

English

12G-SDI EXTENSION KIT HKCU-4002

ST 2110 INTERFACE KIT **HKCU-4001**

NETWORKED MEDIA INTERFACE BOARD **HKCU-IP43F**

SONY CAMERA CONTROL UNIT HDCU4300

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Overview

The HDCU4300 Camera Control Unit connects to a HDC4300 Color Camera or HDC-P43 Multi Purpose Camera¹⁾ with an optical fiber cable, and carries out the processing of video signals from the camera and provides an interface with external equipment.

Connecting a camera facilitates 4K video shooting or HD high frame rate video shooting. HD normal speed video and SD normal speed video can even be simultaneously output when 4K video shooting and HD high frame rate video shooting.

Any one of the following option products (sold separately) can be installed in the unit at a time.

HKCU-IP43F Networked Media Interface Board

Enables output of video signals and audio signals as IP signals. $^{2)} \ensuremath{\mathsf{D}}$

HKCU-4001 ST 2110 Interface Kit

Enables operation of the unit in an IP transmission system that conforms to the SMPTE ST 2110 standard.²⁾

HKCU-4002 12G-SDI Extension Kit

Enables 12G-SDI output and 6G-SDI output.

- 1) To connect to the HDC-P43, an HKCU-SM100 CCU Extension Adaptor and a single-mode fiber cable are required.
- 2) An SFP+ module is required to use IP output.

This unit may be combined with an MSU-1000 series Master Setup Unit (optional) or an RCP-3000/1000 series Remote Control Panel (optional) to form a camera control system. This enables you to configure a system capable of controlling multiple video cameras.

Note

Before operating the system, check that the software and ROM versions of each of this unit, HDC4300, HDC-P43, MSU-1000 series, and RCP-3000/1000 series are supported.

System Configuration

Note

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

HDC4300 connection example



HDC-P43 connection example



IP transmission connection example



Location and Function of Parts

Front Panel



Red tally indicator

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



2 Yellow tally indicator

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

Green tally indicator

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

4 CCU number display

Displays the camera number set in the CCU menu.

6 NMI STATUS indicator or NETWORK indicator

• NMI STATUS indicator (when HKCU-IP43F is installed)

Displays the NMI-LAN status.

Green: Normal status

Flashing green: Network synchronization in progress Off: SFP+ module is not installed.

Disconnected from IP Live System Manager.

Connection with IP Live System Manager in progress **Flashing red:** Not locked to network sync signal.

Signal reception is unavailable.

• NETWORK indicator (when HKCU-4001 is installed)

Displays the GENLOCK status of the network. Low-speed flashing: PTP master not detected High-speed flashing: Genlock initiated Lit: Genlock achieved Not lit: Network genlock setting disabled

6 Status display indicator

REF IN (green): Indicates presence of REFERENCE input signal.

UNLOCK (Red): Not locked to the REFERENCE input signal.

- NETWORK or RCP/MSU (when HKCU-4001 is installed): Displays the status when there is a network system connection.
 - On: When CNS MODE on the <CNS SETTINGS> page in the NETWORK menu is set to either BRIDGE or MCS, this indicates that external control equipment (MSU-1000/1500 Master Setup Unit, RCP-3000/ 1000 series Remote Control Panel, or other equipment) is connected.
 - Flashing: When CNS MODE on the <CNS SETTINGS> page in the NETWORK menu is set to either BRIDGE or MCS, this indicates that the unit cannot connect correctly with external control equipment (MSU-1000/ 1500 Master Setup Unit, RCP-3000/1000 series Remote Control Panel, or other equipment).
 - Off: When CNS MODE on the <CNS SETTINGS> page in the NETWORK menu is set to either BRIDGE or MCS, this indicates that a LAN cable is not connected or that the network system connection settings have not been configured.

When CNS MODE on the <CNS SETTINGS> page in the NETWORK menu is set to LEGACY, this remains turned off.

COM ERROR (Red): Communication with the camera or external control equipment (such as the RCP-3000/1000 series Remote Control Panel) is not possible.

FAN STOP (Red): The fan is stopped.

7 INTERCOM audio input/output and control block



INTERCOM (intercom select) switch

INTERCOM (intercom adjustment) knob



• MIC/PGM (microphone/program) switch

ON: Turns the headset microphone on.

OFF: Turns the headset microphone off.

PGM: Selects program audio output. In this mode, the INTERCOM knob adjusts the headset program audio level.

• INTERCOM (intercom select) switch

Selects the intercom signal input/output connection source for the INTERCOM connector on the front panel.

PROD: Connects the producer line.

PRIV: Blocks the connection to the producer line or engineer line, allowing private intercom talk between the CCU and the camera.

ENG: Connects the engineer line.

• PRIV (private) indicator

Lights when the intercom is in private mode.

- INTERCOM (intercom adjustment) knob
- Adjusts the receiver audio level of the intercom.

• INTERCOM connector (XLR 5-pin)

Connects the intercom headset.

To use a headset with a plug other than an XLR 5-pin plug, consult a Sony service or sales representative.

③ MAIN POWER switch and indicator

Turns the entire camera system on and off, including this unit, the video camera, and the RCP-3000/1000 series Remote Control Panel connected to the REMOTE connector of this unit. Switch to "I" to turn the power on, and switch to "O" to turn the power off. The MAIN indicator lights when the power switch of the unit is turned on. The CAM indicator lights when power is supplied to the video camera.

O CABLE ALARM indicators

- **SHORT (red):** Lights in red when the power supply cord of an optical fiber cable is shorted to the outer sheath, or two power supply cords are shorted. Power is not input to the camera when this indicator lights.
- **OPEN (red):** Lights in red when a camera is not connected to the CAMERA connector on the rear panel of this unit via an optical fiber cable.

Optical signal reception status indicator

Indicates the communication status of the camera and CCU.

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

MENU control block



• DISP/MENU lever and indicator

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

- CANCEL/ENTER lever
- In setup menu mode, used to cancel and enter settings.
- CONTROL knob (rotary encoder)

In status screen mode, used to change the displayed page. In setup menu mode, used to move the cursor on a page and to change menu settings.

Pushing the control knob has the same function as setting the CANCEL/ENTER lever to ENTER.

Assignable button

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

Menu lock switch

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

Call button

When pressed, this outputs a call signal to the camera or external control device (the RCP-3000/1000 series, etc.) that are connected to this unit. Use this when you want to call and speak with the camera operator or external control device operator via intercom. This button lights in red when it is pressed or the call button of other equipment is pressed.

Rear Panel



1 TRUNK A connector (round 12-pin)

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

2 RCP/CNU connector (round 8-pin)

Used to connect to an MSU-1000 series Master Setup Unit, CNU-700 Camera Command Network Unit, or RCP-3000/ 1000 series Remote Control Panel via a CCA-5 Connection Cable. Control signals are sent and received via this connector. When using an RCP-3000/1000 series unit, power is also supplied.

3G/HD SDI OUTPUT (SDI output) connector (SLOT1) (BNC-type)

Used to output video signals from the video camera using Multi-Link format comprising 3G-SDI signals or HD-SDI signals.

For details about assignments to each signal output connector in the Multi-Link interface, see *"Relationship between Connection Type and BNC Connector Assignment" (page 17).*

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

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

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

6 CAMERA connector (optical fiber connector)

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

Notes

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

• To connect to the HDC-P43, an HKCU-SM100 CCU Extension Adapter and a single-mode fiber cable are required.

INTERCOM/TALLY/PGM (intercom/tally/program audio) connector (D-sub 25-pin)

Used to input and output intercom, tally, and program audio signals. Connect to the intercom/tally/program audio connector of the intercom system.

REAR PREVIEW function: Pin 10 is assigned for the output pin of the REAR PREVIEW function.

RETURN SDI IN 1/2 (3G/HD/SD-SDI return video 1/2) connectors (BNC-type)

Two different 3G/HD/SD-SDI return video input signals may be received independently. The selection of RET 1 or 2 is made by the return switch of the video camera. The aspect ratio can also be selected for an SD signal. The type of input signal on RET 1 and 2 may be set individually using the setup menu, or using the MSU-1000 series Master

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

Refer also to the Master Setup Unit manual.

3G/HD SDI I/O 1/2 (SDI input/output 1/2) connectors (SLOT3) (BNC-type)

These can be used as return video inputs, HD prompter inputs, camera video signal outputs, and HD-TRUNK outputs. Set them in SLOT3 on the <I/F SETTINGS> page of the MAINTENANCE menu according to the application.

INPUT area

Setup Unit.

① PROMPTER 1, 2 (tele-prompter input) connectors (BNC-type)

Input the prompter signal of 1 channel or 2 channels depending on the setting of PROMPTER CHANNEL MODE on the <TRUNK/PROMPTER1> page of the MAINTENANCE menu. When 1 channel is set, the input signal is output from the other connector as is (loop-through). If loop-through output is not used, terminate the unused connector at 75 ohms. When 2 channels are set, both connectors become inputs and they are terminated at 75 ohms inside the unit.

If the signal used is a 1.0 Vp-p, 75-ohm analog signal, it may be output from the PROMPTER OUT connector of the video camera with a frequency bandwidth of 5 MHz, regardless of signal format.

② REFERENCE connectors (BNC-type)

Input an HD tri-level reference sync signal or SD reference sync signal (black burst signal, or black burst signal with 10 Field ID) to either of the two connectors.

The input signal is output from the other connector as is (loopthrough output). If loop-through output is not used, terminate the unused connector at 75 ohms.

The type of reference signal is selected using the setup menu, or using the MSU-1000 series Master Setup Unit.

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

Note

When a black burst signal with a 10 Field ID is input, 10F BB on the <GENLOCK> page of the SYSTEM OPERATION menu must be set to ON.

RETURN VBS IN 3/4 (VBS return video input 3/4) connectors (BNC-type)

Two different VBS return video input signals may be received independently.

The selection of RET 3 or 4 is made by the return switch of the video camera. The type of input signal on RET 3 and 4 may be set individually using the setup menu, or using the MSU-1000 series Master Setup Unit. An aspect ratio may also be selected for SD signals.

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

Refer also to the Master Setup Unit manual.

③ 3G/HD SDI OUTPUT (SDI output) connector (SLOT2) (BNC-type)

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

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

NETWORK TRUNK connector (RJ-45 8-pin)

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

OUTPUT area

① VBS MONITOR (VBS monitor output) connector (BNCtype)

Outputs an SD analog video signal.

② CHARACTER/SYNC (character output / sync signal output) connector (BNC-type)

Outputs the self-diagnostic results or setup menu of the unit as an SD analog video signal. If CHARACTER/SYNC OUT on the <I/F SETTINGS> page of the MAINTENANCE menu is set to SYNC, this connector can also be used as the sync signal output (SYNC) connector. An SD composite sync or HD trilevel sync signal will be output from the internal sync signal generator.

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

$m I\!O$ \sim AC IN (AC power input) connector

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

HKCU-IP43F Networked Media Interface Board (Option)

Note

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

The HDCU4300 supports IP output of a single 4K signal or dual HD signals by installing an HKCU-IP43F in the HDCU4300.

HDCU4300 software version 1.11 or later is required. In addition, an OTM-10GSR1 or other SFP+ module is required to use IP output.

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



• NMI-LAN connectors (SFP+)

These connectors output IP video signals and audio. The output signal format is the same as the format set for SLOT4.

HKCU-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 HKCU-4001 to the HDCU4300. HDCU4300 software version 2.00 or later is required. An OTM-10GSR1 or other SFP+ module or SFP28 module is required to use IP output.



1 LAN-1, LAN-2 connectors (SFP+/SFP28)

IP video signals and audio input/output, intercom, and network synchronization are supported. This enables three IP outputs and two IP inputs for HD signals on the HDCU4300.

For RCP/MSU device connection and IP tally input, use the LAN-COM connector.

The input/output signal format is set using the <OUTPUT FORMAT2> page and <RETURN> page in the setup menu.

HKCU-4002 12G-SDI Extension Kit (Option)

Note

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

The HDCU4300 supports 4K 2-system 12G-SDI output or 6G-SDI output by installing an HKCU-4002 in the HDCU4300. HDCU4300 software version 1.50 or later is required.

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



12G/6G-SDI output connectors

These connectors are 12G-SDI output connectors or 6G-SDI output connectors. The output format is the same as the format set for SLOT1 of the HDCU4300.

For details, see page 37.

Connections and Settings

4K System Connection

A 4K format camera system is formed by connecting the unit and a video camera (HDC4300 or HDC-P43¹⁾) with optical fiber cables.

The functions provided by the unit (genlock, power supply to the video camera, various interface functions, etc.) can be used as is.

HD signals down-converted from 4K signals can be output from SLOT2 and SLOT3.

1) Requires an HKCU-SM100 CCU Extension Adaptor and singlemode fiber cable.

Connection example



Settings

Device	Purpose	Menu/Page	Item	Set value
HDCU4300	HD system format setting	SYSTEM OPERATION/ <multi format=""></multi>	BASE FORMAT	Set other than 3G-SDI
	Video format setting	SYSTEM OPERATION/ <multi format=""></multi>	4K/HFR FORMAT	Video format
	Video output format setting	SYSTEM OPERATION/ <output FORMAT></output 	SLOT1 to SLOT3	Video output format of each slot
	Assignment of function of SDI I/O connector	MAINTENANCE/ <i f="" settings=""></i>	SLOT3 (SDI I/O)	SDI IN3/ HD PROMPTER IN, HD TRUNK OUT
HDC4300	HD-PROMPTER output and HD TRUNK input settings	MAINTENANCE/ <sdi out=""></sdi>	SDI-1 OUT	HD PROMPTER
			SDI-2 OUT/IN	HD TRUNK/RET IN

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 HDCU4300.

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.

Connection example

The cutout HD signal is output from SLOT1. HD video down-converted from 4K signals can be output from SLOT2, SLOT3, and SLOT4. Also, a wire frame indicating the cutout region can be displayed.



Settings

Device	Purpose	Menu/Page	Item	Set value
HDCU4300	HD system format setting	SYSTEM OPERATION/ <multi format=""></multi>	BASE FORMAT	Select 59.94 or 50 frequency format
	Video format setting	SYSTEM OPERATION/ <multi format=""></multi>	4K/HFR FORMAT	Video format
	Video output format setting	SYSTEM OPERATION/ <output FORMAT></output 	SLOT1 to SLOT4	Video output format of each slot
	HD CUTOUT settings	SYSTEM OPERATION/ <chu mode=""></chu>	CHU MODE	HDC(HD CUTOUT)
		SYSTEM OPERATION/ <hd cutout=""></hd>	HD CUTOUT	ON (fixed)
HDC4300	HD-PROMPTER output and HD	MAINTENANCE/ <sdi out=""></sdi>	SDI-1 OUT	HD PROMPTER
	I RUNK input settings		SDI-2 OUT/IN	HD TRUNK/RET IN

HFR Video System

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

Yes: Supported, No: Not supported

HFR format		
	HDC4300, HDC-P43 (without option)	HDC4300, HDC-P43 (when SZC-4002 series installed on the unit)
1080/59.94P (2x) ¹⁾	Yes	Yes
1080/50P (2x) ¹⁾	Yes	Yes
720/59.94P (2x) ²⁾	Yes	Yes
720/50P (2x) ²⁾	Yes	Yes
1080/59.94P (3x) ¹⁾	Yes	Yes
1080/50P (3x) ¹⁾	Yes	Yes
720/59.94P (3x) ²⁾	Yes	Yes
720/50P (3x) ²⁾	Yes	Yes
1080/59.94P (4x) ¹⁾	No	Yes
1080/50P (4x) ¹⁾	No	Yes
720/59.94P (4x) ²⁾	No	Yes
720/50P (4x) ²⁾	No	Yes
1080/59.94i (6x) ¹⁾	No	Yes
1080/50i (6x) ¹⁾	No	Yes
720/59.94P (6x) ²⁾	No	Yes
720/50P (6x) ²⁾	No	Yes
1080/59.94i (8x) ¹⁾	No	Yes
1080/50i (8x) ¹⁾	No	Yes
720/59.94P (8x) ²⁾	No	Yes
720/50P (8x) ²⁾	No	Yes

1) Interlaced output is also supported in HD HFR 1080 format.

2) Selectable only when the format is set to 720P.

1x video can be output at the same time from SLOT2 and SLOT3.

Note

The HFR imaging function is dependent on the software version of the connected camera. Check the compatibility of each device before use.

Connection example (4x HD)



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 by setting HDR MODE to Live HDR. Set the HDR Look at the same time.

HDR/SDR or 4K/HD can be output from SLOT1. The HD output from SLOT2, SLOT3, and SLOT4 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.



Settings

Device	Purpose	Menu/Page	Item	Set value
HDCU4300	Transfer to HDR mode	SYSTEM OPERATION/ <hdr></hdr>	HDR MODE	LIVE HDR (Live HDR video output)
		SYSTEM OPERATION/ <output FORMAT></output 	LOOK	Live Mild Natural
			SLOT1 OETF	S-Log3 (SR Live recommended setting) HLG (Compliant with HLG format)

Relationship between Connection Type and BNC Connector Assignment

The names of output interfaces in Table 1 correspond to connector assignments in Table 2 *(page 19)*. 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.

Operation	Frame rate	Slot1			Slot2/Slot3		
mode		Output format	Output interfa	ace	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⁾ ,		
			Single-Link	12G ⁵⁾	- 525/59.941		
		1080/59.94P ⁴⁾	Single-Link	3G			
		1080/59.94i ⁴⁾		1.5G			
	50	4K/50P ³⁾	Quad-Link-1	3G	1080/50P(3G), 1080/50i(1.5G), 720/50P(1.5G) ²⁾ , 625/50i		
			Single-Link	12G			
		1080/50P ⁴⁾	Single-Link	3G			
		1080/50i ⁴⁾		1.5G			
	29.97	4K/29.97P ^{1) 3)}	Dual-Link-2	3G	1080/29.97PsF(1.5G), 525/29.97PsF		
			Single-Link	6G ⁵⁾			
		4K/29.97PsF 1) 3)	Dual-Link-2	3G			
			Quad-Link-1	1.5G			
		1080/29.97PsF ⁴⁾	Single-Link				
2	25	4K/25P ^{1) 3)}	Dual-Link-2	3G	1080/25PsF(1.5G), 625/25PsF		
			Single-Link	6G ⁵⁾			
		4K/25PsF ^{1) 3)}	Dual-Link-2	3G			
			Quad-Link-1	1.5G			
		1080/25PsF ⁴⁾	Single-Link				
	24	4K/24P ^{1) 3)}	Dual-Link-2	3G	1080/24PsF(1.5G), 1080/50i(1.5G), 625/50i		
			Single-Link	6G ⁵⁾			
		4K/24PsF ^{1) 3)}	Dual-Link-2	3G			
			Quad-Link-1	1.5G			
		1080/24PsF ⁴⁾	Single-Link				
	23.98	4K/23.98P ^{1) 3)}	Dual-Link-2	3G	1080/23.98PsF(1.5G), 1080/59.94i(1.5G), 525/59.94i		
			Single-Link	6G ⁵⁾			
		4K/23.98PsF 1) 3)	Dual-Link-2	3G			
			Quad-Link-1	1.5G			
		1080/23.98PsF 4)	Single-Link]			

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

Operation	Frame rate	Slot1			Slot2/Slot3	
mode		Output format	Output interfa	ace	Output format	
HD HFR	59.94(8x)	1080/59.94i(8x), 720/59.94P(8x) ²⁾	Quad-Link-2	3G	1080/59.94i(1.5G), 720/59.94P(1.5G) ²⁾ , 525/59.94i	
	50(8x)	1080/50i(8x), 720/50P(8x) ²⁾	Quad-Link-2	3G	1080/50i(1.5G), 720/50P(1.5G) ²⁾ , 625/50i	
	59.94(6x)	1080/59.94i(6x), 720/59.94P(6x) ²⁾	Triple-Link-2	3G	1080/59.94i(1.5G), 720/59.94P(1.5G) ²⁾ , 525/59.94i	
	50(6x)	1080/50i(6x), 720/50P(6x) ²⁾	Triple-Link-2	3G	1080/50i(1.5G), 720/50P(1.5G) ²⁾ , 625/50i	
	59.94(4x)	1080/59.94P(4x)	Quad-Link-1	3G	1080/59.94P(3G), 1080/59.94i(1.5G), 720/59.94P(1.5G) ²⁾ ,	
		1080/59.94i(4x),		1.5G	525/59.94i	
		720/59.94P(4x) ²	Dual-Link-2	3G		
	50(4x)	1080/50P(4x)	Quad-Link-1	3G	1080/50P(3G), 1080/50i(1.5G), 720/50P(1.5G) ²⁾ , 625/50i	
		1080/50i(4x),		1.5G		
		720/50P(4x) =/	Dual-Link-2	3G		
	59.94(3x)	1080/59.94P(3x)	Triple-Link-1	3G	1080/59.94P(3G), 1080/59.94i(1.5G), 720/59.94P(1.5G) ²⁾ ,	
		1080/59.94i(3x), 720/59.94P(3x) ²⁾		1.5G	525/59.941	
	50(3x)	1080/50P(3x)	Triple-Link-1	3G	1080/50P(3G), 1080/50i(1.5G), 720/50P(1.5G) ²⁾ , 625/50i	
		1080/50i(3x), 720/50P(3x) ²⁾		1.5G		
	59.94(2x)	1080/59.94P(2x)	Dual-Link-1	3G	1080/59.94P(3G), 1080/59.94i(1.5G), 720/59.94P(1.5G) ²⁾ ,	
		1080/59.94i(2x),		1.5G	525/59.94	
		720/59.94P(2x) =/	Single-Link	3G		
	50(2x)	1080/50P(2x)	Dual-Link-1	3G	1080/50P(3G), 1080/50i(1.5G), 720/50P(1.5G) ²⁾ , 625/50i	
		1080/50i(2x),		1.5G		
		720/50F(2X) /	Single-Link	3G		
HD CUTOUT	59.94	1080/59.94P ⁴⁾	Single-Link	3G	1080/59.94P(3G), 1080/59.94i(1.5G), 720/59.94P(1.5G) ²⁾ ,	
		1080/59.94i ⁴⁾		1.5G	525/59.941	
		720/59.94P ²⁾				
	50	1080/50P ⁴⁾	Single-Link	3G	1080/50P(3G), 1080/50i(1.5G), 720/50P(1.5G) ²⁾ , 625/50i	
		1080/50i ⁴⁾		1.5G	1	
		720/50P ²⁾	1			

1) Output is P when the division method is 2SI, and PsF when the division method is SQD.

2) Output only when the BASE FORMAT is 720P.

3) A Slot1 output format of "4K" refers to 4096x2160 or 3840x2160.

4) Supported when the BASE FORMAT is 1080.

5) Supported when HKCU-4002 is installed.

Figure 1: Slot numbers and BNC connectors



Table 2: Relationship between output interface and BNC connector assignment

MAIN Output		4K / HD HFR/HD	4K / HD HFR/HD CUTOUT					
		SLOT 1						
Operation mode	Output interface	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			
	Dual-Link-1	(Link-1	Link-2	Link-1	Link-2			
HD HFR	Quad-Link-1	(Link-1	Link-2	Link-3	Link-4			
	Quad-Link-2	Link-1/2	Link-3/4	Link-5/6	Link-7/8			
	Triple-Link-1	(Link-1	Link-2	Link-3	(Link-2)			
	Triple-Link-2	(Link-1/2	Link-3/4	Link-5/6	(Link-3/4)			
	Dual-Link-1	(Link-1	Link-2	Link-1	Link-2			
	Dual-Link-2	(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			
HD CUTOUT	Perspective	CUTOUT	CUTOUT	CUTOUT	CUTOUT			
	Simple HD	CUTOUT1	CUTOUT2	CUTOUT1				

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.

Paint Functions in HDR MODE and COLOR SPACE

Some paint functions are disabled, depending on the HDR MODE and COLOR SPACE settings on the HDCU4300.

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.

Paint functions that can be adjusted when HDR MODE is selected

Paint function		HDR MODE setting		
		OFF	LIVE HDR	
Gain	Step Gain	Yes	Yes	
	Master White Gain	Yes	Yes	
White	R/G/B	Yes	Yes	
	Balance/C Temp	Yes	Yes	

Paint function		HDR MODE setting	
		OFF	LIVE HDR
Gamma	ON/OFF	Yes	(Fixed OETF)
	R/G/B/Master	Yes	No
	Step Gamma	Yes	No
Black	R/G/B/Master	Yes	Yes
Black Gamma	ON/OFF	Yes	Yes
	Range	Yes	Yes
	R/G/B/Master	Yes	Yes
Flare	ON/OFF	Yes	Yes
	R/G/B/Master	Yes	Yes
Knee	ON/OFF	Yes	(Fixed OFF)
	Knee Point R/G/B/Master	Yes	No
	Knee Slope R/G/B/Master	Yes	No
	Auto Knee ON/OFF	Yes	No
	Auto Knee Point Limit	Yes	No
	Auto Knee Auto Slope	Yes	No
Detail	ON/OFF	Yes	Yes
	Level	Yes	Yes
	Limiter	Yes	Yes
	Crispening	Yes	Yes
	Level Dep	Yes	Yes
	H/V Ratio	Yes	Yes
	Frequency	Yes	Yes
	Mix Ratio	Yes	No
	W.Limiter	Yes	Yes
	B.Limiter	Yes	Yes
	Knee Apt ON/OFF	Yes	(Fixed OFF)
	Knee Apt Level	Yes	No
Shutter	Shutter ON/OFF	Yes	Yes
	ECS ON/OFF	Yes	Yes
	Shutter Level	Yes	Yes
	ECS Level	Yes	Yes
Skin Detail	ON/OFF	Yes	Yes
	Gate ON/OFF	Yes	No
	Zoom Link ON/OFF	Yes	Yes
	Natural Skin DTL ON/OFF	Yes	Yes
	Level	Yes	Yes
	Phase	Yes	Yes
	Width	Yes	Yes
	Saturation	Yes	Yes
	Y Limit	Yes	Yes
Saturation	ON/OFF	Yes	Yes
	Saturation	Yes	Yes

Paint function		HDR MODE setting		
		OFF	LIVE HDR	
Matrix	ON/OFF	Yes	Yes	
	User Matrix ON/OFF	Yes	Yes	
	User Matrix R-G/G-B/B-R/R-B/G-R/B-G	Yes	Yes	
	Multi Matrix ON/OFF	Yes	Yes	
	Multi Matrix Phase	Yes	Yes	
	Multi Matrix Hue/Saturation	Yes	Yes	
	Adaptive Matrix ON/OFF	Yes	Yes	
	Adaptive Matrix Level	Yes	Yes	
	Preset Matrix ON/OFF	Yes	Yes	
	Preset Matrix Preset	Yes	Yes	
V Mod Saw	ON/OFF	Yes	Yes	
	R/G/B/Master	Yes	Yes	
Low Key Saturation	ON/OFF	Yes	Yes	
	Range	Yes	Yes	
	Low Key Sat	Yes	Yes	
White Clip	ON/OFF	Yes	(Fixed OFF)	
	R/G/B/Master	Yes	No	
Knee Saturation	ON/OFF	Yes	(Fixed OFF)	
	Knee Sat	Yes	No	
Auto Iris	ON/OFF	Yes	Yes	
	Pattern	Yes	Yes	
	Level	Yes	Yes	
	APL Ratio	Yes	Yes	
	Iris Gain	Yes	Yes	
Gamma Table	Standard ON/OFF	Yes	(Fixed OETF)	
	Standard	Yes	(Fixed OETF)	
	Hyper ON/OFF	Yes	(Fixed OETF)	
	Hyper	Yes	(Fixed OETF)	
	Special ON/OFF	Yes	(Fixed OETF)	
	Special	Yes	(Fixed OETF)	
	User ON/OFF	Yes	(Fixed OETF)	
	User	Yes	(Fixed OETF)	
Noise Suppression	ON/OFF	Yes	Yes	
	Noise Sup	Yes	Yes	
Flicker Reduction	ON/OFF	Yes	Yes	
	Frequency	Yes	Yes	
	ACM/Standard	Yes	Yes	
Black Shading	R/G/B H/V Para/Saw	Yes	Yes	
White Shading	R/G/B H/V Para/Saw	Yes	Yes	
Black Set	Black Set	Yes	Yes	
OHB Matrix	ON/OFF	Yes	Yes	
	User Matrix R-G/G-B/B-R/R-B/G-R/B-G	Yes	Yes	
	Multi Matrix Phase	Yes	Yes	
	Multi Matrix Hue/Saturation	Yes	Yes	
ATW	ON/OFF	Yes	Yes	
	Speed	Yes	Yes	
ALAC	ON/OFF	Yes	Yes	

Paint functions that can be adjusted when COLOR SPACE is selected

Paint function		COLOR SPA	COLOR SPACE setting	
		BT.709	BT.2020	
			BT.2020 COLO	OR MODE setting
			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	
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	

Paint function		COLOR SPACE	COLOR SPACE setting	
		BT.709	BT.2020	
			BT.2020 COLOR	MODE setting
			WIDE-F	WIDE-BC
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	
	Adaptive Matrix Level		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		COLOR SPACE	COLOR SPACE setting		
		BT.709	BT.2020		
			BT.2020 COLOR	MODE setting	
			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 an HKCU-IP43F is installed and a PWS-100NM1 IP Live System Manager station is connected, settings on the NETWORKED MEDIA INTERFACE page and IP LIVE page must be configured in the NETWORK 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	Fixed value Address for listening for both LAN1 and LAN2.
Port	<u>161</u>	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, <u>Disable</u>	
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	<u>0</u> 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	public	ASCII code, up to 32 characters
Network Interface Name	<u>LAN1</u> , LAN2	Specifies the network to send trap notifications.
IP Address	0.0.0.0 to 255.255.255.255	Specifies the trap destination. SNMP walk/get from the specified trap destination is supported.
Port	<u>162</u>	
Version	V2C	Fixed value
Туре	TRAP	Fixed value

Status Display

The CCU system status can be monitored using a video monitor connected to the PIX connector.

For information on monitoring and changing settings, see "Menu Settings" (page 28).

Displaying the Status Screen

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

DISP/MENU lever



To display the status screen

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

To exit the status screen display

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

Status Display Screen

The following information is displayed on the status display screen.

- · Camera settings
- · System status
- Camera system diagnostics
- · Camera and unit audio status
- Camera and unit intercom status
- Warning display
- NMI-LAN connector status
- 12G/6G-SDI connector output status
- LAN-1 and LAN-2 connector status
- · IP stream transmission status

Camera settings



CHU MODE indication

Displays the CHU MODE (connected camera).

2 Lens file name indication

Displays the lens file name.

③ F drop indication

Displayed when an F drop occurs.

EX (lens extender) indication

Displayed during use of the lens extender.

F-stop value indication

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

6 Camera auto control information area

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

7 Gain value indication

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

8 ND filter indication

Displays the currently selected ND filter type.

9 CC filter indication

Displays the currently selected CC filter type.

Camera microphone status indication

Displayed when the camera microphone is on.

Shutter speed/Clear scan frequency indication

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

Bhutter/ECS indication

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

Notes

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

System status



CHU Mode: CHU MODE (connected camera) setting

Reference: Reference signal format used and genlock status ("Not detected" is displayed when a reference signal is not input.)

Slot1: Output signal format of SLOT1

Slot2: Output signal format of each connector of SLOT2 **Slot3:** Output signal format of each connector of SLOT3

Camera system diagnostics

System Diagnos	is	02/05
Optical Condit	ion	
CAM DOMESTICS CCU DOMESTICS	1 OK 1 Warning	
Camera Cable Power Supply Cable Length	:Connected :OK :~100m	
Network Link Status	:Up	
CCU No.	:10	

Optical Condition CAM: Camera light sensor level Optical Condition CCU: Unit light sensor level Camera Cable: Camera cable connection status Power Supply: Camera power supply status Cable Length: Cable length Network Link Status: LAN connection status CCU No.: CCU number setting status

Camera and unit audio status

Audio		03/05
Camera MIC Gain CH1 CH2	:60dB :60dB	
CCU Audio Out	:AES/EBU	

- Camera MIC Gain CH1: Camera microphone circuit 1 amp gain status
- Camera MIC Gain CH2: Camera microphone circuit 2 amp gain status
- CCU Audio Out: Output format of the AUDIO OUT connector of the unit

Camera and unit intercom status



- Camera Engineer: Camera microphone status of the ENG line of the camera
- **Camera Producer:** Camera microphone status of the PROD line of the camera
- CCU MIC/PGM: Status of MIC/PGM switch on the front of the unit

CCU Line: Intercom system connection status

Warning display



Displays any warning that occurs.

NMI-LAN connector status (when HKCU-IP43F is installed)

NMI St	atus	06/06
LAN1 LAN2	:Link down :Link down	
LSM1 LSM2	:Connecting :Disabled	
Genloc	k:Freerun	
Link1 Link2 Link3 Link4	:Available :Unavailable :Unavailable :Unavailable	

LAN1: Link status of NMI-LAN1 connector LAN2: Link status of NMI-LAN2 connector LSM1: LSM1 connection status LSM2: LSM2 connection status Genlock: Network Genlock status Link1: Link1 AV stream status Link2: Link2 AV stream status Link3: Link3 AV stream status Link4: Link4 AV stream status

12G/6G-SDI connector output status (when HKCU-4002 is installed)

12G/6G-SDI	Status	06/06
SDI OUT STATUS:	SLOT1-2 OK	

STATUS: 12G/6G-SDI connector output status ("-----" is displayed when there is no output)

LAN-1 and LAN-2 connector status (when HKCU-4001 is installed)

Netu	uork	05/07
LAN SPD FEC	1:Link up 1:25G 1:FC-FEC	2:Link up 2:256 2:FC-FEC
LSM	1:Connecting	2:Connecting
PTP	1:No master	2:No master
Ref	:1080/59.94 Locked	

LAN 1: Link status of LAN-1 connector

- SPD 1: Link speed of LAN-1 connector
- FEC 1: FEC setting of the LAN-1 connector
- LSM 1: Connection status of the LAN-1 connector with Live System Manager

PTP 1: Network genlock status of the LAN-1 connector * The above items are also shown for the LAN-2 connector.

Ref: Used reference format setting and genlock status

IP stream transmission status

IP Stream	06/07
OUT VIDEO 4K VIDEO HD1 VIDEO HD2 VIDEO HD3	IN RETURN1
AUDIO	PGM
INTERCOM	INTERCOM
META 4K META HD1 META HD2 META HD3	

OUT: Outgoing IP stream IN: Incoming IP stream -----: No incoming/outgoing stream

Menu Settings

The CCU system and peripheral settings can be checked and modified using a video monitor connected to the PIX connector.

Changing Menu Item Settings

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

DISP/MENU lever and indicator



To display a menu page

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

To display the CCU MENU page

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



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

To select an item in the CCU MENU

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

To change the displayed page

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

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



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

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

To change a menu item setting

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

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

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

2 Turn the CONTROL knob to change the setting.

To cancel a changed setting

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

To suspend menu changes

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

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

3 Press the CONTROL knob.

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

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

To enter a character string

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

characters. The following menu item has character strings:

- VIDEO/MONITOR menu → <BAR CHARACTER> page →
 BAR CHARACTER
- **1** Move the text cursor to the input position, then press the CONTROL knob.

A second cursor is displayed in the character list.

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

Repeat steps 1 and 2 to enter other characters.

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

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

The new input string is registered.

To cancel the character string setting

Turn the CONTROL knob to move the cursor to ESC, then press the CONTROL knob.

To exit the menu display

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

Menu Tree

SYSTEM OPERATION menu





a) Displayed when HKCU-4002 is installed

b) Displayed when HKCU-IP43F is installed

c) Displayed when HKCU-4001 is installed

VIDEO/MONITOR menu



AUDIO/INTERCOM menu



a) Displayed when HKCU-4001 is installed

MAINTENANCE menu

NETWORK menu

- I/F SETTINGS	- SLOT3 (SDI I/O)
(M01)	- CHARACTER/SYNC OUT
	- MIC/WF REMOTE
	- REAR PREVIEW
	- TRUNK LINE
(M02)	
(1102)	
(1003)	
(10104)	
	- RE DIRECTION
	- CALEGORY
	- PAGE
	- CAMERA MENU CIRL
- DATE&TIME	– DATE (YEAR)
(M05)	– DATE (MONTH)
	– DATE (DAY)
	- TIME (HOUR)
	- TIME (MINUTE)
	- TIME ZONE (HOUR)
	 TIME ZONE (MINUTE)
- TALLY INPUT	- R-TALLY
(M06)	- G-TALLY
	- Y-TALLY
- ALARM SETTINGS	- FORCE LEGACY
(M07)	- CABLE OPEN
	- GENLOCK ERROR
SDI ANCILLARY DATA	- VIDEO PAYLOAD ID
(M08)	- EMBED AUDIO
	- EMBED META DATA
SWITCH ASSIGN	 ASSIGNABLE SWITCH
(M09)	
	- READ
(M10)	- INSTALLED OPTIONS
	- LASER DIODE ON BACKUP
(M11)	- RETURN VF







a) Displayed when HKCU-IP43F is installed

b) Displayed when HKCU-4001 is installed

DIAGNOSIS menu



a) Displayed when HKCU-IP43F is installed

b) Displayed when HKCU-4001 is installed

Menu List

Note

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

SYSTEM OPERATION menu

SYSTEM OPERATION			
Page name Page No.	Item	Set value	Indication
<camera f="" i=""></camera>	OUTPUT	CAMERA, <u>BAR</u> , TEST1, TEST2	Selects the output signal.
S01			TEST1 and TEST2 are not selectable if there is no communication with the camera.
	LASER DIODE	ON, <u>OFF</u>	Turns the optical signal output from the CCU to the camera ON/OFF.
			(Displayed only when connected using optical fiber composite cable.)
	START UP VIDEO SIGNAL	BARS, GRAY	Selects the signal to output until the unit connects with the camera after power-on.
<genlock> S02</genlock>	REFERENCE	(NOT DETECTED), (1080/59.94l), (1080/23.98PsF), (720/59.94P), (1080/50l), (1080/24PsF), (720/ 50P), (UNKNOWN)	Signal input of the Reference connector (Display only)
	LOCK STATUS	(LOCKED), (NOT LOCKED)	Lock status of the external reference signal (Display only).
	GENLOCK	HD, <u>SD</u> , NETWORK	Selects the lock mode of the external reference signal. (NETWORK is displayed when HKCU-4001 is installed.)
	10F BB	<u>OFF</u> , ON	Sets whether to use the 10Field ID added to the external reference signal
			This can be selected when GENLOCK is SD and MULTI FORMAT> page \rightarrow SYSTEM is 1.001(525).
	H-PHASE STEP	When HD is selected in GENLOCK: –3.01 to +3.45 µsec <u>0.00</u>	Adjusts the horizontal lock phase in relation to the reference signal (steps)
		When SD is selected in GENLOCK: –8.29 to +9.48 µsec <u>0.00</u>	
	H-PHASE COARSE	–99 to 99 <u>0</u>	Adjusts the horizontal lock phase in relation to the reference signal (fine adjustment)
	V-PHASE	<u>0</u> to 7	Adjusts the vertical lock phase in relation to the reference signal (lines)
	SYNC OUT SELECT	SD SYNC, HD SYNC	Sets the output signal of the CHARACTER/SYNC OUT connector
			This is enabled only when MAINTENANCE Menu \rightarrow //F SETTINGS> page \rightarrow CHARACTER/SYNC is SYNC.

SYSTEM OPERATION			
Page name Page No.	Item	Set value	Indication
<multi format=""></multi>	SYSTEM	<u>1.001(525)</u> , 1.000(625)	Selects the operating frequency of the system.
S03	BASE FORMAT	When 1.001(525) is selected in SYSTEM: 1080/59.94P, <u>1080/59.94I</u> , 1080/ 29.97PsF, 1080/23.98PsF, 720/ 59.94P When 1.000(625) is selected in SYSTEM: 1080/50P, <u>1080/50I</u> , 1080/25PsF, 1080/24PsF, 720/50P	Selects the format of the HD system.
	4K/HFR FORMAT	See "4K/HFR FORMAT" (page 41).	Sets the 4K/HD HFR operation format based on the BASE FORMAT setting.
	BT.2020 COLOR MODE	WIDE-F, <u>WIDE-BC</u>	WIDE-F: Color space setting closest to BT.2020. Suitable for wide color gamut recording, such as for cinema applications.
			WIDE-BC: Can be operated as BT.2020 color gamut with high affinity for 709 color gamut output. Applicable for simultaneous 709 color gamut output and BT.2020 color gamut output operation. It also supports all camera paint functions.
			Note When WIDE-F is selected, the MATRIX function is fixed and cannot be adjusted.
	EBAME CONVERT	0.8.1.2. 1.6 E@23.98PsE	Sets the video delay time when 2-3 Pulldown
	DELAY	0.0, 1.2, <u>1.0</u> 1 @20.001 31	This is enabled only when SYSTEM is 1.001(525).
	HD-SD DELAY	When 1080/59.94P, 1080/59.94I, 1080/29.97PsF, 1080/23.98PsF, 1080/50P, 1080/50I, 1080/25PsF, or 1080/24PsF is selected in BASE FORMAT: FRAME(1F) When 720/59.94P or 720/50P is selected in BASE FORMAT: FRAME(2F)	Displays the phase output for SD signals down converted from HD signals.
<hdr></hdr>	HDR MODE	<u>OFF</u> , LIVE HDR	OFF: Normal shooting operation.
S04			LIVE HDR: Used for LIVE HDR shooting.
			When LIVE HDR is selected, camera paint functions can be used for both HDR output and SDR output. However, some paint functions are not supported for HDR output.
			For details, see "Paint Functions in HDR MODE and COLOR SPACE" (page 19).
	SDR GAIN	<u>0.0</u> to −15.0 dB	Enabled in LIVE HDR mode only. Gain setting applied to SDR output
	HDR CONTRAST	100 to 566 %	Enabled in LIVE HDR mode only.
			HDR output contrast maintained by setting SDR GAIN (Display only)
	HDR BLACK OFFSET	–99.9 to 99.9, <u>0.0</u>	Enabled in LIVE HDR mode only. HDR output black offset

SYSTEM OPERATION				
Page name Page No.	Item		Set value	Indication
<output format=""></output>	SLOT1			
S05	1		See "Formats settable for SLOT1-1" (page 41).	Sets the output signal format of the connector of SLOT1-1.
	(OETF	SDR, S-Log3, HLG	Sets the gamma curve of the SLOT1 video output. Fixed to SDR when HDR MODE is OFF.
	-	LOOK	Live, Mild, Natural	SLOT1 Look setting
				Displays "" when OETF is set to SDR
	(COLOR	BT.709 , BT.2020	Selects the color space of SLOT1 video output.
				BT.709: 709 color space setting close to HDC-series cameras.
				BT.2020: Applicable for color space selected in BT.2020 COLOR MODE on the MULTI FORMAT page.
				Fixed to BT.709 if the format is HD resolution and OETF is set to SDR.
	2		See "Formats settable for SLOT1-2 (when HKCU-4002 is installed)" (page 43).	Displays the SLOT1-2 connector output format when SLOT1-1 is set to 4K format.
	SLOT2	2		
	1		<u>C</u> , M	Sets whether to add characters to the output signal.
				C: Characters are not added.
				M: Characters are added.
			See "Formats settable for SLOT2 and SLOT3" (page 43).	Sets the output signal format of the SLOT2-1 connector.
	2		<u>C,</u> M	Sets whether to add characters to the output signal.
				C: Characters are not added.
				M: Characters are added.
			See "Formats settable for SLOT2 and SLOT3" (page 43).	Sets the output signal format of the SLOT2-2 connector.
	3		<u>C</u> , M	Sets whether to add characters to the output signal.
				C: Characters are not added.
				M: Characters are added.
			See "Formats settable for SLOT2 and SLOT3" (page 43).	Sets the output signal format of the SLOT2-3 connector.
	4		M	M: Characters are added.
			See "Formats settable for SLOT2 and SLOT3" (page 43).	Sets the output signal format of the SLOT2-4 connector.
	SLOTS	3		
	1		<u>C</u> , M	Sets whether to add characters to the output signal.
				C: Characters are not added.
				M: Characters are added.
			See "Formats settable for SLOT2 and SLOT3" (page 43).	Sets the output signal format of the SLOT3-1 connector.
	2		<u>C</u> , M	Sets whether to add characters to the output signal.
				C: Characters are not added.
				M: Characters are added.
			See "Formats settable for SLOT2	Sets the output signal format of the SLOT3-2
			and SLOT3" (page 43).	connector.

SYSTEM OPERATION			
Page name Page No.	Item	Set value	Indication
<output format2=""></output>	SLOT4(NMI)		(When HKCU-IP43F is installed)
S06	1	<u>C</u>	C: Characters are not added.
(When HKCU-IP43F or HKCU-4001 is installed)		See "Formats settable for SLOT4 (NMI) (when HKCU-IP43F is installed)" (page 43).	Sets the output signal format of the SLOT4-1 connector.
	2	M	M: Characters are added.
		See "Formats settable for SLOT4 (NMI) (when HKCU-IP43F is installed)" (page 43).	Sets the output signal format of the SLOT4-2 connector.
	IP OUT(4K)		(When HKCU-4001 is installed)
	1	<u>C</u>	C: Characters and markers are not added to the output signal (fixed)
		Output format	When the SLOT1-1 connector output signal is a 4K video, the same video is output as an ST 2110 video stream.
	OETF	<u>SDR</u>	Displays the same settings as the SLOT1-1
	LOOK	Live, Mild, Natural	connector.
	COLOR	<u>BT.709</u> , BT.2020	_
<output format3=""> S07 (When HKCU-4001 is installed)</output>	IP OUT(HD)		(When HKCU-4001 is installed)
	1	C	C: Characters and markers are not added to the output signal (fixed)
		Output format	Sets the IP output video signal format.
	OETF	<u>SDR</u> , S-Log3, HLG	Sets the IP video output. When the SLOT1-1
	LOOK	<u>Live</u> , Mild, Natural	_ HDR, the same OETF, LOOK, and COLOR as the
	COLOR	<u>BT.709</u> , BT.2020	SLOT1-1 connector can be selected.
	2	С, <u>М</u>	Sets whether to add characters and markers to the output signal.
			C: Characters and markers are not added.
			M: Characters and markers are added.
			Fixed to C when 4K format is configured.
		Output format	Sets the IP output video signal format.
	OETF	<u>SDR</u> , S-Log3, HLG	Sets the IP video output. When the SLOT1-1
	LOOK	<u>Live</u> , Mild, Natural	$_$ HDR, the same OETF, LOOK, and COLOR as the
	COLOR	<u>BT.709</u> , BT.2020	SLOT1-1 connector can be selected.
	3	С, <u>М</u>	Sets whether to add characters and markers to the output signal.
			C: Characters and markers are not added.
			M: Characters and markers are added.
		Output format	Sate the ID output video sized format
	OETE		Sets the IP video output When the SLOT1 1
			- connector output format is 1080/59.94 or 1080/50 in
			HDR, the same OETF, LOOK, and COLOR as the
	COLON	DI.103 , DI.2020	SECTIFI CONNECTOR CAN be selected.

SYSTEM OPERATION					
Page name Page No.	Item	Set value	Indication		
<return></return>	RET1				
S06 S08 (When HKCU-IP43F or HKCU-4001 is	INPUT	SDI IN1, SDI IN2, SDI I/O1, SDI I/O2	Sets the return video input signal to display when RET1 is selected on the camera.		
Installed)		[When the HKCU-4001 is installed]	To use the VBS IN 3 input, select SDI I/O1 and set FORMAT to NTSC or PAL.		
		IP RET1, IP RET2	To use the VBS IN 4 input, select SDI I/O2 and set FORMAT to NTSC or PAL.		
	FORMAT	<u>1080/59.94I(PsF)</u>	Sets the format of the input signal selected using INPUT.		
			For the supported formats that can be selected for each BASE FORMAT setting, see <i>"Formats settable</i> for RETURN FORMAT" (page 46).		
	RET2				
	INPUT	SDI IN2	Sets the return video input signal to display when		
		(same input options as RET1)	RET2 is selected on the camera.		
	FORMAT	<u>1080/59.94I(PsF)</u>	Same as RET1.		
	RET3				
	INPUT	SDI I/O1	Sets the return video input signal to display when		
		(same input options as RET1)	RET3 is selected on the camera.		
	FORMAT	<u>1080/59.94l(PsF)</u>	Same as RET1.		
	RET4				
	INPUT	SDI I/O2	Sets the return video input signal to display when		
		(same input options as RET1)	RET4 is selected on the camera.		
	FORMAT	<u>1080/59.94I(PsF)</u>	Same as RET1.		
	FRAME SYNCHRONIZER	<u>OFF</u> , ON	Sets the frame synchronizer function for the return signal.		
	SD-RETURN MATRIX	OFF, <u>ON</u>	Sets application of the HD matrix to the SD return signal.		
<chu mode=""></chu>	CHU MODE	HDC4300/HDC-P43,	Sets the camera head to connect.		
S07 S09 (When HKCU-IP43F or HKCU-4001 is		HDC(HD CUTOUT)	The unit starts automatically after changing the setting. Restarting may take a few minutes due to internal mode change.		
installed)			HDC(HD CUTOUT): Select to use the cutout function.		

SYSTEM OPERATION			
Page name Page No.	Item	Set value	Indication
<hd cutout=""></hd>	HD CUTOUT	<u>OFF</u> , ON	Turns the HD cutout function ON/OFF.
S08 S10 (When HKCU-IP43F			Enabled only when HDC(HD CUTOUT) is selected in CHU MODE.
or HKCU-4001 is installed)			The cutout HD signal from the 4K source is output from SLOT1.
	MODE	<u>SIMPLE HD,</u>	Selects the cutout mode.
		ZOOM&PERSPECTIVE	SIMPLE HD: Outputs a 1920x1080 HD region cutout from the 4K video as-is. Dual output is supported. The cutout signal set by the CUTOUT POSITION CH1 setting is output from the 1/2 connector and 5/6 connector of Slot1, and the cutout signal set by the CUTOUT POSITION CH2 setting is output from the 3/4 connector and 7/8 connector of Slot1.
			ZOOM&PERSPECTIVE: Outputs an HD signal formed by zooming in or out of the cutout region from the 4K video. In this mode, a perspective transformation is performed according to the focal length of the lens, and an image similar to the image obtained by the camera facing the cutout direction is output.
	CUTOUT CH	<u>1</u> , 2	Selects the cutout position channel.
			Only channel 1 is available when ZOOM&PERSPECTIVE is selected.
	CENTER H	–1536 to 1535, <u>0</u>	Specifies the cutout position center (horizontal direction, 0: center).
			(Setting when MODE is ZOOM&PERSPECTIVE, CUTOUT POSITION ZOOM is 4.0, and FOCAL LENGTH is Infinity)
	CENTER V	–810 to 809, <u>0</u>	Specifies the cutout position center (vertical direction, 0: center).
			(Setting when MODE is ZOOM&PERSPECTIVE, CUTOUT POSITION ZOOM is 4.0, and FOCAL LENGTH is Infinity)
	ZOOM	1.0 to 4.0, <u>2.0</u>	Specifies the zoom factor (1.0: same position as the 4K video)
			Enabled only when ZOOM&PERSPECTIVE is selected.
	CAMERA TILT	–45.0 to 45.0, <u>0</u>	Specifies the tilt angle of the camera (0: horizontal, positive angles represent upward tilt)
			Enabled only when ZOOM&PERSPECTIVE is selected.
	CAMERA ROLL	–5.0 to 5.0, <u>0</u>	Specifies the roll angle of the camera (0: horizontal, positive values represent counterclockwise roll)
			Enabled only when ZOOM&PERSPECTIVE is selected.
	FOCAL LENGTH	<u>7</u> to 500, ∞	Specifies the focal length of the lens (unit: mm)
			To avoid shape change due to perspective transformation, increase the focal length until "INFINITY" is displayed.
			Enabled only when ZOOM&PERSPECTIVE is selected.
<sr live<="" td=""><td>META</td><td>OFF, ON</td><td>SR Live metadata embed on/off setting</td></sr>	META	OFF, ON	SR Live metadata embed on/off setting
MEIADAIA(OUIPUI)>	1st F	LINE9 to LINE20, LINE14	Line number used in 1st field
S00 S11 (When HKCU-IP43F or HKCU-4001 is installed)	2nd F	LINE572 to LINE583, <u>LINE577</u>	Line number used in 2nd field

4K/HFR FORMAT

BASE FORMAT 4K/HFR FORMAT selection options		
settings	When CHU MODE is HDC4300/HDC-P43	When CHU MODE is HDC(HD CUTOUT)
1080/59.94P	4096x2160/59.94P, 1080/59.94P, 1080/59.94P(2x), 1080/59.94P(3x), 1080/59.94P(4x)	4096x2160/59.94P
<u>1080/59.941</u>	4096x2160/59.94P, 1080/59.94P, 1080/59.94P(2x), <u>1080/59.94P(3x)</u> , 1080/59.94P(4x), 1080/59.94I(6x), 1080/59.94I(8x)	4096x2160/59.94P
1080/29.97PsF	4096x2160/29.97P, 1080/29.97P	-
1080/23.98PsF	4096x2160/23.98P, 1080/23.98P	-
720/59.94P	4096x2160/59.94P, 720/59.94P(2x), 720/59.94P(3x), 720/59.94P(4x), 720/59.94P(6x), 720/59.94P(8x)	4096x2160/59.94P
1080/50P	4096x2160/50P, 1080/50P, 1080/50P(2x), 1080/50P(3x), 1080/50P(4x)	4096x2160/50P
1080/501	4096x2160/50P, 1080/50P, 1080/50P(2x), 1080/50P(3x), 1080/50P(4x), 1080/50i(6x), 1080/50i(8x)	4096x2160/50P
1080/25PsF	4096x2160/25P, 1080/25P	-
1080/24PsF	4096x2160/24P, 1080/24P	-
720/50P	4096x2160/50P, 720/50P(2x), 720/50P(3x), 720/50P(4x), 720/50P(6x), 720/50P(8x)	4096x2160/50P

Formats settable for SLOT1-1

4K/HFR FORMAT settings	SLOT1 selection options		
	When CHU MODE is HDC4300/HDC-P43	When CHU MODE is HDC(HD CUTOUT)	
4096x2160/59.94P	4096x2160/59.94P/SQD/3G-A 4096x2160/59.94P/SQD/3G-B 4096x2160/59.94P/2SI/3G-A 4096x2160/59.94P/2SI/3G-B 3840x2160/59.94P/SQD/3G-A 3840x2160/59.94P/SQD/3G-B 3840x2160/59.94P/2SI/3G-A 3840x2160/59.94P/2SI/3G-B • When BASE FORMAT is 1080/59.94P or 1080/59.94I 1080/59.94P/3G-B 1080/59.94P/3G-B 1080/59.94P/3G-B 1080/59.94P	 When BASE FORMAT is 1080/59.94P or 1080/59.94I 1080/59.94P/3G-A 1080/59.94P/3G-B 1080/59.94I When BASE FORMAT is 720/59.94P 720/59.94P 	
4096x2160/29.97P	4096x2160/27.97PsF/SQD/3G-B 4096x2160/27.97P/2SI/3G-B 4096x2160/27.97PsF/SQD 3840x2160/27.97PsF/SQD/3G-B 3840x2160/27.97PsF/SQD/3G-B 3840x2160/27.97PsF/SQD/3G-B 1080/29.97PsF	-	
4096x2160/23.98P	4096x2160/23.98PsF/SQD/3G-B 4096x2160/23.98P/2SI/3G-B 4096x2160/23.98PsF/SQD 3840x2160/23.98PsF/SQD/3G-B 3840x2160/23.98PsF/SQD/3G-B 3840x2160/23.98PsF/SQD/3G-B 1080/23.98PsF	_	
1080/59.94P	1080/59.94P/3G-A 1080/59.94P/3G-B 1080/59.94I	-	
1080/59.94P(2x)	1080/59.94P(2x)/3G-A 1080/59.94P(2x)/3G-B 1080/59.94I(2x)/3G-B 1080/59.94I(2x)	-	

4K/HFR FORMAT settings	SLOT1 selection options			
	When CHU MODE is HDC4300/HDC-P43	When CHU MODE is HDC(HD CUTOUT)		
<u>1080/59.94P(3x)</u>	1080/59.94P(3x)/3G-A 1080/59.94P(3x)/3G-B 1080/59.94I(3x)	-		
1080/59.94P(4x)	1080/59.94P(4x)/3G-A 1080/59.94P(4x)/3G-B 1080/59.94I(4x)/3G-B 1080/59.94I(4x)	_		
1080/59.94I(6x)	1080/59.94I(6x)/3G-B	-		
1080/59.94I(8x)	1080/59.94I(8x)/3G-B	-		
720/59.94P	720/59.94P	-		
720/59.94P(2x)	720/59.94P(2x)/3G-B 720/59.94P(2x)	-		
720/59.94P(3x)	720/59.94P(3x)	_		
720/59.94P(4x)	720/59.94P(4x)/3G-B 720/59.94P(4x)	-		
720/59.94P(6x)	720/59.94P(6x)/3G-B	-		
720/59.94P(8x)	720/59.94P(8x)/3G-B	-		
4096x2160/50P	4096x2160/50P/SQD/3G-A 4096x2160/50P/SQD/3G-B 4096x2160/50P/2SI/3G-A 4096x2160/50P/2SI/3G-A 3840x2160/50P/SQD/3G-B 3840x2160/50P/SQD/3G-B 3840x2160/50P/2SI/3G-A 3840x2160/50P/2SI/3G-B • When BASE FORMAT is 1080/50P or 1080/50I 1080/50P/3G-A 1080/50P/3G-B 1080/50I	 When BASE FORMAT is 1080/50P or 1080/50I 1080/50P/3G-A 1080/50P/3G-B 1080/50I When BASE FORMAT is 720/50P 720/50P 		
	When BASE FORMAT is 720/50P 720/50P			
4096x2160/25P	4096x2160/25PsF/SQD/3G-B 4096x2160/25P/2SI/3G-B 4096x2160/25PsF/SQD 3840x2160/25PsF/SQD/3G-B 3840x2160/25PsF/SQD/3G-B 3840x2160/25PsF/SQD/3G-B 1080/25PsF	_		
4096x2160/24P	4096x2160/24PsF/SQD/3G-B 4096x2160/24P/2SI/3G-B 4096x2160/24PsF/SQD 3840x2160/24PsF/SQD/3G-B 3840x2160/24P/2SI/3G-B 3840x2160/24PsF/SQD/3G-B 1080/24PsF	-		
1080/50P	1080/50P/3G-A 1080/50P/3G-B 1080/50I	-		
1080/50P(2x)	1080/50P(2x)/3G-A 1080/50P(2x)/3G-B 1080/50l(2x)/3G-B 1080/50l(2x)	-		
1080/50P(3x)	1080/50P(3x)/3G-A 1080/50P(3x)/3G-B 1080/50I(3x)	-		
1080/50P(4x)	1080/50P(4x)/3G-A 1080/50P(4x)/3G-B 1080/50I(4x)/3G-B 1080/50I(4x)	-		
1080/50I(6x)	1080/50I(6x)/3G-B	-		

4K/HFR FORMAT settings	SLOT1 selection options		
	When CHU MODE is HDC4300/HDC-P43	When CHU MODE is HDC(HD CUTOUT)	
1080/50I(8x)	1080/50I(8x)/3G-B	-	
720/50P	720/50P	-	
720/50P(2x)	720/50P(2x)/3G-B 720/50P(2x)	-	
720/50P(3x)	720/50P(3x)	-	
720/50P(4x)	720/50P(4x)/3G-B 720/50P(4x)	-	
720/50P(6x)	720/50P(6x)/3G-B	-	
720/50P(8x)	720/50P(8x)/3G-B	-	

Formats settable for SLOT1-2 (when HKCU-4002 is installed)

SLOT1-1 format setting status	SLOT1-2 output format
4096x2160/59.94	4096x2160/59.94P/12G
3840x2160/59.94	3840x2160/59.94P/12G
4096x2160/27.97	4096x2160/29.97P/6G
3840x2160/27.97	3840x2160/29.97P/6G
4096x2160/23.98	4096x2160/23.98P/6G
3840x2160/23.98	3840x2160/23.98P/6G
4096x2160/50	4096x2160/50P/12G
3840x2160/50	3840x2160/50P/12G
4096x2160/27.97	4096x2160/25P/6G
3840x2160/27.97	3840x2160/25P/6G
4096x2160/24	4096x2160/24P/6G
3840x2160/24	3840x2160/24P/6G
Other settings	SLOT1-2 output not supported

Formats settable for SLOT2 and SLOT3

BASE FORMAT settings	SLOT 2 and SLOT 3 selection options		
	When CHU MODE is HDC4300/HDC-P43	When CHU MODE is HDC(HD CUTOUT)	
1080/59.94P	1080/59.94P/3G-A, 1080/59.94P/3G-B, 1080/59.94P/ Link-A, 1080/59.94P/Link-B, 1080/59.94i, 525/59.94I	1080/59.94P/3G-A, 1080/59.94P/3G-B, 1080/59.94P/ Link-A, 1080/59.94P/Link-B, 1080/59.94i, 525/59.94I	
<u>1080/59.94I</u>	<u>1080/59.941</u> , 525/59.941	<u>1080/59.941</u> , 525/59.941	
1080/29.97PsF	1080/29.97PsF, 525/29.97PsF	-	
1080/23.98PsF	1080/23.98PsF, 1080/59.94I, 525/59.94I	-	
720/59.94P	720/59.94P, 525/59.94I	720/59.94P, 525/59.94I	
1080/50P	1080/50P/3G-A, 1080/50P/3G-B, 1080/50P/Link-A, 1080/50P/Link-B, 1080/50I, 625/50I	1080/50P/3G-A, 1080/50P/3G-B, 1080/50P/Link-A, 1080/50P/Link-B, 1080/50I, 625/50I	
1080/501	1080/50i, 625/50l	1080/50i, 625/50I	
1080/25PsF	1080/25PsF, 625/25PsF	-	
1080/24PsF	1080/24PsF, 1080/50I, 625/50I	-	
720/50P	720/50P, 625/50I	720/50P, 625/50I	

Formats settable for SLOT4 (NMI) (when HKCU-IP43F is installed)

SLOT1-1 settings	SLOT4(NMI) selection options ¹⁾		
	When CHU MODE is HDC4300/HDC-P43	When CHU MODE is HDC(HD CUTOUT)	
4096x2160/59.94	3840x2160/59.94P/2SI/3G-A, 1080/59.94I	-	
3840x2160/59.94			
1080/59.94	1080/59.941	1080/59.941	

SLOT1-1 settings	SLOT4(NMI) selection options ¹⁾		
	When CHU MODE is HDC4300/HDC-P43	When CHU MODE is HDC(HD CUTOUT)	
4096x2160/50	3840x2160/50P/2SI/3G-A, 1080/50I	-	
3840x2160/50			
1080/50	1080/501	1080/501	
Other settings	SLOT4 output not supported	SLOT4 output not supported	

1) If SLOT4-1 is set to 4K, SLOT4-2 is unavailable. If SLOT4-1 is set to HD, SLOT4-2 is also set to HD.

Formats settable for IP OUT

BASE	SLOT1-1 settings	SLOT1 OETF	IP OUT selection options
FORMAT settings			
1080/59.94P	4K speed	SDR, S-Log3, HLG	IP OUT(4K)-1
1080/59.941			3840x2160/59.94P
			* 4K output OETF is same as SLOT1 OETF.
			IP OUT-1, IP OUT-2
			1080/59.94P/3G-A, 1080/59.94I
			IP OUT-3
			1080/59.941
			* HD output OETF is SDR (fixed).
	1080/59.94P	S-Log3, HLG	IP OUT(4K)-1
	1080/59.941		
			IP OUT-1, IP OUT-2
			1080/59.94P/3G-A, 1080/59.94
			IP OUT-3
			1080/59.941
			* OETF can be set to SDR to HDR (SLOT1 setting).
	1080/59.94P	SDR	IP OUT(4K)-1
	1080/59.941		
			IP OUT-1, IP OUT-2
			1080/59.94P/3G-A, 1080/59.94I
			IP OUT-3
			1080/59.941
			* OETF is SDR (fixed).
	1080/59.94P(2x, 3x, 4x)	SDR, S-Log3, HLG	IP OUT(4K)-1
	1080/59.94i(2x, 3x, 4x)		
			IP OUT-1, IP OUT-2
			1080/59.94P/3G-A, 1080/59.94I
			IP OUT-3
			1080/59.941
			* OETF is SDR (fixed).
1080/59.941	1080/59.94i(6x, 8x)	SDR, S-Log3, HLG	IP OUT(4K)-1
			IP OUT-1, IP OUT-2
			1080/59.941
			IP OUT-3
			1080/59.941
			* OETF is SDR (fixed).

BASE FORMAT settings	SLOT1-1 settings	SLOT1 OETF	IP OUT selection options
1080/50P	4K speed	SDR, S-Log3, HLG	IP OUT(4K)-1
1080/501			3840x2160/50P
			* 4K output OETF is same as SLOT1 OETF.
			IP OUT-1, IP OUT-2
			1080/50P/3G-A, 1080/50I
			IP OUT(HD)-3
			1080/501
			* HD output OETF is SDB (fixed).
	1080/50P	SDB S-Log3 HLG	IP OUT(4K)-1
	1080/501	0011, 0 20g0, 1120	
			1080/50P/3G-A 1080/50
			1090/501
			* OFTE can be set to SDB to HDB (SLOT1 setting)
	1000/500	200	
	1080/501	SUR	
			1080/50P/3G-A 1080/50I
			* OFTE in SDR (fixed)
	1000/500/02 02 42		
	1080/50F(2x, 3x, 4x) 1080/50I(2x, 3x, 4x)	SDR, S-LOYS, FLG	
	1000/301(2x, 3x, 4x)		
			1080/50F/3G-A, 1080/501
1000/501	4000/501/00.)		
1080/501	1080/501(6x,8x)	SDR, S-Log3, HLG	IP OUT(4K)-1
			IP OUT-1, IP OUT-2
			1080/501
			IP OUT-3
			^ OETF IS SDR (fixed).
720/59.94P	4K speed	SDR, S-Log3, HLG	IP OUT(4K)-1
			3840x2160/59.94P
			IP OUT-1, IP OUT-2, IP OUT-3
	720(1x 2x 3x 4x 6x 8x)		IP output not supported
720/50P	4K speed	SDB/S-Log3 HLG	IP OUT(4K)-1
120/001			3840x2160/50P
	720(1x 2x 3x 4x 6x 8x)		IP output not supported
Other sottings	· ==(1, 2, 0, 1, 0, 0, 0)		IP output not supported
Curer settings		1	in output not supported

Formats settable for RETURN FORMAT

BASE FORMAT settings	RETURN FORMAT selection options			
	SDI IN1, SDI IN2	SDI IN3, SDI IN4	IP RET1, IP RET2	
1080/59.94P 1080/59.94I	1080/59.94P ¹⁾ , 1080/59.94I(PsF), 525/59.94I(PsF)	1080/59.94P ¹⁾ , 1080/59.94I(PsF), 525/59.94I(PsF), NTSC	1080/59.94P, 1080/59.94I(PsF)	
1080/29.97PsF	1080/59.94P ¹⁾ , 1080/59.94I(PsF), 525/59.94I(PsF)	1080/59.94P ¹⁾ , 1080/59.94I(PsF), 525/59.94I(PsF), NTSC	- (IP RET not supported)	
1080/23.98PsF	1080/59.94P ¹⁾ , 1080/59.94I(PsF), 1080/23.98PsF, 525/59.94I(PsF)	1080/59.94P ¹⁾ , 1080/59.94I(PsF), 1080/23.98PsF, 525/59.94I(PsF), NTSC	- (IP RET not supported)	
720/59.94P	720/59.94P, 525/59.94I(PsF)	720/59.94P, 525/59.94I(PsF), NTSC	- (IP RET not supported)	
1080/50P 1080/50I	1080/50P ¹⁾ , 1080/50I(PsF), 625/50I(PsF)	1080/50P ¹⁾ , 1080/50I(PsF), 625/50I(PsF), PAL	1080/50P, 1080/50I(PsF)	
1080/25PsF	1080/50P ¹⁾ , 1080/50I(PsF), 625/50I(PsF)	1080/50P ¹⁾ , 1080/50I(PsF), 625/50I(PsF), PAL	- (IP RET not supported)	
1080/24PsF	1080/50P ¹⁾ , 1080/50I(PsF), 1080/24PsF, 625/50I(PsF)	1080/50P ¹⁾ , 1080/50I(PsF), 1080/24PsF, 625/50I(PsF), PAL	- (IP RET not supported)	
720/50P	720/50P, 625/50I(PsF)	720/50P, 625/501(PsF), PAL	- (IP RET not supported)	

1) Level A and Level B of 3G-SDI are detected automatically.

VIDEO/MONITOR menu

VIDEO/MONITOR			
Page name Page No.	ltem	Set value	Description
<color bar=""></color>	4K/HD		
V01	SDR	SDR-LOOK BAR 16:9(100%), SDR-LOOK BAR 16:9(75%), SMPTE 16:9(BLACK), SMPTE 16:9(-I/Q), BAR 4:3(100%), BAR 4:3(75%), SMPTE 4:3(BLACK), SMPTE 4:3(BLACK), SMPTE 4:3(-I/Q), MF-ARIB(75%), MF-ARIB(100%), MF-ARIB(75%), MF-SMPTE(-I,Q), MF-SMPTE(-I,Q), MF-SMPTE(100%,Q), MF-SMPTE(100%,Q), MF-SMPTE(+I,Q), HD-CUSTOM, SDI CHECK FIELD, Y-RAMP, Y/C-RAMP, HD-CUSTOM2	Selects the color bar of 4K output/HD output.
	HDR	<u>SDR-LOOK BAR(100%),</u>	HDR output color bars type
		SDR-LOOK BAR(75%), HDR BAR, SDI CHECK FIELD, Y-RAMP, Y/C-RAMP	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
	MF-CB	MODIFY, EVEN	Sets the stripe width for multi-format color bar output.
			MODIFY: Stripe width adjusted to prevent colors mixing when 4:3 Edge crop.
			EVEN: Stripe width in accordance with standard.
	SLOPE	<u>WIDE</u> , NARROW	Sets the color difference signal band of the color bar.
			WIDE: Band not limited.
	SD		NARROW: Band is limited to prevent ringing.
	SOURCE	4K/HD BAR, <u>SD BAR</u>	Selects the color bar signal source for output to SD.
			4K/HD BAR: Down converts the 4K/HD color bars and then outputs it.
			SD BAR: Outputs the SD color bars selected in SELECT.
	SELECT	SYSTEM OPERATION menu → <multi format=""> page → When 1.001(525) is selected for SYSTEM: <u>SMPTE</u>, EIA, FULL, 95%, NTSC100%, Y/C-RAMP, Y-RAMP</multi>	Selects the SD color bar.
		SYSTEM OPERATION menu → <multi format=""> page → When 1.000(625) is selected for SYSTEM: <u>SMPTE</u>, EIA, FULL, 95%, PAL100%, Y/C-RAMP, Y-RAMP</multi>	
	BAR-CHARACTER	ON, <u>OFF</u>	Sets the character superimposition on the color bar signal.
	MOVING SYMBOL	ON, <u>OFF</u>	Sets moving symbol on the color bar screen.
	TYPE	0, 1, 2	Selects the symbol type.
	SIZE	<u>SMALL</u> , LARGE	Selects the symbol size.
	2SI DIAMOND MARKER	<u>OFF</u> , ON	Sets diamond mark superimposition on the color bar for 4K 2 sample interleave output.
			See "4K 2SI diamond marker" (page 50).

VIDEO/MONITOR			
Page name Page No.	Item	Set value	Description
<color bar=""> V01</color>	HFR CHANNEL MARK	<u>OFF</u> , ON	Sets channel identification mark superimposition on HD HFR output video.
			See "HFR channel marker" (page 50).
<bar character=""> V02</bar>	BAR CHARACTER		Sets the character string to be displayed on each of lines 1 to 16.
	CLEAR ALL		Clears all the character strings set for BAR CHARACTER.
<downconvert> V03</downconvert>	4K-HD DOWNCONVERT FILTER	<u>1</u> , 2, 3, 4, 1(V:0.3), 1(V:0.6)	Selects the type of filter for downconverting from 4K video signals to HD signals.
	SD ASPECT	SQUEEZE, <u>EDGE CROP,</u> LETTER BOX	Selects the aspect for SD output.
	NTSC SETUP	<u>7.5</u> , 0 IRE	Sets the NTSC signal setup level.
<hfr offset="" paint=""> V04</hfr>	DETAIL LEVEL	–99 to 99 <u>0</u>	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 <u>0</u>	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.
<monitor></monitor>	CHARACTER LEVEL	1, 2, 3, 4, <u>5</u>	Sets the brightness of text in menus, etc.
V05	LEVEL GATE	<u>OFF</u> , 1&2, 1, 2, ()	Sets level gate display.
			OFF: Level gate is not displayed.
			1: Displays level gate 1.
			2: Displays level gate 2.
			1&2: Displays level gate 1 & 2.
			(): Displayed when a camera is not connected. (Display only)
	Y-LEVEL1 MIN	0 to 108% <u>49</u>	Sets the minimum detection levels for level gate 1 display.
	MAX	0 to 108% <u>61</u>	Sets the maximum detection levels for level gate 1 display.
	LEVEL	–99 to 99 <u>–25</u>	Sets the zebra display level to be added to the detection area.
	Y-LEVEL2 MIN	0 to 108% <u>74</u>	Sets the minimum detection levels for level gate 2 display.
	MAX	0 to 108% <u>108</u>	Sets the maximum detection levels for level gate 2 display.
	LEVEL	–99 to 99 <u>–25</u>	Sets the zebra display level to be added to the detection area.
	GATE MARKER	<u>OFF</u> , ON, ()	Sets the display of the gate signal detected by the camera.
			OFF: Gate signal is not displayed.
			ON: Displays zebra in the area (skin gate, etc.) detected by the camera.
			(): Displayed when a camera is not connected. (Display only)
	LEVEL	–99 to 99 0	Sets the zebra display level to be added to the detection area.

VIDEO/MONITOR			
Page name Page No.	Item	Set value	Description
<monitor></monitor>	ASPECT MARKER	<u>OFF</u> , ON	Sets aspect marker display.
V05	SELECT	<u>4:3</u> , 13:9, 14:9, EU VISTA, VISTA, CINEMA, FOLLOW DC	Selects the marker type.
	MODULATION ON/OFF	<u>OFF</u> , ON	Sets the mask function for outside the marker frame.
	MODULATION LEVEL	–99 to 99 <u>0</u>	Sets the mask level.
<spirit level=""></spirit>	INDICATOR	<u>OFF</u> , ON,	Sets spirit level display.
V06			This can be set when connected with a camera which has a lens that supports serial communication attached.
	REVERSE	<u>OFF</u> , ON	Selects the indicator move direction for tilting.
	H POSITION	0 to 99, <u>50</u>	Spirit level display position (horizontal)
	V POSITION	0 to 99, <u>50</u>	Spirit level display position (vertical)
<display> V07</display>	MESSAGE	<u>ALL</u> , WARNING, OFF	Sets the display of messages for the camera auto setup operation status, warnings that occur in the system, etc.
displayed on the camera			ALL: Displays all messages.
setting status page of the status display screen.			WARNING: Displays system warning messages and menu control messages.
			OFF: Displays only menu control messages.
	CHU MODE	<u>ON</u> , OFF	Displays or hides the CHU MODE.
	LENS FILE	<u>ON</u> , OFF	Displays or hides the LENS FILE name.
	MASTER GAIN	<u>ON</u> , OFF	Displays or hides the master gain setting value.
	MODE <u>STI</u> F D	<u>STEP GAIN</u> , MASTER WHITE, F DROP GAIN, TOTAL GAIN	Switches the MASTER GAIN display mode.
			STEP GAIN: Displays the STEP GAIN value.
			MASTER WHITE: Displays the MASTER WHITE GAIN value.
			F DROP GAIN: Displays the F DROP GAIN value.
			TOTAL GAIN: Displays the total value of the STEP GAIN, MASTER GAIN, and F DROP GAIN values combined.
	MASTER WHITE IND	<u>ON</u> , OFF	Displays or hides the enabled status of the master white gain.
	SHUTTER	<u>ON</u> , OFF	Displays or hides the shutter speed/ECS frequency setting value.
	ND FILTER	<u>ON</u> , OFF	Displays or hides the ND filter type.
	CC FILTER	<u>ON</u> , OFF	Displays or hides the CC filter type.
	IRIS	<u>ON</u> , OFF	Displays or hides the iris status.
	EXTENDER	<u>ON</u> , OFF	Displays or hides the lens extender/digital extender status.
	F DROP	<u>ON</u> , OFF	Display or hides the F-drop status.
	MIC	<u>ON</u> , OFF	Displays or hides the camera microphone switch status.

4K 2SI diamond marker

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





When Link 1 and Link 2 have



HFR channel marker

This function is for displaying a marker in the video area of HD HFR output.

The number of squares indicates the channel number so you can easily identify the channel number of a multi-link interface.

Example: Indication for channel 4



AUDIO/INTERCOM menu

Item	Set value	Description
CAM MIC GAIN		Sets the camera microphone gain.
CH1	(), 20, 30, 40, 50, <u>60</u> dB	Set according to the microphone used.
CH2	(), 20, 30, 40, 50, <u>60</u> dB	(): Displayed when a camera is not connected. (Display only)
DELAY	0, 5, 11, 16, 21, 27, 32, 37, 43, 48,	Sets the camera microphone output phase.
	53, 59, 64, 69, 75, 80 ms	
ANALOG OUT	<u>MIC1/2</u> , AES/EBU	Selects the MIC OUT ANALOG output.
		MIC1/2: Outputs the camera MIC1/2 input from the MIC OUT connector of the CCU.
		AES/EBU: Outputs the camera AES/EBU input from the MIC OUT connector of the CCU.
CH1 LEVEL	−20, <u>0</u> , +4 dBu	Sets the AUDIO CH1 output level.
ADJUST	–99 to 99 <u>0</u>	-
CH2 LEVEL	−20, <u>0</u> , +4 dBu	Sets the AUDIO CH2 output level.
ADJUST	–99 to 99 <u>0</u>	-
	Item CAM MIC GAIN CH1 CH2 DELAY ANALOG OUT CH1 LEVEL ADJUST CH2 LEVEL ADJUST	Item Set value CAM MIC GAIN

AUDIO/INTERCOM			
Page name Page No.	ltem	Set value	Description
<intercom></intercom>	INTERCOM CH	1CH(PROD), 2CH(PRODŊ)	Selects the intercom channel number to be used.
A03	PRODUCER	CLEAR COM, <u>4WIRE</u> , RTS	Sets the producer line intercom system.
	SIDETONE CANCEL	–99 to 99 <u>0</u>	Sets the side tone cancel level. (Setting is possible when CLEAR COM or RTS is selected)
	TERMINATION	<u>OFF</u> , ON	Sets termination resistance (200 ohms). (Setting is possible when CLEAR COM or RTS is selected)
			OFF: Displayed when 4WIRE is selected in SYSTEM I/F. (Display only)
	ENGINEER INTERFACE	CLEAR COM, <u>4WIRE</u> , RTS	Sets the engineer line intercom system.
	SIDETONE CANCEL	–99 to 99 <u>0</u>	Sets the side tone cancel level. (Setting is possible when CLEAR COM or RTS is selected)
	TERMINATION	<u>OFF</u> , ON	Sets termination resistance (200 ohms). (Setting is possible when CLEAR COM or RTS is selected)
			OFF: Displayed when 4WIRE is selected in SYSTEM I/F. (Display only)
	PGM1 INPUT	–20, <u>0</u> , +4 dBu	Sets the PGM1 input level of D-sub connector on rear panel.
	PGM2 INPUT	–20, 0 , +4 dBu	Sets the PGM2 input level of D-sub connector on rear panel.
<front intercom=""></front>	MIC/PGM	(PGM ON), (MIC OFF), (MIC ON)	Front panel MIC/PGM switch position (Display only)
A04	I/F	(PROD), (ENG), (PRIV)	Front panel INTERCOM operation status (Display only)
	PRIVATE SW	ENABLE, DISABLE(SET TO ENG), DISABLE(SET TO PROD)	Operation when the INTERCOM switch on the front panel is set to the PRIV position.
			ENABLE: Private operation
			DISABLE(SET TO ENG): Same function as ENG position.
			DISABLE(SET TO PROD): Same function as PROD position.
	INTERCOM MIC	DYNAMIC, ECM, CARBON	Sets the headset microphone connected to the INTERCOM connector on the front panel.
			CARBON: Carbon microphone (power supply, 20 dB gain)
			ECM: Electret condenser microphone (power supply, 40 dB gain)
			DYNAMIC: Dynamic microphone (no power supply, 60 dB gain)
	INTERCOM MIC TYPE	BALANCED, UNBALANCED	Sets the headset microphone connected to the INTERCOM connector on the front panel.
			BALANCED: Balanced microphone
			UNBALANCED: Unbalanced microphone
	GAIN	–6, <u>0</u> , +6 dB	Sets the microphone input gain.
	SIDE TONE LEVEL	0 to 99, <u>50</u>	Sets the side tone level.
	PGM MIX MODE	OFF, INCOM+PGM, L-INCOM/ B-PGM	OFF: Signals are not mixed.
			INCOMPROM: INCOM AND POIN SIGNALS ARE MIXED.
		DCM1 DCM2 DCM1 DCM2	the left channel and PGM signal through the right.
		<u>FGM1</u> , FGM2, FGM1+FGM2	INTERCOM connector.
	PGM1 LEVEL	0 to 99, <u>50</u>	Sets the MIX level of PGM1.
	PGM2 LEVEL	u to 99, <u>50</u>	Sets the MIX level of PGM2.

AUDIO/INTERCOM			
Page name Page No.	Item	Set value	Description
<ip audio=""></ip>	AUDIO OUT	CLEAR COM, <u>4WIRE</u> , RTS	Sets the producer line intercom system.
A05 (When HKCU-4001 is installed)	FORMAT	L24/48kHz/1ms/2ch, L24/48kHz/1ms/4ch, L24/48kHz/1ms/8ch, L24/48kHz/0.125ms/2ch, L24/48kHz/0.125ms/4ch, L24/48kHz/0.125ms/8ch, L24/48kHz/0.125ms/16ch	Sets the audio format.
	CH ORDER	MIC1, MIC2, AES/EBU1, AES/EBU2	Displays the channel order.
	PGM IN		
	FORMAT	L24/48kHz/1ms/2ch, L24/48kHz/1ms/4ch, L24/48kHz/1ms/8ch, L24/48kHz/0.125ms/2ch, L24/48kHz/0.125ms/4ch, L24/48kHz/0.125ms/8ch, L24/48kHz/0.125ms/8ch,	Sets the audio format.
	CH ORDER	PGM1, PGM2	Displays the channel order.
<ip intercom=""></ip>	INTERCOM OUT		
A06 (When HKCU-4001 is installed)	FORMAT	L24/48kHz/1ms/2ch, L24/48kHz/1ms/4ch, L24/48kHz/1ms/8ch, L24/48kHz/0.125ms/2ch, L24/48kHz/0.125ms/4ch, L24/48kHz/0.125ms/8ch, L24/48kHz/0.125ms/16ch	Sets the audio format.
	CH ORDER	ENG, PROD	Displays the channel order.
	INTERCOM IN		
	FORMAT	L24/48kHz/1ms/2ch, L24/48kHz/1ms/4ch, L24/48kHz/1ms/8ch, L24/48kHz/0.125ms/2ch, L24/48kHz/0.125ms/4ch, L24/48kHz/0.125ms/8ch, L24/48kHz/0.125ms/16ch	Sets the audio format.
	CH ORDER	ENG, PROD	Displays the channel order.

MAINTENANCE menu

MAINTENANCE			
Page name Page No.	Item	Set value	Description
<i f="" settings=""></i>	SLOT3 (SDI I/O)	Top (SDI I/O 1) SLOT3-1 OUT,	Sets the functions to assign to the SLOT3 (SDI I/O) connectors.
		<u>SDI IN3/HD PROMPTER IN</u>	The top one is the SDI I/O 1 connector setting.
		Bottom (SDI I/O 2)	The bottom one is the SDI I/O 2 connector setting.
		HD TRUNK OUT, <u>SDI IN4</u>	SLOT3-1, SLOT3-2 OUT: Used as the SLOT3-1 and SLOT3 outputs.
			HD TRUNK OUT: Used as the HD-TRUNK output.
			SDI IN3/HD PROMPTER IN: Used as SDI IN3 input and HD-PROMPTER input connectors.
			SDI IN4: Used as SDI IN4 input connector.
			Note
			When set to SDI I/O1&HD-PROMPTER IN, the return video of camera with INPUT set to SDI I/O1 is the same video as the HD PROMPTER output.
	CHARACTER/SYNC OUT	CHARACTER, SYNC	Sets the function to assign to the CHARACTER/ SYNC OUT connector.
			CHARACTER: Set to VBS (CHARACTER superimposition) output.
			SYNC: Set to SYNC OUT output.
	MIC/WF REMOTE	MIC REMOTE, WF REMOTE	Displayed only when a D-sub 50-pin board is installed.
	REAR PREVIEW	MOMENTARY, TOGGLE	Sets the operation mode of REAR PREVIEW connector output.
<trunk prompter1=""></trunk>	TRUNK LINE		
M02	CHANNEL MODE	2CH(MAX 75Kbps), 1CH(MAX 150Kbps)	Sets the number of channels to be used.
	INTERFACE	<u>232C</u> , 422A	Sets the communication line mode.
	PROMPTER		
	CHANNEL MODE	<u>2СН</u> , 1СН	Sets the number of prompter lines.
<trunk prompter2=""></trunk>	NETWORK TRUNK		
M03	MODE	OFF, NETWORK,	Sets the mode for the network trunk.
		NETWORK+VIDEO	OFF: Network TRUNK is not used.
			NETWORK: Network TRUNK is used (maximum 1 Gbps)
			NETWORK+VIDEO: Network TRUNK is used at the same time as HD TRUNK/HD PROMPTER (maximum 100 Mbps)
	DATA RATE	100Mbps, 1Gbps	Displays the data transfer rate. (Display only)
	HD PROMPTER	(ENABLED), (DISABLED)	Displays the enable/disable state of HD PROMPTER. (Display only)
			Note
			HD PROMPTER operation varies according to the NETWORK TRUNK >MODE setting.
			OFF: HD PROMPTER can be used.
			NETWORK: HD PROMPTER cannot be used.
			NETWORK+VIDEO: HD PROMPTER can be used, but audio is not embedded.
	SOURCE	<u>SDIIN3</u> , IP RET2	HD PROMPTER signal select
	HD TRUNK	(ENABLED), (DISABLED)	Displays the enable/disable state of HD TRUNK. (Display only)

MAINTENANCE			
Page name Page No.	Item	Set value	Description
<menu settings=""> M04</menu>	PAGE RESUME	<u>ON</u> , OFF	Turns the menu mode resume page display function on/off.
	ALARM JUMP	ON, <u>OFF</u>	Turns the error-related page display function on/off for when an error occurs while in menu mode.
	RE DIRECTION		
	CATEGORY	<u>STD</u> , RVS	STD: CONTROL knob clockwise rotation moves the CCU MENU pointer (→) down.
			RVS: CONTROL knob counterclockwise rotation moves the CCU MENU pointer (\rightarrow) down.
	PAGE	<u>STD</u> , RVS	STD: CONTROL knob clockwise rotation displays the next page in the menu.
			RVS: CONTROL knob counterclockwise rotation displays the next page in the menu.
	ITEM	<u>STD</u> , RVS	STD: CONTROL knob clockwise rotation moves the pointer (\rightarrow) down to the next item on the page.
			RVS: CONTROL knob counterclockwise rotation moves the pointer (→) down to the next item on the page.
	DATA	<u>STD</u> , RVS	STD: CONTROL knob clockwise rotation selects the next data option.
			RVS: CONTROL knob counterclockwise rotation selects the next data option.
	CAMERA MENU CTRL	<u>OFF</u> , ON	Displays the camera menu.
			• If CAM MENU is set to ON_CCU menu operations
			cannot be performed because only camera menu operations are available.
			The camera menu is not displayed when SD signal is output.
<date&time></date&time>	DATE (YEAR)	15 to 99	Sets the date and time.
M05	DATE (MONTH)	1 to 12	
	DATE (DAY)	1 to 31	_
	TIME (HOUR)	0 to 23	_
	TIME (MINUTE)	0 to 59	_
	TIME ZONE (HOUR)	–23 to +23, <u>0</u>	Sets the time zone.
	TIME ZONE (MINUTE)	<u>0</u> to 59	_
<tally input=""> M06</tally>	R-TALLY	CONTACT, POWER(24V), POWER(TTL)	RED tally input setting
	G-TALLY	<u>CONTACT</u> , POWER(24V), POWER(TTL)	GREEN tally input setting
	Y-TALLY	CONTACT, POWER(24V), POWER(TTL)	YELLOW tally input setting
<alarm settings=""> M07</alarm>	FORCE LEGACY	OFF, <u>ON</u>	Set to OFF to not display the FORCE LEGACY alarm.
	CABLE OPEN	OFF, <u>ON</u>	Set to OFF to not display the CABLE OPEN alarm.
	GENLOCK ERROR	OFF, <u>ON</u>	Set to OFF to not display the GENLOCK ERROR alarm.
<sdi ancillary="" data=""> M08</sdi>	VIDEO PAYLOAD ID	LATEST, 2002, 2010, 2011	Selects the standard year of the payload ID to be added to the video output of SLOT2 and SLOT3.
	EMBED AUDIO	OFF, <u>ON</u>	Sets whether to embed audio in the SDI output.
	EMBED META DATA	OFF, <u>ON</u>	Sets whether there is metadata superimposition for SLOT2 and SLOT3 output.

MAINTENANCE			
Page name Page No.	ltem	Set value	Description
<switch assign=""> M09</switch>	ASSIGNABLE SWITCH	NONE, BARS, CAM POWER, FORCE LEGACY, LASER DIODE	Sets the function to be assigned to the assignable button on the front panel.
		ON	NONE: No assignment.
			BARS: Sets the color bar output to ON/OFF.
			CAM POWER: Sets camera power to ON/OFF.
			FORCE LEGACY: Forces the communication mode to LEGACY mode.
			LASER DIODE ON: Turns the optical signal output from the CCU to the camera ON/OFF.
<option key=""></option>	READ	Execute with ENTER.	Reads the installation key from the USB flash drive.
M10	INSTALLED OPTIONS		List of installed options. (Display only)
<others></others>	LASER DIODE ON	ENABLE, DISABLE	Sets whether to save the state of the LASER DIODE
M11	BACKUP		setting on the <camera f="" i=""> page of the SYSTEM OPERATION menu for the next startup.</camera>
	RETURN VF	<u>NORMAL,</u> 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)

NETWORK menu

NETWORK			
Page name Page No.	Item	Set value	Description
<ip address=""></ip>	IP ADDRESS	0.0.0.0 to 255.255.255.255	Sets the IP address.
N01	SUBNET MASK	0.0.0.0 to 255.255.255.255	Sets the subnet mask.
	DEFAULT GATEWAY	0.0.0.0 to 255.255.255.255	Sets the default gateway.
	MAC ADDRESS	(xx:xx:xx:xx:xx)	Displays the MAC address of the unit.
<cns settings=""></cns>	CNS MODE	LEGACY, BRIDGE, MCS	Sets the communication mode.
N02	MCS MODE	CLIENT	Indicates that the unit is the client when MCS mode is selected. (Display only)
	CCU NO	When MCS is selected in CNS MODE: Blank, 1 to 96	Sets the CCU number.
		When LEGACY or BRIDGE is selected in CNS MODE: Blank, 1 to 96, A to Z	
	MASTER IP ADDRESS	0.0.0.0 to 255.255.255.255	Sets the master device IP address for MCS mode.
<tsl umd=""></tsl>	TSL UMD	DISABLE, ENABLE	Enables/disables IP Tally using TSL UMD V5.0.
N03	PORT	LAN-COM	Displays the LAN port being used (Fixed to LAN-COM).
	PORT NUMBER	<u>8900</u>	UDP port number for TSL UMD connection
	PACKET STATUS	NOT RECEIVED,	Displays the TSL UMD packet reception status.
		RECEIVED	When received, it also displays IDs and the on/off status of the red, green, and yellow tallies.
			Up to five IDs can be displayed. "AND MORE" is displayed if there are more.

NETWORK			
Page name Page No.	Item	Set value	Description
<networked media<br="">INTERFACE></networked>	NETWORK INTERFACE	<u>NMI LAN1</u> , NMI LAN2	Selects the network interface to configure/display.
N04	DHCP	OFF, <u>ON</u>	Enables or disables DHCP.
(When HKCU-IP43F is installed)	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: Displays the IP address setting 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: Displays the subnet mask setting 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	00:00:00:00:00:00 to FF:FF:FF:FF:FF:FF	Specified MAC address of the selected network interface (Display only)
<ip 2="" address=""> N04</ip>	PORT	LAN1, LAN2	Selects the port of the HKCU-4001 for setting the IP address.
(When HKCU-4001 is installed)	DHCP	OFF	Sets DHCP operation. Fixed to OFF in the current version.
	IP ADDRESS	0.0.0.0 to 255.255.255.255	Sets the IP address.
	SUBNET MASK	0.0.0.0 to 255.255.255.255	Sets the subnet mask.
	DEFAULT GATEWAY	0.0.0.0 to 255.255.255.255	Sets the default gateway.
	MAC ADDRESS	00:00:00:00:00	Displays the MAC address of the LAN interface selected using PORT.
	LINK SPEED	10G, 25G,	Displays the link speed.
	25G FEC	NONE, <u>RS-FEC (CL108)</u> , FC-FEC (CL74)	Sets the FEC mode for 25G.
			Note
			Set to the port setting of the IP switch to be connected.

NETWORK			
Page name Page No.	Item	Set value	Description
<network genlock=""> N05</network>	PORT	LAN1, LAN2	Selects the port of the HKCU-4001 for setting NETWORK GENLOCK.
(When HKCU-4001 is installed)	NETWORK GENLOCK	DISABLE, <u>ENABLE</u>	Enables/disables network genlock for the selected port.
	PROFILE	ST2059-2	Displays the supported profile. Only ST2059-2 profile is supported.
	DOMAIN NUMBER	0 to 127, <u>127</u>	Sets the domain number.
			Note
			Set to the domain number of the master device to be connected.
	COMMUNICATION	MULTICAST MODE, MIXED	MULTICAST MODE: Multicast reply to the master.
	MODE	MODE	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 1	0 to 255	Displays the priority of the PTP master. The lower
	PRIORITY 2	0 to 255	the number, the higher the priority.
	STEP	ONE-STEP, TWO-STEP	Displays the mode in which the timestamp is sent.
			ONE-STEP: Sent in Sync message.
			TWO-STEP: Sent in Follow-up message.
	LOCK STATUS	NOT IN USE,	Displays the PTP operation status.
		NO MASTER, LOCKING	NOT IN USE: PTP operation stopped
		LOCKED	NO MASTER: PTP master is not found.
			LOCKING: Synchronizing
			LOCKED: Synchronized
<ptp status=""> N06</ptp>	PTP PORT	LAN1, LAN2	Displays the port on which PTP is running, and the status.
(When HKCU-4001 is	PORT SEL	LAN1, LAN2	Selects the port for which to display the status.
installed)	Time		Displays the PTP master time.
	GMClockID		Grand master clock ID
	MasterID		Master clock ID
	Sync		Sync message rate
	FollowUp		Follow-up message rate
	DelayReq		Delay request message rate
	DelayResp		Delay response message rate
	Network Status	NOT GOOD, GOOD, VERY GOOD	Displays the network status.
	Delay		Displays the network delay.
	Jitter		Displays the network jitter.

NETWORK			
Page name Page No.	ltem	Set value	Description
<ip live=""></ip>	IP LIVE SYSTEM MANAGER		
(When HKCU-IP43F is	PORT	The settings vary depending on the	Sets IP Live System Manager (LSM).
installed)		installed option.	DISABLE: Does not communicate with LSM.
N07 (When HKCU-4001 is		When HKCU-IP43F is installed:	LAN1: Communicates with LSM using LAN1 only.
installed)		When HKCU-4001 is installed: DISABLE, LAN1&LAN2	LAN1&LAN2: Communicates with LSM using LAN1 and LAN2 (redundancy).
		- , <u> </u>	Note
			Restart the unit after changing the PORT setting.
	DHCP	The settings vary depending on the	When HKCU-IP43F is installed
		installed option. When HKCU-IP43F is installed:	Sets whether to set the LSM IP address using DHCP or to set it manually.
		<u>OFF</u> , ON	ON: Sets the LSM IP address using DHCP.
		When HKCU-4001 is installed:	OFF: Sets the LSM IP address manually.
		<u>UFF</u> (fixed)	Set to OFF (fixed) when DHCP is set to OFF on the NETWORKED MEDIA INTERFACE page.
			When HKCU-4001 is installed
			OFF (fixed)
	PRIMARY IP ADDRESS	0.0.0.0 to 255.255.255.255	Sets the IP address of LSM1.
	SECONDARY IP ADDRESS	0.0.0.0 to 255.255.255.255	Sets the IP address of LSM2.
	PRIMARY DISCO CONNECTION CONN STATUS CONN	DISCONNECTED,	Displays the status of the connection with LSM1.
			DISCONNECTED: Disconnected.
		CONNECTED	CONNECTING: Establishing communication.
			CONNECTED: Communication established.
	SECONDARY	DISCONNECTED,	Displays the status of the connection with LSM2.
	CONNECTION	CONNECTING,	DISCONNECTED: Disconnected.
	STATUS	CONNECTED	CONNECTING: Establishing communication.
			CONNECTED: Communication established.
	MULTICAST ADDRESS	<u>AUTO</u> , MANUAL	Switches the mode of the multicast address setting of the IP stream.
	(When HKCU-4001 is installed)		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 5 pages.
	HITLESS FAILOVER	<u>ON</u> , OFF	Sets whether to use IP stream redundancy.
	(When HKCU-4001 is		ON: Use redundancy.
	installed)		OFF: Do not use redundancy.
	ST 2110 4K	ENABLE, DISABLE	Enables/disables ST2110 4K stream input/output.
			When the LAN1 or LAN2 link speed is 10G, this is set to DISABLE (fixed).
	SAP ANNOUNCE	<u>ON,</u> OFF	SAP notifications on/off setting

NETWORK			
Page name Page No.	Item	Set value	Description
<multicast ADDRESS 1></multicast 	MULTICAST ADDRESS	<u>AUTO</u> , MANUAL	Displays the mode of the multicast address setting of the IP stream.
N08 (When HKCU-4001 is	VIDEO OUT(4K) LAN1-1		Settings for the IP 4K OUT1 output video signal
installed)	IP ADDRESS	224.0.0.1 to 239.255.255.255, <u>0.0.0.0</u>	Sets the transmit destination multicast IP address.
	PORT	100 to 65535, <u>30000</u>	Sets the transmit destination port number.
	VIDEO OUT(4K) LAN1-2	Same as VIDEO OUT(4K) LAN1-1	Settings for the IP 4K OUT2 output video signal
	VIDEO OUT(HD) LAN1-1	Same as VIDEO OUT(4K) LAN1-1	Settings for the IP HD OUT1 output video signal (LAN1)
	VIDEO OUT(HD) LAN1-2	Same as VIDEO OUT(4K) LAN1-1	Settings for the IP HD OUT2 output video signal (LAN1)
	VIDEO OUT(HD) LAN1-3	Same as VIDEO OUT(4K) LAN1-1	Settings for the IP HD OUT3 output video signal (LAN1)
	VIDEO OUT(HD) LAN2-1	Same as VIDEO OUT(4K) LAN1-1	Settings for the IP HD OUT1 output video signal (LAN2)
	VIDEO OUT(HD) LAN2-2	Same as VIDEO OUT(4K) LAN1-1	Settings for the IP HD OUT2 output video signal (LAN2)
	VIDEO OUT(HD) LAN2-3	Same as VIDEO OUT(4K) LAN1-1	Settings for the IP HD OUT3 output video signal (LAN2)
<multicast ADDRESS 2></multicast 	MULTICAST ADDRESS	<u>AUTO</u> , MANUAL	Displays the MULTICAST ADDRESS setting of the <ip live=""> page.</ip>
N09 (When HKCU-4001 is installed)	RETURN LAN1-1		Settings for the IP RET1 input video signal (LAN1)
	IP ADDRESS	224.0.0.1 to 239.255.255.255, <u>0.0.0.0</u>	Sets the receive destination multicast IP address.
	PORT	100 to 65535, <u>30000</u>	Sets the receive destination port number.
	SRC IP	0.0.0.0 to 255.255.255.255	Sets the stream transmit source IP address.
	RETURN LAN1-2	Same as RETURN LAN1-1	Settings for the IP RET2 input video signal (LAN1)
	RETURN LAN2-1	Same as RETURN LAN1-1	Settings for the IP RET1 input video signal (LAN2)
	RETURN LAN2-2	Same as RETURN LAN1-1	Settings for the IP RET2 input video signal (LAN2)
<multicast ADDRESS 3></multicast 	MULTICAST ADDRESS	<u>AUTO</u> , MANUAL	Displays the MULTICAST ADDRESS setting of the <ip live=""> page.</ip>
N10	AUDIO OUT LAN1		Settings for the IP AUDIO OUT output (LAN1)
(When HKCU-4001 is installed)	IP ADDRESS	224.0.0.1 to 239.255.255.255, <u>0.0.0.0</u>	Sets the transmit destination multicast IP address.
	PORT	100 to 65535, <u>30000</u>	Sets the transmit destination port number.
	AUDIO OUT LAN2	Same as AUDIO OUT LAN1	Settings for the IP AUDIO OUT output (LAN2)
	PGM IN LAN1		Settings for the IP PGM input signal (LAN1)
	IP ADDRESS	224.0.0.1 to 239.255.255.255, 0.0.0.0	Sets the receive destination multicast IP address.
	PORT	100 to 65535, <u>30000</u>	Sets the receive destination port number.
	SRC IP	0.0.0.0 to 255.255.255.255	Sets the stream transmit source IP address.
	PGM IN LAN2	Same as PGM IN LAN1	Settings for the IP PGM input signal (LAN2)

NETWORK			
Page name Page No.	Item	Set value	Description
<multicast ADDRESS 4></multicast 	MULTICAST ADDRESS	<u>AUTO</u> , MANUAL	Displays the MULTICAST ADDRESS setting of the <ip live=""> page.</ip>
N11 (When HKCU-4001 is	INTERCOM OUT LAN1		Settings for the IP INTERCOM output (LAN1)
installed)	IP ADDRESS	224.0.0.1 to 239.255.255.255, <u>0.0.0.0</u>	Sets the transmit destination multicast IP address.
	PORT	100 to 65535, <u>30000</u>	Sets the transmit destination port number.
	INTERCOM OUT LAN2	Same as INTERCOM OUT LAN1	Settings for the IP INTERCOM output (LAN2)
	INTERCOM IN LAN1		Settings for the IP INTERCOM input (LAN1)
	IP ADDRESS	224.0.0.1 to 239.255.255.255, 0.0.0.0	Sets the receive destination multicast IP address.
	PORT	100 to 65535, <u>30000</u>	Sets the receive destination port number.
	SRC IP	0.0.0.0 to 255.255.255.255	Sets the stream transmit source IP address.
	INTERCOM IN LAN2	Same as INTERCOM IN LAN1	Settings for the IP INTERCOM input (LAN2)
<multicast ADDRESS 5></multicast 	MULTICAST ADDRESS	<u>AUTO</u> , MANUAL	Displays the mode of the multicast address setting of the IP stream.
N12 (When HKCU-4001 is	META OUT LAN1-1		Settings for metadata for the IP OUT1 video signal (LAN1)
installed)	IP ADDRESS	224.0.0.1 to 239.255.255.255, 0.0.0.0	Sets the transmit destination multicast IP address.
	PORT	100 to 65535, <u>30000</u>	Sets the transmit destination port number.
	META OUT LAN1-2	Same as META OUT LAN1-1	Settings for metadata for the IP OUT2 video signal (LAN1)
	META OUT LAN1-3	Same as META OUT LAN1-1	Settings for metadata for the IP OUT3 video signal (LAN1)
	META OUT LAN2-1	Same as META OUT LAN1-1	Settings for metadata for the IP OUT1 video signal (LAN2)
	META OUT LAN2-2	Same as META OUT LAN1-1	Settings for metadata for the IP OUT2 video signal (LAN2)
	META OUT LAN2-3	Same as META OUT LAN1-1	Settings for metadata for the IP OUT3 video signal (LAN2)
<ping></ping>	PORT	LAN-COM, LAN1, LAN2	Sets the Ping transmit port.
N04	IP ADDRESS	0.0.0.0 to 255.255.255.255	Sets the IP address of the Ping transmit destination.
N06 (When HKCU-IP43E is	PING	EXEC	Sends a Ping.
installed)	STATISTICS		Displays the Ping execution result.
N13 (When HKCU-4001 is	TRANSMITTED PACKETS	0 to 5 [packets]	Number of transmitted packets.
installed)	RECEIVED PACKETS	0 to 5 [packets]	Number of received packets.
	PACKET LOSS	<u>0</u> to 100 [%]	Packet loss rate.
	ROUND-TRIP MIN	0.0 to 1000000.0 [ms]	Minimum round trip delay time in milliseconds.
	ROUND-TRIP AVERAGE	<u>0.0</u> to 1000000.0 [ms]	Average round trip delay time in milliseconds.

DIAGNOSIS menu

DIAGNOSIS			
Page name Page No.	Item	Display	Description
<board status=""> D01</board>	VIF	OK, POWER ERROR, PLD ERROR, TEMP WARNING	VIF board self-diagnosis result
	DVP	OK, POWER ERROR, FAN STOP, PLD ERROR, TEMP WARNING	DVP board self-diagnosis result
	ТХ	OK, POWER ERROR, PLD ERROR, TEMP WARNING	TX board self-diagnosis result
	DPR	OK, POWER ERROR, PLD ERROR, TEMP WARNING	DPR board self-diagnosis result
	NET	OK, PLD ERROR	NET board self-diagnosis result (When HKCU-IP43F is installed)
	HKCU-4001	OK, FAN STOP, PLD ERROR, TEMP WARNING	HKCU-4001 IF board and NET board self-diagnosis result
	FAN1	OK, STOP	Power supply unit fan operation status
	FAN2	OK, STOP	Fan operation status
	CAM POWER SUPPLY	ON, OFF	Status of power supply to camera
	HOUR METER		Accumulated power-on time
<serial number=""></serial>	MODEL NAME		Unit model name
D02	SERIAL NUMBER		Serial number
	HKCU-4001		Displays the serial number of the HKCU-4001 (When HKCU-4001 is installed)
	HKCU-IP43F		Displays the serial number of the HKCU-IP43F (When HKCU-IP43F is installed)
<version1></version1>	APPLICATION		Unit software version
D03	OS		Unit software version
	UPDATER		Unit software version
	MIF		ROM version of MIF PLD (VIF board)
	VIF		ROM version of VIF PLD (VIF board)
	ТХ		ROM version of TX PLD (TX board)
	SY		ROM version of SY PLD (SY board)
	4K-POST		ROM version of 4K-POST PLD (DVP board)
	SDP		ROM version of SPD PLD (DVP board)
<version2></version2>	DEC(HDC4300)		ROM version of DEC PLD (DVP board) for HDC4300 connection
	DPR(NORMAL)		ROM version of DPR PLD (DPR board)
	DPR(HCO)		ROM version of DPR PLD (DPR board) for HD CUTOUT
	DPR(Sub) ^{a)}		ROM version of DPR Sub PLD (DPR board)
	NET (When HKCU-IP43F is installed)		ROM version of NET PLD
	NMI LSI (When HKCU-IP43F is installed)		NMI software version
	NET1 (When HKCU- 4001 is installed)		ROM version of the PLD installed in the HKCU-4001
	NET2 (When HKCU- 4001 is installed)		ROM version of the PLD installed in the HKCU-4001
<camera diagnosis=""></camera>	NAME		Model name of connected camera
D05	ROM VERSION	X.XX	ROM version of camera

DIAGNOSIS			
Page name Page No.	Item	Display	Description
<board status(nmi)=""></board>	POWER(NET)		
D06	POWER(CN)		
(When HKCU-IP43F is	NMI1 SFP+		Displays the SFP+ module status of NMI1.
installed)	MODULE	OK, ABSENT	OK: SFP+ module is inserted successfully.
			ABSENT: SFP+ module is not inserted.
	ТХ	OK, FAULT	OK: Normal
			FAULT: An error occurred during signal transmission.
	RX	OK, LOS	OK: Normal
			LOS: Signal could not be received.
	NMI2 SFP+		Displays the SFP+ module status of NM2.
	MODULE	OK, ABSENT	OK: SFP+ module is inserted successfully.
			ABSENT: SFP+ module is not inserted.
	ТХ	OK, FAULT	OK: Normal
			FAULT: An error occurred during signal transmission.
	RX	OK, LOS	OK: Normal
			LOS: Signal could not be received.
	BOARD S/N		Serial number of the NET board.
<board< td=""><td>IF</td><td></td><td></td></board<>	IF		
STATUS(HKCU-4001)>	FAN1	OK, STOP	Displays the FAN1 status of the IF board.
D06 (When HKCU-4001 is installed)	FAN2	OK, STOP	Displays the FAN2 status of the IF board.
	NET		Displays the SFP+ module status of NMI1.
	NET1	OK, PLD ERROR, TEMP WARNING	Displays the status of the PLD installed on the NET board.
	NET2	OK, PLD ERROR, TEMP WARNING	Displays the status of the PLD installed on the NET board.
	BOARD S/N		Serial number of the HKCU-4001 board.

a) DPR(Sub) may not be displayed, depending on the lot number of the board loaded in the unit. If this occurs, there is no effect on functionality.

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

Error message	Description
CCU:GENLOCK ERROR	External reference sync error
CCU:10FIELD-ID ERROR	10Field ID is not detected even though the 10F BB setting is On
CCU:FORCE LEGACY	FORCE LEGACY is set for CNS MODE
CCU:PS FAN STOP	Power supply block FAN error
CCU:PS CABLE SHORT	CAMERA connector optical fiber cable short circuit error
CCU:PS CABLE OPEN	CAMERA connector optical fiber cable open circuit error
CCU:PS RCP POWER SUPPLY ERROR	Remote control panel (connected to REMOTE connector) power supply error
CCU:PS TEMP WARNING	Power supply unit temperature error
CCU:DVP FAN STOP	DVP board fan stopped
CCU:OPTICAL CONDITION ERROR	Light sensor level on CCU side dropped
CCU:OPTICAL CONDITION WARNING	
CCU:OPTICAL CONDITION CARE	
CCU:COMMAND ERROR	Command communication error of camera and remote control panel
CCU:XXX POWER ERROR	Board power supply section error (XXX is the board name)
CCU:XXX PLD ERROR	PLD error (XXX is the PLD name)
CCU:XXX TEMP WARNING	Board temperature error (XXX is the board name)
CCU:OPT NO OPTION	Option key required for when CHU MODE is set to HDC(HD CUTOUT) is not installed.
CCU:PLEASE UPDATE CAMERA SOFTWARE	There is a software version mismatch between the camera and this unit.
CCU:PLD CONFIG ERROR	DPR PLD is not configured for HD CUTOUT when CHU MODE is set to HDC(HD CUTOUT).

Specifications

HDCU4300

General	
Power requirements	100 V to 240 V AC, 50/60 Hz
Current consumption	4.0 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. 10.1 kg (22 lb 4.3 oz)
Diverse in a (Halt way (in the s))	

Dimensions (Unit: mm (inches))



CAMERA	Optical fiber connector (1)
INTERCOM/TALLY/	D-sub 25-pin connector (1)
PGM	 INTERCOM (PROD/ENG), 4W: 0 dBu, RTS: 0 dBu, CC: -14 dBu
	 PGM, 2 systems, 0 dBu/–20 dBu
	• TALLY (R, G, Y)
	• FLAG
RCP/CNU	8-pin multi-connector (1)
TRUNK	12-pin (1)
LAN	8-pin (1)
NETWORK TRUNK	8-pin (1)

SDI I/O	3G/HD/SD SDI I/O (SLOT3)
	BNC-type (2)
	3G-SDI: SMPTE ST424/425 Level-A/B, 0.8 Vp-p, 75 ohms, 2.970 Gbps/ 2.967 Gbps
	HD-SDI: SMPTE ST292, 0.8 Vp-p, 75 ohms, 1.485 Gbps/1.4835 Gbps
	SD-SDI: SMPTE ST259, 0.8 Vp-p, 75 ohms, 270 Mbps
	3G-SDI/HD-SDI/SD-SDI, character signal selectable
Input connectors	
AC IN	100 V to 240 V AC (1)
SDI RET IN	BNC-type (2)
	3G-SDI: SMPTE ST424/425, 2.970 Gbps/ 2.967 Gbps
	HD-SDI: SMPTE ST292, 1.485 Gbps/ 1.4835 Gbps
	SD-SDI: SMPTE ST259, 270 Mbps
VBS RET IN	BNC-type (2), analog signal, 1.0 Vp-p, 75 ohms
REFERENCE	BNC-type (2), loop-through output
	HD: SMPTE ST274, tri-level sync, 0.6 Vp-p, 75 ohms
	SD: Black burst (NTSC: 0.286 Vp-p, 75 ohms/PAL: 0.3 Vp-p, 75 ohms) or NTSC 10F-BB
PROMPTER	BNC-type (2), loop-through output during 1CH mode, terminate internally at 75 ohms during 2CH mode, analog signal, 1.0 Vp-p, 75 ohms
Output connectors	
AUDIO OUT CH1, CH2	XLR 3-pin, male (2), 0 dBu/–20 dBu/ +4 dBu
VBS MONITOR	BNC-type (1), VBS, 1 Vp-p, 75 ohms
CHARACTER/SYNC	BNC-type (1), VBS, 1 Vp-p, 75 ohms
	HD SYNC: BTA-S001, tri-level sync, 0.6 Vp-p, 75 ohms
	SD SYNC: composite sync, 0.3 Vp-p, 75 ohms
	VBS/HD SYNC/SD SYNC selectable

SDI OUTPUT

• 3G/HD SDI OUTPUT (SLOT1)

BNC-type (8) 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 3G-SDI/HD-SDI switchable

3G/HD/SD SDI OUTPUT (SLOT2)

BNC-type (4)

3G-SDI: SMPTE ST424/425 Level-A/B, 0.8 Vp-p, 75 ohms, 2.970 Gbps/ 2.967 Gbps

HD-SDI: SMPTE ST292, 0.8 Vp-p, 75 ohms, 1.485 Gbps/1.4835 Gbps SD-SDI: SMPTE ST259, 0.8 Vp-p, 75 ohms, 270 Mbps 3G-SDI/HD-SDI/SD-SDI, character signal selectable

Supplied accessories

Number plates (1 set)

Operation guide (1)

Operation manual (CD-ROM) (1)

Optional accessories

United States and Canada: Power cord set (1-551-812-XX) Other areas: Power cord set (1-782-929-XX)

United States and Canada: Plug holder B (2-990-242-01) Other areas: Plug holder C (3-613-640-01)

CCA-5-3 Connection Cable (3 meters), CCA-5-10 Connection Cable (10 meters)

Maintenance Manual

Related devices

HDC4300 Color Camera

HDC-P43 Multi Purpose Camera

RCP-3000/1000 series or later Remote Control Panel

MSU-1000 series Master Setup Unit

HZC-CSM10 Camera System Management Software

SZC-4002/4002M/4002W HFR Software

SZC-2001/2001M/2001W HD CUTOUT Software

HKCU-IP43F Networked Media Interface Board

HKCU-4002 12G-SDI Extension Kit

HKCU-4001 ST 2110 Interface Kit

HKCU-IP43F

General	
Power consumption	18.2 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. $94 \times 10 \times 227$ mm (3 $^{3}/_{4} \times ^{13}/_{32} \times 9$ inches)
	CN board: Approx. 55 × 22 × 136 mm (2 $^{1}/_{4}$ × $^{7}/_{8}$ × 5 $^{3}/_{8}$ inches)
Mass	NET board: Approx. 0.18 kg (6.3 oz)
	CN board: Approx. 0.14 kg (4.9 oz)

Output connectors

CN board: NMI-LAN	SFP+ (2) 10G BASE-** (using SFP+ transceiver module)
Supplied accessories	
30-pin cable (1)	
Harnesses (4)	
Screws (M3 \times 8) (5)	
Installation Guide (1)	
Related devices	

OTM-10GSR1 SFP+ transceiver module

HKCU-4001

General	
Power consumption	42 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)	$206 \times 58 \times 387$ mm (8 $^{1}/_{8} \times 2 ^{3}/_{8} \times 15 ^{1}/_{4}$ inches)
Mass	Approx. 0.7 kg (1 lb 8.7 oz)
I/O connectors	
Connectors	SFP+, SFP28
Number of lines	2
Signal type	10GBASE-**, 25GBase-** (depending on SFP+/SFP28 transceiver module)
	For information about the supported SFP+ and SFP28 transceiver modules (e.g. OTM-10GSR1), contact your Sony sales or service representative.
Supplied accessories	
Flat cable 30-pin (1)	
Coaxial cable 30-pin (1)
Coaxial cable 40-pin (1)
Power supply harness	(1)
Screws M3×8 (6)	
Screws M2.6×5 (2)	
Wire saddle (4)	
Protective tape (1)	
Label (1)	
Operating Instructions	(1)
Related devices	
OTM-10GSR1 SFP+ T	ransceiver Module

OTM-25GSR1 SFP28 Transceiver Module

HKCU-4002

General	
Power consumption	3 W
Operating temperature	5 °C to 40 °C (41 °F to 104 °F)
Storage temperature	–20 °C to +60 °C (–4 °F to +140 °F)
Dimensions (w/h/d, excluding protrusions)	DIF board: $80 \times 150 \times 24$ mm (3 $^{1}/_{4} \times 6 \times {}^{31}/_{32}$ inches)
Mass	DIF board: Approx. 0.16 kg (5.6 oz)
Output connectors	

DIF board: BNC type (2)

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 12G-SDI/6G-SDI switchable

Operating Instructions (1)

Design and specifications are subject to change without notice.

Notes

- Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.
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Depending on the operating environment, unauthorized third parties on the network may be able to access the unit. When connecting the unit to the network, be sure to confirm that the network is protected securely.

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