SONY®

Multi Purpose Camera

Operating Instructions

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

HDC-P50

Table of Contents

Overview

The HDC-P50 is a multi purpose camera equipped with a 2/3-inch, 3-chip 4K image sensor.
Its compact and lightweight enclosure enables shooting at various angles, and it supports 4K signal output.
The image sensor incorporates a global shutter function for accurate image reproduction without rolling shutter distortion or flashbanding.

Supported Formats

The unit supports 1080-59.94i, 1080-50i, 720-59.94P, and 720-50P formats as standard.
You can extend the formats that are supported by installing the following camera operating software (option).

For details, contact your Sony dealer or a Sony service representative.

Extended formats	Camera operating software					
	HZC-DFR50[*1]	HZC-HFR50	HZC-PRV50	HZC-PSF50	HZC-UHD50	HZC-UG50
1080-59.94P		○	○		○	
1080-50P		○	○		○	
1080-59.94i (×2)	○	○				
1080-50i (×2)	○	○				
1080-59.94P (×2)	○	○				
1080-59.94P (×3)/(×4)/(×6)		○				
1080-50P (×2)	○	○				
1080-50P (×3)/(×4)/(×6)		○				
1080-29.97PsF/23.98PsF/25PsF/24PsF				○		
4K-59.94P/29.97P/23.98P/50P/25P/24P					○	
HD (RGB 444)						○

○: Required camera operating software

- Limited subscription licenses are available for each software, with the period of validity of the license indicated by the last character of the name.
  If a character that does not denote a license period of validity is the last character, the license will not expire (indefinite).
  – M: Valid for 30 days
  – W: Valid for 7 days
  – P: Portable license, valid for 365 days
  * Portable licenses are available for HZC-UHD50/HZC-HFR50 software.

[*1] This option is not required if HZC-HFR50 is installed in the unit.

System Configuration

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

Standalone mode (camera only) operation

1) Menu settings cannot be configured by the RM-B170 Remote Control Unit.
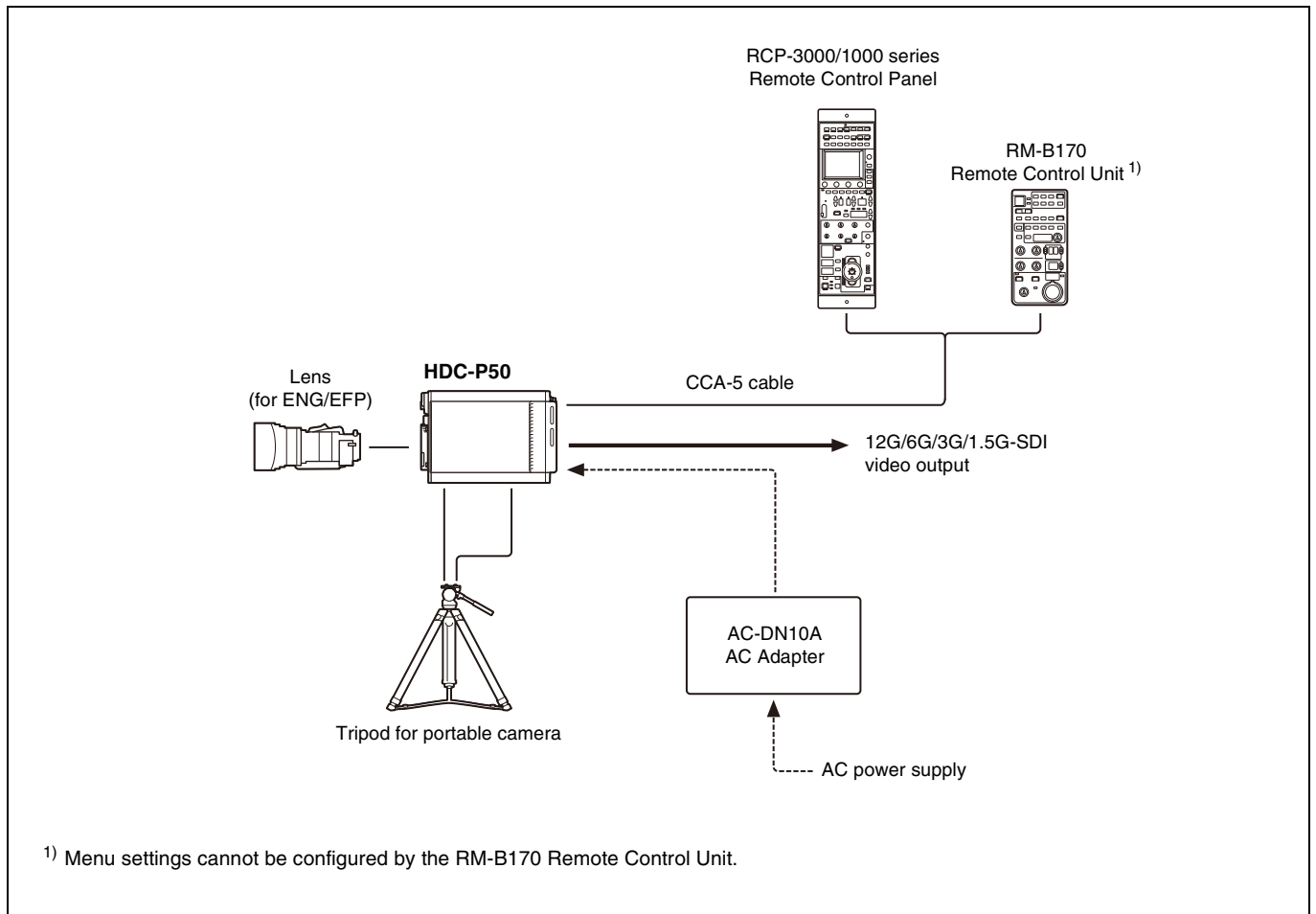
System operation (using LAN)

For details about configuring the unit, see *"Configuring Control System Connection Settings" (page 10)*.

HDC4300
Color Camera

HDCU4300
Camera Control Unit

Lens
(for ENG/EFP)

Optical fiber
cable

Hub

LAN cable

LAN
cable

RCP-3000/1000 series
Remote Control Panel

HDC5500/5000[*1]
Color Camera

HDCU5500/5000[*2]
Camera Control Unit

Lens
(for ENG/EFP)

Optical fiber
cable

LAN cable

LAN cable

HDC-P50

Lens
(for ENG/EFP)

MSU-1000 series
Master Setup Unit

AC-DN10A
AC Adapter

AC power supply

[*1] This diagram shows the HDC5500.

[*2] This diagram shows the HDCU5500.

Locations and Functions of Parts

Front
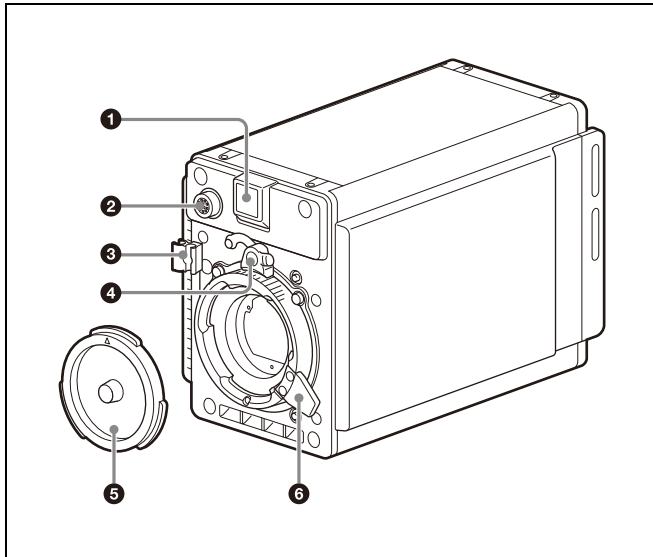
❶ Front tally lamp
The tally lamp lights when a call signal is generated in response to the pressing of a CALL button or a tally signal input to the EXT I/O connector.
You can attach the supplied number plate to display the camera number.

> **Note**
>
> The front tally function cannot be operated during a battery alarm operation.

❷ LENS connector (12-pin)
Connect the lens cable. The camera can control the lens functions through this cable.
Connect the lens cable so that ▲ is at the top.

❸ Lens cable clamp
To secure the cable of the lens (not supplied).

❹ Lens mount stopper rubber
After attaching a lens, attach the rubber to prevent the lens from becoming loose.
Before removing the lens, remove this rubber from the boss on the front panel.

❺ Lens mount cap
The cover can be removed by moving the lens lock lever upwards.
Always keep the lens mount covered with this cap when a lens is not attached.

❻ Lens lock lever
Move the lever down to secure the lens in the lens mount.

Rear

❶ Rear tally lamp
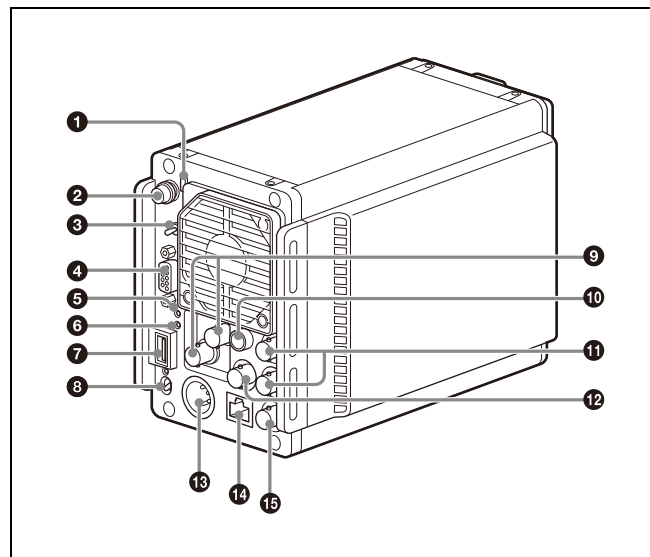The tally lamp lights when a call signal is generated in response to the pressing of a CALL button or a tally signal input to the EXT I/O connector.
The rear tally lamp also serves as a battery alarm function. If the voltage of the XLR input connected to the camera decreases, the rear tally lamp flashes. If the voltage approaches the limit, the rear tally lamp switches to high-speed flashing.
The alarm voltage for starting flashing can be set in the BEFORE END item of the BATTERY ALARM page of the MAINTENANCE menu, and the alarm voltage for switching to high-speed flashing can be set in the END item.

If you want to give priority to the tally function and call function, set the BATTERY ALARM item of the BATTERY ALARM page of the MAINTENANCE menu to OFF.

For details, see "MAINTENANCE Menu" (page 38).

❷ MENU SEL (menu select) knob/ENTER button (rotary encoder)
Turn the knob to select items and settings in the menu displayed on the monitor, then press the knob to apply (confirm) the selection.

❸ DISPLAY/MENU switch
Select the display on the monitor connected to the SDI MONI connector.
DISPLAY: Displays various textual information and markers, such as messages showing the camera settings and operating status, the center marker, and the safety zone marker, in addition to camera images.
● (OFF): Displays images only.
MENU: Displays menus for camera settings, in addition to camera images.

❹ EXT I/O (external input/output) connector (D-sub 9-pin)
Connect an external device.

For details about pin assignment, see "Pin Assignment" (page 52).

❺ REF IN indicator
Displays the status of the external sync reference input signal.

Green: Locked to the REFERENCE input.
Red: Not locked to the REFERENCE input.
Not lit: No REFERENCE signal is input.

❻ RCP/MSU indicator
Displays the status when a remote control panel or master setup unit is connected.
Lit: Indicates that an external control device (such as MSU-1000 series Master Setup Unit or RCP-3000/1000 series Remote Control Panel) is connected.
Flashing: Indicates that an external control device is not connected when using a network system connection.
Not lit: Indicates that an external control device is not connected.

For details, see "Configuring Control System Connection Settings" (page 10).

❼ USB connector (for connecting a USB drive)
Connect a USB drive to save or load the settings data file.

For details, see "Using a USB Drive" (page 50).

❽ CAMERA POWER switch and indicator
Turns the power ON/OFF.
ON: Set the switch to the **I** position. The indicator lights green.
OFF: Set the switch to the ⏻ position.

❾ SDI 3/4 (serial digital interface) connectors (BNC-type)
For 3G-SDI or HD-SDI signal output.

For details about signal settings, see "Setting the Camera Outputs" (page 10).

❿ REMOTE connector (round-type 8-pin)
Connect to external control device, such as the MSU-1000 series Master Setup Unit or RCP-3000/1000 series Remote Control Panel.

> **Note**
>
> When using a CCA-5 cable, it is recommended that you connect an external power supply to the RCP if the supply voltage to the unit is low or if connected over a long distance. For details about external power supplies, contact your Sony dealer.

⓫ SDI 1/2 (serial digital interface) connectors (BNC-type)
For 12G-SDI, 6G-SDI, 3G-SDI, or HD-SDI signal output.

For details about signal settings, see "Setting the Camera Outputs" (page 10).

⓬ GL/SYNC (external sync signal input/sync signal output) connector (BNC-type)
You can select whether to input an external sync reference signal (BB or tri-level) to sync the camera, or output a sync signal from the internal sync signal generator.

For details, see "MAINTENANCE menu" (page 26).

⓭ DC IN (DC power supply input) connector (XLR 4-pin)
Connect to the AC-DN10A AC Adapter to supply power to the camera.

⓮ ⤧ (LAN) connector (RJ-45 8-pin)
Used for LAN connection. Connect to a LAN hub (10BASE-T/100BASE-TX) using a LAN cable (shielded type, category 5 or higher).

> **Notes**
>
> • For safety, do not connect the connector for peripheral device wiring that might have excessive voltage to this port. Follow the instructions for this port.
> • When you connect the LAN cable of the unit to peripheral device, use a shielded-type cable to prevent malfunction due to radiation noise.

⓯ SDI MONI connector (BNC-type)
For HD-SDI signal output.

For details about signal settings, see "Setting the Camera Outputs" (page 10).

Preparations

Attaching a Lens

For information about handling lenses, refer to the operation manual for the lens.
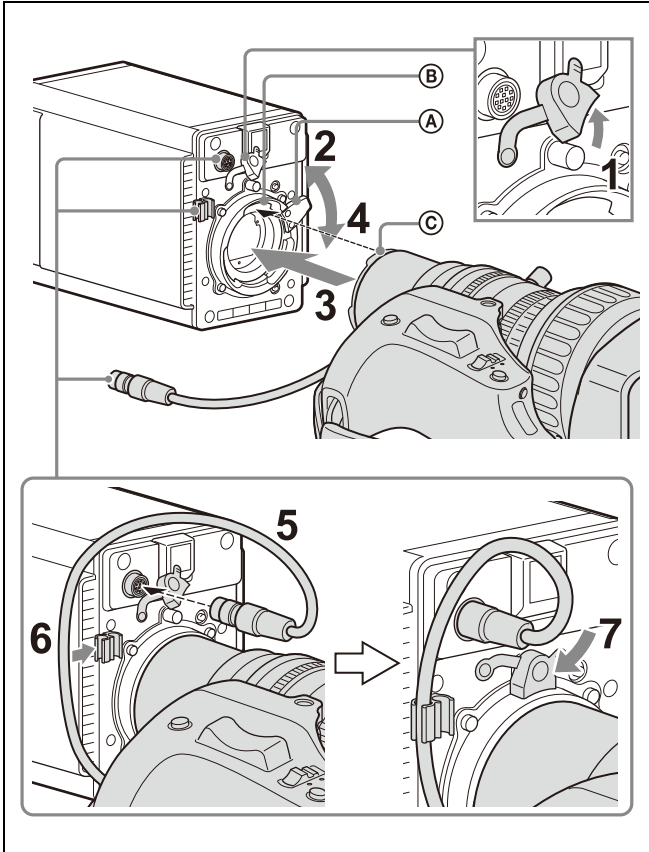
1 Remove the lens mount stopper rubber.

2 Push the lens lock lever Ⓐ upwards and remove the lens mount cap from the lens mount.

3 Align the lens alignment pin Ⓒ with the notch Ⓑ in the upper part of the lens mount and insert the lens into the mount.

4 While supporting the lens, push the lens lock lever Ⓐ downwards to secure the lens.

5 Connect the lens cable to the LENS connector.

6 Secure the lens cable with the cable clamp.

7 Reattach the lens mount stopper rubber.

Adjusting the Flange Focal Length

Adjustment of the flange focal length (the distance between the lens mount attachment plane and the imaging plane) is necessary in the following situations:
- The first time a lens is attached
- When changing lenses

- If the focus is not sharp at both telephoto and wide angle when zooming

The flange focal length can be more precisely adjusted by using the focus assist indicators.

For details about focus assist indicators, see "Displaying the focus assist indicators" (page 13).

The various parts of the lens used in adjusting the flange focal length are in different positions on different lenses. Refer to the operation manual for the particular lens.

Adjustment procedure

1 Set the iris control to manual, and open the iris fully.

2 Place a flange focal length adjustment chart approximately 3 meters (10 ft) from the camera and adjust the lighting to get an appropriate video output level.

About 3 meters (10 ft)
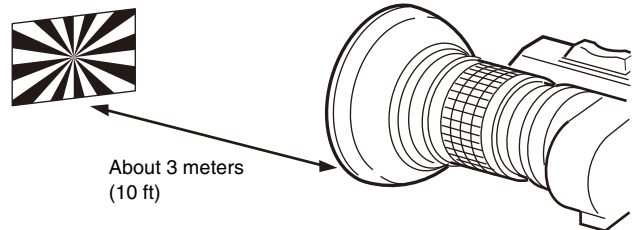
3 Loosen the Ff (flange focal length) ring lock screw.

4 With either manual or power zoom, set the zoom ring to telephoto.

5 Aim at the flange focal length adjustment chart and turn the focus ring to focus the image.

6 Set the zoom ring to wide angle.

7 Turn the Ff ring to bring the chart into focus. Take care not to move the distance ring.

8 Repeat steps 4 to 7 until the image is in focus at both telephoto and wide angle.

9 Tighten the Ff ring lock screw.

Mounting the Camera to a Tripod

Mounting screw positions are located in the same positions on the top and bottom of the unit.
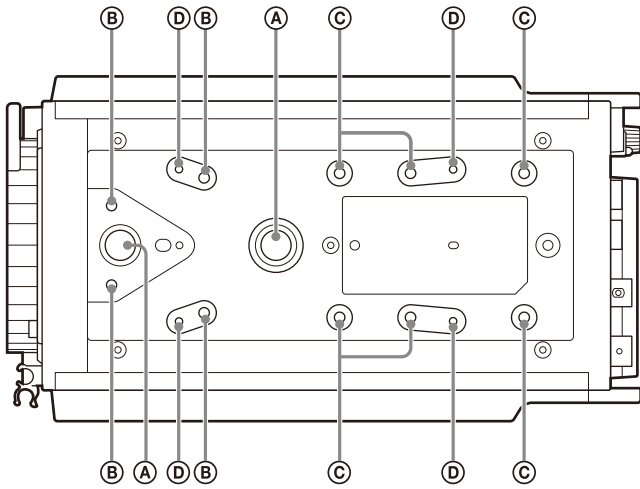
Ⓐ: 3/8-inch tripod screws (screw depth of 10 mm or less)

Ⓑ: M4 screws (screw depth of 5 mm or less)
Use to attach an optional V shoe (Sony part No.: A-8279-993-D).
Use K4×8 (4) thread locking screws (Sony part No.: 3-729-072-02). For details about purchasing parts, contact your Sony dealer or a Sony sales representative.

Ⓒ: M4 screws (screw depth of 6 mm or less)

Ⓓ: M2.6 screws (screw depth of 5 mm or less)

Note

Check that the size of the selected hole matches that of the screw of the tripod. If the screw hole and depth do not match, the unit will not be attached securely, which may cause the camera to fall off and may cause an injury.

When using the supplied camera mounting plate

Camera mounting plate
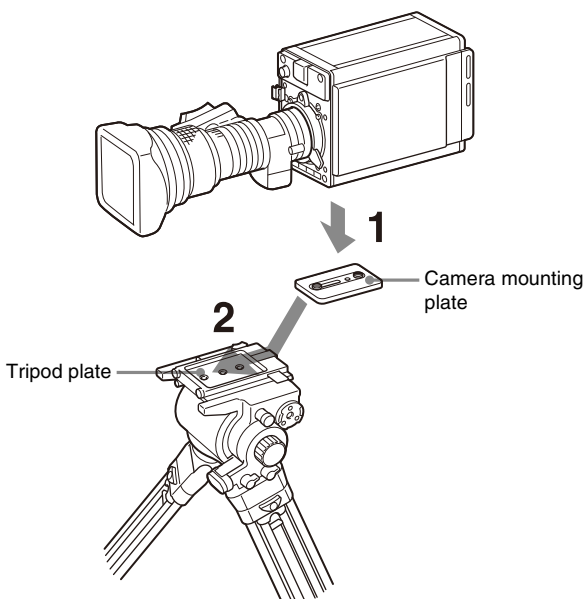
Tripod plate

1 Attach the camera mounting plate of the tripod directly to the camera.
(Two 3/8-inch tripod screws: screw depth of 10 mm or less)

2 Place the camera on the tripod and mount the camera by sliding it forward along the groove of the tripod plate until it clicks into place.

3 Make sure that the camera is securely attached by moving it back and forth.

Note

If the screws of the camera mounting plate are 1/4-inch tripod screws, use inch conversion screws (Sony Part No.: 4-170-419-02) to attach the plate. For details on purchasing inch conversion screws, and other information, contact your Sony dealer or a Sony service representative.

Adjustments and Settings for Shooting

Setting the Camera Outputs

You can change the video signal output from the camera using the menu.

> **Note**
> The display selected by the DISPLAY/MENU switch is always output on the SDI MONI connector.

Outputting the signal being shot (camera picture)

SDI MONI connector setting

Menu page	Item	Setting
<SDI OUT>	SDI MONI	MAIN [a]

a) HD-SDI output. A signal with OETF set to SDR and COLOR set to BT.709 is output.

Outputting the same image as a viewfinder

When the output setting of the SDI MONI connector of the camera is set to VF, you can obtain a signal that includes the same information as that displayed in a viewfinder according to the settings of the VF MARKER, CHARACTER, VF DETAIL, ZEBRA, etc.

> **Note**
> When configuring output of the same image as a viewfinder, the output is 1080i, regardless of the selected RESOLUTION setting.

Menu page	Item	Setting
<SDI OUT>	SDI MONI	VF [a]

a) A signal with OETF set to SDR and COLOR set to BT.709 is output.

Output from SDI 1 to SDI 4 connectors

For details, see "SDI 1 to SDI 4 connector settings" (page 43).

Paint Functions in HDR MODE

Some paint functions are disabled depending on the HDR MODE setting of the unit.
Disabled items can still be adjusted from the PAINT menu on the camera or RCP/MSU, but the settings are not applied to the HDR video that is output from SDI outputs.

Functions disabled during HDR output

Paint function	
Gamma	ON/OFF
	R/G/B/Master
	Step Gamma

Paint function	
Knee	ON/OFF
	Knee Point R/G/B/Master
	Knee Slope R/G/B/Master
	Auto Knee ON/OFF
	Auto Knee Point Limit
	Auto Knee Auto Slope
Detail	Mix Ratio
	Knee Apt ON/OFF
	Knee Apt Level
Skin Detail	Gate ON/OFF
White Clip	ON/OFF
	R/G/B/Master
Knee Saturation	ON/OFF
	Knee Sat
Gamma Table	Standard ON/OFF
	Standard
	Hyper ON/OFF
	Hyper
	Special ON/OFF
	Special
	User ON/OFF
	User

HDR Look Function

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

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

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

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

The function is configured on the <OUTPUT FORMAT> page.

Configuring Control System Connection Settings

The following three modes are supported for the control system of the unit.
- LEGACY mode: This setting mode is for when controlling the unit from an external control device via the REMOTE connector of the unit.
- BRIDGE mode: This setting mode is for when controlling the unit from an external control device (one-to-one) via the LAN connector of the unit.
- MCS mode: This setting is for when building a multi-camera system using multiple network compatible devices.

Use the MAINTENANCE menu to set the mode.

For details about menu operations, see "Menu Operations" (page 17).

Note

When the control system connection mode is changed, turn the power of all devices in the system off and then back on.

To connect in LEGACY mode

Set CNS MODE to LEGACY.

For details, see "CNS SETTINGS (MAINTENANCE menu)" (page 11).

Note

When a LAN cable will not be connected directly to the unit, even when building a camera network system using a LAN, set CNS MODE to LEGACY mode.

To connect in BRIDGE mode

1 **Set CNS MODE to BRIDGE.**

For details, see "CNS SETTINGS (MAINTENANCE menu)" (page 11).

2 **Configure settings related to TCP/IP.**

For details, see "TCP/IP SETTING (MAINTENANCE menu)" (page 11).

3 **Set the IP address of the unit as the "target IP address" of the MSU or RCP to be connected to the LAN.**

For details, see the operation manual of the MSU or RCP.

Note

BRIDGE mode does not support a multi-camera system.

To connect in MCS mode

In MCS mode, one MSU that can be called the master is required.
If there are multiple MSUs, set one of them to "master" and the others to "client."

1 **Set CNS MODE to MCS.**

For details, see "CNS SETTINGS (MAINTENANCE menu)" (page 11).

2 **Set CCU NO.**

For details, see "CNS SETTINGS (MAINTENANCE menu)" (page 11).

3 **Set MASTER IP ADDRESS.**

For details, see "CNS SETTINGS (MAINTENANCE menu)" (page 11).

4 **Configure settings related to TCP/IP.**

For details, see "TCP/IP SETTING (MAINTENANCE menu)" (page 11).

5 **Configure the settings of the MSU or RCP to connect by LAN.**

For details, see the operation manual of the MSU or RCP.

Notes

• When connecting the RCP to the unit with a CCA-5 cable and using a LAN cable for the connection device of that RCP, set CNS MODE to LEGACY mode.
• When connecting the RCP to the camera with a LAN cable and using a CCA cable for the connection device of that RCP, set CNS MODE to MCS mode.
• Set CCU NO to a number that is not a duplicate of any of the CCU device numbers in the system.

Menus used to configure the control system connection settings

For details about menu operations, see "Menu Operations" (page 17).

TCP/IP SETTING (MAINTENANCE menu)

```
<TCP/IP SETTING>  M15 TOP

IP ADDRESS:
      0.   0.   0.    0
SUBNET MASK:
      0.   0.   0.    0
DEFAULT GATEWAY:
      0.   0.   0.    0

                   SET
```

IP ADDRESS: Set the IP address to assign to the unit.
SUBNET MASK: Set the subnet mask of the network environment.
DEFAULT GATEWAY: Set the default gateway of the network environment if necessary.

CNS SETTINGS (MAINTENANCE menu)

```
<CNS SETTINGS>    M16 TOP

CNS MODE     : LEGACY

CCU NO       : 0

MASTER IP ADDRESS:
      0.   0.   0.    0

                   SET
```

CNS MODE: Set the control system connection mode.
  LEGACY: Set the mode to LEGACY mode.
  BRIDGE: Set the mode to BRIDGE mode.
  MCS: Set the mode to MCS mode.
CCU NO: Set the device number (camera number) of the unit when using MCS mode. Set a number that is not a duplicate of any of the CCU device numbers in the system.
MASTER IP ADDRESS: Set the IP address of the master device for MCS mode.

Resetting the network configuration information

```
<NETWORK RESET>   M17 TOP

     NETWORK ALL RESET
```
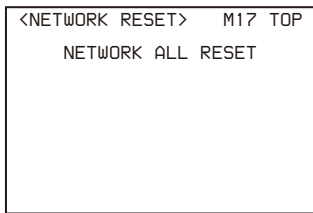
NETWORK ALL RESET: Restore the network related information to the default state.

Setting the Transport Conversion Function

This function converts the protocol of the camera network system to a simple protocol within the HDC-P50 for communication with the CNA-1 which uses a simple protocol. This enables camera control using transmission paths that do not support the camera network system protocol or have high latency.
You can also toggle this function on/off on the <SIMPLE PROTOCOL> page.

Supported networks

The Internet cannot be used. Use a secure, private network that is independent of other systems and networks, and which meets the following conditions.
- Latency: 1 second or lower (one way)
- Bandwidth: 100 Kbps or higher for each camera

Note

When the transport conversion function is enabled, the RCP/MSU indicator is disabled and is always lit.

For details about configuring the CNA-1, refer to the operation manual of the CNA-1.

Camera controlled directly from RCP (one-to-one)
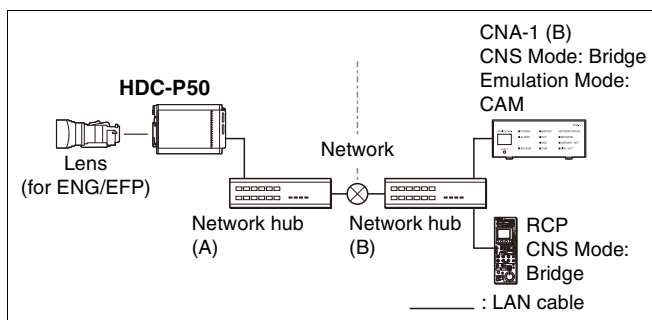
Transport conversion using RS422

1) Connect the REMOTE connector of the HDC-P50 to the EXT I/O connector of the CNA-1.
RS232 is not supported.
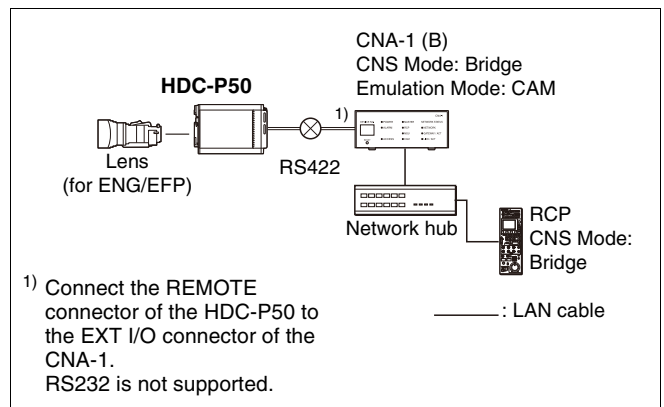
Setting the Focus Assist Functions

Using the OPERATION menu, the assist functions for easier focusing can be displayed on a monitor connected to the SDI MONI connector (VF setting).

Adding the VF detail signal

Adding the VF detail signal to sharp edges in the image on a monitor screen makes it easier to check the focusing condition by observing changes in the detail signal or in the color converted from the detail signal (color detail).
The focus setting where the detail signal becomes strongest is the best focus setting.

1 Turn on the camera.

2 Set the DISPLAY/MENU switch to MENU while holding the MENU SEL knob/ENTER button pressed.
The camera enters Menu mode, and "TOP" is displayed at the upper right corner of the screen.

3 Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to TOP and press the MENU SEL knob/ENTER button.
The TOP MENU screen appears.
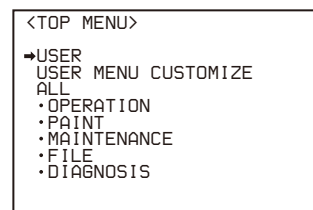
```
<TOP MENU>

➡USER
 USER MENU CUSTOMIZE
 ALL
 ·OPERATION
 ·PAINT
 ·MAINTENANCE
 ·FILE
 ·DIAGNOSIS
```

4 Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to OPERATION and press the MENU SEL knob/ENTER button.
The CONTENTS page of the OPERATION menu is displayed.

```
   CONTENTS       00  TOP
↓↓
➡01.<VF DISPLAY>
 02.<VF MARKER>
 03.<VF DETAIL>
 04.<DYNAMIC FOCUS>
 05.<FOCUS POSITION METER1>
 06.<FOCUS POSITION METER2>
 07.<FOCUS ASSIST>
 08.<ZEBRA>
 09.<CURSOR>
 10.<BOX CURSOR FILE>
```

5 **Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to <VF DETAIL> and press the MENU SEL knob/ENTER button.**
The <VF DETAIL> page is displayed.

```
<VF DETAIL>      ➔ 03 TOP

VF DETAIL :  ON       25%
 CRISP    :   0
 FREQUENCY:   9M
 FLICKER  :  OFF
 AREA     :  100%
 ZOOM LINK:  ON      50%
COLOR DETAIL :  (OFF) BLUE
 PEAK COLOR  :  OFF
 CHROMA LEVEL: 100%
DYNAMIC FOCUS:  ON
```
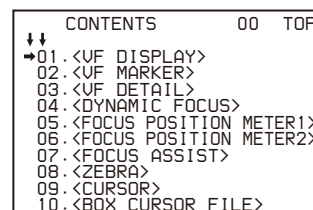
6 **Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the item to be set and press the MENU SEL knob/ENTER button.**

To use the VF detail signal
Set VF DETAIL to ON to activate the VF detail function to add the detail signal to sharp edges in the image. You can adjust the signal level (strength) in the range of 0 to 100% (default: 25%).
You can adjust the characteristics of the detail signal with the menu items below.
CRISP: Adjust to eliminate fine portions of the detail signal.
FREQUENCY: Change the detection band of sharp edges.
FLICKER: Turn ON/OFF the function to flicker the detail signal, which makes it easier to check the signal on a viewfinder screen.
AREA: To limit the area where to display the detail signal.
ZOOM LINK: Set the VF detail level at the WIDE position. (The VF detail level changes according to the zoom position.)

To use the color detail
Set COLOR DETAIL to ON to convert the VF detail signal to a specified color. This makes it easier to check the signal on an LCD screen, including a color viewfinder screen. The display color can be selected in the column next to ON.
You can adjust the coloring with the menu items below.
PEAK COLOR: Turn ON/OFF the function to change the color where the detail signal is strongest.
CHROMA LEVEL: To reduce the chroma components of the video signal (only for video signals on a viewfinder).

7 **Turn the MENU SEL knob/ENTER button to display the desired setting and press the MENU SEL knob/ENTER button.**

8 **To finish the adjustment, set the DISPLAY/MENU switch to OFF to exit Menu mode.**

Displaying the focus assist indicators

The focus assist indicator function extracts the irregularities of a subject and converts the integrated values to a level indicator, which shows the focus condition.

Level indicator (its position and operations can be adjusted.)
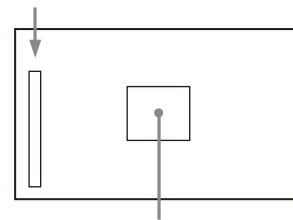
Area marker to display the detection area of the focus (its size and position can be adjusted.)

The focus setting where the indicator shows the maximum level is the best focus setting.
(The range of the indicator substantially changes depending on picture elements or shooting environments. Adjust it with GAIN and OFFSET as required.)

1 **Display the CONTENTS page of the OPERATION menu (referring to steps 1 to 4 in "Adding the VF detail signal").**

2 **Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to <FOCUS ASSIST> and press the MENU SEL knob/ENTER button.**
The <FOCUS ASSIST> page is displayed.

```
<FOCUS ASSIST>   ➔ 07 TOP

INDICATOR  :  OFF
 MODE      :  BOX    BOTTOM
 LEVEL     :  3      QUICK
 GAIN      :  50
 OFFSET    :  50
AREA MARKER:   ON
 SIZE      :  MIDDLE
 POSITION  :  CENTER
 POSITION H:  50
 POSITION V:  50
```
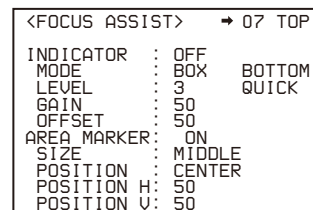
3 **Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the item to be set and press the MENU SEL knob/ENTER button.**

To use the level indicator
Setting INDICATOR to ON displays the level indicator on a viewfinder.
You can set the display format with the menu items below.
MODE: Set the type and position of the indicator.
LEVEL: Set the density and the response speed of the indicator.
GAIN: Set the sensitivity of the indicator.[1]
OFFSET: Set the offset of the focus detection value.[2]

[1] Normally, the sensitivity of the indicator is automatically set to the optimum value in conjunction with the AREA MARKER SIZE set value. Use this setting when an optimum sensitivity value cannot be obtained, depending on the shooting environment.

[2] Normally, the optimum offset is automatically set in conjunction with the AREA MARKER SIZE and MASTER GAIN set values. Use this setting when the optimum offset cannot be obtained, depending on the shooting environment.

To use the area marker

Setting AREA MARKER to ON displays the detection area of the focus as a marker on a viewfinder screen.

You can set the size and position of the detection area with the menu items below.

SIZE: Changes the detection area size. (If the area size is too large, both the subject and the background are included in the area, making the indicator display susceptible to deviate from the subject.)

POSITION: Roughly set the position of the detection area.

POSITION H: Finely adjust the position of the detection area in the horizontal direction.

POSITION V: Finely adjust the position of the detection area in the vertical direction.

4 **Turn the MENU SEL knob/ENTER button to display the desired setting and press the MENU SEL knob/ENTER button.**

5 **To finish the adjustment, set the DISPLAY/MENU switch to OFF to exit Menu mode.**

Note

When displaying the focus assist indicators, check that the flange focal length has been precisely adjusted.

For details about the flange focal length, see "Adjusting the Flange Focal Length" (page 8).

Displaying the focus position meter

The focus position meter function allows you to graphically display the registered focus position (marker) and the current focus position (index) graphically on the viewfinder screen.

Current focus position (index)

Registered focus position (marker)
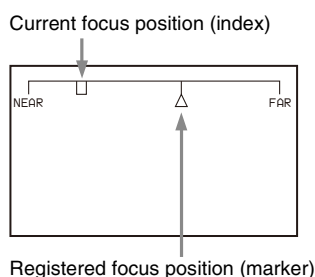
You can set the focus to the registered point easily by adjusting the focus until the index position overlaps the marker position (adjusted state). In the adjusted state, you can display a color frame and marker name on the viewfinder screen.

1 **Display the CONTENTS page of the OPERATION menu (referring to steps 1 to 4 in "Adding the VF detail signal").**

2 **Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to <FOCUS POSITION METER1> or <FOCUS POSITION METER2>, then press the MENU SEL knob/ENTER button.**

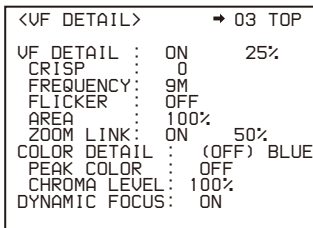The <FOCUS POSITION METER1> page or <FOCUS POSITION METER2> page is displayed.

```
<FOCUS POSITION METER1> 05 TOP

FOCUS POSITION METER: ON
  NEAR LIMIT   : 100 (0~999)
  FAR LIMIT    : 923 (0~999)
  DIRECTION    : HOLIZONTAL
  SIZE         : NORMAL
  RULED LINE   :  ON
  INDEX COLOR  : WHITE
  INDEX WIDTH  : 1
  MARKER WIDTH : 1

CURRENT FOCUS DIST :_5.7M 18.7ft
                     236 (0~999)
```

3 **Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the item to be set and press the MENU SEL knob/ENTER button.**

To use the focus position meter

Setting FOCUS POSITION METER to ON displays the focus position meter on the viewfinder screen.

You can set the display format with the <FOCUS POSITION METER1> page items below.

NEAR LIMIT: Set the NEAR edge of the focus position meter.

FAR LIMIT: Set the FAR edge of the focus position meter.

The focus position range to display varies depending on the NEAR LIMIT and FAR LIMIT settings. The full range is displayed by setting NEAR LIMIT to 0 and FAR LIMIT to 999.

DIRECTION: Select whether to display the meter horizontally at the top of the screen or vertically on the right edge of the screen.

SIZE: Set the size of the meter.

RULED LINE: Turn the display of guide lines on the meter on/off.

INDEX COLOR: Set the color of the index.

INDEX WIDTH: Set the width of the index.

MARKER WIDTH: Set the width of the marker.

To set the adjustment sensitivity and display content

You can set the adjustment sensitivity and configure the display in the adjusted state using ADJUSTED SIGN on the <FOCUS POSITION METER2> page.

SENSE: Set the adjustment sensitivity. Increasing the value increases the sensitivity (making determination of adjusted state more precise).

NAME DISP: Turn the display of the marker name in the adjusted state on/off (DISPLAY screen only).

FRAME DISP: Turn the display of a color frame (adjustment frame) on the screen in the adjusted state on/off.

FRAME WIDTH: Set the width of the adjustment frame.

To configure the marker display settings

You can set the marker display using MARKER CONFIG on the <FOCUS POSITION METER2> page.

REG: Register a marker at the index position.

DISP: Turn the marker display on/off.

COLOR: Set the color of the marker. This also sets the color of the adjustment frame.

NAME: Set the name of the marker.

**POS:** Adjust the marker position manually.

4 **Turn the MENU SEL knob/ENTER button to display the desired setting and press the MENU SEL knob/ENTER button.**

5 **To finish the adjustment, set the DISPLAY switch to OFF to exit Menu mode.**

Setting the Dynamic Focus Function Detail

This sets the detail of the dynamic focus indicator.

The dynamic focus function is enabled when shooting in 4K.

The dynamic focus function adds a marking indicator, derived from the luminance signal and color signal, to the area where 4K resolution signal is being output. This is used for effectively displaying the 4K image focus point.

1 Display the CONTENTS page of the OPERATION menu (referring to steps 1 to 4 in "Adding the VF detail signal").

2 Turn the MENU SEL knob/ENTER button to align the arrow marker (➡) to <DYNAMIC FOCUS> and press the MENU SEL knob/ENTER button.
The <DYNAMIC FOCUS> page is displayed.

```
<DYNAMIC FOCUS>  ➡ 04 TOP

DYNAMIC FOCUS: ON
FREQUENCY    : EXTRA-LOW
ZOOM LINK    : OFF MODE3 100%
CRISP        :    6

LEVEL        : MIDDLE

PEAK COLOR   : YELLOW
THRESHOLD    :   50
COLOR LEVEL  :   19
```

3 Turn the MENU SEL knob/ENTER button to align the arrow marker (➡) to the item to be set and press the MENU SEL knob/ENTER button.

To use dynamic focus
Setting DYNAMIC FOCUS on the <VF DETAIL> page or this page to ON displays markings, derived from the luminance signal and color signal, in the region where a 4K resolution image is obtained.
You can set the marking detail with the menu items below.
FREQUENCY: Set the bandwidth of the 4K resolution high-frequency signal to detect to one of four options. It is set to (AUTO) when ZOOM LINK is ON.
ZOOM LINK: Automatically adjusts the dynamic focus function to appropriate characteristics according to the zoom position. Four modes are available for selection to match the lens being used. It also sets the level at the WIDE position mark.
CRISP: Adjust to eliminate fine portions of the detail signal.
LEVEL: Set the brightness level of the marking signal to add.
PEAK COLOR: Set the color added to the marking indicator where the detected value exceeds a fixed level.
THRESHOLD: Set the threshold value for displaying PEAK COLOR.
COLOR LEVEL: Set the saturation of the color of the PEAK COLOR indicator.

4 Turn the MENU SEL knob/ENTER button to display the desired setting and press the MENU SEL knob/ENTER button.

**5** To finish the adjustment, set the DISPLAY switch to OFF to exit Menu mode.

Setting the VF Dynamic Contrast Function

Emphasizing the contrast in the image on the viewfinder screen makes it easier to check the focusing condition for high brightness areas and for subjects with low contrast levels. You can also toggle this function on/off on the <VF DYNAMIC CONTRAST> page.

1 Turn on the camera.

2 Set the DISPLAY switch to MENU while holding the MENU SELECT knob pressed.
The camera enters Menu mode, and "TOP" is displayed at the upper right corner of the screen.

3 Turn the MENU SELECT knob to align the arrow marker (➡) to "TOP" and press the MENU SELECT knob.
The TOP MENU screen appears.

```
<TOP MENU>

➡USER
 USER MENU CUSTOMIZE
 ALL
 ·OPERATION
 ·PAINT
 ·MAINTENANCE
 ·FILE
 ·DIAGNOSIS
```

4 Turn the MENU SELECT knob to align the arrow marker (➡) to OPERATION and press the MENU SELECT knob.
The CONTENTS page of the OPERATION menu is displayed.

```
   CONTENTS        00  TOP
↓↓
 01.<VF DISPLAY>
 02.<'!'IND>
 03.<VF MARKER>
 04.<VF DETAIL>
 05.<DYNAMIC FOCUS>
 06.<FOCUS POSITION METER1>
 07.<FOCUS POSITION METER2>
➡08.<FOCUS ASSIST>
 09.<ZEBRA>
 10.<CURSOR>
 11.<VF DYNAMIC CONTRAST>
 12.<BOX CURSOR FILE>
 13.<SPIRIT LEVEL>
 14.<VF OUT>
```

5 Turn the MENU SELECT knob to align the arrow marker (➡) to <VF DYNAMIC CONTRAST> and press the MENU SELECT knob.
The <VF DYNAMIC CONTRAST> page is displayed.

```
<VF DYNAMIC CONTRAST>  08 TOP

DYNAMIC CONTRAST: OFF
 GAIN    :    0%
 FILTER  : WIDE
 MODE    : HIGHLIGHT
```

6 Turn the MENU SELECT knob to align the arrow marker (➡) to the item to be set and press the MENU SELECT knob.

To use the VF dynamic contrast signal
Set DYNAMIC CONTRAST to ON to add the contrast signal in the image. You can adjust the GAIN in the range of 0 to 100%.
You can adjust the characteristics of the contrast signal with the menu items below.
FILTER: Adjust the selection range of the contrast extraction target pixel.
MODE: Selection of contrast signal addition mode. LINEAR adjusts the contrast of the entire image. HIGHLIGHT emphasizes the contrast of the high brightness range. FOGGY emphasizes the contrast of the image which is hazy and in low contrast.

7 Turn the MENU SELECT knob to display the desired setting and press the MENU SELECT switch.

8 To finish the adjustment, set the DISPLAY switch to OFF to exit Menu mode.

Monitor Screen Status Display

Besides the video image, a monitor connected to the SDI MONI connector (VF setting) can display text and messages showing the camera settings and operation status, as well as items such as a center marker or safety zone marker.

When the DISPLAY/MENU switch is set to DISPLAY

Items set to ON using the menu or related switches will be displayed on the upper and lower edges of the screen.
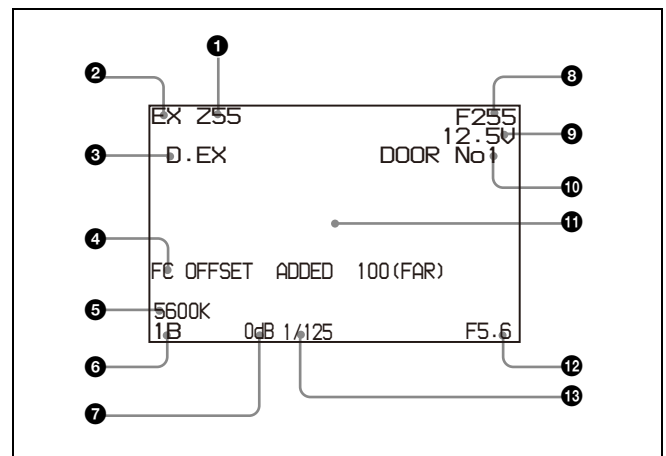
❶ Zoom position
Indicates the approximate position of the zoom lens variator between wide angle (0) and telephoto (999).
Display in millimeters can also be selected.

❷ Lens extender
"EX" is displayed when a lens extender is in use.

❸ Digital extender
"D.EX" is displayed when a digital extender is in use.

❹ Follow focus indicator
Displayed if an offset is superimposed when follow focus is enabled.

❺ 5600K mode
Displayed when 5600K is set to ON.

❻ Filter
Displays the type of filter currently selected. The number (1, 2, 3, 4, 5) indicates the ND filter, and the letter (A, B, C, D) indicates the CC filter selection.

❼ Gain value
Indicates the current gain setting (dB).

❽ Focus position
Shows the focus position of a zoom lens as a numeric value (0 to 999 (infinity)).
Display in meters and feet can also be selected.

> **Note**
>
> Displayed only when a serial communication lens is connected.

⑨ Battery voltage
Displays the battery voltage.

⑩ Focus position meter marker name
Displays the marker name of the focus position meter.

⑪ Setting change / adjustment process message area
This area is only used when the MESSAGE item of the menu is set to other than OFF.

⑫ F value
Indicates the lens F (iris opening) value.

⑬ Shutter/ECS
Displays the shutter/ECS status. Nothing is displayed if the electronic shutter is set to OFF.

STATUS screen

When the DISPLAY/MENU switch is set to DISPLAY, the following status screen is displayed while the MENU SEL knob/ENTER button is pressed.
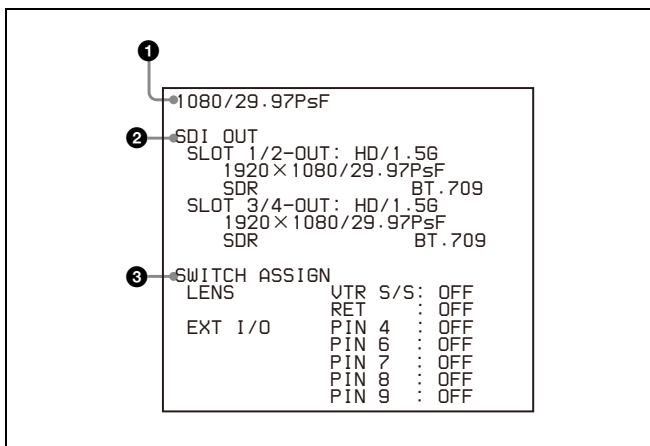
❶ System format indicator
Displays the current system format.

❷ SDI OUT format indicator
Displays the current signal format configured for the SDI OUT connector.

❸ SWITCH ASSIGN indicator
Displays which assignments are configured by the current assignable functions.

Menu Operations

The menu displayed on a monitor connected to the SDI MONI connector enables various settings of the camera to be configured.
The following controls are used to operate the menus.
Turn the MENU SEL knob/ENTER button on the rear panel to select menu items or values, then press the knob to apply (confirm) the selection.

Rear
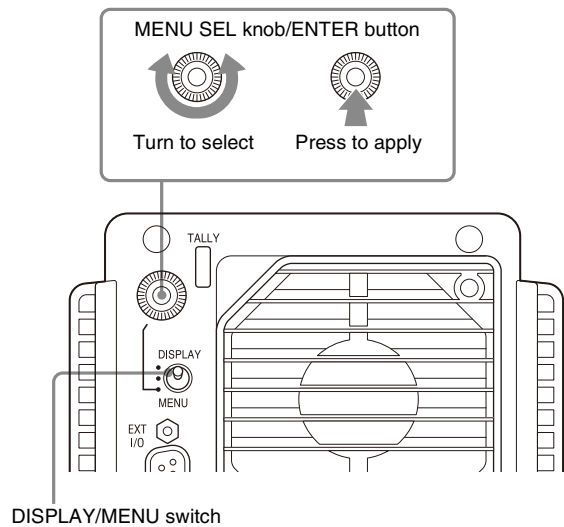
Starting Menu Operations

To display a menu page

Set the DISPLAY/MENU switch from OFF to MENU.
The menu page that was last operated will be displayed.
(If it is the first time, the CONTENTS page of the USER menu will be displayed.)

To display the TOP MENU screen

If you set the DISPLAY/MENU switch from OFF to MENU while holding the MENU SEL knob/ENTER button pressed, "TOP" is displayed at the upper right corner of the screen. Selecting it displays the TOP MENU screen, which lists the available menus, and you can select the menus on this screen.

TOP MENU screen
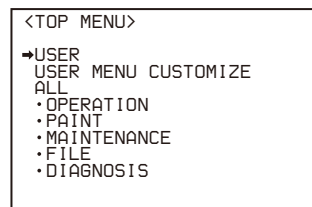
Menu structure

USER menu

This menu can include menu pages selected from among the OPERATION, PAINT, MAINTENANCE, FILE, and DIAGNOSIS menus, for convenience. Changing, adding, and deleting pages can be performed with the USER MENU CUSTOMIZE menu.

USER MENU CUSTOMIZE menu

This menu allows you to edit the USER menu.

For details, see "Editing the USER Menu" (page 19).

ALL menu

This menu permits you to control all items of the OPERATION menu, PAINT menu, MAINTENANCE menu, FILE menu, and DIAGNOSIS menu as a single menu.

OPERATION menu

This menu contains items for camera operators to operate the camera. It mainly permits viewfinder and switch settings.

PAINT menu

This menu contains items for making detailed image adjustments while using a waveform monitor to monitor the waveforms output from the camera. Support of a video engineer is usually required to use this menu.
Although you can also use an external remote control panel or master setup unit to set the items in this menu, the menu is effective when using the camera by itself outdoors.

MAINTENANCE menu

This menu contains items for performing camera maintenance operations, such as changing the system or setting infrequently used "paint" items.

FILE menu

This menu is for performing file operations, such as writing or clearing the reference file.

DIAGNOSIS menu

This menu enables you to check the self-diagnostic information.

To select a menu on the TOP MENU screen

1 Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the desired menu indication.

2 Press the MENU SEL knob/ENTER button.
The CONTENTS page or the last operated page of the selected menu is displayed.

Selecting Pages

When selecting a page from a CONTENTS page

Example: CONTENTS page of the OPERATION menu

If the screen can be scrolled, arrows will indicate the direction of scrolling.


```
      CONTENTS      00  TOP
 ↓↓
    01.<VF DISPLAY>
    02.<VF MARKER>
    03.<VF DETAIL>
 ➡  04.<DYNAMIC FOCUS>
    05.<FOCUS POSITION METER1>
    06.<FOCUS POSITION METER2>
    07.<FOCUS ASSIST>
    08.<ZEBRA>
    09.<CURSOR>
    10.<BOX CURSOR FILE>
```

➡ marker

Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the page to set, then press the MENU SEL knob/ENTER button.

The selected page is displayed.

Page number

```
<VF DETAIL>      ➡ 03  TOP

VF DETAIL :  ON      25%
 CRISP     :   0
 FREQUENCY:   9M
 FLICKER   :  OFF
 AREA      :  70%
 ZOOM LINK:   ON    100%
COLOR DETAIL :  ON  BLUE
 PEAK COLOR  :  ON
 CHROMA LEVEL: 100%
```
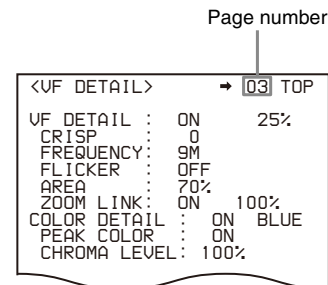
To change the displayed page

1 Check that the arrow marker (➡) is located at the left of the page number, then press the MENU SEL knob/ENTER button.
The ➡ marker changes to a flashing "**?**" (question mark).

Flashes

```
<VF DETAIL>      ? 03  TOP

VF DETAIL :  ON      25%
 CRISP     :   0
 FREQUENCY:   9M
 FLICKER   :  OFF
 AREA      :  70%
 ZOOM LINK:   ON    100%
COLOR DETAIL :  ON  BLUE
 PEAK COLOR  :  ON
 CHROMA LEVEL: 100%
```

2 Turn the MENU SEL knob/ENTER button to flip through the pages.

3 When the desired page is displayed, press the MENU SEL knob/ENTER button.
The "**?**" mark changes back to the arrow marker (➡), and operations with the displayed page are enabled.

To return to the TOP MENU screen

Move the arrow marker (➡) to TOP at the top right of the menu page then press the MENU SEL knob/ENTER button.

```
<VF DETAIL>        03➜TOP

VF DETAIL : ON       25%
 CRISP    :  0
 FREQUENCY:  9M
 FLICKER  : OFF
 AREA     : 70%
 ZOOM LINK: ON   100%
COLOR DETAIL :  ON  BLUE
 PEAK COLOR  :  ON
 CHROMA LEVEL: 100%
```
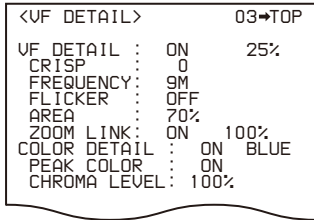
The TOP MENU screen appears.

Setting Menu Items

If a "**?**" mark is flashing at the left of the page number, press the MENU SEL knob/ENTER button to change it to the arrow marker (➜). Setting on the displayed page is enabled.

1 **Turn the MENU SEL knob/ENTER button to move the arrow marker (➜) to the desired item.**

2 **Press the MENU SEL knob/ENTER button.**
The ➜ marker changes to a flashing "**?**" (question mark).

3 **Turn the MENU SEL knob/ENTER button to change the setting value.**
When the knob is rotated quickly, the values will change quickly. When rotated slowly, the values will change slowly.

To interrupt settings
Set the DISPLAY/MENU switch to OFF to turn off the menu screen display.
The setting operation can be restarted by setting the DISPLAY/MENU switch back to MENU.

4 **Press the MENU SEL knob/ENTER button.**
The "**?**" mark changes back to the arrow marker (➜), and the new setting will be registered.

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

To specify a character string

When you press the MENU SEL knob/ENTER button with the arrow marker (➜) pointing to an item for which a character string, such as a file ID, is to be specified, a cursor and the list of selectable characters are displayed.
The displayed cursor can be moved by rotating the MENU SEL knob/ENTER button.

1 **Set the cursor to the position where you wish to enter a character, then press the MENU SEL knob/ENTER button.**
Another cursor appears on the character list.

2 **Set the cursor to the character to be entered and press the MENU SEL knob/ENTER button.**
Repeat steps **1** and **2**.

By selecting INS on the line below the character list, you can enter a space at the cursor position.

Selecting DEL deletes the character at the cursor position.

You can return to step **1** without changing the character by selecting RET.

If you enter the permitted maximum number of characters (up to the stop mark at the right end of the line), the cursor moves to ESC on the line below the character list.

To register the new string you have set, select END and press the MENU SEL knob/ENTER button.

To restore the previous string, select ESC and press the MENU SEL knob/ENTER button.

To return a menu item to its standard value

Select the menu item to be returned to its standard value, then hold the MENU SEL knob/ENTER button pressed for 3 seconds while the arrow marker (➜) is displayed.

To end menu operations

Set the DISPLAY/MENU switch to OFF.

Editing the USER Menu

You can select desired pages and items from the OPERATION, PAINT, MAINTENANCE, FILE, and DIAGNOSIS menus and register them in the USER menu. If you register pages or frequently used items in the USER menu, you can quickly call and use them.

The following pages are included in the factory-set USER menu:

Menu page	USER menu No.	Source menu / page No.	
<VF OUT>	U01	OPERATION	13
<VF DETAIL>	U02	OPERATION	03
<FOCUS ASSIST>	U03	OPERATION	07
<DYNAMIC FOCUS>	U04	OPERATION	04
<VF DISPLAY>	U05	OPERATION	01
<VF MARKER>	U06	OPERATION	02
<CURSOR>	U07	OPERATION	09
<ZEBRA>	U08	OPERATION	08
<OUTPUT FORMAT>	U09	MAINTENANCE	M09
<SDI OUT>	U10	MAINTENANCE	M10
<ROM VERSION>	U11	DIAGNOSIS	D02

For the items on each page, see the corresponding source menu page in the table in "Menu List" (page 23).

The USER MENU CUSTOMIZE menu allows you to configure a USER menu that consists only of pages and items that you need by adding, deleting or replacing pages.

Editing by items

The USER MENU CUSTOMIZE menu allows you to add a new page to the USER menu and add desired items to the page.
While the EDIT page contains factory-preset items, the USER 1 EDIT to USER 19 EDIT pages are all blank in their initial state. You can register up to 10 items, including blank lines, on each of these pages.

To add items to a page
Proceed as follows.

1 **Set the DISPLAY/MENU switch from OFF to MENU while holding the MENU SEL knob/ENTER button pressed.**
The TOP MENU screen appears.

2 **Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to USER MENU CUSTOMIZE, then press the MENU SEL knob/ENTER button.**
If this is the first time the USER MENU CUSTOMIZE menu has been displayed, the CONTENTS page of the menu appears.

```
         CONTENTS      E00 TOP
↓↓
 01.EDIT PAGE
 02.USER 1 EDIT
→03.USER 2 EDIT
 04.USER 3 EDIT
 05.USER 4 EDIT
 06.USER 5 EDIT
 07.USER 6 EDIT
 08.USER 7 EDIT
 09.USER 8 EDIT
 10.USER 9 EDIT
```

If the USER MENU CUSTOMIZE menu has been used before, the page last accessed appears.

3 **If the CONTENTS page is displayed, turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to any of USER 1 EDIT to USER 19 EDIT, then press the MENU SEL knob/ENTER button to display the page.**
If a different page is displayed, turn the MENU SEL knob/ENTER button until the desired page appears, then press the MENU SEL knob/ENTER button to select the page.

Example: When you select the USER 2 EDIT page

```
        USER 2 EDIT  E03 TOP

→
```

4 **Move the arrow marker (➡) to the item to be added (this operation is unnecessary if no item exists on the page, as shown in the figure above), then press the MENU SEL knob/ENTER button.**
The EDIT FUNCTION screen appears.

```
        EDIT FUNCTION    ESC
→INSERT
 MOVE
 DELETE
 BLANK
```

5 **Move the arrow marker (➡) to INSERT and press the MENU SEL knob/ENTER button.**
The page with the last item added appears.

```
 <SW STATUS>      P01 ESC
 FLARE   :→ ON
 GAMMA   :  ON
 BLK GAM :  OFF
 KNEE    :  ON
 WHT CLIP:  ON
 DETAIL  :  ON
 LVL DEP :  ON
 SKIN DTL:  OFF
 MATRIX  :  OFF
```

6 **Add the items.**

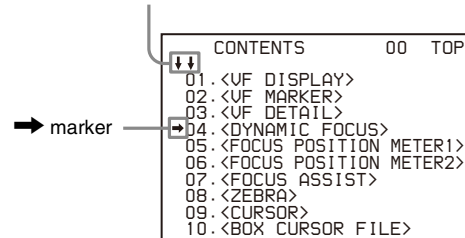① Turn the MENU SEL knob/ENTER button until the page that has the desired items appears, then press the MENU SEL knob/ENTER button.

② Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the desired item, then press the MENU SEL knob/ENTER button.

The USER 2 EDIT page appears again, displaying the newly added item.

7 **Add the remaining items by repeating steps 4 to 6.**
You can add up to 10 items on one page.

To delete items from a page
Proceed as follows.

1 **Move the arrow marker (➡) to the item to be deleted, then press the MENU SEL knob/ENTER button.**
The EDIT FUNCTION screen appears.

2 **Select DELETE, then press the MENU SEL knob/ENTER button.**
The previously displayed page appears again, and the message "DELETE OK? YES➡NO" appears at the upper right.

3 **To delete, turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to YES, then press the MENU SEL knob/ENTER button.**

To change the order of items on a page
Proceed as follows.

1 **Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the item to be moved, then press the MENU SEL knob/ENTER button.**
The EDIT FUNCTION screen appears.

2 **Select MOVE, then press the MENU SEL knob/ENTER button.**
The previously displayed page appears again.

3 **Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the position where you wish to move the item, then press the MENU SEL knob/ENTER button.**

```
        ITEM MOVE        ESC
↓↓
→VF OUT    : COLOR

 VF DETAIL : OFF

 MARKER    :  ON
 CURSOR    : OFF
 ZEBRA SW  : OFF
           :     1
●ASSIGNABLE : OFF
```

The item selected in step **1** moves to the position above the item that you selected in step **3**.
In the above example, "ASSIGNABLE" is moved to the top and the other items are moved down one line.

To insert a blank line
Proceed as follows.

1 **Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the item above which you wish to insert a blank line.**
The EDIT FUNCTION screen appears.

2 **Select BLANK, then press the MENU SEL knob/ENTER button.**
The previously displayed page appears again, and a blank line is inserted above the specified item.

Note

You cannot insert a blank line on a page where 10 items have already been registered.

Editing by pages
You can add a page to the USER menu, delete a page from the USER menu, or replace pages, using the EDIT PAGE of the USER MENU CUSTOMIZE menu.

To add a page
Proceed as follows.

1 **Select USER MENU CUSTOMIZE on the TOP MENU screen.**
If this is the first time the USER MENU CUSTOMIZE menu has been displayed, the CONTENTS page of the menu appears.
If the USER MENU CUSTOMIZE menu has been used before, the page last accessed appears.

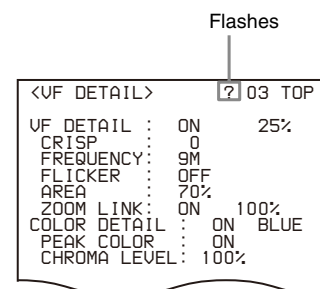**2** **If the CONTENTS page is displayed, turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to EDIT PAGE, then press the MENU SEL knob/ENTER button to display the EDIT PAGE screen.**
If a different page is displayed, turn the MENU SEL knob/ENTER button until the EDIT PAGE screen appears, then press the MENU SEL knob/ENTER button to select the page.

```
       EDIT PAGE    E01 TOP
↓↓
  01.<VF DISPLAY>
→02.<VF MARKER>
  03.<VF DETAIL>
  04.<DYNAMIC FOCUS>
  05.<FOCUS POSITION METER1>
  06.<FOCUS POSITION METER2>
  07.<FOCUS ASSIST>
  08.<ZEBRA>
  09.<CURSOR>
  10.<BOX CURSOR FILE>
```

3 **Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to where you wish to add the page, then press the MENU SEL knob/ENTER button.**
The EDIT FUNCTION screen appears.

```
     EDIT FUNCTION    ESC

→INSERT
 MOVE
 DELETE
```

4 **Select INSERT then press the MENU SEL knob/ENTER button.**
The selection screen appears.

```
     CONTENTS        ESC
↓↓
→01.USER 1
  02.USER 2
  03.USER 3
  04.USER 4
  05.USER 5
  06.USER 6
  07.USER 7
  08.USER 8
  09.USER 9
  10.USER 10
```

5 **Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the desired page, then press the MENU SEL knob/ENTER button.**
This adds the new item above the item selected in step **3**.

To cancel addition of a page
Before pressing the MENU SEL knob/ENTER button in step **5**, turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to ESC at the top right of the screen, then press the MENU SEL knob/ENTER button.
The EDIT PAGE screen appears again.

To delete a page
Proceed as follows.

1 **On the EDIT PAGE screen of the USER MENU CUSTOMIZE menu, move the arrow marker (➡) to the page to be deleted, then press the MENU SEL knob/ENTER button.**
The EDIT FUNCTION screen appears.

2 **Select DELETE, then press the MENU SEL knob/ENTER button.**
The previously displayed page appears again, and the message "DELETE OK? YES➡NO" appears at the upper right.

```
    ITEM DELETE      ESC
  DELETE OK?   YES→NO
  01.<VF DISPLAY>
  02.<VF MARKER>
  03.<VF DETAIL>
  04.<DYNAMIC FOCUS>
●05.<FOCUS POSITION METER1>
  06.<FOCUS POSITION METER2>
  07.<FOCUS ASSIST>
  08.<ZEBRA>
  09.<CURSOR>
  10.<BOX CURSOR FILE>
```

3 **To delete, turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to YES, then press the MENU SEL knob/ENTER button.**

To move a page
Proceed as follows.

1 **Display the EDIT PAGE screen of the USER MENU CUSTOMIZE menu. Turn the MENU SEL knob/ENTER button to move the arrow marker (➡) to the page that you wish to move.**
The EDIT FUNCTION screen appears.

2 **Select MOVE, then press the MENU SEL knob/ENTER button.**
The EDIT PAGE screen appears again.

3 **Turn MENU SEL knob/ENTER button to move the arrow marker (➡) to the position to which you wish to move.**

```
        ITEM MOVE          ESC
 ↓↓
  01.<VF DISPLAY>
  02.<VF MARKER>
  03.<VF DETAIL>
  04.<DYNAMIC FOCUS>
 →05.<FOCUS POSITION METER1>
  06.<FOCUS POSITION METER2>
  07.<FOCUS ASSIST>
  08.<ZEBRA>
  09.<CURSOR>
 ●10.<BOX CURSOR FILE>
```

4 **Press the MENU SEL knob/ENTER button.**

The page selected in step **1** is moved to the position
selected in step **3**.

In the above example, <BOX CURSOR FILE> moves to
the "05" position, and the <FOCUS POSITION METER1>
and following pages move down one line.

Menu List

This section shows the menus displayed on a monitor connected to the SDI MONI connector.
- For the pages that have been registered in the USER menu at the factory, the USER menu page numbers are indicated in parenthesis in the No. column of the tables.
- A CONTENTS page (numbered 00) is also provided for each menu.

Menu Tree

OPERATION menu

```
VF DISPLAY ─────────── EX
01 (U04)              ZOOM
                           ├─ DISP
                           └─ FORM
                      FOCUS
                           └─ FORM
                      ND
                      CC
                      5600K
                      IRIS
                      D.EXT
                      GAIN
                      SHUTTER
                      BATT
                      MESSAGE
                      FOLLOW F
                      FOCUS NAME
VF MARKER ──────────── MARKER
02 (U05)              LEVEL
                      CENTER
                      SAFETY ZONE
                      EFFECT
                      ASPECT
                           ├─ MASK
                           └─ SAFETY
VF DETAIL ──────────── VF DETAIL
03 (U02)                   ├─ CRISP
                           ├─ FREQUENCY
                           ├─ FLICKER
                           ├─ AREA
                           └─ ZOOM LINK
                      COLOR DETAIL
                           ├─ PEAK COLOR
                           └─ CHROMA LEVEL
                      DYNAMIC FOCUS
DYNAMIC FOCUS ──────── DYNAMIC FOCUS
04                    FREQUENCY
                      ZOOM LINK
                      CRISP
                      LEVEL
                      PEAK COLOR
                      THRESHOLD
                      COLOR LEVEL
FOCUS POSITION METER1 ─ FOCUS POSITION METER
05                         ├─ NEAR LIMIT
                           ├─ FAR LIMIT
                           ├─ DIRECTION
                           ├─ SIZE
                           ├─ RULED LINE
                           ├─ INDEX COLOR
                           ├─ INDEX WIDTH
                           └─ MARKER WIDTH
                      CURRENT FOCUS DIST
```

```
FOCUS POSITION METER2 ─ ADJUSTED SIGN
06                         ├─ SENSE
                           ├─ NAME DISP
                           ├─ FRAME DISP
                           └─ FRAME WIDTH
                      MARKER CONFIG
                           ├─ REG MKR1, 2, 3
                           ├─ DISP MKR1, 2, 3
                           ├─ COLOR MKR1, 2, 3
                           ├─ NAME MKR1, 2, 3
                           └─ POS MKR1, 2, 3
                      CURRENT FOCUS DIST
FOCUS ASSIST ───────── INDICATOR
07 (U03)                   ├─ MODE
                           ├─ LEVEL
                           ├─ GAIN
                           └─ OFFSET
                      AREA MARKER
                           ├─ SIZE
                           ├─ POSITION
                           ├─ POSITION H
                           └─ POSITION V
ZEBRA ──────────────── ZEBRA
08 (U08)              ZEBRA1
                           ├─ LEVEL
                           └─ WIDTH
                      ZEBRA2
CURSOR ─────────────── CURSOR
09 (U07)                   ├─ LEVEL
                           ├─ BOX/CROSS
                           ├─ H POSITION
                           ├─ V POSITION
                           ├─ WIDTH
                           └─ HEIGHT
                      BOX MEMORY
                           ├─ H POSI
                           ├─ V POSI
                           ├─ WIDTH
                           └─ HEIGHT
BOX CURSOR FILE ────── 1:
10                    2:
                      3:
                      4:
                      5:
                      STORE
                      READ (USB → CAM)
                      WRITE (CAM → USB)
VF DYNAMIC CONTRAST ── DYNAMIC CONTRAST
11                         ├─ GAIN
                           ├─ FILTER
                           └─ MODE
```

```
├─ SPIRIT LEVEL ──────────── INDICATOR
│  12                        ├─ MODE
│                            ├─ REVERSE
│                            ├─ SCALE
│                            ├─ H POSITION
│                            └─ V POSITION
│                         ANGLE
│                         └─ OFFSET
│                            ├─ SET ZERO ANGLE
│                            └─ CLEAR
├─ VF OUT ─────────────── VF OUT
│  13 (U01)                CHARACTER LEVEL
├─ SWITCH ASSIGN ──────── LENS
│  14                      ├─ VTR S/S
│                          └─ RET
├─ EXT I/O ────────────── PIN 4
│  15                      PIN 6
│                          PIN 7
│                          PIN 8
│                          PIN 9
│                               ├─ MIC GAIN
│                               └─ MIC +48V
└─ OPERATOR FILE ──────── READ (USB → CAM)
   16                      WRITE (CAM → USB)
                           PRESET
```

PAINT menu

```
├─ SW STATUS ──────────── FLARE
│  P01                     GAMMA
│                          BLK GAM
│                          KNEE
│                          WHT CLIP
│                          DETAIL
│                          LVL DEP
│                          SKIN DTL
│                          MATRIX
├─ VIDEO LEVEL ────────── WHITE
│  P02                     BLACK
│                          FLARE
│                          GAMMA
│                          V MOD
│                          FLARE
│                          V MOD
│                          TEST
├─ COLOR TEMP ─────────── WHITE
│  P03                          └─ AUTO WHITE
│                                  BALANCE
│                          COLOR TEMP
│                          BALANCE
│                          ATW
│                               └─ SPEED
│                          MASTER
├─ GAMMA ──────────────── LEVEL
│  P04                     COARSE
│                          TABLE
│                          GAMMA
│                          TEST
├─ BLACK GAMMA ────────── LEVEL
│  P05                     RANGE
│                          TEST
├─ SATURATION ─────────── SATURATION
│  P06                     LOW KEY SAT
│                          RANGE
│                          TEST
├─ KNEE ───────────────── K POINT
│  P07                     K SLOPE
│                          KNEE
│                          KNEE MAX
│                          KNEE SAT
│                          AUTO KNEE
│                               ├─ POINT LIMIT
│                               └─ SLOPE
│                          ABS
├─ WHITE CLIP ─────────── W CLIP
│  P08                     └─ ABS
└─ DETAIL 1 ───────────── DETAIL
   P09                     LEVEL
                                └─ HFR RATIO
                           LIMITER M
                           LIMITER WHT
                           LIMITER BLK
                           CRISP
                                └─ HFR RATIO
                           LEVEL DEPEND
                           ABS
```

```
DETAIL 2 ─────────── H/V RATIO
P10               ── FREQ
                  ── MIX RATIO
                  ── KNEE APT
                  ── DTL H/V MODE
                  ── INDEPENDENT
                  ── ABS

HD DETAIL ────────── DETAIL
P11               ── LEVEL
                  ── LIMITER M
                  ── LIMITER WHT
                  ── LIMITER BLK
                  ── CRISP
                  ── LEVEL DEPEND
                  ── H/V RATIO
                  ── FREQ
                  ── MIX RATIO
                  ── KNEE APT
                  ── ABS

4K DETAIL ────────── DETAIL
P12               ── LEVEL
                  ── LIMITER M
                  ── LIMITER WHT
                  ── LIMITER BLK
                  ── CRISP
                  ── LEVEL DEPEND
                  ── H/V RATIO
                  ── FREQ
                  ── MIX RATIO
                  ── KNEE APT
                  ── ABS

SKIN DETAIL ──────── SKIN DTL
P13               ── SKIN GATE
                  ── ABS
                  ── NATURAL SKINDTL
                  ── ZOOM LINK
                          ── TELE
                          ── WIDE
                  ── CH SW
                  ── HUE
                  ── PHASE
                  ── WIDTH
                  ── SAT
                  ── LEVEL
                  ── Y LIMIT

USER MATRIX ──────── R-G
P14               ── R-B
                  ── G-R
                  ── G-B
                  ── B-R
                  ── B-G
                  ── MATRIX
                          ── PRESET
                          ── USER
                          ── MULTI
                  ── ADAPTIVE MATRIX
                          ── LEVEL

MULTI MATRIX ─────── PHASE
P15               ── HUE
                  ── SAT
                          ── ALL CLEAR
                  ── GATE
                  ── MATRIX
                          ── PRESET
                          ── USER
                          ── MULTI

SHUTTER ──────────── SHUTTER
P16               ── ECS FREQ


NOISE SUPPRESSION ──────── SUPPRESSION
P17

FLICKER REDUCTION ──────── REDUCTION
P18                     ── POWER LINE FREQUENCY
                        ── MODE
                                ── GAIN
                                ── OFFSET
                                ── ACM TYPE

HDR OPERATION ──────── HDR MODE
P19                 ── SDR GAIN
                            ── HDR CONTRAST
                    ── HDR BLACK OFFSET
                    ── HDR KNEE
                            ── POINT
                            ── SLOPE
                    ── HDR WHITE CLIP
                            ── LEVEL
                    ── HDR BLACK CLIP
                    ── HDR BLACK COMPRESSION

OPTICAL FILTER ──────── ND
P20                   ── CC

SCENE FILE ──────── 1
P21             ── 2
               ── 3
               ── 4
               ── 5
               ── STORE
               ── STANDARD
               ── READ (USB → CAM)
               ── WRITE (CAM → USB)
               ── FILE ID
               ── CAM CODE
               ── DATE
               ── DISSOLVE
                       ── SPEED
```

MAINTENANCE menu

AUTO SETUP — M01
- AUTO BLACK
- AUTO WHITE
- AUTO LEVEL
- TEST

WHITE SHADING — M02
- V SAW
- V PARA
- H SAW
- H PARA
- WHITE

BLACK SHADING — M03
- V SAW
- V PARA
- H SAW
- H PARA
- BLK SET
- BLACK
- MASTER GAIN

OHB MATRIX — M04
- OHB MATRIX
- MATRIX

AUTO IRIS — M05
- AUTO IRIS
- WINDOW
- OVERRIDE
- IRIS LEVEL
- APL RATIO
- IRIS GAIN
- IRIS CLOSE

LENS1 — M06
- F NO. DISP
- AF DISPLAY
- ALAC
- F DROP COMP
  - MAX GAIN
  - DROP POINT
  - ROUNDNESS
  - STORE LENS FILE
- ARIA
  - GAIN LIMIT

LENS2 — M07
- REMOTE CONTROL
  - CONTROL MODE
- FOLLOW FOCUS
  - OFFSET ADJUST SENS
  - OFFSET CANCEL GAIN

CALL/TALLY — M08
- FRONT TALLY
  - BRIGHTNESS
  - CALL
- REAR TALLY
  - BRIGHTNESS
- CURRENT CALL

OUTPUT FORMAT — M09 (U09)
- CURRENT CALL
- RESOLUTION
- FREQUENCY
  - OETF
  - LOOK
  - COLOR
- BIT DEPTH

SDI OUT — M10 (U10)
- SLOT1/2-OUT
- SLOT3/4-OUT
- SDI MONI
  - EMB AUDIO
- HD-HFR(P) 12G PID

GL/SYNC — M11
- IN/OUT
  - SYNC-OUT
  - V-PHASE
  - H-PHASE

GENLOCK — M12
- REFERENCE
- GENLOCK
  - STATUS
  - FORMAT
- PHASE
  - V
  - H

DATE — M13
- DATE/TIME
- DATE FORMAT

BATTERY ALARM — M14
- BEFORE END
- END
- BATTERY ALARM

TCP/IP SETTING — M15
- DHCP
- IP ADDRESS
- SUBNET MASK
- DEFAULT GATEWAY
- SET
- MAC ADDRESS

CNS SETTING — M16
- CNS MODE
- CCU NO
- MASTER IP ADDRESS
- SET

NETWORK RESET — M17
- NETWORK ALL RESET

TSL UMD — M18
- TSL UMD
- PORT NUMBER
- PACKET STATUS

SIMPLE PROTOCOL — M19
- TRANSPORT CONVERTER MODE
  - PORT

OTHERS — M20
- FAN MODE
- BARS
- WHITE SETUP MOD
- DIAMOND MARKER
- HFR CHANNEL MARK
- HD DOWNCONV FILTER

OPTION KEY — M21
- READ (USB → CAM)
- EFFECTIVE FUNCTION

FILE menu

- OPERATOR FILE — F01
  - READ (USB → CAM)
  - WRITE (CAM → USB)
  - PRESET
  - STORE PRESET FILE
  - CLEAR PRESET FILE
- SCENE FILE — F02
  - 1
  - 2
  - 3
  - 4
  - 5
  - STORE
  - STANDARD
  - READ (USB → CAM)
  - WRITE (CAM → USB)
  - FILE ID
  - CAM CODE
  - DATE
  - DISSOLVE
    - SPEED
- REFERENCE — F03
  - STORE FILE
  - STANDARD
    - ALL PRESET
  - READ (USB → CAM)
  - WRITE (CAM → USB)
  - FILE ID
  - CAM CODE
  - DATE
- USER GAMMA — F04
  - READ (USB → CAM)
  - PRESET
  - FILE ID
  - CAM CODE
  - DATE
- LENS FILE — F05
  - STORE FILE
  - No.
  - NAME
  - F NO
  - CENTER MARKER
    - H POS
    - V POS
    - STORE
- OHB FILE — F06
  - STORE FILE
- MATRIX FILE — F07
  - CUSTOM PRESET MATRIX
    - STORE FILE
      - 1
      - 2
      - 3
      - 4
      - 5
    - CLEAR ALL
    - READ (USB → CAM)
    - WRITE (CAM → USB)
    - FILE ID
    - CAM CODE
    - DATE
- BOX CURSOR FILE — F08
  - 1:
  - 2:
  - 3:
  - 4:
  - 5:
  - STORE
  - READ (USB → CAM)
  - WRITE (CAM → USB)

DIAGNOSIS menu

- BOARD STATUS — D01
  - OHB
  - DPR
  - SY
  - VIF
  - HOURS METER
- ROM VERSION — D02 (U11)
  - CAMERA APP
  - OS
  - UPDATER
  - SY
  - VIF
- NET STATUS 1 — D03
  - NETWORK
  - LINK CONDITION
  - MAC ADDRESS
- NET STATUS 2 — D04
  - DHCP
  - IP ADDRESS
  - SUBNET MASK
  - DEFAULT GATEWAY
  - MAC ADDRESS
- SERIAL NO — D05
  - MODEL
  - NO
  - EFFECTIVE FUNCTION
- POWER SUPPLY STATUS — D06
  - CAM CONSUMPTION

OPERATION Menu

OPERATION			
Page name Page No.	**Item**	**Settings**	**Description**
<VF DISPLAY> 01 (U04)	EX	**ON**, OFF, 3S	
	ZOOM	ON, **OFF**, 3S	
	DISP	**LEFT**, RIGT	
	FORM	**999**, mm	Sets the ZOOM display format. **999:** Displayed in the range 0 to 999 (no units). **mm:** Displayed in millimeters.
	FOCUS	ON, **OFF**, 3S	Valid only when a serial lens is used.
	FORM	**999**, m, ft	Sets the FOCUS display format. **999**: Displayed in the range 0 to 999 (no units). **m:** Displayed in meters. **ft:** Displayed in feet.
	ND	**ON**, OFF, 3S	
	CC	**ON**, OFF, 3S	
	5600K	**ON**, OFF, 3S	
	IRIS	**ON**, OFF, 3S	
	D.EXT	**ON**, OFF, 3S	
	GAIN	**ON**, OFF, 3S	
	SHUTTER	**ON**, OFF, 3S	
	BATT	ON, **OFF**, 3S	
	MESSAGE	**ALL**, AT, WRN, OFF	**ALL:** Displays all messages. **WRN:** Displays warning messages and higher. **AT:** Displays Auto Setup messages and higher.
	FOLLOW F	**ON**, OFF, 3S	
	FOCUS NAME	OFF, 1S, 3S, 5S, **ON**	Sets whether to show/hide the marker name and sets the display time.
<VF MARKER> 02 (U05)	MARKER	**ON**, OFF	Sets MARKER to ON/OFF.
		WHITE, BLACK, DOT	
	LEVEL	MIN, 1 to 10, **4**	
	CENTER	ON, **OFF**	
		1, 2, 3, 4	**1:** Full cross **2:** Full cross with a hole **3:** Center **4:** Center with a hole
	SAFETY ZONE	ON, **OFF**	
		80.0, **90.0**, 92.5, 95.0%	
	EFFECT	ON, **OFF**	
	ASPECT	ON, **OFF**	
		16:9, 15:9, 14:9, 13:9, **4:3**	
	MASK	ON, **OFF**	
		0 to 15, **12**	Sets the darken level outside the aspect area.
	SAFETY	ON, **OFF**	Sets the safety marker in Aspect mode.
		80.0, **90.0**, 92.5, 95.0%	

OPERATION			
Page name Page No.	**Item**	**Settings**	**Description**
\<VF DETAIL\> 03 (U02)	VF DETAIL	**ON**, OFF	
		0 to 100%, **25%**	
	CRISP	−99 to +99, **0**	
	FREQUENCY	**9M**, 14M, 18M	
	FLICKER	ON, **OFF**	
	AREA	**100%**, 70%, 60%, 50%, 40%, 30%, 20%, 10%	
	ZOOM LINK	**ON**, OFF	
		0 to 100%, **50%** (5% increments)	
	COLOR DETAIL	ON, **OFF**	
		YELLOW, RED, **BLUE**	
	PEAK COLOR	ON, **OFF**	
	CHROMA LEVEL	100%, 50%, **25%**, 0%	
	DYNAMIC FOCUS	**OFF**, ON, (OFF)	**(OFF):** HD format
\<DYNAMIC FOCUS\> 04	DYNAMIC FOCUS	**OFF**, ON, (OFF)	**(OFF):** HD format
	FREQUENCY	**EXTRA-LOW**, LOW, MIDDLE, HIGH, (AUTO)	Sets the bandwidth of the 4K resolution high-frequency signal to detect. **(AUTO):** Displayed when ZOOM LINK is ON.
	ZOOM LINK	ON, **OFF**	
		MODE1, MODE2, MODE3, MODE4	Sets characteristics according to the zoom position.
		0 to 100%, **50%** (5% increments)	Sets the level at the WIDE position mark.
	CRISP	**0** to 99%	Adjust to eliminate fine portions of the detected signal.
	LEVEL	**LOW**, MIDDLE, HIGH, VERY-HIGH	Sets the brightness level of the marking signal.
	PEAK COLOR	OFF, RED, BLUE, GREEN, BROWN, PURPLE, **YELLOW**	
	THRESHOLD	**0** to 99%	Sets the threshold level for adding color specified using PEAK COLOR.
	COLOR LEVEL	0 to 99%, **50%**	Sets the saturation of the color of the PEAK COLOR indicator.
\<FOCUS POSITION METER1\> 05	FOCUS POSITION METER	**OFF**, ON	Shows/hides the focus position meter.
	NEAR LIMIT	**0** to 999	Sets the NEAR edge of the focus position meter.
	FAR LIMIT	0 to **999**	Sets the FAR edge of the focus position meter.
	DIRECTION	**HORIZONTAL**, VERTICAL	Sets the display direction of the focus position meter. **HORIZONTAL:** Horizontal display at the top of the screen. **VERTICAL:** Vertical display along the right edge of the screen.
	SIZE	**NORMAL**, HALF	Sets the display size of the focus position meter.
	RULED LINE	**OFF**, ON	Shows/hides ruled lines.
	INDEX COLOR	BLACK, **WHITE**	Sets the index color.
	INDEX WIDTH	**1** to 5	Sets the index width.
	MARKER WIDTH	**1** to 9	Sets the width of the marker axis portion.
	CURRENT FOCUS DIST		Displays the current focus distance (display only).

Page name Page No.	Item	Settings	Description
<FOCUS POSITION METER2> 06	ADJUSTED SIGN		
	SENSE	1 to 5, **2**	Sets the adjustment sensitivity.
			Increasing the value increases the sensitivity.
	NAME DISP	OFF, 1S, 3S, 5S, **ON**	Sets whether to show/hide the marker name and sets the display time.
	FRAME DISP	OFF, 1S, 3S, 5S, **ON**	Sets whether to show/hide the adjustment frame and sets the display time.
	FRAME WIDTH	1 to 5, **2**	Sets the width of the adjustment frame.
	MARKER CONFIG		
	[REG] MKR1, 2, 3	Execute using ENTER.	Registers a marker at the current focus position.
			(Cannot be registered here if marker registration has been assigned to a dedicated switch.)
	[DISP] MKR1, 2, 3	**OFF**, ON	Shows/hides markers.
			(Cannot be registered here if marker registration has been assigned to a dedicated switch.)
	[COLOR] MKR1, 2, 3	**RED**, GREEN, BLUE, YELLOW, ORANGE, PURPLE, GRAY, BLACK, WHITE	Sets the color of triangular parts of the marker.
			(Cannot be registered here if marker registration has been assigned to a dedicated switch.)
	[NAME] MKR1, 2, 3	Max. 8 characters (Default value: MARKER 1 to 3)	Sets the text of the marker name. *See "To specify a character string" (page 19).*
	[POS] MKR1, 2, 3	**0** to 999	Sets the position of the marker.
	CURRENT FOCUS DIST		Displays the current focus distance (display only).
<FOCUS ASSIST> 07 (U03)	INDICATOR	ON, **OFF**	
	MODE	**BOX**, B&W, COL	
		BTM, LEFT, TOP, RIGHT	
	LEVEL	MIN, 1 to 10, **4**	
		QUICK, SMOOTH	
	GAIN	0 to 99, **50**	
	OFFSET	0 to 99, **50**	
	AREA MARKER	ON, **OFF**	
	SIZE	SMALL, **MIDDLE**, LARGE	
	POSITION	LEFT, **CENTER**, RIGHT	
	POSITION H	0 to 99, **50**	
	POSITION V	0 to 99, **50**	
<ZEBRA> 08 (U08)	ZEBRA	ON, **OFF**	
		1, 2, 1&2	
	ZEBRA1		
	LEVEL	50 to 109%, **70%**	
	WIDTH	0 to 30%, **10%**	
	ZEBRA2	50 to 109%, **100%**	

Page name Page No.	Item			Settings	Description
<CURSOR> 09 (U07)	CURSOR			ON, **OFF**	
		LEVEL		MIN, 1 to 10, **4**	
				WHITE, BLACK, DOT	
		BOX/CROSS		**BOX**, CROSS	
		H POSITION		0 to 99, **50**	
		V POSITION		0 to 99, **50**	
		WIDTH		0 to 99, **50**	
		HEIGHT		0 to 99, **50**	
	BOX MEMORY			1/2/3/4: **OFF**, ON	
		H POSI		1/2/3/4: 0 to 99, **50**	
		V POSI		1/2/3/4: 0 to 99, **50**	
		WIDTH		1/2/3/4: 0 to 99, **50**	
		HEIGHT		1/2/3/4: 0 to 99, **50**	
<BOX CURSOR FILE> 10	1:				Select BOX CURSOR FILE and enters a BOX CURSOR FILE name.
	2:				
	3:				Set the cursor to the left of the number when you select BOX CURSOR FILE.
	4:				Set the cursor to the right of the number when you enter a BOX CURSOR FILE name.
	5:				
					See "To specify a character string" (page 19).
	STORE				Stores a BOX CURSOR FILE name in the camera.
	READ (USB→CAM)				Transfers BOX CURSOR FILE from a USB drive to the camera.
	WRITE (CAM→USB)				Transfers BOX CURSOR FILE from the camera to a USB drive.
<VF DYNAMIC CONTRAST> 11	DYNAMIC CONTRAST			ON, **OFF**, (OFF)	"(OFF)" is displayed when BARS is ON.
		GAIN		0 to 100%, **30%**	
		FILTER		**NARROW**, MIDDLE, WIDE	
		MODE		LINEAR, **HIGHLIGHT**, FOGGY	
<SPIRIT LEVEL> 12	INDICATOR			ON, **OFF**	When this is set to ON, BOX MEMORY for <CURSOR> does not function.
		MODE		**1**, 2	Switches the display method of the indicator.
		REVERSE		**OFF**, ON	Inverts the movement of the indicator horizontally.
		SCALE		50% to 150%, **100%**	Adjusts the horizontal width of the indicator.
		H POSITION		0 to 99, **50**	
		V POSITION		0 to 99, **97**	
	ANGLE				Displays the inclination angle (display only).
		OFFSET		−90 to +90, **0**	
			SET ZERO ANGLE	Execute using ENTER.	Designates the current angle as level (0°).
			CLEAR	Execute using ENTER.	Sets OFFSET to 0.
<VF OUT> 13 (U01)	VF OUT			**COLOR**, Y, R, G, B	
	CHARACTER LEVEL			1 to 5, **4**	
<SWITCH ASSIGN> 14	LENS				Display only
	VTR S/S			**OFF**, FOCUS POS METER, FOCUS POS MKR1, FOCUS POS MKR2, FOCUS POS MKR3, FOCUS ASSIST, SPIRIT LEVEL, VF DETAIL, ZEBRA, DIGITAL EXTENDER, 5600K, VTR S/S	**Note** DIGITAL EXTENDER is enabled only when OUTPUT FORMAT is HD (excluding HFR).
	RET			**OFF**, FOCUS POS METER, FOCUS POS MKR1, FOCUS POS MKR2, FOCUS POS MKR3, FOCUS ASSIST, SPIRIT LEVEL, VF DETAIL, ZEBRA, DIGITAL EXTENDER, 5600K, VTR S/S	

OPERATION			
Page name Page No.	**Item**	**Settings**	**Description**
<EXT I/O> 15	PIN4	**OFF**, R-TALLY OUT, G-TALLY OUT, TALLY OUT, R-TALLY IN, G-TALLY IN, FOCUS POS METER, FOCUS POS MKR1, FOCUS POS MKR2, FOCUS POS MKR3, FOCUS ASSIST, SPIRIT LEVEL, VF DETAIL, ZEBRA, DIGITAL EXTENDER, 5600K, VTR S/S	Function assignment of Assignable pins on EXT I/O connector. **Note** DIGITAL EXTENDER is enabled only when OUTPUT FORMAT is HD (excluding HFR).
	PIN6	**OFF**, R-TALLY OUT, G-TALLY OUT, TALLY OUT, R-TALLY IN, G-TALLY IN, FOCUS POS METER, FOCUS POS MKR1, FOCUS POS MKR2, FOCUS POS MKR3, FOCUS ASSIST, SPIRIT LEVEL, VF DETAIL, ZEBRA, DIGITAL EXTENDER, 5600K, VTR S/S	
	PIN7	**OFF**, R-TALLY OUT, G-TALLY OUT, TALLY OUT, R-TALLY IN, G-TALLY IN, FOCUS POS METER, FOCUS POS MKR1, FOCUS POS MKR2, FOCUS POS MKR3, FOCUS ASSIST, SPIRIT LEVEL, VF DETAIL, ZEBRA, DIGITAL EXTENDER, 5600K, VTR S/S	
	PIN8	**OFF**, FOCUS POS METER, FOCUS POS MKR1, FOCUS POS MKR2, FOCUS POS MKR3, FOCUS ASSIST, SPIRIT LEVEL, VF DETAIL, ZEBRA, DIGITAL EXTENDER, 5600K, VTR S/S, MIC IN	Function assignment of Assignable pins on EXT I/O connector. (If MIC IN is set for either, MIC IN is also assigned on the other.)
	PIN9	**OFF**, FOCUS POS METER, FOCUS POS MKR1, FOCUS POS MKR2, FOCUS POS MKR3, FOCUS ASSIST, SPIRIT LEVEL, VF DETAIL, ZEBRA, DIGITAL EXTENDER, 5600K, VTR S/S, MIC IN	
	MIC GAIN	20dB, 30dB, 40dB, 50dB, **60dB**	
	MIC +48V	ON, **OFF**	
<OPERATOR FILE> 16	READ (USB→CAM)	Execute using ENTER.	Reads the operator file from a USB drive.
	WRITE (CAM→USB)	Execute using ENTER.	Writes the current settings of the operator file items to a USB drive.
	PRESET	Execute using ENTER.	Sets the operator file items to the preset values in internal memory.

PAINT Menu

PAINT			
Page name **Page No.**	**Item**	**Settings**	**Description**
<SW STATUS> P01	FLARE	**ON**, OFF	
	GAMMA	**ON**, OFF	
	BLK GAM	ON, **OFF**	
	KNEE	**ON**, OFF	
	WHT CLIP	**ON**, OFF	
	DETAIL	**ON**, OFF	
	LVL DEP	**ON**, OFF	
	SKIN DTL	ON, **OFF**	
	MATRIX	ON, **OFF**	
<VIDEO LEVEL> P02	WHITE	R/G/B: −99 to +99, **0**	R, G, B, and M (master) values can be independently set.
	BLACK	R/G/B/M: −99 to +99, **0**	(M cannot be set for WHITE.)
	FLARE	R/G/B/M: −99 to +99, **0**	
	GAMMA	R/G/B/M: −99 to +99, **0**	
	V MOD	R/G/B/M: −99 to +99, **0**	
	FLARE	**ON**, OFF	
	V MOD	**ON**, OFF	
	TEST	**OFF**, SAW, 10STEP	
<COLOR TEMP> P03	WHITE	R/G/B: −99 to +99, **0**	
	AUTO WHITE BALANCE	Execute using ENTER.	
	COLOR TEMP	0 K to 65535 K, **3200 K**	
	BALANCE	−99 to +99, **0**	
	ATW	ON, **OFF**	
	SPEED	1, **2**, 3, 4, 5	
	MASTER	−3.0 dB to +12.0 dB, **0.0 dB**	
<GAMMA> P04	LEVEL	R/G/B/M: −99 to +99, **0**	R, G, B, and M (master) values can be independently set.
	COARSE	0.35 to 0.90 (0.05 steps), **0.45**	
	TABLE	**STANDARD**, HYPER, USER	
		1, 2, 3, 4, **5**, 6, 7	With STANDARD or USER selected (only 1 to 5 are available for USER) **1:** Equivalent to a camcorder **2:** ×4.5 gain **3:** ×3.5 gain **4:** Equivalent to SMPTE-240M **5:** Equivalent to ITU-R709 **6:** ×5.0 gain **7:** ×5.0 − 709
		1, 2, 3, **4**	With HYPER selected **1:** 325% to 100% **2:** 460% to 100% **3:** 325% to 109% **4:** 460% to 109%
	GAMMA	**ON**, OFF	
	TEST	**OFF**, SAW, 10 STEP	
<BLACK GAMMA> P05	LEVEL	R/G/B/M: −99 to +99, **0**	R, G, B, and M (master) values can be independently set.
	RANGE	LOW, L.MID, H.MID, **HIGH**	
		ON, **OFF**	
	TEST	**OFF**, SAW, 10 STEP	

PAINT			
Page name Page No.	**Item**	**Settings**	**Description**
<SATURATION> P06	SATURATION	−99 to +99, **0**	
		ON, **OFF**	
	LOW KEY SAT	−99 to +99, **0**	
	RANGE	LOW, L.MID, H.MID, **HIGH**	
		ON, **OFF**	
	TEST	**OFF**, SAW, 10 STEP	
<KNEE> P07	K POINT	R/G/B/M: −99 to +99, **0**	R, G, B, and M (master) values can be independently set.
	K SLOPE	R/G/B/M: −99 to +99, **0**	Absolute values are displayed in ABS mode except for M (master).
	KNEE	**ON**, OFF	
	KNEE MAX	ON, **OFF**	
	KNEE SAT	−99 to +99, **0**	
		ON, **OFF**	
	AUTO KNEE	**OFF**, AUTO	
	POINT LIMIT	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	SLOPE	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	ABS		Highlighted: ABS (Absolute) mode
<WHITE CLIP> P08	W CLIP	−99 to +99, **0**	
		ON, OFF	
	ABS		Highlighted: ABS (Absolute) mode
<DETAIL 1> P09	DETAIL	**ON**, OFF	
	LEVEL	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	HFR RATIO	0 to 199%, **100%**	
	LIMITER [M]	−99 to +99, **0**	
	LIMITER [WHT]	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	LIMITER [BLK]	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	CRISP	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	HFR RATIO	0 to 199%, **100%**	
	LEVEL DEPEND	−99 to +99, **0**	Absolute value is displayed in ABS mode.
		ON, OFF	
	ABS		Highlighted: ABS (Absolute) mode
<DETAIL 2> P10	H/V RATIO	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	FREQ	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	MIX RATIO	−99 to +99, **0**	Absolute value is displayed in ABS mode.
	KNEE APT	−99 to +99, **0**	Absolute value is displayed in ABS mode.
		ON, **OFF**	
	DTL H/V MODE	**H/V**, V only	
	INDEPENDENT	ON, **OFF**	
	ABS		Highlighted: ABS (Absolute) mode

PAINT			
Page name Page No.	**Item**	**Settings**	**Description**
<HD DETAIL> P11	DETAIL	**ON**, OFF	
	LEVEL	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	LIMITER [M]	–99 to +99, **0**	
	LIMITER [WHT]	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	LIMITER [BLK]	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	CRISP	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	LEVEL DEPEND	–99 to +99, **0**	Absolute value is displayed in ABS mode.
		ON, OFF	
	H/V RATIO	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	FREQ	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	MIX RATIO	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	KNEE APT	–99 to +99, **0**	Absolute value is displayed in ABS mode.
		ON, **OFF**	
	ABS		Highlighted: ABS (Absolute) mode
<4K DETAIL> P12	DETAIL	**ON**, OFF	
	LEVEL	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	LIMITER [M]	–99 to +99, **0**	
	LIMITER [WHT]	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	LIMITER [BLK]	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	CRISP	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	LEVEL DEPEND	–99 to +99, **0**	Absolute value is displayed in ABS mode.
		ON, OFF	
	H/V RATIO	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	FREQ	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	MIX RATIO	–99 to +99, **0**	Absolute value is displayed in ABS mode.
	KNEE APT	–99 to +99, **0**	Absolute value is displayed in ABS mode.
		ON, **OFF**	
	ABS		Highlighted: ABS (Absolute) mode
<SKIN DETAIL> P13	SKIN DTL	ON, **OFF**	
	SKIN GATE	**OFF**, 1, 2, 3, (MAT)	**1**, **2**, **3:** The skin gate function can be turned on for the specified channel only. **(MAT):** Displayed when GATE of <MULTI MATRIX> is ON.
	ABS		Highlighted: ABS (Absolute) mode
	NATURAL SKINDTL	**OFF**, ON	
	ZOOM LINK	**OFF**, ON	
	TELE	0 to **99**	
	WIDE	**0** to 99	
	CH SW	1: (ON), 2/3: ON, **OFF**	Sets the skin tone detail function independently for each channel. (Channel 1 is always set to ON.) Absolute values are indicated for LEVEL only in ABS mode.
	HUE	1/2/3: Execute using ENTER.	
	PHASE	1/2/3: **0** to 359	
	WIDTH	1/2/3: 0 to 90, **29**	
	SAT	1/2/3: –99 to +99, **-89**	
	LEVEL	1/2/3: –99 to +99, **0**	
	Y LIMIT	1/2/3: **0** to 99	

PAINT			
Page name Page No.	**Item**	**Settings**	**Description**
<USER MATRIX> P14	R-G	−99 to +99, **0**	
	R-B	−99 to +99, **0**	
	G-R	−99 to +99, **0**	
	G-B	−99 to +99, **0**	
	B-R	−99 to +99, **0**	
	B-G	−99 to +99, **0**	
	MATRIX	ON, **OFF**	
	PRESET	**---**, ON, OFF	
		---, SMPTE-240M, ITU-709, SMPTE-WIDE, NTSC, EBU, ITU-601, CUSTOM1, CUSTOM2, CUSTOM3, CUSTOM4, CUSTOM5	
	USER	**---**, ON, OFF	
	MULTI	**---**, ON, OFF	
	ADAPTIVE MATRIX	**OFF**, ON	
	LEVEL	0 to 7, **0**	
<MULTI MATRIX> P15	PHASE	**0**, 23, 45, 68, 90, 113, 135, 158, 180, 203, 225, 248, 270, 293, 315, 338	Selects an axis (angle) at PHASE for which the multimatrix adjustment is to be made, and sets HUE and SAT (HUE and SAT can be set individually for each of 16 axes).
	HUE	−99 to +99, **0**	
	SAT	−99 to +99, **0**	
	ALL CLEAR	Execute using ENTER.	
	GATE	ON, **OFF**, (SKN)	**(SKN):** Displayed when SKIN GATE of <SKIN DETAIL> is ON.
	MATRIX	ON, **OFF**	
	PRESET	**---**, ON, OFF	
		---, SMPTE-240M, ITU-709, SMPTE-WIDE, NTSC, EBU, ITU-601, CUSTOM1, CUSTOM2, CUSTOM3, CUSTOM4, CUSTOM5	
	USER	**---**, ON, OFF	
	MULTI	**---**, ON, OFF	
<SHUTTER> P16	SHUTTER	ON, **OFF**	
		29.97P/29.97PsF: 1/40, 1/60, 1/100, 1/120, 1/125, 1/250, 1/500, 1/1000, 1/2000	Step shutter selection
		25P/25PsF: 1/33, 1/50, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000	
		24P/24PsF/23.98P/23.98PsF: 1/32, 1/48, 1/96, 1/100, 1/125, 1/250, 1/500, 1/1000, 1/2000	
		59.94i/59.94P: **1/100**, 1/125, 1/250, 1/500, 1/1000, 1/2000	
		50i/50P: 1/60, **1/125**, 1/250, 1/500, 1/1000, 1/2000	
	ECS FREQ	29.97P/29.97PsF: 30.00 to 2700 Hz	
		25P/25PsF: 25.00 to 2300 Hz	
		24P/23.98P/24PsF/23.98PsF: 24.00 to 2200 Hz	
		59.94i/59.94P: **59.96** to 4600 Hz	
		50i/50P: **50.03** to 4600 Hz	
<NOISE SUPPRESSION> P17	SUPPRESSION	**0** to 100%	
		ON, **OFF**	
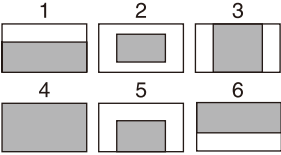
PAINT			
Page name Page No.	**Item**	**Settings**	**Description**
\<FLICKER REDUCTION> P18	REDUCTION	ON, **OFF**, (OFF)	(OFF): When format other than HFR is selected **Note** When you turn REDUCTION ON or OFF, noise may be generated. This is not a malfunction.
	POWER LINE FREQUENCY	**50**, 60	Specifies the frequency of the lighting power source.
	MODE	**STANDARD**, ACM	**STANDARD:** Corrects flicker without adding an image. **ACM:** Corrects flicker by adding images.
	GAIN	−99 to +99, **0**	Enabled only when STANDARD is selected. Sets the correction gain.
	OFFSET	−99 to +99, **0**	Enabled only when STANDARD is selected. Sets the brightness level that invokes correction.
	ACM TYPE	**1**, 2, 3, 4	Enabled only when ACM is selected. Selects the combination of frames to add. More frames are added as the value increases.
\<HDR OPERATION> P19	HDR MODE	**OFF**, LIVE HDR	LIVE HDR is selected when OETF in \<OUTPUT FORMAT> is set to other than SDR.
	SDR GAIN	0.0 to −15 dB, **−6.0 dB**	Enabled only when LIVE HDR is selected. Gain setting applied to the SDR output.
	HDR CONTRAST	100 to 566%, **200%**	Enabled only when LIVE HDR is selected. HDR output contrast ensured by setting SDR GAIN (display only).
	HDR BLACK OFFSET	−99.9 to 99.9, **0**	Enabled only when LIVE HDR is selected. HDR output black offset
	HDR KNEE	**OFF**, ON	Enabled only when LIVE HDR is selected. KNEE setting applied for HDR
	POINT	−99 to 99, **0**	
	SLOPE	−99 to 99, **0**	
	HDR WHITE CLIP	**OFF**, ON	
	LEVEL	−99 to +99, **0**	
	HDR BLACK CLIP	**OFF**, ON	Sets whether to clip levels 0% and lower for HDR output. OFF (fixed) is selected when OETF in \<OUTPUT FORMAT> is set to S-LOG3.
	HDR BLACK COMPRESSION	**OFF**, ON	Sets whether to compress low brightness areas for HDR output.
\<OPTICAL FILTER> P20	ND	**1**, 2, 3, 4, 5	**1:** Clear **2:** 1/4ND **3:** 1/8ND **4:** 1/16ND **5:** 1/64ND
	CC	A, **B**, C, D	**A:** Cross filter **B:** 3200K **C:** 4300K **D:** 6300K

PAINT			
Page name Page No.	**Item**	**Settings**	**Description**
<SCENE FILE> P21	1		Saving and loading a scene file (paint data): When storing a file in camera memory, specify the number after executing STORE. When reading, only specify the number.
	2		
	3		
	4		
	5		
	STORE	Execute using ENTER.	
	STANDARD	Execute using ENTER.	Reads the standard paint data.
	READ (USB→CAM)	Execute using ENTER.	Loads five scene files from a USB drive to internal memory.
	WRITE (CAM→USB)	Execute using ENTER.	Writes five scene files in the camera's memory to a USB drive.
	FILE ID	Max. 14 characters	Enters a comment for the scene files to be written to a USB drive. *See "To specify a character string" (page 19).*
	CAM CODE	Camera code	Display only
	DATE	Date	Display only
	DISSOLVE	**OFF**, ON	Switches scene files seamlessly.
	SPEED	0.2 to 2.8 (increments of 0.2), 3 to 10 (increments of 1), **0.2**	

MAINTENANCE Menu

MAINTENANCE			
Page name Page No.	**Item**	**Settings**	**Description**
<AUTO SETUP> M01	AUTO BLACK	Execute using ENTER.	
	AUTO WHITE	Execute using ENTER.	
	AUTO LEVEL	Execute using ENTER.	
	TEST	**OFF**, SAW, 10STEP	
<WHITE SHADING> M02	V SAW	R/G/B: −99 to +99, **0**	R, G, and B values can be independently set.
	V PARA	R/G/B: −99 to +99, **0**	
	H SAW	R/G/B: −99 to +99, **0**	
	H PARA	R/G/B: −99 to +99, **0**	
	WHITE	R/G/B: −99 to +99, **0**	
<BLACK SHADING> M03	V SAW	R/G/B: −99 to +99, **0**	R, G, and B values can be independently set. M (master) value can also be set for BLACK.
	V PARA	R/G/B: −99 to +99, **0**	
	H SAW	R/G/B: −99 to +99, **0**	
	H PARA	R/G/B: −99 to +99, **0**	
	BLK SET	R/G/B: −99 to +99, **0**	
	BLACK	R/G/B/M: −99 to +99, **0**	
	MASTER GAIN	−6, −3, **0**, 3, 6, 9, 12 dB	
<OHB MATRIX> M04	OHB MATRIX	**ON**, OFF	
	MATRIX	ON, **OFF**	

| MAINTENANCE			
Page name Page No.	**Item**	**Settings**	**Description**
<AUTO IRIS> M05	AUTO IRIS	ON, **OFF**	
	WINDOW	**1**, 2, 3, 4, 5, 6	Selects the auto iris windows: The shaded parts indicate the area where light detection occurs.
	OVERRIDE	–99 to 99, **0**, ---	Sets to temporarily change the reference value for brightness of the automatic iris level in the range of ±2 steps: –99: Two steps to fully closed iris. 99: Two steps to fully opened iris. ---: OFF The setting returns to "---" when the power is turned off.
	IRIS LEVEL	–99 to +99, **0**	±2 steps
	APL RATIO	–99 to +99, **65**	
	IRIS GAIN	–99 to +99, **0**	
	IRIS CLOSE	ON, **OFF**	
<LENS1> M06	F NO. DISP	**CONTROL**, RETURN	Selects the iris indication on the panel when AUTO IRIS is off: **CONTROL:** Displays the value from the camera. **RETURN:** Displays the value returned from the lens. (When AUTO IRIS is on, the value returned from the lens is always displayed.)
	AF DISPLAY	ON, **OFF**	
	ALAC	**AUTO**, OFF	With AUTO selected, the status is displayed at the right. (ACTIVE): Compensation is in progress. (WAIT): Waiting for completion of lens initialization. (STOP): Compensation is turned off for a non-applicable lens.
	F DROP COMP	**OFF**, ON, (OFF)	Turns F drop compensation on/off. During compensation, the compensation gain is displayed on the right. (OFF): For when a serial lens is not attached.
	MAX GAIN	**0.0** to 24 dB	Maximum compensation value
	DROP POINT	0 to 99, **50**	Compensation start point
	ROUNDNESS	**0.0** to 12 dB	Roundness of the compensation curve.
	STORE LENS FILE	Execute using ENTER.	Saves settings to a lens file.
	ARIA	AUTO, **OFF**	With AUTO selected, the status is displayed at the right. (ACTIVE): Compensation is in progress. (WAIT): Waiting for completion of lens initialization. (STOP): Compensation is turned off for a non-applicable lens.
	GAIN LIMIT	0 to 12 dB, **OFF**	

MAINTENANCE			
Page name Page No.	**Item**	**Settings**	**Description**
<LENS2> M07	REMOTE CONTROL	ON, **OFF**, (OFF)	Lens remote control from MSU/RCP on/off setting.
			Same function as the Active button on the Zoom/Focus Control screen of the MSU/RCP.
			(OFF): When lens is not supported
	CONTROL MODE	**ZOOM & FOCUS**, FOCUS, FOLLOW FOCUS	**ZOOM & FOCUS:** Control ZOOM and FOCUS from an MSU/RCP (control by lens demand is not supported).
			FOCUS: Control FOCUS from an MSU/RCP. ZOOM is controlled by lens demand.
			FOLLOW FOCUS: FOCUS is controlled by lens demand, but can be adjusted (offset fine adjustment) from an MSU/RCP. ZOOM is controlled by lens demand.
			Note Settings other than FOLLOW FOCUS cannot be modified when the offset is not 0 and REMOTE CONTROL is OFF. To change settings, set REMOTE CONTROL to ON.
	FOLLOW FOCUS		
	OFFSET ADJUST SENS	1, 2, **3**, 4, 5	Sets the sensitivity of superimposing the offset of the MSU.
	OFFSET CANCEL GAIN	1, 2, **3**, 4, 5	Sets the sensitivity of canceling the offset on the demand side.
<CALL/TALLY> M08	FRONT TALLY	**ON**, OFF	
	BRIGHTNESS	0 to 100, **50**	
	CALL	**DISABLE**, ENABLE	
	REAR TALLY	**ON**, OFF	
	BRIGHTNESS	0 to 100, **50**	
<OUTPUT FORMAT> M09 (U09)	CURRENT	Display only	Displays the current format.
	RESOLUTION	3840×2160, **1920×1080**, 1280×720	System format settings (The selectable system formats vary depending on camera operating software options.)
	FREQUENCY	**59.94i**, 50i, 59.94P, 50P	
	OETF	**SDR**, S-LOG, HLG	Camera OETF setting
	LOOK	**----**, Live, Mild, Natural	Can be selected when OETF is not set to SDR.
			For a description of Live, Mild, and Natural, see *"HDR Look Function" (page 10)*.
	COLOR	**BT.709**, BT.2020	Camera color space setting
	BIT DEPTH	**10BIT**, 12BIT	Selectable only for RGB444.
<SDI OUT> M10 (U10)	SLOT1/2-OUT	*See "SDI 1 to SDI 4 connector settings" (page 43).*	Sets the SDI 1 to SDI 4 format.
	SLOT3/4-OUT		
	SDI MONI	MAIN, **VF**	
	EMB AUDIO	**OFF**, MIC	
	HD-HFR(P) 12G PID	**NORMAL**, 4K FIX	PID setting when 12G-SDI is output in 1080P HFR format
<GL/SYNC> M11	IN/OUT	HD-SYNC, SD-SYNC, **GENLOCK IN**	
	SYNC-OUT		Displayed when OUTPUT is set to SD-SYNC or HD-SYNC.
	V-PHASE	–999 to 999, **0**	
	H-PHASE	–999 to 999, **0**	

MAINTENANCE			
Page name Page No.	**Item**	**Settings**	**Description**
<GENLOCK> M12	REFERENCE	Synchronization status	Display only
	GENLOCK	DISABLE, **ENABLE**	
	STATUS	Display only	
	FORMAT		
	PHASE		
	V	−1024 to 1023, **0**	
	H	−1700 to 1700, **0**	
<DATE> M13	DATE/TIME	2000 to 2035/01 to 12/00 to 31 00 to 23 : 00 to 59	
	DATE FORMAT	1 Y/Mn/D, 2 Mn/D, 3 D/M/Y, 4 D/M, **5 M/D/Y**, 6 M/D	**Y:** Year **Mn:** Month (numeric) **M:** Month (English abbreviation) **D:** Day
<BATTERY ALARM> M14	BEFORE END	**11.5** V to 17.0 V	
	END	**11.0** V to 11.5 V	
	BATTERY ALARM	OFF, **ON**	
<TCP/IP SETTING> M15	DHCP	OFF, **ON**	Enables or disables DHCP.
	IP ADDRESS	**0.0.0.0** to 255.255.255.255	Sets the IP address.
	SUBNET MASK	**0.0.0.0** to 255.255.255.255	Sets the subnet mask.
	DEFAULT GATEWAY	**0.0.0.0** to 255.255.255.255	Sets the default gateway.
	SET	Execute using ENTER.	When "SET OK?" is displayed, execute using ENTER again to apply the changes on the page.
	MAC ADDRESS	MAC address	Displayed when DHCP is ON.
<CNS SETTINGS> M16	CNS MODE	**LEGACY**, BRIDGE, MCS	Select the network connection method. *See "CNS SETTINGS (MAINTENANCE menu)" (page 11).*
	CCU NO	Default setting is **1**	1 to 96 when CNS MODE is set to MCS.
	MASTER IP ADDRESS	**0.0.0.0** to 255.255.255.255	
	SET	Execute using ENTER.	When "SET OK?" is displayed, execute using ENTER again to apply the changes on the page.
<NETWORK RESET> M17	NETWORK ALL RESET	Execute using ENTER.	When "RESET OK?" is displayed, execute using ENTER again to restore all settings in MAINTENANCE menu items M15 to M17 to the factory default settings.
<TSL UMD> M18	TSL UMD	**DISABLE**, ENABLE	Enables/disables IP Tally using TSL UMD V5.0.
	PORT NUMBER	**8900**	Displays the UDP port number for TSL UMD connections.
	PACKET STATUS	**NOT RECEIVED**, RECEIVED	Displays the receive status of TSL UMD packets. When received, IDs and Red/Green on/off status is displayed. Up to five IDs can be displayed. "AND MORE" is displayed if there are more than five.
<SIMPLE PROTOCOL> M19	TRANSPORT CONVERTER MODE	ENABLE, **DISABLE**	Enables camera control of devices, for example, that operate on networks with high latency. This enables the transport conversion mode. When set to ENABLE, CNS MODE is set to LEGACY (fixed).
	PORT	**REMOTE(RS-422A)**, LAN	Sets the port to enable for transport conversion mode.
	BAUDRATE	9.6kbps to 843.75kbps, **115.2kbps**	Displayed only when PORT is set to REMOTE(RS-422A).
	TARGET IP ADDRESS	**0.0.0.0** to 255.255.255.255	Displayed only when PORT is set to LAN.
	TCP PORT	**0** to 65535	Displayed only when PORT is set to LAN.

MAINTENANCE			
Page name **Page No.**	**Item**	**Settings**	**Description**
<OTHERS> M20	FAN MODE	OFF, **AUTO1**, AUTO2, MIN, MAX	AUTO1: Normal rotation AUTO2: Slow rotation
	BARS	ON, **OFF**	
	WHITE SETUP MOD	AWB, **A.LVL**	
	DIAMOND MARKER	**OFF**, ON	Sets diamond marker superposition on the color bar for 4K 2-Sample Interleave output. *See "4K 2SI diamond marker" (page 42).*
	HFR CHANNEL MARK	**OFF**, ON	Sets whether to embed channel identification mark in HD HFR output image.
	HD DOWNCONV FILTER	**1**, 2, 3, 4, 1(V:0.3), 1(V:0.6)	Selects the 4K video signal to HD signal down-converter filter type.
<OPTION KEY> M21	READ (USB→CAM)	Execute using ENTER.	Reads the install key from a USB drive.
	EFFECTIVE FUNCTION		List of installed option functions (display only)

4K 2SI diamond marker

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

Correct connections

When Link 1 and Link 2 have been swapped
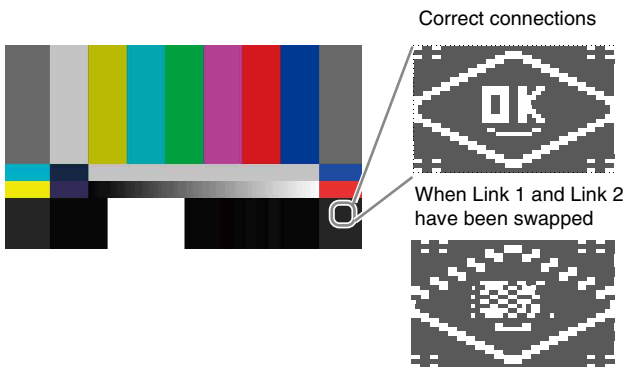
HFR channel marker

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

SDI 1 to SDI 4 connector settings

SYSTEM FORMAT			SDI OUT				
<OUTPUT FORMAT>			<SDI OUT>				
RESOLUTION	FREQUENCY	OETF	SLOT1/2-OUT			SLOT3/4-OUT	
				Output format			Output format
3840×2160	59.94P/50P	Other than SDR	**4K/12G/HDR**	3840×2160/59.94P	Single-Link	**HD/3G-A/SDR**	1920×1080/59.94P
						HD/3G-B/SDR	1920×1080/59.94P
						HD/1.5G/SDR	1920×1080/59.94i
			4K/3G-A/2SI/HDR	3840×2160/59.94P	Quad-Link	4K/3G-A/2SI/HDR	3840×2160/59.94P
			4K/3G-B/2SI/HDR	3840×2160/59.94P		4K/3G-B/2SI/HDR	3840×2160/59.94P
			4K/3G-A/SQD/HDR	3840×2160/59.94P		4K/3G-A/SQD/HDR	3840×2160/59.94P
			4K/3G-B/SQD/HDR	3840×2160/59.94P		4K/3G-B/SQD/HDR	3840×2160/59.94P
		SDR	**4K/12G/HDR**	3840×2160/59.94P	Single-Link	**HD/3G-A/SDR**	1920×1080/59.94P
						HD/3G-B/SDR	1920×1080/59.94P
						HD/1.5G/SDR	1920×1080/59.94i
			4K/3G-A/2SI/HDR	3840×2160/59.94P	Quad-Link	4K/3G-A/2SI/SDR	3840×2160/59.94P
			4K/3G-B/2SI/HDR	3840×2160/59.94P		4K/3G-B/2SI/SDR	3840×2160/59.94P
			4K/3G-A/SQD/SDR	3840×2160/59.94P		4K/3G-A/SQD/SDR	3840×2160/59.94P
			4K/3G-B/SQD/HDR	3840×2160/59.94P		4K/3G-B/SQD/SDR	3840×2160/59.94P
	29.97P/25P	Other than SDR	**4K/6G/HDR**	3840×2160/29.97P	Single-Link	**HD/1.5G/SDR**	1920×1080/29.97PsF
			4K/3G-B/2SI/HDR	3840×2160/29.97P	Dual-Link	HD/1.5G/SDR	1920×1080/29.97PsF
			4K/3G-B/SQD/HDR	3840×2160/29.97PsF		HD/1.5G/SDR	1920×1080/29.97PsF
			4K/1.5G/SQD/HDR	3840×2160/29.97PsF	Quad-Link	4K/1.5G/SQD/HDR	3840×2160/29.97PsF
		SDR	**4K/6G/SDR**	3840×2160/29.97P	Single-Link	**HD/1.5G/SDR**	1920×1080/29.97PsF
			4K/3G-B/2SI/HDR	3840×2160/29.97P	Dual-Link	HD/1.5G/SDR	1920×1080/29.97PsF
			4K/3G-B/SQD/HDR	3840×2160/29.97PsF		HD/1.5G/SDR	1920×1080/29.97PsF
			4K/1.5G/SQD/HDR	3840×2160/29.97PsF	Quad-Link	4K/1.5G/SQD/HDR	3840×2160/29.97PsF
	23.98P/24P	Other than SDR	**4K/6G/HDR**	3840×2160/23.98P	Single-Link	**HD/1.5G/SDR**	1920×1080/23.98PsF
			4K/3G-B/2SI/HDR	3840×2160/23.98P	Dual-Link	HD/1.5G/SDR	1920×1080/23.98PsF
			4K/3G-B/SQD/HDR	3840×2160/23.98PsF		HD/1.5G/SDR	1920×1080/23.98PsF
			4K/1.5G/SQD/HDR	3840×2160/23.98PsF	Quad-Link	4K/1.5G/SQD/HDR	3840×2160/23.98PsF
		SDR	**4K/6G/SDR**	3840×2160/23.98P	Single-Link	**HD/1.5G/SDR**	1920×1080/23.98PsF
			4K/3G-B/2SI/SDR	3840×2160/23.98P	Dual-Link	HD/1.5G/SDR	1920×1080/23.98PsF
			4K/3G-B/SQD/HDR	3840×2160/23.98PsF		HD/1.5G/SDR	1920×1080/23.98PsF
			4K/1.5G/SQD/HDR	3840×2160/23.98PsF	Quad-Link	4K/1.5G/SQD/HDR	3840×2160/23.98PsF

SYSTEM FORMAT			SDI OUT				
<OUTPUT FORMAT>			<SDI OUT>				
RESOLUTION	FREQUENCY	OETF	SLOT1/2-OUT			SLOT3/4-OUT	
				Output format			Output format
1920×1080	59.94P/50P	Other than SDR	**HD/3G-A/HDR**	1920×1080/59.94P	Single-Link	**HD/3G-A/SDR**	1920×1080/59.94P
			HD/3G-B/HDR	1920×1080/59.94P		HD/3G-B/SDR	1920×1080/59.94P
		SDR	**HD/3G-A/SDR**	1920×1080/59.94P	Single-Link	**HD/3G-A/SDR**	1920×1080/59.94P
			HD/3G-B/SDR	1920×1080/59.94P		HD/3G-B/SDR	1920×1080/59.94P
	59.94i/50i	SDR (fixed)	**HD/1.5G/SDR**	1920×1080/59.94i	Single-Link	**HD/1.5G/SDR**	1920×1080/59.94i
	29.97PsF/ 25PsF	Other than SDR	**HD/1.5G/HDR**	1920×1080/ 29.97PsF	Single-Link	**HD/1.5G/SDR**	1920×1080/ 29.97PsF
		SDR	**HD/1.5G/SDR**	1920×1080/ 29.97PsF	Single-Link	**HD/1.5G/SDR**	1920×1080/ 29.97PsF
	23.98PsF/ 24PsF	Other than SDR	**HD/1.5G/HDR**	1920×1080/ 23.98PsF	Single-Link	**HD/1.5G/SDR**	1920×1080/ 23.98PsF
		SDR	**HD/1.5G/SDR**	1920×1080/ 23.98PsF	Single-Link	**HD/1.5G/SDR**	1920×1080/ 23.98PsF
	59.94i (444)/ 50i (444)	SDR (fixed)	**HD/3G-B/SDR**	1920×1080/ 59.94I (444)	Single-Link	**HD/1.5G/SDR**	1920×1080/59.94i
	29.97PsF (444)/ 25PsF (444)	SDR (fixed)	**HD/3G-B/SDR**	1920×1080/ 29.97PsF (444)	Single-Link	**HD/1.5G/SDR**	1920×1080/ 29.97PsF
	23.98PsF (444)/ 24PsF (444)	SDR (fixed)	**HD/3G-B/SDR**	1920×1080/ 23.98PsF (444)	Single-Link	**HD/1.5G/SDR**	1920×1080/ 23.98PsF
	59.94P(2×)/ 50P(2×)	Other than SDR	HD/12G/HFR/HDR	1920×1080/59.94P	Single-Link-2	OFF	–
			HD/3G-A/HFR/ HDR	1920×1080/59.94P	Dual-Link-1	**HD/3G-A/HFR/ HDR**	1920×1080/59.94P
			HD/3G-B/HFR/ HDR	1920×1080/59.94P		HD/3G-B/HFR/ HDR	1920×1080/59.94P
		SDR	HD/12G/HFR/SDR	1920×1080/59.94P	Single-Link-2	OFF	–
			HD/3G-A/HFR/ SDR	1920×1080/59.94P	Dual-Link-1	**HD/3G-A/HFR/ SDR**	1920×1080/59.94P
			HD/3G-B/HFR/SDR	1920×1080/59.94P		HD/3G-B/HFR/ SDR	1920×1080/59.94P
	59.94P(3×)/ 50P(3×)	Other than SDR	HD/12G/HFR/HDR	1920×1080/59.94P	Single-Link-3	OFF	–
			HD/3G-A/HFR/ HDR	1920×1080/59.94P	Triple-Link-1	**HD/3G-A/HFR/ HDR**	1920×1080/59.94P
			HD/3G-B/HFR/ HDR	1920×1080/59.94P		HD/3G-B/HFR/ HDR	1920×1080/59.94P
		SDR	HD/12G/HFR/SDR	1920×1080/59.94P	Single-Link-3	OFF	–
			HD/3G-A/HFR/ SDR	1920×1080/59.94P	Triple-Link-1	**HD/3G-A/HFR/ SDR**	1920×1080/59.94P
			HD/3G-B/HFR/SDR	1920×1080/59.94P		HD/3G-B/HFR/ SDR	1920×1080/59.94P
	59.94P(4×)/ 50P(4×)	Other than SDR	HD/12G/HFR/HDR	1920×1080/59.94P	Single-Link-4	OFF	–
			HD/3G-A/HFR/ HDR	1920×1080/59.94P	Quad-Link	**HD/3G-A/HFR/ HDR**	1920×1080/59.94P
			HD/3G-B/HFR/ HDR	1920×1080/59.94P		HD/3G-B/HFR/ HDR	1920×1080/59.94P
		SDR	**HD/12G/HFR/SDR**	1920×1080/59.94P	Single-Link-4	OFF	–
			HD/3G-A/HFR/SDR	1920×1080/59.94P	Quad-Link	HD/3G-A/HFR/ SDR	1920×1080/59.94P
			HD/3G-B/HFR/SDR	1920×1080/59.94P		HD/3G-B/HFR/ SDR	1920×1080/59.94P
	59.94P(6×)/ 50P(6×)	Other than SDR	**HD/12G/HFR/HDR**	1920×1080/59.94P	Dual-Link-3	**HD/12G/HFR/HDR**	1920×1080/59.94P
		SDR	**HD/12G/HFR/SDR**	1920×1080/59.94P	Dual-Link-3	**HD/12G/HFR/SDR**	1920×1080/59.94P

SYSTEM FORMAT			SDI OUT				
<OUTPUT FORMAT>			**<SDI OUT>**				
RESOLUTION	**FREQUENCY**	**OETF**	**SLOT1/2-OUT**			**SLOT3/4-OUT**	
				Output format			**Output format**
	59.94i(2×)/ 50i(2×)	SDR (fixed)	HD/12G/HFR(i)/ SDR	1920×1080/59.94i	Single-Link-5	OFF	–
			HD/3G-B/HFR(i)/ SDR	1920×1080/59.94i	Single-Link-1	HD/3G-B/HFR(i)/ SDR	1920×1080/59.94i
			HD/1.5G/HFR(i)/ SDR	1920×1080/59.94i	Dual-Link-1	**HD/1.5G/HFR(i)/ SDR**	1920×1080/59.94i
	59.94i(3×)/ 50i(3×)	SDR (fixed)	HD/12G/HFR(i)/ SDR	1920×1080/59.94i	Single-Link-6	OFF	–
			HD/1.5G/HFR(i)/ SDR	1920×1080/59.94i	Triple-Link-1	**HD/1.5G/HFR(i)/ SDR**	1920×1080/59.94i
	59.94i(4×)/ 50i(4×)	SDR (fixed)	HD/12G/HFR(i)/ SDR	1920×1080/59.94i	Single-Link-7	OFF	–
			HD/3G-B/HFR(i)/ SDR	1920×1080/59.94i	Dual-Link-2	HD/3G-B/HFR(i)/ SDR	1920×1080/59.94i
			HD/1.5G/HFR(i)/ SDR	1920×1080/59.94i	Quad-Link	**HD/1.5G/HFR(i)/ SDR**	1920×1080/59.94i
	59.94i(6×)/ 50i(6×)	SDR (fixed)	HD/12G/HFR(i)/ SDR	1920×1080/59.94i	Single-Link-8	OFF	–
			HD/3G-B/HFR(i)/ SDR	1920×1080/59.94i	Triple-Link-2	**HD/3G-B/HFR(i)/ SDR**	1920×1080/59.94i
1280×720	59.94P/50P	SDR (fixed)	**HD/1.5G/SDR**	1280×720/59.94P	Single-Link	**HD/1.5G/SDR**	1280×720/59.94P

Relationship between output interface and BNC connector assignment

Operation mode	Output format	SDI 1	SDI 2	SDI 3	SDI 4
4K	Quad-Link	Link-1	Link-2	Link-3	Link-4
	Dual-Link	Link-1/2	Link-3/4	HD	HD
	Single-Link	Link-1/2/3/4	Link-1/2/3/4	HD	HD
HD	Single-Link	Link-1	Link-1	Link-1	Link-1
HD RGB444	Single-Link	Link-1/2	Link-1/2	HD [a]	HD [a]
HD HFR	Quad-Link	Link-1	Link-2	Link-3	Link-4
	Triple-Link-1	Link-1	Link-2	Link-3	(Link-2)
	Triple-Link-2	Link-1/2	Link-3/4	Link-5/6	(Link-3/4)
	Dual-Link-1	Link-1	Link-2	Link-1	Link-2
	Dual-Link-2	Link-1/2	Link-3/4	Link-1/2	Link-3/4
	Dual-Link-3	Link-1/2/3/4	Link-5/6/(3/4)	OFF	OFF
	Single-Link-1	Link-1/2	Link-1/2	Link-1/2	Link-1/2
	Single-Link-2	Link-1/2/(1/2)	Link-1/2/(1/2)	OFF	OFF
	Single-Link-3	Link-1/2/3/(2)	Link-1/2/3/(2)	OFF	OFF
	Single-Link-4	Link-1/2/3/4	Link-1/2/3/4	OFF	OFF
	Single-Link-5	Link-1/2/(1/2/1/2/1/2)	Link-1/2/(1/2/1/2/1/2)	OFF	OFF
	Single-Link-6	Link-1/2/3(2/1/2/3/2)	Link-1/2/3(2/1/2/3/2)	OFF	OFF
	Single-Link-7	Link-1/2/3/4(1/2/3/4)	Link-1/2/3/4(1/2/3/4)	OFF	OFF
	Single-Link-8	Link-1/2/3/4/5/6(3/4)	Link-1/2/3/4/5/6(3/4)	OFF	OFF

a) YCbCr422 output

FILE Menu

Five types of files can be used for easy adjustments of the camera; Operator, Reference, Scene, OHB, and Lens.
You can store the items set with the OPERATION menu and customized USER menu in the Operator file.

For the specific items included in these files, refer to the Maintenance Manual.

FILE			
Page name Page No.	**Item**	**Settings**	**Description**
<OPERATOR FILE> F01	READ (USB→CAM)	Execute using ENTER.	Reads the operator file from a USB drive.
	WRITE (CAM→USB)	Execute using ENTER.	Writes the current settings of the operator file items to a USB drive.
	PRESET	Execute using ENTER.	Sets the operator file items to the preset values in internal memory.
	STORE PRESET FILE	Execute using ENTER.	Stores the current settings of the operator file items in the operator file in internal memory.
	CLEAR PRESET FILE	Execute using ENTER.	Resets the operator file items stored in internal memory to the initial values.
<SCENE FILE> F02	1		Saving and loading a scene file (paint data): When storing a file in camera memory, specify the number after executing STORE. When reading, only specify the number.
	2		
	3		
	4		
	5		
	STORE	Execute using ENTER.	
	STANDARD	Execute using ENTER.	Reads the standard paint data.
	READ (USB→CAM)	Execute using ENTER.	Loads five scene files from a USB drive to internal memory.
	WRITE (CAM→USB)	Execute using ENTER.	Writes five scene files in the camera's memory to a USB drive.
	FILE ID	Max. 14 characters	Enters a comment for the scene files to be written to a USB drive. *See "To specify a character string" (page 19).*
	CAM CODE	Camera code	Display only
	DATE	Date	Display only
	DISSOLVE	**OFF**, ON	Switches scene files seamlessly.
	SPEED	0.2 to 2.8 (0.2 step), 3 to 10 (1 step), **0.2**	
<REFERENCE> F03	STORE FILE	Execute using ENTER.	Stores the current settings of the reference file items in the reference file in internal memory.
	STANDARD	Execute using ENTER.	Reads the standard values in the reference file in internal memory.
	ALL PRESET	Execute using ENTER.	Resumes the factory-preset reference file.
	READ (USB→CAM)	Execute using ENTER.	Loads a reference file from a USB drive.
	WRITE (CAM→USB)	Execute using ENTER.	Writes the current settings of the reference file items as a reference file to a USB drive.
	FILE ID	Max. 14 characters	Enters a comment for the reference file to be written to a USB drive. *See "To specify a character string" (page 19).*
	CAM CODE	Camera code	Display only
	DATE	Date	Display only

FILE			
Page name Page No.	**Item**	**Settings**	**Description**
<USER GAMMA> F04	READ (USB→CAM)	Execute using ENTER.	Reads the user gamma file from a USB drive.
	PRESET	Execute using ENTER.	Sets the user gamma file items to the preset values in internal memory.
	FILE ID	Max. 14 characters	Enters a comment to insert in the user gamma file. (User gamma file is saved to a USB drive.) *See "To specify a character string" (page 19).*
	CAM CODE	Camera code	Display only
	DATE	Date	Display only
<LENS FILE> F05	STORE FILE	Execute using ENTER.	The center marker is not included.
	No.	1 to 17, **1**	1 to 16: When using a non-serial lens (When using a large lens, this setting depends on the internal setting of the lens.) 17: When using a serial lens
	NAME		Changeable only when using a non-serial lens.
	F NO	F1.0 to F3.4, **F1.7**	Changeable only when using a non-serial lens.
	CENTER MARKER		Sets and stores the center marker position:
	H POS	–48 to +48, **0**	H POS: Increasing the value moves the position to the right.
	V POS	–27 to +27, **0**	V POS: Increasing the value moves the position downwards.
	STORE	Execute using ENTER.	
<OHB FILE> F06	STORE FILE	Execute using ENTER.	Stores the offset values of items specific to the CMOS image sensor (once stored, the values do not need to be stored again if the sensor is reinstalled).
<MATRIX FILE> F07	CUSTOM PRESET MATRIX		Stores matrix preset files: Saved files can be loaded by setting PRESET of <USER MATRIX> to CUSTOM1 to 5.
	STORE FILE		
	1	Execute using ENTER.	
	2	Execute using ENTER.	
	3	Execute using ENTER.	
	4	Execute using ENTER.	
	5	Execute using ENTER.	
	CLEAR ALL	Execute using ENTER.	Clears all the files.
	READ (USB→CAM)	Execute using ENTER.	Loads five preset files from a USB drive to internal memory.
	WRITE (CAM→USB)	Execute using ENTER.	Writes five preset files in the camera's memory to a USB drive.
	FILE ID	Max. 14 characters	Enters a comment for the preset files to be written to a USB drive. *See "To specify a character string" (page 19).*
	CAM CODE	Camera code	Display only
	DATE	Date	Display only
<BOX CURSOR FILE> F08	1:		Select BOX CURSOR FILE and enters a BOX CURSOR FILE name.
	2:		Set the cursor to the left of the number when you select BOX CURSOR FILE.
	3:		
	4:		Set the cursor to the right of the number when you enter a BOX CURSOR FILE name.
	5:		*See "To specify a character string" (page 19).*
	STORE		Stores a BOX CURSOR FILE name in the camera.
	READ (USB→CAM)		Transfers BOX CURSOR FILE from a USB drive to the camera.
	WRITE (CAM→USB)		Transfers BOX CURSOR FILE from the camera to a USB drive.

DIAGNOSIS Menu

This menu is for viewing only; camera settings cannot be made using this menu.
However, some items set the conditions for viewing.

DIAGNOSIS			
Page name Page No.	**Item**	**Indication**	**Description**
<BOARD STATUS> D01	OHB	OK, NG	
	DPR	OK, NG	
	SY	OK, NG	
	VIF	OK, NG	
	HOURS METER	xxxx H	Displays the total working time.
<ROM VERSION> D02 (U11)	CAMERA APP	Vx.xx	
	OS	Vx.xx	
	UPDATER	Vx.xx	
	SY	Vx.xx	
	VIF	Vx.xx	
<NET STATUS 1> D03	NETWORK	OK, NG, - -	- -: When network device is not connected.
	LINK CONDITION	(DOWN), (UP)	
	MAC ADDRESS	xx-xx-xx-xx-xx-xx	
<NET STATUS 2> D04	DHCP	ON, OFF	
	IP ADDRESS	x.x.x.x	
	SUBNET MASK	x.x.x.x	
	DEFAULT GATEWAY	x.x.x.x	
	MAC ADDRESS	xx-xx-xx-xx-xx-xx	
<SERIAL NO> D05	MODEL	HDC-P50	
	NO.	xxxxxxx	
	EFFECTIVE FUNCTION		Displayed if any option is installed.
<POWER SUPPLY STATUS> D06	CAM CONSUMPTION	0% to 100%	Displays camera power consumption.

Appendix

Precautions

Note on laser beams

Laser beams may damage the CMOS image sensor. If you shoot a scene that includes a laser beam, be careful not to let a laser beam become directed into the CMOS image sensor of the camera.

Do not subject to severe shocks

Damage to the case or internal components may result.

When finished using

Set the power switch to OFF.

Operation and storage environment

Store in a level place with air conditioning.
If the unit gets wet, make sure it is completely dry before storage.
Avoid use or storage in the following places:
• Extremely hot or cold places
• Places with high humidity
• Places with strong vibration
• Near strong magnetic fields
• In places where it receives much direct sunlight, or near heating equipment

Condensation

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

Components with limited service life

• The fan and battery are consumable parts that will need periodic replacement.
When operating at room temperature, a normal replacement cycle will be about 5 years. However, this replacement cycle represents only a general guideline and does not imply that the life expectancy of this part is guaranteed. For details on parts replacement, contact your dealer.
• The life expectancy of the electrolytic capacitor is about 5 years under normal operating temperatures and normal usage (8 hours per day; 25 days per month).
If usage exceeds the above normal usage frequency, the life expectancy may be reduced correspondingly.

Camera CMOS image sensor phenomena

Note

The following phenomena that may occur in images are specific to image sensors. They do not indicate a malfunction.

White flecks

Although the image sensors are produced with high-precision technologies, fine white flecks may be generated on the screen in rare cases, caused by cosmic rays, etc.
This is related to the principle of image sensors and is not a malfunction.
The white flecks especially tend to be seen in the following cases:
• When operating at a high environmental temperature
• When you have raised the gain (sensitivity)

Flicker

If recording is made under lighting produced by discharge tubes, such as fluorescent, sodium, or mercury-vapor lamps, the screen may flicker or the colors may appear changed.

To prevent electromagnetic interference from portable communications devices

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

Security

SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND RESULTING FROM A FAILURE TO IMPLEMENT PROPER SECURITY MEASURES ON TRANSMISSION DEVICES, UNAVOIDABLE DATA LEAKS RESULTING FROM TRANSMISSION SPECIFICATIONS, OR SECURITY PROBLEMS OF ANY KIND.

Depending on the operating environment, unauthorized third parties on the network may be able to access the unit. When connecting the unit to the network, be sure to confirm that the network is protected securely.

Error Messages

If a problem occurs during operation, a warning message is displayed.

Note

To display a message, set the DISPLAY/MENU switch to DISPLAY or MENU.

Message	Meaning
TEMP WARNING	The internal temperature is abnormally high.
FAN STOP	The built-in fan is not rotating properly.
SET CORRECT SYSTEM DATE	The time/date of the internal clock have not been set correctly.
OHB BLOCK NG!	A problem is detected in the optical block.
NO USB FLASH DRIVE	A USB drive operation was attempted with no USB drive connected.
USB FLASH DRIVE ERROR	An error occurred during access to a USB drive.
FORMAT ERROR!	A USB drive operation was attempted with an unformatted USB drive.
WRITE PROTECTED	File writing was attempted with a write-protected USB drive.
FILE ERROR	An error occurred while reading a file from a USB drive.

Message	Meaning
OTHER MODEL'S FILE	You attempted to read a file of other models having no compatibility.
FILE NOT FOUND	The file you attempted to read does not exist in the USB drive.

Using a USB Drive

You can connect a USB drive to the USB connector to save and load the settings data file.

Series	Product name
USM-QX series	USM8GQX, USM16GQX, USM32GQX, USM64GQX, USM128GQX
USM-T series (Japan only)	USM8GT, USM16GT, USM32GT, USM64GT, USM128GT
USM-U series	USM4GU, USM8GU, USM16GU, USM32GU, USM64GU, USM128GU
USM-X series	USM8X, USM16X, USM32X, USM64X
USM-W3 series	USM8W3, USM16W3, USM32W3, USM64W3, USM128W3
USM-R series	USM4GR, USM8GR, USM16GR, USM32GR, USM64GR
USM-W series	USM8W, USM16W, USM32W, USM64W
USM-M1 series	USM8M1, USM16M1, USM32M1, USM64M1
USM-SA3 series	USM16SA3, USM32SA3, USM64SA3
USM-SA2 series	USM16SA2, USM32SA2, USM64SA2
USM-SA1 series	USM8SA1, USM16SA1, USM32SA1, USM64SA1
USM-CA1 series	USM16CA1, USM32CA1, USM64CA1
USM-L series (discontinued)	USM1GL, USM2GL, USM4GL, USM8GL, USM16GL, USM32GL
USM-LX series (discontinued)	USM1GLX, USM2GLX, USM4GLX, USM8GLX, USM16GLX, USM32GLX, USM64GLX
USM-N series (discontinued)	USM4GN, USM8GN, USM16GN, USM32GN
USM-P series (discontinued)	USM4GP, USM8GP, USM16GP, USM32GP, USM64GP
USM-M series (discontinued)	USM4GM, USM8GM, USM16GM, USM32GM
USM-Q series (discontinued)	USM8GQ, USM16GQ, USM32GQ, USM64GQ
USM-S series (discontinued)	USM4GS, USM8GS, USM16GS
USM-V series (discontinued)	USM4GV, USM8GV

Notes
- USB drives other than those recommended may not be recognized when connected to the USB connector.
- USB drives must be formatted with the FAT16 or FAT32 file system. Recommended Sony USB drives are preformatted, and can be used without any prior setup.

Specifications

General

Power requirements	10.5 V to 17 V DC, 8.2 A (max.)
Operating temperature	−20 °C to +45 °C (−4 °F to +113 °F)
Storage temperature	−20 °C to +60 °C (−4 °F to +140 °F)
Mass	Approx. 2.4 kg (5 lb 4.7 oz) (Unit only)
Dimensions	See *page 52*.

Imaging element

Imaging element	2/3-Inch CMOS sensor with global shutter
Method	3-chip, RGB

Electrical characteristics

Sensitivity	F10.0 with 1080/59.94i
	F11.0 with 1080/50i
	(at 2000 lx with 89.9% reflectance)
Noise level	−62 dB
Horizontal resolution	2000 TVL (4K: screen centered)
	5% or higher modulation
Geometric distortion	Negligible (not including lens distortion)

Optical system specifications

Spectral system	F1.4 prism

Built-in filters	Color temperature conversion filters
	  A: Cross filter
	  B: 3200K (clear)
	  C: 4300K
	  D: 6300K
	  −: −
	
	ND filters
	  1: Clear
	  2: 1/4ND
	  3: 1/8ND
	  4: 1/16ND
	  5: 1/64ND

Input/output connectors

LENS	12-pin (1)	
DC IN	XLR 4-pin (1), 10.5 V to 17 V DC	
SDI1, SDI2, SDI3, SDI4, SDI MONI	BNC-type (1 each)	
GL/SYNC	BNC-type (1)	
	SYNC	HD: BTA-S001A, tri-level sync, 0.6 Vp-p, 75 ohms
		SD: Composite sync, 0.3 Vp-p, 75 ohms
		HD SYNC/SD SYNC selectable
	GENLOCK	HD: SMPTE ST274, tri-level sync, 0.6 Vp-p, 75 ohms
		SD: Black burst (NTSC: 0.286 Vp-p, 75 ohms/ PAL: 0.3 Vp-p, 75 ohms)
EXT I/O	D-sub 9-pin, female (1)	
USB	USB 2.0 Type A 4-pin (1) (for connecting USB drive)	
🖧 (LAN)	🖧 RJ-45 type 8-pin (1)	
REMOTE	8-pin (1)	

Supplied accessories

Before Using This Unit (1)
Operating Instructions (CD-ROM) (1)
Camera number label (1)

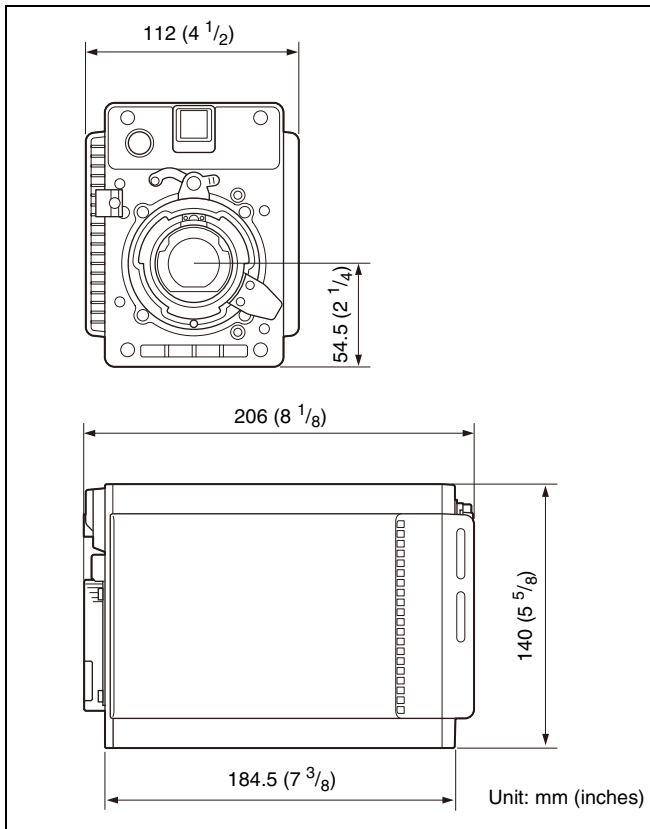Design and specifications are subject to change without notice.

Optional Accessories/Related Equipment

Optional accessories

Camera Operating Software HZC-DFR50/DFR50M/DFR50W HZC-HFR50/HFR50M/HFR50W/HFR50P HZC-PRV50/PRV50M/PRV50W HZC-PSF50/PSF50M/PSF50W HZC-UHD50/UHD50M/UHD50W/UHD50P HZC-UG50/UG50M/UG50W

Related equipment

RCP-3000/1000 series Remote Control Panel
MSU-1000 series Master Setup Unit
HZC-CSM10 Camera System Management Software
CNA-1 Camera Control Network Adapter

> **Notes**
> - Always verify that the unit is operating properly before use. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF THE LOSS OF PRESENT OR PROSPECTIVE PROFITS DUE TO FAILURE OF THIS UNIT, EITHER DURING THE WARRANTY PERIOD OR AFTER EXPIRATION OF THE WARRANTY, OR FOR ANY OTHER REASON WHATSOEVER.
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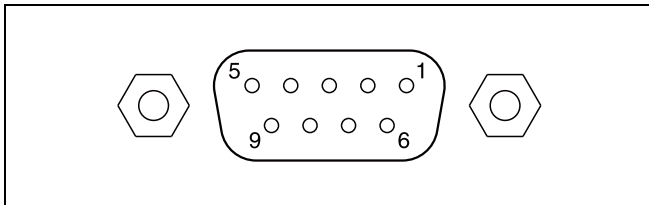
External Dimensions

112 (4 $^1/_2$)

54.5 (2 $^1/_4$)

206 (8 $^1/_8$)

140 (5 $^5/_8$)

184.5 (7 $^3/_8$)

Unit: mm (inches)

Pin Assignment

EXT I/O connector

No.	Signal	I/O	Specifications
1	UNREG	OUT	10.5 V to 17 V DC, 0.5 A (max.)
2	POWER CONT (X)	IN	Short circuit between X and Y to turn power supply off.
3	POWER CONT (Y)	IN	–
4	Assignable1	IN/OUT	OUT: Open-collector (max.50 mA), IN: GND
5	GND	–	–
6	Assignable2	IN/OUT	OUT: Open-collector (max.50 mA), IN: GND
7	Assignable3	IN/OUT	OUT: Open-collector (max.50 mA), IN: GND
8	Assignable4	IN/OUT	OUT: Open-collector (max.50 mA), IN: GND/MIC IN (X)
9	Assignable5	IN/OUT	OUT: Open-collector (max.50 mA), IN: GND/MIC IN (Y)

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