adjustment using a Look File.
Apply	Applies the [Setting] value.

■ Image Quality

Setting item	Setting values/description
Black: Master Pedestal	-50 to +50 Adjusts the black level. Depending on the camera, it can be adjusted from -250 to +250.
Master Black Red Master Black Green Master Black Blue	-50 to +50 These settings correct the color cast in blacks. Depending on the camera, it can be adjusted from -250 to +250.
Black Gamma: Level Range Point	Level: -50 to +50 Range, Point: -20 to +50 These settings control the lower part of the gamma curve.
Knee: Activate White Level 100% Automatic Slope Point Saturation	Activate, Automatic: Off, On White Level 100%: Off, On Slope: -35 to +50 Point: 50 to 109 Saturation: -10 to +10 Compresses the highlighted areas to suppress the occurrence of blown highlights.
Low Key Satur.: Activate Level	Activate: Off, On Level: -50 to +50 Specifies how saturated colors are in dark areas.
Sharpness: Level Detail Frequency Coring Level Limit	Level: -10 to +50 Detail Frequency: -8 to +8 Coring Level: -30 to +50 Limit: -50 to +50 Adjusts edge enhancement.
NR: Automatic Level Spatial Filter Frame Correlation S/N Priority	Automatic: Off, On Level: 0 to +12 Spatial Filter: 0 to 12 Frame Correlation: 0 to 3 S/N Priority: Off, On Adjusts noise reduction.

Setting item	Setting values/description
Skin Detail: Effect Lvl. Assist Hue Chroma Area Y Level	Effect Level: Off, Low, Normal, High Assist: Off, On Hue: -16 to +16 Chroma, Area, Y Level: 0 to +31 Applies a softening filter to areas in the picture with skin tones to give a more pleasant appearance.
White Balance: R Gain G Gain B Gain	-50 to +50 These settings adjust the amount of white balance (RGB).
Over 100%	Through, Clip, Press Determines how video signals exceeding 100% are handled.
Color Matrix: Gain Phase R-G R-B G-R G-B B-R B-G	Gain: -50 to +50 Phase: -18 to +18 R-G, R-B, G-R, G-B, B-R, B-G: -50 to +50 Adjusts the tint of the picture.
CC: Select Area Assist Area A: Setting Phase Setting Chroma Setting Area Setting Y Level Revision Level Revision Phase Area B: Setting Phase Setting Chroma Setting Area Setting Y Level Revision Level Revision Phase	Select Area: Off, Area A, Area B, Area A & B Assist: Off, Area A, Area B Setting Phase, Setting Chroma, Setting Area, Setting Y Level: 0 to 31 Revision Level: -50 to +50 Revision Phase: -18 to +18 Color correction for a specific range of tones.

■ PTZ/IS

Setting item	Setting values/description
Digital Zoom	Off, 300x, 400x, 300x (upper limit: XXX), 400x (upper limit: XXX), Digital Zoom, Digital Tele-Converter, Advanced
Digital Tele-Converter	1.0x, 1.5x, 2.0x, 2.5x, 3.0x, 6.0x
Pan/Tilt Acceleration	Small, Medium, Large
Image Stabilizer	Off, On, Standard, Powered IS, Standard+Powered IS, Dynamic, Dynamic+Powered IS
Digital Image Stabilizer	Off, Digital IS, Super16 Digital IS, Digital IS (Standard), Digital IS (Powered)

■ Crop

Perform crop settings for video output from the camera's 12G-SDI OUT terminal and HDMI OUT / 3G-SDI OUT terminal and IP video.

Setting item	Setting values/description
12G-SDI	Crop Off, Crop 1, Crop 2, Vertical Crop Selects the cropping applied to the 12G-SDI OUT terminal's video.
HDMI / 3G-SDI	Crop Off, Crop 1, Crop 2, Vertical Crop Selects the cropping applied to the HDMI OUT / 3G-SDI OUT terminal's video.
IP	Crop Off, Crop 1, Crop 2, Vertical Crop Selects the cropping applied to the IP video.

Setting item	Setting values/description
Target Frame	Crop 1 , Crop 2, Vertical Crop Selects the cropping frame to be adjusted with the cropping frame adjustment mode.
Frame Display	All, Crop 1, Crop 2, Vertical Crop, Off Selects the cropping frame to be displayed on the screen.

Add-On

Operation and control of the remote camera's Add-On applications. If the Add-On application is "Lite", items shown with  are unavailable or their settings cannot be changed.

Setting item	Setting values/description
Auto Tracking No.	1 to 5 Selects an Auto Tracking preset.
Tracking Name	Displays the Auto Tracking preset name.
Auto Tracking	Off, On
Status	No Target Selected, Searching, Tracking, Angle Fixed, Target Lost Displays the automatic tracking status.  PTZ/IS Crop Add-On Monitoring OSD ◀ 2/3 ▶ 1 Auto Tracking No. Tracking Name Auto Tracking Status 1 On Tracking
Frame Display	Off , On Enables OSD superimposing on the device's SDI OUT terminal/HDMI OUT terminal/PICTURE screen.
Silhouette View	Off , On Displays silhouettes on the screen.
Crop Frame Display	All, Crop 1, Crop 2, Off Selects the cropping frame to be displayed on the screen.
Initial Position Display	Moves to the initial PTZ position.
Display Size	1 to 5 Selects the silhouette display size.
Auto Zoom	Off, On Enables/disables auto zoom.
Tracking Sensitivity	1 to 10 Selects tracking sensitivity.
Auto Select	Off, On Enables/disables automatic selection of the tracking target.
Auto Framing	Off, On
Multi-Person	Off, On
Face Direction	Off, On
Sit/Stand	Off, On
Auto Loop No.	1 to 5
Loop Name	Displays the loop name.
Auto Loop	Stop, Start
Loop Operation	 (Loop),  (Back & Forth)
Loop Direction	 (Forward),  (Reverse)
Save	Saves the settings to the camera.

■ Monitoring

Perform settings related to the camera's SDI/HDMI output video signal.

In the following setting items, "XXX" indicates the camera's video output terminal.

Setting item	Setting values/description
LUT: XXX	Off, On Selects whether to apply a LUT to the output video.
LUT Selection	BT.709, BT.2020, DCI, PQ, HLG, ACESproxy, CMT 709, Canon 709, CMT DCI, CMT PQ, CMT HLG, User LUT1 to 4
User LUT: XXX	1 to 4
Color Space (Output)	BT.709 Gamut, BT.2020 Gamut, Do Not Convert
Range (Output)	Full Range, Narrow Range
User LUT Name	Displays the name of the User LUT selected for the output destination set in [LUT].
View Assist: XXX	Off, On
Select View Assist	BT.709, HDR Assist. (800%), HDR Assist. (400%), Canon 709, CMT 709
Range (Canon Log)	Full Range, Narrow Range, Full Range Priority
Range (HDR)	Full Range, Narrow Range, Full Range Priority
HLG Color	Vivid, BT.2100
HDR → SDR Gain (dB)	Selects the gain adjustment value when converting HDR video to SDR video.

■ OSD

Perform setting related to onscreen displays superimposed on the camera's SDI/HDMI output video signal.

In the following setting items, "XXX" indicates the camera's video output terminal.

Setting item	Setting values/description
Focus Guide	Off, On
OSD Output: XXX	Off, On
OSD Opacity	Off, On
Opacity Level	25.0%, 37.5%, 50.0%, 62.5%, 75.0%
OSD Opacity: Appl. Screens	All, Only Rec/Playback Screens
Peripheral Border	DISP Level 1/2/3, DISP Level 1/2, DISP Level 1, DISP Level 2, DISP Level 3, Off, On
DISP Level	DISP Level 1, DISP Level 2, DISP Level 3
DISP Level 1	All Displays, All Displays (Periph. Border)
DISP Level 2	Shooting Information Display, Markers & Focus Frame, Only FUNC/MENU
DISP Level 3	Only REC/STBY, No Displays

■ Assistance

Perform setting related to shooting assistance displays superimposed on the camera's SDI/HDMI output video signal. In the following setting items, "XXX" indicates the camera's video output terminal.

Setting item	Setting values/description
Peaking: XXX	Off, On
Peaking	Peaking 1, Peaking 2
Peaking 1: Color	White, Red, Yellow, Blue
Peaking 1: Gain	0 to 15
Peaking 1: Frequency	1 to 4
Peaking 2: Color	White, Red, Yellow, Blue
Peaking 2: Gain	0 to 15
Peaking 2: Frequency	1 to 4
Markers: XXX	Off, On
Center Marker Horizontal Marker Vertical Marker Grid Marker	Yellow, Blue, Green, Red, Black, Gray, White, Off
Center Marker Type	Cross 1, Cross 2, Dot 1, Dot 2
Aspect Marker Safe Area Marker	Yellow, Blue, Green, Red, Black, Gray, White, Mask 100%, Mask 75%, Mask 50%, Mask 25%, Off
Marker Aspect Ratio	4:3, 13:9, 14:9, 16:9, 1.375:1, 1.66:1, 1.75:1, 1.85:1, 1.90:1, 2.35:1, 2.39:1, 9:16, 4:5, 2:1, 1:1, Custom
Marker Custom Asp. Ratio	Sets the aspect ratio used when [Marker Aspect Ratio] is set to [Custom].
Marker Custom Asp. Ratio (W)	+1 to +999
Marker Custom Asp. Ratio (H)	+1 to +999
Basis for Marker Safe Area	Whole Picture, Selected Aspect Marker
Marker Safe Area %	80% (Side Length), 88% (Side Length), 90% (Side Length), 93% (Side Length), 95% (Side Length), 80% (Area), 90% (Area), 92.5% (Area), 95% (Area)

■ System

Settings such as camera name, terminal output signal format and network.

Setting item	Setting values/description
Camera Name	Sets the remote camera name (up to 15 alphanumeric characters).
P/T Initialize	Initializes pan/tilt.
Frame Frequency (Hz)	23.98, 29.97 59.94, 25.00, 50.00,
Maximum Resolution	1920x1080, 3840x2160
12G-SDI	Selects the output signal format (resolution, frame rate) for the video output terminals.
HDMI / 6G-SDI	Displayed setting items differ depending on the camera.
HDMI / 3G-SDI	
3G-SDI	
HDMI	
IP	
IPv4 Setting Method	Manual, Auto (DHCP)
Video Flip	Disable, Enable
Input Volume	Sets the input volume.
IPv4 Address	Inputs the IPv4 address.

Setting item	Setting values/description
Subnet Mask	Inputs the subnet mask.
Default Gateway	Inputs the default gateway address.
Apply	Sets the [System] tab settings to the camera (except for [Camera Name]). This process may take some time.
Backup	Saves camera setting values to a USB memory.
Select Restore File	Selects the camera setting values file (stored on the USB memory) used to restore settings.
Restore Target	All Settings , Other than NW/Mgmt. Info, Preset, CP/Preset Selects the settings to restore from the camera setting values file on the USB memory.
Restore	Loads the camera setting values stored on the USB memory and restores them.
Password	Enters the password (8 to 32 characters – must contain two of the following: letters, numbers or symbols) required for camera setting values backup/restore.
Settings:Copying to	From the list of cameras in the group, selects a camera as the copy destination for the setting values.
Copy	Copies the setting values of the currently selected camera to the camera selected in [Settings:Copying to].
Auto Tracking: Running Status	Shows the Auto Tracking operation status.
Start Up	Starts the Auto Tracking Application.
Stop	Stops the Auto Tracking Application.
Automatic Startup	Off, On Turns on/off the automatic start of Auto Tracking.
Auto Loop: Running Status	Shows the automatic loop operation status.
Start Up	Starts the Auto Loop Application.
Stop	Stops the Auto Loop Application.
Automatic Startup	Off, On Turns on/off the automatic start of the automatic loop operation.

■ Camera Control

Performs operations for the currently selected camera such as recording, tally control and menu operation.

Setting item	Setting values/description
Power On	Turns the power on.
Standby	Switches to standby.
PGM Tally	Turns on/off PGM tally input to the camera.
PVW Tally	Turns on/off PVW tally input to the camera.
Wiper	Activates the camera's wiper (one back-and-forth movement).
Washer	Activates the camera's washer and wiper (four back-and-forth movements).
REC / STBY	Starts recording on the camera. Press it again to stop recording.
Rec Command	Off, On
Switch Video Frame Rate	Off, On
Frame Rate	24fps, 30fps Sets the frame rate for [Switch Video Frame Rate].
Camera MENU	Off, MENU, Custom Picture, FUNC Selects the camera menu displayed when pressing a USER button assigned to [Camera Menu].

Setting item	Setting values/description
SET	Used to operate the camera's menus (SET, CANCEL, direction buttons).
CANCEL	
▲	
▼	
◀	
▶	
Assignable Button 1 to Assignable Button 4	Executes functions assigned to the camera's Assignable Buttons 1 to 4.

■ Batch Camera Control

Perform settings on controlled cameras in one go, such as power on/standby, full auto mode, etc.

Setting item	Setting values/description
Control Range	Group, All Selects target cameras to be controlled with the following functions.
Power On	Turns the power on.
Standby	Switches to standby.
Auto WB Mode	Sets the white balance mode to AWB.
Shooting Mode Full Auto	Enables full auto mode.
Shooting Mode Manual	Disables full auto mode.
Color Bars On	Enables color bars.
Color Bars Off	Disables color bars.

Chapter 5

Appendix

This chapter explains the measures to take when trouble occurs or a log message is displayed.

Troubleshooting

Before contacting the Canon Customer Service Center, check the following items.

Power

Connection to cameras takes time after the power is turned on

- When [IPv4 Settings Method] in the SYSTEM menu is set to [DHCP/AutoIP], it takes time to assign an IP address. You can set the IP address manually for a shorter startup time (P. 39).

The device does not turn on

- Connect a DC power supply that conforms to the device's power specifications, or connect the device to a LAN hub that supports PoE+.
- During PoE+ power supply, the LAN cable was connected to the RS-422 terminal. Connect it to the LAN terminal.

Operation

Cameras are not searched

- The device can search for up to 200 cameras. Cameras 201 onwards are not searched.

The camera cannot be controlled

- Check that the camera is connected to power and is not on standby.
- For IP connected cameras, make sure that the camera is connected to the same subnet as the device.
- For cameras with a serial connection, connect the camera to the RS-422 1-5 terminals.
- Make sure the camera is selected to be controlled.
- Check the camera's connection settings.
- Check that the ENABLE button of each operation area is enabled.

The camera cannot be selected

- PRESET / GROUP Select mode is active. Press the SELECT button to switch to CAMERA Select mode, then select a camera (the CAMERA / GROUP lamp illuminates in green).

Changes in camera settings are not reflected

- There was an attempt to change a setting item that is not available with the current camera settings. Depending on the status of the camera, you may be able to set unavailable setting items (operating sounds and lamps are also operated). Check the camera's settings.

The camera's pan/tilt cannot be controlled

- Check that the pan/tilt operation area's ENABLE button is illuminated in orange.

Settings cannot be changed

- There was an attempt to perform a setting that is not allowed with the current [Operation Mode] setting. Check the [Operation Mode] setting (P. 68).

Multi Preset (Control Range: All) does not operate correctly

- The IP addresses and port numbers of cameras in different groups are duplicated. Change the IP address and port numbers of one of the cameras.

Displays and Lamps

ALARM lamp illuminates / flashes

POWER Lamp	ALARM Lamp	Cause / Countermeasures
● (Green light on)	● (Red light on)	When  is displayed, the camera's pan/tilt function cannot operate. Restart the camera. If the problem persists, please consult the Canon Customer Service Center. When  is displayed at the top of the status screen, a high-temperature warning has occurred in the camera. Check the camera's manual and take appropriate action.
● (Green / flashes: once / sec.)	● (Red light on)	Boot using PoE+ power supply failed. Verify the PoE+ hub settings. If the problem persists, connect the AC adapter and start up.
● (Green / flashes: once / 2 sec.)	● (Red / flashes: once / 2 sec.)	An error occurred in this device. Restart this device. If the problem persists, consult the Canon Customer Service Center.

IP video is not displayed

- Make sure that the camera settings grant video distribution privileges to the user, and that the camera's [Administrator Name/User Name] / [Password] (P. 71) are set correctly on the device.

The screen display is incorrect

- Camera or device settings were changed from the remote camera's Settings Page, the Multi-Camera Management Application, or another controller. It may be corrected by switching the menu page or turning the menu display on/off.

Network Connections

Cannot connect to the camera

- When using SSL communications, make sure that a valid certificate is selected, that the device's [Startup Date/Time: Year] / [Month] / [Day] / [Hour] (P. 70) settings are correct, and that the certificate validity is within the startup date/time settings.
- When SSL communication is being used and [Cam. Certificate Verification] is set to [On], check that a self-signed certificate with the camera's IP address set in [Common Name (CN)] is being used. If you do not want to use the verification function, set [Cam. Certificate Verification] to [Off].
- The IP addresses of cameras in the camera group are duplicated. Change the camera's IP address.

Operation is not performed correctly when using multiple control methods (controllers, control application, the camera's Settings Pages, etc.)

- Camera communications (operation, control, IP video reception, etc.) are duplicated. Register groups separately or avoid simultaneous multiple IP video display.

Output

When outputting SDI input video through SDI output, a signal different from the input is output

- When [Frame Display] settings such as focus and cropping are enabled, video with OSD superimposed (P. 57) is output. Disable OSD superimposing or set [SDI Output] (on the SYSTEM menu) to [Through] (P. 68).

Error Messages

Take the following actions if a message appears on the LCD panel.

GPIO interface error has been detected.

(Error code: 0704, 0705)

- Restart the device. If the problem persists, consult the Canon Customer Service Center.

HDMI interface error has been detected.

(Error code: 0505)

- Restart the device. If the problem persists, consult the Canon Customer Service Center.

IP address is invalid.

- The input IP address format is incorrect. Input the correct IP address.
- The registered cameras cannot be swapped because the IP addresses overlap within the same group. Check the camera swapping settings.

No USB memory connected.

- There is no USB memory connected to the USB terminal (front/rear).
- Use of the USB terminal is restricted. From SYSTEM menu > [PoE+ Restrictions], enable the USB terminal to be used.

Detecting USB memory...

- Wait until the USB memory is detected. If the operation is not complete, format the USB memory completely on a computer, or use a different USB memory.

USB interface error has been detected.

(Error code: 0701)

- Restart the device. If the problem persists, consult the Canon Customer Service Center.

Importing failed.

- Could not import device settings from the USB memory. Check the USB memory.

Could not find a camera.

- Make sure that the power supply and LAN cable are properly connected to the camera and the device.

Administrator name or password is invalid.

- Check the [Camera Connect. Details] tab > [Administrator Name/User Name] and [Password] settings (P. 71).

Could not find a camera in factory default state.

- The camera you are trying to register is not factory-set. Connect/register from the [Camera Connection] tab or [Camera Connect. Details] tab.

A system error has been detected.

(Error code: 0601, 0602, 0a01)

- Restart the device. If the problem persists, consult the Canon Customer Service Center.

Cameras with a serial type connection cannot be registered to Camera 6 onwards.

- A serial-connected camera was set as camera number 6 or higher when swapping registered cameras. Check the settings.

Setup failed.

- Settings for the device or the camera were not performed correctly. Restart the camera and the device.

Touch panel error has been detected.

(Error code: 0a03)

- Restart the device. If the problem persists, consult the Canon Customer Service Center.

Number of registered cameras has reached the limit.

- The number of registered cameras reached 200. Unregister unnecessary cameras, before registering additional cameras.

Unsupported USB memory.

- Use a USB memory formatted with FAT32 or exFAT.

Firmware update failed.

- Make sure that the update file stored on the USB memory is correct, then try again.
- Use a different USB memory and try again. If the problem persists, consult the Canon Customer Service Center.

Writing the file failed.

- Could not write to the USB memory. Check the USB memory connected to the device.

Reading the file failed.

- Could not read from the USB memory. Check the USB memory connected to the device.

Fan error has been detected.

(Error code: 0801, 0802)

- Restart the device. If the problem persists, consult the Canon Customer Service Center.

Could not find an unregistered camera.

- Make sure that the power supply and LAN cable are properly connected to the camera and the device.

Specifications

System

- **Protocols**
XC (IP connection), NU (serial connection)
- **Number of cameras that can be connected**
200 (including 5 serial-connected cameras)
- **LCD Panel**
Type: TFT color LCD panel
Screen size: 7.0 in. (178 mm)
Resolution: 800x480 (approximately 384,000 pixels)
Touch panel format: Capacitive touch screen

Terminals

- **SDI IN Terminal**
BNC jack
12G / 6G / 3G / HD-SDI input
- **SDI OUT Terminal**
BNC jack
12G / 6G / 3G / HD-SDI output
SDI IN terminal through output supported
OSD can be superimposed on SDI input video
Output of IP input video (LAN terminal) supported
- **HDMI OUT Terminal**
HDMI™ connector (Type A), output only, video only
- **LAN Terminal**
RJ-45 connector, 1000Base-T
- **RS-422 1 / 2 / 3 / 4 / 5 Terminals**
RJ-45 connector x 5
Used for serial connection
- **GPIO 1 Terminal / GPIO 2 Terminal**
D-sub 25-pin, used for external device control interface
- **USB Terminals (front, rear)**
USB Type A x2

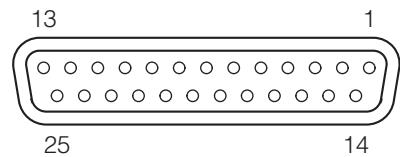
Power / Others

- **Power**
LAN terminal
 - LAN connector, PoE+ power supply supported (IEEE802.3at compliant), PoE cannot be usedDC IN 12V terminal
 - DC input: DC 10.8 to 20 V, 2.5 A, 4-pin XLR connector
- **Power consumption**
PoE+ input: 25.0 W (maximum power consumption)
Class 4 power sourcing equipment (requests 25.5 W)
DC input: 27.0 W (maximum power consumption)
- **GND Terminal**
Connects to the system's ground
- **Operating temperature (including temperature for guaranteed performance and storage)**
0 – +40°C (32– 104°F)
20 – 90% RH (without condensation)
- **Dimensions (W x H x D)**
Approx. 342 x 145 x 245 mm (13.47 x 5.71 x 9.65 in.) (excluding protrusions)
- **Weight**
Approx. 3.4 kg (7.50 lb.)

Control Interface for External Devices

GPIO 1 Terminal / GPIO 2 Terminal Pin Arrangement

You can choose from three GPIO 1 / GPIO 2 terminal pin assignment modes (P. 73).



■ GPIO 1 Terminal Pin Arrangement

Pin number	I/O	Signal name		
		Mode 1	Mode 2	Mode 3
1	IN		PGM Tally In 1	
	14	IN		PGM Tally In 2
2		IN		PGM Tally In 3
	15	IN		PGM Tally In 4
3		IN		PGM Tally In 5
	16	IN		PGM Tally In 6
4		IN		PGM Tally In 7
	17	IN		PGM Tally In 8
5		IN		PGM Tally In 9
	18	IN		PGM Tally In 10
6	GND		GND	
	19	IN	PVW Tally In 1	Multi Preset In 1
7		IN	PVW Tally In 2	Multi Preset In 2
	20	IN	PVW Tally In 3	Multi Preset In 3
8		IN	PVW Tally In 4	Multi Preset In 4
	21	IN	PVW Tally In 5	Menu ENABLE
9		IN	PVW Tally In 6	Reserved
	22	GND	GND	
10	IN / OUT		PVW Tally In 7	Group Out 1
	23	IN / OUT	PVW Tally In 8	Group Out 2
11		IN / OUT	PVW Tally In 9	Group Out 3
	24	IN / OUT	PVW Tally In 10	Group Out 4
12		IN / OUT	Reserved	Group Out 5
	25	GND	GND	
13		OUT	ALARM Out	

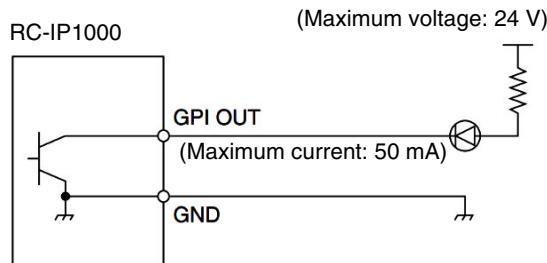
Signal name and meaning

Signal name	Setting item	Description	Operation type
PGM Tally In 1 to 10	Camera 1 to 200	The PGM tally (red) of the specified camera lights up when input is received.	Status
PVW Tally In 1 to 10	Camera 1 to 200	The PVW tally (green) of the specified camera lights up when input is received.	Status
ALARM Out	–	Output when the selected camera is in ALARM state.	Status
Group Out 1 to 5	1 to 20	Output when the specified group is selected.	Status
Multi Preset In 1 to 4	Multi Preset 1 to 4	The specified Multi Preset is executed when input is received.	Trigger
Menu ENABLE	–	The Menu Operation Area ENABLE button is enabled/disabled when input is received.	Trigger
Group 1 to 5 In	–	The specified group is selected when input is received.	Trigger
Group 1 to 5 Out	–	Output when a group is selected.	Status

GPI IN / OUT Connection Examples

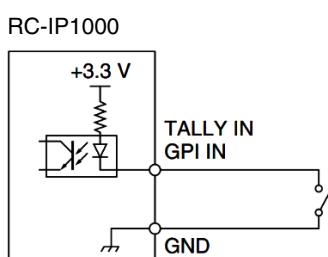
GPI OUT Connection Example

Open-collector output
Voltage: Maximum DC 24 V
Current: Maximum 50 mA



GPI IN Connection Example

Contact input



■ GPIO 2 Terminal Pin Arrangement

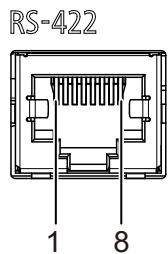
Pin number	I/O	Signal name		
		Mode 1	Mode 2	Mode 3
1	IN	Camera In 1	Preset In 1	Camera Button In 1
14	IN	Camera In 2	Preset In 2	Camera Button In 2
2	IN	Camera In 3	Preset In 3	Camera Button In 3
15	IN	Camera In 4	Preset In 4	Camera Button In 4
3	IN	Camera In 5	Preset In 5	Camera Button In 5
16	IN	Camera In 6	Preset In 6	Camera Button In 6
4	IN	Camera In 7	Preset In 7	Camera Button In 7
17	IN	Camera In 8	Preset In 8	Camera Button In 8
5	IN	Camera In 9	Preset In 9	Camera Button In 9
18	IN	Camera In 10	Preset In 10	Camera Button In 10
6	GND	GND		
19	IN / OUT	Camera Out 1	Camera In 1	Camera Button Out 1
7	IN / OUT	Camera Out 2	Camera In 2	Camera Button Out 2
20	IN / OUT	Camera Out 3	Camera In 3	Camera Button Out 3
8	IN / OUT	Camera Out 4	Camera In 4	Camera Button Out 4
21	IN / OUT	Camera Out 5	Camera In 5	Camera Button Out 5
9	IN / OUT	Camera Out 6	Camera In 6	Camera Button Out 6
22	IN / OUT	Camera Out 7	Camera In 7	Camera Button Out 7
10	IN / OUT	Camera Out 8	Camera In 8	Camera Button Out 8
23	IN / OUT	Camera Out 9	Camera In 9	Camera Button Out 9
11	IN / OUT	Camera Out 10	Camera In 10	Camera Button Out 10
24	GND	GND		
12	IN	Reserved		
25	GND	GND		
13	IN	Reserved		

Signal name and meaning

Signal types and meaning are the same as for GPIO 1.

Signal name	Setting item	Description	Operation type
Camera In 1 to 10	Camera 1 to 200	The specified camera is selected when input is received.	Trigger
Camera Out 1 to 10	Camera 1 to 200	Output when a camera is selected	Status
Preset In 1 to 10	Preset 1 to 100	The specified Multi Preset is executed when input is received.	Trigger
Camera Button In 1 to 10	–	When input is received, performs the same operation as when pressing a CAMERA / PRESET Select button for camera selection.	Trigger
Camera Button Out 1 to 10	–	Outputs the camera selection status of CAMERA / PRESET Select buttons.	Status

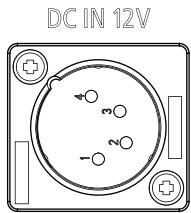
RS-422 1 / 2 / 3 / 4 / 5 Terminal Pin Arrangement



Pin number	Function	
1	RX-	Input (-)
2	RX+	Input (+)
3	TX-	Output (-)
4	GND	-
5	GND	-
6	TX+	Output (+)
7	NC	-
8	NC	-

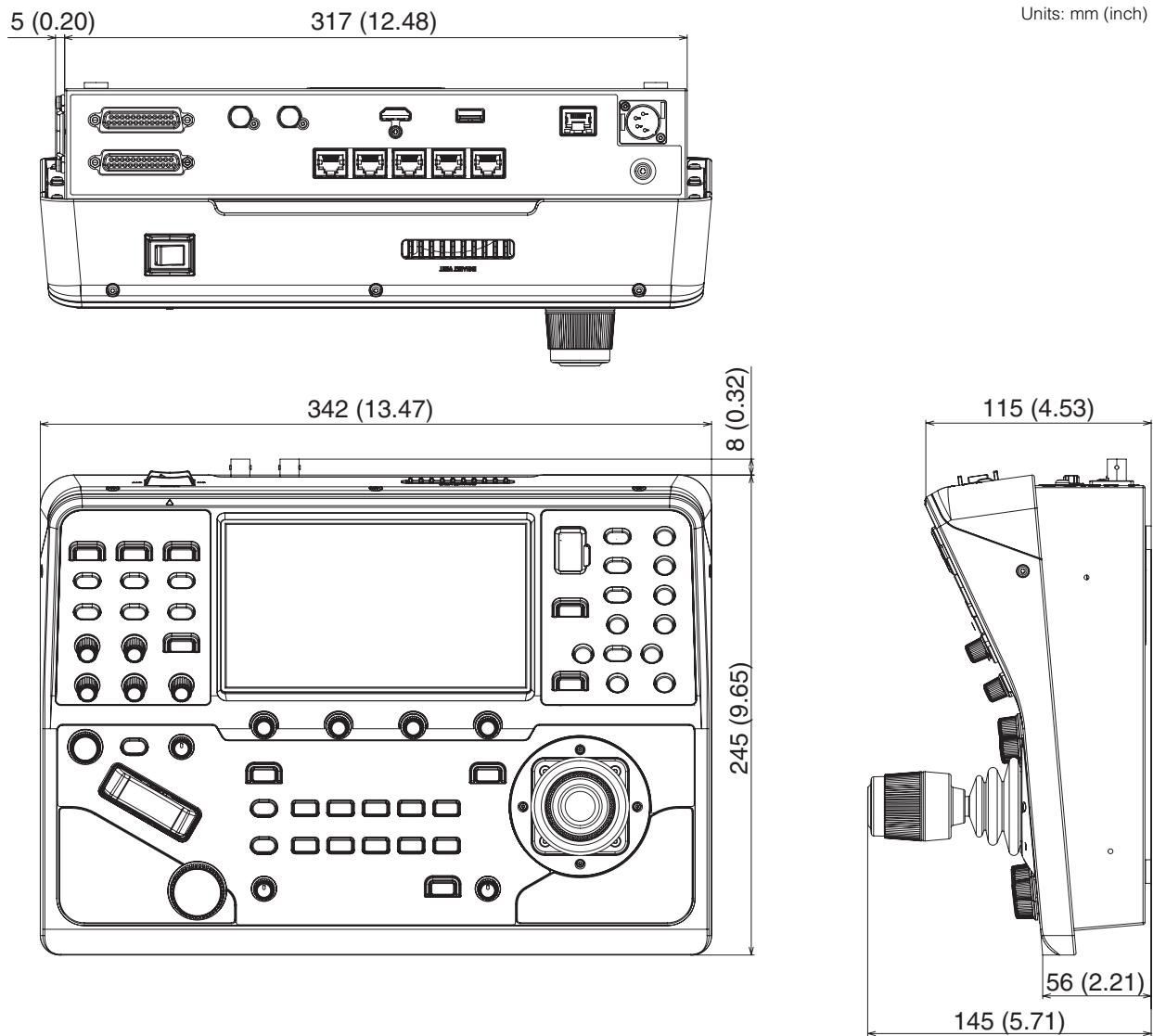
Connect the GNDs on both ends to stabilize the voltage level of the signal.

DC IN 12V Terminal Pin Arrangement

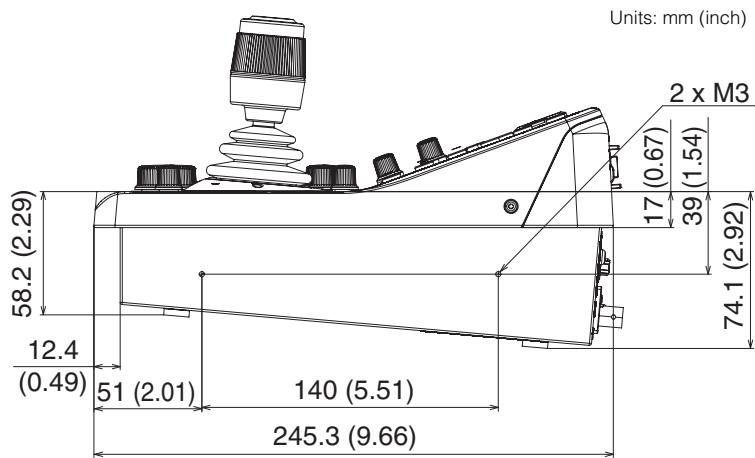


Pin number	Function
1	GND
2	Not connected
3	Not connected
4	+12V

Dimensions



Mounting position for desktop mounting angles



Trademarks

- The terms HDMI, HDMI High-Definition Multimedia Interface, HDMI Trade dress and the HDMI Logos are trademarks or registered trademarks of HDMI Licensing Administrator, Inc.
- All other company or product names used in this document are trademarks or registered trademarks of their respective holders.



This product comes with exFAT, a licensed file system technology from Microsoft.

Index

A

- Add-On 84
- Adjusting Auto Tracking Frame / Silhouette 53
- AGC (Auto Gain Control) Button 15
- AIR INTAKE 17
- ALARM Lamp 9
- Assignable Buttons/Dials 64
- Assistance (SYSTEM menu) 75
- AUTO Focus Button 14
- AUTO Iris Button 14
- Auto Loop 84
- Auto Tracking 84
- Automatic Camera Registration 40
- AWB Button 15

B

- Backup / Restore camera settings 87
- BARS Button 15
- Basic Operations 47
- Batch Camera Control 55, 88

C

- CAMERA / GROUP Select Mode 12, 48
- CAMERA / PRESET Select Area 11
- Camera Group 48
- Camera List Screen 28
- CAMERA Menu 80
- Camera Number 25, 29
- CAMERA Select 12, 28, 49
- Camera Settings Area 15
- Camera Status 37
- Changing Camera Settings 50
- Checking Video 35
- Color Bars 15
- Control Screen 29
- Controlling Multiple Cameras Simultaneously 54
- Crop 59, 83
- Cropping Camera Output Video 59
- Cropping Frame 59
- Custom Picture 82

D

- DC IN 12V Terminal 17, 23, 97
- DC Power Supply 23
- Desktop Mounting Angles 19
- Dimensions 19, 98
- Direct Setting Mode 32

E

- ENABLE Button
 - Camera Settings Area ENABLE Button 16
 - Iris/Zoom/Focus Operation Area ENABLE Button 14
 - Menu Operation Area ENABLE Button 10
 - Pan/Tilt Operation Area ENABLE Button 13
- Error Messages 92
- Executing a Preset 77
- EXHAUST VENT 17
- Exporting/Importing Settings 68
- Exposure 25, 80

F

- F1 to F5 Dials 11, 13
- Face AF 52
- Factory-Set Camera Initial Setup 44
- Firmware Update 68
- Focus 14, 81
- FOCUS Dial 14
- Focus Guide 81
- Full Auto 15
- FULL AUTO Button 15

G

- Gain 32, 80
- GND Terminal 17
- GPIO 73, 94
- GPIO 1/2 Terminals 17
- GROUP Number 48
- GROUP Select 12, 48

H

- HDMI OUT Terminal 17, 57, 93

I

Individual Camera Registration	41
Input/Output Format	56
Inputting Characters	34
Inputting the IP Address	42
Installation	19
Intake Fan	17
IP Connection	21
IP Multi View output	58
Iris	14
IRIS Dial	14
Iris/Zoom/Focus Operation Area	14
ISO	25, 80

L

LAN Terminal	17, 24, 93
LCD Panel	10

M

MAC Address	76
Marker	75
Menu (Device Setup)	32
Menu List	63
Menu Operation Area	10
Multi Control	54
Multi Preset	54, 79
Multi View	36

N

Network	39, 72
Network Information	76
NU Protocol	21, 71

O

ONE-SHOT AF Button	14
Operation Mode	68
OSD (Camera)	85
OSD (Device)	36

P

PAN / TILT Lever	13
Pan/Tilt Operation Area	13
Pan/Tilt Settings	67

PGM Tally	12, 26
PICTURE Button	10, 35
PICTURE Screen	35
Pin Arrangement	94
PoE+	24
PoE+ Hub	21
PoE+ Restrictions	68
POWER	17
Power	45
POWER Lamp	9
POWER Switch	17
Powering On/Off Multiple Cameras	55
PRESET / GROUP Select Mode	12, 49
PRESET / TRACE Menu	77
Preset Editing	77
PRESET GROUP Select	12, 49
Preset Link	71
Preset List Screen	31
PRESET Select	12, 49
Preset/Trace List output	58
PVW Tally	12, 26

R

RS-422 1 / 2 / 3 / 4 / 5 Terminals	17, 93, 97
--	------------

S

SDI IN Terminal	17, 56, 93
SDI OUT Terminal	17, 56, 93
SELECT Button	12
Serial Number	76
Shooting Information	38
Shooting Status	26
Shutter	15
SHUTTER Button	15
Shutter Speed	32, 80
Single View	35
Specifications	93
SPEED Dial	
Focus SPEED Dial	14
Pan/Tilt SPEED Dial	13
Zoom SPEED Dial	14
Status Screen	25
Stream Deck	74
Supported Formats	56, 57
Swapping Registered Cameras	70

Switcher	21
System Example	21
SYSTEM Menu	64

T

Tally	12, 26
TALLY Status	26
Top Menu	25
Touch Function	51
Trace Editing	79
Trace Execution	78
Troubleshooting	90
Turning On the Device	24
Turning On the Power (Camera)	45
Turning On the Power of the Cameras	45

U

USB Terminal	10, 17, 93
USER 1-10 Screen	27
USER Buttons 1 to 5	11, 13
USER Buttons Area	11
Using the Menu for Camera Setup	50

V

Vector Scope	75
Video Input/Output	56

W

Washer	87
Waveform Monitor	75
White Balance	15, 81
Wiper	87

X

XC Protocol	21, 71
-------------------	--------

Z

Zoom	14
ZOOM Rocker	14

