SONY

BASEBAND PROCESSOR UNIT

BPU4500A

NETWORKED MEDIA INTERFACE KIT

SKC-IP45AF

ST 2110 INTERFACE KIT

SKC-4001

OPERATION MANUAL English

1st Edition (Revised 2)

Table of Contents

Overview

The BPU4500A Baseband Processor Unit connects to a CA4000 Camera System Adaptor, mounted on a PMW-F55 Solid-state Memory Camcorder[1)] or an F65 Digital Motion Picture Camera[2)], or to an HDC4300 Color Camera or HDC-P43 Multi Purpose Camera via an optical fiber cable. It processes video signals from the camera and provides an interface with external devices.
It can also connect to an HDCU3000-series, HDCU2000-series, or HDCU1000-series[3)] Camera Control Unit (hereinafter referred to as the "CCU")[4)] to form a 4K video multi-camera system, supplying power to the camera and transferring various signals (intercom, tally, prompter, audio, etc.).
The unit can output video signals and audio signals not just as SDI but also as IP.[5)]

1) Requires PMW-F55 software version 2.10 or later.
2) Requires the SKC-4065 F65 Adaptor.
3) If using a HDCU1000-series unit, please contact your Sony representative.
4) To connect to SMPTE ST 2110 standard compatible devices using the SKC-4001 ST 2110 Interface Kit, connect with an HDCU3100 which has HKCU-SFP30 installed or with an HDCU3500/ HDCU5000 which has HKCU-SFP50 installed.
5) Requires the SKC-IP45AF Networked Media Interface Kit and an SFP+ module to use IP output.

Note

For system camera operation, first check that the software and ROM version of this unit, PMW-F55, F65, F65 Adaptor, CA4000, HDC4300, and HDC-P43 support this function.

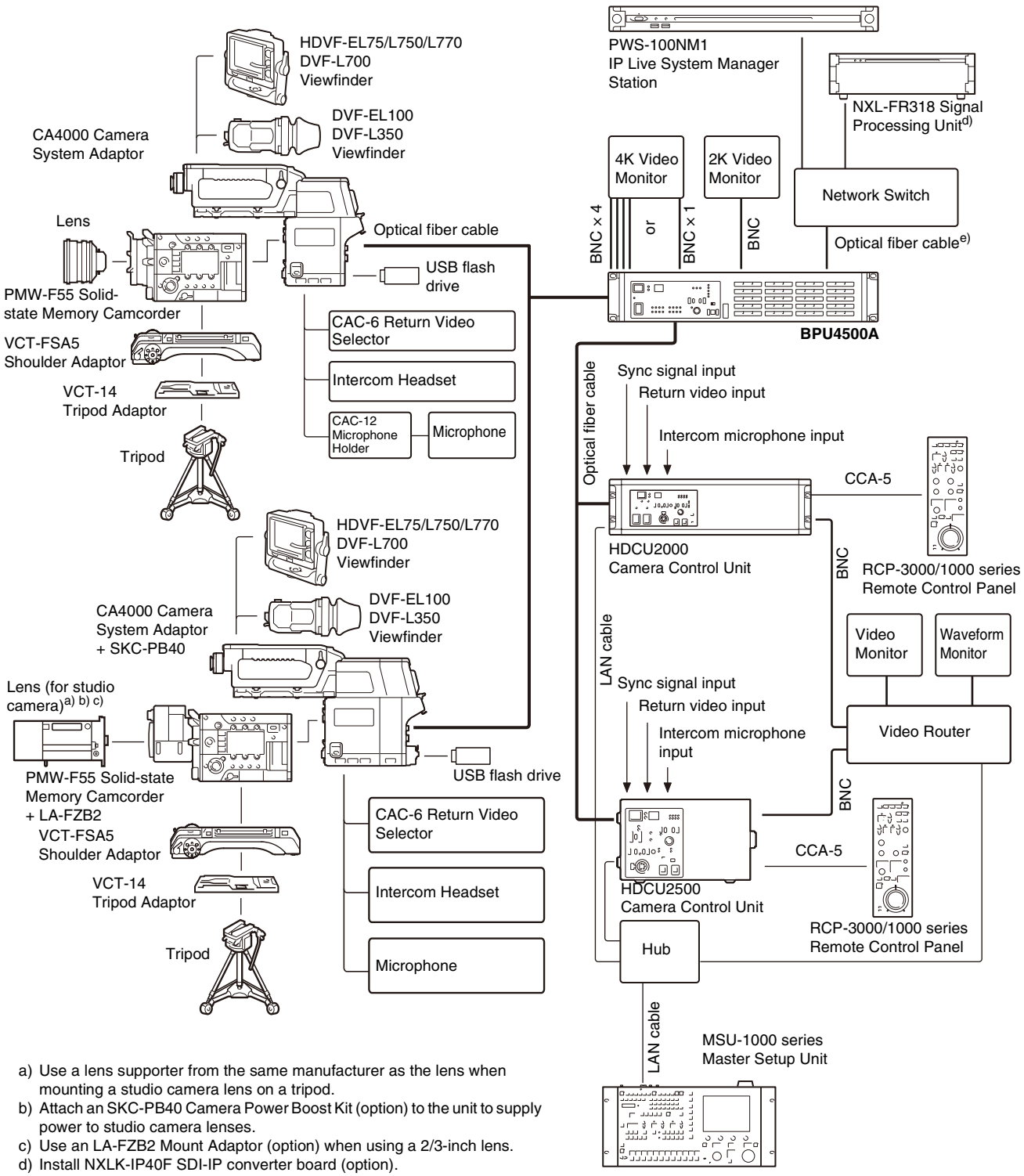
System Configuration

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.

PMW-F55 connection example

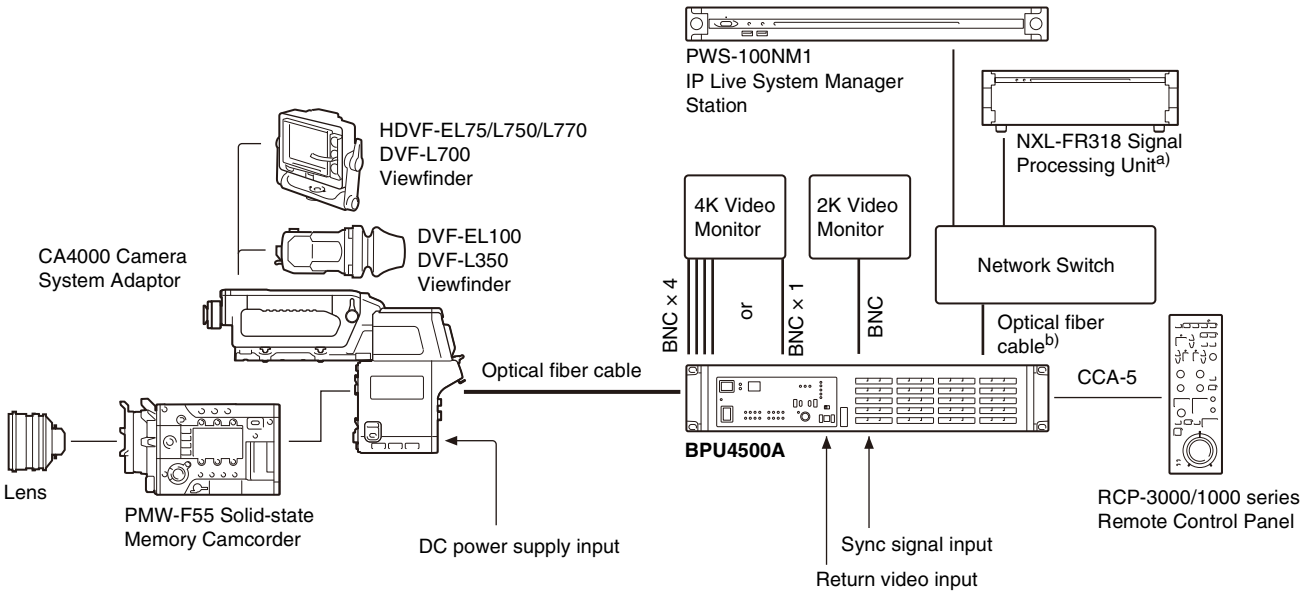
Connection example of PMW-F55 and HDCU2000/2500 for operation as a system camera.



a) Use a lens supporter from the same manufacturer as the lens when mounting a studio camera lens on a tripod.
b) Attach an SKC-PB40 Camera Power Boost Kit (option) to the unit to supply power to studio camera lenses.
c) Use an LA-FZB2 Mount Adaptor (option) when using a 2/3-inch lens.
d) Install NXLK-IP40F SDI-IP converter board (option).
e) Install the SKC-IP45AF Networked Media Interface Kit (option) for communication with IP devices.

Extension mode connection example

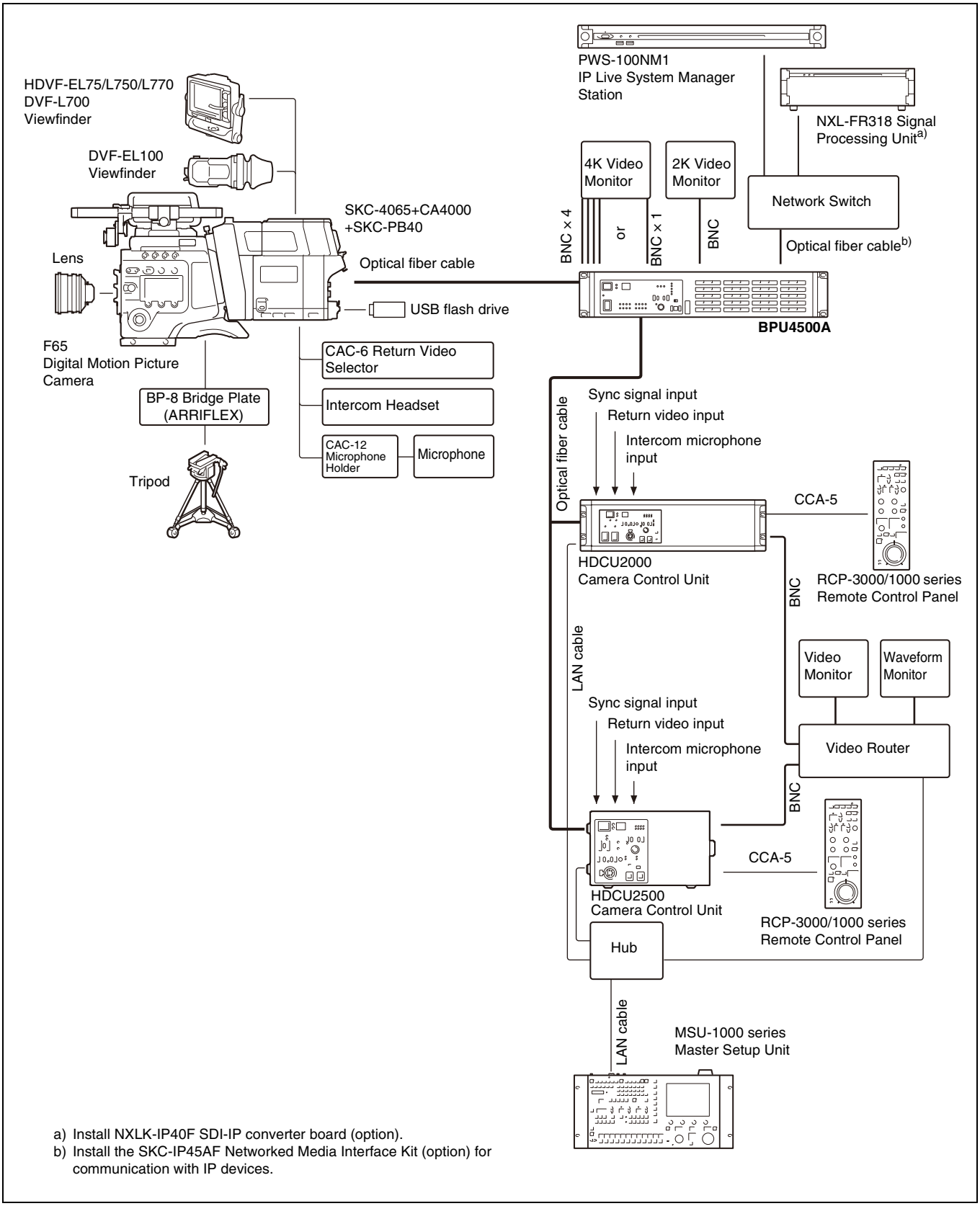
Connection example without HDCU2000/2500 for operation as a camera extension unit.



a) Install NXLK-IP40F SDI-IP converter board (option).
b) Install the SKC-IP45AF Networked Media Interface Kit (option) for communication with IP devices.

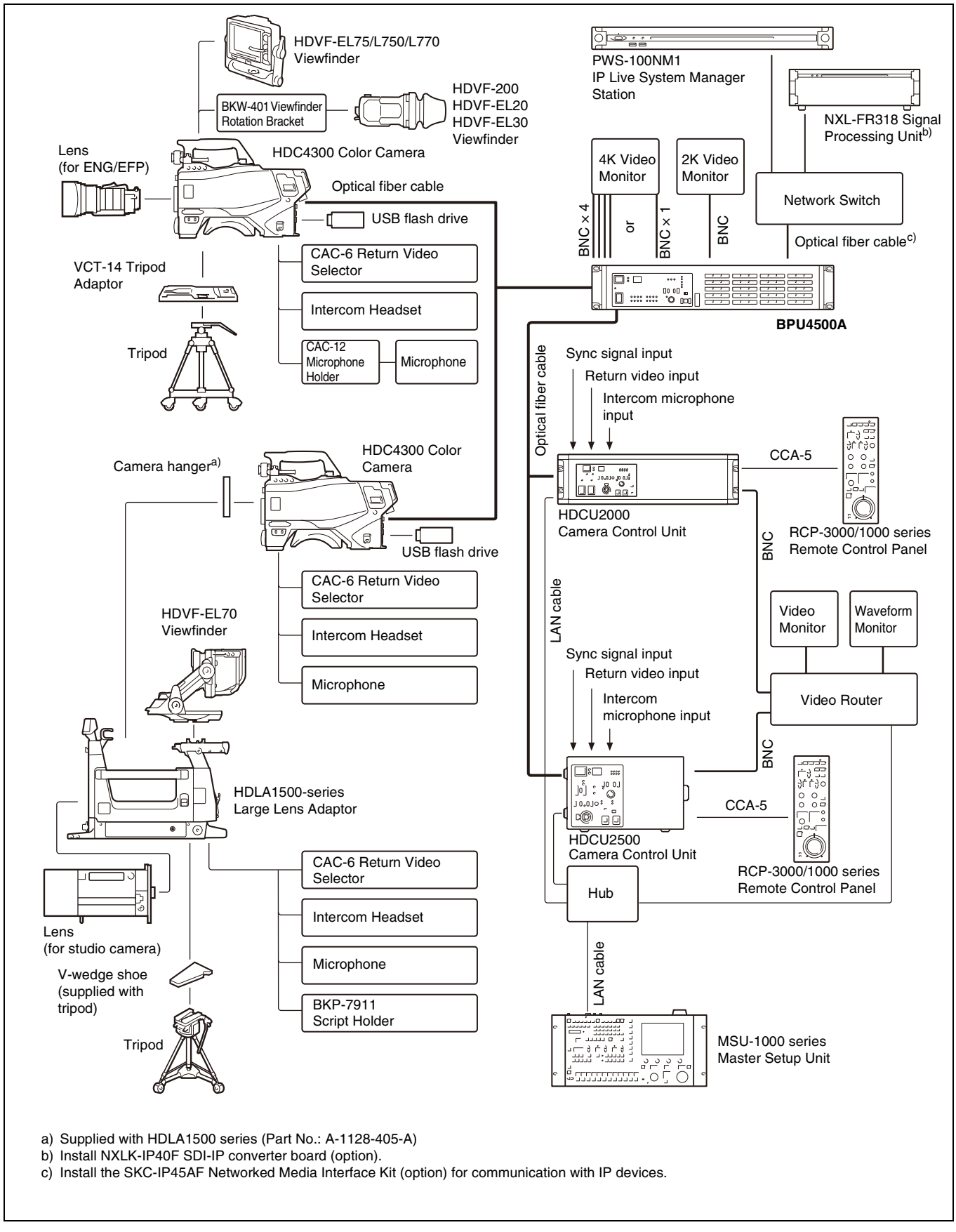
F65 connection example

Connection example of operation using an F65 as a system camera.



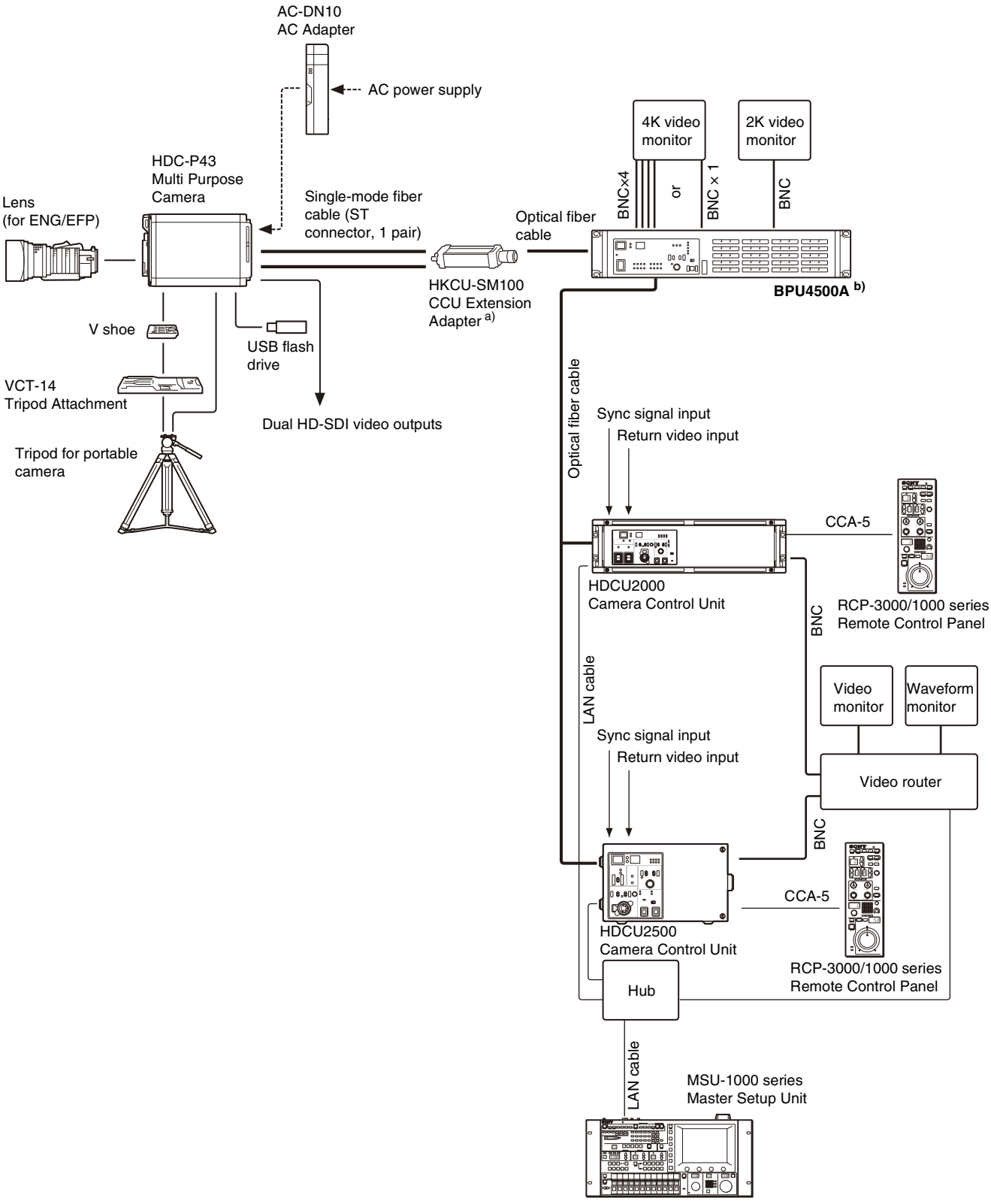
a) Install NXLK-IP40F SDI-IP converter board (option).
b) Install the SKC-IP45AF Networked Media Interface Kit (option) for communication with IP devices.

HDC4300 connection example



a) Supplied with HDLA1500 series (Part No.: A-1128-405-A)
b) Install NXLK-IP40F SDI-IP converter board (option).
c) Install the SKC-IP45AF Networked Media Interface Kit (option) for communication with IP devices.

HDC-P43 connection example

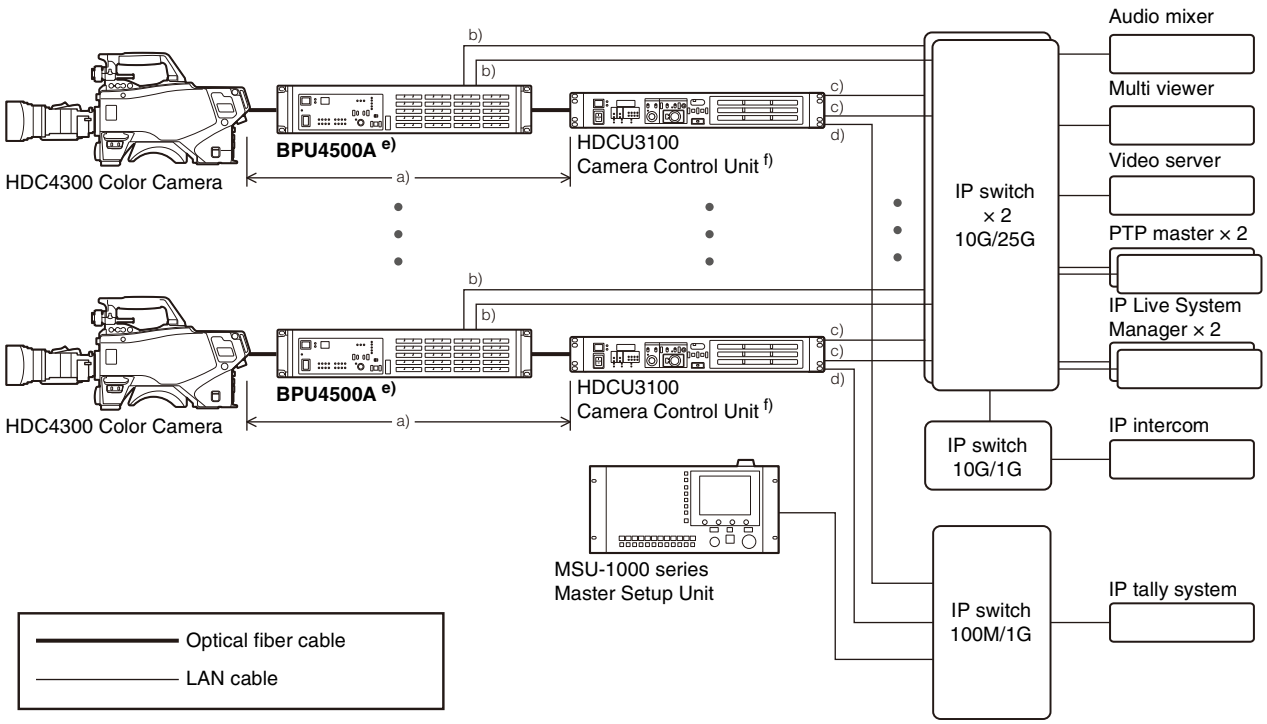


a) The transmission distance with a single-mode fiber cable (ST connector) and optical fiber cable is approximately 5 km (max.).
b) The SZC-4002/4002M/4002W HFR software option must be installed for HFR (High Frame Rate) imaging at 4×/6×/8× speeds.

IP transmission connection example

Connection with devices that are SMPTE ST 2110 compliant is supported by installing an SKC-4001 ST 2110 Interface Kit in the BPU4500A.

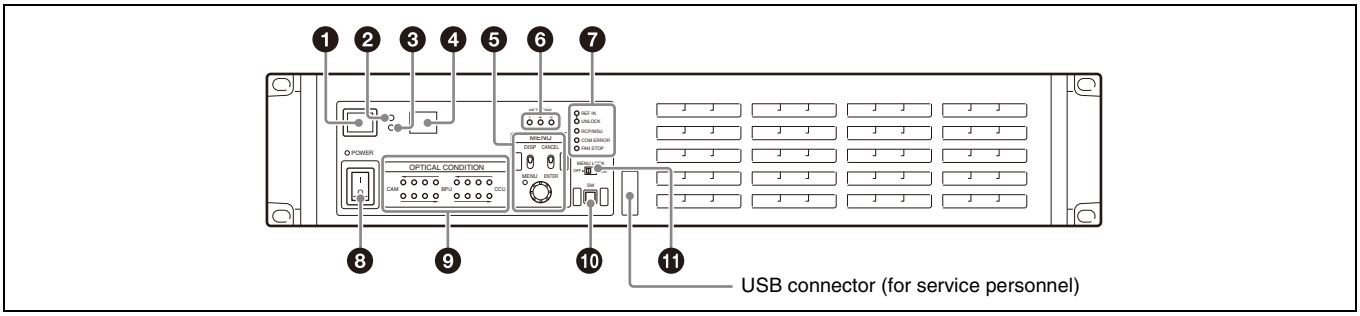
To use IP-related functions, connect with an HDCU3100/HDCU3500/HDCU5000, and use PTP synchronization on the CCU device.



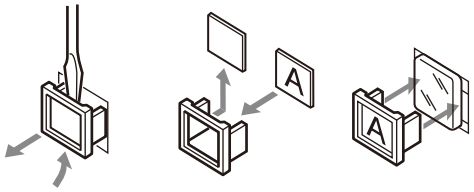
a) Signal transfer over a maximum of 2 km is possible. However, the actual transfer distance may vary depending on the system configuration of the cameras and the type of optical fiber cables used.
b) Connect to the LAN1 and LAN2 connectors of the SKC-4001 ST 2110 Interface Kit.
c) Connect to the LAN1 and LAN2 connectors of the HKCU-SFP30 ST 2110 Interface Kit.
d) Connect to the LAN-COM connector of the HDCU3100.
e) Install the SKC-4001 ST 2110 Interface Kit.
f) Install the HKCU-SFP30 ST 2110 Interface Kit.

Name and Function of Parts

Front Panel



❶ Red tally light
Turns on when a red tally signal is received. When the CALL button on the video camera, the MSU-1000 Master Setup Unit, or the RCP-3000/1000 series Remote Control Panel is pressed, the light turns off if lit or turns on if not lit.
A supplied number plate can be attached (see following diagram).

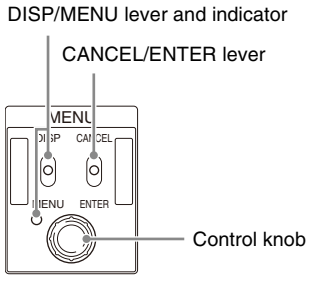


❷ Yellow tally light
Turns on when a yellow tally signal is received.

❸ Green tally light
Turns on when a green tally signal is received.

❹ CCU number display
Displays the camera number specified in the menu of the CCU for a system connection.
A number is not displayed when this unit is used as an extension unit.

❺ MENU control block



DISP/MENU lever and indicator: Used to display the status and menu. The indicator lights up when the menu is displayed.
CANCEL/ENTER lever: Used to cancel/enter settings when the menu is displayed.
Control knob (rotary encoder): Used to switch pages when the status screen is displayed. Used to move the cursor within a page and to change the setting of the selected item when the menu is displayed.
Pushing the control knob has the same function as setting the CANCEL/ENTER lever to ENTER.

❻ NETWORK Indicators
When the SKC-IP45AF (option) is installed: Displays the status of NMI-LAN.
1: Corresponds to SLOT 1 NMI LAN 1 to 2.
2: Corresponds to SLOT 2 NMI LAN 1 to 2.
3: Corresponds to SLOT 3/4 NMI LAN 1 to 2.
Green: Normal state
Flashing green: Network synchronization process is in progress.
Off: SFP+ module is not installed.
IP Live System Manager has been disconnected.
IP Live System Manager connection is being established.
Flashing red: Not locked to network synchronization signal. Signal reception is unavailable.
When the SKC-4001 (option) is installed: Displays the status of network genlock.
Low-speed flashing: PTP master not detected
High-speed flashing: Genlock initiation in progress
On: Genlock state
Off: Network genlock setting disabled

❼ Status display indicators
REF IN (green): Indicates operation is synchronized to REFERENCE input signal.
UNLOCK (red): Indicates operation is not synchronized to input reference signal.
When connected to a CCU, REF IN and UNLOCK indicate the lock status for the CCU.
RCP/MSU: Displays the network system connection status.
On: Indicates that an external control device (MSU-1000 Master Setup Unit or RCP-3000/1000 series Remote Control Panel) is connected when the CNS MODE setting in <CNS SETTINGS> is set to BRIDGE.
Flashing: Indicates that an external control device (MSU-1000 Master Setup Unit or RCP-3000/1000 series Remote Control Panel) is not connected successfully when the CNS MODE setting in <CNS SETTINGS> is set to BRIDGE.
Off: Indicates that the LAN cable is not connected or network system connection parameters have not been set when the CNS MODE setting in <CNS SETTINGS> is set to BRIDGE.
The indicator is always off when CNS MODE is set to LEGACY.

For details, see "<CNS SETTINGS>" (page 44).

COM ERROR (red): Indicates a communications error with the video camera, CCU, or external control device (such as an RCP-3000/1000 series Remote Control Panel).
FAN STOP (red): Indicates the internal fan has stopped.

❽ POWER switch and indicator
Turns the system power supply on/off to the unit, video camera, and RCP-3000/1000 series Remote Control Panel or other device connected to the REMOTE connector. Switch to "**I**" to turn the power on, and switch to "○" to turn the power off. The indicator lights up when power is turned on.

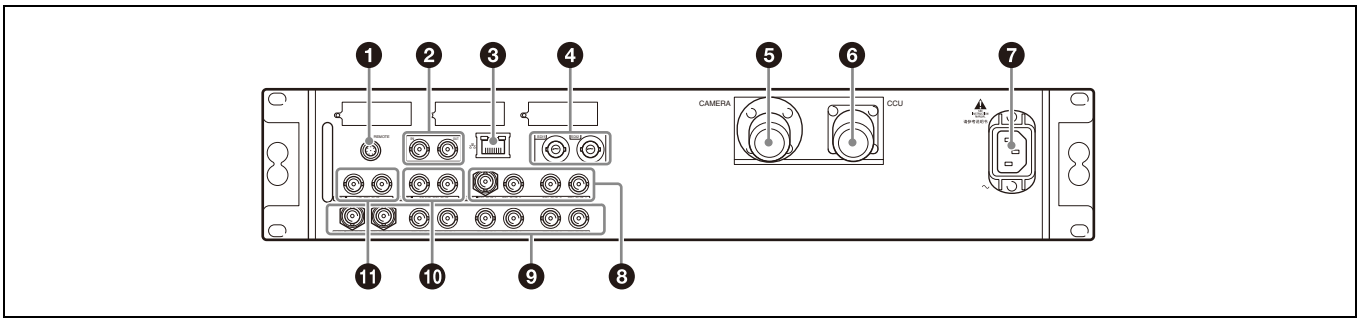
❾ Optical signal condition indicators
Displays the communications link optical signal level condition between the video camera, CCU, and the unit.
CAM←BPU: Signal level from the unit to the video camera
CAM→BPU: Signal level from the video camera to the unit
BPU←CCU: Signal level from the CCU to the unit
BPU→CCU: Signal level from the unit to the CCU

Indicates the receive signal status according to the following indicators.
Two green indicators (right): Receive signal condition is very good.
One green indicator (2nd from right): Receive signal condition is OK.
One yellow indicator (2nd from left): Receive signal level is low.
One red indicator (left): Receive signal level is extremely low.

❿ Assignable buttons
You can assign functions to these buttons from the BPU menu.

⓫ Menu lock switch
Locks the menu control block on the front panel.

Rear Panel



❶ REMOTE connector (round type, 8-pin)
Connects to an RCP-3000/1000 series Remote Control Panel or MSU-1000 Master Setup Unit using a CCA-5 connection cable. Remote control signals are transmitted and received via this connector. It also supplies power when connected to an RCP-3000/1000 series Remote Control Panel.

Note

When connected to a CCU, do not connect anything to this connector.

❷ REFERENCE IN/OUT (reference sync signal) connectors

- **IN connector (BNC type) (left)**

Inputs an external HD tri-level sync signal or SD reference sync signal (black burst signal).
The type of reference signal is detected automatically and can be checked in the setup menu.

Note

When connected to a CCU, do not connect anything to this connector.

- **OUT connector (BNC type) (right)**

When a reference sync signal is input on the IN connector or the unit is turned off, the signal input on the IN connector is output as-is (loop through). Otherwise, this connector outputs an SD composite sync signal or a HD tri-level signal from the internal sync signal generator (HD tri-level signal set by factory default).
Available only when used as a camera extension unit.

❸ 品 (LAN) connector (RJ-45 8-pin)
Connects to a LAN. Connect to a LAN hub (10BASE-T/100Base-TX) using a LAN cable (shielded type, category 5 or higher).

❹ SDI1 and SDI2 (return video input) connectors (BNC type)
Connects to 2-system, independent, 3G/HD-SDI return video signal inputs. The SDI1/SDI2 selection is made using the return switch on the video camera. The SDI2 connector becomes the HD prompter input connector by enabling HD PROMPTER on the <RETURN> page in the CONFIGURATION menu.
Available only when used as a camera extension unit.

❺ CAMERA connector (optical fiber connector)
Connects to a video camera using an optical fiber cable. All video camera signals (power supply, control signals, video signal, audio signal, etc.) can be transmitted and received via a single optical fiber cable.

❻ CCU (camera control unit) connector (optical fiber connector)
Connects to a camera control unit using an optical fiber cable. All video camera signals (power supply, control signals, video signal, audio signal, etc.) can be transmitted and received via a single optical fiber cable. In an extension mode connection, it can also supply power to the camera by connecting an HDCE-200 Camera Extension Adaptor.

Note

A communications error may occur if there is any dust or other matter on the surface of the optical fiber cable connector. Always attach the connector cap when not in use.

❼ ∿ AC IN (AC power supply) connector
Connects to the AC power supply using the specified power supply cord. The power supply cord can be attached to the unit using the optional plug holder.

❽ SDI OUT 1 to 4 connectors (SLOT1) (BNC type)
Outputs video signals from the video camera using Multi-Link format comprising 3G-SDI signals and HD-SDI signals.
The SDI OUT 1 connector also supports output of 12G-SDI signals and 6G-SDI signals.

For details about assignments of signals to output connectors, see "Relationship Between Operation Mode and Output Format" (page 22).

When using the HD CUTOUT option, the extracted cut-out signal is output from this connector.

❾ SDI OUT 1 to 8 connectors (SLOT2) (BNC type)
Outputs video signals from the video camera using Multi-Link format comprising 3G-SDI signals and HD-SDI signals.
The SDI OUT 1 and SDI OUT 2 connectors also support output of 12G-SDI signals and 6G-SDI signals.

For details about assignments of signals to output connectors, see "Relationship Between Operation Mode and Output Format" (page 22).

❿ 3G/HD SDI OUT connector (SLOT3) (BNC type)
Outputs 1-system video signals from the video camera as HD-SDI signals.
They can also output signals with superimposed text characters and markers.
The same signal is output from each connector grouped in pairs.

⓫ HD SDI OUT connector (SLOT4) (BNC type)
Outputs 1-system video signals from the video camera as HD-SDI signals.
They can also output signals with superimposed text characters and markers.
The same signal is output from each connector grouped in pairs.

SKC-IP45AF Networked Media Interface Kit (Option)

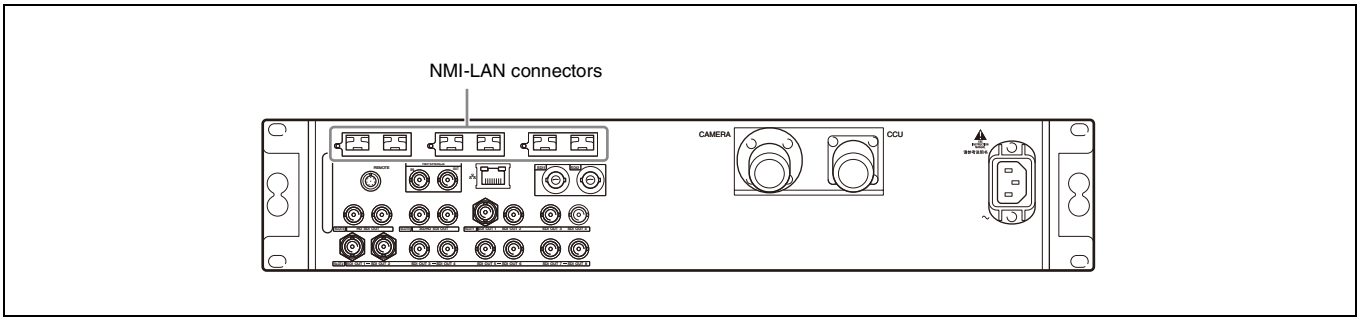
Note

To avoid danger, operation inside the unit should only be performed by a technician who has received service training.

The BPU4500A can support 2-system 4K or 1-system HD over IP output by installing the SKC-IP45AF in the BPU4500A.

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

The following diagram shows the rear panel of the BPU4500A with the SKC-IP45AF installed.



NMI-LAN connectors (SFP+)

These connectors output IP video signals and audio. The output signal format is the same as the format set for the slot of each connector.

SKC-4001 ST 2110 Interface Kit (Option)

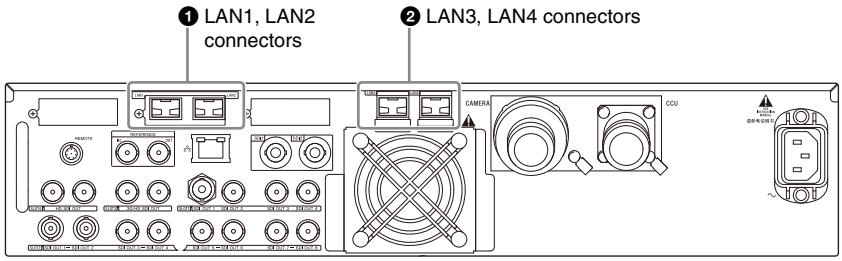
Note

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

Connection with devices that are SMPTE ST 2110 compliant is supported by installing an SKC-4001 in the BPU4500A.

BPU4500A software version 3.02 or later is required. In addition, an OTM-25GSR1 or other SFP28 module is required to use IP output.

The following diagram shows the rear panel of the BPU4500A with the SKC-4001 installed.



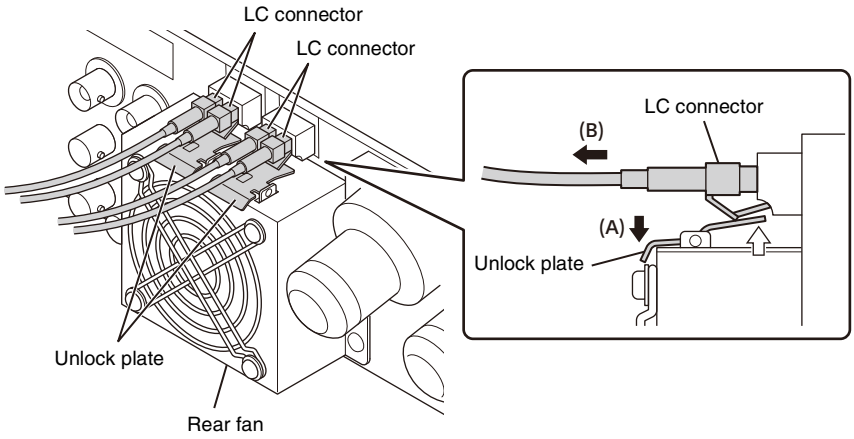
❶ LAN1, LAN2 connectors (SFP28)
Outputs IP video and audio signals. Output of one 4K signal and two HD signals from the BPU4500A is supported.
For connection with an RCP/MSU device or IP tally input, use the LAN connector of the BPU4500A.
The output signal format is set using the <OUTPUT FORMAT> page of the CONFIGURATION menu.

❷ LAN3, LAN4 connectors (SFP28)
Outputs IP video and audio signals. Output of one 4K signal or HD signal from the BPU4500A is supported.
The output signal format is set using the <OUTPUT FORMAT> page of the CONFIGURATION menu.

About disconnecting LC connectors

When connecting to other models using the LAN3 and LAN4 connectors of the SKC-4001, unlock the LC connectors and pull the connectors out from the unit as described below.

Push and hold down the unlock plate (A) and grasp the LC connector and pull the connector out (B). (The LC connector is unlocked by pushing down on the unlock plate.)



Connection and Setup

4K System Connection

A 4K format camera system is formed by connecting the unit to a video camera (F65[1)] or PMW-F55[2)] with mounted CA4000, HDC4300, or HDC-P43) and HDCU2000/2500 Camera Control Unit (CCU) using optical fiber cables.

1) Requires the SKC-4065 F65 Adaptor.
2) Requires PMW-F55 software version 2.10 or later.

Functions provided by the CCU (genlock, power supply to the video camera, and various interface functions) can be used as-is.

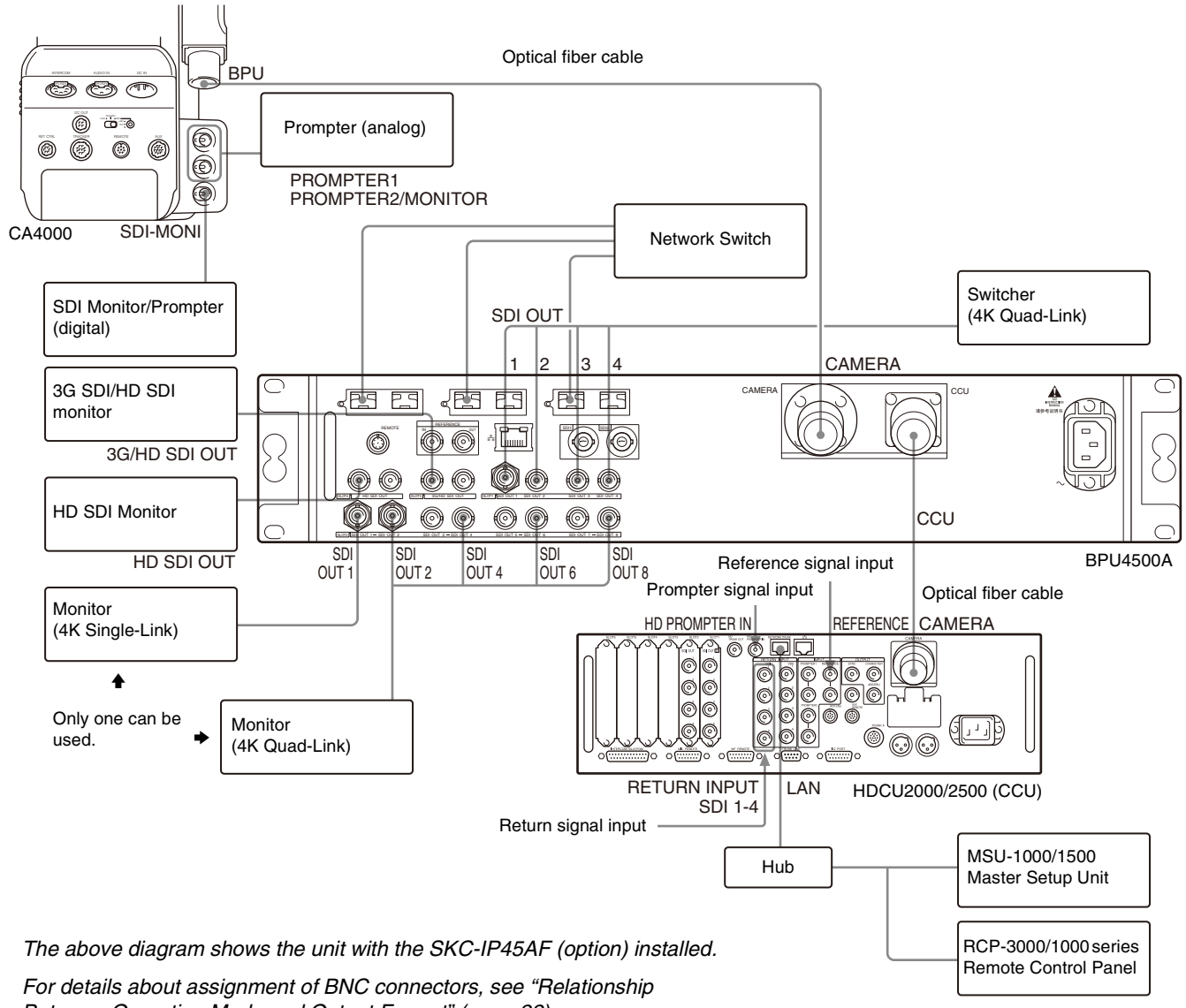
HD signals down-converted from the 4K signal can be output from SLOT3, SLOT4, and the CCU.

Note

12G/6G-SDI signal output is supported only from the following connectors.

- SDI OUT 1 connector of SLOT1
- SDI OUT 1 and SDI OUT 2 connectors of SLOT2

Connection example



The above diagram shows the unit with the SKC-IP45AF (option) installed.

For details about assignment of BNC connectors, see "Relationship Between Operation Mode and Output Format" (page 22).

Settings

Device	Setting	Menu/Page	Item		Set value
BPU4500A	Image format settings	CONFIGURATION/<SYSTEM SETTINGS>	SYSTEM FORMAT	RESOLUTION	4096×2160
				FREQUENCY	Displays value set on CCU.
	Video output connector settings	CONFIGURATION/<OUTPUT FORMAT> Can also be set using the control panel.	SLOT1 to SLOT4		Video output format of each slot
HDCU2000/ 2500	Image format settings	SYSTEM OPERATION/ <MULTI FORMAT>	FREQUENCY	HD	Frame frequency
			HD-SD DELAY		Frame (1F)
	Video output connector settings	SYSTEM OPERATION/ <OUTPUT FORMAT> Can also be set using the control panel.	SLOT1 to SLOT6		Video output format of each slot
	Transfer rate settings	CCU CONFIGURATION/ <PROMPT/TRUNK>	TRANSMIT		AUTO, HIGH BIT RATE
CA4000	Prompter output connector settings	MAINTENANCE/<SDI-OUT>	SDI-MONI OUT		HD-PROMPT
		MAINTENANCE/<PROMPTER2 OUT>	OUTPUT		PROMPTER2

Extension Mode Connection

The unit can be used to form a video signal extension system by connecting it to a video camera (F65[1) 2)] or PMW-F55 with mounted CA4000, HDC4300, or HDC-P43) using optical fiber cables.
The system can be synchronized because using the external genlock function.
Intercom systems and multi-camera operation systems are not supported.
An external power supply or power supplied from the CCU connector of an HDCE-200 is also required for the camera, since power is not supplied from the unit.
HD signals down-converted from 4K signals or generated normal speed signals from HFR video can be output from the SLOT3 and SLOT4 outputs.

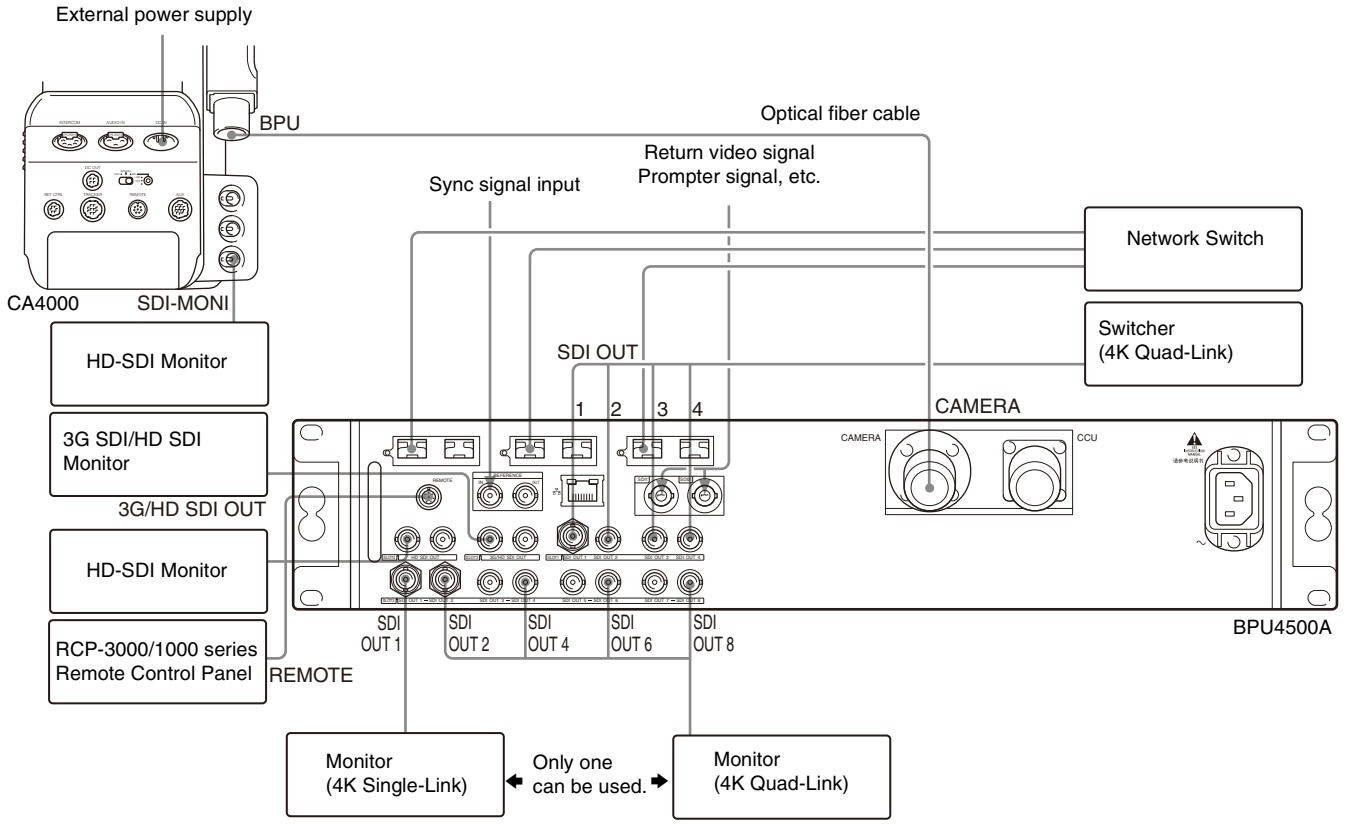
1) Requires an external power supply when the F65 is used in an extension connection.
2) Requires the SKC-4065 F65 Adaptor.

Note

12G/6G-SDI signal output is supported only from the following connectors.

- SDI OUT 1 connector of SLOT1
- SDI OUT 1 and SDI OUT 2 connectors of SLOT2

Connection example



The above diagram shows the unit with the SKC-IP45AF (option) installed.

For details about assignment of BNC connectors, see "Relationship Between Operation Mode and Output Format" (page 22).

Settings

Device	Setting	Menu/Page	Item		Set value
BPU4500A	Image format settings	CONFIGURATION/ <SYSTEM SETTINGS>	SYSTEM FORMAT	RESOLUTION	4096×2160 (4K system) 1920×1080 (HD HFR system)
				FREQUENCY	Frame frequency
	Video output connector settings	CONFIGURATION/ <OUTPUT FORMAT> Can also be set using the control panel.	SLOT1 to SLOT4		Video output format of each slot
CA4000	Prompter output connector settings	MAINTENANCE/<SDI OUT>	SDI-MONI OUT		HD-PROMPT

HD CUTOUT Video System

An HD signal can be extracted from the 4K signal by installing the optional SZC-2001/2001M/2001W HD CUTOUT Software in the BPU4500A.
The region that is cut out can be controlled using a mouse or other device connected to the HD CUTOUT Controller.

For details about setup and operation, refer to the SZC-2001/2001M/2001W User's Guide.

The cut-out HD signal is output from SLOT1 and a 4K signal can also be output simultaneously from SLOT2.
HD signals down-converted from the 4K signal can be output from SLOT3, SLOT4, and the CCU.

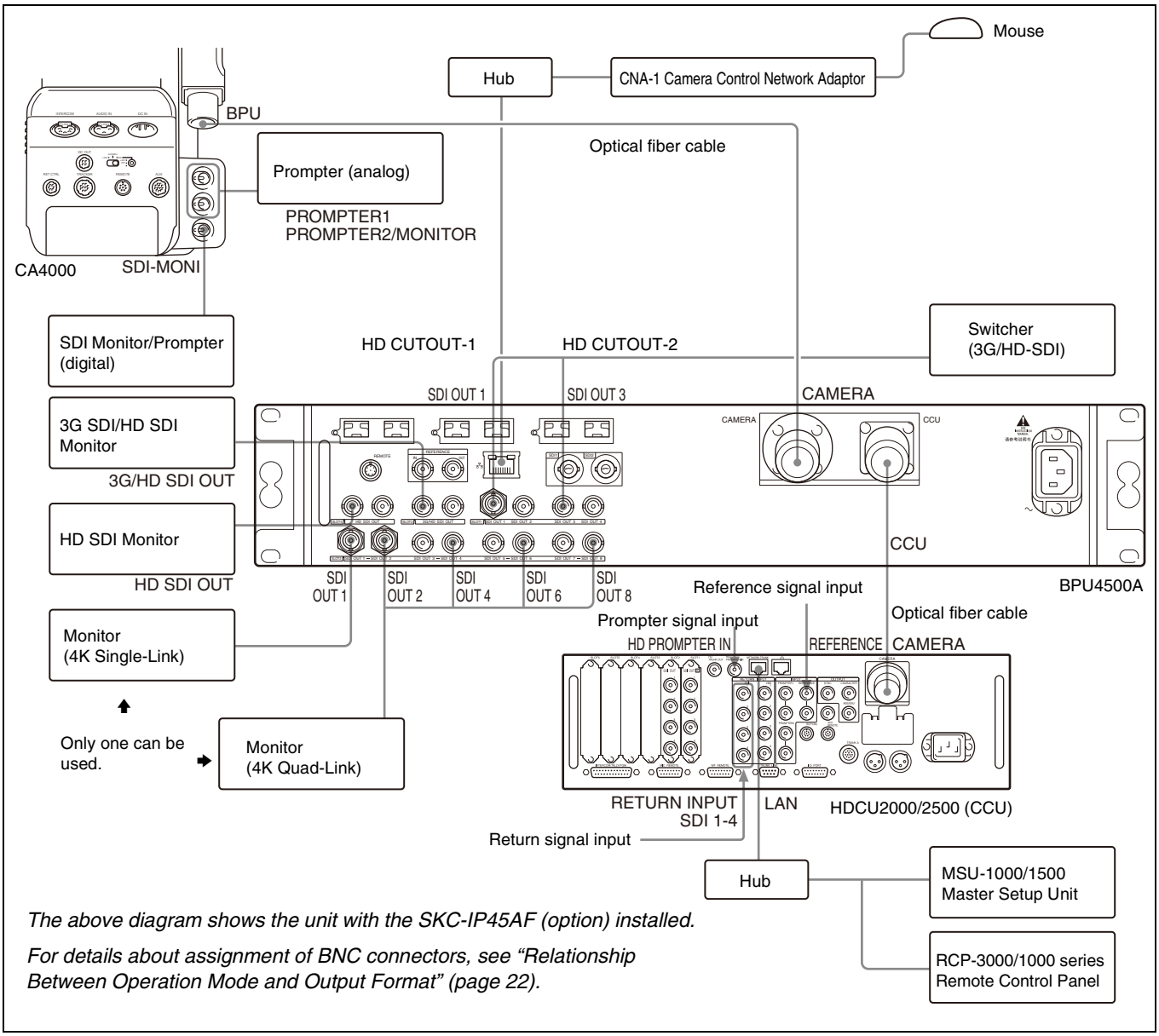
Also, a wire frame indicating the cut-out region can be displayed on the signal from SLOT3, SLOT4.

Note

12G/6G-SDI signal output is supported only from the following connectors.

- SDI OUT 1 connector of SLOT1
- SDI OUT 1 and SDI OUT 2 connectors of SLOT2

Connection example



The above diagram shows the unit with the SKC-IP45AF (option) installed.

For details about assignment of BNC connectors, see "Relationship Between Operation Mode and Output Format" (page 22).

Note

The HD CUTOUT signal is output as an SDI signal from SLOT1 only. IP is not output.

Settings

Device	Setting	Menu/Page	Item		Set value
BPU4500A	Image format settings	CONFIGURATION/<SYSTEM SETTINGS>	SYSTEM FORMAT	RESOLUTION	4096×2160
				FREQUENCY	Displays value set on CCU.
	Video output connector settings	CONFIGURATION/<OUTPUT FORMAT> Can also be set using the control panel.	SLOT1 to SLOT4		Video output format of each slot
	HD CUTOUT settings	CONFIGURATION/<OUTPUT FORMAT>	HD CUTOUT		ON
HDCU2000/2500	Image format settings	SYSTEM OPERATION/ <MULTI FORMAT>	FREQUENCY	HD	Frame frequency
			HD-SD DELAY		Frame (1F)
	Video output connector settings	SYSTEM OPERATION/ <OUTPUT FORMAT> Can also be set using the control panel.	SLOT1 to SLOT6		Video output format of each slot
	Transfer rate settings	CCU CONFIGURATION/ <PROMPT/TRUNK>	TRANSMIT		AUTO, HIGH BIT RATE

Device	Setting	Menu/Page	Item	Set value
CA4000	Prompter output connector settings	MAINTENANCE/<SDI-OUT>	SDI-MONI OUT	HD-PROMPT
		MAINTENANCE/<PROMPTER2 OUT>	OUTPUT	PROMPTER2

HFR Video System

The BPU4500A can transfer HFR video and perform signal processing for the following formats according to the connected camera.

Optional SZC-4002/4002M/4002W HFR Software must be installed to support formats other than 2× and 3× HD.

Yes: Supported, No: Not supported

HFR format	Connected device			
	Without option	SZC-4002 series installed		
	HDC4300, HDC-P43	PMW-F55	F65	HDC4300, HDC-P43
1080/59.94P (2×) 1)	Yes	No	No	No
1080/50P (2×) 1)	Yes	No	No	No
720/59.94P (2×) 2)	Yes	No	No	No
720/50P (2×) 2)	Yes	No	No	No
1080/59.94P (3×) 1)	Yes	No	No	No
1080/50P (3×) 1)	Yes	No	No	No
720/59.94P (3×) 2)	Yes	No	No	No
720/50P (3×) 2)	Yes	No	No	No
1080/59.94P (4×) 1)	No	Yes	No	Yes
1080/50P (4×) 1)	No	Yes	No	Yes
720/59.94P (4×) 2)	No	Yes	No	Yes
720/50P (4×) 2)	No	Yes	No	Yes
1080/59.94P (6×) 1)	No	Yes	No	Yes
1080/50P (6×) 1)	No	Yes	No	Yes
720/59.94P (6×) 2)	No	Yes	No	Yes
720/50P (6×) 2)	No	Yes	No	Yes
1080/59.94P (8×) 1)	No	No	No	Yes
1080/50P (8×) 1)	No	No	No	Yes
720/59.94P (8×) 2)	No	No	No	Yes
720/50P (8×) 2)	No	No	No	Yes
4096×2160/59.94P (2×)	No	No	Yes	Yes
4096×2160/50P (2×)	No	No	Yes	Yes

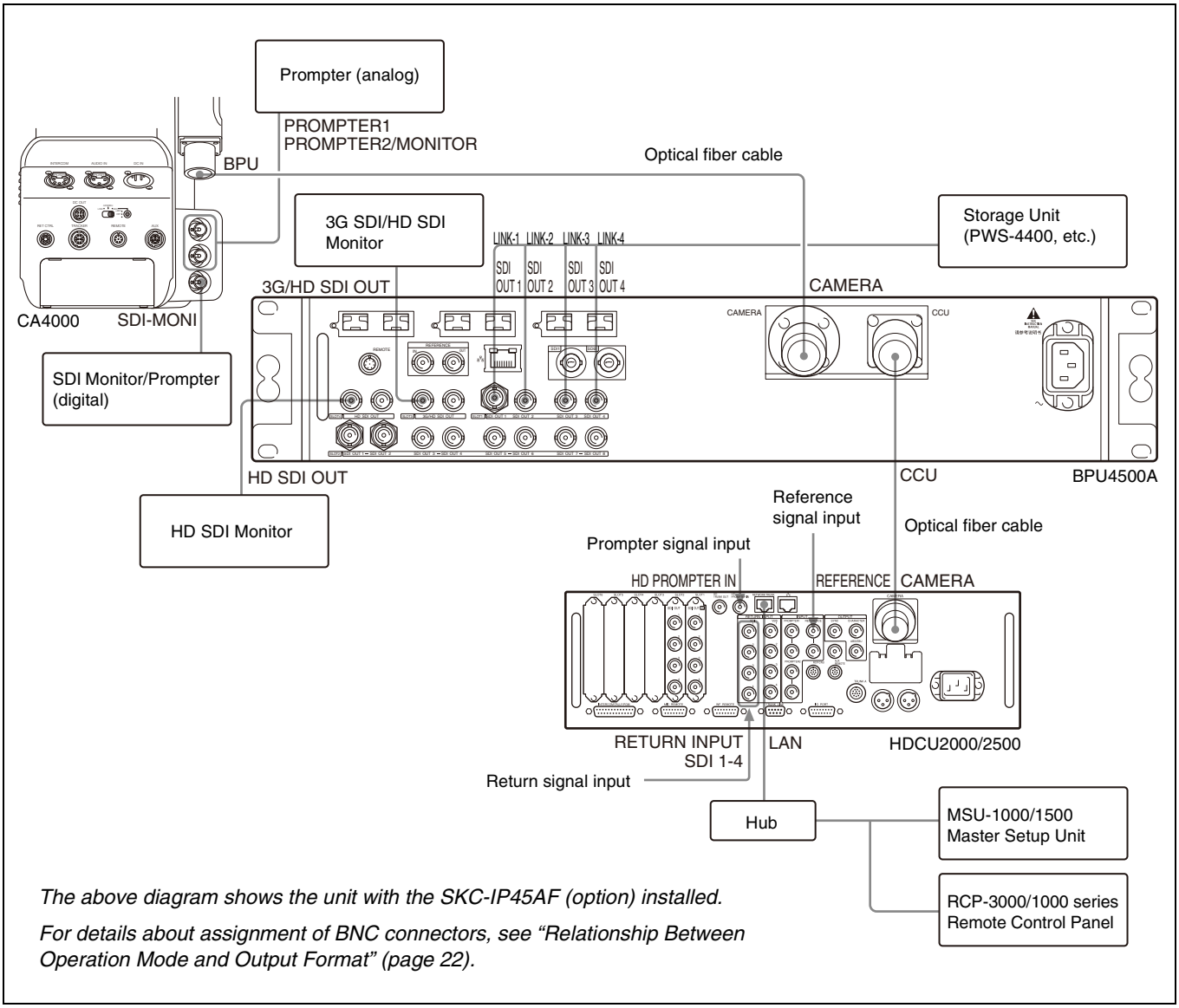
1) Interlaced output also supported in HD HFR 1080 format
2) Selectable only when the format is set to 720P by the camera control unit (such as the HDCU2000).

A 1× frame rate signal can be output at the same time from SLOT3, SLOT4, and the CCU.

Notes

- The HFR imaging function is dependent on the software version of the connected camera and camera adaptor. Check the compatibility of each device before use.
- When HD HFR is selected, the HFR video is output as an SDI signal only. IP is not output.

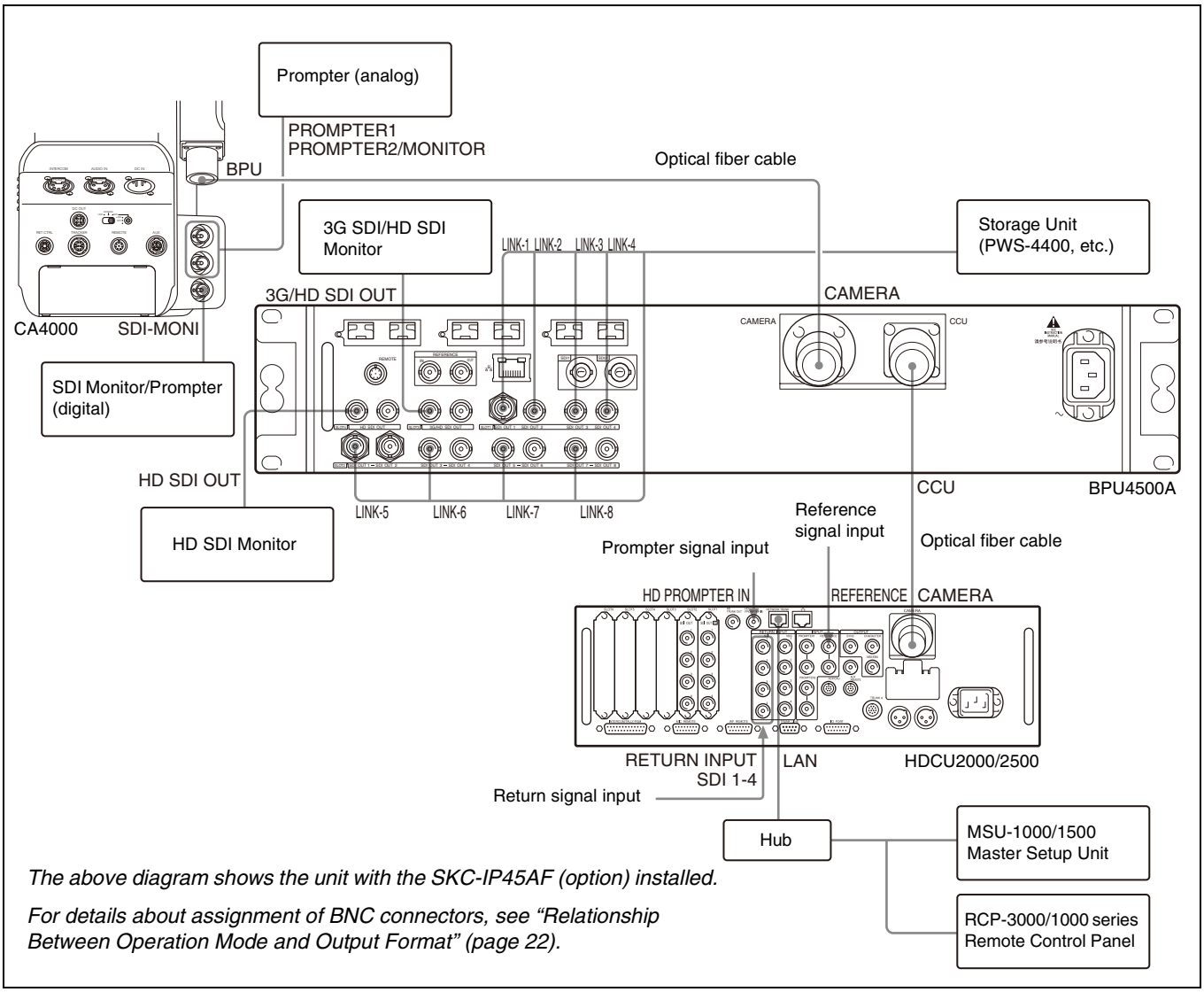
Connection example (4× HD)



The above diagram shows the unit with the SKC-IP45AF (option) installed.

For details about assignment of BNC connectors, see “Relationship Between Operation Mode and Output Format” (page 22).

Connection example (4K HFR)



The above diagram shows the unit with the SKC-IP45AF (option) installed.

For details about assignment of BNC connectors, see "Relationship Between Operation Mode and Output Format" (page 22).

Settings

Device	Setting	Menu/Page	Item		Set value
BPU4500A	Image format settings	CONFIGURATION/<SYSTEM SETTINGS>	SYSTEM FORMAT	RESOLUTION	4096×2160 (4K HFR) 1920×1080 (HD HFR)
				FREQUENCY	CCU frame frequency selectable from 2×/3×/4×/6×/8× (2× only in 4K HFR mode)
	Video output connector settings	CONFIGURATION/<OUTPUT FORMAT> Can also be set using the control panel.	SLOT1 to SLOT4		Video output format of each slot
HDCU2000/2500	Image format settings	SYSTEM OPERATION/<MULTI FORMAT>	FREQUENCY	HD	1× frame frequency
	Video output connector settings	SYSTEM OPERATION/<OUTPUT FORMAT> Can also be set using the control panel.	SLOT1 to SLOT6		Video output format of each slot
	Transfer rate settings	CCU CONFIGURATION/<PROMPT/TRUNK>	TRANSMIT		AUTO, HIGH BIT RATE
CA4000	Prompter output connector settings	MAINTENANCE/<SDI-OUT>	SDI-MONI OUT		HD-PROMPT
		MAINTENANCE/<PROMPTER2 OUT>	OUTPUT		PROMPTER2

HDR Video System

When a 4K format camera system is selected, the dynamic range of the camera can be enhanced to produce HDR video output from SLOT1 and SLOT2 by setting HDR MODE to Live HDR or CINEMA.
Set the HDR Look at the same time.
SLOT1 and SLOT2 can be configured separately, and can output HDR/SDR or 4K/HD.
The HD output from SLOT3, SLOT4, and the CCU is always SDR video.

HDR Look

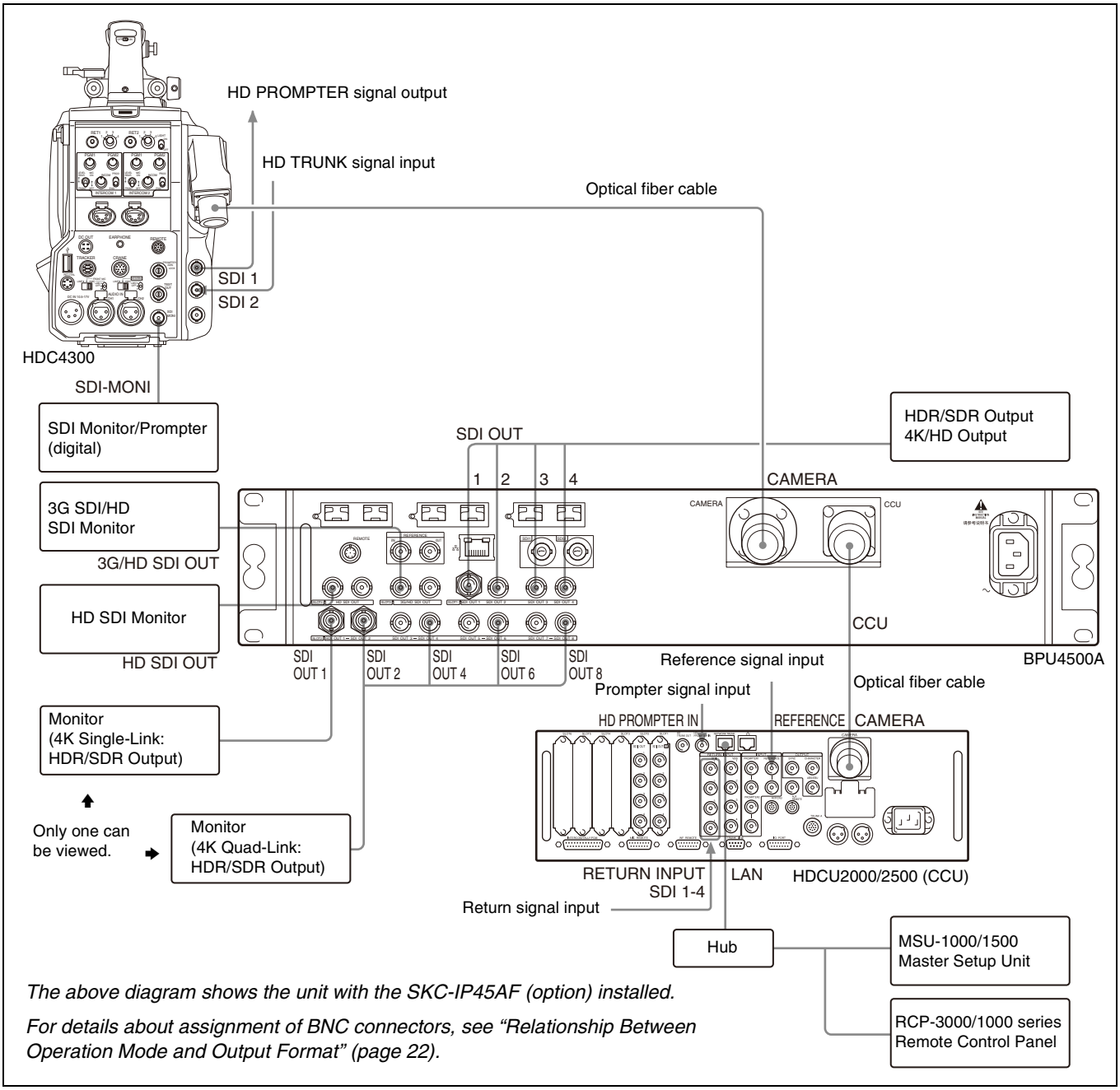
The HDR Look is a setting that determines the basic Look (visual performance, attractiveness) of the HDR video.
This is a basic setting that determines how the image captured by the camera will be displayed on the display as an HDR image. You can select from the following three settings.

Live: Characteristics based on the traditional Look derived from current SDR images. A powerful image with strong contrast and high color density. Wide dynamic range with substantial image brightness, capturing highlights without overexposure.

Mild: Based on the Live setting but with an overall milder image characteristic.

Natural: HLG original Look. Calm, gentle color density. The actual sensitivity setting is reduced, but with better S/N ratio. Natural can be selected only when the output signal OETF setting is HLG.

Connection example



The above diagram shows the unit with the SKC-IP45AF (option) installed.

For details about assignment of BNC connectors, see “Relationship Between Operation Mode and Output Format” (page 22).

Settings

Device	Setting	Menu/Page	Item	Set value
BPU4500A	Transfer to HDR mode	CONFIGURATION/<SYSTEM SETTINGS>	HDR MODE	LIVE HDR (Live HDR shooting, SR Live setting)
				CINEMA (HDR output for recording)
			HDR LOOK	Live
				Mild
				Natural
				(Enabled only when HDR MODE is set to LIVE HDR)
		CONFIGURATION/<OUTPUT FORMAT>	SLOT1, SLOT2 OETF	S-Log3 (SR Live recommended setting)
				HLG (Compliant with HLG format)
				S-Log2 (CINEMA mode only)

Relationship Between Operation Mode and Output Format

The names of output interfaces in Table 1 correspond to BNC connector assignments in Table 2 *(see page 25)*. Check the output interface for the format you want to use in Table 1, then check the signal assignments to BNC connectors in Table 2.

Table 1: Relationship between operation mode/signal format and output interface

Operation mode	Frame rate	Slot1/Slot2			Slot3	Slot4
		Output format	Output format		Output format	
4K	59.94	4K/59.94P [3]	Quad-Link-1	3G	1080/59.94P (3G), 1080/59.94i (1.5G), 720/59.94P (1.5G) [2]	1080/59.94i (1.5G), 720/59.94P (1.5G) [2]
		4K/59.94P [3]	Single-Link	12G		
		1080/59.94P		3G		
	50	4K/50P [3]	Quad-Link-1	3G	1080/50P (3G), 1080/50i (1.5G), 720/50P (1.5G) [2]	1080/50P (3G), 720/50P (1.5G) [2]
		4K/50P [3]	Single-Link	12G		
		1080/50P		3G		
	29.97	4K/29.97P [1] [3]	Dual-Link-2	3G	1080/29.97PsF (1.5G)	1080/29.97PsF (1.5G)
		4K/29.97PsF [1] [3]				
		4K/29.97P [1] [3]	Quad-Link-1	1.5G		
		4K/29.97PsF [1] [3]				
		4K/29.97P [3]	Single-Link	6G		
		1080/29.97PsF		1.5G		
	25	4K/25P [1] [3]	Dual-Link-2	3G	1080/25PsF (1.5G)	1080/25PsF (1.5G)
		4K/25PsF [1] [3]				
		4K/25P [1] [3]	Quad-Link-1	1.5G		
		4K/25PsF [1] [3]				
		4K/25P [3]	Single-Link	6G		
		1080/25PsF		1.5G		
	24	4K/24P [1] [3]	Dual-Link-2	3G	1080/24PsF (1.5G)	1080/24PsF (1.5G)
		4K/24PsF [1] [3]				
		4K/24P [1] [3]	Quad-Link-1	1.5G		
		4K/24PsF [1] [3]				
		4K/24P [3]	Single-Link	6G		
		1080/24PsF		1.5G		

Operation mode	Frame rate	Slot1/Slot2			Slot3	Slot4
		Output format	Output format		Output format	
4K	23.98	4K/23.98P [1) 3)]	Dual-Link-2	3G	1080/23.98PsF (1.5G)	1080/23.98PsF (1.5G)
		4K/23.98PsF [1) 3)]				
		4K/23.98P [1) 3)]	Quad-Link-1	1.5G		
		4K/23.98PsF [1) 3)]				
		4K/23.98P [3)]	Single-Link	6G		
		1080/23.98PsF		1.5G		
4K HFR	59.94 (2×)	3840×2160/59.94P (2×)	Octa-Link	3G	1080/59.94P (3G), 1080/59.94i (1.5G), 1080/59.94i (2×) (3G)	1080/59.94i (1.5G)
	50 (2×)	3840×2160/50P (2×)		3G	1080/50P (3G), 1080/50i (1.5G), 1080/50i (2×) (3G)	1080/50i (1.5G)
HD	59.94	1080/59.94P	Single-Link	3G	1080/59.94P (3G), 1080/59.94i (1.5G), 720/59.94P (1.5G) [2)]	1080/59.94i (1.5G), 720/59.94P (1.5G) [2)]
		1080/59.94i		1.5G		
		720/59.94P [2)]				
	50	1080/50P	Single-Link	3G	1080/50P (3G), 1080/50i (1.5G), 720/50P (1.5G) [2)]	1080/50i (1.5G), 720/50P (1.5G) [2)]
		1080/50i		1.5G		
		720/50P [2)]				
	29.97	1080/29.97PsF	Single-Link	1.5G	1080/29.97PsF (1.5G)	1080/29.97PsF (1.5G)
	25	1080/25PsF	Single-Link	1.5G	1080/25PsF (1.5G)	1080/25PsF (1.5G)
	24	1080/24PsF	Single-Link	1.5G	1080/24PsF (1.5G)	1080/24PsF (1.5G)
	23.98	1080/23.98PsF	Single-Link	1.5G	1080/23.98PsF (1.5G)	1080/23.98PsF (1.5G)
HD HFR	59.94 (8×)	1080/59.94P (8×)	Octa-Link	3G	1080/59.94P (3G), 1080/59.94i (1.5G), 720/59.94P (1.5G) [2)]	1080/59.94i (1.5G), 720/59.94P (1.5G) [2)]
		1080/59.94i (8×), 720/59.94P (8×) [2)]		1.5G		
			Quad-Link-2	3G		
	50 (8×)	1080/50P (8×)	Octa-Link	3G	1080/50P (3G), 1080/50i (1.5G), 720/50P (1.5G) [2)]	1080/50i (1.5G), 720/50P (1.5G) [2)]
		1080/50i (8×), 720/50P (8×) [2)]		1.5G		
			Quad-Link-2	3G		
	59.94 (6×)	1080/59.94P (6×)	Hexa-Link	3G	1080/59.94P (3G), 1080/59.94i (1.5G), 720/59.94P (1.5G) [2)]	1080/59.94i (1.5G), 720/59.94P (1.5G) [2)]
		1080/59.94i (6×), 720/59.94P (6×) [2)]		1.5G		
			Triple-Link-2	3G		
	50 (6×)	1080/50P (6×)	Hexa-Link	3G	1080/50P (3G), 1080/50i (1.5G), 720/50P (1.5G) [2)]	1080/50i (1.5G), 720/50P (1.5G) [2)]
		1080/50i (6×), 720/50P (6×) [2)]		1.5G		
			Triple-Link-2	3G		
	59.94 (4×)	1080/59.94P (4×)	Quad-Link-1	3G	1080/59.94P (3G), 1080/59.94i (1.5G), 720/59.94P (1.5G) [2)]	1080/59.94i (1.5G), 720/59.94P (1.5G) [2)]
		1080/59.94i (4×), 720/59.94P (4×) [2)]		1.5G		
			Dual-Link-2	3G		
	50 (4×)	1080/50P (4×)	Quad-Link-1	3G	1080/50P (3G), 1080/50i (1.5G), 720/50P (1.5G) [2)]	1080/50i (1.5G), 720/50P (1.5G) [2)]
		1080/50i (4×), 720/50P (4×) [2)]		1.5G		
			Dual-Link-2	3G		
	59.94 (3×)	1080/59.94P (3×)	Triple-Link-1	3G	1080/59.94P (3G), 1080/59.94i (1.5G), 720/59.94P (1.5G) [2)]	1080/59.94i (1.5G), 720/59.94P (1.5G) [2)]
		1080/59.94i (3×), 720/59.94P (3×) [2)]		1.5G		
	50 (3×)	1080/50P (3×)	Triple-Link-1	3G	1080/50P (3G), 1080/50i (1.5G), 720/50P (1.5G) [2)]	1080/50i (1.5G), 720/50P (1.5G) [2)]
		1080/50i (3×), 720/50P (3×) [2)]		1.5G		
	59.94 (2×)	1080/59.94P (2×)	Dual-Link-1	3G	1080/59.94P (3G), 1080/59.94i (1.5G), 720/59.94P (1.5G) [2)]	1080/59.94i (1.5G), 720/59.94P (1.5G) [2)]
		1080/59.94i (2×), 720/59.94P (2×) [2)]		1.5G		
			Single-Link	3G		
	50 (2×)	1080/50P (2×)	Dual-Link-1	3G	1080/50P (3G), 1080/50i (1.5G), 720/50P (1.5G) [2)]	1080/50i (1.5G), 720/50P (1.5G) [2)]
		1080/50i (2×), 720/50P (2×) [2)]		1.5G		
			Single-Link	3G		

Operation mode	Frame rate	Slot1/Slot2			Slot3	Slot4
		Output format	Output format		Output format	
HD CUTOUT	59.94	1080/59.94P	Perspective	3G	1080/59.94P (3G), 1080/59.94i (1.5G), 720/59.94P (1.5G) [2]	1080/59.94i (1.5G), 720/59.94P (1.5G) [2]
		1080/59.94i, 720/59.94P [2]		1.5G		
		1080/59.94P	Simple HD	3G		
		1080/59.94i, 720/59.94P [2]		1.5G		
		4K/59.94P [3]	4K (Quad-Link-1)	3G		
		4K/59.94P [3]	4K (Single-Link)	12G		
	50	1080/50P	Perspective	3G	1080/50P (3G), 1080/50i (1.5G), 720/50P (1.5G) [2]	1080/50i (1.5G), 720/50P (1.5G) [2]
		1080/50i, 720/50P [2]		1.5G		
		1080/50P	Simple HD	3G		
		1080/50i, 720/50P [2]		1.5G		
		4K/50P [3]	4K (Quad-Link-1)	3G		
		4K/50P [3]	4K (Single-Link)	12G		

1) When the division method is 2SI, the output is P (progressive). When the division method is SQD, the output is PsF.
2) 720P format is output only when the format of the connected CCU is 720P.
3) A Slot1/Slot2 output format of “4K” refers to 4096×2160 or 3840×2160.

Notes

- For 4K, the following IP output formats are supported (when SKC-IP45AF is installed).
  – SLOT1, SLOT2: 3840×2160 59.94P, 3840×2160 50P, 3840×2160 119.88P, 3840×2160 100P
  – SLOT3, SLOT4: 1920×1080 59.94i, 1920×1080 50i
- The HD HFR signal and HD CUTOUT signal are output as SDI signals only. IP is not output.

Figure 1: Slot numbers and BNC connectors/NMI-LAN connectors [1]

1) Requires the SKC-IP45AF Networked Media Interface Kit to use the NMI-LAN connectors.

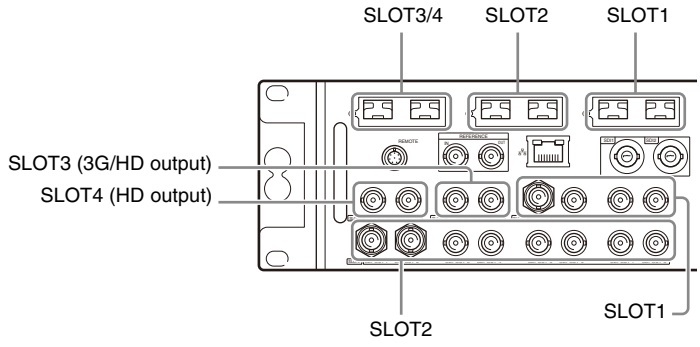


Table 2: Relationship between output interface and BNC connector/NMI-LAN connector assignment

The format of the signals output from the NMI-LAN connectors is the same as that for the SDI connectors.

MAIN Output		4K / HD HFR / HD CUTOUT							
		SLOT1				SLOT2			
Operation mode	Output format	SDI OUT 1	SDI OUT 2	SDI OUT 3	SDI OUT 4	SDI OUT 1-2[a]	SDI OUT 3-4[b]	SDI OUT 5- 6[c]	SDI OUT 7- 8[d]
4K	Quad-Link-1	Link-1	Link-2	Link-3	Link-4	Link-1	Link-2	Link-3	Link-4
	Dual-Link-1	Link-1	Link-2	Link-1	Link-2	Link-1	Link-2	Link-1	Link-2
	Single-Link	Link-1	–	–	–	Link-1	–	–	–
HD HFR	Octa-Link	Link-1	Link-2	Link-3	Link-4	Link-5	Link-6	Link-7	Link-8
	Quad-Link-1	Link-1	Link-2	Link-3	Link-4	Link-1	Link-2	Link-3	Link-4
	Quad-Link-2	Link-1/2	Link-3/4	Link-5/6	Link-7/8	Link-1/2	Link-3/4	Link-5/6	Link-7/8
	Hexa-Link	Link-1	Link-2	Link-3	(Link-4)	Link-4	Link-5	Link-6	(Link-3)
	Triple-Link-1	Link-1	Link-2	Link-3	(Link-2)	Link-1	Link-2	Link-3	(Link-2)
	Triple-Link-2	Link-1/2	Link-3/4	Link-5/6	(Link-3/4)	Link-1/2	Link-3/4	Link-5/6	(Link-3/4)
	Dual-Link-1	Link-1	Link-2	Link-1	Link-2	Link-1	Link-2	Link-1	Link-2
	Dual-Link-2	Link-1/2	Link-3/4	Link-1/2	Link-3/4	Link-1/2	Link-3/4	Link-1/2	Link-3/4
	Single-Link	Link-1/2	Link-1/2	Link-1/2	Link-1/2	Link-1/2	Link-1/2	Link-1/2	Link-1/2
4K HFR	Octa-Link	Link-1	Link-2	Link-3	Link-4	Link-5	Link-6	Link-7	Link-8
HD CUTOUT	Perspective	CUTOUT	CUTOUT	CUTOUT	CUTOUT	–	–	–	–
	Simple HD	CUTOUT 1	CUTOUT 2	CUTOUT 1	CUTOUT 2	–	–	–	–
	4K Quad-Link-1	–	–	–	–	Link-1	Link-2	Link-3	Link-4
	4K Single-Link	–	–	–	–	Link-1	–	–	–

a) SDI OUT 1 and SDI OUT 2 output the same data.
b) SDI OUT 3 and SDI OUT 4 output the same data.
c) SDI OUT 5 and SDI OUT 6 output the same data.
d) SDI OUT 7 and SDI OUT 8 output the same data.

Table 3: Relationship between operation mode and output format when SKC-4001 is installed

Operation mode	Frame rate	Output format				
		LAN1/LAN2				LAN3/LAN4
		HD1 [a]	HD2 [b]	HD3 [c]	4K1 [d]	4K2 [e]
4K	59.94	1080/59.94P, 1080/59.94i	1080/59.94i	–	4K/59.94P	4K/59.94P
		1080/59.94P, 1080/59.94i	1080/59.94i	1080/59.94P, 1080/59.94i	–	4K/59.94P
	50	1080/50P, 1080/50i	1080/50i	–	4K/50P	4K/50P
		1080/50P, 1080/50i	1080/50i	1080/50P, 1080/50i	–	4K/50P
HD	59.94	1080/59.94P, 1080/59.94i	1080/59.94i	1080/59.94P, 1080/59.94i	–	–
	50	1080/50P, 1080/50i	1080/50i	1080/50P, 1080/50i	–	–

Operation mode	Frame rate	Output format				
		LAN1/LAN2				LAN3/LAN4
		HD1 [a]	HD2 [b]	HD3	HD HFR [d]	HD HFR
HD HFR	59.94(4×)	1080/59.94P, 1080/59.94i	1080/59.94i	–	1080/59.94P(4×), 1080/59.94i(4×)	–
	50(4×)	1080/50P, 1080/50i	1080/50i	–	1080/50P(4×), 1080/50i(4×)	–
	59.94(3×)	1080/59.94P, 1080/59.94i	1080/59.94i	–	1080/59.94P(3×), 1080/59.94i(3×)	–
	50(3×)	1080/50P, 1080/50i	1080/50i	–	1080/50P(3×), 1080/50i(3×)	–
	59.94(2×)	1080/59.94P, 1080/59.94i	1080/59.94i	–	1080/59.94P(2×), 1080/59.94i(2×)	–
	50(2×)	1080/50P, 1080/50i	1080/50i	–	1080/50P(2×), 1080/50i(2×)	–

a) Linked to SLOT3 settings
b) Linked to SLOT4 settings
c) Enabled when SLOT1 is set for HD
d) Linked to SLOT1 settings
e) Linked to SLOT2 settings

Paint Functions in HDR MODE and BT.2020 COLOR MODE

Some paint functions are disabled, depending on the HDR MODE and BT.2020 COLOR MODE settings on the BPU4500A.
Disabled items can still be adjusted from the PAINT menu on the camera or RCP/MSU, but the settings are not applied to the HDR video that is output from SLOT1 and SLOT2.

Paint functions that can be adjusted when HDR MODE is selected

Paint function		HDR MODE setting		
		OFF	LIVE HDR (HDR output)	CINEMA (HDR output)
Gain	Step Gain	Yes		
	Master White Gain	Yes		
White	R/G/B	Yes		
	Balance/C Temp	Yes		
Gamma	ON/OFF	Yes	(Fixed OETF)	(Fixed OETF)
	R/G/B/Master	Yes	No	No
	Step Gamma	Yes	No	No
Black	R/G/B/Master	Yes	Yes	No
Black Gamma	ON/OFF	Yes	Yes	(Fixed OFF)
	Range	Yes	Yes	No
	R/G/B/Master	Yes	Yes	No
Flare	ON/OFF	Yes		
	R/G/B/Master	Yes		
Knee	ON/OFF	Yes	(Fixed OFF)	(Fixed OFF)
	Knee Point R/G/B/Master	Yes	No	No
	Knee Slope R/G/B/Master	Yes	No	No
	Auto Knee ON/OFF	Yes	No	No
	Auto Knee Point Limit	Yes	No	No
	Auto Knee Auto Slope	Yes	No	No
Detail	ON/OFF	Yes	Yes	(Fixed OFF)
	Level	Yes	Yes	No
	Limiter	Yes	Yes	No
	Crispening	Yes	Yes	No
	Level Dep	Yes	Yes	No
	H/V Ratio	Yes	Yes	No
	Frequency	Yes	Yes	No
	Mix Ratio	Yes	No	No
	W.Limiter	Yes	Yes	No
	B.Limiter	Yes	Yes	No
	Knee Apt ON/OFF	Yes	(Fixed OFF)	No
	Knee Apt Level	Yes	No	No
Shutter	Shutter ON/OFF	Yes		
	ECS ON/OFF	Yes		
	Shutter Level	Yes		
	ECS Level	Yes		

Paint function		HDR MODE setting		
		OFF	LIVE HDR (HDR output)	CINEMA (HDR output)
Skin Detail	ON/OFF	Yes	Yes	(Fixed OFF)
	Gate ON/OFF	Yes	No	No
	Zoom Link ON/OFF	Yes	Yes	No
	Natural Skin DTL ON/OFF	Yes	Yes	No
	Level	Yes	Yes	No
	Phase	Yes	Yes	No
	Width	Yes	Yes	No
	Saturation	Yes	Yes	No
	Y Limit	Yes	Yes	No
Saturation	ON/OFF	Yes	Yes	No
	Saturation	Yes	Yes	No
Matrix	ON/OFF	Yes	Yes	No
	User Matrix ON/OFF	Yes	Yes	No
	User Matrix R-G/G-B/B-R/R-B/G-R/B-G	Yes	Yes	No
	Multi Matrix ON/OFF	Yes	Yes	No
	Multi Matrix Phase	Yes	Yes	No
	Multi Matrix Hue/Saturation	Yes	Yes	No
	Adaptive Matrix ON/OFF	Yes	Yes	No
	Adaptive Matrix Level	Yes	Yes	No
	Preset Matrix ON/OFF	Yes	Yes	No
	Preset Matrix Preset	Yes	Yes	No
V Mod Saw	ON/OFF	Yes		
	R/G/B/Master	Yes		
Low Key Saturation	ON/OFF	Yes	Yes	No
	Range	Yes	Yes	No
	Low Key Sat	Yes	Yes	No
White Clip	ON/OFF	Yes	(Fixed OFF)	(Fixed OFF)
	R/G/B/Master	Yes	No	No
Knee Saturation	ON/OFF	Yes	(Fixed OFF)	(Fixed OFF)
	Knee Sat	Yes	No	No
Auto Iris	ON/OFF	Yes		
	Pattern	Yes		
	Level	Yes		
	APL Ratio	Yes		
	Iris Gain	Yes		
Gamma Table	Standard ON/OFF	Yes	(Fixed OETF)	(Fixed OETF)
	Standard	Yes	(Fixed OETF)	(Fixed OETF)
	Hyper ON/OFF	Yes	(Fixed OETF)	(Fixed OETF)
	Hyper	Yes	(Fixed OETF)	(Fixed OETF)
	Special ON/OFF	Yes	(Fixed OETF)	(Fixed OETF)
	Special	Yes	(Fixed OETF)	(Fixed OETF)
	User ON/OFF	Yes	(Fixed OETF)	(Fixed OETF)
	User	Yes	(Fixed OETF)	(Fixed OETF)
Noise Suppression	ON/OFF	Yes		
	Noise Sup	Yes		
Flicker Reduction	ON/OFF	Yes		
	Frequency	Yes		
	ACM/Standard	Yes		
Black Shading	R/G/B H/V Para/Saw	Yes		
White Shading	R/G/B H/V Para/Saw	Yes		

Paint function		HDR MODE setting		
		OFF	LIVE HDR (HDR output)	CINEMA (HDR output)
Black Set	Black Set	Yes		
OHB Matrix	ON/OFF	Yes	Yes	No
	User Matrix R-G/G-B/B-R/R-B/G-R/B-G	Yes	Yes	No
	Multi Matrix Phase	Yes	Yes	No
	Multi Matrix Hue/Saturation	Yes	Yes	No
ATW	ON/OFF	Yes		
	Speed	Yes		
ALAC	ON/OFF	Yes		

Paint functions that can be adjusted when BT.2020 COLOR MODE is selected

Paint function		BT.2020 COLOR MODE setting		
		BT.709	WIDE-F	WIDE-BC
Gain	Step Gain	Yes		
	Master White Gain	Yes		
White	R/G/B	Yes		
	Balance/C Temp	Yes		
Gamma	ON/OFF	Yes		
	R/G/B/Master	Yes		
	Step Gamma	Yes		
Black	R/G/B/Master	Yes		
Black Gamma	ON/OFF	Yes		
	Range	Yes		
	R/G/B/Master	Yes		
Flare	ON/OFF	Yes		
	R/G/B/Master	Yes		
Knee	ON/OFF	Yes		
	Knee Point R/G/B/Master	Yes		
	Knee Slope R/G/B/Master	Yes		
	Auto Knee ON/OFF	Yes		
	Auto Knee Point Limit	Yes		
	Auto Knee Auto Slope	Yes		
Detail	ON/OFF	Yes		
	Level	Yes		
	Limiter	Yes		
	Crispening	Yes		
	Level Dep	Yes		
	H/V Ratio	Yes		
	Frequency	Yes		
	Mix Ratio	Yes		
	W.Limiter	Yes		
	B.Limiter	Yes		
	Knee Apt ON/OFF	Yes		
	Knee Apt Level	Yes		
Shutter	Shutter ON/OFF	Yes		
	ECS ON/OFF	Yes		
	Shutter Level	Yes		
	ECS Level	Yes		

Paint function		BT.2020 COLOR MODE setting		
		BT.709	WIDE-F	WIDE-BC
Skin Detail	ON/OFF	Yes		
	Gate ON/OFF	Yes		
	Zoom Link ON/OFF	Yes		
	Natural Skin DTL ON/OFF	Yes		
	Level	Yes		
	Phase	Yes		
	Width	Yes		
	Saturation	Yes		
	Y Limit	Yes		
Saturation	ON/OFF	Yes		
	Saturation	Yes		
Matrix	ON/OFF	Yes	(Fixed OFF)	Yes
	User Matrix ON/OFF	Yes	No	Yes
	User Matrix R-G/G-B/B-R/R-B/G-R/B-G	Yes	No	Yes
	Multi Matrix ON/OFF	Yes	No	Yes
	Multi Matrix Phase	Yes	No	Yes
	Multi Matrix Hue/Saturation	Yes	No	Yes
	Adaptive Matrix ON/OFF	Yes	Yes	Yes
	Adaptive Matrix Level	Yes	Yes	Yes
	Preset Matrix ON/OFF	Yes	No	Yes
	Preset Matrix Preset	Yes	No	Yes
V Mod Saw	ON/OFF	Yes		
	R/G/B/Master	Yes		
Low Key Saturation	ON/OFF	Yes		
	Range	Yes		
	Low Key Sat	Yes		
White Clip	ON/OFF	Yes		
	R/G/B/Master	Yes		
Knee Saturation	ON/OFF	Yes		
	Knee Sat	Yes		
Auto Iris	ON/OFF	Yes		
	Pattern	Yes		
	Level	Yes		
	APL Ratio	Yes		
	Iris Gain	Yes		
Gamma Table	Standard ON/OFF	Yes		
	Standard	Yes		
	Hyper ON/OFF	Yes		
	Hyper	Yes		
	Special ON/OFF	Yes		
	Special	Yes		
	User ON/OFF	Yes		
	User	Yes		
Noise Suppression	ON/OFF	Yes		
	Noise Sup	Yes		
Flicker Reduction	ON/OFF	Yes		
	Frequency	Yes		
	ACM/Standard	Yes		
Black Shading	R/G/B H/V Para/Saw	Yes		
White Shading	R/G/B H/V Para/Saw	Yes		
Black Set	Black Set	Yes		

Paint function		BT.2020 COLOR MODE setting		
		BT.709	WIDE-F	WIDE-BC
OHB Matrix	ON/OFF	Yes	No	Yes
	User Matrix R-G/G-B/B-R/R-B/G-R/B-G	Yes	No	Yes
	Multi Matrix Phase	Yes	No	Yes
	Multi Matrix Hue/Saturation	Yes	No	Yes
ATW	ON/OFF	Yes		
	Speed	Yes		
ALAC	ON/OFF	Yes		

PWS-100NM1 Connection Settings

When a PWS-100NM1 IP Live System Manager station is connected, settings on the NETWORKED MEDIA INTERFACE page and IP LIVE SYSTEM MANAGER page must be configured in the CONFIGURATION menu and also on the PWS-100NM1.

SNMP agent settings

Item	Set value (defaults are underlined)	Meaning
Enable/Disable	Enable, **Disable**	
IP Address	0.0.0.0	Address for listening with fixed values set for both LAN1 and LAN2.
Port	**161**	Fixed value
sysName	–	ASCII code, up to 63 characters
sysContact	–	ASCII code, up to 63 characters
sysLocation	–	ASCII code, up to 63 characters
Sub Agent List	–	Setting not required
V1/V2c		
Enable/Disable	Enable, **Disable**	
Name	Enter name (**public**)	ASCII code, up to 32 characters
Version	V2C	Fixed value
Access Mode	READ_ONLY	Fixed value
ACL Network Address	**0.0.0.0** to 255.255.255.255	When set to 0.0.0.0, all access is denied.
ACL Prefix Length	**0** to 32	When set to 0, all access is denied.

Trap Settings dialog

Item	Set value (defaults are underlined)	Meaning
Enable/Disable	Enable, **Disable**	
Name	Enter name (**public**)	ASCII code, up to 32 characters
Network Interface Name	**LAN1**, LAN2	Specify the network to send trap notifications.
IP Address	**0.0.0.0** to 255.255.255.255	Specify the trap destination. SNMP walk/get from the specified trap destination is supported.
Port	**162**	
Version	V2C	Fixed value
Type	TRAP	Fixed value

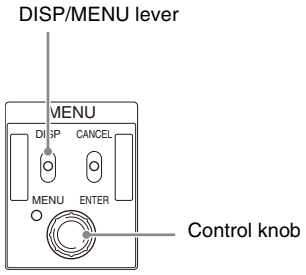
Status Display

The device and system status can be monitored using text characters superimposed on the output signal configured for the monitor output (M).

For details about checking and changing settings, see "Menu Settings" (page 31).

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 video camera settings status is displayed.
Turn the control knob to change the displayed page.

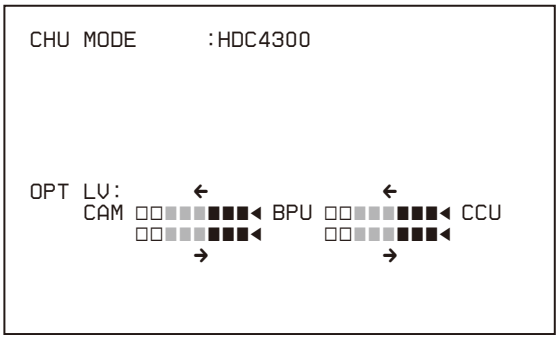
To exit the status screen

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

Status Display Screen

The optical level status can be monitored on the status display screen.

Optical level status



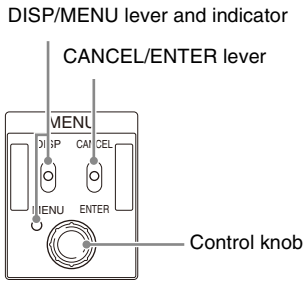
CAM ← BPU: Signal level on the BPU connector of CA unit.
CAM → BPU: Signal level on the CA connector of BPU unit.
BPU ← CCU: Signal level on the CCU connector of BPU unit.
BPU → CCU: Signal level on the CAMERA connector of CCU unit.

Menu Settings

The device and system status can be monitored and settings can be modified using the menu displayed in the video output configured for the monitor output (M).

Changing Settings using the Menu

The menu screen is controlled using the knob and levers in the MENU control block on the front panel.
Pushing the control knob and setting the CANCEL/ENTER lever to ENTER have the same function.

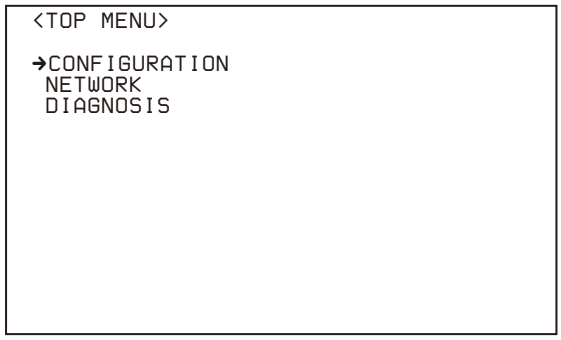


To display a menu page

Set the DISP/MENU lever to the MENU position.
When first powered on, the TOP MENU page is displayed.

To display the TOP MENU screen

In menu display mode, turn the control knob to move the ➡ cursor to TOP in the upper right corner of the menu page, then press the control knob.
The TOP menu showing the menu configuration is displayed.



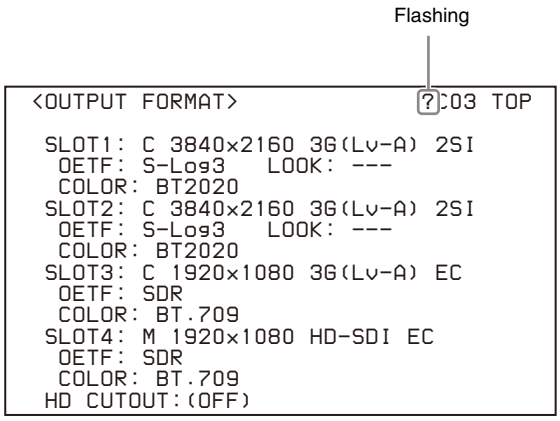
Menu	Description
CONFIGURATION	BPU configuration settings.
NETWORK	Unit network configuration settings.
DIAGNOSIS	Displays the device status.

To select a menu from the TOP MENU

Turn the control knob to move the ➡ cursor to the desired menu and push the knob.
The last accessed page in the selected menu will be displayed.

To change page

1 Check that the ➡ cursor is pointing to the page number then push the control knob.
The ➡ cursor changes to a flashing ? (question mark).



2 Turn the control knob to flip through the pages, and push the knob when the desired page is displayed.
The ? (question mark) changes back to ➡. Items on the page can now be selected.

To set a menu item

If ? (question mark) is displayed to the left of the page number, push the control knob to change to the ➡ cursor. Settings on the displayed page can now be modified.

1 Turn the control knob to move the ➡ cursor to the desired item and push the knob.
The ➡ cursor 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 CANCEL before pushing the control knob to restore the original setting.

To cancel menu changes
Set the DISP/MENU switch to MENU to turn off the menu screen display.
The menu setting operation can be restarted by setting the DISP/MENU switch to MENU again.

3 Push the control knob.
The ? (question mark) changes back to ➡, and the item setting is registered.

4 To change other settings on the same menu page, repeat steps 1 to 3.

To set a menu item with multiple input fields

Some menus have items with multiple input fields.
If you press the control knob when the ➡ cursor is pointing to an item with multiple input fields, the input fields are displayed for setting each input field.
The cursor is moved by turning the control knob.

1 Turn the control knob to move the ➡ cursor to the desired item and push the knob.
The ➡ cursor changes to a flashing ∗ (asterisk). The input fields and ➡ cursor are displayed.

2 Turn the control knob to move the ➡ cursor to the desired input field and push the knob.
The ➡ cursor changes to a flashing ? (question mark).

3 Turn the control knob to change the setting.

To cancel a changed setting in an input field
Set the CANCEL/ENTER lever to CANCEL before pushing the control knob to restore the original setting of the input field. Other changed input fields for the item are not restored to their previous setting.

To cancel menu changes
Set the DISP/MENU switch to MENU to turn off the menu screen display.
The menu setting operation can be restarted by setting the DISP/MENU switch to MENU again.

4 Push the control knob.
The ? (question mark) changes back to ➡, and the input field setting changes.

5 Repeat steps 2 to 4 to change other input fields.

6 Turn the control knob to move the ➡ cursor to END and push the knob.
The ∗ (asterisk) changes back to ➡, and all the changes for the item setting are applied.

To cancel all settings
Move the ➡ cursor to ESC and push the control knob.
The ∗ (asterisk) changes back to ➡, and all the changes for the item are discarded.

To exit the menu

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

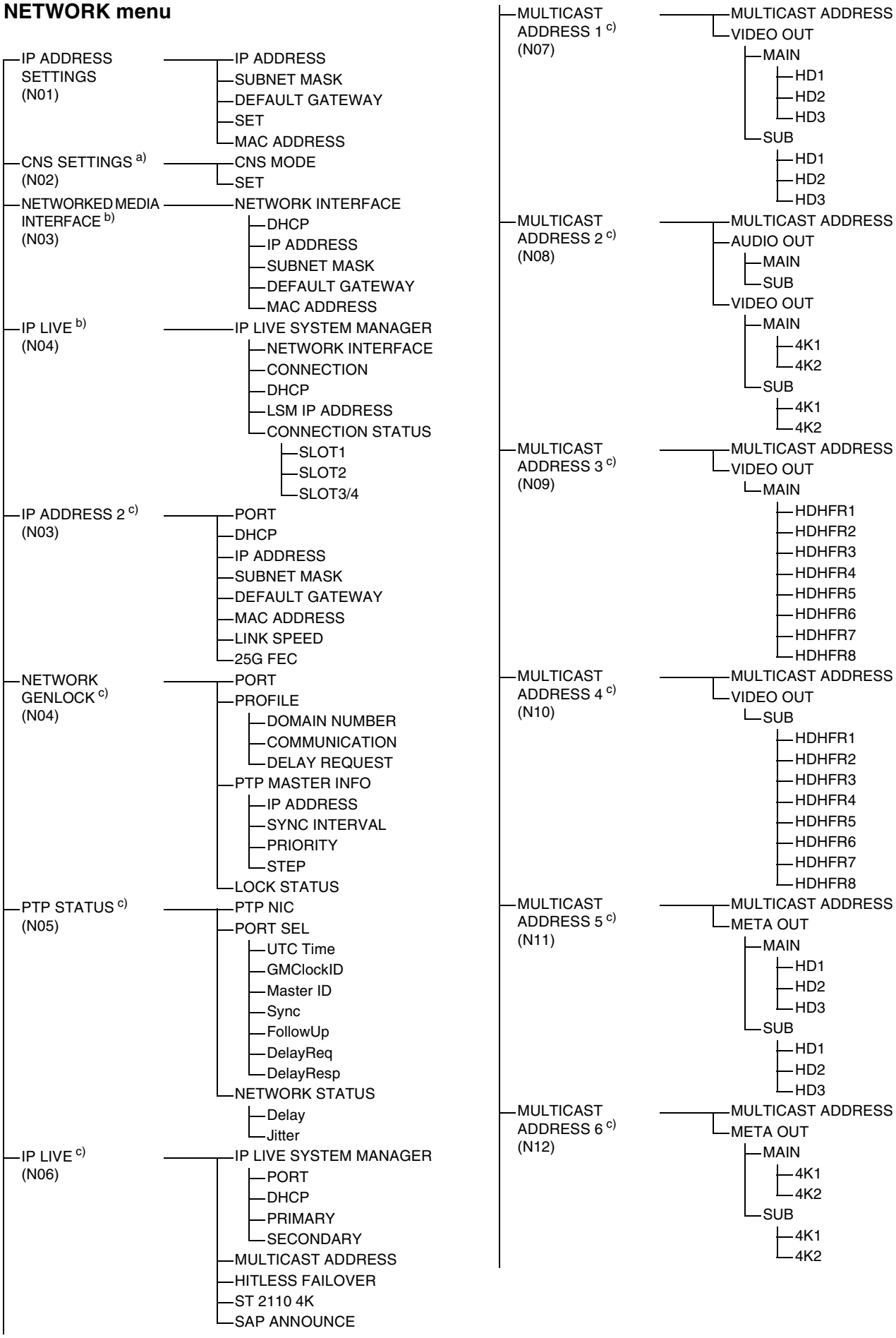
Menu Tree

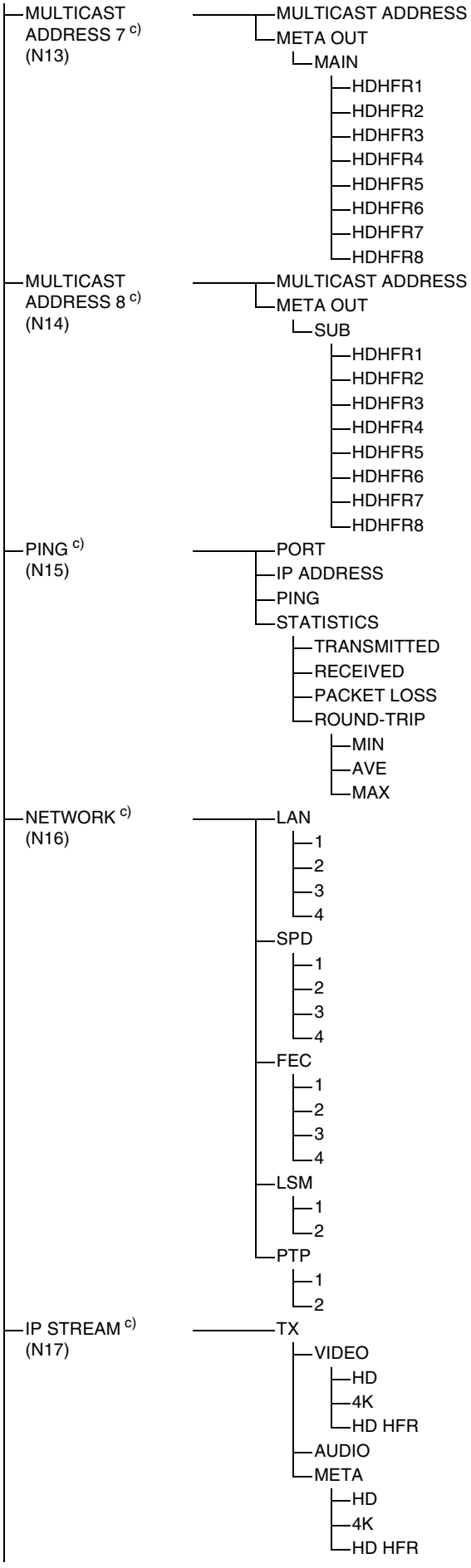
CONFIGURATION menu

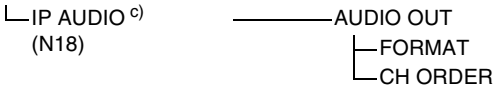
- BARS (C01)
  - BARS TYPE
    - SDR
    - HDR
  - MOVING SYMBOL
    - TYPE
    - SIZE
  - 2SI DIAMOND MARKER
- SYSTEM SETTINGS (C02)
  - SYSTEM FORMAT
    - RESOLUTION
    - FREQUENCY
    - CCU
  - BT.2020 COLOR MODE
  - HDR MODE
    - SDR GAIN
    - HDR CONTRAST
    - HDR BLACK OFFSET
    - HDR LOOK
    - COLOR SPACE
    - OETF
    - COLOR TEMP
- OUTPUT FORMAT (C03)
  - SLOT1
    - OETF
    - LOOK
    - COLOR
  - SLOT2
    - OETF
    - LOOK
    - COLOR
  - SLOT3
    - OETF
    - COLOR
  - SLOT4
    - OETF
    - COLOR
  - HD CUTOUT
- GENLOCK (C04)
  - REFERENCE
  - GENLOCK [a]
    - STATUS [a]
    - FORMAT [a]
    - PHASE V [a]
    - PHASE H [a]
  - SYNC OUT
  - VIDEO OUT [b]
    - PHASE V [b]
    - PHASE H [b]
- RETURN (C05)
  - SDI1
  - SDI2
  - FRAME SYNCHRO
  - HD PROMPTER
- DATE (C06)
  - DATE/TIME
    - DATE
    - TIME
  - FILE TIMESTAMP FORMAT
    - FILE_TIMESTAMP
- CHU MODE (C07)
  - CURRENT
    - PMW-F55
    - F65(1×)
    - F65(2×)
    - HDC4300/HDC-P43
- TRANSMIT (C08)
  - CCU TRANSMIT
  - CHU TRANSMIT
  - CAM OPTICAL SIGNAL
- OTHERS (C09)
  - ASSIGNABLE SWITCH
  - HD DOWNCONV FILTER
  - CHARACTER LEVEL
  - 2× MODE(HD)
  - CLEAR BPU SETTINGS
  - RETURN VF
  - CHANNEL MARKER
  - HDR NORMAL SPEED OUT
  - HDR LOOK SELECTION
- OPTION KEY (C10)
  - READ(USB→CAM)
  - INSTALLED OPTION
- HD CUTOUT (C11)
  - HD CUTOUT
  - MODE
  - CUTOUT CH
    - CENTER H
    - CENTER V
    - ZOOM
  - CAMERA TILT
  - CAMERA ROLL
  - FOCAL LENGTH
- HFR PAINT OFFSET
  - DETAIL LEVEL
  - DETAIL CRISP
- SR Live METADATA(OUTPUT) (C13)
  - META
  - 1st F
  - 2nd F

a) Not displayed when a CCU is connected.
b) Displayed when a CCU is connected.

NETWORK menu







a) Not displayed when a CCU is connected.
b) Displayed only when the SKC-IP45AF Networked Media Interface Kit is installed.
c) Displayed only when the SKC-4001 ST 2110 Interface Kit is installed.

DIAGNOSIS menu

- OPTICAL LEVEL (D01)
  - OPTICAL LEVEL
  - CABLE LENGTH
- BOARD STATUS (D02)
  - SY
  - DVP
  - TX
  - DPR1
  - DPR2
  - NET [a]
- CONNECTION STATUS (D03)
  - CHU
    - DOCKING
    - POWER
    - CABLE
    - COMM
  - CSA
    - CABLE
    - COMM
  - CCU
    - CABLE
    - COMM
- ROM VERSION (D04)
  - CAMERA APP
  - OS
  - UPDATER
  - SY
  - TX
  - DEC
  - DPR1
  - DPR2
  - 4K-POST
  - 2K-POST
  - SDP
- ROM VERSION 2 (D05)
  - DPR1 (SUB)
  - DPR2 (SUB)
  - NMI LSI [a]
  - 4K-NET [a]
  - 2K-NET [a]
  - NIF [b]
  - NET1-A [b]
  - NET1-B [b]
  - NET2-A [b]
  - NET2-B [b]
- SERIAL NO. (D06)
  - MODEL
  - NO
  - SKC-4001 [b]
- IP ADDRESS (D07)
  - IP ADDRESS
  - SUBNET MASK
  - DEFAULT GATEWAY
  - MAC ADDRESS
- LAN STATUS (D08)
  - AUTO NEGOTIATION
  - CONNECTION SPEED
  - DUPLEX MODE
  - LINK CONDITION
- CNS STATUS (D09)
  - CNS MODE
- 12G/6G-SDI STATUS
  - SDI OUT
  - STATUS
- BOARD STATUS (SKC-4001) [b] (D11)
  - IF
    - FAN1
    - FAN2
    - FAN3

a) Displayed only when the SKC-IP45AF Networked Media Interface Kit is installed.
b) Displayed only when the SKC-4001 ST 2110 Interface Kit is installed.

Menu List

Legend

The following conventions are used in the menu tables.
Settings <u>ON</u>, <u>OFF</u>, <u>0</u>, etc.: Factory default settings shown underlined.
ENTER to execute: Execute by pushing the control knob or setting the CANCEL/ENTER lever to the ENTER position.

CONFIGURATION menu

Page name Page No.	Item	Set value	Description
<BARS> C01	BPU BARS	**<u>OFF</u>**, ON	BPU color bar output on/off setting
	BARS TYPE		
	SDR	**<u>SDR-LOOK BAR 16:9 (100%)</u>**, 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	SDR output color bars type When connected to a CCU, it is set by the CCU and cannot be modified from the BPU menu.
	HDR	**<u>SDR-LOOK BAR(100%)</u>**, SDR-LOOK BAR(75%), HDR BAR, SDI CHECK FIELD, Y-RAMP, Y/C-RAMP	HDR output color bars type SDR-LOOK BAR(100%): Same appearance as 100% level color bars for SDR when viewed on an HDR-compatible display SDR-LOOK BAR(75%): Same appearance as 75% level color bars for SDR when viewed on an HDR-compatible display HDR BAR: Color bars for HDR (displays HDR LOOK BAR(75%) color bars when OETF is set to S-Log2)
	MOVING SYMBOL	ON, **<u>OFF</u>**	Sets moving symbol on the color bar screen.
	TYPE	**<u>0</u>**, 1, 2	Selects the symbol type.
	SIZE	**<u>SMALL</u>**, LARGE	Selects the symbol size.
	2SI DIAMOND MARKER	**<u>OFF</u>**, ON	Sets diamond marker superimposition on the color bar for 4K 2-sample interleave output. See *"4K 2SI diamond marks" (page 43)*.
<SYSTEM SETTINGS> C02	SYSTEM FORMAT		System format settings (The selectable system format options vary depending on the selected camera head setting.)
	RESOLUTION	**<u>4096×2160</u>**, 1920×1080	
	FREQUENCY	**<u>59.94</u>**, 50, 59.94(2×), 50(2×), 29.97, 25, 24, 23.98, 59.94(3×), 50(3×), 59.94(4×), 50(4×), 59.94P(6×), 50(6×), 59.94(8×), 50(8×)	
	CCU		Displays the CCU output format.
		1920×1080, 1280×720	Video resolution setting for transfer to CCU (display only)
	BT.2020 COLOR MODE	WIDE-F, **<u>WIDE-BC</u>**	Color space setting when COLOR is set to BT.2020 for SLOT1 and SLOT2 on the <OUTPUT FORMAT> page. WIDE-F: Color space setting close to BT.2020, which maintains compatibility with CINEMA mode. WIDE-BC: Color space setting close to BT.2020, which maintains compatibility with BT.709.

Page name Page No.	Item	Set value	Description
<SYSTEM SETTINGS> C02	HDR MODE	**OFF**, LIVE HDR, CINEMA	OFF: Normal SDR shooting mode. LIVE HDR: Enhances the video dynamic range on the camera, and outputs adjusted HDR video. CINEMA: Enhances the dynamic range on the camera, and outputs video for recording.
	SDR GAIN	**0.0** to –15.0 dB	Gain setting applied to SDR output Enabled in LIVE HDR mode only.
	HDR CONTRAST	100 to 566 %	HDR output contrast maintained by setting SDR GAIN (display only) Enabled in LIVE HDR mode only.
	HDR BLACK OFFSET	–99 to 99, **0**	HDR output black offset Enabled in LIVE HDR mode only.
	HDR LOOK	**Live**, Mild, Natural	Selectable only when HDR MODE is set to LIVE HDR See *"HDR Look" (page 21)*.
	COLOR SPACE	**NORMAL**, S-GAMUT, SGAMUT3, S-GAMUT3.CINE, ---	Selects the color space. OETF is automatically set according to the color space selection. Available only in CINEMA mode with the camera head set to PMW-F55, F65(1×), or F65(2×) on the <CHU MODE> page. NORMAL: (S-Log2) S-GAMUT: (S-Log2) SGAMUT3: (S-Log3) S-GAMUT3.CINE: (S-Log3)
	OETF	S-Log2, S-Log3, ---	OETF setting (display only) Available only in CINEMA mode with the camera head set to PMW-F55, F65(1×), or F65(2×) on the <CHU MODE> page.
	COLOR TEMP	**VARIABLE**, 3200K, 4300K, 5500K, ---	Selects the color temperature. 3200K/4300K/5500K options are selectable when COLOR SPACE is set to NORMAL. Available only in CINEMA mode with the camera head set to PMW-F55, F65(1×), or F65(2×) on the <CHU MODE> page.

Page name Page No.	Item	Set value	Description
<OUTPUT FORMAT> C03	SLOT1		SLOT1 output format settings
		3840×2160, 4096×2160, 1920×1080, 1280×720	SLOT1 output video resolution setting
		HD-SDI, 3G(Lv-B), **3G(Lv-A)**, 6G, 12G	SLOT1 video output system setting
		59i, **59P**, 50i, 50P	SLOT1 output frequency and scanning method setting in HFR mode (displayed only for HD HFR format)
		(8×), (6×), (4×), **(3×)**, (2×)	SLOT1 speed setting in HFR mode (displayed only for HD HFR format)
		SQD, **2SI**	SLOT1 4K video division output method setting (displayed only for 4K format) SQD: Square Division (quadrants) 2SI: 2-Sample Interleave
	OETF	**SDR**, S-Log2, S-Log3, HLG	SLOT1 OETF setting When HDR MODE is OFF: Fixed to SDR When HDR MODE is LIVE HDR: SDR, S-Log3, or HLG selectable When HDR MODE is CINEMA: SDR, S-Log2, or S-Log3 selectable (Disabled when the camera head is set to PMW-F55, F65(1×), or F65(2×) on the <CHU MODE> page. Displays the OETF setting of the <SYSTEM SETTINGS> page.)
	LOOK	Live, Mild, Natural	Displays the SLOT1 Look setting Displays “---” when OETF is set to SDR
	COLOR	**BT.709**, BT.2020	SLOT1 color space setting Available only when the format is 4K or HD HDR. Cannot be modified when all of the following conditions are satisfied. Displays the COLOR SPACE setting of the <SYSTEM SETTINGS> page. • HDR MODE is CINEMA • Camera head set to PMW-F55, F65(1×), or F65(2×) on the <CHU MODE> page • COLOR SPACE setting of the <SYSTEM SETTINGS> page set to other than NORMAL

Page name Page No.	Item	Set value	Description
<OUTPUT FORMAT> C03	SLOT2		SLOT2 output format settings
		3840×2160, 4096×2160, 1920×1080, 1280×720	SLOT2 output video resolution setting
		HD-SDI, 3G(Lv-B), **3G(Lv-A)**, 6G, 12G	SLOT2 video output system setting
		59i, **59P**, 50i, 50P	SLOT2 output frequency and scanning method setting in HFR mode (displayed only for HD HFR format)
		(8×), (6×), (4×), **(3×)**, (2×)	SLOT2 speed setting in HFR mode (displayed only for HD HFR format)
		SQD, **2SI**	SLOT2 4K video division output method setting (displayed only for 4K format) SQD: Square Division (quadrants) 2SI: 2-Sample Interleave
	OETF	**SDR**, S-Log2, S-Log3, HLG	SLOT2 OETF setting When HDR MODE is OFF: Fixed to SDR When HDR MODE is LIVE HDR: SDR, S-Log3, or HLG selectable When HDR MODE is CINEMA: SDR, S-Log2, or S-Log3 selectable (Disabled when the camera head is set to PMW-F55, F65(1×), or F65(2×) on the <CHU MODE> page. Displays the OETF setting of the <SYSTEM SETTINGS> page.)
	LOOK	Live, Mild, Natural	Displays the SLOT2 Look setting Displays "---" when OETF is set to SDR
	COLOR	**BT.709**, BT.2020	SLOT2 color space setting Available only when the format is 4K or HD HDR. Cannot be modified when all of the following conditions are satisfied. Displays the COLOR SPACE setting of the <SYSTEM SETTINGS> page. • HDR MODE is CINEMA • Camera head set to PMW-F55, F65(1×), or F65(2×) on the <CHU MODE> page • COLOR SPACE setting of the <SYSTEM SETTINGS> page set to other than NORMAL
	SLOT3		SLOT3 output format settings
		C, **M** (M:Monitor, C:Clean)	When set to M, character text and markers are output on SLOT3.
		1920×1080, 1280×720	SLOT3 output video resolution setting
		HD-SDI, 3G(Lv-B), 3G(Lv-A)	SLOT3 video output system setting
		59i, **59P**, 50i, 50P	SLOT3 output frequency and scanning method setting in HFR mode (displayed only for HD HFR and 4K HFR formats)
		__ **(blank)**, (2×)	SLOT3 2× output frame rate speed setting. Selectable only when CURRENT in <CHU MODE> (C07) is set to F65(2×) (displayed only for HD HFR format).
		EC, LB	Edge Crop (EC) and Letter Box (LB) setting. When CCU is set to 720P, this is fixed to EC displayed in parentheses (displayed only for 4K format).
	OETF	SDR	SLOT3 OETF setting (display only)
	COLOR	BT.709	SLOT3 color space setting (display only)

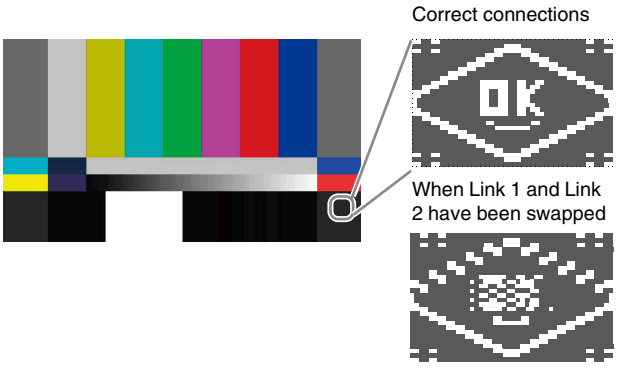
Page name Page No.	Item	Set value	Description
<OUTPUT FORMAT> C03	SLOT4		SLOT4 output format settings
		1920×1080, 1280×720	SLOT4 output video resolution setting (display only)
		59i, 50i	SLOT4 output frequency and scanning method setting in HFR mode (displayed only for HD HFR and 4K HFR formats)
		EC, LB	Edge Crop (EC) and Letter Box (LB) setting. Linked to the setting for SLOT3 (displayed only for 4K format).
	OETF	SDR	SLOT4 OETF setting (display only)
	COLOR	BT.709	SLOT4 color space setting (display only)
	HD CUTOUT	**OFF**, ON	HD CUTOUT on/off setting. Available only when SZC-2001/2001M/2001W is installed.
<GENLOCK> C04	REFERENCE	CCU, INTERNAL, GENLOCK	Reference sync signal in use (display only)
	GENLOCK		Setting and status of reference sync signal input on REFERENCE IN connector (not displayed when a CCU is connected)
	STATUS		Status of reference sync signal input on REFERENCE IN connector (display only).
	FORMAT		Format of reference sync signal input on REFERENCE IN connector (display only).
	PHASE V	–1024 to +1023, **0**	Output video V phase relative to the input reference sync signal (delay represented by positive values)
	PHASE H	–1700 to +1700, **0**	Output video H phase relative to the input reference sync signal (delay represented by positive values)
	SYNC OUT	**SD SYNC**, HD SYNC, (THROUGH)	SD composite sync signal and HD tri-level sync signal selector setting. (THROUGH is selected when a signal is input on the REFERENCE IN connector.)
	VIDEO OUT		Video output phase adjustment (displayed when connected to CCU).
	PHASE V	–32 to +32, **0**	SLOT1 to SLOT4 output video V phase relative to the internal sync signal (delay represented by positive values) (0 (fixed) for 4K HFR)
	PHASE H	–256 to +255, **0**	SLOT1 to SLOT4 output video H phase relative to the internal sync signal (delay represented by positive values)
<RETURN> C05	SDI1	1080/59.94i(PsF), 1080/59.94P, 1080/50i(PsF), 1080/50P, NO SIGNAL, ---	Format of video signal input on SDI1 connector (display only) ---: When a CCU is connected Enabled only for extension mode connection
	SDI2	1080/59.94i(PsF), 1080/59.94P, 1080/50i(PsF), 1080/50P, NO SIGNAL, ---, HD PROMPTER	Format of video signal input on SDI2 connector (display only) ---: When a CCU is connected HD PROMPTER: HD prompter is on. Enabled only for extension mode connection
	FRAME SYNCHRO	**OFF**, ON, ---	Return signal frame synchronizer on/off setting
	HD PROMPTER	**OFF**, ON, ---	HD prompter on/off setting Enabled only for extension mode connection
<DATE> C06	DATE/TIME		
	DATE	2013.**.** to 20**.**.**	Date setting and display
	TIME	00:00 to 23:59	Time setting and display
	FILE TIMESTAMP FORMAT		Y: Year Mn: Month (numeric) M: Month (English abbreviation) D: Day
	FILE_TIMESTAMP	1 Y/Mn/D, 2 Mn/D, 3 D/M/Y 4 D/M, **5 M/D/Y**, 6 M/D	

Page name Page No.	Item	Set value	Description
<CHU MODE> C07	CURRENT	PMW-F55, F65(1×), F65(2×), **HDC4300/HDC-P43**	Currently selected camera head setting
	PMW-F55	ENTER to execute	Sets camera head setting to PMW-F55.
	F65(1×)	ENTER to execute	Sets camera head setting to F65 (normal speed).
	F65(2×)	ENTER to execute	Sets camera head setting to F65 (2× frame rate). Enabled only when the SZC-4002 is installed.
	HDC4300/ HDC-P43	ENTER to execute	Sets camera head setting to HDC4300 or HDC-P43.
<TRANSMIT> C08	CCU TRANSMIT	**HIGH BIT RATE**, HD-SDI	Sets the type of CCU connected. HIGH BIT RATE: CCU that supports high bit rate. HD-SDI: CCU that does not support high bit rate. CCUs with 1.5 Gbps optical transmission are not supported.
	CHU TRANSMIT	NORMAL	Transfer method of connected camera (display only)
	CAM OPTICAL SIGNAL	**OFF**, ON	Sets optical transfer with the camera in an extension mode connection (available only when HDC-P43 is connected)
<OTHERS> C09	ASSIGNABLE SWITCH	**OFF**, BPU BARS	Assignable button function select
	HD DOWNCONV FILTER	**1** to 4, 1(V:0.3), 1(V:0.6)	4K video signal to HD signal down-converter filter type
	CHARACTER LEVEL	1 to **5**	Menu character contrast level
	2× MODE (HD)	0 (SRMASTER), **1 (EVS)**	Selects the output mode for 2× HD video (SLOT3). 0 (SRMASTER): Compatible with the SR-R1000. 1 (EVS): Compatible with servers manufactured by EVS. SR-R1000/PWS-4400/PWS-4500 support both the 0 and 1 settings. Displayed only when the format is 4K HFR.
	CLEAR BPU SETTINGS	ENTER to execute	Reset to factory default settings
	RETURN VF	**NORMAL**, HFR LINK	Sets the VF return signal to the camera. NORMAL: Normal-speed signal HFR LINK: HFR signal 1LINK (steady image can be used as the image to display in the viewfinder)
	CHANNEL MARKER	**OFF**, ON	Displays markers that identify each channel for HFR video signals output from the SDI output connectors of 8 channels (max).
	HDR NORMAL SPEED OUT	**OFF**, ON	HDR standard video output function on/off setting for SDI OUT 7 to 8 connectors of SLOT2 Enabled only when both shooting in HD HFR (2× to 6×) with HDC4300 connected and with HDR output enabled
	HDR LOOK SELECTION	**SYSTEM**, EACH SLOT	Sets whether to enable separate LOOK settings for SLOT1 and SLOT2. When EACH SLOT is selected, separate LOOK settings can be set on the <OUTPUT FORMAT> page.
<OPTION KEY> C10	READ (USB→CAM)	ENTER to execute	Read the install key from a USB flash drive.
	INSTALLED OPTION		List of installed options (display only)

Page name Page No.	Item	Set value	Description
<HD CUTOUT> C11	HD CUTOUT	**OFF**, ON	HD CUTOUT function on/off setting (available only when the SZC-2001/2001M/2001W is installed)
	MODE	**SIMPLE HD**, ZOOM&PERSPECTIVE	HD CUTOUT mode selection SIMPLE HD: HD image cut out as-is from 4K image. ZOOM&PERSPECTIVE: When HD image is cut out from 4K image, distortion is corrected. Zoom in/out is supported.
	CUTOUT CH	**1**, 2	Specify the cut-out frame to control.
	CENTER H	–2048 to +2047, **0**	Center position of cut-out frame (H)
	CENTER V	–1080 to +1079, **0**	Center position of cut-out frame (V)
	ZOOM	1.0 to 4.0, **2.0**	Zoom factor
	CAMERA TILT	–45.0 to +45.0, **0**	Camera tilt angle
	CAMERA ROLL	–5.0 to +5.0, **0**	Camera roll angle
	FOCAL LENGTH	**7** to 500, ∞	Lens focal length (2.8× lens focal length when LA-FZB2 is connected). ∞: Equivalent to simple CUTOUT with zoom
<HFR PAINT OFFSET> C12	DETAIL LEVEL	–99 to 99, **0**	Sets the offset amount of DETAIL LEVEL to be added to HD HFR video. DETAIL LEVEL is the standard for HD normal speed that is set from the MSU/RCP. 0 is the same as HD normal speed.
	DETAIL CRISP	–99 to 99, **0**	Sets the offset amount of DETAIL CRISP to be added to HD HFR video. DETAIL CRISP is the standard for HD normal speed that is set from the MSU/RCP. 0 is the same as HD normal speed.
<SR Live METADATA(OUTPUT)> C13	META	**OFF**, ON	SR Live metadata embed on/off setting
	1st F	LINE9 to LINE20, **LINE14**	Line number used in 1st field
	2nd F	LINE572 to LINE583, **LINE577**	Line number used in 2nd field

4K 2SI diamond marks

This function is for displaying a test pattern like the following in the area at the bottom right of the 4K color bar when 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.



NETWORK menu

Page name Page No.	Item	Set value	Description
<IP ADDRESS SETTINGS> N01	IP ADDRESS	**0.0.0.0** to 255.255.255.255	IP address setting of the unit
	SUBNET MASK	**0.0.0.0** to 255.255.255.255	Subnet mask setting
	DEFAULT GATEWAY	**0.0.0.0** to 255.255.255.255	Gateway IP address setting
	SET	ENTER to execute.	
	MAC ADDRESS	xx:xx:xx:xx:xx:xx	MAC address of the unit (display only)

Page name Page No.	Item	Set value	Description
<CNS SETTINGS> N02 (Not available when a CCU is connected.)	CNS MODE	LEGACY, BRIDGE	Sets the communication mode.
	SET	ENTER to execute.	
<NETWORKED MEDIA INTERFACE> N03 (When the SKC-IP45AF is installed)	NETWORK INTERFACE	**SLOT1 NMI LAN1**, SLOT1 NMI LAN2, SLOT2 NMI LAN1, SLOT2 NMI LAN2, SLOT3/4 NMI LAN1, SLOT3/4 NMI LAN2	Selects the network interface to configure/display.
	DHCP	OFF, **ON**	Enables or disables DHCP.
	IP ADDRESS	**0.0.0.0** to 255.255.255.255	When DHCP enabled: Displays the IP address assigned using DHCP for the selected network interface. When DHCP disabled: Sets and displays the IP address for the selected network interface.
	SUBNET MASK	**0.0.0.0** to 255.255.255.255	When DHCP enabled: Displays the subnet mask set using DHCP for the selected network interface. When DHCP disabled: Sets and displays the subnet mask for the selected network interface.
	DEFAULT GATEWAY	**0.0.0.0** to 255.255.255.255	When DHCP enabled: Displays the default gateway IP address set using DHCP for the selected network interface. When DHCP disabled: Sets and displays the default gateway IP address for the selected network interface.
	MAC ADDRESS	xx:xx:xx:xx:xx:xx	Specified MAC address of the selected network interface (display only)
<IP LIVE> N04 (When the SKC-IP45AF is installed)	IP LIVE SYSTEM MANAGER		
	NETWORK INTERFACE	**NMI LAN1**, NMI LAN2	Selects the network interface to configure/display.
	CONNECTION	DISABLE, **ENABLE**	Sets whether to connect the IP Live System Manager (LSM) for the selected network interface.
	DHCP	OFF, **ON**	Sets whether to set the LSM IP address using DHCP or to set it manually. ON: Sets the LSM IP address using DHCP. OFF: Sets the LSM IP address manually. Set to OFF (fixed) when DHCP is set to OFF on the <NETWORKED MEDIA INTERFACE> page.
	LSM IP ADDRESS	**0.0.0.0** to 255.255.255.255	Sets the IP address of the LSM. The setting is applied when SET is executed. Disabled when DHCP is set to ON.
	CONNECTION STATUS		
	SLOT1	DISCONNECTED, CONNECTING, CONNECTED	Displays the LSM connection status for the selected network interface of SLOT1.
	SLOT2	DISCONNECTED, CONNECTING, CONNECTED	Displays the LSM connection status for the selected network interface of SLOT2.
	SLOT3/4	DISCONNECTED, CONNECTING, CONNECTED	Displays the LSM connection status for the selected network interface of SLOT3/4.

Page name Page No.	Item	Set value	Description
<IP ADDRESS 2> N03 (When the SKC-4001 is installed)	PORT	LAN1, LAN2, LAN3, LAN4	Selects the network interface to configure/display.
	DHCP	**OFF**	Sets DHCP operation. Fixed to OFF in the current version.
	IP ADDRESS	**0.0.0.0** to 255.255.255.255	Sets and displays the IP address for the selected network interface.
	SUBNET MASK	**0.0.0.0** to 255.255.255.255	Sets and displays the subnet mask for the selected network interface.
	DEFAULT GATEWAY	**0.0.0.0** to 255.255.255.255	Sets and displays the default gateway IP address for the selected network interface.
	MAC ADDRESS	xx:xx:xx:xx:xx:xx	Specified MAC address of the selected network interface (display only)
	LINK SPEED	25G, -----	Displays the link speed.
	25G FEC	NONE, **RS-FEC (CL108)**, FC-FEC (CL74)	Sets the FEC mode for 25G. **Note** Set to the port setting of the IP switch to be connected.
<NETWORK GENLOCK> N04 (When the SKC-4001 is installed)	PORT	LAN1, LAN2	Selects the port of the SKC-4001 for setting NETWORK GENLOCK.
	PROFILE	ST2059-2	Displays the supported protocol. 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	**MULTICAST MODE**, MIXED MODE	MULTICAST MODE: Multicast reply to the master. MIXED MODE: Unicast reply to the master.
	DELAY REQUEST INTERVAL	–7 to –1	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	Displays the Sync Interval setting of the master device.
	PRIORITY	0 to 255	Displays the priority of the PTP master. The lower the number, the higher the priority.
	STEP	ONE-STEP, TWO-STEP	Displays the mode in which the time stamp 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 PTP operation status. NOT IN USE: PTP operation stopped NO MASTER: PTP master is not found. LOCKING: Synchronizing LOCKED: Synchronized

Page name Page No.	Item	Set value	Description
<PTP STATUS> N05 (When the SKC-4001 is installed)	PTP NIC	LAN1, LAN2	Displays the port on which PTP is running, and the status.
	PORT SEL	LAN1, LAN2	Selects the port for which to display the status.
	UTC TIME		Displays the PTP master time.
	GMClockID		Grand master clock ID
	Master ID		Master clock ID
	Sync		Sync message rate
	FollowUp		Follow-up message rate
	DelayReq		Delay request message rate
	DelayResp		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 (When the SKC-4001 is installed)	IP LIVE SYSTEM MANAGER		
	PORT	DISABLE, **LAN1&LAN2**	Sets the LSM. DISABLE: Does not communicate with LSM. LAN1: Communicates with LSM using LAN1 only. LAN1&LAN2: Communicates with LSM using LAN1 and LAN2 (redundancy). **Note** Restart the unit after changing the PORT setting.
	DHCP	OFF	OFF (fixed)
	PRIMARY	**0.0.0.0** to 255.255.255.255	Sets the IP address of LSM1.
	SECONDARY	**0.0.0.0** to 255.255.255.255	Sets the IP address of LSM2.
	MULTICAST ADDRESS	**AUTO**, MANUAL	Switches the mode of the multicast address setting of the IP stream. AUTO: When PORT is set to LAN1&LAN2, this option is fixed to AUTO, and multicast addresses specified by the LSM are used. MANUAL: When PORT is set to DISABLE, this option is fixed to MANUAL, and the multicast addresses are set manually on the MULTICAST ADDRESS 1 to 8 pages.
	HITLESS FAILOVER	**ON**, OFF	Sets whether to use IP stream redundancy. ON: Use redundancy. OFF: Do not use redundancy.
	ST 2110 4K	DISABLE, **ENABLE**	Selects whether to enable 4K output for IP stream.
	SAP ANNOUNCE	**ON**, OFF	Enables/disables SAP notifications.
<MULTICAST ADDRESS 1> N07 (When the SKC-4001 is installed)	MULTICAST ADDRESS	AUTO, MANUAL	Displays the mode of the multicast address setting of the IP stream.
	VIDEO OUT		Settings for the IP HD OUT video output
	MAIN		
	HD1	224.0.0.1 to 239.255.255.255, **0.0.0.0**	Sets the transmit destination multicast IP address.
	HD2		Sets the transmit destination multicast IP address.
	HD3		Sets the transmit destination multicast IP address.
	SUB		
	HD1	224.0.0.1 to 239.255.255.255, **0.0.0.0**	Sets the transmit destination multicast IP address.
	HD2		Sets the transmit destination multicast IP address.
	HD3		Sets the transmit destination multicast IP address.

Page name Page No.	Item			Set value	Description
<MULTICAST ADDRESS 2> N08 (When the SKC-4001 is installed)	MULTICAST ADDRESS			AUTO, MANUAL	Displays the mode of the multicast address setting of the IP stream.
	AUDIO OUT				Settings for the IP AUDIO OUT audio output
		MAIN		224.0.0.1 to 239.255.255.255, **0.0.0.0**	Sets the transmit destination multicast IP address.
		SUB			Sets the transmit destination multicast IP address.
	VIDEO OUT				Settings for the IP 4K OUT video output
		MAIN			
			4K1	224.0.0.1 to 239.255.255.255, **0.0.0.0**	Sets the transmit destination multicast IP address.
			4K2		Sets the transmit destination multicast IP address.
		SUB			
			4K1	224.0.0.1 to 239.255.255.255, **0.0.0.0**	Sets the transmit destination multicast IP address.
			4K2		Sets the transmit destination multicast IP address.
<MULTICAST ADDRESS 3> N09 (When the SKC-4001 is installed)	MULTICAST ADDRESS			AUTO, MANUAL	Displays the mode of the multicast address setting of the IP stream.
	VIDEO OUT				Settings for the IP HD HFR OUT main video output
		MAIN			
			HDHFR1	224.0.0.1 to 239.255.255.255, **0.0.0.0**	Sets the transmit destination multicast IP address.
			HDHFR2		Sets the transmit destination multicast IP address.
			HDHFR3		Sets the transmit destination multicast IP address.
			HDHFR4		Sets the transmit destination multicast IP address.
			HDHFR5		Sets the transmit destination multicast IP address.
			HDHFR6		Sets the transmit destination multicast IP address.
			HDHFR7		Sets the transmit destination multicast IP address.
			HDHFR8		Sets the transmit destination multicast IP address.
<MULTICAST ADDRESS 4> N10 (When the SKC-4001 is installed)	MULTICAST ADDRESS			AUTO, MANUAL	Displays the mode of the multicast address setting of the IP stream.
	VIDEO OUT				Settings for the IP HD HFR OUT sub video output
		SUB			
			HDHFR1	224.0.0.1 to 239.255.255.255, **0.0.0.0**	Sets the transmit destination multicast IP address.
			HDHFR2		Sets the transmit destination multicast IP address.
			HDHFR3		Sets the transmit destination multicast IP address.
			HDHFR4		Sets the transmit destination multicast IP address.
			HDHFR5		Sets the transmit destination multicast IP address.
			HDHFR6		Sets the transmit destination multicast IP address.
			HDHFR7		Sets the transmit destination multicast IP address.
			HDHFR8		Sets the transmit destination multicast IP address.
<MULTICAST ADDRESS 5> N11 (When the SKC-4001 is installed)	MULTICAST ADDRESS			AUTO, MANUAL	Displays the mode of the multicast address setting of the IP stream.
	META OUT				Settings for the IP HD OUT metadata output
		MAIN			
			HD1	224.0.0.1 to 239.255.255.255, **0.0.0.0**	Sets the transmit destination multicast IP address.
			HD2		Sets the transmit destination multicast IP address.
			HD3		Sets the transmit destination multicast IP address.
		SUB			
			HD1	224.0.0.1 to 239.255.255.255, **0.0.0.0**	Sets the transmit destination multicast IP address.
			HD2		Sets the transmit destination multicast IP address.
			HD3		Sets the transmit destination multicast IP address.

Page name Page No.	Item		Set value	Description
<MULTICAST ADDRESS 6> N12 (When the SKC-4001 is installed)	MULTICAST ADDRESS		AUTO, MANUAL	Displays the mode of the multicast address setting of the IP stream.
	META OUT			Settings for the IP 4K OUT metadata output
		MAIN		
		4K1	224.0.0.1 to 239.255.255.255, **0.0.0.0**	Sets the transmit destination multicast IP address.
		4K2		Sets the transmit destination multicast IP address.
		SUB		
		4K1	224.0.0.1 to 239.255.255.255, **0.0.0.0**	Sets the transmit destination multicast IP address.
		4K2		Sets the transmit destination multicast IP address.
<MULTICAST ADDRESS 7> N13 (When the SKC-4001 is installed)	MULTICAST ADDRESS		AUTO, MANUAL	Displays the mode of the multicast address setting of the IP stream.
	META OUT			Settings for the IP HD HFR OUT metadata main output
		MAIN		
		HDHFR1	224.0.0.1 to 239.255.255.255, **0.0.0.0**	Sets the transmit destination multicast IP address.
		HDHFR2		Sets the transmit destination multicast IP address.
		HDHFR3		Sets the transmit destination multicast IP address.
		HDHFR4		Sets the transmit destination multicast IP address.
		HDHFR5		Sets the transmit destination multicast IP address.
		HDHFR6		Sets the transmit destination multicast IP address.
		HDHFR7		Sets the transmit destination multicast IP address.
		HDHFR8		Sets the transmit destination multicast IP address.
<MULTICAST ADDRESS 8> N14 (When the SKC-4001 is installed)	MULTICAST ADDRESS		AUTO, MANUAL	Displays the mode of the multicast address setting of the IP stream.
	META OUT			Settings for the IP HD HFR OUT metadata sub output
		SUB		
		HDHFR1	224.0.0.1 to 239.255.255.255, **0.0.0.0**	Sets the transmit destination multicast IP address.
		HDHFR2		Sets the transmit destination multicast IP address.
		HDHFR3		Sets the transmit destination multicast IP address.
		HDHFR4		Sets the transmit destination multicast IP address.
		HDHFR5		Sets the transmit destination multicast IP address.
		HDHFR6		Sets the transmit destination multicast IP address.
		HDHFR7		Sets the transmit destination multicast IP address.
		HDHFR8		Sets the transmit destination multicast IP address.
<PING> N15 (When the SKC-4001 is installed)	PORT		**LAN-COM**, LAN1, LAN2	Sets the Ping transmit port.
	IP ADDRESS		**0.0.0.0** to 255.255.255.255	Sets the IP address of the Ping transmit destination.
	PING		EXEC	Sends a Ping.
	STATISTICS			Displays the Ping execution result.
		TRANSMITTED	**0** to 5 [packet]	Number of transmitted packets.
		RECEIVED	**0** to 5 [packet]	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 in milliseconds.
		AVE	**0.0** to 1000000.0 [ms]	Average round trip delay time in milliseconds.
		MAX	**0.0** to 1000000.0 [ms]	Maximum round trip delay time in milliseconds.

Page name Page No.	Item	Set value	Description
<NETWORK> N16 (When the SKC-4001 is installed)	LAN		Displays the link status of LAN1, LAN2, LAN3, LAN4.
	1	LINK DOWN, LINK UP	
	2	LINK DOWN, LINK UP	
	3	LINK DOWN, LINK UP	
	4	LINK DOWN, LINK UP	
	SPD		Displays the link speed of LAN1, LAN2, LAN3, LAN4.
	1	25G, -----	
	2	25G, -----	
	3	25G, -----	
	4	25G, -----	
	FEC		Displays the FEC mode of LAN1, LAN2, LAN3, LAN4
	1	NONE, RS-FEC (CL108), FC-FEC	
	2	NONE, RS-FEC (CL108), FC-FEC	
	3	NONE, RS-FEC (CL108), FC-FEC	
	4	NONE, RS-FEC (CL108), FC-FEC	
	LSM		Displays the LSM connection status for LAN1 and LAN2.
	1	DISCONNECTED, CONNECTING, CONNECTED	DISCONNECTED: Disconnected. CONNECTING: Establishing communication. CONNECTED: Communication established.
	2	DISCONNECTED, CONNECTING, CONNECTED	DISCONNECTED: Disconnected. CONNECTING: Establishing communication. CONNECTED: Communication established.
	PTP		Displays the PTP operating status for LAN1 and LAN2.
	1	NOT IN USE, NO MASTER, LOCKING, LOCKED	NOT IN USE: PTP operation stopped NO MASTER: PTP master is not found. LOCKING: Synchronizing LOCKED: Synchronized
	2	NOT IN USE, NO MASTER, LOCKING, LOCKED	NOT IN USE: PTP operation stopped NO MASTER: PTP master is not found. LOCKING: Synchronizing LOCKED: Synchronized
<IP STREAM> N17 (When the SKC-4001 is installed)	TX		
	VIDEO		Displays the IP output video channel.
	HD	1/2/3, -/-/-	
	4K	1/2, -/-	
	HD HFR	1/2/3/4/-/-/-/-, -/-/-/-/-/-/-/-	
	AUDIO	1, -	Displays the IP output audio channel.
	META		Displays the IP output metadata channel.
	HD	1/2/3, -/-/-	
	4K	1/2, -/-	
	HD HFR	1/2/3/4/-/-/-/-, -/-/-/-/-/-/-/-	

Page name Page No.	Item	Set value	Description
<IP AUDIO> N18 (When the SKC-4001 is installed)	AUDIO OUT		
	FORMAT	L24/48kHz/0.125ms/2ch, L24/48kHz/0.125ms/4ch, L24/48kHz/0.125ms/8ch, **L24/48kHz/0.125ms/16ch,** L24/48kHz/1ms/2ch, L24/48kHz/1ms/4ch, L24/48kHz/1ms/8ch, L24/48kHz/1ms/16ch,	Sets the audio format.
	CH ORDER	MIC1, MIC2, AES/EBU1, AES/EBU2	Displays the channel order.

DIAGNOSIS menu

Page name Page No.	Item	Display	Description
<OPTICAL LEVEL> D01	OPTICAL LEVEL	Bar graph display	Bar graph display of optical signal level condition between the unit and the CCU.
	CABLE LENGTH	xxxx m	Length of the optical fiber cable between the CCU and camera head
<BOARD STATUS> D02	SY	OK, NG	Internal board status
	DVP	OK, NG	
	TX	OK, NG	
	DPR1	OK, NG	
	DPR2	OK, NG	
	NET [a)]	OK, NG	
<CONNECTION STATUS> D03	CHU		
	DOCKING	OK, NG, ---	Video camera connection status (not displayed for HDC4300 or HDC-P43 connection). ---: When camera system adaptor is not connected.
	POWER	OK, NG, ---	Video camera power status (not displayed for HDC4300 or HDC-P43 connection). ---: When DOCKING is NG or camera system adaptor is not connected.
	CABLE	OPEN, CONNECTED	Video camera cable connection status (not displayed for HDC4300 or HDC-P43 connection).
	COMM	OK, NG, ---	Communications status of the video camera. ---: When DOCKING is NG or camera system adaptor is not connected.
	CSA		
	CABLE	OPEN, CONNECTED	Camera system adaptor connection status (not displayed for HDC4300 or HDC-P43 connection)
	COMM	OK, NG, ---	Camera system adaptor communication status (not displayed for HDC4300 or HDC-P43 connection) ---: When CABLE is OPEN.
	CCU		
	CABLE	OPEN, CONNECTED	CCU connection status
	COMM	OK, NG, ---	CCU communications status. ---: When CABLE is OPEN.

Page name Page No.	Item	Display	Description
<ROM VERSION> D04	CAMERA APP	Version number, date, device name	ROM version information installed on each device
	OS	OS version	
	UPDATER	Version of software updater	
	SY	Vx.xx	ROM version of SY board
	TX	Vx.xx	ROM version of TX board
	DEC	Vx.xx	ROM version of DVP board
	DPR1	Vx.xx	ROM version of DPR1 board
	DPR2	Vx.xx	ROM version of DPR2 board
	4K-POST	Vx.xx	ROM version of DVP board
	2K-POST	Vx.xx	ROM version of DVP board
	SDP	Vx.xx	ROM version of DVP board
<ROM VERSION 2> D05	DPR1(SUB)	Vx.xx	ROM version of DPR1(SUB) board
	DPR2(SUB)	Vx.xx	ROM version of DPR2(SUB) board
	NMI LSI [a)]	Vx.xx	LSI software version for IP output
	4K-NET [a)]	Vx.xx	ROM version of NET board
	2K-NET [a)]	Vx.xx	ROM version of NET board
	NIF [b)]	Vx.xx	ROM version of NIF board
	NET1-A [b)]	Vx.xx	ROM version of NET board
	NET1-B [b)]	Vx.xx	ROM version of NET board
	NET2-A [b)]	Vx.xx	ROM version of NET board
	NET2-B [b)]	Vx.xx	ROM version of NET board
<SERIAL NO.> D06	MODEL	Model name	
	NO	Serial number	
	SKC-4001 [b)]	Serial number	SKC-4001 serial number
<IP ADDRESS> D07	IP ADDRESS	0.0.0.0 to 255.255.255.255	IP address of the unit (display only)
	SUBNET MASK	0.0.0.0 to 255.255.255.255	Subnet mask (display only)
	DEFAULT GATEWAY	0.0.0.0 to 255.255.255.255	Gateway IP address (display only)
	MAC ADDRESS	00:00:00:00:00:00 to FF:FF:FF:FF:FF:FF	MAC address of the unit (display only)
<LAN STATUS> D08	AUTO NEGOTIATION	OFF, ON	Auto negotiation setting
	CONNECTION SPEED	10M, 100M	Connection speed
	DUPLEX MODE	HALF, FULL	Duplex mode setting
	LINK CONDITION	DOWN, UP	LAN connection status
<CNS STATUS> D09	CNS MODE	LEGACY, BRIDGE	Communications mode setting
<12G/6G-SDI STATUS> D10	SDI OUT	SLOT1, SLOT2	12G/6G-SDI output status of slot 1 and slot 2
	STATUS	OK, ERROR	
<BOARD STATUS (SKC-4001)> [b)] (D11)	IF		
	FAN1	OK, STOP	Displays the FAN1 status of the IF board.
	FAN2		Displays the FAN2 status of the IF board.
	FAN3		Displays the FAN3 status of the IF board.

a) Displayed only when the SKC-IP45AF Networked Media Interface Kit is installed.
b) Displayed only when the SKC-4001 ST 2110 Interface Kit is installed.

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.

Do not push the mesh portion of the front panel with your fingers or sharp objects.

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 unit can result in malfunctions and interference with audio and video signals.
It is recommended that the portable communications devices near this unit be powered off.

Error Messages

When an error is detected in the unit or video camera, the following messages may be displayed on the video output configured for the monitor output (M).

Note

Display the menu or status screen to view messages.

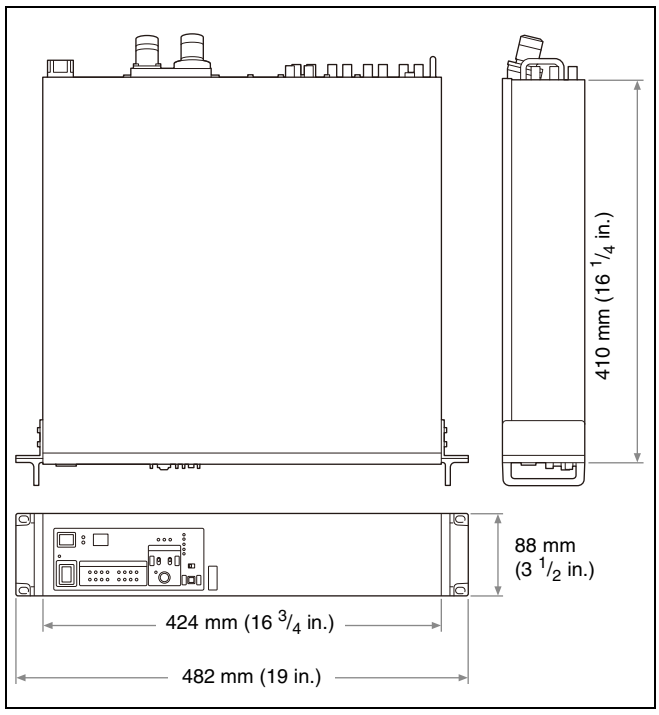
Error message	Meaning
TEMP WARNING	Internal temperature error.
PLD NG	Internal PLD error.
PLEASE CONFIRM CHU MODE ON CSA	The CSA camera head setting does not match the connected camera head.
PLEASE CONFIRM CHU MODE ON BPU	The BPU camera head setting does not match the connected camera head.
PLEASE UPDATE CSA SOFTWARE	The BPU and CSA software versions do not match.
PLEASE CONFIRM BPU MODE/CHU VERSION	The BPU camera head setting does not match the connected camera head. Or the BPU and CSA software versions do not match.

Specifications

BPU4500A

General	
Power requirement	100 V to 240 V AC, 50/60 Hz
Current consumption	2.4 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	Approx. 8.9 kg (19 lb 10 oz.)
Input/output connectors	
CAMERA	Optical fiber connector (1)
CCU	Optical fiber connector (1)
REMOTE	8-pin multi-connector (1)
LAN	8-pin (1)
Input connectors	
AC IN	100 V to 240 V AC (1)
SDI1, SDI2	BNC type (2) 3G-SDI: SMPTE ST424/425, 2.970 Gbps/2.967 Gbps HD-SDI: SMPTE ST292, 0.8 Vp-p, 75 ohms, 1.485 Gbps/1.4835 Gbps
REFERENCE IN	BNC type (1) 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)
Output connectors	
SLOT1 SDI OUT 1 to 4	BNC type (4) 12G-SDI: SMPTE ST2082, 0.8 Vp-p, 75 ohms, 11.880 Gbps/11.868 Gbps 6G-SDI: SMPTE ST2081, 0.8 Vp-p, 75 ohms, 5.940 Gbps/5.934 Gbps 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 12G-SDI/6G-SDI/3G-SDI/HD-SDI selectable
SLOT2 SDI OUT 1 to 8	BNC type (8) 12G-SDI: SMPTE ST2082, 0.8 Vp-p, 75 ohms, 11.880 Gbps/11.868 Gbps 6G-SDI: SMPTE ST2081, 0.8 Vp-p, 75 ohms, 5.940 Gbps/5.934 Gbps 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 12G-SDI/6G-SDI/3G-SDI/HD-SDI selectable
SLOT3 3G/HD SDI OUTPUT	BNC type (2) 3G-SDI: SMPTE ST424/425 Level-A, 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 3G-SDI/HD-SDI selectable
SLOT4 HD SDI OUTPUT	BNC type (2) HD-SDI: SMPTE ST292, 0.8 Vp-p, 75 ohms, 1.485 Gbps/1.4835 Gbps
REFERENCE OUT	BNC type (1) HD: SMPTE ST274, tri-level sync, 0.6 Vp-p, 75 ohms SD: Composite sync, 0.3 Vp-p, 75 ohms HD SYNC/SD SYNC selectable
Supplied accessories	
Number plates (1 set)	
Operation Guide (1)	
Operation Manual (CD-ROM) (1)	
Optional accessories	
United States and Canada: Plug holder B (2-990-242-01) Other areas: Plug holder C (3-613-640-01)	
United States and Canada: Power cord set (1-551-812-XX) Other areas: Power cord set (1-782-929-XX)	
CCA-5-3 (3 m) and CCA-5-10 (10 m) connection cables	
SFP+ module	
Service manual	
Related equipment	
PMW-F55 Solid-state Memory Camcorder	
F65 Digital Motion Picture Camera	
CA4000 Camera System Adaptor	
HDC4300 Color Camera	
HDC-P43 Multi Purpose Camera	
HDCU2000/2500 HD Camera Control Unit	
SZC-2001/2001M/2001W HD CUTOUT Software	
SZC-4002/4002M/4002W HFR Software	
SKC-IP45AF Networked Media Interface Kit	
SKC-4001 ST 2110 Interface Kit	
RCP-3000/1000 series Remote Control Panel	
MSU-1000/1500 Master Setup Unit	
CNA-1 Camera Control Network Adaptor	

Dimensions



SKC-IP45AF (Option)

General	
Power consumption	39.6 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)	NET board: Approx. 224 × 11 × 225 mm ($8\ ^{7}/_{8} \times\ ^{7}/_{16} \times 8\ ^{7}/_{8}$ inches) CN board: Approx. 55 × 21 × 136 mm ($2\ ^{1}/_{4} \times\ ^{27}/_{32} \times 5\ ^{3}/_{8}$ inches)
Mass	NET board: Approx. 0.35 kg (12.3 oz.) (1) CN board: Approx. 0.10 kg (3.5 oz.) per board (3)
Output connectors	
CN board: NMI-LAN (SLOT1) NMI-LAN (SLOT2) NMI-LAN (SLOT3/4)	SFP+ (6) 10G BASE-** (using SFP+ transceiver module)
Supplied accessories	
30-pin cable (1)	
Harness (6)	
Screws (M3×8) (3)	
NMI label (1)	
Operating Instructions (1)	
Related equipment	
OTM-10GSR1 SFP+ Transceiver Module	

SKC-4001 (Option)

General	
Power consumption	110 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)	329 × 50 × 352 mm ($13 \times 2 \times 13\ ^{7}/_{8}$ inches)
Mass	Approx. 1.5 kg (3 lb 4.9 oz)
I/O connectors	
Connectors	SFP28
Number of lines	2
Signal type	25GBASE-** (depending on SFP28 transceiver module) For information about the supported SFP28 transceiver modules (e.g. OTM-25GSR1), contact your Sony sales or service representative.
Supplied accessories	
Flat cable	30-pin (1)
Coaxial cable	10-pin (1)
	30-pin (1)
	40-pin (1)
Screw	M3×8 (21)
	M2.6×5 (5)
Frame	IF frame (1)
	C frame (1)
Fan	Front fan assembly (1)
	Front fan (Right) assembly (1)
	Rear fan assembly (1)
Sheet	Duct sheet (1)
	Rear partition sheet (1)
Wire saddle (3)	
Edge saddle (2)	
Cord clamp (1)	
SFP cover (4)	
Operating Instructions (1)	
Related equipment	
OTM-25GSR1 SFP28 transceiver module	

Design and specifications are subject to change without notice.

Notes

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BPU4500A (SY)
4-739-700-**13** (2)

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