SONY

5-024-458-**18** (1)
GB

Solid-State Memory Camcorder

FX6

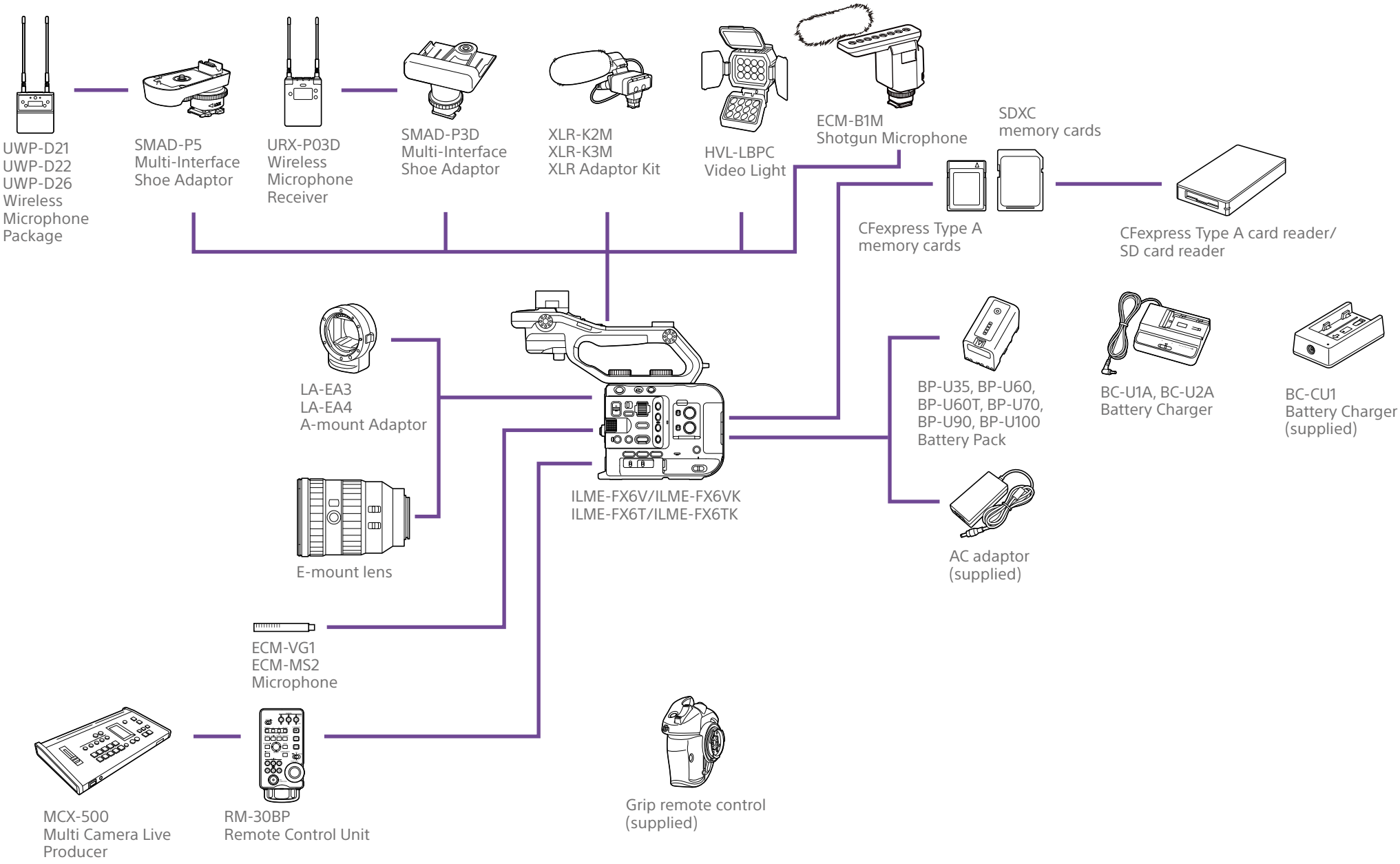
ILME-FX6V/ILME-FX6VK
ILME-FX6T/ILME-FX6TK
Software Version 6.0

E-mount

Operating Instructions

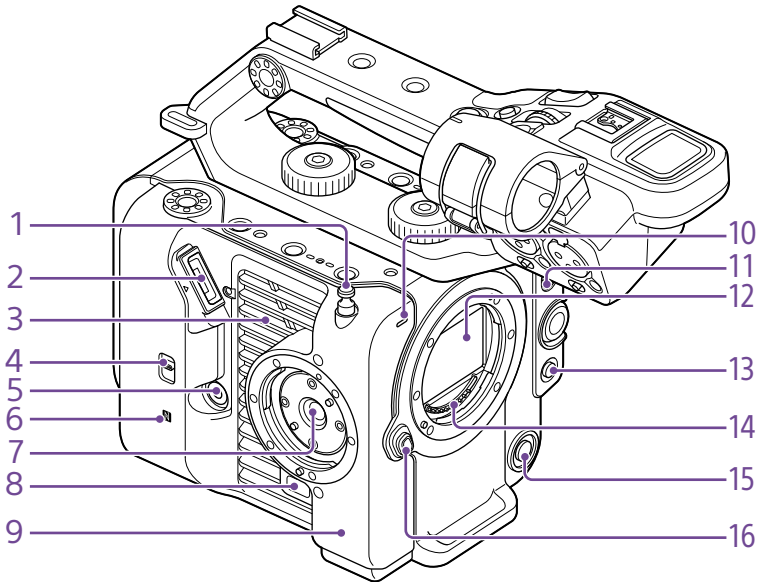
Table of Contents

System Configuration



Location and Function of Parts

Left Side and Front Side



1. **Tape measure hook**
The tape measure hook is on the same plane as the image sensor. To measure the distance between the camcorder and the subject accurately, use this hook as a reference point. You can attach the end of a tape measure to the hook to measure the distance from the subject.
2. **Viewfinder connector (page 24)**
3. **Air vent**

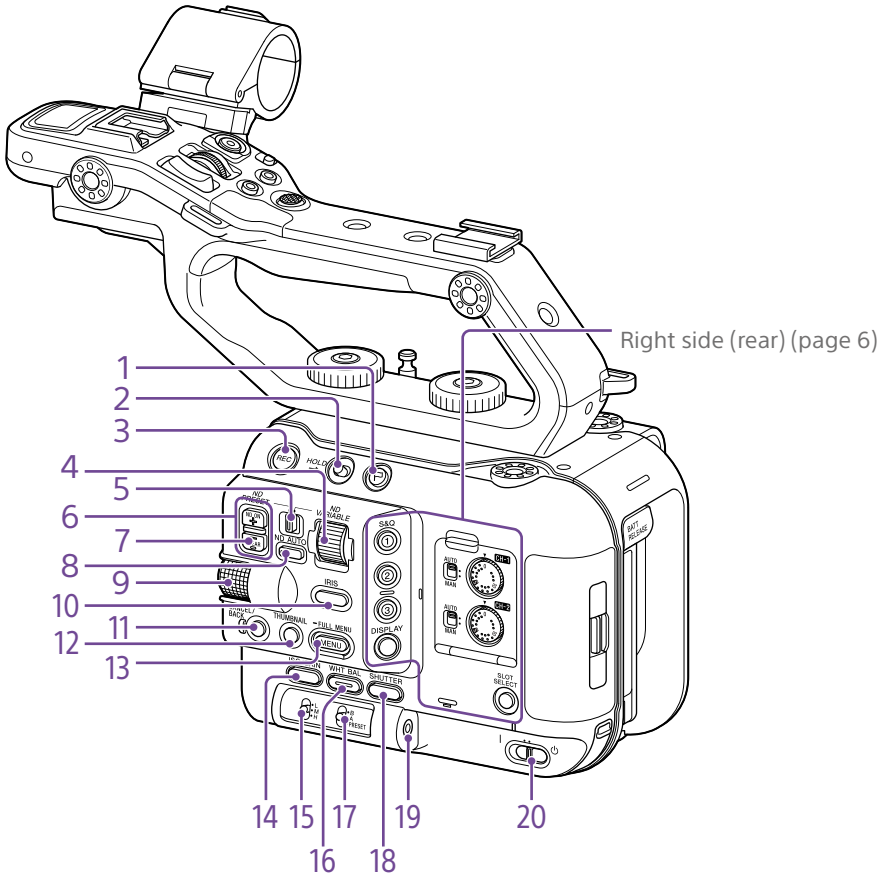
[Note]
Do not cover the air vent.

4. **TC IN/OUT select switch (page 40, 135)**
5. **Grip remote control connector (page 25)**
6. **(N-Mark)**
NFC (Near Field Communication) is an international communications protocol for wireless communication between objects in close proximity.
This function is not available in software version 6.0 and later.
7. **Grip remote control attachment (page 25)**
8. **Grip remote control release button (page 25)**
9. **Wi-Fi antenna**
10. **Recording/tally lamp (front) (page 39)**
Flashes when the remaining capacity on the recording media or battery is low.
11. **FOCUS switch (page 42)**
12. **Image sensor**
13. **PUSH AUTO FOCUS button (page 45)**
14. **Lens signal contacts**

[Note]
Do not touch directly with your hands.

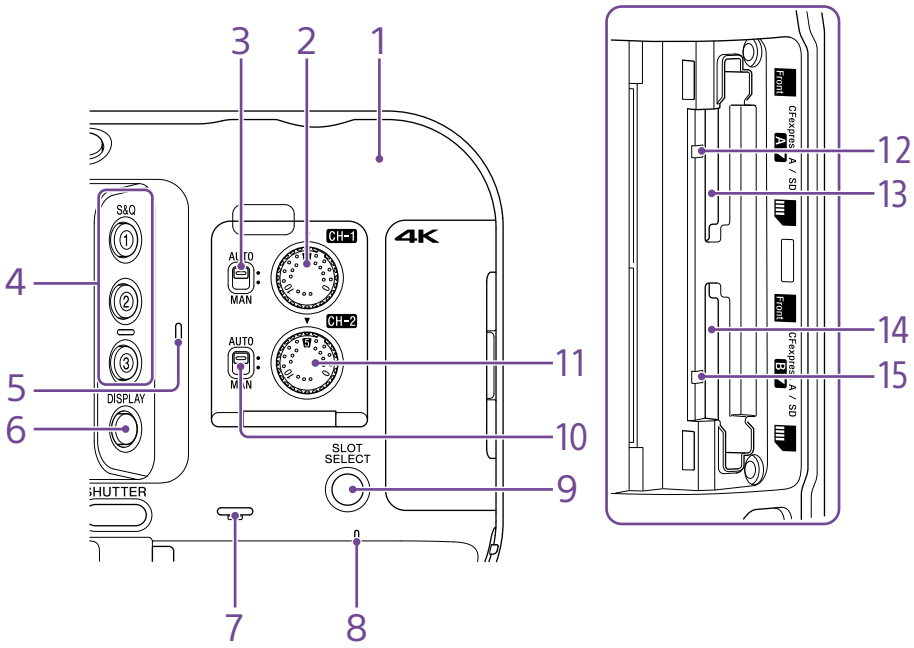
15. **WB SET (white balance set) button (page 51)**
16. **Lens release button (page 27)**

Right Side (Front/Top/Bottom)



1. **Clip Flag button (page 58, 83)**
2. **HOLD switch (page 116)**
3. **Record START/STOP button (page 39)**
Press the record START/STOP button to start recording. The LED is lit red while recording.
4. **ND VARIABLE dial (page 49)**
5. **ND PRESET/VARIABLE switch (page 49)**
6. **ND FILTER POSITION up/down buttons (page 49)**
7. **ND CLEAR indicator (page 49)**
8. **ND VARIABLE AUTO button (page 49)**
Press the ND VARIABLE AUTO button to start auto density adjustment of the ND filter. The LED is lit green when turned on.
9. **Multi-function dial (page 54)**
Press when viewing the image in the viewfinder to display and operate the direct menu.
Turn the dial when a menu is displayed in the viewfinder to move the cursor up/down to select menu items or settings. Press to apply the selected item.
When the menu is not being displayed, the dial can also function as an assignable dial.
10. **IRIS function button (page 48)**
11. **CANCEL/BACK button**
12. **THUMBNAIL button (page 80)**
13. **MENU button (page 18, 86)**
Press the MENU button to display the status screen. Press and hold the MENU button to display the full menu screen. Press the button during status screen or full menu screen display to return to the previous screen display.
14. **ISO/GAIN function button (page 48)**
15. **ISO/GAIN (gain select) switch (page 48)**
16. **WHT BAL (white balance) function button (page 51)**
17. **WHT BAL (white balance memory select) switch (page 51)**
18. **SHUTTER function button (page 49)**
19. **Headphone jack (page 39)**
20. **POWER switch (page 39)**

Right Rear Side and Card Slot

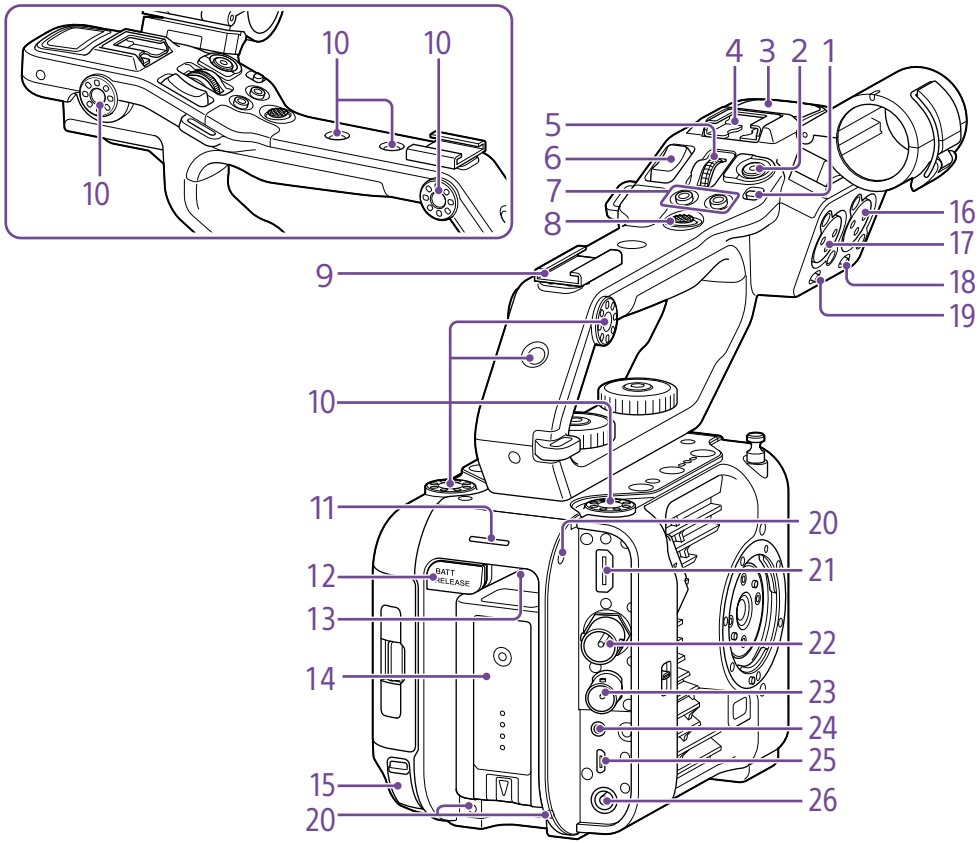


1. Wi-Fi antenna
2. AUDIO LEVEL (CH1) dial (page 52)
3. CH1 (AUTO/MAN) switch (page 52)
4. ASSIGN (assignable) 1 to 3 buttons (page 54)
5. Internal microphone (page 52)
Narration microphone for recording ambient sound.

[Tip]
This microphone is disabled when the handle is attached, and the handle internal microphone becomes active (page 7).

6. DISPLAY (screen display) button (page 12)
7. Built-in speaker (page 39)
8. POWER indicator (page 39)
9. SLOT SELECT (memory card slot (A)/(B) select) button (page 39)
10. CH2 (AUTO/MAN) switch (page 52)
11. AUDIO LEVEL (CH2) dial (page 52)
12. Access indicator A (page 31)
13. CFexpress Type A/SD card slot (A) (page 31)
14. CFexpress Type A/SD card slot (B) (page 31)
15. Access indicator B (page 31)

Handle, Rear, and Connector Block



1. **Handle HOLD switch (page 116)**
Use to disable operation of the controls on the handle.

[Tip]
Can also be set for the handle record START/STOP button only.

2. **Handle record START/STOP button**

3. **Handle internal microphone**

4. **Multi-interface shoe**

Multi Interface Shoe

For details about accessories supported by the multi-interface shoe, contact your sales representative.

5. **Handle assignable dial (page 54)**

6. **Handle zoom lever (page 116)**

7. **ASSIGN (assignable) 7 to 8 buttons (page 54)**

8. **Multi selector (8-way D-pad and apply buttons)**

9. **Accessory shoe (page 7)**

10. **Accessory attachment screw holes (1/4 inch)**
Compatible with 1/4-20 UNC screws (length of 6 mm or less).

[Note]
Use of screws longer than 6 mm may damage exterior parts.

11. **Recording/tally lamp (rear) (page 39)**

12. **BATT RELEASE button (page 22)**

13. **Air inlet**

[Note]
Do not cover the air inlet.

14. **Battery pack attachment (page 22)**

15. **USB-C® connector (page 71)**

[Note]
Connector for data communications. Power cannot be supplied to the unit using this connector.

16. **INPUT2 (audio input 2) connector (page 52)**

17. **INPUT1 (audio input 1) connector (page 52)**

18. **INPUT2 (LINE/MIC/MIC+48V) switch (page 52)**

19. **INPUT1 (LINE/MIC/MIC+48V) switch (page 52)**

20. **Screw holes for external devices**
Compatible with M3 screws (length of 4 mm or less).

[Note]
Use of screws longer than 4 mm may damage the exterior surface.

21. **HDMI OUT connector (page 134)**

22. **SDI OUT connector (page 134)**

23. **TC IN/TC OUT (timecode input/output) connector (page 135)**

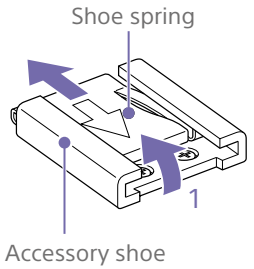
24. **REMOTE connector**
Connect to general-purpose LANC jack accessory.

25. **USB/multi connector (page 136)**

26. **DC-IN connector (standard DC jack) (page 23)**

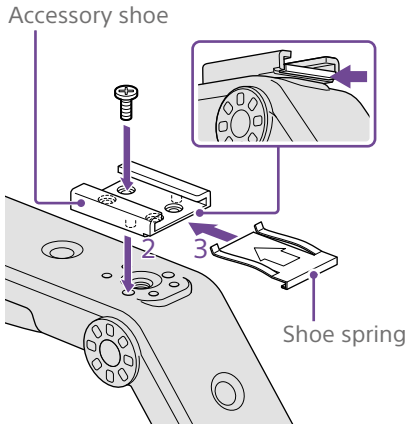
Attaching the accessory shoe

1 Lift the front edge of the shoe spring, and pull the spring in the opposite direction to the arrow engraved on the spring.



2 Position the accessory shoe on the accessory shoe mount, aligning the protrusions on the shoe with the corresponding points on the mount, and tighten the four screws.

3 Insert the shoe spring in the direction of the arrow so that the U-shaped portion fits onto the end of the accessory shoe.

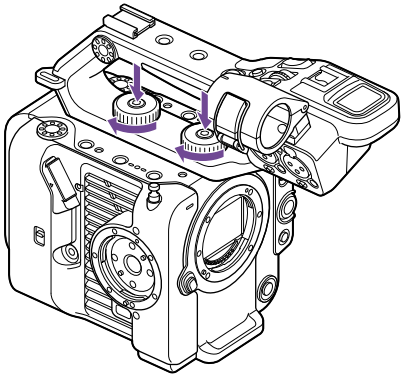


Removing the accessory shoe

Remove the shoe spring as described in step 1 in “Attaching the Accessory Shoe,” unscrew the four screws, and remove the accessory shoe.

Attaching the handle

Position the handle so that the handle connector and screw holes are aligned, push in and turn the handle attachment screws clockwise to attach the handle to the unit. You can also tighten the two handle attachment screws by turning them clockwise using a hex wrench (4 mm).



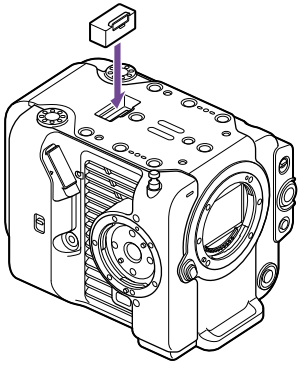
[Note]
Make sure the two handle attachment screws are securely tightened before using the handle. The handle may fall off from the camcorder if the screws are not tightened securely.

Removing the handle

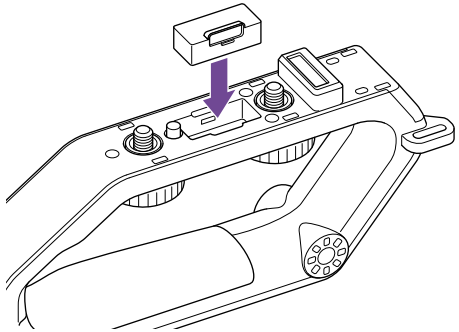
Remove using the reverse of the attachment procedure.

Attaching the handle connector protective cap (supplied)

When using the camcorder with the handle removed, protect the connector using the supplied protective cap.



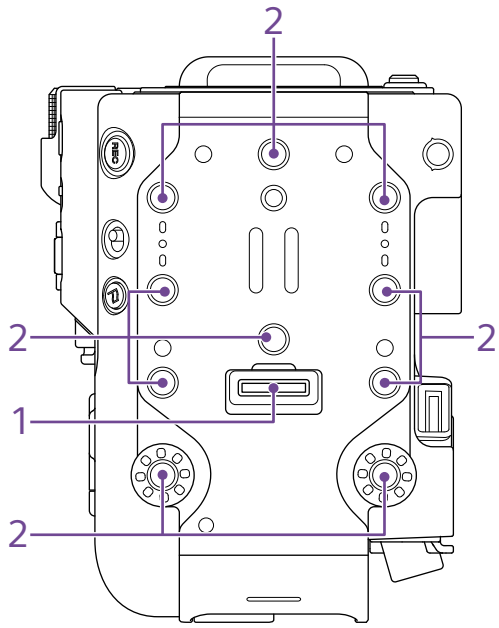
[Tip]
When attaching the handle, stow the supplied protective cap on the bottom of the handle.



Protecting the connector terminals

Attach the cover to unused connectors to protect the connector terminals.

Top Side

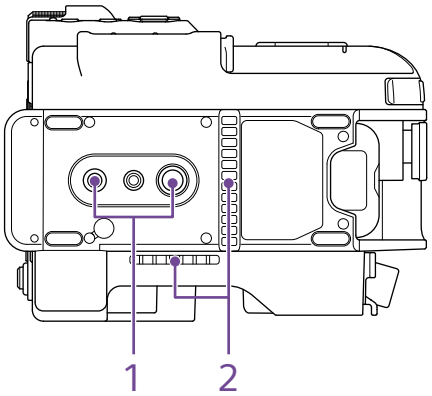


1. **Handle connector**
2. **Accessory attachment screw holes (1/4 inch)**

Compatible with 1/4-20 UNC screws (length of 6 mm or less).

[Note]
Use of screws longer than 6 mm may damage exterior parts.

Bottom Side



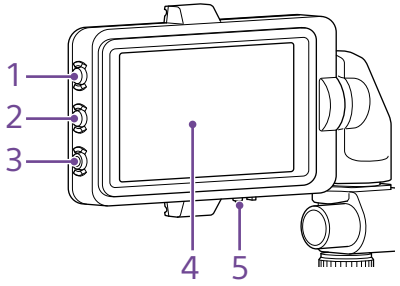
1. **Tripod screw holes (1/4 inch, 3/8 inch)**
Compatible with 1/4-20 UNC screws and 3/8-16 UNC screws. Attach to a tripod (option, screw length of 5.5 mm or less).

2. **Air outlet**

[Note]
Do not cover the air outlet.

Viewfinder

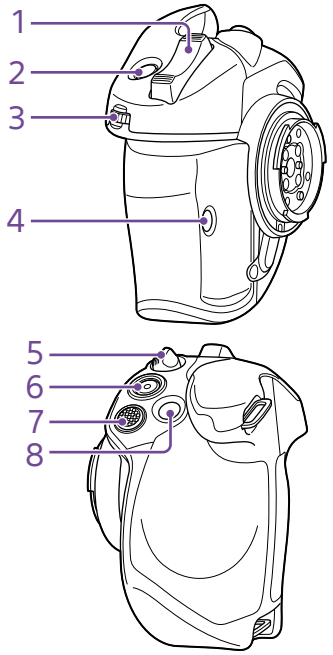
For details about attaching the viewfinder (supplied), see page 24.



1. **PEAKING button**
2. **ZEBRA button**
3. **ASSIGN (assignable) 9 button (page 54)**
4. **Touch panel**
Touch operations can be disabled using an assignable button or using the menu (page 10).
5. **MIRROR switch**

Grip Remote Control

For details about attaching the grip remote control (supplied), see page 25.



1. **Zoom lever**
2. **ASSIGN (assignable) 4 button (page 54)**
3. **Grip assignable dial (page 54)**
4. **ASSIGN (assignable) 6 button (page 54)**
5. **Grip rotation lever (page 26)**
6. **Record START/STOP button**
7. **Multi selector (8-way D-pad and apply buttons)**
8. **ASSIGN (assignable) 5 button (page 54)**

Using the Touch Panel

Touch Panel Usage Precautions

The viewfinder of the unit is a touch panel, which you operate directly by touch using your finger.

- The touch panel is designed to be touched lightly with your finger. Do not press the panel with force or touch it using sharp-edged or pointed objects (nail, ballpoint pen, pin, etc.).
- The touch panel may not respond when touched in the following circumstances. Also note that these may cause a malfunction.
  - Operation using the tips of finger nails
  - Operation while other objects are touching the surface
  - Operation with a protective sheet or sticker attached
  - Operation with water droplets or condensation on the display
  - Operation using wet or sweaty fingers

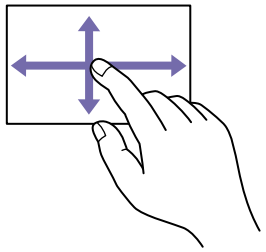
Touch Panel Gestures

Tap

Lightly touch an item, such as an icon or menu item, using your finger and then immediately remove your finger.

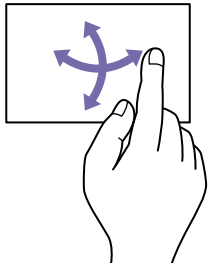
Drag

Touch the screen and slide your finger to the desired position of the screen, and then remove your finger.



Flick/swipe

Touch the screen and quickly flick/swipe your finger up, down, left, or right.



[Tip]

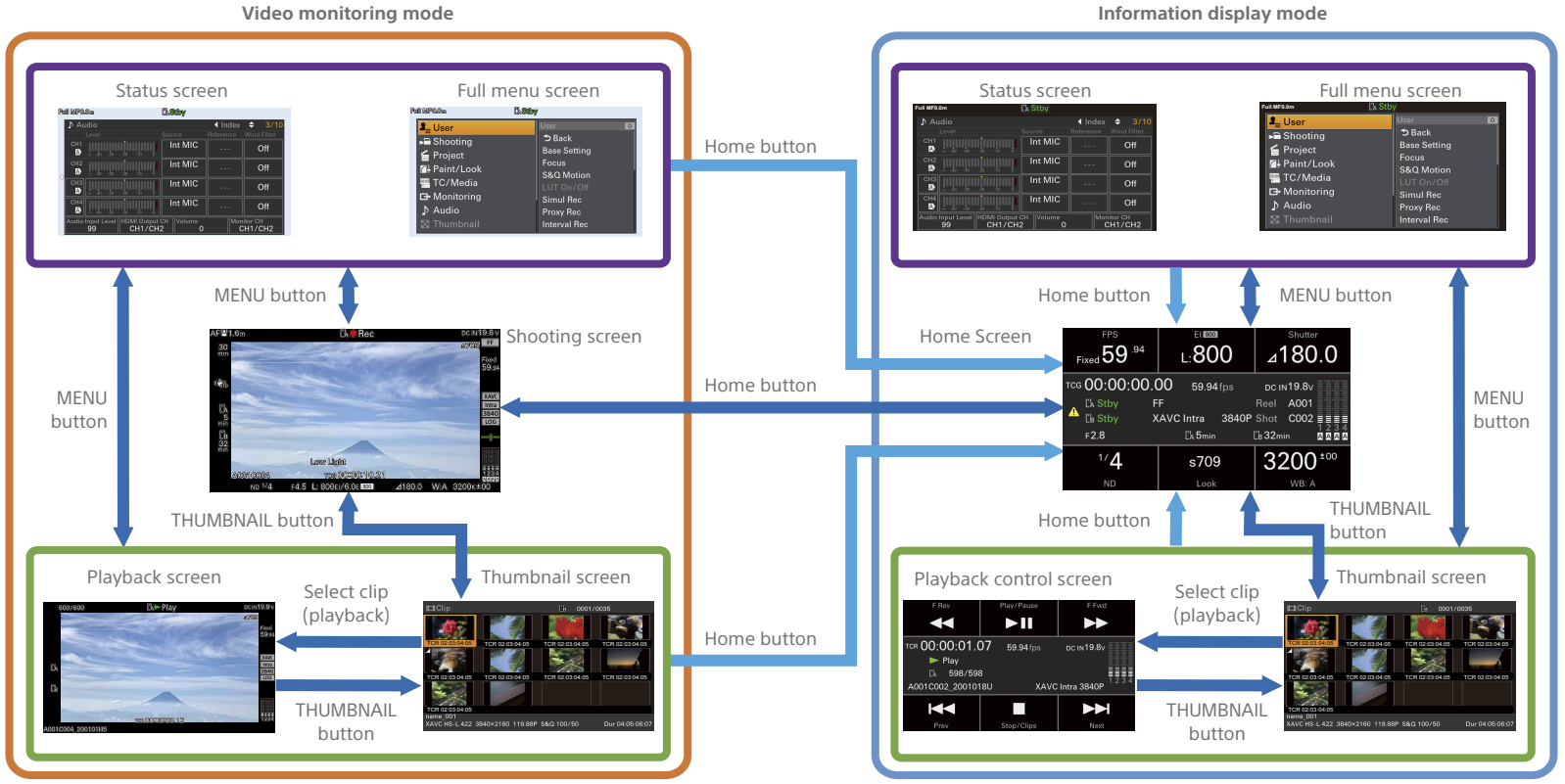
If the display content continues beyond the edges of the screen, you can drag or flick the display content to scroll.

Configuring the Touch Panel

Touch panel operation can be enabled/disabled using Touch Operation (page 116) in the Technical menu.

Viewfinder Screen Structure

The viewfinder operates in two modes centered around the Home screen: video monitoring mode where you can check settings while monitoring the video, and information display mode where you can check and change information and settings. You can switch between modes using an assignable button assigned with the Home function (Home button). The status screen, full menu screen, playback screen, and thumbnail screen can be displayed in each mode.
You can switch between the screens to display in the viewfinder using the Home button, MENU button, and THUMBNAIL button.



[Tips]

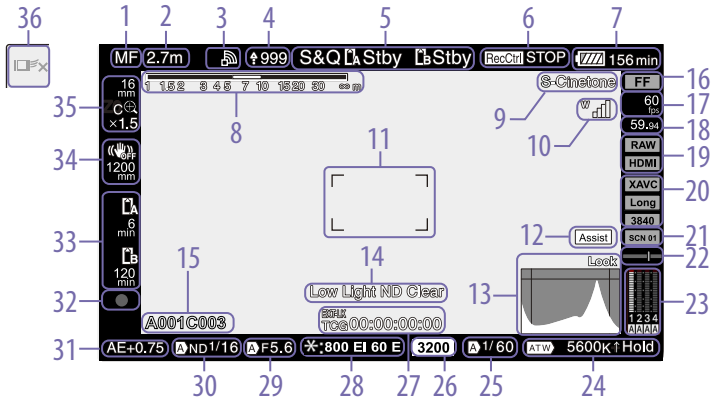
- In video monitoring mode, you can output the same display screen as the viewfinder to an external monitor.
- Information display mode is designed for viewfinder use in combination with a connected external monitor for HDMI output. Place the external monitor on the top or the right side of the unit for monitoring the video, and use the viewfinder for configuring settings, depending on the composition of the shooting team.
  - When Monitoring >Output Display is set to Off for external output used as a viewfinder, the face detection frame, focus pointer, and other markers are not displayed and their positions may change unintentionally. To turn off the screen display after setting Output Display to On, use of the DISPLAY (screen display) button is recommended.
  - The functions displayed in the viewfinder are operated using touch operation, but the orange cursor can also be operated using the multi-function dial or function buttons. To use direct menu operation on the shooting screen in the same way as in video monitoring mode, set Menu Settings >Info. Disp. Mode Operation to Direct Menu Priority in the Technical menu of the full menu.
  - The Home screen, status screen, full menu screen, and playback control screen are not displayed on an external monitor. When the Home screen, status screen, or full menu screen is displayed in the viewfinder, the shooting screen is displayed on the external monitor, and when the playback control screen is displayed in the viewfinder, the playback screen is displayed on the external monitor. However, when the status screen or full menu screen is displayed in the viewfinder, some of the information that is displayed on the external monitor shooting screen is not displayed.

Shooting Screen/Playback Screen

In video monitoring mode, the shooting screen and playback screen showing the unit status and settings around the image are displayed in the viewfinder and external monitor during shooting (recording/standby) and playback, respectively.
In information display mode, various information and settings are displayed in the viewfinder, while the shooting screen and playback screen are displayed on an external monitor. To display settings on the shooting screen and playback screen, set Info. Disp. on the Monitoring status screen (page 19) to On beforehand.

[Note]
When Info. Disp. for SDI output is set to On, information is displayed above the video. Information is not displayed around the video, including for HDMI output.
You can show/hide the information using the DISPLAY button. Even when hidden, it will appear while performing direct menu (page 54) operations.
You can also select to show/hide each item independently (page 110). To always display the recording mode and slot A/B status indicator, and Interval Rec recording interval indicator, set Display On/Off >Rec/Play Status to Always On or Always On (Minimum) in the Monitoring menu of the full menu.
* Items marked with an asterisk cannot be displayed on an external monitor in information display mode.

Information Displayed on the Screen While Shooting



1. Focus mode indicator (page 46)

Meaning	Display
Focus Hold mode	Focus Hold
MF mode	MF
Full MF mode	Full MF
AF mode	AF
Realtime tracking AF mode	

Meaning	Display
Face/eye detection AF (AF/ /Only/ /)	
Face/eye detection icon	
Face/eye only AF icon	Only
Face/eye only AF icon (saved tracking face)	Only
Saved tracking face icon	
AF paused icon[1)]	

1) Displayed during AF operation when AF operation cannot continue and temporarily stops. The icon disappears when the cause for stopping AF operation is resolved and then AF operation resumes.

2. Focus position indicator
Displays the focus position.

3. Network status indicator (page 14)
Displays the network connection status as an icon. If it is flashing, press the MENU button to check the status on the Network status screen.

4. Upload indicator/remaining files indicator (page 77)

5. Recording mode, slot A/B, Interval Rec recording interval indicator (page 55)

Display	Description
Stby	Recording standby
Rec	Recording
Cache	Picture cache recording standby

6. SDI output/HDMI output Rec Control status indicator (page 134)/RAW output operation status indicator (page 65)
Displays the output status of the REC control signal.
Displays the output status of the RAW signal.

7. Remaining battery capacity/DC IN voltage indicator (page 22)

8. Depth-of-field indicator

9. Look name display (page 61)
Displays the selected look.

10. UWP-D series status indicator (page 14)
Displays the RF level signal strength as an icon when a UWP-D series device is connected to the MI shoe configured for digital audio transfer.

11. Focus area indicator (page 43)
Displays the focus area for auto focus.

12. Gamma display assist indicator*
Displays the gamma display assist status. The gamma display assist function can be turned on/off by assigning Gamma Display Assist to an assignable button (page 54).

13. Video signal monitor (page 57)
Displays a waveform, vectorscope, and histogram.
The orange line indicates the set value of the zebra level.
In Log shooting modes (page 29), the monitor target is displayed above the display.

Display	Meaning
Look	Video with applied LUT
SG3C/SLog3	S-Gamut3.Cine/S-Log3 video
SG3/SLog3	S-Gamut3/S-Log3 video

Network speed indicator*
Displays the current data transmission speed for each network connection. Not displayed when the video signal monitor is displayed.

14. Video level warning indicator*

15. Clip name display (page 108)
Displays the name of the clip being recorded or to record next.

16. Imager scan mode indicator (page 30)
When Imager Scan Mode is set to FF, a "C" mark is displayed in modes with narrower angle of view (cropped).
Cropping occurs in the following modes.
- When the recording format is 3840×2160 and S&Q Motion frame rate is 100 fps or 120 fps
- When Codec is set to RAW or RAW & XAVC-I and the RAW output format is 3840×2160

17. Slow & Quick Motion shooting frame rate indicator (page 55)

18. System frequency indicator

19. RAW output resolution indicator (page 65)
Displays the output resolution of the RAW signal.

20. Recording format (picture size) indicator (page 97)
Displays the picture size for recording on the memory cards.

21. Look name display (page 61)

22. Spirit level indicator
Displays the horizontal level in ±1° increments up to ±15°.

23. Audio level meter
Displays the audio level of CH1 to CH4.

24. White balance indicator
Displays the white balance and color temperature, offset status of the color temperature, and tint value.
"↑" is displayed if the offset status is higher than the set value, and "↓" is displayed if lower than the set value.

Display	Meaning
ATW	Auto mode[1]
ATW Hold	Auto mode paused[1]
W:P	Preset mode
W:A	Memory A mode
W:B	Memory B mode

1) The tint value is not displayed.

25. Shutter indicator (page 49)

26. Base Sensitivity indicator/Base ISO indicator (page 48)

Shooting mode	Displayed setting[1]
Custom	Base Sensitivity
Flexible ISO	Base ISO
Cine EI Quick	Display only[2]
Cine EI	Base ISO

1) ISO/Gain/EI setting in the Shooting menu of the full menu or on the Main status screen
2) Configured automatically in conjunction with Exposure Index. ◗ appears on the left side.

27. Timecode external lock indicator/time data display (page 40)
Displays "EXT-LK" when locked to the timecode of an external device.

28. Gain indicator (page 48)
In Custom shooting mode (page 29), it displays the gain value or ISO value. In Flexible ISO shooting mode, it displays the ISO value. In Cine EI/Cine EI Quick shooting mode (page 29), it displays the EI value.

Display	Meaning
A	Auto mode
H	Preset H mode
M	Preset M mode
L	Preset L mode
❁	Temporary adjustment mode
B	Bokeh control mode (page 58)

29. Iris indicator
Displays the iris position (F-number) (if a lens that supports iris setting display is attached).

30. ND filter indicator (page 49)

Display	Meaning
A	Auto mode
B	Bokeh control mode (page 58)

31. AE mode/AE level indicator (page 48)

32. Focus indicator (page 42)

33. Remaining media capacity indicator

Display	Meaning
Px A	Mounting/mount status/ proxy recording (media A)
A	Mounting/mount status/ no proxy recording (media A)
Px B	Mounting/mount status/ proxy recording (media B)
B	Mounting/mount status/ no proxy recording (media B)
Px P	Mounting/mount status/ proxy chunk recording (media B)[1]
Px P	Mount status (non-recordable)/ proxy chunk recording (media B)[1] [2]

1) Recording proxy data only
2) Media error, media full, or other error occurred at the start of recording or during recording.

A 🔒 icon appears if the memory card is write-protected.
If a memory card is the target media for proxy chunk recording but a proxy is not being recorded, "STOP" is displayed flashing during recording.

34. Image stabilization mode indicator (page 96)

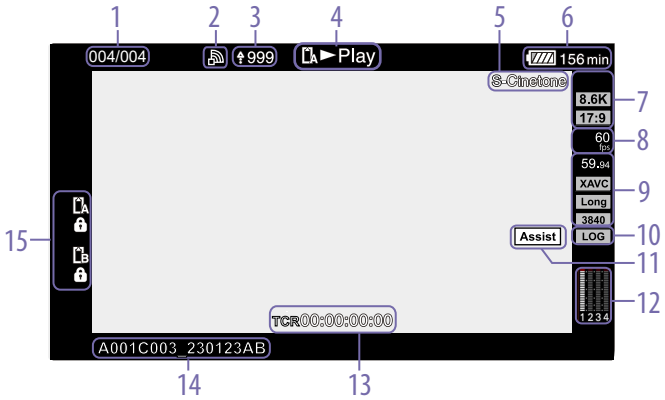
35. Zoom position indicator (page 41)
Displays the zoom position in the range 0 (wide angle) to 99 (telephoto) (if a lens that supports zoom setting display is attached). The display can be changed to a bar indicator or focus distance indicator (page 117).
The following items are added to the display when Clear Image Zoom is enabled.

Display	Meaning
C	Clear Image Zoom is enabled
Magnification value	When using Clear Image Zoom

36. Realtime tracking AF stop button (page 47)

Information Displayed on the Screen During Playback

The following information is superimposed on the playback picture.



1. **Clip number/Total number of clips**
2. **Network status indicator**
3. **Upload indicator/Remaining files indicator**
4. **Playback status indicator**
5. **Look name display**
6. **Remaining battery capacity/DC IN voltage indicator**
7. **Imager scan mode indicator**
8. **Slow & Quick Motion shooting frame rate indicator**
9. **Playback format**
   Displays the frame rate and codec of the playback clip. For XAVC, the image size is also displayed.
10. **Recording look indicator**
11. **Gamma display assist***
12. **Audio level meter**
    Displays the playback audio level.
13. **Time data display**
14. **Clip name display**
15. **Remaining media capacity indicator**
    A icon appears if the memory card is write-protected.

Icon Display

Network connection icon display

If the icon is flashing, press the MENU button to check the status on the Network status screen. For details, see “Checking the Network Connection Status” (page 74).

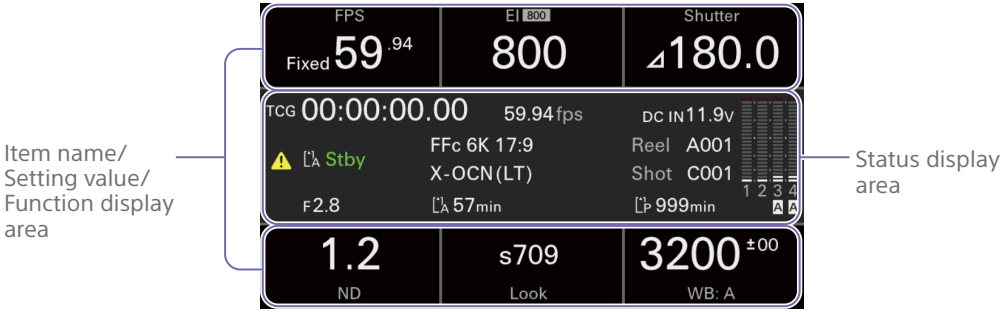
Network mode	Connection status	Icon
Access point mode	Operating as an access point	AP
	Access point operation error	AP (Icon flashing)
Station mode	Wi-Fi connection Icon changes according to the signal strength (4 steps)	
	Wi-Fi disconnected (including when establishing connection)	(Icon flashing)
	Wi-Fi connection error	(Icon flashing)
Wired LAN	Wired LAN connected	
	Wired LAN disconnected	(Icon flashing)
	Wired LAN error	(Icon flashing)
USB tethering	USB tethering connected	
	USB tethering disconnected	(Icon flashing)
	USB tethering error	(Icon flashing)

UWP-D series icon display

Transmitter status	Receive status	Icon
Power off	Not receiving	
Normal transmit status	Receiving	– (receive level (4 steps))
Muting status	Receiving (muted)	
Remaining battery capacity warning status	Receiving	(Icon flashing)
Muting and remaining battery capacity warning status	Receiving	(Icon flashing)

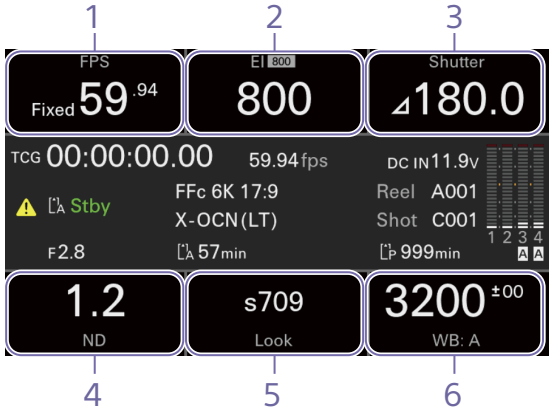
Home Screen

Press an assignable button assigned with the Home function (Home button) to display the Home screen in the viewfinder. You can check the status of the unit and set basic settings for the unit on the Home screen.



[Tip]
In the factory default setting, pressing the multi-function dial or an assignable button assigned with the Direct Menu function in information display mode displays a cursor on the Home screen, allowing you to change the settings of each item. To use direct menu operation on an external monitor, set Menu Settings >Info. Disp. Mode Operation to Direct Menu Priority in the Technical menu of the full menu.

Item Name/Setting Value/Function Display Area



Select items displayed in 1 to 6 to set the corresponding item.

1. **FPS**
Displays and sets the shooting frame rate.

2. **Exposure Index/Base ISO**
Displays and sets the Exposure Index (EI) and Base ISO.

[Tip]
In Flexible ISO mode, this displays and sets ISO/Base ISO. In Custom mode, this displays and sets ISO/Base Sensitivity or Gain/Base Sensitivity.

3. **Shutter**
Displays and sets the electronic shutter.

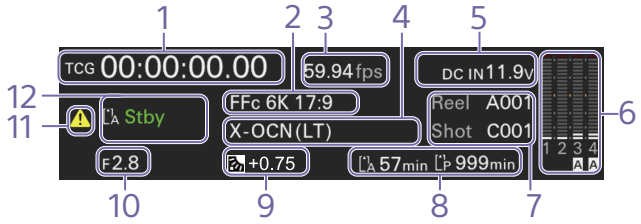
4. **ND Filter**
Displays and sets the ND filter.

5. **Look**
Displays and sets the look.

[Tip]
In Custom mode, this displays and sets scene files.

6. **WB (White Balance)**
Displays and sets the white balance.

Status Display Area



1. Time data display
Displays the duration, user bits, or timecode, depending on the TC Display setting in the TC/Media menu of the full menu (page 108).
Displays the type of data currently shown in the time data display, as follows.
TCG: Recorded timecode
EXT-LK: External sync lock
UBG: Recorded user bits
TCR: Playback timecode
UBR: Playback user bits
Clk: Clock
Dur: Duration

2. Imager scan mode indicator/RAW indicator
Displays the Imager Scan setting on the Project status screen.

3. System frequency indicator
Displays the Frequency setting on the Project status screen.

4. Recording format (codec)/Image resolution indicator
Displays the name of the format used for recording on a memory card and the image resolution.

5. Power supply voltage/Remaining battery capacity indicator
Displays the power supply voltage or remaining battery capacity.

6. Audio level meter
Displays the audio recording or playback levels. The numbers 1 to 4 indicate channels 1 to 4.

7. Clip name display
When Auto Naming is set to Cam ID + Reel#:
Displays "Reel: Camera ID + Reel Number" and "Shot: Camera Position + Shot Number."
When Auto Naming is set to Title:
Displays "Title: character string set using Title Prefix" and "No.: Clip Number."

8. Remaining media capacity indicator
Displays the status and remaining recording time (when recording in the current recording format) of each recording media.
"Px" is displayed on the right side of the icon for proxy data recording.

9. AE mode/AE level indicator
Displays the Auto Exposure >Mode and Level settings in the Shooting menu of the full menu.

10. Iris indicator
Displays the iris position (T-number or F-number).

11. Warning/error icon
Displayed when a warning or error occurs. You can check the content of warnings and errors by displaying the menu. If the screen display is superimposed on an external monitor, you can also check on the external monitor.

12. Recording status indicator
Displays the following recording operation states of the unit.

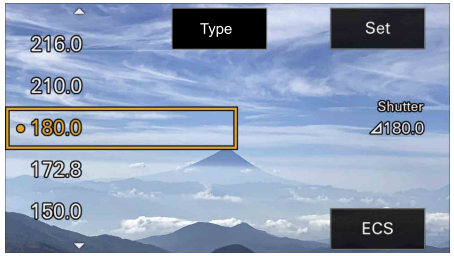
Display	Description
Stby	Recording standby
●Rec	Recording
●Cache	Picture cache recording standby

Operations on the Home Screen

1 Press an assignable button assigned with the Home function.
The Home screen appears in the viewfinder.

2 Select the item to set from items 1 to 6.
In addition to selecting items using touch operation, you can also use the multi-function dial and multi selector if Menu Settings >Info. Disp. Mode Operation (page 117) is set to Home Screen Priority in the Technical menu of the full menu. First, press the multi-function dial or an assignable button assigned with the Direct Menu function to display the cursor, then use the multi-function dial or multi selector to move the cursor. The cursor will disappear if 3 seconds have elapsed without any operation.

[Note]
When Menu Settings >Info. Disp. Mode Operation is set to Direct Menu Priority in the Technical menu of the full menu, you cannot press the multi-function dial to perform operations. Touch one of the items.



The setting selection screen appears. The diagram above shows an example when item 3 is selected.

3 Move the cursor to the selection item or setting.

4 Select the Set button to apply the value.

[Tip]
On the setting selection screen, you can also use the multi-function dial or multi selector to move the cursor. Position the cursor and press the multi-function dial or multi selector, then select the Set button to apply the value.

Home Screen Items

The settings that can be configured for each item are given below. For details about items with the same settings as in the full menu, refer to the full menu description (page 84).

Item	Description
FPS	Sets whether the shooting frame rate is set to the system frequency or is different from the system frequency. • Fixed When “Fixed” is selected on the screen, the shooting frame rate matches the system frequency, and “Fixed” and the system frequency are displayed. • Variable When “Variable” is selected on the screen, you can set a shooting frame rate that is different from the system frequency. 1 to 60 / 100 / 120 / 150 / 180 / 200 / 240 fps [Note] The available settings vary depending on the selected system frequency, codec, and video format. [Tip] This setting corresponds to Rec Function >S&Q Motion on the Project status screen and S&Q Motion in the Shooting menu of the full menu.
ISO/Gain / Base Sensitivity (Custom mode)	Sets the ISO/Gain (page 90). You can press Base Sensitivity to set the base sensitivity (page 91). You can press AGC to set the auto gain control function. [Tips] • ISO/Gain corresponds to ISO/Gain/EI >ISO/Gain<H>/<M>/<L> in the Shooting menu of the full menu. Base Sensitivity corresponds to ISO/Gain/EI >Base Sensitivity in the Shooting menu of the full menu. • AGC corresponds to Auto Exposure >AGC in the Shooting menu of the full menu. AGC is set to Off (fixed) in Cine EI/Cine EI Quick shooting mode.
ISO / Base ISO (Flexible ISO shooting mode)	Sets the ISO (page 90). You can press Base ISO to set Base ISO (page 91). You can press AGC to set the auto gain control function. [Tips] • ISO corresponds to ISO/Gain/EI >ISO/Gain<H>/<M>/<L> in the Shooting menu of the full menu. Base ISO corresponds to ISO/Gain/EI >Base ISO in the Shooting menu of the full menu. • AGC corresponds to Auto Exposure >AGC in the Shooting menu of the full menu.
Exposure Index/Base ISO (Cine EI/Cine EI Quick shooting mode)	Sets the exposure index (page 90). You can press Base ISO to set the base ISO sensitivity (page 91). [Tips] • Sets the exposure index only in Cine EI Quick shooting mode. • Exposure Index corresponds to ISO/Gain/EI >Exposure Index<H>/<M>/<L> in the Shooting menu of the full menu. Base ISO corresponds to ISO/Gain/EI >Base ISO in the Shooting menu of the full menu.
Shutter	Sets the electronic shutter (page 92). Press Angle or ECS to switch to setting the shutter by angle or frequency, respectively. You can press Type to set the auto shutter control function. [Tips] • Angle corresponds to Shutter >Shutter Angle in the Shooting menu of the full menu. ECS corresponds to Shutter >ECS On/Off and ECS Frequency in the Shooting menu of the full menu. • Auto Shutter corresponds to Auto Exposure >Auto Shutter in the Shooting menu of the full menu. • You can set the shutter speed instead of the angle by setting Shutter >Mode to Speed in the Shooting menu of the full menu.
ND Filter	Set the ND filter (page 49). You can set the ND filter light intensity and position, and adjust the auto exposure.
Scene File (Custom mode)	Switches to preconfigured image quality settings. In addition to the pre-installed image quality settings, you can save and switch to your preferred image quality settings (page 105). [Tip] This setting corresponds to Scene File >Recall Internal Memory in the Paint/Look menu of the full menu.
Look (Log shooting modes)	Sets the look (page 105). Press the Edit Look button (item 4) and select a look. You can set the output systems to which to apply a look using items 1 and 6. Depending on the status, there are combinations that cannot be set or settings that are interdependent. [Tip] This setting corresponds to some settings on the Monitoring status screen, Base Look >Select in the Paint/Look menu of the full menu, and each item under LUT On/Off in the Shooting menu of the full menu.
WB (White Balance)	Sets the white balance (page 94). You can set white balance preset values. You can set separate color temperature and tint values in memory A/B. You can set ATW (Auto Tracing White Balance). [Tip] This setting corresponds to the items under White in the Shooting menu of the full menu.

Status Screen

You can check the settings and status of the camcorder on the status screen. The settings of items marked with an asterisk (*) can be changed.

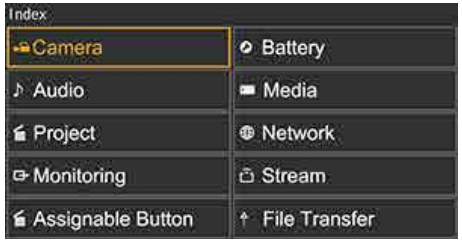
To display the status screen

- Press the MENU button.

[Tip]
You can show/hide each status screen using Menu Page On/Off (page 117) in the Technical menu.

To switch the status screen

- Turn the multi-function dial.
- Push the multi selector up/down
- Swipe the status screen up/down.
- Swipe the status screen to the right to display the Index screen and select the page to view.



To hide the status screen

- Press the MENU button.

To change a setting

With the status screen displayed, press the multi-function dial or multi selector to enable selection of a setup item within a page. Select a page number and then press to switch pages.
You can also select items directly using touch operation.

[Note]
You can disable changes from the status screen by setting Menu Settings >User Menu Only (page 117) in the Technical menu of the full menu to On.

Main status screen

Displays the main functions of the camera and the free space on the media.

Display item	Description
S&Q Frame Rate*	Slow & Quick Motion shooting and frame rate settings
Frequency/Scan*	System frequency and scanning method settings
Imager Scan*	Scan mode of the image sensor
Media Remain (A)	Remaining free space on media in slot A
ND Filter	ND filter setting
ISO/Gain/EI	ISO/Gain/Exposure Index setting
Base ISO/ Sensitivity*	Base ISO/Base Sensitivity setting
Codec*	Codec setting for recording
Media Remain (B)	Remaining free space on media in slot B
Scene File*	Scene file in use and its File ID setting
Base Look/LUT*	Base Look/LUT setting
Shutter	Shutter speed or shutter angle setting
Iris	Iris setting
Video Format*	Picture size for recording to memory cards
RAW Output Format*	Image size of the RAW output
White Balance	White balance setting

Camera status screen

Displays the status of various presets of the camera.

Display item	Description
White Switch<B>	White balance memory B setting
White Switch<A>	White balance memory A setting
White Switch<P>	Preset White setting
ND<Preset>*	ND filter Preset1 to 3 settings
ISO / Gain[1]<L>*	ISO/Gain[1]<L> setting
ISO / Gain[1]<M>*	ISO/Gain[1]<M> setting
ISO / Gain[1]<H>*	ISO/Gain[1]<H> setting
Base ISO/ Sensitivity*	Base ISO/Base Sensitivity setting
Zebra1*	Zebra1 On/Off setting and level
Zebra2*	Zebra2 On/Off setting and level
VF Gamma/ Gamma	Gamma category and curve
Scene File*	Scene file in use and its File ID setting

1) Exposure Index in Cine EI mode/Cine EI Quick shooting mode.

Audio status screen

Displays the input setting, audio level meter, and volume monitor setting for each channel.

Display item		Description
CH1	Level Control	Auto adjustment On/Off status
	Level Meter	Audio level meter
	Source*	Input source
	Reference*	Input reference level
	Wind Filter*	Microphone wind noise reduction filter setting
CH2	Level Control	Auto adjustment On/Off status
	Level Meter	Audio level meter
	Source*	Input source
	Reference*	Input reference level
	Wind Filter*	Microphone wind noise reduction filter setting
CH3	Level Control*	Auto adjustment On/Off status
	Level Meter*	Audio level meter
	Source*	Input source
	Reference*	Input reference level
	Wind Filter*	Microphone wind noise reduction filter setting
CH4	Level Control*	Auto adjustment On/Off status
	Level Meter*	Audio level meter
	Source*	Input source
	Reference*	Input reference level
	Wind Filter*	Microphone wind noise reduction filter setting
Audio Input Level*		Audio input level (master volume) setting
HDMI Output CH*		HDMI output audio channel setting
Volume*		Headphone/built-in speaker volume setting

Display item	Description
Monitor CH*	Monitor channel setting

Project status screen

Displays the basic settings related to the shooting project.

Display item	Description
Frequency/Scan*	System frequency and scanning method settings
Codec*	Codec setting for recording
Rec Function*	Special recording function On/Off setting and main settings
Simul Rec*	2-slot simultaneous recording function On/Off status and setting
Title Prefix*1) / Reel*2)	Title portion of clip name/ Camera ID and Reel Number set values
Imager Scan*	Scan mode of the image sensor
Video Format*	Picture size for recording to memory cards
Picture Cache Rec*	Picture cache recording function On/Off and cache size setting
Number*1) / Shot*2)	Numeric suffix of the clip name/Camera Position and Shot Number values
Shooting Mode*	Shooting mode settings
RAW Output Format*	Image size of the RAW output
Proxy Rec*	Proxy recording function On/Off setting

1) When Auto Naming is set to Title
2) When Auto Naming is set to Cam ID + Reel#

Monitoring status screen

Displays the SDI and HDMI output settings.

Display item		Description
SDI	Signal*	Output picture size
	Info. Disp.*	Output display On/Off setting
	Color Gamut*	Color gamut setting/ Monitor LUT status
HDMI	Signal*	Output picture size
	Info. Disp.*	Output display On/Off setting
	Color Gamut*	Color gamut setting/ Monitor LUT status
Stream	Signal	Output picture size
	Info. Disp.	Output display (Off (fixed))
	Color Gamut*	Color gamut setting/ Monitor LUT status
VF	Color Gamut*	Gamma display assist setting/Color gamut setting/Monitor LUT status
Base Look/LUT*		Base Look/LUT setting
Gamma Display Assist*		Gamma Display Assist on/ off setting

Assignable Button status screen

Displays the functions assigned to each of the assignable buttons.

Display item	Description
1	Function assigned to the ASSIGN 1 button
2	Function assigned to the ASSIGN 2 button
3	Function assigned to the ASSIGN 3 button
4	Function assigned to the ASSIGN 4 button
5	Function assigned to the ASSIGN 5 button
6	Function assigned to the ASSIGN 6 button
7	Function assigned to the ASSIGN 7 button
8	Function assigned to the ASSIGN 8 button
9	Function assigned to the ASSIGN 9 button
Focus Hold Button	Function assigned to the Focus Hold button of the lens
Multi Function Dial	Function assigned to the multi-function dial
Grip Dial	Function assigned to the grip assignable dial
Handle Dial	Function assigned to the handle assignable dial

Battery status screen

Displays information about the battery and DC IN source.

Display item	Description
Detected Battery	Type of battery
Remaining	Remaining capacity (%)
Charge Count	Number of recharges
Capacity	Remaining capacity (Ah)
Voltage	Battery voltage (V)
Manufacture Date	Date of battery manufacture
Video Light Remaining	Displays the remaining capacity of the video light battery.
Power Source	Power supply source
Supplied Voltage	Supplied power source voltage

Media status screen

Displays the remaining capacity and remaining recording time of recording media.

Display item	Description
Media A information	Displays the media icon when recording media is inserted in slot A.
Media A remaining capacity meter	Displays the remaining capacity of recording media inserted in slot A expressed as a percentage on a bar graph.
Media A remaining recording time	Displays an estimate of the remaining recording time of the recording media inserted in slot A in units of minutes under the current recording conditions.
Format Media(A)*	Selects the formatting method (Full Format or Quick Format) and formats media A.
Media B information	Displays the media icon when recording media is inserted in slot B.
Media B remaining capacity meter	Displays the remaining capacity of recording media inserted in slot B expressed as a percentage on a bar graph.
Media B remaining recording time	Displays an estimate of the remaining recording time of the recording media inserted in slot B in units of minutes under the current recording conditions.
Format Media(B)*	Selects the formatting method (Full Format or Quick Format) and formats media B.

Network status screen

Displays the network connection status.

Display item	Description
Wireless LAN*	Wireless LAN settings and connection status
Wired LAN*	Wired LAN settings and connection status
USB Tethering*	USB tethering settings and connection status
Show Authentication	Press to display the user name and password for connecting to the unit.

[Tip]
If the Status column is flashing, tapping a flashing item may display hints on what to do. For details, see “Checking the Network Connection Status” (page 74), “Connecting with “Monitor & Control”” (page 67), “Connecting to the Internet via Wireless LAN” (page 68), “Connecting to the Internet via USB Tethering” (page 71), and “Connecting to the Internet via Wired LAN” (page 72).

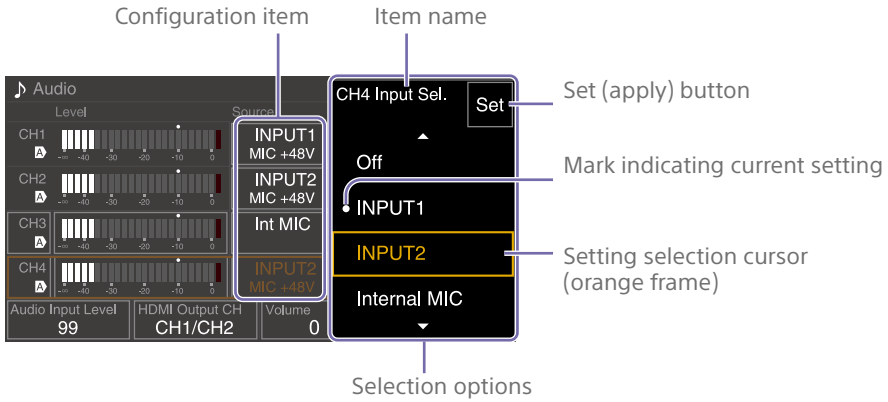
File Transfer status screen

Displays file transfer information.

Display item	Description
Auto Upload*	Auto Upload function On/Off status
Auto Upload (Proxy)*	Auto Upload (Proxy) function On/Off/Chunk status
Total Transfer Progress	Transfer progress of all jobs
Default Upload Server*	Name of Auto Upload (Proxy) destination server
Job Status (Remain / Total)	Remaining number of jobs and total number of jobs
Current File Transfer Progress	Transfer progress of current file transfer
Current Transferring File Name	Name of file currently being transferred
Server Address	Address of file transfer destination server
Destination Directory	Destination directory of file transfer destination server

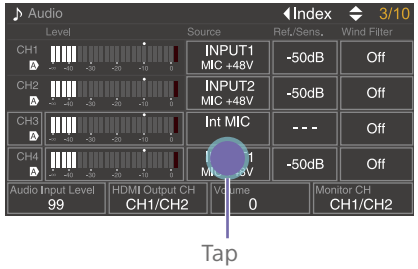
Using Touch-enabled Settings Screens

Screen layout



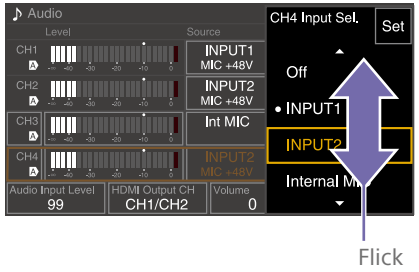
Operation

1 Tap a setup item.



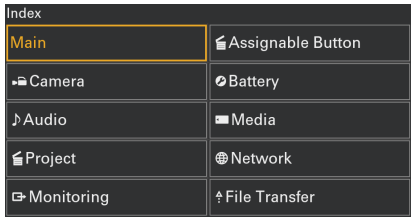
The selection options for the value appear.

2 Drag or flick a setting to select the value.



3 Tap the Set button or the value selection cursor.
The value is applied and the display returns to the previous screen.

4 Swipe the screen to the right.
The Index screen appears.



[Tips]

- Press the CANCEL/BACK button to return to the previous value.
- You can also use the multi-function dial or multi selector.
- Touch operations can also be disabled (page 116).

Power Supply

You can use a battery pack or AC power supply from an AC adaptor.
For safety, use only the Sony battery packs and AC adaptors listed below.

Lithium-ion battery packs
BP-U series

Battery chargers
BC-CU1 (supplied)
BC-U1A
BC-U2A

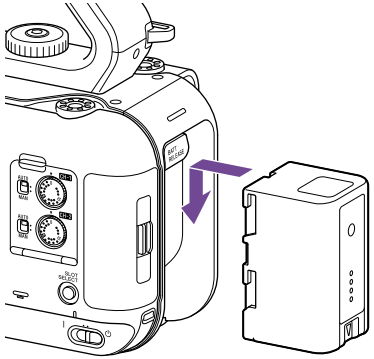
AC adaptor (supplied)

[CAUTION]
Do not store battery packs in locations exposed to direct sunlight, flame, or high temperature.

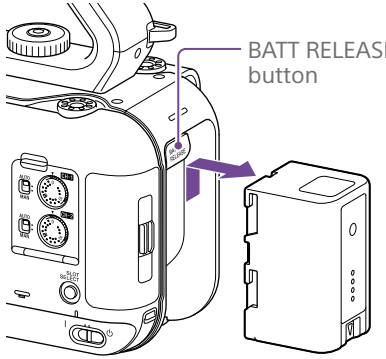
[Notes]
- When operating from an AC power source, use the supplied AC adaptor.
- Power cannot be supplied to the unit using the USB-C connector.
- Always set the POWER switch to the Off position before connecting a battery or AC adaptor. If it is connected with the POWER switch in the On position, the camcorder may be unable to start in some cases. If the camcorder cannot be started, set the POWER switch to the Off position and disconnect the battery pack or AC adaptor temporarily, then wait about 30 seconds before attempting to connect again. (If the AC adaptor is connected while the camcorder is operating from the battery pack, it can be connected with the POWER switch in the On position without problem.)

Using a Battery Pack

To attach a battery pack, plug the battery pack into the attachment (page 7) as far as it will go, and then slide it down to lock it into position.



To remove a battery pack, press and hold the BATT RELEASE button (page 7), slide the battery pack up and then pull it out of the attachment.



[Notes]
- Before attaching a battery pack, charge the battery using the dedicated BC-CU1, BC-U1A, or BC-U2A battery charger.
- Charging a battery pack while it is warm (for example, immediately after use) may not fully recharge the battery.

Checking the remaining capacity

When shooting/playing using a battery pack, the remaining battery capacity is displayed in the viewfinder (page 12).

Icon	Meaning
	91% to 100%
	71% to 90%
	51% to 70%
	31% to 50%
	11% to 30%
	0% to 10%

The camcorder indicates the remaining capacity by calculating the available time with the battery pack if operation is continued at the current rate of power consumption.

If the battery pack charge becomes low

If the remaining battery charge falls below a certain level during operation (Low Battery state), a low-battery message appears and the recording/tally lamp starts flashing to warn you.
If the remaining battery charge falls below the level at which operation cannot continue (Battery Empty state), a battery-empty message appears.
Replace with a charged battery pack.

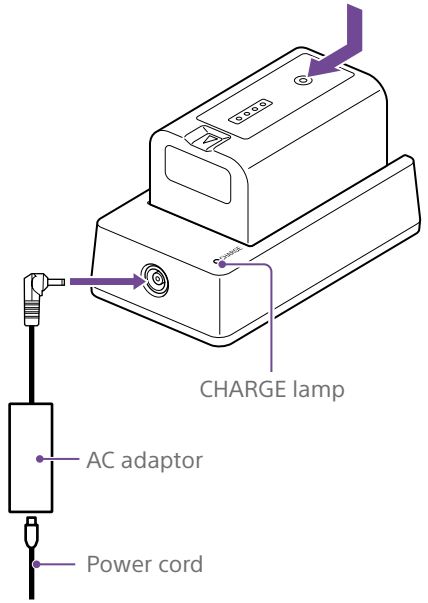
Changing the warning levels

The Low Battery level is set to 10% of full battery charge and the Battery Empty level is set to 3% by factory default. You can change the warning level settings using Camera Battery Alarm (page 118) in the Technical menu of the full menu.

To charge the battery pack using the supplied battery charger (BC-CU1)

1 Connect the AC adaptor (supplied) to the battery charger, and connect the power cord (supplied) to an AC power source.

2 Push the battery in and slide it in the direction of the arrow.
The CHARGE lamp lights up orange and charging starts.



CHARGE lamp (orange)
Lit: Charging
Flashing: Charging error, or temperature is outside the operating range and charging is paused
- When fully charged, the CHARGE lamp of the battery charger turns off.
- Always use genuine Sony batteries.

Charging time

Approximate time (minutes) required when you charge a fully discharged battery pack.

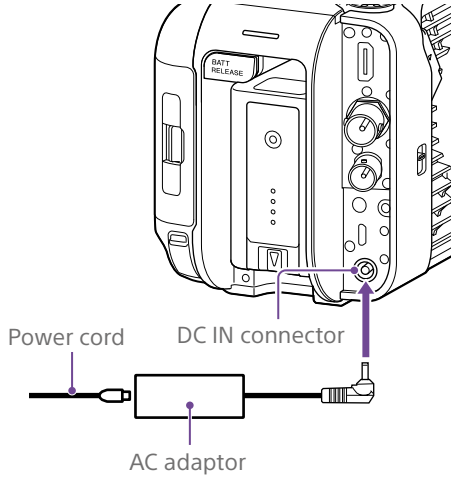
Battery pack	Full charge time
BP-U35	120 minutes

[Note]

If the AC adaptor is disconnected from the battery charger and the battery is left connected to the battery charger, the battery will start to discharge.

Using AC Power

Connecting the camcorder to an AC power source allows use without worrying about the need to recharge the battery pack.



Connect the AC adaptor to the DC IN connector on the camcorder, and connect the power cord (supplied) to an AC power source.

If the output voltage from the AC adaptor becomes low

If the output voltage from the AC adaptor falls below a certain level during operation (DC Low Voltage1 state), a message appears informing you that the AC adaptor output voltage has dropped, and the recording/tally lamp starts flashing.
If the output voltage from the AC adaptor falls below the level at which operation cannot continue (DC Low Voltage2 state), a message appears informing you that the AC adaptor output voltage is too low.
If this occurs, the AC adaptor may be faulty. Check the AC adaptor, as required.

Changing the warning voltages

The DC Low Voltage1 level is set to 16.5 V and the DC Low Voltage2 level is set to 15.5 V by factory default. You can change the warning level settings using Camera DC IN Alarm (page 118) in the Technical menu.

AC adaptor

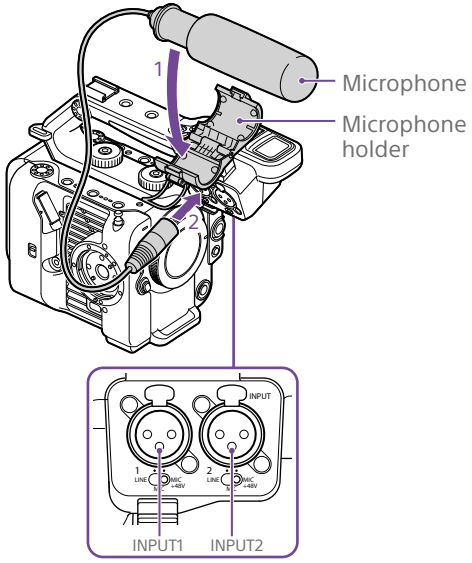
- Do not connect and use an AC adaptor in a confined space, such as between a wall and furniture.
- Connect the AC adaptor to the nearest AC power source. If a problem occurs during operation, immediately disconnect the power cord from the AC power source.
- Do not short-circuit the metal parts of the plug of the AC adaptor. Doing so will cause a malfunction.
- The battery cannot be charged while attached to the camcorder, even if the AC adaptor is connected.
- When disconnecting the AC adaptor from the unit, grasp the plug and pull it straight out. Pulling on the cable may cause a malfunction.

Attaching Devices

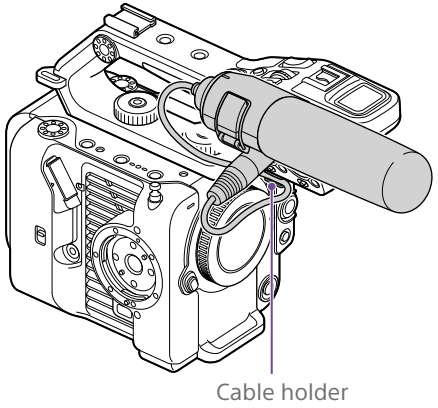
Attaching a Microphone (sold separately)

1 Place the microphone in the microphone holder.

2 Connect the microphone cable to the INPUT1 or INPUT2 connector.



3 Place the microphone cable into the cable holder as shown in the diagram.



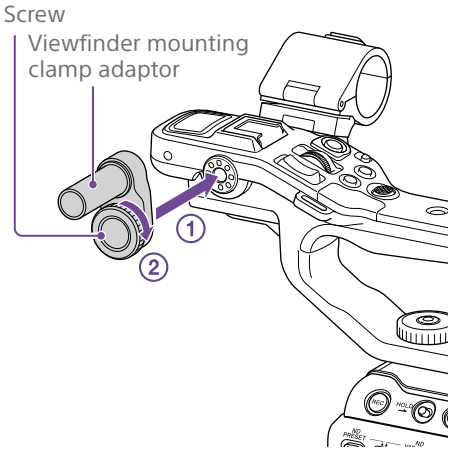
[Tips]
- If you cannot attach the microphone securely, use the spacer supplied with the microphone.
- Depending on the type of lens attached, the tip of the microphone may be visible in the camcorder image. Adjust the position of the microphone.

Attaching the Viewfinder

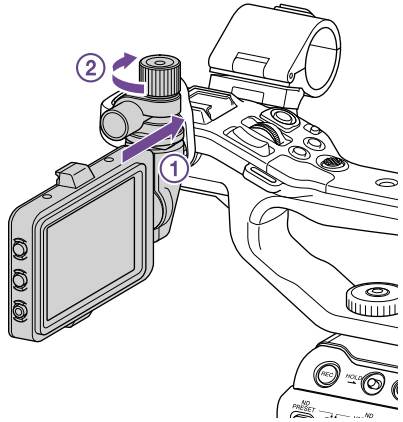
[Note]
Attach/remove the viewfinder while the camcorder is turned off.

Attaching the viewfinder to the front of the handle

1 Insert the viewfinder mounting clamp adaptor in the viewfinder attachment of the handle (①), and turn the screw (supplied) clockwise to secure it in position (②).
The mounting clamp adaptor can be freely attached in 45° increments, but the position where the attachment point is directly above the screw is recommended.

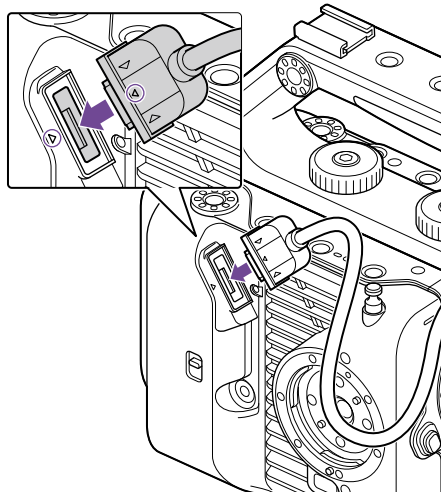


2 Mount the viewfinder clamp onto the viewfinder mounting clamp adaptor (①), and turn the locking knob clockwise to secure it in position (②).

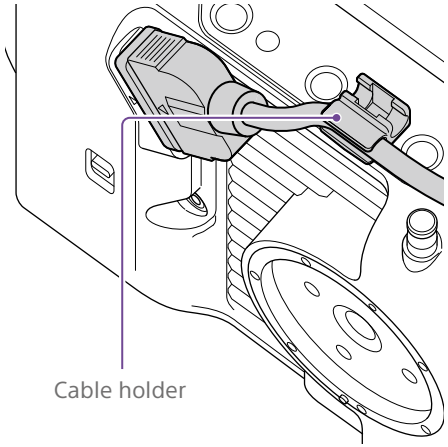


[Note]
Be sure to securely tighten the locking knob when using a viewfinder. The viewfinder may fall off if the locking knob is not tightened securely.

3 Align the ▲ mark on the camcorder with the ▼ mark on the viewfinder connector, and insert the cable.
Make sure that the ▼ mark is the outer side before inserting the connector.

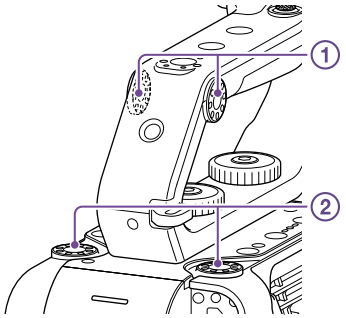


4 Place the cable into the cable holder as shown in the diagram.



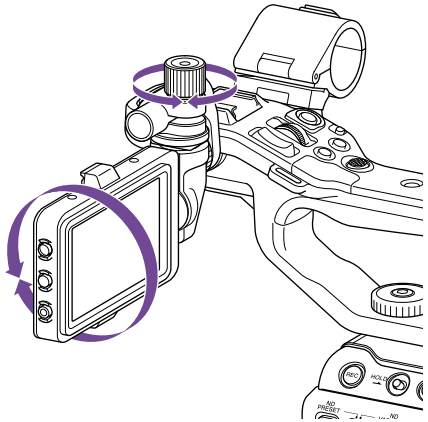
Attaching the viewfinder to the rear of the handle

There are two attachment points each on the rear of the handle (①) and rear of the camcorder (②) for attaching a viewfinder. Attach the viewfinder in the same way described in "Attaching the viewfinder to the front of the handle."

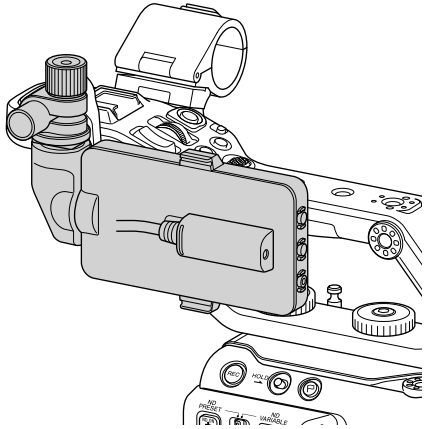


Adjusting the viewfinder position

Tilt the viewfinder up/down/forward/backward to adjust the angle of the viewfinder.
You can use the MIRROR switch to flip the image when viewing from the front of the camcorder, for example.



[Tip]
When the unit is not being used or is being transported, it is recommended that the viewfinder be moved to the position in the following diagram to protect the viewfinder.

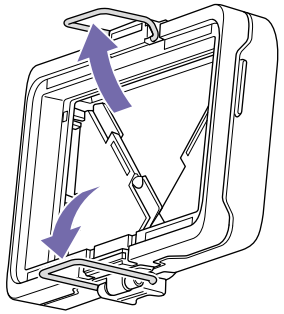


Removing the viewfinder

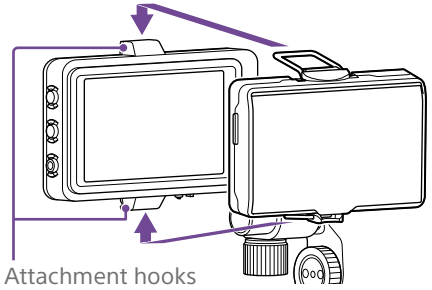
Loosen the viewfinder locking knob, and use the reverse procedure of attaching the viewfinder.

Attaching the Viewfinder Hood

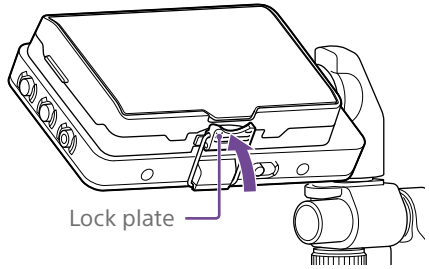
1 Open the metal clips on the viewfinder hood.



2 Attach the metal clip on the top of the viewfinder hood to the hook on the top of the viewfinder, and attach the metal clip on the bottom of the viewfinder hood to the hook on the bottom of the viewfinder.

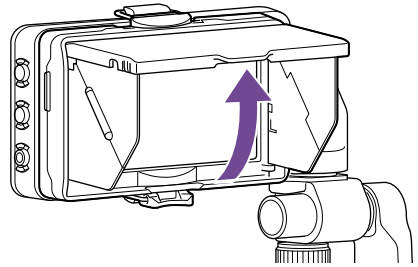


3 Push the lock plate on the bottom of the viewfinder hood in the direction of the arrow to lock the viewfinder hood into position.



Opening the viewfinder hood

Pull the bottom center of the viewfinder hood out towards you, and then pull up to open the hood.



[Note]
When moving the viewfinder, hold the body of the viewfinder and then move it. Do not grasp the viewfinder hood.

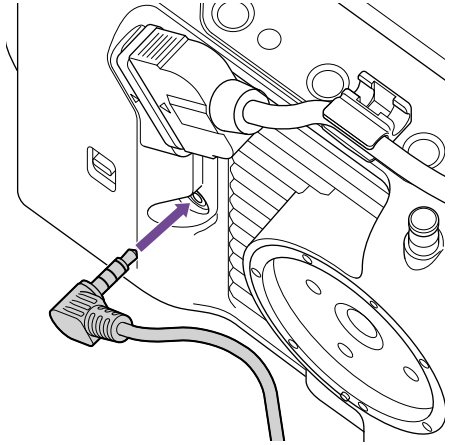
Removing the viewfinder hood

Unclip the viewfinder hood lock, and remove the viewfinder hood from the viewfinder.

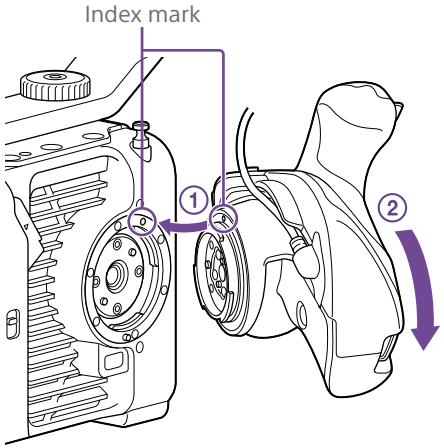
Attaching the Grip Remote Control

[Note]
Attach/remove the grip remote control while the camcorder is turned off.

1 Connect the cable to the grip remote control connector.

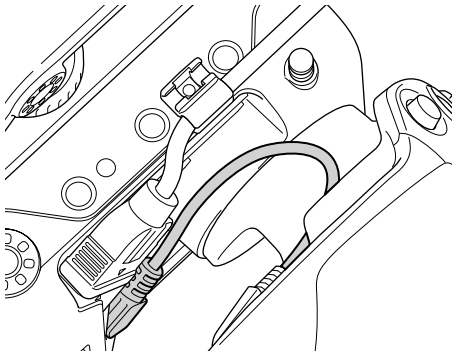


2 Align the grip remote control attachment of the camcorder and the mount index mark on the grip (①), attach the grip to the camcorder, and turn it counterclockwise slowly (②).
A click sound can be heard when it locks into position.



[Note]
If it cannot be attached correctly, re-attach it without applying excessive force to the grip remote controller or the camcorder.

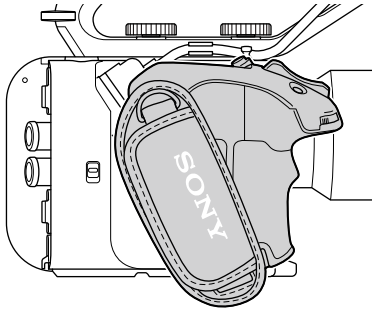
3 Insert the cable connected in step 2 under the slit of the grip remote control as shown in the diagram.



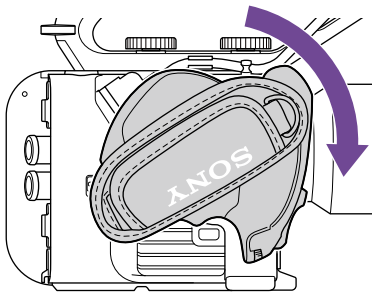
[Note]
If the cable is not placed under the slit, changing the angle of the grip attachment may place excessive force on the cable or the cable may get caught in the rotating mechanism.

Adjusting the angle of the grip remote control

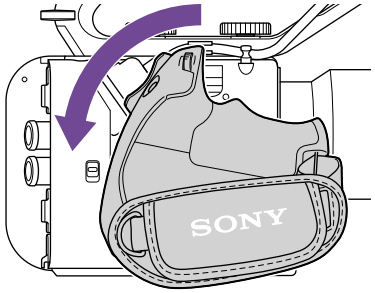
You can adjust the angle of the grip remote control over a range shown in the following diagram to suit your shooting style.



Standard position

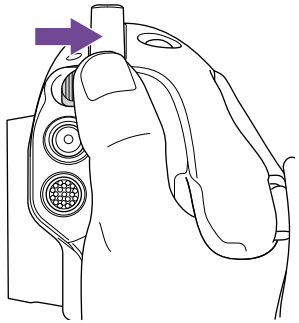


Rotated toward lens (90° max.)



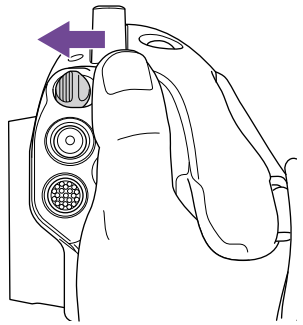
Rotated toward rear (83° max.)

1 Move the grip rotation lever to the position shown in the diagram and rotate the grip while pressing the lever.



2 Remove your finger from the grip rotation lever near the desired position.

3 Move the grip slightly until you hear a click sound, indicating the grip is secured in position.
When the grip is secured, the grip rotation lever returns to the original position.

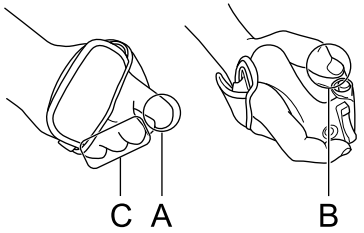


[Notes]
- After changing position, always check that the grip is securely positioned.
- You cannot adjust the angle beyond the adjustment range. Do not use excessive force when rotating the grip.

Holding the grip (recommended method)

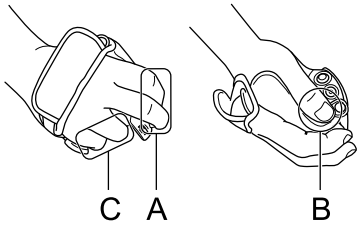
There are no rules about how to hold the grip, but the following example shows a way for easy operation of the grip.

When using the ASSIGN 5 button or multi selector



A: Operate the grip assignable dial using your index finger.
B: Operate the multi selector and ASSIGN 5 button using your thumb.
C: Firmly hold the grip using your middle finger, ring finger, and little finger.

When operating the zoom



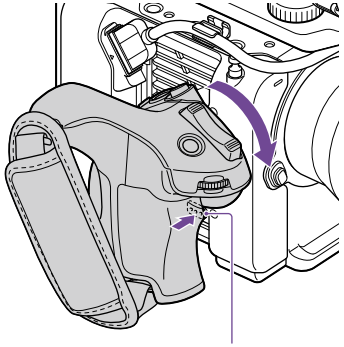
A: Operate the zoom lever using your index finger and middle finger.
B: Firmly hold the grip using your thumb.
C: Firmly hold the grip using your ring finger and little finger.

Removing the grip

[Note]
When removing the grip, be sure to place the camcorder on a flat surface, such as a desk.

1 Disconnect the cable from the grip remote control connector.

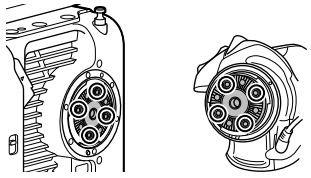
2 Press and hold the grip remote control release button of the camcorder, and rotate the grip clockwise until it detaches.



Grip remote control release button

[Tip]
A rosette can be attached to both the grip attachment point on the unit and the corresponding attachment point on the grip.
For details about purchasing rosettes, contact your Sony dealer.
- Camcorder side: 4-546-932- (option)
- Grip side: 4-547-089- (option)
- Attachment screws*
  Camcorder side: 7-627-556- (option)
  Grip side: 7-627-556- (option)

* Four screws are required for each rosette (screw holes are indicated by the circles in the following diagram). Use of screws other than those specified may damage exterior parts.



Camcorder side

Grip side

Attaching a Lens

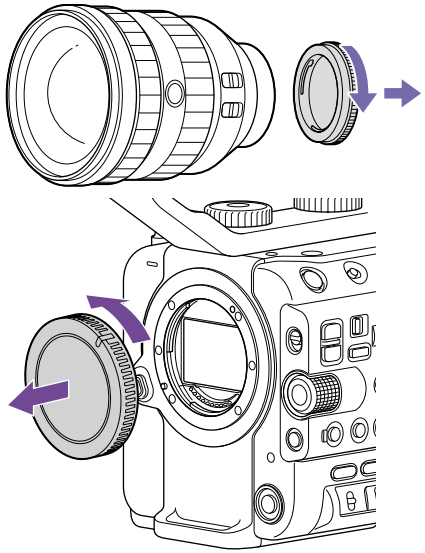
[CAUTION]
Do not leave the lens facing the sun. Direct sunlight can enter through the lens, be focused in the camcorder, and may cause a fire.

[Notes]
- Attach/remove a lens while the camcorder is turned off.
- A lens is a precision component. Do not place the lens on a surface with the lens mount face down. Attach the supplied lens mount cap.

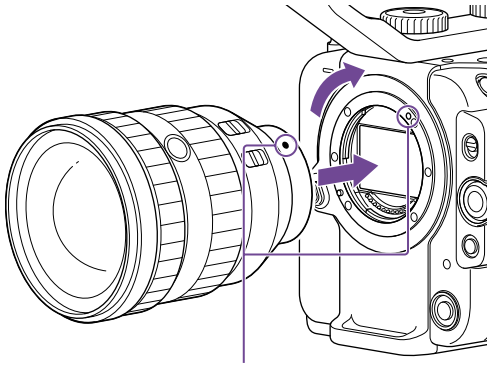
[Tip]
For details about lenses supported by the camcorder, contact your Sony service representative.

Attaching an E-mount lens

1 Remove the lens cap and cover from the camcorder and the lens.



2 Align the lens mount mark (white) with the camcorder, carefully insert the lens, and then turn the lens clockwise.
A click sound can be heard when it locks into position.



Mount marks (white)

[Note]
Do not press the lens release button when attaching a lens.

Attaching an A-mount lens

To use an A-mount lens, attach a lens mount adaptor (option) and then attach the A-mount lens.

[Note]
When using an A-mount lens, the iris is set manually and focus is set to MF.

Removing a lens

Remove a lens using the following procedure.

1 Press and hold the lens release button and turn the lens counterclockwise while supporting the lens.

2 Pull the lens out in the forward direction.

[Notes]
- When removing a lens, align the mount mark on the lens lock ring with the mount mark on the camcorder.
- Grasp the lens securely in your hand to prevent the lens from falling.
- If another lens will not be attached immediately, always attach the body cap.

Iris adjustments for lenses with Auto Iris switch

- When the lens Auto Iris is set to AUTO, the iris is adjusted automatically and can also be adjusted manually from the camcorder.
- When the lens Auto Iris is set to MANUAL, the iris can only be adjusted using the lens ring. Iris operation from the camcorder has no effect.

Focus adjustments for lenses with focus switch

- When the lens focus switch is set to AF/MF or AF, the focus is adjusted automatically and can also be adjusted manually from a remote control unit.
- When the lens focus switch is set to MF, the focus is adjusted using the lens ring and can also be adjusted manually from a remote control unit.

  [Note]
  When using an A-mount lens, manual adjustment from a remote control unit may not be available.

- When the lens focus switch is set to Full MF, the focus can only be adjusted using the lens ring. Focus operation from the camcorder has no effect.

Attaching to a tripod

Use the tripod screw holes on the camcorder when attaching to a tripod. Using the tripod mount on the lens may cause damage.

Anamorphic lenses

When shooting with an anamorphic lens, see “Setting De-Squeeze Display” (page 59) for details about how to de-squeeze the HDMI output image and how to de-squeeze in the viewfinder of the unit.

Configuring Basic Camcorder Operation

The initial settings screen appears in the viewfinder the first time the camcorder is turned on or after the backup battery has become completely discharged.
Set the date and time of the internal clock using this screen.

Time Zone

Time Zone sets the time difference from UTC (Coordinated Universal Time). Change the setting as required.

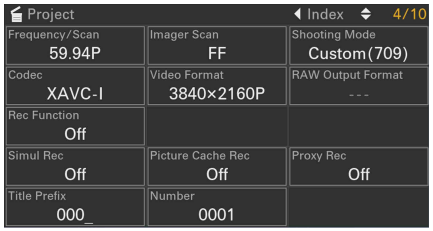
Setting the Date and Time

Use the multi selector (page 7) or the multi-function dial (page 5) to select items and settings, then press the multi selector apply button or multi-function dial to apply the settings and start the clock running.
Once the settings screen is closed, you can change the date, time, and time zone settings using Clock Set (page 124) in the Maintenance menu.

[Notes]

- If the clock setting is lost because the backup battery becomes fully discharged due to power being disconnected for an extended period (no battery pack and no DC IN power source), the initial settings screen will be displayed when you next turn the camcorder on.
- While the initial settings screen is displayed, no other operation, except turning the power off, is permitted until you finish the settings on this screen.
- The camcorder has a built-in rechargeable battery for storing the date, time, and other settings even when the camcorder is turned off.

Before shooting, configure the basic operation of the camcorder on the Project status screen to suit the application.



Shooting Mode

You can switch the shooting mode between "Custom" for creating images flexibly on-site, and "Log shooting (Flexible ISO, Cine EI Quick, Cine EI)" where the camcorder is operated similarly to a film camera with images being developed in post-production.
Set the shooting mode using Shooting Mode (page 19) on the Project status screen.

[Tip]
You can also set the shooting mode using Base Setting >Shooting Mode (page 97) in the Project menu of the full menu.

Custom

In Custom shooting mode, you can select the video standard.
You can set the video standard using Base Setting >Target Display (page 97) in the Project menu of the full menu.

- SDR(BT.709): Shooting according to HD broadcast standard
- HDR(HLG): Shooting according to next generation 4K broadcast standard

For details, see page 61.

Log shooting modes (Cine EI, Cine EI Quick, Flexible ISO)

In Log shooting modes, you select the base color gamut for recorded signals and output signals. The color gamut selected here is the color gamut of the video output when LUT is set to Off.
You can set the color gamut using Cine EI/Flex.ISO Set >Color Gamut (page 98) in the Project menu of the full menu.

- S-Gamut3.Cine/SLog3: Easy to adjust color gamut for digital cinema (DCI-P3).
- S-Gamut3/SLog3: Sony wide color gamut that covers the ITU-R BT.2020 color gamut.

For details, see "Shooting with Look Adjustment in Post-Production" (page 64).
There are three Log shooting modes: Flexible ISO, Cine EI, and Cine EI Quick.

- Flexible ISO: Records S-Log3 content with exposure settings reflecting the ISO sensitivity matching the scene being shot.
- Cine EI/Cine EI Quick: Records S-Log3 content at a selected base sensitivity (fixed), but allowing you to change the distribution between light and dark areas using the Exposure Index. In Cine EI Quick shooting mode, a base sensitivity that is suitable for the Exposure Index setting is selected automatically.

[Note]
When recording in Cine EI Quick or Cine EI, it is recommended that you keep the Exposure Index setting constant. If you change the Exposure Index setting, brightness correction may be very difficult to achieve in post-production, which may make it impossible to reproduce the state when the image was originally shot.

The functional restrictions for each shooting mode are given below.
Yes: Supported
No: Not supported

Item	Custom	Log shooting		
		Flexible ISO	Cine EI Quick	Cine EI
ISO/GAIN	Yes	Yes (ISO only)	No	No
AGC	Yes	Yes	No	No
Base Sensitivity	Yes	No	No	No
Base ISO	No	Yes	Yes (auto)	Yes
Exposure Index	No	No	Yes	Yes
Auto Shutter	Yes	Yes	No	No
ATW	Yes	Yes	No	No
LUT On/Off	No	Yes	Yes	Yes
Paint/Look (excluding Base Look)	Yes	No	No	No
Codecs including RAW	No	Yes	Yes	Yes

System Frequency

Set the system frequency using Frequency/Scan (page 19) on the Project status screen. The camcorder may reboot automatically after switching, depending on the selected value.

[Tip]
You can also set the system frequency using Rec Format >Frequency (page 97) in the Project menu of the full menu.

[Note]
You cannot switch the system frequency during recording or playback.

Imager Scan Mode

You can set the effective picture size and resolution of the image sensor.
Set the scan mode using Imager Scan (page 19) on the Project status screen.

- FF: Full-frame size.
- S35: Super 35mm size.

[Tip]
You can also set the scan mode using Rec Format >Imager Scan Mode (page 97) in the Project menu of the full menu.

[Notes]
- You cannot switch the imager scan mode during recording or playback.
- When set to S35, the video format is restricted to 1920×1080.

Codec

Set the codec using Codec (page 19) on the Project status screen.

[Tip]
You can also set the codec using Rec Format >Codec (page 97) in the Project menu of the full menu.

[Note]
You cannot switch the codec during recording or playback.

Video Format

You can set the video format for recording.
Set the video format using Video Format (page 19) on the Project status screen.

[Tip]
You can also set the video format using Rec Format >Video Format (page 97) in the Project menu of the full menu.

[Notes]
- You cannot switch the video format during recording or playback.
- Restrictions may apply to the signal from the SDI OUT and HDMI OUT connectors, depending on the video format setting.

Using Memory Cards

The camcorder records audio and video on CFexpress Type A memory cards (available separately) or SDXC memory cards (available separately) inserted in the card slots. The memory cards are also used for proxy recording and storing/loading settings, and when upgrading (software update).

About CFexpress Type A Memory Cards

Use the Sony CFexpress Type A memory cards* listed in “Recommended Media” (page 32) in the camcorder.
For details on operations with media from other manufacturers, refer to the operating instructions for the media or consult the manufacturer’s information.
* Referred to as “CFexpress cards” in this document.

About SDXC memory cards

Use the SDXC memory cards* listed in “Recommended Media” (page 32) in the camcorder.
* Referred to as “SD cards” in this document.

Recommended Media

The guaranteed operating conditions will vary depending on the Rec Format and Recording settings.
Yes: Operation supported
No: Normal operation not guaranteed

Recording format				CFexpress Type A	SDXC						
				VPG400	Class10	U1	U3	VSC V10	VSC V30	VSC V60	VSC V90
RAW Out & XAVC-I	4096×2160 Class300	Normal mode	59.94P	Yes	No	No	No	No	No	No	Yes
			50P	Yes	No	No	No	No	No	No	Yes
			29.97P	Yes	No	No	No	No	No	Yes	Yes
			25P	Yes	No	No	No	No	No	Yes	Yes
			24P	Yes	No	No	No	No	No	Yes	Yes
			23.98P	Yes	No	No	No	No	No	Yes	Yes
	3840×2160 Class300	Normal mode	59.94P	Yes	No	No	No	No	No	No	Yes
			50P	Yes	No	No	No	No	No	No	Yes
			29.97P	Yes	No	No	No	No	No	Yes	Yes
			25P	Yes	No	No	No	No	No	Yes	Yes
			23.98P	Yes	No	No	No	No	No	Yes	Yes
		S&Q (60fps or lower)	59.94P	Yes	No	No	No	No	No	No	Yes
			50P	Yes	No	No	No	No	No	No	Yes
			29.97P	Yes	No	No	No	No	No	No	Yes
			25P	Yes	No	No	No	No	No	No	Yes
			23.98P	Yes	No	No	No	No	No	No	Yes
		S&Q (100fps, 120fps)	59.94P	Yes	No	No	No	No	No	No	No
			50P	Yes	No	No	No	No	No	No	No
			29.97P	Yes	No	No	No	No	No	No	No
			25P	Yes	No	No	No	No	No	No	No
			23.98P	Yes	No	No	No	No	No	No	No

Recording format				CFexpress Type A	SDXC						
				VPG400	Class10	U1	U3	VSC V10	VSC V30	VSC V60	VSC V90
XAVC-I	4096×2160 Class300	Normal mode	59.94P	Yes	No	No	No	No	No	No	Yes
			50P	Yes	No	No	No	No	No	No	Yes
			29.97P	Yes	No	No	No	No	No	Yes	Yes
			25P	Yes	No	No	No	No	No	Yes	Yes
			24P	Yes	No	No	No	No	No	Yes	Yes
			23.98P	Yes	No	No	No	No	No	Yes	Yes
		S&Q (60fps or lower)	59.94P	Yes	No	No	No	No	No	No	Yes
			50P	Yes	No	No	No	No	No	No	Yes
			29.97P	Yes	No	No	No	No	No	No	Yes
			25P	Yes	No	No	No	No	No	No	Yes
			24P	Yes	No	No	No	No	No	No	Yes
			23.98P	Yes	No	No	No	No	No	No	Yes
	3840×2160 Class300	Normal mode	59.94P	Yes	No	No	No	No	No	No	Yes
			50P	Yes	No	No	No	No	No	No	Yes
			29.97P	Yes	No	No	No	No	No	Yes	Yes
			25P	Yes	No	No	No	No	No	Yes	Yes
			23.98P	Yes	No	No	No	No	No	Yes	Yes
		S&Q (60fps or lower)	59.94P	Yes	No	No	No	No	No	No	Yes
			50P	Yes	No	No	No	No	No	No	Yes
			29.97P	Yes	No	No	No	No	No	No	Yes
			25P	Yes	No	No	No	No	No	No	Yes
			23.98P	Yes	No	No	No	No	No	No	Yes
		S&Q (100fps, 120fps)	59.94P	Yes	No	No	No	No	No	No	No
			50P	Yes	No	No	No	No	No	No	No
			29.97P	Yes	No	No	No	No	No	No	No
			25P	Yes	No	No	No	No	No	No	No
			23.98P	Yes	No	No	No	No	No	No	No

Recording format				CFexpress Type A	SDXC						
				VPG400	Class10	U1	U3	VSC V10	VSC V30	VSC V60	VSC V90
XAVC-I	1920×1080 Class100	Normal mode	59.94P	Yes	No	No	No	No	No	Yes	Yes
			50P	Yes	No	No	No	No	No	Yes	Yes
			29.97P	Yes	No	No	Yes	No	Yes	Yes	Yes
			25P	Yes	No	No	Yes	No	Yes	Yes	Yes
			23.98P	Yes	No	No	Yes	No	Yes	Yes	Yes
		S&Q (60fps or lower)	59.94P	Yes	No	No	No	No	No	Yes	Yes
			50P	Yes	No	No	No	No	No	Yes	Yes
			29.97P	Yes	No	No	No	No	No	Yes	Yes
			25P	Yes	No	No	No	No	No	Yes	Yes
			23.98P	Yes	No	No	No	No	No	Yes	Yes
		S&Q (100fps, 120fps)	59.94P	Yes	No	No	No	No	No	No	Yes
			50P	Yes	No	No	No	No	No	No	Yes
			29.97P	Yes	No	No	No	No	No	No	Yes
			25P	Yes	No	No	No	No	No	No	Yes
			23.98P	Yes	No	No	No	No	No	No	Yes
		S&Q (150fps, 180fps)	59.94P	Yes	No	No	No	No	No	No	No
			50P	Yes	No	No	No	No	No	No	No
			29.97P	Yes	No	No	No	No	No	No	No
			25P	Yes	No	No	No	No	No	No	No
			23.98P	Yes	No	No	No	No	No	No	No
		S&Q (200fps, 240fps)	59.94P	Yes	No	No	No	No	No	No	No
			50P	Yes	No	No	No	No	No	No	No
			29.97P	Yes	No	No	No	No	No	No	No
			25P	Yes	No	No	No	No	No	No	No
			23.98P	Yes	No	No	No	No	No	No	No

Recording format				CFexpress Type A	SDXC						
				VPG400	Class10	U1	U3	VSC V10	VSC V30	VSC V60	VSC V90
XAVC-L	3840×2160 420	Normal mode	59.94P	Yes	No	No	Yes	No	Yes	Yes	Yes
			50P	Yes	No	No	Yes	No	Yes	Yes	Yes
			29.97P	Yes	No	No	Yes	No	Yes	Yes	Yes
			25P	Yes	No	No	Yes	No	Yes	Yes	Yes
			23.98P	Yes	No	No	Yes	No	Yes	Yes	Yes
		S&Q (60fps or lower)	59.94P	Yes	No	No	Yes	No	Yes	Yes	Yes
			50P	Yes	No	No	Yes	No	Yes	Yes	Yes
			29.97P	Yes	No	No	No	No	No	Yes	Yes
			25P	Yes	No	No	No	No	No	Yes	Yes
			23.98P	Yes	No	No	No	No	No	No	Yes
		S&Q (100fps, 120fps)	59.94P	Yes	No	No	No	No	No	Yes	Yes
			50P	Yes	No	No	No	No	No	Yes	Yes
			29.97P	Yes	No	No	No	No	No	No	Yes
			25P	Yes	No	No	No	No	No	No	Yes
			23.98P	Yes	No	No	No	No	No	No	No
	1920×1080 HD50	Normal mode	59.94P	Yes	No	No	Yes	No	Yes	Yes	Yes
			50P	Yes	No	No	Yes	No	Yes	Yes	Yes
			29.97P	Yes	No	No	Yes	No	Yes	Yes	Yes
			25P	Yes	No	No	Yes	No	Yes	Yes	Yes
			23.98P	Yes	No	No	Yes	No	Yes	Yes	Yes
		S&Q (60fps or lower)	59.94P	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
			50P	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
			29.97P	Yes	No	No	Yes	No	Yes	Yes	Yes
			25P	Yes	No	No	Yes	No	Yes	Yes	Yes
			23.98P	Yes	No	No	Yes	No	Yes	Yes	Yes
		S&Q (100fps, 120fps)	59.94P	Yes	No	No	Yes	No	Yes	Yes	Yes
			50P	Yes	No	No	Yes	No	Yes	Yes	Yes
			29.97P	Yes	No	No	No	No	No	Yes	Yes
			25P	Yes	No	No	No	No	No	Yes	Yes
			23.98P	Yes	No	No	No	No	No	Yes	Yes

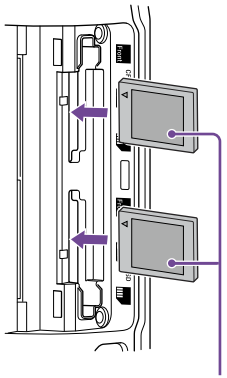
Recording format				CFexpress Type A	SDXC						
				VPG400	Class10	U1	U3	VSC V10	VSC V30	VSC V60	VSC V90
XAVC-L	1920×1080 HD50	S&Q (150fps, 180fps)	59.94P	Yes	No	No	No	No	No	Yes	Yes
			50P	Yes	No	No	No	No	No	Yes	Yes
			29.97P	Yes	No	No	No	No	No	No	Yes
			25P	Yes	No	No	No	No	No	No	Yes
			23.98P	Yes	No	No	No	No	No	No	Yes
		S&Q (200fps, 240fps)	59.94P	Yes	No	No	No	No	No	Yes	Yes
			50P	Yes	No	No	No	No	No	Yes	Yes
			29.97P	Yes	No	No	No	No	No	No	Yes
			25P	Yes	No	No	No	No	No	No	Yes
			23.98P	Yes	No	No	No	No	No	No	Yes
	1920×1080 HD35	Normal mode	59.94P	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
			50P	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
			29.97P	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
			25P	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
			23.98P	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
		S&Q (60fps or lower)	59.94P	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
			50P	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
			29.97P	Yes	No	No	Yes	No	Yes	Yes	Yes
			25P	Yes	No	No	Yes	No	Yes	Yes	Yes
			23.98P	Yes	No	No	Yes	No	Yes	Yes	Yes
		S&Q (100fps, 120fps)	59.94P	Yes	No	No	Yes	No	Yes	Yes	Yes
			50P	Yes	No	No	Yes	No	Yes	Yes	Yes
			29.97P	Yes	No	No	Yes	No	Yes	Yes	Yes
			25P	Yes	No	No	Yes	No	Yes	Yes	Yes
			23.98P	Yes	No	No	No	No	No	Yes	Yes
		S&Q (150fps, 180fps)	59.94P	Yes	No	No	Yes	No	Yes	Yes	Yes
			50P	Yes	No	No	Yes	No	Yes	Yes	Yes
			29.97P	Yes	No	No	No	No	No	Yes	Yes
			25P	Yes	No	No	No	No	No	Yes	Yes
			23.98P	Yes	No	No	No	No	No	Yes	Yes
		S&Q (200fps, 240fps)	59.94P	Yes	No	No	Yes	No	Yes	Yes	Yes
			50P	Yes	No	No	Yes	No	Yes	Yes	Yes
			29.97P	Yes	No	No	No	No	No	Yes	Yes
			25P	Yes	No	No	No	No	No	Yes	Yes
			23.98P	Yes	No	No	No	No	No	No	Yes

Inserting a Memory Card

1 Open the media cover of the card slot section.

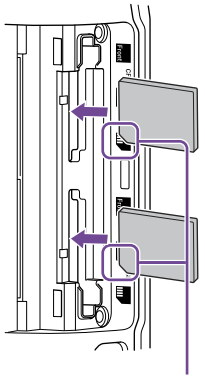
2 Insert a memory card.

- For CFexpress cards, the label faces to the left.



Label

- For SD cards, the label faces to the right with the beveled corner at the bottom.



Beveled corner

The access indicator (page 6) is lit red, then changes to green if the card is usable.

[Note]
If the access indicator flashes red continuously and does not change to green, temporarily turn off the camcorder, and remove and reinsert the memory card.

3 Close the media cover.

[Notes]
- The memory card, memory card slot, and image data on the memory card may be damaged if the card is forced into the slot in the incorrect orientation.
- When recording to media inserted in both CFexpress Type A/SD card slots A and B, insert media in both slots that is recommended for operation with the format of the recording.

Ejecting a Memory Card

Open the media cover of the card slot section, and lightly press the memory card in to eject the card.

[Notes]
- If the camcorder is turned off or the memory card is removed while the memory card is being accessed, the integrity of data on the card cannot be guaranteed. All data recorded on the card may be discarded. Always make sure the access indicator is green or off before turning off the camcorder or removing the memory card.
- When removing a memory card immediately after recording is finished, the memory card may be hot, but this does not indicate a problem.

Formatting (Initializing) Memory Cards

If an unformatted memory card or a memory card that was formatted in a different specification is inserted, the message “Media Needs to be Formatted” is displayed in the viewfinder.

Format the card using the following procedure.

1 Select Format Media (page 109) in the TC/Media menu of the full menu or on the Media status screen.

2 Select Media(A) (slot A) or Media(B) (slot B), then select the formatting method (Full Format or Quick Format).
A confirmation message appears.
- Full Format: Initializes the media completely, including the data region and data management information.
- Quick Format: Initializes the data management information of the media only.

[Note]
If there are files to be transferred on the memory card to be formatted, a supplementary message (display example: “A transfer target file exists”) appears below the confirmation message. In this case, confirm whether or not to initialize the memory card and execute or cancel the initialization.

3 Select Execute.
A message is displayed while formatting is in progress, and the access indicator is lit red.
When formatting is completed, a completion message is displayed. Press the multi-function dial to dismiss the message.

[Notes]
- Formatting a memory card erases all data, including recorded video data and setup files.
- Messages may appear during execution depending on the formatting process duration.

If formatting fails

Memory cards not supported by the camcorder cannot be formatted.
A warning message is displayed. Follow the instructions to replace the card with a supported memory card.

To use a card formatted on the camcorder in the slot of another device

First, make a backup of the card, then reformat the card in the device to be used.

Checking the Remaining Recording Time

When shooting (recording/standby), you can monitor the remaining capacity of the memory card in each slot using the slot A/B remaining media indicators in the viewfinder (page 12).
The remaining recording time is calculated from the remaining capacity of the media in each slot and the current video format (recording bit rate), and is displayed in units of minutes.

Memory card replacement timing

- When the total remaining recording time on the two memory cards becomes less than 5 minutes, the message “Media Near Full” appears, the recording/tally lamp starts flashing, and a beep sound (headphone output) will warn you.
  Replace with media that has free space.
- If you continue recording until the total remaining recording time reaches zero, the message changes to “Media Full” and recording stops.

[Note]
Up to approximately 600 clips can be recorded on one memory card.

Restoring Memory Cards

If for any reason an error should occur in a memory card, the card must be restored before use.
When you load a memory card that needs to be restored, a message appears in the viewfinder to ask whether you want to restore it.

Restoring a card

Turn the multi-function dial (page 5) to select Execute, then press the multi-function dial.
A message and progress status (%) are displayed while formatting is in progress, and the access indicator is lit red.
When restoration ends, a completion message appears.

If restoration fails

- Memory cards on which memory errors have occurred cannot be restored. A warning message is displayed. Follow the instructions to replace the memory card.
- Memory cards on which memory errors have occurred may become usable if they are reformatted.
- In some cases, some clips can be restored while others cannot. The restored clips can be played normally.

[Notes]
- For restoration of media recorded with this camcorder, be sure to use this camcorder.
- Media recorded with a device other than this camcorder or with another camcorder of different version (even of the same model) may not be restored using this camcorder.
- Clips shorter than 2 seconds cannot be restored.

Basic Operation Procedure

Basic shooting is conducted using the following procedure.

1 Attach the necessary devices, and check that power is being supplied.

2 Insert the memory card(s).

3 Set the POWER switch to the on position.
The POWER indicator turns on, and the camera image appears in the viewfinder.

4 Press the record START/STOP button (page 5).
The recording/tally lamp lights and recording begins.

5 To stop recording, press the record START/STOP button again.
Recording stops, and the camcorder switches to STBY (standby) mode.

[Note]
If the record START/STOP button is pressed within a few seconds after turning the camcorder on, the recording/tally lamp lights up to indicate the unit is in the recording state, but recording to media may not occur for the first few seconds, depending on the selected recording format.

Switching Between Memory Cards

When two memory cards are inserted, press the SLOT SELECT button (page 6) to switch cards.
Recording automatically switches to the second memory card just before the remaining capacity on the first card is reduced to zero (relay recording). You can continue recording continuously when switching memory cards by replacing the memory card that is full with a new memory card.

[Notes]
- You cannot switch between memory cards during playback mode. Also, continuous playback of a clip spanning media in slot A and slot B is not supported.
- When a recordable memory card is inserted in the second memory card slot, the memory cards will not switch if only proxy data is recorded on that memory card.

Clips (recorded data)

When you stop recording, the video, audio, and accompanying data from the start to the end of the recording are saved as a single "clip" on a memory card.

Clip names

The name of each clip recorded by the camcorder is automatically assigned using the format set in Clip Name Format (page 108) of the TC/Media menu of the full menu.
When Clip Name Format (page 108) >Auto Naming is set to Cam ID + Reel# for recordings, clip names are generated according to the following rules.

- If a clip with a name in Cam ID + Reel# format already exists on the inserted memory card, the information from the last recorded clip is inherited.
  Example: If "B002C003_XXXXXXXX" exists on the memory card, the next created clip will be "B002C004_XXXXXXXX."
- If a blank memory card is inserted, the Reel Number of the previously recorded clip is incremented by 1.
  Example: If you insert a blank card 2 after recording up to "D001CXXX_XXXXXXXX" on card 1, the next created clip will be "D002C001_XXXXXXXX" and the clip name is displayed underlined until recording starts.
- If Camera ID and Reel Number are specified, that information becomes active.
  Example: If you change the Camera ID to "F" and Reel Number to "001" from the menu on a memory card that has recorded up to "E003CXXX_XXXXXXXX," the next recorded clip will be "F001CXXX_XXXXXXXX."
  Also, if you change only the Camera ID, the Reel Number will be set to "001" and the clip name is displayed underlined until recording starts.

Maximum clip duration

Up to 6 hours per clip.
The maximum duration of continuous recording is the same as the maximum duration of a clip. If the recording time exceeds the maximum duration of a clip, a new clip is created automatically and recording continues. The new clip appears as a separate clip on the thumbnail screen.

Multiple clips are recorded in succession during relay recording, but recording will stop automatically after approximately 24 hours.

[Notes]
- Do not eject a memory card while recording to it is in progress. When recording, only change memory cards in slots for which the slot access indicator is off.
- When the remaining capacity on the memory card being recorded becomes less than one minute and a recordable memory card is inserted in the other slot, a "Will Switch Slots Soon" message appears. The message disappears after switching memory card slots.
- Relay recording may not operate if recording is started when the remaining memory card capacity is less than one minute. For correct relay recording, check that the remaining memory card capacity is more than one minute before starting recording.
- Video created using the camcorder relay recording function cannot be played back seamlessly on the camcorder.
- To combine video created using the camcorder relay recording function, use "Catalyst Browse" software.

Monitoring Audio

You can monitor the audio that is being recorded using headphones.
Connecting a set of headphones to the headphone jack (page 5) enables you to monitor the audio being recorded. You can also monitor the playback audio (page 81) using the built-in speaker (page 6) or headphones.
You can adjust the volume of the audio to monitor using Volume (page 18) on the Audio status screen or Audio Output >Volume (page 114) in the Audio menu of the full menu.
You can select the channel to monitor using Monitor CH (page 18) on the Audio status screen or Audio Output >Monitor CH (page 114) in the Audio menu of the full menu.

Specifying Time Data

Setting the timecode

Set the timecode to record using Timecode (page 108) in the TC/Media menu of the full menu.

Setting user bits

You can add an 8-digit hexadecimal number to the recorded image as user bits. You can also set the user bits to the current time. Set using Users Bit (page 108) in the TC/Media menu.

Displaying time data

Set the timecode to display using TC Display (page 108) >Display Select in the TC/Media menu.
Pressing an assignable button (page 54) with DURATION/TC/U-BIT assigned will switch the display between the timecode, user bits, and duration in sequence.

Switching the timecode input/output

You can switch the timecode input/output using the TC IN/OUT select switch (page 4).
For details, see page 135.

Reviewing the Recording (Rec Review)

You can review the last recorded clip on the screen (recording review).

[Note]
Rec Review is not supported if the video format is changed after recording a clip.

Recording review method

Assign Rec Review to one of the assignable buttons beforehand.
When recording is stopped, press the assignable button (page 54) with Rec Review assigned. Playback of the last recorded clip begins.
The clip is played to the end, Rec Review ends, and the camcorder returns to STBY (standby) mode.

To stop Rec Review

Press the assignable button with Rec Review assigned or press the CANCEL/BACK button.

Recording review settings

You can set the playback start position to one of the following using the Rec Review setting (page 116) in the Technical menu.

- Last 3 seconds of the clip
- Last 10 seconds of the clip
- Start of the clip

[Tip]
If you want to review a specific clip after recording multiple clips, press the THUMBNAIL button to display the thumbnail screen, and select the clip to start playback.

Adjusting the Zoom

You can adjust the zoom according to the shooting conditions.

When a power zoom lens is attached, you can adjust the zoom using the zoom lever on either the grip remote control or the handle. The zoom speed varies with the pressure applied to the lever.
The camcorder is equipped with a zoom function that uses image signal processing called Clear Image Zoom. When Clear Image Zoom is enabled, zoom is supported even for fixed focal distance (prime) lenses. It can also be used to extend the range beyond the optical range on a power zoom lens.
The maximum zoom ratio using Clear Image Zoom varies depending on the recording resolution.

- For QFHD/4K recording resolution: 1.5×
- For HD recording resolution: 2×

Selecting the Type of Zoom

Set the type of zoom using Zoom >Zoom Type (page 116) in the Technical menu of the full menu.
The type of zoom will vary depending on the type of lens that is attached.

Attached lens	Zoom Type setting	
	Optical Zoom Only	On(Clear Image Zoom)
Prime lens/ Manual zoom lens	Zoom operation using the lever is not supported.	Clear Image Zoom is supported.
Power zoom lens	Optical zoom only	Optical zoom and Clear Image Zoom are supported.

[Notes]

- Clear Image Zoom is not available in the following cases.
  - When S&Q Motion >Frame Rate (page 96) in the Shooting menu of the full menu is higher than 60fps
  - When Rec Format >Codec (page 97) in the Project menu of the full menu is set to RAW or an option that includes RAW
- Operating the SERVO/MANUAL select switch on a lens resets the magnification of Clear Image Zoom to 1×.
- When push auto focus (AF-S) is executed during Clear Image Zoom operation, the AF operation gives priority to the area at the center of the screen.

Setting the Handle Zoom

Set the handle zoom setting using Handle Zoom (page 116) in the Technical menu of the full menu.

Setting the Direction of the Zoom Ring

On some E-mount lenses, the direction of rotation of the zoom ring can be reversed.
Set the direction of rotation using Lens >Zoom Ring Direction (page 117) in the Technical menu of the full menu.

Adjusting the Focus

You can adjust the focus automatically or manually according to the shooting conditions.

Adjusting the Focus Manually (Manual Focus)

To adjust the focus manually, set the FOCUS switch (page 4) to the “MAN” position.
This allows you to adjust the focus manually according to the shooting conditions.
Manual focusing is useful for the following types of subjects.

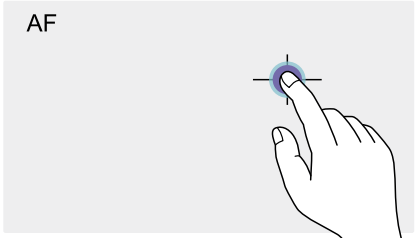
- Subjects on the far side of a window covered in water droplets
- Subjects with low contrast against the background
- Subjects further away than nearby subjects

[Tip]
You can also use auto focus in the following cases when manual adjustment is the main method of operation.

- When the AF subject shift sensitivity is set to 1(Locked)
- When the FOCUS switch is set to the “AF” position
- When operating the focus ring (AF Assist, page 45)

Focusing using touch operation (Spot Focus)

In manual focus mode, you can specify the position where you want to adjust the focus by touch operation.
To use spot focus, set Focus >Touch Function in MF (page 95) in the Shooting menu to Spot Focus.
A spot focus mark is displayed when you tap the position where you want to adjust the focus.



[Tips]

- In spot focus mode, you can press an assignable button (page 54) assigned with Push AF/Push MF to temporarily stop spot focus and enable auto focus while the button is pressed. The focus returns to manual focus when you release the button.
- The spot focus function does not operate if the lens is set for manual focusing.
- The spot focus function does not operate when a setting other than Off(1.0×) is selected in De-Squeeze (page 110) in the Monitoring menu of the full menu.
- The spot focus position cannot be specified while the focus is magnified or when Touch Operation (page 116) in the Technical menu is set to Off.

Using auto focus temporarily (Push Auto Focus (AF))

When Focus >Push AF Mode (page 95) in the Shooting menu of the full menu is set to AF, press the PUSH AUTO FOCUS button (page 4) when in manual focus mode to focus automatically while the button is pressed.
Focusing occurs within the focus area set using Focus >Focus Area (page 95) in the Shooting menu of the full menu.
The focus returns to manual focus when you release the button.
This is useful when you want to move the focus slowly from one subject to another subject during manual focus.

[Tip]
The same operation is supported using an assignable button (page 54) assigned with Push AF/Push MF.

[Notes]

- The Push Auto Focus function does not operate if the lens is set for manual focusing.
- The Push Auto Focus function does not operate when a setting other than Off(1.0×) is selected in De-Squeeze (page 110) in the Monitoring menu of the full menu.

Using single-shot auto focus (Push Auto Focus (AF-S))

Set Focus >Push AF Mode (page 95) in the Shooting menu of the full menu to Single-shot AF(AF-S), then set the focus area using Focus >Focus Area(AF-S) (page 95) in the Shooting menu of the full menu.
Press the PUSH AUTO FOCUS button when in manual focus mode to focus automatically at high speed. Focusing stops as soon as you release the button.
The focus status is indicated by the focus indicator.

- On: The focus is fixed at the focus position.
- Flashing: Out of focus. Since focusing is not automatic, change the composition and focus settings to achieve focus.

The focus returns to manual focus when you release the button.
This is useful when you want to quickly focus on a subject before starting to shoot.

[Tips]

- The same operation is supported using an assignable button (page 54) assigned with Push AF/Push MF.
- You can also assign Push AF Mode to an assignable button (page 54).
- You can also assign Focus Area(AF-S) to an assignable button (page 54).
- You can display/hide the focus area frame using Display On/Off >Focus Area Ind.(AF-S) (page 110) in the Monitoring menu of the full menu.
- During focus magnification, the focus adjusts to fit the magnified display position.

[Notes]

- The Push Auto Focus function does not operate if the lens is set for manual focusing.
- The focus area frame is not hidden when using the DISPLAY button.
- During Clear Image Zoom operation, the Focus Area(AF-S) frame position cannot be set. During Push AF-S operation, the AF operation also gives priority to the center portion.
- The Push Auto Focus function does not operate when a setting other than Off(1.0×) is selected in De-Squeeze (page 110) in the Monitoring menu of the full menu.

Focusing using magnified view (Focus Magnifier)

By factory default, the VF Focus Mag ×3/×6 function is assigned to the ASSIGN 4 button on the grip remote control and the ASSIGN 7 button on the handle (page 54).
Press the ASSIGN 4 button or ASSIGN 7 button to switch the viewfinder to the focus magnifier screen, with the center magnified by approximately three times. Press the button again to increase the magnification to approximately six times. This function is useful for checking the focus.
Press the button again to return to the normal screen.
You can move the position to be magnified during focus magnification using the multi selector (page 7). Pressing the multi selector returns to the center of the image.
When push auto focus (AF) is used during focus magnification, focusing occurs within the focus area set using Focus >Focus Area (page 95) in the Shooting menu of the full menu.
If push auto focus (AF-S) is used during focus magnification, the focus adjusts to the magnified display position.
You can also press an assignable button (page 54) assigned with HDMI FocusMagx2/x4 to switch the HDMI output image to the focus magnifier screen, with the center of the HDMI output image magnified by approximately two times. Press the button again to increase the magnification to approximately four times.

[Notes]
- The recorded image and SDI output image are not magnified when the focus is magnified.
- It is not possible to magnify both the viewfinder image and the HDMI output image at the same time. Select the magnification target using Focus Magnifier >Focus Mag Button Target (page 112) in the Monitoring menu of the full menu.
- HDMI output image focus magnification is only available when the HDMI output format is FHD and the SDI output image display embedding is set to Off.
- The magnified position returns to the center of the screen when the camcorder is turned off.

Adjusting the Focus Automatically (Auto Focus)

The camcorder uses phase detection AF for high-speed focusing and contrast AF for high-accuracy focusing.
The combination of these two AF methods provides auto focus with both high speed and high accuracy.
To adjust the focus automatically, set the FOCUS switch (page 4) of the camcorder to the "AUTO" position. If the lens is fitted with a focus selector switch, set the switch to the "AF/MF" or "AF" position. If the switch is set to the "Full MF" or "MF" position, lens focusing cannot be operated from the camcorder (page 28).

[Tip]
When Focus >AF Assist (page 95) in the Shooting menu of the full menu is set to On, you can still use the focus ring on the lens during auto focus to adjust the focus.

[Notes]
- A lens that supports auto focus is required.
- Accuracy may not be obtained depending on the shooting conditions.
- The focus cannot be adjusted automatically on an A-mount lens.
- Auto focus cannot be used when De-Squeeze >Ratio (HDMI/VF) (page 110) is set to a value other than Off(1.0×) in the Monitoring menu.

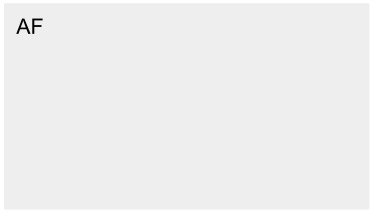
Setting the auto focus area/position (Focus Area)

You can set the target area for auto focus using Focus >Focus Area (page 95) in the Shooting menu of the full menu.

Flexible Spot:
Focuses on a specified position in the image.
When selected, specify the position using the multi selector (page 7).
You can return to the center position by pressing and holding the multi selector.

Zone:
Automatically searches for a focus position within the specified zone.
When selected, specify the position using the multi selector (page 7).
You can return to the center position by pressing and holding the multi selector.

Wide:
Searches for a subject over a wide angle of the image when focusing. A frame is not displayed.



[Tip]
The same operation is supported using an assignable button (page 54) assigned with Focus Area.
You can display/hide the focus area frame using Display On/Off >Focus Area Indicator (page 110) in the Monitoring menu of the full menu.

[Note]
The focus area frame is not hidden when using the DISPLAY button.

Changing the focus area quickly (Focus Setting)

You can change the position and size of the auto focus area quickly during shooting by assigning Focus Setting to an assignable button (page 54).
The operation varies depending on the focus area setting.

When Focus >Focus Area (page 95) in the Shooting menu of the full menu is set to Flexible Spot or Zone
You can change the position of the focus area by pressing an assignable button assigned with Focus Setting and adjusting using the multi selector (page 7).
You can return the position of the focus area to the center while adjusting the position by pressing the multi selector.
You can change the size of the focus area by pressing and holding an assignable button assigned with Focus Setting.
After changing the size, set the position of the focus area by pressing the multi selector.
When finished, press the assignable button assigned with Focus Setting to return to the original screen.

When Focus >Focus Area (page 95) in the Shooting menu of the full menu is set to Wide
You can only change the size of the focus area by pressing and holding an assignable button assigned with Focus Setting. The position can be also be changed by first changing the type to Flexible Spot or Zone.

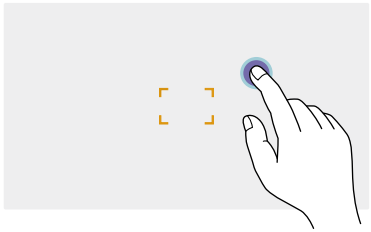
[Tips]
- When both Focus >Push AF Mode (page 95) in the Shooting menu of the full menu is set to Single-shot AF(AF-S) and the FOCUS switch (page 4) is in the MF position, you can change the Focus Area(AF-S) (page 95) focus area position.
- The focus area frame is displayed orange when the position of the focus area can be changed.

Moving the focus area frame using touch operation (touch focus area)

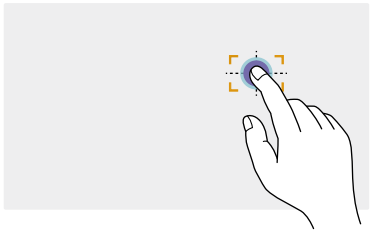
You can change the position of the focus area by pressing an assignable button (page 54) assigned with Focus Setting to change the focus area display to orange, and then move it using touch operation.
Tap the screen to move the focus area, with the focus area centered on the tapped position. Drag on the screen to move the focus area to the position traced by your finger (page 10).

[Tip]
You can enable/disable touch focus operation on the shooting screen using an assignable button assigned with Focus Setting.

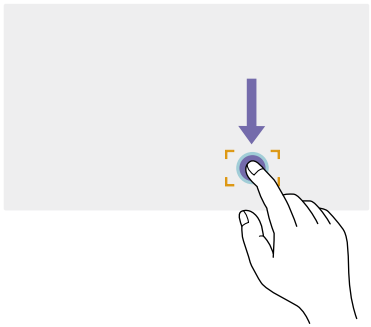
Tap any position



Focus area moves, with the focus area centered on the tapped position.



Drag to move the focus area, tracing your finger position



[Notes]

- If you tap a position or drag the focus area to a position that exceeds the setting range, the focus area is set to the top/bottom/left/right edge of the setting range.
- This function is not available in the following circumstances.
  - When Touch Operation (page 116) in the Technical menu of the full menu is set to Off
  - When the focus area is displayed in gray or is not displayed at all

Adjusting the auto focus action (AF transition speed, AF subject shift sensitivity)

AF transition speed

You can set the speed of the focus drive for when the subject changes using Focus >AF Transition Speed (page 95) in the Shooting menu of the full menu.
When set to low speed, the focus moves slowly when the subject to be focused changes, enabling the shooting of impressive images.
When set to high speed, the focus switches between subjects quickly. The subject that enters the frame is immediately focused, making this setting ideal for documentary shooting which requires quick focusing.

Focused on far subject

During the change:
1(Slow): Focus operates slowly
.
.
.
7(Fast): Focus operates rapidly

Focused on near subject

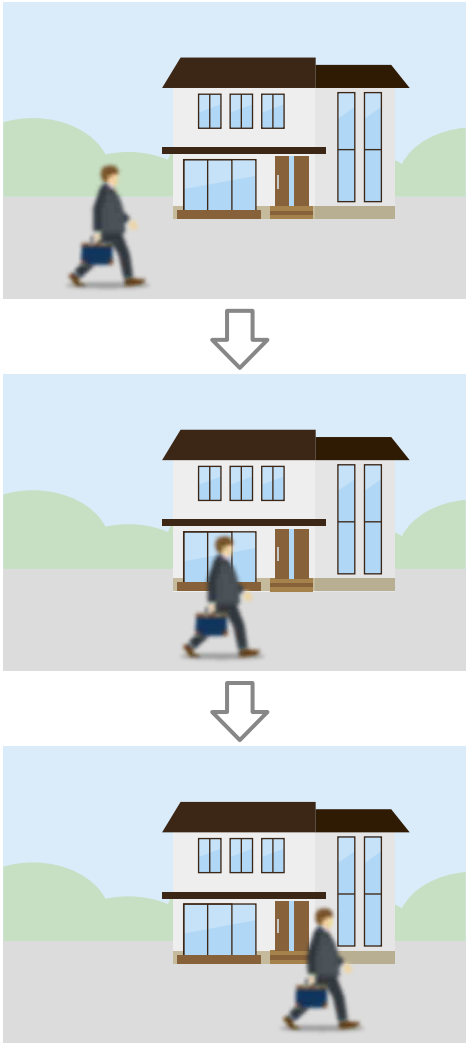
AF subject shift sensitivity

You can set the sensitivity for changing between subjects using Focus >AF Subj. Shift Sens. (page 95) in the Shooting menu of the full menu.
When set to a low sensitivity, the focus does not readily shift even if another subject moves in front of the in-focus subject. When set to a high sensitivity, the focus shifts to give priority to the subject that moves in front.

[Tip]

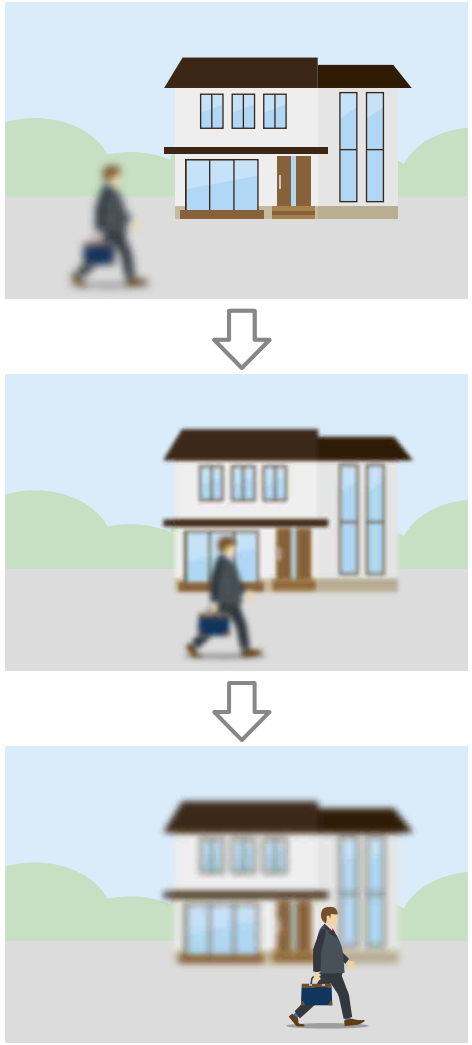
If AF Speed/Sens. is assigned to an assignable button, the level bars for adjusting values are displayed in the following order each time the button is pressed, allowing you to change the AF transition speed and AF subject shift sensitivity settings.
AF transition speed → AF subject shift sensitivity → No display ...

AF Subj. Shift Sens.: 1(Locked On)



Change focus to another subject slowly

AF Subj. Shift Sens.: 5(Responsive)



Change focus to another subject rapidly

Changing the focus target manually (AF Assist)

When Focus >AF Assist (page 95) in the Shooting menu of the full menu is set to On, you can still use the focus ring on the lens during auto focus to adjust the focus on a subject.
When you stop using focus ring operation, auto focus continues to focus on the subject focused using the focus ring (AF assist state). After operating the focus ring, moving the focus to another subject is slightly more difficult, regardless of the Focus >AF Subj. Shift Sens. (page 95) setting in the Shooting menu of the full menu.
The AF assist state is canceled by the following.

- When the subject focused using the focus ring is no longer visible
- When switching to manual focus
- When realtime tracking AF is started

[Tips]

- The AF assist state can be canceled quickly by using an assignable button (page 54) assigned with Push AF/Push MF.
- Realtime tracking AF stops when the focus ring is operated.
- In Face/Eye Only AF mode, auto focus focuses on the face closest to the focus position of the focus ring.

Using manual focus temporarily (Push Manual Focus)

Press the PUSH AUTO FOCUS button (page 4) when in auto focus mode to focus manually while the button is pressed. The focus returns to auto focus when you release the button.
This allows you to temporarily stop auto focus and focus manually when something that is not the subject of shooting crosses in front of the subject.

[Tip]

The same operation is supported using an assignable button (page 54) assigned with Push AF/Push MF.

Tracking using Face and Eye Detection (Face/Eye Detection AF)

The camcorder can detect people's faces and eyes as a target to track, and then adjust the focus on faces and eyes within the focus area. This function is available only when the focus mode is AF mode or during push auto focus. When faces are detected, gray face/eye detection frames are displayed. When auto focusing is possible, the frames change to white and tracking starts. When eyes are detected and the focus is adjusted, the face/eye detection frame is displayed on the eyes. When multiple individuals are detected, the main subject is automatically determined.

[Tips]
- When the focus area is set to Zone or Flexible Spot and faces or eyes overlap within the specified focus area, the face/eye detection frames change to white, and the camcorder focuses on those faces/eyes.
- When push auto focus (AF-S) is used, the face/eye detection frames for the faces/eyes that are in focus change to green.

Set the face/eye detection AF action using Focus >Face/Eye Detection AF (page 95) in the Shooting menu.

Face/Eye Only AF:
The camera detects the faces/eyes of subjects (people) and focuses and tracks only on their faces/eyes. While a face or eye is not detected, AF is temporarily stopped and the [!] (AF paused) icon (page 12) is displayed. This mode is effective when you want to auto focus and track faces/eyes only.

Face/Eye Priority AF:
The camera detects the faces/eyes of subjects (people) and prioritizes the focusing/tracking on the faces/eyes. When a face or eye is not detected, focusing is in AF mode (default setting).

Off:
The face/eye detection AF function is disabled.

[Notes]
- During push auto focus operation, Face/Eye Priority AF is activated even if Face/Eye Only AF is currently selected.
- When the FOCUS switch is set to MAN, face/eye detection AF is disabled (excluding during push auto focus operation).
- If you turn the camcorder off while Face/Eye Only AF is selected, the mode automatically switches to Face/Eye Priority AF when the camcorder is next turned on.

Hiding face/eye detection frames

You can show/hide face/eye detection frames using Display On/Off >Face/Eye Detection Frame (page 110) in the Monitoring menu of the full menu.

[Note]
Green face/eye detection frames are displayed for faces and eyes that are in focus using push auto focus (AF-S), and are not hidden using the DISPLAY button or when Face/Eye Detection Frame is set to Off.

Switching face/eye detection AF operation using an assignable button

Assign Face/Eye Detection AF to an assignable button (page 54). You can then switch face/eye detection AF operation in the order Face/Eye Priority AF, Face/Eye Only AF, and Off each time you press the button.

Setting using the direct menu

You can also set the face/eye detection AF operation using the direct menu (page 54).

Tracking a Specified Subject (Realtime Tracking AF)

You can maintain focus on a subject by specifying the subject by touch operation or by selecting a face detection frame.
When a subject is selected, a white tracking frame is displayed and tracking starts.

[Tips]
- Tracking occurs over the entire image area, regardless of the focus area setting.
- When Focus >Touch Function in MF (page 95) in the Shooting menu is set to Tracking AF, realtime tracking AF is supported even when the focus mode is MF mode.

The following actions occur for the tracking target, depending on the face/eye detection AF operating mode.

Face/Eye Only AF, Face/Eye Priority AF:
Use for focusing and tracking of a specified subject.
If the tracking target is a person and a face/eye is detected, the camera focuses on that face/eye.
When a tracking target face/eye is detected, the tracking target face is saved. When saved, a ❁ (saved tracking face icon) (page 12) is displayed.

[Note]
If tracking AF is started during manual focus, the tracking target face is not saved.

Off:
Focusing and tracking of the specified subject. Face/eye detection does not occur, even if the tracking target is a person.

[Note]
The Realtime Tracking AF function does not operate if the lens is set for manual focusing.

Starting realtime tracking AF

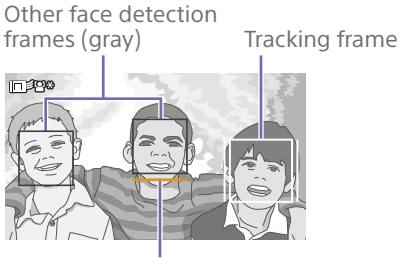
When a specific subject is specified as the tracking target, tracking of that target starts.

Specifying by touch operation
Tap the target subject to track in one of the following states:
- When the focus mode is MF mode or during push manual focus, and Focus >Touch Function in MF (page 95) in the Shooting menu is set to Tracking AF
- When the focus mode is AF mode or during push auto focus (AF)

[Note]
Specifying a target by touch operation is not available when Touch Operation (page 116) in the Technical menu is set to Off.

Specifying using the face/eye selection cursor

Set Focus >Multi Selector Function (page 95) to Face/Eye Sel. Cursor in the Shooting menu, move the face/eye selection cursor (orange underline) to the target subject to track using the multi selector (page 7), and press the multi selector.



[Tips]

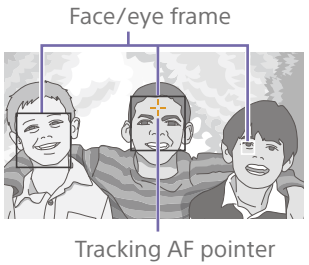
- You can also change the target to track during realtime tracking AF.
- If an assignable button (page 54) assigned with the VF Focus Mag function is pressed during realtime tracking AF, the tracking status is maintained and the focus is magnified. However, you cannot specify a target to track during focus magnification.

[Note]

During manual focus, tracking cannot be started using the face/eye selection cursor.

Specifying using the tracking AF pointer

You can select any subject on the screen using the multi selector instead of touch operation. Set Focus >Multi Selector Function (page 95) to Pointer in the Shooting menu, move the tracking AF pointer to the target subject to track using the multi selector (page 7), and press the multi selector.



- You can set the color of the tracking AF pointer using Focus >Pointer Color (page 95) in the Shooting menu.
- You can set whether to display a border for the tracking AF pointer using Focus >Pointer Border (page 95) in the Shooting menu.

[Tip]

The default position of the tracking AF pointer is at the center of the display image. You can return to the default position by pressing and holding the multi selector.

[Note]

When the multi selector is operated with a function other than realtime tracking AF, the tracking AF pointer is grayed out and the multi selector cannot be used to control the tracking AF pointer.

Stopping realtime tracking AF

Stopping by touch operation

Tap the (Realtime tracking AF stop) button displayed at the top left of the touch panel.

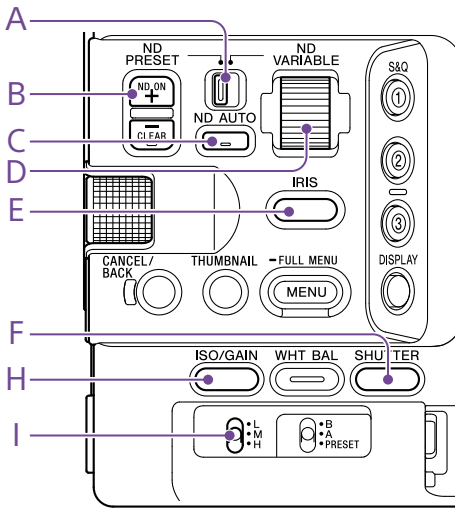
Stopping using the PUSH AUTO FOCUS button

Press the PUSH AUTO FOCUS button (page 4) on the front side.

[Tips]

- Realtime tracking AF will stop in the following cases:
  - When the FOCUS switch or AUTO/MAN control on the lens is switched
  - When the focus mode is changed
  - When auto focus assist is executed
  - When the focus area setting or face/eye detection AF action is changed
  - When an assignable button assigned with Push AF/Push MF is pressed
  - When the tracking target is not within the shooting screen or when the subject is out of focus for a few seconds
- When a tracking face is saved (when the "❁" (saved tracking face icon) is displayed), realtime tracking AF will resume when the saved tracking face enters the image area. To clear the tracking face, stop realtime tracking AF as described above.

Adjusting the Brightness



You can adjust the brightness by adjusting the iris, gain, shutter speed, and by adjusting the light level using ND filters. You can also make adjustments automatically. The target level for automatic brightness adjustment is set using Auto Exposure (page 93) >Level in the Shooting menu of the full menu. You can also assign AE Level/Mode to an assignable button or assignable dial (page 54).
You can press an assignable button assigned with AE Level/Mode to set the brightness level for auto exposure detection (page 93).
You can press and hold an assignable button assigned with AE Level/Mode to set the operating mode for auto exposure adjustment (page 93).

[Notes]
- The gain cannot be adjusted in Cine EI/Cine EI Quick shooting mode. The base sensitivity is fixed. Also, the brightness cannot be adjusted automatically using the shutter speed. Brightness auto adjustment using the iris and ND filter is supported.
- From software version 4.0, brightness auto adjustment operates so that the image with applied LUT is correctly exposed.

Selecting the Base Sensitivity

You can select from two types of base sensitivity on the unit.
In Custom shooting mode, you can set the base sensitivity to High or Low using Base ISO/Sensitivity on the Main status screen (page 18) or the Camera status screen (page 18), or ISO/Gain/EI >Base Sensitivity (page 91) in the Shooting menu of the full menu.
In Cine EI/Flexible ISO shooting mode, you can set the base ISO to ISO 12800 or ISO 800 using Base ISO/Sensitivity on the Main status screen (page 18) or the Camera status screen (page 18), or ISO/Gain/EI >Base ISO (page 91) in the Shooting menu of the full menu.
In Cine EI Quick shooting mode, a base sensitivity of ISO 12800 or ISO 800 suitable for the selected Exposure Index setting is selected automatically.
Selecting Low or ISO 800 in normal lighting conditions and selecting High or ISO 12800 in low lighting conditions is recommended.

* Can also be configured on the status screen.

[Tip]
You can also assign Base ISO/Sensitivity to an assignable button (page 54).

Adjusting the Iris

You can adjust the iris to adjust the brightness.

Adjusting the iris automatically

This function adjusts the brightness according to the subject. A lens that supports auto iris is required.

1. If a lens with Auto Iris switch is attached, set the switch to AUTO.
2. Press and hold the IRIS function button (E) to display the direct menu (page 54) or the Auto/Manual selection screen, and select Auto.

[Tip]
You can also assign Auto Iris to an assignable button (page 54).

[Note]
The iris cannot be adjusted automatically on an A-mount lens.

Adjusting the iris manually

1. Press and hold the IRIS function button (E) to display the direct menu (page 54) or the Auto/Manual selection screen, and select Manual.
2. Press the IRIS function button (E) so that the iris value is displayed on a white background or the iris value selection screen appears.
3. Turn the multi-function dial to adjust the value.

[Tips]
- You can also operate the multi-function dial as an IRIS dial (page 54) by assigning the IRIS function to the multi-function dial.
- You can also assign the IRIS function to an assignable dial (page 54).

Temporarily adjusting automatically

Press the assignable button (page 54) assigned with the Push Auto Iris function to automatically adjust the iris temporarily while the button is pressed.
The iris returns to the previous setting when you release the button.

[Notes]
- When the Auto Iris switch of the lens is set to MANUAL, the Auto Iris and Push Auto Iris functions on the unit have no effect. Manual iris adjustments on the unit also have no effect.
- Push Auto Iris cannot be executed when Iris >Bokeh Control (page 93) in the Shooting menu is set to On.

Adjusting the Gain

In Custom/Flexible ISO shooting mode, you can adjust the gain to adjust the brightness.

Adjusting the gain automatically

Press and hold the ISO/GAIN function button (H) to display the direct menu (page 54) or the Auto/Manual selection screen, and select Auto.

[Tips]
- You can also perform the same action by setting Auto Exposure (page 93) >AGC in the Shooting menu to On.
- You can also assign AGC to an assignable button (page 54).

Adjusting the gain manually

You can control the gain when you want to adjust the exposure while using a fixed iris setting or when you want to prevent the gain increasing due to AGC.

1 Press and hold the ISO/GAIN function button (H) to display the direct menu (page 54) or the Auto/Manual selection screen, and select Manual.

2 Set the ISO/GAIN switch (I) to H, M, or L.

[Tips]
- You can change the preset value of each switch position using ISO/Gain<L>/<M>/<H> (page 18) on the Camera status screen or ISO/Gain/EI >ISO/Gain<H>/<M>/<L> (page 90) in the Shooting menu of the full menu.
- You can also assign Push AGC to an assignable button, and set AGC to On temporarily by pressing and holding the button.

[Notes]
- Push AGC cannot be executed when Iris >Bokeh Control (page 93) in the Shooting menu of the full menu is set to On.
- Push AGC cannot be executed in Cine EI/Cine EI Quick shooting mode.

Controlling the gain (fine adjustment)

1 Press the ISO/GAIN function button (H) so that the gain value is displayed on a white background or the gain value selection screen appears.

2 Turn the multi-function dial to adjust the value.

[Tip]
Change the gain preset value according to the ISO/GAIN switch (I) setting.

Controlling the gain temporarily (fine adjustment)

Turn the assignable dial (page 54) assigned with the ISO/Gain/EI function, to adjust the gain value set by the ISO/GAIN switch (I). This is useful when you want to adjust the exposure by one step without changing the depth of field.
The adjusted gain value is canceled by switching the ISO/GAIN switch (I), changing the base sensitivity, setting AGC to On, or turning the power off.

[Tips]
- You can also assign this function to the multi-function dial (page 54).
- You can also assign Push AGC to an assignable button, and set AGC to On temporarily by pressing and holding the button.

[Notes]
- Push AGC cannot be executed when Iris >Bokeh Control (page 93) in the Shooting menu of the full menu is set to On.
- Push AGC cannot be executed in Cine EI/Cine EI Quick shooting mode.

Selecting the Exposure Index

In Cine EI/Cine EI Quick shooting mode, it is assumed that video output with LUT set to Off is recorded as the main signal. By changing the brightness of the image with LUT On to match an EI value, you can check the result of post-production exposure sensitivity adjustment while shooting.
You can change the EI value by setting the ISO/GAIN switch (I) to H, M, or L. In Cine EI Quick shooting mode, you can change the base sensitivity at the same time as the EI value.

[Tip]
You can change the EI value of each switch position using ISO/Gain/EI (page 18) on the Camera status screen or ISO/Gain/EI >Exposure Index<H>/<M>/<L> (page 90) in the Shooting menu of the full menu.

Adjusting the exposure index

1 Press the ISO/GAIN function button (H) so that the EI value is displayed on a white background or the gain value selection screen appears.

2 Turn the multi-function dial to adjust the value.

[Tip]
Change the EI preset value according to the ISO/GAIN switch (I) setting.

Adjusting the Shutter

You can adjust the shutter to adjust the brightness.

Adjusting the shutter automatically

Press and hold the SHUTTER function button (F) to display the direct menu (page 54) or Shutter Mode selection screen, and select Auto to adjust the shutter speed or shutter angle automatically in response to the image brightness.

[Tip]
You can also perform the same adjustment by setting Auto Exposure >Auto Shutter (page 93) in the Shooting menu of the full menu to On.

Adjusting the shutter manually

1 Press and hold the SHUTTER function button (F) to display the direct menu (page 54) or the Shutter Mode selection screen, and select Speed or Angle.

2 Press the SHUTTER function button (F) so that the shutter value is displayed on a white background or the shutter value selection screen appears.

3 Turn the multi-function dial to adjust the shutter speed.

[Tips]
- To adjust the exposure time to match the frame interval, select Off in step 1.
- You can also set the angle and adjust the frequency (page 92).

Adjusting the Light Level (ND Filter)

In conditions where the lighting is too bright, you can set the appropriate brightness by changing the ND filter.
The unit features two ND filter modes. You can switch between the two modes using the ND PRESET/VARIABLE switch.

Setting the display mode used for the light transmittance level

You can set the display mode used to express the transmittance of light through the ND filter using ND Filter >Display Mode (page 92) in the Shooting menu of the full menu.
- When set to Transmittance:
  Clear (No ND filter), 1/4 to 1/128

- When set to Optical Density:
  Clear (No ND filter), 0.6 to 2.1

Adjusting in preset mode

Set the ND PRESET/VARIABLE switch (A) to the PRESET position, and set the ND FILTER POSITION up/down buttons (B) to one of the following settings.
Clear: No ND filter
1: Transmittance set by ND Filter >Preset1 (page 91) in the Shooting menu of the full menu.
2: Transmittance set by ND Filter >Preset2 (page 91) in the Shooting menu of the full menu.
3: Transmittance set by ND Filter >Preset3 (page 91) in the Shooting menu of the full menu.

Adjusting in variable mode

Set the ND PRESET/VARIABLE switch (A) to the VARIABLE position. Switch the ND FILTER POSITION up/down buttons (B) between CLEAR and On.

Adjusting the light level automatically

You can set Auto ND Filter to On to enable auto exposure adjustment using the ND filter.

1 Press the [+] button of the ND FILTER POSITION up/down buttons (B) to turn ND filter operation on.

2 Press and hold the ND VARIABLE AUTO button (C) until Auto is selected.

Adjusting the light level manually

1 Press the [+] button of the ND FILTER POSITION up/down buttons (B) to turn ND filter operation on.

2 Press and hold the ND VARIABLE AUTO button (C) until Manual is selected.

3 Turn the ND VARIABLE dial (D) to adjust the transmittance of the filter.

[Tips]
- You can also assign the ND Filter function to an assignable dial (page 54).
- In variable mode, you can adjust Transmittance in 1/4EV increments or Optical Density in 0.05 (equivalent to 1/6EV) increments.

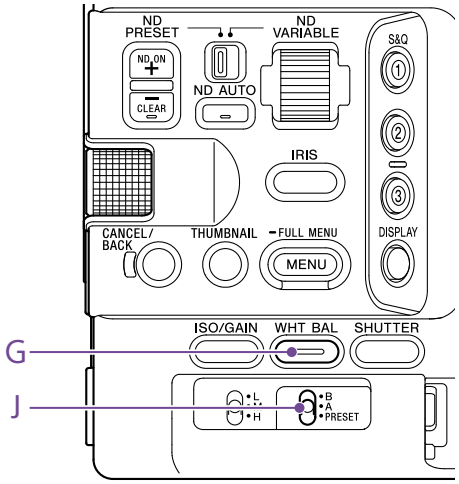
Temporarily adjusting automatically

You can assign Push Auto ND to an assignable button (page 54), and temporarily set Auto ND Filter to On by pressing and holding the button. Releasing the button sets Auto ND Filter back to Off.
Press the [+] button of the ND FILTER POSITION up/down buttons (B) to turn ND filter operation on.

[Notes]
- When the ND filter is switched passing through CLEAR during shooting, the ND filter frame is displayed on the image and the operating sound is included in the audio.
- Push Auto ND cannot be executed when Iris > Bokeh Control (page 93) in the Shooting menu is set to On.

[Tips]
- You can set to CLEAR by turning the ND VARIABLE dial (D) down from ND1/4. Turning the dial up from CLEAR sets ND1/4. You can disable this action using ND Dial >CLEAR with Dial (page 116) in the Technical menu of the full menu.
- You can also assign ND Filter Position to an assignable button (page 54), and press the button instead of using the ND FILTER POSITION up/down buttons to change the setting.
  Preset mode: Clear → Preset1 → Preset2 → Preset3 → Clear...
  Variable mode: Clear → On → Clear...
- You can also assign Auto ND Filter to an assignable button (page 54), and press the button to switch Auto ND filter between On and Off.
- When shooting a brightly lit subject, closing the iris too much may cause diffraction blur, producing an image starting to go out of focus (typical phenomena in video cameras). You can suppress this effect to obtain better shooting results using the ND filter.

Adjusting for Natural Colors (White Balance)



You can select the adjustment mode to suit the shooting conditions.

ATW (Auto Tracing White Balance)

This function adjusts the white balance automatically to an appropriate level.
The white balance is automatically adjusted when the color temperature of the light source changes.
Press and hold the WHT BAL function button (G) to display the direct menu (page 54) or the ATW/Manual selection screen, and select ATW.
You can select the speed of adjustment (five steps) using White Setting >ATW Speed (page 94) in the Shooting menu of the full menu.

[Tip]
You can freeze the current white balance setting by assigning the ATW Hold function to an assignable button (page 54), and pressing the assignable button to temporarily pause ATW mode.

[Notes]
- ATW cannot be used in Cine EI/Cine EI Quick shooting mode.
- It may not be possible to adjust to the appropriate color using ATW, depending on the lighting and subject conditions.
  Examples:
  – When a single color dominates the subject, such as sky, sea, ground, or flowers.
  – When the color temperature is extremely high or extremely low.
  If the appropriate effect cannot be obtained because the ATW auto tracking speed is slow or for other reasons, run auto white balance.

Adjusting the White Balance Manually

1 When white balance is set to ATW mode, press and hold the WHT BAL function button (G) to display the direct menu (page 54) and select W:P, W:A, or W:B, or to display the ATW/Manual selection screen and select Manual.

2 Select B, A, or PRESET using the WHT BAL switch (J).
B: Memory B mode
A: Memory A mode
PRESET: Preset mode

[Tip]
ATW can be enabled for memory B by setting White Setting >White Switch<B> (page 94) in the Shooting menu of the full menu to ATW.

Memory A/Memory B mode
This mode adjusts the white balance to the setting saved in memory A or B, respectively.

Preset mode
This mode adjusts the color temperature to a preset value (factory default is 3200K).

Changing the default preset value

In preset mode, you can change an existing preset value directly.
Press and hold the WHT BAL function button (G) and select one of the following in the direct menu.
Custom: → 3200K, → 4300K, → 5600K, → 6300K
Log shooting: → 3200K, → 4300K, → 5500K

[Tip]
You can also assign Preset White Select to an assignable button (page 54), and press the button to change the setting.
Custom: 3200K → 4300K → 5600K → 6300K → 3200K...

Log shooting: 3200K → 4300K → 5500K → 3200K...

Changing the color temperature

1 Press the WHT BAL function button (G) so that the color temperature value is displayed on a white background or the color temperature selection screen appears.

2 Turn the multi-function dial to adjust the value.

[Tips]
- In preset mode, you can set the value in 100K units.
- In memory mode, you can set the value in 20K increments in the range 2000K to 5600K. Values above 5600K can be set at intervals equal to the amount of color change (mired) from 5580K to 5600K. You can also adjust the tint value in the direct menu, the Tint selection screen on the Home screen, or using White (page 94) >Tint in the Shooting menu of the full menu.

Running auto white balance

The white balance to save in memory A/ memory B mode is configured automatically.

1 Select memory A mode or memory B mode.

2 Place white paper (or other object) in a location with the same lighting source and conditions as the subject, then zoom in on the paper to show white on the screen.

3 Adjust the brightness.
Adjust the iris using the procedure in “Adjusting the iris manually” (page 48).

4 Press the WB SET button (page 4).
- If auto white balance is run in memory mode, the result of auto adjustment is saved in the memory (A or B) selected in step 1.
- If auto white balance is run in ATW mode, the result is inherited and ATW resumes when the auto adjustment ends. This is useful when you want to adjust the white balance very quickly, regardless of the ATW Speed setting.

[Note]
If the adjustment is not successful, an error message is displayed on the screen for about three seconds. If the error message persists after repeated attempts to set white balance, contact your Sony service representative.

Setting the Audio to Record

You can specify the audio to be recorded using the input connectors, switches, and dials of the camcorder.

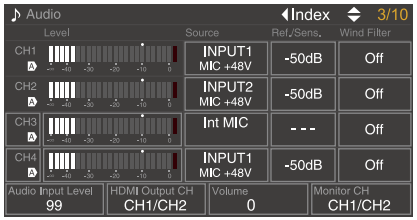
External audio input connectors and selector switches

INPUT1 connector (page 7)
INPUT2 connector (page 7)
Multi-interface shoe (page 7)
INPUT1 (LINE/MIC/MIC+48V) switch (page 7)
INPUT2 (LINE/MIC/MIC+48V) switch (page 7)

Switches for setting the audio level

CH1 (AUTO/MAN) switch (page 6)
CH2 (AUTO/MAN) switch (page 6)
AUDIO LEVEL (CH1) dial (page 6)
AUDIO LEVEL (CH2) dial (page 6)

Audio status screen



Selecting the Audio Input Device

1 Set the audio input using CH1/CH2/CH3/CH4 >Source (page 18) on the Audio status screen or Audio Input >CH1 Input Select to CH4 Input Select (page 113) in the Audio menu of the full menu.
If using a microphone or XLR adaptor connected to the multi-interface shoe, specify Shoe CH1 or Shoe CH2. For details about the XLR adaptor, see “Adding Audio Input Connectors” (page 53).

[Notes]
- Audio is not recorded in Interval Rec mode or Slow & Quick Motion mode.
- The camcorder has a built-in narration microphone for recording ambient sound. It can be used for syncing the timing with other equipment. In such cases, specify Internal MIC.
- Only the handle internal microphone (page 7) becomes active for recording audio when the handle is attached. When the handle is not attached, the narration microphone (page 6) for recording ambient sound can be used.
- When CH1 Input Select and CH2 Input Select are set to Internal MIC, the audio recording level of both CH1 and CH2 is adjusted using the AUDIO LEVEL(CH1) dial (page 6). When CH3 Input Select and CH4 Input Select are set to Internal MIC, the audio recording level of both CH3 and CH4 is adjusted using CH3 Input Level (page 113).

2 Select the input audio source.
Set the INPUT1/INPUT2 (LINE/MIC/MIC+48V) switches to the devices connected to the INPUT1/INPUT2 connectors, respectively.

Connected device	Switch position
External audio source (e.g. mixer)	LINE
Dynamic microphone, battery-operated microphone	MIC
+48 V phantom power microphone	MIC+48V

- Selecting MIC+48V and connecting a microphone that is not compatible with a +48V source may damage the connected device. Check the setting before connecting the device.
- If noise is a concern on connectors with no device connected, set the corresponding INPUT1/INPUT2 (LINE/MIC/MIC+48V) switches to LINE.

Adjusting the Audio Recording Level Automatically

Set the CH1/CH2 (AUTO/MAN) switches for the channels to adjust automatically to AUTO.
For CH3/CH4, set the audio level control on the Audio status screen (page 18) or Audio Input >CH3 Level Control and CH4 Level Control in the Audio menu of the full menu to Auto (page 113).

Adjusting the Audio Recording Level Manually

Use the following procedure to adjust the audio recording level for CH1/CH2.

1 Set the CH1/CH2 (AUTO/MAN) switches for the channels to adjust manually to MAN.

2 During shooting or standby, turn the AUDIO LEVEL (CH1)/(CH2) dials of the corresponding channels to adjust the audio level.
- For CH3/CH4, set the audio level control using CH3/CH4 (page 18) on the Audio status screen or Audio Input >CH3 Level Control or CH4 Level Control in the Audio menu of the full menu to Manual, and then adjust the audio recording level using CH3 Input Level or CH4 Input Level.
- You can adjust the levels for CH1 to CH4 as a group. You can adjust the recording level using an assignable dial (page 54) assigned with the Audio Input Level function, the Audio status screen, or Audio Input >Audio Input Level in the Audio menu of the full menu.

[Tip]
The Audio status screen is convenient for checking the audio input level (page 18).

[Notes]
- The Audio Input Level settings may be disabled, depending on the combination of settings in the Audio menu. For details, see the diagram on page 154.
- The camcorder supports combinations of various settings. For details, see the diagram on page 154.

Adding Audio Input Connectors

You can connect up to four channels of XLR audio devices to the camcorder at the same time by using an XLR-K2M XLR adaptor (not supplied) or XLR-K3M XLR adaptor (not supplied).
Attach the XLR adaptor to the multi-interface shoe, and set CH3 >Source to Shoe CH1 and CH4 >Source to Shoe CH2 on the Audio status screen (page 18). Or, set Audio Input >CH3 Input Select to Shoe CH1 and CH4 Input Select to Shoe CH2 in the Audio menu of the full menu.
Camcorder functions that overlap will be disabled for channels on which the XLR adaptor is selected as the input. Use the switches and dials on the XLR adaptor to perform adjustments.

[Notes]

- The camcorder supports 2ch digital audio interface of the XLR-K3M.
- If Audio Input >CH3 Level and CH4 Level in the Audio menu are set to Audio Input Level, then Audio Input Level on the camcorder is multiplied by the level adjusted on the XLR adaptor.
  Audio Input Level is also enabled when the XLR adaptor switch is set to AUTO.
  When “Through” is specified, audio will be recorded at the level adjusted with the XLR adaptor (page 155).

Useful Functions

Direct Menu Operation

You can check the status and settings of the camcorder displayed in the viewfinder, and directly select and change the settings.
The following items can be configured.

- Face/Eye Detection AF
- SteadyShot
- Auto Exposure Mode
- Auto Exposure Level
- ND Filter Position / Auto ND Filter
- ND Filter Value
- Auto Iris
- Iris Value
- AGC
- Gain Value
- ISO Value
- Exposure Index Value
- Base ISO/Sensitivity
- Auto Shutter / ECS
- Shutter Value
- White Balance Mode
- Color Temp
- Tint
- Scene File
- S&Q Motion Frame Rate

1 Press the multi-function dial, or an assignable button assigned with the Direct Menu function.
Only the items on the screen that can be configured using the direct menu are selectable using the orange cursor.

2 Turn the multi-function dial to move the cursor to the menu item to operate, then press the multi-function dial.
A menu is displayed or the item is displayed on a white background.

3 Turn the multi-function dial to select a setting, then press the multi-function dial.
The menu or white background disappears and the new setting is displayed with an orange cursor.
Press the assignable button assigned with Direct Menu again or wait 3 seconds without performing any action to exit the direct menu.

[Tips]

- Direct settings can also be configured by pressing and holding each of the function buttons (page 5).
- When items are displayed on a white background, the multi-function dial can be used like an assignable dial.
- The multi selector (page 9) can also be used for selection operations.

[Note]

In information display mode, the direct menu cannot be used when Menu Settings >Info. Disp. Mode Operation (page 117) is set to Home Screen Priority in the Technical menu of the full menu.
To use the direct menu while the Home screen is displayed, change the setting to Direct Menu Priority.

Assignable Buttons/Dials

There are nine assignable buttons (page 6, 7, 9) on the camcorder to which you can assign functions.
You can also assign functions to the multi-function dial on the camcorder (page 5), the assignable dial on the handle (page 7), and the assignable dial on the grip remote control (page 9).

Changing the button function

Use Assignable Button (page 100) in the Project menu of the full menu.

You can view the assigned functions on the Assignable Button status screen (page 19).

Functions assigned to each assignable button by factory default

Button 1	S&Q Motion
Button 2	AF Speed/Sens.
Button 3	Focus Setting
Button 4	VF Focus Mag x3/x6
Button 5	Direct Menu
Button 6	Off
Button 7	VF Focus Mag x3/x6
Button 8	Direct Menu
Button 9	Video Signal Monitor
Focus Hold button	Focus Hold

Assignable functions

- Off
- Base ISO/Sensitivity
- AGC
- Push AGC
- ND Filter Position
- Auto ND Filter
- Push Auto ND
- Auto Iris
- Push Auto Iris
- Bokeh Control
- Auto Shutter
- AE Level/Mode
- Backlight
- Spotlight
- Preset White Select
- ATW
- ATW Hold
- AF Speed/Sens.
- Focus Setting
- Focus Area
- Focus Area(AF-S)
- Face/Eye Detection AF
- Push AF Mode
- Push AF/Push MF
- Focus Hold
- VF Focus Mag x3/x6
- VF Focus Mag x3
- VF Focus Mag x6
- HDMI FocusMagx2/x4
- HDMI Focus Mag x2
- HDMI Focus Mag x4
- S&Q Motion
- LUT On/Off 1
- LUT On/Off 2
- SteadyShot
- Crop Select
- Rec
- Picture Cache Rec
- Rec Review
- Clip Flag OK
- Clip Flag NG
- Clip Flag Keep
- Color Bars
- Tally [Front]
- DURATION/TC/U-BIT
- Display
- Lens Info
- Video Signal Monitor
- Marker
- VF Adjust
- VF Mode
- Gamma Display Assist
- Peaking
- Zebra
- Volume
- Thumbnail
- Touch Operation
- Handle Zoom
- Auto Upload (Proxy)
- Direct Menu
- Network Status
- Home
- User Menu
- Menu

Changing the dial function

You can change the function of the multi-function dial on the camcorder, the grip assignable dial, and the handle assignable dial.

For the multi-function dial, set using Multi Function Dial (page 103) >Default Function in the Project menu.
Off is assigned by factory default.

Functions assignable to the multi-function dial

- Off
- ISO/Gain/EI
- IRIS
- Auto Exposure Level
- Audio Input Level

[Note]
The setting is disabled while the menu is displayed.

For the assignable dial, set using Assignable Dial (page 102) in the Project menu of the full menu.
IRIS is assigned to all by factory default.

[Tip]
The assignable dial of the RM-30BP (option) follows the Grip/Remote Dial setting.

Functions assignable to the handle/grip assignable dial

- Off
- ISO/Gain/EI
- ND Filter
- IRIS
- Auto Exposure Level
- Audio Input Level
- Multi Function Dial

You can view the assigned functions on the Assignable Button status screen (page 19).

Slow & Quick Motion

When the recording format (page 97) is set to the following values, you can specify different values for the shooting frame rate and playback frame rate.

Recording format				Frame rate
System frequency	Imager scan mode	Codec	Video format	
59.94/50/29.97/25/23.98	FF	RAW	3840×2160P	1–60, 100, 120
		RAW & XAVC-I	3840×2160P	1–60, 100, 120
		XAVC-I	4096×2160P	1–60
			3840×2160P	1–60, 100, 120
			1920×1080P	1–60, 100, 120, 150, 180, 200, 240
		XAVC-L	3840×2160P	1–60, 100, 120
			1920×1080P	1–60, 100, 120, 150, 180, 200, 240
	S35	XAVC-I	1920×1080P	1–60, 100, 120
		XAVC-L	1920×1080P	1–60, 100, 120
24	FF	XAVC-I	4096×2160P	1–60

You can turn Slow & Quick Motion mode on/off by pressing an assignable button (page 54) assigned with the S&Q Motion function.
You can set the frame rate for shooting by pressing and holding the button.

[Tip]
You can also set the mode using S&Q Frame Rate on the Main status screen, Rec Function on the Project status screen, and S&Q Motion in the Shooting menu of the full menu.

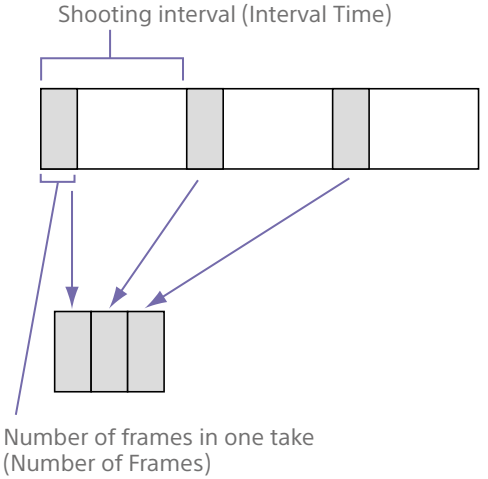
[Notes]
- Slow & Quick Motion cannot be set during recording, playback, or while the thumbnail screen is displayed.
- Audio recording is not supported in Slow & Quick Motion mode.
- The auto iris and auto shutter functions are disabled in Slow & Quick Motion mode.
- Auto focus has the following limitations in Slow & Quick Motion mode.
  - Limitations due to lens model, system frequency, and shooting frame rate

Sony lens	System frequency	AF availability
Other than SEL16F28	–	7 fps or higher supported
SEL16F28	59.94/29.97/23.98	30, 60, 120, 240 fps supported
	50.00/25.00	25, 50, 100, 200 fps supported
	24.00	Not supported

  - The auto focus function is temporarily disabled if the iris is set to F18 or higher.
- For details about using RAW output, see page 65.

Recording Video Intermittently (Interval Rec)

The camcorder's Interval Rec function allows you to capture time-lapse video to the camcorder's internal memory. This function is an effective way to shoot slow-moving subjects.
When you start recording, the camcorder automatically records a specified number of frames at a specified interval time.



When Interval Rec is enabled, the HVL-LBPC (option) video light automatically turns on before recording starts, which allows you to record pictures under stable light and color temperature conditions (pre-lighting function).

[Notes]
- Only one special recording function, such as Interval Rec recording, can be used at any one time.
- If another special recording mode is enabled while Interval Rec is in use, Interval Rec is automatically released.
- Interval Rec mode is automatically released after changing system settings, such as the video format.
- Interval Rec settings cannot be changed during recording or playback, or when the thumbnail screen is displayed.

To set Interval Rec

Select Rec Function >Interval Rec on the Project status screen, and configure the Number of Frames and Interval Time settings. If using the HVL-LBPC video light (option), set the time interval for turning on the video light before recording starts using Interval Rec >Pre-Lighting in the Project menu, as required.

[Tip]
You can also set the mode using Interval Rec (page 99) in the Project menu of the full menu.

[Notes]
- If you want to turn the video light on before the start of recording, set the video light switch to AUTO. The video light turns on and off automatically according to the setting of Video Light Set (page 117) in the Technical menu.
- If you turn the video light switch on, the video light is always lit (video light does not turn on/off automatically).
- If the video light is configured so that it will turn off for a duration of 5 seconds or less, the video light does not turn off.

The camcorder exits Interval Rec mode when it is powered off, but the Number of Frames, Interval Time, and Pre-lighting settings are maintained. You do not need to set them again the next time you shoot in Interval Rec mode.

To shoot using Interval Rec

Press the record START/STOP button to start recording. “Int ●Rec” and “Int ●Stby” appear alternately in the viewfinder.
If you are using the pre-lighting function, the video light turns on before recording starts.

To stop shooting

Stop the recording.
When shooting ends, the video data stored in memory up to that point is written to the media.

To exit Interval Rec mode

Do one of the following.
- Set the POWER switch to Off.
- In recording standby mode, set Rec Function to a setting other than Interval Rec on the Project status screen.

Also, Interval Rec mode is automatically released when the camcorder is restarted.

Limitations during recording

- Audio is not recorded.
- Reviewing the recording (Rec Review) is not possible.

If the camcorder is turned off

- If the POWER switch on the camcorder is set to the Off position, the media is accessed for several seconds to record the images stored in memory up till that moment, and then the power turns off automatically.
- If power is lost because the battery was removed, the DC power cord was disconnected, or the power was turned off from the AC adaptor, then the video and audio data shot up to that point may be lost (maximum 10 seconds). Care should be exercised when exchanging the battery.

Recording Cached Pictures (Picture Cache Rec)

The Picture Cache Rec function allows you to capture video retroactively when you start recording by maintaining an internal cache memory of a specified duration when shooting.
Set Picture Cache Rec to On on the Project status screen and then set the cache size.

Cache Size setting	Cache time (approximate)
Short	5 seconds
Medium	10 seconds
Long	20 seconds
Max	Maximum value of each recording format

[Tips]
- The cache time may be shorter, depending on the shooting frame rate and recording format. Check the Picture Cache Rec field on the Project status screen or the display at the bottom right of the cache size setup screen.
- You can also set the mode using Picture Cache Rec (page 99) in the Project menu of the full menu.
- You can also switch Picture Cache Rec between On and Off using an assignable button (page 54).

[Notes]
- Picture Cache Rec cannot be used in combination with Interval Rec, 2-slot simultaneous recording, or proxy recording. When Picture Cache Rec is set to On, these other recording functions are forcibly set to Off.
- Picture Cache Rec mode cannot be selected while recording or Rec Review is in progress.
- When Picture Cache Rec is set to On, the timecode is recorded in Free Run mode even if set to Regen or Rec Run (page 108).
- The Output Format setting may not be configurable in Picture Cache Rec mode. If this occurs, temporarily set Picture Cache Rec to Off, and then change the setting.

Starting Picture Cache Rec

When Picture Cache Rec is set to On, “●Cache” (● is green) appears in the viewfinder .
When you press the record START/STOP button, recording starts and video is written to memory cards starting from the video stored in the cache memory.

To exit Picture Cache Rec

Set Picture Cache Rec to Off on the Project status screen, or press an assignable button assigned with the Picture Cache Rec function.

[Notes]
- Changing the recording format or basic look clears the video in cache memory stored up to that point, and starts caching new video. Consequently, picture cache recording of pictures before changing format is not possible, even if you start recording immediately after changing format.
- If Picture Cache Rec is set to On or Off immediately after inserting a memory card, cache data may not be recorded on the card.
- Video is stored in cache memory when the Picture Cache Rec function is set to On. Video prior to the function being set to On is not cached.
- Video is not stored in cache memory while a memory card is being accessed, such as during playback, Rec Review, or thumbnail screen display. Picture cache recording of video during that interval is not possible.

Recording to Memory Cards A and B Simultaneously (2-slot Simul Rec)

You can record to both memory card A and memory card B simultaneously by setting Simul Rec (page 19) on the Project status screen or Simul Rec >Setting (page 99) in the Project menu of the full menu to On.

Recording separately to memory card A and memory card B

You can start/stop recording to each memory card independently using the record START/STOP buttons on the camcorder and the handle.
By factory default, both buttons are set to start/stop simultaneous recording to both memory cards A and B.

- "Rec Button:[SlotA SlotB] Handle Rec Button:[SlotA SlotB]"

When the buttons are set to control recording for different memory cards, SDI/HDMI Rec Control (page 100) record start/stop control follows the recording state of slot A.

To change the setting

Select Simul Rec >Rec Button Set (page 99) in the Project menu.

Rec Button Set	Buttons and memory cards
"Rec Button:[SlotA SlotB] Handle Rec Button:[SlotA SlotB]"	Starts/stops simultaneously recording to memory cards A and B using either button.
"Rec Button:[SlotA] Handle Rec Button:[SlotB]"	The record START/STOP button starts/stops recording to memory card A, and the record START/STOP button on the handle starts/stops recording to memory card B.
"Rec Button:[SlotB] Handle Rec Button:[SlotA]"	The record START/STOP button starts/stops recording to memory card B, and the record START/STOP button on the handle starts/stops recording to memory card A.

[Tip]
The record button on the grip remote control or LANC remote control operate the same as the record START/STOP button of the unit.

To prevent accidental operation of the handle record START/STOP button

Set the handle HOLD switch to the HOLD position.

[Note]
The handle HOLD switch does not function when HOLD Switch Setting (page 116) >with Rec Button is set to Off in the Technical menu of the full menu. When set to On, set Handle HOLD Switch to Rec Button Only.

To enable the zoom lever and buttons other than the handle record START/STOP button, set HOLD Switch Setting >Handle HOLD Switch to Rec Button Only.

About the file name

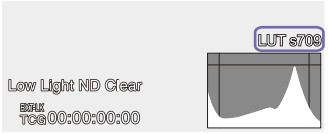
In 2-slot simultaneous recording, the generated clip will have the same clip name on both media. The clip name will be the same as the clip name when recording to slot A during normal recording.

Video Signal Monitor

You can set the type of video signal to display in the viewfinder to waveform, vectorscope, or histogram using Display On/Off >Video Signal Monitor (page 111) in the Monitoring menu.
The orange line indicates the set value of the zebra level.
You can also assign the Video Signal Monitor function to an assignable button (page 54).

Monitor target display

In Log shooting modes, the color gamut setting (page 29) or monitor LUT setting (page 96) information is displayed at the top right of the video signal monitor to indicate the monitor target.



Gamma Display Assist Function

In Custom shooting mode (page 29) when Target Display is set to HDR(HLG), you can set Gamma Display Assist* on the Monitoring status screen to On to view an assisted display in the viewfinder that makes shooting in HDR easier.

* You can also set the function using Gamma Display Assist >Setting (page 112) in the Monitoring menu of the full menu.

Selecting the viewfinder display when the gamma display assist function is enabled

There are two display methods supported for displaying HDR images in the viewfinder when the gamma display assist function is enabled.

Displaying HDR with maintained contrast between low luminance areas and high luminance areas

This method takes advantage of the expressive power of HDR to display the image in the viewfinder without causing crushed blacks or blown out highlights, even when shooting with bright or dark exposure. However, the contrast is slightly reduced.
To use this display method, set HDR Setting >VF SDR Preview (page 98) to Off in the Project menu of the full menu.

Displaying SDR by simple conversion from HDR to SDR

This method allows you to operate the camera with the same feeling as conventional SDR. You can adjust the brightness of the HDR image by setting the difference in gain between HDR and SDR using SDR Gain.
To use this display method, configure using the following procedure.

1 Set HDR Setting >VF SDR Preview (page 98) to On in the Project menu of the full menu.

2 Adjust the SDR gain value in HDR mode using HDR Setting >SDR Gain (page 99) in the Project menu of the full menu.

[Tip]
When converting from an HDR image to SDR using SR Live Metadata after shooting, SDR Gain is applied to the conversion so that the SDR image display has the same exposure that was viewed in the viewfinder at the time of shooting.

Clip Flags

You can add an OK clip flag to a clip by pressing the Clip Flag button (page 5) and selecting Add OK.
You can delete an OK clip flag by pressing the button twice and selecting Delete Clip Flag.

[Tips]
- You can also use an assignable button assigned with the clip flag function to add clip flags (page 54).
- You can also add a clip flag using Set Clip Flag (page 115) in the Thumbnail menu of the full menu (page 83).
- The thumbnail screen can be displayed sorted by clip flag type (filtered clip thumbnail screen). For details, see “Clip Operations” (page 83).

Breathing Compensation

You can set whether to perform breathing compensation for the lens using Lens >Breathing Compensation (page 117) in the Technical menu of the full menu.
This function corrects for the phenomenon in which changes in the angle of view occur as the focus position varies.
When breathing compensation is executed, a portion of the image is electronically cropped to maintain a constant angle of view so the breathing phenomenon does not appear.

[Notes]
- When breathing compensation is enabled, the angle of view and image quality may change slightly.
- Depending on the lens, it may not be possible to correct the change in the angle of view when breathing compensation is enabled.
- Compensation is not possible when a lens that does not support breathing compensation is attached.
- This function is set to Off (fixed) in the following cases.
  - When Lens >Distortion Comp. in the Technical menu is set to Off
  - When S&Q Motion >Setting in the Shooting menu is set to On
  - When Rec Format >Codec in the Project menu is set to RAW or an option that includes RAW

Adjusting the Bokeh (Bokeh Control Function)

You can easily adjust the degree of bokeh by linking the ND filter and gain to the iris operation.

Switching the bokeh control function on/off

This function can be enabled only when adjusting the exposure manually. Set the ND filter to variable mode, then set the iris, gain, shutter, and ND filter to manual adjustment.
You can switch the bokeh control function on/off using Iris >Bokeh Control (page 93) in the Shooting menu of the full menu.
When the bokeh control function is set to On, a B icon is displayed on the ND filter and gain indicators.

[Tip]
You can also assign the Bokeh Control function to an assignable button (page 54) and switch the bokeh control function between On and Off using the button.

Adjusting the degree of bokeh

1 Set the bokeh control function to On.

2 Fully open the iris.

3 Set the ND filter to 1/128.

4 Set the gain to 0 dB and use lighting to adjust the exposure.

5 Adjust the focus.

6 Adjust the iris.
The degree of bokeh changes.

[Tips]
- When the bokeh control function is set to On, the ND filter and gain operate together to offset changes in exposure due to iris adjustment, allowing you to change the degree of bokeh.
- The bokeh control is first linked to the ND filter in response to the iris operation. When the ND filter can no longer be changed, the gain is linked.
- In MF mode, it is recommended that you first open the iris and then adjust the focus.
- If you use the auto ND filter instead of the bokeh control function, the ND filter follows the change in the brightness of the subject.

Display during gain link operation

When the bokeh control function is set to On, the gain may change as the iris is adjusted. When the gain link is active and the gain changes, a message appears at the top of the screen and a B icon on the gain indicator flashes.

[Notes]
- This function is enabled only on E-mount lenses that can communicate with the unit.
- The maximum effect of this function can be obtained using the iris ring on a Sony E-mount lens.
- The appearance may vary depending on the operation speed, lens, shooting settings, and subject, and also the brightness may change. Performing a camera test before shooting is strongly recommended.
- The brightness may change when the iris operation direction changes, such as when opening the iris after closing it or when closing the iris after opening it. In this case, adjust slightly more than required beforehand and then back up a little, check the brightness, and then start shooting.
  For example, if you want to open the iris to F8 aperture and blur the background, first close the aperture past F8 and then return to F8, check the brightness, and start shooting.
- Perform bokeh control operations slowly. If you need to speed up the operation, try adjusting gradually while checking the changes to the image.
- The quality of the image with bokeh control is not guaranteed under all shooting conditions.
- The bokeh control function is set to Off when any of the following operations occurs.
  - When the camcorder is turned off
  - When any of the iris, gain, shutter, or ND filter is set to Auto

– When the shooting mode is switched
– When the ND filter is set to clear or preset mode
– When the lens is removed
– When the unit restarts, for example, after switching the frequency

Setting De-Squeeze Display

You can shoot with an anamorphic lens to create cinemascope-sized image content. Setting the de-squeeze display to match the magnification of your anamorphic lens allows you to output images on the HDMI output and in the viewfinder that are adjusted to the same aspect ratio as when viewing the subject directly.
You can set the de-squeeze display using De-Squeeze >Ratio (HDMI/VF) (page 110) in the Monitoring menu.

[Notes]
- The HDMI output image display is not de-squeezed during RAW output and SD signal output.
- When set to other than Off, auto focus cannot be used.

Proxy Recording

This function allows you to simultaneously record a low-resolution proxy clip at the same time as recording a high-resolution original clip when recording to a memory card.
A proxy clip can be subdivided into chunks automatically at short intervals and the files can be transferred before the end of recording.

For details about supported memory cards, formatting memory cards, and checking the remaining capacity, see "Using Memory Cards" (page 31).

Configuring Before Shooting

1 Set Proxy Rec (page 19) on the Project status screen or Proxy Rec >Setting (page 99) in the Project menu of the full menu to On.

2 Insert a memory card into a CFexpress Type A/SD card slot (page 6).
- For CFexpress cards, the label faces to the left.
- For SD cards, the label faces to the right with the beveled corner at the bottom.

[Notes]
- Proxy Rec cannot be set to On at the same time as S&Q Motion. When S&Q Motion is set to On, Proxy Rec is temporarily set to Off. When S&Q Motion is set to Off, Proxy Rec is set to On again.
- Proxy Rec cannot be set to On at the same time as Interval Rec. When Proxy Rec is set to On, these other recording modes are forcibly set to Off.

Recording a Proxy

Press the record START/STOP button to start recording after completing the required setting for shooting.

[Notes]
- If the camcorder is turned off or the memory card is removed while the memory card is being accessed, the integrity of data on the card cannot be guaranteed. All data recorded on the memory card may be discarded. Always make sure the memory card access indicator is off before turning off the camcorder or removing the memory card.
- Make sure that the memory card does not pop out when inserting or removing it.

To exit, stop the recording.

Setting the Audio Channel for Proxy Recording

Select Proxy Rec >Audio Channel (page 99) in the Project menu of the full menu, and set the audio channel for proxy clip recording.

Recording and Uploading a Proxy Clip in Chunks

When the auto upload setting is set to Chunk and a proxy clip is recorded in chunks, the proxy clip can start to be uploaded before the original clip recording ends.
For details about transferring a proxy clip recorded in chunks, see "Transferring Clips Automatically" (page 78) and "Transferring Files to "C3 Portal" and "Ci Media Cloud"" (page 76).

1 Select Proxy Rec >Chunk (page 99) in the Project menu and select the chunk recording interval.
30s: Record proxy clip in 30-second chunks (default setting).
1min: Record proxy clip in 1-minute chunks.
2min: Record proxy clip in 2-minute chunks.

2 Set File Transfer >Auto Upload (Proxy) (page 122) in the Network menu to Chunk.
The original clip is recorded to the media in slot A, and the proxy clip is recorded in chunks to the media in slot B.

3 Start proxy recording.
A separate proxy clip transfer job is registered in the job list at the specified chuck recording interval.

[Notes]
- When Auto Upload (Proxy) is not set to Chunk, proxy recording in chunks does not occur.
- The media in slot B is dedicated to recording proxy clips in chunks, hence relay recording and 2-slot simultaneous recording are not supported.

About the Recorded File

The file name extension is ".mp4".
The timecode is also recorded simultaneously.

Storage Destination of the Recorded File

The recorded file is stored in the following directory.

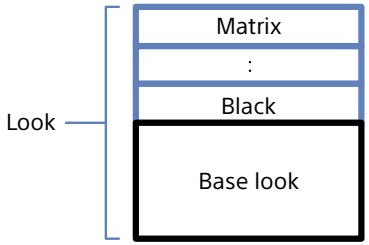
Recording media	Folder path
SDXC	/PRIVATE/XDROOT/GENERAL/PXTMP
CFexpress Type A	/XDROOT/GENERAL/PXTMP

About the File Name

The file name consists of the clip name recorded on the memory card + "S03" suffix.
The file name of a proxy clip recorded in chunks for upload consists of the original clip name + chunk number + "S03" suffix.
For details about clip names, see Clip Name Format (page 108) in the TC/Media menu of the full menu.

Shooting with the Desired Look

When the camcorder is set to Custom shooting mode (page 29), you can add adjustments to the black, matrix, and other parameters to create a “look” based on the base look.



You can also quickly select a different look by saving different combinations of settings in scene files.
The camcorder is provided with a total of six preset looks.

Selecting a Look

In video monitoring mode

1 With the shooting screen displayed, press the multi-function dial.

2 Select the SCN (scene file) icon.

3 Press the multi-function dial.

4 Select the desired look from the menu, and press the multi-function dial.

In information display mode

1 Select Look (item 5) on the Home screen in the viewfinder.

2 Move the cursor to select the desired look from the list.

3 Select the Set button to apply the value.

[Tips]

- The following presets are configured by factory default.

Shooting Mode	Custom	
Target Display	SDR(BT.709)	HDR(HLG)
Scene file 1	S-Cinetone	HLG Live
Scene file 2	Standard	HLG Mild
Scene file 3	Still	HLG Natural
Scene file 4	ITU709	(Not registered)
Scene file 5	709tone	(Not registered)
Scene files 6 to 16	(Not registered)	(Not registered)

- You can also select a look using Scene File (page 18) on the Main status screen or Scene File >Recall Internal Memory (page 105) in the Paint/Look menu of the full menu. You can also recall a preset look using Scene File >Preset Recall.

Importing a Desired Base Look

You can import a 3D LUT file, created on a computer or other device, as a base look from a memory card or cloud service. Up to 16 files can be imported.

- File format: CUBE file (*.cube) for a 17-grid or 33-grid 3D LUT created using Catalyst Browse, RAW Viewer, or DaVinci Resolve* (by Blackmagic Design Pty. Ltd.).
  * Verified with Resolve V9.0, V10.0, and V11.0.
- Input color gamut/Gamma: S-Gamut3. Cine/S-Log3 or S-Gamut3/S-Log3

Importing from a memory card

You can import a 3D LUT file from a memory card.

1 On the computer or other device, save the 3D LUT file in the specified folder or the recording media.

Recording media	Folder path
SDXC	/PRIVATE/SONY/PRO/LUT/
CFexpress Type A	/SONY/PRO/LUT/

2 Insert the recording media on which 3D LUT files are saved into CFexpress Type A/SD card slot (B).

3 Select Base Look >Import from Media(B) (page 105) in the Paint/Look menu of the full menu.

4 Select an import destination.

5 Select a 3D LUT file to import.
Follow the on-screen instructions. The camcorder handles a 3D LUT file as a base look.

6 Select the imported 3D LUT file using Base Look >Select (page 105) in the Paint/Look menu of the full menu.

7 Configure Base Look >Input and Output (page 105) in the Paint/Look menu of the full menu to match the attributes of the imported 3D LUT file.

Importing from a cloud service

You can import a 3D LUT file from a cloud service.

1 Connect to the unit from the “Creators' App for Enterprise” smartphone application (page 76).

2 Select Base Look >Import from Cloud(Private) or Import from Cloud(Share) (page 105) in the Paint/Look menu of the full menu.

3 Select an import destination.

4 Select a 3D LUT file to import.
Follow the on-screen instructions. The camcorder handles a 3D LUT file as a base look.

5 Select the imported 3D LUT file using Base Look >Select (page 105) in the Paint/Look menu of the full menu.

6 Configure Base Look >Input and Output (page 105) in the Paint/Look menu of the full menu to match the attributes of the imported 3D LUT file.

Importing from the “Monitor & Control” application

You can import a 3D LUT file from the “Monitor & Control” application. For details about operation, refer to the Help Guide for the “Monitor & Control” application.
For details about connecting to the camcorder from the “Monitor & Control” application, see “Connecting with “Monitor & Control”” (page 67).

[Note]
When the base look currently being used on the camcorder is changed by importing a 3D LUT file from the “Monitor & Control” application, the image may be temporarily distorted.

Adjusting for underexposure

If there is a tendency for underexposure when auto exposure is selected when using the imported base look, adjust Base Look >AE Level Offset (page 105) in the Paint/Look menu.

[Notes]
- Just importing a 3D LUT file does not affect the image. Load the imported 3D LUT file using Base Look >Select (page 105) in the Paint/Look menu of the full menu.
- If Input is not set correctly, the proper look will not be obtained.
- The Input, Output, and AE Level Offset menu item settings are applied to the base look selected using Select. If multiple 3D LUT files are imported, select Select for each 3D LUT file, and configure Input, Output, and AE Level Offset individually for each file.
- The configured Input, Output, and AE Level Offset settings are saved for each 3D LUT file.
- The base look/LUT selection options for imported 3D LUT files are common to SDR(BT.709)/HDR(HLG)/Log shooting modes, but color gamut and gamma conversion are not performed according to these modes.
- 3D LUT files are not deleted when All Reset >Reset (page 124) is executed in the Maintenance menu of the full menu.

Deleting a Base Look

You can delete an imported 3D LUT file using Base Look >Delete (page 105) in the Paint/Look menu of the full menu.
You can delete all imported 3D LUT files using Base Look >Delete All (page 105) in the Paint/Look menu of the full menu.

[Notes]
- Before deleting, check that the base look is not being used in any scene files. If a base look that is being used is deleted, the look of the corresponding scene files will be incorrect.
- Imported 3D LUT files are not deleted when All Reset >Reset (page 124) is selected in the Maintenance menu of the full menu.
- A deleted base look can no longer be used as a LUT in Log shooting modes (page 64).

Customizing a Look

You can customize the look based on the base look using the Matrix and other setup items in the Paint/Look menu of the full menu. For details about each setup item, see page 105. Connect your camcorder to a TV or monitor, and adjust the picture quality while observing the picture on the TV or monitor screen.

[Note]
When you import a 3D LUT file and apply it to the image, the desired look defined in the 3D LUT file will not be obtained if Matrix and settings other than base look settings in the Paint/Look menu are changed. You can reset all customized settings using Reset Paint Settings >Reset without Base Look (page 105) in the Paint/Look menu of the full menu.

Saving a Look in Internal Memory

You can save the current look as a scene file in internal memory using Scene File >Store Internal Memory (page 105) in the Paint/Look menu of the full menu. You can edit the file name that is assigned when saving. For details, see “Renaming a scene file” (page 62).
By saving it as a scene file, you can easily load the look using the direct menu from the shooting screen or from the Look item on the Home screen.

[Notes]
- If you select another look without saving the current look, the current look is discarded.
- Scene files are not deleted when All Reset >Reset (page 124) is executed in the Maintenance menu of the full menu.
- To use a scene file with base look based on a 3D LUT file, the 3D LUT file must be imported into the unit. If the used base look is deleted after saving the scene file, the correct settings are no longer available for recall.

[Tips]
- You can also recall a look using Scene File >Recall Internal Memory (page 105) in the Paint/Look menu of the full menu.
- You can overwrite the preset scene files.
  To restore a preset scene file, load the look to be restored using Scene File >Preset Recall (page 105) in the Paint/Look menu of the full menu, and then save the scene file using Scene File >Store Internal Memory.

Renaming a scene file

You can rename a scene file using Scene File >File Name (page 105) in the Paint/Look menu of the full menu.
When you save a scene file in internal memory using Store Internal Memory, the file is saved with the edited name.

[Tips]
- When a scene file is loaded on the camera using Recall Internal Memory, the name of the scene file is set to the File Name default value.
- When a base look is selected using Base Look >Select (page 105) in the Paint/Look menu of the full menu, the name of the base look is set to the File Name default value.

Deleting a saved look

You can delete a scene file saved in internal memory using Scene File >Delete Internal Memory (page 105) in the Paint/Look menu of the full menu.

[Tip]
When deleted, it is no longer displayed in the direct menu.

Sharing the Look with Another Camera

You can share the settings with other cameras that support this function by saving the look as a scene file on a memory card. This function applies to the setup items in the Paint/Look menu of the full menu.

Saving a scene file to a memory card

You can save a scene file saved in the internal memory of the unit to a memory card using Scene File >Save to Media(B) (page 105) in the Paint/Look menu of the full menu.
The scene file is stored in the following directory on a memory card.

Memory card	Folder path
SDXC	/PRIVATE/SONY/PRO/SCENE
CFexpress Type A	/SONY/PRO/SCENE

[Tips]
- The setup items of the unit included in a scene file are the same items saved in internal memory. For details, see “Items Saved in Files” (page 146).
- When a scene file is saved to a memory card using Save to Media(B), the name of the scene file is the same as the scene file saved in internal memory. If there are duplicate file names on the memory card, a copy counter suffix is added automatically.

[Note]
Limit the number of scene files saved separately for SDR and for HDR on a memory card to a maximum of 60 each. If this limit is exceeded, all saved files will no longer be accessible on the unit.

Loading a scene file from a memory card

You can load a scene file saved on a memory card to the internal memory of the unit using Scene File > Load from Media(B) (page 105) in the Paint/Look menu of the full menu.

[Tip]
When a scene file is loaded from a memory card into internal memory, you can select and apply the scene file to the current image quality settings using Scene File >Recall Internal Memory (page 105) in the Paint/Look menu of the full menu.

[Notes]
- When loading a scene file into a different model or into the same model with a different software version, only the values of common settings are loaded into internal memory.
- Even when settings can be loaded, the image quality may not be the same due to differences in image sensors and camera signal processing between models. Also, where the setup items are the same but the configurable ranges in the menu are different, values within the supported range will be loaded.
- Setup items that exist in the scene file loaded from a memory card but that do not exist on the camera that loaded the file will not be loaded.
- Setup items that exist on the camera that loaded a scene file but that are not in the scene file loaded from the memory card are set to the default value of the camera that loaded the file.
- Even after loading a scene file, it may not be possible to fully reproduce the image quality settings, so check the image quality after loading.

Shooting with Look Adjustment in Post-Production

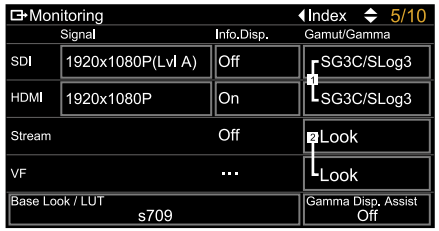
By selecting a Log shooting mode and recording evenly distributed gradations from dark areas to bright areas, you can make fine adjustments, such as locally restoring the gradations of dark areas and bright areas, in post-production.
However, when viewing the recorded images on a conventional monitor, the overall contrast will appear low, making focus and exposure adjustments difficult.
You can apply a LUT to the monitor target on the camcorder to assist various adjustments during shooting. You can also apply a LUT to the playback video to check the finished result.
LUTs are applied by the following systems. However, only one LUT can be applied.

- SDI output and HDMI output
- Viewfinder and proxy images, streaming
- Video recorded on recording media

Applying a LUT to the Viewfinder Image

1 Press the MENU button to display the Monitoring status screen.

2 Select the Gamut/Gamma column in the VF row.



3 Select On or Off.

[Notes]

- The LUT On/Off setting of VF is also applied to proxy file and streaming video.
- Gamma display assist is available during focus magnifier operation.

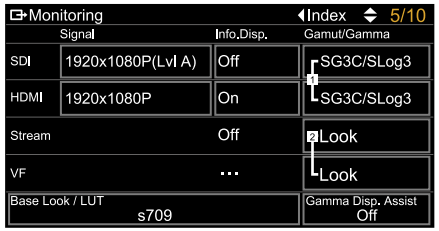
[Tips]

- You can also set using LUT On/Off >2 VF/Proxy/Stream (page 96) in the Shooting menu of the full menu.
- SDI/HDMI can be set similarly to VF.
- For video on recording media, you can set using LUT On/Off >Internal Rec (page 96) in the Shooting menu of the full menu.

Changing a LUT

1 Press the MENU button to display the Monitoring status screen.

2 Select the Base Look/LUT field.



3 Select the LUT to apply from the base look list.

[Tips]

- The unit provides s709, 709(800%), and S-Log3 as preset LUTs.
- You can also import and apply a 3D LUT file. For details, see “Importing a Desired Base Look” (page 61) and “Deleting a Base Look” (page 62).
- The base look can also be set using Base Look >Select (page 105) in the Paint/Look menu of the full menu.

Changing the Distribution of Dark and Bright Areas in Recorded Video

In Cine EI/Cine EI Quick shooting mode, you can change the distribution of dark areas and bright areas, for example, if you want to prioritize the tone of dark areas over bright areas, by changing the Exposure Index from the base sensitivity.

1 Apply a LUT to the viewfinder image (page 64).

2 Press the MENU button to display the Camera status screen.

3 Set the L/M/H fields of Exposure Index. The individual settings are assigned to the L/M/H positions of the ISO/GAIN switch (page 5).

4 Select the Exposure Index value to apply using the ISO/GAIN switch.

5 Adjust the exposure of the viewfinder image as appropriate.

[Note]
Gamma display assist is available during focus magnifier operation. The Exposure Index setting is not applied to gamma display assist.

[Tips]

- The exposure can also be adjusted using ISO/Gain/EI >Exposure Index (page 90) in the Shooting menu of the full menu.
- The second numerical value of the setting indicates how many steps of brightness information are assigned for bright areas (brightness higher than 18% gray). Areas brighter than these are overexposed. Example: In “400EI/5.0E,” 5.0 steps are assigned on the bright side.
- You can also use this as a guide to check the tone of dark and bright areas during shooting. For example, if the M position is the base sensitivity, L position is minus 2 steps, and H position is plus 2 steps, you can check by switching the ISO/GAIN switch. Remember to return to the M position after checking the exposure.

Recording a 3D LUT File as Metadata

You can record a 3D LUT file (CUBE file) that is applied to the monitor image when shooting as metadata for the clip.
To enable this function, set Cine EI/Flex.ISO Set >Embed LUT File (page 98) to On in the Project menu of the full menu.
The 3D LUT file (CUBE file) that is selected when recording starts is recorded as metadata. However, recording as metadata is not possible in the following circumstances.

- When a 3D LUT file (file displaying a “!” before the file name when Base Look is selected) imported using a previous version is selected
- When a 3D LUT file that can be saved is selected but then the LUT data to use is changed and recording is started immediately
- When LUT On/Off >Internal Rec (page 96) is set to LUT On in the Shooting menu of the full menu

[Note]
Only one metadata item can be recorded per clip.

[Tip]
Used 3D LUT files are saved in a specific folder on the media.

Recording media	Folder path
SDXC	/XDROOT/GENERAL/LUT
CFexpress Type A	

Recording RAW Video

You can record the RAW video signal output from the SDI OUT connector or HDMI OUT connector of the camcorder to a supported external recorder.

[Tip]
A RAW video signal that is appropriate for the connected device is automatically output from the HDMI OUT connector.

Recording from the SDI OUT Connector

1 Connect an external RAW recorder to the SDI OUT connector of the camcorder.

2 Select Flexible ISO, Cine EI Quick, or Cine EI using Shooting Mode on the Project status screen (page 19) or Base Setting >Shooting Mode (page 97) in the Project menu of the full menu.

3 Set the scan mode (FF only) using Imager Scan on the Project status screen or Rec Format >Imager Scan Mode (page 97) in the Project menu of the full menu.

4 Set the codec using the Project status screen or Rec Format >Codec (page 97) in the Project menu of the full menu to a codec that includes RAW.
Selecting RAW & XAVC-I will simultaneously record video to the external RAW recorder and video to the memory cards in the camcorder.

5 Set the resolution using the Project status screen or Rec Format >RAW Output Format (page 97) in the Project menu of the full menu.

6 Check that the external recorder is turned on, then press the record START/STOP button on the camcorder.

[Note]
When recording is started on an external recorder, without using the record START/STOP button on the camcorder, clips may not be recorded properly.

The supported RAW output formats are shown below.

System frequency	Codec	RAW Output Format
59.94/ 50/ 29.97/ 25/ 23.98	RAW	4096×2160
		3840×2160
	RAW & XAVC-I	4096×2160
		3840×2160
24	RAW	4096×2160
	RAW & XAVC-I	4096×2160

Recording from the HDMI OUT Connector

1 Connect an external RAW recorder to the HDMI OUT connector of the camcorder.

2 Select Flexible ISO, Cine EI Quick, or Cine EI using Shooting Mode on the Project status screen (page 19) or Base Setting >Shooting Mode (page 97) in the Project menu of the full menu.

3 Set the scan mode (FF only) using Imager Scan on the Project status screen or Rec Format >Imager Scan Mode (page 97) in the Project menu of the full menu.

4 Set the codec using the Project status screen or Rec Format >Codec (page 97) in the Project menu of the full menu to RAW(HDMI).
Selecting RAW(HDMI) & XAVC-I will simultaneously record video to the external RAW recorder and video to the memory cards in the camcorder.

5 Check that the external recorder is turned on, then press the record START/STOP button on the camcorder.

[Note]
When recording is started on an external recorder, without using the record START/STOP button on the camcorder, clips may not be recorded properly.

The supported RAW output formats are shown below.

System frequency	Codec	RAW Output Format
59.94/ 50/ 29.97/ 25/ 23.98	RAW(HDMI)	4240×2392
	RAW(HDMI) & XAVC-I	4240×2392

Recording Status Indicator

When Display On/Off (page 110) >RAW Output Control Status in the Monitoring menu of the full menu is set to On, the RAW recording status is indicated by an icon displayed in the viewfinder.

[Note]
The recording control signal is output from the SDI OUT connector of the camcorder, but it is not possible to get the status of the external recorder. Accordingly, the camcorder may indicate RAW video recording is in progress when the external recorder is not actually recording. Check the indicator on the external recorder to obtain the correct operating status.

[Tip]
The RAW Output Format setting value is also displayed.

Slow & Quick Motion Recording

If S&Q Motion >Setting in the Shooting menu is set to On, RAW video is recorded in Slow & Quick Motion mode.
For details about the supported frame rates for shooting, see page 55.

[Note]
Slow & Quick Motion recording from the HDMI OUT connector is not supported.

Network Functions

The unit can connect to a mobile device, such as a smartphone or tablet, allowing you to control the unit remotely from a mobile device. The unit can also be connected to the Internet to transfer files and to use various services.

[Note]
When using any network connection device attached to the unit, radio waves emitted by the device may cause noise to be recorded in the audio. In this case, keep the network connection device away from the unit.

- Remote control
  You can control the unit remotely from a mobile device while viewing the camera image or playback image.

  [Notes]
  - If unauthorized access is detected, the camera may become unable to accept communications. If this occurs, reconnect from the beginning.
  - You can control the unit remotely using the "Content Browser Mobile" application, but you cannot monitor the image.
  - Monitoring of the video is not supported with the following settings.
    - System frequency of 24
    - Interval Rec mode
- File transfer
  You can transfer a proxy clip or original clip that is recorded on a memory card in the unit to a cloud server via the Internet.

"Monitor & Control" application

This application allows you to set the white balance and exposure, and adjust the focus while monitoring the video of the unit on the screen of a mobile device.

"Creators' App for Enterprise" application

This application supports the following functions.

- Transfer of files from the unit to the "C3 Portal" and "Ci Media Cloud" cloud services.
- Import 3D LUT files saved in "C3 Portal" to the unit.
  For details, see "Importing from a cloud service" (page 61).
- Save an ALL file created by the unit to "C3 Portal" and then load it from "C3 Portal."
  For details, see "Load from Media(B)" (page 103) and "Loading an ALL file from a cloud service" (page 132).

This application supports simple connection to the camera and efficient file transfer using a smartphone. For details, see the Help Guide for the application.
A "C3 Portal" or "Ci Media Cloud" account is required for use.
For details about obtaining an account, contact the administrator of your organization.

[Note]
Cloud services, applications, and some functions may not be available, depending on the region in which you live.

"Camera Remote SDK"

This is a development environment provided by Sony where software developers themselves can develop solutions and applications using Sony cameras. Developers can remotely control Sony cameras from a host PC and develop their own applications for shooting and monitoring using this SDK.

For details about each application and the SDK, contact your Sony sales or service representative. For details about operation, refer to the corresponding Help or Help Guide.

Connecting with “Monitor & Control”

You can connect the unit to a mobile device and use “Monitor & Control” to operate the unit while monitoring the image on the mobile device.

Connection method	Features
Wi-Fi connection with camera as an AP[1] (Wi-Fi Direct connection)/Wi-Fi	The unit acts as an AP[1] and can connect to only one mobile device. The unit cannot connect to the Internet, even If the mobile device is connected to the Internet.
Wi-Fi connection with wireless LAN router as an AP[1]/Wi-Fi	The unit can be operated from multiple mobile devices. If your router connects to the Internet and allows connection to the unit, the unit will have Internet access.
Wired LAN connection via a router/Wired LAN	
Wi-Fi tethering[2] with mobile device as an AP[1]/ Tethering (Wi-Fi)	If your mobile device connects to the Internet and allows connection to the unit, the unit will have Internet access.
USB tethering[2] with mobile device as an AP[1]/ Tethering (USB)	

1) Access point (AP): Device that supplies an SSID for Wi-Fi connections
2) Tethering (Internet sharing): A function that allows you to connect to the Internet via mobile line data communication using the SIM card of a mobile device

For details about how to connect to the unit with a mobile device and how to operate the “Monitor & Control” application, refer to the “Monitor & Control” Help Guide.

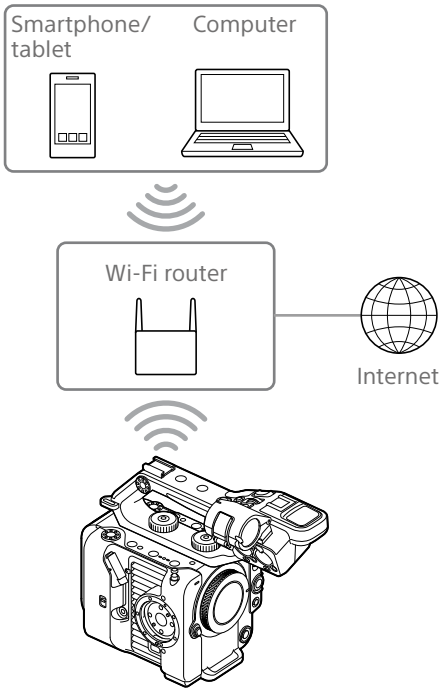
[Tip]
In software version 6.0 and later, a random password is generated for access authentication at the factory and when the unit is reset. To set a password, set Network Setup >Edit Authentication (page 119) in the Network menu of the full menu.

You can check the operating status in the Status field on the Network status screen.
For details about the status display when the unit is set to AP mode, see the following table. For other details, see “Connecting to the Internet” (page 68).

Status display	Possible cause	Solution
Non Active	(State transition in progress)	Process in progress. Wait a short while.
(SSID name)	Waiting for a mobile device to connect.	Tap the SSID name to display the SSID and password of the unit. Set the wireless LAN function of the mobile device.
Connected	Mobile device is connected.	Multiple mobile devices cannot be connected.

Connecting to the Internet

Connecting to the Internet via Wireless LAN



Connect the unit to an existing wireless LAN access point. Connect the mobile device to control operation via the access point.
The 10 most recently connected access points are displayed in the history. The connection history is saved in an ALL file, but the access point passwords are not saved. Password entry is required the next time you connect after loading the ALL file.

[Tips]
- When connected to an access point, set the unit to station (ST) mode.
- You may be able to configure your mobile device as an access point (Wi-Fi tethering). For details, refer to the operation manual for the mobile device.

Connecting using the access point auto detection function

1 Press the MENU button to display the Network status screen.

2 Set Wireless LAN >Setting to Station Mode (ST).

[Notes]
- The unit is not a network device (for example, a router or switching hub). It is strongly recommended that you connect the unit to a network where you can configure and manage the network settings appropriately to protect against network-based attacks, such as DoS attacks (Denial of Service attacks).
- When connecting the unit to a network, connect it via a router that is configured and managed appropriately, or connect it to a LAN port that has the same functionality. If connected without such protection (for example when connected to free Wi-Fi), security issues may occur. When properly configured, routers provide sufficient protection against DoS attacks or loss of functionality of devices in the network. If you notice anything unusual, immediately disconnect the camera from the network.

3 Press Wireless LAN >Status.
The Scan Networks screen appears.

4 Select the access point for the network to which you want to connect and enter the password.

[Note]
The following are the valid number of input characters:
- WPA2: 8 to 63 characters
- WPA3: 8 to 128 characters
- None: Entry disabled

The following are valid input characters:
Alphabetic characters (uppercase/lowercase), numeric characters, symbols (- . @ _ ( ) ! " #$ % & ' * + , / : ; < = > ? [\ ] ^ ` { | } ~)

5 Configure the following connection settings, as required.

Configuration item	Description
DHCP	Set the DHCP setting. When set to On, the IP address is assigned to the unit automatically. To enter the IP address of the unit manually, set to Off. [Note] Even when DHCP is set to On, an IP address will not be assigned if a DHCP server is not running on the connected network.
IP Address	Enter the IP address of the unit. This setting is available only when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
Subnet Mask	Enter the subnet mask of the unit. This setting is available only when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.

Configuration item	Description
Gateway	Enter the gateway for the access point. This setting is available only when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
DNS Auto	Set whether to acquire DNS automatically. When set to On, the DNS server address is automatically acquired. This setting is available only when DHCP is set to On.
Primary DNS Server	Enter the primary DNS server for the access point. This setting is available only when DNS Auto is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
Secondary DNS Server	Enter the secondary DNS server for the access point. This setting is available only when DNS Auto is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.

6 When finished, press the Connect button.
The unit connects to the Internet.

[Tips]
- To use “Monitor & Control” or the “Camera Remote SDK” to control the unit from an external device, set Wireless LAN >Remote to Enable on the Network status screen.
- Press the Show Authentication button on the Network status screen to display the authentication information for connecting to the unit. Take care that the screen cannot be viewed and the QR code image cannot be copied by others.

Connecting manually by entering access point information

1 Set Wireless LAN >Setting to Station Mode (ST) in the Network menu of the full menu or on the Network status screen.

2 Select Wireless LAN >Manual Register (page 121) in the Network menu of the full menu.
The Manual Register screen appears.

3 Configure the following settings.

Configuration item	Description
SSID	Enter the SSID for the wireless LAN access point. [Note] Enter 1 to 32 valid input characters. The following are valid input characters: Alphabetic characters (uppercase/lowercase), numeric characters, symbols (- . @ _ ( ) ! " # $ % & ' * + , / : ; < = > ? [\ ] ^ ` { | } ~)
Security	Select the encryption method. [Notes] • In this document, wireless LAN access points and wireless LAN routers that relay LAN connections are referred to as “access points.” • The unit supports connections to access points with WPA3-SAE, WPA2-PSK (AES), or no security settings. For secure wireless LAN connection, connection to access points with WPA3 or WPA2 security setting is strongly recommended. • By default, the WPA2 security method is selected. • If you connect to an access point without any security setting, you may be subject to hacking, access by malicious third parties, or attacks upon vulnerabilities. Unless it is otherwise unavoidable, connection without any security setting is not recommended. • Configuring security on a wireless LAN is very important. Sony will not be liable for any damages resulting from security measures not being taken, or if a security problem occurs due to unavoidable circumstances in the use of wireless LAN.
Password	Enter the password for the wireless LAN access point. [Note] The following are the valid number of input characters: • WPA2: 8 to 63 characters • WPA3: 8 to 128 characters • None: Entry disabled The following are valid input characters: Alphabetic characters (uppercase/lowercase), numeric characters, symbols (- . @ _ ( ) ! " #$ % & ' * + , / : ; < = > ? [\ ] ^ ` { | } ~)
DHCP	Set the DHCP setting. When set to On, the IP address is assigned to the unit automatically. To enter the IP address of the unit manually, set to Off. [Note] Even when DHCP is set to On, an IP address will not be assigned if a DHCP server is not running on the connected network.
IP Address	Enter the IP address of the unit. This setting is available only when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
Subnet Mask	Enter the subnet mask of the unit. This setting is available only when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.

Configuration item	Description
Gateway	Enter the address of the gateway. This setting is available only when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
DNS Auto	Set whether to acquire DNS automatically. When set to On, the DNS server address is automatically acquired. This setting is available only when DHCP is set to On.
Primary DNS Server	Enter the address of the primary DNS server. This setting is available only when DNS Auto is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
Secondary DNS Server	Enter the address of the secondary DNS server. This setting is available only when DNS Auto is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.

4 When finished, press the Connect button.
The unit connects to the Internet.

[Tips]
- To use “Monitor & Control,” “Creators' App for Enterprise,” or the “Camera Remote SDK” to control the unit from an external device, set Wireless LAN >Remote to Enable on the Network status screen.
- Press the Show Authentication button on the Network status screen to display the authentication information for connecting to the unit. Take care that the screen cannot be viewed and the QR code image cannot be copied by others.

[Notes]
- Security (encryption method) can be set to None, WPA2, or WPA3. The use of WPA2 or WPA3 is recommended from a security standpoint. For secure wireless LAN connection, connection to access points with WPA2 or WPA3 security setting is strongly recommended.
- If you connect to an access point without any security setting, you may be subject to hacking, access by malicious third parties, or attacks upon vulnerabilities. Unless it is otherwise unavoidable, connection without any security setting is not recommended.
- When configuring an access point on the Manual Register screen, the number and type of characters that can be entered are as follows.
  - When entering an SSID:
    Enter 1 to 32 valid input characters. The following are valid input characters:
    Alphabetic characters (uppercase/lowercase), numeric characters, symbols (- . @ _ ( ) ! " # $ % & ' * + , / : ; < = > ? [\ ] ^ ` { | } ~)
  - When entering the password:
    For WPA2, enter 8 to 63 valid input characters. For WPA3, enter 8 to 128 valid input characters. The following are valid input characters:
    Alphabetic characters (uppercase/lowercase), numeric characters, symbols (- . @ _ ( ) ! " # $ % & ' * + , / : ; < = > ? [\ ] ^ ` { | } ~)

Checking the operating status

You can check the operating status in the Status field on the Network status screen.

Status display	Possible cause	Solution
Non Active	(State transition in progress)	Process in progress. Wait a short while.
Disconnected	An access point to connect to is not selected.	Tap Disconnected and select a connection destination from the access point list.
Searching	Searching for a previously connected access point.	To change the connection destination, tap Searching and select a connection destination from the access point list.
Connecting	• Far from the access point. • IP address is being acquired or acquisition failed. • WPS execution in progress. • Disconnected from the access point.	Check the following. • An access point for connection is nearby. • Access point recognizes the unit as a trusted device. • Number of simultaneous connections to an access point does not exceed the upper limit. • DHCP server of access point or network is enabled.
(SSID name)	(Operating normally)	The unit is connected to the displayed access point.
IP Address Error	The assigned IP address or network segment conflicts with other communication networks. Example: In the following case, the network segments are 192.168.0.0/24, so there is an overlap. • Wireless LAN: IP address: 192.168.0.13 Subnet mask: 255.255.255.0 • Wired LAN: IP address: 192.168.0.25 Subnet mask: 255.255.255.0	Check the settings of the unit and the network side, and change the IP address and network segment so that they do not conflict.

Connecting to the Internet via USB Tethering

You can connect the unit to a smartphone via a USB cable, and then connect to the Internet using the smartphone.

1 Turn the unit on.

2 Press the MENU button to display the Network status screen.

3 Select USB Tethering >Setting >USB Tethering.
USB tethering is turned on.

4 Connect the smartphone via a USB cable to the USB-C connector of the unit.

5 Enable tethering communication on the smartphone.
For details, refer to the operation manual for the smartphone.
The unit connects to the Internet.

[Note]
USB tethering and wired LAN cannot be used at the same time on the unit.

Checking the operating status

You can check the operating status in the Status field on the Network status screen.

Status display	Possible cause	Solution
Non Active	(State transition in progress)	Process in progress. Wait a short while.
No Device	• USB cable was unplugged from the USB-C connector. • Another device is connected to the USB/multi connector. • The other device is not set for USB tethering.	Check the following. • Reinsert the USB cable in the USB-C connector. • Other device is turned on. • Remove any device connected to the USB/multi connector. • USB tethering on the other device is turned on.
Unsp. Cnct. Dev.	• Other device is not set for USB tethering. • Other device does not support USB tethering.	Check that USB tethering on the other device is turned on. USB hubs cannot be used.
Disconnected	(State transition in progress)	Process in progress. Wait a short while.
Connecting	• Other device does not recognize the unit as a trusted device. • IP address is being acquired or acquisition failed.	Check the following. • Other device recognizes the unit as a trusted device. • DHCP server of other device or network is enabled.
Connected	(Operating normally)	The unit is operating normally.
IP Address Error	The assigned IP address or network segment conflicts with other communication networks. Example: In the following case, the network segments are 192.168.0.0/24, so there is an overlap. • Wireless LAN: IP address: 192.168.0.13 Subnet mask: 255.255.255.0 • USB tethering: IP address: 192.168.0.25 Subnet mask: 255.255.255.0	Check the settings of the unit and the network side, and change the IP address and network segment so that they do not conflict.

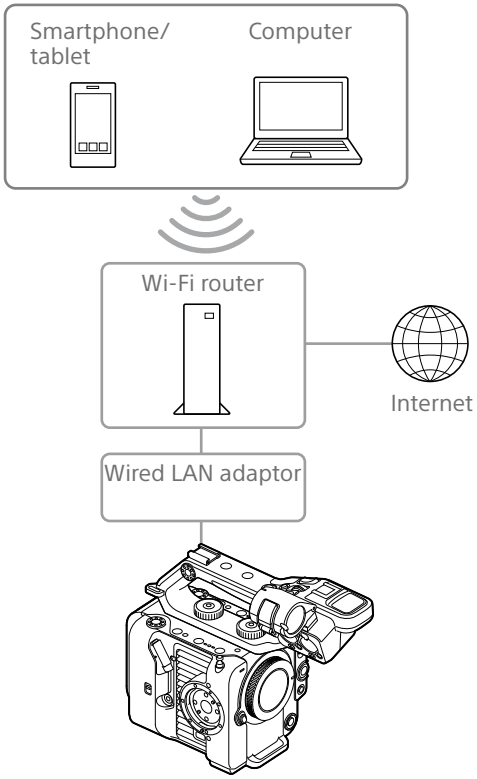
[Tips]
- To use “Monitor & Control,” “Creators' App for Enterprise,” or the “Camera Remote SDK” to control the unit from an external device, set USB Tethering >Remote to Enable on the Network status screen.
- Press the Show Authentication button on the Network status screen to display the authentication information for connecting to the unit. Take care that the screen cannot be viewed and the QR code image cannot be copied by others.
- When both USB Tethering and Wired LAN are set to Off, the screen for selecting the USB function to enable appears when you connect the unit and a smartphone via a USB cable. In this case, select USB Tethering from the displayed drop-down list box and select Execute to turn on USB tethering.

[Notes]
- If the following screen appears, remove the USB cable to return to the shooting screen, select USB Tethering on the Network status screen, and then connect the USB cable.

- USB tethering cannot be used if the smartphone is connected via a USB hub.
- Power supply up to 5 V/0.9A is supported, depending on the electrical current requirement of the connected USB device.
- Only use trusted smartphone devices for tethering. Connecting to devices of unknown origin is not recommended due to security concerns.

Connecting to the Internet via Wired LAN

You can connect to the Internet by connecting the wired LAN connector of a wired LAN adaptor (option) attached to the USB-C connector (page 7) of the unit to a Wi-Fi router (option) using a LAN cable. You can also connect the unit to multiple mobile devices, such as smartphones, using a router.



1 Attach a wired LAN adaptor to the USB-C connector of the unit.

[Notes]
- Use a USB Type-C wired LAN adaptor. Use of a Gigabit Ethernet compatible adaptor is recommended. However, operation is not guaranteed to work with all devices.
- A USB wired LAN adaptor cannot be used if a computer is attached to the USB/multi connector (page 7).
- The built-in Wi-Fi communication function may be affected, depending on the model of the wired LAN adaptor.

2 Connect the wired LAN connector of the wired LAN adaptor to a Wi-Fi router using a LAN cable.

3 Turn the unit on.

4 Press the MENU button to display the Network status screen.

5 Set Wired LAN >Setting to On.

[Notes]
- Wired LAN and USB tethering cannot be used at the same time on the unit.
- The unit is not a network device (for example, a router or switching hub). It is strongly recommended that you connect the unit to a network where you can configure and manage the network settings appropriately to protect against network-based attacks, such as DoS attacks (Denial of Service attacks).
- When connecting the unit to a network, connect it via a router that is configured and managed appropriately, or connect it to a LAN port that has the same functionality. If connected without such protection, security issues may occur. When properly configured, routers provide sufficient protection against DoS attacks or loss of functionality of devices in the network. If you notice anything unusual, immediately disconnect the camera from the network.

6 Configure the following settings using Wired LAN >Detail Settings (page 122) in the Network menu of the full menu and select Set.

Configuration item	Description
DHCP	Set the DHCP setting. When set to On, the IP address is assigned to the unit automatically. To enter the IP address of the unit manually, set to Off. [Note] Even when DHCP is set to On, an IP address will not be assigned if a DHCP server is not running on the connected network.
IP Address	Enter the IP address of the unit. This setting is available only when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
Subnet Mask	Enter the subnet mask of the unit. This setting is available only when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
Gateway	Enter the address of the gateway. This setting is available only when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
DNS Auto	Set whether to acquire DNS automatically. When set to On, the DNS server address is automatically acquired. This setting is available only when DHCP is set to On.

Configuration item	Description
Primary DNS Server	Enter the address of the primary DNS server. This setting is available only when DNS Auto is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
Secondary DNS Server	Enter the address of the secondary DNS server. This setting is available only when DNS Auto is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.

Checking the operating status

You can check the operating status in the Status field on the Network status screen.

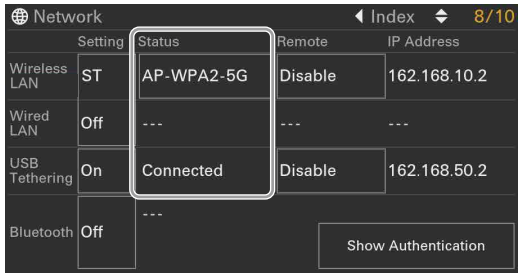
Status display	Possible cause	Solution
Non Active	(State transition in progress)	Process in progress. Wait a short while.
No Device	• Wired LAN adaptor is not connected to the USB-C connector. • Another device is connected to the USB/multi connector.	Check the following. • Reinsert the wired LAN adaptor into the USB-C connector. • Remove any device connected to the USB/multi connector.
Unsp. Cnct. Dev.	• A device other than a wired LAN adaptor is connected to the USB-C connector. • An unsupported wired LAN adaptor is connected.	Check the following. • Connect the wired LAN adaptor to the USB-C connector. • If a wired LAN adaptor is connected, replace with another device. USB hubs cannot be used.
Disconnected	• Ethernet cable is unplugged. • Other device connected via Ethernet cable is not turned on. • Ethernet cable is damaged.	Check the following. • Both ends of Ethernet cable are inserted correctly. • Other device connected via Ethernet cable is turned on. • Ethernet cable is not damaged.
Connecting	• IP address is being acquired or acquisition failed. • There is no DHCP server on the network.	If there is no change after a short wait, check that the network DHCP server is enabled. If there is no DHCP server, set the IP address manually.
Connected	(Operating normally)	The unit is operating normally.
IP Address Error	The assigned IP address or network segment conflicts with other communication networks. Example: In the following case, the network segments are 192.168.0.0/24, so there is an overlap. • Wireless LAN: IP address: 192.168.0.13 Subnet mask: 255.255.255.0 • Wired LAN: IP address: 192.168.0.25 Subnet mask: 255.255.255.0	Check the settings of the unit and the network side, and change the IP address and network segment so that they do not conflict.

[Tips]
- To use “Monitor & Control,” “Creators' App for Enterprise,” or the “Camera Remote SDK” to control the unit from an external device, set Wired LAN >Remote to Enable on the Network status screen.
- Press the Show Authentication button on the Network status screen to display the authentication information for connecting to the unit. Take care that the screen cannot be viewed and the QR code image cannot be copied by others.

[Note]
Always select Set after changing the connection settings. The settings are not applied if Set is not selected.

Checking the Network Connection Status

You can check the status of each network connection on the Network status screen.



[Tip]
To enable remote operation, set Remote to Enable for the corresponding connection. If not using remote operation, it is recommended that the connection be set to Disable to prevent unintended operation.

Wireless LAN: Access point mode (AP)

Status display	Possible cause	Solution
Non Active	(State transition in progress)	Process in progress. Wait a short while.
(SSID name)	Waiting for a mobile device to connect.	Tap the SSID name to display the SSID and password of the unit. Set the mobile LAN function of the mobile device.
Connected	Mobile device is connected.	Multiple mobile devices cannot be connected.

Wireless LAN: Station mode (ST)

Status display	Possible cause	Solution
Non Active	(State transition in progress)	Process in progress. Wait a short while.
Disconnected	An access point to connect to is not selected.	Tap Disconnected and select a connection destination from the access point list.
Searching	Searching for a previously connected access point.	To change the connection destination, tap Searching and select a connection destination from the access point list.
Connecting	• Far from the access point. • IP address is being acquired or acquisition failed. • WPS execution in progress. • Disconnected from the access point.	Check the following. • An access point for connection is nearby. • Access point recognizes the unit as a trusted device. • Number of simultaneous connections to an access point does not exceed the upper limit. • DHCP server of access point or network is enabled.
(SSID name)	(Operating normally)	The unit is connected to the displayed access point.
IP Address Error	The assigned IP address or network segment conflicts with other communication networks. Example: In the following case, the network segments are 192.168.0.0/24, so there is an overlap. • Wireless LAN: IP address: 192.168.0.13 Subnet mask: 255.255.255.0 • Wired LAN: IP address: 192.168.0.25 Subnet mask: 255.255.255.0	Check the settings of the unit and the network side, and change the IP address and network segment so that they do not conflict.

Wired LAN

Status display	Possible cause	Solution
Non Active	(State transition in progress)	Process in progress. Wait a short while.
No Device	• Wired LAN adaptor is not connected to the USB-C connector. • Another device is connected to the USB/multi connector.	Check the following. • Reinsert the wired LAN adaptor into the USB-C connector. • Remove any device connected to the USB/multi connector.
Unsp. Cnct. Dev.	• A device other than a wired LAN adaptor is connected to the USB-C connector. • An unsupported wired LAN adaptor is connected.	Check the following. • Connect the wired LAN adaptor to the USB-C connector. • If a wired LAN adaptor is connected, replace with another device. USB hubs cannot be used.

Status display	Possible cause	Solution
Disconnected	• Ethernet cable is unplugged. • Other device connected via Ethernet cable is not turned on. • Ethernet cable is damaged.	Check the following. • Both ends of Ethernet cable are inserted correctly. • Other device connected via Ethernet cable is turned on. • Ethernet cable is not damaged.
Connecting	• IP address is being acquired or acquisition failed. • There is no DHCP server on the network.	If there is no change after a short wait, check that the network DHCP server is enabled. If there is no DHCP server, set the IP address manually.
Connected	(Operating normally)	The unit is operating normally.
IP Address Error	The assigned IP address or network segment conflicts with other communication networks. Example: In the following case, the network segments are 192.168.0.0/24, so there is an overlap. • Wireless LAN: IP address: 192.168.0.13 Subnet mask: 255.255.255.0 • Wired LAN: IP address: 192.168.0.25 Subnet mask: 255.255.255.0	Check the settings of the unit and the network side, and change the IP address and network segment so that they do not conflict.

USB tethering

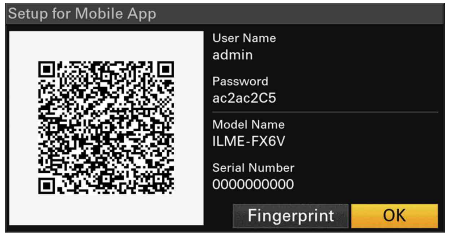
Status display	Possible cause	Solution
Non Active	(State transition in progress)	Process in progress. Wait a short while.
No Device	• USB cable was unplugged from the USB-C connector. • Another device is connected to the USB/multi connector. • The other device is not set for USB tethering.	Check the following. • Reinsert the USB cable in the USB-C connector. • Other device is turned on. • Remove any device connected to the USB/multi connector. • USB tethering on the other device is turned on.
Unsp. Cnct. Dev.	• Other device is not set for USB tethering. • Other device does not support USB tethering.	Check that USB tethering on the other device is turned on. USB hubs cannot be used.
Disconnected	(State transition in progress)	Process in progress. Wait a short while.
Connecting	• Other device does not recognize the unit as a trusted device. • IP address is being acquired or acquisition failed.	Check the following. • Other device recognizes the unit as a trusted device. • DHCP server of other device or network is enabled.
Connected	(Operating normally)	The unit is operating normally.
IP Address Error	The assigned IP address or network segment conflicts with other communication networks. Example: In the following case, the network segments are 192.168.0.0/24, so there is an overlap. • Wireless LAN: IP address: 192.168.0.13 Subnet mask: 255.255.255.0 • USB tethering: IP address: 192.168.0.25 Subnet mask: 255.255.255.0	Check the settings of the unit and the network side, and change the IP address and network segment so that they do not conflict.

Transferring Files to “C3 Portal” and “Ci Media Cloud”

You can transfer files to the “C3 Portal” and “Ci Media Cloud” cloud services using the “Creators' App for Enterprise” application.

1 Select Network Setup >Setup for Mobile App (page 119) in the Network menu of the full menu.
A confirmation screen appears for items that will be updated automatically.
The following settings in the Network menu are selected automatically.
Wired LAN >Setting: Off
USB Tethering >Setting: On
USB Tethering >Camera Remote Control: Enable

2 Check the settings and select OK.
The configuration starts.
A configuration message appears.
When the configuration is completed, the access authentication screen appears in the viewfinder.



The following information is displayed on the screen.
User name/password/fingerprint/camera model name/serial number

[Tip]
This screen is not output to the video output.

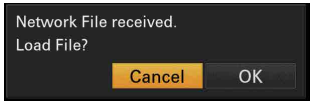
[Note]
Take care that the password cannot be viewed and the QR code image cannot be copied by others.

3 Start “Creators’ App for Enterprise” on the smartphone, select a file transfer destination cloud service, and sign in.

4 Connect a USB cable to the USB-C data communication connector of the unit, and then connect the smartphone.

5 Enable the USB tethering function on the smartphone.
For details, refer to the operation manual for the smartphone.

6 Follow the instructions on the “Creators' App for Enterprise” screen and scan the QR code displayed on the LCD monitor of the unit.
File transfer setup information is sent from the smartphone to the unit, and the following screen appears on the unit.



7 Select OK.
The setup information starts loading.
When the setup is loaded successfully, a message appears.

[Notes]
- Creators' App for Enterprise overwrites the File Transfer (page 122) setting in the Network menu of the unit.
- Root Certificate cannot be set automatically. Configure manually.

Transferring Original Clips

Set using the File Transfer status screen or set File Transfer >Auto Upload (page 122) to On in the Network menu of the full menu to enable transfer of original clips automatically. Each time a recording finishes, the clip is transferred to the location associated with your selected cloud service account.

Transferring Proxy Clips

Set using the File Transfer status screen or set File Transfer >Auto Upload (Proxy) (page 122) to On in the Network menu of the full menu to enable transfer of proxy clips automatically. Each time a recording finishes, the clip is transferred to the location associated with your selected cloud service account.

[Tips]
- Files transferred from the unit are cached in “Creators' App for Enterprise” and then transferred to “C3 Portal” or “Ci Media Cloud.” The file transfer status display on the unit indicates the transfer status to “Creators' App for Enterprise.”
- When the file transfer from the unit to “Creators' App for Enterprise” is completed, you can turn off the unit but note that file transfer from the smartphone may be continuing. Be aware of the remaining battery charge on the smartphone.
- You can transfer any clips to “C3 Portal” and “Ci Media Cloud.” For details, see “Selecting and Transferring Clips” (page 78).
- You can import 3D LUT files stored in “C3 Portal” into the unit.
- You can save an ALL file created by the unit in “C3 Portal” and then load it from “C3 Portal.”

Other Functions that Use “C3 Portal”

Managing 3D LUT files

You can import 3D LUT files stored in “C3 Portal” into the unit.
For details, see “Importing a Desired Base Look” (page 61).

Managing ALL files

You can save an ALL file created on the unit in “C3 Portal” and load it from “C3 Portal.”
For details, see “Loading an ALL file from a cloud service” (page 132).

Transferring Files

You can transfer a recorded proxy clip or original clip to a server on the Internet or to a server on the local network.

Preparing to Transfer Files

Connect the unit to the Internet or local network using the following procedures.
- Connecting to the Internet via Wireless LAN (page 68)
- Connecting to the Internet via USB Tethering (page 71)
- Connecting to the Internet via Wired LAN (page 72)

Registering a file transfer destination

Register a server to which to transfer files comprising the clips beforehand.

1 Select File Transfer >Server Settings1 to Server Settings3 (page 123) in the Network menu of the full menu.
The transfer destination setup screen appears.

2 Set each item on the transfer destination setup screen.

Configuration item	Description
Display Name	Enter the name of the server to display in the transfer destination list. [Note] Enter 1 to 16 valid input characters. The following are valid input characters: Alphabetic characters (uppercase and lowercase), numeric characters, symbols (! # $ % & ' ( ) * + , - . / : ; < = > ? @ [ ] ~)
Service	Displays the server type. FTP: FTP server
Host Name	Enter the address of the server. [Note] Enter 1 to 255 valid input characters. The following are valid input characters: Alphabetic characters (uppercase and lowercase), numeric characters, symbols (. -)
Port	Enter the port number of the server to connect. [Note] Enter 1 to 5 valid input characters. Only numeric characters are valid input characters.
User Name	Enter the user name. [Note] Enter 0 to 255 valid input characters. The following are valid input characters: Alphabetic characters (uppercase/lowercase), numeric characters, symbols (- . @ _ ( ) ! " # $ % & ' * + , / : ; < = > ? [\ ] ^ ` { | } ~)
Password	Enter the password. [Note] Enter 0 to 255 valid input characters. The following are valid input characters: Alphabetic characters (uppercase/lowercase), numeric characters, symbols (- . @ _ ( ) ! " # $ % & ' * + , / : ; < = > ? [\ ] ^ ` { | } ~)
Passive Mode	Turn passive mode on/off.
Destination Directory	Enter the name of the directory on the destination server. [Notes] • Original clips are transferred to the “Main” folder within the directory specified as the transfer destination. • When editing, “□” indicates characters that cannot be changed. Correct operation is not guaranteed when editing a directory name that contains these characters. If you need to edit, delete all the characters and re-enter a value. • If characters that are invalid on the destination server are entered in Destination Directory, files will be transferred to the user’s home directory. Invalid characters will vary depending on the server. • Enter 0 to 128 valid input characters. The following are valid input characters: Alphabetic characters (uppercase and lowercase), numeric characters, symbols (! # $ % & ' ( ) * + , - . / : ; < = > ? @ [ ] ~)
Using Secure Protocol	Set whether to perform secure FTP transfer. For details, see “Transferring using Secure FTP” (page 79).
Root Certificate	Load/clear a certificate. • Load: Select Set in step 3 to load a CA certificate. [Note] The certificate to be loaded must be in PEM format with “certification.pem” file name, and should be written to the root directory of the memory card inserted in CFexpress Type A/SD card slot (B). The maximum certificate size that can be loaded is 1 MB per certificate. • Clear: Select Set in step 3 to clear a CA certificate. • None: Do not load or clear a certificate. [Notes] • Set the clock of the unit to the correct time before loading a CA certificate. • Depending on the recording format, Load/Clear cannot be executed for a certificate because the recording operation takes priority. • In low voltage state, Load/Clear cannot be selected for a CA certificate.
Root Certificate Status	Displays the load status of the certificate.
Reset	Reset the Server Settings1 to Server Settings3 settings to the defaults.

3 When finished, select Set to apply the settings.

[Note]
Always select Set after changing the settings. The settings are not applied if Set is not selected.

Selecting and Transferring Clips

You can transfer a proxy clip or original clip that is recorded on a memory card to a server.

[Note]
Proxy clips recorded in chunks are files dedicated for auto transfer. These files cannot be selected and transferred manually.

Transferring proxy clips

1 Select Transfer Clip (Proxy) >Select Clip (page 115) in the Thumbnail menu of the full menu.
The display changes from the full menu to the thumbnail screen.
Clips can be transferred from the thumbnail screen or the filtered clip thumbnail screen.

2 Select the clip you want to transfer, then press the MENU button.
A transfer confirmation screen appears.

3 Select Execute.
The proxy clip corresponding to the selected original clip is registered as a transfer job, and the transfer begins.
When the transfer job is successfully registered, the registration result screen appears.

4 Select OK.

[Tip]
Select All Clips instead of Select Clip in step 1 to transfer the proxy clips corresponding to all the original clips.

[Note]
Up to 200 transfer jobs can be registered.

Transferring original clips

1 Select Transfer Clip >Select Clip (page 115) in the Thumbnail menu of the full menu.
The display changes from the full menu to the thumbnail screen.
Clips can be transferred from the thumbnail screen or the filtered clip thumbnail screen.

2 Select the clip you want to transfer, then press the MENU button.
A transfer confirmation screen appears.

3 Select Execute.
The selected clip is registered as a transfer job, and the transfer begins.
When the transfer job is successfully registered, the registration result screen appears.

4 Select OK.

[Tip]
Select All Clips instead of Select Clip in step 1 to transfer all the clips.

[Notes]
- Original clips are transferred to the “Main” folder within the directory specified as the transfer destination.
- Up to 200 transfer jobs can be registered.

Checking the transfer status

You can check the status of file transfer by selecting File Transfer >View Job List (page 123) in the Network menu of the full menu.
You can also check the file transfer status when connected with a mobile device using the “Catalyst Browse” application.

[Tip]
If File Transfer >Auto Upload/Auto Upload (Proxy) (page 122) is set to On in the Network menu of the full menu or on the File Transfer status screen when connected to a network, original clips or proxy clips are automatically transferred to the server specified using Default Upload Server when recording ends. If both original clips and proxy clips are configured for auto transfer, the auto transfer of proxy clips takes precedence.

[Notes]
- The job list is retained when the unit is turned off, but up to 10 minutes of recent progress information may be lost if the battery pack is removed without first setting the power switch to the standby position.
- Jobs added after the battery low voltage state are not saved in the job list.
- If an error occurs during file transfer, the transfer of a clip with the same name as a transferred clip may not be resumed depending on the settings and status of the transfer destination server. In this case, check the transfer destination server settings and status.

Transferring Clips Automatically

You can transfer clips automatically.

Transferring original clips automatically

Original clips can be transferred to a specified server automatically when recording ends.
To enable auto transfer, use the File Transfer status screen or set File Transfer >Auto Upload (page 122) to On in the Network menu of the full menu.

Transferring proxy clips automatically

Proxy clips can be transferred to a specified server automatically when recording ends.
To enable auto transfer, use the File Transfer status screen or set File Transfer >Auto Upload (Proxy) (page 122) to On in the Network menu of the full menu.
Alternatively, when Auto Upload (Proxy) is set to Chunk, you can record a proxy clip in chunks and then upload the chunks to a specified server while the recording continues. The auto transfer of a proxy clip recorded in chunks takes precedence over other file transfer jobs.

Transferring using Secure FTP

You can transfer files with encryption using FTPS in Explicit mode (FTPES) for the connection with the file transfer destination server.

Setting secure FTP transfer

For secure FTP transfer, set Using Secure Protocol in the destination file server settings to On and load a certificate.

Precautions related to the FTP function

In FTP, the contents, user name, and password are not encrypted. For secure data transfer, use FTPES (FTPS).

About the FTPS function

The FTPS function supports various encryption algorithms to ensure secure file transfer. Multiple encryption algorithms, some of which may not comply with current security best practices, are supported for compatibility with a wide range of servers.

Encryption algorithms supported by the FTPS function

The following encryption algorithms are supported.

- TLS_RSA_WITH_AES_256_CBC_SHA256
- TLS_RSA_WITH_AES_128_CBC_SHA256
- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384
- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256
- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384
- TLS_ECDHE_ECDSA_WITH_AES_256_CBC_SHA384
- TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256
- TLS_DHE_RSA_WITH_AES_256_GCM_SHA384
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA256
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA
- TLS_DHE_RSA_WITH_AES_128_CBC_SHA256

Recommended encryption algorithms

The following encryption algorithms are recommended based on the NIST recommendations (NIST SP 800-57 Part 1 Revision 5) and related security standards.

- TLS_ECDHE_RSA_WITH_AES_256_GCM_SHA384
- TLS_ECDHE_RSA_WITH_AES_128_GCM_SHA256
- TLS_ECDHE_ECDSA_WITH_AES_256_GCM_SHA384

About deprecated algorithms

The FTPS function also supports the following algorithms for compatibility, but they are deprecated based on the NIST recommendations (NIST SP 800-57 Part 1 Revision 5) and related security standards, and may be removed in a future version.

- TLS_RSA_WITH_AES_256_CBC_SHA256
- TLS_RSA_WITH_AES_128_CBC_SHA256
- TLS_ECDHE_RSA_WITH_AES_256_CBC_SHA384
- TLS_ECDHE_RSA_WITH_AES_128_CBC_SHA256
- TLS_ECDHE_ECDSA_WITH_AES_256_CBC_SHA384
- TLS_ECDHE_ECDSA_WITH_AES_128_CBC_SHA256
- TLS_DHE_RSA_WITH_AES_256_GCM_SHA384
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA256
- TLS_DHE_RSA_WITH_AES_256_CBC_SHA
- TLS_DHE_RSA_WITH_AES_128_CBC_SHA256

About connection compatibility

The FTPS function is designed with a balance between security and compatibility. Currently, deprecated algorithms are supported for the following reasons, but they may be removed in a future version to improve security.

- Freelance photographers and videographers need to connect to servers running on various clients.
- Compatibility with older systems and legacy servers needs to be maintained.
- Not all users are prepared to change to a more secure setting because changing the encryption algorithm settings on the server side is complicated.
- The FTPS settings are often shared with other secure services. Any changes must be considered carefully as they may have an impact on other services on the server.
- A wide range of encryption algorithms must be supported to ensure interoperability in different environments.

The encryption algorithm used during an FTPS connection is determined by automatic negotiation with the destination server, and therefore depends on the server settings. While aware of the security risks, compatibility is currently prioritized to satisfy the diverse needs of users.

Security risks

Using deprecated algorithms, including CBC/DHE/RSA/SHA-1, increases the risk that encrypted data may be decrypted or tampered with by an attacker, exposing data during transfer.

Recommendation for secure connection

Before using the FTPS function, check that the connection destination server supports the recommended encryption algorithm. Enable only the recommended algorithms on the server side and disable the deprecated algorithms.

References

- Recommendation for Key Management, Special Publication 800-57 Part 1 Revision 5, NIST, 2020.
- Transitioning the Use of Cryptographic Algorithms and Key Lengths, Special Publication 800-131A Revision 2, NIST, 2019.
- Recommendation for Block Cipher Modes of Operation: The CMAC Mode for Authentication, Special Publication 800-38B, NIST, 2005 (includes updates as of 10/06/2016).

Thumbnail Screen

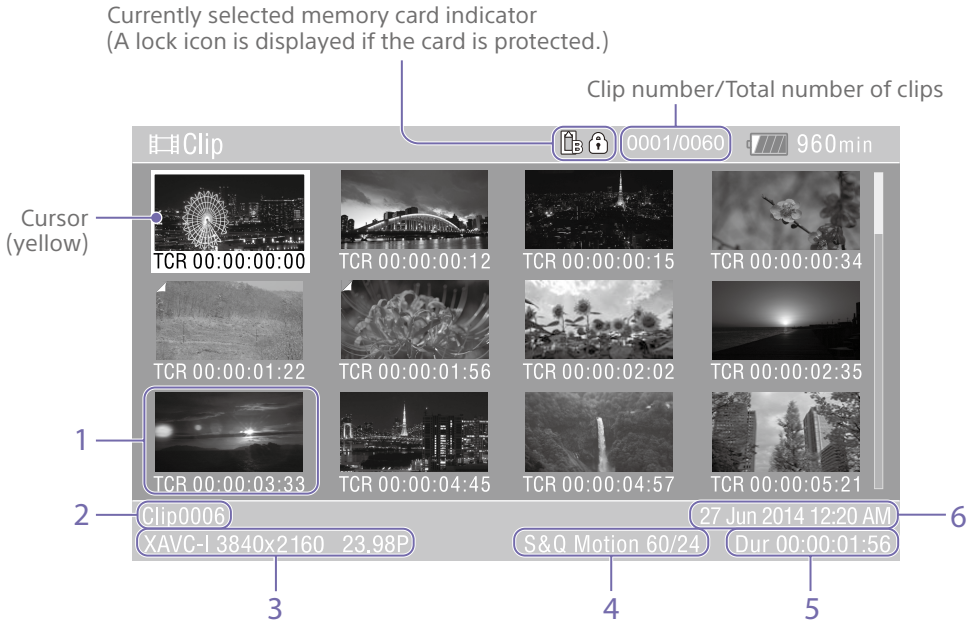
When you press the THUMBNAIL button (page 5), clips recorded on the memory card are displayed as thumbnails on the screen. Pressing the SLOT SELECT button switches the memory card for display.
You can select a clip on the thumbnail screen and start playback from that clip. On the thumbnail screen, you can operate the clips or check clip properties using the Thumbnail menu of the full menu. In information display mode, you can control playback in the viewfinder (playback control screen).
Pressing the THUMBNAIL button again closes the thumbnail screen and returns to the camera image.

[Notes]

- Only the clips recorded in the currently selected recording format are displayed on the thumbnail screen. If an expected recorded clip is not displayed, check the recording format. Take special note of this fact before formatting (initializing) media.
- The Output Display setting is not applied while the thumbnail screen is displayed. Note that the password setting screen is also displayed on the external monitor, so exercise caution when changing the password.

Screen Layout

Information for the clip at the cursor position is displayed at the bottom of the screen.



1. **Thumbnail (index picture)**
Displays the index picture of a clip. When a clip is recorded, its first frame is automatically set as the index picture.
Clip/frame information is displayed below the thumbnail. You can change the information displayed using Customize View (page 115) >Thumbnail Caption in the Thumbnail menu of the full menu.

2. **Clip name**
Displays the name of the selected clip.

3. **Recording video format**
Displays the file format of the selected clip.

4. **Special recording information**
Displays the recording mode only if the clip was recorded using a special recording mode. For Slow & Quick Motion clips, the frame rate is displayed on the right.

5. **Clip duration**

6. **Creation date**

Playing Clips

Playback Control Screen

In information display mode, when you select a clip to play on the thumbnail screen, the playback control screen is displayed in the viewfinder. The function display area supports touch operation.

Function display area

Select items displayed in 1 to 6 to set the corresponding item.

1. F Rev button
Fast reverse playback.
Press the button repeatedly to switch between three speeds.

2. Play/Pause button
Plays a clip or pauses clip playback.

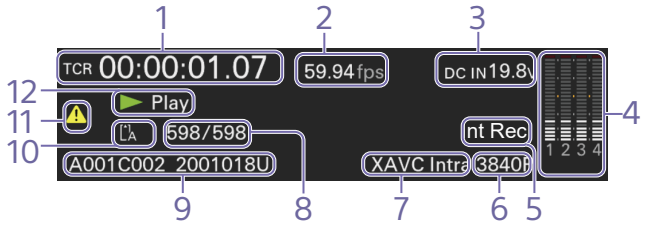
3. F Fwd button
Fast forward playback.
Press the button repeatedly to switch between three speeds.

4. Prev button
Jumps to the start of a clip in the reverse direction.

5. Stop/Clips button
Stops playback and returns to the thumbnail screen.

6. Next button
Jumps to the start of a clip in the forward direction.

Status display area



1. Time data display
Displays the timecode of the playback position.

2. Frame rate indicator
Displays the frame rate of the playback clip.

3. Power supply voltage/Remaining battery capacity indicator
Displays the power supply voltage or remaining battery capacity.

4. Audio level meter
Displays the playback audio levels.

5. Special recording mode indicator
Displays the special recording mode information of the playback clip.

6. Image resolution indicator
Displays the image resolution.

7. Codec name display
Displays the name of the codec.

8. Clip number/Total number of clips indicator
Displays the Current playback clip number/ Total number of playable clips.

9. Clip name display
Displays the name of the clip.

10. Media indicator
Displays the current playback media.
A (Write-protected) icon is displayed on the right if the memory card is protected.

11. Warning/error icon
Displayed when a warning or error occurs. You can check the content of warnings and errors by displaying the menu. If the screen display is superimposed on an external monitor, you can also check it on the external monitor.

12. Playback status indicator
Displays the playback operating status.

Playing Recorded Clips

You can play recorded clips when the camcorder is in recording standby mode.

1 Insert the memory card to play.

2 Press the THUMBNAIL button.
If clips are displayed for a memory card different from the memory card you want to play, press the SLOT SELECT button to switch memory cards.

3 Use the multi selector (page 7) or multi-function dial (page 5) to move the cursor to the thumbnail for the clip you want to play.
You can also drag the thumbnail screen up/down to scroll the screen.

4 Press the multi selector apply button or multi-function dial.
Playback begins from the start of the selected clip.
You can also start playback by tapping the thumbnail.

You can control playback by pressing the following buttons.

Press the multi selector apply button or multi-function dial, or tap the playback image:
Pauses playback.
Press again to resume normal playback.

Press the multi selector left/right buttons, or flick the playback image left/right:
Jumps to start of clip/start of next clip.

Press and hold the multi selector left/right buttons:
Fast reverse/forward.
Returns to normal playback when you release the button.

CANCEL/BACK button:
Stops playback, and returns to recording standby mode.

[Notes]

- There may be momentary picture breakup or still image display at the boundary between clips. You cannot operate the camcorder during this period.
- When you select a clip on the thumbnail screen and begin playback, there may be momentary picture breakup at the start of the clip. To view the start of the clip without breakup, put the camcorder into playback mode, pause, use the multi selector left button to return to the start of the clip, and start play again.

[Tip]

When a clip that was recorded in a Log shooting mode is played back, the EI value and LUT used when the clip was recorded are applied. The LUT to apply is determined from the saved 3D LUT file metadata information.
If the clip was recorded with Cine EI/Flex.ISO Set >Embed LUT File (page 98) in the Project menu of the full menu set to On when shooting, that LUT is applied for playback if the 3D LUT file used when shooting is installed on the unit.
If the clip was recorded with Cine EI/Flex.ISO Set >Embed LUT File (page 98) in the Project menu of the full menu set to Off when shooting, the LUT selected using Base Look >Select (page 105) in the Paint/Look menu of the full menu is applied for playback.
The same LUT is applied if the 3D LUT file used when shooting is not installed on the unit.

Clip Operations

On the thumbnail screen, you can operate the clips or check clip properties using the Thumbnail menu of the full menu.
The Thumbnail menu (page 115) appears when you press and hold the MENU button and select Thumbnail.

Thumbnail Menu Operations

Use the multi selector (page 7) or the multi-function dial (page 5) to select a function, then press the multi selector apply button or multi-function dial.
You can also move items directly using touch operation.
Press the CANCEL/BACK button (page 5) to return to the previous screen.

[Note]
Some items cannot be selected, depending on the state when the menu was displayed.

Menu Items for Clip Operations

- Display Clip Properties
- Set Clip Flag
- Lock/Unlock Clip
- Delete Clip
- Transfer Clip
- Transfer Clip (Proxy)
- Filter Clips
- Customize View

For details about clip operation menu items, see the Thumbnail menu (page 115).

Displaying clip properties

Select Display Clip Properties (page 115) in the Thumbnail menu to display the clip properties screen.
Press the multi selector left/right button to jump to the previous/next clip.

Adding clip flags

You can add clip flags (OK, NG or KP marks) to clips to filter the display of clips based on the clip flags.
Select the thumbnail for the clip to which you want to add a clip flag, then select the clip flag using Set Clip Flag (page 115) in the Thumbnail menu of the full menu.

Setting	Added clip flag
Add OK	OK
Add NG	NG
Add KEEP	KP

[Tips]
- You can also use an assignable button assigned with the clip flag function to add clip flags (page 54).
- You can add an OK clip flag (page 58) to the thumbnail of the selected clip by pressing the Clip Flag button (page 5).

Displaying the filtered clip thumbnail screen

Select Filter Clips (page 115) in the Thumbnail menu of the full menu, and select a clip flag type to display only those clips that have the specified flag.
To display all clips, select All.

[Tip]
You can also switch filters in sequence using the DISPLAY button.

Deleting clips

You can delete clips from memory cards.
Select Delete Clip >Select Clip or All Clips in the Thumbnail menu of the full menu.

Select Clip:
Deletes the selected clip. Multiple clip selection is supported.

All Clips:
Deletes all of the displayed clips.

Changing the information displayed on the thumbnail screen

You can change the clip/frame information displayed below the thumbnail.
Select Customize View >Thumbnail Caption in the Thumbnail menu of the full menu, and select the information to display.

Date Time:
Displays the date and time the clip was created and last modified.

Time Code:
Displays the timecode.

Duration:
Displays the duration of the clip.

Sequential Number:
Displays a sequential number on each thumbnail.

Full Menu Configuration and Hierarchy

Press and hold the MENU button to display the full menu in the viewfinder to specify various items for shooting, recording, and playback (menu can also be displayed on an external monitor). The full menu comprises the following menus.

Menu Configuration

User menu
: Contains menu items configured by the user using Edit User Menu.

Edit User menu
: Contains menu items for editing the User menu.

Shooting menu
: Contains settings related to shooting.

Project menu
: Contains basic project settings.

Paint/Look menu
: Contains settings related to image quality.

TC/Media menu
: Contains settings related to timecodes and recording media.

Monitoring menu
: Contains settings related to video output and the viewfinder display.

Audio menu
: Contains settings related to audio.

Thumbnail menu
: Contains settings related to thumbnail display.

Technical menu
: Contains settings for technical items.

Network menu
: Contains settings related to networks.

Maintenance menu
: Contains devices settings, such as the clock and language.

Full Menu Hierarchy

User (Factory settings)	Base Setting
	Focus
	S&Q Motion
	LUT On/Off
	Simul Rec
	Proxy Rec
	Interval Rec
	Assignable Button
	Assignable Dial
	Multi Function Dial
	All File
	Clip Name Format
	Format Media
	VF Setting
	Zebra
	Zoom
	Menu Settings
Edit User Menu	Add Item
	Customize Reset
Shooting	ISO/Gain/EI
	ND Filter
	Shutter
	Iris
	Auto Exposure
	White
	White Setting
	Offset White
	Focus
	S&Q Motion
	LUT On/Off
	Noise Suppression
	Flicker Reduce
	SteadyShot
Project	Base Setting
	Rec Format
	Cine EI/Flex.ISO Set
	HDR Setting
	Simul Rec
	Proxy Rec
	Interval Rec
	Picture Cache Rec
	SDI/HDMI Rec Control
	Assignable Button
	Assignable Dial
	Multi Function Dial
	User File
	All File
Paint/Look	Scene File
	Base Look
	Reset Paint Settings
	Black
	Knee
	Detail
	Matrix
	Multi Matrix
TC/Media	Timecode
	TC Display
	Users Bit
	HDMI TC Out
	Clip Name Format
	Update Media
	Format Media
Monitoring	Output On/Off
	Output Format
	De-Squeeze
	Output Display
	Display On/Off
	Marker
	VF Setting
	Gamma Display Assist
	Peaking
	Zebra
	Focus Magnifier
Audio	Audio Input
	Audio Output
Thumbnail	Display Clip Properties
	Set Clip Flag
	Lock/Unlock Clip
	Delete Clip
	Transfer Clip
	Transfer Clip (Proxy)
	Filter Clips
	Customize View
Technical	Color Bars
	ND Dial
	Tally
	HOLD Switch Setting
	Touch Operation
	Rec Review
	Zoom
	Handle Zoom
	Menu Settings
	Fan Control
	Lens
	Video Light Set
	APR
	Camera Battery Alarm
	Camera DC IN Alarm

Network	Network Setup
	Wireless LAN
	Wired LAN
	USB Tethering
	File Transfer
	Network Reset
Maintenance	Language
	Clock Set
	All Reset
	Hours Meter
	Version

Full Menu Operations

Press and hold the MENU button to display the full menu in the viewfinder to specify detailed settings (menu can also be displayed on an external monitor).

Menu Controls

MENU button (page 5)
: Press and hold to display the full menu. Press again while the full menu is displayed to hide the menu.

Multi selector (8-way D-pad and apply buttons) (page 7)
: Press the 8-way D-pad buttons to move the cursor up/down/left/right to select menu items or settings.
Press the multi selector apply button to apply the selected item.

Multi-function dial (page 5)
: Turn the multi-function dial to move the cursor up/down to select menu items or settings.
Press the multi-function dial to apply the selected item.

CANCEL/BACK button (page 5)
: Press to return to the previous menu. An uncompleted change is canceled.

Touch panel
: You can select menu items and settings using touch operation.

[Notes]
- Some items cannot be selected, depending on the state when the menu was displayed.
- Touch operation is not available when Touch Operation >Setting (page 116) is set to Off in the Technical menu of the full menu.

Setting Menu Items

Press the 8-way D-pad buttons or turn the multi-function dial to move the cursor to the menu item to set, then press the apply button or multi-function dial to select the item. When using touch operation, tap the item you want to configure.

- The menu item selection area displays up to eight lines. If the available options for an item cannot be displayed at the same time, scroll the display by moving the cursor up/down.
- For sub-items with a large settings range (for example, –99 to +99), the settings area is not displayed. The current setting is highlighted to indicate that the value can be changed.
- Selecting [Execute] for a function will execute the corresponding function.
- Selecting an item that requires confirmation before execution will temporarily hide the menu and display a confirmation message. Check the message, and then select whether to execute or cancel the function.

Entering a Character String

When you select an item, such as a file name, which requires character entry, the character entry screen appears.

1 Select the character type you want to enter using touch operation or the multi-function dial/multi selector, then apply the setting.
You can move the cursor in the character string by tapping or dragging left/right.
ABC: Uppercase alphabetic characters
abc: Lowercase alphabetic characters
123: Numeric characters
!#$: Special characters

2 Select a character from the selected character type, then apply the setting.
The cursor moves to the next field.
␣: Enters a space character at the cursor position.
←/→: Moves the position of the cursor.
⌫: Deletes the character on the left of the cursor (backspace).

3 When finished, select [Done] and apply the setting.
To cancel, select Cancel.
The character string is confirmed and the character entry screen disappears.

[Note]
When entering a password, a button (👁) to show/hide characters will be displayed. This switches the display between asterisks and normal text.

Locking and Unlocking the Menu

You can lock the full menu so that only the User menu is displayed.
In this state, settings cannot be changed using the status screens.

Locking the menu

1 Press and hold the multi-function dial and press and hold the MENU button.

2 Select Menu Settings >User Menu with Lock in the Technical menu.

[Note]
When you press and hold only the MENU button to display the normal full menu, User Menu Only is displayed under Menu Settings in the Technical menu. Press and hold the multi-function dial and press and hold the MENU button to display User Menu with Lock.

3 Set to On, and press the apply button or multi-function dial.
The viewfinder display switches to the passcode number input screen.

4 Enter an arbitrary number.
Enter a 4-digit number in the range 0000 to 9999. The default value is 0000.
Enter a number and press the apply button or multi-function dial to move the cursor to the next digit.
When all digits have been entered, move the cursor to SET.

5 Press the apply button or multi-function dial.
The entry is applied.
A confirmation message appears, and the screen switches to the User menu display.

Unlocking the menu

1 Press and hold the multi-function dial and press and hold the MENU button.

2 Select Menu Settings >User Menu with Lock in the User menu.

[Note]
When you press and hold only the MENU button to display the normal full menu, User Menu Only is displayed under Menu Settings in the Technical menu. Press and hold the multi-function dial and press and hold the MENU button to display User Menu with Lock.

3 Set to Off, and press the apply button or multi-function dial.
The viewfinder display switches to the passcode number input screen.

4 Enter the passcode number used to lock the menu.
Enter a number and press the apply button or multi-function dial to move the cursor to the next digit.
When all digits have been entered, move the cursor to Set.

5 Press the apply button or multi-function dial.
The entry is applied.
If the entered passcode number matches the passcode number used to lock the menu, the menu is unlocked and the menu is displayed.

[Notes]
- If the entered passcode number does not match the passcode number used to lock the menu, the menu is not unlocked.
- It is recommended that you leave a record of the passcode nearby, just in case it is forgotten. If you do forget the passcode number, contact your Sony service representative.
- If the menu is locked without registering full menu items from the following table in the User menu, those functions cannot be assigned to assignable buttons.
- If those functions were already assigned to assignable buttons, the assignable setting is forcibly disabled at the point when the menu is locked.

Full menu item	Assignable button selection
Shooting >ISO/Gain/EI >Base Sensitivity, Shooting >ISO/Gain/EI > Base ISO	Base ISO/Sensitivity
Shooting >Auto Exposure >AGC	AGC
–	Auto ND Filter
Shooting >Iris >Bokeh Control	Bokeh Control
Shooting >Auto Exposure >Auto Shutter	Auto Shutter
Shooting >Auto Exposure >Level	AE Level/Mode
Shooting >Auto Exposure >Mode	Backlight
Shooting >Auto Exposure >Mode	Spotlight
Shooting >White > Preset White	Preset White Select
Shooting >Focus > AF Transition Speed, Shooting >Focus > AF Subj. Shift Sens.	AF Speed/Sens.
Shooting >Focus > Focus Area	Focus Area
Shooting >Focus > Focus Area(AF-S)	Focus Area(AF-S)
Shooting >Focus > Face/Eye Detection AF	Face/Eye Detection AF
Shooting >Focus > Push AF Mode	Push AF Mode
Shooting >S&Q Motion >Setting	S&Q Motion
Shooting >LUT On/Off >1 SDI/HDMI	LUT On/Off 1
Shooting >LUT On/Off >2 VF/Proxy/Stream	LUT On/Off 2
Shooting >SteadyShot >Setting	SteadyShot
Project >Picture Cache Rec >Setting	Picture Cache Rec
Technical >Rec Review >Setting	Rec Review
Thumbnail >Set Clip Flag >Add OK	Clip Flag OK
Thumbnail >Set Clip Flag >Add NG	Clip Flag NG
Thumbnail >Set Clip Flag >Add KEEP	Clip Flag Keep
Technical >Color Bars >Setting	Color Bars
Monitoring >Display On/Off >Lens Info	Lens Info
Monitoring >Display On/Off >Video Signal Monitor	Video Signal Monitor
Monitoring >Marker >Setting	Marker
Monitoring >VF Setting >Color Mode	VF Mode
Monitoring >Gamma Display Assist >Setting	Gamma Display Assist
Monitoring >Peaking >Setting	Peaking
Monitoring >Zebra >Setting	Zebra
Audio >Audio Output >Volume	Volume
Technical >Touch Operation >Setting	Touch Operation
Technical >Handle Zoom >Setting	Handle Zoom
Network >File Transfer >Auto Upload (Proxy)	Auto Upload (Proxy)
User	User Menu

User Menu

This section describes the function and settings of each menu item.

User	
Item	Description
Base Setting	Project >Base Setting item
Focus	Shooting >Focus item
S&Q Motion	Shooting >S&Q Motion item
LUT On/Off	Shooting >LUT On/Off item
Simul Rec	Project >Simul Rec item
Proxy Rec	Project >Proxy Rec item
Interval Rec	Project >Interval Rec item
Assignable Button	Project >Assignable Button item
Assignable Dial	Project >Assignable Dial item
Multi Function Dial	Project >Multi Function Dial item
All File	Project >All File item
Clip Name Format	TC/Media >Clip Name Format item
Format Media	TC/Media >Format Media item
VF Setting	Monitoring >VF Setting item
Zebra	Monitoring >Zebra item
Zoom	Technical >Zoom item
Menu Settings	Technical >Menu Settings item
Edit User Menu	Displays the Edit User menu screen.

[Note]
You can add and remove menu items in the User menu using the Edit User menu. Up to 20 items can be configured.

Edit User Menu

The Edit User menu is displayed at the top level when Edit User Menu is selected in the User menu.

Edit User		
Item	Sub-item setting	Description
Add Item Add an item to the User menu		Adds a menu item to the User menu.
Customize Reset Reset the items in the User menu		Restores the menu items registered in the User menu to the factory default.
Menu item selected during editing	Delete	Deletes the registered menu item from the User menu.
	Move	Rearranges the registered menu items within the User menu.
	Edit Sub Item	Edits (register/delete) the registered menu sub-item in the User menu.

Shooting Menu

This section describes the function and settings of each menu item.
Factory default settings are shown in bold (for example, **18dB**).

Shooting >ISO/Gain/EI Sets gain settings.		
Item	Sub-item setting	Description
Mode	ISO/**dB**	Selects the gain setting mode. [Note] In Log shooting modes, this is set to ISO (fixed).
ISO/Gain<H>	For details about settings, see “ISO/Gain Settings and Default Values” (page 125).	Sets the <H> gain preset value. [Note] This function cannot be configured in Cine EI/ Cine EI Quick shooting mode.
ISO/Gain<M>	For details about settings, see “ISO/Gain Settings and Default Values” (page 125).	Sets the <M> gain preset value. [Note] This function cannot be configured in Cine EI/ Cine EI Quick shooting mode.
ISO/Gain<L>	For details about settings, see “ISO/Gain Settings and Default Values” (page 125).	Sets the <L> gain preset value. [Note] This function cannot be configured in Cine EI/ Cine EI Quick shooting mode.

Shooting >ISO/Gain/EI Sets gain settings.		
Item	Sub-item setting	Description
Exposure Index<H>	**Cine EI** When Base ISO is set to ISO 800: 200EI / 4.0E 250EI / 4.3E 320EI / 4.7E 400EI / 5.0E 500EI / 5.3E 640EI / 5.7E 800EI / 6.0E 1000EI / 6.3E **1250EI / 6.7E** 1600EI / 7.0E 2000EI / 7.3E 2500EI / 7.7E 3200EI / 8.0E When Base ISO is set to ISO 12800: 3200EI / 4.0E 4000EI / 4.3E 5000EI / 4.7E 6400EI / 5.0E 8000EI / 5.3E 10000EI / 5.7E 12800EI / 6.0E 16000EI / 6.3E **20000EI / 6.7E** 25600EI / 7.0E 32000EI / 7.3E 40000EI / 7.7E 51200EI / 8.0E	Sets the <H> exposure index value. Enabled only in Cine EI/Cine EI Quick shooting mode.

Shooting >ISO/Gain/EI
Sets gain settings.

Item	Sub-item setting	Description
Exposure Index<H>	**Cine EI Quick** 200EI / 4.0E 250EI / 4.3E 320EI / 4.7E 400EI / 5.0E 500EI / 5.3E 640EI / 5.7E 800EI / 6.0E 1000EI / 6.3E 1250EI / 6.7E 1600EI / 7.0E 2000EI / 7.3E 2500EI / 7.7E 3200EI / 4.0E 4000EI / 4.3E 5000EI / 4.7E 6400EI / 5.0E 8000EI / 5.3E 10000EI / 5.7E **12800EI / 6.0E** 16000EI / 6.3E 20000EI / 6.7E 25600EI / 7.0E 32000EI / 7.3E 40000EI / 7.7E 51200EI / 8.0E	Sets the <H> exposure index value. Enabled only in Cine EI/Cine EI Quick shooting mode.
Exposure Index<M>	(Same settings as Exposure Index<H>) **Cine EI** When Base ISO is set to ISO 800: **1000EI / 6.3E** When Base ISO is set to ISO 12800: **16000EI / 6.3E** **Cine EI Quick** **800EI / 6.0E**	Sets the <M> exposure index value.
Exposure Index<L>	(Same settings as Exposure Index<H>) **Cine EI** When Base ISO is set to ISO 800: **800EI / 6.0E** When Base ISO is set to ISO 12800: **12800EI / 6.0E** **Cine EI Quick** **800EI / 6.0E**	Sets the <L> exposure index value.

Shooting >ISO/Gain/EI
Sets gain settings.

Item	Sub-item setting	Description
Shockless Gain	On / **Off**	Turns the shockless gain function on/off.
Base Sensitivity	High / **Low**	Sets the base sensitivity for Custom shooting mode.
Base ISO	ISO 12800 / **ISO 800**	Sets the base ISO sensitivity for Flexible ISO/Cine EI shooting mode. [Note] This function cannot be configured in Cine EI Quick shooting mode. The Base ISO sensitivity is configured automatically in conjunction with Exposure Index.

Shooting >ND Filter
Sets the preset values for the ND filter.

Item	Sub-item setting	Description
Preset1	When Display Mode is set to Transmittance: **1/4** / 1/8 / 1/16 / 1/32 / 1/64 / 1/128 When Display Mode is set to Optical Density: **0.6** / 0.9 / 1.2 / 1.5 / 1.8 / 2.1	Sets the preset 1 value for the ND filter.
Preset2	When Display Mode is set to Transmittance: 1/4 / 1/8 / **1/16** / 1/32 / 1/64 / 1/128 When Display Mode is set to Optical Density: 0.6 / 0.9 / **1.2** / 1.5 / 1.8 / 2.1	Sets the preset 2 value for the ND filter.
Preset3	When Display Mode is set to Transmittance: 1/4 / 1/8 / 1/16 / 1/32 / **1/64** / 1/128 When Display Mode is set to Optical Density: 0.6 / 0.9 / 1.2 / 1.5 / **1.8** / 2.1	Sets the preset 3 value for the ND filter.

Shooting >ND Filter
Sets the preset values for the ND filter.

Item	Sub-item setting	Description
Display Mode	Optical Density / **Transmittance**	Sets the display mode used to express the ND filter light transmittance level. Display and control are executed using the selected display mode. Optical Density: Displays and controls the amount of light transmitted through the ND filter in terms of optical density (logarithmic notation). Transmittance: Displays and controls the amount of light transmitted through the ND filter in terms of transmittance (fraction display).

Shooting >Shutter
Sets electronic shutter operation.

Item	Sub-item setting	Description
Mode	**Speed** / Angle	Selects the operating mode of the electronic shutter. Used for shooting fast-moving subjects clearly. Selects the mode for setting the shutter speed in seconds (Speed) or as a shutter angle (Angle).
Shutter Speed On/Off	On / **Off**	Sets whether the exposure time when Speed mode is selected follows the Shutter Speed value or is set for full exposure.

Shooting >Shutter
Sets electronic shutter operation.

Item	Sub-item setting	Description
Shutter Speed	64F to 1/8000 The available settings vary depending on the system frequency of the selected recording format. 59.94P: 64F / 32F / 16F / 8F / 7F / 6F / 5F / 4F / 3F / 2F / 1.2F(1/50) / **1/60** / 1/100 / 1/120 / 1/125 / 1/250 / 1/500 / 1/1000 / 1/2000 / 1/4000 / 1/8000 50P: 64F / 32F / 16F / 8F / 7F / 6F / 5F / 4F / 3F / 2F / **1/50** / 1/60 / 1/100 / 1/120 / 1/125 / 1/250 / 1/500 / 1/1000 / 1/2000 / 1/4000 / 1/8000 29.97P: 64F / 32F / 16F / 8F / 7F / 6F / 5F / 4F / 3F / 2F / **1/30** / 1/40 / 1/50 / 1/60 / 1/100 / 1/120 / 1/125 / 1/250 / 1/500 / 1/1000 / 1/2000 / 1/4000 / 1/8000 25P: 64F / 32F / 16F / 8F / 7F / 6F / 5F / 4F / 3F / 2F / **1/25** / 1/33 / 1/50 / 1/60 / 1/100 / 1/120 / 1/125 / 1/250 / 1/500 / 1/1000 / 1/2000 / 1/4000 / 1/8000 24P/23.98P: 64F / 32F / 16F / 8F / 7F / 6F / 5F / 4F / 3F / 2F / **1/24** / 1/32 / 1/48 / 1/50 / 1/60 / 1/96 / 1/100 / 1/120 / 1/125 / 1/250 / 1/500 / 1/1000 / 1/2000 / 1/4000 / 1/8000	Sets the shutter speed when Mode is set to Speed.
Shutter Angle	64F / 32F / 16F / 8F / 7F / 6F / 5F / 4F / 3F / 2F / 360.0° / 300.0° / 270.0° / 240.0° / 216.0° / 210.0° / **180.0°** / 172.8° / 150.0° / 144.0° / 120.0° / 90.0° / 86.4° / 72.0° / 45.0° / 30.0° / 22.5° / 11.25° / 5.6°	Sets the shutter angle when Mode is set to Angle.
ECS On/Off	On / **Off**	Turns the Extended Clear Scan function on/off.

Shooting >Shutter
Sets electronic shutter operation.

Item	Sub-item setting	Description
ECS Frequency	23.99 to 8000 The available settings vary depending on the system frequency of the selected recording format. The default values are given below. 59.94P: **60.00** 50P: **50.00** 29.97P: **30.00** 23.98P: **23.99** 25P: **25.02** 24P: **24.02**	Sets the ECS frequency when Mode is set to ECS.

Shooting >Iris
Sets bokeh control function settings.

Item	Sub-item setting	Description
Bokeh Control	On / **Off**	Turns the bokeh control function on/off.

Shooting >Auto Exposure
Sets automatic exposure adjustment settings.

Item	Sub-item setting	Description
Level	+3.0 / +2.75 / +2.5 / +2.25 / +2.0 / +1.75 / +1.5 / +1.25 / +1.0 / +0.75 / +0.5 / +0.25 / **±0** / –0.25 / –0.5 / –0.75 / –1.0 / –1.25 / –1.5 / –1.75 / –2.0 / –2.25 / –2.5 / –2.75 / –3.0	Sets the brightness level for the automatically detected exposure.
Mode	Backlight / **Standard** / Spotlight	Sets the operating mode of auto exposure adjustment. Backlight: Backlight mode (mode for reduced darkening of shadows when the subject is backlit) Standard: Standard mode Spotlight: Spotlight mode (mode for reduced clipped whites when subject is lit by spotlighting)
Speed	–99 to +99 (**±0**)	Sets the adjustment speed of auto exposure adjustment.

Shooting >Auto Exposure
Sets automatic exposure adjustment settings.

Item	Sub-item setting	Description
AGC	On / **Off**	Turns the AGC (auto gain control) function on/off. [Note] This is set to Off (fixed) in Cine EI/Cine EI Quick shooting mode.
AGC Limit	For details about settings, see “AGC Limit Settings and Default Values” (page 128).	Sets the maximum gain of the AGC function. [Note] This function cannot be configured in Cine EI/ Cine EI Quick shooting mode.
AGC Point	**F2.8** / F4 / F5.6	Sets the F-number of the iris where AGC operation starts when the AGC function is On. [Note] This function cannot be configured in Cine EI/ Cine EI Quick shooting mode.
Auto Shutter	On / **Off**	Turns the auto shutter control function on/off. [Note] This is set to Off (fixed) in Cine EI/Cine EI Quick shooting mode.
A.SHT Limit	1/100 / 1/150 / 1/200 / 1/250 / **1/2000**	Sets the fastest shutter speed of the auto shutter function. [Note] This function cannot be configured in Cine EI/ Cine EI Quick shooting mode.
A.SHT Point	F5.6 / F8 / **F11** / F16	Sets the F-number of the iris where auto shutter operation starts. [Note] This function cannot be configured in Cine EI/ Cine EI Quick shooting mode.
Clip High light	On / **Off**	Turns the function that ignores brightest areas to provide a flatter response at high luminance on/off.
Detect Window	**1** / 2 / 3 / 4 / 5 / 6 / Custom	Sets the light metering range for automatically adjusting the exposure according to the brightness of the subject. (Not available when adjusting exposure manually)

Shooting >Auto Exposure
Sets automatic exposure adjustment settings.

Item	Sub-item setting	Description
Detect Window Indication	On / **Off**	Turns the light metering range indication on/off.
Custom Width	40 to 999 (**500**)	Sets the width of the light metering range.
Custom Height	70 to 999 (**500**)	Sets the height of the light metering range.
Custom H Position	–479 to +479 (**±0**)	Sets the horizontal position of the light metering range.
Custom V Position	–464 to +464 (**±0**)	Sets the vertical position of the light metering range.

Shooting >White
Sets white balance settings.

Item	Sub-item setting	Description
Preset White	2000K to 15000K (**3200K**)	Sets the white balance preset value.
Color Temp <A>	2000K to 15000K (**3200K**)	Sets the white balance color temperature saved in memory A. [Note] Since Color Temp is clipped at 2000K and 15000K during R/B Gain operation, it may not be possible to display the correct Color Temp value for the R/B Gain value.
Tint<A>	–99 to +99 (**±0**)	Sets the white balance tint value saved in white memory A. [Note] Since Tint is clipped at ±99 during R/B Gain operation, it may not be possible to display the correct Tint value for the R/B Gain value.
R Gain <A>	–99.0 to +99.0 (**±0.0**)	Sets the white balance R gain value saved in memory A.
B Gain <A>	–99.0 to +99.0 (**±0.0**)	Sets the white balance B gain value saved in memory A.
Color Temp <B>	2000K to 15000K (**3200K**)	Sets the white balance color temperature saved in memory B. [Note] Since Color Temp is clipped at 2000K and 15000K during R/B Gain operation, it may not be possible to display the correct Color Temp value for the R/B Gain value.

Shooting >White
Sets white balance settings.

Item	Sub-item setting	Description
Tint<B>	–99 to +99 (**±0**)	Sets the white balance tint value saved in white memory B. [Note] Since Tint is clipped at ±99 during R/B Gain operation, it may not be possible to display the correct Tint value for the R/B Gain value.
R Gain <B>	–99.0 to +99.0 (**±0.0**)	Sets the white balance R gain value saved in memory B.
B Gain <B>	–99.0 to +99.0 (**±0.0**)	Sets the white balance B gain value saved in memory B.

Shooting >White Setting
Adjusts white balance settings.

Item	Sub-item setting	Description
Shockless White	Off / 1 / **2** / 3	Sets the white balance response speed when switching white balance mode. Off: Switches instantaneously. 1 to 3: Switches more slowly the higher the number.
ATW Speed	1 / 2 / **3** / 4 / 5	Sets the response speed in ATW mode. 1: Fastest response speed
White Switch<B>	**Memory** / ATW	Selects the white balance adjustment mode that is selected when the WHT BAL switch is set to B. [Note] This is set to Memory (fixed) in Cine EI/Cine EI Quick shooting mode.
Filter White Memory	On / **Off**	Turns the function that sets the white balance memory area for each ND filter on/off. On: Sets the white balance memory for each ND filter. [Tip] In preset mode, there are four settings (CLEAR/1/2/3). In variable mode, there are two settings (CLEAR/On). Off: Sets white balance memory common to all ND filters.

Shooting >Offset White
Sets white balance offset settings.

Item	Sub-item setting	Description
Offset White <A>	On / **Off**	Selects whether to add (On) or not to add (Off) an offset value to the white balance in memory A. [Note] This is set to Off (fixed) in Log shooting modes.
Offset Color Temp<A>	–99 to +99 (**±0**)	Sets the color temperature offset to be added to the white balance in memory A when Offset White <A> is set to On.
Offset Tint<A>	–99 to +99 (**±0**)	Sets the Tint value offset to be added to the white balance in memory A when Offset White <A> is set to On.
Offset White <B>	On / **Off**	Selects whether to add (On) or not to add (Off) an offset value to the white balance in memory B. [Note] This is set to Off (fixed) in Log shooting modes.
Offset Color Temp<B>	–99 to +99 (**±0**)	Sets the color temperature offset to be added to the white balance in memory B when Offset White <B> is set to On.
Offset Tint<B>	–99 to +99 (**±0**)	Sets the Tint value offset to be added to the white balance in memory B when Offset White <B> is set to On.
Offset White <ATW>	On / **Off**	Selects whether to add (On) or not to add (Off) an offset value to the ATW white balance.
Offset Color Temp<ATW>	–99 to +99 (**±0**)	Sets the color temperature offset to be added to the ATW white balance when Offset White <ATW> is set to On.
Offset Tint<ATW>	–99 to +99 (**±0**)	Sets the Tint value offset to be added to the ATW white balance when Offset White <ATW> is set to On.

Shooting >Focus
Sets focus settings.

Item	Sub-item setting	Description
AF Transition Speed	1(Slow) / 2 / 3 / 4 / **5** / 6 / 7(Fast)	Sets the speed of the focus drive for when the subject changes during auto focus.
AF Subj. Shift Sens.	1(Locked On) / 2 / 3 / 4 / **5(Responsive)**	Sets the sensitivity for changing subject focus during auto focus.

Shooting >Focus
Sets focus settings.

Item	Sub-item setting	Description
Focus Area	**Wide** / Zone / Flexible Spot	Sets the target area for auto focus and push auto focus (AF) (page 43). Wide: Searches for a subject over a wide angle of the image when focusing. Zone: Automatically searches for a focus point within the specified zone. Flexible Spot: Focuses on a specified position in the image.
Focus Area (AF-S)	**Flexible Spot**	Sets the target area for push auto focus (AF-S).
Face/Eye Detection AF	Face/Eye Only AF / **Face/Eye Priority AF** / Off	Enables/disables face detection AF.
Push AF Mode	**AF** / Single-shot AF(AF-S)	Sets the push auto focus mode during manual focus.
Touch Function in MF	**Tracking AF** / Spot Focus	Sets the action that occurs when the touch panel is tapped during manual focus.
Multi Selector Function	**Face/Eye Sel. Cursor** / Pointer	Sets the method for specifying the realtime tracking AF target in response to multi selector operation.
Pointer Color	**Orange** / White / Yellow / Cyan / Green / Magenta / Red / Blue	Sets the color of the pointer used for specifying the realtime tracking AF target.
Pointer Border	**On** / Off	Turns the border of the pointer used for specifying the realtime tracking AF target on/off.
AF Assist	**On** / Off	When set to On, allows you to temporarily override auto focus and set focus manually.

Shooting >S&Q Motion
Sets Slow & Quick Motion mode settings (page 55).

Item	Sub-item setting	Description
Setting	On / **Off**	Turns the Slow & Quick motion mode on/off. When set to On, the following functions are disabled. • Auto iris • Auto focus
Frame Rate	1fps to 60fps / 100fps / 120fps / 150fps / 180fps / 200fps / 240fps	Sets the frame rate for Slow & Quick Motion shooting. [Note] The available settings vary depending on the selected system frequency, codec, and video format.

Shooting >LUT On/Off
Sets LUT settings.

Item	Sub-item setting	Description
1 SDI/HDMI	LUT On / **LUT Off**	Selects whether to apply monitor LUT to the SDI and HDMI output video.
2 VF/Proxy/ Stream	LUT On / **LUT Off**	Selects whether to apply monitor LUT to the viewfinder, proxy, and stream output video.
Internal Rec	LUT On / **LUT Off**	Selects whether to apply monitor LUT to the internal recording video.

Shooting >Noise Suppression
Sets noise suppression settings.
[Tip]
The Setting(Custom) and Level(Custom) settings are reflected in the Target Display setting (page 131).

Item	Sub-item setting	Description
Setting (Custom)	**On** / Off	Turns the noise suppression function on/off in Custom shooting mode. [Note] This function cannot be configured in Log shooting modes.
Level (Custom)	Low / **Mid** / High	Sets the noise suppression level in Custom shooting mode. [Note] This function cannot be configured in Log shooting modes.

Shooting >Noise Suppression
Sets noise suppression settings.
[Tip]
The Setting(Custom) and Level(Custom) settings are reflected in the Target Display setting (page 131).

Item	Sub-item setting	Description
Setting (Cine EI/Flex. ISO)	On / **Off**	Turns the noise suppression function on/off in Log shooting modes. [Note] This function cannot be configured in Custom shooting mode.
Level (Cine EI/Flex. ISO)	Low / **Mid** / High	Sets the noise suppression level in Log shooting modes. [Note] This function cannot be configured in Custom shooting mode.

Shooting >Flicker Reduce
Sets flicker correction settings.

Item	Sub-item setting	Description
Mode	Auto / On / **Off**	Sets the flicker correction mode.
Frequency	50Hz / **60Hz**	Sets the frequency of the power source supplying the lighting that is causing the flicker.

Shooting >SteadyShot
Sets image stabilization settings.

Item	Sub-item setting	Description
Setting	Active / **Standard** / Off	Sets the image stabilization function. [Note] Enabled when a compatible lens is attached.

Project Menu

This section describes the function and settings of each menu item.
Factory default settings are shown in bold (for example, **18dB**).

Project >Base Setting
Sets base settings.

Item	Sub-item setting	Description
Shooting Mode	**Custom** / Flexible ISO / Cine EI Quick / Cine EI	Sets the shooting mode (page 29).
Target Display	**SDR(BT.709)** / HDR(HLG)	Sets the video standard for recording/ output in Custom shooting mode.

Project >Rec Format
Sets recording format settings.

Item	Sub-item setting	Description
Frequency	**59.94** / 50 / 29.97 / 25 / 24 / 23.98	Selects the system frequency.
Imager Scan Mode	**FF** / S35	Selects the imager size.
Codec	RAW / RAW & XAVC-I / RAW(HDMI) / RAW(HDMI) & XAVC-I / **XAVC-I** / XAVC-L	Sets the clip recording/playback codec.
RAW Output Format	The available settings vary depending on the Frequency and Codec settings.	Sets the image size of the RAW output. [Note] When Codec is set to RAW & XAVC-I, the Video Format setting switches in link with the RAW Output Format setting.

Frequency	Codec	Selection options
59.94/ 50/ 29.97/ 25/ 23.98	RAW	4096×2160
		3840×2160
	RAW & XAVC-I	4096×2160
		3840×2160
	RAW(HDMI)	4240×2392
	RAW(HDMI) & XAVC-I	4240×2392
24	RAW	4096×2160
	RAW & XAVC-I	4096×2160

Project >Rec Format
Sets recording format settings.

Item	Sub-item setting			Description
Video Format	The available settings vary depending on the Frequency and Codec settings.			Sets the image size and bit rate.
	Frequency	Codec	Selection options	
	59.94	RAW/ RAW(HDMI)	–	
		RAW & XAVC-I	4096×2160P	
			3840×2160P	
		RAW(HDMI) & XAVC-I	3840×2160P	
		XAVC-I	4096×2160P	
			3840×2160P	
			1920×1080P	
		XAVC-L	3840×2160P	
			1920×1080P 50	
			1920×1080P 35	
	50	RAW/ RAW(HDMI)	–	
		RAW & XAVC-I	4096×2160P	
			3840×2160P	
		RAW(HDMI) & XAVC-I	3840×2160P	
		XAVC-I	4096×2160P	
			3840×2160P	
			1920×1080P	
		XAVC-L	3840×2160P	
			1920×1080P 50	
			1920×1080P 35	

Project >Rec Format Sets recording format settings.			
Item	Sub-item setting		Description
Video Format	29.97	RAW/ RAW(HDMI)	–
		RAW & XAVC-I	4096×2160P
			3840×2160P
		RAW(HDMI) & XAVC-I	3840×2160P
		XAVC-I	4096×2160P
			3840×2160P
			1920×1080P
		XAVC-L	3840×2160P
			1920×1080P 50
			1920×1080P 35
	25	RAW/ RAW(HDMI)	–
		RAW & XAVC-I	4096×2160P
			3840×2160P
		RAW(HDMI) & XAVC-I	3840×2160P
		XAVC-I	4096×2160P
			3840×2160P
			1920×1080P
		XAVC-L	3840×2160P
			1920×1080P 50
			1920×1080P 35

Project >Rec Format Sets recording format settings.			
Item	Sub-item setting		Description
Video Format	23.98	RAW/ RAW(HDMI)	–
		RAW & XAVC-I	4096×2160P
			3840×2160P
		RAW(HDMI) & XAVC-I	3840×2160P
		XAVC-I	4096×2160P
			3840×2160P
			1920×1080P
		XAVC-L	3840×2160P
			1920×1080P 50
			1920×1080P 35
	24	RAW/ RAW(HDMI)	–
		RAW & XAVC-I	4096×2160P
		RAW(HDMI) & XAVC-I	3840×2160P
		XAVC-I	4096×2160P

Project >Cine EI/Flex.ISO Set Sets Log shooting mode (Cine EI, Cine EI Quick, Flexible ISO) settings.		
Item	Sub-item setting	Description
Color Gamut	S-Gamut3/SLog3 / **S-Gamut3.Cine/SLog3**	Sets the color gamut for Log shooting modes.
Embed LUT File	**On** / Off	Turns 3D LUT file (CUBE file) metadata recording on/off.

Project >HDR Setting Sets HDR mode settings.		
Item	Sub-item setting	Description
VF SDR Preview	On / **Off**	In HDR mode, this turns the function that converts the viewfinder image from HDR to SDR on/off when gamma display assist is enabled. [Tip] When set to On, SDR Gain is applied to the viewfinder image.

Project >HDR Setting Sets HDR mode settings.		
Item	Sub-item setting	Description
SDR Gain	0dB to –15dB (**–6dB**)	In HDR mode, this sets the SDR Gain setting that is applied to the viewfinder when VF SDR Preview is set to On.

Project >Simul Rec Sets simultaneous recording mode settings (page 57).		
Item	Sub-item setting	Description
Setting	On / **Off**	Turns the simultaneous recording function on/off and sets the recording destination media.
Rec Button Set	**Rec Button:[SlotA SlotB] Handle Rec Button:[SlotA SlotB]** / Rec Button:[SlotA] Handle Rec Button:[SlotB] / Rec Button:[SlotB] Handle Rec Button:[SlotA]	Assigns the record buttons used to control each recording media.

Project >Proxy Rec Sets proxy recording mode settings.		
Item	Sub-item setting	Description
Setting	On / **Off**	Turns proxy recording mode on/off.
Audio Channel	**CH1/CH2** / CH3/CH4	Selects the audio channel to record to proxy data.
Chunk	**30s** / 1min / 2min	Selects the chunk recording interval for proxy files.

Project >Interval Rec Sets interval recording mode settings (page 55).		
Item	Sub-item setting	Description
Setting	On / **Off**	Turns interval recording mode on/off. (Setting this mode to On will set all other special modes to Off.)
Interval Time	**1** / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 15 / 20 / 30 / 40 / 50 (s) 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 15 / 20 / 30 / 40 / 50 (min) 1 / 2 / 3 / 4 / 6 / 12 / 24 (h)	Sets the interval between recordings in Interval Rec recording mode (when Interval Rec is set to On).

Project >Interval Rec Sets interval recording mode settings (page 55).		
Item	Sub-item setting	Description
Number of Frames	1frame / 2frames / 3frames / 6frames / 9frames / 12frames The available settings vary depending on the frame frequency of the selected video format. 59.94P/50P: **2frames** / 6frames / 12frames 29.97P/25P/24P/23.98P: **1frame** / 3frames / 6frames / 9frames	Sets the number of frames to record per take in Interval Rec recording mode (when Interval Rec is set to On).
Pre-Lighting	**Off** / 2 s / 5 s / 10 s	Sets the number of seconds that the video light turns on before recording starts in Interval Rec recording mode. [Tip] Available only when using the HVL-LBPC (option).

Project >Picture Cache Rec Sets picture cache recording mode settings (page 56).		
Item	Sub-item setting	Description
Setting	On / **Off**	Turns picture cache recording mode on/off.
Cache Size	Short / Medium / Long / **Max**	Sets the time for accumulation of images in picture cache memory (picture cache recording time).
Cache Rec Time		Displays the time for accumulation of images in picture cache memory (picture cache recording time).

Project >SDI/HDMI Rec Control
Sets SDI/HDMI recording control settings.

Item	Sub-item setting	Description
Setting	**Off** / SDI/HDMI Remote I/F / Parallel Rec	Sets recording start/stop control of an external device via the SDI/HDMI output signal. Off: Do not use remote control. SDI/HDMI Remote I/F: Record stop/start control of an external connected device, when there is no media inserted in the camcorder. Not synchronized with frame accuracy to camcorder media. Parallel Rec: Record stop/start control of an external connected device, when media is inserted in the camcorder. Synchronized with frame accuracy to camcorder media. [Note] For control using the HDMI output signal, set HDMI TC Out >Setting (page 108) in the TC/Media menu of the full menu to On.

Project >Assignable Button
Sets function assignments to assignable buttons.

Item	Sub-item setting	Description
<1> to <9>, Focus Hold Button	Off / Base ISO/Sensitivity / AGC / Push AGC / ND Filter Position / Auto ND Filter / Push Auto ND / Auto Iris / Push Auto Iris / Bokeh Control / Auto Shutter / AE Level/Mode / Backlight / Spotlight / Preset White Select / ATW / ATW Hold / AF Speed/Sens. / Focus Setting / Focus Area / Focus Area(AF-S) / Face/Eye Detection AF / Push AF Mode / Push AF/Push MF / Focus Hold / VF Focus Mag x3/x6 / VF Focus Mag x3 / VF Focus Mag x6 / HDMI FocusMagx2/x4 / HDMI Focus Mag x2 / HDMI Focus Mag x4 / S&Q Motion / LUT On/Off 1 / LUT On/Off 2 / SteadyShot / Crop Select / Rec / Picture Cache Rec / Rec Review / Clip Flag OK / Clip Flag NG / Clip Flag Keep / Color Bars / Tally [Front] / DURATION/TC/U-BIT / Display / Lens Info / Video Signal Monitor / Marker / VF Adjust / VF Mode / Gamma Display Assist / Peaking / Zebra / Volume / Thumbnail / Touch Operation / Handle Zoom / Auto Upload (Proxy) / Direct Menu / Network Status / Home / User Menu / Menu	Assigns functions to assignable buttons. Base ISO/Sensitivity: Switches the base sensitivity of the image sensor. AGC: Turns the AGC function on/off. Push AGC: Enables the AGC function while the button is pressed. ND Filter Position: Switches ND filters. Auto ND Filter: Turns the auto ND filter function on/off. Push Auto ND: Enables the auto ND filter function while the button is pressed. Auto Iris: Turns the iris function on/off. Push Auto Iris: Enables the auto iris function while the button is pressed. Bokeh Control: Turns the bokeh control mode on/off. Auto Shutter: Turns the auto shutter function on/off. AE Level/Mode: Displays/exits the AE Level/Mode direct menu. Backlight: Switches between Backlight and Standard. Spotlight: Switches between Spotlight and Standard. Preset White Select: Switches the white balance preset mode value. ATW: Turns the ATW function on/off.

Project >Assignable Button
Sets function assignments to assignable buttons.

Item	Sub-item setting	Description
<1> to <9>, Focus Hold Button		ATW Hold: Pauses ATW function operation. AF Speed/Sens.: Switches the AF transition speed setting and AF subject shift sensitivity setting. Focus Setting: Sets the focus area. Focus Area: Sets the focus area for AF and push AF. Focus Area(AF-S): Sets the focus area for push AF (AF-S). Face/Eye Detection AF: Switches the face/eye detection AF settings. Push AF Mode: Switches the Push AF mode setting. Push AF/Push MF: In MF focus mode, activates AF while the button is pressed. In AF focus mode, activates MF while the button is pressed. Focus Hold: In AF focus mode, focus is fixed while the button is pressed. VF Focus Mag x3/x6: VF Focus Mag x3: VF Focus Mag x6: Turns the viewfinder focus magnifier function on/off. [Tip] Selectable when Focus Magnifier >Focus Mag Button Target is set to VF in the Monitoring menu of the full menu.

Project >Assignable Button
Sets function assignments to assignable buttons.

Item	Sub-item setting	Description
<1> to <9>, Focus Hold Button		HDMI FocusMagx2/x4: HDMI Focus Mag x2: HDMI Focus Mag x4: Turns the HDMI output video focus magnifier function on/off. [Tip] Selectable when Focus Magnifier >Focus Mag Button Target is set to HDMI in the Monitoring menu of the full menu. S&Q Motion: Turns Slow & Quick Motion on/off. Sets the shooting frame rate when pressed and held. LUT On/Off 1: Switches the LUT On/Off >1 SDI or 1 SDI/HDMI setting in the Shooting menu. LUT On/Off 2: Switches the LUT On/Off >2 VF/ Proxy/Stream setting in the Shooting menu. SteadyShot: Switches between Active, Standard, and Off. Crop Select: Sets the imager scan mode. Rec: Starts/stops recording. Picture Cache Rec: Turns picture cache recording mode on/off. Rec Review: Turns the Rec Review function on/off. Clip Flag OK: Executes the Add OK function. Press twice to execute Delete Clip Flag. Clip Flag NG: Executes the Add NG function. Press twice to execute Delete Clip Flag.

Project >Assignable Button
Sets function assignments to assignable buttons.

Item	Sub-item setting	Description
<1> to <9>, Focus Hold Button		Clip Flag Keep: Executes the Add Keep function. Press twice to execute Delete Clip Flag. Color Bars: Turns the color bars on/off. Tally [Front]: Turns the recording/tally lamp light/flashing function on/off. DURATION/TC/U-BIT: Switches between Time Code, Users Bit, and Duration. Display: Turns the screen indicators on/off. Lens Info: Switches the depth-of-field indicator. Video Signal Monitor: Switches the video signal monitor (such as a waveform monitor). Marker: Turns the marker function on/off. VF Adjust: Displays the level bars for adjusting the brightness of the viewfinder display. VF Mode: Switches the viewfinder display between color and B&W. Gamma Display Assist: Switches the gamma display assist function. Peaking: Turns the peaking function on/off. Zebra: Turns the Zebra function on/off. Volume: Adjusts the monitor audio level output to the headphone jack and built-in speaker. Thumbnail: Displays/exits the thumbnail screen.

Project >Assignable Button
Sets function assignments to assignable buttons.

Item	Sub-item setting	Description
<1> to <9>, Focus Hold Button		Touch Operation: Turns touch operation on/off. Handle Zoom: Switches the handle zoom operation. Auto Upload (Proxy): Turns proxy file auto upload on/off or sets chunk mode. Direct Menu: Displays/exits the direct menu. Network Status: Displays the Network status screen. Home: Displays the Home screen. User Menu: Displays/exits the User menu. Menu: Displays/exits the full menu.

Project >Assignable Dial
Sets function assignments for assignable dial and sets rotation direction.

Item	Sub-item setting	Description
Grip/Remote Dial	Off / ISO/Gain/EI / ND Filter / **IRIS** / Auto Exposure Level / Audio Input Level / Multi Function Dial	Assigns functions to the grip assignable dial. ISO/Gain/EI: Adjusts the gain or EI. ND Filter: Adjusts the ND filter. IRIS: Adjusts the iris. Auto Exposure Level: Adjusts the auto exposure level. Audio Input Level: Adjusts the audio recording level. Multi Function Dial: Functions as a multi-function dial.
Grip Dial Direction	**Normal** / Opposite	Sets the direction of rotation of the grip assignable dial. Normal: Turn in normal direction. Opposite: Turn in opposite direction.

Project >Assignable Dial
Sets function assignments for assignable dial and sets rotation direction.

Item	Sub-item setting	Description
Handle Dial	Off / ISO/Gain/EI / ND Filter / **IRIS** / Auto Exposure Level / Audio Input Level / Multi Function Dial	Assigns functions to the handle assignable dial. ISO/Gain/EI: Adjusts the gain or EI. ND Filter: Adjusts the ND filter. IRIS: Adjusts the iris. Auto Exposure Level: Adjusts the auto exposure level. Audio Input Level: Adjusts the audio recording level. Multi Function Dial: Functions as a multi-function dial.
Handle Dial Direction	**Normal** / Opposite	Sets the direction of rotation of the handle assignable dial. Normal: Turn in normal direction. Opposite: Turn in opposite direction.

Project >Multi Function Dial
Assigns functions to the multi-function dial.

Item	Sub-item setting	Description
Default Function	**Off** / IRIS / ISO/Gain/EI / Auto Exposure Level / Audio Input Level	Assigns the default function to the multi-function dial. IRIS: Adjusts the iris. ISO/Gain/EI: Adjusts the gain or EI. Auto Exposure Level: Adjusts the auto exposure level. Audio Input Level: Adjusts the audio recording level.

Project >User File
Sets settings related to user file operations.

Item	Sub-item setting	Description
Load from Media(B)	Execute / Cancel	Loads user file settings from a memory card inserted into CFexpress Type A/SD card slot (B). Execute: Execute function.
Save to Media(B)	Execute / Cancel	Saves user file settings to a memory card inserted into CFexpress Type A/SD card slot (B). Execute: Execute function.
File ID		Displays a screen for displaying/editing the file ID of user files.
Load Customize Data	On / **Off**	Sets whether to load User menu customized information when Load from Media(B) is executed.
Load White Data	On / **Off**	Sets whether to load white balance information when Load from Media(B) is executed.

Project >All File
Sets settings related to ALL files.

Item	Sub-item setting	Description
Load from Media(B)	Execute / Cancel	Loads ALL file settings from a memory card inserted into CFexpress Type A/SD card slot (B). Execute: Execute function.
Load from Cloud(Private)	Execute / Cancel	Loads an uploaded ALL file from the C3 Portal cloud service (private) Execute: Execute function.
Load from Cloud(Share)	Execute / Cancel	Loads an uploaded ALL file from the C3 Portal cloud service (share) Execute: Execute function.
Save to Media(B)	Execute / Cancel	Saves ALL file settings to a memory card inserted into CFexpress Type A/SD card slot (B). Execute: Execute function.
Save to Cloud(Private)	Execute / Cancel	Saves ALL file settings file to the C3 Portal cloud service (private). Execute: Execute function.
Save to Cloud(Share)	Execute / Cancel	Saves ALL file settings file to the C3 Portal cloud service (share). Execute: Execute function.

Project >All File Sets settings related to ALL files.		
Item	Sub-item setting	Description
File ID		Assigns a name to the file.
Load Network Data	On / **Off**	Sets whether to load Network menu settings information when Load from Media(B), Load from Cloud(Private), or Load from Cloud(Share) is executed.

Paint/Look Menu

This section describes the function and settings of each menu item.
Factory default settings are shown in bold (for example, **18dB**).

Paint/Look >Scene File
Sets settings related to scene files.

[Note]
Enabled in Custom shooting mode only.

Item	Sub-item setting	Description
Recall Internal Memory		Loads a scene file stored in internal memory and applies the settings as the current image quality settings.
Store Internal Memory		Saves the current image quality state as a scene file in internal memory.
Delete Internal Memory		Deletes a scene file stored in internal memory.
Preset Recall	When Shooting Mode is set to Custom and Target Display is set to SDR(BT.709): S-Cinetone / Standard / Still / ITU709 / 709tone / **Cancel** When Shooting Mode is set to Custom and Target Display is set to HDR(HLG): HLG Live / HLG Mild / HLG Natural / **Cancel**	Applies preset image quality settings (non-rewritable) as the current image quality settings.
Load from Media(B)		Loads a scene file from a memory card to internal memory.
Save to Media(B)		Saves a scene file from internal memory to a memory card.
File Name		Edits the name of a scene file.

Paint/Look >Base Look
Sets settings related to the base look.

Item	Sub-item setting	Description
Select	When Shooting Mode is set to Custom and Target Display is set to SDR(BT.709): **S-Cinetone** / Standard / Still / ITU709 / 709tone / User1 to User16 When Shooting Mode is set to Custom and Target Display is set to HDR(HLG): HLG Live / **HLG Mild** / HLG Natural / User1 to User16 When in Log shooting modes: **s709** / 709(800) / S-Log3 / User1 to User16	Selects a base look.

Paint/Look >Base Look
Sets settings related to the base look.

Item	Sub-item setting	Description
Delete		Deletes the selected base look.
Delete All		Deletes all base looks.
Import from Media(B)	Execute / Cancel	Imports a base look file from a memory card inserted into CFexpress Type A/SD card slot (B). Execute: Execute function.
Import from Cloud(Private)	Execute / Cancel	Imports an uploaded base look file from the C3 Portal cloud service (private). Execute: Execute function.
Import from Cloud(Share)	Execute / Cancel	Imports an uploaded base look file from the C3 Portal cloud service (share). Execute: Execute function.
Input	S-Gamut3/SLog3 / **S-Gamut3.Cine/SLog3**	Sets the input gamut for the selected base look.
Output	**BT.709** / HLG	Sets the output color gamut for the selected base look.
AE Level Offset	**0EV** / 1/3EV / 2/3EV / 1EV / 4/3EV / 5/3EV / 2EV	Sets the exposure reference value for the selected base look.

Paint/Look >Reset Paint Settings
Resets the Paint/Look menu settings, excluding the base look.

[Note]
Enabled in Custom shooting mode only.

Item	Sub-item setting	Description
Reset without Base Look	Execute / Cancel	Resets the Paint/Look menu settings, excluding the base look. Execute: Execute function.

Paint/Look >Black
Sets black settings.

[Note]
Enabled in Custom shooting mode only.

Item	Sub-item setting	Description
Master Black	–99.0 to +99.0 (**±0.0**)	Sets the master black level.
R Black	–99.0 to +99.0 (**±0.0**)	Sets the R black level.
B Black	–99.0 to +99.0 (**±0.0**)	Sets the B black level.

Paint/Look >Knee
Sets knee correction settings.

[Note]
Enabled in Custom shooting mode only.

Item	Sub-item setting	Description
Setting	When Target Display is set to SDR(BT.709): On / **Off** / --- When Target Display is set to HDR(HLG): On / **Off** / ---	Turns the knee correction function on/off. [Tip] Enabled only when Base Look >Select is set to Standard, ITU709, 709tone, HLG Live, HLG Mild, or HLG Natural.
Auto Knee	When Target Display is set to SDR(BT.709): **On** / Off / --- When Target Display is set to HDR(HLG): On / **Off** / ---	Turns the auto knee function on/off. [Tip] Enabled only when knee correction Setting is set to On and Base Look >Select is set to Standard, ITU709, or 709tone.
Point	75% to 109% (**90%**)	Sets the knee point.
Slope	–99 to +99 (**±0**)	Sets the knee slope.

Paint/Look >Detail
Sets detail adjustment settings.

[Note]
Enabled in Custom shooting mode only.

Item	Sub-item setting	Description
Setting	**On** / Off	Turns the detail function on/off.
Level	–7 to +7 (**±0**)	Sets the detail level.
Manual Setting	On / **Off** / ---	Turns the detail manual adjustment function on/off.
V/H Balance	–2 to +2 (**±0**)	Sets the balance between vertical (V) and horizontal (H) detail for detail manual adjustment.
B/W Balance	Type1 / Type2 / **Type3** / Type4 / Type5	Sets the balance between black (B) detail for low-luminance areas and white (W) detail for high-luminance areas for detail manual adjustment.
Limit Value	0 to **7**	Sets the limit level of the detail for detail manual adjustment.
Crispening	**0** to 7	Sets the crispening level for detail manual adjustment.
High Light Detail	**0** to 4	Sets the detail level of high-luminance areas for detail manual adjustment.

Paint/Look >Matrix
Sets matrix correction settings.

[Note]
Enabled in Custom shooting mode only.

Item	Sub-item setting	Description
User Matrix	On / **Off**	Turns the user matrix correction function on/off.
User Matrix Level	–99 to +99 (**±0**)	Adjusts the color saturation of the entire image.
User Matrix Phase	–99 to +99 (**±0**)	Adjusts the color tone (phase) of the entire image.
User Matrix R-G	–99 to +99 (**±0**)	Sets a user-defined R-G user matrix.
User Matrix R-B	–99 to +99 (**±0**)	Sets a user-defined R-B user matrix.
User Matrix G-R	–99 to +99 (**±0**)	Sets a user-defined G-R user matrix.
User Matrix G-B	–99 to +99 (**±0**)	Sets a user-defined G-B user matrix.
User Matrix B-R	–99 to +99 (**±0**)	Sets a user-defined B-R user matrix.
User Matrix B-G	–99 to +99 (**±0**)	Sets a user-defined B-G user matrix.

Paint/Look >Multi Matrix
Sets multi matrix correction settings.

[Note]
Enabled in Custom shooting mode only.

Item	Sub-item setting	Description
Setting	On / **Off**	Turns the multi matrix correction function on/off.

Paint/Look >Multi Matrix

Sets multi matrix correction settings.

[Note]
Enabled in Custom shooting mode only.

Item	Sub-item setting	Description
Area Indication	On / **Off**	Turns on/off the display function that identifies the target area corresponding to the target color axis for correction during Multi Matrix operation. On: Display areas other than the color area specified by Axis in black and white. Off: Normal display. [Tips] • The setting is toggled On/Off when you press the DISPLAY button (page 6) while the multi matrix correction setting screen is displayed. • This setting is set to Off (fixed) during recording and when the picture cache recording function is turned on. • This setting is automatically set to Off when you move from the Multi Matrix setting menu to another screen. [Notes] • While the target area indication display function is turned on, the displayed video is also output as the recording video and output video. • When the picture cache recording function is turned on, the Area Indication setting cannot be changed.
Reset	Execute / Cancel	Resets the hue and saturation settings of each color axis to the default values.
Axis	**B** / B+ / MG– / MG / MG+ / R / R+ / YL– / YL / YL+ / G– / G / G+ / CY / CY+ / B–	Selects the target color axis for adjustment.
Hue	–99 to +99 (**±0**)	Sets the hue of the target color axis for adjustment selected in Axis.
Saturation	–99 to +99 (**±0**)	Sets the saturation of the target color axis for adjustment selected in Axis.

TC/Media Menu

This section describes the function and settings of each menu item.
Factory default settings are shown in bold (for example, **18dB**).

TC/Media >Timecode
Sets timecode settings.

Item	Sub-item setting	Description
Mode	**Preset** / Regen / Clock	Sets the timecode running mode. Preset: Starts running from a preset value. Regen: Starts running from the timecode of the end of the previous clip. Clock: Uses the internal clock as the timecode.
Run	**Rec Run** / Free Run	Rec Run: Runs only when recording. Free Run: Always running, regardless of camcorder operation.
Setting		Sets the timecode to an arbitrary value. SET: Set the value.
Reset	Execute / Cancel	Resets the timecode to 00:00:00:00. Execute: Execute function.
TC Format	**DF** / NDF	Sets the timecode format. DF: Drop Frame NDF: Non-Drop Frame

TC/Media >TC Display
Sets time data display settings.

Item	Sub-item setting	Description
Display Select	**Timecode** / Users Bit / Duration	Switches the time data display.

TC/Media >Users Bit
Sets settings related to user bits.

Item	Sub-item setting	Description
Mode	**Fix** / Time	Sets the user bit mode. Fix: Uses an arbitrary fixed value in user bits. Time: Uses the current hour, minute, and second in user bits.
Setting		Sets the user bits to an arbitrary value.

TC/Media >HDMI TC Out
Sets settings related to timecode output when using HDMI.

Item	Sub-item setting	Description
Setting	On / **Off**	Sets whether to output the timecode to devices for other purposes, using HDMI.

TC/Media >Clip Name Format
Sets settings related to clip naming and deletion.

Item	Sub-item setting	Description
Auto Naming	Cam ID + Reel# / **Title**	Selects the clip naming format. Cam ID + Reel#: Camera ID + Reel Number + Shot Number + date + random string Title: Arbitrary string specified by Title Prefix + clip number
Camera ID	**A** to Z	Sets the camera ID used when generating clip names. [Note] Configurable only when Auto Naming is set to Cam ID + Reel#.
Reel Number	**001** to 999	Sets the numeric portion of the Reel Number used when generating clip names. [Note] Configurable only when Auto Naming is set to Cam ID + Reel#.
Camera Position	**C** / L / R	Sets the first character portion of the Shot Number used when generating clip names. [Note] Configurable only when Auto Naming is set to Cam ID + Reel#.

TC/Media >Clip Name Format
Sets settings related to clip naming and deletion.

Item	Sub-item setting	Description
Title Prefix	**nnn**_ (nnn is the last 3 digits of the serial number)	Sets the title part (4 to 46 characters) of the clip name. Opens a character string entry screen. **Character string entry screen structure** Character selection area (3 lines): Selects the characters to insert at the cursor position of the Title Prefix area. !#$%()+.-.;=@[ ]^_~0123456789 abcdefghijklmnopqrstuvwxyz ABCDEFGHIJKLMNOPQRSTUVWXYZ Cursor operation area (1 line): Space: Inserts a space at the cursor position. ←: Moves the cursor to the left. →: Moves the cursor to the right. BS: Deletes the character to the left of the cursor position. Title Prefix area (1 line): Area for entering the title. **To set the title** 1. Select the character to insert at the cursor position in the Title Prefix area from the character selection area using the multi selector (page 7), and press the multi selector apply button. (The selected character is inserted, and the cursor moves to the right.) 2. Repeat step 1 to set the title. (Use BS as required.) 3. After setting the title, select Done to close the character entry screen.
Number Set	**0001** to 9999	Sets the 4-digit number suffix of the clip name.

TC/Media >Update Media
Updates the management file on memory cards.

Item	Sub-item setting	Description
Media(A)	Execute / Cancel	Updates the management file on the memory card in slot A. Execute: Execute function.
Media(B)	Execute / Cancel	Updates the management file on the memory card in slot B. Execute: Execute function.

TC/Media >Format Media
Initializes memory cards.

Item	Sub-item setting	Description
Media(A)	Full Format / Quick Format / Cancel	Formats the memory card in slot A.
Media(B)	Full Format / Quick Format / Cancel	Formats the memory card in slot B.

Monitoring Menu

This section describes the function and settings of each menu item.
Factory default settings are shown in bold (for example, **18dB**).

Monitoring >Output On/Off Sets video output settings.		
Item	Sub-item setting	Description
SDI	**On** / Off	Turns the SDI output on/off.
HDMI	**On** / Off	Turns HDMI output on/off.

Monitoring >Output Format Sets output format settings.		
Item	Sub-item setting	Description
SDI	For details about settings, see “Output Formats and Limitations” (page 139).	Sets the SDI and HDMI output resolution.
HDMI		

Monitoring >De-Squeeze Sets the de-squeeze settings.		
Item	Sub-item setting	Description
Ratio (HDMI/VF)	**Off(1.0×)** / 1.3× / 1.5× / 2.0×	Selects the de-squeeze ratio for the HDMI output image and the image displayed in the viewfinder when shooting with an anamorphic lens.

Monitoring >Output Display Sets screen display output settings.		
Item	Sub-item setting	Description
SDI	On / **Off**	Sets whether the menu, status, and screen display are embedded in the SDI output signal.
HDMI	On / **Off**	Sets whether the menu, status, and screen display are embedded in the HDMI output signal.

Monitoring >Display On/Off Sets display item settings.		
Item	Sub-item setting	Description
Focus Mode	**On** / Off	Selects the items to display in the viewfinder.
Focus Position	**On** / Off	
Network Status	**On** / Off	
File Transfer Status	**On** / Off	
Rec/Play Status	Always On / Always On (Minimum) / **On** / Off	
RAW Output Control Status	**On** / Off	
SDI/HDMI Rec Control	**On** / Off	
Tally	**On** / Off	
Battery Remain	**On** / Off	
Zoom Position	**On** / Off	
SteadyShot	**On** / Off	
Media Status	**On** / Off	
Lens Info	On / **Off**	
Look Name	**On** / Off	
UWP RF Level	**On** / Off	
Focus Area Indicator	**On** / Off	
Focus Area Ind.(AF-S)	**On** / Off	
Face/Eye Detection Frame	**On** / Off	
Tracking AF Pointer	**On** / Off	
Focus Indicator	**On** / Off	
Clip Name	**On** / Off	

Monitoring >Display On/Off
Sets display item settings.

Item	Sub-item setting	Description
Video Level Warning	**On** / Off	
Timecode	**On** / Off	
Gamma Display Assist	**On** / Off	
Video Signal Monitor	**Off** / Waveform / Vector / Histogram	
Network Speed	On / **Off**	
Imager Scan Mode	**On** / Off	
Frame Rate	**On** / Off	
Rec Format	**On** / Off	
Rec Look	**On** / Off	
Level Gauge	**On** / Off	
Audio Level Meter	**On** / Off	
Auto Exposure Mode	**On** / Off	
Auto Exposure Level	**On** / Off	
ND Filter	**On** / Off	
Iris	**On** / Off	
ISO/Gain/EI	**On** / Off	
Base ISO/ Sensitivity	**On** / Off	
Shutter	**On** / Off	
White Balance	**On** / Off	
Clip Number	**On** / Off	
Notice Message	**On** / Off	

Monitoring >Marker
Sets marker display settings.

Item	Sub-item setting	Description
Setting	**On** / Off	Turns the display of all markers on/off.
Color	**White** / Yellow / Cyan / Green / Magenta / Red / Blue	Selects the marker signal color.
Center Marker	1 / 2 / 3 / 4 / **Off**	Selects the center marker.
Safety Zone	On / **Off**	Turns the safety zone marker on/off.
Safety Area	80% / **90%** / 92.5% / 95%	Selects the size of the safety zone marker (as a percentage of total screen size).
Aspect Marker	Line / Mask / **Off**	Selects the type of aspect marker.
Aspect Mask	0 to 15 (**12**)	Sets the level of the video signal outside the marker.
Aspect Safety Zone	On / **Off**	Turns the aspect safety zone marker on/off.
Aspect Safety Area	80% / **90%** / 92.5% / 95%	Selects the size of the aspect safety zone marker (as a percentage of total screen size).
Aspect Select	1:1 / 4:3 / 13:9 / 14:9 / 15:9 / 16:9 / 17:9 / 1.66:1 / 1.85:1 / 2.35:1 / **2.39:1** / Custom	Sets the mode when displaying the aspect marker.
Custom Aspect Ratio	Enter arbitrary value (**01.00:01.00**)	Sets the aspect ratio to an arbitrary value. [Note] This setting is enabled when Aspect Select is set to Custom.
Guide Frame	On / **Off**	Turns the guide frame display on/off.
100% Marker	On / **Off**	Turns the 100% marker on/off.
User Box	On / **Off**	Turns the user box marker display on/off.
User Box Width	3 to 479 (**240**)	Sets the user box marker width (distance from the center to the left and right edges).
User Box Height	3 to 269 (**135**)	Sets the user box marker height (distance from the center to the top and bottom edges).
User Box H Position	–476 to +476 (**0**)	Sets the horizontal position of the center of the user box marker.
User Box V Position	–266 to +266 (**0**)	Sets the vertical position of the center of the user box marker.

Monitoring >VF Setting Sets viewfinder settings.		
Item	Sub-item setting	Description
Brightness	1 to 15 (**8**)	Adjusts the brightness of the viewfinder image.
Color Mode	**Color** / B&W	Selects the display mode of the viewfinder in E-E/recording mode.

Monitoring >Gamma Display Assist Sets gamma display assist settings.		
Item	Sub-item setting	Description
Setting	**On** / Off	Turns the gamma display assist function on/off in Custom shooting mode when Target Display is set to HDR(HLG). [Note] This is set to Off (fixed) in Log shooting modes.

Monitoring >Peaking Sets peaking settings.		
Item	Sub-item setting	Description
Setting	On / **Off**	Turns the peaking function on/off.
Peaking Level	High / **Mid** / Low	Sets the color peaking signal level.
Color	**B&W** / Red / Yellow / Blue	Selects the color of the color peaking signal.

Monitoring >Zebra Sets zebra pattern settings.		
Item	Sub-item setting	Description
Setting	**Off** / Zebra1 / Zebra2	Selects the zebra pattern type (Off, Zebra 1, Zebra 2).
Zebra1 Level	0% to 109% (**70%**)	Sets the Zebra 1 display level.
Zebra1 Aperture Level	2% to 20% (**10%**)	Sets the Zebra 1 aperture level.
Zebra2 Level	0% to 109% (**100%**)	Sets the Zebra 2 display level.

Monitoring >Focus Magnifier Sets focus magnifier settings.		
Item	Sub-item setting	Description
Focus Mag Button Target	**VF** / HDMI	Sets the focus magnifier target for control using an assignable button.

Audio Menu

This section describes the function and settings of each menu item.
Factory default settings are shown in bold (for example, **18dB**).
Refer to “Block Diagrams” (page 154).

Audio >Audio Input
Sets audio input settings.

Item	Sub-item setting	Description
CH1 Input Select	INPUT1 / **Internal MIC** / Shoe CH1	Switches the input source for recording on channel 1.
CH2 Input Select	INPUT1 / INPUT2 / **Internal MIC** / Shoe CH2	Switches the input source for recording on channel 2.
CH3 Input Select	Off / INPUT1 / **Internal MIC** / Shoe CH1	Switches the input source for recording on channel 3.
CH4 Input Select	Off / INPUT1 / INPUT2 / **Internal MIC** / Shoe CH2	Switches the input source for recording on channel 4.
INPUT1 MIC Reference	–80dB / –70dB / –60dB / **–50dB** / –40dB / –30dB	Sets the reference recording level for XLR microphone input from INPUT1.
INPUT2 MIC Reference	–80dB / –70dB / –60dB / **–50dB** / –40dB / –30dB	Sets the reference recording level for XLR microphone input from INPUT2.
Line Input Reference	**+4dB** / 0dB / –3dB / EBUL	Selects the reference input level when the INPUT1/INPUT2 switch is set to LINE.
Reference Level	**–20dB** / –18dB / –16dB / –12dB / EBUL	Selects the recording level of the 1 kHz reference tone signal.
CH1 Wind Filter	On / **Off**	Enables/disables the wind reduction filter for channel 1 recording.
CH2 Wind Filter	On / **Off**	Enables/disables the wind reduction filter for channel 2 recording.
CH3 Wind Filter	On / **Off**	Enables/disables the wind reduction filter for channel 3 recording.
CH4 Wind Filter	On / **Off**	Enables/disables the wind reduction filter for channel 4 recording.
CH3 Level Control	**Auto** / Manual	Selects automatic audio input level adjustment or manual adjustment for recording channel 3. [Note] If both CH3 Input Select and CH4 Input Select are set to Internal MIC, CH4 is switched to automatic/manual in conjunction with this setting.

Audio >Audio Input
Sets audio input settings.

Item	Sub-item setting	Description
CH4 Level Control	**Auto** / Manual	Selects automatic audio input level adjustment or manual adjustment for recording channel 4. [Note] If both CH3 Input Select and CH4 Input Select are set to Internal MIC, CH4 is switched to automatic/manual in conjunction with the CH3 Level Control setting.
CH3 Input Level	0 to 99 (**49**)	Sets the input level for recording channel 3.
CH4 Input Level	0 to 99 (**49**)	Sets the input level for recording channel 4.
Audio Input Level	0 to **99**	Sets the audio input level. Can be used as the master volume, according to the settings of CH1 Level to CH4 Level.
Limiter Mode	**Off** / –6dB / –9dB / –12dB / –15dB / –17dB	Selects the limiter characteristic for large input signals when adjusting the audio input level manually.
CH1&2 AGC Mode	Mono / **Stereo**	Sets the auto level adjustment mode for recording channel 1 and channel 2. When set to Stereo, the AGC is linked between channels.
CH3&4 AGC Mode	Mono / **Stereo**	Sets the auto level adjustment mode for recording channel 3 and channel 4. When set to Stereo, the AGC is linked between channels.
AGC Spec	**–6dB** / –9dB / –12dB / –15dB / –17dB	Selects the AGC characteristic.
1kHz Tone on Color Bars	On / **Off**	Turns the 1 kHz reference tone signal on/off when displaying color bars. [Note] When set to On, the 1 kHz reference tone signal is set for recording on channel 3 and channel 4, even if CH3 Input Select and CH4 Input Select are set to Off.

Audio >Audio Input Sets audio input settings.		
Item	Sub-item setting	Description
CH1 Level	Input without XLR adaptor Audio Input Level / Side / **Level+Side** Input with XLR adaptor (page 53) **Audio Input Level** / Through	Sets the combination of audio input level adjustments enabled for recording channel 1. [Note] "Side" refers to the AUDIO LEVEL (CH1) dial on the side of the camcorder. When Level+Side is selected, the audio recording level is determined by the combination of the Audio Input Level and dial settings (page 154).
CH2 Level	Input without XLR adaptor Audio Input Level / Side / **Level+Side** Input with XLR adaptor (page 53) **Audio Input Level** / Through	Sets the combination of audio input level adjustments enabled for recording channel 2. [Note] "Side" refers to the AUDIO LEVEL (CH2) dial on the side of the camcorder. When Level+Side is selected, the audio recording level is determined by the combination of the Audio Input Level and dial settings (page 154).
CH3 Level	Input without XLR adaptor Audio Input Level / CH3 Input Level / **Level+CH3 Input Level** Input with XLR adaptor (page 53) **Audio Input Level** / Through	Sets the combination of audio input level adjustments enabled for recording channel 3.
CH4 Level	Input without XLR adaptor Audio Input Level / CH4 Input Level / **Level+CH4 Input Level** Input with XLR adaptor (page 53) **Audio Input Level** / Through	Sets the combination of audio input level adjustments enabled for recording channel 4.

Audio >Audio Output Sets audio output settings.		
Item	Sub-item setting	Description
Monitor CH	**CH1/CH2** / CH3/CH4 / MIX ALL / CH1 / CH2 / CH3 / CH4	Selects the audio channel output to the headphone jack and built-in speaker. [Note] If audio for multiple channels is set for simultaneous output, the output level for each channel is reduced for output to prevent clipping.
Volume	**0** to 50	Adjusts the monitor audio level output to the headphone jack and built-in speaker.
Headphone Out	Mono / **Stereo**	Selects whether the headphone jack output is monaural (Mono) or stereo (Stereo).
Alarm Level	0 to 7 (**4**)	Adjusts the volume of the alarm.
HDMI Output CH	**CH1/CH2** / CH3/CH4	Sets the combination of audio channels on the HDMI output.

Thumbnail Menu

This section describes the function and settings of each menu item.
Factory default settings are shown in bold (for example, **18dB**).

Thumbnail		
Item	Sub-item setting	Description
Display Clip Properties		Displays the clip properties screen.
Thumbnail >Set Clip Flag Sets clip flag settings.		
Item	Sub-item setting	Description
Add OK		Adds an OK flag.
Add NG		Adds an NG flag.
Add KEEP		Adds a Keep flag.
Delete Clip Flag		Deletes all flags.
Thumbnail >Lock/Unlock Clip Sets clip protection settings.		
Item	Sub-item setting	Description
Select Clip		Selects and locks/unlocks a clip.
Lock All Clips		Locks all clips.
Unlock All Clips		Unlocks all clips.
Thumbnail >Delete Clip Deletes clips.		
Item	Sub-item setting	Description
Select Clip		Deletes the selected clip.
All Clips		Deletes all clips.
Thumbnail >Transfer Clip Transfers clips. [Note] Transfer Clip cannot be configured when a password is not configured using Access Authentication in the Network menu.		
Item	Sub-item setting	Description
Select Clip		Transfers selected clips.
All Clips		Transfers all clips. [Note] Up to 200 clips can be transferred.

Thumbnail >Transfer Clip (Proxy) Transfers proxy clips. [Note] Transfer Clip (Proxy) cannot be configured when a password is not configured using Access Authentication in the Network menu.		
Item	Sub-item setting	Description
Select Clip		Transfers proxy clips corresponding to the selected clips.
All Clips		Transfers proxy clips corresponding to all the clips. [Note] Up to 200 clips can be transferred.
Thumbnail >Filter Clips Sets settings of clips to display.		
Item	Sub-item setting	Description
OK		Display only clips that have an OK flag.
NG		Display only clips that have an NG flag.
KEEP		Display only clips that have a Keep flag.
None		Display only clips that have no flag.
All		Displays all clips, regardless of whether there are any flags.
Thumbnail >Customize View Switches the thumbnail screen view.		
Item	Sub-item setting	Description
Thumbnail Caption	Date Time / **Time Code** / Duration / Sequential Number	Switches the information displayed below thumbnails.

Technical Menu

This section describes the function and settings of each menu item.
Factory default settings are shown in bold (for example, **18dB**).

Technical >Color Bars Sets color bar settings.		
Item	Sub-item setting	Description
Setting	On / **Off**	Turns the color bars on/off.
Type	**ARIB** / 100% / 75% / SMPTE	Selects the color bar type.

Technical >ND Dial Sets settings related to ND VARIABLE dial operations.		
Item	Sub-item setting	Description
CLEAR with Dial	**On** / Off	Sets whether to enable ND status switching (CLEAR ⇔ On) by ND VARIABLE dial operation.

Technical >Tally Sets recording/tally lamp settings.		
Item	Sub-item setting	Description
Front Tally Lamp	**On** / Off	Turns the recording/tally lamp (Front) on/off.
Rear Tally Lamp	**On** / Off	Turns the recording/tally lamp (Rear) on/off.

Technical >HOLD Switch Setting Sets hold switch settings.		
Item	Sub-item setting	Description
with Rec Button	**On** / Off	Sets whether to lock operation of the record START/STOP button.
with Hand Grip Remote	**On** / Off	Sets whether to lock operation of the grip remote control.
Handle HOLD Switch	**Normal** / Rec Button Only	Sets whether the hold target of the handle HOLD switch is only the handle record START/STOP button. Normal: All operation controls on the handle are targets of the hold operation. However, the handle recording START/STOP button follows the "with Rec Button" setting. Rec Button Only: Only the handle record START/STOP button is the target of the hold operation.

Technical >Touch Operation Sets settings related to touch operations.		
Item	Sub-item setting	Description
Setting	**On** / Off	Turns touch operation on/off.

Technical >Rec Review Sets recording review settings.		
Item	Sub-item setting	Description
Setting	**3 s** / 10 s / Clip	Selects the time for playback of clips just recorded for recording review.

Technical >Zoom Sets the zoom settings.		
Item	Sub-item setting	Description
Zoom Type	**Optical Zoom Only** / On(Clear Image Zoom)	Sets the type of zoom. Optical Zoom Only: Optical zoom is adjusted by operation of the lens. On(Clear Image Zoom): Electronic zoom with little or no deterioration in image quality.

Technical >Handle Zoom Sets handle zoom settings.		
Item	Sub-item setting	Description
Setting	Off / Low / High / **Variable**	Sets the speed of the handle zoom.
High	1 to 8 (**8**)	Sets the zoom speed of the handle zoom lever when High handle zoom speed is selected.
Low	1 to 8 (**3**)	Sets the zoom speed of the handle zoom lever when Low handle zoom speed is selected. [Note] Uneven zooming may occur when the zoom speed is set to a low value.

Technical >Menu Settings
Sets settings related to the menu.

Item	Sub-item setting	Description
Info. Disp. Mode Operation	**Home Screen Priority** / Direct Menu Priority	In information display mode, this sets whether to prioritize operations on the Home screen or in the direct menu.
User Menu Only	On / **Off**	Sets whether to display the User menu only (On) or display the menu list (Off) when the camcorder displays the menu.
Menu Page On/Off	Main / Camera / Audio / Project / Monitoring / Assignable Button / Battery / Media / Network / File Transfer Configure using checkboxes. **Enabled**: Checked. Disabled: Unchecked.	Turns the status screen display on/off.
User Menu with Lock	On / **Off**	Sets whether to lock the menu display, showing the User menu only. [Note] In normal menu display operation, this item is not displayed. For details about menu display operation, see page 86.

Technical >Fan Control
Sets fan control mode settings.

Item	Sub-item setting	Description
Setting	**Auto** / Minimum / Off in Rec	Sets the control mode of the camcorder fan. [Note] Even when Off in Rec is selected, the fan will operate if the internal temperature of the camcorder rises above a certain value.

Technical >Lens
Sets settings related to lenses.

Item	Sub-item setting	Description
Zoom Ring Direction	**Left(W)/Right(T)** / Right(W)/Left(T)	Sets the direction of zoom ring operation. [Note] Enabled only when using an E-mount lens that supports zoom ring direction switching.
Shading Compensation	**Auto** / Off	Sets the automatic shading compensation.

Technical >Lens
Sets settings related to lenses.

Item	Sub-item setting	Description
Chroma Aberration Comp.	**Auto** / Off	Sets the automatic chromatic aberration compensation.
Distortion Comp.	**Auto** / Off	Sets the automatic distortion compensation.
Breathing Compensation	Auto / **Off**	Sets the lens breathing compensation.
Distance Display	**Meter** / Feet	Sets the display units for lens information and focus position.
Zoom Position Display	Focal Length / **Number** / Bar	Sets the display format for the zoom position.

Technical >Video Light Set
Sets the video light lighting method. Available only when using the HVL-LBPC (option).

Item	Sub-item setting	Description
Video Light Set	**Power Link** / Rec Link / Rec Link + Stby	Sets the lighting control method for the video light attached to the multi-interface shoe. Power Link: Turns the video light on/off when the camcorder is turned on/off. Rec Link: Turns the video light on/off when the camcorder starts/stops recording. Rec Link + Stby: Turns the video light on/standby when the camcorder starts/stops recording.

Technical >APR
Executes APR.

Item	Sub-item setting	Description
APR	Execute / Cancel	Runs APR (Automatic Pixel Restoration) for image sensor auto adjustment. Execute: Execute function. [Note] To ensure proper light shielding, attach the cap and then cover the entire area using a black cloth.

Technical >Camera Battery Alarm Sets battery low-voltage alarm settings.		
Item	Sub-item setting	Description
Low Battery	5% / **10%** / 15% / ... / 45% / 50%	Sets the remaining battery level to display a battery low-voltage alarm (5% increments).
Battery Empty	**3%** to 7%	Sets the remaining battery level to display a battery empty alarm.

Technical >Camera DC IN Alarm Sets input voltage alarm settings.		
Item	Sub-item setting	Description
DC Low Voltage1	16.0V to 19.0V (**16.5V**)	Sets the voltage to display a DC IN low input voltage alarm.
DC Low Voltage2	**15.5V** to 18.5V	Sets the voltage to display a DC IN insufficient input voltage alarm.

Network Menu

This section describes the function and settings of each menu item.
Factory default settings are shown in bold (for example, **18dB**).

Network >Network Setup Makes settings related to the network.		
Item	Sub-item setting	Description
Setup for Mobile App		Starts the network setup assist tool.
Show Authentication		Displays the user name and password for access authentication as text and QR code. [Note] Take care that the password cannot be viewed and the QR code image cannot be copied by others.
Edit Authentication		Sets settings related to access authentication.
	User Name	Sets the user name for access authentication. [Note] Enter up to 16 valid characters. The following are valid input characters: Alphabetic characters (uppercase/lowercase), numeric characters, symbols (! % + , - . =)
	Input Password	Sets the password for access authentication. [Notes] • When setting a password, make sure that the setting is not visible to others. From a security standpoint, it is recommended that you set a password that is hard to guess by others, and that you store it safely. • Enter 8 to 16 valid input characters, including at least one alphabetic character and one numeric character. The following are valid input characters: Alphabetic characters (uppercase/lowercase), numeric characters, symbols (! % + , - . =)
	Generate Password Execute / Cancel	Automatically generates a password for access authentication. Execute: Execute function.

Network >Wireless LAN Sets settings related to wireless LAN connections.		
Item	Sub-item setting	Description
Setting	Access Point (2.4GHz) / Access Point (5GHz) / Station Mode / **Off**	Selects the operating mode of the wireless LAN connection.
Channel		Displays the wireless LAN channel. (Access point mode only)
Camera SSID & Password		Displays the SSID and password of the unit. (Access point mode only) [Note] Make sure that the password is not visible to others.
Regenerate Password	Execute / Cancel	Regenerates the password for access point mode. (Access point mode only) Execute: Execute function.
Camera Remote Control	Enable / **Disable**	Sets whether to enable remote control from a mobile device connected to the same network as the access point to which the unit is connected in station mode. (Station mode only)
Connected Network		Displays the connected wireless LAN network access point. (Station mode only)
	SSID	Displays the SSID for the access point to connect.
	Security	Displays the type of security for the access point to connect.
	Password	Displays the password for the access point to connect. [Tip] If the security type is set to WPA2 or WPA3, "********" is displayed. If the security type is set to None, a blank field is displayed.
	DHCP	Displays whether DHCP is on/off.
	IP Address	Displays the IP address of the unit.
	Subnet Mask	Displays the subnet mask.
	Gateway	Displays the default gateway.
	DNS Auto	Displays whether DNS acquisition is on/off.

Network >Wireless LAN
Sets settings related to wireless LAN connections.

Item	Sub-item setting	Description
Connected Network	Primary DNS Server	Displays the primary DNS server.
	Secondary DNS Server	Displays the secondary DNS server.
Scan Networks		Detects the wireless LAN networks access points and displays a list. (Station mode only)
	SSID	Displays the SSID for the access point to connect.
	Security	Displays the type of security for the access point to connect.
	Password	Sets the password for the access point to connect. [Tip] If the security type is set to WPA2 or WPA3, "*******" is displayed. If the security type is set to None, a blank field is displayed. [Note] The following are the valid number of input characters: WPA2: 8 to 63 characters WPA3: 8 to 128 characters None: Entry disabled The following are valid input characters: Alphabetic characters (uppercase/lowercase), numeric characters, symbols (- . @ _ ( ) ! " #$ % & ' * + , / : ; < = > ? [\ ] ^ ` { | } ~)
	DHCP **On** / Off	Turns DHCP on/off.
	IP Address	Set the IP address of the unit when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
	Subnet Mask	Sets the subnet mask when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.

Network >Wireless LAN
Sets settings related to wireless LAN connections.

Item	Sub-item setting	Description
Scan Networks	Gateway	Sets the default gateway when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
	DNS Auto **On** / Off	Turns DNS auto acquisition on/off when DHCP is set On.
	Primary DNS Server	Sets the primary DNS server when DNS Auto is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
	Secondary DNS Server	Sets the secondary DNS server when DNS Auto is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
WPS	Execute / Cancel	Establishes a connection using WPS (Wi-Fi Protected Setup). (Station mode only) Execute: Execute function.

Network >Wireless LAN
Sets settings related to wireless LAN connections.

Item	Sub-item setting	Description
Manual Register		Sets the wireless LAN network access point to connect. (Station mode only)
	SSID	Sets the SSID for the access point to connect. [Note] Enter 1 to 32 valid input characters. The following are valid input characters: Alphabetic characters (uppercase/lowercase), numeric characters, symbols (- . @ _ ( ) ! " # $ % & ' * + , / : ; < = > ? [\ ] ^ ` { | } ~)
	Security None / **WPA2** / WPA3	Sets the type of security for the access point to connect. [Note] This can be set to None, WPA2, or WPA3. The use of WPA2 or WPA3 is recommended from a security standpoint.
	Password	Sets the password for the access point to connect. [Tip] If the security type is set to WPA2 or WPA3, "*******" is displayed. If the security type is set to None, a blank field is displayed. [Note] The following are the valid number of input characters: WPA2: 8 to 63 characters WPA3: 8 to 128 characters None: Entry disabled The following are valid input characters: Alphabetic characters (uppercase/lowercase), numeric characters, symbols (- . @ _ ( ) ! " #$ % & ' * + , / : ; < = > ? [\ ] ^ ` { | } ~)
	DHCP **On** / Off	Turns DHCP on/off.
	IP Address	Set the IP address of the unit when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.

Network >Wireless LAN
Sets settings related to wireless LAN connections.

Item	Sub-item setting	Description
Manual Register	Subnet Mask	Sets the subnet mask when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
	Gateway	Sets the default gateway when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
	DNS Auto **On** / Off	Turns DNS auto acquisition on/off when DHCP is set On.
	Primary DNS Server	Sets the primary DNS server when DNS Auto is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
	Secondary DNS Server	Sets the secondary DNS server when DNS Auto is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
IP Address		Displays the IP address of the unit.
Subnet Mask		Displays the subnet mask.
MAC Address		Displays the MAC address of the wireless LAN interface of the unit.

Network >Wired LAN
Sets settings related to wired LAN connections.

Item	Sub-item setting	Description
Setting	On / **Off**	Turns the wired LAN function on/off.
Camera Remote Control	Enable / **Disable**	Sets whether to enable remote control from a device connected to the same network as the network to which the unit is connected via wired LAN.
Detail Settings		Configures properties of the wired LAN connection.
	DHCP **On** / Off	Turns DHCP on/off.
	IP Address	Set the IP address of the unit when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
	Subnet Mask	Sets the subnet mask when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
	Gateway	Sets the default gateway when DHCP is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
	DNS Auto **On** / Off	Turns DNS auto acquisition on/off when DHCP is set On.
	Primary DNS Server	Sets the primary DNS server when DNS Auto is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.
	Secondary DNS Server	Sets the secondary DNS server when DNS Auto is set to Off. [Note] You can enter an address in the range 0.0.0.0 to 255.255.255.255 for each segment using the ▲/▼ buttons.

Network >Wired LAN
Sets settings related to wired LAN connections.

Item	Sub-item setting	Description
IP Address		Displays the IP address of the unit.
Subnet Mask		Displays the subnet mask.
MAC Address		Displays the MAC address of the unit.

Network >USB Tethering
Sets settings related to USB tethering.

Item	Sub-item setting	Description
Setting	On / **Off**	Turns the smartphone connection on/off.
Camera Remote Control	Enable / **Disable**	Sets whether to enable remote control via USB tethering using a smartphone application, such as Monitor & Control or Creators' App for Enterprise.
IP Address		Displays the IP address of the unit.
Subnet Mask		Displays the subnet mask.

Network >File Transfer
Sets settings related to file transfers.

Item	Sub-item setting	Description
Auto Upload	On / **Off**	Turns auto uploading of original files on/off. [Note] When Simul Rec >Setting (page 99) in the Project menu is set to On, the clips recorded on the media in slot B are not automatically uploaded.
Auto Upload (Proxy)	On / **Off** / Chunk	On: Enables proxy file auto upload. Off: Disables proxy file auto upload. Chunk: Uploads a proxy file recorded in chunks automatically. [Note] When Simul Rec >Setting (page 99) in the Project menu is set to On, the clips recorded on the media in slot B are not automatically uploaded. Also, Chunk is grayed out and cannot be selected.

Network >File Transfer
Sets settings related to file transfers.

Item	Sub-item setting	Description
Default Upload Server		Selects the upload server for files. The server selected here becomes the auto upload destination for original files and proxy files, and the upload destination for files from the thumbnail screen. Displays the display name configured in Server Settings 1 to 3.
Clear Completed Jobs	Execute / Cancel	Clears completed transfer jobs from the list. Execute: Execute function.
Clear All Jobs	Execute / Cancel	Clears all transfer jobs from the list. Execute: Execute function.
View Job List		Displays the transfer job list.
Server Settings1	Display Name	Sets the display name shown in the transfer destination setup menu.
	Service **FTP**	Displays the type of server.
	Host Name	Sets the host name of the transfer destination server.
	Port (1 to 65535 (**21**))	Sets the port number of the transfer destination server.
	User Name	Sets the user name for authentication of the transfer destination server connection.
	Password	Sets the authentication password of the transfer destination server connection.
	Passive Mode On / **Off (Active Mode)**	Turns PASV mode on/off.
	Destination Directory	Enter the name of the transfer destination directory.
	Using Secure Protocol On / **Off**	Sets whether to use (On) or not use (Off) secure FTP transfer (FTPS Explicit Mode: FTPES).
	Root Certificate Load / Clear / **None**	Loads a root certificate for secure FTP transfer and clears settings. [Note] Write the certificate to the root directory of a memory card. For details, see page 77.

Network >File Transfer
Sets settings related to file transfers.

Item	Sub-item setting	Description
Server Settings1	Root Certificate Status Loaded / **No Certificate**	Displays the root certificate loading status for secure FTP transfer.
	Reset Execute / Cancel	Resets the settings of Server Settings to the defaults. Execute: Execute function.
Server Settings2	Same as Server Settings1.	
Server Settings3	Same as Server Settings1.	

Network >Network Reset
Resets the network settings.

Item	Sub-item setting	Description
Reset	Execute / Cancel	Resets the network settings. Execute: Execute function.

Maintenance Menu

This section describes the function and settings of each menu item.
Factory default settings are shown in bold (for example, **18dB**).

Maintenance >Language Sets the display language.		
Item	Sub-item setting	Description
Select		Sets the display language. SET: Set language.

Maintenance >Clock Set Sets internal clock settings.		
Item	Sub-item setting	Description
Time Zone	UTC – 12:00 to UTC + 14:00	Sets the time difference from UTC in 30-minute units.
Date Mode	**YYMMDD** / MMDDYY / DDMMYY	Selects the display format for dates. YYMMDD: Year, month, day MMDDYY: Month, day, year DDMMYY: Day, month, year
12h/24h	12h / **24h**	Selects the clock display format. 12h: 12-hour mode 24h: 24-hour mode
Date		Sets the current date. SET: Set the value.
Time		Sets the current time. SET: Set the value.

Maintenance >All Reset Resets settings to factory defaults.		
Item	Sub-item setting	Description
Reset	Execute / Cancel	Resets all settings to their factory defaults. Execute: Execute function. [Note] A 3D LUT file imported using Base Look >Import from Media(B), Import from Cloud(Private), or Import from Cloud(Share) (page 105) in the Paint/Look menu cannot be deleted. To delete all imported 3D LUT files, select Base Look >Delete All in the Paint/Look menu (page 105).
Reset without Network	Execute / Cancel	Resets the menu settings, excluding Network menu settings, to the factory default state.

Maintenance >All Reset Resets settings to factory defaults.		
Item	Sub-item setting	Description
Reset to Factory Defaults	Execute / Cancel	Deletes all settings and files, and resets them to the factory default state.

Maintenance >Hours Meter Displays the accumulated running time.		
Item	Sub-item setting	Description
Hours (System)		Displays the accumulated hours of use (cannot be reset).
Hours(Reset)		Displays the accumulated hours of use (can be reset).
Reset	Execute / Cancel	Resets the Hours(Reset) display to 0. Execute: Execute function.

Maintenance >Version Displays version information.		
Item	Sub-item setting	Description
Version Number	Vx.xx	Displays the software version of the camcorder.
Version Up	Execute / Cancel "●" is displayed if an update is available	Updates the camcorder.* Execute: Execute function. * This function updates the camcorder software.
Lens Version Number	Vxx	Displays the software version number of an E-mount lens.

Shooting Menu Settings and Default Values

ISO/Gain Settings and Default Values

The range of ISO/Gain (page 90) settings and default values vary depending on the Mode, Target Display, Base Look >Select, Base Sensitivity, and Base ISO settings. The available options are highlighted in gray.

When Mode is set to ISO

Custom

Target Display	SDR(BT.709)		HDR(HLG)		SDR(BT.709) and HDR(HLG) common	
Base Look >Select	S-Cinetone / Standard / Still / ITU709 / 709tone		HLG Live / HLG Mild / HLG Natural		User1 to User16	
Base Sensitivity	Low	High	Low	High	Low	High
ISO 320	ISO/Gain<L> default					
ISO 400						
ISO 500						
ISO 640	ISO/Gain<M> default					
ISO 800			ISO/Gain<L> default		ISO/Gain<L> default	
ISO 1000						
ISO 1250	ISO/Gain<H> default					
ISO 1600			ISO/Gain<M> default		ISO/Gain<M> default	
ISO 2000						
ISO 2500						
ISO 3200			ISO/Gain<H> default		ISO/Gain<H> default	
ISO 4000						
ISO 5000		ISO/Gain<L> default				
ISO 6400						
ISO 8000						
ISO 10000		ISO/Gain<M> default				
ISO 12800				ISO/Gain<L> default		ISO/Gain<L> default
ISO 16000						
ISO 20000		ISO/Gain<H> default				
ISO 25600				ISO/Gain<M> default		ISO/Gain<M> default
ISO 32000						
ISO 40000						
ISO 51200				ISO/Gain<H> default		ISO/Gain<H> default
ISO 64000						
ISO 80000						
ISO 102400						
ISO 128000						
ISO 160000						
ISO 204800						
ISO 256000						
ISO 320000						
ISO 409600						

Flexible ISO

Base ISO	ISO 12800	ISO 800
ISO 320		
ISO 400		
ISO 500		
ISO 640		
ISO 800		ISO/Gain<L> default
ISO 1000		
ISO 1250		
ISO 1600		ISO/Gain<M> default
ISO 2000		
ISO 2500		
ISO 3200		ISO/Gain<H> default
ISO 4000		
ISO 5000		
ISO 6400		
ISO 8000		
ISO 10000		
ISO 12800	ISO/Gain<L> default	
ISO 16000		
ISO 20000		
ISO 25600	ISO/Gain<M> default	
ISO 32000		
ISO 40000		
ISO 51200	ISO/Gain<H> default	
ISO 64000		
ISO 80000		
ISO 102400		
ISO 128000		
ISO 160000		
ISO 204800		
ISO 256000		
ISO 320000		
ISO 409600		

When Mode is set to dB

Settings range	
–3dB	
–2dB	
–1dB	
0dB	ISO/Gain<L> default
1dB	
2dB	
3dB	
4dB	
5dB	
6dB	ISO/Gain<M> default
7dB	
8dB	
9dB	
10dB	
11dB	
12dB	ISO/Gain<H> default
13dB	
14dB	
15dB	
16dB	
17dB	
18dB	
19dB	
20dB	
21dB	
22dB	
23dB	
24dB	
25dB	
26dB	
27dB	
28dB	
29dB	
30dB	

AGC Limit Settings and Default Values

The range of AGC Limit (page 93) settings and default values vary depending on the Mode, Target Display, Base Look >Select, Base Sensitivity, and Base ISO settings. The available options are highlighted in gray.

When Mode is set to ISO

Custom

Target Display	SDR(BT.709)		HDR(HLG)		SDR(BT.709) and HDR(HLG) common	
Base Look >Select	S-Cinetone / Standard / Still / ITU709 / 709tone		HLG Live / HLG Mild / HLG Natural		User1 to User16	
Base Sensitivity	Low	High	Low	High	Low	High
ISO 400						
ISO 500						
ISO 640						
ISO 800						
ISO 1000						
ISO 1250						
ISO 1600						
ISO 2000	Default					
ISO 2500						
ISO 3200						
ISO 4000						
ISO 5000			Default		Default	
ISO 6400						
ISO 8000						
ISO 10000						
ISO 12800						
ISO 16000						
ISO 20000						
ISO 25600						
ISO 32000		Default				
ISO 40000						
ISO 51200						
ISO 64000						
ISO 80000				Default		Default
ISO 102400						
ISO 128000						
ISO 160000						
ISO 204800						
ISO 256000						
ISO 320000						
ISO 409600						

Flexible ISO

Base ISO	ISO 12800	ISO 800
ISO 400		
ISO 500		
ISO 640		
ISO 800		
ISO 1000		
ISO 1250		
ISO 1600		
ISO 2000		
ISO 2500		
ISO 3200		
ISO 4000		
ISO 5000		Default
ISO 6400		
ISO 8000		
ISO 10000		
ISO 12800		
ISO 16000		
ISO 20000		
ISO 25600		
ISO 32000		
ISO 40000		
ISO 51200		
ISO 64000		
ISO 80000	Default	
ISO 102400		
ISO 128000		
ISO 160000		
ISO 204800		
ISO 256000		
ISO 320000		
ISO 409600		

When Mode is set to dB

Settings range	
3dB	
6dB	
9dB	
12dB	
15dB	Default
18dB	
21dB	
24dB	
27dB	
30dB	

Image Quality Settings Saved for Each Shooting Mode

The current status of configuration items related to image quality are saved for each of the following shooting modes (page 29). When you change the shooting mode, the settings that are saved for the target shooting mode are applied.

- Custom shooting mode SDR(BT.709)
- Custom shooting mode HDR(HLG)
- Log shooting modes (Cine EI, Cine EI Quick, Flexible ISO)

The configuration items related to image quality which are saved for each shooting mode are shown below.
Yes: Item is saved.
No: Item is not saved.

Configuration item			Shooting mode				
			Custom		Flexible ISO	Cine EI Quick	Cine EI
			SDR(BT.709)	HDR(HLG)			
Shooting menu	ISO/Gain/EI	ISO/Gain	Yes[1]		Yes	No	
		Exposure Index	No		No	Yes	Yes
		Base Sensitivity	Yes		No		
		Base ISO	No		Yes[4]	No[3]	Yes[4]
	White	Preset White	Yes		Yes		
		Other than above	Yes				
	White Setting		Yes				
	Offset White		Yes		No		
	LUT On/Off		No		Yes		
	Noise Suppression	Setting(Custom)	Yes	Yes	No		
		Level(Custom)	Yes	Yes	No		
		Setting (Cine EI/Flex. ISO)	No		Yes		
		Level (Cine EI/Flex. ISO)	No		Yes		
Paint/Look Menu	Base Look	Select	Yes	Yes	Yes		
		Input[2]	Yes				
		Output[2]	Yes				
		AE Level Offset[2]	Yes				
	Black		Yes	Yes	No		
	Knee	Auto Knee	Yes	No	No		
		Other than above	Yes	Yes	No		
	Detail		Yes	Yes	No		
	Matrix		Yes	Yes	No		
	Multi Matrix		Yes	Yes	No		

1) Separate ISO sensitivity settings are saved for both Custom shooting mode SDR(BT.709) and HDR(HLG).
2) Settings are saved for each Base Look, and do not depend on the shooting mode.
3) The base ISO sensitivity changes in conjunction with Exposure Index.
4) Common setting value in Flexible ISO and Cine EI shooting modes.

Saving and Loading Configuration Data

Configuration Data

You can save the settings of the full menu to a memory card inserted into CFexpress Type A/SD card slot (B). You can also save an ALL file to a cloud service. This allows you to quickly recall an appropriate set of menu settings for the current situation.
Configuration data is saved in the following categories.

User files

User files save the setting items and data of the customizable User menu.
You can save up to 64 files on a memory card. By loading this file into the camcorder memory, you can customize the setup of the User menu.

ALL (all settings) files

ALL files save the configuration data of all menus. You can save up to 64 files on a memory card. Up to 120 files can be saved to C3 Portal (cloud service), comprising up to 60 private files and 60 share files.

[Note]
For details about the content saved in an ALL file, see “Items Saved in Files” (page 146).

Saving a User File / ALL File

Saving to a memory card

1 Insert a memory card into CFexpress Type A/SD card slot (B) (page 6).
- For CFexpress cards, the label faces to the left.
- For SD cards, the label faces to the right with the beveled corner at the bottom.

2 For a user file, select User File >Save to Media(B) (page 103) >Execute in the Project menu of the full menu.
For an ALL file, select All File >Save to Media(B) (page 103) >Execute in the Project menu of the full menu.
A file save destination screen appears.

3 Select a “No File” row on the save destination screen.
Selecting a row with a File ID entry will overwrite the selected file.
The File ID assigned when saving can be changed using the menu. For details about configuration, see “Changing the File ID” (page 133).

4 Select Execute on the confirmation screen.

Saving an ALL file to a cloud service

1 Connect to the unit from the “Creators' App for Enterprise” smartphone application (page 76).

2 Select All File >Save to Cloud(Private) or Save to Cloud(Share) (page 103) >Execute in the Project menu of the full menu.
A file save destination screen appears.

3 Select a “No File” row on the save destination screen.
Selecting a row with a File ID entry will overwrite the selected file.
The File ID assigned when saving can be changed using the menu. For details about configuration, see “Changing the File ID” (page 133).

4 Select Execute on the confirmation screen.

Loading a User File / ALL File

Loading from a memory card

1 Insert a memory card on which a file is saved into CFexpress Type A/SD card slot (B) (page 6).
- For CFexpress cards, the label faces to the left.
- For SD cards, the label faces to the right with the beveled corner at the bottom.

2 For a user file, select User File >Load from Media(B) (page 103) >Execute in the Project menu of the full menu.
For an ALL file, select All File >Load from Media(B) (page 103) >Execute in the Project menu of the full menu.
A file list screen appears.

3 Select a file to load.
A confirmation screen appears.

4 Select Execute.

[Notes]
- The unit will reboot automatically after loading configuration data.
- When All File >Load Network Data in the Project menu of the full menu is set to Off, all settings in the ALL file are loaded except Network menu settings.
- User files and ALL files saved using software version 6.0 cannot be loaded on devices running software versions earlier than 6.0. User files and ALL files saved on devices running software versions earlier than 6.0 can be loaded on devices running software version 6.0.

Loading an ALL file from a cloud service

1 Connect to the unit from the “Creators' App for Enterprise” smartphone application (page 76).

2 Select All File >Load from Cloud(Private) or Load from Cloud(Share) (page 103) >Execute in the Project menu of the full menu.
A file list screen appears.

3 Select a file to load.
A confirmation screen appears.

4 Select Execute.

[Notes]
- The unit will reboot automatically after loading configuration data.
- When All File >Load Network Data in the Project menu of the full menu is set to Off, all settings in the ALL file are loaded except Network menu settings.

Changing the File ID

1 For a user file, select User File >File ID (page 103) in the Project menu of the full menu.
For an ALL file, select All File >File ID (page 104) in the Project menu of the full menu.
A screen for editing the File ID appears.

2 Select a character using the multi selector (page 7) or the multi-function dial (page 5), then press the multi selector apply button or multi-function dial.

3 Repeat step 2 as required.

4 When finished entering characters, select Done.

Connecting External Monitors and Recording Devices

To display recorded/playback pictures on an external monitor, select the camcorder output signal and use an appropriate cable for the monitor to be connected.
You can also connect recording devices, such as a VTR, and record the output signal from the camcorder.
You can display the same information that is visible in the viewfinder, such as status information and menus, on an external monitor. Set Info. Disp. (page 19) on the Monitoring status screen or Output Display (page 110) in the Monitoring menu of the full menu to On according to the signal to output to the monitor.

[Note]
Observe the following when connecting an external monitor or recording device to the unit. Failing to do so may cause large currents to flow in the internal circuitry of the unit which may damage electronic components.

1. About DC cables
   Use DC cables with a low GND line impedance for connecting an external monitor, recording devices, and all other devices.
2. Checking for potential difference
   Before use, make sure that there is no potential difference between all connected devices and the unit.
   (1) Disconnect all connected devices, such as an external monitor and recording devices, from the unit.
   Check that the 75 Ω coaxial cable, HDMI and other cables are not connected.
   (2) Connect the DC cables of all connected devices and the unit, and then turn on the power of each connected device and the unit.
   (3) Use a tester or other device to confirm that there is no potential difference between the unit and each connected device.
   If there is a potential difference, it is possible that the impedance of the GND line of one of the DC cables is high. Replace such cables with cables having a low GND line impedance, as required, to eliminate any potential difference.
3. Connection and power-on sequence
   Connect each cable and turn on the power in the following order.
   (1) Turn off the power of the unit, external monitor, recording devices, and all other devices.
   (2) Connect the DC cables of all devices.
   (3) Connect the 75 Ω coaxial cable, HDMI and other cables.
   (4) Turn on the power of all connected devices and then the unit.

For details, contact a Sony service representative.

SDI OUT Connector (BNC type)

Set the output on/off setting and the output format in the Monitoring menu (page 110). Use a commercially available 75 Ω coaxial cable for connection.

To start recording on the camcorder and external device simultaneously

With SDI signal output enabled, set SDI/HDMI Rec Control (page 100) >Setting in the Project menu of the full menu to SDI/HDMI Remote I/F or Parallel Rec to enable output of a REC trigger signal to the external device connected to the SDI OUT connector. This will link recording on the external device with the camcorder.

[Notes]
- If a connected external device does not support a REC trigger signal, the device cannot be operated.
- When set to SDI/HDMI Remote I/F, only the REC trigger signal is output when there is no recording media currently inserted.

HDMI OUT Connector (Type A connector)

Set the output On/Off setting and the output format in the Monitoring menu (page 110) of the full menu.

To start recording on the camcorder and external device simultaneously

With HDMI signal output enabled, set HDMI TC Out >Setting (page 108) in the TC/Media menu of the full menu to On, and set SDI/HDMI Rec Control >Setting (page 100) in the Project menu to SDI/HDMI Remote I/F or Parallel Rec to enable output of a REC trigger signal to the external device connected to the HDMI OUT connector. This will synchronize recording on the external device with the camcorder.

[Notes]
- If a connected external device does not support a REC trigger signal, the device cannot be operated.
- When set to SDI/HDMI Remote I/F, only the REC trigger signal is output when there is no recording media currently inserted.

Synchronizing Timecodes

You can synchronize the timecode of the unit with other devices.

Locking the Timecode to Other Devices

Set the unit that supplies the timecode to a mode in which the timecode output keeps running (such as Free Run or Clock).

1 Set Timecode (page 108) in the TC/Media menu of the full menu as follows.
Mode: Preset
Run: Free Run

2 Press the assignable button (page 54) assigned with the DURATION/TC/U-BIT function to display the timecode on the screen.

3 Check that the TC IN/OUT select switch (page 4) is set to the IN position, then supply a reference timecode for synchronizing the system frequency of the camcorder to the TC IN/TC OUT connector.

The timecode generator of the camcorder acquires lock with the reference timecode, and “EXT-LK” appears on the screen.
Once about ten seconds have elapsed after the timecode locks, the external lock state is maintained even if the external reference timecode source is disconnected.

[Notes]

- When operating with external lock, the timecode instantly acquires lock with the external timecode and the external timecode value appears in the data display area. However, do not start recording immediately. Wait for a few seconds until the timecode generator stabilizes before recording.
- If the frequency of the reference timecode and the frame frequency on the camcorder are not the same, lock cannot be acquired and the camcorder will not operate properly. If this occurs, the timecode will not acquire successful lock with the external timecode.
- The timecode may shift by one frame per hour with respect to the reference timecode.

To release external lock

Change the Timecode setting in the TC/Media menu of the full menu.
External synchronization is also released if the system frequency is changed and when you start recording in a special recording mode (Slow & Quick Motion or Interval Rec).

Synchronizing the Timecode of Another Device with the Timecode of the Camcorder

Set the unit that supplies the timecode to a mode in which the timecode output keeps running (such as Free Run or Clock).

1 Set the timecode of the camcorder using Timecode (page 108) in the TC/Media menu of the full menu.

2 Check that the TC IN/OUT select switch (page 4) is set to the OUT position, and connect the TC IN/TC OUT connector to the timecode input connector of the device you want to synchronize.

Managing/Editing Clips using a Computer

Connecting using a USB Cable

Using a card reader (option)

Connect a CFexpress Type A card reader or SD card reader to a computer using a USB cable, and insert a memory card into the card reader slot. The memory card is recognized as a computer extension drive. On supported computers, you can import clips at high speed using the mass storage mode of the camcorder.

Using mass storage mode

[Note]
Mass storage mode cannot be used when USB Tethering >Setting in the Network menu of the full menu is set to On or when Wired LAN >Setting in the Network menu is set to On. Set both of these to Off.

Connect the camcorder using a USB cable, and insert a memory card in card slot A or B. The memory card is recognized as a computer extension drive.

1 Connect the USB-C connector (page 7) or USB/multi connector (page 7) to the computer using a USB cable.

2 Turn the camcorder POWER switch to the ON position.
A USB connection (page 122) confirmation message appears if both USB Tethering is set to Off on the Network status screen or in USB Tethering >Setting setting in the Network menu of the full menu, and Wired LAN >Setting is set to Off in the Network menu. Select Mass Storage (MSC) in the drop-down list box.

[Notes]
- Mass storage mode cannot be used when USB Tethering or Wired LAN >Setting is set to On. Set Setting to Off.
- The USB connection confirmation message is not displayed while another confirmation message or progress message is displayed, for example, when formatting or restoring a memory card. The confirmation message is displayed when the formatting or restoring execution ends. The USB confirmation message is also not displayed when the clip properties screen is displayed. The message is displayed when processing ends or when you return to the thumbnail screen.

3 Turn the multi-function dial to select Execute.

4 On Windows, check that the card is added as a removable disk in the “My Computer” window.
On Mac, check that a folder called “NO NAME” or “Untitled” (editable) is created on the Desktop.

[Notes]
- Do not perform the following operations if the access indicator is lit red.
  - Turning the power off or disconnecting the power cord
  - Removing the memory card
  - Disconnecting the USB cable
- Operation is not guaranteed to work on all computers.

Using a Nonlinear Editing System

In a nonlinear editing system, editing software (option) that supports the formats recorded by the camcorder is required.
Use dedicated application software to save the clips you want to edit on the HDD of the computer beforehand.

Usage Precautions

On 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.

On LCD panels

The LCD panel fitted to this unit is manufactured with high precision technology, giving a functioning pixel ratio of at least 99.99%. Thus a very small proportion of pixels may be “stuck”, either always off (black), always on (red, green, or blue), or flashing. In addition, over a long period of use, because of the physical characteristics of the liquid crystal display, such “stuck” pixels may appear spontaneously. These problems are not a malfunction. Note that any such problems have no effect on recorded data.

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 shooting under lighting produced by fluorescent lights, sodium lamps, mercury-vapor lamps, or LEDs, the screen may flicker or colors may vary.

On consumable parts

- The fan and battery are consumable parts that will need periodic replacement.
  When operating at room temperature, a normal replacement cycle will be about 5 years. However, this replacement cycle represents only a general guideline and does not imply that the life expectancy of these parts is guaranteed. For details on parts replacement, contact your dealer.
- The life expectancy of the AC adaptor and 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.
- The battery terminal of this unit (the connector for battery packs and AC adaptors) is a consumable part.
  Power may not be supplied to the unit properly if the pins of the battery terminal are bent or deformed by shock or vibrations, or if they become corroded due to prolonged outdoor use.
  Periodic inspections are recommended to keep the unit working properly and to prolong its usable lifetime. Contact a Sony service or sales representative for more information about inspections.

About the built-in rechargeable battery

The camcorder has a built-in rechargeable battery for storing the date, time, and other settings even when the camcorder is turned off. The built-in rechargeable battery will become charged after 24 hours have elapsed if the unit is connected to a power outlet using the AC adaptor or if a fully charged battery pack is attached, regardless of whether the camcorder is turned on/off. The rechargeable battery will be fully discharged in about 2 months if the AC adaptor is not connected or the camcorder is used without the battery pack attached. Use your camcorder after charging the battery. However, even if the rechargeable battery is not charged, the camcorder operation will not be affected as long as you do not need to record the date.

Usage and storage locations

Store in a level, ventilated place.
Avoid using or storing the unit in the following places.

- In excessive heat or cold (operating temperature range: 0 °C to 40 °C (32 °F to 104 °F))
  Remember that in summer in warm climates the temperature inside a car with the windows closed can easily exceed 50 °C (122 °F).
- In damp or dusty locations. Locations where the unit may be exposed to rain
- Locations subject to violent vibration
- Near strong magnetic fields
- Close to radio or TV transmitters producing strong electromagnetic fields.
- In direct sunlight or close to heaters for extended periods

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 the laser beam be directed into the lens of the unit. Specifically, high-power laser beams from medical devices or other devices may cause damage due to reflected light and scattered light.

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 precautions

- From a security standpoint, we strongly advise that you always update the unit to the latest software version.
  For details about security precautions, visit the following website.
  https://helpguide.sony.net/pro/network_security_c/v1/h_zz/index.html
- If you set the Security wireless LAN setting to None and connect to an access point, wireless communication between the camera and the access point will not be encrypted and may be intercepted by a third party within the range of the signal. Use the WPA2 or WPA3 security protocol for enhanced 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.
- Communication content may be unknowingly intercepted by unauthorized third parties in the vicinity of the signals. When using wireless LAN communication, implement security measures properly to protect the communication content.
- When connecting this product to a network, connect via a system that provides a protection function, such as a router or firewall. If connected without such protection, security issues may occur.

Output Formats and Limitations

Factory default settings are shown in bold (for example, **1920×1080P (Level A)**).

[Notes]

- The resolution of the output format is limited by the Rec Format >Frequency, Codec and Video Format settings in the Project menu of the full menu (page 97).
- The resolution of the output format is also limited by the combination with the S&Q frame rate. In addition to the table of SDI OUT/HDMI OUT connector output formats below, the HDMI output changes to Full HD or lower when all the following conditions are met.
  - S&Q Motion >Setting in the Shooting menu is set to On
  - S&Q Motion >Frame Rate in the Shooting menu is higher than 60fps
  - Rec Format >Codec in the Project menu is set to RAW or RAW & XAVC-I, or Output On/Off >SDI in the Monitoring menu is set to On
- When the conditions above are met, the HDMI output 4096×2160P and 3840×2160P selection options for Output Format >SDI/HDMI (page 110) in the Monitoring menu are grayed out and cannot be selected.
- The image is not output if a higher resolution than the playback image resolution is configured.

SDI OUT/HDMI OUT Connector Output Formats

System frequency setting (Rec Format >Frequency in the Project menu)	Codec setting (Rec Format >Codec in the Project menu)	RAW/Recording format setting (Rec Format >RAW Output Format/Video Format in the Project menu)	Output format (Output Format in the Monitoring menu)	
			SDI	HDMI
50/59.94Hz	RAW RAW & XAVC-I	4096×2160(RAW)	(4096×2160 RAW)	4096×2160P
				3840×2160P
				1920×1080P
				1920×1080i
		3840×2160(RAW)	(3840×2160 RAW)	3840×2160P
				1920×1080P
				1920×1080i
	RAW(HDMI) RAW(HDMI) & XAVC-I	4240×2392(RAW)	**1920×1080P (Level A)**	(4240×2392 HDMI RAW)
			1920×1080P (Level B)	
			1920×1080i	

System frequency setting (Rec Format >Frequency in the Project menu)	Codec setting (Rec Format >Codec in the Project menu)	RAW/Recording format setting (Rec Format >RAW Output Format/Video Format in the Project menu)	Output format (Output Format in the Monitoring menu)	
			SDI	HDMI
50/59.94Hz	XAVC-I XAVC-L	4096×2160(Video)	4096×2160P[1)]	4096×2160P
			4096×2160P	1920×1080P
			4096×2160P	1920×1080i
			3840×2160P	3840×2160P
			3840×2160P	1920×1080P
			3840×2160P	1920×1080i
			1920×1080P (Level A)	**1920×1080P**
			1920×1080P (Level A)	1920×1080i
			1920×1080P (Level B)	1920×1080P
			1920×1080P (Level B)	1920×1080i
			1920×1080i	1920×1080i
		3840×2160(Video)	3840×2160P	3840×2160P
			3840×2160P	1920×1080P
			3840×2160P	1920×1080i
			1920×1080P (Level A)	**1920×1080P**
			1920×1080P (Level A)	1920×1080i
			1920×1080P (Level B)	1920×1080P
			1920×1080P (Level B)	1920×1080i
			1920×1080i	1920×1080i

System frequency setting (Rec Format >Frequency in the Project menu)	Codec setting (Rec Format >Codec in the Project menu)	RAW/Recording format setting (Rec Format >RAW Output Format/Video Format in the Project menu)	Output format (Output Format in the Monitoring menu)	
			SDI	HDMI
50/59.94Hz	XAVC-I XAVC-L	1920×1080(Video)	**1920×1080P (Level A)**	**1920×1080P**
			1920×1080P (Level A)	1920×1080i
			1920×1080P (Level B)	1920×1080P
			1920×1080P (Level B)	1920×1080i
			1920×1080i	1920×1080i
			(Output stopped)	720×480P[1) 2)]
				720×576P[1) 3)]
25/29.97Hz	RAW RAW & XAVC-I	4096×2160(RAW)	(4096×2160 RAW)	4096×2160P
				3840×2160P
				1920×1080P
				1920×1080i
		3840×2160(RAW)	(3840×2160 RAW)	3840×2160P
				1920×1080P
				1920×1080i
	RAW(HDMI) RAW(HDMI) & XAVC-I	4240×2392(RAW)	1920×1080P	(4240×2392 HDMI RAW)
			1920×1080PsF	
	XAVC-I XAVC-L	4096×2160(Video)	4096×2160P[1)]	4096×2160P
			4096×2160P	1920×1080P
			3840×2160P	3840×2160P
			3840×2160P	1920×1080P
			1920×1080P	1920×1080P
			1920×1080PsF	**1920×1080i**
		3840×2160(Video)	3840×2160P	3840×2160P
			3840×2160P	1920×1080P
			1920×1080P	1920×1080P
			1920×1080PsF	**1920×1080i**
		1920×1080(Video)	1920×1080P	1920×1080P
			1920×1080PsF	**1920×1080i**

System frequency setting (Rec Format >Frequency in the Project menu)	Codec setting (Rec Format >Codec in the Project menu)	RAW/Recording format setting (Rec Format >RAW Output Format/Video Format in the Project menu)	Output format (Output Format in the Monitoring menu)	
			SDI	HDMI
23.98Hz	RAW RAW & XAVC-I	4096×2160(RAW)	(4096×2160 RAW)	4096×2160P
				3840×2160P
				1920×1080P
		3840×2160(RAW)	(3840×2160 RAW)	3840×2160P
				1920×1080P
	RAW(HDMI) RAW(HDMI) & XAVC-I	4240×2392(RAW)	**1920×1080P**	(4240×2392 HDMI RAW)
			1920×1080PsF	
	XAVC-I XAVC-L	4096×2160(Video)	4096×2160P[1)]	4096×2160P
			4096×2160P	1920×1080P
			3840×2160P	3840×2160P
			3840×2160P	1920×1080P
			1920×1080P	**1920×1080P**
			1920×1080PsF	1920×1080P
		3840×2160(Video)	3840×2160P	3840×2160P
			3840×2160P	1920×1080P
			1920×1080P	**1920×1080P**
			1920×1080PsF	1920×1080P
		1920×1080(Video)	**1920×1080P**	**1920×1080P**
			1920×1080PsF	1920×1080P
24Hz	RAW RAW & XAVC-I	4096×2160(RAW)	(4096×2160 RAW)	4096×2160P
				1920×1080P
	XAVC-I	4096×2160(Video)	4096×2160P[1)]	4096×2160P
			1920×1080P	**1920×1080P**

1) The screen display cannot be embedded.
2) When the system frequency is 59.94
3) When the system frequency is 50

Troubleshooting

Power Supply

Symptom	Cause	Solution
The camcorder does not power on.	No battery pack is mounted and no power is supplied to the DC IN connector.	Mount a battery pack (page 22) or connect to AC power using an AC adaptor (page 23).
	The battery pack is completely exhausted.	Replace the battery pack with a fully charged one (page 22).
The power supply cuts while operating.	The battery pack becomes exhausted.	Replace the battery pack with a fully charged one (page 22).
The battery pack becomes exhausted very quickly.	The ambient temperature is very low.	This is due to the battery characteristics and is not a defect.
	The battery pack is inadequately charged.	Recharge the battery pack (page 22). If the battery pack is soon exhausted even after you charged it fully, it may comes to the end of its life. Replace it with a new one.

Recording/Playback

Symptom	Cause	Solution
Recording does not start when you press the record START/STOP button.	The memory card is full.	Replace the memory card with one having sufficient space.
	The memory card needs restoration.	Restore the memory card (page 38).
Audio recording is not possible.	The AUDIO LEVEL (CH1/CH2) dials are set to the minimum level.	Adjust the audio recording levels with the AUDIO LEVEL (CH1/CH2) dials (page 52).
The recorded sound is distorted.	The audio level is too high.	Adjust the audio recording levels with the AUDIO LEVEL (CH1/CH2) dials (page 52).
The recorded sound has a high noise level.	The audio level is too low.	Adjust the audio recording levels with the AUDIO LEVEL (CH1/CH2) dials (page 52). When an external microphone is selected, also adjust the INPUT MIC Reference setting under Audio Input in the Audio menu (page 113).
Clips cannot be played back.	The clip is being edited.	Clips cannot be played back if you have modified file names or folders, or if the clip is in use on a computer. This is not a malfunction.
	The clip is being recorded on another device.	Clips recorded on other devices may not be played back, or displayed in incorrect size. This is not a malfunction.

External Devices

Symptom	Solution
The computer does not recognize the camcorder.	Disable USB tethering. Disable wired LAN.
	Disconnect the USB cable from the computer, then connect it again securely.
	Disconnect the USB cable from your computer, reboot your computer, and follow the steps again in the correct order.
	Connect the computer and the camcorder by inserting a USB cable into either the USB-C connector or the USB/multi connector.
Clips cannot be loaded on the computer.	Disconnect the USB cable from the computer, restart the camcorder, and then connect it again.
	Application software must be installed to load clips on your computer (page 136).

Wireless LAN Connection

[Note]
Obstructions and electromagnetic interference between the camcorder and wireless LAN access point or terminal device, or the ambient environment (such as wall materials) could shorten the communication range or prevent connections altogether. If you experience these problems, check the connection/communication status after moving the camcorder to a new location, or bringing the camcorder and access point/terminal device closer together.

Symptom	Solution
A terminal device cannot access the camcorder.	• Check the wireless LAN connection (IP address, etc.). • The communication setting between the access point and client may be invalid. For details, refer to the operating instructions of the access point.
You cannot log in to the camcorder.	Check the user name and password that you set.

See “Connecting with “Monitor & Control”” (page 67), “Connecting to the Internet via Wireless LAN” (page 68), and “Checking the Network Connection Status” (page 74).

Internet Connection

Symptom	Solution
File uploading fails.	The user name and password of the server may not be correct. Input the correct user name and password.
File uploading is not available.	Signal condition may be poor. Move to another location and try again.

See “Connecting to the Internet via Wireless LAN” (page 68), “Connecting to the Internet via USB Tethering” (page 71), “Connecting to the Internet via Wired LAN” (page 72), and “Checking the Network Connection Status” (page 74).

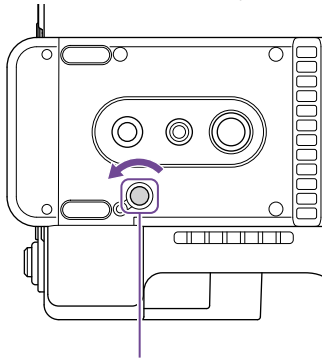
When using the ND Filter

Symptom	Solution
The ND filter does not move.	You can move the filter to the Clear position manually using the following procedure.

1 Turn the camcorder POWER switch to the off position.

2 Remove the round cap on the bottom side.

3 Insert a screwdriver in the hole and turn it counterclockwise.
- The ND filter moves to the Clear position by turning counterclockwise. Continue turning until reaching the Clear position.
- Use a screwdriver with ø2.4 mm diameter or smaller. The insertion depth of the screwdriver is about 3.0 cm ($1\,^{3}/_{16}$ in.).



4 Set the ND PRESET/VARIABLE switch (page 5) to the PRESET position, and set the ND FILTER POSITION up/down buttons (page 5) to the CLEAR position.

[Notes]
- Do not use the procedure above during normal operation. Only use this procedure if the ND filter will not move. The ND filter may become damaged if this procedure is used during normal operation.
- After the procedure above is used, consult a Sony service center to have the camcorder repaired.
- If an error message still appears after performing the procedure above, shooting is still possible.

Error/Warning Messages

If a warning, caution, or operating condition that requires confirmation occurs on the camcorder, a message is displayed in the viewfinder, the recording/tally lamp starts flashing, and a warning sound is emitted.
The warning sound is emitted from the headphones connected to the headphone connector.

Error Messages

The camcorder will stop operation when the following kind of display occurs.

Viewfinder message	Warning sound	Recording/ tally lamp	Cause and Solution
E + error code	Continuous	High-speed flashing	Indicates an abnormality in the camcorder. Recording stops, even if ●REC is displayed in the viewfinder. Turn off the camcorder, and check for any problem with connected devices, cables, or media. If the error persists when the camcorder is turned on again, contact your Sony service representative. (If the camcorder does not turn off when the POWER switch is set to OFF, remove the battery or disconnect the DC IN supply.) An error display or warning sound may not occur depending on the status of the camcorder.

Warning Messages

Follow the instructions provided if the following display occurs.

Viewfinder message	Warning sound	Recording/ tally lamp	Cause and Solution
Battery Near End	Intermittent	Flashing	The remaining capacity of the battery pack is getting low. Recharge at the earliest convenience.
Battery End	Continuous	High-speed flashing	The battery pack is empty. Recording is disabled. Stop operation and replace the battery pack.
Temperature High	Intermittent	Flashing	The internal temperature is high. Turn off the camcorder and allow it to cool down before operating it again.
Media Temperature High	Intermittent	Flashing	The temperature of the CFexpress card is high. Replace the card or allow it to cool down before using it again.
Voltage Low	Intermittent	Flashing	The DC IN voltage is low (level 1). Check the power source.
Insufficient Voltage	Continuous	High-speed flashing	The DC IN voltage is too low (level 2). Recording is disabled. Connect a different power source.
Media Near Full	Intermittent	Flashing	The remaining capacity on the memory card is getting low. Replace at the earliest convenience.
Media Full	Continuous	High-speed flashing	Clips could not be recorded or copied because there is no remaining capacity on the memory card. Replace immediately.
Clips Near Full	Intermittent	Flashing	The number of additional clips that can be recorded on a memory card is getting low. Replace at the earliest convenience.
Clips Full	Continuous	High-speed flashing	The maximum number of clips that can be recorded on the memory card has been reached. Recording or copying more clips is not possible. Replace immediately.
Last Clip Recording	Intermittent	Flashing	The clip currently recording is the last clip that can be recorded, as the maximum number of clips has been reached. Prepare a new memory card.
Media(A)[1] Life Near End	Intermittent	Flashing	The memory card is approaching the end of its life. Replace at the earliest convenience.
Media(A)[1] Life End	Continuous	High-speed flashing	The memory card has reached the end of its life. Replace immediately.
Media(A)[1] Near Full	Intermittent	Flashing	When using the Simul Rec function
Media(A)[1] Full	Continuous	High-speed flashing	When using the Simul Rec function
Media(A)[1] Clips Near Full	Intermittent	Flashing	When using the Simul Rec function
Media(A)[1] Clips Full	Continuous	High-speed flashing	When using the Simul Rec function
Media(A)[1] Last Clip Rec	Intermittent	Flashing	When using the Simul Rec function
Transfer Jobs Near Full	–	–	The number of FTP file transfer jobs that can be registered is getting low.

Viewfinder message	Warning sound	Recording/ tally lamp	Cause and Solution
Transfer Jobs Full	–	–	The number of FTP file transfer jobs that can be registered has reached the upper limit. To add another job, first delete any unwanted jobs.[2)]

1) "(B)" is displayed for the card in slot B.
2) You can select and delete jobs using File Transfer >View Job List (page 123) in the Network menu of the full menu. You can also delete jobs from the CBM job list.

Caution and Operation Messages

The following caution and operation messages may appear in the center of the screen. Follow the instructions provided to resolve the issue.

Display message	Cause and Solution
Battery Error Please Change Battery	An error was detected in the battery pack. Replace with a normal battery pack.
Backup Battery End Please Change	The remaining capacity of the backup battery is insufficient. Charge the backup battery.
Unknown Media (A) [1)] Please Change	A memory card that has been partitioned or a memory card containing more clips that can be handled by the camcorder was inserted. The card cannot be used in the camcorder, and must be replaced.
Cannot Use Media (A) [1)] Unsupported File System	A card using a different file system or an unformatted card was inserted. The card cannot be used in the camcorder, and must be replaced or formatted using the camcorder.
Media Error Media (A) [1)] Needs to be Restored	An error occurred on the memory card, and the card must be restored. Restore the memory card.
Media Error Cannot Record to Media (A) [1)]	The memory card may be damaged, and can no longer be used for recording. Playback is possible, so making a copy and replacing the memory card is recommended.
Media Error Cannot Use Media (A) [1)]	The memory card may be damaged, and can no longer be used for recording or playback. The card cannot be used in the camcorder, and must be replaced.
Media (A) [1)] Error Recording Halted Playback Halted	Recording and playback was stopped because an error occurred while using the memory card. If the problem persists, replace the memory card.
Media Reached Rewriting Limit Change Media (A) [1)]	The memory card has reached the end of its life. Make a backup, and replace the card immediately. If you continue using the card, the card may not be able to record or play. For details, refer to the operating instructions for the memory card.
The specified address is invalid.	The specified address is invalid. Check that the setting is correct.
Cannot Use Specified Port Number	The specified port number is invalid. Check that the setting is correct.

Display message	Cause and Solution
Fan Stopped	The built-in fan stopped. Avoid use at high temperatures, disconnect the power, and contact your Sony service representative.
LENS Error	A lens error was detected in the lens I/F communication when an E-mount lens was attached. Check the status of the connection with the E-mount lens.
This Multi Term. acc is not supported by the device and cannot be used. Please verify the compatibility.	An incompatible accessory was detected. The only Multi Terminal accessory supported by the unit is the supplied grip remote control.
Failed	This error may appear if an address cannot be obtained with DHCP set to On. Check the DHCP server settings.
Addition of auto upload job failed.	The maximum number of transfer jobs has been reached. Clear any unwanted jobs. The auto upload destination setting for original files or proxy files may also be incorrect. Check that the setting is correct.
<SSID>Not found.	Network (access point) with the specified <SSID> could not be found. Check that the setting is correct.
<SSID>Authentication Failed	Connection authentication on the network (access point) with the specified <SSID> failed. Check that the password and other settings are correct.
An IP address conflict has occurred. Please check the network settings.	There is a conflict in the network segments between the wireless LAN and wired LAN/USB tethering. Change the address manually or change the settings for the network router.
The IP address of the Wireless LAN Access Point Mode has been changed due to an IP address conflict.	The IP address in wireless LAN access point mode was changed due to a conflict on the network segments between the wireless LAN and wired LAN/USB tethering. Check the IP address setting.

1) “(B)” is displayed for the card in slot B.

Items Saved in Files

Items Configured in the Full Menu

Yes: Item is saved.
No: Item is not saved.
–: Not saved (temporary setting)

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Shooting	ISO/Gain/EI	Mode	Yes	No
		ISO/Gain<H>	Yes	No
		ISO/Gain<M>	Yes	No
		ISO/Gain<L>	Yes	No
		Exposure Index<H>	Yes	No
		Exposure Index<M>	Yes	No
		Exposure Index<L>	Yes	No
		Shockless Gain	Yes	No
		Base Sensitivity	Yes	No
		Base ISO	Yes	No
	ND Filter	Preset1	Yes	No
		Preset2	Yes	No
		Preset3	Yes	No
		Display Mode	Yes	No
	Shutter	Mode	Yes	No
		Shutter Speed On/Off	Yes	No
		Shutter Speed	Yes	No
		Shutter Angle	Yes	No
		ECS On/Off	Yes	No
		ECS Frequency	Yes	No
	Iris	Bokeh Control	No	No
		Level	Yes	No
		Mode	Yes	No
		Speed	Yes	No
		AGC	Yes	No
		AGC Limit	Yes	No
		AGC Point	Yes	No
		Auto Shutter	Yes	No
		A.SHT Limit	Yes	No
		A.SHT Point	Yes	No
		Clip High light	Yes	No
		Detect Window	Yes	No
		Detect Window Indication	Yes	No
		Custom Width	Yes	No
		Custom Height	Yes	No
		Custom H Position	Yes	No
		Custom V Position	Yes	No
	White	Preset White	Yes	No
		Color Temp <A>	Yes	No
		Tint<A>	Yes	No
		R Gain <A>	Yes	No
		B Gain <A>	Yes	No
		Color Temp <B>	Yes	No
		Tint<B>	Yes	No
		R Gain <B>	Yes	No
		B Gain <B>	Yes	No
	White Setting	Shockless White	Yes	No
		ATW Speed	Yes	No
		White Switch<B>	Yes	No
		Filter White Memory	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Shooting	Offset White	Offset White <A>	Yes	No
		Offset Color Temp<A>	Yes	No
		Offset Tint<A>	Yes	No
		Offset White <B>	Yes	No
		Offset Color Temp<B>	Yes	No
		Offset Tint<B>	Yes	No
		Offset White<ATW>	Yes	No
		Offset Color Temp<ATW>	Yes	No
		Offset Tint<ATW>	Yes	No
	Focus	AF Transition Speed	Yes	No
		AF Subj. Shift Sens.	Yes	No
		Focus Area	Yes	No
		Focus Area (AF-S)	Yes	No
		Face/Eye Detection AF	Yes	No
		Push AF Mode	Yes	No
		Touch Function in MF	Yes	No
		Multi Selector Function	Yes	No
		Pointer Color	Yes	No
		Pointer Border	Yes	No
		AF Assist	Yes	No
	S&Q Motion	Setting	Yes	No
		Frame Rate	Yes	No
	LUT On/Off	1 SDI/HDMI	Yes	No
		2 VF/Proxy/Stream	Yes	No
		Internal Rec	Yes	No
	Noise Suppression	Setting(Custom)	Yes	No
		Level(Custom)	Yes	No
		Setting (Cine EI/Flex. ISO)	Yes	–
		Level (Cine EI/Flex. ISO)	Yes	–
	Flicker Reduce	Mode	Yes	No
		Frequency	Yes	No
	SteadyShot	Setting	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Project	Base Setting	Shooting Mode	Yes	–
		Target Display	Yes	–
	Rec Format	Frequency	Yes	No
		Imager Scan Mode	Yes	No
		Codec	Yes	No
		RAW Output Format	Yes	No
		Video Format	Yes	No
	Cine EI/Flex.ISO Set	Color Gamut	Yes	–
		Embed LUT File	Yes	No
	HDR Setting	VF SDR Preview	Yes	No
		SDR Gain	Yes	No
	Simul Rec	Setting	Yes	No
		Rec Button Set	Yes	No
	Proxy Rec	Setting	Yes	No
		Audio Channel	Yes	No
		Chunk	Yes	No
	Interval Rec	Setting	No	No
		Interval Time	Yes	No
		Number of Frames	Yes	No
		Pre-Lighting	Yes	No
	Picture Cache Rec	Setting	Yes	No
		Cache Size	Yes	No
		Cache Rec Time	–	–
	SDI/HDMI Rec Control	Setting	Yes	No
	Assignable Button	<1>	Yes	No
		<2>	Yes	No
		<3>	Yes	No
		<4>	Yes	No
		<5>	Yes	No
		<6>	Yes	No
		<7>	Yes	No
		<8>	Yes	No
		<9>	Yes	No
		Focus Hold Button	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Project	Assignable Dial	Grip/Remote Dial	Yes	No
		Grip Dial Direction	Yes	No
		Handle Dial	Yes	No
		Handle Dial Direction	Yes	No
	Multi Function Dial	Default Function	Yes	No
	User File	Load from Media(B)	–	–
		Save to Media(B)	–	–
		File ID	No	No
		Load Customize Data	Yes	No
		Load White Data	Yes	No
	All File	Load from Media(B)	–	–
		Load from Cloud(Private)	–	–
		Load from Cloud(Share)	–	–
		Save to Media(B)	–	–
		Save to Cloud(Private)	–	–
		Save to Cloud(Share)	–	–
		File ID	Yes	No
		Load Network Data	No	No
Paint/Look	Scene File	Recall Internal Memory	–	–
		Store Internal Memory	–	–
		Delete Internal Memory	–	–
		Preset Recall	–	–
		Load from Media(B)	–	–
		Save to Media(B)	–	–
		File Name	Yes	–
	Base Look	Select	Yes	Yes
		Delete	–	–
		Delete All	–	–
		Import from Media(B)	–	–
		Import from Cloud(Private)	–	–
		Import from Cloud(Share)	–	–
		Input	Yes	Yes
		Output	Yes	Yes
		AE Level Offset	Yes	Yes
	Reset Paint Settings	Reset without Base Look	–	–

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Paint/Look	Black	Master Black	Yes	Yes
		R Black	Yes	Yes
		B Black	Yes	Yes
	Knee	Setting	Yes	Yes
		Auto Knee	Yes	Yes
		Point	Yes	Yes
		Slope	Yes	Yes
	Detail	Setting	Yes	Yes
		Level	Yes	Yes
		Manual Setting	Yes	Yes
		V/H Balance	Yes	Yes
		B/W Balance	Yes	Yes
		Limit Value	Yes	Yes
		Crispening	Yes	Yes
		High Light Detail	Yes	Yes
	Matrix	User Matrix	Yes	Yes
		User Matrix Level	Yes	Yes
		User Matrix Phase	Yes	Yes
		User Matrix R-G	Yes	Yes
		User Matrix R-B	Yes	Yes
		User Matrix G-R	Yes	Yes
		User Matrix G-B	Yes	Yes
		User Matrix B-R	Yes	Yes
		User Matrix B-G	Yes	Yes
	Multi Matrix	Setting	Yes	Yes
		Area Indication	No	No
		Reset	–	–
		Axis	No	Yes
		Hue	Yes	Yes
		Saturation	Yes	Yes

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
TC/Media	Timecode	Mode	Yes	No
		Run	Yes	No
		Setting	No	No
		Reset	–	–
		TC Format	Yes	No
	TC Display	Display Select	Yes	No
	Users Bit	Mode	Yes	No
		Setting	No	No
	HDMI TC Out	Setting	Yes	No
	Clip Name Format	Auto Naming	Yes	No
		Camera ID	No	No
		Reel Number	No	No
		Camera Position	No	No
		Title Prefix	Yes	No
		Number Set	No	No
	Update Media	Media(A)	–	–
		Media(B)	–	–
	Format Media	Media(A)	–	–
		Media(B)	–	–
Monitoring	Output On/Off	SDI	Yes	No
		HDMI	Yes	No
	Output Format	SDI	Yes	No
		HDMI	Yes	No
	De-Squeeze	Ratio (HDMI/VF)	Yes	No
	Output Display	SDI	Yes	No
		HDMI	Yes	No
	Display On/Off	Focus Mode	Yes	No
		Focus Position	Yes	No
		Network Status	Yes	No
		File Transfer Status	Yes	No
		Rec/Play Status	Yes	No
		RAW Output Control Status	Yes	No
		SDI/HDMI Rec Control	Yes	No
		Tally	Yes	No
		Battery Remain	Yes	No
		Zoom Position	Yes	No
		SteadyShot	Yes	No
		Media Status	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Monitoring	Display On/Off	Lens Info	Yes	No
		Look Name	Yes	No
		UWP RF Level	Yes	No
		Focus Area Indicator	Yes	No
		Focus Area Ind.(AF-S)	Yes	No
		Face/Eye Detection Frame	Yes	No
		Tracking AF Pointer	Yes	No
		Focus Indicator	Yes	No
		Clip Name	Yes	No
		Video Level Warning	Yes	No
		Timecode	Yes	No
		Gamma Display Assist	Yes	No
		Video Signal Monitor	Yes	No
		Network Speed	Yes	No
		Imager Scan Mode	Yes	No
		Frame Rate	Yes	No
		Rec Format	Yes	No
		Rec Look	Yes	No
		Level Gauge	Yes	No
		Audio Level Meter	Yes	No
		Auto Exposure Mode	Yes	No
		Auto Exposure Level	Yes	No
		ND Filter	Yes	No
		Iris	Yes	No
		ISO/Gain/EI	Yes	No
		Base ISO/Sensitivity	Yes	No
		Shutter	Yes	No
		White Balance	Yes	No
		Clip Number	Yes	No
		Notice Message	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Monitoring	Marker	Setting	Yes	No
		Color	Yes	No
		Center Marker	Yes	No
		Safety Zone	Yes	No
		Safety Area	Yes	No
		Aspect Marker	Yes	No
		Aspect Mask	Yes	No
		Aspect Safety Zone	Yes	No
		Aspect Safety Area	Yes	No
		Aspect Select	Yes	No
		Custom Aspect Ratio	Yes	No
		Guide Frame	Yes	No
		100% Marker	Yes	No
		User Box	Yes	No
		User Box Width	Yes	No
		User Box Height	Yes	No
		User Box H Position	Yes	No
		User Box V Position	Yes	No
	VF Setting	Brightness	Yes	No
		Color Mode	Yes	No
	Gamma Display Assist	Setting	Yes	No
	Peaking	Setting	Yes	No
		Peaking Level	Yes	No
		Color	Yes	No
	Zebra	Setting	Yes	No
		Zebra1 Level	Yes	No
		Zebra1 Aperture Level	Yes	No
		Zebra2 Level	Yes	No
	Focus Magnifier	Focus Mag Button Target	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Audio	Audio Input	CH1 Input Select	Yes	No
		CH2 Input Select	Yes	No
		CH3 Input Select	Yes	No
		CH4 Input Select	Yes	No
		INPUT1 MIC Reference	Yes	No
		INPUT2 MIC Reference	Yes	No
		Line Input Reference	Yes	No
		Reference Level	Yes	No
		CH1 Wind Filter	Yes	No
		CH2 Wind Filter	Yes	No
		CH3 Wind Filter	Yes	No
		CH4 Wind Filter	Yes	No
		CH3 Level Control	Yes	No
		CH4 Level Control	Yes	No
		CH3 Input Level	Yes	No
		CH4 Input Level	Yes	No
		Audio Input Level	Yes	No
		Limiter Mode	Yes	No
		CH1&2 AGC Mode	Yes	No
		CH3&4 AGC Mode	Yes	No
		AGC Spec	Yes	No
		1kHz Tone on Color Bars	Yes	No
		CH1 Level	Yes	No
		CH2 Level	Yes	No
		CH3 Level	Yes	No
		CH4 Level	Yes	No
	Audio Output	Monitor CH	Yes	No
		Volume	Yes	No
		Headphone Out	Yes	No
		Alarm Level	Yes	No
		HDMI Output CH	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Thumbnail	Display Clip Properties		–	–
	Set Clip Flag	Add OK	–	–
		Add NG	–	–
		Add KEEP	–	–
		Delete Clip Flag	–	–
	Lock/Unlock Clip	Select Clip	–	–
		Lock All Clips	–	–
		Unlock All Clips	–	–
	Delete Clip	Select Clip	–	–
		All Clips	–	–
	Transfer Clip	Select Clip	–	–
		All Clips	–	–
	Transfer Clip (Proxy)	Select Clip	–	–
		All Clips	–	–
	Filter Clips	OK	–	–
		NG	–	–
		KEEP	–	–
		None	–	–
		All	–	–
	Customize View	Thumbnail Caption	Yes	–
Technical	Color Bars	Setting	No	No
		Type	Yes	No
	ND Dial	CLEAR with Dial	Yes	No
	Tally	Front	Yes	No
		Rear	Yes	No
	HOLD Switch Setting	with Rec Button	Yes	No
		with Hand Grip Remote	Yes	No
		Handle HOLD Switch	Yes	No
	Touch Operation	Setting	Yes	No
	Rec Review	Setting	Yes	No
	Zoom	Zoom Type	Yes	No
	Handle Zoom	Setting	Yes	No
		High	Yes	No
		Low	Yes	No
	Menu Settings	Info. Disp. Mode Operation	Yes	No
		User Menu Only	Yes	No
		Menu Page On/Off	Yes	No
		User Menu with Lock	No	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Technical	Fan Control	Setting	Yes	No
	Lens	Zoom Ring Direction	Yes	No
		Shading Compensation	Yes	No
		Chroma Aberration Comp.	Yes	No
		Distortion Comp.	Yes	No
		Breathing Compensation	Yes	No
		Distance Display	Yes	No
		Zoom Position Display	Yes	No
	Video Light Set	Video Light Set	Yes	No
	APR	APR	–	–
	Camera Battery Alarm	Low Battery	Yes	No
		Battery Empty	Yes	No
	Camera DC IN Alarm	DC Low Voltage1	Yes	No
		DC Low Voltage2	Yes	No
Network	Network Setup	Setup for Mobile App	–	–
		Show Authentication	–	–
		Edit Authentication		
		User Name	No	No
		Input Password	No	No
		Generate Password	No	No
	Wireless LAN	Setting	Yes	No
		Channel	–	–
		Camera SSID & Password	–	–
		Regenerate Password	–	–
		Camera Remote Control	Yes	No
		Connected Network		
		SSID	–	–
		Security	–	–
		Password	–	–
		DHCP	–	–
		IP Address	–	–
		Subnet Mask	–	–
		Gateway	–	–
		DNS Auto	–	–
		Primary DNS Server	–	–
		Secondary DNS Server	–	–

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Network	Wireless LAN	Scan Networks		
		SSID	–	–
		Security	–	–
		Password	No	No
		DHCP	Yes	No
		IP Address	Yes	No
		Subnet Mask	Yes	No
		Gateway	Yes	No
		DNS Auto	Yes	No
		Primary DNS Server	Yes	No
		Secondary DNS Server	Yes	No
		WPS	–	–
		Manual Register		
		SSID	Yes	No
		Security	Yes	No
		Password	No	No
		DHCP	Yes	No
		IP Address	Yes	No
		Subnet Mask	Yes	No
		Gateway	Yes	No
		DNS Auto	Yes	No
		Primary DNS Server	Yes	No
		Secondary DNS Server	Yes	No
		IP Address	–	–
		Subnet Mask	–	–
		MAC Address	–	–

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Network	Wired LAN	Setting	Yes	No
		Camera Remote Control	Yes	No
		Detail Settings		
		DHCP	Yes	No
		IP Address	Yes	No
		Subnet Mask	Yes	No
		Gateway	Yes	No
		DNS Auto	Yes	No
		Primary DNS Server	Yes	No
		Secondary DNS Server	Yes	No
		IP Address	–	–
		Subnet Mask	–	–
		MAC Address	–	–
	USB Tethering	Setting	Yes	No
		Camera Remote Control	Yes	No
		IP Address	–	–
		Subnet Mask	–	–
	File Transfer	Auto Upload	Yes	No
		Auto Upload (Proxy)	Yes	No
		Default Upload Server	Yes	No
		Clear Completed Jobs	–	–
		Clear All Jobs	–	–
		View Job List	–	–
		Server Settings1/Server Settings2/Server Settings3		
		Display Name	Yes	No
		Service	Yes	No
		Host Name	Yes	No
		Port	Yes	No
		User Name	No	No
		Password	No	No
		Passive Mode	Yes	No
		Destination Directory	Yes	No
		Using Secure Protocol	Yes	No
		Root Certificate	–	–
		Root Certificate Status	–	–
		Reset	–	–
	Network Reset	Reset	–	–

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Maintenance	Language	Select	Yes	No
	Clock Set	Time Zone	Yes	No
		Date Mode	Yes	No
		12h/24h	Yes	No
		Date	No	No
		Time	No	No
	All Reset	Reset	–	–
		Reset without Network	–	–
		Reset to Factory Defaults	–	–
	Hours Meter	Hours(System)	–	–
		Hours(Reset)	–	–
		Reset	–	–
	Version	Version Number	–	–
		Version Up	–	–
		Lens Version Number	–	–

Items Configured by Assignable Buttons

Yes: Item is saved.
No: Item is not saved.
–: Not saved (temporary setting)

Assignable button selection	All File	Scene File
ND Filter Position	Yes	No
Auto Iris	Yes	No
ATW	Yes	No
Focus Setting	Yes	No
Display	Yes	–
VF Adjust	Yes	–

Items Configured by the Assignable Dial

Yes: Item is saved.
No: Item is not saved.
–: Not saved (temporary setting)

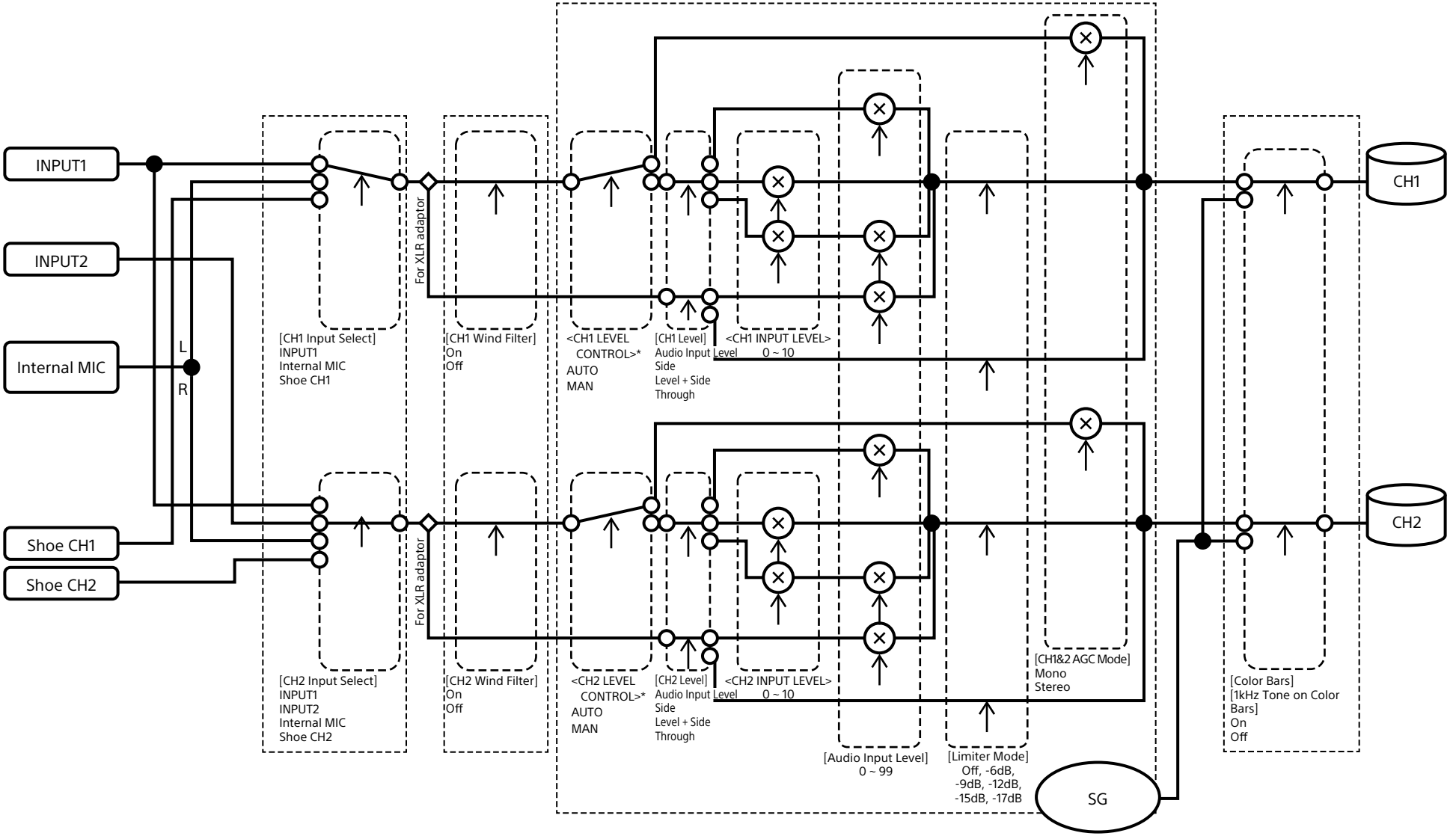
Assignable dial selection	All File	Scene File
IRIS	Yes	No
ND Filter	Yes	No
Audio Input Level	Yes	No

Block Diagrams

See related items in “Setting the Audio to Record” (page 52) and “User Menu” (page 88).

Audio Input (CH1&CH2)

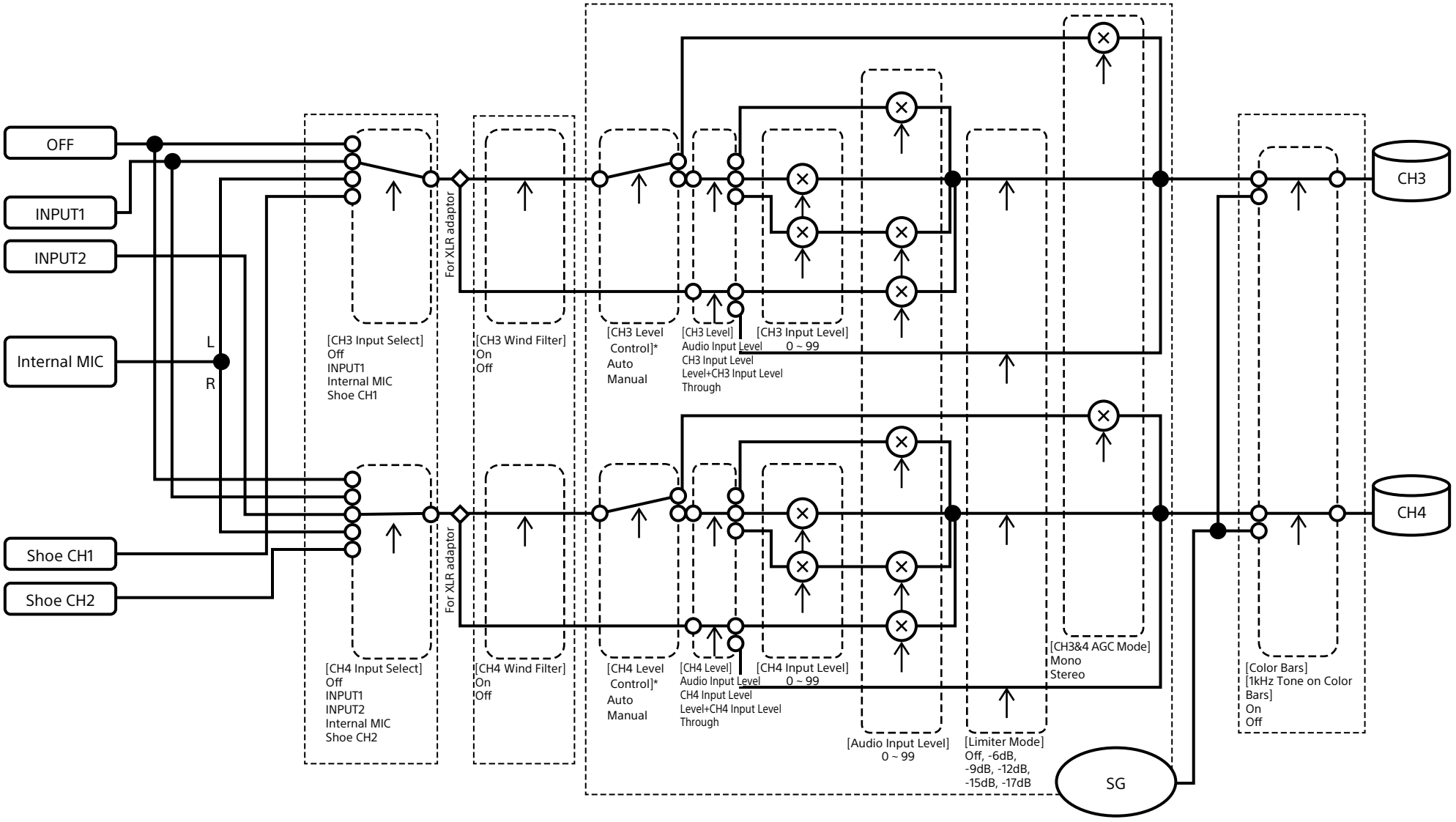
The following shows the block diagram with the handle attached.



* Set to Manual when audio is input from XLR adaptor.

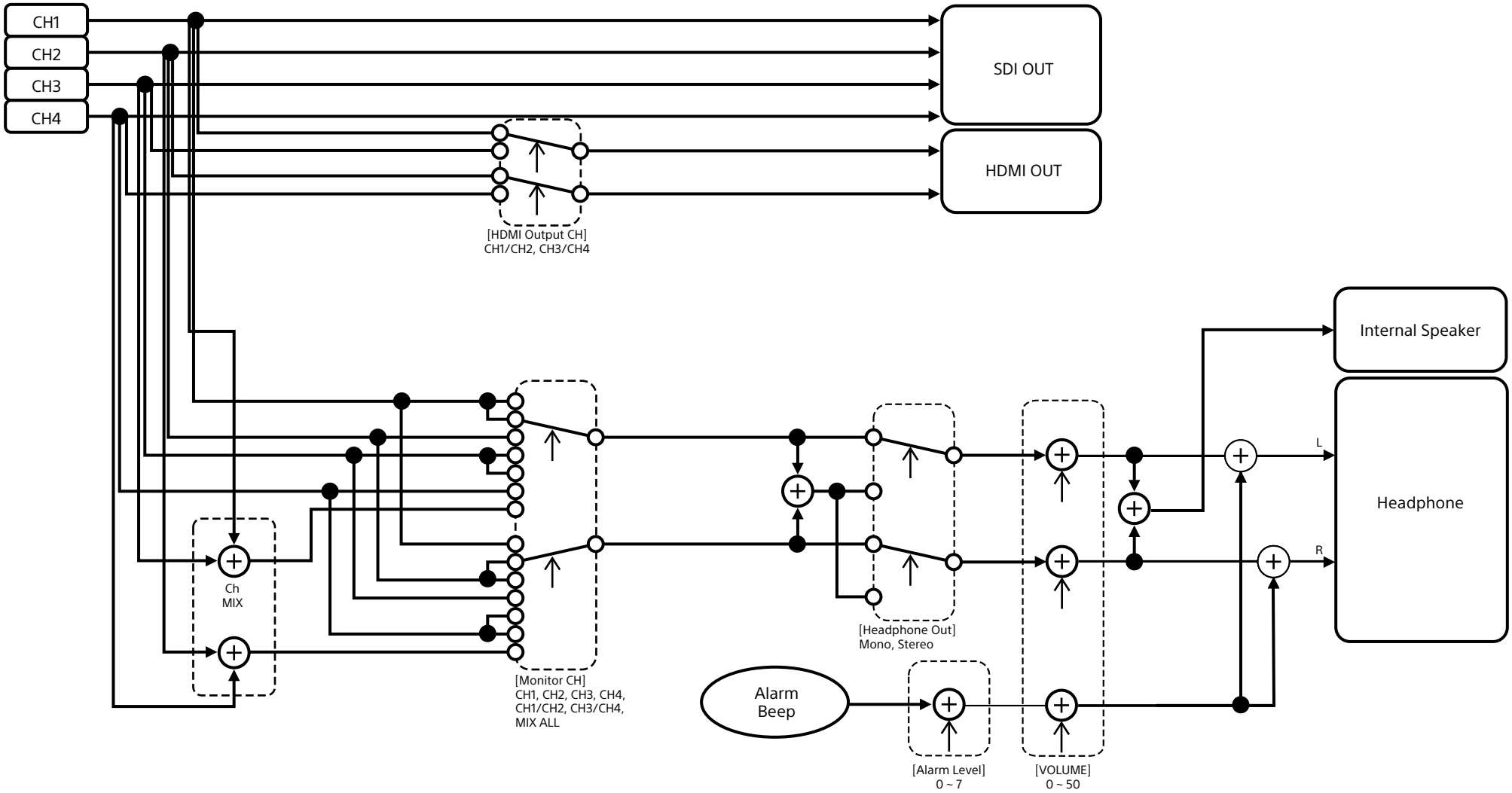
Audio Input (CH3&CH4)

The following shows the block diagram with the handle attached.



* Set to Manual when audio is input from XLR adaptor.

Audio Output



Updating E-mount Lens Software

You can update the software of an E-mount lens using the camcorder.
Refer to the web site for the lens for lenses that can be updated and the corresponding software.

Checking the Version

1 Attach an E-mount lens to the camcorder (page 27).

2 Select Version in the Maintenance menu of the full menu to display Lens Version Number (page 124).
The software version number of the E-mount lens is displayed on the side.

Updating Software

Set the camcorder to mass storage mode (page 136).
Update the software following the procedure supplied with the lens software.

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Licenses (in English) are recorded in the internal memory of your product.
Establish a Mass Storage connection between the product and a computer to read licenses in the "PMHOME" - "LICENSE" folder.

Specifications

General

Mass
- Approx. 890 g (1 lb 15 oz) (main body only)
- Approx. 2.59 kg (5 lb 11 oz) (including SEL24105G lens, lens hood, battery (BP-U35), viewfinder, handle, grip)

Dimensions
- See page 164.

Power requirements
- 19.5 V DC (18.0 V to 20.5 V)

Power consumption
- Approx. 18.0 W (body, lens, XAVC-I QFHD 59.94P recording, viewfinder on, no external device connected)
- Approx. 36.0 W (body, lens, XAVC-I QFHD 59.94P recording (S&Q 120 fps), viewfinder on, HDMI, SDI, external device connected)

Operating temperature
- 0 °C to 40 °C (32 °F to 104 °F)

Storage temperature
- –20 °C to +60 °C (–4 °F to +140 °F)

Continuous operating time
- Approx. 105 minutes (using BP-U35) (body, lens, XAVC-I QFHD 59.94P recording, viewfinder on, no external device connected)

Recording format (video)
- XAVC Intra
  - XAVC-I 4K/QFHD mode: VBR, 600 Mbps (max) bit rate, MPEG-4 AVC/H.264
  - XAVC-I HD mode: CBG, 223 Mbps (max) bit rate, MPEG-4 AVC/H.264
- XAVC Long
  - XAVC-L QFHD mode: VBR, 150 Mbps (max) bit rate, MPEG-4 H.264/AVC
  - XAVC-L HD 50 mode: VBR, 50 Mbps (max) bit rate, MPEG-4 H.264/AVC
  - XAVC-L HD 35 mode: VBR, 35 Mbps (max) bit rate, MPEG-4 H.264/AVC

Recording format (audio)
- LPCM 24-bit, 48 kHz, 4-channel

Recording frame rate
- XAVC Intra
  - XAVC-I 4K mode: 4096×2160/59.94P, 50P, 29.97P, 25P, 24P, 23.98P
  - XAVC-I QFHD mode: 3840×2160/59.94P, 50P, 29.97P, 25P, 23.98P
  - XAVC-I HD mode: 1920×1080/59.94P, 50P, 29.97P, 25P, 23.98P
- XAVC Long
  - XAVC-L QFHD mode: 3840×2160/59.94P, 50P, 29.97P, 25P, 23.98P
  - XAVC-L HD 50 mode: 1920×1080/59.94P, 50P, 29.97P, 25P, 23.98P
  - XAVC-L HD 35 mode: 1920×1080/59.94P, 50P, 29.97P, 25P, 23.98P

Recording/playback time
- XAVC Intra
  - XAVC-I QFHD mode: 59.94P, Approx. 30 minutes (using CEA-G160T)
  - XAVC-I HD mode: 59.94P, Approx. 75 minutes (using CEA-G160T)
- XAVC Long
  - XAVC-L QFHD mode: 59.94P, Approx. 110 minutes (using CEA-G160T)
  - XAVC-L HD 50 mode: 59.94P, Approx. 130 minutes (using CEA-G80T)
  - XAVC-L HD 35 mode: 59.94P, Approx. 175 minutes (using CEA-G80T)

[Note]
The recording/playback time may vary due to usage conditions and memory characteristics. The recording and playback times are for a continuous recording as a single clip. The actual times may be shorter, depending on the number of clips recorded.

Camera Section

Imaging device (type)
- 35 mm full-frame equivalent, single-chip CMOS image sensor

Number of pixels
- 12.9M (total)
- 10.2M (effective)

Auto focus
- Detection method: Phase detection/contrast detection

Internal ND filters
- CLEAR: OFF
- 1: 1/4ND
- 2: 1/16ND
- 3: 1/64ND
- Linearly variable ND: 1/4ND to 1/128ND

ISO sensitivity
- ISO 800/12800 (Cine EI Quick/Cine EI, D55 Light source)

Lens mount
- E-mount

Latitude
- 15+ stops

Shutter speed
- 64F to 1/8000 sec. (23.98P)

Shutter angle
- 5.6° to 360°, 2 to 64 frames

Slow & Quick Motion
- XAVC QFHD: 1 fps to 120 fps
- XAVC HD: 1 fps to 240 fps
- XAVC 4K: 1 fps to 60 fps
- XAVC HD (S35): 1 fps to 120 fps

White balance
- 2000 K to 15000 K

Gain
- –3 dB to +30 dB (1 dB increments)

Base look
- S-Cinetone, Standard, Still, ITU709, 709tone, s709, 709(800%), S-Log3, HLG Live, HLG Mild, HLG Natural

Audio Section

Sampling frequency
    48 kHz
Quantization
    24-bit
Frequency response
    XLR input MIC mode: 20 Hz to 20 kHz (±3 dB or less)
    XLR input LINE mode: 20 Hz to 20 kHz (±3 dB or less)
Dynamic range
    XLR input MIC mode: 80 dB (Typical)
    XLR input LINE mode: 90 dB (Typical)
Distortion
    XLR input MIC mode: 0.08% or lower (–40 dBu input level)
    XLR input LINE mode: 0.08% or lower (+14 dBu input level)
Built-in speaker
    Monaural
Internal microphone
    Monaural
Handle internal microphone
    Omnidirectional stereo electret condenser microphone

[Note]
Only the handle internal microphone becomes active when the handle is attached.

Input/Output Section

Inputs

INPUT 1/2:
    XLR type, 3-pin, female
    LINE / MIC / MIC+48V switchable
    MIC: Reference –30 dBu to –80 dBu
TC IN:
    BNC type

Outputs

SDI OUT:
    BNC type, 12G-SDI, 6G-SDI, 3G-SDI (Level A/B), HD-SDI
Headphones (stereo mini jack):
    –16 dBu (reference level output, maximum monitor volume, 16 Ω load)
HDMI:
    Type A, 19-pin
TC OUT:
    BNC type

Other

DC IN:
    EIAJ compliant, 18 V to 20.5 V DC
Multi-interface shoe:
    Dedicated (21-pin)
REMOTE:
    2.5 mm 3-pole sub-mini type
Grip remote control connector:
    3.5 mm 4-pole stereo mini jack (supplied connector for grip remote control)
USB-C:
    USB 3.2 Gen 1
USB/multi:
    USB 2.0 standard compliant, micro B type for mass storage (1)
VF:
    Dedicated (40-pin)

Display Section

Viewfinder (LCD)

Screen size
    8.8 cm (3.5 inch) diagonal
Aspect ratio
    16:9
Number of pixels
    1280 (H) × 720 (V)

Media Slot Section

CFexpress Type A/SD card slot (2)

Wireless LAN

Supported standards
    IEEE 802.11 a/b/g/n/ac (ILME-FX6V/VK)
    IEEE 802.11 b/g/n (ILME-FX6T/TK)
Frequency band
    2.4 GHz
    5 GHz (ILME-FX6V/VK only)
Supported security protocols
    WPA2-PSK (AES) / WPA3-SAE
Connection method
    Wi-Fi Protected Setup™ (WPS)/Manual
Access method
    Infrastructure mode

Battery charger (BC-CU1)

Mass
    Approx. 60 g (2.1 oz)
Dimensions
    Approx. 57 × 26 × 101 mm ($2\,^1/_4 \times 1\,^1/_{16} \times 4$ in) (width / height / depth)
Input
    19.5 V DC, 26 W
Output
    16.4 V DC, 1.4 A
Operating temperature
    0 °C to 40 °C (32 °F to 104 °F)
Storage temperature
    –20 °C to +60 °C (–4 °F to +140 °F)

Supplied Accessories

AC adaptor (1)
Power cord (1)
Battery charger (1)
Battery pack (1)
Handle (1)
LCD monitor (1)
USB-C cable (1)
Grip remote control (1)
LCD hood (1)
Cold shoe kit (1)
(Cold shoe (1), shoe spring (1), screws (4))
Lens mount cap (1)
Handle connector protective cap (1)
Before Using This Unit (1)
Warranty booklet (1)

Design and specifications are subject to change without notice.

Notes

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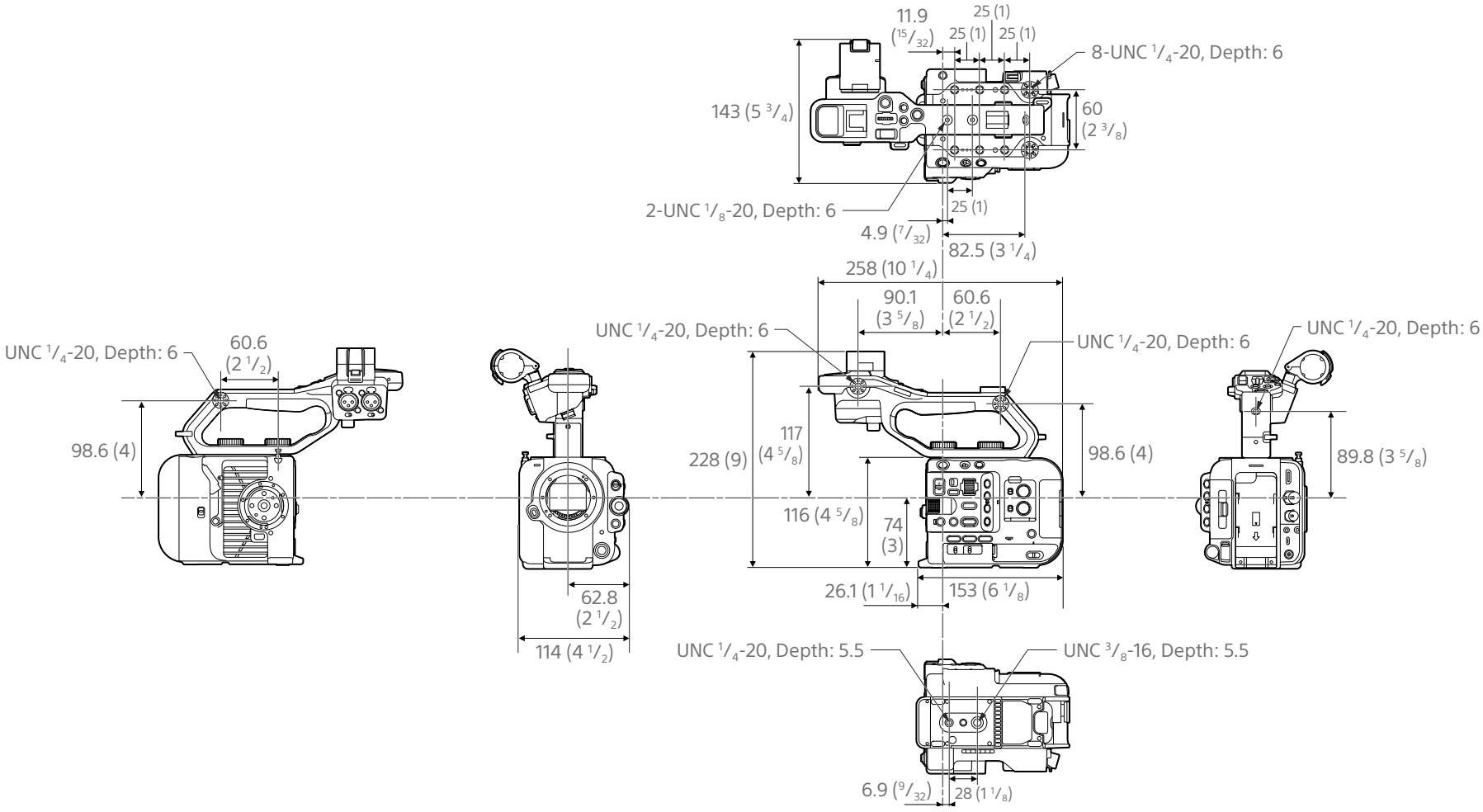
External Dimensions

Unit: mm (inches)



Dimensions are approximate values.

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