Panasonic

VariCam LT Ready for Live White Paper

REFERENCE MANUAL

September 1, 2020

1. Introduction

This white paper describes the method for setting up a VariCam LT for operation in a multi-camera system.

VariCam LT Version 6.0 offers improved live operation functionality, and can now be controlled with the Panasonic AK-HRP1000GJ/1005 remote operation panel (ROP).
The VariCam LT also features new "shading modes" for image enhancement in locations suitable for ROP use.

Version 8.0 supports HLG/Rec.2020 enabling HDR operation.

2. Required Devices and Versions

2.1. HD Operation

・ VariCam LT (AU-V35LT1G)   Version : 27.98-00-0.00 or later

・ ROP (AK-HRP1000GJ/HRP1005)   Version : 4.45-00-0.01 or later

・ ROP(AK-HRP200G)   Version : 4.20-00-0.00 or later

Note: HLG/Rec.2020 is supported from the following versions:

・ VariCam LT (AU-V35LT1G)   Version: 34.56-00-0.00 or later

・ ROP (AK-HRP1000GJ)   Version: 4.70-00-0.02 or later

・ ROP(AK-HRP1005)   Version: 4.70-00-0.00 or later

When used with the AK-HRP1000GJ/HRP1005:
• Switching hub with PoE support
• LAN cable (straight cabling, Category 5e or higher, maximum length of 100 m)

When used with the AK-HRP200G:
• LAN cable (Category 5e or higher)
*A crossover cable should be used when connecting the VariCam LT directly to an AK-HRP200G,
 and a straight cable should be used when connecting through hubs etc.

2.2. 4K Operation

In addition to the products above, 4K 50p/59.94p live output and control from ROP is enabled when using products that support VariCam LT 4K RAW output.

Devices supporting 4K output (as of May 2019):
• DTS: DTS1820 Camera Adaptor/DTS1810-U12GP Base Station http://www.dts-dsp.co.uk/downloads.html

3. Image Enhancement Parameters and ROP Supported Items

3.1. Supported parameters for Each Main Color Settings

The following shading modes have been added to VariCam LT Version 6.0 and later to facilitate use in
multi-camera systems.
(Note: HLG is supported from Version 8.0.)

(1) Main Color: V-Log, Grading Sel: Shading
While still using the V-Log signal for recording, outputs such as Gain and Pedestal can be controlled with the ROP.
Since there are no major image enhancement changes, it is recommended to use this together with 3D LUT
 for enhancement. This mode can be useful when Camera outputs are live, and recorded images are graded in
postproduction.

(2) Main Color: Shading, Gamma Sel: V-Log
Controllable parameters are almost the same as (1), but ROP control also applies to the recorded images, except for
3D LUT. Applying 3D LUT during post-processing will reproduce the same images as the output.
This mode can be useful when images are enhanced to a certain degree on set, and LUT and other tweaks are added
in postproduction.

(3) Main Color: Shading, Gamma Sel: BC Gamma/HLG
This mode enables as almost all VariCam LT image enhancement settings as possible to be controlled by the ROP.
3D LUT cannot be used. This mode is recommended for situations where there is no postproduction and the entire
shot will be composed on set.
When selecting BC Gamma, it is also possible to adjust the gamma, enabling more flexibility of adjustment than the scene 1-5
preset gammas.

(4) Processed RAW Mode
Processed RAW output superimposes image-enhancement processes for live operation. The whole system works as 4K
when the camera is connected to VariCam 4K RAW supported devices. Processed RAW can be selected when Main Color is
set to any color mode other than V-Log mode.

According to Main Color, Grading SEL, Gamma SEL settings include the above mode, VariCam LT can be used to
control the following items via the ROP.

[AK-HRP1000GJ/1005 Controllable Items]

[General settings]

MENU SETTINGS	MAIN COLOR	V-LOG		SCENE1-5			SHADING			note
	GRADING SEL	INTERNAL EXTERNAL	SHADING	OFF			OFF			
	GAMMA SELECT	-	-	V-709	V-406060 V-452080	VIDEO45 VIDEO50	V-LOG	BCGAMMA	HLG	
Controllable item	CAMERA MENU	Y	Y	Y	Y	Y	Y	Y	Y	
	Lens IRIS	Y	Y	Y	Y	Y	Y	Y	Y	
	Auto IRIS	Y	Y	Y	Y	Y	Y	Y	Y	
	FPS (VFR) Select	Y	Y	Y	Y	Y	Y	Y	Y	select from Preset
	SHUTTER Select	Y	Y	Y	Y	Y	Y	Y	Y	select from Preset
	EI Select	Y	Y	Y	Y	Y	Y	Y	Y	
	WB Select	Y	Y	Y	Y	Y	Y	Y	Y	select from Preset
	AWB	Y	Y	Y	Y	Y	Y	Y	Y	
	ABB	Y	Y	Y	Y	Y	Y	Y	Y	
	NR	Y	Y	Y	Y	Y	Y	Y	Y	
	REC Start/Stop	Y	Y	Y	Y	Y	Y	Y	Y	
	5600K override	Y	Y	Y	Y	Y	Y	Y	Y	
	CALL	Y	Y	Y	Y	Y	Y	Y	Y	
	Color Bars	Y	Y	Y	Y	Y	Y	Y	Y	
	CDL	Y								
	3D LUT Select	Y	Y				Y		Y	

[SHADING-related settings]

MENU SETTINGS	MAIN COLOR	V-LOG		SCENE1-5			SHADING			note
	GRADING SEL	INTERNAL EXTERNAL	SHADING	OFF			OFF			
	GAMMA SELECT	-	-	V-709	V-406060 V-452080	VIDEO45 VIDEO50	V-LOG	BCGAMMA	HLG	
Controllable item	R/G/B Gain		Y	Y	Y	Y	Y	Y	Y	
	R/G/B Pedestal Master Pedestal		Y	Y	Y	Y	Y	Y	Y	
	CHROMA Level / Phase		Y*		Y	Y		Y*	Y*	* level only
	R/B GAMMA Master GAMMA		Y					Y		
	BLACK GAMMA							Y	Y	
	KNEE					Y		Y		
	HLG KNEE								Y	
	WHITE CLIP					Y		Y		
	HD OUTPUT DETAIL		Y							only for output
	DETAIL			Y	Y	Y	Y	Y	Y	not for LT codec
	SKIN DETAIL			Y	Y	Y	Y	Y	Y	not for LT codec
	LINEAR MATRIX			Y	Y	Y		Y	Y	
	COLOR CORRECTION			Y	Y	Y		Y	Y	

[AK-HRP200G Controllable Items]

[General settings]

MENU SETTINGS	MAIN COLOR	V-LOG		SCENE1-5			SHADING			note
	GRADING SEL	INTERNAL EXTERNAL	SHADING	OFF			OFF			
	GAMMA SELECT	-	-	V-709	V-406060 V-452080	VIDEO45 VIDEO50	V-LOG	BCGAMMA	HLG	
Controllable item	CAMERA MENU	Y	Y	Y	Y	Y	Y	Y	Y	
	Lens IRIS	Y	Y	Y	Y	Y	Y	Y	Y	
	Auto IRIS	Y	Y	Y	Y	Y	Y	Y	Y	
	SHUTTER Select	Y	Y	Y	Y	Y	Y	Y	Y	select from Preset
	EI Select	Y*	Y*	Y*	Y*	Y*	Y*	Y*	Y*	* cannot change EI mode
	AWB	Y	Y	Y	Y	Y	Y	Y	Y	
	ABB	Y	Y	Y	Y	Y	Y	Y	Y	
	REC Start/Stop	Y	Y	Y	Y	Y	Y	Y	Y	
	Color Bars	Y	Y	Y	Y	Y	Y	Y	Y	

[SHADING-related settings]

MENU SETTINGS	MAIN COLOR	V-LOG		SCENE1-5			SHADING			note
	GRADING SEL	INTERNAL EXTERNAL	SHADING	OFF			OFF			
	GAMMA SELECT	-	-	V-709	V-406060 V-452080	VIDEO45 VIDEO50	V-LOG	BCGAMMA	HLG	
Controllable item	R/B Gain		Y	Y	Y	Y	Y	Y	Y	
	R/B Pedestal Master Pedestal		Y	Y	Y	Y	Y	Y	Y	
	KNEE					Y*		Y*	Y*	* ON/OFF only
	HD OUTPUT DTL		Y							only for output
	DETAIL			Y	Y	Y	Y	Y	Y	not for LT codec
	SKIN DETAIL			Y*	Y*	Y*	Y*	Y*	Y*	not for LT codec * ON/OFF only
	LINEAR MATRIX			Y*	Y*	Y*		Y*	Y*	* ON/OFF only
	COLOR CORRECTION			Y*	Y*	Y*		Y*	Y*	* ON/OFF only

The Flare/Pedestal Volume setting of the AK-HRP200G is set to "Flare" by default. When controlling R/B pedestals, the Setup Mode must be accessed and the "Flare Pedestal Volume" must be set to "Pedestal."
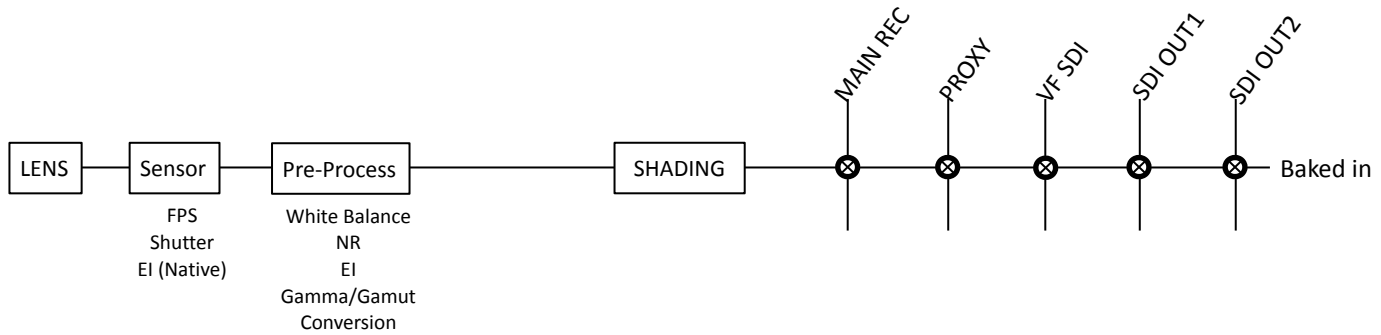For details, refer to Annex1 "HRP200G Set-up Mode".

3.2. Effects of Image Enhancement Parameters on Outputs

The table below shows the effects of the image enhancement parameters in each mode on the outputs. The parameters included in each "shading" block refer to the corresponding item in the "SHADING-related settings" table on the preceding page.
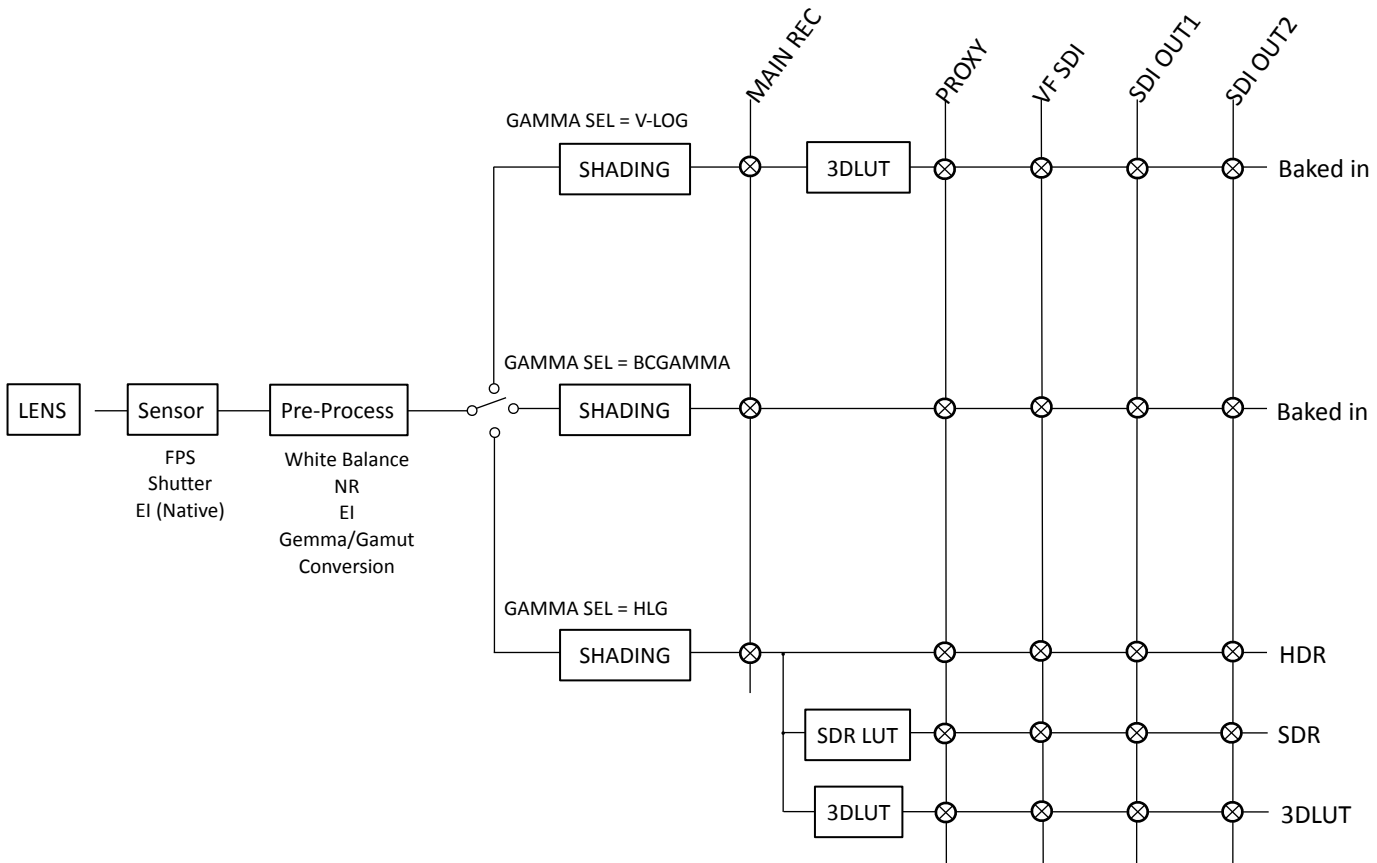
3.2.1. In case of MAIN COLOR = V-LOG

MAIN REC   PROXY   VF SDI   SDI OUT1   SDI OUT2

GRADING SEL = OFF

V-709 → V-709

V-LOG

GRADING SEL = ON
(Internal, External App)

LENS — Sensor — Pre-Process

FPS
Shutter
EI (Native)

White Balance
NR
EI
Gemma/Gamut
Conversion to V-LOG

CDL → 3DLUT → Grading

V-LOG

GRADING SEL = SHADING

SHADING → 3DLUT → Baked in

V-LOG
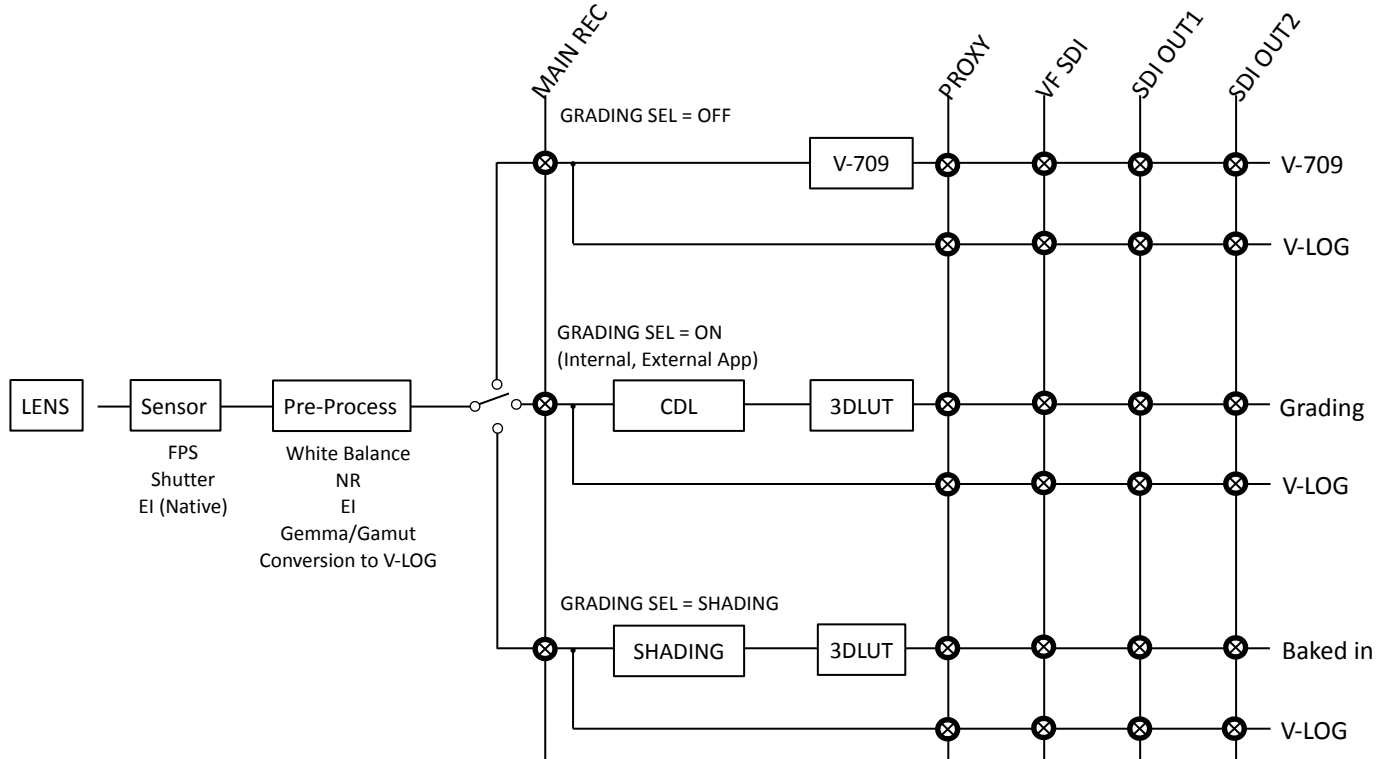
3.2.2. In case of MAIN COLOR = SCENE 1-5

MAIN REC   PROXY   VF SDI   SDI OUT1   SDI OUT2

LENS — Sensor — Pre-Process — SHADING → Baked in

FPS
Shutter
EI (Native)

White Balance
NR
EI
Gamma/Gamut
Conversion

3.2.3. In case of MAIN COLOR = SHADING

3.2.3.1 In case of PROCESSED RAW = OFF

3.2.3.1 In case of PROCESSED RAW = ON
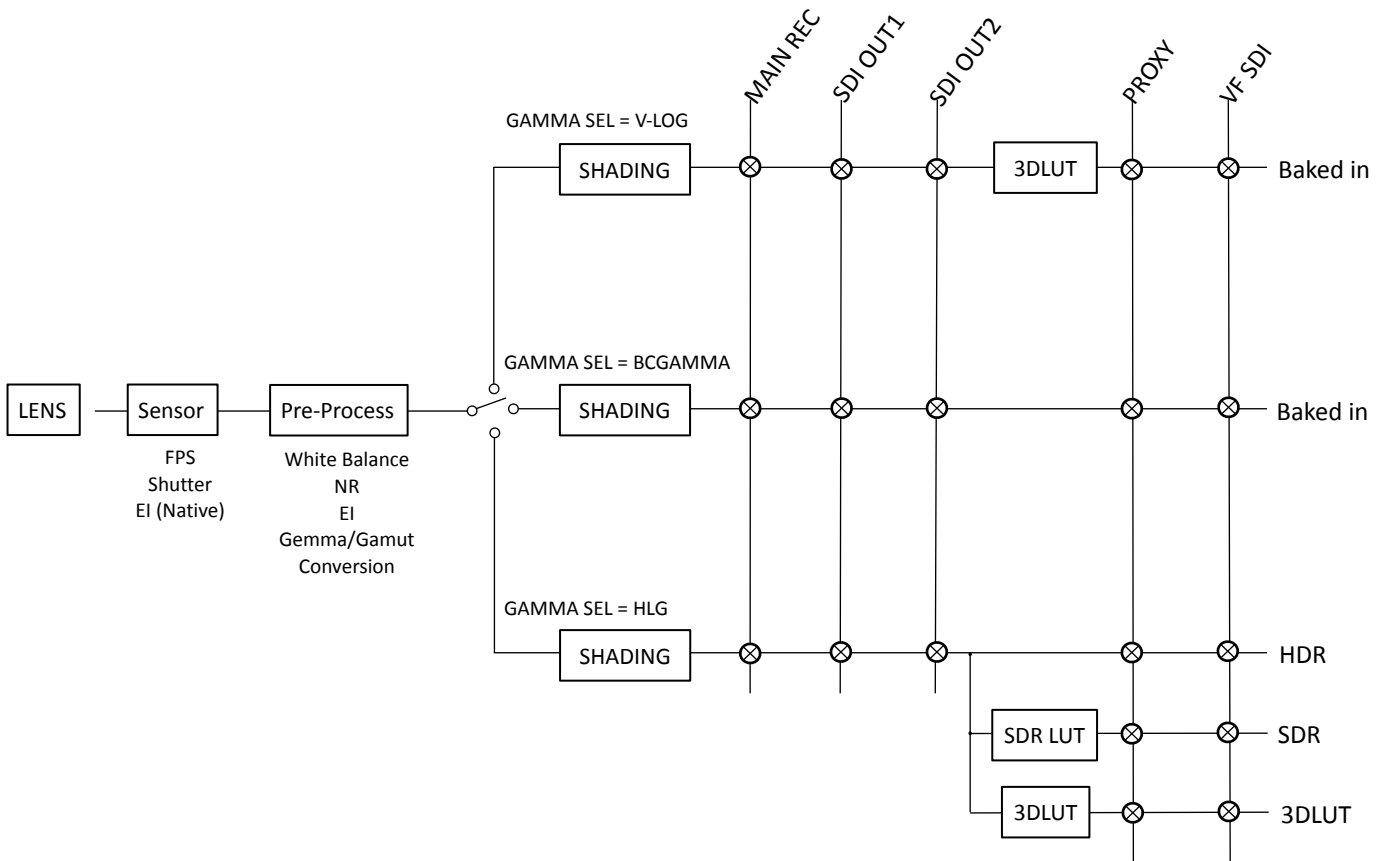
4. Connection Example and Settings

4.1. Connection Example in HD Operation

4.1.1. Connection Example

Connect the RETURN signal to the GENLOCK signal at the GENLOCK IN terminal. The signal must be 1080 SDI.
Use a switching hub with PoE support to connect the ROP to the LAN terminal.
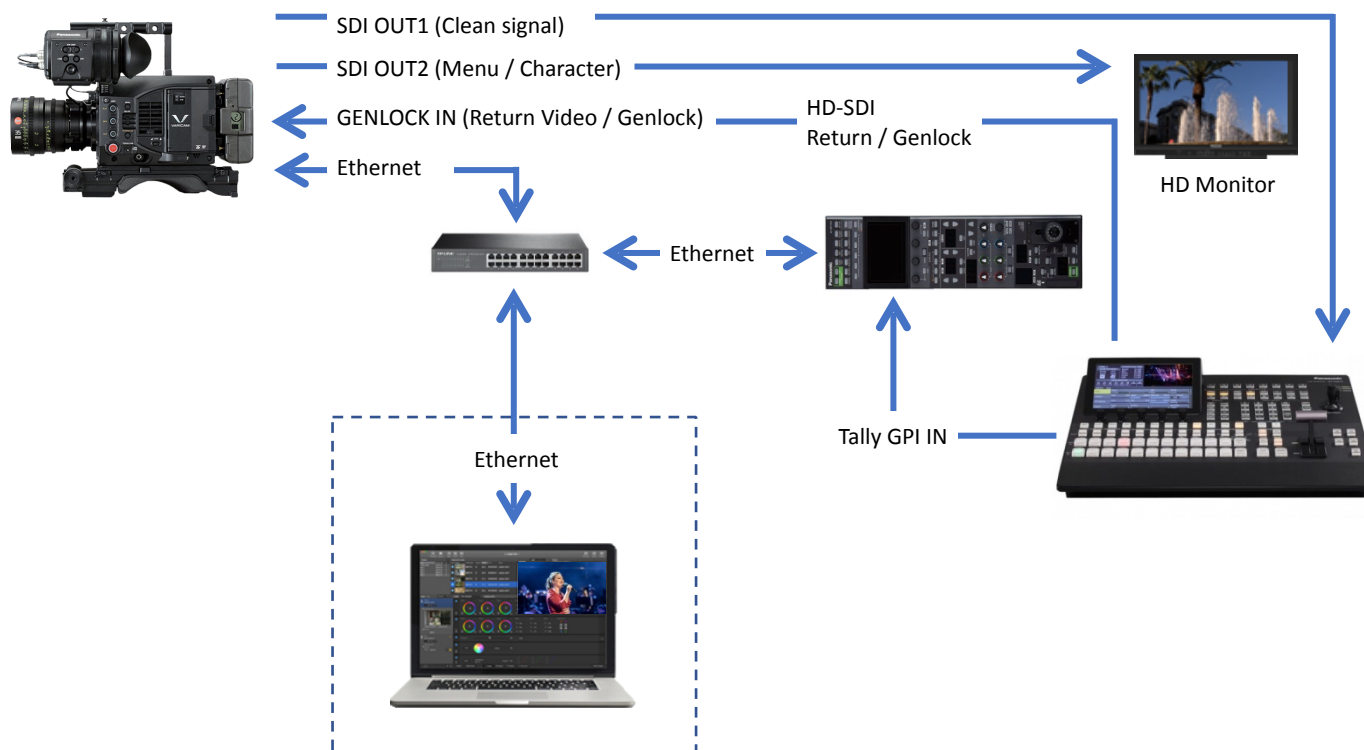
In V-Log mode, 3D LUT can be created on PC/Mac and uploaded to the VariCam.
Compatible software such as Live Grade is required.

In addition to the above:
• When Grading SEL is set to External, CDL is controllable via PC/Mac or HRP1000.
• When Grading SEL is set to Internal, CDL is controllable via HRP1000.

4.1.2. Restrictions and Notes

• When the VariCam LT is connected to an ROP, the six buttons on the home screen cannot be used to move to the
  setting screens. (However, the Menu button can be used to access the list menu.)
• The response to parameter changes from the ROP is delayed while the Home or Menu screen is displayed.
  It is recommended to keep the View screen displayed when using an ROP to control the device.
• The Surround View function is not available when Grading SEL is set to "Shading" or when "Main Color" is set to
  "Shading."
• Depending on the lens being used, the Iris response to ROP commands may be delayed.

4.1.3. SDI Output Settings

When connected to an ROP, even if the VariCam LT's MENU→OUTPUT SETTINGS→SDI OUT→MENU DISP is set to "Off," selecting "Camera Menu On" from the ROP menu will display the menu on SDI OUT2.
In addition, even if the VariCam LT MENU→OUTPUT SETTINGS→SDI OUT→SDI OUT 2 CLEAN VIEW is set to "On" or MENU→OUTPUT SETTINGS→SDI OUT INDICATOR→SDI OUT 2 SW is set to "Off," the ROP CHARA button will only affect SDI OUT2 and will toggle OSD on and off. CHARA is also set to "Off" when the VariCam LT is connected to the ROP.

[Recommended Settings]
MENU -> OUTPUT SETTINGS -> SDI OUT -> MENU DISP : OFF
MENU -> OUTPUT SETTINGS -> SDI OUT -> SDI OUT1 CLEAN VIEW : ON

4.2. Connection Example for 4K Operation

4.2.1. Connection Example with a DTS System

SDI OUT1 /2
(Processed RAW)

Intercom1/2

GENLOCK IN
(HD-SDI Return / Genlock)

Ethernet

DTS Fiber Adaptor

SMPTE 311 Fiber

4K video out
VF-SDI

Intercom System

Return In

DTS Base Station

Ethernet

Tally GPI IN
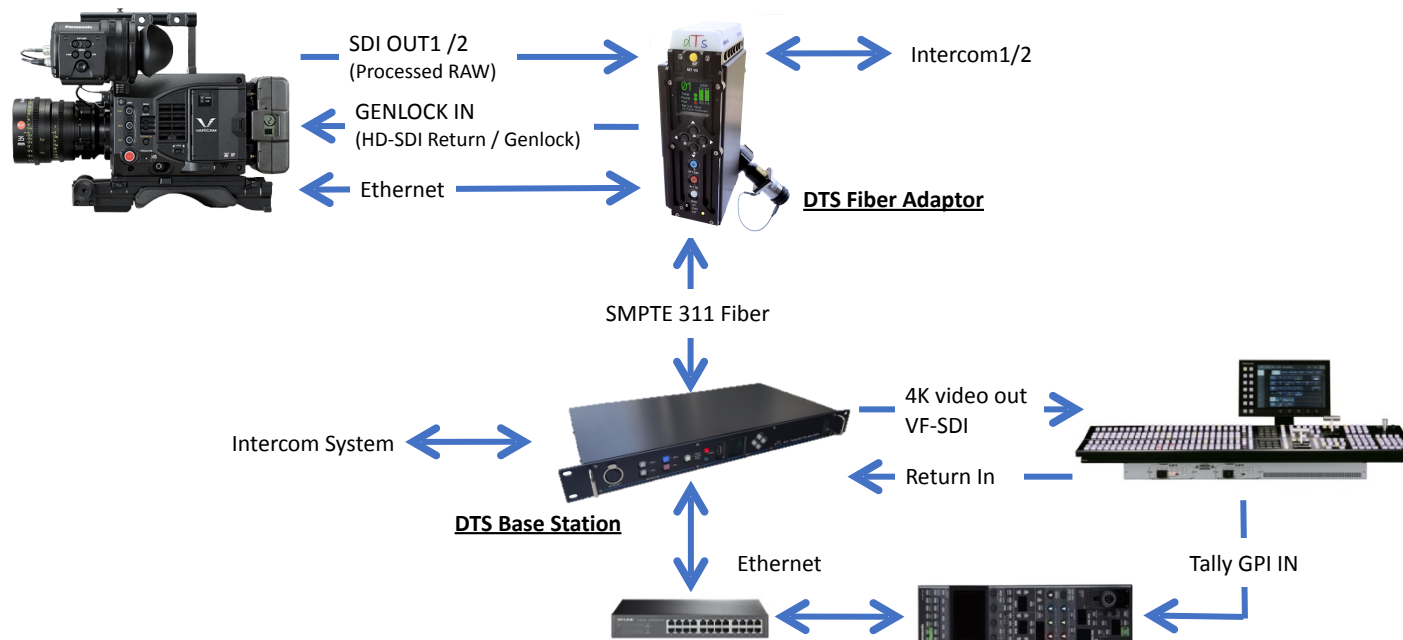
4.2.2. Connection Settings with a DTS System

Please refer to the DTS's installation manual for further details. When outputting 4K video from DTS system, please set the VariCam LT as follows:

MENU -> OUTPUT SETTINGS -> SDI_OUT -> PROCESSED RAW SW: ON

Processed RAW can be selected when Main Color of VariCam LT is set to anything other than V-Log mode.

4.2.3. Restrictions and Notes

- When the VariCam LT is connected to an ROP, the six buttons on the home screen cannot be used to move to the setting screens. (However, the Menu button can be used to access the list menu.)
- The response to parameter changes from the ROP is delayed while the Home or Menu screen is displayed.
  It is recommended to keep the View screen displayed when using an ROP to control the device.
- The Surround View function is not available when Grading SEL is set to "Shading" or when "Main Color" is set to "Shading."
- Depending on the lens being used, the Iris response to ROP commands may be delayed.

Note: The following restrictions also apply when performing 4K operation in the above system.

- VFR = ON and MAIN PIXEL = 2048x1080 CROP, 1920x1080 CROP are not supported
- When using in a DTS system, Genlock/RETURN signals must be 1.5G SDI (3G SDI not supported)
- Color Bar cannot be superimposed on SDI OUT
- 3D LUT cannot be applied on SDI OUT
- In some cases, time-code output via DTS Base Station may be incorrect.

Panasonic

4.2.4. Supported Formats List

VariCam LT SYSTEM Format				DTS Base station 4x3G SDI output format						DTS Base station Monitor output(OPTION) format			
Block	MAIN CODEC	MAIN PIXEL	FREQUENCY	Pixel	Frame Rate	Sampling	Division	Format	output	Pixel	Frame Rate	Sampling	Format
Main system is 4K	AVC-I4K422	4096x2160	24.00p	4096x2160	24.00p	YCbCr 422	2SI	3G Level-B	2x3G-SDI	2048x1080	over30.00p	YCbCr422	HD-SDI
							SQD	HD-SDI	4xHD-SDI				
		4096x2160 3840x2160	23.98p	4096x2160 3840x2160	23.98p	YCbCr 422	2SI	3G Level-B	2x3G-SDI	2048x1080 1920x1080	over29.97p	YCbCr422	HD-SDI
							SQD	HD-SDI	4xHD-SDI				
			29.97p	4096x2160 3840x2160	29.97	YCbCr 422	2SI	3G Level-B	2x3G-SDI				
							SQD	HD-SDI	4xHD-SDI				
			25.00p	4096x2160 3840x2160	25.00p	YCbCr 422	2SI	3G Level-B	2x3G-SDI	2048x1080 1920x1080	over25.00p	YCbCr422	HD-SDI
							SQD	HD-SDI	4xHD-SDI				
	AVC-I4KLT	4096x2160	24.00p	4096x2160	24.00p	YCbCr 422	2SI	3G Level-B	2x3G-SDI	2048x1080	over60.00p	YCbCr422	3G-SDI
							SQD	HD-SDI	4xHD-SDI				
		4096x2160 3840x2160	23.98p	4096x2160 3840x2160	23.98p	YCbCr 422	2SI	3G Level-B	2x3G-SDI	2048x1080 1920x1080	over59.94p	YCbCr422	3G-SDI
							SQD	HD-SDI	4xHD-SDI				
			29.97p	4096x2160 3840x2160	29.97p	YCbCr 422	2SI	3G Level-B	2x3G-SDI				
							SQD	HD-SDI	4xHD-SDI				
			25.00p	4096x2160 3840x2160	25.00p	YCbCr 422	2SI	3G Level-B	2x3G-SDI	2048x1080 1920x1080	over50.00p	YCbCr422	3G-SDI
							SQD	HD-SDI	4xHD-SDI				
			59.94p	4096x2160 3840x2160	59.94p	YCbCr 422	2SI	3G Level-A	4x3G-SDI	2048x1080 1920x1080	over59.94p	YCbCr422	3G-SDI
							2SI	3G Level-B	4x3G-SDI				
							SQD	3G Level-A	4x3G-SDI				
							SQD	3G Level-B	4x3G-SDI				
			50.00p	4096x2160 3840x2160	50.00p	YCbCr 422	2SI	3G Level-A	4x3G-SDI	2048x1080 1920x1080	over50.00p	YCbCr422	3G-SDI
							2SI	3G Level-B	4x3G-SDI				
							SQD	3G Level-A	4x3G-SDI				
							SQD	3G Level-B	4x3G-SDI				
Main system is 2K(444)	AVC-I2K444	2048x1080	24.00p	4096x2160	24.00p	YCbCr 422	2SI	3G Level-B	2x3G-SDI	2048x1080	24.00p	YCbCr422	HD-SDI
							SQD	HD-SDI	4xHD-SDI				
	AVC-I444	2048x1080 1920x1080	23.98p	4096x2160 3840x2160	23.98p	YCbCr 422	2SI	3G Level-B	2x3G-SDI	2048x1080 1920x1080	23.98p	YCbCr422	HD-SDI
							SQD	HD-SDI	4xHD-SDI				
			29.97p	4096x2160 3840x2160	29.97p	YCbCr 422	2SI	3G Level-B	2x3G-SDI	2048x1080 1920x1080	29.97p	YCbCr422	HD-SDI
							SQD	HD-SDI	4xHD-SDI				
			25.00p	4096x2160 3840x2160	25.00p	YCbCr 422	2SI	3G Level-B	2x3G-SDI	2048x1080 1920x1080	25.00p	YCbCr422	HD-SDI
							SQD	HD-SDI	4xHD-SDI				
Main system is 2K(422)	AVC-I2K422	2048x1080	24.00p	4096x2160	24.00p	YCbCr 422	2SI	3G Level-B	2x3G-SDI	2048x1080	over60.00p	YCbCr422	3G-SDI
							SQD	HD-SDI	4xHD-SDI				
	AVC-I2K422 AVC-I100 ProRes***	2048x1080 1920x1080	23.98p	4096x2160 3840x2160	23.98p	YCbCr 422	2SI	3G Level-B	2x3G-SDI	2048x1080 1920x1080	over59.94p	YCbCr422	3G-SDI
							SQD	HD-SDI	4xHD-SDI				
			29.97p	4096x2160 3840x2160	29.97p	YCbCr 422	2SI	3G Level-B	2x3G-SDI				
							SQD	HD-SDI	4xHD-SDI				
			25.00p	4096x2160 3840x2160	25.00p	YCbCr 422	2SI	3G Level-B	2x3G-SDI	2048x1080 1920x1080	over50.00p	YCbCr422	3G-SDI
							SQD	HD-SDI	4xHD-SDI				
			59.94p	4096x2160 3840x2160	59.94p	YCbCr 422	2SI	3G Level-A	4x3G-SDI	2048x1080 1920x1080	over59.94p	YCbCr422	3G-SDI
							2SI	3G Level-B	4x3G-SDI				
							SQD	3G Level-A	4x3G-SDI				
							SQD	3G Level-B	4x3G-SDI				
			50.00p	4096x2160 3840x2160	50.00p	YCbCr 422	2SI	3G Level-A	4x3G-SDI	2048x1080 1920x1080	over50.00p	YCbCr422	3G-SDI
							2SI	3G Level-B	4x3G-SDI				
							SQD	3G Level-A	4x3G-SDI				
							SQD	3G Level-B	4x3G-SDI				

When outputting 4K video in a DTS system, output Level-A/B and 2SI/SQD settings are switched on the DTS Base Station side.
Note that settings on the VariCam LT side are not reflected in this case.

When outputting via 12G-SDI to a DTS Base Station, please select the formats with 2SI Level-A in the above 4 x 3G SDI setting.
In any other format, images cannot be displayed correctly.

4.3. Genlock/Return Video Settings

When using the Return function, Genlock must either be externally synchronized (using VariCam as a slave device)
or the Return signal itself must be locked to the VariCam LT (using VariCam as a master device).

[Genlock Settings]
(When used as a slave device): MENU → SYSTEM SETTINGS → GENLOCK → GENLOCK MODE: EXT
(When used as a master device): MENU → SYSTEM SETTINGS → GENLOCK → GENLOCK MODE: INT

The Return function can be assigned to the following switches.
From MENU→SYSTEM SETTINGS→USER SWITCHES, assign the function to the switch of your choice:
-USER1
-USER2
-USER3
-USER GRIP1
-USER GRIP2
-LENS RET SW

The following is the configuration information for which Return is valid. 720p and SD signals are not supported.

SYSTEM FORMAT	RETUERN VIDEO SDI INPUT FORMAT											
	1080/23.98		1080/24.00		1080/25.00		1080/29.97		1080/50.00		1080/59.94	
	True P	PsF	True P	PsF	True P	PsF	True P	PsF	P	I	P	I
23.98P	V	V	-	-	-	-	-	-	-	-	-	-
24.00P	-	-	V	V	-	-	-	-	-	-	-	-
25.00P	-	-	-	-	V	V	-	-	V	V	-	-
29.97P	-	-	-	-	-	-	V	V	-	-	V	V
50.00P	-	-	-	-	V	V	-	-	V	V	-	-
59.94P	-	-	-	-	-	-	V	V	-	-	V	V
50.00I	-	-	-	-	V	V	-	-	V	V	-	-
59.94I	-	-	-	-	-	-	V	V	-	-	V	V

4.4. Fan Settings

The fan mode can be changed in MENU→SYSTEM SETTINGS→FAN→FAN SPEED.
A new "Live Mode" has been added as of VariCam LT Version 6.0. In Live Mode, the fan is normally operated
at a low speed. However, when a preset temperature is reached, the fan speed is optimized for the [MAIN CODEC]
settings (the same speeds as when MATCH CODEC settings are made).
This setting can also be changed from ROP MENU→SYSTEM CAM. (AK-HRP1000GJ/1005 only)

5. VariCam LT and ROP Connection Settings

Here, we present only the basic method for connecting the VariCam LT with an ROP.
For more detail, refer to the operating guide for your VariCam LT and your ROP.
Please note in advance that the use of the AK-HRP200G requires a PC for connection settings.

5.1. Steps to Connect a VariCam LT with an ROP

The following are the steps for connecting a VariCam LT with an ROP.

| VariCam LT network settings | ➡ | These can only be set from the VariCam LT (see 5.2). |

| ROP settings | ➡ | These can be set in ROP or Easy IP setup software or I
n ROP setup software (see 5.3). |

| User authentication settings | ➡ | These settings are not required when using the devices under the default settings. However, there are notes for those who have used VariCam LT before Version 6.0 (see 5.4). |
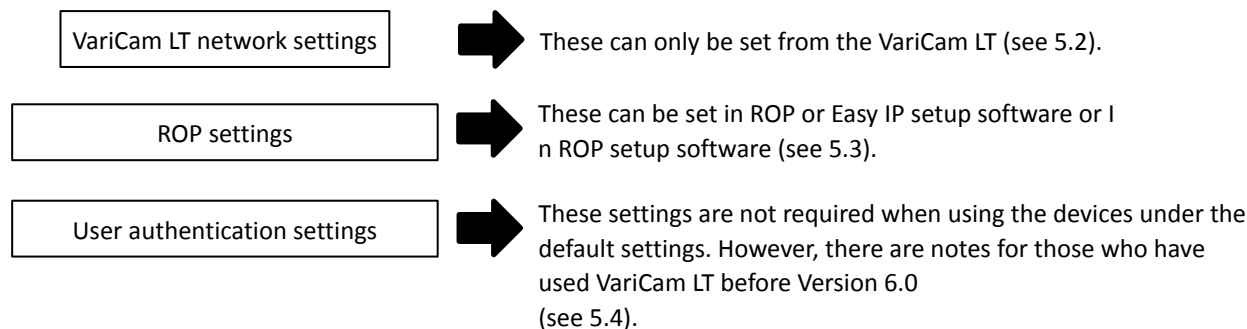
5.2. VariCam LT Network Settings

1. From MENU→PERIPHERAL→LAN PROPERTY, set each of the following items as needed.
DHCP: DHCP auto-configuration setting
IP ADDRESS: IP address
SUBNET MASK: Subnet mask
DEFAULT GATEWAY: Default gateway
PRIMARY DNS: The primary DNS server to use
SECONDARY DNS: The secondary DNS server to use
DHCP SERVER: DHCP server configuration setting

2. From MENU→PERIPHERAL→NETWORK SEL, select LAN

5.3. ROP Settings

5.3.1 When using the AK-HRP1000GJ/1005

1. From ROP MENU→ROP IP SETTING, set each of the following items as needed.
    ROP IP ADDRESS: IP address
    ROP SUBNET MASK: Subnet mask
    ROP DEFAULT GATEWAY: Default gateway

2. From ROP MENU→CAMERA IP SETTING, set the IP address for the camera number you wish to connect to the above IP address set on the VariCam LT and set PORT to "49152."

3. From ROP MENU→CONNECT SETTING, set the "CONNECT MODE" for the camera number set in step 1 above to "LAN (AU)."

*For step 1 above, the parameter can also be set using Easy IP setup software.
 In addition, the parameters in steps 2 and 3 can also be set using ROP setup software.

5.3.2 When using the AK-HRP200G

1. Access Setup Mode on the AK-HRP200G and set each of the following items as needed.
     ROP IP ADDRESS: IP address
     ROP SUBNET MASK: Subnet mask
     ROP DEFAULT GATEWAY: Default gateway

2. Connect the PC and ROP on the network, open the ROP setup software and open the Camera List tab.
     Here, set the following items:
     CONNECTION MODE: IP Mode
     CAMERA TYPE: Camcorder IP
     IP ADDRESS: The IP address of the camera you wish to connect (the IP address set on the VariCam LT in the
      section above)
     CAMERA PORT NO: 49152
   After setting the above items, click the SET button to apply the changes.

   *For step 1 above, the parameter can also be set using Easy IP setup software.
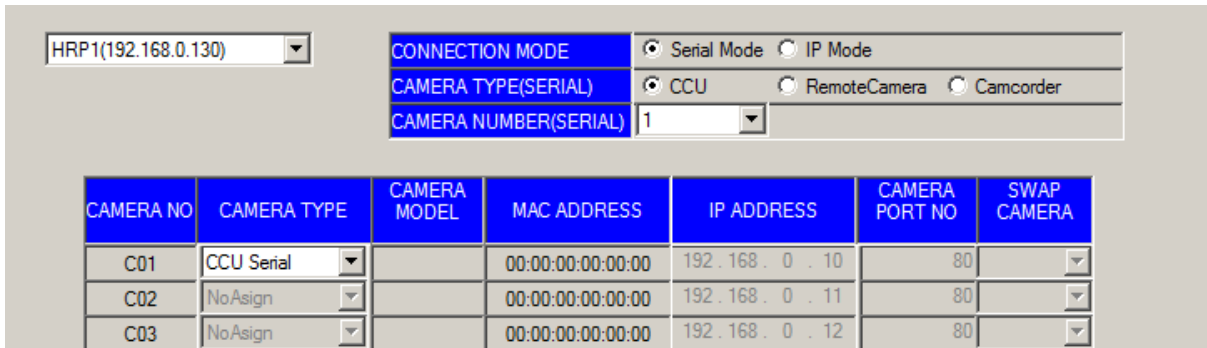
5.4. User Authentication Settings

5.4.1. About User Authentication for Connections
(for Users Who Have Updated from Versions Prior to VariCam LT Version 6.0)

In addition to the above, user authentication is also required to connect a VariCam LT to an ROP.
This is due to the requirement that the network account set on the VariCam LT (which can be viewed in
MENU→PERIPHERAL→NETWORK FUNC→ACCOUNT LIST) match the user information set on the ROP (which can be
viewed and set via the ROP setup software).

When using versions prior to VariCam LT Version 6.0 with the AK-HRP200G, it was necessary to change the network
settings on one of the two devices, since their default accounts were not the same.

In VariCam LT Version 6.0, the ROP default account, "username: admin, password: 12345" has been added to the default
accounts on the VariCam, enabling the devices to be connected without first making the user authentication settings.

*However, for users updating from a version prior to Version 6.0 via software update, the new account information will
only be added after the device has been initialized. After backing up your important data, use MENU→SYSTEM
SETTINGS→INITIALIZE→LOAD FACTORY DATA to initialize the device, or add the above account by following the manual
procedure.

5.4.2. Steps for Manually Adding a User Account
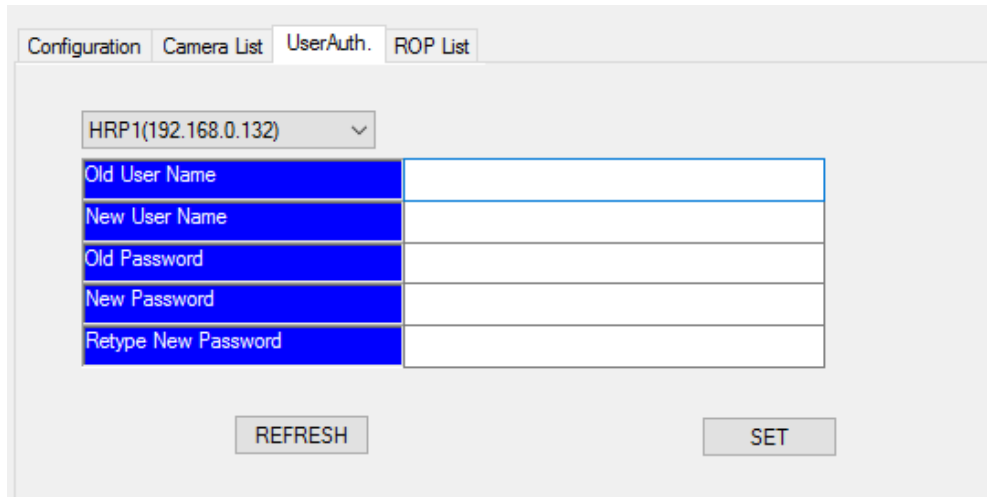
[To set an account on the ROP]
Connect the PC and ROP on the network, open the ROP setup software and open the User Auth tab.
Clicking the REFRESH button here will display the old username.
Fill in the New Username, Old Password, New Password and Retype New Password fields with the desired data and click SET to complete the setting process.
The default factory account settings for new devices are "username: admin, password: 12345."

[Adding an account to the VariCam LT]
Access MENU→PERIPHERAL→NETWORK FUNC→USER ACCOUNT to add the account.
Access MENU→PERIPHERAL→NETWORK FUNC→ACCOUNT LIST to see a list of the currently added accounts.
The default settings for new devices are made in one of the following configurations.
Username: guest/Password: p2guest
Username: admin/Password: 12345
(The "admin" account was added in Version 6.0 and later.
Users originally using versions prior to Version 6.0 may use the "Initialize" command to initialize the device and add the new account.)

6. Special Operations

6.1. Recording Operation

Recording can be triggered on the AK-HRP1000GJ by pressing the STORE and HEAD buttons; on the AK-HRP1005
by pressing and holding the FILES button; and on the AK-HRP200G by pressing the STORE and HEAD POWER buttons.
*This functionality can only be used when MENU→REC SETTINGS→REC FUNCTION→REC MODE is set to "Normal"
on the VariCam LT.

AK-HRP1000GJ   AK-HRP1005

STORE + HEAD   Press and hold FILES

AK-HRP200G

STORE + VF POWER
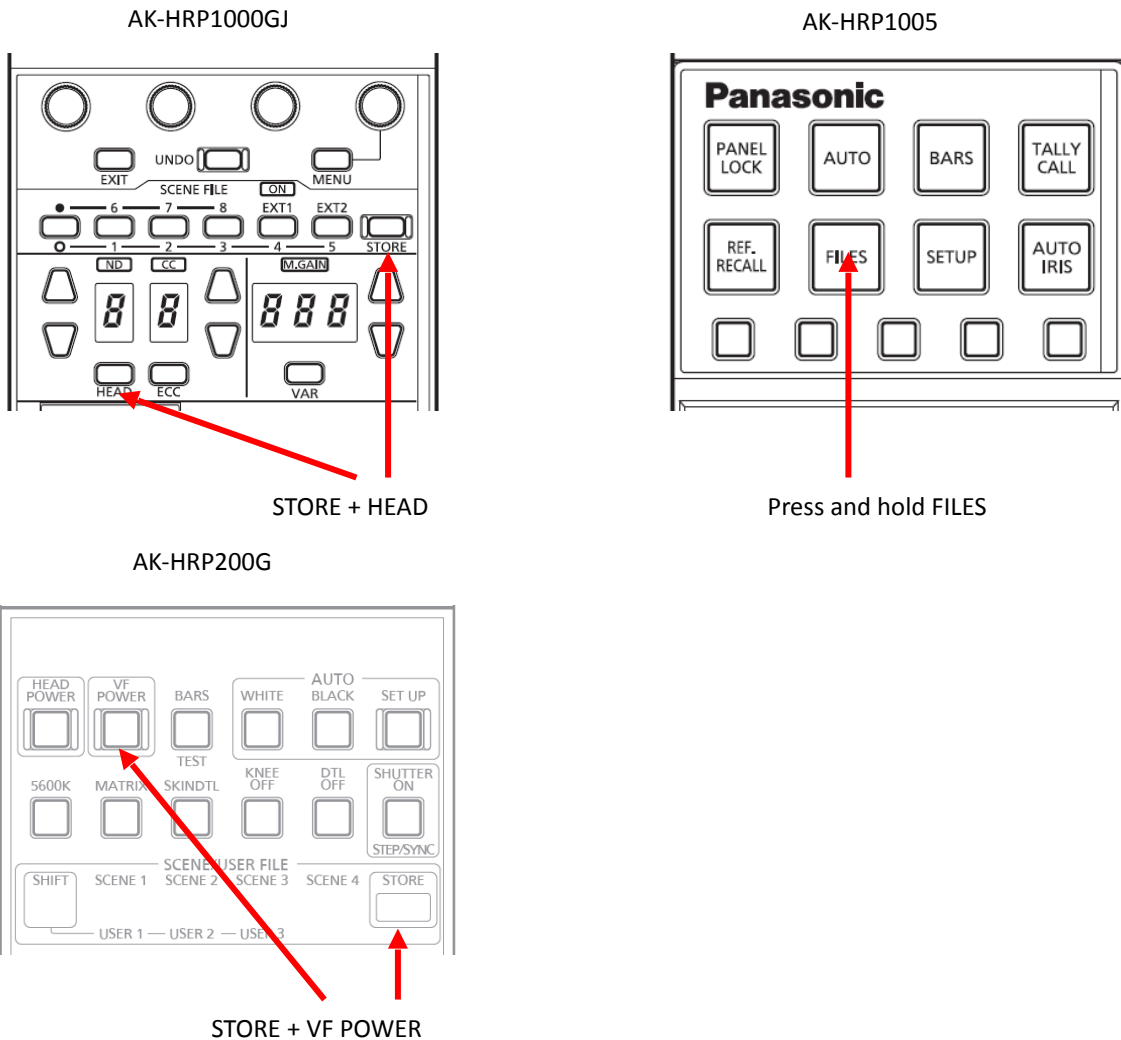
6.2. Main Color Switching Operation

With the AK-HRP1000GJ, the Main Color can be switched by pressing the SCENE FILE button. Scenes 1-5 on the ROP map
to Main Color scenes 1-5, and scene 6 on the ROP maps to Main Color shading. When no scene is selected on the ROP,
the Main Color will be set to V-LOG.
*Switching cannot be performed while the VariCam LT is recording or playing back data or during FPGA configuration.
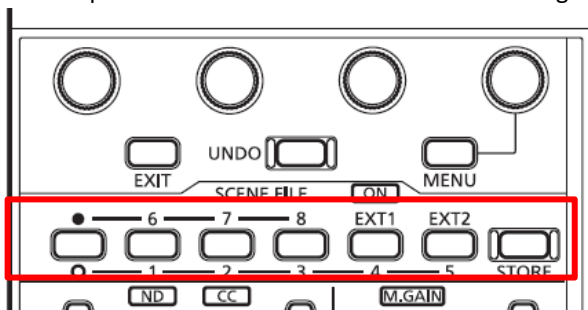
6.3. Tally Input

6.3.1 ROP Settings

A Tally signal can be sent as input to ROP preview connector pins 3 and 4 (or pins 8 and 9 on the AK-HRP1005).

AK-HRP1000GJ   AK-HRP1005   AK-HRP200G
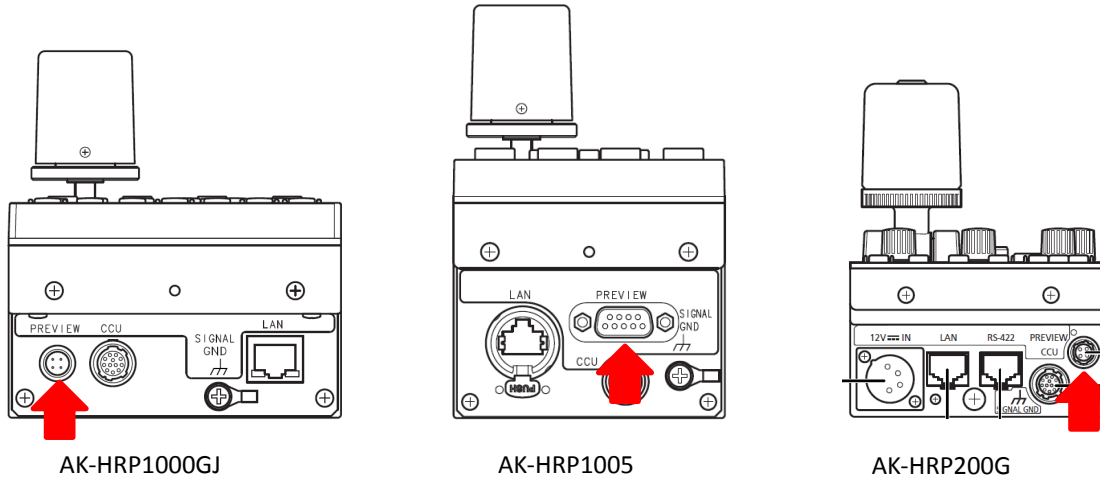
Pin No.	Function	Flow of signal	Remarks
3 (8)	EXTRA1	TALLY→ROP	Dry contact
4 (9)	EXTRA2	TALLY→ROP	Dry contact

Tally settings are made as follows.
For the AK-HRP1000GJ/1005
Access ROP MENU→SYSTEM CAM to change the settings.
TALLY CONTROL: Set Tally notifications to on or off.
TALLY INPUT: Select the camera number to which Tally notifications are sent.

For the AK-HRP200G
Access Setup Mode to change the settings.
For details, refer to the Annex1 AK-HRP200G "Setup Mode" documentation.

6.3.2 VariCam LT Settings

Tally lights the Tally lamps on the VariCam LT VF (VCVF10). The Tally signal can be accessed via the DC OUT/RS terminals.

(Connection example)
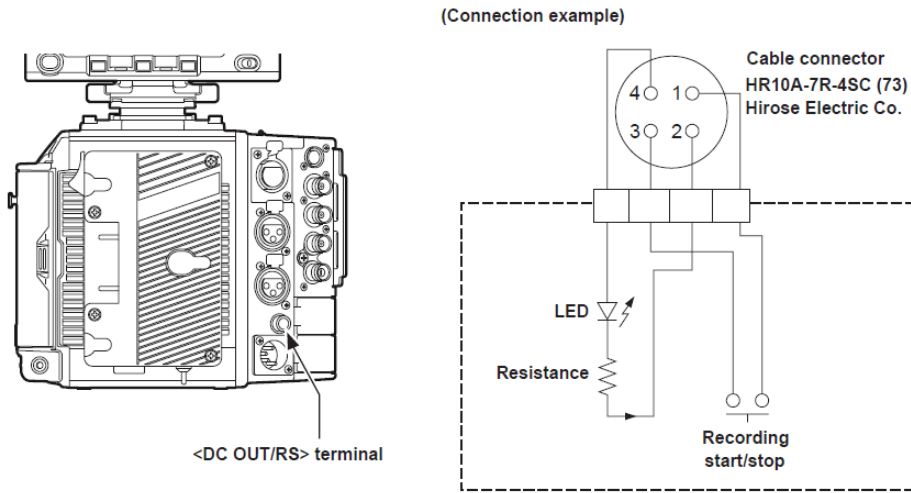
1 GND
2 TALLY OUT
   Open collector output on the camera side

Tally lamp on	Low impedance
Tally lamp off	High impedance

3 Recording start/stop switch
   This is connected in parallel to the <REC> button on the camera or the VTR button on the lens.
4 +12 V

REC Tally settings can be made on the VariCam. It is recommended to make them so as not to interfere with external inputs.
MENU→OUTPUT SETTINGS→VF SDI INDICATOR→REC TALLY: This can be used to switch the recording status display mode.
RED: The red Tally lamp is lit
GREEN: The green Tally lamp is lit
CHAR: "REC" is shown in characters in the viewfinder

Annex 1. HRP200G Set-up Mode

■Opening setup mode
Setup mode differs from normal operating modes. Use the steps below to open setup mode.

1. **When a camera and CCU are connected, select IRIS (to light the <IRIS> display on the panel).**
   If the IRIS display is not lit, press the selected <DISPLAY SELECT> button to select IRIS.
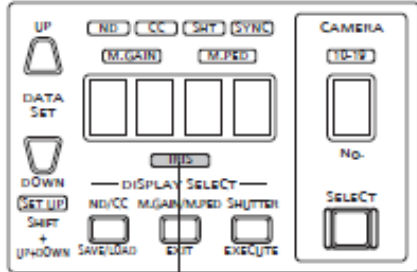
IRIS display

Use the steps below to open setup mode when the power is on, but a camera or CCU is not connected.

2. **Simultaneously hold down DATA SET <DATA SET> <UP>, <DOWN> and <SHIFT> for approximately two seconds.**
   This opens setup mode and Menu No. 1 (camera number setting) is displayed.
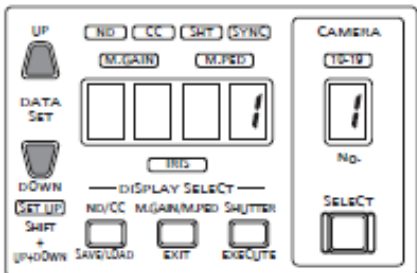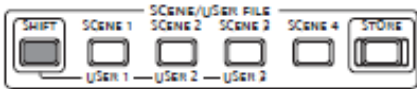
■Exiting setup mode
To exit setup mode, hold down <EXIT> for two seconds. The unit returns to normal operating mode.
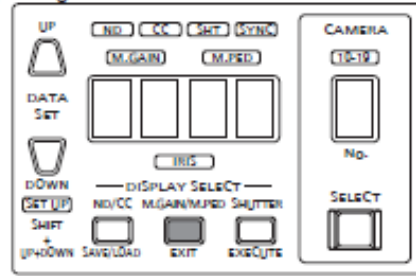
■Basic operations
The buttons indicated in the figure below are available in setup mode. No other buttons are available. All other LEDs stay off. (Except the alarm display)
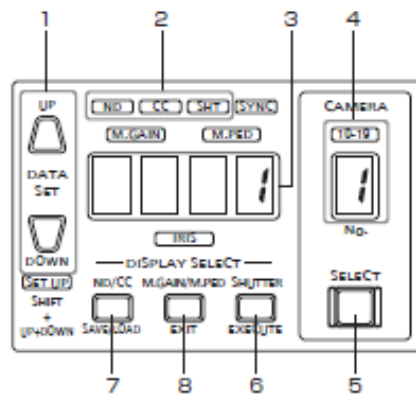
1. Selects set values

2. Indicates selected submenu

3. Indicates set values and selected values

4. Indicates menu numbers

5. Selects a menu number. Each press of the button increments menu numbers.
   1→2→3→…→21→1→2→…

6. Confirms a setting

7. Selects a submenu. Each press of the button opens a different submenu.

8. To exit setup mode, hold down <EXIT> for two seconds. The unit returns to normal operating mode.
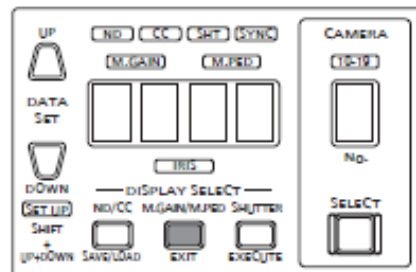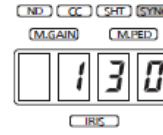
7 Select/set flare and pedestal

Press <SELECT> to select menu number [7].

Select FL (Flare)/PE (Pedestal)

Press to confirm

Press to exit setup mode
(hold down)

Press to select the
menu number

7-1 Set flare

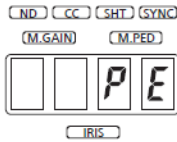**Press <UP> or <DOWN> to select [FL] and press
<EXECUTE> to confirm the selection.**
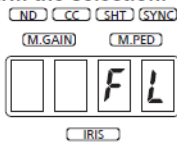
- To exit setup mode, hold down <EXIT> for about 2 seconds.
- To make other settings, press <SELECT> to select a menu number.

7-2 Set pedestal

**Press <UP> or <DOWN> to select [PE] and press
<EXECUTE> to confirm the selection.**
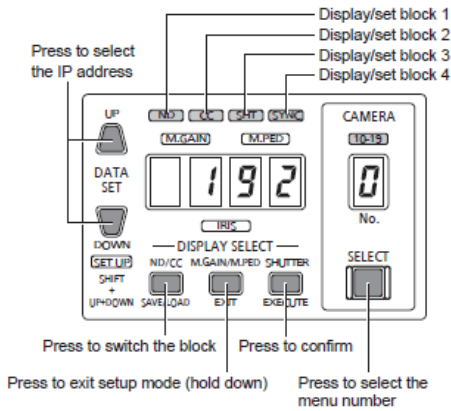

- To exit setup mode, hold down <EXIT> for about 2 seconds.
- To make other settings, press <SELECT> to select a menu number.

10 Set IP address

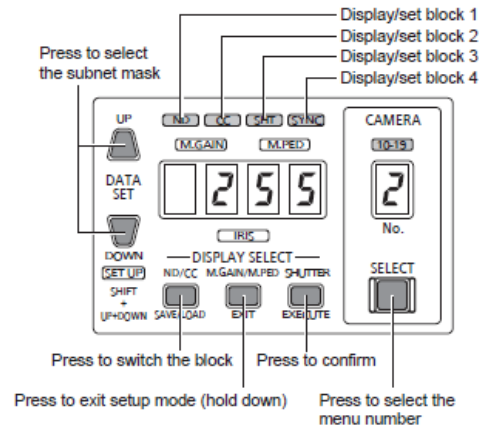1. **Press <SELECT> to select menu number [10].**
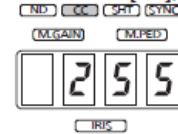   - Block 1 of the IP address appears.

Display/set block 1
Display/set block 2
Display/set block 3
Display/set block 4

Press to select
the IP address

Press to switch the block   Press to confirm

Press to exit setup mode (hold down)   Press to select the
menu number
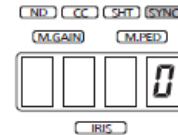
2. **Press <SAVE/LOAD> to select [CC], [SHT], and [SYNC].**
   - The display changes in the order of block 1, block 2, block 3, and block 4.
   - When changing the IP address, press <UP> or <DOWN> to change the setting for each block.

3. **Press <SHUTTER> to confirm the IP address setting.**
   - Pressing <SHUTTER> while block 4 is displayed confirms the setting.

- To exit setup mode, hold down <EXIT> for about 2 seconds.
- If the IP address setting value has been changed, the unit will restart automatically when you exit setup mode. If the setting value has not been changed, the unit will not restart.
- To make other settings, press <SELECT> to select a menu number.

11 Set subnet mask

1. **Press <SELECT> to select menu number [11].**
   - Block 1 of the subnet mask appears.

Display/set block 1
Display/set block 2
Display/set block 3
Display/set block 4

Press to select
the subnet mask

Press to switch the block   Press to confirm

Press to exit setup mode (hold down)   Press to select the
menu number

2. **Press <SAVE/LOAD> to select [CC], [SHT], and [SYNC].**

- The display changes in the order of block 1, block 2, block 3, and block 4.
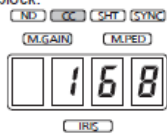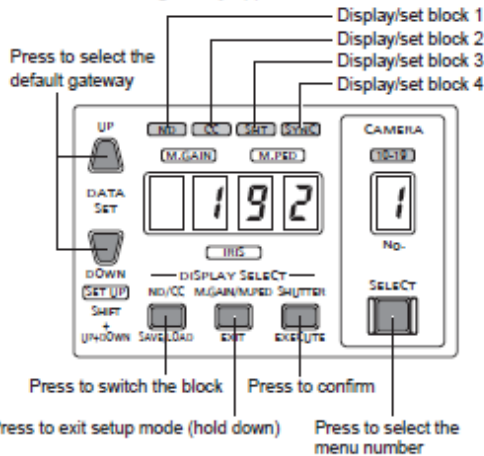- When changing the subnet mask, press <UP> or <DOWN> to change the setting for each block.

3. **Press <SHUTTER> to confirm the subnet mask setting.**

- Pressing <SHUTTER> while block 4 is displayed confirms the setting.

- To exit setup mode, hold down <EXIT> for about 2 seconds.
- If the subnet mask setting value has been changed, the unit will restart automatically when you exit setup mode. If the setting value has not been changed, the unit will not restart.
- To make other settings, press <SELECT> to select a menu number.

12 Set default gateway

1. Press <SELECT> to select menu number [12].
- Block 1 of the default gateway appears.

Display/set block 1
Display/set block 2
Display/set block 3
Display/set block 4
Press to select the default gateway
Press to switch the block   Press to confirm
Press to exit setup mode (hold down)   Press to select the menu number

2. Press <SAVE/LOAD> to select [CC], [SHT], and [SYNC].
- The display changes in the order of block 1, block 2, block 3, and block 4.
- When changing the default gateway, press <UP> or <DOWN> to change the setting for each block.

3. Press <SHUTTER> to confirm the default gateway setting.
- Pressing <SHUTTER> while block 4 is displayed confirms the setting.

- To exit setup mode, hold down <EXIT> for about 2 seconds.
- If the default gateway setting value has been changed, the unit will restart automatically when you exit setup mode. If the setting value has not been changed, the unit will not restart.
- To make other settings, press <SELECT> to select a menu number.

■ **Settable addresses**

192.	168.	0.	130
Block 1	Block 2	Block 3	Block 4

For the IP address, you can set a value within the following ranges.

Block 1	1 to 223
Block 2	0 to 255
Block 3	0 to 255
Block 4	1 to 254

However, "127.0.0.1" cannot be set even though it is within the above ranges.

For the subnet mask, you can set a value within the following ranges.

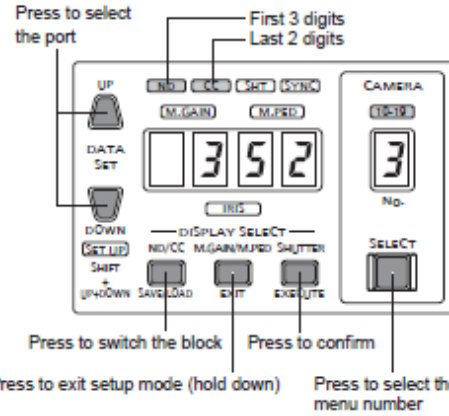| Block 1	0 to 255
Block 2	0 to 255
Block 3	0 to 255
Block 4	0 to 255

However, "0.0.0.0" and "127.0.0.1" cannot be set even though it is within the above ranges.

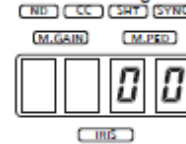For the default gateway, you can set a value within the following ranges.

Block 1	0 to 255
Block 2	0 to 255
Block 3	0 to 255
Block 4	0 to 255

13 Set port

1. Press <SELECT> to select menu number [13].
- The 3 digits of the port number appear.

Press to select the port
First 3 digits
Last 2 digits
Press to switch the block   Press to confirm
Press to exit setup mode (hold down)   Press to select the menu number

2. Press <SAVE/LOAD> to select [CC].
- The display changes to the next 2 digits.


- Press <UP> or <DOWN> to change the setting for each block.
- Press <SHUTTER> to confirm the setting.
- A value within the range of 35200 to 35599 can be set for the port number.

- To exit setup mode, hold down <EXIT> for about 2 seconds.
- If the port number setting value has been changed, the unit will restart automatically when you exit setup mode. If the setting value has not been changed, the unit will not restart.
- To make other settings, press <SELECT> to select a menu number.
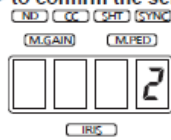
20 Set tally number

Set the camera number to assign to tally input.
1. Press <SELECT> to select menu number [20].
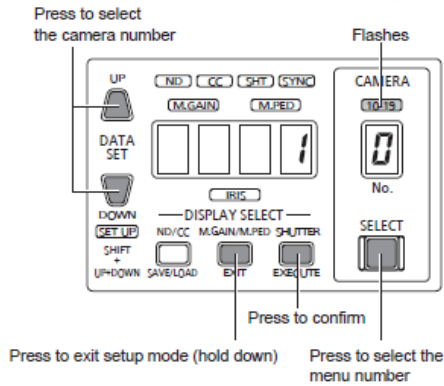
2. Press <UP> or <DOWN> to select a camera number and press <EXECUTE> to confirm the selection.

- To exit setup mode, hold down <EXIT> for about 2 seconds.
- To make other settings, press <SELECT> to select a menu number.

21 Set tally output

Set the sending of tally information from the unit to remote cameras.
1. Press <SELECT> to select menu number [21].