SONY

4-738-876-**14** (1)

Camera Control Unit

Operating Instructions

Before operating the unit, please read this manual thoroughly and retain it for future reference.

HDCU3100
HDCU3170

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Overview

The HDCU3100 Camera Control Unit connects to a Sony HDC3500 Color Camera, HDC3100 Fiber Color Camera, or HDC2000-series[1)] or HSC300RF/100RF HD Color Camera, with an optical fiber cable, and carries out signal processing, provides an interface with external equipment, and supplies power to the camera.
The HDCU3170 Camera Control Unit connects to an HDC3500 Color Camera[2)] or HDC3170 Triax Color Camera, with a triax cable, and carries out signal processing, provides an interface with external equipment, and supplies power to the camera.

The unit is equipped with a down-converter for converting HD signals[3)] transferred from the camera to SD signals[4)] and an up-converter for converting SD signals to HD signals, which give the unit the flexibility to operate in both high-definition and standard-definition camera systems.

The unit may be combined with an RCP-1000 series or later Remote Control Panel (optional) to form a camera control system. In addition, by combining the unit with an MSU-1000/1500 Master Setup Unit (optional), you can form a system capable of controlling multiple cameras.

Expanded functionality is supported by installing the following option devices in the unit.

HKCU-SFP30 ST 2110 Interface Kit
Enables operation in an IP transmission system.

HKCU-SM30 Single Mode Fiber Connector Kit
Enables connection with Sony cameras that support optical fiber transmission over a single-mode fiber cable.

HKCU-FB30 Optical Fiber Connector Kit
Enables support for both optical fiber and triax transmission.

HKCU-SDI30 12G-SDI Extension Kit
Enables 1-system 2-output 12G-SDI output at 4K.

HKCU-UHD30 4K/HDR Processor Board
Enables 4K output and 4K HDR output.

1) HDC2000 series: HDC2000/2580/2500/2400/1700
2) Attachment of the optional HKC-TR37 Triax Transmission Adaptor and HKC-CN50 Side Panel Attachment Kit is required.
3) HD (high-definition) signals: Generic name for 1125/750-line HDTV signals.
4) SD (standard-definition) signals: Generic name for NTSC/PAL signals, 525/625 component signals, and 525/625 composite signals.

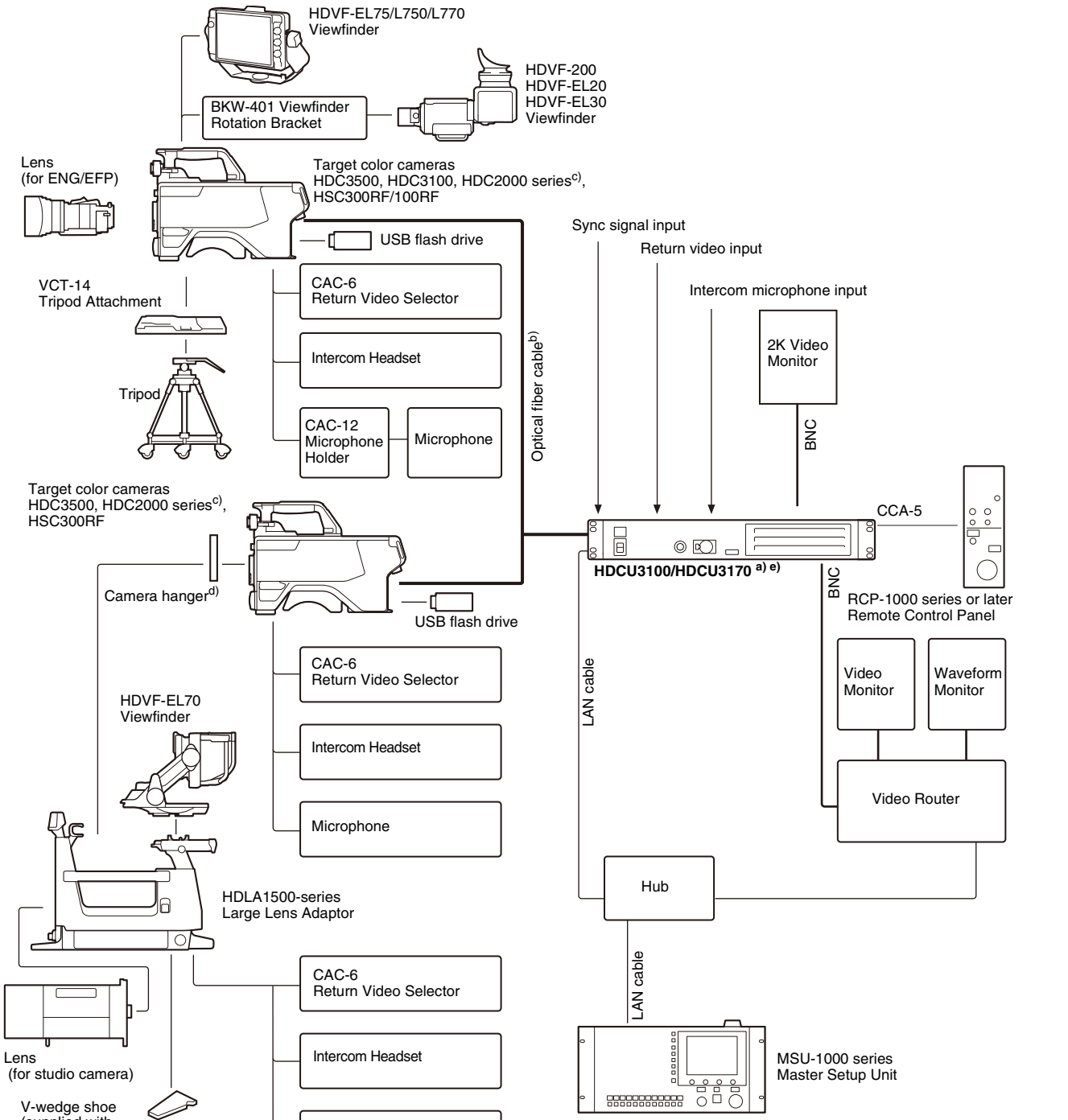
* Some models may not be available in certain countries or regions.

System Configuration

Note

Production of some of the peripherals and related devices shown in the figures may have been discontinued.
For advice on choosing devices, please contact your Sony representative or dealer.

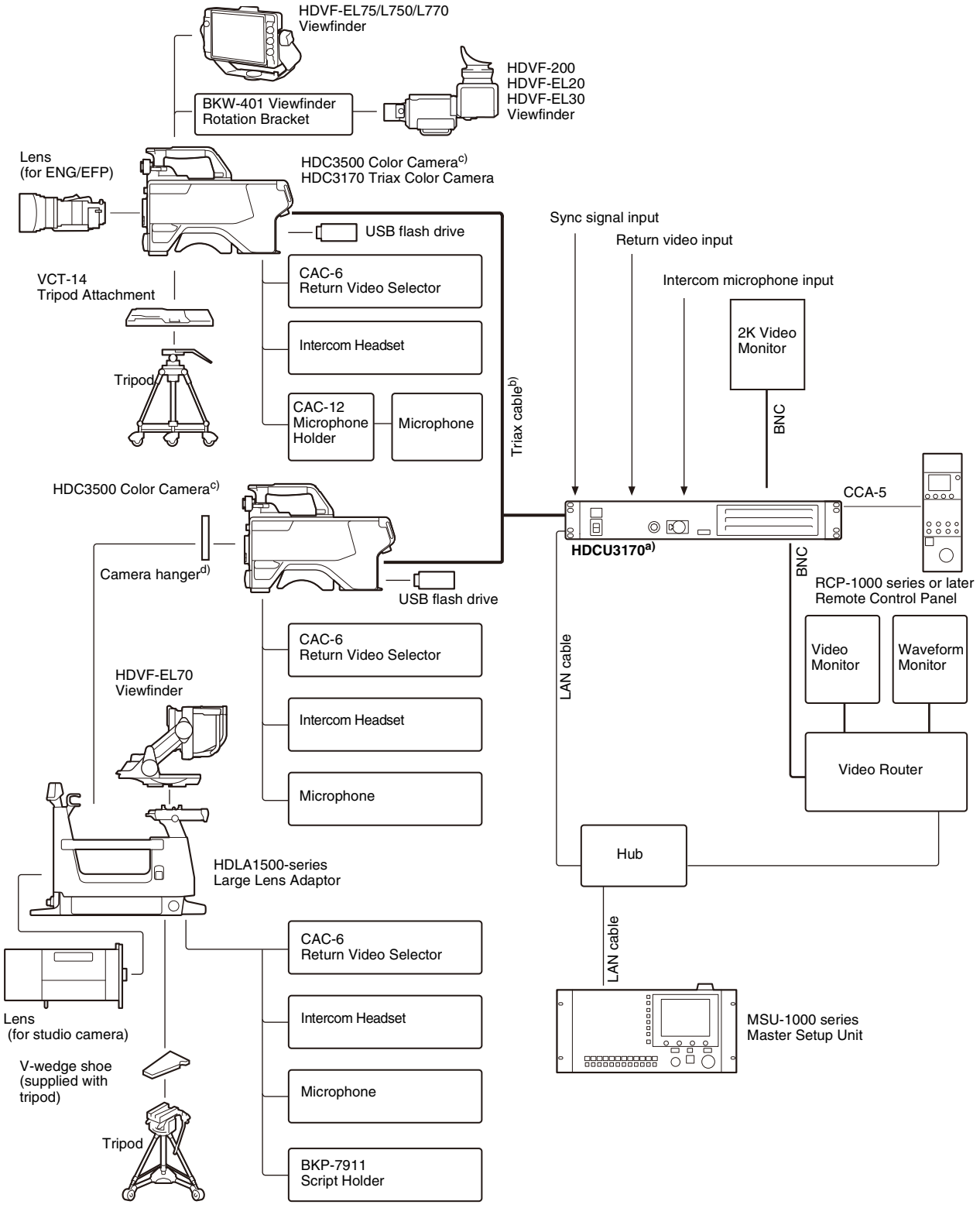
Connection example (optical fiber transmission)



a) Set the signal type and signal transmission rate for the camera to connect using the following menu items.
- SYSTEM CONFIG → <CAMERA I/F> → CABLE TYPE → FIBER CAMERA CABLE
- SYSTEM CONFIG → <CAMERA I/F> → FIBER TRANSMIT RATE (page 29)

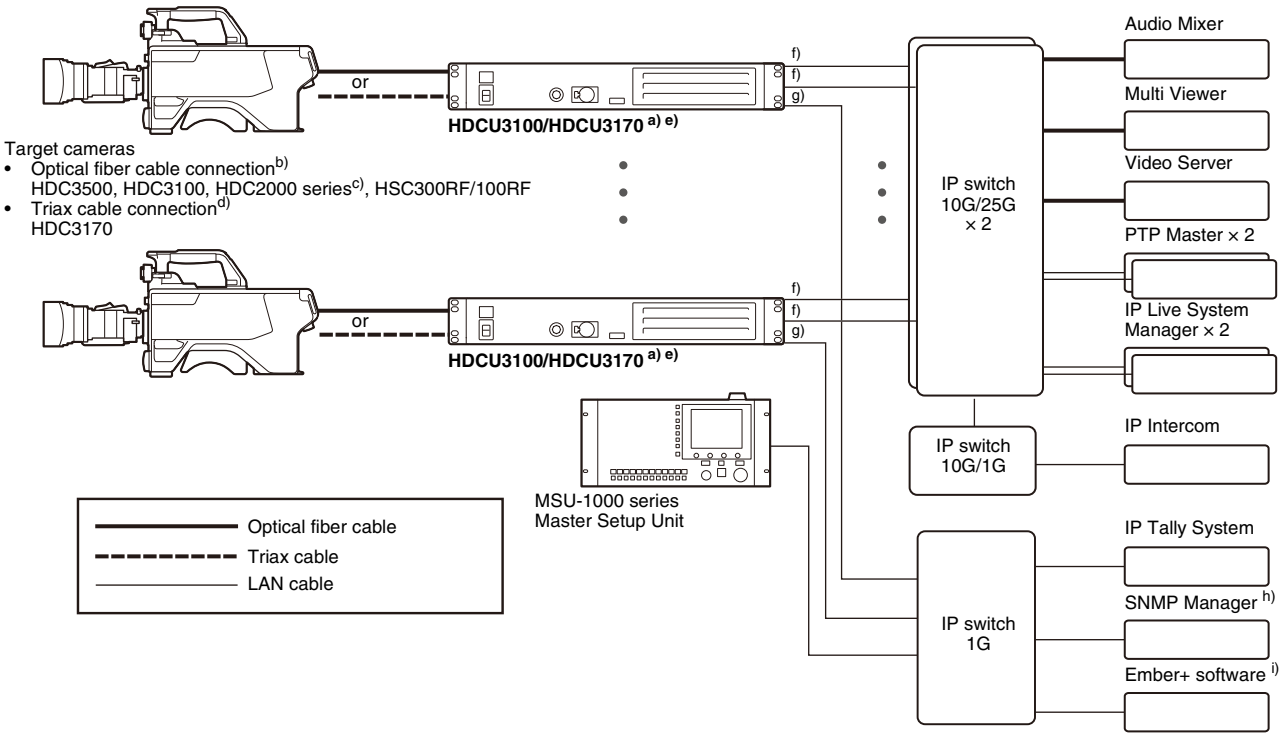
b) Signal transfer up to a maximum of 2 km is possible. However, the actual transfer distance may vary depending on the system configuration of the cameras and the type of optical fiber cables used.
c) HDC2000 series: HDC2000/2580/2500/2400/1700
d) Supplied with HDLA1500 series (Part No.: A-1128-405-A)
e) For optical fiber transmission when the HDCU3170 is connected to an HDC3500 Color Camera or HDC3100 Fiber Color Camera, attach the HKCU-FB30 Optical Fiber Connector Kit.

Connection example (digital triax transmission)



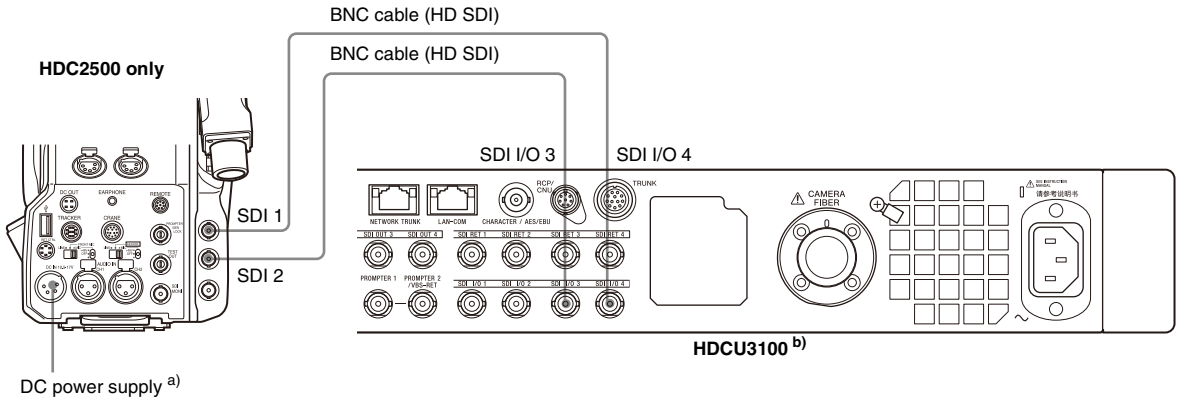
a) Set the signal type using the following menu item.
SYSTEM CONFIG → <CAMERA I/F> → CABLE TYPE → TRIAX CAMERA CABLE (page 29)
b) Signal transfer up to a maximum of 1.8 km is possible. However, the actual transfer distance may vary depending on the system configuration of the cameras and the type of triax cables used.
c) For triax transmission with the HDC3500 Color Camera, attach the HKC-TR37 Triax Transmission Adaptor and HKC-CN50 Side Panel Attachment Kit.
d) Supplied with HDLA1500 series (Part No.: A-1128-405-A)

Connection example (IP connection)



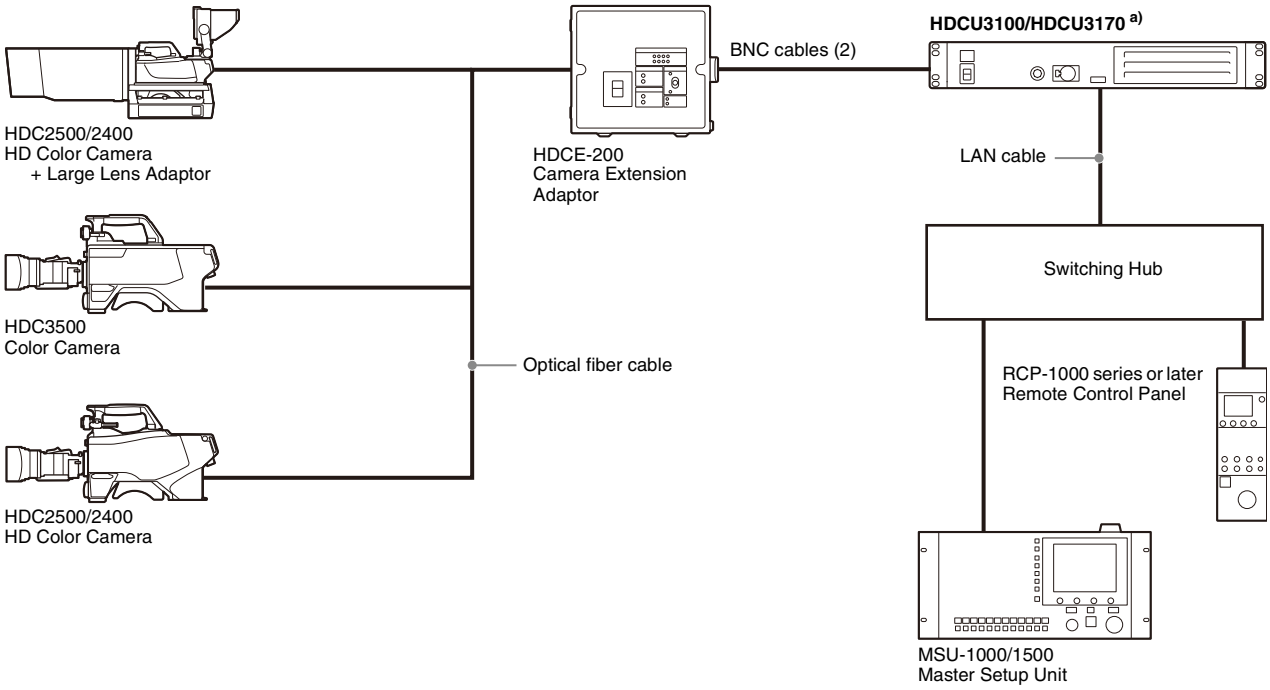
a) Set the signal transfer rate according to the connected camera using the SYSTEM CONFIG → <CAMERA I/F> menu in the HDCU3100/HDCU3170. For details, see *page 29*.
b) Signal transfer up to a maximum of 2 km is possible. However, the actual transfer distance may vary depending on the system configuration of the cameras and the type of optical fiber cables used.
c) HDC2000 series (HDC2000/2500/2400/1700) support optical fiber connection.
d) Signal transfer up to a maximum of 1.8 km is possible. However, the actual transfer distance may vary depending on the system configuration of the cameras and the type of triax cables used.
e) Install the HKCU-SFP30 ST 2110 Interface Kit.
f) Connect to the LAN-1 and LAN-2 connectors of the HKCU-SFP30 ST 2110 Interface Kit.
g) Connect to the LAN-COM connector of the HDCU3100/HDCU3170.
h) To support SNMP monitoring, install HZCU-SNMP50 SNMP Agent Software (option).
i) To support Ember+ control, install HZCU-CNFG50 Config Control Software (option).

Connection example (coax connection)



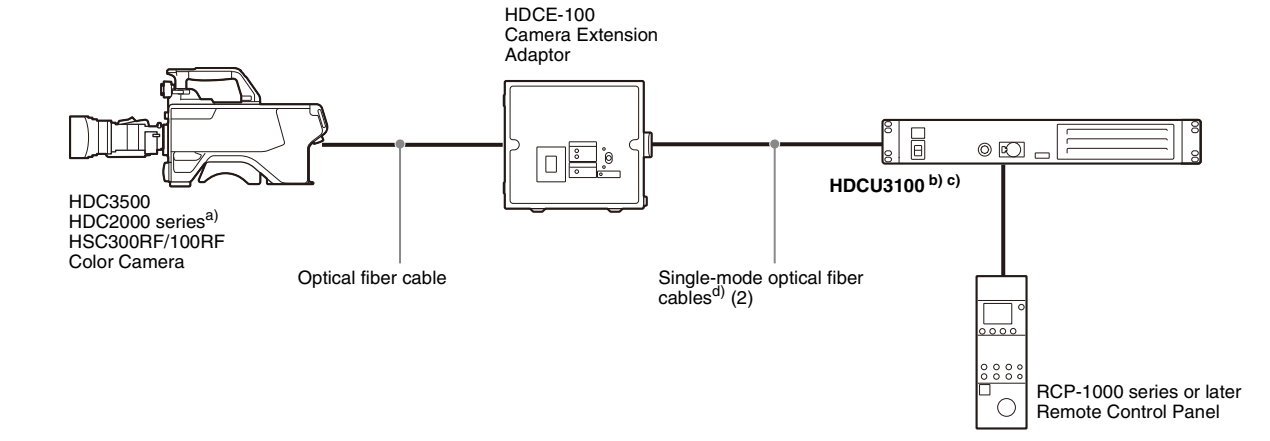
a) A dedicated power supply (external DC power source) for the camera is required. Power is not supplied from the camera control unit.
b) Configure the following menu settings.
- Set SYSTEM CONFIG → <CAMERA I/F> → CABLE TYPE to COAX.
- Set SYSTEM CONFIG → <VIDEO I/O> → SDI-I/O 3 → SIGNAL to HD TRUNK.
- Set SYSTEM CONFIG → <VIDEO I/O> → SDI-I/O 4 → SIGNAL to HD PROMPTER.

Connection example (coax (HDCE) connection)



a) Configure the following menu settings.
- Set SYSTEM CONFIG → <CAMERA I/F> → CABLE TYPE to COAX(HDCE).
- Set SYSTEM CONFIG → <VIDEO I/O> → SDI-I/O 3 → SIGNAL to HD TRUNK.
- Set SYSTEM CONFIG → <VIDEO I/O> → SDI-I/O 4 → SIGNAL to HD PROMPTER.

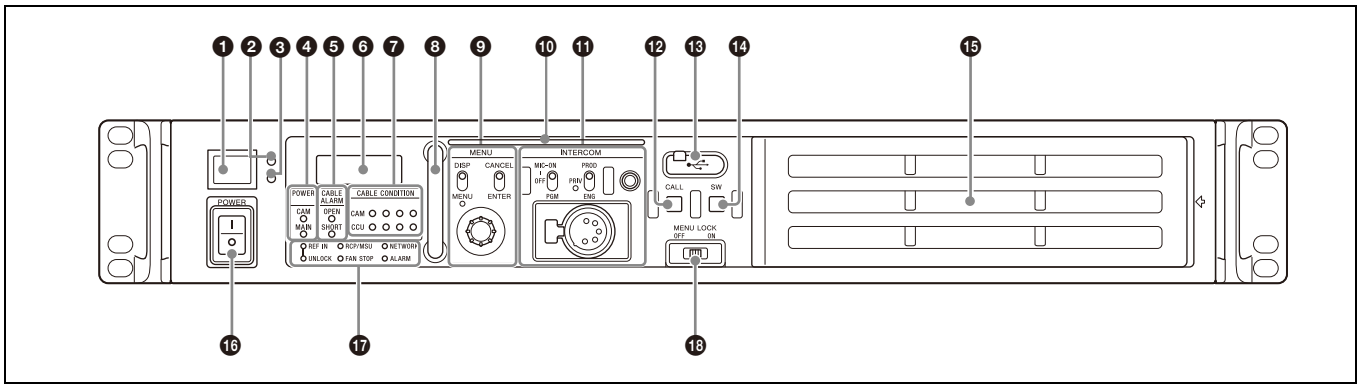
Connection example (single-mode fiber connection)



a) HDC2000 series: HDC2000/2580/2500/2400/1700
b) Attach the HKCU-SM30 Single Mode Fiber Connector Kit.
c) Set the signal type using the following menu item.
HDCU3100: SYSTEM CONFIG → <CAMERA I/F> → CABLE TYPE → SINGLE MODE FIBER
d) Signal transfer up to a maximum of 10 km is possible. However, the actual transfer distance may vary depending on the system configuration of the cameras and the type of single-mode optical fiber cables used.

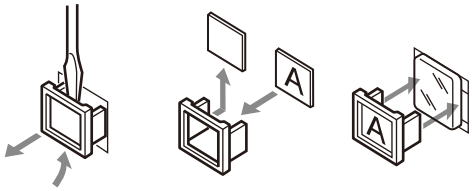
Location and Function of Parts

Front Panel



❶ Red tally indicator

Lights in red when this unit receives a red tally signal. You can attach the supplied number plate here.



❷ Yellow tally indicator

Lights in yellow when this unit receives a yellow tally signal.

❸ Green tally indicator

Lights in green when this unit receives a green tally signal.

❹ POWER indicators

CAM: Lights when power is being supplied to the camera.
MAIN: Lights when the unit is turned on. In addition, this flashes when a fan error occurs.

❺ CABLE ALARM indicators

OPEN: Lights up when a camera is not connected to the CAMERA FIBER connector on the rear panel of this unit via an optical fiber cable (HDCU3100) or to the CAMERA TRIAX connector via a triax cable (HDCU3170). Power is not supplied to the camera while this indicator is lit.
SHORT: Lights up when an overcurrent flows through the optical fiber cable (HDCU3100) or triax cable (HDCU3170). Power is not supplied to the camera while this indicator is lit.

❻ CCU number display

Displays the camera number set in the CCU menu.

❼ CABLE CONDITION (signal reception status) indicators

Indicates the communication status of the camera (CAM) and camera control unit (CCU).

- **Optical fiber transmission**

  When the two indicators on the right (green) are lit: Reception status is excellent.
  When the second indicator from the right (green) is lit: Reception status is good.
  When the second indicator from the left (yellow) is lit: Reception status is low.
  When the indicator on the left (red) is lit: Reception status is at the lowest level.

- **Triax transmission**

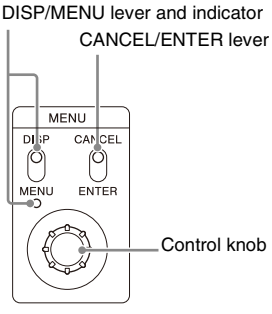
  When the two indicators on the right (green) are lit: Cable reception status is excellent.
  When the second indicator from the right (green) is lit: Cable reception status is good.
  When the second indicator from the left (yellow) is lit: Cable reception status is low.
  When the indicator on the left (red) is lit: Cable reception is poor or close to the guaranteed cable transmission limit.
  When all indicators are not lit: The guaranteed cable transmission limit has been exceeded or the cable is OPEN circuit.

❽ Guard bar

Note

Do not pull the guard bar with excessive force.

❾ MENU control block



- **DISP/MENU lever and indicator**

Selects the status display or setup menu display. In setup menu mode, the indicator turns on.

• **CANCEL/ENTER lever**

In setup menu mode, used to cancel and enter settings.

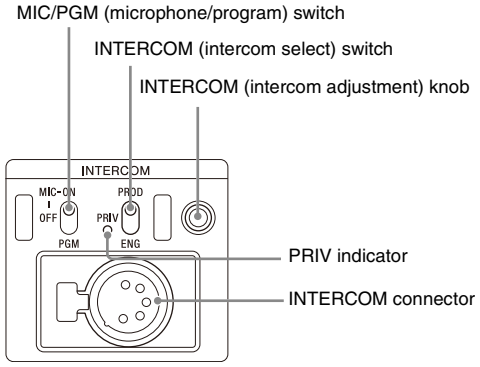
• **Control knob (rotary encoder)**

In status screen mode, used to change the displayed page. In setup menu mode, used to move the cursor on a page and to change menu settings.
Pushing the control knob has the same function as setting the CANCEL/ENTER lever to ENTER.

⑩ SIGNAL BAR indicator

Indicates the output status of the video signal.
During gray signal output: Off
During color bar output: Lights in the color specified with the MAINTENANCE → <FRONT PANEL> → SIGNAL BAR → READY COLOR menu item.
During camera video output: Lights in a white flowing pattern.

⑪ INTERCOM audio input/output and control block



• **INTERCOM (intercom adjustment) knob**

Adjusts the headset audio level.

• **MIC/PGM (microphone/program) switch**

ON: Turns the headset microphone on.
OFF: Turns the headset microphone off.
PGM: Selects program audio output.

• **INTERCOM (intercom select) switch**

Selects the intercom signal input/output connection source for the INTERCOM connector on the front panel.
PROD: Connects the producer line.
PRIV: Blocks the connection to the producer line or engineer line, allowing private intercom talk between the CCU and the camera.
ENG: Connects the engineer line.

• **PRIV (private) indicator**

Lights when the intercom is in private mode.

• **INTERCOM connector (XLR 5-pin)**

Connect the intercom headset.

⑫ Call button

When pressed, this outputs a call signal to the camera or external control devices (the RCP-1500/1000 series Remote Control Panel, etc.) that are connected to this unit. Use this when you want to call and speak with the camera operator or external control device operator via intercom. This button lights in red when it is pressed or the call button of other equipment is pressed.

⑬ USB port

Used to connect to a USB device.

⑭ Assignable button

You can set a function for this button via the CCU menu.

⑮ Filter cover

Press the filter cover in the direction of the arrow while pulling it to remove it.
The filter (black sponge) is placed under the cover. If the filter becomes dirty, you can remove it and clean it with cold or warm water. When using a detergent, use a neutral solution. Be sure to dry the filter thoroughly before replacing it on the unit.

⑯ POWER switch

Turns the entire camera system on and off, including the unit, the camera, and the RCP-1000 series Remote Control Panel connected to the REMOTE connector of this unit. Switch to "**I**" to turn the power on, and switch to "○" to turn the power off.

⑰ Status display indicators

REF IN (green): Indicates presence of REFERENCE input signal.
UNLOCK (red): Not locked to the REFERENCE input signal.
RCP/MSU: Displays the status when there is a remote control panel connected.
On: Indicates that external control equipment (MSU-1000/1500 Master Setup Unit, RCP-1000 series Remote Control Panel, or other equipment) is connected.
Off: Indicates that external control equipment is not connected.

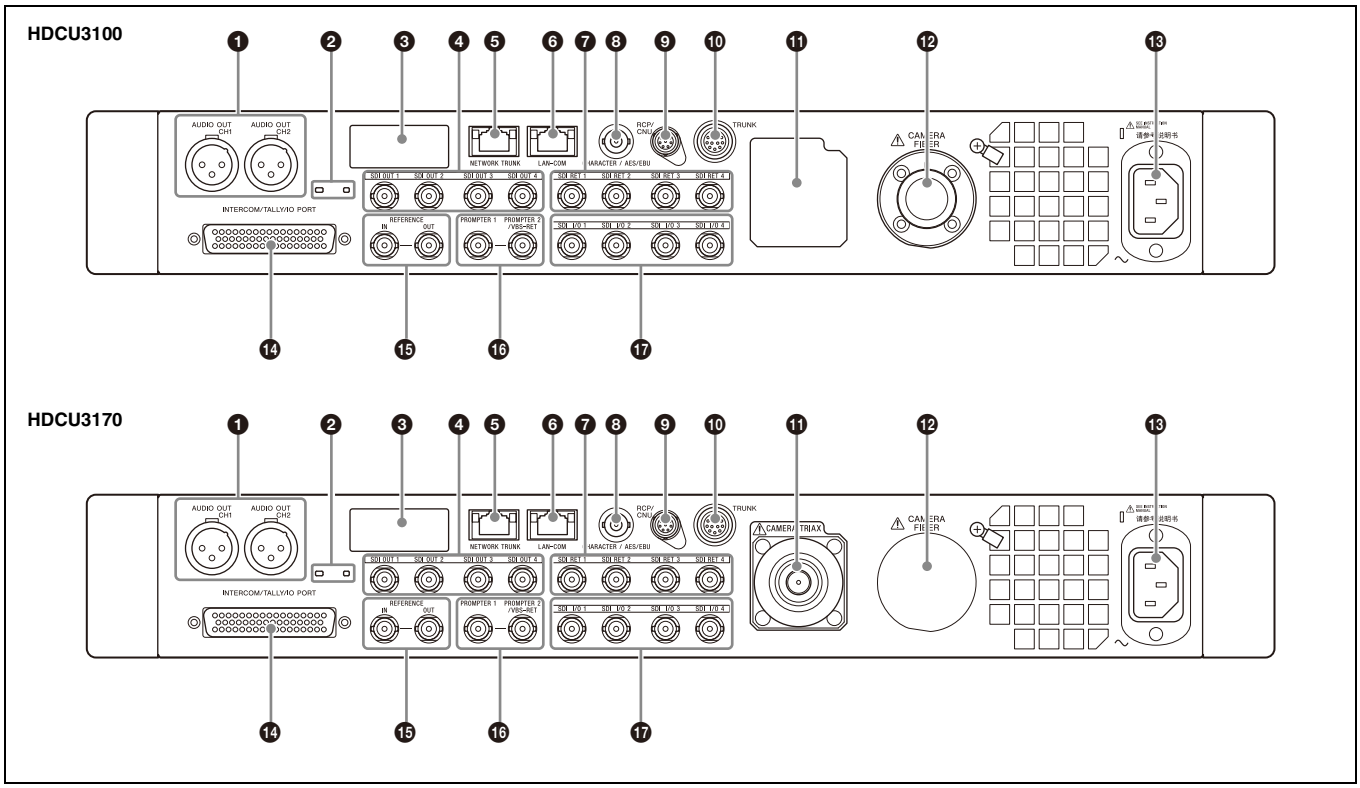
For details, see "NETWORK Menu" (page 71).

NETWORK: Displays the network genlock status when using the HKCU-SFP30 ST 2110 Interface Kit.
Low-speed flashing: PTP master not detected
High-speed flashing: Genlock initiated
Lit: Genlock achieved
Not lit: Network genlock setting disabled
ALARM: Lights when various errors occur.
FAN STOP: Lights when the fan is stopped.

⑱ Menu lock switch

This locks out operation of the front panel menu operation area.

Rear Panel



❶ AUDIO OUT CH1, CH2 (audio output 1, 2) connectors (XLR 3-pin)

Used to output the audio signal to the AUDIO IN connectors of the video camera.

❷ Rear indicator

Displays calls and statuses.

❸ Option kit mounting port

One of the following option kits can be attached.

- HKCU-SFP30 ST 2110 Interface Kit
- HKCU-SM30 Single Mode Fiber Connector Kit
- HKCU-SDI30 12G-SDI Extension Kit

For an overview of option kits, see *"Option Kits" (page 12)*.

❹ SDI OUT (3G/HD/SD SDI output) 1/2/3/4 connectors

The signal from the video camera may be output as four 3G SDI signals, HD SDI signals, or SD SDI signals. They can output signals with superimposed text characters and markers.

For details on settings, contact a Sony service or sales representative.

❺ NETWORK TRUNK connector (RJ-45 8-pin)

Used to connect the device connected to the NETWORK TRUNK connector of a camera with the network connection device.

❻ LAN-COM connector (RJ-45 8-pin)

Used to connect to a LAN. Connect a LAN hub (10BASE-T/100BASE-TX), using a LAN cable (shielded type of category 5 or higher).

❼ SDI RET (3G/HD/SD SDI return video input) 1/2/3/4 connectors (BNC-type)

Four different 3G/HD/SD SDI return video input signals may be received independently. The selection of RET 1 to RET 4 is made by the return switch of the video camera. The aspect ratio can also be selected for an SD signal.
The type of input signal on RET 1 to RET 4 may be set individually using the setup menu, or using the MSU-1500/1000 series Master Setup Unit.

For details on the setup menu, contact a Sony service or sales representative.

Refer also to the Master Setup Unit manual.

❽ CHARACTER (character output) / AES/EBU connector (BNC-type)

CHARACTER: Outputs the self-diagnostic results or setup menu of the unit as an SD analog video signal.
AES/EBU: Outputs the AES/EBU format digital audio signal that is input to the video camera.

❾ RCP/CNU connector (round 8-pin)

Used to connect to an MSU-1000 series Master Setup Unit, CNU-700 Camera Command Network Unit, or RCP-1000 series or later Remote Control Panel via a CCA-5 Connection Cable. Control signals are sent and received via this connector. When using an RCP-1000 series or later unit, power is also supplied.

❿ TRUNK connector (round 12-pin)

Used to connect to the CCU connector on a video camera via an RS-232C or RS-422A interface. Communication with up to two channels is supported.

⓫ HDCU3100: Option kit mounting port

The optional HKCU-SM30 Single Mode Fiber Connector Kit can be attached.
For an overview of option kits, see *"Option Kits" (page 12)*.

⓫ HDCU3170: CAMERA TRIAX connector

Used to connect a video camera, using a triax cable. All video camera signals, including power supply, control, video, and audio, are sent and received over one triax cable.

⓬ HDCU3100: CAMERA FIBER connector

Used to connect a video camera, using an optical fiber cable. All video camera signals, including power supply, control, video, and audio, are sent and received over one optical fiber cable.

Note

Dust on the connection surface of the optical fiber cable may result in transmission errors. When not connected, always cover the end of the connector with the supplied cap.

⓬ HDCU3170: Option kit mounting port

The optional HKCU-FB30 Optical Fiber Connector Kit can be attached.
For an overview of option kits, see *"Option Kits" (page 12)*.

⓭ ∿ AC IN (AC power input) connector

Use the specified power cord to connect to an AC power supply. The power cord can be secured to this unit using the plug holder (optional).

⓮ INTERCOM/TALLY/IO PORT (intercom / tally / input/output) connector (D-sub 50-pin)

Used to input and output intercom, tally, and program audio signals. Connect to the intercom/tally/program audio connector of the intercom system.
REAR PREVIEW function: Pin 10 is assigned for the output pin of the REAR PREVIEW function.

⓯ REFERENCE IN/OUT connectors (BNC-type)

Input an HD tri-level reference sync signal or SD reference signal (black burst signal, or black burst signal with 10-field ID) to the REFERENCE IN connector.
The input signal is output from the REFERENCE OUT connector as-is (loop-through). If loop-through output is not used, terminate the unused connector at 75 ohms.
When a sync signal is not input to the REFERENCE IN connector, an SD composite sync or HD tri-level sync signal generated by the internal sync signal generator will be output from the REFERENCE OUT connector.

⓰ INPUT area

① PROMPTER (prompter input) 1/2 connectors (BNC-type)

Input the prompter signal of 1 channel or 2 channels depending on the setting of PROMPTER2/VBS-RET on the <REAR I/F> page of the SYSTEM CONFIG menu and PROMPTER CHANNEL MODE on the <TRUNK/PROMPTER> page of the MAINTENANCE menu. When PROMPTER2/VBS-RET is set to DISABLE, the input signal is output from the other connector as-is (loop-through). If loop-through output is not used, terminate the unused connector at 75 ohms. When PROMPTER2/VBS-RET is set to ENABLE, both connectors become inputs and they are terminated at 75 ohms inside the unit.
If the signal used is a 1.0 Vp-p, 75-ohm analog signal, it may be output from the PROMPTER OUT connector of the video camera with a frequency bandwidth of 5 MHz, regardless of signal format.

Note

Only the PROMPTER 1 connector functions on the HDCU3170.

② VBS-RET (VBS return video input) connector* (BNC-type)

A single VBS return video signal can be input independently.

* This connector doubles as the PROMPTER 2 connector.

The RET selection is made by the return switch of the video camera. The type of input signal on each RET connector may be set individually using the setup menu, or using the MSU-1000 series Master Setup Unit. The aspect ratio may also be selected for SD signals.

For details on setup menu operations, contact a Sony service or sales representative.

Refer also to the Master Setup Unit manual.

For details on how to select the signal, contact a Sony service or sales representative.

⓱ SDI I/O (3G/HD SDI input/output) 1/2/3/4 connectors (BNC-type)

These can be used as return video inputs, HD prompter inputs, camera video signal outputs, and HD-TRUNK outputs. Set them in NETWORK TRUNK on the <TRUNK/PROMPTER> page of the MAINTENANCE menu according to the application.

Option Kits

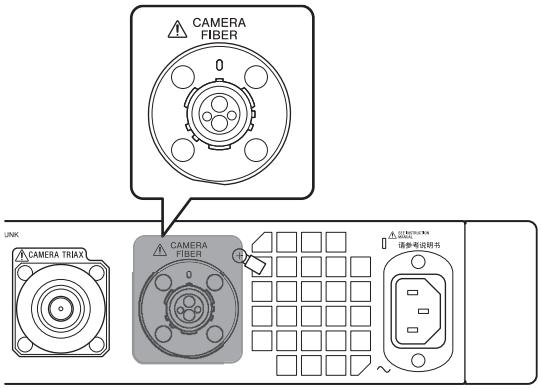
Note

For safety, only a qualified technician with service training should perform tasks inside the unit.

For details about installation, contact a Sony service or sales representative.

HKCU-FB30 Optical Fiber Connector Kit

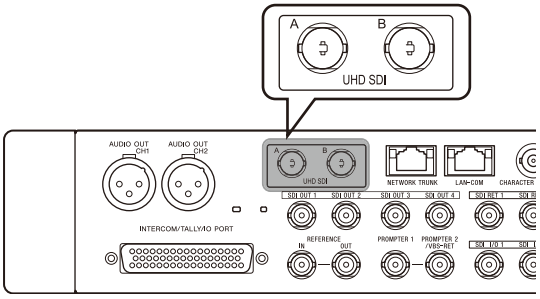
This unit is an option kit that can be installed in the option kit mounting port ⓬ on the rear of the HDCU3170 and supports optical fiber transmission on the HDCU3170.



When a video camera is connected using an optical fiber cable, all video camera signals, including power supply, control, video, and audio, are sent and received over one optical fiber cable.

HKCU-SDI30 12G-SDI Extension Kit

This unit is an option kit that can be installed in the option kit mounting port ❸ on the rear of the HDCU3100/HDCU3170 Camera Control Unit and enables support for 1-system dual 12G-SDI output at 4K from the HDCU3100/HDCU3170.



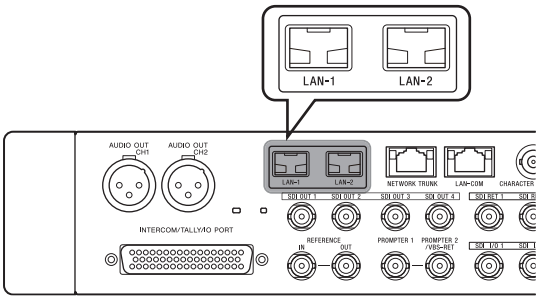
The output format is the same as the format set for SYSTEM CONFIG menu → <OUTPUT FORMAT3> of the HDCU3100/HDCU3170.
This kit is supported when the HKCU-UHD30 is installed.

Note

HDCU3100/HDCU3170 software version 2.20 or later is required.

HKCU-SFP30 ST 2110 Interface Kit

This unit is an option kit that can be installed in the option kit mounting port ❸ on the rear of the HDCU3100/HDCU3170 Camera Control Unit and enables connection with SMPTE ST 2110 compliant devices.



IP video signals and audio input/output, intercom, and network synchronization are performed using the LAN-1 and LAN-2 connectors (SFP+/SFP28). This enables three IP outputs and three IP inputs for HD signals on the HDCU3100/HDCU3170. For RCP/MSU device connection and IP tally input, use the LAN-COM connector.
The input/output signal format is set using <OUTPUT FORMAT3> and <RETURN FORMAT3> in the setup menu of the HDCU3100/HDCU3170.

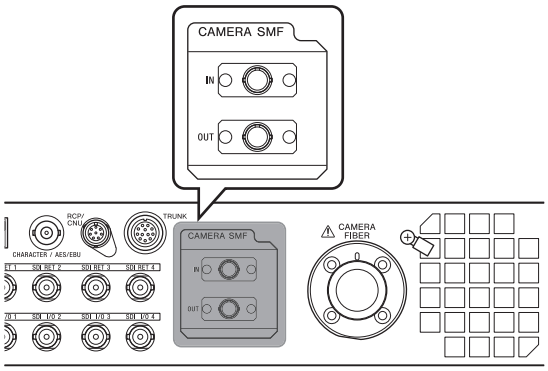
Notes

- HDCU3100/HDCU3170 software version 1.10 or later is required.
- An OTM-10GSR1 or other SFP+ module or SFP28 module is required to use IP output.

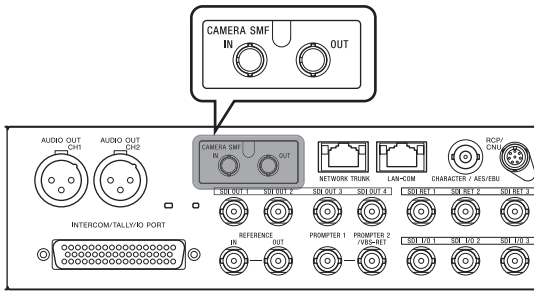
HKCU-SM30 Single Mode Fiber Connector Kit

This unit is an option kit that can be installed in the option kit mounting port ⓫ on the rear of the HDCU3100 Camera Control Unit or in the option kit mounting port ❸ on the rear of the HDCU3170, and supports single mode fiber transmission on the HDCU3100/3170.

HDCU3100



HDCU3170



The CAMERA SMF IN connector inputs the video signal from the camera, audio (microphone) signal, HD-TRUNK signal, and NETWORK TRUNK signal.
The CAMERA SMF OUT connector outputs the return video signal to the camera, prompter video signal, program audio

signal, and NETWORK TRUNK signal. The RS-422A and RS-232C interfaces are also supported.

Notes

- HDCU3100/HDCU3170 software version 2.20 or later is required.
- Dust on the connection surface of the connector may result in transmission errors. When not connected, always cover the end of the connector with a cap.

HKCU-UHD30 4K/HDR Processor Board

4K output and 4K HDR output are supported by installing an HKCU-UHD30 in the HDCU3100/HDCU3170.

Note

HDCU3100/HDCU3170 software version 2.20 or later is required.

Status Display

The CCU system status can be monitored using a video monitor connected to the CHARACTER, SDI OUT 3, or SDI OUT 4 connector.

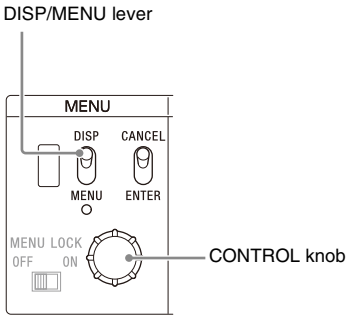
Note

To use the SDI OUT 3 or SDI OUT 4 connector, set SYSTEM CONFIG → <OUTPUT FORMAT1> → SDI-OUT3 or SDI-OUT4 → MONITOR in the setup menu to M.

For information on monitoring and changing settings, see "Settings Using the Menu of the Unit" (page 16).

Displaying the Status Screen

The menu screen is controlled using the knob and levers in the MENU control block on the front panel.



To display the status screen

Set the DISP/MENU lever to the DISP position. The most recently viewed status screen page is displayed. When first powered on, the camera settings status is displayed. Turning the CONTROL knob changes the displayed page.

To exit the status screen display

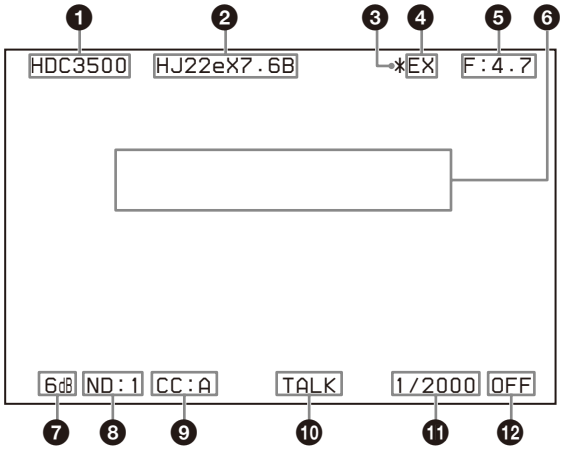
In status screen display mode, set the DISP/MENU lever to the DISP position.

Status Display Screen

The following information is displayed on the status display screen.

- System status
- Input/output signal format information of each SDI connector
- Camera and unit audio status
- Camera and unit intercom status
- Warning display

Camera settings



❶ Camera name indication

Displays the name of the connected camera.

❷ Lens file name indication

Displays the lens file name.

❸ F drop indication

Displayed when an F drop occurs.

❹ EX (lens extender) indication

Displayed during use of the lens extender.

❺ F-stop value indication

Displays the lens F-stop value (iris value).

❻ Camera auto control information area

Top: Displays the Auto Setup type and execution status.
Bottom: Displays the execution item.

❼ Gain value indication

Displays the video output signal gain setting value (dB).

❽ ND filter indication

Displays the currently selected ND filter type.

❾ CC filter indication

Displays the currently selected CC filter type.

❿ Camera microphone status indication

Displayed when the camera microphone is on.

⓫ Shutter speed/Clear scan frequency indication

Displays the shutter speed. When ECS is on, displays the clear scan frequency.

⓬ Shutter/ECS indication

Displays the on/off state of the shutter/ECS.

Notes

- Items that are turned off using the <DISPLAY> page settings of the VIDEO/MONITOR menu are not displayed.
- A "-" mark is displayed for each item when a camera is not connected.

System status

```
*System Status*                    01/11

 Camera Format :1080/59.94P

 Camera Cable  :Connected
  Cable Type   :Fiber Camera Cable
  Power Supply :On
  Cable Length :~100m

  CAM □□■■■■■◁ OK
  CCU □□■■■■■◁ OK

 Reference     :Not Detected
                Unlock

 CCU No.:96     RCP/MSU:Connected
```

Camera Format: Signal format of connected camera
Camera Cable: Camera cable connection status
Camera Type: Camera cable type
Power Supply: Camera power supply status
Cable Length: Cable length
CAM: Camera light sensor level
CCU: Control unit light sensor level
Reference: Reference signal format used and genlock status ("Not Detected" is displayed when a reference signal is not input.)
CCU No.: CCU number setting status
RCP/MSU: RCP/MSU connection status

Input/output signal format status of SDI connectors

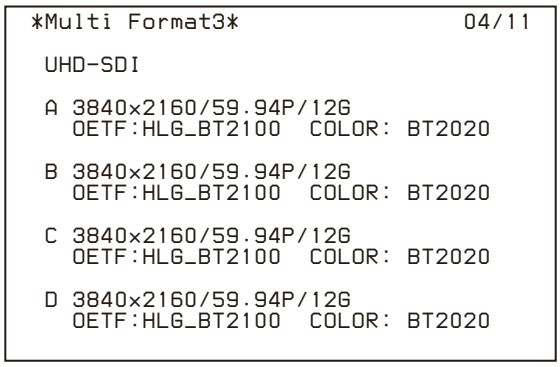
SDI-OUT connectors

```
*Multi Format1*                    02/11

 SDI-OUT

 1:1080/59.94i(PsF)/RGB444/3G
   OETF:HLG_BT.2100  Color:BT.2020

 2:1080/59.94i(PsF)/RGB444/3G
   OETF:HLG_BT.2100  Color:BT.2020

 3:1080/59.94i(PsF)/RGB444/3G
   OETF:HLG_BT.2100  Color:BT.2020

 4:1080/59.94i(PsF)/RGB444/3G
   OETF:HLG_BT.2100  Color:BT.2020
```

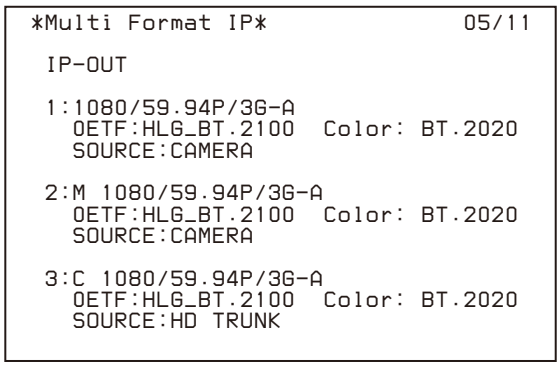
SDI-I/O connectors

```
*Multi Format2*                    03/11

 SDI-I/O

 1:1080/59.94i(PsF)/RGB444/3G
   OETF:HLG_BT.2100  Color:BT.2020

 2:1080/59.94i(PsF)/RGB444/3G
   OETF:HLG_BT.2100  Color:BT.2020

 3:(HD Trunk)


 4:(Disable)
```

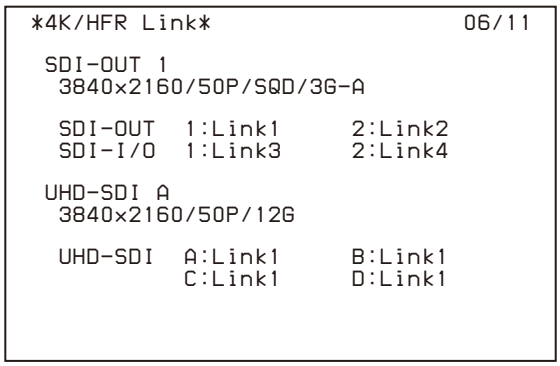
UHD-SDI connectors



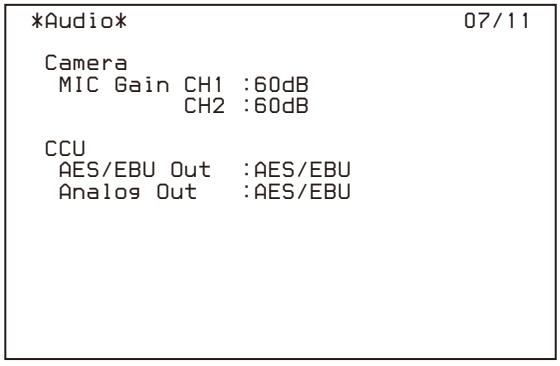
IP-OUT connectors



4K/HFR Link display

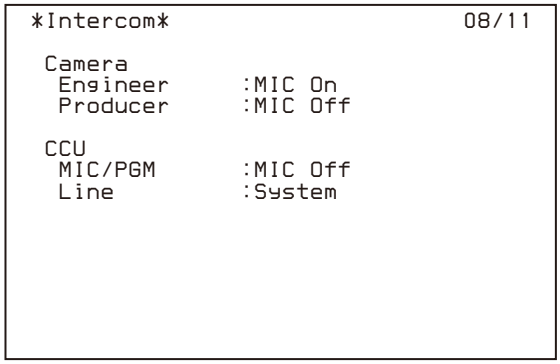


Camera and unit audio status



Camera MIC Gain CH1: Camera microphone circuit 1 amplifier gain status
Camera MIC Gain CH2: Camera microphone circuit 2 amplifier gain status
CCU AES/EBU Out: Output format of the AES/EBU connector
CCU Analog Out: Output format of the analog output connector

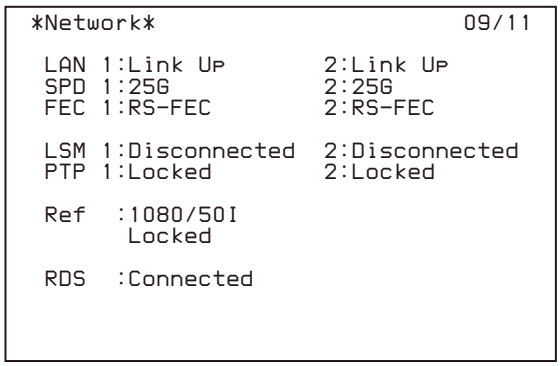
Camera and unit intercom status



Camera Engineer: Camera microphone status of the ENG line of the camera
Camera Producer: Camera microphone status of the PROD line of the camera
CCU MIC/PGM: Status of MIC/PGM switch on the front of the unit
CCU Line: Intercom system connection status

Network status

Displayed only when HKCU-SFP30 is installed.



LAN1: Link status of the LAN1 connector
SPD1: Link speed of the LAN1 connector
FEC1: FEC setting for 25G of the LAN1 connector
LSM1: Connection status of the LAN1 connector with Live System Manager
PTP1: Network genlock status of the LAN1 connector

* The above items are also shown for the LAN2 connector.

Ref: Used reference format setting and genlock status
RDS: Connection status with NMOS Registration & Discovery System

UHD-SDI status

Displayed only when HKCU-UHD30 and HKCU-SDI30 are installed.

```
*UHD-SDI Status*

 UHD-SDI A:OK
         B:OK
```

IP stream status

Displayed only when HKCU-SFP30 is installed.

```
*IP Stream*                          10/11

 OUT VIDEO1           IN RETURN1
     VIDEO2              RETURN2
     VIDEO3              RETURN3
     -----               -----

     AUDIO               PGM
     HD TRUNK AUDIO

     INTERCOM            INTERCOM

     META1
     META2
     META3
     -----
```

Displays the stream status during IP transmission.
OUT: Outgoing IP stream
IN: Incoming IP stream
-----: No incoming/outgoing stream

Warning display

```
*Alarm*                              11/11

 CCU:PS FAN STOP
 CCU:GENLOCK ERROR
```

Displays any warning that occurs.

Settings Using the Menu of the Unit

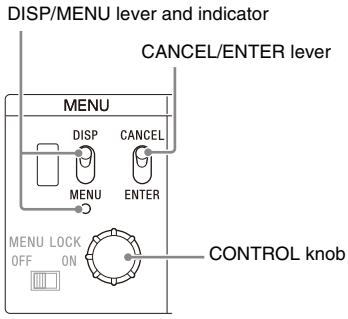
The CCU system and peripheral settings can be checked and modified using a video monitor connected to the CHARACTER, SDI OUT 3, or SDI OUT 4 connector.

Note

To use the SDI OUT 3 or SDI OUT 4 connector, set SYSTEM CONFIG → <OUTPUT FORMAT1> → SDI-OUT3 or SDI-OUT4 → MONITOR in the setup menu to M.

Changing Menu Item Settings

The menu screen is controlled using the knob and levers in the MENU control block on the front panel. Setting the CANCEL/ENTER lever to the ENTER position and pressing the CONTROL knob perform the same function.



To display a menu page

Set the DISP/MENU lever to the MENU position.
When first powered on, the CCU MENU page is displayed.
When <OUTPUT FORMAT1> → SDI-OUT4 → MONITOR is set to C (characters are not added), you can hold the DISP/MENU lever in the MENU position for 3 seconds to force display of the CCU MENU.

To display the CCU MENU page

In menu display mode, turn the CONTROL knob to move the pointer (➡) to TOP in the upper right corner of the menu page, then press the CONTROL knob. The CCU MENU showing the menu configuration is displayed.

```
** CCU MENU **

→SYSTEM CONFIG
 VIDEO/MONITOR
 AUDIO/INTERCOM
 MAINTENANCE
 FILE
 NETWORK
 DIAGNOSIS
```

Menu name	Description
SYSTEM CONFIG	Input/output signal format and system-related settings
VIDEO/MONITOR	Video-related settings
AUDIO/INTERCOM	Audio- and intercom-related settings
MAINTENANCE	CCU configuration settings
FILE	CCU file-related settings
NETWORK	Network-related settings
DIAGNOSIS	Displays the unit status.

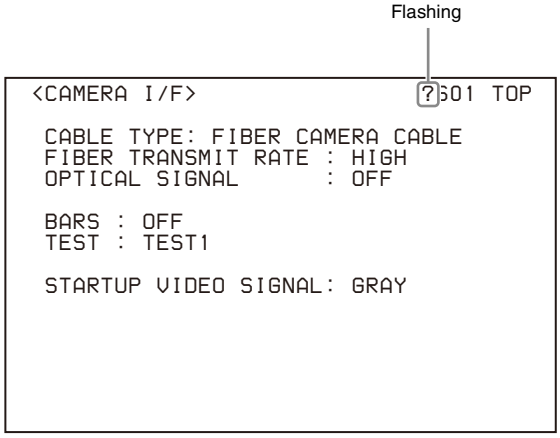
To select an item in the CCU MENU

Turn the CONTROL knob to move the pointer (➡) up/down to the desired menu item, then press the CONTROL knob. The most recently viewed page in the selected menu is displayed.

To change the displayed page

1 Turn the CONTROL knob to move the pointer (➡) to the page number, then press the CONTROL knob.

The pointer (➡) changes to a flashing question mark (?).



2 Turn the CONTROL knob to change the displayed page to the desired page, then press the CONTROL knob.

The question mark (?) changes back to the pointer (➡). Items on the page can now be selected and changed.

To change a menu item setting

If a question mark (?) is displayed beside the page number, press the CONTROL knob to restore the pointer (➡). Items on the page can now be selected and changed.

1 Turn the CONTROL knob to move the pointer (➡) to the desired item, then press the CONTROL knob.

The pointer (➡) changes to a flashing question mark (?).

2 Turn the CONTROL knob to change the setting.

To cancel a changed setting
Set the CANCEL/ENTER lever to the CANCEL position before pressing the CONTROL knob. The item is restored to its current setting.

To suspend menu changes
Set the DISP/MENU lever to the MENU position to exit the menu screen.

The DISP/MENU lever can be set to the MENU position again to restart the operation.

3 Press the CONTROL knob.

The question mark (?) changes back to the pointer (➡), and the item setting is registered.

4 Repeat steps 1 to 3 to change other settings on the same page.

To enter a character string

Some menu items require a character string input.
Moving the pointer (➡) to an item with a character string input and pressing the CONTROL knob displays a rectangular cursor and a list of selectable characters.
Turning the CONTROL knob moves the cursor between characters. The following menu item has character strings:

- VIDEO/MONITOR menu → <BAR CHARACTER> page → BAR CHARACTER

1 Move the text cursor to the input position, then press the CONTROL knob.

A second cursor is displayed in the character list.

2 Turn the CONTROL knob to move the cursor to the desired character, then press the CONTROL knob.

Repeat steps 1 and 2 to enter other characters.

- Select INS to insert a space character at the cursor position.
- Select DEL to delete the character at the cursor position.
- Select RET to return to step 1 without changing the string.
- Entering the maximum number of characters (up to the right edge) moves the cursor to ESC on the lower right of the character list.

3 Turn the CONTROL knob to move the cursor to END, then press the CONTROL knob.

The new input string is registered.

To cancel the character string setting
Turn the CONTROL knob to move the cursor to ESC, then press the CONTROL knob.

To exit the menu display

In menu display mode, set the DISP/MENU lever to the MENU position.

Settings Using the Web Menu

You can configure the unit, execute functions, and monitor settings information using the web menu. You can also monitor tally information and monitor the front panel information of the CCUs (camera control unit) connected to a private network on the same subnet as the unit.
The web menu is accessed using a web browser on a PC.

Note

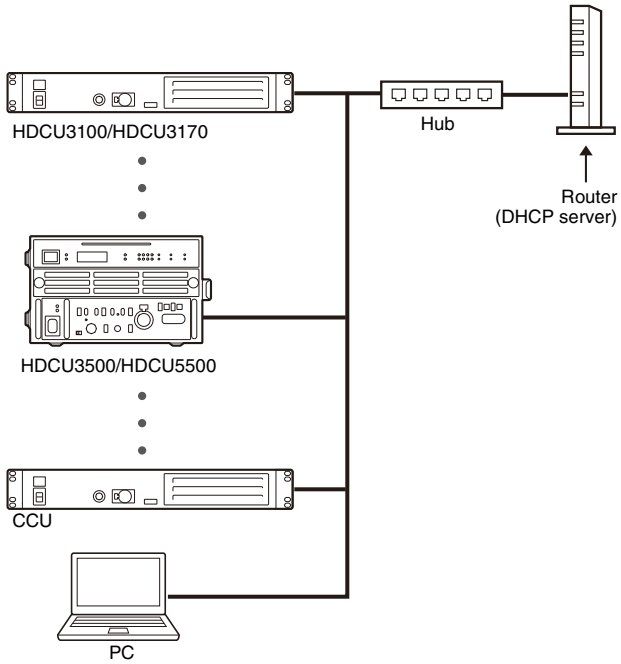
Use of a monitor with resolution 1000×720 or higher is recommended to display the web menu normally.

Accessing the Web Menu

1 Referring to the following connection example, connect a PC which has a web browser installed and the unit on the same private network.

Note

The unit uses the multicast protocol for acquiring and updating information from other CCUs on the same subnet. Accordingly, use of a router that supports the IGMP Snooping function is recommended. If the IGMP Snooping function is not available, CCU information will be present on the network in the broadcasting state, increasing the load of devices on the same network. When <WEB MENU> → SERVICE DISCOVERY is set to OFF in the NETWORK menu, the multicast protocol is not used and only the information for the local unit is acquired and displayed.



2 Check that the devices are turned on.

3 Check that <WEB MENU> → WEB MENU is set to ENABLE in the NETWORK menu.

4 Check the network settings of the unit using one of the following.

- In the setup menu of the unit (page 16), set <IP ADDRESS> → PORT to LAN-COM in the NETWORK menu to display the IP address of the unit and the subnet mask on the menu display.
- On the front panel of the unit, push and hold the DISP/MENU lever up in the DISP position for 3 seconds to display the IP address and subnet mask in the CCU number display area.

5 Enter the IP address of the unit in the web browser.

The web menu is accessed.

6 Enter the user name and password.

Enter the user name (admin) and configured password in the pop-up displayed by the web browser. If a password has not been configured, the password setup screen appears.

Note

For security, access will be denied by the PC for a set time after several unsuccessful authentication attempts. This state will be released after 5 minutes have elapsed.
You can reset the password using <WEB MENU> → PASSWORD RESET in the NETWORK menu of the unit.

Setting the Authentication Password

This unit uses digest authentication for security.
If a password has not been configured, the password setup screen appears when accessing the web menu. Enter a password in [Password] and [Retry Password] on the screen. [Username] is “admin” (fixed).

[Password]
The password must contain 8 to 32 alphanumeric and symbol characters. Include both letters and numbers for increased security.
(Valid characters are ! ? # $ % & ' + ~ , - . = _ < > * " @ \ | / : ; { } and space character.)

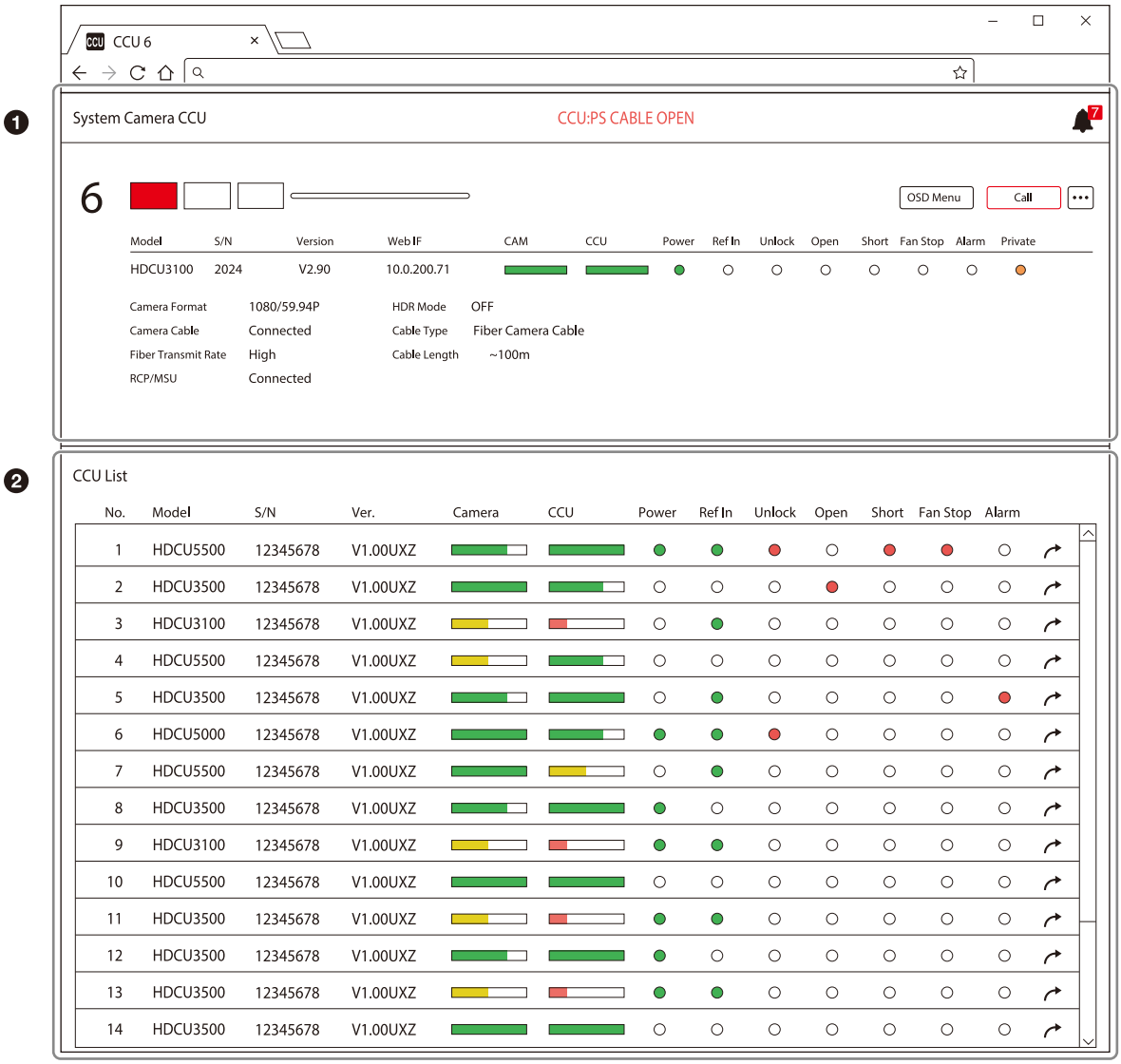
[Retry Password]
Enter the same password here that you entered in [Password] to confirm the password.

Web Browsers

The use of Chrome is recommended. Use of a web browser other than Chrome may corrupt the layout of the web menu or may cause some functions to operate incorrectly.

Structure of the Web Menu

The web menu is comprised by an area showing the settings and information of the unit and an area showing a list view of the information for other CCU units on the same subnet.



❶ Unit settings/information display area

For details, see *"Name and Function of Settings/Information Display Area" (page 20)*.

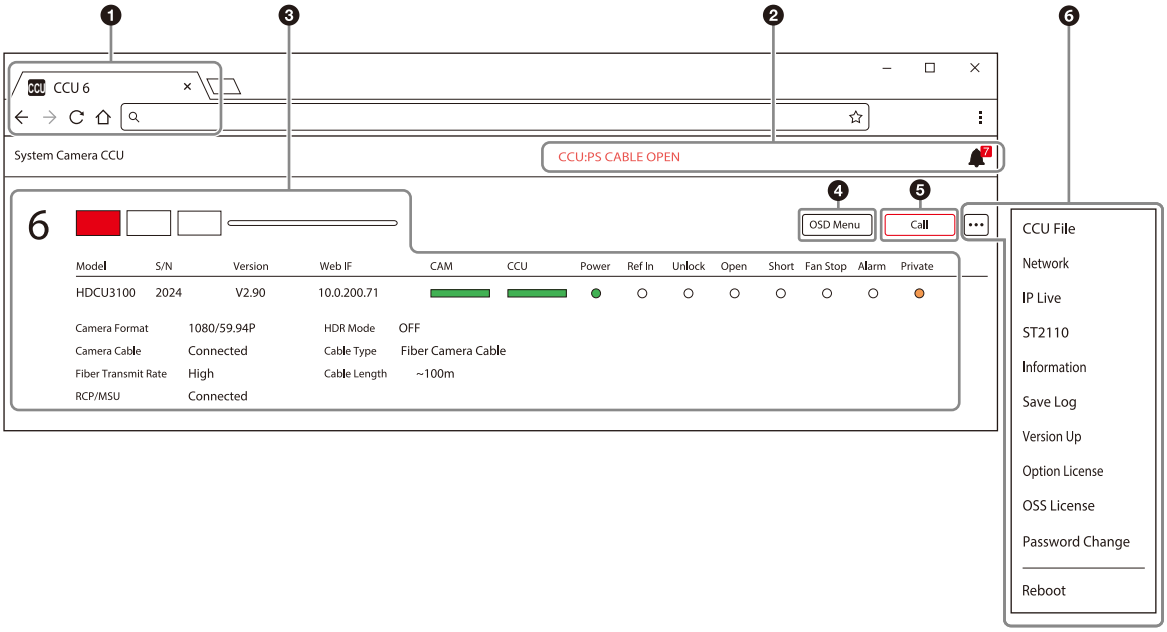
❷ Information about CCU units on the same subnet

For details, see *"CCU Information List Screen" (page 21)*.

Notes

- The web menu actually displays white text on a dark gray background. The illustrations in this document show the colors reversed for increased clarity.
- Information for CCU units on another VLAN cannot be displayed.
- When the menu lock switch of the unit is in the ON position, the unit cannot be configured from the web menu.
- If the IP address is changed by direct operation on the unit or OSD operation in the web menu, a dialog displaying the changed IP address information appears in the web menu. Click the link in the dialog to reconnect to the unit using the new IP address and display the web menu again.
- If connection with a CCU being accessed using the web menu is lost for 30 seconds, a dialog appears and an attempt is made to reconnect. If 30 minutes elapse without reestablishing a connection, a dialog appears that prompts you to reload. If a connection is not reestablished in this dialog, the connection process is aborted and connection with the CCU is lost.

Name and Function of Settings/Information Display Area



Note

When a setting of the unit is changed using the setup menu, the display in the web menu is also updated.

❶ Favicon / CCU number display

Displays the favicon and CCU number in a tab.

❷ Error message display

Displays the number of current errors at the top right of the 🔔 icon. Click the 🔔 icon to display the error messages in a pull-down list.
Error messages are also displayed in the center of the header. If there are multiple error messages, the error messages are displayed alternately at a set interval while they are blinking.

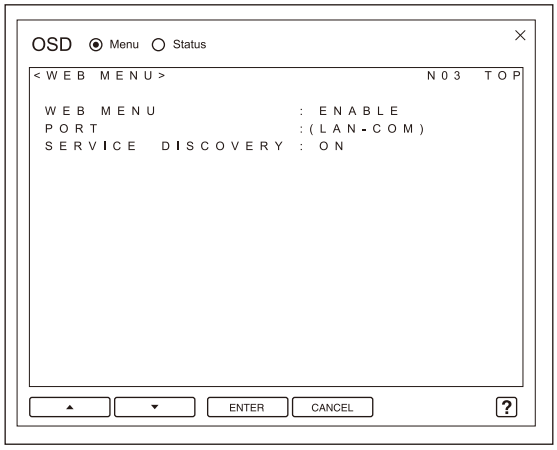
❸ Front panel information display

Displays information about the front panel of the unit. The light sensor level of the camera and CCU are displayed in nine gradations of bar color and length.

Light sensor level	Bar display
High	(Bar color: green)
	(Bar color: green)
	(Bar color: green)
	(Bar color: green)
	(Bar color: yellow)
	(Bar color: yellow)
	(Bar color: red)
	(Bar color: red)
Low	(No bar display)

❹ OSD Menu button

Click to display the OSD menu screen of the unit.
The configuration items displayed on the OSD menu screen are the same as those displayed in the setup menu of the unit. You can switch between the OSD menu screen display and the status screen display of the status of the unit.



Click the △ (up) button and ▽ (down) button at the bottom of the screen to switch between screens. Clicking the ENTER button applies/executes a setting. Clicking the CANCEL button cancels a setting.
You can operate the unit using these buttons, the knobs and levers on the front panel, a mouse, or a keyboard.

OSD menu button	Front panel knob/lever	Mouse	Keyboard
△ button	CONTROL knob	Scroll up	↑
▽ button	CONTROL knob	Scroll down	↓
ENTER button	CANCEL/ENTER lever	Left-click	→
CANCEL button	CANCEL/ENTER lever	Right-click	←

Note

When a setting of the unit is changed using the setup menu, the display in the OSD menu screen is also updated.

Help screen

Clicking the ? icon at the bottom right of the screen displays a help screen describing how to operate the OSD menu.

❺ Call button

The call button of the unit lights up while the Call button is pressed using a mouse. Also, the display of the Call button on the screen changes to dark red while the Call button of the unit is pressed.

❻ ··· button

Click to display a context menu containing a list of the functions that can be executed from the web menu.

CCU File: Executes the same functions as on the <CCU FILE> page of the FILE menu of the unit. You can upload a CCU file stored on a PC to the unit, or download a CCU file from the unit to a PC.

Network: Executes the same functions as on the <IP ADDRESS> page of the NETWORK menu of the unit. Set DHCP to OFF and enter values for each setting, then apply the settings using the Apply button.

IP Live: Executes the same functions as on the <IP LIVE> page and <NMOS> page of the NETWORK menu of the unit. Select the mode in IP Live Mode Select, and change each setting. Displayed only when HKCU-SFP30 is installed.

ST2110: Executes the same functions as on the <MULTICAST ADDRESS> page of the NETWORK menu of the unit. Displayed only when HKCU-SFP30 is installed.

Information: Displays software license information (equivalent to the <OPTION> page of the MAINTENANCE menu), version information (equivalent to the <VERSION> page of the DIAGNOSIS menu), and camera diagnosis information (equivalent to the <CAMERA DIAGNOSIS> page of the DIAGNOSIS menu).

Save Log: Downloads the log file (log.zip) of the unit.

Version Up: Store the package file on the PC used to access the web menu before updating the unit using this function. During the update process, a screen indicating that the unit is updating appears in the web menu. When the update is completed, the unit restarts automatically and the web menu connects again automatically.

Option License: Downloads the device information file (DEVICE.DAT) required for license authentication to a PC via the web menu. It can also perform the following operations which are equivalent to functions on the <OPTION> page of the MAINTENANCE menu.

① Install license key (USB flash drive not required)
② Check the status of software licenses

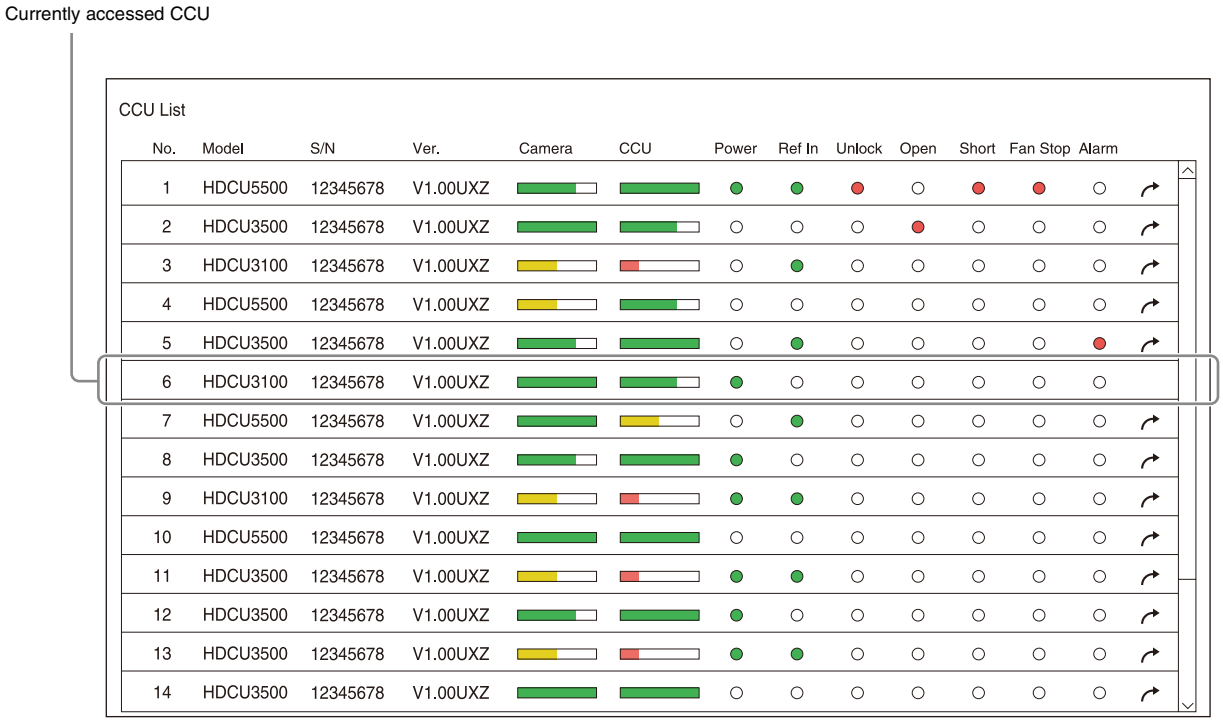
OSS License: Displays a list of OSS (Open Source Software) licenses.

Password Change: Changes the password for accessing the web menu.

Reboot: Reboots the unit.

CCU Information List Screen

This screen displays information about CCU units on the same subnet in list view sorted by CCU number.
To display the CCU information list, set <WEB MENU> → SERVICE DISCOVERY to ON in the NETWORK menu.



Notes

- The information displayed in the CCU information list is acquired via the network. There may be a short delay before the information is reflected on the screen compared to the settings/information display area.
- If communication from a CCU is not received for 30 seconds, the corresponding CCU row becomes gray. When updated information is detected, the background color returns to normal.
- When the setting of a CCU displayed in the list changes, the display of the list is updated.

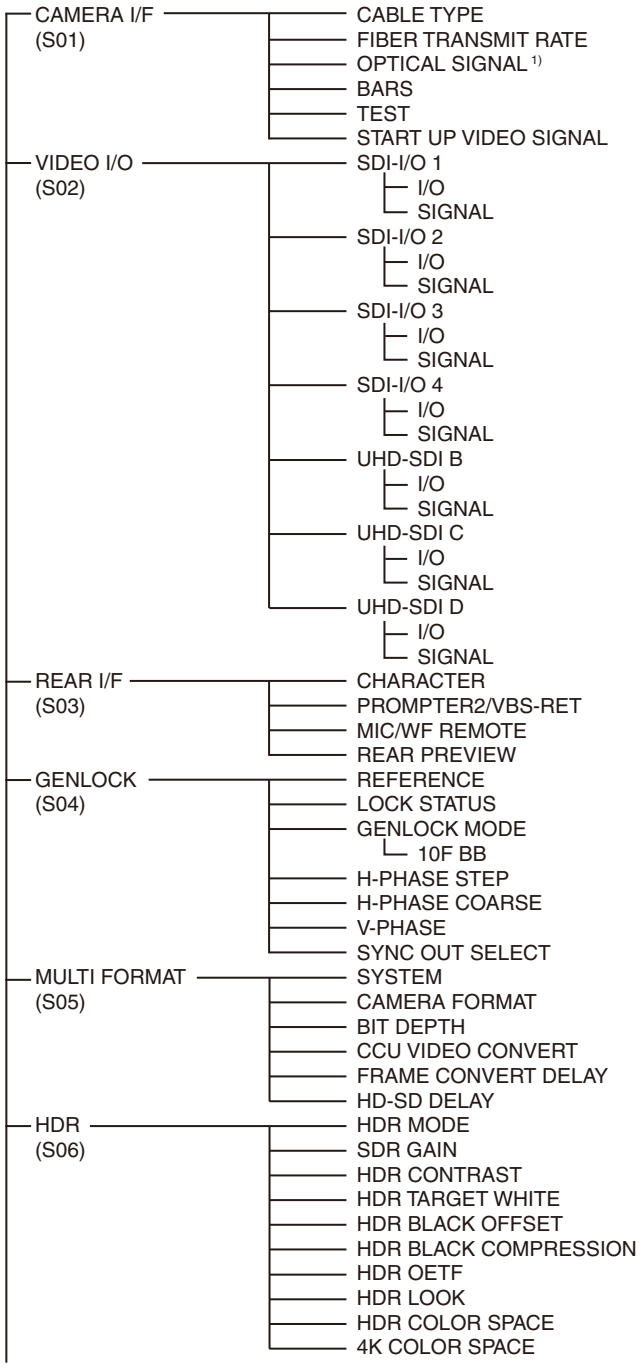
- Modes supported by the CCU information list display are HDCU3100 V2.2 and later, HDCU3170 V2.2 and later, HDCU3500 V1.0 and later, and HDCU5500 V1.0 and later.

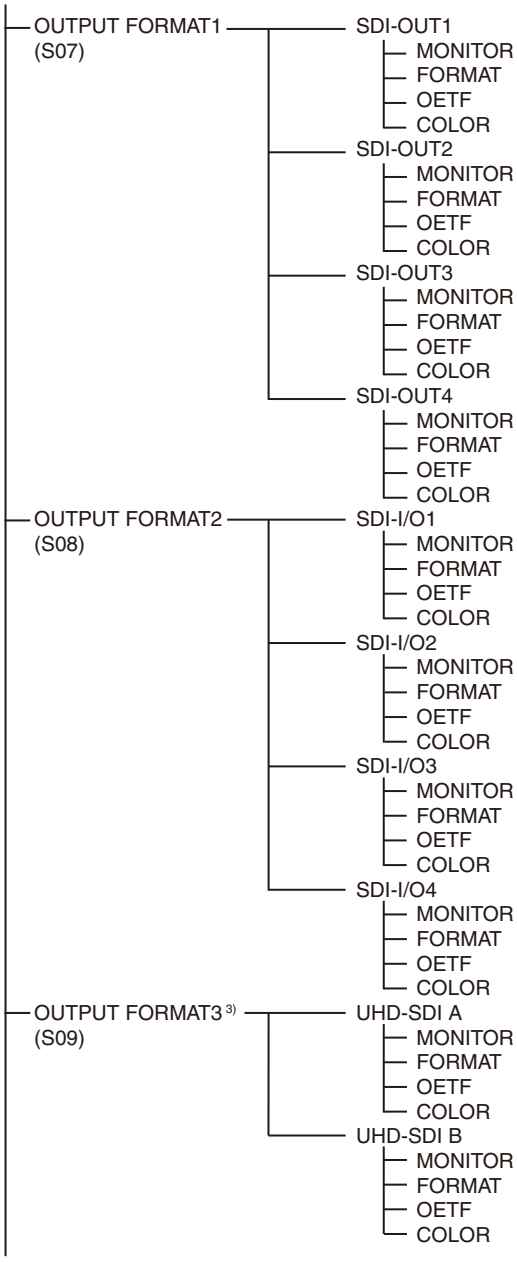
The front panel information of each CCU is displayed on each row. You can switch to the web menu of a CCU by clicking the  button.
The  button is not displayed in the row of the currently accessed CCU. The background color also differs from the other rows.

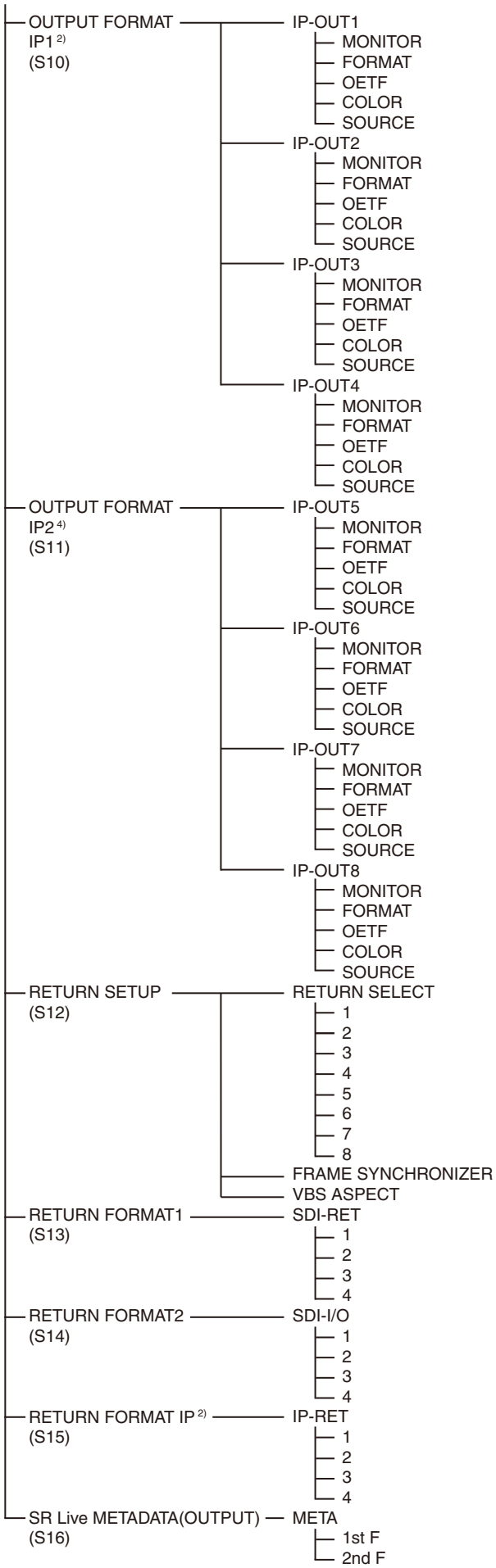
Menu Tree

SYSTEM CONFIG Menu

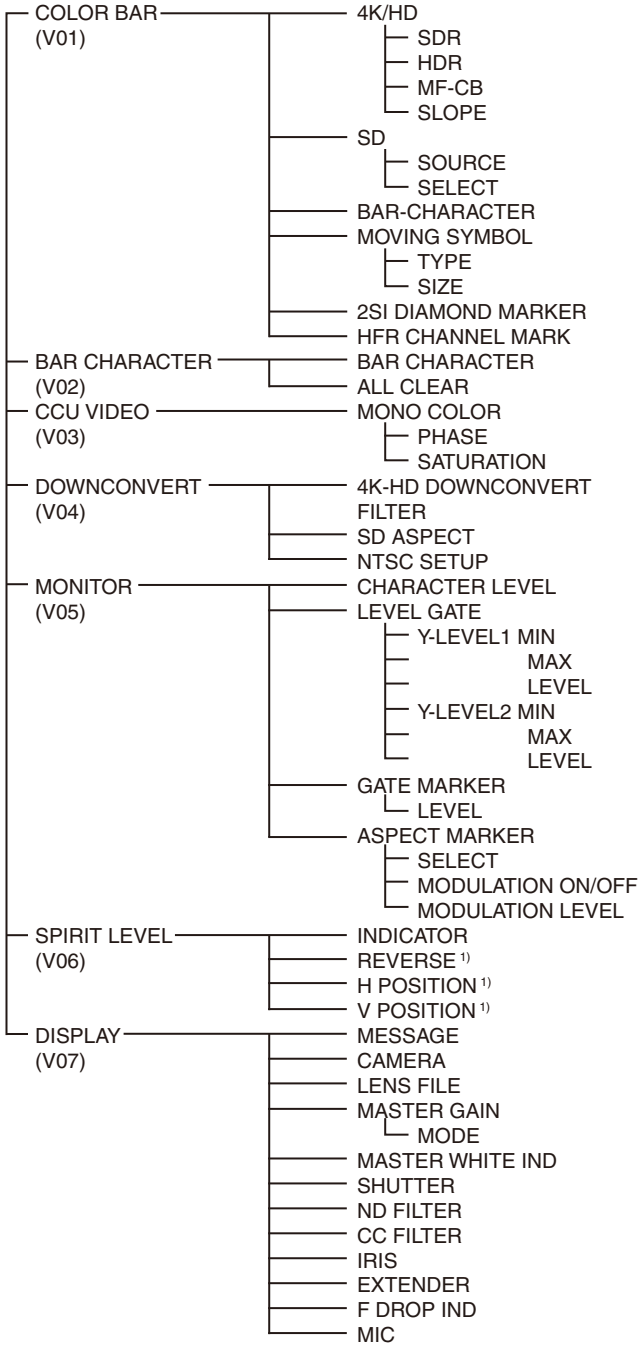
Menu items marked “1)” are displayed only for HDCU3100 or HDCU3170 (with HKCU-FB30 installed).
Menu items marked “2)” are displayed only when HKCU-SFP30 is installed.
Menu items marked “3)” are displayed only when HKCU-UHD30 and HKCU-SDI30 are installed.
Menu items marked “4)” are displayed only when HKCU-UHD30 and HKCU-SFP30 are installed.





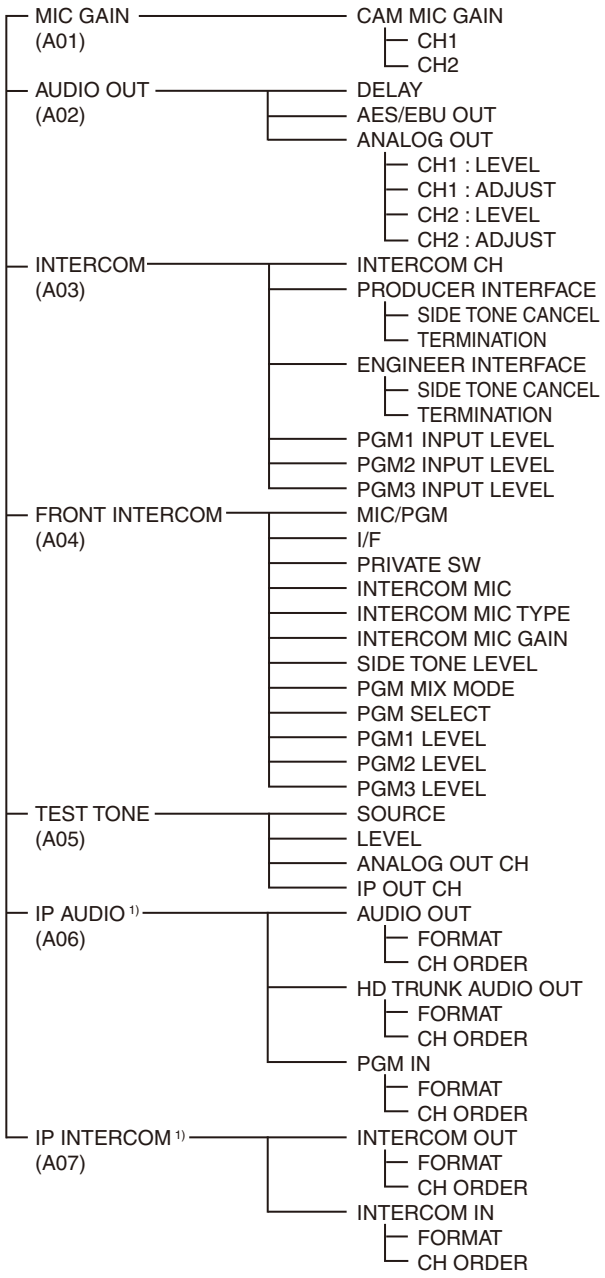


VIDEO/MONITOR Menu

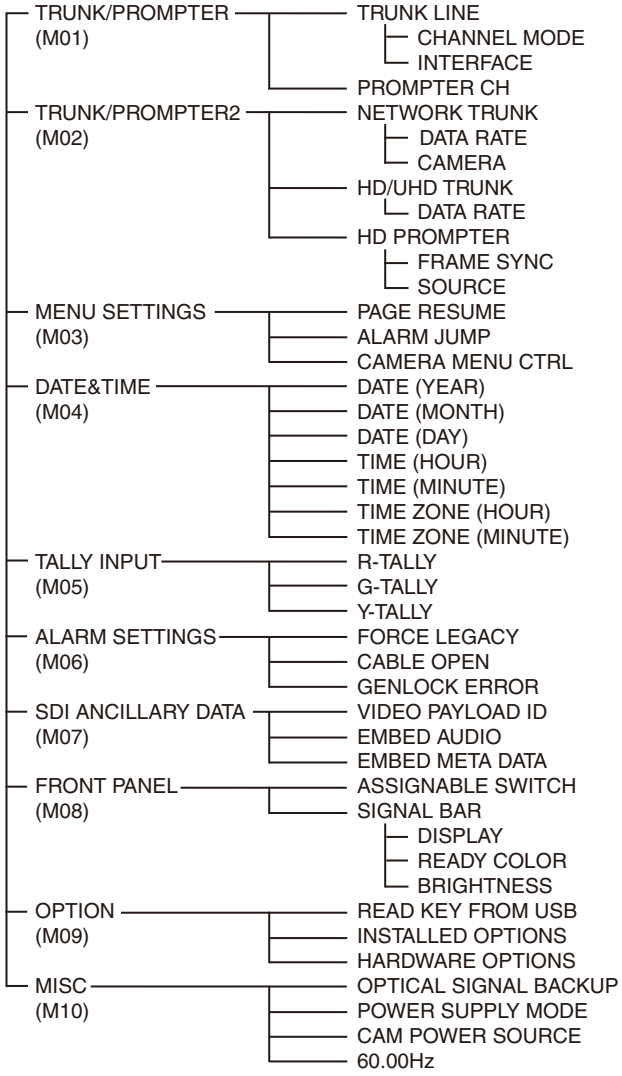


AUDIO/INTERCOM Menu

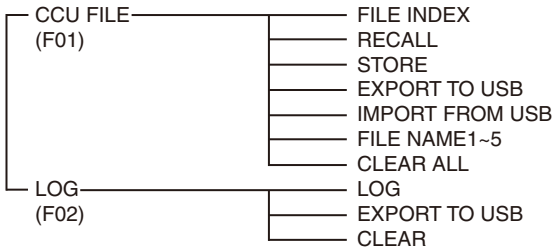
Menu items marked “1)” are displayed only when HKCU-SFP30 is installed.



MAINTENANCE Menu

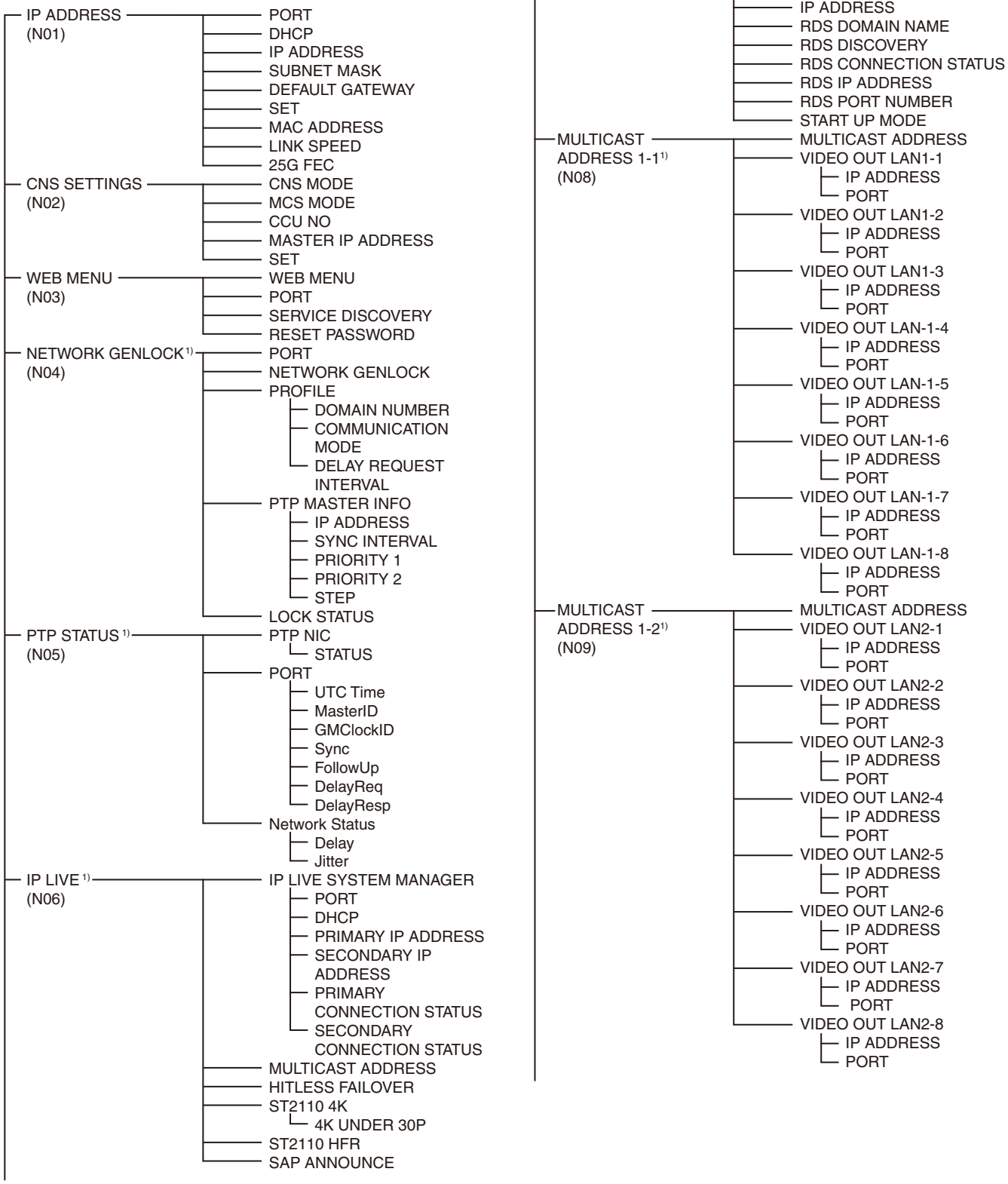


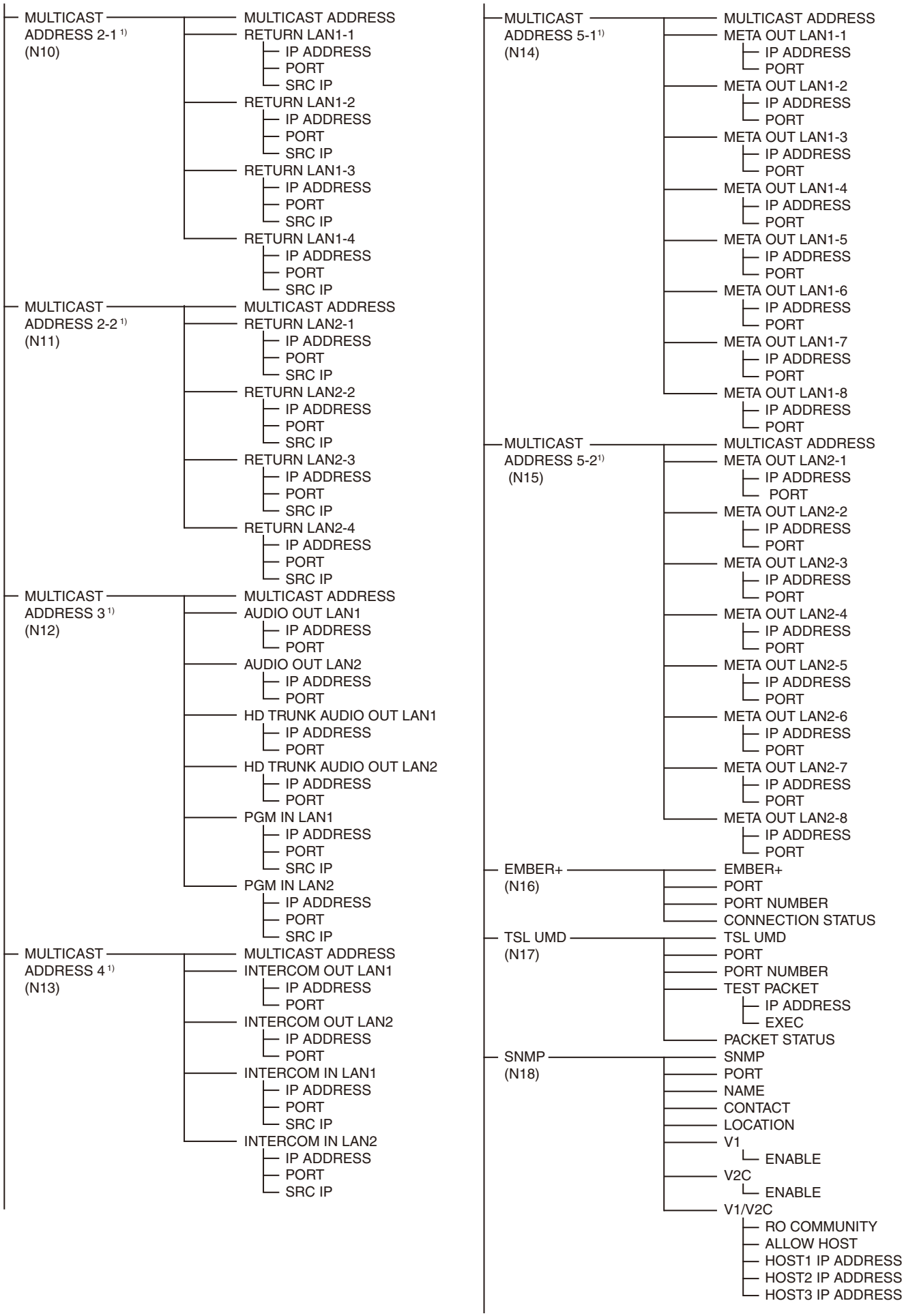
FILE Menu

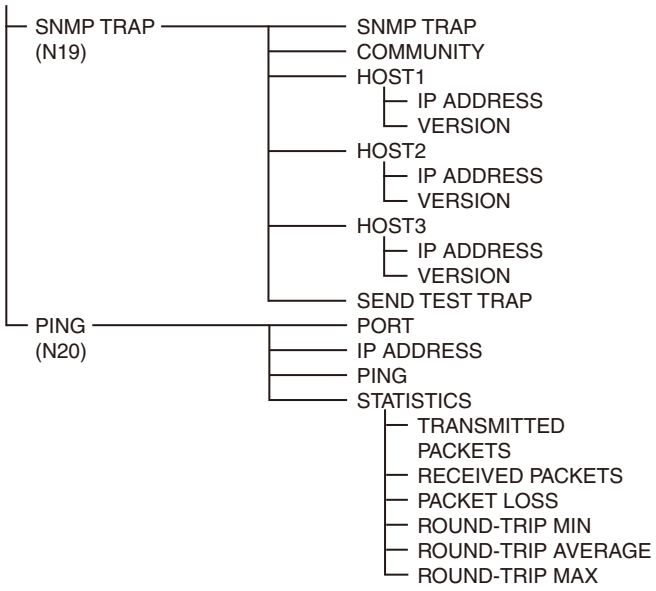


NETWORK Menu

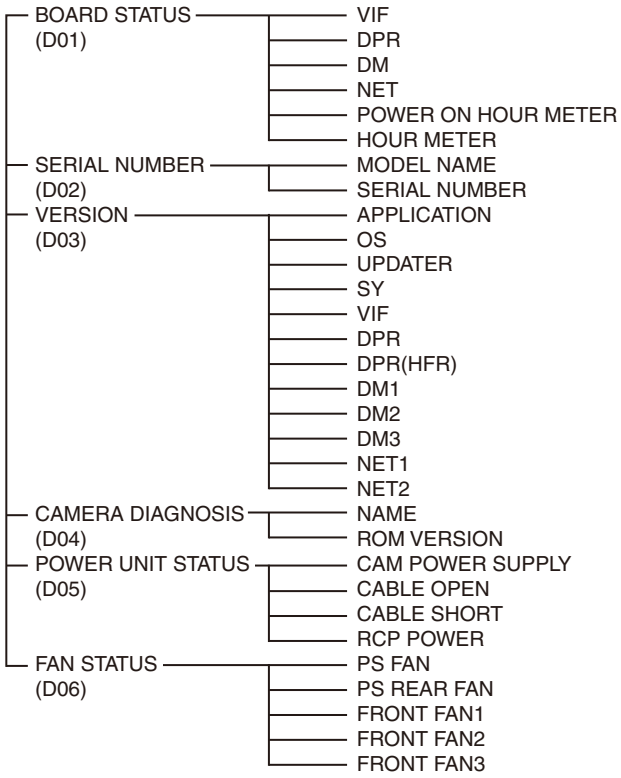
Menu items marked “1)” are displayed only when HKCU-SFP30 is installed.




MULTICAST ADDRESS 2-1 1) (N10)
MULTICAST ADDRESS
RETURN LAN1-1
IP ADDRESS
PORT
SRC IP
RETURN LAN1-2
IP ADDRESS
PORT
SRC IP
RETURN LAN1-3
IP ADDRESS
PORT
SRC IP
RETURN LAN1-4
IP ADDRESS
PORT
SRC IP
MULTICAST ADDRESS 2-2 1) (N11)
MULTICAST ADDRESS
RETURN LAN2-1
IP ADDRESS
PORT
SRC IP
RETURN LAN2-2
IP ADDRESS
PORT
SRC IP
RETURN LAN2-3
IP ADDRESS
PORT
SRC IP
RETURN LAN2-4
IP ADDRESS
PORT
SRC IP
MULTICAST ADDRESS 3 1) (N12)
MULTICAST ADDRESS
AUDIO OUT LAN1
IP ADDRESS
PORT
AUDIO OUT LAN2
IP ADDRESS
PORT
HD TRUNK AUDIO OUT LAN1
IP ADDRESS
PORT
HD TRUNK AUDIO OUT LAN2
IP ADDRESS
PORT
PGM IN LAN1
IP ADDRESS
PORT
SRC IP
PGM IN LAN2
IP ADDRESS
PORT
SRC IP
MULTICAST ADDRESS 4 1) (N13)
MULTICAST ADDRESS
INTERCOM OUT LAN1
IP ADDRESS
PORT
INTERCOM OUT LAN2
IP ADDRESS
PORT
INTERCOM IN LAN1
IP ADDRESS
PORT
SRC IP
INTERCOM IN LAN2
IP ADDRESS
PORT
SRC IP
MULTICAST ADDRESS 5-1 1) (N14)
MULTICAST ADDRESS
META OUT LAN1-1
IP ADDRESS
PORT
META OUT LAN1-2
IP ADDRESS
PORT
META OUT LAN1-3
IP ADDRESS
PORT
META OUT LAN1-4
IP ADDRESS
PORT
META OUT LAN1-5
IP ADDRESS
PORT
META OUT LAN1-6
IP ADDRESS
PORT
META OUT LAN1-7
IP ADDRESS
PORT
META OUT LAN1-8
IP ADDRESS
PORT
MULTICAST ADDRESS 5-2 1) (N15)
MULTICAST ADDRESS
META OUT LAN2-1
IP ADDRESS
PORT
META OUT LAN2-2
IP ADDRESS
PORT
META OUT LAN2-3
IP ADDRESS
PORT
META OUT LAN2-4
IP ADDRESS
PORT
META OUT LAN2-5
IP ADDRESS
PORT
META OUT LAN2-6
IP ADDRESS
PORT
META OUT LAN2-7
IP ADDRESS
PORT
META OUT LAN2-8
IP ADDRESS
PORT
EMBER+ (N16)
EMBER+
PORT
PORT NUMBER
CONNECTION STATUS
TSL UMD (N17)
TSL UMD
PORT
PORT NUMBER
TEST PACKET
IP ADDRESS
EXEC
PACKET STATUS
SNMP (N18)
SNMP
PORT
NAME
CONTACT
LOCATION
V1
ENABLE
V2C
ENABLE
V1/V2C
RO COMMUNITY
ALLOW HOST
HOST1 IP ADDRESS
HOST2 IP ADDRESS
HOST3 IP ADDRESS



DIAGNOSIS Menu



Menu List

Legend

The following conventions are used in the menu list table.
Settings column values (e.g. ON, OFF, 0): Default settings are underlined
Execute using ENTER: When using the setup menu directly, press the CONTROL knob or move the CANCEL/ENTER lever to the ENTER position to execute. When using the web menu, click the ENTER button in the OSD menu to execute.

Notes

- Menu items marked “1)” are displayed only for HDCU3100 or HDCU3170 (with HKCU-FB30 installed).
- Menu items marked “2)” are displayed only when HKCU-SFP30 is installed.
- Menu items marked “3)” are displayed only when both HKCU-UHD30 and HKCU-SDI30 are installed.

SYSTEM CONFIG Menu

SYSTEM CONFIG			
Page name Page No.	**Item**	**Set value**	**Description**
<CAMERA I/F> S01	CABLE TYPE	**FIBER CAMERA CABLE**, COAX, COAX(HDCE), SINGLE-MODE FIBER, TRIAX CAMERA CABLE	Specifies the cable type used for connecting the camera. **FIBER CAMERA CABLE:** Select when using the HDCU3100 or the HDCU3170 with HKCU-FB30 installed. **TRIAX CAMERA CABLE:** Select when using the HDCU3170. **SINGLE-MODE FIBER:** Selectable only when the HKCU-SM30 is installed.
	FIBER TRANSMIT RATE	**HIGH**, HD, ---	Sets the transfer rate when an optical fiber cable is connected. **HIGH:** When the HDC3500/3100 or HDC2000 series is connected **HD:** When the HSC300RF/100RF is connected **---:** When CABLE TYPE is set to COAX, COAX(HDCE), or TRIAX CAMERA CABLE
	OPTICAL SIGNAL 1)	ON, **OFF**	Turns the optical signal output from the CCU to the camera ON/OFF. (Displayed only when connected using optical fiber composite cable.)
	BARS	**OFF**, ON	Turns color bars ON/OFF.
	TEST	**OFF**, TEST1, TEST2	Turns TEST SAW ON/OFF.
	START UP VIDEO SIGNAL	**BARS**, GRAY	Selects the signal to output until the unit connects with the camera after power-on.

SYSTEM CONFIG			
Page name **Page No.**	**Item**	**Set value**	**Description**
<VIDEO I/O> S02	SDI-I/O 1		Sets SDI I/O 1.
	I/O	IN, **OUT**	Selects input or output.
	SIGNAL	When OUT is selected in I/O: **SDI-OUT** When IN is selected in I/O: SDI-RET	Sets the signal function.
	SDI-I/O 2		Sets SDI I/O 2.
	I/O	IN, **OUT**	Selects input or output.
	SIGNAL	When OUT is selected in I/O: **SDI-OUT** When IN is selected in I/O: SDI-RET	Sets the signal function.
	SDI-I/O 3		Sets SDI I/O 3.
	I/O	IN, **OUT**	Selects input or output.
	SIGNAL	When OUT is selected in I/O: SDI-OUT, **HD TRUNK** When IN is selected in I/O: SDI-RET	Sets the signal function.
	SDI-I/O 4		Sets SDI I/O 4.
	I/O	**IN**, OUT	Selects input or output.
	SIGNAL	When OUT is selected in I/O: SDI-OUT When IN is selected in I/O: SDI-RET, **HD PROMPTER**	Sets the signal function.
<REAR I/F> S03	CHARACTER	**CHARACTER**, AES/EBU	Sets the function to assign to the CHARACTER, AES/EBU, SYNC connector. **CHARACTER:** Set to VBS output on which character superposition is performed. **AES/EBU:** Set to AES/EBU output.
	PROMPTER2/VBS-RET	**ENABLE**, DISABLE	Sets the function to assign to the PROMPTER2/ VBS-RET connector. **ENABLE:** Set to both signal input for the second prompter and VBS return signal input. (VBS return signal only when using HDCU3170) **DISABLE:** The PROMPTER1 input signal is output as is (loop-through output). If loop-through output is not used, terminate the unused connector at 75 ohms.
	MIC/WF REMOTE	**MIC REMOTE**, WF REMOTE	Switches the function of pins 36 to 43 when a D-Sub 50-pin board is mounted as the INTERCOM/TALLY/ IO PORT connector.
	REAR PREVIEW	**MOMENTARY**, TOGGLE	Sets the operation mode of the REAR PREVIEW connector output.

SYSTEM CONFIG			
Page name Page No.	**Item**	**Set value**	**Description**
<GENLOCK> S04	REFERENCE	NOT DETECTED, EXT IN, 1080/59.94I, 1080/23.98PsF, 720/59.94P, 1080/50I, 1080/24PsF, 720/50P	Signal input of the REFERENCE IN connector. (Display only)
	LOCK STATUS	When HD or SD is selected in GENLOCK MODE: LOCKED, NOT LOCKED	Lock status of the external reference signal. (Display only)
	GENLOCK MODE	HD, **SD**, NETWORK	Sets the lock mode of the external reference signal. **Notes** • NETWORK is displayed only when the HKCU-SFP30 ST 2110 Interface Kit is installed. • Set to NETWORK if operating within an SMPTE ST 2110 compliant system. • When set to NETWORK, an external reference input on the REFERENCE IN connector is not required, and network synchronization operates using the LAN 1 and LAN 2 connectors of the HKCU-SFP30. The network synchronization setting is configured on the <NETWORK GENLOCK> page of the NETWORK menu.
	10F BB	**OFF**, ON, (--)	Sets whether to use the 10-field ID added to the external reference signal. This can be selected when GENLOCK MODE is SD and SYSTEM CONFIG → <MULTI FORMAT> page → SYSTEM is 1.001(525). **(--):** When GENLOCK MODE is HD or SYSTEM CONFIG → <MULTI FORMAT> page → SYSTEM is 1.000(625).
	H-PHASE STEP	When HD is selected in GENLOCK MODE: –3.01 to 3.45 µsec **0.00** When SD is selected in GENLOCK MODE: –8.29 to 9.48 µsec **0.00**	Adjusts the horizontal lock phase in relation to the reference signal (steps)
	H-PHASE COARSE	–99 to 99, **0**	Adjusts the horizontal lock phase in relation to the reference signal (fine adjustment)
	V-PHASE	**0** to 7	Adjusts the vertical lock phase in relation to the reference signal (lines)
	SYNC OUT SELECT	**SD SYNC**, HD SYNC	Sets the output signal of the REFERENCE OUT connector.

SYSTEM CONFIG Page name Page No.	Item	Set value	Description
<MULTI FORMAT> S05	SYSTEM	**1.001(525)**, 1.000(625)	Selects the operating frequency of the system.
	CAMERA FORMAT	When 1.001(525) is selected in SYSTEM: UHD/59.94P (4K/HDR), UHD/29.97P (4K/HDR), UHD/23.98P (4K/HDR), 1080/29.97P (4K/HDR), 1080/23.98P (4K/HDR), 1080/59.94P (4K/HDR), 1080/59.94P, **1080/59.94I**, 1080/29.97PsF, 1080/23.98PsF, 720/59.94P, 1080/59.94I (RGB444), 1080/29.97PsF (RGB444), 1080/23.98PsF (RGB444), 1080/59.94P(2×), 1080/59.94P(3×), 1080/59.94P(4×), 1080/59.94I(2×), 720/59.94P(2×) When 1.000(625) is selected in SYSTEM: UHD/50P (4K/HDR), UHD/25P (4K/HDR), UHD/24P (4K/HDR), 1080/25P (4K/HDR), 1080/24P (4K/HDR), 1080/50P (4K/HDR), 1080/50P, **1080/50I**, 1080/25PsF, 1080/24PsF, 720/50P, 1080/50I (RGB444), 1080/25PsF (RGB444), 1080/24PsF (RGB444), 1080/50P(2×), 1080/50P(3×), 1080/50P(4×), 1080/50I(2×), 720/50P(2×)	Selects the system format. **Note** The formats available for selection vary depending on the active format of the connected camera.
	BIT DEPTH	10BIT, 12BIT	Sets the RGB4:4:4 output bit length, and changes the CCU output format. This can be selected only when CAMERA FORMAT is set to 1080/59.94I (RGB444), 1080/29.97PsF (RGB444), 1080/23.98PsF (RGB444), 1080/50I (RGB444), 1080/25PsF (RGB444), or 1080/24PsF (RGB444). Not displayed when using HDCU3170.
	CCU VIDEO CONVERT	**DISABLE**, ENABLE	Sets the video converter function. Can be set to ENABLE when CAMERA FORMAT is set to the following.
	FRAME CONVERT DELAY	0.8, 1.2, **1.6** F@23.98PsF	Sets the video delay time for 2-3 Pulldown. This is enabled only when SYSTEM is 1.001(525).

CAMERA FORMAT	Conversion output
UHD/59.94P(4K/HDR)	720/59.94P
1080/59.94P(4K/HDR)	
1080/59.94P(2×)	
1080/59.94P(3×)	
1080/59.94P(4×)	
1080/59.94P	
UHD/50P(4K/HDR)	720/50P
1080/50P(4K/HDR)	
1080/50P(2×)	
1080/50P(3×)	
1080/50P(4×)	
1080/50P	

SYSTEM CONFIG			
Page name **Page No.**	**Item**	**Set value**	**Description**
<MULTI FORMAT> S05	HD-SD DELAY	LINE, **FRAME**	Sets the delay for SD signals down-converted from HD signals.
		90H, 120H, **1F**, 2F	The delay duration display will be as follows when CAMERA FORMAT is set to a 1080 format. **When LINE is selected:** 90H **When FRAME is selected:** 1F The delay duration display will be as follows when CAMERA FORMAT is set to a 720 format. **When LINE is selected:** 120H **When FRAME is selected:** 2F
<HDR> S06	HDR MODE	**OFF**, LIVE HDR, CINEMA	**OFF:** Normal shooting operation. **LIVE HDR:** Used for LIVE HDR shooting. **CINEMA:** Output HDR for recording **Note** When LIVE HDR is selected, camera paint functions can be used for both HDR output and SDR output. However, some paint functions are not supported for HDR output.
	SDR GAIN	–15 to 0.0, **–6.0** dB	Enabled in LIVE HDR mode only. Gain setting applied to SDR output
	HDR CONTRAST	100 to 560%, **200%**	Enabled in LIVE HDR mode only. HDR output contrast maintained by setting SDR GAIN (Display only)
	HDR TARGET WHITE	50 to 765 nit	Enabled in LIVE HDR mode only. Displays the white standard level.
	HDR BLACK OFFSET	–99 to 99, **0**	Enabled in LIVE HDR mode only. HDR output black offset
	HDR BLACK COMPRESSION	**OFF**, ON	Enabled in LIVE HDR mode only. Sets whether to compress low-luminance areas for HDR output.
	HDR OETF	**S-Log3**, HLG	Sets the video output OETF.
	HDR LOOK	Natural, Mild, **Live**	Sets the video output LOOK.
	HDR COLOR SPACE	**BT709**, BT2020, S-Gamut3, S-Gamut3.Cine	Selects the color space of the video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **S-Gamut3:** Sets the color output format to S-Gamut3. **S-Gamut3.Cine:** Sets the color output format to S-Gamut3.Cine.
	4K COLOR SPACE	**BT709**, BT2020	Selects the color space of 4K video output. Same settings as HDR COLOR SPACE when HDR MODE is set to LIVE HDR. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020.

SYSTEM CONFIG			
Page name **Page No.**	**Item**	**Set value**	**Description**
<OUTPUT FORMAT1> S07	SDI-OUT1		Sets the output for the SDI OUT 1 connector.
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the SDI OUT 1 connector.
	OETF	**SDR**, HDR OETF	Sets the gamma curve of the video output.
	COLOR	BT709, BT2020, SG3, SG3C	Selects the color space of SDI-OUT1 video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.
	SDI-OUT2		Sets the output for the SDI OUT 2 connector.
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the SDI OUT 2 connector.
	OETF	**SDR**, HDR OETF	Sets the gamma curve of the video output.
	COLOR	BT709, BT2020, SG3, SG3C	Selects the color space of SDI-OUT2 video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.
	SDI-OUT3		Sets the output for the SDI OUT 3 connector.
	MONITOR	**C**, M	Sets whether to add characters to the output signal. **C:** Characters are not added. **M:** Characters are added.
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the SDI OUT 3 connector.
	OETF	**SDR**, HDR OETF	Sets the gamma curve of the video output.
	COLOR	BT709, BT2020, SG3, SG3C	Selects the color space of SDI-OUT3 video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.

SYSTEM CONFIG			
Page name **Page No.**	**Item**	**Set value**	**Description**
<OUTPUT FORMAT1> S07	SDI-OUT4		Sets the output for the SDI OUT 4 connector.
	MONITOR	C, M	Sets whether to add characters to the output signal. **C:** Characters are not added. **M:** Characters are added. **Note** When this is set to C (characters are not added), the CCU MENU will not be displayed. To display it, hold the DISP/MENU lever in the MENU position for 3 seconds.
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the SDI OUT 4 connector.
	OETF	**SDR**, HDR OETF	Sets the gamma curve of the video output.
	COLOR	BT709, BT2020, SG3, SG3C	Selects the color space of SDI-OUT4 video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.

SYSTEM CONFIG			
Page name **Page No.**	**Item**	**Set value**	**Description**
<OUTPUT FORMAT2> S08	SDI-I/O1		Sets the output for the SDI I/O 1 connector.
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the SDI I/O 1 connector.
	OETF	**SDR**, HDR OETF	Sets the gamma curve of the video output.
	COLOR	BT709, BT2020, SG3, SG3C	Selects the color space of SDI-I/O1 video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.
	SDI-I/O2		Sets the output for the SDI I/O 2 connector.
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the SDI I/O 2 connector.
	OETF	**SDR**, HDR OETF	Sets the gamma curve of the video output.
	COLOR	BT709, BT2020, SG3, SG3C	Selects the color space of SDI-I/O2 video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.
	SDI-I/O3		Sets the output for the SDI I/O 3 connector.
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52* (DISABLE), (HD TRUNK)	Sets the output signal format of the SDI I/O 3 connector. **(DISABLE):** When SYSTEM CONFIG → <VIDEO I/O> → SDI I/O 3 → I/O is set to IN **(HD TRUNK):** When SYSTEM CONFIG → <VIDEO I/O> → SDI I/O 3 → I/O is set to OUT and SIGNAL is set to HD TRUNK
	OETF	**SDR**, HDR OETF	Sets the gamma curve of the video output.
	COLOR	BT709, BT2020, SG3, SG3C	Selects the color space of SDI-I/O3 video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.

SYSTEM CONFIG			
Page name **Page No.**	**Item**	**Set value**	**Description**
<OUTPUT FORMAT2> S08	SDI-I/O4		Sets the output for the SDI I/O 4 connector.
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52* (DISABLE)	Sets the output signal format of the SDI I/O 4 connector. **(DISABLE):** When SYSTEM CONFIG → <VIDEO I/O> → SDI I/O 4 → I/O is set to IN
	OETF	**SDR**, HDR OETF	Sets the gamma curve of the video output.
	COLOR	BT709, BT2020, SG3, SG3C	Selects the color space of SDI-I/O4 video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.
<OUTPUT FORMAT3> [3)] S09	UHD-SDI A		Sets the output of the UHD SDI A connector.
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the UHD SDI A connector.
	OETF	SDR, 4K OETF	Sets the gamma curve of the video output.
	COLOR	BT709, BT2020, SG3, SG3C	Selects the color space of UHD-SDI A video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.
	UHD-SDI B		Sets the output of the UHD SDI B connector.
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the UHD SDI B connector.
	OETF	SDR, 4K OETF	Sets the gamma curve of the video output.
	COLOR	BT709, BT2020, SG3, SG3C	Selects the color space of UHD-SDI B video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.

SYSTEM CONFIG			
Page name **Page No.**	**Item**	**Set value**	**Description**
<OUTPUT FORMAT IP1> S10 Displayed only when HKCU-SFP30 is installed.	IP-OUT1		Sets the output for the LAN 1 and LAN 2 connectors.
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the LAN 1 and LAN 2 connectors.
	OETF	**SDR**, HDR OETF	Sets the gamma curve of the video output.
	COLOR	BT709, BT2020, SG3, SG3C	Selects the color space of IP-OUT1 video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.
	SOURCE	CAMERA	Selects the signal source to output.
	IP-OUT2		Sets the output for the LAN 1 and LAN 2 connectors.
	MONITOR	**C**, M	Sets whether to add characters to the output signal. **C:** Characters are not added. **M:** Characters are added.
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the LAN 1 and LAN 2 connectors.
	OETF	**SDR**, HDR OETF	Sets the gamma curve of the video output.
	COLOR	BT709, BT2020, SG3, SG3C	Selects the color space of IP-OUT2 video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.
	SOURCE	CAMERA	Selects the signal source to output.
	IP-OUT3		Sets the output for the LAN 1 and LAN 2 connectors.
	MONITOR	C, **M**	Sets whether to add characters to the output signal. **C:** Characters are not added. **M:** Characters are added. **Notes** • M (fixed) when SOURCE is set to CAMERA. • C (fixed) when SOURCE is set to HD TRUNK.
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the LAN 1 and LAN 2 connectors.
	OETF	SDR	Sets the gamma curve of the video output.
	COLOR	**BT709**, SG3, SG3C	Selects the color space of IP-OUT3 video output. **BT709:** Sets the color output format to BT709. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.
	SOURCE	**CAMERA**, HD TRUNK	Selects the signal source to output.

SYSTEM CONFIG			
Page name **Page No.**	**Item**	**Set value**	**Description**
<OUTPUT FORMAT IP1> S10 Displayed only when HKCU-SFP30 is installed.	IP-OUT4		Sets the output for the LAN 1 and LAN 2 connectors. **Notes** • IP-OUT4 is a setting for dedicated 4K output. • Output is supported when the HKCU-UHD30 option is installed.
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the LAN 1 and LAN 2 connectors.
	OETF	**SDR**, HDR OETF	Sets the gamma curve of the video output.
	COLOR	BT709, BT2020, SG3, SG3C	Selects the color space of IP-OUT4 video output. **BT709:** Sets the color output format to BT709. **BT2020:** Sets the color output format to BT2020. **SG3:** Sets the color output format to S-Gamut3. **SG3C:** Sets the color output format to S-Gamut3.Cine.
	SOURCE	CAMERA	Selects the signal source to output.

SYSTEM CONFIG			
Page name **Page No.**	**Item**	**Set value**	**Description**
<OUTPUT FORMAT IP2> S11 Displayed only when HKCU-UHD30 and HKCU-SFP30 are installed.	IP-OUT5		Sets the output for the LAN 1 and LAN 2 connectors. **Note** IP-OUT5 is a setting for dedicated HFR and 4K output (4K 29.97PsF SQD/4K 25PsF SQD).
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the LAN 1 and LAN 2 connectors.
	OETF	SDR, HDR OETF	Displays the video output OETF.
	COLOR	BT709, BT2020, SG3, SG3C	Displays the color space of IP-OUT5 video output. **BT709:** BT709 color space format **BT2020:** BT2020 color space format **SG3:** S-Gamut3 color space format **SG3C:** S-Gamut3.Cine color space format
	SOURCE	CAMERA	Selects the signal source to output.
	IP-OUT6		Sets the output for the LAN 1 and LAN 2 connectors. **Note** IP-OUT6 is a setting for dedicated HFR and 4K output (4K 29.97PsF SQD/4K 25PsF SQD).
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the LAN 1 and LAN 2 connectors.
	OETF	SDR, HDR OETF	Displays the video output OETF.
	COLOR	BT709, BT2020, SG3, SG3C	Displays the color space of IP-OUT6 video output. **BT709:** BT709 color space format **BT2020:** BT2020 color space format **SG3:** S-Gamut3 color space format **SG3C:** S-Gamut3.Cine color space format
	SOURCE	CAMERA	Selects the signal source to output.

SYSTEM CONFIG			
Page name **Page No.**	**Item**	**Set value**	**Description**
<OUTPUT FORMAT IP2> S11 Displayed only when HKCU-UHD30 and HKCU-SFP30 are installed.	IP-OUT7		Sets the output for the LAN 1 and LAN 2 connectors. **Note** IP-OUT7 is a setting for dedicated HFR and 4K output (4K 29.97PsF SQD/4K 25PsF SQD).
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the LAN 1 and LAN 2 connectors.
	OETF	SDR, HDR OETF	Displays the video output OETF.
	COLOR	BT709, BT2020, SG3, SG3C	Displays the color space of IP-OUT7 video output. **BT709:** BT709 color space format **BT2020:** BT2020 color space format **SG3:** S-Gamut3 color space format **SG3C:** S-Gamut3.Cine color space format
	SOURCE	CAMERA	Selects the signal source to output.
	IP-OUT8		Sets the output for the LAN 1 and LAN 2 connectors. **Note** IP-OUT8 is a setting for dedicated HFR and 4K output (4K 29.97PsF SQD/4K 25PsF SQD).
	MONITOR	C	Sets whether to add characters to the output signal. **C:** Characters are not added. **Note** Set to C (fixed).
	FORMAT	*SYSTEM is 1.001(525): see page 48* *SYSTEM is 1.000(625): see page 52*	Sets the output signal format of the LAN 1 and LAN 2 connectors.
	OETF	**SDR**, HDR OETF	Displays the video output OETF.
	COLOR	BT709, BT2020, SG3, SG3C	Displays the color space of IP-OUT8 video output. **BT709:** BT709 color space format **BT2020:** BT2020 color space format **SG3:** S-Gamut3 color space format **SG3C:** S-Gamut3.Cine color space format
	SOURCE	CAMERA	Selects the signal source to output.

SYSTEM CONFIG

Page name Page No.	Item	Set value	Description
<RETURN SETUP> S12	RETURN SELECT		Sets the format of the return signal to be input. For details on the selectable RETURN FORMAT options for each SYSTEM (system operating frequency) setting and CAMERA FORMAT (system format) setting in <MULTI FORMAT>, see the following. *SYSTEM is 1.001(525): page 48* *SYSTEM is 1.000(625): page 52* **Notes** • IP-RET1, IP-RET2, IP-RET3 can be selected when HKCU-SFP30 is installed. IP-RET4 can be selected when HKCU-UHD30 is installed. • SDI-I/O1 to SDI-I/O4 can be selected when the <VIDEO I/O> setting is as follows.
	1	**SDI-RET1**, SDI-RET2, SDI-RET3, SDI-RET4, SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4, VBS-RET, IP-RET1, IP-RET2, IP-RET3, IP-RET4	
	2	SDI-RET1, **SDI-RET2**, SDI-RET3, SDI-RET4, SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4, VBS-RET, IP-RET1, IP-RET2, IP-RET3, IP-RET4	
	3	SDI-RET1, SDI-RET2, **SDI-RET3**, SDI-RET4, SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4, VBS-RET, IP-RET1, IP-RET2, IP-RET3, IP-RET4	
	4	SDI-RET1, SDI-RET2, SDI-RET3, **SDI-RET4**, SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4, VBS-RET, IP-RET1, IP-RET2, IP-RET3, IP-RET4	
	5	SDI-RET1, SDI-RET2, SDI-RET3, SDI-RET4, **SDI-I/O1**, SDI-I/O2, SDI-I/O3, SDI-I/O4, VBS-RET, IP-RET1, IP-RET2, IP-RET3, IP-RET4	
	6	SDI-RET1, SDI-RET2, SDI-RET3, SDI-RET4, SDI-I/O1, **SDI-I/O2**, SDI-I/O3, SDI-I/O4, VBS-RET, IP-RET1, IP-RET2, IP-RET3, IP-RET4	
	7	SDI-RET1, SDI-RET2, SDI-RET3, SDI-RET4, SDI-I/O1, SDI-I/O2, **SDI-I/O3**, SDI-I/O4, VBS-RET, IP-RET1, IP-RET2, IP-RET3, IP-RET4	
	8	SDI-RET1, SDI-RET2, SDI-RET3, SDI-RET4, SDI-I/O1, SDI-I/O2, SDI-I/O3, **SDI-I/O4**, VBS-RET, IP-RET1, IP-RET2, IP-RET3, IP-RET4	
	FRAME SYNCHRONIZER	**OFF**, ON	Sets the frame synchronizer function for the return signal. ON (fixed) when using HDCU3170.
	VBS ASPECT	SQUEEZE, LETTER BOX, **EDGE CROP**	Sets the aspect ratio of the VBS input signal.
<RETURN FORMAT1> S13	SDI-RET		
	1	1080/59.94P/3G, 1080/50P/3G, **1080/59.94I(PsF)**, 50I(PsF), 1080/23.98PsF, 24PsF, 720/59.94P, 50P, 525/59.94I(PsF), 625/50I(PsF)	Sets the format of the return signal to be input to the SDI RET connectors. When an SD signal is set (525 or 625), set the aspect ratio of the input signal. SQUEEZE, LETTER BOX, **EDGE CROP** 1080/23.98PsF, 24PsF, 720/59.94P, 50P not displayed when using HDCU3170.
	2		
	3		
	4		
<RETURN FORMAT2> S14	SDI-I/O		
	1	1080/59.94P, 1080/50P, **1080/59.94I(PsF)**, 50I(PsF), 1080/23.98PsF, 24PsF, 720/59.94P, 50P, 525/59.94I(PsF), 625/50I(PsF)	Sets the format of the return signal to be input to the SDI I/O connectors. 1080/23.98PsF, 24PsF, 720/59.94P, 50P not displayed when using HDCU3170. **Note** "DISABLED" is displayed if <VIDEO I/O> ⟶ SDI-I/O 1, SDI-I/O 2, SDI-I/O 3, SDI-I/O 4 is set to SDI-RET.
	2		
	3		
	4		

SDI-I/O	<VIDEO I/O> setting
SDI-I/O 1	<VIDEO I/O> ⟶ SDI-I/O 1 ⟶ I/O is set to IN and SIGNAL is set to SDI-RET
SDI-I/O 2	<VIDEO I/O> ⟶ SDI-I/O 2 ⟶ I/O is set to IN and SIGNAL is set to SDI-RET
SDI-I/O 3	<VIDEO I/O> ⟶ SDI-I/O 3 ⟶ I/O is set to IN and SIGNAL is set to SDI-RET
SDI-I/O 4	<VIDEO I/O> ⟶ SDI-I/O 4 ⟶ I/O is set to IN and SIGNAL is set to SDI-RET

SYSTEM CONFIG			
Page name Page No.	**Item**	**Set value**	**Description**
<RETURN FORMAT IP> S15 Displayed only when HKCU-SFP30 is installed.	IP-RET		Sets the format of the return signal to be input on the LAN 1 and LAN 2 connectors. **Note** IP-RET4 can be selected only when HKCU-UHD30 is enabled.
	1 2 3 4	IP-RET1,2 1080/59.94P, 1080/50P, **1080/59.94I**, 1080/50I IP-RET3 1080/59.94I(PsF), 1080/50I IP-RET4 3840×2160/59.94P/12G, 3840×2160/50P/12G	
<SR Live METADATA(OUTPUT)> S16	META	**OFF**, ON	Turns SR Live metadata embedding ON/OFF.
	1st F	LINE9 to LINE20, **LINE14**	Sets the line number in the 1st field or the frame to embed SR Live metadata.
	2nd F	LINE572 to LINE583	Line number in the 2nd field to embed SR Live metadata (display only). **Note** Enabled only when a 2nd field is present.

SR Live Metadata Output Function

This function embeds the required group of settings for generating an SDR signal from an HDR signal in the VANC space (HDR SDR Relation Table).

- SR Live metadata can be embedded between lines 9 to 20.
- The default setting is embedding SR Live metadata on line 14. When the output format is 3G-SDI Level B/HD-SDI, SR Live metadata is also embedded in the 2nd field.

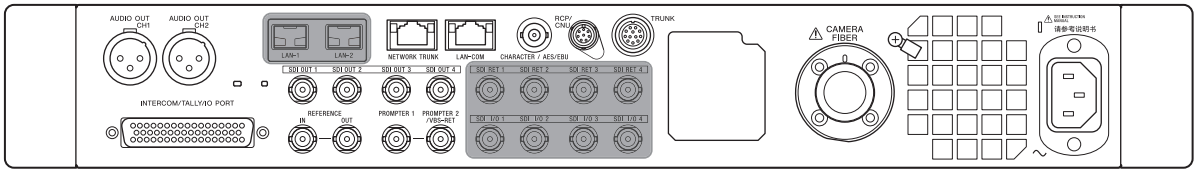
Note

For SR Live, it is recommended that the Knee and Gamma be common for the RGB settings, so only the Master value for Knee and Gamma is transferred by SR Live metadata. The value for color G is used as the Master value, and values for R and B are not transferred.

No.	Item name	Description
1	Table Version	Table format version information
2	OETF	OETF format applied to video signal
3	Transfer Matrix	Transfer matrix applied to video signal
4	Color Gamut	Color gamut of video signal
5	Conversion Mode	Conversion mode that should be applied during video conversion
6	HDR Look	Look mode setting applied to HDR video
7	HDR Black Compression	Black compression function applied to HDR video (ON/OFF setting)
8	SDR Gain	Gain difference setting between HDR video and SDR video
9	SDR Master Black	Master (SDR) black level setting (absolute value)
10	HDR Black Offset	HDR black setting offset from Master (SDR) black setting
11	Gamma Table	Gamma table number applied to SDR video
12	Gamma Step	Gamma step applied to SDR video
13	Gamma Level	Gamma level applied to SDR video (absolute value)
14	Knee	Knee function applied to SDR video (ON/OFF setting)
15	Knee Point	Knee point value applied to SDR video (absolute value)
16	Knee Slope	Knee slope value applied to SDR video (absolute value)
17	Knee Saturation	Knee saturation function applied to SDR video (ON/OFF setting)
18	Knee Saturation Level	Knee saturation value applied to SDR video (absolute value)
19	Soft Knee	Soft knee function applied to SDR video (ON/OFF setting) (Not supported on this unit)
20	Knee Radius	Soft knee function radius value applied to SDR video (absolute value) (Not supported on this unit)
21	SDR White Clip	White clip function applied to SDR video (ON/OFF setting)
22	SDR White Clip Level	White clip level applied to SDR video (absolute value)
23	HDR Knee	HDR knee function applied to HDR video (ON/OFF setting)
24	HDR Knee Point	HDR knee point value applied to HDR video (absolute value)
25	HDR Knee Slope	HDR knee slope value applied to HDR video (absolute value)
26	HDR White Target	HDR white target value applied to HDR video

Return Formats and Output Formats

This section lists the return formats and output formats for the connector blocks with shading in the following diagram.



Return format (when SYSTEM is set to 1.001(525))

Note

UHD-SDI A and UHD-SDI B are dedicated output connectors, and a return format cannot be configured.

CAMERA FORMAT	SYSTEM CONFIG → <RETURN FORMAT1>	SYSTEM CONFIG → <RETURN FORMAT2>	SYSTEM CONFIG → <RETURN FORMAT IP>
	SDI-RET1, SDI-RET2, SDI-RET3, SDI-RET4	SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4	IP-RET1, IP-RET2, IP-RET3, IP-RET4
UHD/59.94P(4K/HDR) or 1080/59.94P(4K/HDR)	1080/59.94P/3G 1080/59.94I(PsF) 720/59.94P[*1] 525/59.94I(PsF)	1080/59.94P/3G 1080/59.94I(PsF) 720/59.94P[*1] 525/59.94I(PsF)	3840×2160/59.54P/12G (IP-RET4 only) 1080/59.94P 1080/59.94I 720/59.94P[*1] (The 3 formats above for IP-RET1, IP-RET2, IP-RET3 only)
UHD/29.97P(4K/HDR) or 1080/29.97P(4K/HDR)	1080/59.94I(PsF) 525/59.94I(PsF)	1080/59.94I(PsF) 525/59.94I(PsF)	3840×2160/29.97P/6G (IP-RET4 only) 1080/29.97PsF (IP-RET1, IP-RET2, IP-RET3 only)
UHD/23.98P(4K/HDR) or 1080/23.98P(4K/HDR)	1080/59.94I(PsF) 1080/23.98PsF 525/59.94I(PsF)	1080/59.94I(PsF) 1080/23.98PsF 525/59.94I(PsF)	3840×2160/23.98P/6G (IP-RET4 only) 1080/23.98PsF (IP-RET1, IP-RET2, IP-RET3 only)
1080/59.94P	1080/59.94P/3G 1080/59.94I(PsF) 720/59.94P[*1] 525/59.94I(PsF)	1080/59.94P/3G 1080/59.94I(PsF) 720/59.94P[*1] 525/59.94I(PsF)	1080/59.94P 1080/59.94I 720/59.94P[*1] (The 3 formats above for IP-RET1, IP-RET2, IP-RET3 only)
1080/59.94I	1080/59.94I(PsF) 525/59.94I(PsF)	1080/59.94I(PsF) 525/59.94I(PsF)	1080/59.94I (IP-RET1, IP-RET2, IP-RET3 only)
1080/29.97PsF	1080/59.94I(PsF) 525/59.94I(PsF)	1080/59.94I(PsF) 525/59.94I(PsF)	1080/29.97PsF (IP-RET1, IP-RET2, IP-RET3 only)
1080/23.98PsF	1080/59.94I(PsF) 1080/23.98PsF 525/59.94I(PsF)	1080/59.94I(PsF) 1080/23.98PsF 525/59.94I(PsF)	1080/23.98PsF (IP-RET1, IP-RET2, IP-RET3 only)
720/59.94P	720/59.94P 525/59.94I(PsF)	720/59.94P 525/59.94I(PsF)	720/59.94P (IP-RET1, IP-RET2, IP-RET3 only)
1080/59.94I (RGB444)	1080/59.94I(PsF)/RGB444/3G 1080/59.94I(PsF) 525/59.94I(PsF)	1080/59.94I(PsF)/RGB444/3G 1080/59.94I(PsF) 525/59.94I(PsF)	1080/59.94I (IP-RET1, IP-RET2, IP-RET3 only)
1080/29.97PsF (RGB444)	1080/59.94I(PsF)/RGB444/3G 1080/59.94I(PsF) 525/59.94I(PsF)	1080/59.94I(PsF)/RGB444/3G 1080/59.94I(PsF) 525/59.94I(PsF)	1080/29.97PsF (IP-RET1, IP-RET2, IP-RET3 only)

CAMERA FORMAT	SYSTEM CONFIG → <RETURN FORMAT1>	SYSTEM CONFIG → <RETURN FORMAT2>	SYSTEM CONFIG → <RETURN FORMAT IP>
	SDI-RET1, SDI-RET2, SDI-RET3, SDI-RET4	SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4	IP-RET1, IP-RET2, IP-RET3, IP-RET4
1080/23.98PsF (RGB444)	1080/23.98PsF/RGB444/3G 1080/59.94I(PsF) 1080/23.98PsF 525/59.94I(PsF)	1080/23.98PsF/RGB444/3G 1080/59.94I(PsF) 1080/23.98PsF 525/59.94I(PsF)	1080/23.98PsF (IP-RET1, IP-RET2, IP-RET3 only)
1080/59.94P(2×) (HDR/SDR)	1080/59.94P/3G 1080/59.94I(PsF) 720/59.94P*1 525/59.94I(PsF)	1080/59.94P/3G 1080/59.94I(PsF) 720/59.94P*1 525/59.94I(PsF)	1080/59.94P 1080/59.94I 720/59.94P*1 (The 3 formats above for IP-RET1, IP-RET2, IP-RET3 only)
1080/59.94P(3×) (HDR/SDR)	1080/59.94P/3G 1080/59.94I(PsF) 720/59.94P*1 525/59.94I(PsF)	1080/59.94P/3G 1080/59.94I(PsF) 720/59.94P*1 525/59.94I(PsF)	1080/59.94P 1080/59.94I 720/59.94P*1 (The 3 formats above for IP-RET1, IP-RET2, IP-RET3 only)
1080/59.94P(4×) (HDR/SDR)	1080/59.94P/3G 1080/59.94I(PsF) 720/59.94P*1 525/59.94I(PsF)	1080/59.94P/3G 1080/59.94I(PsF) 720/59.94P*1 525/59.94I(PsF)	1080/59.94P 1080/59.94I 720/59.94P*1 (The 3 formats above for IP-RET1, IP-RET2, IP-RET3 only)
1080/59.94I(2×)	1080/59.94I(PsF) 525/59.94I(PsF)	1080/59.94I(PsF) 525/59.94I(PsF)	1080/59.94I (IP-RET1, IP-RET2, IP-RET3 only)
720/59.94P(2×)	720/59.94P 525/59.94I(PsF)	720/59.94P 525/59.94I(PsF)	720/59.94P (IP-RET1, IP-RET2, IP-RET3 only)

*1 720P input can be selected when CCU VIDEO CONVERT is set to ENABLE.

Return format (when SYSTEM is set to 1.000(625))

Note

UHD-SDI A and UHD-SDI B are dedicated output connectors, and a return format cannot be configured.

CAMERA FORMAT	SYSTEM CONFIG → <RETURN FORMAT1>	SYSTEM CONFIG → <RETURN FORMAT2>	SYSTEM CONFIG → <RETURN FORMAT IP>
	SDI-RET1, SDI-RET2, SDI-RET3, SDI-RET4	SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4	IP-RET1, IP-RET2, IP-RET3, IP-RET4
UHD/50P(4K/HDR) or 1080/50P(4K/HDR)	1080/50P/3G 1080/50I(PsF) 720/50P*1 625/50I(PsF)	1080/50P/3G 1080/50I(PsF) 720/50P*1 625/50I(PsF)	3840×2160/50P/12G (IP-RET4 only) 1080/50P 1080/50I 720/50P*1 (The 3 formats above for IP-RET1, IP-RET2, IP-RET3 only)
UHD/25P(4K/HDR) or 1080/25P(4K/HDR)	1080/50I(PsF) 625/50I(PsF)	1080/50I(PsF) 625/50I(PsF)	3840×2160/25P/6G (IP-RET4 only) 1080/25PsF (IP-RET1, IP-RET2, IP-RET3 only)
UHD/24P(4K/HDR) or 1080/24P(4K/HDR)	1080/50I(PsF) 1080/24PsF 625/50I(PsF)	1080/50I(PsF) 1080/24PsF 625/50I(PsF)	3840×2160/24P/6G (IP-RET4 only) 1080/24PsF (IP-RET1, IP-RET2, IP-RET3 only)
1080/50P	1080/50P/3G 1080/50I(PsF) 720/50P*1 625/50I(PsF)	1080/50P/3G 1080/50I(PsF) 720/50P*1 625/50I(PsF)	1080/50P 1080/50I 720/50P*1 (The 3 formats above for IP-RET1, IP-RET2, IP-RET3 only)
1080/50I	1080/50I(PsF) 625/50I(PsF)	1080/50I(PsF) 625/50I(PsF)	1080/59.94I (IP-RET1, IP-RET2, IP-RET3 only)
1080/25PsF	1080/50I(PsF) 625/50I(PsF)	1080/50I(PsF) 625/50I(PsF)	1080/25PsF (IP-RET1, IP-RET2, IP-RET3 only)

CAMERA FORMAT	SYSTEM CONFIG → <RETURN FORMAT1> SDI-RET1, SDI-RET2, SDI-RET3, SDI-RET4	SYSTEM CONFIG → <RETURN FORMAT2> SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4	SYSTEM CONFIG → <RETURN FORMAT IP> IP-RET1, IP-RET2, IP-RET3, IP-RET4
1080/24PsF	1080/50I(PsF) 1080/24PsF 625/50I(PsF)	1080/50I(PsF) 1080/24PsF 625/50I(PsF)	1080/24PsF (IP-RET1, IP-RET2, IP-RET3 only)
720/50P	720/50P 625/50I(PsF)	720/50P 625/50I(PsF)	720/50P (IP-RET1, IP-RET2, IP-RET3 only)
1080/50I (RGB444)	1080/50I(PsF)/RGB444/3G 1080/50I(PsF) 625/50I(PsF)	1080/50I(PsF)/RGB444/3G 1080/50I(PsF) 625/50I(PsF)	1080/50I (IP-RET1, IP-RET2, IP-RET3 only)
1080/25PsF (RGB444)	1080/50I(PsF)/RGB444/3G 1080/50I(PsF) 625/50I(PsF)	1080/50I(PsF)/RGB444/3G 1080/50I(PsF) 625/50I(PsF)	1080/25PsF (IP-RET1, IP-RET2, IP-RET3 only)
1080/24PsF (RGB444)	1080/24PsF/RGB444/3G 1080/50I(PsF) 1080/24PsF 625/50I(PsF)	1080/24PsF/RGB444/3G 1080/50I(PsF) 1080/24PsF 625/50I(PsF)	1080/24PsF (IP-RET1, IP-RET2, IP-RET3 only)
1080/50P(2×) (HDR/SDR)	1080/50P/3G 1080/50I(PsF) 720/50P[*1] 625/50I(PsF)	1080/50P/3G 1080/50I(PsF) 720/50P[*1] 625/50I(PsF)	1080/50P 1080/50I 720/50P[*1] (The 3 formats above for IP-RET1, IP-RET2, IP-RET3 only)
1080/50P(3×) (HDR/SDR)	1080/50P/3G 1080/50I(PsF) 720/50P[*1] 625/50I(PsF)	1080/50P/3G 1080/50I(PsF) 720/50P[*1] 625/50I(PsF)	1080/50P 1080/50I 720/50P[*1] (The 3 formats above for IP-RET1, IP-RET2, IP-RET3 only)
1080/50P(4×) (HDR/SDR)	1080/50P/3G 1080/50I(PsF) 720/50P[*1] 625/50I(PsF)	1080/50P/3G 1080/50I(PsF) 720/50P[*1] 625/50I(PsF)	1080/50P 1080/50I 720/50P[*1] (The 3 formats above for IP-RET1, IP-RET2, IP-RET3 only)
1080/50I(2×)	1080/50I(PsF) 625/50I(PsF)	1080/50I(PsF) 625/50I(PsF)	1080/50I (IP-RET1, IP-RET2, IP-RET3 only)
720/50P(2×)	720/50P 625/50I(PsF)	720/50P 625/50I(PsF)	720/50P (IP-RET1, IP-RET2, IP-RET3 only)

*1 720P input can be selected when CCU VIDEO CONVERT is set to ENABLE.

Formats settable for UHD SDI, SDI OUT, SDI I/O, and IP OUT connectors (when SYSTEM is set to 1.001(525))

Note

For underlined formats, the output format can be switched according to the HDR MODE setting.

– When HDR MODE is LIVE HDR or CINEMA: HD/HDR and HD/SDR options can be selected for output, in addition to 4K/HDR. The following combinations can be configured.
  4K/HDR + HD/HDR + HD/SDR
  4K/HDR + HD/HDR
  4K/HDR + HD/SDR

– When HDR MODE is OFF: 4K/SDR + HD/SDR combination only.

CAMERA FORMAT	SYSTEM CONFIG → <OUTPUT FORMAT3>	SYSTEM CONFIG → <OUTPUT FORMAT1>	SYSTEM CONFIG → <OUTPUT FORMAT2>	SYSTEM CONFIG → <OUTPUT FORMAT IP>
	UHD-SDI A[*1], UHD-SDI B[*1]	**SDI-OUT1, SDI-OUT2, SDI-OUT3, SDI-OUT4**	**SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4**	**IP-OUT1[*2], IP-OUT2[*2], IP-OUT3[*2], IP-OUT4[*2] IP-OUT5[*2], IP-OUT6[*2] IP-OUT7[*2], IP-OUT8[*2]**
UHD/59.94P (4K/HDR)[*3] or 1080/59.94P (4K/HDR)	3840×2160/59.94P/12G 1080/59.94P/3G-A 1080/59.94P/3G-B 1080/59.94I 720/59.94P[*4] **Notes** • HKCU-UHD30 is required for 4K output. • The UHD-SDI B 12G output setting is linked to the UHD-SDI A setting.	3840×2160/59.94P/SQD/3G-A 3840×2160/59.94P/SQD/3G-B 3840×2160/59.94P/2SI/3G-A 3840×2160/59.94P/2SI/3G-B (The 4 formats above for SDI-OUT1, SDI-OUT2 only) 1080/59.94P/3G-A 1080/59.94P/3G-B 1080/59.94I 720/59.94P[*4] 525/59.94I **Notes** • HKCU-UHD30 is required for 4K output. • The 4K output settings are linked to the SDI-OUT1 setting.	3840×2160/59.94P/SQD/3G-A 3840×2160/59.94P/SQD/3G-B 3840×2160/59.94P/2SI/3G-A 3840×2160/59.94P/2SI/3G-B (The 4 formats above for SDI-I/O1, SDI-I/O2 only) 1080/59.94P/3G-A 1080/59.94P/3G-B 1080/59.94I 720/59.94P[*4] 525/59.94I **Note** The 4K output settings are linked to the SDI-OUT1 setting.	1080/59.94P/3G-A 1080/59.94I 720/59.94P[*4] (The 3 formats above for IP-OUT1, IP-OUT2, IP-OUT3 only) 3840×2160/59.94P/12G (IP-OUT4 only)
UHD/29.97P (4K/HDR)[*3] or 1080/29.97P (4K/HDR)	3840×2160/29.97P/6G 3840×2160/29.97PsF/SQD/3G-B 3840×2160/29.97P/2SI/3G-B 3840×2160/29.97PsF/SQD/1.5G 1080/29.97PsF	3840×2160/29.97PsF/SQD/3G-B 3840×2160/29.97PsF/SQD/1.5G (The 2 formats above for SDI-OUT1, SDI-OUT2 only) 1080/29.97PsF 525/29.97PsF **Notes** • HKCU-UHD30 is required for 4K output. • The 4K output settings are linked to the SDI-OUT1 setting.	3840×2160/29.97PsF/SQD/3G-B 3840×2160/29.97PsF/SQD/1.5G (The 2 formats above for SDI-I/O1, SDI-I/O2 only) 1080/29.97PsF 525/29.97PsF **Note** The 4K output settings are linked to the SDI-OUT1 setting.	1080/29.97PsF (IP-OUT1, IP-OUT2, IP-OUT3 only) 3840×2160/29.97P/6G (IP-OUT4 only) 3840×2160/29.97PsF/SQD/1.5G (IP-OUT5, IP-OUT6, IP-OUT7, IP-OUT8 only)

CAMERA FORMAT	SYSTEM CONFIG → <OUTPUT FORMAT3>	SYSTEM CONFIG → <OUTPUT FORMAT1>	SYSTEM CONFIG → <OUTPUT FORMAT2>	SYSTEM CONFIG → <OUTPUT FORMAT IP>
	UHD-SDI A[*1], UHD-SDI B[*1]	**SDI-OUT1, SDI-OUT2, SDI-OUT3, SDI-OUT4**	**SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4**	**IP-OUT1[*2], IP-OUT2[*2], IP-OUT3[*2], IP-OUT4[*2] IP-OUT5[*2], IP-OUT6[*2] IP-OUT7[*2], IP-OUT8[*2]**
UHD/23.98P (4K/HDR)[*3] or 1080/23.98P (4K/HDR)[*3]	3840×2160/23.98P/6G 3840×2160/23.98PsF/SQD/ 3G-B 3840×2160/23.98P/2SI/3G-B 3840×2160/23.98PsF/SQD/ 1.5G 1080/23.98PsF	3840×2160/23.98PsF/SQD/ 3G-B 3840×2160/23.98PsF/SQD/ 1.5G (The 2 formats above for SDI-OUT1, SDI-OUT2 only) 1080/59.94I 1080/23.98PsF 525/59.94I **Notes** • HKCU-UHD30 is required for 4K output. • The 4K output settings are linked to the SDI-OUT1 setting.	3840×2160/23.98PsF/SQD/ 3G-B 3840×2160/23.98PsF/SQD/ 1.5G (The 2 formats above for SDI-I/O1, SDI-I/O2 only) 1080/59.94I 1080/23.98PsF 525/59.94I **Note** The 4K output settings are linked to the SDI-OUT1 setting.	1080/23.98PsF (IP-OUT1, IP-OUT2, IP-OUT3 only) 3840×2160/23.98P/6G (IP-OUT4 only) 3840×2160/23.98PsF/SQD/ 1.5G (IP-OUT5, IP-OUT6, IP-OUT7, IP-OUT8 only)
1080/59.94P	1080/59.94P/3G-A 1080/59.94P/3G-B 1080/59.94I 720/59.94P[*4]	1080/59.94P/3G-A 1080/59.94P/3G-B 1080/59.94I 720/59.94P[*4] 525/59.94i	1080/59.94P/3G-A 1080/59.94P/3G-B 1080/59.94I 720/59.94P[*4] 525/59.94I	1080/59.94P/3G-A 1080/59.94I 720/59.94P[*4] (The 3 formats above for IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/59.94I[*3]	1080/59.94I	1080/59.94I 525/59.94I	1080/59.94I 525/59.94I	1080/59.94I (IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/29.97PsF	1080/29.97PsF	1080/29.97PsF 525/29.97PsF	1080/29.97PsF 525/29.97PsF	1080/29.97PsF (IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/23.98PsF[*3]	1080/23.98PsF	1080/23.98PsF 1080/59.94I 525/59.94I	1080/23.98PsF 1080/59.94I 525/59.94I	1080/23.98PsF (IP-OUT1, IP-OUT2, IP-OUT3 only)
720/59.94P[*3]	720/59.94P	720/59.94P 525/59.94I	720/59.94P 525/59.94I	720/59.94P (IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/59.94I (RGB444)[*3]	1080/59.94I(RGB444)/3G-B 1080/59.94I	1080/59.94I(RGB444)/3G-B 1080/59.94I 525/59.94I	1080/59.94I(RGB444)/3G-B 1080/59.94I 525/59.94I	1080/59.94I (IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/29.97PsF (RGB444)[*3]	1080/29.97PsF(RGB444)/ 3G-B 1080/29.97PsF	1080/29.97PsF(RGB444)/ 3G-B 1080/29.97PsF 525/29.97PsF	1080/29.97PsF(RGB444)/ 3G-B 1080/29.97PsF 525/29.97PsF	1080/29.97PsF (IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/23.98PsF (RGB444)[*3]	1080/23.98PsF(RGB444)/ 3G-B 1080/23.98PsF	1080/23.98PsF(RGB444)/ 3G-B 1080/23.98PsF 1080/59.94I 525/59.94I	1080/23.98PsF(RGB444)/ 3G-B 1080/23.98PsF 1080/59.94I 525/59.94I	1080/23.98PsF (IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/59.94P(2×)[*3]	1080/59.94P(2×)/12G 1080/59.94I(2×)/3G-B 720/59.94P(2×)/3G-B 1080/59.94P/3G-A 1080/59.94P/3G-B 1080/59.94I 720/59.94P[*4]	1080/59.94P(2×)/3G-A 1080/59.94P(2×)/3G-B 1080/59.94I(2×) 1080/59.94I(2×)/3G-B 720/59.94P(2×) 720/59.94P(2×)/3G-B (The 6 formats above for SDI-OUT1, SDI-OUT2 only) 1080/59.94I 525/59.94I	1080/59.94P(2×)/3G-A 1080/59.94P(2×)/3G-B 1080/59.94I(2×) 1080/59.94I(2×)/3G-B 720/59.94P(2×) 720/59.94P(2×)/3G-B (The 6 formats above for SDI-I/O1, SDI-I/O2 only) 1080/59.94I 525/59.94I	1080/59.94P(2×)/3G-A 1080/59.94I(2×) 720/59.94P(2×)[*5] (The 3 formats above for IP-OUT5, IP-OUT6 only) 1080/59.94P/3G-A 1080/59.94I 720/59.94P (The 3 formats above for IP-OUT1, IP-OUT2, IP-OUT3 only)

CAMERA FORMAT	SYSTEM CONFIG → <OUTPUT FORMAT3>	SYSTEM CONFIG → <OUTPUT FORMAT1>	SYSTEM CONFIG → <OUTPUT FORMAT2>	SYSTEM CONFIG → <OUTPUT FORMAT IP>
	UHD-SDI A[*1], UHD-SDI B[*1]	**SDI-OUT1, SDI-OUT2, SDI-OUT3, SDI-OUT4**	**SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4**	**IP-OUT1[*2], IP-OUT2[*2], IP-OUT3[*2], IP-OUT4[*2] IP-OUT5[*2], IP-OUT6[*2] IP-OUT7[*2], IP-OUT8[*2]**
1080/59.94P(3×)[*3]	1080/59.94P(3×)/12G	1080/59.94P(3×)/3G-A	1080/59.94P(3×)/3G-A	1080/59.94P(3×)/3G-A
	1080/59.94P/3G-A	1080/59.94P(3×)/3G-B	1080/59.94P(3×)/3G-B	1080/59.94I(3×)
	1080/59.94P/3G-B	1080/59.94I(3×)	1080/59.94I(3×)	720/59.94P(3×)[*5]
	1080/59.94I	720/59.94P(3×)	720/59.94P(3×)	(The 3 formats above for IP-OUT5, IP-OUT6, IP-OUT7 only)
	720/59.94P[*4]	(The 4 formats above for SDI-OUT1, SDI-OUT2 only)	(The 4 formats above for SDI-I/O1, SDI-I/O2 only)	
		1080/59.94I	1080/59.94I	1080/59.94P/3G-A
		525/59.94I	525/59.94I	1080/59.94I
				720/59.94P
				(The 3 formats above for IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/59.94P(4×)[*3]	1080/59.94P(4×)/12G	1080/59.94P(4×)/3G-A	1080/59.94P(4×)/3G-A	1080/59.94P(4×)/3G-A
	1080/59.94I(4×)/3G-B	1080/59.94P(4×)/3G-B	1080/59.94P(4×)/3G-B	1080/59.94I(4×)
	720/59.94P(4×)/3G-B	1080/59.94I(4×)	1080/59.94I(4×)	720P(4×)[*5]
	1080/59.94P/3G-A	1080/59.94I(4×)/3G-B	1080/59.94I(4×)/3G-B	(The 3 formats above for IP-OUT5, IP-OUT6, IP-OUT7, IP-OUT8 only)
	1080/59.94P/3G-B	720/59.94P(4×)	720/59.94P(4×)	
	1080/59.94I	720/59.94P(4×)/3G-B	720/59.94P(4×)/3G-B	
	720/59.94P[*4]	(The 6 formats above for SDI-OUT1, SDI-OUT2 only)	(The 6 formats above for SDI-I/O1, SDI-I/O2 only)	1080/59.94P/3G-A
				1080/59.94I
		1080/59.94I	1080/59.94I	720/59.94P
		525/59.94I	525/59.94I	(The 3 formats above for IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/59.94I(2×)[*3]	1080/59.94I(2×)/3G-B/ Link1&Link2	1080/59.94I(2×)/Link1	1080/59.94I(2×)/Link1	1080/59.94I (IP-OUT1, IP-OUT2, IP-OUT3 only)
	1080/59.94I	1080/59.94I(2×)/3G-B/ Link1&Link2	1080/59.94I(2×)/3G-B/ Link1&Link2	
		1080/59.94I	1080/59.94I	
		525/59.94I	525/59.94I	
		(The 4 formats above for SDI-OUT1, SDI-OUT3 only)	(The 4 formats above for SDI-I/O1, SDI-I/O3 only)	
		1080/59.94I(2×)/Link2	1080/59.94I(2×)/Link2	
		1080/59.94I(2×)/3G-B/ Link1&Link2	1080/59.94I(2×)/3G-B/ Link1&Link2	
		1080/59.94I	1080/59.94I	
		525/59.94I	525/59.94I	
		(The 4 formats above for SDI-OUT2, SDI-OUT4 only)	(The 4 formats above for SDI-I/O2, SDI-I/O4 only)	

CAMERA FORMAT	SYSTEM CONFIG → <OUTPUT FORMAT3>	SYSTEM CONFIG → <OUTPUT FORMAT1>	SYSTEM CONFIG → <OUTPUT FORMAT2>	SYSTEM CONFIG → <OUTPUT FORMAT IP>
	UHD-SDI A[*1], UHD-SDI B[*1]	**SDI-OUT1, SDI-OUT2, SDI-OUT3, SDI-OUT4**	**SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4**	**IP-OUT1[*2], IP-OUT2[*2], IP-OUT3[*2], IP-OUT4[*2] IP-OUT5[*2], IP-OUT6[*2] IP-OUT7[*2], IP-OUT8[*2]**
720/59.94P(2×)[*3]	720/59.94P(2×)/3G-B/ Link1&Link2 720/59.94P	720/59.94P(2×)/Link1 720/59.94P(2×)/3G-B/ Link1&Link2 720/59.94P 525/59.94I (The 4 formats above for SDI-OUT1, SDI-OUT3 only) 720/59.94P(2×)/Link2 720/59.94P(2×)/3G-B/ Link1&Link2 720/59.94P 525/59.94I (The 4 formats above for SDI-OUT2, SDI-OUT4 only)	720/59.94P(2×)/Link1 720/59.94P(2×)/3G-B/ Link1&Link2 720/59.94P 525/59.94I (The 4 formats above for SDI-I/O1, SDI-I/O3 only) 720/59.94P(2×)/Link2 720/59.94P(2×)/3G-B/ Link1&Link2 720/59.94P 525/59.94I (The 4 formats above for SDI-I/O2, SDI-I/O4 only)	720/59.94P (IP-OUT1, IP-OUT2, IP-OUT3 only)

*1 Configurable only when HKCU-SDI30 is installed.
*2 Configurable only when HKCU-SFP30 is installed.
*3 Cannot be selected when CABLE TYPE is set to TRIAX CAMERA CABLE.
*4 720 output can be selected when CCU VIDEO CONVERT is set to ENABLE.
*5 When both GENLOCK MODE is set to HD or NETWORK, and CAMERA FORMAT is set to 24P, 50I output from the BNC output is supported but the video is asynchronous.

Formats settable for UHD SDI, SDI OUT, SDI I/O, and IP OUT connectors (when SYSTEM is set to 1.000(625))

Note

For underlined formats, the output format can be switched according to the HDR MODE setting.

– When HDR MODE is LIVE HDR or CINEMA: HD/HDR and HD/SDR options can be selected for output, in addition to 4K/HDR. The following combinations can be configured.
  4K/HDR + HD/HDR + HD/SDR
  4K/HDR + HD/HDR
  4K/HDR + HD/SDR

– When HDR MODE is OFF: 4K/SDR + HD/SDR combination only.

CAMERA FORMAT	SYSTEM CONFIG → <OUTPUT FORMAT3>	SYSTEM CONFIG → <OUTPUT FORMAT1>	SYSTEM CONFIG → <OUTPUT FORMAT2>	SYSTEM CONFIG → <OUTPUT FORMAT IP>
	UHD-SDI A[*1], UHD-SDI B[*1]	**SDI-OUT1, SDI-OUT2, SDI-OUT3, SDI-OUT4**	**SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4**	**IP-OUT1[*2], IP-OUT2[*2], IP-OUT3[*2], IP-OUT4[*2] IP-OUT5[*2], IP-OUT6[*2] IP-OUT7[*2], IP-OUT8[*2]**
UHD/50P (4K/HDR)[*3] or 1080/50P (4K/HDR)	3840×2160/50P/12G 1080/50P/3G-A 1080/50P/3G-B 1080/50I 720/50P[*4] **Notes** • HKCU-UHD30 is required for 4K output. • The UHD-SDI B 12G output setting is linked to the UHD-SDI A setting.	3840×2160/50P/SQD/3G-A 3840×2160/50P/SQD/3G-B 3840×2160/50P/2SI/3G-A 3840×2160/50P/2SI/3G-B (The 4 formats above for SDI-OUT1, SDI-OUT2 only) 1080/50P/3G-A 1080/50P/3G-B 1080/50I 720/50P[*4] 625/50I **Notes** • HKCU-UHD30 is required for 4K output. • The 4K output settings are linked to the SDI-OUT1 setting.	3840×2160/50P/SQD/3G-A 3840×2160/50P/SQD/3G-B 3840×2160/50P/2SI/3G-A 3840×2160/50P/2SI/3G-B (The 4 formats above for SDI-I/O1, SDI-I/O2 only) 1080/50P/3G-A 1080/50P/3G-B 1080/50I 720/50P[*4] 625/50I **Note** The 4K output settings are linked to the SDI-OUT1 setting.	1080/50P/3G-A 1080/50I 720/50P[*4] (The 3 formats above for IP-OUT1, IP-OUT2, IP-OUT3 only) 3840×2160/50P/12G (IP-OUT4 only)
UHD/25P (4K/HDR)[*3] or 1080/25P (4K/HDR)	3840×2160/25P/6G 3840×2160/25PsF/SQD/3G-B 3840×2160/25P/2SI/3G-B 3840×2160/25PsF/SQD/1.5G 1080/25PsF	3840×2160/25PsF/SQD/3G-B 3840×2160/25PsF/SQD/1.5G (The 2 formats above for SDI-OUT1, SDI-OUT2 only) 1080/25PsF 625/25PsF **Notes** • HKCU-UHD30 is required for 4K output. • The 4K output settings are linked to the SDI-OUT1 setting.	3840×2160/25PsF/SQD/3G-B 3840×2160/25PsF/SQD/1.5G (The 2 formats above for SDI-I/O1, SDI-I/O2 only) 1080/25PsF 625/25PsF **Note** The 4K output settings are linked to the SDI-OUT1 setting.	1080/25PsF (IP-OUT1, IP-OUT2, IP-OUT3 only) 3840×2160/25P (IP-OUT4 only) 3840×2160/25PsF/SQD (IP-OUT5, IP-OUT6, IP-OUT7, IP-OUT8 only)

CAMERA FORMAT	SYSTEM CONFIG → <OUTPUT FORMAT3>	SYSTEM CONFIG → <OUTPUT FORMAT1>	SYSTEM CONFIG → <OUTPUT FORMAT2>	SYSTEM CONFIG → <OUTPUT FORMAT IP>
	UHD-SDI A[*1], UHD-SDI B[*1]	**SDI-OUT1, SDI-OUT2, SDI-OUT3, SDI-OUT4**	**SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4**	**IP-OUT1[*2], IP-OUT2[*2], IP-OUT3[*2], IP-OUT4[*2] IP-OUT5[*2], IP-OUT6[*2] IP-OUT7[*2], IP-OUT8[*2]**
UHD/24P (4K/HDR)[*3] or 1080/24P (4K/HDR)[*3]	3840×2160/24P/6G 3840×2160/24PsF/SQD/ 3G-B 3840×2160/24P/2SI/3G-B 3840×2160/24PsF/SQD/ 1.5G 1080/24PsF	3840×2160/24PsF/SQD/ 3G-B 3840×2160/24PsF/SQD/ 1.5G (The 2 formats above for SDI-OUT1, SDI-OUT2 only) 1080/50I 1080/24PsF 625/50I **Notes** • HKCU-UHD30 is required for 4K output. • The 4K output settings are linked to the SDI-OUT1 setting.	3840×2160/24PsF/SQD/ 3G-B 3840×2160/24PsF/SQD/ 1.5G (The 2 formats above for SDI-I/O1, SDI-I/O2 only) 1080/50I 1080/24PsF 625/50I **Note** The 4K output settings are linked to the SDI-OUT1 setting.	1080/24PsF (IP-OUT1, IP-OUT2, IP-OUT3 only) 3840×2160/24P (IP-OUT4 only) 3840×2160/24PsF/SQD (IP-OUT5, IP-OUT6, IP-OUT7, IP-OUT8 only)
1080/50P	1080/50P/3G-A 1080/50P/3G-B 1080/50I 720/50P[*4]	1080/50P/3G-A 1080/50P/3G-B 1080/50I 720/50P[*4] 625/50I	1080/50P/3G-A 1080/50P/3G-B 1080/50I 720/50P[*4] 625/50I	1080/50P/3G-A 1080/50I 720/50P[*4] (The 3 formats above for IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/50I[*3]	1080/50I	1080/50I 625/50I	1080/50I 625/50I	1080/50I (IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/25PsF	1080/25PsF	1080/25PsF 625/25PsF	1080/25PsF 625/25PsF	1080/25PsF (IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/24PsF[*3]	1080/24PsF	1080/24PsF 1080/50I 625/50I	1080/24PsF 1080/50I 625/50I	1080/24PsF (IP-OUT1, IP-OUT2, IP-OUT3 only)
720/50P[*3]	720/50P	720/50P 625/50I	720/50P 625/50I	720/50P (IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/50I (RGB444)[*3]	1080/50I(RGB444)/3G-B 1080/50I	1080/50I(RGB444)/3G-B 1080/50I 625/50I	1080/50I(RGB444)/3G-B 1080/50I 625/50I	1080/59.94i (IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/25PsF (RGB444)[*3]	1080/25PsF(RGB444)/3G-B 1080/25PsF	1080/25PsF(RGB444)/3G-B 1080/25PsF 625/25PsF	1080/25PsF(RGB444)/3G-B 1080/25PsF 625/25PsF	1080/25PsF (IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/24PsF (RGB444)[*3]	1080/24PsF(RGB444)/3G-B 1080/24PsF	1080/24PsF(RGB444)/3G-B 1080/24PsF 1080/50I 625/50I	1080/24PsF(RGB444)/3G-B 1080/24PsF 1080/50I 625/50I	1080/24PsF (IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/50P(2×)[*3]	1080/50P(2×)/12G 1080/50I(2×)/3G-B 720/50P(2×)/3G-B 1080/50P/3G-A 1080/50P/3G-B 1080/50I 720/50P[*4]	1080/50P(2×)/3G-A 1080/50P(2×)/3G-B 1080/50I(2×) 1080/50I(2×)/3G-B 720/50P(2×) 720/50P(2×)/3G-B (The 6 formats above for SDI-OUT1, SDI-OUT2 only) 1080/50I 625/50I	1080/50P(2×)/3G-A 1080/50P(2×)/3G-B 1080/50I(2×) 1080/50I(2×)/3G-B 720/50P(2×) 720/50P(2×)/3G-B (The 6 formats above for SDI-I/O1, SDI-I/O2 only) 1080/50I 625/50I	1080/50P(2×)/3G-A 1080/50I(2×) 720/50P(2×)[*5] (The 3 formats above for IP-OUT5, IP-OUT6 only) 1080/50P/3G-A 1080/50I 720/50P (The 3 formats above for IP-OUT1, IP-OUT2, IP-OUT3 only)

CAMERA FORMAT	SYSTEM CONFIG → <OUTPUT FORMAT3>	SYSTEM CONFIG → <OUTPUT FORMAT1>	SYSTEM CONFIG → <OUTPUT FORMAT2>	SYSTEM CONFIG → <OUTPUT FORMAT IP>
	UHD-SDI A[*1], UHD-SDI B[*1]	**SDI-OUT1, SDI-OUT2, SDI-OUT3, SDI-OUT4**	**SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4**	**IP-OUT1[*2], IP-OUT2[*2], IP-OUT3[*2], IP-OUT4[*2] IP-OUT5[*2], IP-OUT6[*2] IP-OUT7[*2], IP-OUT8[*2]**
1080/50P(3×)[*3]	1080/50P(3×)/12G	1080/50P(3×)/3G-A	1080/50P(3×)/3G-A	1080/50P(3×)/3G-A
	1080/50P/3G-A	1080/50P(3×)/3G-B	1080/50P(3×)/3G-B	1080/50I(3×)
	1080/50P/3G-B	1080/50I(3×)	1080/50I(3×)	720/50P(3×)[*5]
	1080/50I	720/50P(3×)	720/50P(3×)	(The 3 formats above for IP-OUT5, IP-OUT6, IP-OUT7 only)
	720/50P[*4]	(The 4 formats above for SDI-OUT1, SDI-OUT2 only)	(The 4 formats above for SDI-I/O1, SDI-I/O2 only)	
		1080/50I	1080/50I	1080/50P/3G-A
		625/50I	625/50I	1080/50I
				720/50P
				(The 3 formats above for IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/50P(4×)[*3]	1080/50P(4×)/12G	1080/50P(4×)/3G-A	1080/50P(4×)/3G-A	1080/50P(4×)/3G-A
	1080/50I(4×)/3G-B	1080/50P(4×)/3G-B	1080/50P(4×)/3G-B	1080/50I(4×)
	720/50P(4×)/3G-B	1080/50I(4×)	1080/50I(4×)	720P(4×)[*5]
	1080/50P/3G-A	1080/50I(4×)/3G-B	1080/50I(4×)/3G-B	(The 3 formats above for IP-OUT5, IP-OUT6, IP-OUT7, IP-OUT8 only)
	1080/50P/3G-B	720/50P(4×)	720/50P(4×)	
	1080/50I	720/50P(4×)/3G-B	720/50P(4×)/3G-B	
	720/50P[*4]	(The 6 formats above for SDI-OUT1, SDI-OUT2 only)	(The 6 formats above for SDI-I/O1, SDI-I/O2 only)	1080/50P/3G-A
				1080/50I
		1080/50I	1080/50I	720/50P
		625/50I	625/50I	(The 3 formats above for IP-OUT1, IP-OUT2, IP-OUT3 only)
1080/50I(2×)[*3]	1080/50I(2×)/3G-B/ Link1&Link2	1080/50I(2×)/Link1	1080/50I(2×)/Link1	1080/50I (IP-OUT1, IP-OUT2, IP-OUT3 only)
	1080/50I	1080/50I(2×)/3G-B/ Link1&Link2	1080/50I(2×)/3G-B/ Link1&Link2	
		1080/50I	1080/50I	
		625/50I	625/50I	
		(The 4 formats above for SDI-OUT1, SDI-OUT3 only)	(The 4 formats above for SDI-I/O1, SDI-I/O3 only)	
		1080/50I(2×)/Link2	1080/50I(2×)/Link2	
		1080/50I(2×)/3G-B/ Link1&Link2	1080/50I(2×)/3G-B/ Link1&Link2	
		1080/50I	1080/50I	
		625/50I	625/50I	
		(The 4 formats above for SDI-OUT2, SDI-OUT4 only)	(The 4 formats above for SDI-I/O2, SDI-I/O4 only)	

CAMERA FORMAT	SYSTEM CONFIG → <OUTPUT FORMAT3>	SYSTEM CONFIG → <OUTPUT FORMAT1>	SYSTEM CONFIG → <OUTPUT FORMAT2>	SYSTEM CONFIG → <OUTPUT FORMAT IP>
	UHD-SDI A[*1], UHD-SDI B[*1]	SDI-OUT1, SDI-OUT2, SDI-OUT3, SDI-OUT4	SDI-I/O1, SDI-I/O2, SDI-I/O3, SDI-I/O4	IP-OUT1[*2], IP-OUT2[*2], IP-OUT3[*2], IP-OUT4[*2] IP-OUT5[*2], IP-OUT6[*2] IP-OUT7[*2], IP-OUT8[*2]
720/50P(2×)[*3]	720/50P(2×)/3G-B/ Link1&Link2 720/50P	720/50P(2×)/Link1 720/50P(2×)/3G-B/ Link1&Link2 720/50P 625/50I (The 4 formats above for SDI-OUT1, SDI-OUT3 only) 720/50P(2×)/Link2 720/50P(2×)/3G-B/ Link1&Link2 720/50P 625/50I (The 4 formats above for SDI-OUT2, SDI-OUT4 only)	720/50P(2×)/Link1 720/50P(2×)/3G-B/ Link1&Link2 720/50P 625/50I (The 4 formats above for SDI-I/O1, SDI-I/O3 only) 720/50P(2×)/Link2 720/50P(2×)/3G-B/ Link1&Link2 720/50P 625/50I (The 4 formats above for SDI-I/O2, SDI-I/O4 only)	720/50P (IP-OUT1, IP-OUT2, IP-OUT3 only)

*1 Configurable only when HKCU-SDI30 is installed.
*2 Configurable only when HKCU-SFP30 is installed.
*3 Cannot be selected when CABLE TYPE is set to TRIAX CAMERA CABLE.
*4 720 output can be selected when CCU VIDEO CONVERT is set to ENABLE.
*5 When both GENLOCK MODE is set to HD or NETWORK, and CAMERA FORMAT is set to 24P, 50I output from the BNC output is supported but the video is asynchronous.

Relationship between output interface and BNC connector assignment (4K operating mode)

MAIN output		4K / HD HFR					
		UHD-SDI (HKCU-SDI30)		SDI OUT		SDI I/O	
Operation mode	Output interface	A	B	1	2	1	2
4K	Quad-Link-1	–	–	Link1	Link2	Link3	Link4
	Dual-Link	Link1	Link2	Link1	Link2	Link1	Link2
	Single-Link	Link1	Link1	–	–	–	–

Relationship between output interface and BNC connector assignment (HFR operating mode)

HFR			UHD SDI		SDI OUT		SDI I/O	
			A	B	1	2	1	2
2×	12G	1080P	Link1/2/(1/2)	Link1/2/(1/2)	–	–	–	–
		1080I	Link1/2/(1/2)	Link1/2/(1/2)	–	–	–	–
	3G-A/B	1080P	–	–	Link1	Link2	Link1	Link2
	3G-B	1080I	Link1/2	Link1/2	Link1/2	Link1/2	Link1/2	Link1/2
		720P	Link1/2	Link1/2	Link1/2	Link1/2	Link1/2	Link1/2
	1.5G	1080I	–	–	Link1	Link2	Link1	Link2
		720P	–	–	Link1	Link2	Link1	Link2
3×	12G	1080P	Link1/2/3/(2)	Link1/2/3/(2)	–	–	–	–
		1080I	Link1/2/3/(2)	Link1/2/3/(2)	–	–	–	–
	3G-A/B	1080P	–	–	Link1	Link2	Link3	(Link2)
	1.5G	1080I	–	–	Link1	Link2	Link3	(Link2)
		720P	–	–	Link1	Link2	Link3	(Link2)

HFR			UHD SDI		SDI OUT		SDI I/O	
			A	B	1	2	1	2
4×	12G	1080P	Link1/2/3/4	Link1/2/3/4	–	–	–	–
		1080I	Link1/2/3/4	Link1/2/3/4	–	–	–	–
	3G-A/B	1080P	–	–	Link1	Link2	Link3	Link4
	3G-B	1080I	Link1/2	Link3/4	Link1/2	Link3/4	Link1/2	Link3/4
		720P	Link1/2	Link3/4	Link1/2	Link3/4	Link1/2	Link3/4
	1.5G	1080I	–	–	Link1	Link2	Link3	Link4
		720P	–	–	Link1	Link2	Link3	Link4

Supported camera formats for each camera

Camera (option)/ Adaptor	Connection method	FIBER TRANSMIT RATE setting	Camera format	
			When SYSTEM is 1.001	When SYSTEM is 1.000
HDC3500 + HDCE-100	Optic fiber connection/ Single-mode fiber connection	HIGH	UHD/59.94P(4K/HDR) UHD/29.97P(4K/HDR) UHD/23.98P(4K/HDR) 1080/59.94P 1080/59.94I 1080/29.97PsF 1080/23.98PsF 720/59.94P 1080/59.94I(RGB444) 1080/29.97PsF(RGB444) 1080/23.98PsF(RGB444) 1080/59.94P(2×) 1080/59.94I(2×) 1080/59.94P(3×) 1080/59.94P(4×)	UHD/50P(4K/HDR) UHD/25P(4K/HDR) UHD/24P(4K/HDR) 1080/50P 1080/50I 1080/25PsF 1080/24PsF 720/50P 1080/50I(RGB444) 1080/25PsF(RGB444) 1080/24PsF(RGB444) 1080/50P(2×) 1080/59.94I(2×) 1080/50P(3×) 1080/50P(4×)
HDC3100 + HDCE-100	Optic fiber connection/ Single-mode fiber connection	HIGH	1080/59.94P(4K/HDR) 1080/29.97P(4K/HDR) 1080/23.98P(4K/HDR) 1080/59.94P 1080/59.94I 1080/29.97PsF 1080/23.98PsF 720/59.94P 1080/59.94I(RGB444) 1080/29.97PsF(RGB444) 1080/23.98PsF(RGB444)	1080/50P(4K/HDR) 1080/25P(4K/HDR) 1080/24P(4K/HDR) 1080/50P 1080/50I 1080/25PsF 1080/24PsF 720/50P 1080/50I(RGB444) 1080/25PsF(RGB444) 1080/24PsF(RGB444)
• HDC2000 series • HDC2000 series + HDCE-200 (+HKCU-SM27) + HDFX200 (+HKCU-SM27)	Optic fiber connection/ Single-mode fiber connection	HIGH	1080/59.94P(4K/HDR) 1080/59.94P 1080/59.94I 1080/29.97PsF 1080/23.98PsF 720/59.94P 1080/59.94I(RGB444) 1080/29.97PsF(RGB444) 1080/23.98PsF(RGB444) 1080/59.94I(2×) 720/59.94P(2×)	1080/50P(4K/HDR) 1080/50P 1080/50I 1080/25PsF 1080/24PsF 720/50P 1080/50I(RGB444) 1080/25PsF(RGB444) 1080/24PsF(RGB444) 1080/50I(2×) 720/50P(2×)
HDC2000 series + HDFX200	Optic fiber connection/ Single-mode fiber connection	HIGH	1080/59.94P 1080/59.94I 1080/29.97PsF 720/59.94P 1080/59.94I(2×) 720/59.94P(2×)	1080/50P 1080/50I 1080/25PsF 720/50P 1080/50I(2×) 720/50P(2×)
HSC300RF/100RE + HDCE-100	Optic fiber connection/ Single-mode fiber connection	HD	1080/59.94I 1080/29.97PsF 1080/23.98PsF 720/59.94P	1080/50I 1080/25PsF 1080/24PsF 720/50P
HDC2000 series	Coax connection	–	1080/59.94I 1080/29.97PsF 1080/23.98PsF 720/59.94P	1080/50I 1080/25PsF 1080/24PsF 720/50P

Camera (option)/ Adaptor	Connection method	FIBER TRANSMIT RATE setting	Camera format	
			When SYSTEM is 1.001	When SYSTEM is 1.000
HDC2000 series + HDCE-200	Coax (HDCE) connection	–	1080/59.94P 1080/59.94I 1080/29.97PsF 1080/23.98PsF 720/59.94P 1080/59.94I(RGB444) 1080/29.97PsF(RGB444) 1080/23.98PsF(RGB444) 1080/59.94I(2×) 720/59.94P(2×)	1080/50P 1080/50I 1080/25PsF 1080/24PsF 720/50P 1080/50I(RGB444) 1080/25PsF(RGB444) 1080/24PsF(RGB444) 1080/50I(2×) 720/50P(2×)
• HDC3170 • HDC3500 + HKC-TR37	Digital triax connection	–	1080/59.94P(4K/HDR) 1080/29.97P(4K/HDR) 1080/59.94P 1080/29.97PsF	1080/50P(4K/HDR) 1080/25P(4K/HDR) 1080/50P 1080/25PsF

Supported IP output formats for each camera (when SYSTEM is set to 1.001(525))

Camera format	Target cameras	HD output	4K output	HD HFR output
		IP-OUT1, IP-OUT2, IP-OUT3	IP-OUT4	IP-OUT5, IP-OUT6, IP-OUT7, IP-OUT8
UHD/59.94P(4K/HDR)	HDC3500	1080/59.94P/3G-A 1080/59.94I 720/59.94P[*1]	3840×2160/59.94P/12G	–
UHD/29.97P(4K/HDR)		1080/29.97PsF/1.5G	3840×2160/29.97P/6G[*2]	3840×2160/29.97PsF/SQD/1.5G[*2]
UHD/23.98P(4K/HDR)		1080/23.98PsF/1.5G	3840×2160/23.98P/6G[*2]	3840×2160/23.98PsF/SQD/1.5G[*2]
1080/59.94P(4K/HDR)	HDC3100 HDC3170 HDC2000 series	1080/59.94P/3G-A 1080/59.94I 720/59.94P[*1]	3840×2160/59.94P/12G	–
1080/29.97P(4K/HDR)	HDC3100 HDC3170	1080/29.97PsF/1.5G	3840×2160/29.97P/6G[*2]	3840×2160/29.97PsF/SQD/1.5G[*2]
1080/23.98P(4K/HDR)	HDC3100	1080/23.98PsF/1.5G	3840×2160/23.98P/6G[*2]	3840×2160/23.98PsF/SQD/1.5G[*2]
1080/59.94P	HDC3100 HDC3170 HDC3500 HDC2000 series	1080/59.94P/3G-A 1080/59.94I 720/59.94P[*1]	–	–
1080/59.94I		1080/59.94I/1.5G	–	–
1080/29.97PsF		1080/29.97PsF/1.5G	–	–
1080/23.98PsF	HDC3100 HDC3500 HDC2000 series	1080/23.98PsF/1.5G	–	–
720/59.94P		720/59.94P	–	–
1080/59.94I (RGB444)		1080/59.94I/1.5G	–	–
1080/29.97PsF (RGB444)		1080/29.97PsF/1.5G	–	–
1080/23.98PsF (RGB444)		1080/23.98PsF/1.5G	–	–

Camera format	Target cameras	HD output	4K output	HD HFR output
		IP-OUT1, IP-OUT2, IP-OUT3	IP-OUT4	IP-OUT5, IP-OUT6, IP-OUT7, IP-OUT8
1080/59.94P(2×)	HDC3500	1080/59.94P/3G-A 1080/59.94I 720/59.94P[*1]	–	1080/59.94P/3G-A 1080/59.94I 720/59.94P (Link1) (The 4 formats above for IP-OUT5 only) 1080/59.94P/3G-A 1080/59.94I 720/59.94P (Link2) (The 4 formats above for IP-OUT6 only)
1080/59.94P(3×)		1080/59.94P/3G-A 1080/59.94I 720/59.94P[*1]	–	1080/59.94P/3G-A 1080/59.94I 720/59.94P (Link1) (The 4 formats above for IP-OUT5 only) 1080/59.94P/3G-A 1080/59.94I 720/59.94P (Link2) (The 4 formats above for IP-OUT6 only) 1080/59.94P/3G-A 1080/59.94I 720/59.94P (Link3) (The 4 formats above for IP-OUT7 only)

Camera format	Target cameras	HD output	4K output	HD HFR output
		IP-OUT1, IP-OUT2, IP-OUT3	IP-OUT4	IP-OUT5, IP-OUT6, IP-OUT7, IP-OUT8
1080/59.94P(4×)	HDC3500	1080/59.94P/3G-A 1080/59.94I 720/59.94P[*1]	–	1080/59.94P/3G-A 1080/59.94I 720/59.94P (Link1) (The 4 formats above for IP-OUT5 only) 1080/59.94P/3G-A 1080/59.94I 720/59.94P (Link2) (The 4 formats above for IP-OUT6 only) 1080/59.94P/3G-A 1080/59.94I 720/59.94P (Link3) (The 4 formats above for IP-OUT7 only) 1080/59.94P/3G-A 1080/59.94I 720/59.94P (Link4) (The 4 formats above for IP-OUT8 only)
1080/59.94I(2×)	HDC3500	1080/59.94I/1.5G	–	–
720/59.94P(2×)	HDC2000 series	720/59.94P	–	–

*1 720 can be selected when CCU VIDEO CONVERT is set to ENABLE.
*2 3840×2160/29.97P/6G can be selected when <IP LIVE> → ST2110 4K → 4K UNDER 30P is set to PROGRESSIVE(6G) on the Network page. 3840×2160/23.98PsF/SQD/1.5G can be selected when <IP LIVE> → ST2110 4K → 4K UNDER 30P is set to PsF(SQD 1.5G ×4) on the Network page.

Supported IP output formats for each camera (when SYSTEM is set to 1.000(625))

Camera format	Target cameras	HD output	4K output	HD HFR output
		IP-OUT1, IP-OUT2, IP-OUT3	IP-OUT4	IP-OUT5, IP-OUT6, IP-OUT7, IP-OUT8
UHD/50P(4K/HDR)	HDC3500	1080/50P/3G-A 1080/50I 720/50P[*1]	3840×2160/50P/12G	–
UHD/25P(4K/HDR)		1080/25PsF/1.5G	3840×2160/25P/6G[*2]	3840×2160/25PsF/SQD/1.5G[*2]
UHD/24P(4K/HDR)		1080/24PsF/1.5G	3840×2160/24P/6G[*2]	3840×2160/24PsF/SQD/1.5G[*2]
1080/50P(4K/HDR)	HDC3100 HDC3170 HDC2000 series	1080/50P/3G-A 1080/50I 720/50P[*1]	3840×2160/50P/12G	–
1080/25P(4K/HDR)	HDC3100 HDC3170	1080/25PsF/1.5G	3840×2160/25P/6G[*2]	3840×2160/25PsF/SQD/1.5G[*2]
1080/24P(4K/HDR)	HDC3100	1080/24PsF/1.5G	3840×2160/24P/6G[*2]	3840×2160/24PsF/SQD/1.5G[*2]
1080/50P	HDC3100 HDC3170 HDC3500	1080/50P/3G-A 1080/50I 720/50P[*1]	–	–
1080/50I	HDC2000 series	1080/50I/1.5G	–	–
1080/25PsF		1080/25PsF/1.5G	–	–

Camera format	Target cameras	HD output	4K output	HD HFR output
		IP-OUT1, IP-OUT2, IP-OUT3	IP-OUT4	IP-OUT5, IP-OUT6, IP-OUT7, IP-OUT8
1080/24PsF	HDC3100 HDC3500 HDC2000 series	1080/24PsF/1.5G	–	–
720/50P		720/50P	–	–
1080/50I (RGB444)		1080/50I/1.5G	–	–
1080/25PsF (RGB444)		1080/25PsF/1.5G	–	–
1080/24PsF (RGB444)		1080/24PsF/1.5G	–	–
1080/50P(2×)	HDC3500	1080/50P/3G-A 1080/50I 720/50P[*1]	–	1080/50P/3G-A 1080/50I 720/50P (Link1) (The 4 formats above for IP-OUT5 only) 1080/50P/3G-A 1080/50I 720/50P (Link2) (The 4 formats above for IP-OUT6 only)
1080/50P(3×)		1080/50P/3G-A 1080/50I 720/50P[*1]	–	1080/50P/3G-A 1080/50I 720/50P (Link1) (The 4 formats above for IP-OUT5 only) 1080/50P/3G-A 1080/50I 720/50P (Link2) (The 4 formats above for IP-OUT6 only) 1080/50P/3G-A 1080/50I 720/50P (Link3) (The 4 formats above for IP-OUT7 only)

Camera format	Target cameras	HD output	4K output	HD HFR output
		IP-OUT1, IP-OUT2, IP-OUT3	IP-OUT4	IP-OUT5, IP-OUT6, IP-OUT7, IP-OUT8
1080/50P(4×)	HDC3500	1080/50P/3G-A 1080/50I 720/50P[*1]	–	1080/50P/3G-A 1080/50I 720/50P (Link1) (The 4 formats above for IP-OUT5 only) 1080/50P/3G-A 1080/50I 720/50P (Link2) (The 4 formats above for IP-OUT6 only) 1080/50P/3G-A 1080/50I 720/50P (Link3) (The 4 formats above for IP-OUT7 only) 1080/50P/3G-A 1080/50I 720/50P (Link4) (The 4 formats above for IP-OUT8 only)
1080/50I(2×)	HDC3500	1080/50I/1.5G	–	–
720/50P(2×)	HDC2000 series	720/50P	–	–

*1 720 can be selected when CCU VIDEO CONVERT is set to ENABLE.
*2 3840×2160/29.97P/6G can be selected when <IP LIVE> → ST2110 4K → 4K UNDER 30P is set to PROGRESSIVE(6G) on the Network page. 3840×2160/23.98PsF/SQD/1.5G can be selected when <IP LIVE> → ST2110 4K → 4K UNDER 30P is set to PsF(SQD 1.5G ×4) on the Network page.

VIDEO/MONITOR Menu

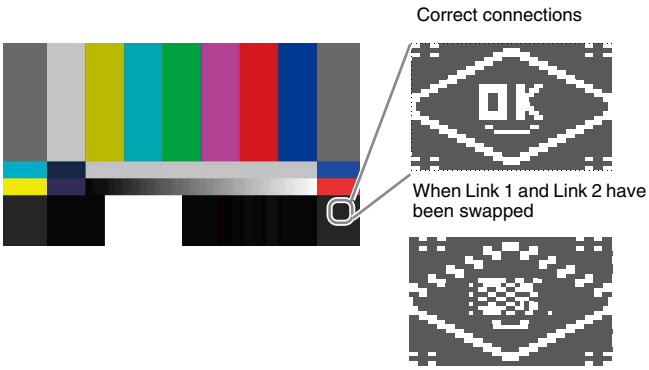
VIDEO/MONITOR			
Page name Page No.	**Item**	**Set value**	**Description**
<COLOR BAR> V01	4K/HD		Sets the 4K/HD color bars.
	SDR	**SDR-LOOK BAR (100%)**, SDR-LOOK BAR 16:9(75%), SMPTE 16:9(BLACK), SMPTE 16:9(–I/Q), BAR 4:3(100%), BAR 4:3(75%), SMPTE 4:3(BLACK), SMPTE 4:3(–I/Q), MF-ARIB(75%), MF-ARIB(100%), MF-ARIB(+I), MF-SMPTE(–I,Q), MF-SMPTE(75%,Q), MF-SMPTE(100%,Q), MF-SMPTE(+I,Q), HD-CUSTOM, SDI CHECK FIELD, Y-RAMP, Y/C-RAMP, HD-CUSTOM2	Sets the type of SDR output color bars.
	HDR	**SDR-LOOK BAR(100%)**, SDR-LOOK BAR(75%), HDR BAR, SDI CHECK FIELD, Y-RAMP, Y/C-RAMP	Sets the type of HDR output color bars.
	MF-CB	**MODIFY**, EVEN	Sets the stripe width for multi-format color bar output. **MODIFY:** Stripe width adjusted to prevent colors mixing in 4:3 Edge crop mode. **EVEN:** Stripe width in accordance with standard.
	SLOPE	**WIDE**, NARROW	Sets the color difference signal band of the color bars. **WIDE:** Band not limited. **NARROW:** Band is limited to prevent ringing.
	SD		
	SOURCE	4K/HD BAR, **SD BAR**	Selects the color bar signal source for output to SD. **4K/HD BAR:** Down converts the 4K/HD color bars and then outputs it. **SD BAR:** Outputs the SD color bars selected in SELECT.
	SELECT	When SYSTEM CONFIG menu → <MULTI FORMAT> page → SYSTEM is set to 1.001(525): **SMPTE**, EIA, FULL, 95%, NTSC100%, Y/C-RAMP, Y-RAMP When SYSTEM CONFIG menu → <MULTI FORMAT> page → SYSTEM is set to 1.000(625): **SMPTE**, EIA, FULL, 95%, PAL100%, Y/C-RAMP, Y-RAMP	Selects the SD color bars.
	BAR-CHARACTER	ON, **OFF**	Sets the character superimposition on the color bar signal.
	MOVING SYMBOL	ON, **OFF**	Sets moving symbol on the color bar screen.
	TYPE	0, 1, 2	Selects the symbol type.
	SIZE	**SMALL**, LARGE	Selects the symbol size.
	2SI DIAMOND MARK	ON, **OFF**	Sets diamond mark superimposition on the color bar for 4K 2-sample interleave output. *See "4K 2SI diamond marker" (page 64).*
	HFR CHANNEL MARK	**OFF**, ON	Sets channel identification mark superimposition on HD HFR output video. *See "HFR channel marker" (page 64).*
<BAR CHARACTER> V02	BAR CHARACTER		Sets the character string to be displayed on each of lines 1 to 16.
	ALL CLEAR		Clears all the character strings set for BAR CHARACTER.

VIDEO/MONITOR				
Page name Page No.	**Item**		**Set value**	**Description**
<CCU VIDEO> V03	MONO COLOR		ON, **OFF**	Turns the MONO COLOR function ON/OFF.
	PHASE		0 to 359, **0**	Sets the MONO COLOR function hue adjustment.
	SATURATION		–99 to +99, **0**	Sets the MONO COLOR function color level adjustment.
<DOWNCONVERT> V04	4K-HD DOWNCONVERT FILTER		**1**, 2, 3, 4, 1(V:0.3), 1(V:0.6)	Selects the type of filter for downconverting from 4K video signals to HD signals. Enabled when CAMERA FORMAT is set to UHD/59.94P(4K/HDR) or UHD/50P(4K/HDR).
	SD ASPECT		SQUEEZE, **EDGE CROP**, LETTER BOX	Selects the aspect ratio for SD output.
	NTSC SETUP		**7.5**, 0 IRE	Sets the NTSC signal setup level.
<MONITOR> V05	CHARACTER LEVEL		1, 2, 3, 4, **5**	Sets the brightness of text in menus, etc.
	LEVEL GATE		**OFF**, 1&2, 1, 2, (---)	Sets level gate display. **OFF:** Level gate is not displayed. **1:** Displays level gate 1. **2:** Displays level gate 2. **1&2:** Displays level gate 1 & 2. **---:** Displayed when a camera is not connected. (Display only)
	Y-LEVEL1	MIN	0 to 108% **49**	Sets the minimum detection level for level gate 1 display.
		MAX	0 to 108% **61**	Sets the maximum detection levels for level gate 1 display.
		LEVEL	–99 to 99 **–25**	Sets the zebra display level to be added to the detection area.
	Y-LEVEL2	MIN	0 to 108% **74**	Sets the minimum detection level for level gate 2 display.
		MAX	0 to 108% **108**	Sets the maximum detection levels for level gate 2 display.
		LEVEL	–99 to 99 **–25**	Sets the zebra display level to be added to the detection area.
	GATE MARKER		**OFF**, ON, (---)	Sets the display of the gate signal detected by the camera. **OFF:** Gate signal is not displayed. **ON:** Displays zebra in the area (skin gate, etc.) detected by the camera. **---:** Displayed when a camera is not connected. (Display only)
	LEVEL		–99 to 99 **0**	Sets the zebra display level to be added to the detection area.
	ASPECT MARKER		**OFF**, ON	Sets aspect marker display.
	SELECT		**4:3**, 13:9, 14:9, EU VISTA, VISTA, CINEMA, FOLLOW DC	Selects the marker type.
	MODULATION ON/OFF		**OFF**, ON	Sets the mask function for outside the marker frame.
	MODULATION LEVEL		–99 to 99 **0**	Sets the mask level.
<SPIRIT LEVEL> V06	INDICATOR		**OFF**, ON, ---	Sets spirit level display. This can be set when connected with a camera which has a lens that supports serial communication attached. **HDCU3170:** --- (fixed)
	REVERSE		**OFF**, ON	Selects the indicator move direction for tilting.
	H POSITION		0 to 99 **50**	Spirit level display position (horizontal)
	V POSITION		0 to 99 **50**	Spirit level display position (vertical)

VIDEO/MONITOR			
Page name **Page No.**	**Item**	**Set value**	**Description**
<DISPLAY> V07 Sets the items to be displayed on the camera setting status page of the status display screen.	MESSAGE	**ALL**, WARNING, OFF	Sets the display of messages for the camera auto setup operation status, warnings that occur in the system, etc. **ALL:** Displays all messages. **WARNING:** Displays system warning messages and menu control messages. **OFF:** Displays only menu control messages.
	CAMERA	**ON**, OFF	Displays or hides the model name of the connected camera.
	LENS FILE	**ON**, OFF	Displays or hides the LENS FILE name.
	MASTER GAIN	**ON**, OFF	Displays or hides the master gain setting value.
	MODE	**STEP GAIN**, MASTER WHITE, F DROP GAIN, TOTAL GAIN	Switches the MASTER GAIN display mode. **STEP GAIN:** Displays the STEP GAIN value. **MASTER WHITE:** Displays the MASTER WHITE GAIN value. **F DROP GAIN:** Displays the F DROP GAIN value. **TOTAL GAIN:** Displays the total value of the STEP GAIN, MASTER GAIN, and F DROP GAIN values combined.
	MASTER WHITE IND	**ON**, OFF	Displays or hides the enabled status of the master white gain.
	SHUTTER	**ON**, OFF	Displays or hides the shutter speed/ECS frequency setting value.
	ND FILTER	**ON**, OFF	Displays or hides the ND filter type.
	CC FILTER	**ON**, OFF	Displays or hides the CC filter type.
	IRIS	**ON**, OFF	Displays or hides the iris status.
	EXTENDER	**ON**, OFF	Displays or hides the lens extender/digital extender status.
	F DROP IND	**ON**, OFF	Display or hides the F-drop status.
	MIC	**ON**, OFF	Displays or hides the camera microphone switch status.

4K 2SI diamond marker

This function is for displaying a test pattern like the following in the area at the bottom right of the 4K color bar during 4K 2 sample interleave output. OK is displayed if the connections for Links 1 to 4 are correct, and OK is not displayed if they are incorrect. This function can be used to check the connections.



HFR channel marker

This function is for displaying a marker in the video area of HD HFR output.
The number of squares indicates the channel number so you can easily identify the channel number of a multi-link interface.
Example: Indication for channel 4

AUDIO/INTERCOM menu

AUDIO/INTERCOM			
Page name Page No.	**Item**	**Set value**	**Description**
<MIC GAIN> A01	CAM MIC GAIN		Sets the camera microphone gain.
	CH1	(---), 20, 30, 40, 50, **60** dB	Set according to the microphone used.
	CH2	(---), 20, 30, 40, 50, **60** dB	**(---):** Displayed when a camera is not connected. (Display only)
<AUDIO OUT> A02	DELAY	0, 5, 11, 16, 21, 27, 32, 37, 43, 48, 53, 59, 64, 69, 75, 80 ms	Sets the camera microphone output phase.
	AES/EBU OUT	MIC1/2, **AES/EBU**	Selects the AES/EBU output. **MIC1/2:** Outputs the camera MIC1/2 input from the AES/EBU connector of the CCU. **AES/EBU:** Outputs the camera AES/EBU input from the AES/EBU connector of the CCU.
	ANALOG OUT	**MIC1/2**, AES/EBU	Selects the MIC OUT ANALOG output. **MIC1/2:** Outputs the camera MIC1/2 input from the AUDIO OUT connector of the CCU. **AES/EBU:** Outputs the camera AES/EBU input from the AUDIO OUT connector of the CCU.
	CH1 : LEVEL	–20, **0**, +4 dBu	Sets the AUDIO CH1 output level.
	CH1 : ADJUST	–99 to 99, **0**	
	CH2 : LEVEL	–20, **0**, +4 dBu	Sets the AUDIO CH2 output level.
	CH2 : ADJUST	–99 to 99, **0**	
<INTERCOM> A03	INTERCOM CH	1CH(PROD), **2CH(PROD&ENG)**	Selects the intercom channel number to be used.
	PRODUCER INTERFACE	CLEAR COM, **4WIRE**, RTS	Sets the producer line intercom system.
	SIDETONE CANCEL	–99 to 99 **0**	Sets the side tone cancel level. (Configurable when CLEAR COM or RTS is selected)
	TERMINATION	**OFF**, ON	Sets termination resistance (200 ohms). (Configurable when CLEAR COM or RTS is selected) **OFF:** Displayed when 4WIRE is selected in PRODUCER INTERFACE. (Display only)
	ENGINEER INTERFACE	CLEAR COM, **4WIRE**, RTS	Sets the engineer line intercom system.
	SIDETONE CANCEL	0 to 99 **0**	Sets the side tone cancel level. (Configurable when CLEAR COM or RTS is selected)
	TERMINATION	**OFF**, ON	Sets termination resistance (200 ohms). (Configurable when CLEAR COM or RTS is selected) **OFF:** Displayed when 4WIRE is selected in ENGINEER INTERFACE. (Display only)
	PGM1 INPUT LEVEL	–20, **0**, +4 dBu	Sets the PGM1 input level.
	PGM2 INPUT LEVEL	–20, **0**, +4 dBu	Sets the PGM2 input level.
	PGM3 INPUT LEVEL	–20, **0**, +4 dBu	Sets the PGM3 input level.

AUDIO/INTERCOM			
Page name **Page No.**	**Item**	**Set value**	**Description**
<FRONT INTERCOM> A04	MIC/PGM	(PGM ON), (MIC OFF), (MIC ON)	Front panel MIC/PGM switch position (Display only)
	I/F	(PROD), (ENG), (PRIVATE)	CCU front panel INTERCOM switch position (Display only)
	PRIVATE SW	**ENABLE**, DISABLE(SET TO ENG), DISABLE(SET TO PROD)	Operation when the INTERCOM switch on the front panel is set to the PRIV (private) position. **ENABLE:** Private operation **DISABLE(SET TO ENG):** ENG line operation
	INTERCOM MIC	**DYNAMIC**, ECM, CARBON	Sets the headset microphone connected to the INTERCOM connector on the front panel. **CARBON:** Carbon microphone (power supply, 20 dB gain) **ECM:** Electret condenser microphone (power supply, 40 dB gain) **DYNAMIC:** Dynamic microphone (no power supply, 60 dB gain)
	INTERCOM MIC TYPE	BALANCED, **UNBALANCED**, (UNBALANCED)	Sets the headset microphone connected to the INTERCOM connector on the front panel. **BALANCED:** Balanced microphone **UNBALANCED:** Unbalanced microphone **(UNBALANCED):** When INTERCOM MIC is set to ECM or CARBON.
	INTERCOM MIC GAIN	–6, **0**, +6 dB	Sets the microphone input gain.
	SIDE TONE LEVEL	0 to 99 **50**	Sets the side tone level.
	PGM MIX MODE	**OFF**, INCOM+PGM, L-INCOM/R-PGM	**OFF:** PGM signal is not mixed. **INCOM+PGM:** INCOM and PGM signals are mixed. **L-INCOM/R-PGM:** Outputs INCOM signal through the left channel and PGM signal through the right.
	PGM SELECT	**PGM1**, PGM2, PGM3, PGM1+PGM2+PGM3	Selects the PGM audio output from the FRONT INTERCOM connector.
	PGM1 LEVEL	0 to 99, **50**	Sets the MIX level of PGM1.
	PGM2 LEVEL	0 to 99, **50**	Sets the MIX level of PGM2.
	PGM3 LEVEL	0 to 99, **50**	Sets the MIX level of PGM3.
<TEST TONE> A05	SOURCE	(1kHz)	Sets the audio source of the test tone.
	LEVEL	0, –10, **–20**, –30, –40, –50, –60, –70 [dB]	Sets the level of the test tone.
	ANALOG OUT CH	**NONE**, ALL, MIC1, MIC2, AES/EBU1, AES/EBU2, INTERCOM ENG, INTERCOM PROD	Sets the analog output channel of the test tone.
	IP OUT CH	**NONE**, ALL, MIC1, MIC2, AES/EBU1, AES/EBU2, INTERCOM ENG, INTERCOM PROD	Sets the IP output channel of the test tone.

AUDIO/INTERCOM			
Page name **Page No.**	**Item**	**Set value**	**Description**
<IP AUDIO> A06 Displayed only when HKCU-SFP30 is installed.	AUDIO OUT		
	FORMAT	L24/48kHz/1ms/2ch, L24/48kHz/1ms/4ch, L24/48kHz/1ms/8ch, L24/48kHz/0.125ms/2ch, L24/48kHz/0.125ms/4ch, L24/48kHz/0.125ms/8ch, **L24/48kHz/0.125ms/16ch**	Sets the audio format.
	CH ORDER	MIC1, MIC2, AES/EBU1, AES/EBU2	Displays the channel order.
	HD TRUNK AUDIO OUT		
	FORMAT	L24/48kHz/1ms/2ch, L24/48kHz/1ms/4ch, L24/48kHz/1ms/8ch, L24/48kHz/0.125ms/2ch, L24/48kHz/0.125ms/4ch, L24/48kHz/0.125ms/8ch, **L24/48kHz/0.125ms/16ch**	Sets the audio format.
	CH ORDER	THROUGH	Displays the channel order.
	PGM IN		
	FORMAT	L24/48kHz/1ms/2ch, L24/48kHz/1ms/4ch, L24/48kHz/1ms/8ch, L24/48kHz/0.125ms/2ch, L24/48kHz/0.125ms/4ch, L24/48kHz/0.125ms/8ch, **L24/48kHz/0.125ms/16ch**	Sets the audio format.
	CH ORDER	PGM1, PGM2, PGM3	Displays the channel order.
<IP INTERCOM> A07 Displayed only when HKCU-SFP30 is installed.	INTERCOM OUT		
	FORMAT	L24/48kHz/1ms/2ch, L24/48kHz/1ms/4ch, L24/48kHz/1ms/8ch, **L24/48kHz/0.125ms/2ch**, L24/48kHz/0.125ms/4ch, L24/48kHz/0.125ms/8ch, L24/48kHz/0.125ms/16ch	Sets the audio format.
	CH ORDER	ENG, PROD	Displays the channel order.
	INTERCOM IN		
	FORMAT	L24/48kHz/1ms/2ch, L24/48kHz/1ms/4ch, L24/48kHz/1ms/8ch, **L24/48kHz/0.125ms/2ch**, L24/48kHz/0.125ms/4ch, L24/48kHz/0.125ms/8ch, L24/48kHz/0.125ms/16ch	Sets the audio format.
	CH ORDER	ENG, PROD	Displays the channel order.

MAINTENANCE Menu

MAINTENANCE			
Page name Page No.	**Item**	**Set value**	**Description**
<TRUNK/PROMPTER> M01	TRUNK LINE		
	CHANNEL MODE	When <CAMERA I/F> → CABLE TYPE is FIBER CAMERA CABLE and FIBER TRANSMIT RATE is HIGH: **2CH(MAX 75Kbps)**, 1CH(MAX 150Kbps) When <CAMERA I/F> → CABLE TYPE is FIBER CAMERA CABLE and FIBER TRANSMIT RATE is HD: 1CH(MAX 38Kbps) When <CAMERA I/F> → CABLE TYPE is TRIAX CAMERA CABLE: **2CH(MAX 19Kbps)**, 1CH(MAX 38Kbps)	Sets the number of channels to be used.
	INTERFACE	**232C**, 422A	Sets the communication line mode.
	PROMPTER CH	**2CH**, 1CH	Sets the number of prompter lines. 1CH (fixed) when using HDCU3170. **Note** The number of lines will vary depending on the number of prompter lines of the connected camera.
<TRUNK/PROMPTER2> M02	NETWORK TRUNK	**OFF**, NETWORK, NETWORK+VIDEO	Sets the mode for the network trunk. **OFF:** Network trunk is not used. **NETWORK:** Network trunk is used (maximum 1 Gbps) **NETWORK+VIDEO:** Network trunk is used at the same time as HD Trunk/HD Prompter (maximum 100 Mbps) Not displayed when using HDCU3170. NETWORK TRUNK is not available when CAMERA FORMAT is set to the following. UHD/59.9P (4K/HDR) UHD/50P (4K/HDR) 1080/59.94P (4K/HDR) 1080/50P (4K/HDR)
	DATA RATE	100Mbps, 1Gbps	Displays the data transfer rate.
	CAMERA	ENABLE, DISABLE	Displays whether the camera is enabled/disabled. (Display only) DISABLE (fixed) when using HDCU3170.
	HD TRUNK	ENABLE, DISABLE	Displays whether HD TRUNK is enabled/disabled. (Display only) DISABLE (fixed) when using HDCU3170.
	DATA RATE	1.5G	Displays the HD TRUNK data rate.
	HD PROMPTER	ENABLE, DISABLE	Displays the enable/disable state of HD PROMPTER. (Display only) DISABLE (fixed) when using HDCU3170.
	FRAME SYNC	OFF, ON, (ON)	Turns the frame synchronizer function ON/OFF.
	SOURCE	**SDI-I/O4**, IP-RET3	Sets the HD prompter signal source. IP-RET3 can be selected only when the HKCU-SFP30 ST 2110 Interface Kit is installed.

MAINTENANCE			
Page name Page No.	**Item**	**Set value**	**Description**
<MENU SETTINGS> M03	PAGE RESUME	**ON**, OFF	Turns the menu mode resume page display function ON/OFF.
	ALARM JUMP	ON, **OFF**	Turns the error-related page display function ON/OFF for when an error occurs while in menu mode.
	CAMERA MENU CTRL	**OFF**, ON	Displays the camera menu. **Notes** • If CAM MENU is set to ON, CCU menu operations cannot be performed because only camera menu operations are available. • The camera menu is not displayed when SD signal is output.
<DATE&TIME> M04	DATE (YEAR)	17 to 99	Sets the date and time. **Note** When this is changed, all logs stored on the unit will be deleted.
	DATE (MONTH)	1 to 12	
	DATE (DAY)	1 to 31	
	TIME (HOUR)	0 to 23	
	TIME (MINUTE)	0 to 59	
	TIME ZONE (HOUR)	–23 to +23, **0**	Sets the time zone.
	TIME ZONE (MINUTE)	**0** to 59	
<TALLY INPUT> M05	R-TALLY	**CONTACT**, POWER (24V), POWER (TTL)	RED tally input setting
	G-TALLY	**CONTACT**, POWER (24V), POWER (TTL)	GREEN tally input setting
	Y-TALLY	**CONTACT**, POWER (24V), POWER (TTL)	YELLOW tally input setting
<ALARM SETTINGS> M06	FORCE LEGACY	OFF, **ON**	Set to OFF to not display the FORCE LEGACY alarm.
	CABLE OPEN	OFF, **ON**	Set to OFF to not display the CABLE OPEN alarm.
	GENLOCK ERROR	OFF, **ON**	Set to OFF to not display the GENLOCK ERROR alarm.
<SDI ANCILLARY DATA> M07	VIDEO PAYLOAD ID	**LATEST(2019)**, 2002, 2010, 2011, 2017, 2019	Selects the standard year of the payload ID to be added to the SDI VIDEO output.
	EMBED AUDIO	OFF, **ON**	Sets whether to embed audio in the SDI VIDEO output.
	EMBED META DATA	OFF, **ON**	OFF (fixed) when using HDCU3170.
<FRONT PANEL> M08	ASSIGNABLE SWITCH	**NONE**, BARS, CAM POWER, FORCE LEGACY, OPTICAL SIGNAL	Sets the function to be assigned to the assignable button on the front panel. **NONE:** No assignment. **BARS:** Sets the color bar output to ON/OFF. **CAM POWER:** Sets camera power to ON/OFF. **FORCE LEGACY:** Forces the communication mode to LEGACY mode. **OPTICAL SIGNAL:** Turns the optical signal output from the CCU to the camera ON/OFF.
	SIGNAL BAR		
	DISPLAY	OFF, **ON**	Switches the signal bar display on the front panel.
	READY COLOR	**WHITE**, GREEN, BARS	Sets the color for the ready status (during color bar output).
	BRIGHTNESS	LOW, MIDDLE, **HIGH**	Sets the signal bar brightness level.
<OPTION KEY> M09	READ KEY FROM USB	Execute with ENTER.	Reads the installation key from the USB flash drive.
	INSTALLED OPTIONS		Lists the installed option software. (Display only)
	HARDWARE OPTIONS		Lists the installed hardware options. (Display only)

MAINTENANCE			
Page name Page No.	**Item**	**Set value**	**Description**
<MISC> M10	OPTICAL SIGNAL BACKUP	ENABLE, **DISABLE**	Sets whether to save the state of the OPTICAL SIGNAL setting on the <CAMERA I/F> page of the SYSTEM CONFIG menu for the next startup.
	POWER SUPPLY MODE	**NORMAL**, BOOST	Switches the control mode for supplying power to the camera.
	CAM POWER SOURCE	**CCU**, HDCE-TX	Sets the power supply source for the camera.
	60.00Hz	**DISABLE**, ENABLE	Sets whether to show/hide the 60.00 Hz related options when setting CAMERA FORMAT. **DISABLE:** Not displayed **ENABLE:** Displayed

FILE Menu

FILE			
Page name Page No.	**Item**	**Set value**	**Description**
<CCU FILE> F01	FILE INDEX	1 to 5, **1**	Selects the file number of the target for operation.
	RECALL		All menu settings of the unit can be saved to a CCU file. Use RECALL to load and apply the saved settings to simplify the setup operation. **Note** The IP address, subnet mask, and default gateway settings of the LAN COM connector are not loaded using RECALL.
	STORE		Saves a CCU file to the internal memory. Up to five CCU files can be saved in the unit. Select the file number on the STORE screen.
	EXPORT TO USB		Exports a CCU file to the USB flash drive. Exporting is also supported using the web menu. The path of the USB flash drive is “/MSSONY/PRO/CAMERA/HDCU3100”
	IMPORT FROM USB		Imports a CCU file from the USB flash drive. Importing is also supported using the web menu. The path of the USB flash drive is “/MSSONY/PRO/CAMERA/HDCU3100”
	FILE NAME1 to 5	NO_FILE	Sets the CCU file name. ASCII code, 1 to 32 characters
	CLEAR ALL		Deletes all CCU files.
<LOG> F02	LOG	**ENABLE**, DISABLE	Enables or disables saving of log files.
	EXPORT TO USB		Saves logs to the USB flash drive. (Execute using EXEC) The path of the USB flash drive is “/MSSONY/PRO/CAMERA/HDCU3100”
	CLEAR		Deletes logs stored internally on the unit. (Execute using EXEC) **Note** Logs for up to 30 days are stored. Logs are deleted when the 30-day maximum is reached, starting with the oldest.

NETWORK Menu

NETWORK			
Page name Page No.	**Item**	**Set value**	**Description**
<IP ADDRESS> N01	PORT	LAN-COM, LAN1, LAN2	Selects the port for which to set the IP address. **LAN1, LAN2:** Displayed only when HKCU-SFP30 is installed.
	DHCP	**ON**, OFF	Enables or disables DHCP.
	IP ADDRESS	**0.0.0.0** to 255.255.255.255	Sets the IP address. **Note** If there is no DHCP server available on the network when DHCP is set to ON, a unique Link-Local address (169.254.0.0/16) is assigned locally by the Auto IP function. If an IP address is assigned to the DHCP server, the Auto IP function will not be activated while the unit is operating (powered) in order to prevent incorrect operation, even if communication with the DHCP server is subsequently interrupted. This IP address may change if the unit is rebooted, and should only be used for setup purposes. The Auto IP function applies only to the LAN COM connector. It does not apply to the LAN 1 and LAN 2 connectors of the HKCU-SFP30.
	SUBNET MASK	**0.0.0.0** to 255.255.255.255	Sets the subnet mask.
	DEFAULT GATEWAY	**0.0.0.0** to 255.255.255.255	Sets the default gateway.
	SET		A “SET OK?” message is displayed. Press ENTER again to confirm the change. (Execute using ENTER)
	MAC ADDRESS	**000000000000** to ffffffffffff	Displays the MAC address of each port.
	LINK SPEED	**AUTO**, 10G, 25G	Sets the link speed. Displayed only when LAN1 or LAN2 is selected. **Note** Always set LAN1 and LAN2 to the same link speed. Normal operation will not occur if the settings are different.
	25G FEC	OFF, **RS-FEC(CL108)**, FC-FEC(CL74)	Sets the FEC mode for 25G. Displayed only when LAN1 or LAN2 is selected. **Note** Set to the port setting of the IP switch to be connected.
<CNS SETTINGS> N02	CNS MODE	**LEGACY**, BRIDGE, MCS	Sets the communication mode.
	MCS MODE	CLIENT	Indicates that the unit is the client when MCS mode is selected. (Display only)
	CCU NO	When MCS is selected in CNS MODE: Blank, 1 to 96 When LEGACY or BRIDGE is selected in CNS MODE: Blank, 1 to 96, A to Z	Sets the CCU number.
	MASTER IP ADDRESS	**0.0.0.0** to 255.255.255.255	Sets the master device IP address for MCS mode.
	SET		A “SET OK?” message is displayed. Press ENTER again to confirm the change. (Execute using ENTER)

NETWORK			
Page name Page No.	**Item**	**Set value**	**Description**
<WEB MENU> N03	WEB MENU	**ENABLE**, DISABLE	Enables/disables the web menu.
	PORT	**LAN-COM**, LAN1	Selects the connection port.
	SERVICE DISCOVERY	**ON**, OFF	Enables/disables the service discovery function. **ON:** Display the CCU list in the web menu. **OFF:** Do not display the CCU list in the web menu. **Notes** • Set this to OFF if the CCU list is not required or when you want to reduce the network load as much as possible. • When set to OFF, the unit cannot be detected by the service discovery from other CCUs on the same subnet.
	RESET PASSWORD	EXEC	Resets the web menu authentication password. (Execute using EXEC)
<NETWORK GENLOCK> N04 Displayed only when HKCU-SFP30 is installed.	PORT	LAN1, LAN2	Selects the port to use.
	NETWORK GENLOCK	DISABLE, **ENABLE**	Enables/disables network genlock.
	PROFILE	ST2059-2	Displays the supported profile. Only the ST2059-2 profile is supported.
	DOMAIN NUMBER	0 to 127, **127**	Sets the domain number. **Note** Set to the domain number of the master device to be connected.
	COMMUNICATION MODE	**MULTICAST MODE**, MIXED MODE	**MIXED MODE:** Unicast reply to the master. **MULTICAST MODE:** Multicast reply to the master.
	DELAY REQUEST INTERVAL	–7 to –1, **–3**	Displays the delay of the response to the PTP master.
	PTP MASTER INFO		Displays information obtained from the PTP master.
	IP ADDRESS	0.0.0.0 to 255.255.255.255	Displays the IP address of the currently synchronized PTP master device.
	SYNC INTERVAL	–7 to –1, **–3**	Displays the Sync Interval setting of the master device.
	PRIORITY 1	0 to 255, **128**	Displays the priority level of the PTP master. The lower the number, the higher the priority.
	PRIORITY 2	0 to 255, **128**	
	STEP	ONE-STEP, **TWO-STEP**	Displays the mode in which the timestamp is sent. **ONE-STEP:** Sent in Sync message. **TWO-STEP:** Sent in Follow-up message.
	LOCK STATUS	**NOT IN USE**, NO MASTER, LOCKING, LOCKED	Displays the genlock operation status. **NOT IN USE:** PTP operation stopped **NO MASTER:** PTP master not found **LOCKING:** Synchronizing **LOCKED:** Synchronized

NETWORK			
Page name Page No.	**Item**	**Set value**	**Description**
<PTP STATUS> N05 Displayed only when HKCU-SFP30 is installed.	PTP NIC	LAN1, LAN2	Displays the port on which PTP is running.
	STATUS	NO MASTER, LOCKED, LOCKING, NOT IN USE	Displays the PTP status. **NOT IN USE:** PTP operation stopped **NO MASTER:** PTP master not found **LOCKING:** Synchronizing **LOCKED:** Synchronized
	PORT	LAN1, LAN2	Selects the port for which to display the status.
	UTC Time	1970-01-01 00:00:00	Master time (displays the internal time when the master is Free-run or Disable).
	MasterID	0000000000000000-0	Displays the master clock ID.
	GMClockID	0000000000000000-0	Displays the grandmaster clock ID.
	Sync	0Hz (0pkts)	Displays the sync message rate.
	FollowUp	0Hz (0pkts)	Displays the follow-up message rate.
	DelayReq	0Hz (0pkts)	Displays the delay request message rate.
	DelayResp	0Hz (0pkts)	Displays the delay response message rate.
	Network Status	UNAVAILABLE, NOT GOOD, GOOD, VERY GOOD	Displays the network status.
	Delay	0ns	Displays the network delay.
	Jitter	0ns	Displays the network jitter.
<IP LIVE> N06 Displayed only when HKCU-SFP30 is installed.	IP LIVE SYSTEM MANAGER		
	PORT	DISABLE, **LAN1&LAN2**	Sets the IP Live System Manager (LSM). **DISABLE:** Does not communicate with LSM. **LAN1&LAN2:** Communicates with LSM using LAN 1 and LAN 2 (for redundancy). **Note** Restart the unit after changing the PORT setting.
	DHCP	**OFF**	Sets the IP address of the LSM (OFF (fixed)).
	PRIMARY IP ADDRESS	**0.0.0.0** to 255.255.255.255	Sets the IP address of LSM1.
	SECONDARY IP ADDRESS	**0.0.0.0** to 255.255.255.255	Sets the IP address of LSM2.
	PRIMARY CONNECTION STATUS	**DISCONNECTED**, CONNECTING, CONNECTED	Displays the status of the connection with LSM1. **DISCONNECTED:** Disconnected. **CONNECTING:** Establishing communication. **CONNECTED:** Communication established.
	SECONDARY CONNECTION STATUS	**DISCONNECTED**, CONNECTING, CONNECTED	Displays the status of the connection with LSM2. **DISCONNECTED:** Disconnected. **CONNECTING:** Establishing communication. **CONNECTED:** Communication established.
	MULTICAST ADDRESS	**AUTO**, MANUAL	Sets the mode switching method for the multicast address settings of IP streams. AUTO (fixed) when PORT is set to LAN1&LAN2, and uses multicast addresses configured from LSM. MANUAL (fixed) when PORT is set to DISABLE, and uses the addresses set manually using the MULTICAST ADDRESS 1 to 5 pages.
	HITLESS FAILOVER	**ON**, OFF	Enables/disables IP stream redundancy.
	ST2110 4K	**ENABLE**, DISABLE	Enables/disables output of IP stream 4K signal.
	4K UNDER 30P	**PROGRESSIVE(6G)**, PsF(SQD 1.5G ×4)	Sets the output format for 4K 30P or lower.
	ST2110 HFR	**ENABLE**, DISABLE	Enables/disables output of IP stream HFR signal.
	SAP ANNOUNCE	**ON**, OFF	Enables/disables SAP announcements.

NETWORK			
Page name Page No.	**Item**	**Set value**	**Description**
<NMOS> N07 Displayed only when HKCU-SFP30 is installed.	PORT	**DISABLE**, LAN-COM, LAN1	Selects the ports on which NMOS is enabled. Can be selected only when <IP LIVE> → IP LIVE SYSTEM MANAGER PORT is set to DISABLE.
	PORT NUMBER (IS-04 NODE)	100 to 65535, **3001**	Sets the port number for the IS-04 Node API.
	PORT NUMBER (IS-05 CONNECTION)	100 to 65535, **3002**	Sets the port number for the IS-05 Connection API.
	DNS	**Auto**, Static	Sets the connection to the DNS server. Enabled only when RDS DISCOVERY is set to ON. **Note** Static (fixed) when DHCP is set to OFF.
	IP ADDRESS	**0.0.0.0** to 255.255.255.255	Displays the IP address of the detected DNS server when DNS is set to Auto. Sets the IP address of the DNS server when DNS is set to Static.
	RDS DOMAIN NAME	RDS domain name	Displays the name of the detected RDS domain when DNS is set to Auto. Sets the name of the RDS domain when DNS is set to Static.
	RDS DISCOVERY	**ON**, OFF	Enables/disables auto detection using the Registration & Discovery System (RDS). When enabled, RDS discovery is enabled within the same subnet. **Note** If RDS is not available on the same subnet, disable the setting and set the IP address manually.
	RDS CONNECTION STATUS	**DISCONNECTED**, CONNECTING, CONNECTED	Displays the RDS connection status.
	RDS IP ADDRESS	**0.0.0.0** to 255.255.255.255	Displays the detected RDS IP address when RDS DISCOVERY is set to ON. Sets the RDS IP address manually when RDS DISCOVERY is set to OFF.
	RDS PORT NUMBER	100 to 65535, **18235**	Displays the detected RDS port when RDS DISCOVERY is set to ON. Sets the RDS port manually when RDS DISCOVERY is set to OFF.
	START UP MODE	**STOP**, RESUME	When set to STOP, ST2110 transmission is stopped until IS-05 control from an external source is received. When set to RESUME, the ST2110 transmission state at the time of the previous startup is restored. **Note** Before using resume mode, check the system configuration to see if there are any harmful effects. If you change the system configuration or move the unit to another system during RESUME operation, a failure may occur due to duplication of multicast addresses or due to network bandwidth overflow.

NETWORK			
Page name Page No.	**Item**	**Set value**	**Description**
<MULTICAST ADDRESS 1-1> N08 Displayed only when HKCU-SFP30 is installed.	MULTICAST ADDRESS	AUTO, **MANUAL**	Displays the mode of the multicast address setting of the IP stream.
	VIDEO OUT LAN1-1		
	IP ADDRESS	224.0.0.1 to 239.255.255.255	Displays the transmit destination IP address.
	PORT	**100 to 65535**	Displays the transmit destination port number.
	VIDEO OUT LAN1-2		Same setting items and values as VIDEO OUT LAN1-1.
	VIDEO OUT LAN1-3		Same setting items and values as VIDEO OUT LAN1-1.
	VIDEO OUT LAN1-4		Same setting items and values as VIDEO OUT LAN1-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	VIDEO OUT LAN1-5		Same setting items and values as VIDEO OUT LAN1-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	VIDEO OUT LAN1-6		Same setting items and values as VIDEO OUT LAN1-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	VIDEO OUT LAN1-7		Same setting items and values as VIDEO OUT LAN1-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	VIDEO OUT LAN1-8		Same setting items and values as VIDEO OUT LAN1-1. **Note** Displayed only when the HKCU-UHD30 option is installed.

NETWORK			
Page name Page No.	**Item**	**Set value**	**Description**
<MULTICAST ADDRESS 1-2> N09 Displayed only when HKCU-SFP30 is installed.	MULTICAST ADDRESS	AUTO, **MANUAL**	Displays the mode of the multicast address setting of the IP stream.
	VIDEO OUT LAN2-1		
	IP ADDRESS	224.0.0.1 to 239.255.255.255	Displays the transmit destination IP address.
	PORT	**100 to 65535**	Displays the transmit destination port number.
	VIDEO OUT LAN2-2		Same setting items and values as VIDEO OUT LAN2-1.
	VIDEO OUT LAN2-3		Same setting items and values as VIDEO OUT LAN2-1.
	VIDEO OUT LAN2-4		Same setting items and values as VIDEO OUT LAN2-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	VIDEO OUT LAN2-5		Same setting items and values as VIDEO OUT LAN2-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	VIDEO OUT LAN2-6		Same setting items and values as VIDEO OUT LAN2-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	VIDEO OUT LAN2-7		Same setting items and values as VIDEO OUT LAN2-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	VIDEO OUT LAN2-8		Same setting items and values as VIDEO OUT LAN2-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
<MULTICAST ADDRESS 2-1> N10 Displayed only when HKCU-SFP30 is installed.	MULTICAST ADDRESS	**AUTO**, MANUAL	Displays the MULTICAST ADDRESS setting of the <MULTICAST SETTING> page.
	RETURN LAN1-1		**Note** Displayed only when the HKCU-UHD30 option is installed.
	IP ADDRESS	224.0.0.1 to 239.255.255.255	Displays the receive destination IP address.
	PORT	**100 to 65535**	Displays the receive destination port number.
	SRC IP	**0.0.0.0** to 255.255.255.255	Displays the stream transmit source IP address.
	RETURN LAN1-2		Same setting items and values as RETURN LAN1-1.
	RETURN LAN1-3		Same setting items and values as RETURN LAN1-1.
	RETURN LAN1-4		Same setting items and values as RETURN LAN1-1. **Note** Displayed only when the HKCU-UHD30 option is installed.

NETWORK			
Page name Page No.	**Item**	**Set value**	**Description**
<MULTICAST ADDRESS 2-2> N11 Displayed only when HKCU-SFP30 is installed.	MULTICAST ADDRESS	**AUTO**, MANUAL	Displays the MULTICAST ADDRESS setting of the <MULTICAST SETTING> page.
	RETURN LAN2-1		
	IP ADDRESS	224.0.0.1 to 239.255.255.255	Displays the receive destination IP address.
	IP ADDRESS	**100 to 65535**	Displays the receive destination port number.
	RETURN LAN2-2		Same setting items and values as RETURN LAN2-1.
	RETURN LAN2-3		Same setting items and values as RETURN LAN2-1.
	RETURN LAN2-4		Same setting items and values as RETURN LAN2-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
<MULTICAST ADDRESS 3> N12 Displayed only when HKCU-SFP30 is installed.	MULTICAST ADDRESS	**AUTO**, MANUAL	Displays the MULTICAST ADDRESS setting of the <MULTICAST SETTING> page.
	AUDIO OUT LAN1		
	IP ADDRESS	224.0.0.1 to 239.255.255.255	Displays the transmit destination IP address.
	PORT	**100 to 65535**	Displays the transmit destination port number.
	AUDIO OUT LAN2		Same setting items and values as AUDIO OUT LAN1.
	HD TRUNK AUDIO OUT LAN1		Same setting items and values as AUDIO OUT LAN1.
	HD TRUNK AUDIO OUT LAN2		Same setting items and values as AUDIO OUT LAN1.
	PGM IN LAN1		
	IP ADDRESS	224.0.0.1 to 239.255.255.255	Displays the receive destination IP address.
	PORT	**100 to 65535**	Displays the receive destination port number.
	SRC IP	**0.0.0.0** to 255.255.255.255	Displays the stream transmit source IP address.
	PGM IN LAN2		Same setting items and values as PGM IN LAN1.
<MULTICAST ADDRESS 4> N13 Displayed only when HKCU-SFP30 is installed.	MULTICAST ADDRESS	**AUTO**, MANUAL	Displays the MULTICAST ADDRESS setting of the <MULTICAST SETTING> page.
	INTERCOM OUT LAN1		
	IP ADDRESS	224.0.0.1 to 239.255.255.255	Displays the transmit destination IP address.
	PORT	**100 to 65535**	Displays the transmit destination port number.
	INTERCOM OUT LAN2		Same setting items and values as INTERCOM OUT LAN1.
	INTERCOM IN LAN1		
	IP ADDRESS	224.0.0.1 to 239.255.255.255	Displays the receive destination IP address.
	PORT	**100 to 65535**	Displays the receive destination port number.
	SRC IP	**0.0.0.0** to 255.255.255.255	Displays the stream transmit source IP address.
	INTERCOM IN LAN2		Same setting items and values as INTERCOM IN LAN1.

NETWORK			
Page name Page No.	**Item**	**Set value**	**Description**
<MULTICAST ADDRESS 5-1> N14 Displayed only when HKCU-SFP30 is installed.	MULTICAST ADDRESS	AUTO, **MANUAL**	Displays the MULTICAST ADDRESS setting of the <MULTICAST SETTING> page.
	META OUT LAN1-1		
	IP ADDRESS	224.0.0.1 to 239.255.255.255	Displays the transmit destination IP address.
	PORT	**100 to 65535**	Displays the transmit destination port number.
	META OUT LAN1-2		Same setting items and values as META OUT LAN1-1.
	META OUT LAN1-3		Same setting items and values as META OUT LAN1-1.
	META OUT LAN1-4		Same setting items and values as META OUT LAN1-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	META OUT LAN1-5		Same setting items and values as META OUT LAN1-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	META OUT LAN1-6		Same setting items and values as META OUT LAN1-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	META OUT LAN1-7		Same setting items and values as META OUT LAN1-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	META OUT LAN1-8		Same setting items and values as META OUT LAN1-1. **Note** Displayed only when the HKCU-UHD30 option is installed.

NETWORK			
Page name Page No.	**Item**	**Set value**	**Description**
<MULTICAST ADDRESS 5-2> N15 Displayed only when HKCU-SFP30 is installed.	MULTICAST ADDRESS	AUTO, **MANUAL**	Displays the MULTICAST ADDRESS setting of the <MULTICAST SETTING> page.
	META OUT LAN2-1		
	IP ADDRESS	224.0.0.1 to 239.255.255.255	Displays the transmit destination IP address.
	PORT	**100 to 65535**	Displays the transmit destination port number.
	META OUT LAN2-2		Same setting items and values as META OUT LAN2-1.
	META OUT LAN2-3		Same setting items and values as META OUT LAN2-1.
	META OUT LAN2-4		Same setting items and values as META OUT LAN2-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	META OUT LAN2-5		Same setting items and values as META OUT LAN2-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	META OUT LAN2-6		Same setting items and values as META OUT LAN2-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	META OUT LAN2-7		Same setting items and values as META OUT LAN2-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
	META OUT LAN2-8		Same setting items and values as META OUT LAN2-1. **Note** Displayed only when the HKCU-UHD30 option is installed.
<EMBER+> N16	EMBER+	**DISABLE**, ENABLE	Enables/disables configuration using Ember+. **Note** Can be enabled by installing HZCU-CNFG50 Config Control Software (option).
	PORT	**LAN-COM**, LAN1	Selects the connection port name.
	PORT NUMBER	**9000**	Displays the TCP port number for the Ember+ connection.
	CONNECTION STATUS	**DISCONNECTED**, CONNECTING, CONNECTED	Displays the connection status of Ember+ communication. **DISCONNECTED:** Disconnected. **CONNECTING:** Establishing communication. **CONNECTED:** Communication established.

NETWORK			
Page name Page No.	**Item**	**Set value**	**Description**
<TSL UMD> N17	TSL UMD	**DISABLE**, ENABLE	Enables/disables IP Tally using TSL UMD V5.0.
	PORT	**LAN-COM**, LAN1	Selects the connection port name.
	PORT NUMBER	**8900**	Displays the UDP port number of the TSL UMD connection.
	TEST PACKET		
	IP ADDRESS	0.0.0.0 to 255.255.255.255, **127.0.0.1**	Sets the IP address of the destination for sending TSL UMD format test packets.
	EXEC	**STOP SENDING**, START SENDING	Send TSL UMD format test packets.
	PACKET STATUS	**NOT RECEIVED**, RECEIVED	Displays the TSL UMD packet reception status. When received, it also displays IDs and the on/off status of the red, green, and yellow tallies. Up to five IDs can be displayed. “AND MORE” is displayed if there are more.
<SNMP> N18	SNMP	ENABLE, **DISABLE**	Enables/disables SNMP. **Note** Enabled by installing HZCU-SNMP50 SNMP Agent Software (option).
	PORT	**LAN-COM**, LAN1	Selects the connection port name.
	NAME		Displays the system name (ASCII code, up to 32 characters).
	CONTACT		Displays the system administrator’s name (ASCII code, up to 32 characters).
	LOCATION		Displays the system installation location (ASCII code, up to 32 characters).
	V1		
	ENABLE	ENABLE, **DISABLE**	Enables/disables SNMP V1. Selectable when SNMP is enabled. DISABLE (fixed) when SNMP is disabled.
	V2C		
	ENABLE	ENABLE, **DISABLE**	Enables/disables SNMP V2C. Selectable when SNMP is enabled. DISABLE (fixed) when SNMP is disabled.
	V1/V2C		
	RO COMMUNITY	**sony**	Displays the ReadOnly community name (ASCII code, up to 32 characters).
	ALLOW HOST	**ANY**, SPECIFIC	Sets the hosts that can be connected. **ANY:** Allow access from all IP addresses. **SPECIFIC:** Allow access only from IP addresses configured using the HOST IP ADDRESS items.
	HOST1 IP ADDRESS	**0.0.0.0** to 255.255.255.255	Sets the address of a host that can connect with access permission when ALLOW HOST is set to SPECIFIC.
	HOST2 IP ADDRESS		
	HOST3 IP ADDRESS		

NETWORK			
Page name Page No.	**Item**	**Set value**	**Description**
<SNMP TRAP> N19	SNMP TRAP	ENABLE, **DISABLE**	Enables/disables SNMP traps. Selectable when SNMP is enabled. DISABLE (fixed) when SNMP is disabled.
	COMMUNITY	sony	Displays the trap community name (ASCII code, up to 32 characters).
	HOST1		
	IP ADDRESS	**0.0.0.0** to 255.255.255.255	Sets the trap notification address.
	VERSION	V1, V2C	Sets the trap version.
	HOST2		Same setting items and values as HOST1.
	HOST3		Same setting items and values as HOST1.
	SEND TEST TRAP	**EXEC**	Sends a test trap.
<PING> N20	PORT	**LAN-COM**, LAN1, LAN2	Selects the PING transmission destination port. **Note** LAN1 and LAN2 are available only when HKCU-SFP30 is installed.
	IP ADDRESS	**0.0.0.0** to 255.255.255.255	Sets the IP address of the PING transmit destination.
	PING		Send PING. (Execute using EXEC)
	STATISTICS		Displays the PING execution result.
	TRANSMITTED PACKETS	**0** to 5	Number of transmitted packets.
	RECEIVED PACKETS	**0** to 5	Number of received packets.
	PACKET LOSS	**0** to 100 %	Packet loss rate.
	ROUND-TRIP MIN	**0.0** to 1000000.0 ms	Minimum round-trip delay time.
	ROUND-TRIP AVERAGE	**0.0** to 1000000.0 ms	Average round-trip delay time.
	ROUND-TRIP MAX	**0.0** to 1000000.0 ms	Maximum round-trip delay time.

DIAGNOSIS menu

DIAGNOSIS			
Page name Page No.	**Item**	**Display**	**Description**
<BOARD STATUS> D01	VIF	OK, POWER ERROR, PLD ERROR, TEMP WARNING	VIF board self-diagnosis result
	NET	OK, POWER ERROR, PLD ERROR, TEMP WARNING	HKCU-SFP30 board (option) self-diagnostics result
	DPR	OK, POWER ERROR	HKCU-UHD30 board (option) self-diagnostics result
	DIF	PLD ERROR, TEMP	HKCU-SDI30 board (option) self-diagnostics result
	DM	WARNING	Displayed on HDCU3170 only
	POWER ON HOUR METER	99999 H	Accumulated power-on time from power on.
	HOUR METER	99999 H	Accumulated power-on time
<SERIAL NUMBER> D02	MODEL NAME		Unit model name
	SERIAL NUMBER		Serial number

DIAGNOSIS			
Page name Page No.	**Item**	**Display**	**Description**
<VERSION> D03	APPLICATION		Unit software version
	OS		Unit software version
	UPDATER		Unit software version
	SY		ROM version of SY PLD (SY board)
	VIF		ROM version of VIF PLD (VIF board)
	NET1		ROM version of NET1 PLD (HKCU-SFP30 board option)
	NET2		ROM version of NET2 PLD (HKCU-SFP30 board option)
	DPR		ROM version of DPR PLD (HKCU-UHD30 board option)
	DPR(HFR)		ROM version of DPR PLD(HFR) (HKCU-UHD30 board option)
	DM1		ROM version of DM1 (DM board of HDCU3170) PLD
	DM2		ROM version of DM2 (DM board of HDCU3170) PLD
	DM3		ROM version of DM3 (DM board of HDCU3170) PLD
<CAMERA DIAGNOSIS> D04	NAME		Model name of connected camera
	ROM VERSION	X.XX	ROM version of camera
<POWER UNIT STATUS> D05	CAM POWER SUPPLY	ON, OFF	Displays the status of power supply to the camera.
	CABLE OPEN	OK, OPEN	Displays the cable open-circuit status.
	CABLE SHORT	OK, SHORT	Displays the cable short-circuit status.
	RCP POWER	OK, ERROR	Displays the status of power supply to the RCP.
<FAN STATUS> D06	PS FAN	OK, STOP	Displays the power supply unit fan operation status.
	PS REAR FAN	OK, STOP	Displays the operating status of the power supply unit rear fan.
	REAR FAN	OK, STOP	Displays the rear panel fan operation status.
	FRONT FAN1	OK, STOP	Displays the front panel fan 1 operation status.
	FRONT FAN2	OK, STOP	Displays the front panel fan 2 operation status.
	FRONT FAN3	OK, STOP	Displays the front panel fan 3 operation status.

Appendix

Precautions

If the unit is suddenly taken from a cold to a warm location, or if ambient temperature suddenly rises, moisture may form on the outer surface of the unit and/or inside of the unit. This is known as condensation. If condensation occurs, turn off the unit and wait until the condensation clears before operating the unit. Operating the unit while condensation is present may damage the unit.

The fan and battery are consumable parts that will need periodic replacement.
When operating at room temperature, a normal replacement cycle will be about 5 years. However, this replacement cycle represents only a general guideline and does not imply that the life expectancy of these parts is guaranteed. For details on parts replacement, contact your Sony representative.

The life expectancy of the electrolytic capacitor is about 5 years under normal operating temperatures and normal usage (8 hours per day; 25 days per month).
If usage exceeds the above normal usage frequency, the life expectancy may be reduced correspondingly.

Operating environment

- Avoid high-temperature rooms and near sources of heat.
- Do not place in locations with strong electric or magnetic field.
- Dry location with good ventilation.
- Avoid locations exposed to sunlight or strong lighting.

Avoid violent impacts

Dropping the unit, or otherwise imparting a violent shock to it, is likely to cause it to malfunction.

Do not cover with cloth

While the unit is in operation, do not cover it with a cloth or other material. This can cause the temperature to rise, leading to a malfunction.

After use

Set the POWER switch to the OFF position.

Care

If the body or panels of the unit become dirty, wipe them with a dry cloth. For severe dirt, use a soft cloth steeped in a small amount of neutral detergent, then wipe dry. Do not use volatile solvents such as alcohol or thinners, as these may damage the finish.

To prevent electromagnetic interference from portable communications devices

The use of portable telephones and other communications devices near this camera can result in malfunctions and interference with audio and video signals.
It is recommended that the portable communications devices near this camera be powered off.

Digital Triax Transmission (HDCU3170)

A powerful error-correction function is incorporated for the transmission between the camera and CCU. However, if an error occurs during long-distance transmission because of external noise or for some other reason, the compensation by interpolation that partially uses the previous picture may operate.
In digital triax transmission, the following video delay in transmission may occur.

- The video delay in transmission between the camera and the CCU is approx. 9 ms to 12 ms.
- A delay of about 1 frame occurs on the viewfinder display if a camera image is sent back from the CCU to the camera as a return signal.
- An appropriate delay is applied to the MIC1 and MIC2 audio signals from the CCU to match the video delay.
- A certain time is required for the video signal transmitted between the camera and the CCU to stabilize after power is applied. This is not a malfunction.

Transmission distances

The maximum and minimum transmission distances allowed for triax cable connection are shown in the table below. The distances may vary according to the conditions, such as the total power requirements (including the power supply to the camera from the CCU) and cable degradation.
Allowable transmission range when using triax cables with the following characteristics:
Attenuation: 3.8 dB to 68.4 dB at 100 MHz (including the connector loss)

Cable type (example)		Max. distance	Min. distance
Fujikura	∅ 8.5 mm	900 m (2953 ft)	50 m (164 ft)
Fujikura	∅ 14.5 mm	1800 m (5906 ft)	100 m (328 ft)
Belden 9232	∅ 13.2 mm	1300 m (4265 ft)	75 m (246 ft)

Error Messages

When an error is detected in this unit or the camera, the ALARM indicator turns on and an error message is displayed on this unit.

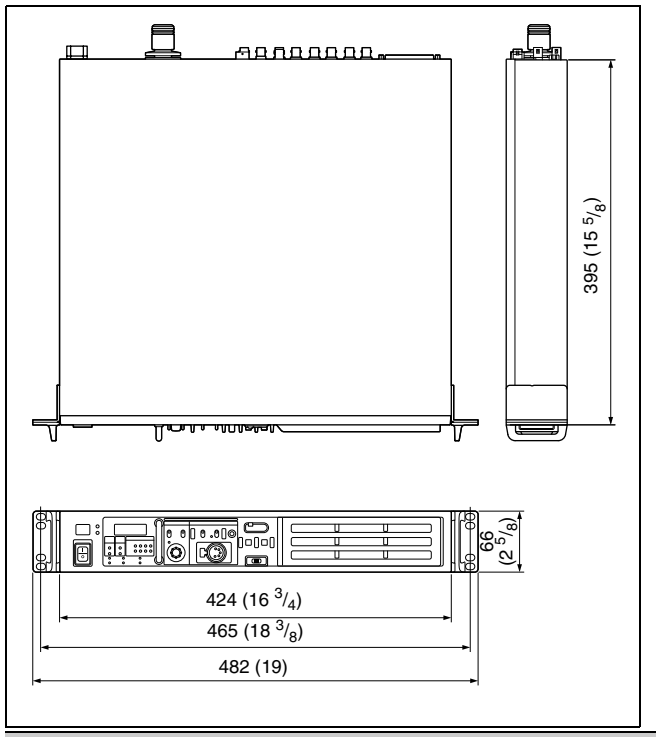
Error message	Description
CCU:10FIELD-ID ERROR	10-field ID is not detected even though the 10F BB setting is On
CCU:FORCE LEGACY	LEGACY is forcibly set for CNS MODE
CCU:FRONT FAN1 STOP	Front board fan stopped
CCU:FRONT FAN2 STOP	
CCU:FRONT FAN3 STOP	
CCU:GENLOCK ERROR	External reference sync error
CCU:LINK SPEED MISMATCH	The link speeds of LAN1 and LAN2 do not match.
CCU:LSM VERSION MISMATCH	The version of the connection destination IP Live System Manager is not supported.
CCU:OPTICAL CONDITION CARE	Light sensor level on CCU side dropped
CCU:OPTICAL CONDITION ERROR	
CCU:OPTICAL CONDITION OK	
CCU:OPTICAL CONDITION WARNING	
CCU:PS CABLE OPEN	CAMERA connector optical fiber cable/triax cable open-circuit connection error
CCU:PS CABLE SHORT	CAMERA connector optical fiber cable/triax cable short-circuit connection error
CCU:PS FAN STOP	Power supply block fan error
CCU:PS POWER ERROR	Power supply unit input/output error
CCU:PS POWER WARNING	
CCU:PS RCP POWER SUPPLY ERROR	Remote control panel (connected to REMOTE connector) power supply error
CCU:PS REAR FAN STOP	Power supply block rear fan error
CCU:PS TEMP WARNING	Power supply unit temperature error
CCU:SET DATE&TIME	Invalid date
CCU:XXX PLD ERROR	PLD error (XXX is the board name)
CCU:XXX POWER ERROR	Board power supply error (XXX is the board name)
CCU:XXX TEMP WARNING	Board temperature error (XXX is the board name)

Specifications

HDCU3100/HDCU3170

General	
Power requirements	100 V to 240 V AC, 50/60 Hz
Current consumption	4.5 A (max.)
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Mass	HDCU3100: Approx. 7.3 kg (16 lb 1.5 oz)
	HDCU3170: Approx. 8.1 kg (17 lb 14 oz)

Dimensions (Unit: mm (inches))



Input/output connectors	
CAMERA FIBER	HDCU3100: Optical fiber connector (1)
CAMERA TRIAX	HDCU3170: Triax connector (1)
INTERCOM/TALLY/ IO PORT	D-sub 50-pin connector (1) • INTERCOM (PROD/ENG), 4W: 0 dBu, RTS: 0 dBu, CC: –14 dBu • PGM, 3 systems, 0 dBu/–20 dBu • TALLY (R, G, Y) • FLAG
RCP/CNU	8-pin multi-connector (1)
TRUNK	12-pin (1)
LAN-COM	8-pin (1)
NETWORK TRUNK	8-pin (1)

SDI I/O 1 to 4	3G/HD/SD SDI I/O BNC type (4) 3G SDI: SMPTE ST424/425 Level-A/B, 0.8 Vp-p, 75 ohms, 2.970 Gbps/ 2.967 Gbps HD SDI: SMPTE ST292, 0.8 Vp-p, 75 ohms, 1.485 Gbps/1.4835 Gbps SD SDI: SMPTE ST259, 0.8 Vp-p, 75 ohms, 270 Mbps 3G SDI/HD SDI/SD SDI, character signal selectable
REFERENCE IN/OUT	BNC type (2), loop-through output HD: SMPTE ST274, tri-level sync, 0.6 Vp-p, 75 ohms SD: Black burst (NTSC: 0.286 Vp-p, 75 ohms/PAL: 0.3 Vp-p, 75 ohms) or NTSC 10F-BB
Input connectors	
AC IN	100 V to 240 V AC (1)
SDI RET 1 to 4	BNC type (4) 3G SDI: SMPTE ST424/425, 2.970 Gbps/ 2.967 Gbps HD SDI: SMPTE ST292, 1.485 Gbps/ 1.4835 Gbps SD SDI: SMPTE ST259, 270 Mbps
PROMPTER 1 PROMPTER 2/VBS-RET	BNC type (2), loop-through output during 1CH mode, terminated internally at 75 ohms during 2CH mode, analog signal, 1.0 Vp-p, 75 ohms
Output connectors	
AUDIO OUT CH1, CH2	XLR 3-pin, male (2), 0 dBu/–20 dBu/ +4 dBu
CHARACTER / AES/EBU	BNC type (1), VBS, 1 Vp-p, 75 ohms AES/EBU format AES/EBU selectable
SDI OUT 1 to 4	3G/HD/SD SDI OUTPUT BNC type (4) 3G SDI: SMPTE ST424/425 Level-A/B, 0.8 Vp-p, 75 ohms, 2.970 Gbps/ 2.967 Gbps HD SDI: SMPTE ST292, 0.8 Vp-p, 75 ohms, 1.485 Gbps/1.4835 Gbps SD SDI: SMPTE ST259, 0.8 Vp-p, 75 ohms, 270 Mbps 3G SDI/HD SDI/SD SDI, character signal selectable
Supplied accessories	
Number plates (1 set)	
Before Using This Unit (1)	
Operating Instructions (CD-ROM) (1)	
Optional accessories	
HKCU-SFP30 ST 2110 Interface Kit	
HKCU-UHD30 4K/HDR Processor Board	
HKCU-SDI30 12G-SDI Extension Kit	
HKCU-SM30 Single Mode Fiber Connector Kit	
HKCU-FB30 Optical Fiber Connector Kit	
HZCU-CNFG50 Config Control Software	
HZCU-SNMP50 SNMP Agent Software	
United States and Canada: Power cord set (1-551-812-XX) Other areas: Power cord set (1-782-929-XX)	
United States and Canada: Plug holder B (2-990-242-01) Other areas: Plug holder C (3-613-640-01)	
CCA-5-3 Connection Cable (3 meters), CCA-5-10 Connection Cable (10 meters)	
Service Manual	
Related devices	
HDC3500 Color Camera	
HDC3100 Fiber Color Camera	
HDC3170 Triax Color Camera	
HDC2000 HD Color Camera	
HDC2580/2500/2400/1700 HD Color Camera	
HSC300RF/100RF HD Color Camera	
RCP-1000 series or later Remote Control Panel	
MSU-1000 series Master Setup Unit	

HKCU-FB30

General	
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Dimensions (w / h / d, excluding protrusions)	57 × 58 × 86 mm ($2\ ^1/_4 \times 2\ ^3/_8 \times 3\ ^1/_2$ inches)
Mass	CN board: Approx. 60 g (2.1 oz)
Supplied accessories	
Optical module (1)	
LEMO connector (1)	
Harnesses (2)	
Screws 3×8 (4)	
Screws 3×6 (7)	
Operating Instructions (1)	

HKCU-SDI30

General	
Power consumption	5 W
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Dimensions (w / h / d, excluding protrusions)	21 × 57 × 230 mm ($^{27}/_{32} \times 2\ ^1/_4 \times 9\ ^1/_8$ inches)
Mass	DIF board: Approx. 150 g (5.3 oz)
Output connectors	
DIF board: BNC type (2)	
12G-SDI: SMPTE ST2082, 0.8 Vp-p, 75 ohms, 11.880 Gbps/ 11.868 Gbps	
Supplied accessories	
60-pin cable (1)	
Harness (1)	
Screws M3×6 (2)	
Screws +2.6×5 (2)	
Operating Instructions (1)	

HKCU-SFP30

General	
Power consumption	40 W
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Dimensions (w / h / d, excluding protrusions)	115 × 32 × 250 mm ($4\ ^5/_8 \times 1\ ^5/_{16} \times 9\ ^7/_8$ inches)
Mass	0.4 kg (14 oz)
I/O connectors	
Connectors	SFP+, SFP28
Number of lines	2
Signal type	10GBASE-**, 25GBASE-** (depending on SFP+/SFP28 transceiver module) For information about the supported SFP+ and SFP28 transceiver modules (e.g. OTM-10GSR1), contact your Sony sales or service representative.
Supplied accessories	
Fan assembly (1)	
Fan (1)	
Fan bracket (1)	
Fan harness (1)	
60-pin harness (2)	
20-pin harness (1)	
Power supply harness (1)	
Screws M3×6 (7)	
Screws M3×5 (2)	
Screws M2.6×25 (2)	
Bracket (1)	
Clamp (1)	
Operating Instructions (1)	

HKCU-SM30

General	
Power consumption	1.3 W
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Dimensions (w / h / d, excluding protrusions)	112 × 16 × 150 mm ($4\ ^1/_2 \times\ ^{21}/_{32} \times 6$ inches)
Mass	CN board: Approx. 120 g (4.2 oz)
Input/output connectors	
CN board	ST connectors for single-mode fiber cables (2)
Supplied accessories	
SC-ST optical conversion adapter (2)	
SC-LC optical fiber cable (1)	
Harnesses (3)	
Screws M3×6 (5)	
Screws M2×5 (7)	
Screws +2.6×5 (2)	
Connector holder (2)	
Connector plate (1)	
Operating Instructions (1)	

HKCU-UHD30

General	
Power consumption	15 W
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Dimensions (w / h / d, excluding protrusions)	163 × 33 × 93 mm ($6\ ^1/_2 \times 1\ ^5/_{16} \times 3\ ^3/_4$ inches)
Mass	DIF board: Approx. 150 g (5.3 oz)
Supplied accessories	
Fan assembly (1)	
60-pin cable (2)	
Harness (1)	
Screws M3×6 (6)	
Screws +PSM 3×12 (2)	
Operating Instructions (1)	

Design and specifications are subject to change without notice.

Notes

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