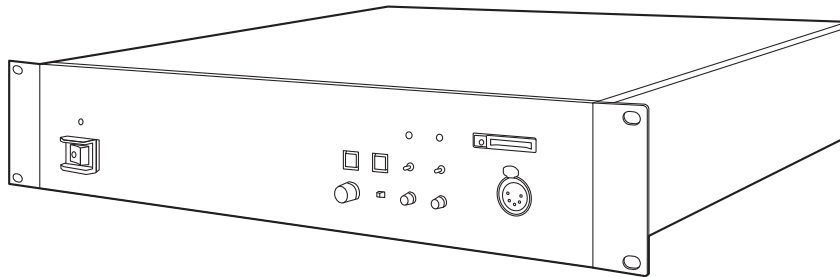


Operating Instructions <Operations and Settings>

Camera Control Unit

Model No. **AK-HCU200P**
Model No. **AK-HCU200PS**
Model No. **AK-HCU200E**
Model No. **AK-HCU200ES**



- **How the Operating Instructions are configured**

- <Basics>:

- The <Basics> describes the procedure for connection with the required equipment and for installation. Before installing this unit, be sure to take the time to read through <Basics> to ensure that the unit will be installed correctly.

- <Operations and Settings> (this manual):

- This <Operations and Settings> describes how to operate the unit and how to establish its settings.

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Illustrations and screen images in this manual

- Illustrations of the unit and screens may appear different from the actual unit and screens.
- The screenshots are used in accordance with the guidelines of Microsoft Corporation.

Abbreviations

The following abbreviations are used in this manual.

- Microsoft® Windows® 7 Professional SP1 32/64-bit is referred to as "Windows 7".
- Microsoft® Windows® XP Professional SP3 and Microsoft® Windows® XP Home Edition SP3 are referred to as "Windows XP".
- Windows® Internet Explorer® 8 is referred to as "Internet Explorer".
- SD memory cards and SDHC memory cards are both referred to as "memory cards".
They are referred to individually in descriptions in which each of them is discussed separately.
- Personal computers are referred to as "computers".
- Studio handy camera is referred to as "camera".
- Remote operation panel is referred to as "ROP".

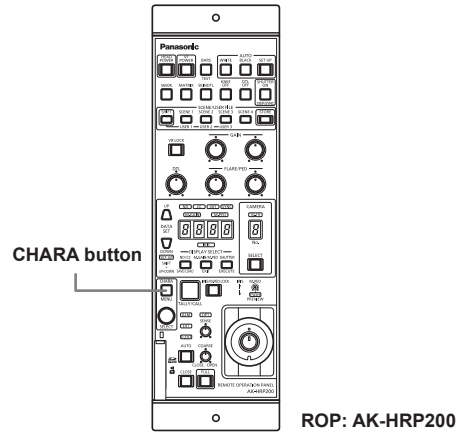
Furthermore, the product numbers of equipment are referred to as follows.

Equipment part number	Notation in this manual
AK-HC3800G	AK-HC3800
AK-HC3800GS	
AK-HRP200G	AK-HRP200
AK-HCU200P	AK-HCU200
AK-HCU200PS	
AK-HCU200E	
AK-HCU200ES	

Picture monitor (PM) displays


Switching the display

Display the camera statuses, warnings, and other information on the picture monitor using the operation panel of the ROP.
 Press the CHARA button of the ROP to display the desired information.
 The camera statuses, warnings, and other information are cleared when the CHARA button of the ROP is held down.



Transition of displays

When trouble is detected, warning information is automatically displayed on the picture monitor.
 Even if status information or operation information is already displayed on the picture monitor when trouble is detected, priority is given to the display of the warning information.
 The descending sequence of priority for the displays on the picture monitor is as follows: WARNING displays → AUTO displays → STATUS displays → REMOTE OPERATION menu displays → CCU menu displays → OPERATION displays → no display.
 When the warning information with the highest priority disappears, the warning information with the next highest priority appears.

Sequence of priority	What is displayed on the screen	ROP connected	
		Yes	No
Higher 	WARNING displays	Warnings are automatically displayed when trouble is detected. <ul style="list-style-type: none"> ● Self-recovery The warning displays are cleared. ● Press the CHARA button of the ROP The display switches to the status screen (IRIS or status display). ● Hold down the CHARA button of the ROP The warning displays are cleared. 	Warnings are automatically displayed when trouble is detected. <ul style="list-style-type: none"> ● Self-recovery The warning displays are cleared. ● Press the SELECT dial on the unit When the transition source screen is displayed: The display switches to the transition source screen. When the transition source screen is not displayed: The warning displays are cleared.
	AUTO displays	Automatically displayed	Automatically displayed
	STATUS displays	Perform display operations using the CHARA button of the ROP. <ul style="list-style-type: none"> ● Press the CHARA button of the ROP No display → (WARNING) → IRIS → status displays → Status1 → Status2 → Status3 → Status4 → Status1 ... ● Hold down the CHARA button of the ROP The status displays end. 	/
	REMOTE OPERATION menu displays	Display by pressing the CHARA button of the ROP. <ul style="list-style-type: none"> ● Operations using the SELECT dial of the ROP 	/
	CCU menu displays	Display by pressing the MENU button on the unit. <ul style="list-style-type: none"> ● Operations using the SELECT dial on the unit 	Display by pressing the MENU button on the unit. <ul style="list-style-type: none"> ● Operations using the SELECT dial on the unit
	OPERATION displays	Automatically displayed	Automatically displayed
Lower	No display	—	—

Description of information displayed

WARNING

The warning information is displayed when trouble is detected in the unit, camera, or optical fiber multi cable. The warning information items are displayed top aligned. A displayed warning information item is cleared when the status becomes normal.



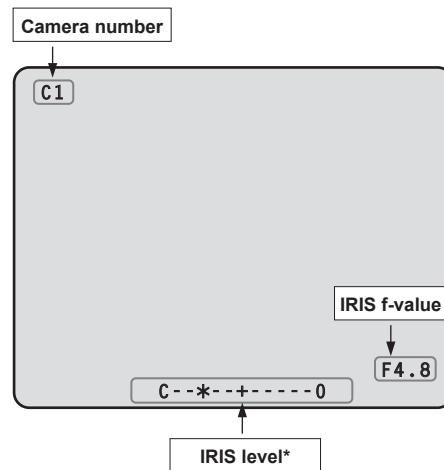
Warning information items

Display item	Description
CAM RCV LVL NG	The level of the optical signal received by the camera is low.
CCU RCV LVL NG	The level of the optical signal received by the unit is low.
CABLE OPEN	The optical fiber multi cable is not connected.
CABLE SHORT	The optical fiber multi cable is shorted.
CAM FAN NG	Trouble with the cooling fan of the camera.
CCU HIGH TEMP	The temperature of the unit is abnormally high.
CAM WARM-UP	The camera is warming up.
ROP SAVING DATA	The data managed by the camera and this unit is being saved to the memory card in the ROP.

To clear the warning information displays, press the button below.
ROP (AK-HRP200): CHARA button

IRIS display

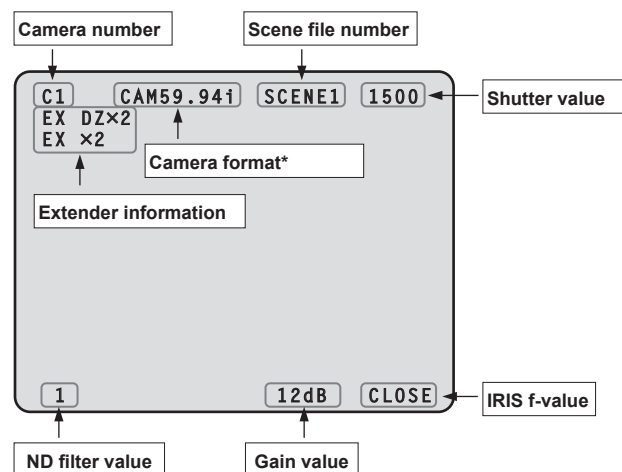
When the information is not displayed on the picture monitor, display it by pressing the CHARA button of the ROP. The camera number is displayed at the top left of the screen, the IRIS level is displayed at the bottom of the screen, and the IRIS f-value is displayed at the bottom right of the screen. Set each item to be displayed on the "PM VIEW SETTING" screen that can be accessed by selecting "MAINTENANCE" on the menu. However, this screen will not appear if the menu's "IRIS LEVEL" setting is "OFF".



*: The IRIS level is displayed based on the IRIS f-value.

Status displays

From the IRIS display screen, press the CHARA button of the ROP to display the statuses. The camera number, scene file number, shutter value, and extender information are displayed at the top of the screen. The ND filter value, gain value, and IRIS f-value are displayed at the bottom of the screen. Set each item to be displayed on the "PM VIEW SETTING" screen that can be accessed by selecting "MAINTENANCE" on the menu. However, when the "IRIS LEVEL" setting is "OFF", the screen will be displayed first if the CHARA button of the ROP is pressed when the information is not displayed on the picture monitor.



*: The camera format value indicates the format of the signal output from the camera.

Picture monitor (PM) displays (Continued)

● Status displays (page 1 of 4)

From the status display screen, press the CHARA button of the ROP to display the first page of the status displays.

1/4 -STATUS1-		
CAM NO.		1
MASTER GAIN	0dB	
5600K	OFF	
GAMMA	OFF	
KNEE	OFF	
WHITE CLIP	OFF	
BLACK GAMMA	OFF	
HD DETAIL	OFF	
HD SKIN DETAIL	OFF	
MATRIX	OFF	

● Status displays (page 2 of 4)

From the status displays (page 1 of 4) screen, press the CHARA button of the ROP to display the second page.

2/4 -STATUS2-		
SHUTTER		OFF
ND FILTER		1
LENS EXTENDER		1.0
AUTO IRIS		OFF
SCENE FILE		SCENE1
SD DETAIL		OFF
ASU REF		USER1
ASU MODE		OUT FULL

Item	Display range	Remarks
CAM No.	1 19	The camera number is displayed here.
MASTER GAIN	Setting values on camera	The master gain value is displayed here. ● For the setting values, refer to the Operating Instructions for the camera.
5600K	OFF ON	The status of the 5600K switch is displayed here. OFF: 3200K, ON: 5600K
GAMMA	OFF ON	The status of the gamma correction is displayed here.
KNEE	OFF ON	The status of the knee function is displayed here. ● This function attenuates those parts that have exceeded the prescribed level (knee point) of the video signals to minimize saturation.
WHITE CLIP	OFF ON	The status of the white clip function is displayed here.
BLACK GAMMA	OFF ON	The status of the black gamma function is displayed here. ● This function changes the amplification rate of the video signals in the low-brightness areas.
HD DETAIL	OFF ON	The status of the detail function for the HD signals is displayed here. ● This function (detail enhancer) enhances (makes sharper or softer) the detail image quality of the video output signals.
HD SKIN DETAIL	OFF ON	The status of the skin tone detail function for the HD signals is displayed here. ● This function minimizes or emphasizes the detail components applied to the skin tone.
MATRIX	OFF ON	The status of the matrix function is displayed here. ● This function compensates the saturation and hue.

Item	Display range	Remarks
SHUTTER	Setting values on camera	The speed of the electronic shutter is displayed here. ● For the setting values, refer to the Operating Instructions for the camera.
ND FILTER	1 4	The names of the ND filters are displayed here. The names (each consisting of 4 characters) correspond to filter 1, 2, 3 and 4. ● Displayed as the filter names are the names that were set using the unit's menu.
LENS EXTENDER	1.0 2.0	The magnification of the lens extender is displayed here.
AUTO IRIS	OFF ON	The status of the auto IRIS function is displayed here.
SCENE FILE	SCENE1 SCENE4 OFF	The selected scene file is displayed here.
SD DETAIL	OFF ON	The status of the detail function for the SD signals is displayed here.
ASU REF	USER1 USER2 USER3 FACTORY	The reference file used during auto setup is displayed here.
ASU MODE	OUT FULL OUT EASY	The auto setup mode is displayed here.

Picture monitor (PM) displays (Continued)

● Status displays (page 3 of 4)

From the status displays (page 2 of 4) screen, press the CHARA button of the ROP to display the third page.

```

3 / 4 - STATUS3 -

DOWNCONVERT MODE      SC
UPCONVERT MODE        SC
RETURN1                HD SDI1
RETURN2                HD SDI2
RETURN3                HD SDI1
RETURN4                HD SDI2
SDI RETURN1           HD
SDI RETURN2           HD
SDI OUTPUT1&2         HD
SDI OUTPUT3&4         HD
NORMAL/PM              NORMAL
COMPOSITE              NORMAL/PM
NORMAL/PM              PM
    
```

Item	Display range	Remarks
DOWNCONVERT MODE	SC SQ LB	The setting information of the down-conversion system is displayed here.
UPCONVERT MODE	SC SQ LB	The setting information of the up-conversion system is displayed here.
RETURN1	HD SDI1	The statuses of the input format allocations for SDI return signals 1 to 4 are displayed here.
RETURN2	HD SDI2	
RETURN3	SD SDI1	
RETURN4	SD SDI2	
SDI RETURN1	HD SD	The format of the return signal to be input to [HD/SD SDI 1] of the RETURN IN connectors is displayed here.
SDI RETURN2	HD SD	The format of the return signal to be input to [HD/SD SDI 2] of the RETURN IN connectors is displayed here.
SDI OUTPUT1&2	HD SD	The format of the signals to be output from [1] and [2] of the HD/SD SDI OUT connectors is displayed here.
SDI OUTPUT3&4	HD SD	The format of the signals to be output from [3/PM] and [4/PM] of the HD/SD SDI OUT connectors is displayed here.
SDI OUTPUT3&4 NORMAL/PM	NORMAL PM	The setting information for output from [3/PM] and [4/PM] of the HD/SD SDI OUT connectors is displayed here.
COMPOSITE NORMAL/PM	NORMAL PM	The signal to be output from [OUT/PM] of the VBS connectors is displayed here.

● Status displays (page 4 of 4)

From the status displays (page 3 of 4) screen, press the CHARA button of the ROP to display the fourth page.

```

4 / 4 - STATUS4 -

HOURS CCU              *****H
CABLE OPEN
CABLE SHORT
CAM RECEIVE LEVEL      ■■■■■■
CCU RECEIVE LEVEL      ■■■■■■

VERSION                1.00-00-0.00
    
```

Item	Display range	Remarks
HOURS CCU	—	The unit's cumulative operation time is displayed here.
CABLE OPEN	—	This item flashes when the optical fiber multi cable is not connected.
CABLE SHORT	—	This item flashes when the optical fiber multi cable is short-circuited.
CAM RECEIVE LEVEL	■ ———— ■■■■■■	The level of the optical signals received by the camera is displayed in 5 gradations.
CCU RECEIVE LEVEL	■ ———— ■■■■■■	The level of the optical signals received by the unit is displayed in 5 gradations.
VERSION	—	The unit's software version is displayed here.

Picture monitor (PM) displays (Continued)

● Operation displays (manual)

The operation displays appear at the bottom of the screen for 4 seconds when any of the following operations have been performed with the operation panel of the ROP.

- "MASTER GAIN" is changed
- "SHUTTER" is changed
- "LENS EXT" is changed
- "FILTER" is changed
- "SCENE FILE" is changed
- "REF LOAD" is changed

The display time can be changed from "MAINTENANCE" menu → "PM OPERATION STATUS" → "STATUS DISP TIME".



Item	Display range	Remarks
MASTER GAIN	Setting values on camera	The master gain value is displayed here. (in 3 dB increments) ● For the setting values, refer to the Operating Instructions for the camera.
SHUTTER	Setting values on camera	The speed of the electronic shutter is displayed here. ● For the setting values, refer to the Operating Instructions for the camera.
LENS EXT	1.0 2.0	The magnification of the lens extender is displayed here. ● When the magnification of the lens extender is set to 2×, "2.0" is displayed. Otherwise, "1.0" is displayed.
FILTER	4 characters	The name of the ND filter is displayed here.
SCENE FILE	SCENE1 SCENE4 OFF	This indicates the scene file name.
REF LOAD	FACTORY USER1 USER2 USER3	This indicates the reference file that was loaded using the SCENE command.

● Operation displays (AUTO)

If the AWB function, ABB function, or AUTO SETUP function has been activated when a menu is not displayed on the picture monitor, information on the operation performed appears at the bottom of the screen.

When the AUTO SETUP operations are displayed, they will remain displayed until the operations are completed.

The display is cleared 4 seconds after the operations are completed.

If the operations cannot be completed, they will remain displayed until the NG (error) items of the AUTO function are released.

The display time can be changed from "MAINTENANCE" menu → "PM OPERATION STATUS" → "STATUS DISP TIME".



Item	Display description:		
	Appears on two lines at the bottom of the screen.		
	Top line: status Bottom line: Detailed information		
ABB START	ABB: ACTIVE (None)		
AWB START	AWB: ACTIVE (None)		
AUTO OK (Common to ABB, AWB, and AUTO SETUP)	ABB: OK	AWB: OK	AUTO SETUP: OK (None)
AUTO NG1*1 (Only for ABB and AWB)	ABB: NG	AWB: NG	Detailed information of the NG (error) message is displayed here*1.
AUTO SETUP START*2	AUTO SETUP: ACTIVE Detailed information is displayed here*2.		
AUTO NG2*3 (Only for AUTO SETUP)	AUTO SETUP: NG Detailed information of the NG (error) message is displayed here*3.		
AUTO BREAK (Common to ABB, AWB and AUTO SETUP)	ABB: BREAK	AWB: BREAK	AUTO SETUP: BREAK (None)
AUTO READY (Only for AUTO SETUP)	AUTO SETUP: READY (None)		

***1: [AUTO NG1 detailed information]**

The AUTO NG1 detailed information is displayed flashing on the screen.

Rch OUT RANGE
Gch OUT RANGE
Bch OUT RANGE
AWB LOW LIGHT
AWB HIGH LIGHT

***2: [AUTO SETUP operation information]**

The AUTO SETUP operation information is displayed on the screen.

B.SHD OPERATION
FLARE OPERATION
ABB OPERATION
AWB OPERATION

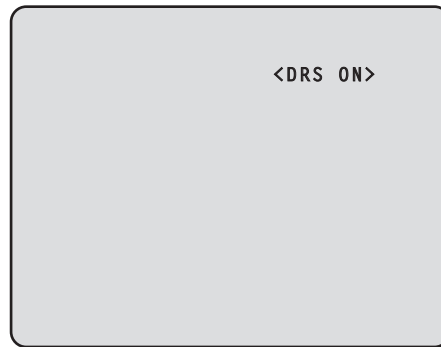
***3: [AUTO NG2 detailed information]**

The AUTO NG2 detailed information is displayed flashing on the screen.

ABB Gch OUT RANGE
ABB Bch OUT RANGE
ABB Rch OUT RANGE
B.SHD Gch OUT RANGE
B.SHD Bch OUT RANGE
B.SHD Rch OUT RANGE
FLARE Gch OUT RANGE
FLARE Bch OUT RANGE
FLARE Rch OUT RANGE
AWB Gch OUT RANGE
AWB Bch OUT RANGE
AWB Rch OUT RANGE
NOT RUNNING
 ILLEGAL MODE(CINEGAMMA)
NOT RUNNING
 ILLEGAL MODE(D.EXT)
NOT RUNNING
 ILLEGAL MODE(SCANREVERSE)
NOT RUNNING
 ILLEGAL MODE(BAR)
NOT RUNNING
 ILLEGAL MODE(TESTSAW)

● **Contrast automatic adjustment display**

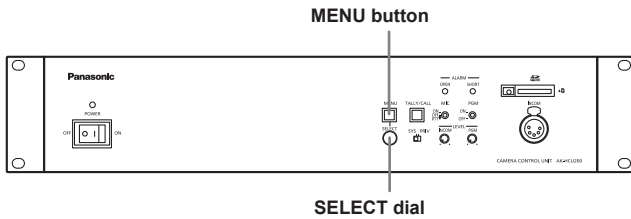
This appears when contrast automatic adjustment (DRS SWITCH) is set to ON by ROP operation.



● For details on contrast automatic adjustment, refer to the Operating Instructions for the ROP.

Menu operations

While viewing the menu screen of the picture monitor, operate the MENU button and SELECT dial on the front panel.



Displaying and hiding the menus

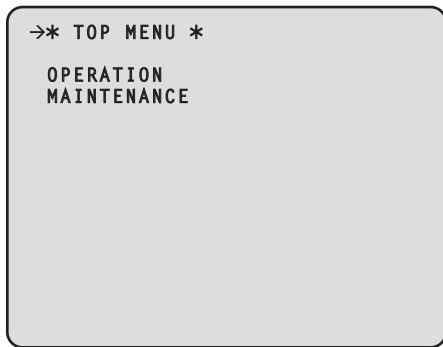
1. Hold down the MENU button

The menu screen appears and the MENU button lights. "TOP MENU" appears first.

- If the MENU button is held down when the menu is displayed, the menu closes and the MENU button turns off.



Hold down the MENU button ↑ ↓ Hold down the MENU button



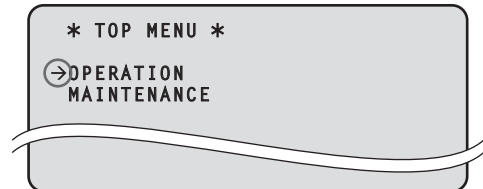
Basic menu operations

Selecting a menu

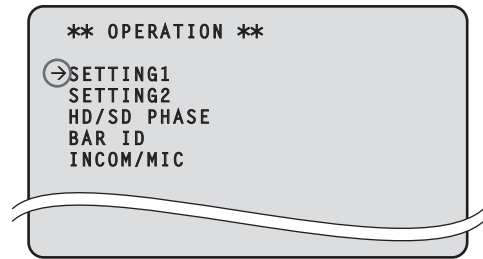
1. Press the SELECT dial

Move the cursor to the desired item (OPERATION or MAINTENANCE) on the "TOP MENU" screen, and then press the SELECT dial to display the menu screen one level below the selected item.

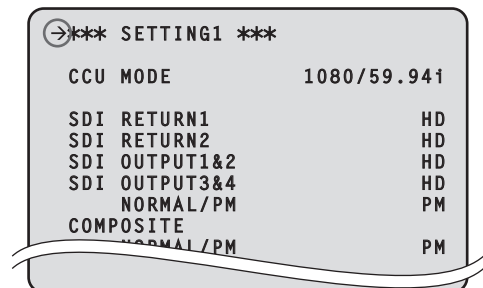
- When the SELECT dial is turned clockwise, the cursor moves down; conversely, when it is turned counterclockwise, the cursor moves up.



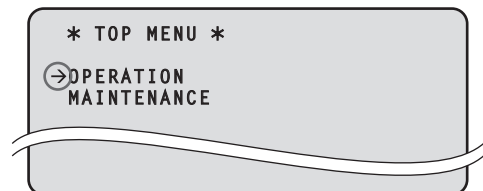
2. Turn the SELECT dial to move the cursor to the menu item you want to set, and then press the SELECT dial.



The setting screen one level below the selected menu item appears.



- Moving the cursor to the menu title and then pressing the SELECT dial redisplay "TOP MENU".

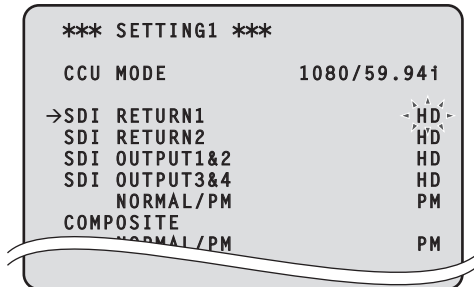


Changing the setting value of a setting item

A number of items and the set values are displayed on the setting screen at the lowest level.

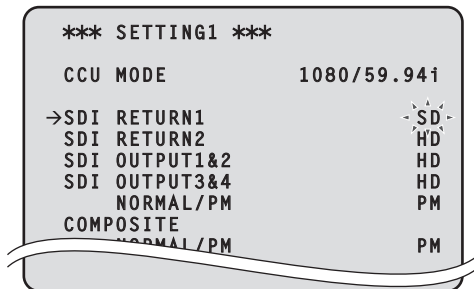
1. Turn the SELECT dial to move the cursor to the menu item you want to set, and then press the SELECT dial.

The setting value of the selected menu item starts flashing and you can change it.



2. Turn the SELECT dial to change the value, and then press the SELECT dial.

Turning the SELECT dial changes the setting value and pressing the SELECT dial confirms the setting value.

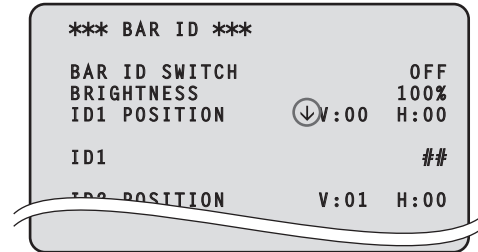


Once the setting value has been confirmed, the flashing stops, and the cursor can be moved from one menu to another. In some cases, the setting is reflected when the setting value is changed in the flashing state; in other cases, it is reflected when the SELECT dial is pressed to confirm the setting value.

Menu items with multiple setting items on one line and text input menu items

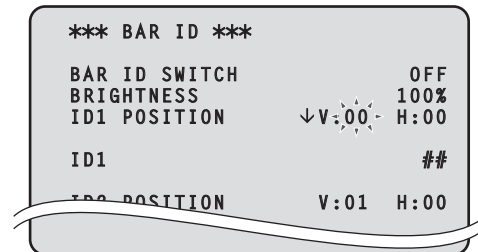
1. Turn the SELECT dial to move the cursor to the menu item you want to set, and then press the SELECT dial.

The cursor becomes "↓" and you can use the SELECT dial to move the cursor to a setting item in the selected menu item.



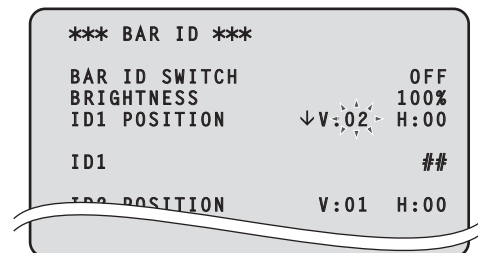
2. Turn the SELECT dial to move the cursor to the item you want to set, and then press the SELECT dial.

The setting value of the selected item starts flashing and you can change it.



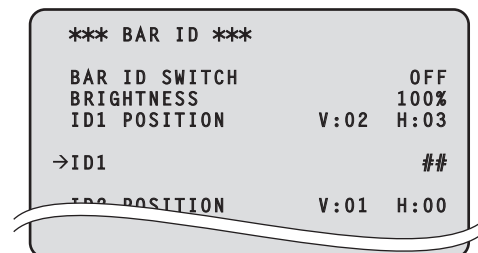
3. Turn the SELECT dial to change the value, and then press the SELECT dial.

Turning the SELECT dial changes the setting value (or characters), and pressing the SELECT dial confirms the setting value (or characters).



When the setting value is confirmed and the flashing stops, you can move the cursor.

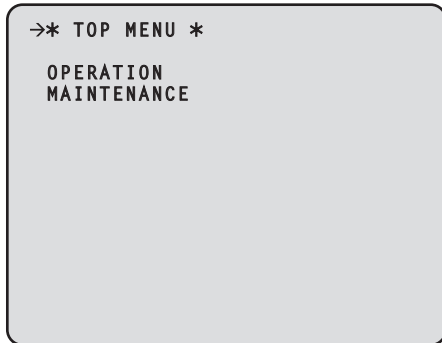
If you press the SELECT dial while the cursor is on the left of a menu item, the cursor becomes "→" and you can select the menu item.



Setting menu items

TOP MENU

This is the first screen displayed when you hold down the MENU button. Select one of the menus.



- **OPERATION**

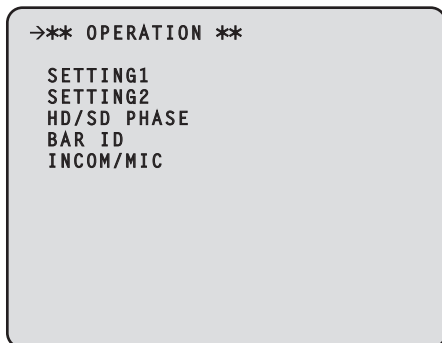
Select this to open the OPERATION menu screen.

- **MAINTENANCE**

Select this to open the MAINTENANCE menu screen.

OPERATION menu

This is the selection screen for the OPERATION menu. Moving the cursor to the "OPERATION" menu title and then pressing the SELECT dial redisplayes "TOP MENU".



- **SETTING1**

Select this to display the SETTING1 screen.

- **SETTING2**

Select this to display the SETTING2 screen.

- **HD/SD PHASE**

Select this to display the HD/SD PHASE screen.

- **BAR ID**

Select this to display the BAR ID screen.

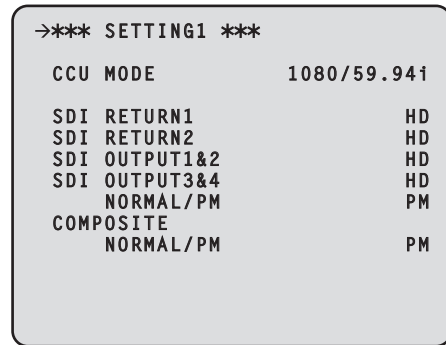
- **INCOM/MIC**

Select this to display the INCOM/MIC screen.

- **SETTING1 Screen**

This is the selection screen for the SETTING1 menu.

Moving the cursor to the "SETTING1" menu title and then pressing the SELECT dial redisplayes the OPERATION menu one level up.



 indicates the factory default setting.

Item	Setting value	Remarks
CCU MODE	59.94 Hz: <u>1080/59.94i</u> 1080/50i	Set the format of the signal to be output from the unit.
	50 Hz: 1080/59.94i <u>1080/50i</u>	
SDI RETURN1	<u>HD</u> SD	Set the format of the return signal to be input to [HD/SD SDI 1] of the RETURN IN connectors.
SDI RETURN2	<u>HD</u> SD	Set the format of the return signal to be input to [HD/SD SDI 2] of the RETURN IN connectors.
SDI OUTPUT1&2	<u>HD</u> SD	Set the format of the signals to be output from [1] and [2] of the HD/SD SDI OUT connectors.
SDI OUTPUT3&4	<u>HD</u> SD	Set the format of the signals to be output from [3/PM] and [4/PM] of the HD/SD SDI OUT connectors.
SDI OUTPUT3&4 NORMAL/PM	NORMAL <u>PM</u>	Set the signal to be output from [3/PM] and [4/PM] of the HD/SD SDI OUT connectors. NORMAL: Output the main line images. PM: Output the picture monitor images.
COMPOSITE NORMAL/PM	NORMAL <u>PM</u>	Set the signal to be output from [OUT/PM] of the VBS connectors. NORMAL: Output the main line images. PM: Output the picture monitor images.

- When the SDI OUTPUT3&4 NORMAL/PM item and COMPOSITE NORMAL/PM item are set to "NORMAL", the menus and statuses will not be able to be displayed because the picture monitor images will not be output.

When one of items is set to "NORMAL", the other one is set to "PM" as both of the items cannot be set to "NORMAL".

Setting menu items (Continued)

● SETTING2 Screen

This is the selection screen for the SETTING2 menu.

Moving the cursor to the "SETTING2" menu title and then pressing the SELECT dial redisplay the OPERATION menu one level up.

->*** SETTING2 ***		
FS DELAY		NORMAL
HD BAR SELECT		ARIB
BAR LPF		7TAP
BAR USER1		75%WHITE
BAR USER2		0%BLACK
SETUP 7.5%		OFF
PATHO		OFF

___ indicates the factory default setting.

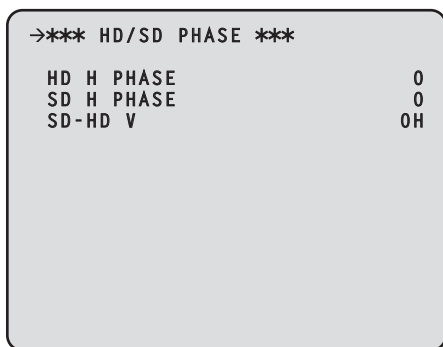
Item	Setting value	Remarks
FS DELAY	<u>NORMAL</u> SHORT	Select the delay mode for the HD return signals. NORMAL: Matches return signal input that does not match the sync phase to the phase of the camera by delaying it by 1 frame. SHORT: Sets the shortest delay. (5 H) However, if the following conditions are not met, it is delayed by 1 frame + 5H. ● HD signal ● The SD-HD V item in the HD/SD PHASE screen is "ADVANCE" or "0H_SD_DLAY" ● When output from this unit is used as the return signal, the delay is less than 3H
HD BAR SELECT	FULL BARS-1 <u>ARIB</u> BARS-2 BARS-3 BARS-4 BARS-5 BARS-6	Select the color bar signals to be output from the HD/SD SDI OUT connectors and VBS connector when "BAR" has been selected on the operation panel of the ROP. When they are output in VBS or SD format, color bars in HD format are output in the mode specified with DOWNCONVERT MODE*. FULL: 75 % full field color bar BARS-1: Color bar based on the SMPTE standard ARIB: ARIB multi-format color bar BARS-2: Color bar based on the EIAJ standard BARS-3: Split field color bar BARS-4: 75 % full field color bar placed in an area with a 4:3 aspect ratio. (Displayed 40 % gray outside the area.) BARS-5: Color bar based on the SMPTE standard that is placed in an area with a 4:3 aspect ratio. (Displayed 40 % gray outside the area.) BARS-6: Color bar based on the EIAJ standard that is placed in an area with a 4:3 aspect ratio. (Displayed 40 % gray outside the area.)

Item	Setting value	Remarks
BAR LPF	OFF 3TAP 5TAP <u>7TAP</u> 9TAP	Select the filter through which to pass the color bar signals to be output from the HD/SD SDI OUT connectors when BAR has been selected on the operation panel of the ROP. ● A higher TAP value will ensure a smooth rise and fall of the waveforms and reduce both the overshoot and undershoot.
BAR USER1	<u>75%WHITE</u> 100%WHITE +I_SIGNAL -I_SIGNAL	Set user range 1 for when ARIB has been selected as the HD BAR SELECT setting. This can be set when "ARIB" is selected for the HD BAR SELECT item. In the case of another setting, "___" is displayed and a setting cannot be selected.
BAR USER2	<u>0%BLACK</u> +Q_SIGNAL	Set user range 2 for when ARIB has been selected as the HD BAR SELECT setting. This can be set when "ARIB" is selected for the HD BAR SELECT item. In the case of another setting, "___" is displayed and a setting cannot be selected.
SETUP 7.5%	ON <u>OFF</u>	Select whether to add the setup 7.5 % level to the SD signals to be output from [OUT/PM] of the VBS connectors.
PATHO	ON <u>OFF</u>	Select ON/OFF for the pathological signals.

*: The DOWNCONVERT MODE setting can be configured by operating the REMOTE OPERATION menu with the ROP.
For details, refer to Operating Instructions <Operations and Settings> of AK-HRP200.

● **HD/SD PHASE Screen**

This menu is used for the HD signal and SD signal phase adjustments. Moving the cursor to the “HD/SD PHASE” menu title and then pressing the SELECT dial redisplay the OPERATION menu one level up.



__ indicates the factory default setting.

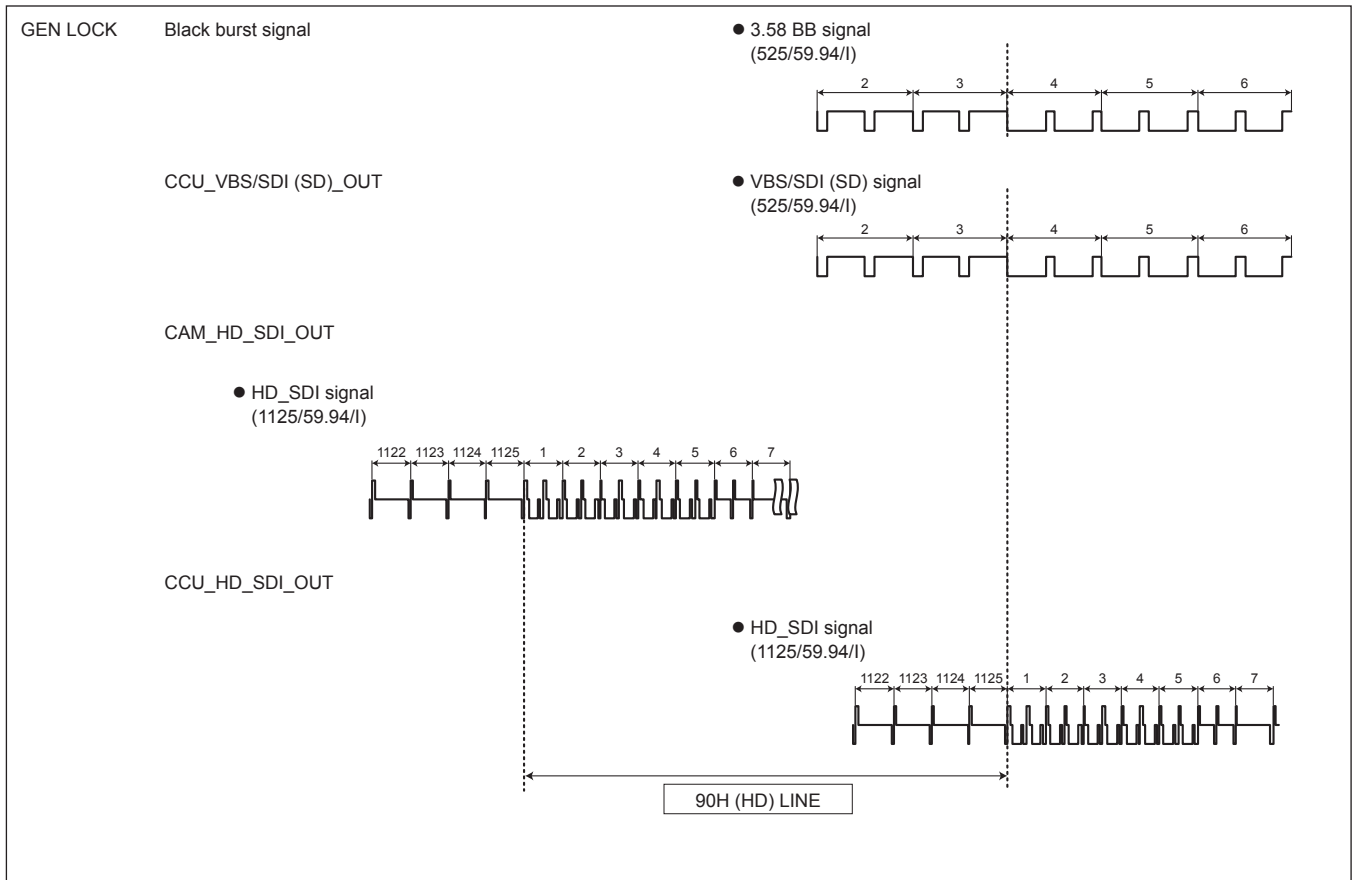
Item	Setting value	Remarks
HD H PHASE	59.94 Hz: -1099 0 1099	Adjust the horizontal sync phase of HDTV output in respect to the sync signals of the system.
	50 Hz: -1319 0 1319	
SD H PHASE	59.94 Hz: -857 0 857	Adjust the horizontal sync phase of SDTV output in respect to the sync signals of the system.
	50 Hz: -863 0 863	
SD-HD V	0H ADVANCE 0H_SD_DLAY	Set the vertical phase of the HDTV output in relation to the SDTV output. 0H: Sets the vertical phase to the same phase. ADVANCE: When the field frequency is 59.94 Hz, the phase advance is 90H. When the field frequency is 50 Hz, the phase advance is 75H. 0H_SD_DLAY: The SDTV signals are delayed and set in-phase with the HDTV signals. ● When the setting of this item is set to “0H” or “ADVANCE” while the field frequency is 50 Hz, images in SD format are delayed by 1 frame + 75 lines only when letterbox is selected for DOWNCONVERT MODE*. For the relationship with the sync phase, refer to pages 14 to 19.

*: The DOWNCONVERT MODE setting can be configured by operating the REMOTE OPERATION menu with the ROP. For details, refer to Operating Instructions <Operations and Settings> of AK-HRP200.

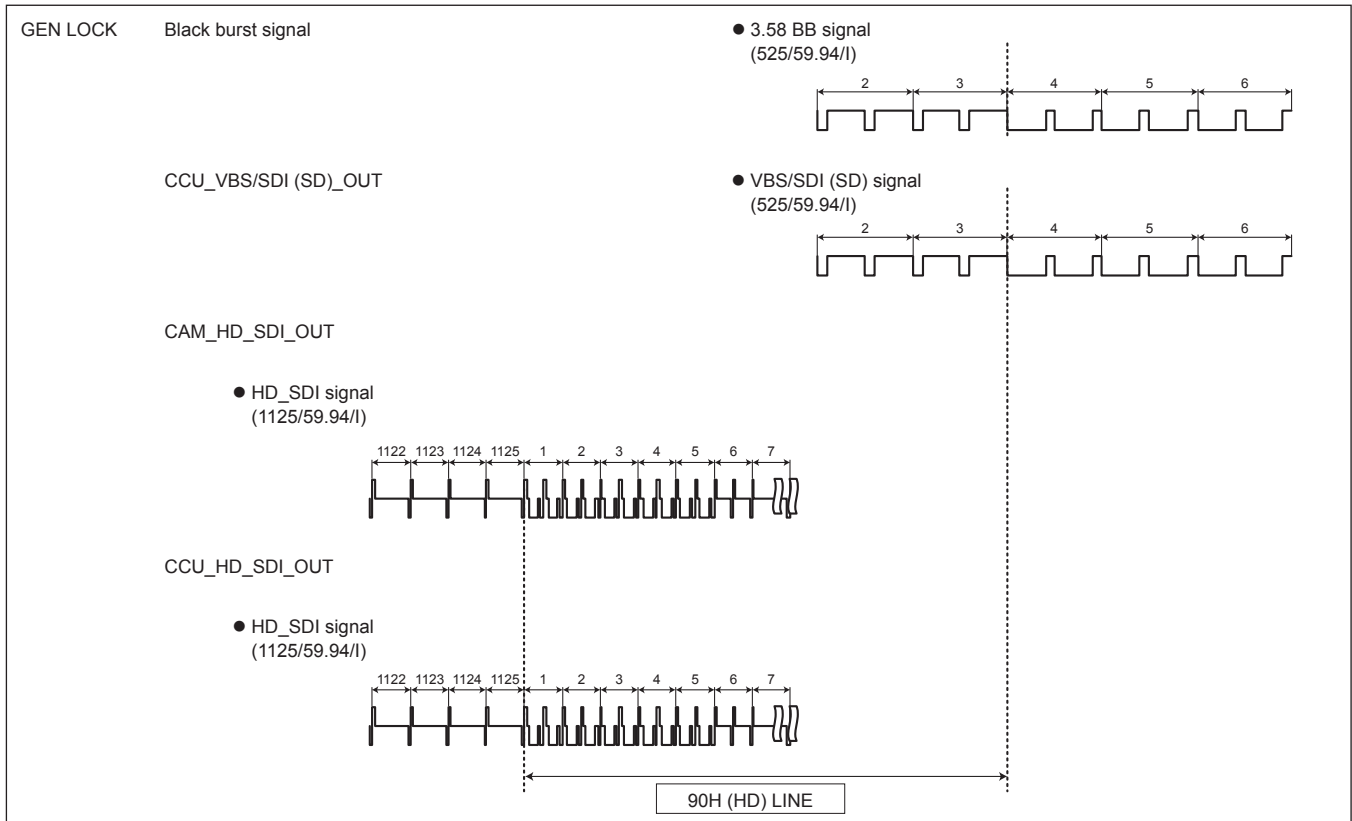
● SD signal phase

<1080i/59.94 Hz format>

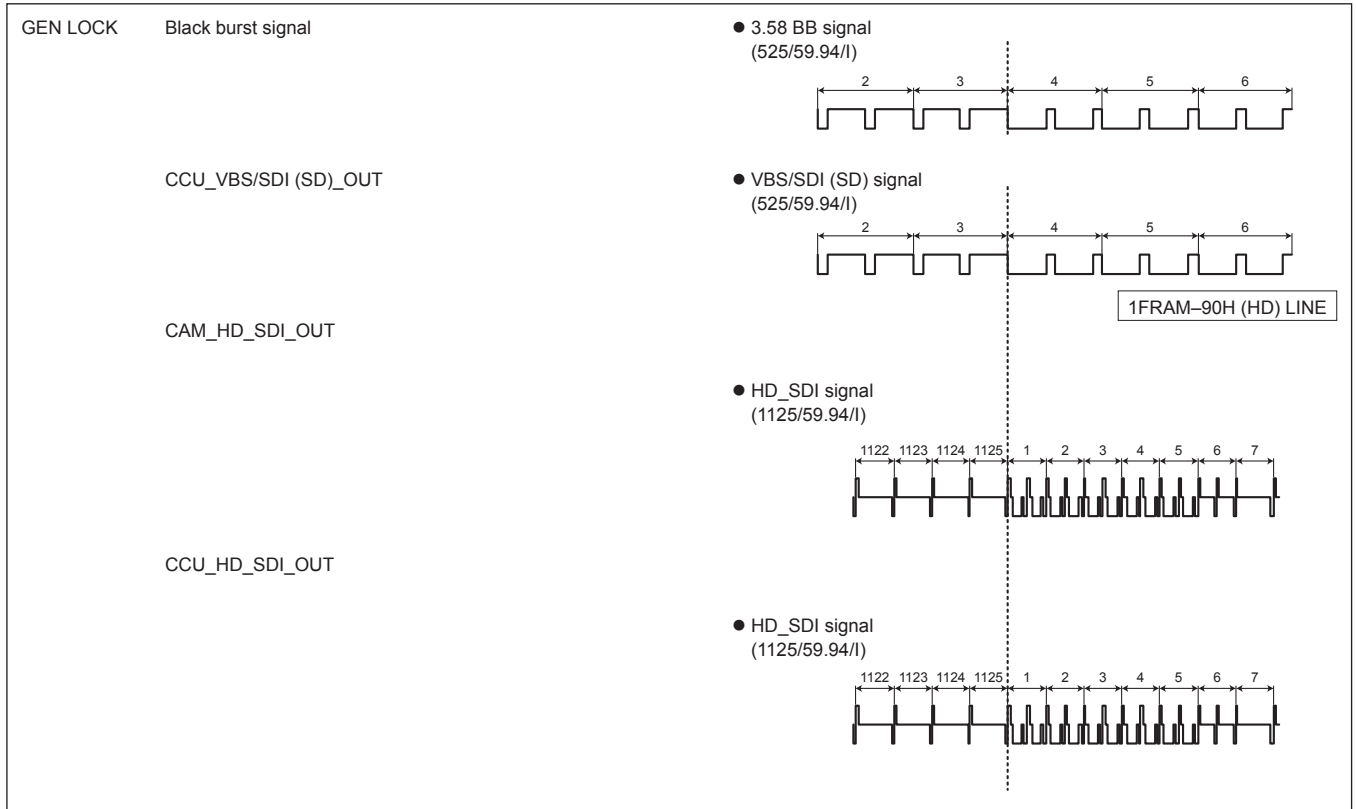
Setting of SD-HD V item: 0H



Setting of SD-HD V item: ADVANCE (90H)

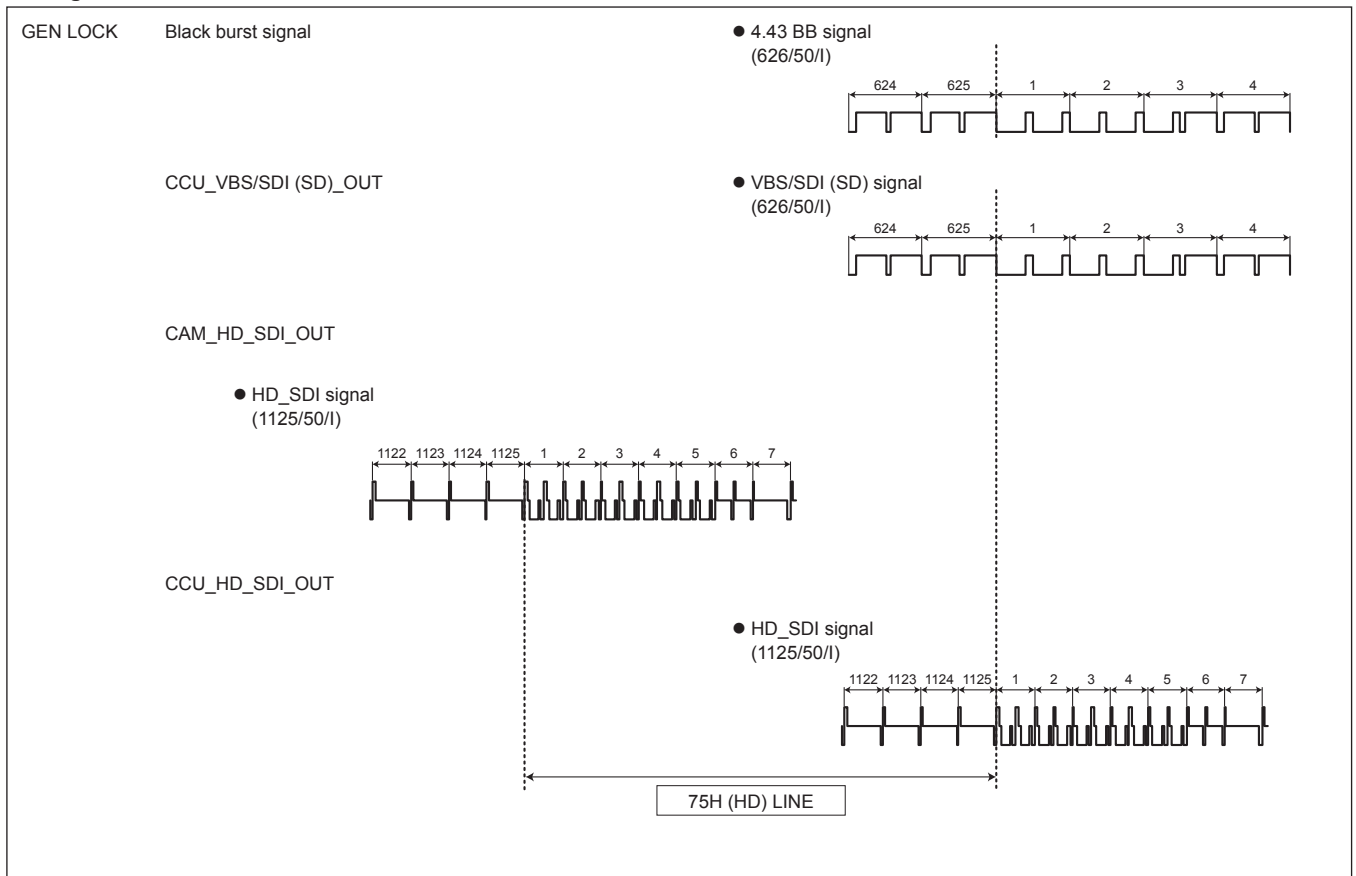


Setting of SD-HD V item: 0H_SD_DLAY (1FRAM-90H DLY)

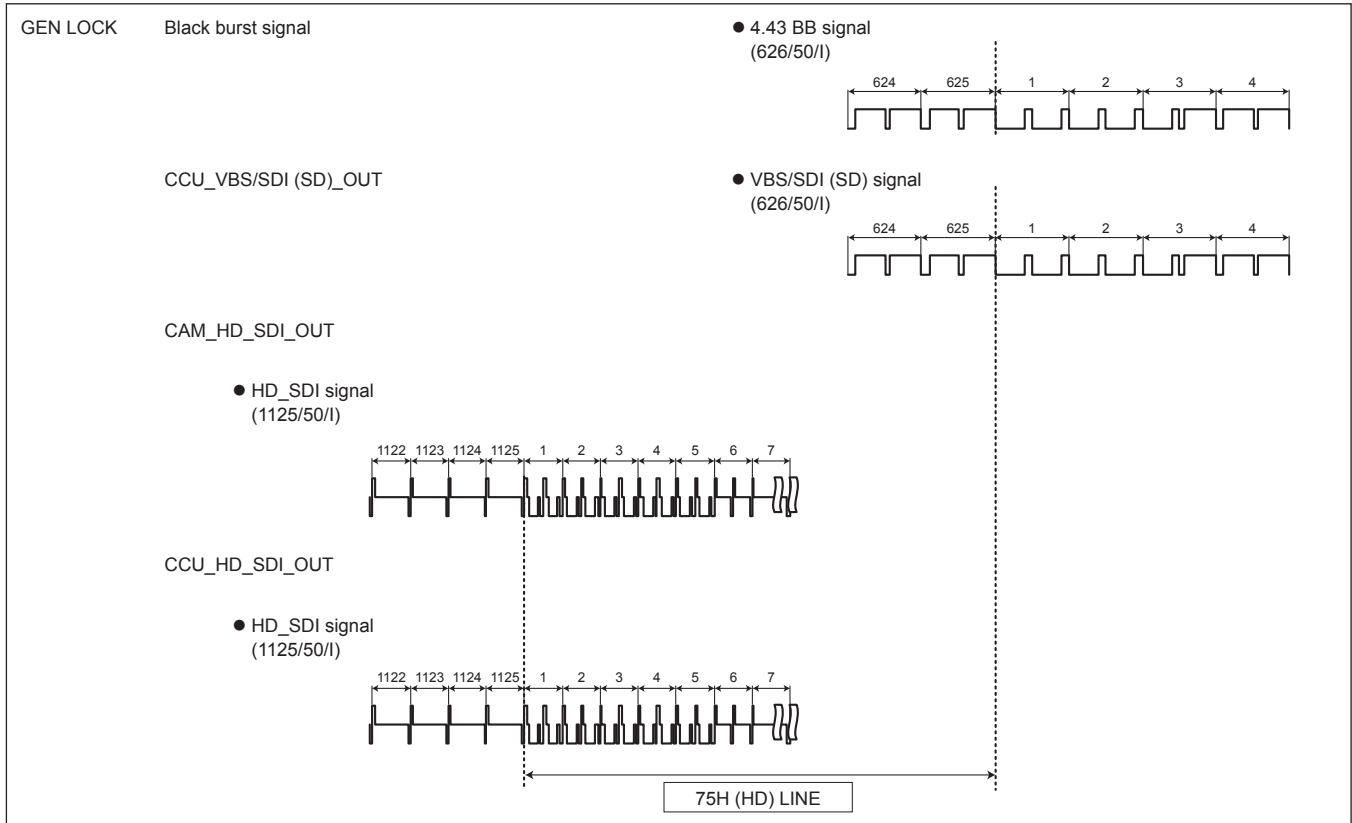


<1080i/50 Hz format>

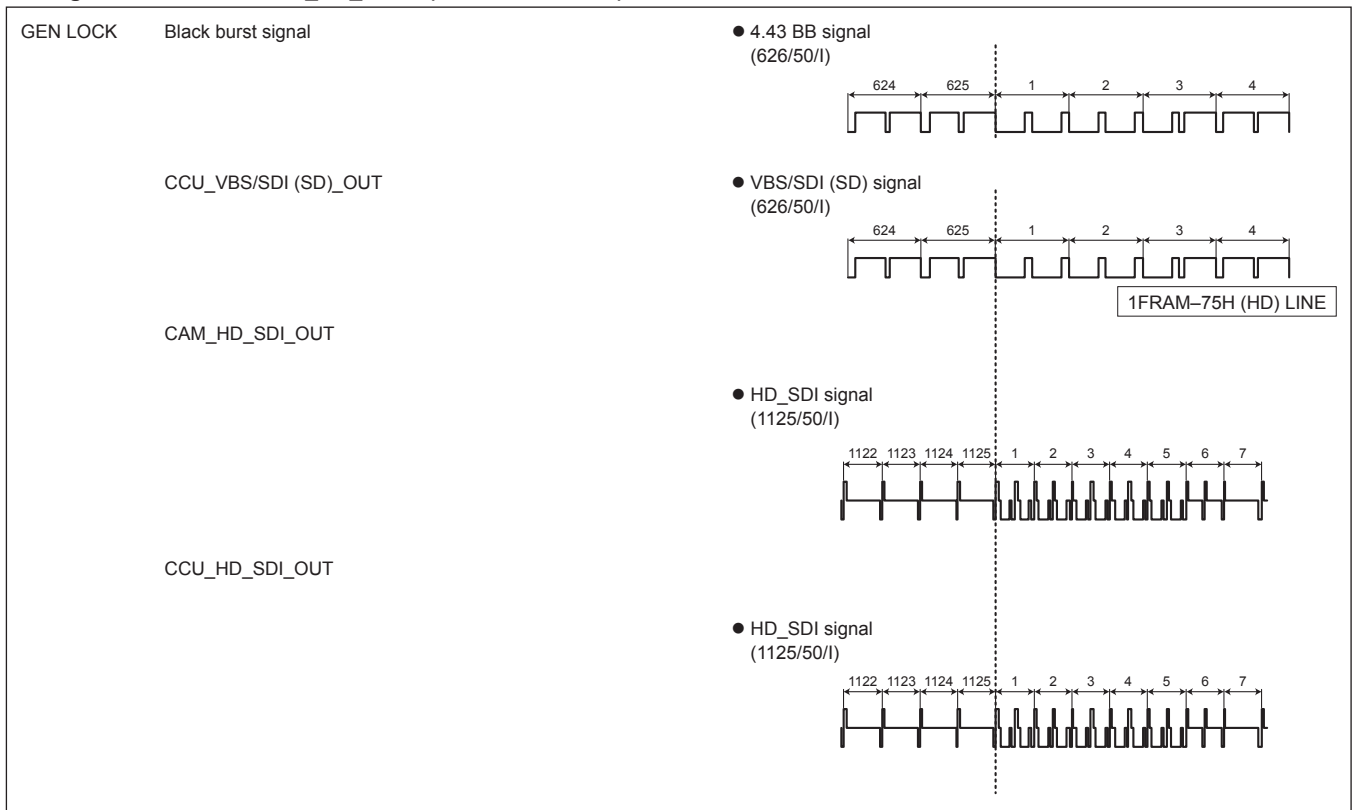
Setting of SD-HD V item: 0H



Setting of SD-HD V item: **ADVANCE (75H)**

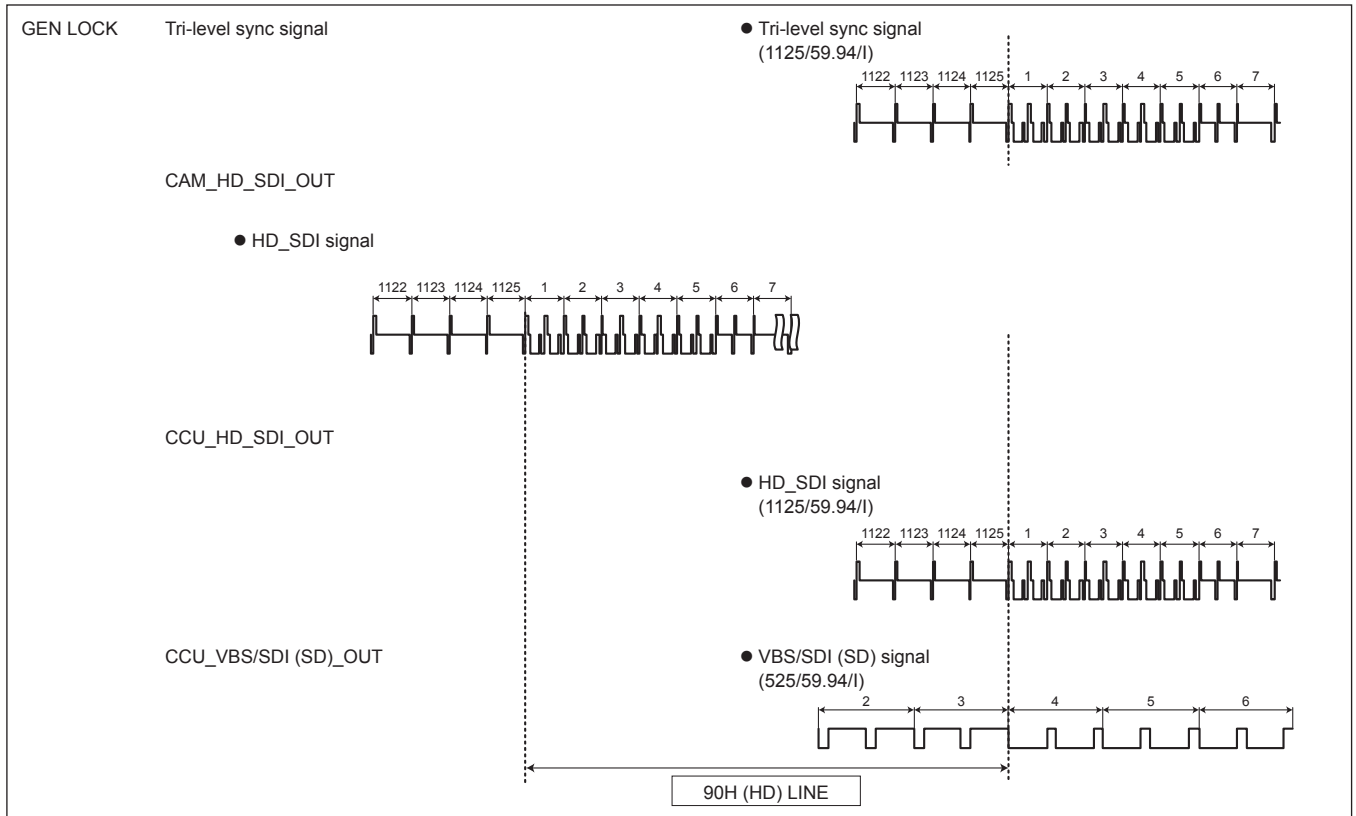


Setting of SD-HD V item: **0H_SD_DLAY (1FRAM-75H DLY)**

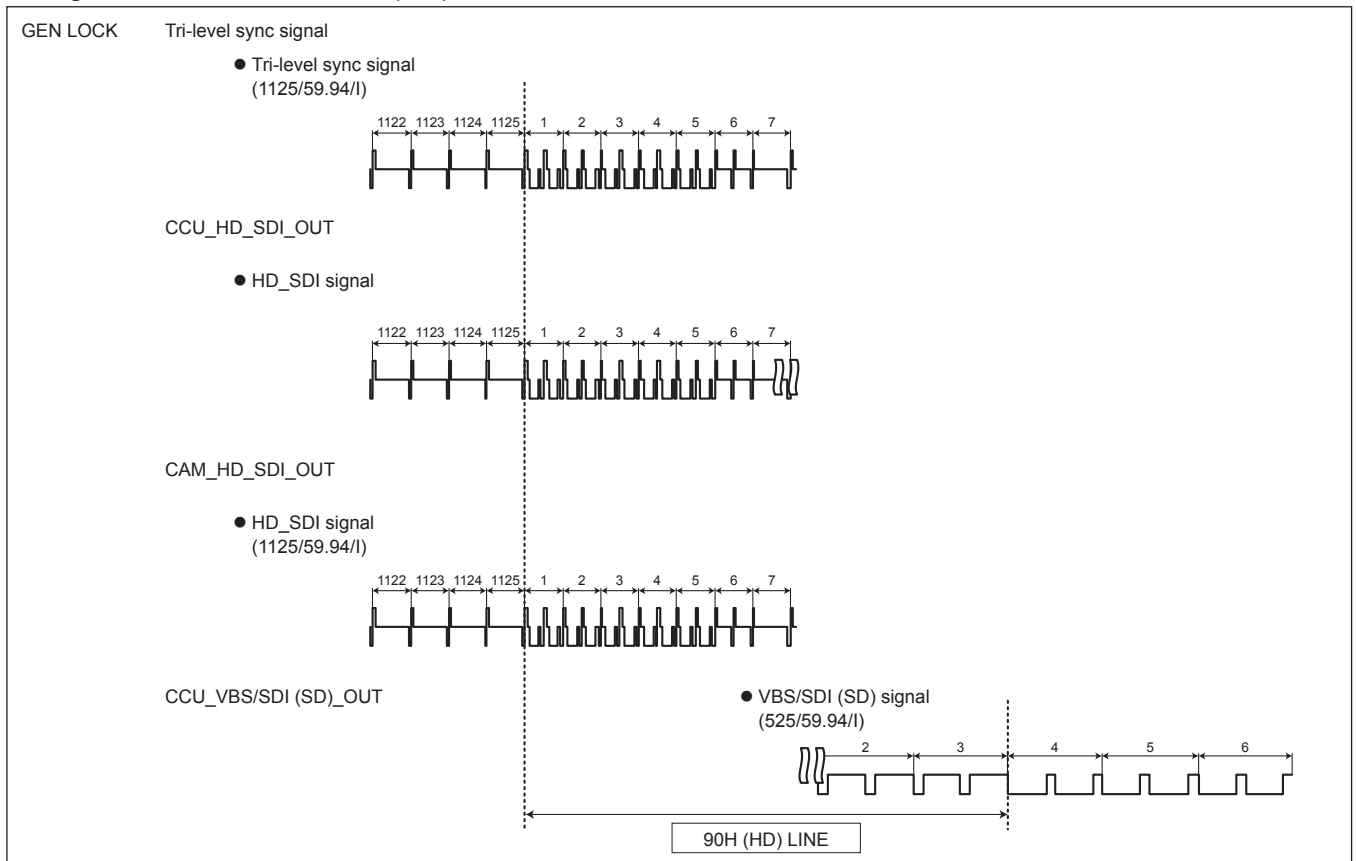


● HD signal phase
<1080i/59.94 Hz format>

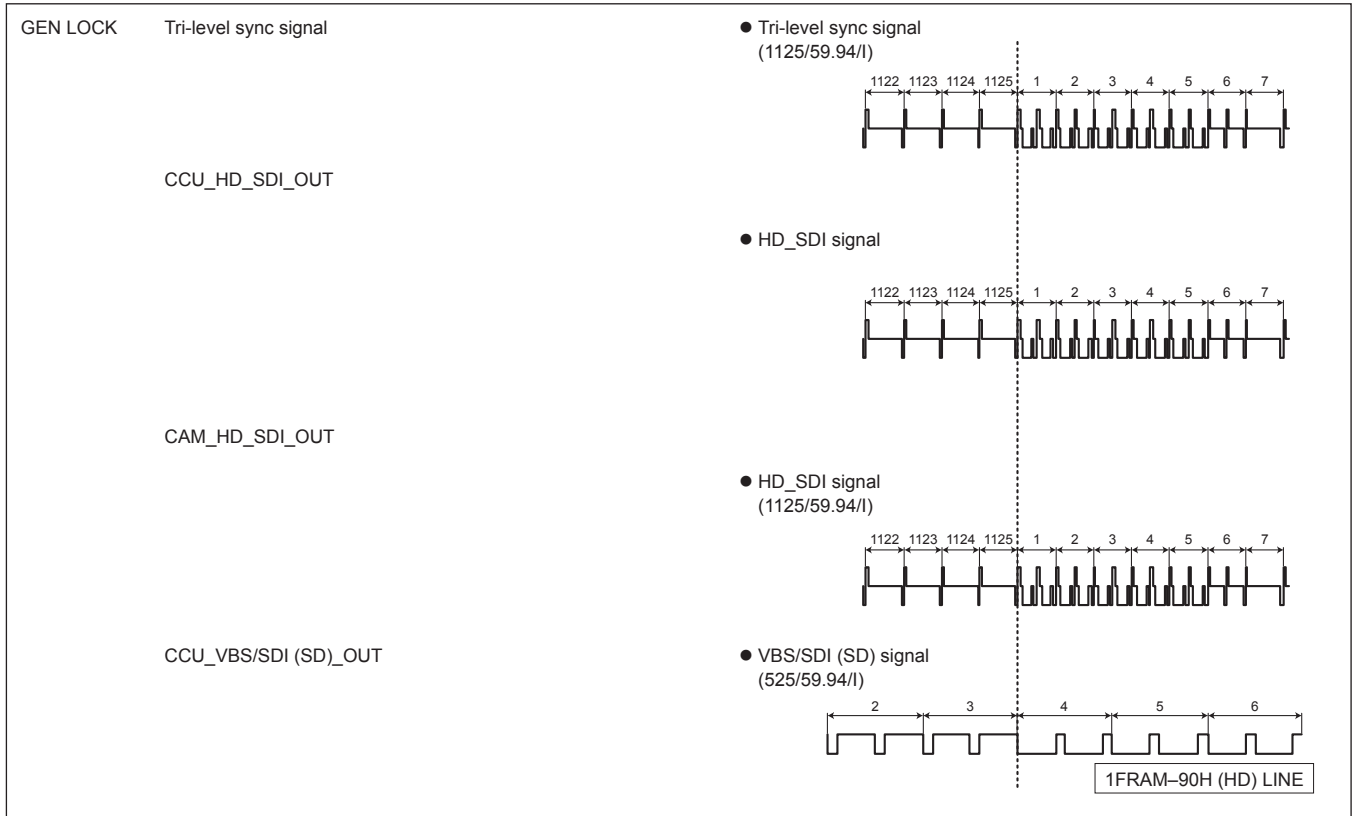
Setting of SD-HD V item: 0H



Setting of SD-HD V item: ADVANCE (90H)

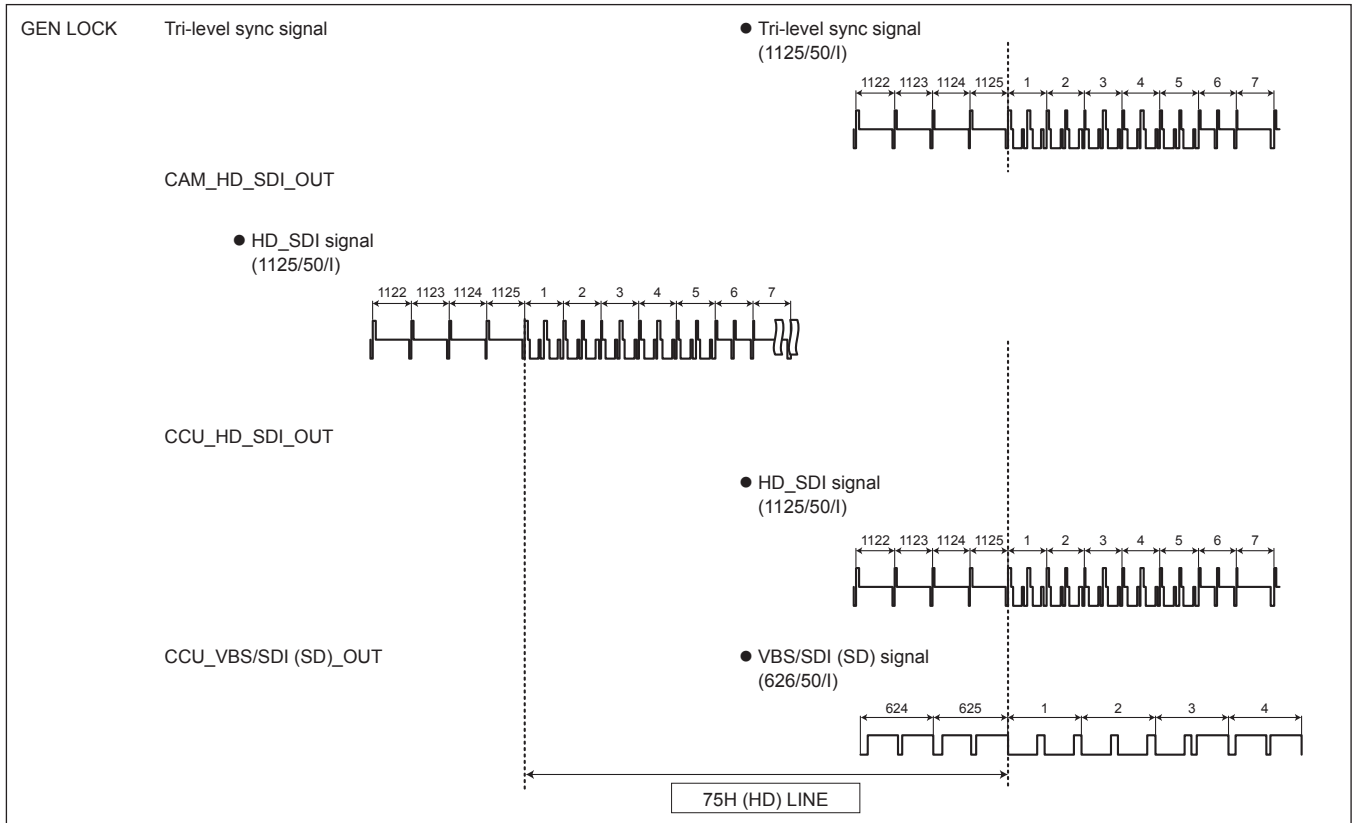


Setting of SD-HD V item: 0H_SD_DLAY (1FRAM-90H DLY)

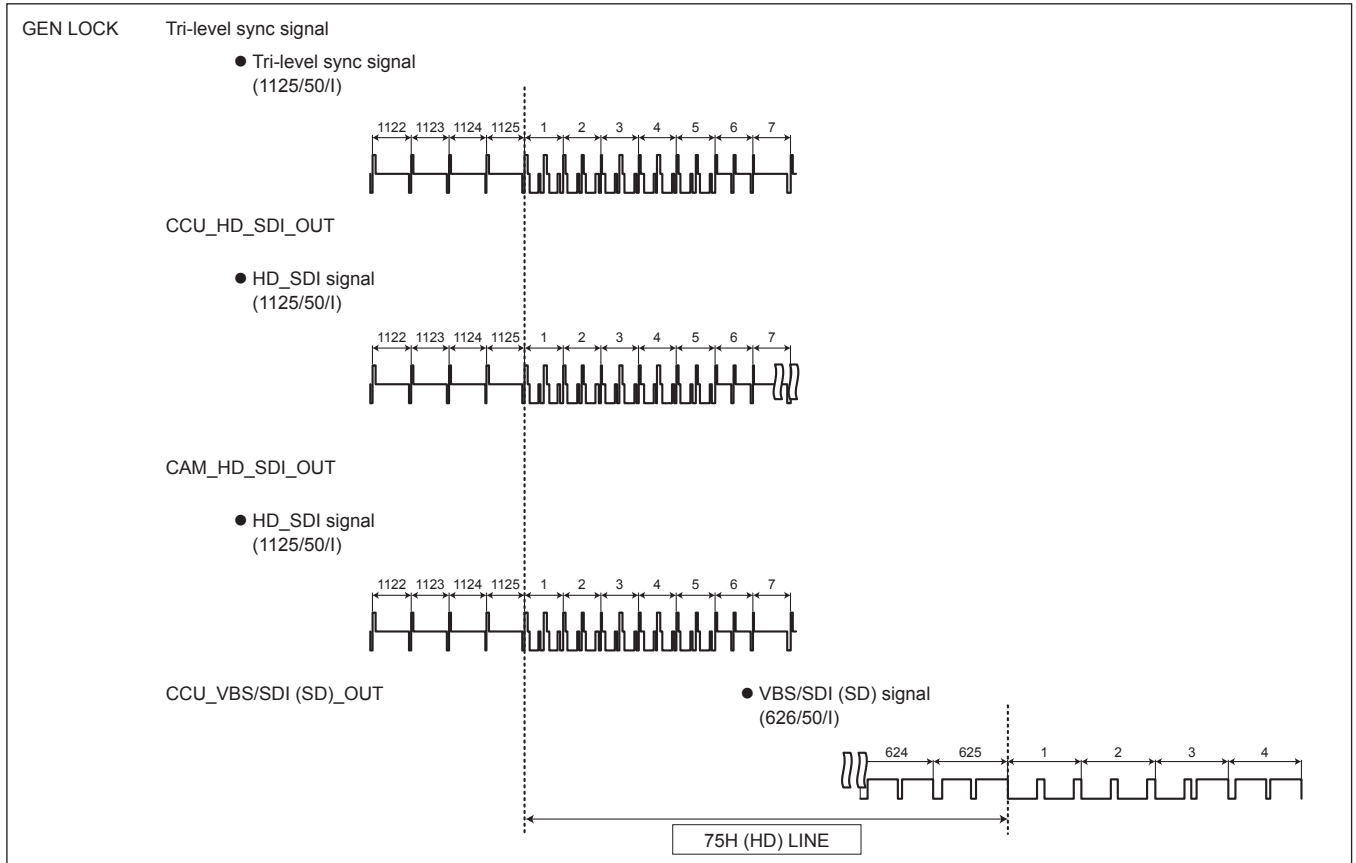


<1080i/50 Hz format>

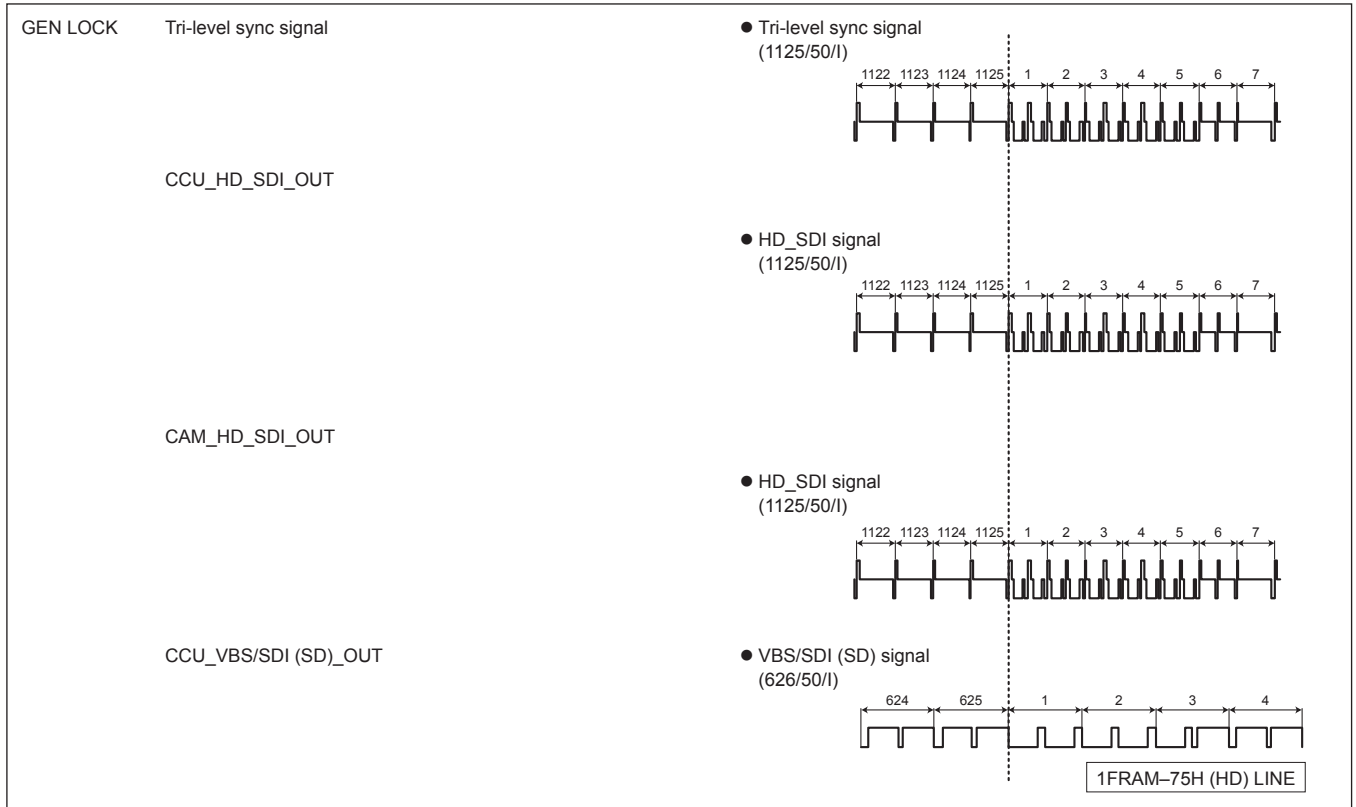
Setting of SD-HD V item: 0H



Setting of SD-HD V item: ADVANCE (75H)



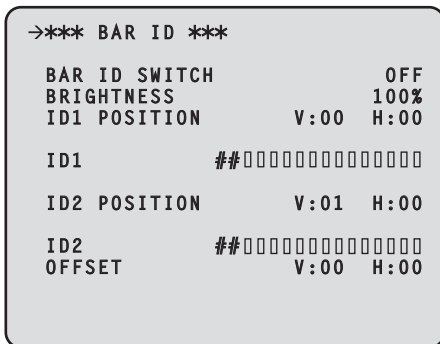
Setting of SD-HD V item: 0H_SD_DLAY (1FRAM-75H DLY)



Setting menu items (Continued)

● BAR ID Screen

This menu is used to set the BAR IDs displayed on the color bars. Moving the cursor to the "BAR ID" menu title and then pressing the SELECT dial redisplay the OPERATION menu one level up.



__ indicates the factory default setting.

Item	Setting value	Remarks
BAR ID SWITCH	ON <u>OFF</u>	Set the display of the BAR IDs displayed on the color bars when the color bars are displayed to ON or OFF.
BRIGHTNESS	0% <u>100%</u>	Set the character color, in units of 10 %, of the BAR ID displayed on the color bar when the color bar is displayed. 0%: (black), 100%: (white)
ID1 POSITION	V (vertical): <u>00</u> 05 H (horizontal): <u>00</u> 15	Set the display start position of BAR ID1 displayed on the color bars when the color bars are displayed. Set from which character in the vertical direction and which character in the horizontal direction, starting from the top left of the color bar, to start displaying the BAR ID using the font size as the reference. ● When the coordinates of ID1 and ID2 are the same, bar ID1's character string will be placed on top of bar ID2 (BAR ID2 will be below). When the vertical coordinates are the same and the horizontal coordinates differ, the BAR ID with the horizontal coordinates set later will be placed on top of the vertical one.
ID1	##□□□□□□□□□□□□□□	Set the character string of BAR ID1. The ID that is set here is displayed on the color bar. Up to 16 characters can be set. <div style="border: 1px solid black; padding: 5px; width: fit-content;"> Characters which can be used: ● Alphanumeric characters ● Spaces ● . ! " # % & ' () * + , - . / : ; < = > ? @ [] _ ~ </div> ● When "##" has been input in the character string, this part is replaced by the camera number (1 to 19) and displayed.

Item	Setting value	Remarks
ID2 POSITION	V (vertical): 00 <u>01</u> 05 H (horizontal): <u>00</u> 15	Set the display start position of BAR ID2 displayed on the color bars when the color bars are displayed. Set from which character in the vertical direction and which character in the horizontal direction, starting from the top left of the color bar, to start displaying the BAR ID using the font size as the reference. ● When the coordinates of ID1 and ID2 are the same, bar ID1's character string will be placed on top of bar ID2 (BAR ID2 will be below). When the vertical coordinates are the same and the horizontal coordinates differ, the BAR ID with the horizontal coordinates set later will be placed on top of the vertical one.
ID2	##□□□□□□□□□□□□□□	Set the character string of BAR ID2. The ID that is set here is displayed on the color bar. Up to 16 characters can be set. <div style="border: 1px solid black; padding: 5px; width: fit-content;"> Characters which can be used: ● Alphanumeric characters ● Spaces ● . ! " # % & ' () * + , - . / : ; < = > ? @ [] _ ~ </div> ● When "##" has been input in the character string, this part is replaced by the camera number (1 to 19) and displayed.
OFFSET	V (vertical): <u>00</u> 79 H (horizontal): <u>00</u> 89	The display positions of the bar IDs can be finely adjusted within the font size range. Using the top left of the font as the origin point, set the horizontal offset and vertical offset.

Setting menu items (Continued)

● INCOM/MIC Screen

This menu is used for the unit's intercom settings.

Configure the camera's intercom setting on the camera.

Moving the cursor to the "INCOM/MIC" menu title and then pressing the SELECT dial redisplay the OPERATION menu one level up.

```

->*** INCOM/MIC ***

4W/RTS IN LEVEL          0dB
4W/RTS OUT LEVEL        0dB
RTS CANCEL               0dB
GAIN PGM                 0dB
MIC1 LEVEL               0dB
MIC2 LEVEL               0dB
CM/DM                   DM
CCU INCOM MIC            0dB
CCU SIDE TONE           -6dB
    
```

— indicates the factory default setting.

Item	Setting value	Remarks
4W/RTS IN LEVEL	-40.0dB <u>0dB</u> 20.0dB	Set the input level for the intercom (4-WIRE and RTS) signal. (0.5dB increments)
4W/RTS OUT LEVEL	-40.0dB <u>0dB</u> 20.0dB	Set the output level for the intercom (4-WIRE and RTS) signal. (0.5dB increments)
RTS CANCEL	-40.0dB 31.5dB	Set the noise canceling level for the engineering intercom (RTS system). (0.5dB increments)
GAIN PGM	<u>0dB</u> 20dB	Set the gain for the PGM sound.
MIC1 LEVEL	-40.0dB <u>0dB</u> 20.0dB	Finely adjust the level of output from the MIC OUT 1 connector. (0.5dB increments)
MIC2 LEVEL	-40.0dB <u>0dB</u> 20.0dB	Finely adjust the level of output from the MIC OUT 2 connector. (0.5dB increments)
CM/DM	CM <u>DM</u>	Use this to select the type of intercom microphone (carbon microphone or dynamic microphone) to be connected to the unit. CM: Carbon microphone DM: Dynamic microphone
CCU INCOM MIC	-40.0dB <u>0dB</u> 12.0dB	Use this to set the level of the unit's intercom microphones for regular use. (0.5dB increments)
CCU SIDE TONE	-40.0dB <u>-6dB</u> 0.0dB	Use this to set the side tone level of the unit's intercom for regular use. (0.5dB increments)

MAINTENANCE Menu

This is the selection screen for the MAINTENANCE menu.

Moving the cursor to the "MAINTENANCE" menu title and then pressing the SELECT dial redisplay "TOP MENU".

```

->** MAINTENANCE **

START UP
ANALOG GAIN
ND NAME
NETWORK
VERSION
PM VIEW SETTING
PM OPERATION STATUS
SYSTEM
SD CARD
    
```

● START UP

Displays the screen for setting the control to be performed when the unit's power has been turned on.

● ANALOG GAIN

Displays the screen for setting the analog signal levels.

● ND NAME

Displays the screen for setting the ND filter names.

● NETWORK

Displays the network setting screen.

● VERSION

Displays the version information screen.

● PM VIEW SETTING

Displays the screen for setting ON or OFF for the items (IRIS and status displays) to display on the picture monitor.

● PM OPERATION STATUS

Displays the screen for setting ON or OFF for the operation items to display on the picture monitor.

● SYSTEM

Displays the screen for initializing the menu settings.

● SD CARD

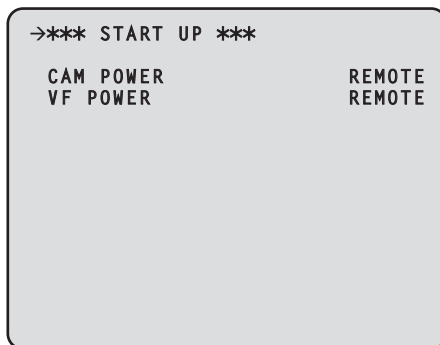
Displays the screen for setting the saving of data and upgrading of software using a memory card.

Setting menu items (Continued)

● START UP Screen

This menu is used to set the control that is performed when the unit's power is turned on.

Moving the cursor to the "START UP" menu title and then pressing the SELECT dial redisplay the MAINTENANCE menu one level up.



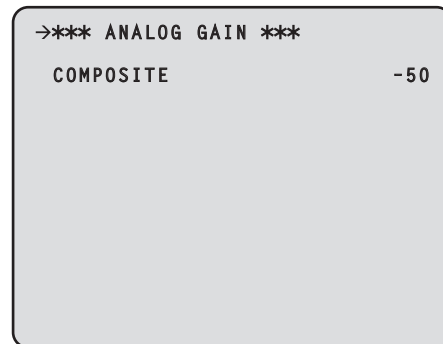
— indicates the factory default setting.

Item	Setting value	Remarks
CAM POWER	OFF ON <u>REMOTE</u>	Set the control of the camera's power that is to be performed when the unit's power is turned on. OFF: The camera's power will not come on even when the unit's power is turned on. In this case, "HEAD POWER" must be set to ON on the operation panel of the ROP. ON: The camera's power will come on when the unit's power is turned on. REMOTE: Starts up in accordance with the "HEAD POWER" state that was set with the ROP last time.
VF POWER	OFF ON <u>REMOTE</u>	Set the control of the viewfinder's power that is performed when the unit's power is turned on. OFF: The viewfinder's power will not come on even when the unit's power is turned on. In this case, "VF POWER" must be set to ON on the operation panel of the ROP. ON: When the viewfinder's POWER switch is ON, turning on the power of this unit also turns on the power of the viewfinder. REMOTE: Starts up in accordance with the "VF POWER" state that was set with the ROP last time.

● ANALOG GAIN Screen

This menu is used to set the analog signal levels.

Moving the cursor to the "ANALOG GAIN" menu title and then pressing the SELECT dial redisplay the MAINTENANCE menu one level up.



— indicates the factory default setting.

Item	Setting value	Remarks
COMPOSITE	-50 50 <u>Factory setting</u>	Set the video level of the analog composite signal to be output from [OUT/PM] of the VBS connectors. (Variable range: ±8 IRE or more is possible)

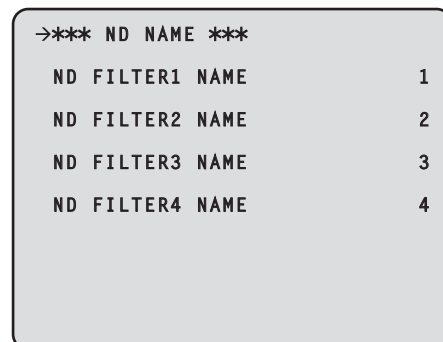
● ND NAME Screen

This menu is used to set the names of the ND filters.

The names set here are displayed for the statuses on the picture monitor.

Names consisting of up to 4 characters can be set for ND FILTER1 NAME to ND FILTER4 NAME.

Moving the cursor to the "ND NAME" menu title and then pressing the SELECT dial redisplay the MAINTENANCE menu one level up.



— indicates the factory default setting.

Item	Setting value	Remarks
ND FILTER1 NAME	<u>1</u> Max. 4 characters	Set the name of ND filter 1.
ND FILTER2 NAME	<u>2</u> Max. 4 characters	Set the name of ND filter 2.
ND FILTER3 NAME	<u>3</u> Max. 4 characters	Set the name of ND filter 3.
ND FILTER4 NAME	<u>4</u> Max. 4 characters	Set the name of ND filter 4.

Characters which can be used:

- Alphanumeric characters
- Spaces
- , ! " # % & ' () * + , - . / : ; < = > ? @ [] _ ~

Setting menu items (Continued)

● NETWORK Screen

This menu is used for the network settings.

Moving the cursor to the "NETWORK" menu title and then pressing the SELECT dial redisplay the MAINTENANCE menu one level up.

```

->*** NETWORK ***

IP ADDRESS          192.168.0.20
SUBNET MASK         255.255.255.0
DEFAULT GATEWAY    192.168.0.1
PORT                80
MAC ADDRESS        **-**-**-**-**-**
    
```

● VERSION Screen

This menu is used to display the version information for the application software and FPGA.

Moving the cursor to the "VERSION" menu title and then pressing the SELECT dial redisplay the MAINTENANCE menu one level up.

```

->*** VERSION ***

SOFTWARE           *.*-**-*.**
HARDWARE FPGA1    *.*-**-*.**
HARDWARE FPGA2    *.*-**-*.**
HARDWARE FPGA3    *.*-**-*.**
    
```

___ indicates the factory default setting.

Item	Setting value	Remarks
IP ADDRESS	<u>192.168.0.20</u>	Set the IP address. ● Select each set of three digits with the cursor.
SUBNET MASK	<u>255.255.255.0</u> 255.255.255.128 255.255.255.192 255.255.255.224 255.255.255.240 255.255.255.248 255.255.255.252 255.255.255.254 255.255.255.255	Set the subnet mask.
DEFAULT GATEWAY	<u>192.168.0.1</u>	Set the default gateway.
PORT	1 80 65535	Set the port number.
MAC ADDRESS	---	Displays the MAC address.

Item	Remarks
SOFTWARE	Displays the version of the software installed on the unit.
HARDWARE FPGA1	Displays the versions of the programs installed on the unit.
HARDWARE FPGA2	
HARDWARE FPGA3	

Setting menu items (Continued)

● PM VIEW SETTING Screen

This menu is used to set ON or OFF for the items (IRIS, status display) to display on the picture monitor.

Moving the cursor to the "PM VIEW SETTING" menu title and then pressing the SELECT dial redispays the MAINTENANCE menu one level up.

->*** PM VIEW SETTING ***		
CAMERA NO.		ON
CAM MODE		ON
SCENE FILE NO.		ON
SHUTTER		ON
ND FILTER		ON
GAIN		ON
EXTENDER INFO		ON
IRIS		ON
IRIS LEVEL		ON

● PM OPERATION STATUS Screen

This menu is used to set ON or OFF for the operation items to display on the picture monitor.

Moving the cursor to the "PM OPERATION STATUS" menu title and then pressing the SELECT dial redispays the MAINTENANCE menu one level up.

->*** PM OPERATION STATUS ***		
STATUS DISPLAY TIME	4	
MASTER GAIN		ON
SHUTTER		ON
LENS EXTENDER		ON
FILTER		ON
SCENE FILE		ON
REF LOAD		ON
AUTO OPERATION STATUS		ON

__ indicates the factory default setting.

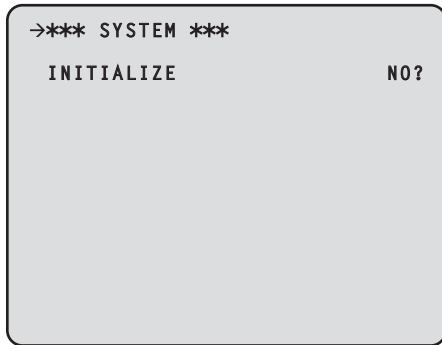
Item	Setting value	Remarks
CAMERA NO.	<u>ON</u> OFF	Set the display of the camera number.
CAM MODE	<u>ON</u> OFF	Set the display of the format of the signal output from the camera.
SCENE FILE NO.	<u>ON</u> OFF	Set the display of the scene file number.
SHUTTER	<u>ON</u> OFF	Set the display of the shutter speed.
ND FILTER	<u>ON</u> OFF	Set the display of the ND filter status.
GAIN	<u>ON</u> OFF	Set the display of the gain.
EXTENDER INFO	<u>ON</u> OFF	Set the display of the lens extender status.
IRIS	<u>ON</u> OFF	Set the display of the IRIS f-value.
IRIS LEVEL	<u>ON</u> OFF	Set the display of the IRIS level bar. ● When OFF is set, the IRIS display screen does not appear on the picture monitor.

__ indicates the factory default setting.

Item	Setting value	Remarks
STATUS DISPLAY TIME	0 2 <u>4</u>	Set the length of the status display time. Set the time in 1-second increments. When the status of an item that has been set to ON on this menu has changed, the status is displayed on the picture monitor for just the length of time that was set for STATUS DISPLAY TIME. ● When 0 (zero) is set, the operations (manual and auto) are not displayed on the picture monitor.
MASTER GAIN	<u>ON</u> OFF	Set the status display for when the master gain is changed.
SHUTTER	<u>ON</u> OFF	Set the status display for when the shutter speed is changed.
LENS EXTENDER	<u>ON</u> OFF	Set the status display for when the lens extender is changed.
FILTER	<u>ON</u> OFF	Set the status display for when the filter is changed.
SCENE FILE	<u>ON</u> OFF	Set the status display for when the scene file is changed.
REF LOAD	<u>ON</u> OFF	Set the status display for when the reference file is loaded.
AUTO OPERATION STATUS	<u>ON</u> OFF	Set the status display for when AWB, ABB, or ASU is executed.

● **SYSTEM Screen**

This menu is used to initialize the menu settings.
Moving the cursor to the "SYSTEM" menu title and then pressing the SELECT dial redisplay the MAINTENANCE menu one level up.



Move the cursor to INITIALIZE, press the SELECT dial, turn the SELECT dial to select "YES?", and press the SELECT dial to initialize the menu settings.

The following data is initialized.

- Items in the OPERATION menu
- Items in the MAINTENANCE menu
(Excluding, however, the NETWORK screen, VERSION screen, SYSTEM screen, and SD CARD screen.)

Furthermore, the setting information (following data) in the REMOTE OPERATION menu* is also initialized.

- Items in the SD DETAIL menu
- Items in the SYSTEM menu
(Excluding, however, each of the HD BAR, MIC1 GAIN, MIC1 AMP, MIC2 GAIN, and MIC2 AMP items.)

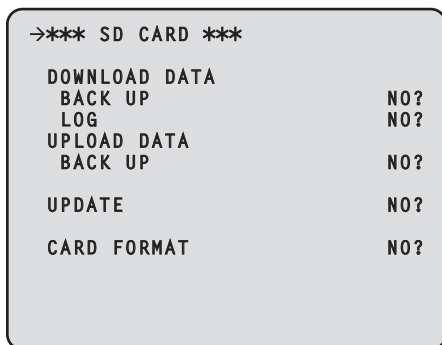
*: The REMOTE OPERATION can be operated with the ROP.

● **SD CARD Screen**

This menu is used to set the saving of data and upgrading of software using a memory card.

Moving the cursor to the "SD CARD" menu title and then pressing the SELECT dial redisplay the MAINTENANCE menu one level up.

- When data in a memory card is being processed, do not turn off the power of this unit or remove the memory card until processing is complete.



Item	Remarks
DOWNLOAD DATA BACK UP	Save this unit's setting information (following data) to the memory card. ● Items in the OPERATION menu ● Items in the MAINTENANCE menu (Excluding, however, the SYSTEM screen and SD CARD screen.) Furthermore, also save the setting information (following data) in the REMOTE OPERATION menu*. ● Items in the SD DETAIL menu ● Items in the SYSTEM menu (Excluding, however, each of the HD BAR, MIC1 GAIN, MIC1 AMP, MIC2 GAIN, and MIC2 AMP items.)
DOWNLOAD LOG	Save the unit's log information to the memory card. The data is for maintenance.
UPLOAD DATA BACKUP	Save the setting information (following data) saved in the memory card to this unit. ● Items in the OPERATION menu ● Items in the MAINTENANCE menu (Excluding, however, the NETWORK screen, VERSION screen, SYSTEM screen, and SD CARD screen.) Furthermore, also save the setting information (following data) in the REMOTE OPERATION menu*. ● Items in the SD DETAIL menu ● Items in the SYSTEM menu (Excluding, however, each of the HD BAR, MIC1 GAIN, MIC1 AMP, MIC2 GAIN, and MIC2 AMP items.)
UPDATE	Upgrade the unit's software or programs with files saved to the memory card.
CARD FORMAT	Initialize the memory card. Initialization may take about 5 minutes.

*: The REMOTE OPERATION can be operated with the ROP.

Move the cursor to the desired item, press the SELECT dial, turn the SELECT dial to select "YES?", and press the SELECT dial to execute the item.

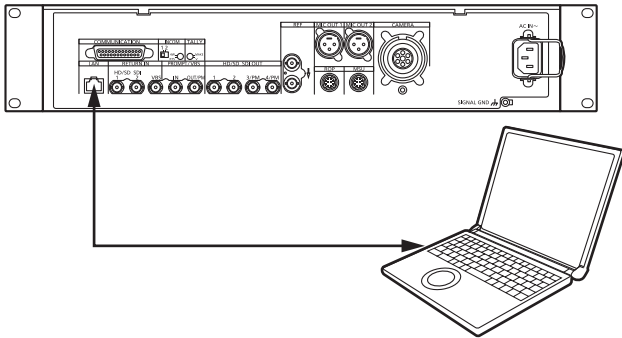
Processing will not be possible if any of the following messages appears at that time.

Error message	Measure
NO CARD (A memory card is not inserted.)	Insert a memory card.
WRITE ERROR (Writing is not possible.)	The memory card is likely to be defective. Replace the memory card.
WRITE PROTECT (The memory card is write protected.)	Remove the memory card and unlock the write-protection lock.
CARD FULL (There is no space for saving.)	Delete any unnecessary data from the memory card or replace the memory card with a new one.
LOAD ERROR (Reading is not possible.)	Data written with other than this unit cannot be read.
FORMAT ERROR (Formatting is not possible.)	The memory card is likely to be defective. Replace the memory card.

- When the DOWNLOAD DATA process is performed, "WRITING...Do not turn off power until complete." is displayed and then the "SAVE OK" message is displayed when the process completes.

Web settings

You can connect the unit and a computer, and configure various settings from the Web browser screen.
Use a LAN cable (crossover cable) to directly connect the unit's LAN connector for computer connections and the computer.



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

Note

- Network settings of the unit (default settings)
- IP address: 192.168.0.20
 - Subnet mask: 255.255.255.0
 - Port number: 80
 - Default gateway: 192.168.0.1

Menu operations

Start the Web browser, and enter "http://192.168.0.20" in the [Address] box of the Web browser.
If the IP address is changed, the URL will also be different.
If this is the case, use the new IP address in the URL (http://new IP address/).



● **Moving from one menu to another**

To move from one menu to another, select the desired menu on the left of the screen.



This is equivalent to "TOP MENU" displayed on the picture monitor.

When either "OPERATION" or "MAINTENANCE" is selected above, the corresponding menu items are displayed here.
In the example shown, the OPERATION menu items are displayed.
The setting screen corresponding to the menu item selected here is displayed on the right.

- When using Internet Explorer, do not use [Back] or [Next].

● **Displaying the setting screens**

Select a menu item on the left of the screen to display the setting screen corresponding to that item.

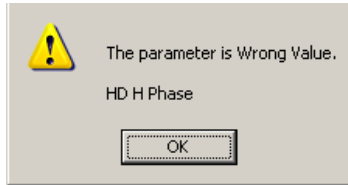


● **Item setting operations (settings)**

The current settings are displayed on the setting screen. When you change a setting and then select the “SET” button on the screen, the new value is reflected on the unit.

Notes

- When a setting has also been changed on the unit, the value that was set last takes priority. In a case like this, there may be a discrepancy in the values set.
- When a setting outside the setting range is selected using keyboard input and the “SET” button is selected, the input check will result in an error.



In a case like this, the setting item will be restored to its original value.

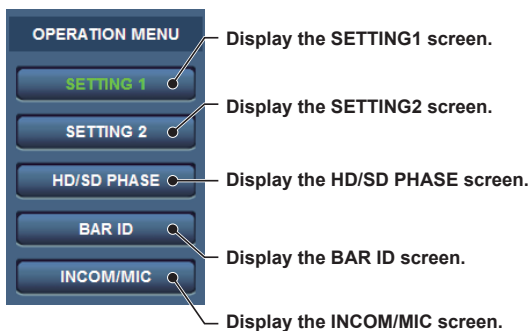
Description of menus

■ **Initial screen**

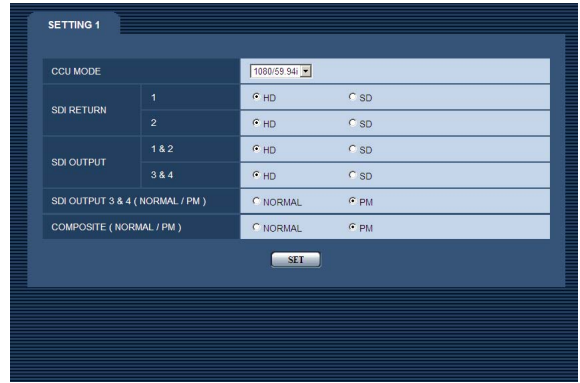
This is the screen that appears first when a connection is established to the URL you specified on the computer. The menu for the “SETTING1” item on the “OPERATION” menu is displayed.



Items when the OPERATION menu is selected



● **SETTING1 Screen**



— indicates the factory default setting.

Item	Setting value	Remarks
CCU MODE	59.94 Hz: 1080/59.94i 1080/50i 50 Hz: 1080/59.94i 1080/50i	Set the format of the signal to be output from the unit.
SDI RETURN 1	HD SD	Set the format of the return signal to be input to [HD/SD SDI 1] of the RETURN IN connectors.
SDI RETURN 2	HD SD	Set the format of the return signal to be input to [HD/SD SDI 2] of the RETURN IN connectors.
SDI OUTPUT 1&2	HD SD	Set the format of the signals to be output from [1] and [2] of the HD/SD SDI OUT connectors.
SDI OUTPUT 3&4	HD SD	Set the format of the signals to be output from [3/PM] and [4/PM] of the HD/SD SDI OUT connectors.
SDI OUTPUT 3&4 (NORMAL/PM)	NORMAL PM	Set the signal to be output from [3/PM] and [4/PM] of the HD/SD SDI OUT connectors. NORMAL: Output the main line images. PM: Output the picture monitor images.
COMPOSITE (NORMAL/PM)	NORMAL PM	Set the signal to be output from [OUT/PM] of the VBS connectors. NORMAL: Output the main line images. PM: Output the picture monitor images.

- When the SDI OUTPUT3&4 (NORMAL/PM) item and COMPOSITE (NORMAL/PM) item are set to “NORMAL”, the menus and statuses will not be able to be displayed because the picture monitor images will not be output. When you set one of items to “NORMAL”, set the other one to “PM”. When you set both of the items to “NORMAL”, priority is given to the setting of the SDI OUTPUT3&4 (NORMAL/PM) item and the COMPOSITE (NORMAL/PM) item is set to “PM”.

● SETTING2 Screen



_____ indicates the factory default setting.

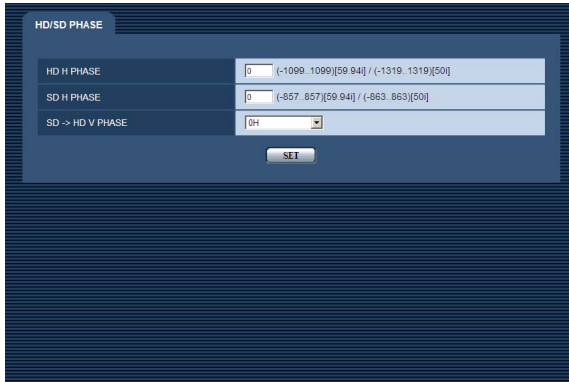
Item	Setting value	Remarks
FS DELAY	<u>NORMAL</u> SHORT	Select the delay mode for the HD return signals. NORMAL: Matches return signal input that does not match the sync phase to the phase of the camera by delaying it by 1 frame. SHORT: Sets the shortest delay. (5 H) However, if the following conditions are not met, it is delayed by 1 frame + 5H. ● HD signal ● The SD-HD V item in the HD/SD PHASE screen is "ADVANCE" or "OH_SD_DLAY" ● When output from this unit is used as the return signal, the delay is less than 3H
HD BAR SELECT	FULL BARS-1 <u>ARIB</u> BARS-2 BARS-3 BARS-4 BARS-5 BARS-6	Select the color bar signals to be output from the HD/SD SDI OUT connectors and VBS connector when "BAR" has been selected on the operation panel of the ROP. When they are output in VBS or SD format, color bars in HD format are output in the mode specified with DOWNCONVERT MODE*. FULL: 75 % full field color bar BARS-1: Color bar based on the SMPTE standard ARIB: ARIB multi-format color bar BARS-2: Color bar based on the EIAJ standard BARS-3: Split field color bar BARS-4: 75 % full field color bar placed in an area with a 4:3 aspect ratio. (Displayed 40 % gray outside the area.) BARS-5: Color bar based on the SMPTE standard that is placed in an area with a 4:3 aspect ratio. (Displayed 40 % gray outside the area.) BARS-6: Color bar based on the EIAJ standard that is placed in an area with a 4:3 aspect ratio. (Displayed 40 % gray outside the area.)

Item	Setting value	Remarks
HD BAR LPF	OFF 3TAP 5TAP <u>7TAP</u> 9TAP	Select the filter through which to pass the color bar signals to be output from the HD/SD SDI OUT connectors when BAR has been selected on the operation panel of the ROP. ● A higher TAP value will ensure a smooth rise and fall of the waveforms and reduce both the overshoot and undershoot.
HD BAR USER1 (ARIB)	<u>75%WHITE</u> 100%WHITE +I_SIGNAL -I_SIGNAL	Set user range 1 for when ARIB has been selected as the HD BAR SELECT setting. This can be set when "ARIB" is selected for the HD BAR SELECT item. In the case of another setting, this is disabled.
HD BAR USER2 (ARIB)	<u>0%BLACK</u> +Q_SIGNAL	Set user range 2 for when ARIB has been selected as the HD BAR SELECT setting. This can be set when "ARIB" is selected for the HD BAR SELECT item. In the case of another setting, this is disabled.
SETUP 7.5%	ON <u>OFF</u>	Select whether to add the setup 7.5 % level to the SD signals to be output from [OUT/PM] of the VBS connectors. When the CCU MODE item is "1080/50i", SETUP 7.5% is disabled even if you set it to "ON".
PATHO	ON <u>OFF</u>	Select ON/OFF for the pathological signals.

*: The DOWNCONVERT MODE setting can be configured by operating the REMOTE OPERATION menu with the ROP.
For details, refer to Operating Instructions <Operations and Settings> of AK-HRP200.

● **HD/SD PHASE Screen**

This menu is used for the HD signal and SD signal phase adjustments.



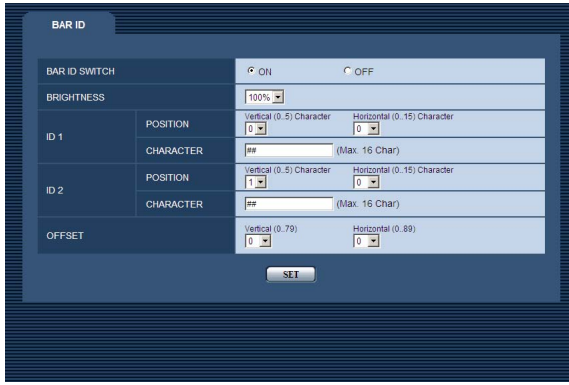
0 indicates the factory default setting.

Item	Setting value	Remarks
HD H PHASE	59.94 Hz: -1099 0 1099 50 Hz: -1319 0 1319	Adjust the horizontal sync phase of HDTV output in respect to the sync signals of the system.
SD H PHASE	59.94 Hz: -857 0 857 50 Hz: -863 0 863	Adjust the horizontal sync phase of SDTV output in respect to the sync signals of the system.
SD ->HD V PHASE	0H ADVANCE 0H_SD_DLAY	Set the vertical phase of the HDTV output in relation to the SDTV output. 0H: Sets the vertical phase to the same phase. ADVANCE: When the field frequency is 59.94 Hz, the phase advance is 90H. When the field frequency is 50 Hz, the phase advance is 75H. 0H_SD_DLAY: The SDTV signals are delayed and set in-phase with the HDTV signals. ● When the setting of this item is set to "0H" or "ADVANCE" while the field frequency is 50 Hz, images in SD format are delayed by 1 frame + 75 lines only when letterbox is selected for DOWNCONVERT MODE*. For the relationship with the sync phase, refer to pages 14 to 19.

*: The DOWNCONVERT MODE setting can be configured by operating the REMOTE OPERATION menu with the ROP. For details, refer to Operating Instructions <Operations and Settings> of AK-HRP200.

● **BAR ID Screen**

This menu is used to set the BAR IDs displayed on the color bars.



__ indicates the factory default setting.

Item	Setting value	Remarks
BAR ID SWITCH	ON <u>OFF</u>	Set the display of the BAR IDs displayed on the color bars when the color bars are displayed to ON or OFF.
BRIGHTNESS	0% <u>100%</u>	Set the character color, in units of 10 %, of the BAR ID displayed on the color bar when the color bar is displayed. 0%: (black), 100%: (white)
ID1 POSITION	V (vertical): 00 05 H (horizontal): 00 15	Set the display start position of BAR ID1 displayed on the color bars when the color bars are displayed. Set from which character in the vertical direction and which character in the horizontal direction, starting from the top left of the color bar, to start displaying the BAR ID using the font size as the reference. ● When the coordinates of ID1 and ID2 are the same, bar ID1's character string will be placed on top of bar ID2 (BAR ID2 will be below). When the vertical coordinates are the same and the horizontal coordinates differ, the BAR ID with the horizontal coordinates set later will be placed on top of the vertical one.
ID1 CHARACTER	##00000000000000	Set the character string of BAR ID1. The ID that is set here is displayed on the color bar. Up to 16 characters can be set. <div style="border: 1px solid black; padding: 5px; width: fit-content;"> Characters which can be used: ● Alphanumeric characters ● Spaces ● . ! " # % & ' () * + , - . / : ; < = > ? @ [] _ ~ </div> ● When "##" has been input in the character string, this part is replaced by the camera number (1 to 19) and displayed.

Item	Setting value	Remarks
ID2 POSITION	V (vertical): 00 <u>01</u> 05 H (horizontal): 00 15	Set the display start position of BAR ID2 displayed on the color bars when the color bars are displayed. Set from which character in the vertical direction and which character in the horizontal direction, starting from the top left of the color bar, to start displaying the BAR ID using the font size as the reference. ● When the coordinates of ID1 and ID2 are the same, bar ID1's character string will be placed on top of bar ID2 (BAR ID2 will be below). When the vertical coordinates are the same and the horizontal coordinates differ, the BAR ID with the horizontal coordinates set later will be placed on top of the vertical one.
ID2 CHARACTER	##00000000000000	Set the character string of BAR ID2. The ID that is set here is displayed on the color bar. Up to 16 characters can be set. <div style="border: 1px solid black; padding: 5px; width: fit-content;"> Characters which can be used: ● Alphanumeric characters ● Spaces ● . ! " # % & ' () * + , - . / : ; < = > ? @ [] _ ~ </div> ● When "##" has been input in the character string, this part is replaced by the camera number (1 to 19) and displayed.
OFFSET	V (vertical): 00 79 H (horizontal): 00 89	The display positions of the bar IDs can be finely adjusted within the font size range. Using the top left of the font as the origin point, set the horizontal offset and vertical offset.

● INCOM/MIC Screen

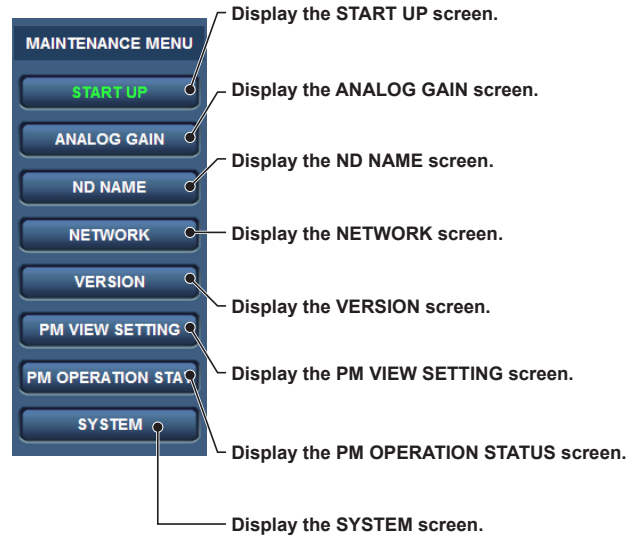
This menu is used for the unit's intercom settings. Configure the camera's intercom setting on the camera.



__ indicates the factory default setting.

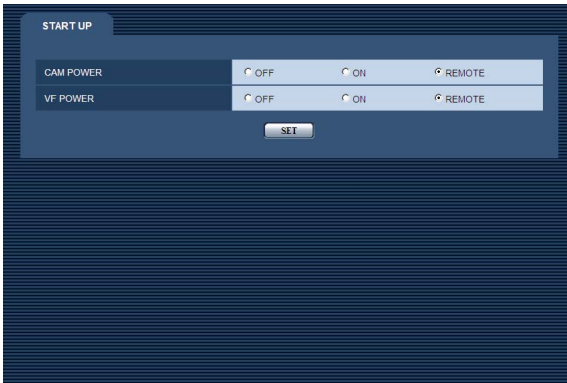
Item	Setting value	Remarks
4W/RTS IN LEVEL	-40.0dB <u>0dB</u> 20.0dB	Set the input level for the intercom (4-WIRE and RTS) signal. (0.5dB increments)
4W/RTS OUT LEVEL	-40.0dB <u>0dB</u> 20.0dB	Set the output level for the intercom (4-WIRE and RTS) signal. (0.5dB increments)
RTS CANCEL	-40.0dB 31.5dB	Set the noise canceling level for the engineering intercom (RTS system). (0.5dB increments)
GAIN PGM	<u>0dB</u> 20dB	Set the gain for the PGM sound.
MIC LEVEL MIC1	-40.0dB <u>0dB</u> 20.0dB	Finely adjust the level of output from the MIC OUT 1 connector. (0.5dB increments)
MIC LEVEL MIC2	-40.0dB <u>0dB</u> 20.0dB	Finely adjust the level of output from the MIC OUT 2 connector. (0.5dB increments)
CM/DM	CM <u>DM</u>	Use this to select the type of intercom microphone (carbon microphone or dynamic microphone) to be connected to the unit. CM: Carbon microphone DM: Dynamic microphone
CCU INCOM MIC	-40.0dB <u>0dB</u> 12.0dB	Use this to set the level of the unit's intercom microphones for regular use. (0.5dB increments)
CCU SIDE TONE	-40.0dB <u>-6dB</u> 0.0dB	Use this to set the side tone level of the unit's intercom for regular use. (0.5dB increments)

Items when the MAINTENANCE menu is selected



● **START UP Screen**

This menu is used to set the control that is performed when the unit's power is turned on.

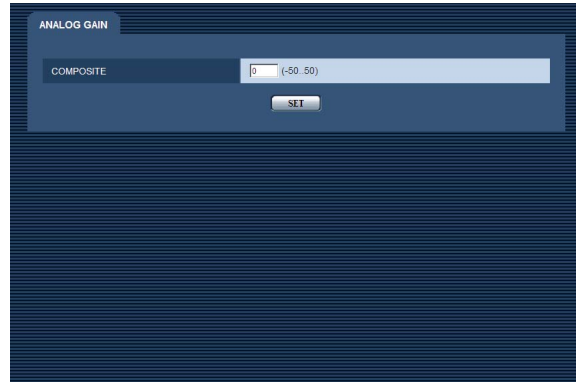


___ indicates the factory default setting.

Item	Setting value	Remarks
CAM POWER	OFF ON <u>REMOTE</u>	Set the control of the camera's power that is to be performed when the unit's power is turned on. OFF: The camera's power will not come on even when the unit's power is turned on. In this case, "HEAD POWER" must be set to ON on the operation panel of the ROP. ON: The camera's power will come on when the unit's power is turned on. REMOTE: Starts up in accordance with the "HEAD POWER" state that was set with the ROP last time.
VF POWER	OFF ON <u>REMOTE</u>	Set the control of the viewfinder's power that is performed when the unit's power is turned on. OFF: The viewfinder's power will not come on even when the unit's power is turned on. In this case, "VF POWER" must be set to ON on the operation panel of the ROP. ON: When the viewfinder's POWER switch is ON, turning on the power of this unit also turns on the power of the viewfinder. REMOTE: Starts up in accordance with the "VF POWER" state that was set with the ROP last time.

● **ANALOG GAIN Screen**

This menu is used to set the analog signal levels.



___ indicates the factory default setting.

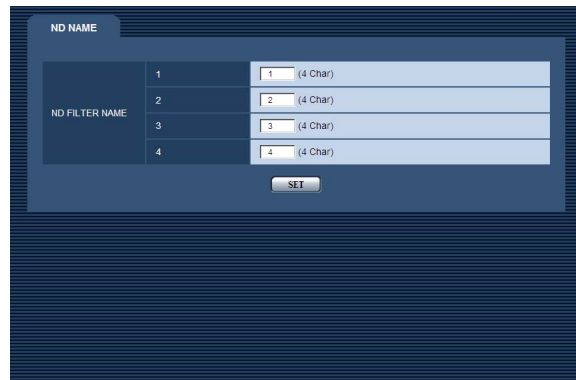
Item	Setting value	Remarks
COMPOSITE	-50 50 <u>Factory setting</u>	Set the video level of the analog composite signal to be output from [OUT/PM] of the VBS connectors. (Variable range: ±8 IRE or more is possible)

● **ND NAME Screen**

This menu is used to set the names of the ND filters.

The names set here are displayed for the statuses on the picture monitor.

Names consisting of up to 4 characters can be set for ND FILTER NAME 1 to ND FILTER NAME 4.



___ indicates the factory default setting.

Item	Setting value	Remarks
ND FILTER NAME 1	1 Max. 4 characters	Set the name of ND filter 1.
ND FILTER NAME 2	2 Max. 4 characters	Set the name of ND filter 2.
ND FILTER NAME 3	3 Max. 4 characters	Set the name of ND filter 3.
ND FILTER NAME 4	4 Max. 4 characters	Set the name of ND filter 4.

Characters which can be used:

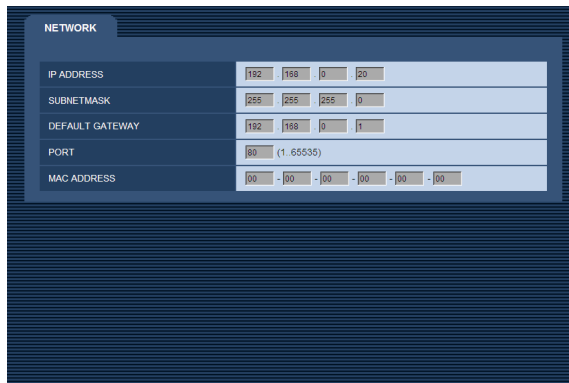
- Alphanumeric characters
- Spaces
- . ! " # % & ' () * + , - . / : ; < = > ? @ [] _ ~

Web settings (Continued)

● NETWORK Screen

This screen displays the network addresses.

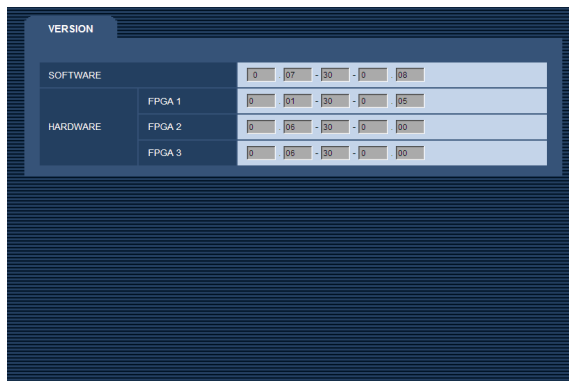
- On this screen, the addresses cannot be changed.



Item	Remarks
IP ADDRESS	Displays the IP address.
SUBNETMASK	Displays the subnet mask.
DEFAULT GATEWAY	Displays the default gateway.
PORT	Displays the port number.
MAC ADDRESS	Displays the MAC address.

● VERSION Screen

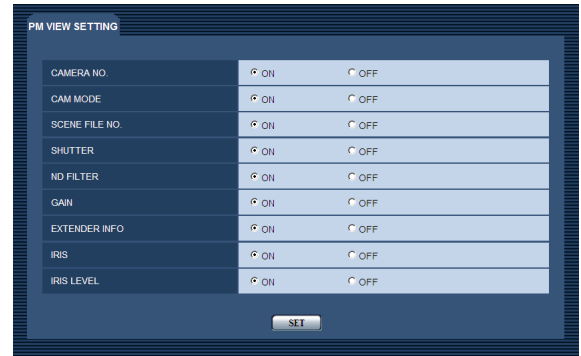
This menu is used to display the version information for the application software and FPGA.



Item	Remarks
SOFTWARE	Displays the version of the software installed on the unit.
HARDWARE FPGA1	Displays the versions of the programs installed on the unit.
HARDWARE FPGA2	
HARDWARE FPGA3	

● PM VIEW SETTING Screen

This menu is used to set ON or OFF for the items (IRIS, status display) to display on the picture monitor.

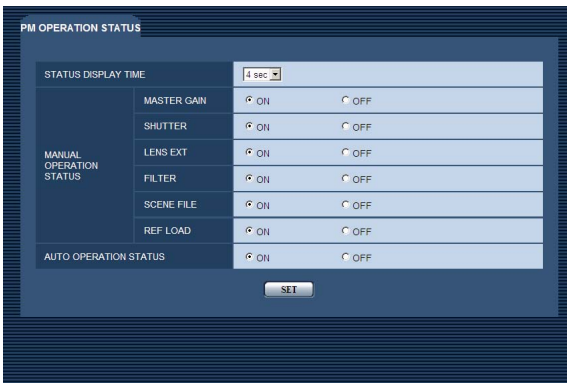


__ indicates the factory default setting.

Item	Setting value	Remarks
CAMERA NO.	<u>ON</u> OFF	Set the display of the camera number.
CAM MODE	<u>ON</u> OFF	Set the display of the format of the signal output from the camera.
SCENE FILE NO.	<u>ON</u> OFF	Set the display of the scene file number.
SHUTTER	<u>ON</u> OFF	Set the display of the shutter speed.
ND FILTER	<u>ON</u> OFF	Set the display of the ND filter status.
GAIN	<u>ON</u> OFF	Set the display of the gain.
EXTENDER INFO	<u>ON</u> OFF	Set the display of the lens extender status.
IRIS	<u>ON</u> OFF	Set the display of the IRIS f-value.
IRIS LEVEL	<u>ON</u> OFF	Set the display of the IRIS level bar. ● When OFF is set, the IRIS display screen does not appear on the picture monitor.

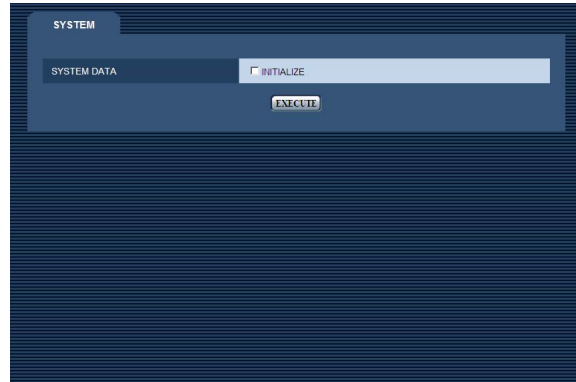
● **PM OPERATION STATUS Screen**

This menu is used to set ON or OFF for the operation items to display on the picture monitor.



● **SYSTEM Screen**

This menu is used to initialize the menu settings.



___ indicates the factory default setting.

Item	Setting value	Remarks
STATUS DISPLAY TIME	0 sec	Set the length of the status display time. Set the time in 1-second increments. When the status of an item that has been set to ON on this menu has changed, the status is displayed on the picture monitor for just the length of time that was set for STATUS DISPLAY TIME. ● When 0 (zero) is set, the operations (manual and auto) are not displayed on the picture monitor.
	2 sec	
	<u>4 sec</u>	
MANUAL OPERATION STATUS		
MASTER GAIN	<u>ON</u> OFF	Set the status display for when the master gain is changed.
SHUTTER	<u>ON</u> OFF	Set the status display for when the shutter speed is changed.
LENS EXT	<u>ON</u> OFF	Set the status display for when the lens extender is changed.
FILTER	<u>ON</u> OFF	Set the status display for when the filter is changed.
SCENE FILE	<u>ON</u> OFF	Set the status display for when the scene file is changed.
REF LOAD	<u>ON</u> OFF	Set the status display for when the reference file is loaded.
AUTO OPERATION STATUS	<u>ON</u> OFF	Set the status display for when AWB, ABB, or ASU is executed.

To return the menu settings to the factory default settings, add a ✓ mark to INITIALIZE and then click [EXECUTE].

The following data is initialized.

- Items in the OPERATION menu
- Items in the MAINTENANCE menu (Excluding, however, the NETWORK screen, VERSION screen, SYSTEM screen, and SD CARD screen.)

Furthermore, the setting information (following data) in the REMOTE OPERATION menu* is also initialized.

- Items in the SD DETAIL menu
- Items in the SYSTEM menu (Excluding, however, each of the HD BAR, MIC1 GAIN, MIC1 AMP, MIC2 GAIN, and MIC2 AMP items.)

*: The REMOTE OPERATION can be operated with the ROP.

Table of adjustment setting ranges

Names in [] apply when menu operations are performed from a computer using a Web browser.

■ OPERATION menu

Menu	Item	Adjustment setting range	Initial value
SETTING1 (pages 11 and 27)	CCU MODE	1080/59.94i, 1080/50i	59.94 Hz: 1080/59.94i 50 Hz: 1080/50i
	SDI RETURN1	HD, SD	HD
	SDI RETURN2	HD, SD	HD
	SDI OUTPUT 1&2	HD, SD	HD
	SDI OUTPUT 3&4	HD, SD	HD
	SDI OUTPUT 3&4 NORMAL/PM [SDI OUTPUT 3&4 (NORMAL/PM)]	NORMAL, PM	PM
	COMPOSITE NORMAL/PM [COMPOSITE (NORMAL/PM)]	NORMAL, PM	PM
SETTING2 (pages 12 and 28)	FS DELAY	NORMAL, SHORT	NORMAL
	HD BAR SELECT	FULL, BARS-1, ARIB, BARS-2, BARS-3, BARS-4, BARS-5, BARS-6	ARIB
	BAR LPF [HD BAR LPF]	OFF, 3TAP, 5TAP, 7TAP, 9TAP	7TAP
	BAR USER1 [HD BAR USER1 (ARIB)]	75%WHITE, 100%WHITE, +I_SIGNAL, -I_SIGNAL	75%WHITE
	BAR USER2 [HD BAR USER2 (ARIB)]	0%BLACK, +Q_SIGNAL	0%BLACK
	SETUP 7.5%	ON, OFF	OFF
	PATHO	ON, OFF	OFF
HD/SD PHASE (pages 13 and 29)	HD H PHASE	59.94 Hz: -1099 to 1099 50 Hz: -1319 to 1319	0
	SD H PHASE	59.94 Hz: -857 to 857 50 Hz: -863 to 863	0
	SD-HD V [SD -> HD V PHASE]	0H, ADVANCE, 0H_SD_DLAY	0H
BAR ID (page 20 and 30)	BAR ID SWITCH	ON, OFF	OFF
	BRIGHTNESS	0% (black) to 100% (white) (10% increments)	100%
	ID1 POSITION	V (vertical): 0 to 5 H (horizontal): 0 to 15	V: 0 H: 0
	ID1 [ID1 CHARACTER]	Max. 16 characters Characters which can be used: ● Alphanumeric characters ● Spaces ● . ! " # % & ' () * + , - . / : ; < = > ? @ [] _ ~	##□□□□□□□□□□□□□□
	ID2 POSITION	V (vertical): 0 to 5 H (horizontal): 0 to 15	V: 1 H: 0
	ID2 [ID2 CHARACTER]	Max. 16 characters Characters which can be used: ● Alphanumeric characters ● Spaces ● . ! " # % & ' () * + , - . / : ; < = > ? @ [] _ ~	##□□□□□□□□□□□□□□
	OFFSET	V (vertical): 0 to 79 H (horizontal): 0 to 89	V: 0 H: 0

Table of adjustment setting ranges (Continued)

Menu	Item	Adjustment setting range	Initial value
INCOM/MIC (pages 21 and 31)	4W/RTS IN LEVEL	-40.0dB to 20.0dB (0.5dB increments)	0dB
	4W/RTS OUT LEVEL	-40.0dB to 20.0dB (0.5dB increments)	0dB
	RTS CANCEL	-40.0dB to 31.5dB (0.5dB increments)	Factory setting
	GAIN PGM	0dB, 20dB	0dB
	MIC1 LEVEL [MIC LEVEL MIC1]	-40.0dB to 20.0dB (0.5dB increments)	0dB
	MIC2 LEVEL [MIC LEVEL MIC2]	-40.0dB to 20.0dB (0.5dB increments)	0dB
	CM/DM	CM, DM	DM
	CCU INCOM MIC	-40.0dB to 12.0dB (0.5dB increments)	0dB
	CCU SIDE TONE	-40.0dB to 0.0dB (0.5dB increments)	-6dB

■ MAINTENANCE Menu

Menu	Item	Adjustment setting range	Initial value
START UP (pages 22 and 32)	CAM POWER	OFF, ON, REMOTE	REMOTE
	VF POWER	OFF, ON, REMOTE	REMOTE
ANALOG GAIN (pages 22 and 32)	COMPOSITE	-50 to 50	Factory setting
ND NAME (pages 22 and 32)	ND FILTER1 NAME [ND FILTER NAME 1]	Max. 4 characters Characters which can be used: ● Alphanumeric characters ● Spaces ● . ! " # % & ' () * + , - . / : ; < = > ? @ [] _ ~	1
	ND FILTER2 NAME [ND FILTER NAME 2]		2
	ND FILTER3 NAME [ND FILTER NAME 3]		3
	ND FILTER4 NAME [ND FILTER NAME 4]		4
NETWORK (pages 23 and 33)	IP ADDRESS		192.168.0.20
	SUBNET MASK [SUBNETMASK]	255.255.255.0, 255.255.255.128, 255.255.255.192, 255.255.255.224, 255.255.255.240, 255.255.255.248, 255.255.255.252, 255.255.255.254, 255.255.255.255	255.255.255.0
	DEFAULT GATEWAY		192.168.0.1
	PORT	1 to 65535 However, excluding the following numbers: 20, 21, 25, 42, 53, 69, 23, 110, 995, 123, 67, 68, 10669, 10670, 161, 162	80
	MAC ADDRESS	Display only	---
VERSION (pages 23 and 33)	SOFTWARE	Version display	---
	HARDWARE FPGA1	Version display	---
	HARDWARE FPGA2	Version display	---
	HARDWARE FPGA3	Version display	---
PM VIEW SETTING (pages 24 and 33)	CAMERA NO.	ON, OFF	ON
	CAM MODE	ON, OFF	ON
	SCENE FILE NO.	ON, OFF	ON
	SHUTTER	ON, OFF	ON
	ND FILTER	ON, OFF	ON
	GAIN	ON, OFF	ON
	EXTENDER INFO	ON, OFF	ON
	IRIS	ON, OFF	ON
IRIS LEVEL	ON, OFF	ON	

Table of adjustment setting ranges (Continued)

Menu	Item	Adjustment setting range	Initial value
PM OPERATION STATUS (pages 24 and 34)	STATUS DISPLAY TIME	0, 2, 4 [0 sec, 2 sec, 4 sec]	4 [4 sec]
	MASTER GAIN [MANUAL OPERATION STATUS MASTER GAIN]	ON, OFF	ON
	SHUTTER [MANUAL OPERATION STATUS SHUTTER]	ON, OFF	ON
	LENS EXTENDER [MANUAL OPERATION STATUS LENS EXT]	ON, OFF	ON
	FILTER [MANUAL OPERATION STATUS FILTER]	ON, OFF	ON
	SCENE FILE [MANUAL OPERATION STATUS SCENE FILE]	ON, OFF	ON
	REF LOAD [MANUAL OPERATION STATUS REF LOAD]	ON, OFF	ON
	AUTO OPERATION STATUS	ON, OFF	ON
SYSTEM (pages 25 and 34)	INITIALIZE [SYSTEM DATA]	NO?, YES? [INITIALIZE]	NO? [EXECUTE]
SD CARD (page 25)	DOWNLOAD DATA BACK UP	NO?, YES?	NO?
	DOWNLOAD LOG	NO?, YES?	NO?
	UPLOAD DATA BACKUP	NO?, YES?	NO?
	UPDATE	NO?, YES?	NO?
	CARD FORMAT	NO?, YES?	NO?

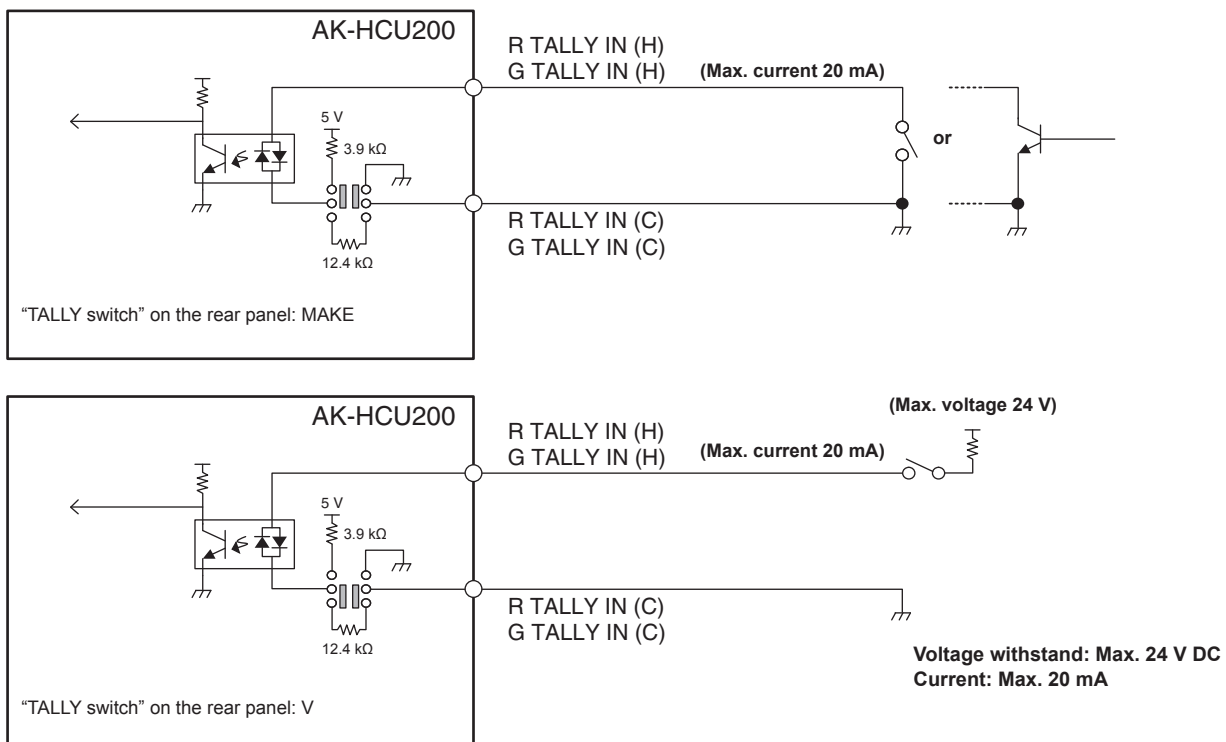
Connector pin assignment table

[COMMUNICATION]

JBY-25S-1A3F(LF)(SN) (J.S.T. Mfg. Co., Ltd.)

Pin No.	Signal	Flow of signals	Remarks
1	INCOM 1 OUT (H)	CCU → SYSTEM	0 dBm, 600 Ω (4W)/1 V [p-p] (RTS) ● Select "4W" or "RTS" and "INCOM1" or "INCOM2" with the "INCOM switches" on the rear panel. [When "RTS" is set, terminate pins 1 and 3 of the connector using a terminating resistor (200 Ω).]
2	INCOM 1 OUT (C)	CCU → SYSTEM	
3	INCOM 1 (GND)		
4	INCOM 1 IN (H)	SYSTEM → CCU	
5	INCOM 1 IN (C)	SYSTEM → CCU	
6	PGM IN (H)	SYSTEM → CCU	0 dBm/-20 dBm, 600 Ω ● Select "0dB" or "20dB" for the GAIN PGM item on the INCOM/MIC screen (pages 21 and 31)
7	PGM IN (C)	SYSTEM → CCU	
8	PGM IN (GND)		
9	GND		
10	NC		
11	R TALLY IN(H)	SYSTEM → CCU	ON: Short/TTL(H)/24 V ☞ Refer to "Example of tally input connections". OFF: Open/TTL(L)/24 V
12	R TALLY IN(C)	SYSTEM → CCU	
13	GND		
14	INCOM 2 OUT (H)	CCU → SYSTEM	0 dBm, 600 Ω (4W)/1 V [p-p] (RTS) ● Select "4W" or "RTS" and "INCOM1" or "INCOM2" with the "INCOM switches" on the rear panel. [When "RTS" is set, terminate pins 14 and 16 of the connector using a terminating resistor (200 Ω).]
15	INCOM 2 OUT (C)	CCU → SYSTEM	
16	INCOM 2 (GND)		
17	INCOM 2 IN (H)	SYSTEM → CCU	
18	INCOM 2 IN (C)	SYSTEM → CCU	
19	NC		
20	NC		
21	NC		
22	NC		
23	NC		
24	G TALLY IN (H)	SYSTEM → CCU	ON: Short/TTL(H)/24 V ☞ Refer to "Example of tally input connections". OFF: Open/TTL(L)/24 V
25	G TALLY IN (C)	SYSTEM → CCU	

● Example of tally input connections



Connector pin assignment table (Continued)

[MIC OUT 1], [MIC OUT 2]

HA16RV-3PG(76) (Hirose Electric Co., Ltd.)

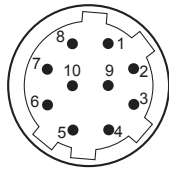
Pin No.	Signal	Flow of signals	Remarks
1	SHIELD		0 dBm, 600 Ω
2	HOT	CCU → SYSTEM	
3	COLD	CCU → SYSTEM	

[MSU]

This connector is for future function expansion.

HR10G-10R-10SC(71) (Hirose Electric Co., Ltd.)

Pin No.	Signal	Flow of signals
1	CSU CONT (H)	CCU → MSU
2	CSU CONT (C)	CCU → MSU
3	CSU DATA (H)	MSU → CCU
4	CSU DATA (C)	MSU → CCU
5	TALLY R	CCU → MSU
6	TALLY G	CCU → MSU
7	HEAD POWER	CCU → MSU
8	ALARM 1	CCU → MSU
9	ALARM 0	CCU → MSU
10	GND	



Connector of cable
HR10A-10P-10P(73)

[CAMERA]

AK-HCU200P, AK-HCU200E:

OPS2404-PR (Tajimi Electronics Co., Ltd.)

AK-HCU200PS, AK-HCU200ES:

FXW.3K.93C.TLM (LEMO)

Pin No.	Signal	Flow of signals
1	Optical fiber	CAM → CCU
2	Optical fiber	CCU → CAM
3	Control line (H)	CCU → CAM
4	Control line (C)	CCU ↔ CAM
5	DC 190 V	CCU → CAM
6	GND	CCU → CAM

[INCOM]

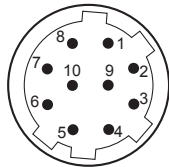
NC5FBH (Neutrik Co., Ltd.)

Pin No.	Signal	Remarks
1	SHIELD	Carbon MIC: -10 dB Dynamic MIC: -55 dB ● Select from "CM" and "DM" for the CM/DM item on the INCOM/MIC menu.
2	TALK	
3	SHIELD	
4	RECEIVE	
5	NC	

[ROP]

HR10G-10R-10SC(71) (Hirose Electric Co., Ltd.)

Pin No.	Signal	Flow of signals
1	ROP CONT (H)	CCU → ROP
2	ROP CONT (C)	CCU → ROP
3	ROP DATA (H)	ROP → CCU
4	ROP DATA (C)	ROP → CCU
5	NC	
6	NC	
7	NC	
8	NC	
9	+12 V OUT	CCU → ROP
10	GND	



Connector of cable
HR10A-10P-10P(73)

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