SONY

5-011-867-**14** (1)
GB

Solid-State Memory Camcorder

Operating Instructions

PXW-FX9V/PXW-FX9VK
PXW-FX9T/PXW-FX9TK

Software Version 2.1

XDCAM XQD HDMI
MPEG HD422 Exmor R CMOS Sensor XAVC

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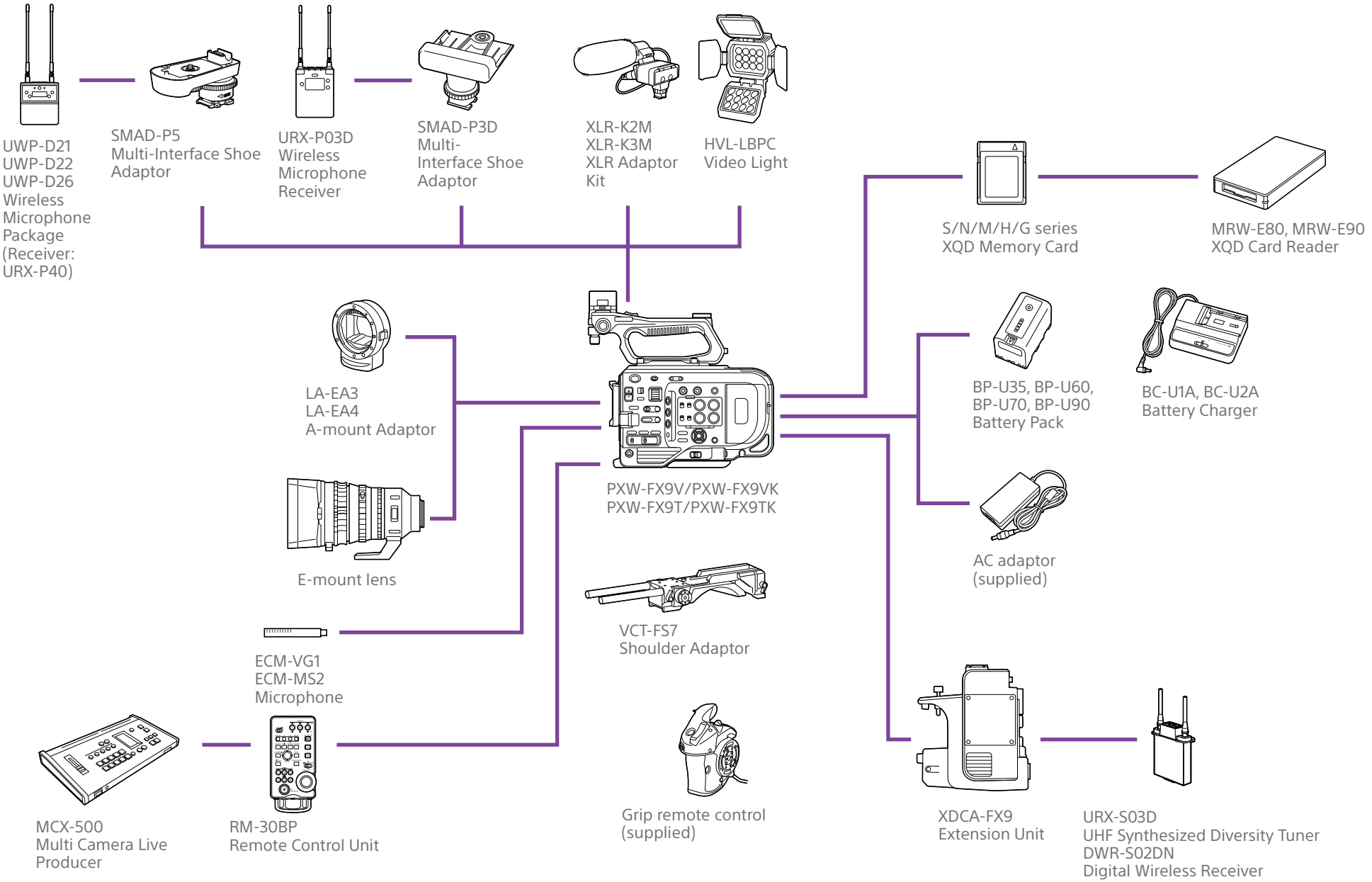
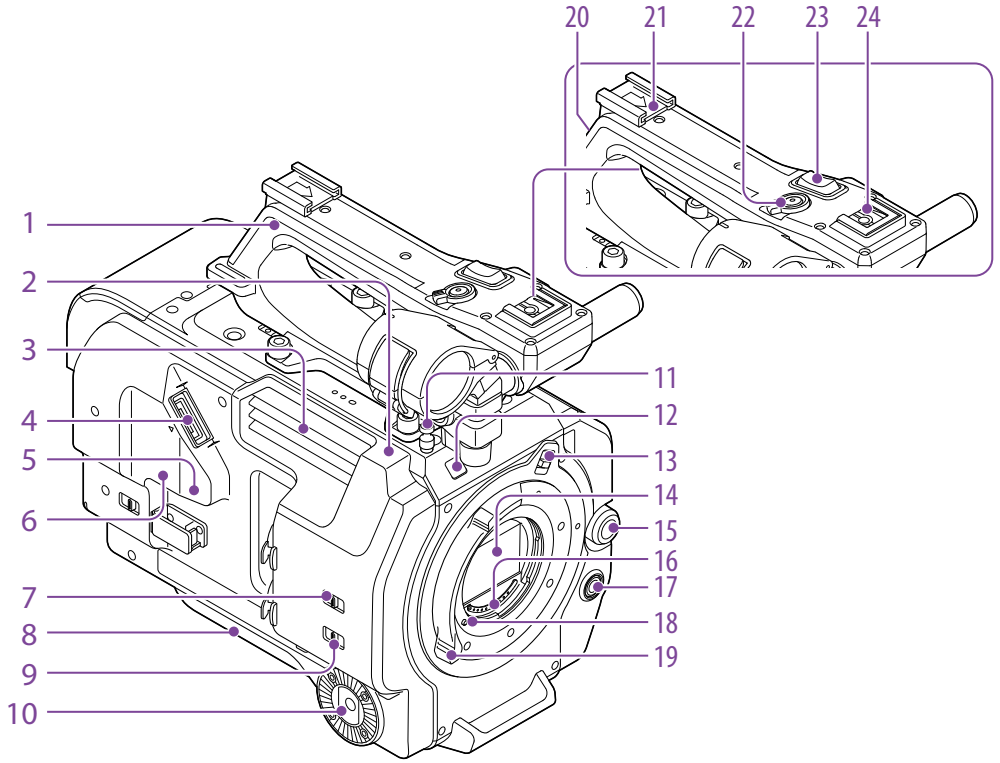
System Configuration



Location and Function of Parts

Left Side, Front Side, and Handle



1. **Handle (page 5)**
2. **Wi-Fi antenna (page 54)**
3. **Air outlet**

[Note]

Do not cover the air outlet.

4. **Viewfinder connector (page 19)**
5. **REMOTE connector**

Connect to general-purpose LANC jack accessory.

6. **USB/multi connector (page 22)**
7. **INPUT1 (LINE/MIC/MIC+48V) switch (page 42)**
8. **Shoulder pad (page 23)**
9. **INPUT2 (LINE/MIC/MIC+48V) switch (page 42)**
10. **Grip attachment (page 22)**
11. **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.

12. **Recording/tally lamp (front) (page 31)**

Flashes when the remaining capacity on the recording media or battery is low.

13. **Lens lock ring stopper (page 21)**
14. **Image sensor**
15. **Multi-function dial (page 44)**

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.

16. **Lens signal contacts**

Connect an E-mount lens.

17. **WB SET (white balance set) button (page 41)**
18. **Lens lock pin (page 21)**
19. **Lens lock ring (page 21)**
20. **GPS module antenna**

The GPS antenna and peripheral circuits are built-in.

21. **Accessory shoe (page 4)**
22. **Handle record START/STOP button**

The record button cannot be operated when the lock lever is in the lock position.

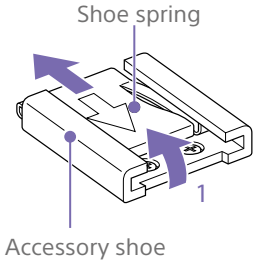
23. **Handle zoom lever (page 106)**
24. **Multi-interface shoe**

Multi Interface Shoe

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

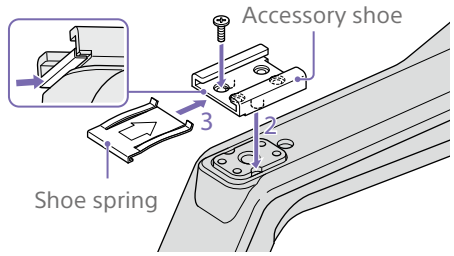
Attaching the accessory shoe

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.

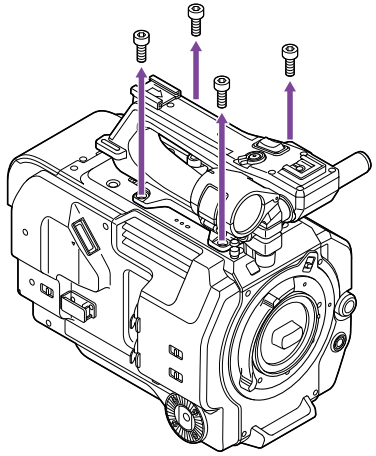


Removing the accessory shoe

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

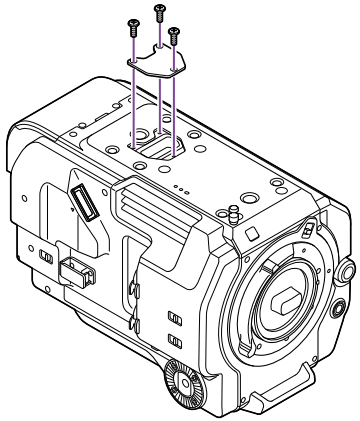
Removing the handle

Remove the four handle attachment screws, and remove the handle from the camcorder.



Attaching the handle connector protective cap (supplied)

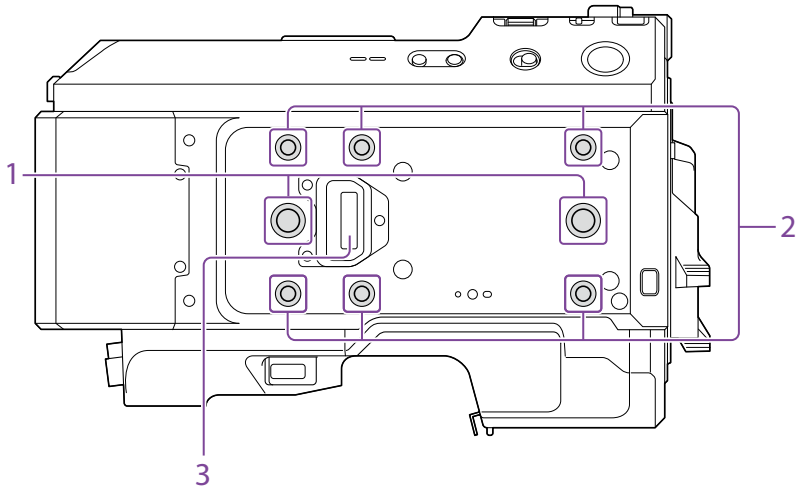
When using the camcorder with the handle removed, protect the connector using the supplied protective cap.



Protecting the connector terminals

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

Top Side

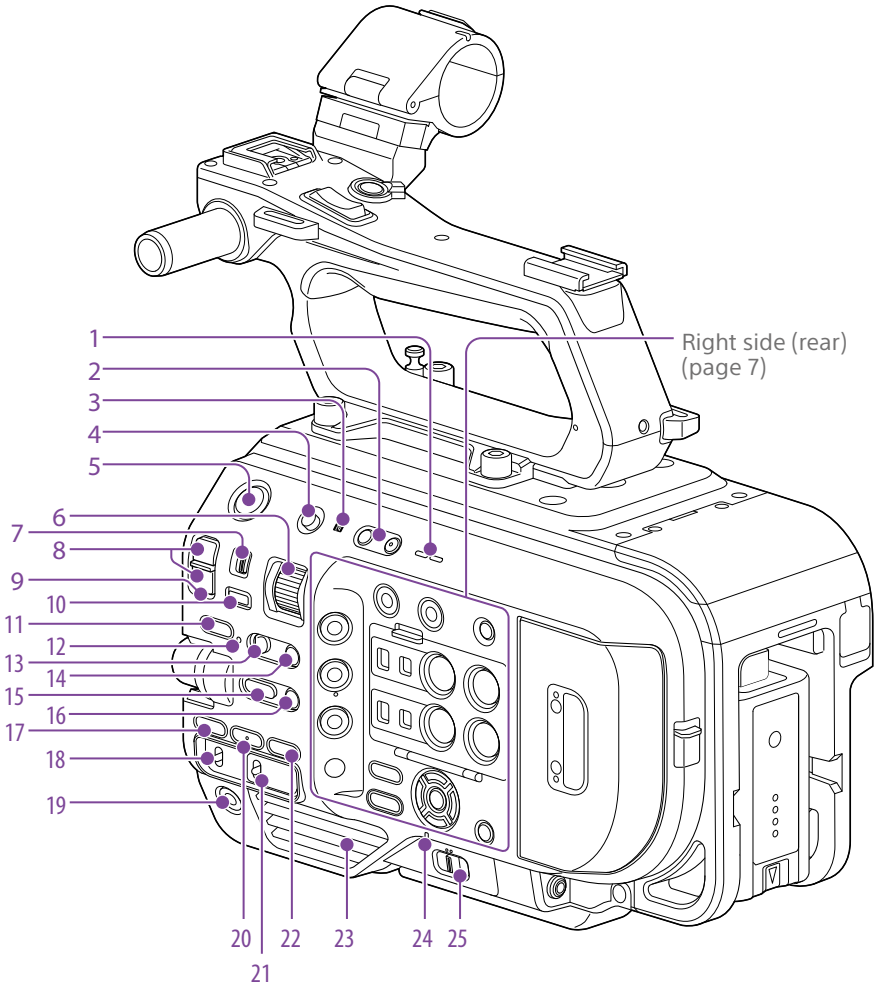


1. **Extension screw holes (3/8 inch)**
Compatible with 3/8-16 UNC screws (length of 10.0 mm or less).

2. **Extension screw holes (1/4 inch)**
Compatible with 1/4-20 UNC screws (length of 7.0 mm or less).

3. **Handle connector**

Right Side (Front/Top/Bottom)



1. **Built-in speaker (page 31)**

2. **VOLUME (monitor volume adjust) buttons**
Adjusts the monitor volume and alarm volume.

3. **(N-Mark)**
- Touch a smartphone equipped with the NFC function against the unit to establish a wireless connection (page 54).
  Some smartphones that support wireless pay systems may not support NFC. For details, refer to the operation manual for the smartphone.
- NFC (Near Field Communication) is an international communications protocol for wireless communication between objects in close proximity.

4. **HOLD switch (page 106)**
Disables operation of the unit (hold state).

5. **Record START/STOP button/indicator (page 31)**

6. **ND VARIABLE dial (page 39)**

7. **ND PRESET/VARIABLE switch (page 39)**

8. **ND FILTER POSITION up/down buttons (page 39)**

9. **ND CLEAR indicator (page 39)**

10. **ND VARIABLE AUTO button (page 39)**

11. **STATUS button (page 14)**
Displays the main settings of the unit. The settings of some items can be changed.

12. **FOCUS AUTO indicator (page 33)**

13. **FOCUS switch (page 33)**

14. **PUSH AUTO FOCUS button (page 36)**

15. **IRIS function button (page 38)**

16. **PUSH AUTO IRIS button (page 38)**

17. **ISO/GAIN function button (page 38)**

18. **ISO/GAIN (gain select) switch (page 38)**

19. **ASSIGN (assignable) 9 button (page 44)**

20. **WHT BAL (white balance) function button (page 41)**

21. **WHT BAL (white balance memory select) switch (page 41)**

22. **SHUTTER function button (page 39)**

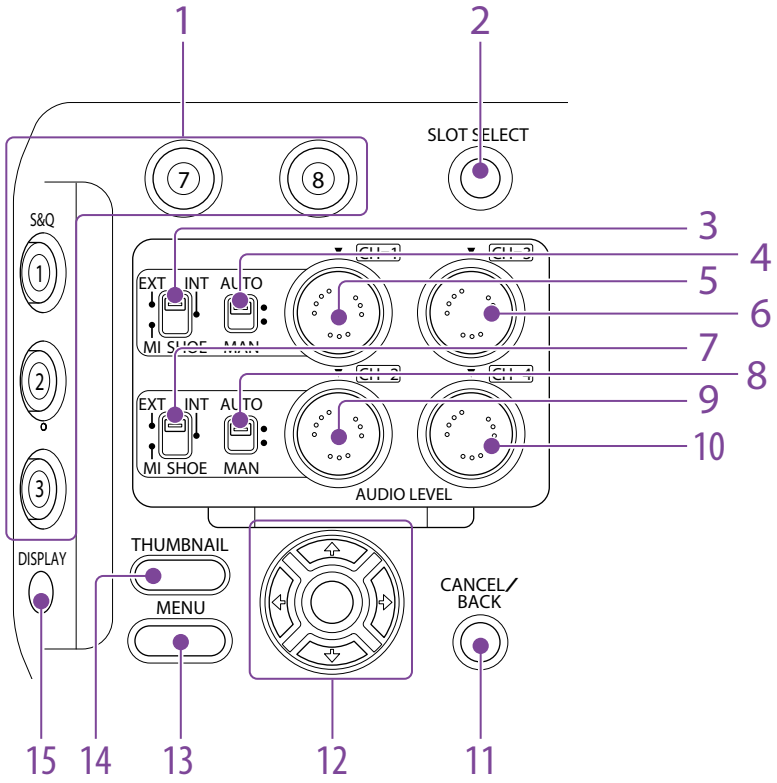
23. **Air inlet**

[Note]
Do not cover the air inlet.

24. **POWER indicator (page 31)**

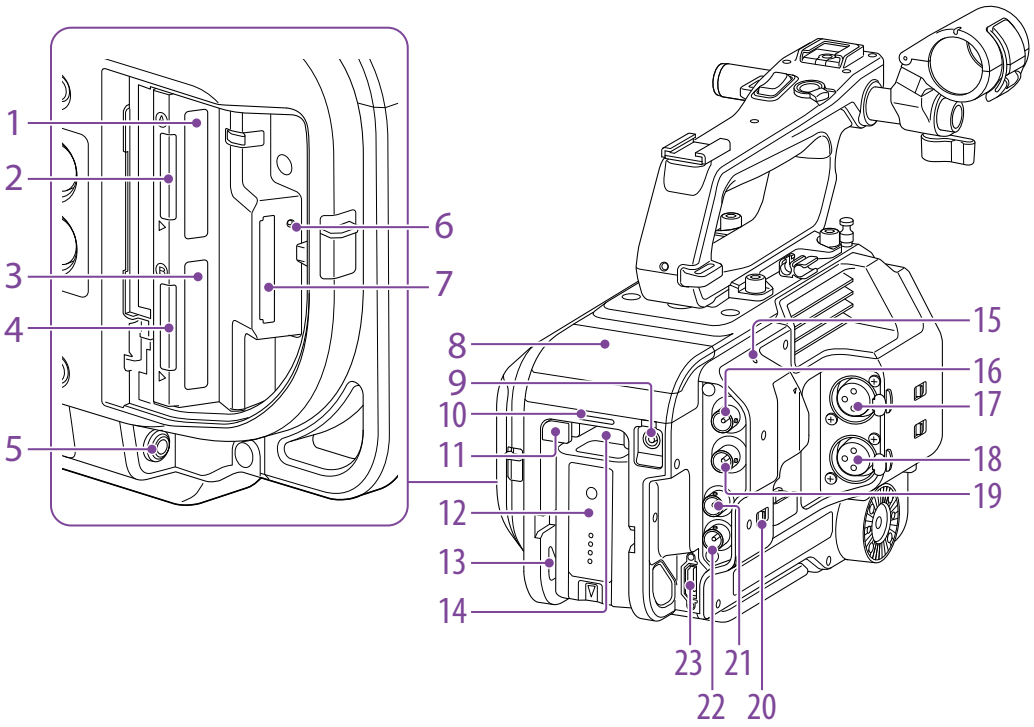
25. **POWER switch (page 31)**

Right Side (Rear)



1. ASSIGN (assignable) 1 to 3, 7 to 8 buttons (page 44)
2. SLOT SELECT (XQD memory card select) button (page 31)
3. CH1 INPUT select switch (page 42)
4. CH1 (AUTO/MAN) switch (page 42)
5. AUDIO LEVEL (CH1) dial (page 42)
6. AUDIO LEVEL (CH3) dial (page 42)
7. CH2 INPUT select switch (page 42)
8. CH2 (AUTO/MAN) switch (page 42)
9. AUDIO LEVEL (CH2) dial (page 42)
10. AUDIO LEVEL (CH4) dial (page 42)
11. CANCEL/BACK button (page 69)
12. Arrows (↑/↓/←/→) and SET button (page 69)
13. MENU button (page 71)
14. THUMBNAIL button (page 68)
15. DISPLAY (screen display) button (page 11)

Card Slot, Rear Side, and Terminals



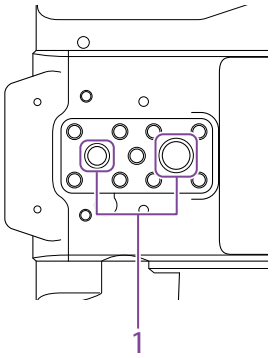
1. XQD card slot A (page 27)
2. XQD (A) access indicator (page 28)
3. XQD card slot B (page 28)
4. XQD (B) access indicator (page 28)
5. Headphone jack (page 31)
6. SD card access indicator (page 30)
7. UTILITY SD/MS card slot (page 30)
8. Extension unit connector (internal) (page 23)
9. DC IN connector (page 18)
10. Recording/tally lamp (rear) (page 31)
11. BATT RELEASE button (page 17)
12. Battery (page 17)
13. Battery pack attachment (page 17)
14. Air inlet

[Note]

Do not cover the air inlet.

15. Internal microphone (page 42)
Narration microphone for recording ambient sound.
16. SDI OUT 1 connector (page 117)
17. INPUT1 (audio input 1) connector (page 42)
18. INPUT2 (audio input 2) connector (page 42)
19. SDI OUT 2 connector (page 117)
20. IN/OUT select switch (page 118)
21. TC IN/TC OUT (timecode input/output) connector (page 118)
22. GENLOCK IN (genlock input)/REF OUT (sync signal output) connector (page 118)
23. HDMI OUT connector (page 117)

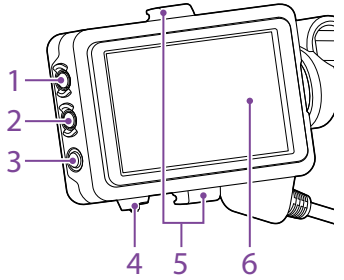
Bottom Side



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

Viewfinder

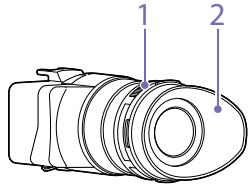
For details about attaching the viewfinder (supplied), see page 19.



1. PEAKING button
2. ZEBRA button
3. ASSIGN (assignable) 10 button (page 44)
4. MIRROR switch
5. Eyepiece attachment hooks
6. Touch panel
Touch operations can be disabled using an assignable button or using the menu (page 10).

Eyepiece

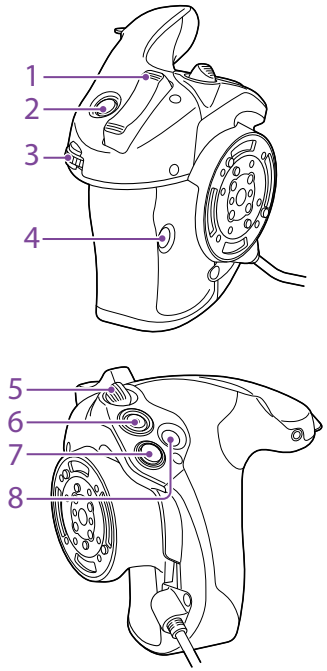
For details about attaching the eyepiece (supplied), see page 21.



1. Diopter adjustment knob
2. Eyecup

Grip Remote Control

For details about attaching the grip remote control (supplied), see page 22.

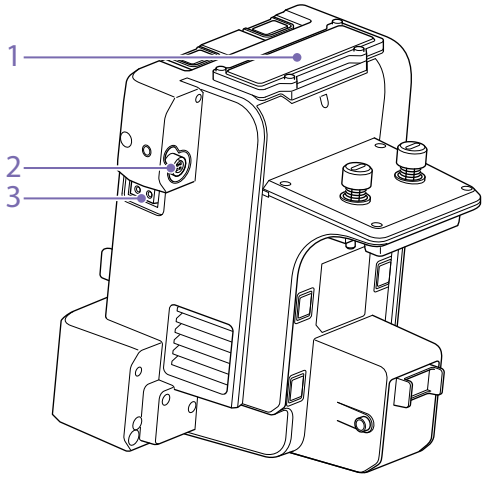


1. **Zoom lever**
2. **ASSIGN (assignable) 4 button**
3. **Assignable dial**
4. **ASSIGN (assignable) 6 button**
5. **Grip rotation lever**
6. **Record START/STOP button**
7. **Multi selector (8-way D-pad and SET button)**
8. **ASSIGN (assignable) 5 button**

XDCA-FX9 Extension Unit (Option)

For details about attaching an XDCA-FX9 Extension Unit (option), see page 23.

Front

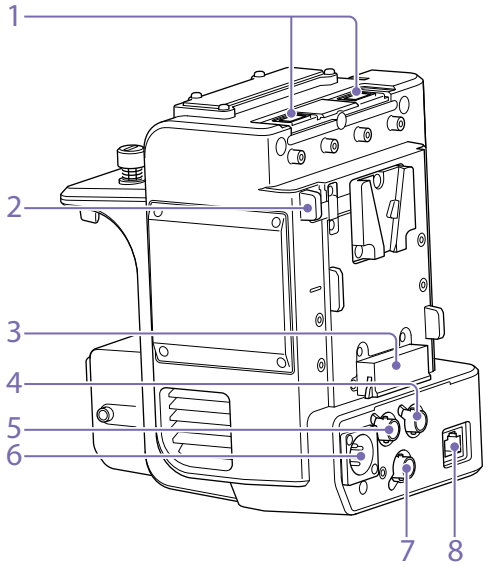


1. **Wireless receiver insertion slot**
Attach a portable wireless tuner when using a wireless microphone.

2. **DC OUT connector (4-pin round type)**
12 V DC power output connector.

3. **LIGHT connector (2-pin)**
12 V DC power output connector.

Rear



1. **USB connectors (type A)**
2. **Battery release lever**
3. **Battery attachment terminal**
4. **TC OUT connector (BNC type)**
5. **REF OUT connector (BNC type)**
6. **DC IN connector (XLR type, 4-pin)**
7. **RAW OUT connector (BNC type)**
8. **LAN connector**

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
  - Operation in water

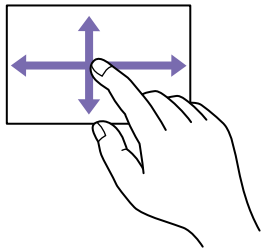
Touch Panel Gestures

Tap

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

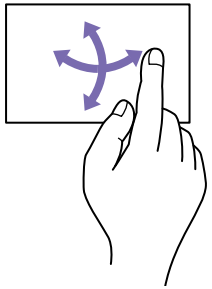
Drag

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.

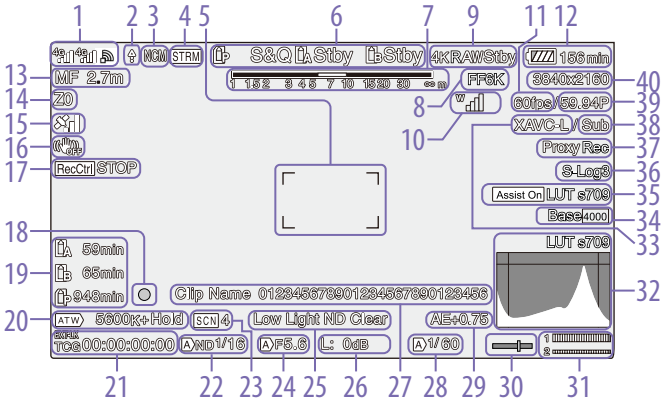
Configuring the Touch Panel

Touch panel operation can be enabled/disabled using Touch Operation (page 74) in the Technical menu.

Screen Display

During shooting (recording/standby) and playback, the camcorder status and settings are superimposed on the image displayed in the viewfinder.
You can show/hide the information using the DISPLAY button.
You can also select to show/hide each item independently (page 99).

Information Displayed on the Screen While Shooting



1. Network status indicator (page 13)
Displays the network connection status as an icon.

2. Upload indicator/remaining files indicator (page 60)

3. Network client mode status indicator (page 13)
Displays the connection status in network client mode.

4. Streaming status indicator

5. Focus area indicator (page 33)
Displays the focus area for auto focus.

6. Recording mode, slot A/B, Interval Rec recording interval indicator (page 46)

Display	Meaning
●Rec	Recording
Stby	Recording standby

7. Depth-of-field indicator

8. Imager scan mode indicator (page 26)
A [!] mark is displayed if there is a mismatch between the image circle size of the lens and the effective picture size imager scan mode setting.

9. RAW output operation status indicator (page 53)
Displays the output status of the RAW signal.

10. UWP-D series status indicator (page 13)
Displays the RF level signal strength as an icon when a UWP-D series device is connected to an MI shoe configured for digital audio transfer.

11. Slow & Quick Motion shooting frame rate indicator (page 45)

12. Remaining battery capacity/DC IN voltage indicator (page 17)

13. Focus mode indicator (page 37)

Meaning	Display
Focus Hold mode	Focus Hold
MF mode	MF
AF mode	AF
Face/eye detection AF (AF/ /Only/ /)	
Face/eye detection icon	
Face/eye detection AF icon	Only
Registered face icon	
AF paused icon during face/eye detection AF[1)]	[!]

1) Displayed when there is no registered face and a face is not detected, or when there is a registered face and the registered face is not detected.

14. Zoom position indicator
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 107).

15. GPS status indicator (page 50)
Displays the GPS status.

16. Image stabilization mode indicator

17. SDI output/HDMI output Rec Control status indicator (page 117)
Displays the output status of the REC control signal.

18. Focus indicator (page 36)

19. Remaining media capacity indicator

20. White balance mode indicator

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

21. Timecode external lock indicator/time data display (page 31)
Displays "EXT-LK" when locked to the timecode of an external device.

22. ND filter indicator (page 39)

23. Scene file indicator (page 115)

24. Iris indicator
Displays the iris position (F value or T value) if a lens that supports iris setting display is attached.

25. Video level warning indicator

26. Gain indicator (page 38)
Displayed as an EI value when Base Setting >Shooting Mode (page 86) in the Project menu is set to Cine EI.

Display	Meaning
A	Auto mode
H	Preset H mode
M	Preset M mode
L	Preset L mode
	Temporary adjustment mode

27. Clip name display (page 68)

28. Shutter indicator (page 39)

29. AE mode/AE level indicator (page 38)

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

31. **Audio level meter**
Displays the audio level of CH1 and CH2. CH3 and CH4 can be monitored on the status screen.

32. **Video signal monitor (page 49)**
Displays a waveform, vectorscope, and histogram.
The monitor LUT type of the signal being monitored is displayed when Base Setting >Shooting Mode (page 86) in the Project menu is set to Cine EI.

33. **Recording format (codec) indicator (page 86)**
Displays the name of the format for recording on XQD memory cards.

34. **Base Sensitivity indicator/Base ISO indicator (page 38)**
When Base Setting >Shooting Mode (page 86) in the Project menu is set to SDR or HDR, it displays the base sensitivity set using ISO/Gain/EI >Base Sensitivity in the Shooting menu.
When Base Setting >Shooting Mode (page 86) in the Project menu is set to Cine EI, it displays the base ISO sensitivity set using ISO/Gain/EI >Base ISO in the Shooting menu.

35. **Gamma display assist/monitor LUT 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 44).
Displays the monitor LUT setting when Base Setting >Shooting Mode (page 86) in the Project menu is set to Cine EI (page 84).

36. **Gamma indicator (page 93)**
Displays the gamma setting of the picture recorded on XQD memory cards.

37. **Proxy status indicator**

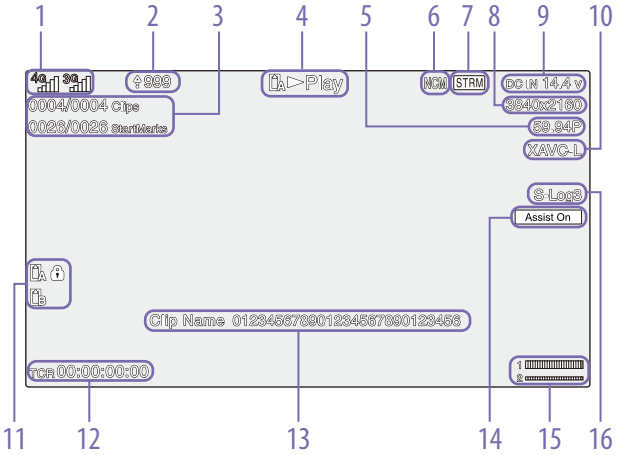
38. **4K & HD (Sub) recording indicator**

39. **Recording format (frame rate and scan method) indicator**

40. **Recording format (picture size) indicator (page 86)**
Displays the picture size for recording on XQD memory cards.

Information Displayed on the Screen During Playback

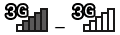
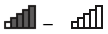
The following information is superimposed on the playback picture.



1. **Network status indicator**
2. **Upload indicator/remaining files indicator**
3. **Clip number/total number of clips**
4. **Playback status indicator**
5. **Playback format (frame rate and scan method) indicator**
6. **Network client mode status indicator**
7. **Streaming status indicator**
8. **Playback format (picture size) indicator**
9. **Remaining battery capacity/DC IN voltage indicator**
10. **Playback format (codec) indicator**
11. **Media indicator**
A icon appears if the memory card is write-protected.
12. **Time data display**
13. **Clip name display**
14. **Gamma display assist indicator**
15. **Audio level meter**
Displays the recording audio level.
16. **Gamma indicator**

Icon Display

Network connection icon display

Network mode	Connection status	Icon
Access point mode	Operating as an access point	
	Access point operation error	
Station mode	Wi-Fi connection Icon changes according to the signal strength (4 steps)	
	Wi-Fi disconnected (including when establishing connection)	
	Wi-Fi connection error	
Modem [1)]	Icon changes according to the 3G/4G connection signal strength (5 steps) Icon for signal strength 3 is displayed for modems that do not report signal strength.	3G connection  4G connection Network connection where 3G/4G cannot be distinguished 
	3G/4G disconnected (including when establishing connection)	
	3G/4G connection error	

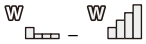
1) Two modems can be connected when an XDCA-FX9 (option) is attached to the camcorder. When two modems are connected, the icons change according to the modem status as follows.

Connection status	Icon
Two modems connected, only modem 1 in use	
Two modems connected, only modem 2 in use	
Two modems connected, both in use	

Network client mode icon display

Network client mode connection status	Icon
Network client mode connected status	
Network client mode connection standby status	
Network client mode connection error status	

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)

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.
The status screen supports touch operation.

To display the status screen

- Press the STATUS button.

To switch the status screen

- Turn the multi-function dial.
- Press the ↑/↓ arrow buttons.
- Swipe the status screen up/down.

To hide the status screen

- Press the STATUS 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.

[Tip]
You can disable changes from the status screen by setting Menu Settings >User Menu Only (page 106) in the Technical 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	Frame rate setting for Slow & Quick Motion shooting
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 for recording and RAW output enable/disable setting
Media Remain (B)	Remaining free space on media in slot B
Scene File*	Scene file in use and its File ID setting
Monitor LUT*	Monitor LUT setting
Shutter	Shutter speed or shutter angle setting
Iris	Iris setting
Video Format*	Picture size for recording to XQD 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<L>*	ISO/Gain<L> setting
ISO / Gain<M>*	ISO/Gain<M> setting
ISO / Gain<H>*	ISO/Gain<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

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
	Ref./Sens.*	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
	Ref./Sens.*	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
	Ref./Sens.*	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
	Ref./Sens.*	Input reference level
	Wind Filter*	Microphone wind noise reduction filter setting
Audio Input Level*		Master audio input level setting
HDMI Output CH*		HDMI output audio channel setting
Headphone Out*		Headphone output type setting
Monitor CH*		Monitor channel setting

[Note]
The Source settings for CH1 and CH2 are selected using the CH1 INPUT select switch (page 7) and CH2 INPUT select switch (page 7) on the right side of the unit. You can set Source for CH1 and CH2 when using a portable wireless tuner (page 24). You can also set Source for CH2 when the CH2 INPUT select switch is set to EXT.

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	Enabled special recording format and settings
Simul Rec*	2-slot simultaneous recording function On/Off status and setting
Title Prefix	Title portion of the clip name
Imager Scan*	Scan mode of the image sensor

Display item	Description
Video Format*	Picture size for recording to XQD memory cards
Picture Cache Rec*	Picture cache recording function On/Off status and setting
Number	Numeric suffix of the clip name
Shooting Mode*	Shooting mode setting
RAW Output Format*	Image size of the RAW output
4K & HD (Sub) Rec*	4K & HD (Sub) recording function On/Off status
Proxy Rec*	Proxy recording function On/Off status and setting
Genlock	Genlock state

Monitoring Status screen

Displays the SDI, HDMI, and video output settings.

Display item		Description
SDI1	Signal*	Output picture size
	Info. Disp*	Output display On/Off setting
	Color Gamut*	Color space setting/ Monitor LUT status
SDI2	Signal*	Output picture size
	Info. Disp*	Output display On/Off setting
	Color Gamut*	Color space setting/ Monitor LUT status
HDMI	Signal*	Output picture size
	Info. Disp*	Output display On/Off setting
	Color Gamut*	Color space setting/ Monitor LUT status
Stream	Signal	Output picture size
	Info. Disp	Output display (Off (fixed))
	Color Gamut*	Color space setting/ Monitor LUT status
RAW		Image size of the RAW output
Monitor LUT*		Monitor LUT setting
VF*		Gamma display assist setting/Monitor LUT status/Color space setting

[Note]
The monitor LUT setting is linked to all output systems, including the viewfinder. Only the gamma display assist setting is available for the viewfinder display.

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
10	Function assigned to the ASSIGN 10 button
Focus Hold Button	Function assigned to the Focus Hold button of the lens
Multi Function Dial	Function assigned to the multi-function dial
Assignable Dial	Function assigned to the 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	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.
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.
SD card information	Displays the media icon when media is inserted in the UTILITY SD/MS card slot.
SD card protection	Displays the lock icon when the media inserted in the UTILITY SD/MS card slot is protected (locked).
SD card remaining capacity meter	Displays the remaining capacity of media inserted in the UTILITY SD/MS card slot expressed as a percentage on a bar graph.
SD card remaining capacity	Displays an estimate of the remaining recording time of the recording media inserted in the UTILITY SD/MS card slot in units of minutes, or displays the remaining capacity in units of GBs.

GPS Status screen

Displays the GPS positioning status and information.

Display item	Description
GPS	GPS signal and positioning status
Dilution Of Precision	Positioning accuracy information
Latitude	Latitude information
Longitude	Longitude information
Altitude	Altitude information
Positioning date and time	Positioning date and time
Current date and time	Current date and time
Time Zone	Time Zone setting

Network Status screen

Displays the network connection status.

Display item	Description
Wireless LAN	Wireless network settings and connection status
Wired LAN	Wired LAN network settings and connection status
Modem 1	Wireless network settings and connection status of modem (option)
Modem 2	Wireless network settings and connection status of modem (option)

NCM/Streaming Status screen

Displays the connection status in network client mode and the streaming status.

Display item	Description
Network Client Mode Status	Network client mode status
CCM Name	Name of CCM connected in network client mode
CCM Address	Address of CCM connected in network client mode
QoS Streaming1 Bit Rate	Streaming bit rate 1
QoS Streaming2 Bit Rate	Streaming bit rate 2
Streaming Status	Streaming status
Streaming Type	Currently selected streaming type

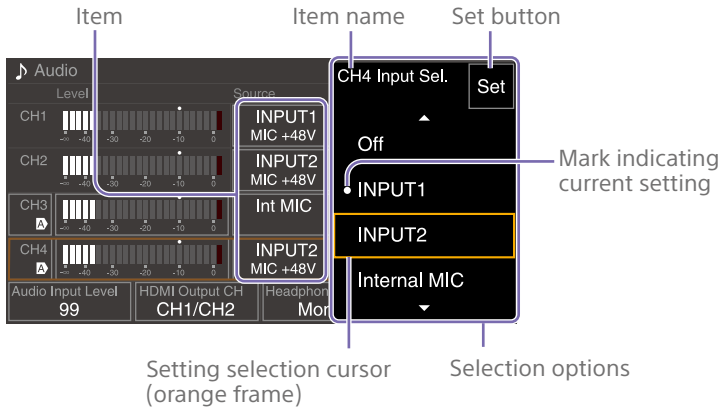
File Transfer Status screen

Displays file transfer information.

Display item	Description
Auto Upload (Proxy)	Auto Upload (Proxy) function On/Off status
Job Status (Remain / Total)	Remaining number of jobs and total number of jobs
Total Transfer Progress	Transfer progress of all jobs
Default Upload Server	Name of Auto Upload (Proxy) destination server
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

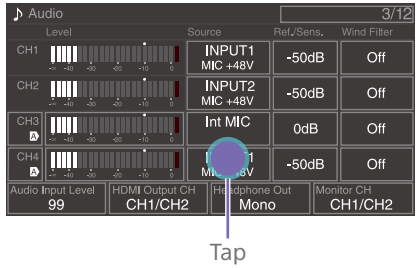
Using Touch-enabled Settings Screens

Screen layout



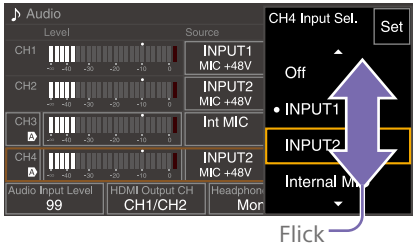
Operation

1 Tap a setup item.



The selection options for the value appear.

2 Tap a value directly or drag/flick to move the desired value to the cursor position.



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

[Tips]

- You can also press the ← arrow button to apply the value.
- 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 10).

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-U35 (supplied)
BP-U60
BP-U70
BP-U90
BP-U100

Battery chargers
BC-U1A (supplied)
BC-U2A

AC adaptor (supplied)

A V-shoe battery can be used when an XDCA-FX9 Extension Unit is attached.
For safety, use only the Sony battery packs and AC adaptors listed below.

Lithium-ion battery packs
BP-GL95B

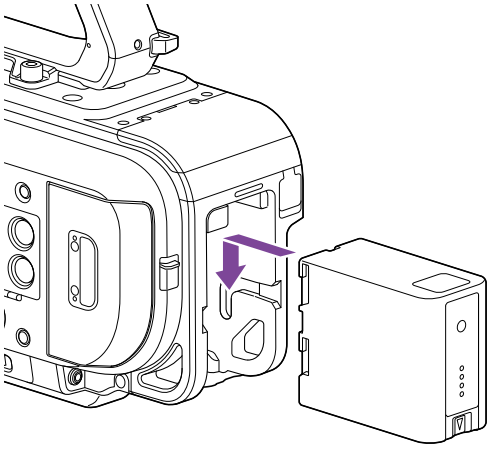
AC adaptor
AC-DN10A

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

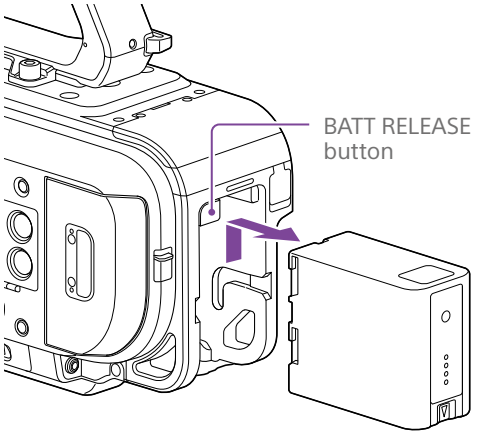
[Notes]
- When operating from an AC power source, use the supplied AC adaptor.
- Always set the POWER switch to the Off position before connecting a battery or AC adaptor. If it is connected with the POWER switch in the On position, the camcorder may be unable to start in some cases. If the camcorder 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.)
- When using an AC-DN10A adaptor and peripheral devices are attached to the camcorder, make sure that the total power consumption of the peripheral devices is less than 25 W.

Using a Battery Pack

To attach a battery pack, plug the battery pack into the attachment (page 8) 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 8), 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-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 11).

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.

When using an extension unit

When using the XDCA-FX9 Extension Unit, the battery voltage or the remaining battery capacity is displayed, depending on the battery used.

[Note]
The camcorder battery pack cannot be attached when an XDCA-FX9 unit is attached to the camcorder. You must attach a battery pack to the XDCA-FX9 or connect an external power supply.

If the battery pack charge becomes low

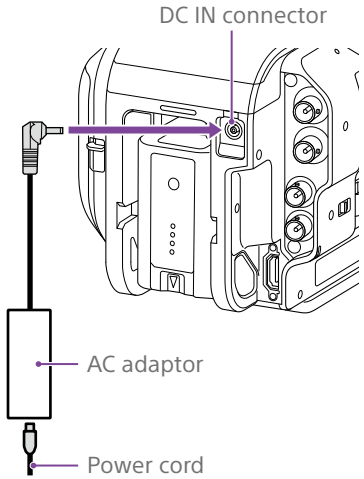
If the remaining battery charge falls below a certain level during operation (Low Battery state), a low-battery message appears, the recording/tally lamp starts flashing, and a beep sound will warn you.
If the remaining battery charge falls below the level at which operation cannot continue (Battery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

Changing the warning voltage 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 107) in the Technical menu.

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, the recording/tally lamp starts flashing, and a beep sound is emitted.
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.

[Tip]
If an AC power source is used while the battery is attached, the camcorder will automatically switch to battery power if the output voltage of the AC adaptor drops.

Changing the warning levels

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 108) in the Technical menu.

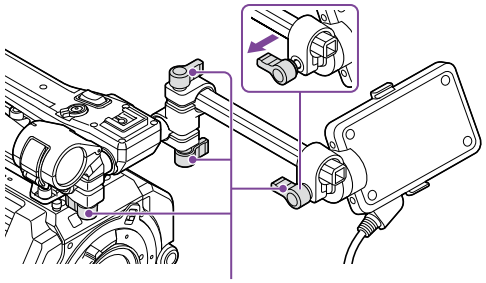
AC adaptor

- 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.

Attaching Devices

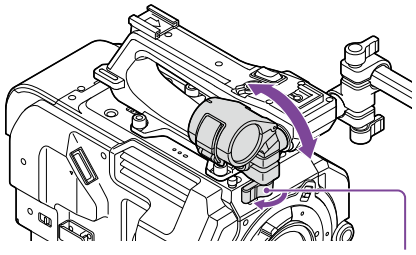
Clamp Lever Operation

Operate the clamp levers when attaching/removing or adjusting the position of the microphone and viewfinder.
When attaching, turn the clamp lever clockwise to secure the rod.
When removing or adjusting the position, turn the clamp lever counterclockwise to loosen the clamp lever.
If a clamp lever is in a position that makes it difficult to turn, pull the clamp lever off and rotate it to an angle that will make operation easier. Then place the clamp lever back on.



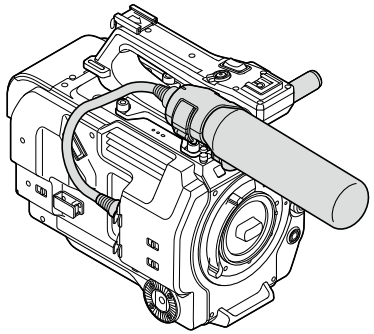
Adjusting the Microphone Holder Position

Loosen the clamp lever, and turn the microphone holder to move it forward/backward to adjust the position.



Microphone holder and microphone orientation

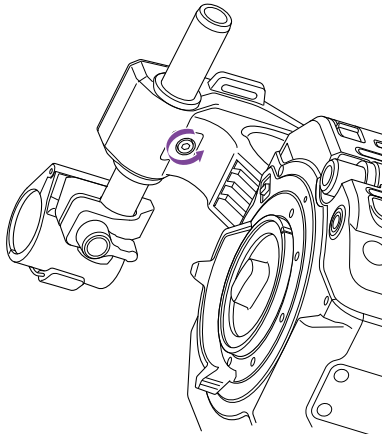
Attach so that the microphone holder and microphone are oriented as shown in the following diagram.



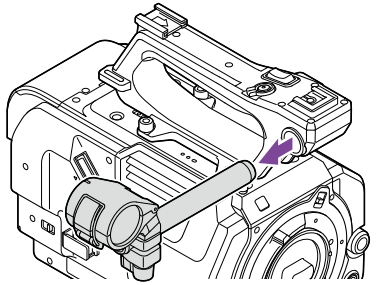
Replacing the Microphone Rod

[Notes]
- The microphone rod is attached when shipped from the factory.
- Attach/remove the microphone rod while the camcorder is turned off.
- Attach/remove the microphone rod with the body cap attached so as not to damage the image sensor.

1 Loosen the screw.



2 Withdraw the microphone rod.

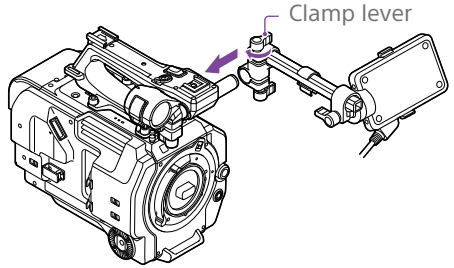


3 Attach the microphone rod in the reverse sequence.

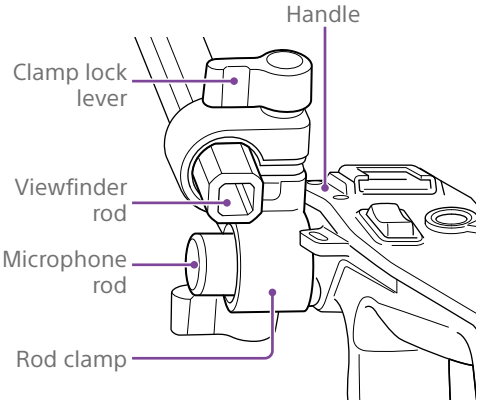
Attaching the Viewfinder

[Note]
Attach/remove the viewfinder while the camcorder is turned off. If the viewfinder is removed while the camcorder is turned on, the camcorder will restart automatically.

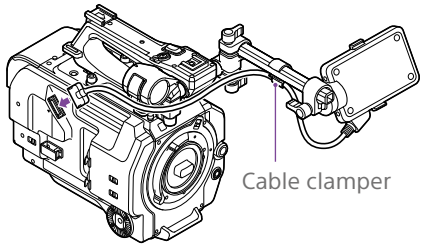
1 Loosen the viewfinder clamp lever, and insert the viewfinder onto the microphone rod.



[Note]
When attaching the viewfinder, attach the rod clamp to the microphone rod so that the parts are positioned as shown in the following diagram.
- Clamp lock lever positioned between the viewfinder rod and the handle
- Viewfinder rod positioned above the microphone rod

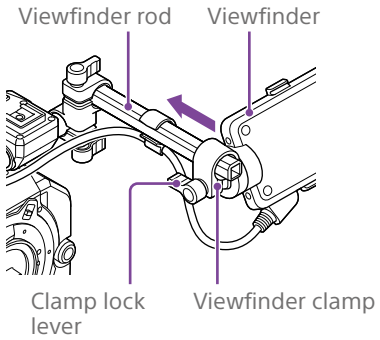


2 Adjust the left/right positioning of the viewfinder, tighten the clamp lever, connect the viewfinder cable to the viewfinder connector of the camcorder, and secure the viewfinder cable in the cable clamper.



[Notes]

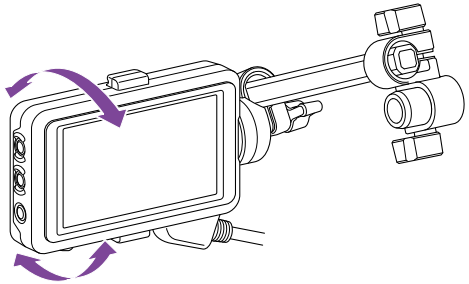
- Attach the viewfinder so that the viewfinder rod is positioned above the clamp lock lever of the viewfinder clamp.



- Check that the viewfinder is securely attached. The viewfinder may fall off during shooting if the clamp lever is loose.

Adjusting the viewfinder orientation

Tilt the viewfinder up/down to adjust the angle of the viewfinder.

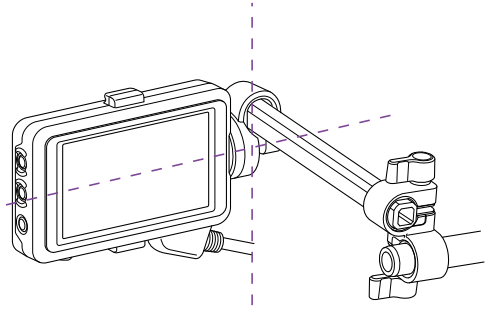


You can adjust the angle so that the viewfinder is facing the subject. Setting the MIRROR switch to the B/T position flips the left and rights sides of the image on the LCD screen, but the image is recorded in the correct orientation.

Adjusting the viewfinder position

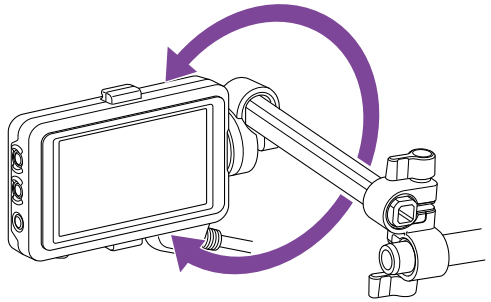
90° angle adjustment

If a square-shaped clamp spacer is attached to the rod connection joint, you can adjust the position of the viewfinder in 90° increments. Temporarily remove the viewfinder to adjust the angle, then reattach the viewfinder.

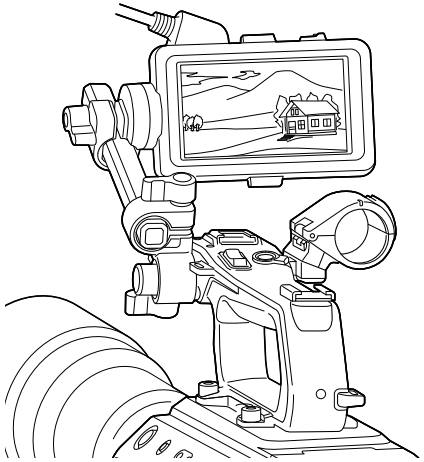


Arbitrary angle adjustment

If a circular-shaped clamp spacer is attached to the rod connection joint, you can turn the viewfinder on the rod to adjust the position of the viewfinder.



If the viewfinder is turned 180° as shown in the following diagram, set the MIRROR switch to the ROT position to flip the image display and text display horizontally and vertically.

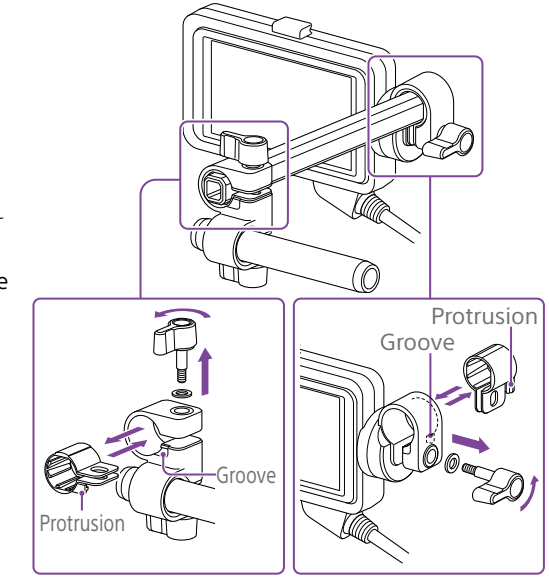


[Note]
When attaching a circular-shaped clamp spacer, attach to a commercial ø15 mm rod.

[Tip]
A circular-shaped clamp spacer is attached by factory default.

Changing the clamp spacer

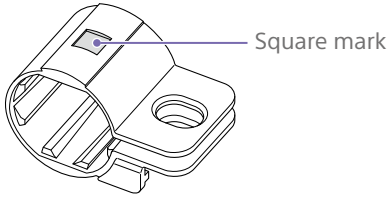
Remove the clamp spacer as shown in the following diagram, align the protrusion on the square-shaped spacer or circular-shaped spacer with the groove in the clamp, and insert the spacer.



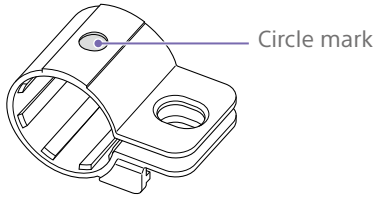
[Note]
Always attach a washer. If a washer is not attached, the clamping force on the rod may be insufficient and may cause the viewfinder to fall off.

You can determine the shape of the spacer as shown in the following diagrams.

Square-shaped clamp spacer



Circular-shaped clamp spacer



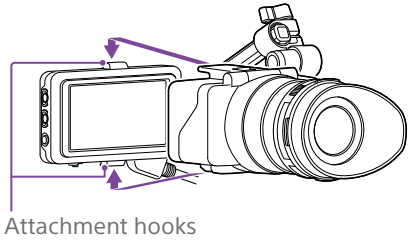
Removing the viewfinder

Loosen the viewfinder clamp lever, and use the reverse procedure of attaching the viewfinder.

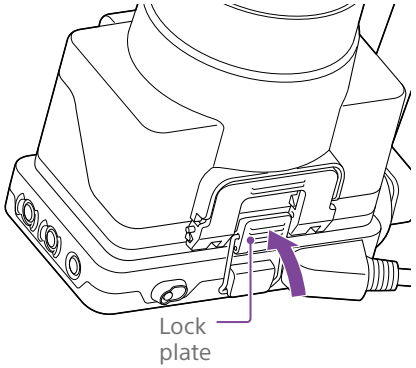
Attaching the Eyepiece

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

1 Attach the hook on the top of the eyepiece to the hook on the top of the viewfinder, and attach the metal clip on the bottom of the eyepiece to the hook on the bottom of the viewfinder.

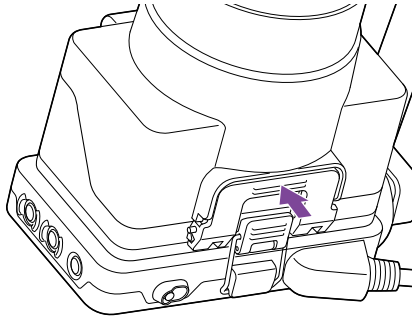


2 Push the lock plate on the bottom of the eyepiece in the direction of the arrow to lock the eyepiece into position.

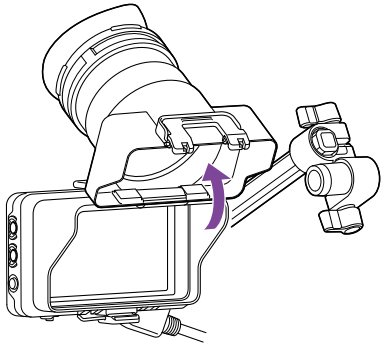


Opening the eyepiece

Press the button indicated by the arrow.

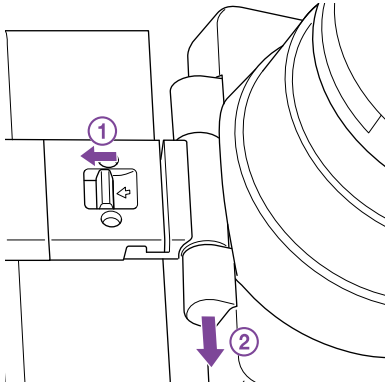


Open the eyepiece upwards when the lock disengages. The viewfinder is directly visible when the eyepiece is opened.



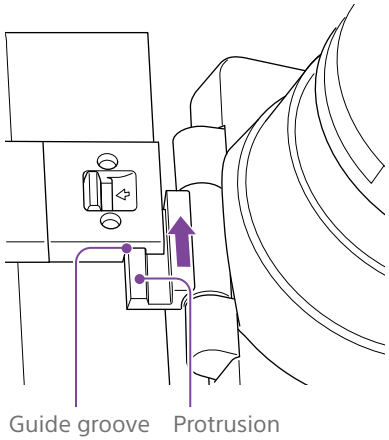
Removing the rear part of the eyepiece

With the eyepiece opened upwards, release the eyepiece lock in the direction of the arrow (①), and slide the rear part of the eyepiece out in the direction of the arrow (②). When the rear part of the eyepiece is removed, the front of the eyepiece can be used instead of a hood.



Attaching the rear part of the eyepiece

When attaching the rear part of the eyepiece, align the projection of the hinge with the guide groove, and push it in the direction of the arrow in the following diagram until it locks.



Removing the eyepiece

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

Attaching a Lens

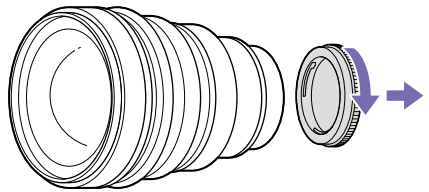
[CAUTION]
Do not leave the lens facing the sun. Direct sunlight can enter through the lens, be focused in the camcorder, and may cause a fire.

[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.

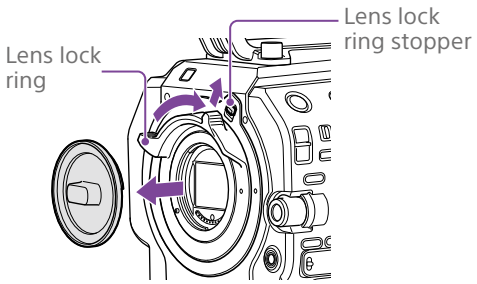
[Tip]
For details about lenses supported by the camcorder, contact your Sony service representative.

Attaching an E-mount lens

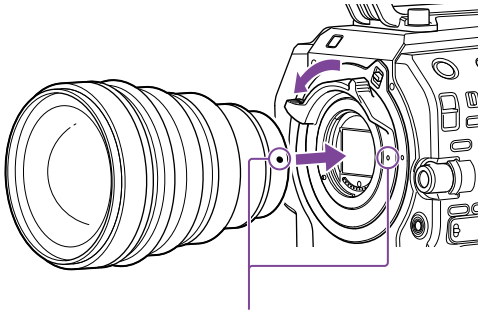
1 Remove the cover from the lens.



2 Release the lens lock ring stopper, turn the lens lock ring clockwise, and remove the body cap from the camcorder.



3 Align the lens mount mark (white) with the camcorder, carefully insert the lens, and slowly turn the lens lock ring counterclockwise to secure the lens.



[Notes]
- If the lens lock ring stopper does not return to the lock position when the lens is attached, move the stopper to the lock position manually.
- When attaching a lens, align the mount mark (white) on the lens lock ring with the mount mark (white) on the camcorder.

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 Release the lens lock ring stopper, and turn the lens lock ring clockwise while firmly 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.

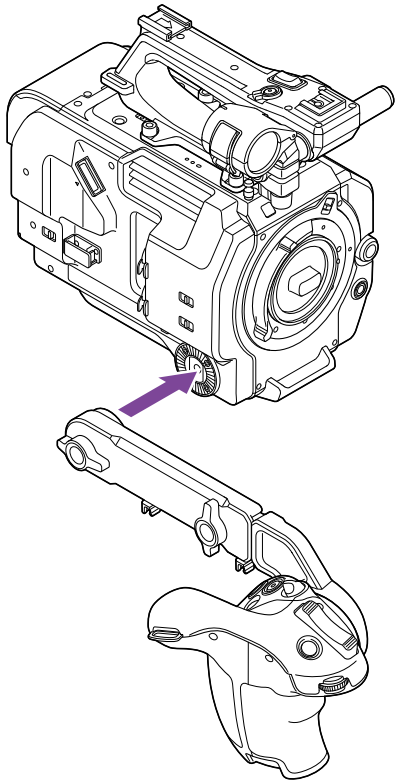
Attaching to a tripod

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

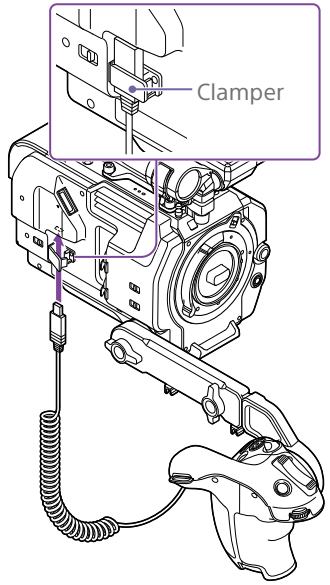
Attaching the Grip Remote Control

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

1 Attach the arm to the grip attachment, and tighten the screw.



2 Connect the grip remote control cable to the USB/multi connector on the camcorder, and secure the cable in the cable clamper.

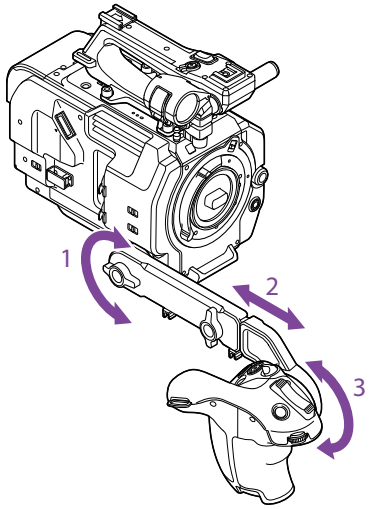


[Notes]
- When attaching the grip remote control cable, secure the cable in the cable clamper to prevent damaging it.
- Check that the arm is securely attached to the camcorder. The camcorder may fall while shooting if the screw is loose.
- Do not support the weight of the camcorder by holding just the grip remote control.
- After connecting the grip remote control cable, always lock the cable in the clamper. Pulling on the cable with force during use may damage the connector.
- If the grip cable gets in the way, secure it using the cable clamper in the center of the arm.

Adjusting the position of the grip remote control

- Loosen the arm mounting screw, adjust the angle of the arm (1), and then tighten the screw.

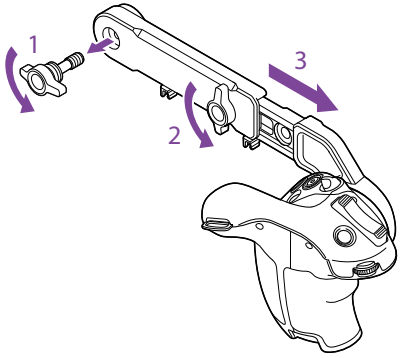
- Loosen the arm extension screw, adjust the length of the arm (2), and then tighten the screw.
- Press the grip rotation lever (page 9) to adjust the angle of the grip remote control (3).



Attaching the grip close to the camcorder

1 Remove the arm mounting screw (1).

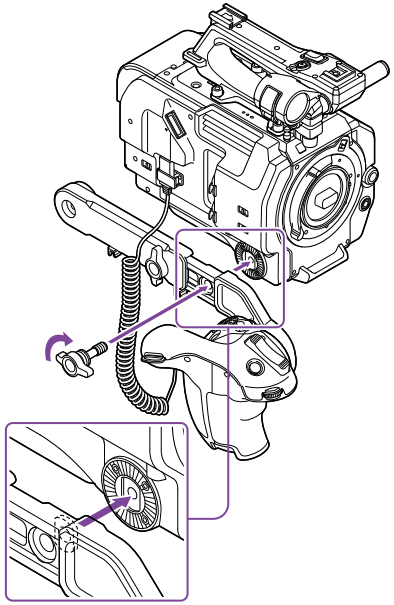
2 Loosen the arm extension screw (2), and extend the arm until a hole becomes visible (3).



[Note]
After extending the arm, securely tighten the screw.

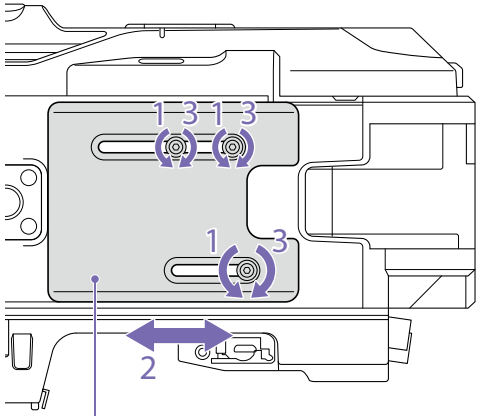
3 Connect the grip remote control cable to the USB/multi connector on the camcorder.

4 Align the protrusion on the arm with the groove in the grip attachment point, and secure in position using the screw removed in step 1.



Adjusting the Position of the Shoulder Pad

You can slide the shoulder pad forward or backward. Adjust the position of the shoulder pad so that the camcorder is easy to operate when placed on your shoulder.



1 Loosen the three shoulder pad screws.

2 Slide the shoulder pad forward/backward to the desired position.

3 Securely tighten the screws.

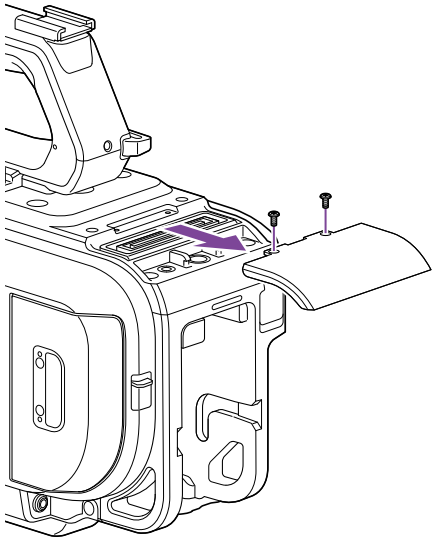
Attaching the XDCA-FX9

You can add functions to the camcorder, such as a V-shoe battery or wired LAN, by attaching an XDCA-FX9 Extension Unit (option) to the camcorder.

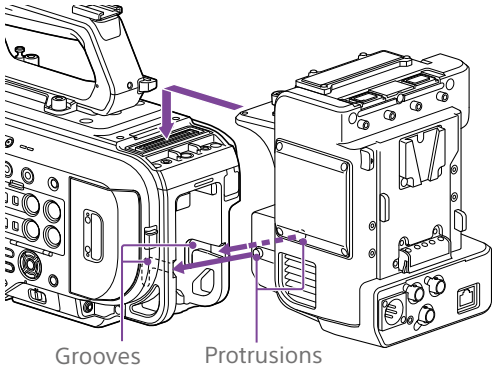
[Notes]
- The camcorder battery pack cannot be attached when an XDCA-FX9 unit is attached to the camcorder. You must attach a battery pack to the XDCA-FX9 or connect an external power supply.
- Attach/remove the XDCA-FX9 while the camcorder is turned off.

1 Remove the battery pack (page 17) attached to the camcorder.

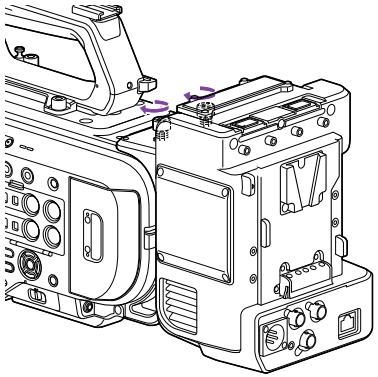
2 Remove the two screws, and remove the cover of the extension unit connector block from the camcorder.



3 Align the protrusions of the XDCA-FX9 with the left and right grooves of the camcorder and slide it all the way in and then down into the connector block.



4 Tighten the two screws on the top of the XDCA-FX9 to secure the XDCA-FX9.



Removing the XDCA-FX9

Loosen the two screws on the top of the XDCA-FX9, and remove the XDCA-FX9 from the camcorder.

Attaching a V-Shoe Battery

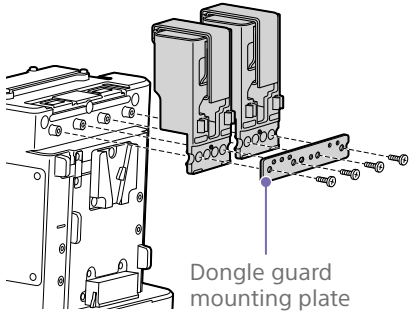
Insert the V-shoe battery into the battery pack attachment on the XDCA-FX9.

Removing a V-shoe battery

Pull the V-shoe battery out from the battery pack attachment on the XDCA-FX9 while holding down the battery release lever.

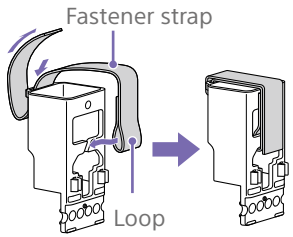
Attaching the Dongle Guards

You can attach a dongle guard to protect a modem or other USB device attached to a USB connector.
Attach the dongle guard and dongle guard mounting bracket to the extension unit, and secure in position using mounting bracket screws.



Attaching using fastener strap

Attach the fastener strap to the dongle guard to secure a USB device in place.
Attach the loop of the strap to the back of the dongle guard and pass the strap over the guard as shown below.



Attaching a Portable Wireless Tuner (when using a wireless microphone)

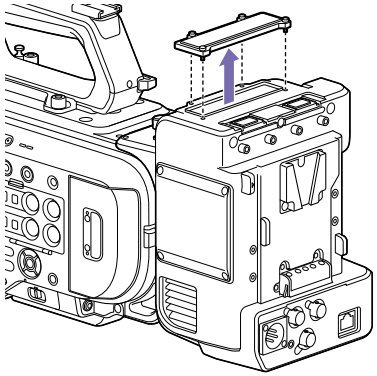
You can attach any one of the following portable wireless tuners, once the camcorder is turned off, when using a wireless microphone.

- URX-S03D UHF Synthesized Diversity Tuner
- DWR-S02DN Digital Wireless Receiver

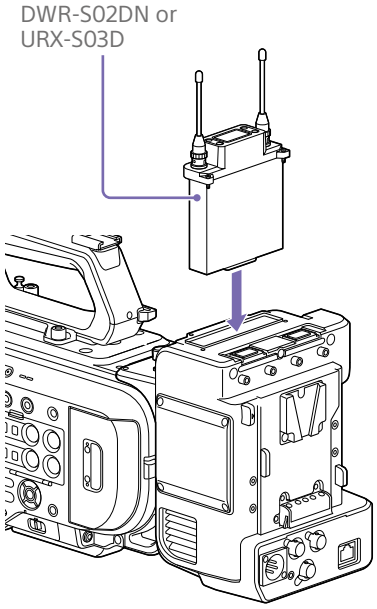
Also refer to the instruction manual of the portable wireless tuner.

[Note]
The wireless tuners that are supported will vary depending on the region and the corresponding frequency band. Consult your Sony dealer or Sony sales representative for the wireless tuners that can be used with this unit.

1 Remove the four screws securing the cover of the insertion slot, and remove the cover.



2 Insert the DWR-S02DN or URX-S03D into the housing slot, and fasten the four screws.



3 Set one of the following.

For CH1 input: Set the CH1 INPUT select switch to MI SHOE, and set Audio Input >CH1 MI SHOE Input Select in the Audio menu to Wireless.

For CH2 input: Set the CH2 INPUT select switch to MI SHOE, and set Audio Input >CH2 MI SHOE Input Select in the Audio menu to Wireless.

For CH3/CH4 input: Set Audio Input >CH3 Input Select or CH4 Input Select in the Audio menu to Wireless.

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.
Before shooting, configure the basic operation of the camcorder to suit the application.

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 arrow buttons (page 7) or the multi-function dial (page 4) to select items and settings, then press the SET 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 114) 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. For details about the built-in rechargeable battery, see page 120.

Shooting Mode

You can switch the shooting mode between “SDR mode” (for creating images flexibly on-site), “HDR mode” (for shooting with wide color space and wide dynamic range), and “Cine EI mode” (where the camcorder is operated similarly to a film camera, with footage developed in post production).
Select the mode using Base Setting* >Shooting Mode (page 86) in the Project menu.

* Can also be configured on the status screen.

[Notes]

- Cine EI mode has the following limitations.
  - Functions that cannot be adjusted automatically (tracking)
    - White balance
    - Gain
    - Shutter
  - Functions that cannot be configured
    - ISO sensitivity/gain (set to base ISO sensitivity (fixed))
    - Paint menu settings (all are disabled)
    - Scene File (disabled)
- The following functions are available in Cine EI mode only.
  - Exposure Index
  - Monitor LUT

When the shooting mode is set to Cine EI mode, select the base color space for the recording signal and output signal. The color space selected here is the color space of the video output when MLUT is set to Off.
Select the color space using Cine EI Setting >Color Gamut (page 88) in the Project menu.

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

System Frequency

Select the frequency using Rec Format >Frequency* (page 86) in the Project menu.
The camcorder may reboot automatically after switching, depending on the selected value.

* Can also be configured on the status screen.

[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.
Select the mode using Rec Format >Imager Scan Mode* (page 86) in the Project menu.

* Can also be configured on the status screen.

- FF 6K: Full-frame size at 6K resolution.
- FFcrop 5K: Full-frame size cropped to approximately 83% size for 5K resolution.
- S35 4K: Super 35mm size at 4K resolution.
- FF 2K: Full-frame size at 2K resolution.
- S35 2K: Super 35mm size at 2K resolution.

[Notes]

- You cannot switch the imager scan mode during recording or playback.
- When the imager scan mode is set to FF 2K or S35 2K, the recording format setting is restricted to 1920×1080 resolution.

Codec

Select the codec using Rec Format >Codec* (page 86) in the Project menu.

* Can also be configured on the status screen.

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

Video Format

You can set the video format for recording.
Select a format using Rec Format >Video Format* (page 86) in the Project menu.

* Can also be configured on the status screen.

[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 XQD Memory Cards

The camcorder records audio and video on XQD memory cards (available separately) inserted in the card slots.

About XQD Memory Cards

Use the following Sony XQD memory cards 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.
S-series XQD memory cards (QD-S64E/S32E/S64/S32)
H-series XQD memory cards (QD-H32/H16)
N-series XQD memory cards (QD-N64)
M-series XQD memory cards (QD-M128A/M64A/M32A)
G-series XQD memory cards (QD-G240F/G120F/G256E/G128E/G64E/G32E/G128A/G64A/G32A)
The use of memory cards other than Sony XQD memory cards is not guaranteed.

[Tip]
For details about using XQD memory cards and usage precautions, refer to the operating instructions for the XQD memory card.

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				G-series S-series (QD-S64E/S32E)	N-series M-series	H-series S-series (QD-S64/S32)
XAVC Intra 422	4096×2160	Normal mode or S&Q (60P or lower)	59.94P/ 50P/ 29.97P/ 25P/ 23.98P/ 24P	Yes	No	No
	3840×2160	Normal mode or S&Q (60P or lower)	59.94P/ 50P/ 29.97P/ 25P/ 23.98P	Yes	No	No
	1920×1080	Normal mode or S&Q (60P or lower)	59.94P/ 50P	Yes	No	No
			59.94i/ 50i/ 29.97P/ 25P/ 23.98P	Yes	Yes	No
		S&Q (above 60P)	59.94P/ 50P/ 29.97P/ 25P/ 23.98P	Yes	No	No

Recording format				G-series S-series (QD-S64E/S32E)	N-series M-series	H-series S-series (QD-S64/S32)
XAVC Long 422	3840×2160	Normal mode or S&Q (60P or lower)	59.94P/ 50P/ 29.97P/ 25P/ 23.98P	Yes	Yes	No
	1920×1080	Normal mode or S&Q (60P or lower)	59.94P/ 50P/ 59.94i/ 50i/ 29.97P/ 25P/ 23.98P	Yes	Yes	Yes
		S&Q (above 60P)	59.94P/ 50P	Yes	Yes	No
			29.97P	Yes	50 Mbps: No 35 Mbps: Yes	No
			25P/ 23.98P	Yes	No	No
MPEG2 HD 422	1920×1080	Normal mode	59.94i/ 50i/ 29.97P/ 25P/ 23.98P	Yes	Yes	Yes

Inserting XQD Memory Cards

1 Open the media cover of the card slot section.

2 Insert an XQD memory card with the XQD label facing to the left.
The access indicator (page 8) is lit red, then changes to green if the card is usable.

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 XQD card slots A and B, insert media in both slots that is recommended for operation with the format of the recording.

Ejecting XQD Memory Cards

Open the media cover of the card slot section, and lightly press the XQD 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 an XQD memory card immediately after recording is finished, the XQD memory card may be hot, but this does not indicate a problem.

Formatting (Initializing) XQD Memory Cards

If an unformatted XQD memory card or an XQD 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 98) in the TC/Media menu.

2 Select Media(A) (slot A) or Media(B) (slot B), then select Execute.
A confirmation message appears.

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 SET button or multi-function dial to dismiss the message.

[Note]
Formatting a memory card erases all data, including recorded video data and setup files.

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 XQD memory card.

Checking the Remaining Recording Time

When shooting (recording/standby), you can monitor the remaining capacity of the XQD memory card in each slot using the slot A/B remaining media indicators in the viewfinder (page 11).
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.

XQD 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 XQD memory card.
If the number of recorded clips reaches the limit, the remaining recording time indicator becomes “0” and a message is displayed.

Restoring XQD Memory Cards

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

Restoring a card

Use the arrow buttons (page 7) or the multi-function dial (page 4) to select Execute, then press the SET button or multi-function dial.
A message is displayed while formatting is in progress, and the access indicator is lit red.
When restoration ends, a completion message appears.

If restoration fails

- XQD memory cards on which memory errors have occurred cannot be restored. A warning message is displayed. Follow the instructions to replace the XQD memory card.
- XQD 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.
- If the message “Could not Restore Some Clips” keeps appearing after repeated attempts at restoration, it may be possible to restore the XQD memory card with the following procedure.
  1 Copy the required clips to another XQD memory card using Copy Clip (page 104) in the Thumbnail menu.
  2 Format the unusable XQD memory card on the camcorder.
  3 Copy the required clips back to the newly formatted XQD memory card.

[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.

Using a UTILITY SD/MS Card

The UTILITY SD/MS card is used for proxy recording and storing/loading settings. It is also used for future upgrades (software update).

Supported SD/MS Cards

SDXC memory cards*
SDHC memory cards*
SD memory cards*
“Memory Stick PRO-HG Duo”**
“Memory Stick PRO Duo”**

* Referred to collectively as “SD cards” in this manual.
** Referred to as “Memory Stick” media in this document.

[Note]
Proxy recording is not supported on “Memory Stick” media.

Inserting an SD/MS Card

1 Open the media cover of the card slot section.

2 Insert the SD card or “Memory Stick” media into the card slot with the label facing right.
The access indicator (page 8) is lit red, then goes off if the card is usable.

3 Close the media cover.

Ejecting an SD/MS Card

Open the media cover of the card slot section, and lightly press the SD card or “Memory Stick” media in to eject it.

[Notes]
- If the camcorder is turned off or the SD card or “Memory Stick” media is removed while the SD card or “Memory Stick” media is being accessed, the integrity of data cannot be guaranteed. All data recorded on the card may be discarded. Always make sure the access indicator is off before turning off the camcorder or removing the SD card or “Memory Stick” media.
- Take caution to prevent the SD card or “Memory Stick” media from flying out when inserting/ejecting the card.

Formatting (Initializing) SD/MS Cards

SD cards and “Memory Stick” media must be formatted the first time they are used in the camcorder.
An SD card or “Memory Stick” media to be used with this camcorder must be formatted using the format function of this camcorder.

1 Select Format Media (page 98) in the TC/Media menu.

2 Specify Utility SD/MS, then select Execute.
A confirmation message appears.

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

[Note]
Formatting an SD card or “Memory Stick” media erases all data. The data cannot be restored.

Checking the Remaining Capacity

You can check the remaining capacity on an SD card or “Memory Stick” media on the Media Status screen (page 15).
When shooting (recording/standby) with proxy recording set to On, you can monitor the remaining capacity of the SD card using the remaining media indicators on the viewfinder screen (page 11).

[Note]
A mark is displayed if the SD card is protected.

To use an SD 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.

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/ indicator (page 6).
The recording/tally lamp lights and recording begins.

5 To stop recording, press the record START/STOP button (page 6) 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 XQD Memory Cards

When two XQD memory cards are inserted, press the SLOT SELECT button (page 7) 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.

[Note]
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.

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 an XQD 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 97) of the TC/Media menu.

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 8) enables you to monitor the audio being recorded. You can also monitor the playback audio (page 69) using the built-in speaker (page 6) or headphones.
Adjust the volume of the monitored audio using the VOLUME (audio monitoring volume adjustment) buttons (page 6).
You can select the audio channel to monitor using Audio Output >Monitor CH* (page 103) in the Audio menu.
* Can also be configured on the status screen.

Specifying Time Data

Setting the timecode

Set the timecode to record using Timecode (page 97) in the TC/Media 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 97) in the TC/Media menu.

Displaying time data

Set the timecode to display using TC Display (page 97) >Display Select in the TC/Media menu.
Pressing an assignable button (page 44) 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 IN/OUT select switch (page 8).
For details, see page 118.

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 44) 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 106) 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 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 6) 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

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 6) 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 22).
In AF mode, the FOCUS AUTO LED is lit.

[Tip]
When Focus >AF Assist (page 84) in the Shooting 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.

Setting the auto focus area/position (Focus Area)

You can set the target area for auto focus using Focus >Focus Area (page 84) in the Shooting menu.

Flexible Spot:

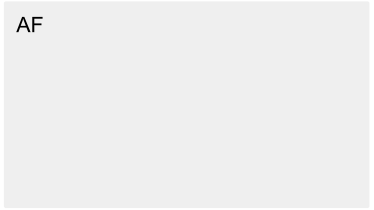
Focuses on a specified position in the image.
When selected, specify the position using the arrow buttons (page 7) or multi selector (page 9).
You can return to the center position by pressing and holding the SET button (page 7) or multi selector.

Zone:

Automatically searches for a focus position within the specified zone.
When selected, specify the position using the arrow buttons (page 7) or multi selector (page 9).
You can return to the center position by pressing and holding the SET button (page 7) or 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 44) assigned with Focus Area.
You can display/hide the focus area frame using Display On/Off >Focus Area Indicator (page 99) in the Monitoring 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 44).
The operation varies depending on the focus area setting.

When Focus >Focus Area (page 84) in the Shooting 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 arrow buttons (page 7), multi selector (page 9), or touch operation (page 34).
You can return the position of the focus area to the center while adjusting the position by pressing the SET button (page 7) or 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 SET button or multi selector.
When finished, press the assignable button assigned with Focus Setting to return to the original screen.

When Focus >Focus Area (page 84) in the Shooting 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

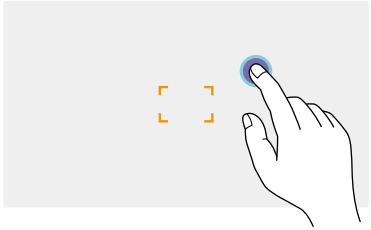
be also be changed by first changing the type to Flexible Spot or Zone.

[Tips]
- The focus area frame is displayed orange when the position of the focus area can be changed.
- When Focus >Push AF Mode (page 84) in the Shooting menu is set to Single-shot AF(AF-S), you can change the Focus Area(AF-S) (page 84) focus area position.

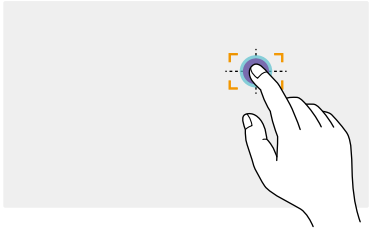
Moving the focus area frame using touch operation (touch focus area)

You can move the focus area using touch operation when the focus area frame is displayed orange as a result of setting Focus > Focus Area (page 84) in the Shooting menu to Flexible Spot or Zone, or by pressing an assignable button assigned with the Focus Setting function.
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).

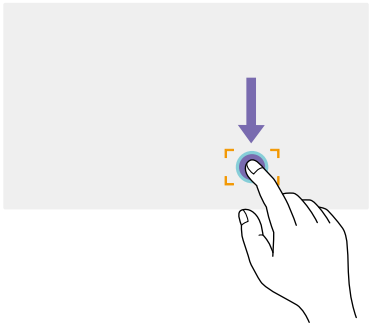
Tap any position



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 moves to the top/bottom/left/right edge of the setting range.
- This function is not available in the following circumstances.
  - When Touch Operation (page 74) in the Technical 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 83) in the Shooting 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

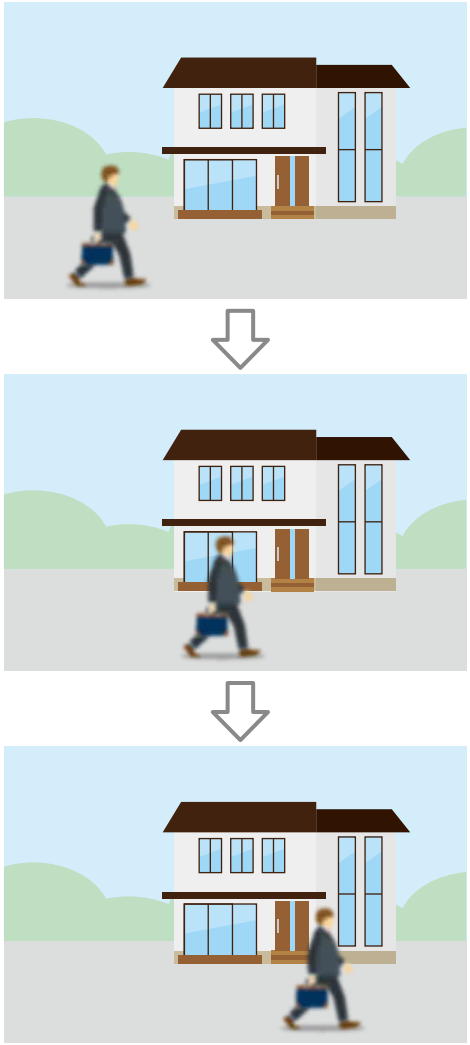
Focused on near subject

AF subject shift sensitivity

You can set the sensitivity for changing between subjects using Focus >AF Subj. Shift Sens. (page 83) in the Shooting 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.

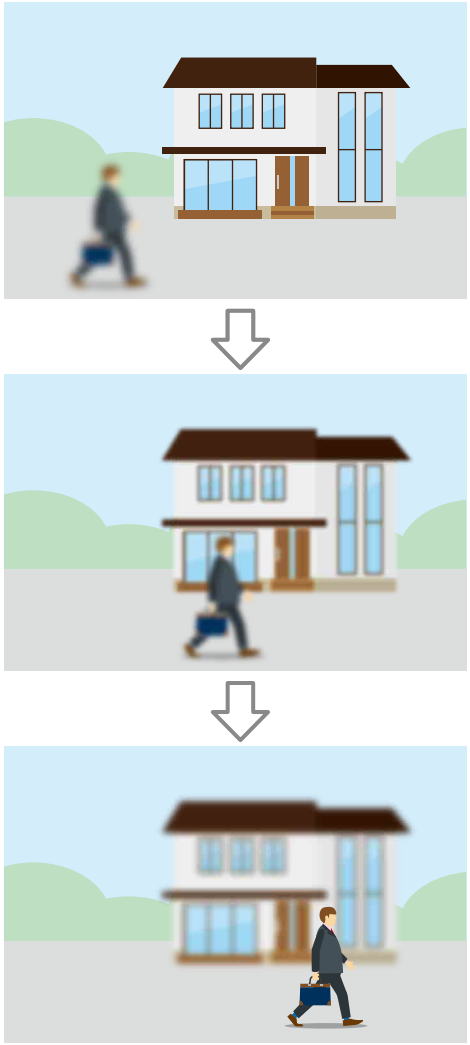
[Tip]
If AF Speed/Sens. is assigned to an assignable button, the level bars for adjusting values are displayed in the following order each time the button is pressed, allowing you to change the AF transition speed and AF subject shift sensitivity settings.
AF transition speed → AF subject shift sensitivity → 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 84) in the Shooting menu is set to On, you can select the target for auto focus during auto focus using the focus ring on the lens.
Auto focus operation is restored when you stop operating the focus ring.
Setting Focus >AF Subj. Shift Sens. (page 83) in the Shooting menu to 1(Locked On) is convenient when you want the auto focus operation to continue as-is when the focus position moves to a subject with a different distance.

Using Manual Focus Temporarily (Push Manual Focus)

Press the PUSH AUTO FOCUS button (page 6) 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 44) assigned with Push AF/Push MF.

Using Auto Focus Temporarily (Push Auto Focus)

When Focus >Push AF Mode (page 84) in the Shooting menu is set to AF, press the PUSH AUTO FOCUS button (page 6) 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 84) in the Shooting 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.

[Tips]
- The same operation is supported using an assignable button (page 44) assigned with Push AF/Push MF.
- You can also assign Push AF Mode to an assignable button (page 44).

[Note]
The Push Auto Focus function does not operate if the lens is set for manual focusing.

Using Single-Shot Auto Focus (Push Auto Focus (AF-S))

Set Focus >Push AF Mode (page 84) in the Shooting menu to Single-shot AF(AF-S), then set the focus area using Focus >Focus Area(AF-S) (page 84) in the Shooting 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 44) assigned with Push AF/Push MF.
- You can also assign Push AF Mode to an assignable button (page 44).
- You can also assign Focus Area(AF-S) to an assignable button (page 44).
- You can display/hide the focus area frame using Display On/Off >Focus Area Ind.(AF-S) (page 99) in the Monitoring 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.

Focusing using Magnified View (Focus Magnifier)

By factory default, the Focus Magnifier ×3/×6 function is assigned to the ASSIGN 4 button on the grip remote control and the ASSIGN 10 button on the viewfinder (page 44).
Press the ASSIGN 4 button or ASSIGN 10 button to switch 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 arrow buttons (page 7) or the multi selector (page 9). You can return to the center position by pressing and holding the SET button (page 7) or multi selector.
When push auto focus (AF) is used during focus magnification, focusing occurs within the focus area set using Focus >Focus Area (page 84) in the Shooting menu.
If push auto focus (AF-S) is used during focus magnification, the focus adjusts to the magnified display position.

[Notes]
- The recorded image or SDI/HDMI output image is not magnified when the focus is magnified.
- During focus magnification, the STATUS button and MENU button are disabled.
- The magnified position returns to the center of the screen when the camcorder is turned off.

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

The camcorder can detect people's faces and eyes, and then adjust the focus on faces and eyes within the focus area.
This function is available only when focus adjustment is in 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. 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 84) in the Shooting menu.

Face/Eye Only AF:
The camera detects the faces/eyes of subjects (people) and focuses only on their faces/eyes. While a face or eye is not detected, AF is temporarily stopped (MF), and the Face/Eye Only AF mode auto focus paused icon [!] (page 11) is displayed. This mode is effective when you want to auto focus on faces/eyes only.

Face/Eye Priority AF:
The camera detects the faces/eyes of subjects (people) and prioritizes the focusing 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 99) in the Monitoring 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.

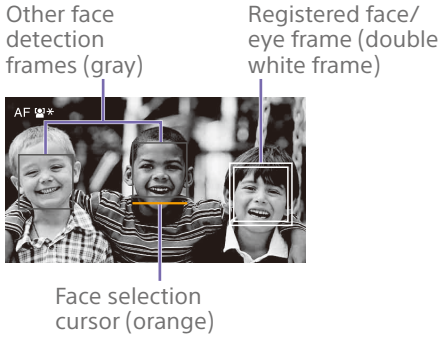
Focusing on a registered face

During face/eye detection AF operation, you can register a face for a subject (person) for focusing on that face.
Only one face can be registered. Registering a face overwrites the existing registration.
When a face is registered, the face/eye detection frame changes to a double frame (registered face frame), and the registered face icon ❁ (page 11) is displayed.
In face/eye detection AF, the following actions occur depending on the combination of registered face and face/eye detection AF operating mode.

In Face/Eye Priority AF mode:
If the camera detects the registered face, the camera focuses on that face. If the registered face is not detected, face/eye detection AF is activated.

In Face/Eye Only AF mode:
If the camera detects the registered face only, the camera focuses on that face/eye. While the registered face is not detected, AF is temporarily stopped (MF), and the Face/Eye Only AF mode auto focus paused icon [!] (page 11) is displayed. This mode is effective when you want to auto focus on the registered person only.

Setting the registered face
Move the face selection cursor (orange underline) to the face to register using the arrow buttons (page 7) or multi selector (page 9), and press the SET button (page 7) or multi selector.



Clearing the registered face
Move the face selection cursor to the registered face frame using the arrow buttons (page 7) or multi selector (page 9), and press the SET button (page 7) or multi selector.
The registered face is cleared, the face/eye detection frame becomes a single frame, and the registered face icon disappears.
When faces/eyes are detected with the registered face frame not displayed and the face selection cursor (orange) displayed, you can clear the registered face by pressing the SET button or multi selector twice.

[Notes]
- Faces and eyes may not be detected depending on the recording environment, condition of the subject, or the settings.
- You may not be able to get the proper effect, or objects other than people's faces may be detected as a face, in some recording environments. In this case, set the face/eye detection AF function to Off.
- Registration of the face of the intended individual for focusing before shooting is recommended.
- Face registration may not be successful depending on hairstyle, facial decoration, or if not directly facing the camera. In this case, the face/eye detection frame may become a double frame, but the registered face icon is not displayed and the face is not registered.
- If a face has already been registered, clearing the existing face and then registering the new face is recommended.

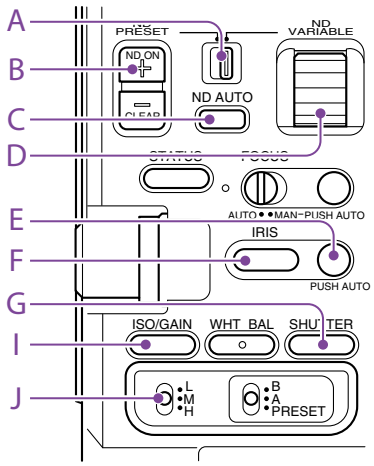
Switching face/eye detection AF operation using an assignable button

Assign Face/Eye Detection AF to an assignable button (page 44). 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 44).

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 80) >Level in the Shooting menu.
You can also assign Auto Exposure Level to an assignable button (page 44).

[Note]
The gain cannot be adjusted in Cine EI 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.

Selecting the Base Sensitivity

You can select from two types of base sensitivity on the camcorder.
In SDR/HDR mode, you can set Base Sensitivity* in the Shooting menu to High or Low. In Cine EI mode, you can set Base ISO* in the Shooting menu to ISO 4000 or ISO 800.
* Can also be configured on the status screen.
You can shoot with good balance, without increased noise, by selecting Low or ISO 800 in normal lighting conditions or selecting High or ISO 4000 in low lighting conditions.

[Tip]
You can also assign Base ISO/Sensitivity to an assignable button (page 44).

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 (F) to display the direct menu (page 44), and select Auto.

[Tip]
You can also assign Auto Iris to an assignable button (page 44).

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

Adjusting the iris manually

1. Press and hold the IRIS function button (F) to display the direct menu (page 44), and select Manual.
2. Press the IRIS function button (F) so that the iris value is displayed on a white background.
3. Turn the multi-function dial to adjust the value.

[Tips]
- You can also operate the multi-function dial as an IRIS dial (page 44) by assigning the IRIS function to the multi-function dial.
- You can also assign the IRIS function to an assignable dial (page 44).

Temporarily adjusting automatically

Press the PUSH AUTO IRIS button (E) to automatically adjust the iris temporarily while the button is pressed.
The iris returns to the previous setting when you release the button.

[Tip]
You can also assign Push Auto Iris to an assignable button (page 44).

[Note]
When the Auto Iris switch of the lens is set to MANUAL, the Auto Iris and Push Auto Iris functions on the camcorder have no effect. Manual iris adjustments on the camcorder also have no effect.

Adjusting the Gain

In SDR/HDR mode, you can adjust the gain to adjust the brightness.

Adjusting the gain automatically

Press and hold the ISO/GAIN function button (I) to display the direct menu (page 44), and select Auto.

[Tips]
- You can also perform the same action by setting Auto Exposure (page 80) >AGC in the Shooting menu to On.
- You can also assign AGC to an assignable button (page 44).

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 (I) to display the direct menu (page 44), and select Manual.
2. Set the ISO/GAIN switch (J) to H, M, or L.

[Tip]
You can also assign Push AGC to an assignable button, and set AGC to On temporarily by pressing and holding the button.

Controlling the gain (fine adjustment)

1. Press the ISO/GAIN function button (I) so that the gain value is displayed on a white background.
2. Turn the multi-function dial to adjust the value.

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

Controlling the gain temporarily (fine adjustment)

Turn the assignable dial (page 44) assigned with the ISO/Gain/EI function, to adjust the gain value set by the ISO/GAIN switch (J). 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 (J), changing the base sensitivity, setting AGC to On, or turning the power off.

[Tip]
You can also assign this function to the multi-function dial (page 44).

Adjusting the Exposure Index

In Cine EI mode, it is assumed that video output with MLUT set to Off is recorded as the main signal. By changing the brightness of the image with MLUT 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 (J) to H, M, or L.

[Tip]
You can change the EI value of each switch position using ISO/Gain/EI >Exposure Index<H>/<M>/<L> (page 79) in the Shooting menu or using the Camera Status screen (page 14).

Fine adjustment of the exposure index

1 Press the ISO/GAIN function button (I) so that the EI value is displayed on a white background.

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

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

Adjusting the Shutter

You can adjust the shutter to adjust the brightness.

Adjusting the shutter automatically

Press and hold the SHUTTER function button (G) to display the direct menu (page 44) 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 action by setting Auto Exposure (page 81) >Auto Shutter in the Shooting menu to On.

Adjusting the shutter manually

1 Press and hold the SHUTTER function button (G) to display the direct menu (page 44), and select Speed or Angle.

2 Press the SHUTTER function button (G) so that the shutter value is displayed on a white background.

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 79).

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 camcorder features two ND filter modes. You can switch between the two modes using the ND PRESET/VARIABLE switch.

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 79) in the Shooting menu.
2: Transmittance set by ND Filter >Preset2 (page 79) in the Shooting menu.
3: Transmittance set by ND Filter >Preset3 (page 79) in the Shooting 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.

[Tip]
You can also assign the ND Filter function to an assignable dial (page 44).

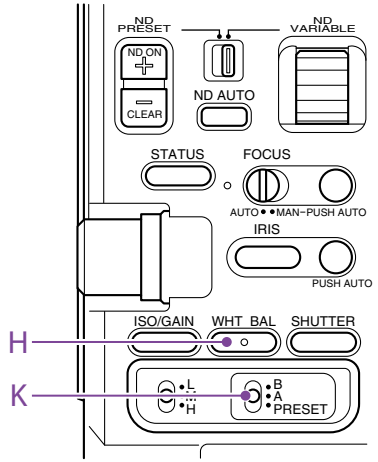
Temporarily adjusting automatically

You can assign Push Auto ND to an assignable button (page 44), 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.

[Note]
When the ND filter is switched to or from CLEAR during shooting, the ND filter frame is displayed on the image and the operating sound is included in the audio.

[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 106) in the Technical menu.
- You can also assign ND Filter Position to an assignable button (page 44), 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 44), 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 (H) to display the direct menu (page 44) and select ATW.
You can select the speed of adjustment (five steps) using White Setting >ATW Speed (page 82) in the Shooting menu.

[Tip]
You can freeze the current white balance setting by assigning the ATW Hold function to an assignable button (page 44), and pressing the assignable button to temporarily pause ATW mode.

[Notes]
- ATW cannot be used in Cine EI 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 (H) to display the direct menu (page 44), and select Manual.

2 Select B, A, or PRESET using the WHT BAL switch (K).
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 82) in the Shooting 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 (H) and select one of the following in the direct menu.
SDR/HDR mode: → 3200K, → 4300K, → 5600K, → 6300K
Cine EI mode: → 3200K, → 4300K, → 5500K

[Tip]
You can also assign Preset White Select to an assignable button (page 44), and press the button to change the setting.
SDR/HDR mode: 3200K → 4300K → 5600K → 6300K → 3200K...
Cine EI mode: 3200K → 4300K → 5500K → 3200K...

Changing the color temperature

1 Press the WHT BAL function button (H) so that the color temperature value is displayed on a white background.

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 units. You can also adjust the tint value using White (page 82) >Tint in the Shooting 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 38).

4 Press the WB SET button (page 4).
- If auto white balance is run in memory mode, the adjustment value is saved in the memory (A or B) selected in step 1.
- If auto white balance is run in ATW mode, the white balance adjustment returns to the ATW mode white balance when adjustment ends.

[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 8)
INPUT2 connector (page 8)
Multi-interface shoe (page 4)
CH1 INPUT select switch (page 7)
CH2 INPUT select switch (page 7)
INPUT1 (LINE/MIC/MIC+48V) switch (page 4)
INPUT2 (LINE/MIC/MIC+48V) switch (page 4)

Switches for setting the audio level

CH1 (AUTO/MAN) switch (page 7)
CH2 (AUTO/MAN) switch (page 7)
AUDIO LEVEL (CH1) dial (page 7)
AUDIO LEVEL (CH2) dial (page 7)
AUDIO LEVEL (CH3) dial (page 7)
AUDIO LEVEL (CH4) dial (page 7)

Selecting the Audio Input Device

1 Select the audio input connector.
For CH1/CH2, select the audio input using the CH1 INPUT select switch or CH2 INPUT select switch.
Set to EXT to use the INPUT1 connector or INPUT2 connector.
If using a shoe microphone, XLR adaptor, UWP (UHF wireless microphone) device, or portable wireless tuner, specify MI SHOE in the same way. For details about the XLR adaptor, see “Adding Audio Input Connectors” (page 43).
For details about portable wireless tuners, see “Using a Portable Wireless Tuner” (page 43).
For CH3/CH4, select the audio input using Audio Input >CH3 Input Select* (page 102) and CH4 Input Select* (page 102) in the Audio menu.
* Can also be configured on the status screen.

[Tip]
For CH2, you can also select INPUT1 using Audio Input >CH2 EXT Input Select* (page 102) in the Audio menu.
* Can also be configured on the status screen.

[Note]
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 INT or Internal MIC.

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 feed 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 Audio Input >CH3 Level Control* and CH4 Level Control* in the Audio menu to Auto (page 102).
* Can also be configured on the status screen.

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 Audio Input >CH3 Level Control* and CH4 Level Control* in the Audio menu to Manual, and then set the audio recording level using the AUDIO LEVEL(CH3)/(CH4) dials.
- You can adjust the levels for CH1 to CH4 as a group. You can adjust the recording level using an assignable dial (page 44) assigned with the Audio Input Level function, or using Audio Input >Audio Input Level* in the Audio menu.

* Can also be configured on the status screen.

[Tip]
The Audio Status screen is convenient for checking the audio input level (page 14).

[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 138.
- If either the CH1 INPUT select switch or CH2 INPUT select switch is set to INT, CH2 is switched to automatic/manual in conjunction with the CH1 (AUTO/MAN) switch. Also, the CH2 audio recording level is set in conjunction with the AUDIO LEVEL (CH1) dial.
- The camcorder supports combinations of various settings. For details, see the diagram on page 138.

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 Audio Input >CH3 Input Select* to Shoe CH1 and CH4 Input Select* to Shoe CH2 in the Audio 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.

* Can also be configured on the status screen.

[Notes]

- The camcorder supports the 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 will be set to match 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 139).
- To attach an XLR-K2M XLR adaptor (not supplied) or XLR-K3M XLR adaptor (not supplied) to the camcorder, remove the microphone holder from the camcorder.

Using a Portable Wireless Tuner

An XDCA-FX9 Extension Unit (option) is required. For details about attaching an XDCA-FX9, see page 23.
With a portable wireless tuner attached to the XDCA-FX9, set Audio Input (page 102) >CH1 MI SHOE Input Select*, CH2 MI SHOE Input Select*, CH3 Input Select*, or CH4 Input Select* in the Audio menu to Wireless.

* Can also be configured on the status screen.

Useful Functions

Direct Menu Operation

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

- Face/Eye Detection AF
- Steady Shot
- White Mode
- Color Temp
- Scene File
- ND Filter Position / Auto ND Filter
- ND Filter Value
- Auto Iris
- Iris Value
- AGC
- Gain Value
- ISO Value
- EI Gain Value
- Auto Shutter
- Shutter Value
- Auto Exposure Mode
- Auto Exposure Level
- 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 6).
- 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.

Assignable Buttons/Dials

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

Changing the button function

Use Assignable Button (page 89) in the Project menu.
You can view the assigned functions on the Assignable Button Status screen (page 15).

Functions assigned to each assignable button by factory default

Button 1	S&Q Motion
Button 2	Off
Button 3	Off
Button 4	Focus Magnifier x3/x6
Button 5	Direct Menu
Button 6	Off
Button 7	Off
Button 8	Off
Button 9	Off
Button 10	Focus Magnifier x3/x6
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
- Auto Shutter
- Auto Exposure Level
- 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
- Focus Magnifier x3/x6
- Focus Magnifier x3
- Focus Magnifier x6
- S&Q Motion
- SteadyShot
- Rec
- Picture Cache Rec
- Rec Review
- Last Clip Del.
- Shot Mark1
- Shot Mark2
- 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
- Thumbnail
- Touch Operation
- Handle Zoom
- NFC
- Network Client Mode
- Auto Upload (Proxy)
- Direct Menu
- User Menu
- Menu

Changing the dial function

You can change the function of the multi-function dial on the camcorder and the assignable dial on the grip remote control.
For the multi-function dial, set using Multi Function Dial (page 91) >Default Function in the Project menu.
Off is assigned by factory default.

Functions assignable to the multi-function dial

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

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

For the assignable dial, set using Assignable Dial (page 91) in the Project menu.
IRIS is assigned by factory default.

Functions assignable to the assignable dial

- Off
- ISO/Gain/EI
- ND Filter
- IRIS
- Audio Input Level

You can view the assigned functions on the Assignable Button Status screen (page 15).

Slow & Quick Motion

When the recording format (page 86) 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	FFcrop 5K/S35 4K	XAVC-I	4096×2160P	1–60
			3840×2160P	1–60
			1920×1080P	1–60
		XAVC-L	3840×2160P	1–60
			1920×1080P	1–60
	FF 2K	XAVC-I	1920×1080P	1–60, 100, 120, 150, 180*1
		XAVC-L	1920×1080P	1–60, 100, 120
	S35 2K	XAVC-I	1920×1080P	1–60, 100, 120
		XAVC-L	1920×1080P	1–60, 100, 120
29.97/25/23.98	FF 6K	XAVC-I	4096×2160P	1-30
			3840×2160P	1–30
			1920×1080P	1–30
		XAVC-L	3840×2160P	1–30
			1920×1080P	1–30
	FFcrop 5K/S35 4K	XAVC-I	4096×2160P	1–60
			3840×2160P	1–60
			1920×1080P	1–60
		XAVC-L	3840×2160P	1–60
			1920×1080P	1–60
	FF 2K	XAVC-I	1920×1080P	1–60, 100, 120, 150, 180*2
		XAVC-L	1920×1080P	1–60, 100, 120
	S35 2K	XAVC-I	1920×1080P	1–60, 100, 120
		XAVC-L	1920×1080P	1–60, 100, 120
24	FF 6K	XAVC-I	4096×2160P	1-30
	FFcrop 5K/S35 4K	XAVC-I	4096×2160P	1–60

*1 Can be selected when the system frequency is 59.94.
*2 Can be selected when the system frequency is 29.97/23.98.

Recording format				Frame rate
System frequency	Imager scan mode	Codec	RAW format	
59.94/50	FFcrop 5K	RAW/ RAW&XAVC-I*3/ RAW&XAVC-L*3	4096×2160	1–60
	S35 4K	RAW	4096×2160	1–60
			3840×2160	1–60, 100, 120
		RAW&XAVC-I*3/ RAW&XAVC-L*3	4096×2160	1–60
	FF 2K	RAW/ RAW&XAVC-I*3	2048×1080	1–60, 100, 120, 150, 180*1
		RAW&XAVC-L*3	2048×1080	1–60, 100, 120
	S35 2K	RAW/ RAW&XAVC-I*3/ RAW&XAVC-L*3	2048×1080	1–60, 100, 120
29.97/25/23.98	FF 6K	RAW/ RAW&XAVC-I*3/ RAW&XAVC-L*3	4096×2160	1–30
	FFcrop 5K	RAW/ RAW&XAVC-I*3/ RAW&XAVC-L*3	4096×2160	1–60
	S35 4K	RAW	4096×2160	1–60
			3840×2160	1–60, 100, 120
		RAW&XAVC-I*3/ RAW&XAVC-L*3	4096×2160	1–60
	FF 2K	RAW/ RAW&XAVC-I*3	2048×1080	1–60, 100, 120, 150, 180*2
		RAW&XAVC-L*3	2048×1080	1–60, 100, 120
	S35 2K	RAW/ RAW&XAVC-I*3/ RAW&XAVC-L*3	2048×1080	1–60, 100, 120
24	FF 6K	RAW	4096×2160	1–30
	FFcrop 5K/S35 4K	RAW	4096×2160	1–60

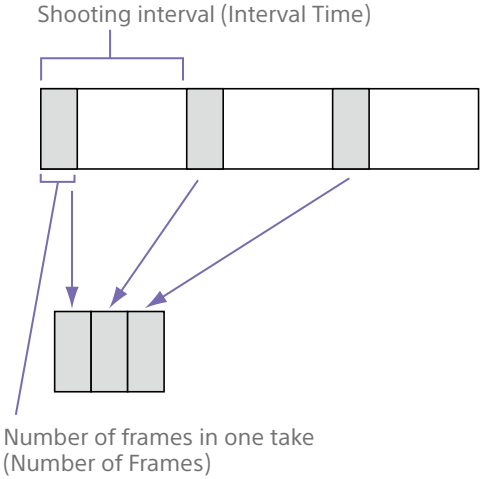
*1 Can be selected when the system frequency is 59.94.
*2 Can be selected when the system frequency is 29.97/23.98.
*3 Video format becomes 1920×1080.

You can turn Slow & Quick Motion mode on/off by pressing an assignable button (page 44) assigned with the S&Q Motion function.
You can set the frame rate for shooting by pressing and holding the button.

[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 focus function, auto iris function, and auto shutter function are disabled in Slow & Quick Motion mode.
- For details about using RAW output, see page 53.

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

Set Interval Rec (page 88) >Setting in the Project menu to On, and set Number of Frames and Interval Time.
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.

[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 107) 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 Interval Rec >Setting in the Project menu to Off.

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.
- Genlock is not applied.

If the camcorder is turned off during recording

- 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 and then record it to XQD memory cards by maintaining an internal cache memory of a specified duration when shooting. Set Picture Cache Rec >Setting* (page 88) in the Project menu to On.
The picture cache recording time is set using Picture Cache Rec >Cache Rec Time (page 88) in the Project menu.

* Can also be configured on the status screen.

Supported recording formats

Codec	Video format	System frequency	Cache time [sec.]
XAVC-I	4096×2160P	59.94	0–4 sec
		50	
		29.97	
		25	0–4/ 4–8 sec
		23.98	
		24	
	3840×2160P	59.94	0–4 sec
		50	
		29.97	
		25	0–4/ 4–8 sec
		23.98	
XAVC-I	1920×1080P	59.94	0–4/ 4–8 sec
		50	
		29.97	0–4/ 4–8/ 8–12/ 12–16/ 16–20/ 20–24 sec
		25	
		23.98	0–4/ 4–8/ 8–12/ 12–16/ 16–20/ 20–24/ 24–28 sec
	1920×1080i	59.94	0–4/ 4–8/ 8–12/ 12–16/ 16–20 sec
	1920×1080i	50	0–4/ 4–8/ 8–12/ 12–16/ 16–20/ 20–24 sec
XAVC-L	3840×2160P	59.94	0–4/ 4–8/ 8–12/ 12–16 sec
		50	
		29.97	0–4/ 4–8/ 8–12/ 12–16/ 16–20/ 20–24/ 24–28 sec
		25	
		23.98	

Codec	Video format	System frequency	Cache time [sec.]
XAVC-L	1920×1080P 50	59.94	0–4/ 4–8/ 8–12/ 12–16/ 16–20/ 20–24/ 24–28 sec
		50	
		29.97	
		25	
		23.98	
	1920×1080P 35	59.94	0–4/ 4–8/ 8–12/ 12–16/ 16–20/ 20–24/ 24–28 sec
		50	
		29.97	
		25	
		23.98	
	1920×1080i 50	59.94	0–4/ 4–8/ 8–12/ 12–16/ 16–20/ 20–24/ 24–28 sec
		50	
	1920×1080i 35	59.94	0–4/ 4–8/ 8–12/ 12–16/ 16–20/ 20–24/ 24–28 sec
		50	
	1920×1080i 25	59.94	0–4/ 4–8/ 8–12/ 12–16/ 16–20/ 20–24/ 24–28 sec
		50	
MPEG HD422	1920×1080i 50	59.94	0–4/ 4–8/ 8–12/ 12–16/ 16–20/ 20–24/ 24–28 sec
		50	
		29.97	
		25	
		23.98	

[Notes]

- Picture Cache Rec cannot be set to On at the same time as Interval Rec or Slow & Quick Motion. When Picture Cache Rec is set to On, these other recording modes 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 regardless of the setting in the TC/Media menu (page 97).
- 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.

Configuring before shooting

Configure Picture Cache Rec (page 88) in the Project menu before shooting.
You can also assign the Picture Cache Rec function to an assignable button (page 44) and switch Picture Cache Rec >Setting between On and Off using the button. When configured, the "●" (● is green) indicator appears in the viewfinder.

Starting picture cache recording

When you press the record START/STOP button, recording starts and video is written to XQD memory cards starting from the video stored in the cache memory.

To cancel Picture Cache Rec

Set Picture Cache Rec >Setting in the Project menu to Off, or press an assignable button assigned with the Picture Cache Rec function.

[Notes]

- Changing the recording format 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 an XQD 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 an XQD 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 >Setting* in the Project menu to On.

* Can also be configured on the status screen.

[Note]

Simultaneous recording is not supported in Slow & Quick Motion mode (page 84) or Picture Cache Rec mode (page 88). Also, simultaneous recording is not supported for the following recording formats (page 86).

XAVC-I

Video format
4096×2160P, 3840×2160P

XAVC-L

Video format
4096×2160P, 3840×2160P

Changing the Settings of the Record START/STOP Buttons on the Camcorder and Handle

When simultaneous recording (Simul Rec) is enabled, 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 follows the recording state of slot A.

To change the setting

Select Simul Rec >Rec Button Set 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 Set	Buttons and memory cards
"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.

4K & HD (Sub) Recording

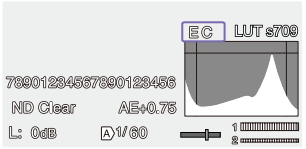
You can simultaneously record a 4K (QFHD) video as a main clip and an MPEG HD422 video as a sub-clip, which can be used for editing, to a single XQD memory card.
The following XQD memory card recording formats can be used for 4K & HD (Sub) recording.
The sub-clip recording format varies, depending on the system frequency of the main clip.

Main clip recording format	System frequency	Sub-clip recording format
• XAVC-I 4096×2160P • XAVC-I 3840×2160P	29.97/25/23.98	MPEG HD422 1920×1080P
• XAVC-L 3840×2160P	59.94/50	MPEG HD422 1920×1080i

[Tip]
Sub-clips can be copied to other media as main clips using Copy Sub Clip (page 104) in the Thumbnail menu.

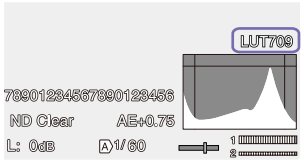
Video Signal Monitor

You can set the type of video signal to display on the viewfinder screen to waveform, vectorscope, or histogram using Display On/Off >Video Signal Monitor (page 100) in the Monitoring menu.
The video signal monitor of the camcorder measures the video signal in the video output stage. Accordingly, if the output video is edge cropped with respect to the recorded video, the cropped signal component will not be measured. When this occurs, "EC" is displayed at the top left of the video signal monitor.



Monitoring target display

In Cine EI mode, the color space setting (page 26) or monitor LUT setting (page 84) information is displayed at the top right of the video signal monitor to indicate the target of monitoring.



High Dynamic Range (HDR) Shooting

You can set high dynamic range (HDR) mode to record and output images with BT.2020 equivalent color space and increased dynamic range.

Setting high dynamic range mode

Set Base Setting >Shooting Mode* (page 86) in the Project menu to HDR.

* Can also be configured on the status screen.

Setting the type of HLG

Set the type of HLG for HDR mode using HDR Paint Setting >HLG Look (page 93) in the Paint menu.

HLG Look setting	Description
Natural	Characteristic conforming to ITU-R BT.2100(HLG).
Live	Characteristic conforming to ITU-R BT.2100(HLG) that delivers improved HDR performance. However, using this setting may increase the noise level.

Setting the gamma display assist function

Set Gamma Display Assist >Setting (page 101) in the Monitoring menu to On to view an assisted display in the viewfinder that makes shooting in HDR mode easier.

* Can also be configured on the status screen.

User 3D LUT

In Cine EI mode, you can load a CUBE file (*.cube) for a 17-point or 33-point 3D LUT created using RAW Viewer or DaVinci Resolve (by Blackmagic Design Pty. Ltd.).

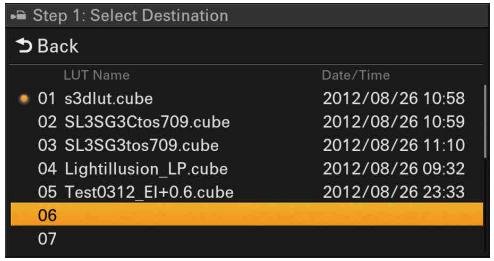
[Note]
Save the user 3D LUT file in the following directory on the SD card.
\PRIVATE\SONY\PRO\LUT\

The following procedure is required in order to use user 3D LUT.

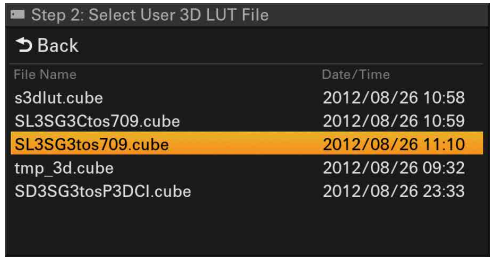
1 Insert the SD card into the UTILITY SD/MS card slot (page 8) with the label facing right.

2 Select Monitor 3D LUT >Load SD Card (page 85) in the Shooting menu.

3 Select a load destination.
You can register up to 16 files in the internal memory of the unit.



4 Select a file to load.



5 Select OK.
The selected file is loaded.

6 Select OK.

7 Set Monitor LUT >Category (page 84) in the Shooting to User 3D LUT.

8 Select the user 3D LUT you want to use using Monitor LUT >User 3D LUT Select (page 84) in the Shooting menu.

Obtaining Location Information (GPS)

When GPS in the Technical menu is set to On, is displayed when the camcorder is seeking GPS satellites. When positioning is established, location information is recorded when shooting video.

[Notes]
- The GPS setting in the Technical menu cannot be set to On when the handle is not attached, as the GPS receiver is built into the handle.
- The icon displayed varies, depending on the signal reception from the GPS satellites.
- While using the GPS function, gripping the handle may affect the positioning accuracy.

Positioning status	Display	GPS reception state
Off	No display	GPS is set to Off or an error occurred.
Positioning not available	NO GPS SIGNAL	Location information could not be obtained because GPS signal could not be received. Move to a location with a clear view of the sky.
Searching for satellites		Searching for GPS satellites. Several minutes may be required to acquire satellites.
Positioning		A weak GPS signal is being received.
		A GPS signal is being received. Location information can be acquired.
		A strong GPS signal is being received. Location information can be acquired.

[Tips]
- GPS is set to On by factory default. Location and time information of video shot when positioning is enabled is recorded by the camcorder.
- If a positioning icon is not displayed after several minutes, there may be a problem with signal reception. Start shooting without location information, or move to an area with a clear view of the sky. Shooting when a positioning icon is not displayed means that location information will not be recorded.
- The GPS signal may not be received when indoors or near tall structures. Move to a location with a clear view of the sky.
- The recording of location information may be interrupted, depending on the strength of the received signal, even if a positioning icon is displayed.

Planning Metadata

Planning metadata is information about shooting and recording plans recorded in an XML file.
You can shoot using clip names and shot mark names defined in advance in a planning metadata file.

You can send and receive planning metadata via a network using the “Content Browser Mobile” application.

[Notes]
- When the media slot cover is opened, the transfer of planning metadata via the network is interrupted. Planning metadata cannot be transferred while the cover is open. The transfer resumes when the cover is closed.
- To define clip names or shot mark names, use a font set for the language specified using Language >Select (page 114) in the Maintenance menu. Text characters may not be displayed correctly if you use a language that is different from the language setting of the camcorder.
- If you define clip and shot mark names in French, Dutch, or Finnish, some characters are displayed in a different but similar font.

Loading a planning metadata file

To record planning metadata together with clips, it is necessary to load a planning metadata file into the camcorder’s memory beforehand.
Insert the XQD memory card with the planning metadata file (.xml) saved to the directory below into the camcorder card slot, then select and load the file using Planning Metadata (page 92) >Load Media(A) or Load Media(B) in the Project menu.
exFAT: XDROOT/General/Sony/Planning

Confirming the detailed information in planning metadata

After loading planning metadata into the camcorder, you can check the detailed information that it contains, such as file names, date and time of creation, and titles.
Select Planning Metadata (page 92) >Properties >Execute in the Project menu.

Clearing the loaded planning metadata

You can clear the planning data loaded in the camcorder memory.
Select Planning Metadata (page 92) >Clear Memory >Execute in the Project menu.

Defining a clip name in planning metadata

The following two types of clip name strings can be written in a planning metadata file.
- ASCII-format name that is displayed on the viewfinder screen
- UTF-8 format name that is actually registered as the clip name

When you specify a clip name in planning metadata, the name is displayed under the operation status indication on the viewfinder screen.

Example of clip name strings

Use a text editor to modify the description for the planning metadata <Title> tag.
The shaded fields in the example are clip name strings.
“Typhoon” is described in ASCII format (up to 44 characters). “Typhoon_Strikes” is described in UTF-8 format (up to 44 bytes).
“␣” indicates a space and ↵ indicates a carriage return.

```
<?xml␣version="1.0"␣encoding="
UTF-8"?>↵
<PlanningMetadata␣xmlns="http://
xmlns.sony.net/pro/metadata/
planningmetadata"␣assignId="
P0001"␣creationDate="
2011-08-20T17:00:00+09:00"␣
lastUpdate="
2011-09-28T10:30:00+09:00"␣
version="1.00">↵
    <Properties␣propertyId="
    assignment"␣update="
    2011-09-28T10:30:00+09:00"␣
    modifiedBy="Chris">↵
        <Title␣usAscii="Typhoon"␣
        xml:lang="en">Typhoon_Strikes
```

```
        </Title>↵
    </Properties>↵
</PlanningMetadata>↵
```

[Notes]

- When you create a file, enter each statement as a single line by breaking a line with a carriage return only after the last character of the line, and do not enter spaces except where specified with "sp."
- A string of up to 44 bytes (or 44 characters) is valid as a clip name.
  If the UTF-8 format string exceeds 44 bytes, the first 44 bytes are used as the clip name.
  If only a string in ASCII format is specified, the ASCII format name up to the 44th character is used as the clip name.
  When neither the ASCII format name string nor UTF-8-format name string is valid, a clip name in the standard format is used.
- The following characters cannot be used in clip names, and are replaced by an underscore character (_).
  Invalid characters: "*/:<>?\|

Using a clip name defined in planning metadata

Load a planning metadata file that contains the clip name into the memory of the camcorder, then select Clip Name Format >Auto Naming (page 97) >Plan in the TC/Media menu.
Clip names are generated by adding an underscore (_) and a 5-digit serial number (00001 to 99999).
Example: Typhoon_Strikes_00001, Typhoon_Strikes_00002, ...

[Notes]

- If the serial number reaches 99999, it returns to 00001 upon the next recording.
- When you load another planning metadata file, the 5-digit serial number returns to 00001.

Defining shot mark names in planning metadata

When you record shot mark 1 or shot mark 2, you can apply a name to the shot mark, using a string defined in planning metadata.

Example of shot mark name strings

Use a text editor to modify the description for the planning metadata <Meta name> tag. The shaded fields in the example are shot mark name strings.
Names can be either in ASCII-format (up to 32 characters) or UTF-8-format (up to 16 characters).
"sp" indicates a space and ↵ indicates a carriage return.

[Note]

If a name string contains even one non-ASCII character, the maximum length of that string is limited to 16 characters.

```
<?xml sp version="1.0" sp encoding="
UTF-8"?>↵
<PlanningMetadata xmlns="http://
xmlns.sony.net/pro/metadata/
planningmetadata" sp assignId="
H00123" sp creationDate="
2011-04-15T08:00:00Z" sp lastUpdate="
2011-04-15T15:00:00Z" sp version=
"1.00">↵
<Properties sp propertyId=
"assignment" sp class="original" sp
update="2011-04-15T15:00:00Z" sp
modifiedBy="Chris">↵
    <Title sp usAscii="Football
    Game" sp xml:lang="en">
    Football Game 15/04/2011
    </Title>↵
        <Meta sp name="_ShotMark1" sp
        content="Goal"/>↵
        <Meta sp name="_ShotMark2" sp
        content="Shoot"/>↵
    </Properties>↵
</PlanningMetadata>↵
```

[Note]

When you create a file, enter each statement as a single line by breaking a line with a carriage return only after the last character of the line, and do not enter spaces except where specified with "sp" outside the shot mark name strings.

Proxy Recording

You can record proxy data to an SD card at the same time as recording to an XQD memory card.

For details about supported SD cards, formatting SD cards, and checking the remaining capacity, see "Using a UTILITY SD/MS Card" (page 30).

Configuring Before Shooting

1 Set Proxy Rec* >Setting in the Project menu to On.
* Can also be configured on the status screen.

2 Insert the SD card into the UTILITY SD/MS card slot (page 8) with the label facing right.

[Note]
Proxy Rec cannot be set to On at the same time as S&Q Motion, Interval Rec, Picture Cache Rec, 2-slot Simul Rec, or 4K & HD (Sub) 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 the recording after completing the required setting for shooting.

[Notes]
- If the camcorder is turned off or the SD card is removed while the SD 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 off before turning off the camcorder or removing the SD card.
- Take caution to prevent the SD card from flying out when inserting/ejecting the card.

To exit, stop the recording.
When the recording on an XQD memory card is stopped, proxy data recording is also stopped.

Changing Proxy Recording Settings

Setting the picture size

Select Proxy Rec >Proxy Format (page 88) in the Project menu, and set the picture size.

Setting the audio channel

Select Proxy Rec >Audio Channel (page 88) in the Project menu, and set the audio channel for proxy data recording.

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 "/PRIVATE/PXROOT/Clip" directory.

About the File Name

The file name consists of the clip name recorded on the XQD memory card and a consecutive number suffix.
In 2-slot Simul Rec mode, the clip name of slot A has precedence.
The consecutive number is maintained even if the camcorder is turned off. The consecutive number returns to 0001 by executing All Reset.
For details about clip names, see Clip Name Format (page 97) in the TC/Media menu.

Recording RAW Video

You can record the RAW video signal output from the RAW OUT connector of an XDCA-FX9 (option) attached to the camcorder to an external recorder.

1 Connect an external RAW recorder to the RAW OUT connector of the XDCA-FX9 attached to the camcorder.

2 Set Base Setting >Shooting Mode* in the Project menu to Cine EI.

3 Set the codec using Rec Format >Codec* in the Project menu to RAW.
Selecting RAW & XAVC-I will simultaneously record RAW video to the external RAW recorder and HD video to the XQD memory cards in the camcorder.

4 Select the scan mode and resolution using Rec Format >Imager Scan Mode* in the Project menu.

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 button on the camcorder, clips may not be recorded properly.

[Tip]
Functions marked with an asterisk (*) can also be configured on the status screen.

The supported RAW output formats are shown below.

Project >Rec Format			
Frequency	Codec	Imager Scan Mode	RAW Output Format
59.94/50	RAW	FFcrop 5K	4096×2160
		S35 4K	4096×2160/ 3840×2160
		FF 2K/ S35 2K	2048×1080
	RAW & XAVC-I/ RAW & XAVC-L/ RAW & MPEG HD 422	FFcrop 5K/ S35 4K	4096×2160
		FF 2K/ S35 2K	2048×1080
29.97/25/ 23.98	RAW	FF 6K/ FFcrop 5K	4096×2160
		S35 4K	4096×2160/ 3840×2160
		FF 2K/ S35 2K	2048×1080
	RAW & XAVC-I/ RAW & XAVC-L/ RAW & MPEG HD 422	FF 6K/ FFcrop 5K/ S35 4K	4096×2160
		FF 2K/ S35 2K	2048×1080
24	RAW	FF 6K/ FFcrop 5K/ S35 4K	4096×2160

Recording control status display

If Display On/Off (page 99) >RAW Output Control Status in the Monitoring menu is set to On, the RAW recording control status is displayed in the viewfinder using an icon.

[Note]
The recording control signal is output from the RAW 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 45.

Connecting to Other Devices via LAN

The camcorder can connect to smartphones, tablets, and other devices via LAN connection. Making a LAN connection between a device and the camcorder enables the following using the web remote control (page 64) or "Content Browser Mobile" application.

- Planning metadata (page 50)
  Send and receive planning metadata using a device and camcorder.
  You can send planning metadata created beforehand to the camcorder to specify clip names.
- Remote operation via LAN
  You can control the camcorder from a smartphone, tablet, or computer that is connected to the camcorder via a LAN.
- File transfer via LAN
  You can transfer a proxy file (low resolution) that is recorded on an SD card in the camcorder or original file (high resolution) that is recorded by the camcorder to the server via a LAN.
- Video monitoring via LAN
  You can create a stream (H.264) from the camera or playback video of the camcorder, and monitor the video using the "Content Browser Mobile" application from a device via a LAN.

"Content Browser Mobile" application

You can operate the camcorder remotely on the device screen while monitoring the video from the camcorder, and configure settings of the camcorder, using the "Content Browser Mobile" application.

For details about the "Content Browser Mobile" application, contact your Sony sales or service representative.

Streaming high quality video using Sony QoS technology (page 62)

You can stream high quality video using a Sony Network RX Station (sold separately) or XDCAM air* Connection Control Manager (CCM) connected with the camcorder in network client mode.

* XDCAM air is a cloud service that is provided by Sony. To use this service, registration is required.
XDCAM air is not provided in some regions. For details on areas where the service is provided, refer to the following site.
https://www.xdcam-air.com
In addition, refer to the following sites for the privacy policy of XDCAM air.
– Terms of service
https://www.xdcam-air.com/site/tos_eu.html
– Privacy policy of XDCAM air
https://sony-imaging-products-solutions.co.jp/pp/sips/en/index.html
– Privacy policy of professional ID
https://www.pro-id.sony.net/#/privacyPolicy
For more details, contact a Sony professional sales representative.

Setting the User Name and Password

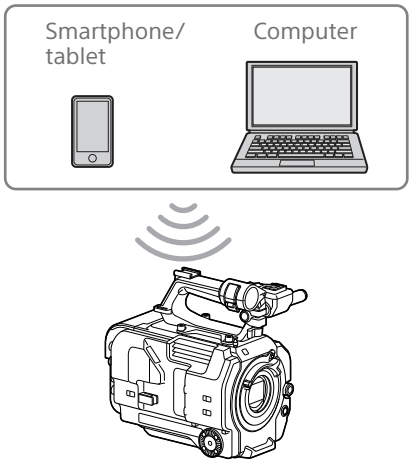
Set the user name and password of the camcorder in order to use the network function.

1 Set Access Authentication >User Name (page 109) in the Network menu.

2 Set Access Authentication >Password (page 109) in the Network menu.

Connecting using Wireless LAN Access Point Mode

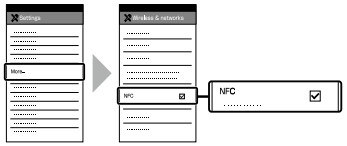
The camcorder works as an access point, and connects to a device via a wireless LAN.



Connecting to an NFC-compatible device with one-touch operation

Devices that support NFC can be connected (one-touch connection) using NFC.

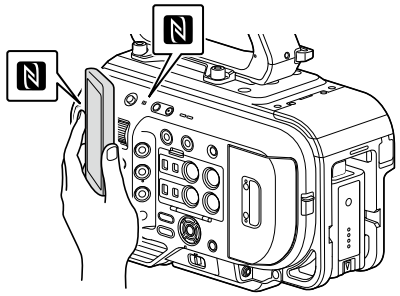
1 Open [Settings] on the device, select [More], and place a check mark in the NFC checkbox.



2 Turn the camcorder on.

3 Activate the NFC function.
Press and hold (for 3 seconds) an assignable button assigned with NFC or select Wireless LAN >NFC in the Network menu to activate NFC connection mode.
The NFC function is available only while N appears on the screen.

4 Touch the camcorder using the device.
The device connects to the camcorder and "Content Browser Mobile" starts.



[Notes]

- Disable sleep mode and screen lock beforehand.
- Touch and hold the device still until the "Content Browser Mobile" application launches (1 to 2 seconds).

Connecting to a WPS-compatible device

Devices that support WPS can be connected using WPS.

1 Select Wireless LAN >Setting >Access Point Mode in the Network menu.

2 Select Wireless LAN >WPS >Execute in the Network menu.

3 Open the device Network settings or Wi-Fi settings on the device, and turn Wi-Fi on.

4 Select the camcorder SSID from the SSID list in Wi-Fi Network on the device, then select WPS Push Button in Option on the device to connect.

[Notes]
- The operation method differs depending on the device.
- For the SSID and password of the camcorder, check AP Mode Settings >Camera SSID & Password (page 109) in the Network menu.

5 Display the web remote control (page 64). Or connect using the Content Browser Mobile application.

Connecting by inputting an SSID and password on a device

You can connect the camcorder to a device by entering the SSID and password on a device.

1 Select Wireless LAN >Setting >Access Point Mode in the Network menu.

2 Open the device Network settings or Wi-Fi settings on the device, and turn Wi-Fi on.

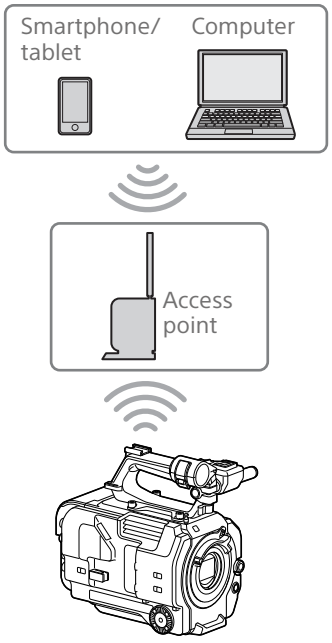
3 Connect the device to the camcorder by selecting the camcorder SSID from the SSID list in Wi-Fi Network and entering the password.
For the SSID and password of the camcorder, check AP Mode Settings >Camera SSID & Password (page 109) in the Network menu.

[Note]
The operation method differs depending on the device.

4 Display the web remote control (page 64). Or connect using the Content Browser Mobile application.

Connecting using Wireless LAN Station Mode

The camcorder connects to an existing access point of the wireless LAN as a client. The camcorder and device connect 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 passwords are not saved. Password entry is required the next time you connect after loading the ALL file.



Connecting to an access point using WPS

If the access point is compatible with the WPS function, you can connect to the access point with simple settings.

1 Turn the access point on.

2 Turn the camcorder on.

3 Select Wireless LAN >Setting > Station Mode in the Network menu.

4 Select Wireless LAN >WPS >Execute in the Network menu.

5 Press the WPS button of the access point.
For details about the operation of the WPS button, refer to the operating instructions of the access point.
When the connection is successful, the network status indicator icon will show a strength of 1 or higher on the viewfinder screen.

[Note]
If the connection fails, perform steps from step 1 again.

6 Connect the device to the access point.
For details about connecting, refer to the operating instructions of the device.

7 Display the web remote control (page 64). Or connect using the Content Browser Mobile application.

Connecting to an access point using auto network detection or manually

You can configure connection to a desired access point from the setup menu.
You can configure connection to a desired access point using the auto network detection function.

Connecting using the network auto detection function

1 Perform steps 1 to 3 in “Connecting to an access point using WPS” (page 55).

2 Select ST Mode Settings >Scan Networks (page 110) >Execute in the Network menu.
The camcorder starts detection of connection destinations.
Possible destinations that are found are displayed in a list.

3 Select a destination from the list.
The network (access point) details screen appears. The selected connection is displayed in SSID.

4 Select Password, and set the password on the password input screen.
Selecting an SSID in the connection history automatically configures settings, including the password.
Set the password to return to the network (access point) details screen.

5 Configure the following connection settings.
- DHCP
  Set the DHCP setting.
  When you set to On, the IP address is assigned to the camcorder automatically.
  To assign the IP address to the camcorder manually, set to Off.
- IP Address
  Enter the IP address of the unit.
  This setting is available only when DHCP is set to Off.
- Subnet Mask
  Enter the subnet mask of the unit.
  This setting is available only when DHCP is set to Off.
- Gateway
  Enter the gateway for the access point.
  This setting is available only when DHCP is set to Off.
- DNS Auto
  Sets 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.
- Secondary DNS Server
  Enter the secondary DNS server for the access point.
  This setting is available only when DNS Auto is set to Off.

6 When finished, select Connect to connect to the access point.

Connecting manually

1 Perform steps 1 to 3 in “Connecting to an access point using WPS” (page 55).

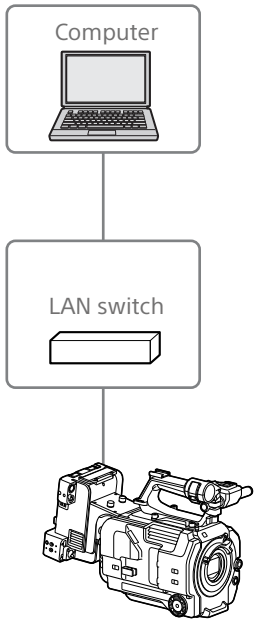
2 Select ST Mode Settings >Manual Register (page 110) >Execute in the Network menu.
Momentarily, the network (access point) details screen appears.

3 Configure the following connection settings.
- SSID
  Enter the SSID for the connection access point.
- Security
  Select the encryption method.
- Password
  Enter the password for the connection access point.
- DHCP
  Set the DHCP setting.
  When you set to On, the IP address is assigned to the camcorder automatically.
  To assign the IP address to the camcorder manually, set to Off.
- IP Address
  Enter the IP address of the unit.
  This setting is available only when DHCP is set to Off.
- Subnet Mask
  Enter the subnet mask of the unit.
  This setting is available only when DHCP is set to Off.
- Gateway
  Enter the address of the gateway.
  This setting is available only when DHCP is set to Off.
- DNS Auto
  Sets 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.
- Secondary DNS Server
  Enter the address of the secondary DNS server.
  This setting is available only when DNS Auto is set to Off.

4 When finished, select Connect to connect to the access point.

Connecting to a Device using a LAN Cable

You can connect with a device by connecting the wired LAN connector of the XDCA-FX9 (page 23) attached to the camcorder to a LAN switch using a LAN cable.



LAN cable connections and wired LAN settings

1 Connect the wired LAN connector of the XDCA-FX9 to a LAN switch using a LAN cable.

2 Turn the camcorder on.

3 Set Wired LAN >Setting (page 111) in the Network menu to On.

4 Configure connection settings using Wired LAN >Detail Settings (page 111) in the Network menu.

- DHCP
  Set the DHCP setting.
  When you set to On, the IP address is assigned to the camcorder automatically. To assign the IP address to the camcorder manually, set to Off.
- IP Address
  Enter the IP address of the unit.
  This setting is available only when DHCP is set to Off.
- Subnet Mask
  Enter the subnet mask of the unit.
  This setting is available only when DHCP is set to Off.
- Gateway
  Enter the address of the gateway.
  This setting is available only when DHCP is set to Off.
- DNS Auto
  Sets 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.
- Secondary DNS Server
  Enter the address of the secondary DNS server.
  This setting is available only when DNS Auto is set to Off.

5 When finished, select Set to apply the settings.

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

Connecting to the Internet

You can connect the camcorder to the Internet using a modem, wired LAN, or wireless LAN.

Connecting using a Modem

You can connect the camcorder to the Internet via a 3G/4G network by attaching an XDCA-FX9 (page 23) to the camcorder and an optional modem to the XDCA-FX9.
Attaching and using more than one modem at the same time enables high-quality streaming in network client mode, using two lines for higher quality streaming and device redundancy.
For details about compatible modems, contact your Sony dealer or a Sony service representative.

[Note]
A modem cannot be used at the same time as a wired LAN.

Attaching an XDCA-FX9 to the unit

Attach a modem that supports the USB standard to the USB connector (Type A) of the XDCA-FX9. Two modems can be used simultaneously by connecting modems to both connectors.

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

Connecting to a network

1 Turn the camcorder on.

2 Set Modem >Setting in the Network menu to On.

[Note]
It may take some time (about 1 minute) to connect to a 3G/4G network. Wait until the network status indicator (page 11) modem icon shows a strength of 1 or higher on the viewfinder screen.

Connecting using USB Tethering

You can connect a smartphone via a USB cable to an XDCA-FX9 attached to the camcorder, and then connect to the internet using the smartphone.

Attaching a smartphone to the camcorder

Connect a smartphone via a USB cable to the USB connector (Type A) (page 4) of an XDCA-FX9 attached to the camcorder.

[Notes]
- Attach/remove the smartphone while the camcorder is turned off.
- USB tethering cannot be used if the smartphone is connected via a USB hub.

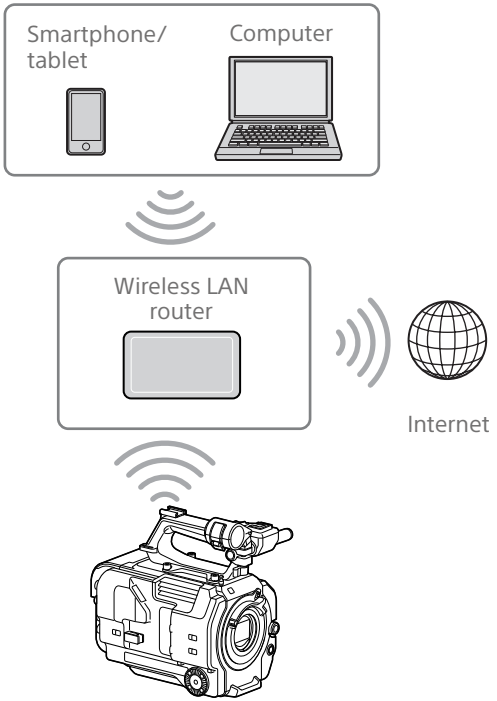
Connecting to a network

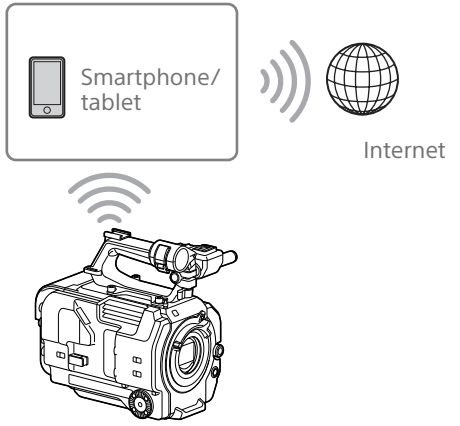
1 Turn the camcorder on.

2 Set Modem >Setting in the Network menu to On.

Connecting using Wireless LAN Station Mode

You can connect the camcorder to the Internet in Wi-Fi station mode via an optional wireless LAN router or by tethering to a device.

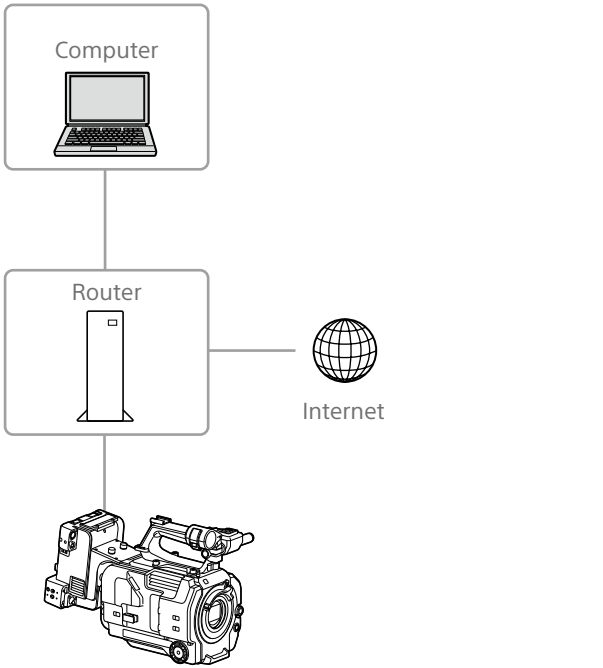




Connect to the wireless LAN router or device as described in “Connecting using Wireless LAN Station Mode” (page 55).

Connecting using a LAN Cable

You can connect with a device by connecting the wired LAN connector of the XDCA-FX9 (page 23) attached to the camcorder to an Internet router using a LAN cable.



Connect to the Internet router as described in “Connecting to a Device using a LAN Cable” (page 56).

Uploading Files

You can upload a proxy file or original file that is recorded on the camcorder to a server on the Internet or a server on a local network via a 3G/4G network or access point.

[Note]
When the media slot cover is opened, the transfer of files via the network is interrupted. Files cannot be transferred while the cover is open. The transfer resumes when the cover is closed.

Preparations

Connecting to a network

Connect the camcorder to the Internet or local network as described in "Connecting to the Internet" (page 58) or "Connecting to Other Devices via LAN" (page 54).

Registering a file transfer destination

Register the server for uploading in advance.

1 Select File Transfer >Server Settings1 (or Server Settings2, Server Settings3) in the Network menu.
The transfer destination setup screen appears.

2 Set each item on the transfer destination setup screen.
Display Name
Enter the name of the server to display in the transfer destination list.
Service
Displays the server type.
"FTP": FTP server
Host Name
Enter the address of the server.
Port
Enter the port number of the server to connect.
User Name
Enter the user name.
Password
Enter the password.
Passive Mode
Turn passive mode on/off.
Destination Directory
Enter the name of the directory on the destination server.

[Notes]
- 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.

Using Secure Protocol
Set whether to perform secure FTP uploading.
Root Certificate
Load/clear a certificate.
- Load
  Select Set in step 3 to import a CA certificate.
  * The certificate to be loaded must be in PEM format, and should be written to the root directory of the Utility SD card with "certification.pem" file name.
- 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 camcorder to the correct time before importing a CA certificate.
- When recording in XAVC-I 3840×2160P 59.94/50P, Load cannot be selected.
- 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 settings of Server Settings to the defaults.

3 When finished, select Set to apply the settings.
Always select Set after changing the settings. The settings are not applied if Set is not selected.

You can also register a server using the web remote control "Registering a destination server" (page 65).

Selecting a File and Uploading

Upload a file that is recorded on an SD card or an original file that is recorded on an XQD memory card to a server.
Files can also be uploaded via web remote control. For details, see "Transferring files (Slot A, Slot B, Slot SD/MS)" (page 66).

Uploading a proxy file on an SD card from the thumbnail screen

1 Connect the camcorder and device using a LAN connection (page 54).

2 Select Transfer Clip (Proxy) >Select Clip in the Thumbnail menu.
The display changes from the setup menu to the thumbnail screen.
Clips can be transferred from the thumbnail screen or the filtered clip thumbnail screen.

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

4 Select Execute.
The proxy file corresponding to the selected file is registered as a transfer job, and uploading begins.
When the transfer job is successfully registered, the transfer result screen appears.

5 Select OK.

To upload all files

Select All Clips instead of Select Clip in step 2 to transfer the proxy files corresponding to all the files.

[Note]
Up to 200 files can be transferred.

Uploading an original file on an XQD memory card from the thumbnail screen

1 Connect the camcorder and device using a LAN connection (page 54).

2 Select Transfer Clip >Select Clip in the Thumbnail menu.
The display changes from the setup menu to the thumbnail screen.
Clips can be transferred from the thumbnail screen or the filtered clip thumbnail screen.

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

4 Select Execute.
The selected file is registered as a transfer job, and uploading begins.
When the transfer job is successfully registered, the transfer result screen appears.

5 Select OK.

To upload all files

Select All Clips instead of Select Clip in step **2** to transfer all the files.

[Note]
Up to 200 files can be transferred.

Checking the file transfer

You can check the status of file transfer by selecting File Transfer >View Job List (page 112) in the Network menu.
You can check the upload status on the Job List screen that is displayed by selecting Job List on the SD Card, Slot A, or Slot B screen (page 66).

[Tips]
- You can also check the status of file transfer from the web remote control screen.
- If File Transfer >Auto Upload (Proxy) in the Network menu is set to On and a network connection exists, proxy files are automatically uploaded to the server specified using Default Upload Server when recording ends. For details, see “Uploading a proxy file automatically” (page 66).

[Notes]
- Up to 200 transfer jobs can be registered.
- The job list is retained when the camcorder is turned off, but up to 10 minutes of recent progress information may be lost if the battery pack is removed or the camcorder is powered off without first setting the POWER switch to STANDBY.
- 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.

Uploading using Secure FTP

You can upload files with encryption using FTPS in Explicit mode (FTPES) for the connection with the destination file server.

Setting secure FTP transfer

For secure FTP transfer, set Using Secure Protocol on the destination file server to ON and import a certificate.
For details about configuration, see “Registering a file transfer destination” (page 60).

Using Network Client Mode

High-quality streaming is supported by enabling network client mode and connecting a Sony Network RX Station (option) as a Connection Control Manager (CCM) or connecting via XDCAM air.

Setting the Network Client Mode Connection

Up to three network client mode connections can be configured as NCM Settings.

1 Select Network Client Mode >NCM Settings1 (or NCM Settings2, NCM Settings3) in the Network menu.
The network client mode connection destination setup screen appears.

2 Set each item on the connection destination setup screen.

Display Name
Set the display name in the NCM Settings menu.

CCM Address
Enter the address of the CCM to connect (host name or IP address).

CCM Port
Enter the port number of the CCM to connect.

User Name
Enter the user name.

Password
Enter the password.

CCM Certificate
A CCM root certificate is required to connect to a CCM or to XDCAM air. The camcorder contains a built-in CCM root certificate, which can also be updated. To update the CCM root certificate, save the certificate on a memory card and then import the certificate from the memory card.

- Load
  Select Set in step 3 to import a certificate.
  * The certificate to be loaded must be in PEM format, and should be written to the root directory of the SD card with "CCM_certification.pem" file name.
- Clear
  Select Set in step 3 to clear a certificate.
- None
  Do not load or clear a certificate.

[Notes]
- Set the clock of the camcorder to the correct time before loading CCM and XDCAM air connection certificates.
- When recording in XAVC-I 3840×2160P 59.94/50P or XAVC-I 4096×2160P 59.94/50P, Load cannot be selected.
- In low voltage state, CCM and XDCAM air connection certificates cannot be loaded or cleared.

CCM Certificate Status
Displays the load status of the certificate.

Camera Control
Enable/disable camera control when connected with a CCM.

Camera Setting
Enable/disable ALL file operations when connected with a CCM.

Reset
Reset the settings of NCM Settings to the defaults.

3 When finished, select Set to apply the settings.
Always select Set after changing the settings. The settings are not applied if Set is not selected.

4 Select Network Client Mode >NCM Settings Select in the Network menu, and then select the NCM settings (NCM Settings1, NCM Settings2, NCM Settings3) specified in steps 1 to 3.

Setting the Streaming Quality

Set Network Client Mode >Streaming Quality (page 112) in the Network menu to High for high-quality streaming. Set Streaming Quality to Normal for normal quality.

[Notes]
- Streaming Quality cannot be set to High in the following cases.
  - When Proxy Rec >Setting (page 88) in the Project menu is set to On
  - When 4K & HD (Sub) Rec >Setting (page 88) in the Project menu is set to On
  - When Focus >Face/Eye Detection AF (page 84) in the Shooting menu is not set to Off
- When Network Client Mode >Setting (page 112) in the Network menu is set to On, Streaming Quality cannot be changed.

Connecting in Network Client Mode

1 Connect the camcorder to the Internet as described in "Connecting to the Internet" (page 58).

2 Set Network Client Mode >Setting in the Network menu to On.
Network client mode is enabled, and the camcorder connects to the Network RX Station or XDCAM air.
Live streaming starts in response to Network RX Station operation. For details about operation, refer to the instruction manual for the Network RX Station or the Help for XDCAM air.
You can also set Setting to On or Off by pressing an assignable button (page 44) assigned with Network Client Mode.

[Notes]
- Streaming cannot be started under the following menu settings.
  - When S&Q Motion >Setting in the Shooting menu is set to On
  - When Interval Rec >Setting in the Project menu is set to On
  - When Simul Rec >Setting in the Project menu is set to On
- After changing to network client mode, monitoring (page 65) is not available.
- Changing to network client mode while monitoring will stop the monitoring.
- File transfer is not supported during streaming in network client mode. File transfer is supported after stopping streaming.
- If streaming in network client mode is started during file transfer, the file transfer stops. File transfer restarts after stopping streaming.
- User Name, Password, and certificates are not saved in an ALL file, so these must be configured again after loading an ALL file.
- If Setting is set to Off while streaming in network client mode, streaming stops.
- When streaming in network client mode, NCM Settings Select and the NCM Settings selected using NCM Settings Select cannot be changed.
- During streaming, the screen information update frequency is reduced, but this does not affect operation.
- The recording settings cannot be changed during streaming in network client mode.
- The wired LAN settings cannot be changed during streaming in network client mode.
- The image may momentarily stop when switching to the thumbnail screen or playback screen during QoS streaming.
- The distribution formats available for streaming vary depending on the Rec Format setting of the camcorder.

Transferring Files in Network Client Mode

You can transfer files to a server set by the CCM by connecting a Network RX Station acting as a CCM and the camcorder in network client mode.

1 Select the file to upload from the CCM or other source.

- To transfer a proxy file
  Perform steps 1 to 4 in “Uploading a proxy file on an SD card” (page 66).
- To transfer an original file
  Perform steps 1 to 4 in “Uploading an original file on an XQD memory card” (page 66).

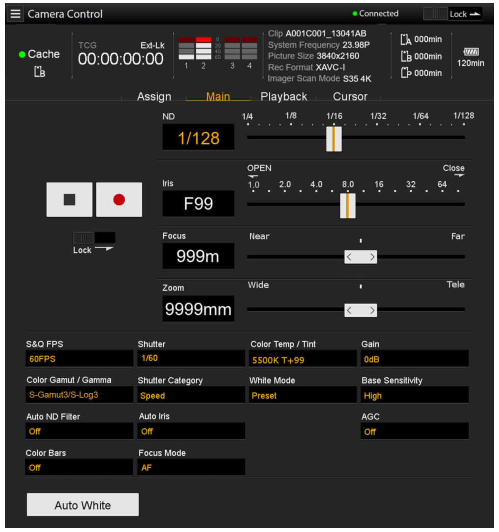
[Note]
The destination can also be set to “NCM: RX Server” when not in network client mode. In this case, transfer is placed on hold, and then transfer to the server specified on the CCM starts after connecting to the CCM in network client mode.

Using Web Remote Control

You can access the web remote control built into the camcorder from a tablet or computer over a network connection.
Using the web remote control allows you to operate the camcorder remotely. You can start/stop recording and adjust the recording settings with a connected device. This function is useful for setting the camcorder in a remote place, such as the top of a crane, etc.

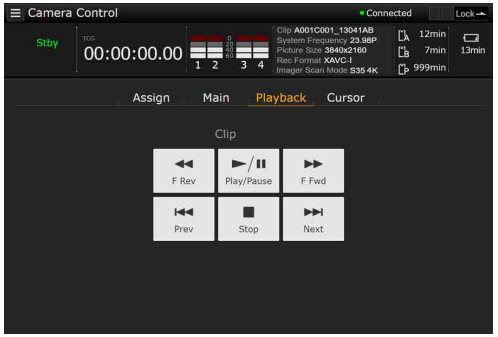
Camera Control screen

Main screen



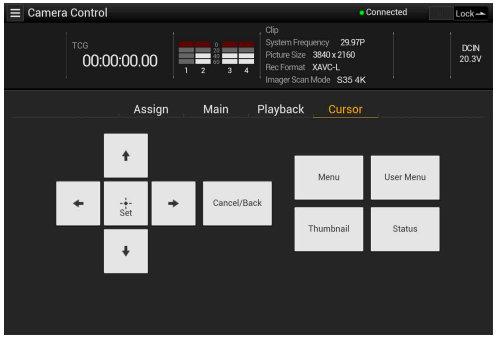
- Status display
- Record start/stop button
- ND filter slider
- Iris slider
- Focus slider
- Zoom slider
- Shooting settings (SDR or HDR shooting mode (page 26))
  S&Q Frame Rate, Shutter, Color Temp/Tint, Gain, Gamma, Shutter Category, White Mode, Base Sensitivity, Auto ND Filter, Auto Iris, AGC, Color Bars, Focus Mode, Auto White
- Shooting settings (Cine EI shooting mode)
  S&Q Frame Rate, Shutter, Color Temp/Tint, Exposure Index, Color Gamut/Gamma, Shutter Category, White Mode, Base ISO, Auto ND Filter, Auto Iris, AGC, Color Bars, Focus Mode, Monitor LUT, Auto White

Playback screen



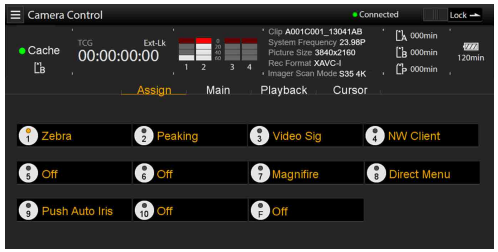
- Status display
- Playback control buttons
  F Rev, Play/Pause, F Fwd, Prev, Stop, Next

Cursor screen



- Status display
- Cursor control buttons, menu/status display
  Up, Left, Set, Right, Down, Cancel/Back, Menu, User Menu, Thumbnail, Status

Assign screen



- Status display
- Assignable button display
  Assignable buttons 1 to 10, Focus Hold button

Displaying the Web Remote Control

1 Connect the camcorder and device via a network connection (page 54).

2 Launch a browser on the device, then access “http://IP address of camcorder/rm.html.”
For example, if the IP address is 192.168.122.1, enter “http://192.168.122.1/rm.html” in the address bar.
You can check the IP address of the camcorder on the Network Status screen (page 16).

3 Enter the user name and password (Access Authentication >User Name and Password in the Network menu).
When connection is successful, the web remote control screen appears on the device.
You use the Wi-Fi Remote screen to operate the camcorder.

The buttons become unavailable when the Lock switch is dragged to the right.

[Notes]

- The web remote control screen may not match the camcorder settings under the following circumstances. If this occurs, reload the browser window.
  - If the camcorder is restarted while connected
  - If the camcorder is operated directly while connected
  - If the device has been reconnected
  - If the browser Forward/Back buttons have been used
- The web remote control may not function if the wireless signal strength becomes weak.

Web Remote Control Compatible Devices

You can use a tablet or computer to configure and operate the camcorder.
The supported devices, OS, and browsers are shown in the following table.

Device	OS	Browser
Tablet	Android 7/8	Chrome
	iOS 12	Safari
Computer	Windows 7/8.1/10	Chrome
	macOS 10.13/10.14	Safari

For details about devices supported using the “Content Browser Mobile” application, contact your Sony sales or service representative.

Web Remote Control Menu

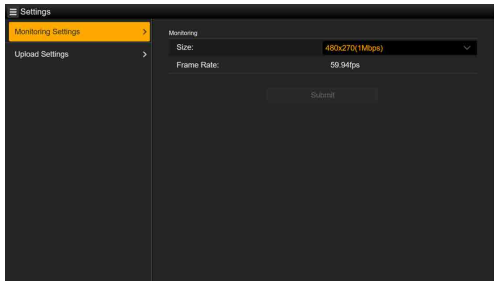
Tapping ☰ in the top left of the screen will display the screen selection menu. Select Monitoring Settings to display the Monitoring Settings screen.
Tapping ☰ in the top left of the Monitoring Settings screen will display the setup menu for tasks, such as file transfer.

Menu items

- Remote Control
  Camera Control
- Monitoring
  Monitoring Settings
- File Transfer
  Slot A
  Slot B
  Slot SD/MS
  Job List
  Upload Settings

Video monitoring settings (Monitoring Settings)

You can set the format when monitoring on a device.



Size

Sets the picture size and bit rate of the video for monitoring.

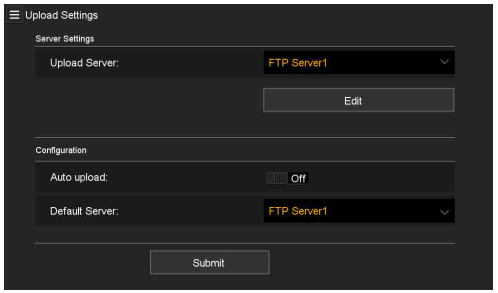
- 480×270(1Mbps)
- 480×270(0.5Mbps)

Frame Rate

Displays the frame rate of the video for monitoring.

File transfer settings (Upload Settings)

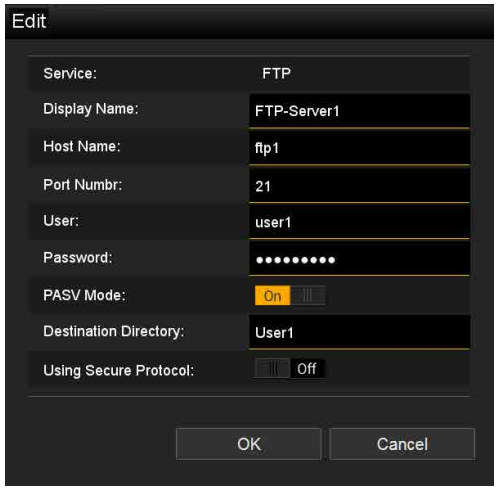
You can change the server settings for uploading a proxy file or an original file that is recorded on the camcorder.



Registering a destination server

Select a server in the Upload Server list and tap Edit to display the server setup screen, then set each item to register a server.
You can also register a server using File Transfer (page 112) in the Network menu.
A server configured here will be displayed in the file transfer list on the Slot A, Slot B, and Slot SD/MS screens when uploading a file.

Upload Server Edit screen



Tap OK to apply the settings. Tap Cancel to cancel the settings.

Service
Displays the server type.
"FTP": FTP server

Display Name
Enter the name of the server to display in the list.

Host Name
Enter the address of the server.

Port
Enter the port number of the server to connect.

User Name
Enter the user name.

Password
Enter the password.

[Notes]

- The password is cleared when the Edit screen is opened for security reasons. Enter it again if the server settings have changed.
- From a security standpoint, it is recommended that you set a password with a sufficiently long character string that is hard to guess by others, and that you store it safely.

Display Password
Shows/hides the password.
When set to Off, the configured password is not displayed. When entering a password, all characters are displayed as asterisks.
When set to On, the configured password is displayed. When entering a password, all characters are displayed.

Passive Mode
Turn passive mode on/off.

Destination Directory
Enter the directory on the destination server.

[Note]
If characters that are invalid on the destination server are entered in the destination directory, files will be transferred to the user's home directory. Invalid characters will vary depending on the server.

Using Secure Protocol
Set whether to perform secure FTP uploading. Setting to ON displays the certificate status. To import or clear a certificate, tap Select Function and select a task in the displayed menu.

- Load
  Load a CA certificate.
  * The certificate to be loaded must be in PEM format, and should be written to the root directory of the SD card with "certification.pem" file name.
- Clear
  Clear the CA certificate.
- None
  Do not load or clear a certificate.

[Note]
Set the clock of the camcorder to the correct time before importing a CA certificate.

Changing registered server settings

Select the server whose settings you want to change on the Upload Settings screen, then tap Edit. Change the settings as required on the displayed screen.
You can also set a server using File Transfer (page 112) in the Network menu.

Uploading a proxy file automatically

Auto Upload On/Off

When Auto Upload On/Off is set to On and the camcorder is connected to the Internet, the camcorder automatically uploads a proxy file to the transfer destination that is set using Default Upload Server after recording.

Default Upload Server

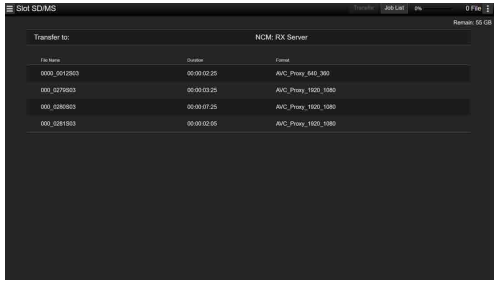
Select the default destination file transfer server.

File transfer management (File Transfer)

You can transfer original files recorded on an XQD memory card or proxy files recorded on an SD card, manage file transfer, and configure the file transfer destination.

Transferring files (Slot A, Slot B, Slot SD/MS)

You can display a list of clips recorded on media inserted in slot A/slot B or a list of proxy files recorded on media inserted in the UTILITY SD/MS card slot.



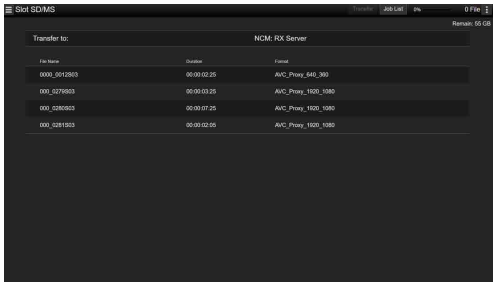
You can select a displayed file to upload the file to a server on the Internet.

Uploading a proxy file on an SD card

1 Connect the camcorder and device using a LAN connection (page 54).

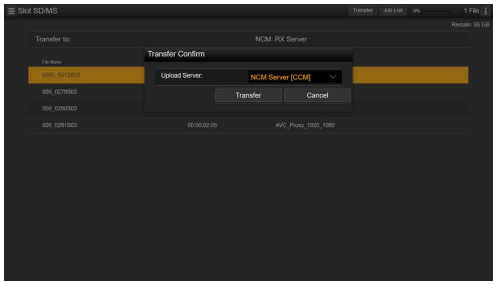
2 Launch a browser on the device and display the web remote control (page 64).

3 Display the file list screen to select a file.
Tap ☰ >File Transfer >Slot SD/MS.
A file list screen for the media inserted in the UTILITY SD/MS card slot appears.



4 Select the file to upload.
Tap the file to select it. To cancel, tap the file again.
You can double-tap the file to play the file and check the contents (SD card only).

5 Tap Transfer.
The server that you set using Default Upload Server in “Registering a destination server” (page 65) appears.
To change the server, tap the server to display the server list, then select a server.
Input the name of the directory on the server in Directory if necessary.



6 Tap Transfer.
The camcorder starts uploading the selected file.
To cancel uploading, tap Cancel.

Uploading an original file on an XQD memory card

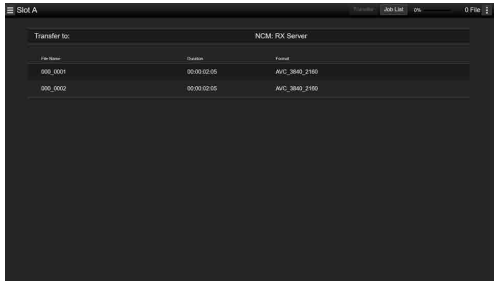
[Tip]

The cover of the XQD card slot must be closed in order to view information about the files on the XQD memory card.

1 Connect the camcorder and device using a LAN connection (page 54).

2 Launch a browser on the device and display the web remote control (page 64).

3 Display the file list screen to select a file.
Tap ☰ >File Transfer >Slot A or Slot B.
A file list screen for the media inserted in slot A or slot B appears.
Example: Slot A screen



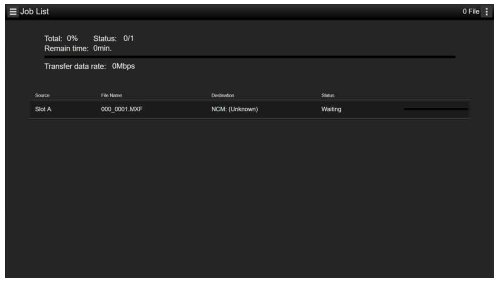
4 Select the file to upload.
Tap the file to select it. To cancel, tap the file again.

5 Tap Transfer.
The server that you set using Default Upload Server in “Registering a destination server” (page 65) appears.
To change the server, tap the server to display the server list, then select a server.
Input the name of the directory on the server in Directory if necessary.

6 Tap Transfer.
The camcorder starts uploading the selected file.
To cancel uploading, tap Cancel.

Checking the file transfer (Job List)

You can check the list of the files to be uploaded, the file that is being uploaded, cancel or start the file upload, and delete the file from the file list.
The camcorder is compatible with the FTP resume function (resume upload for a file whose transfer was suspended).



- Total: Progress of all the files to be uploaded.
- Status: Progress of the file that is currently being uploaded.
- Remain Time: Estimated remaining time for uploading.
- Transfer data rate: Transfer rate indication.

To cancel or start uploading, or delete a file from the file list

1 Select a file.

2 Tap ⋮ at the upper right of the screen, and select an item.
- Abort selected: Cancel uploading the selected file.
- Delete from list: Delete the selected file from the list.
- Start selected: Start uploading the selected file.

- Clear completed: Delete the list of uploaded files.
- Select All: Select all files in the list.

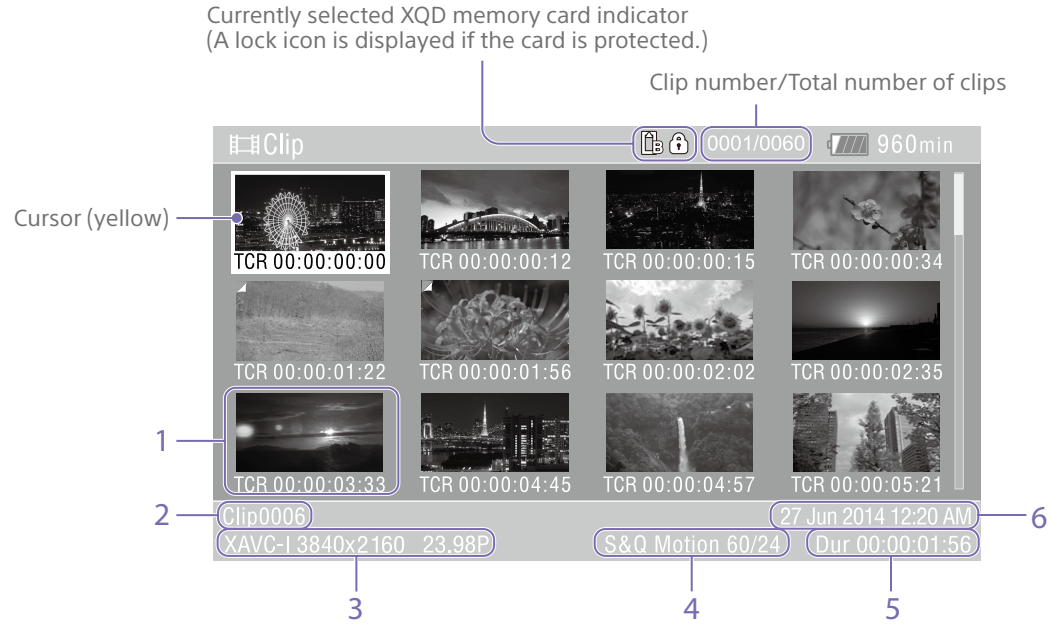
Thumbnail Screen

The thumbnail screen appears if you press the THUMBNAIL button (page 7). The thumbnail screen displays the clips stored on XQD memory cards as thumbnails (index pictures).
You can select a clip on the thumbnail screen and start playback of that clip. The playback image can be displayed in the viewfinder and on an external monitor.
Pressing the THUMBNAIL button again closes the thumbnail screen and returns to the camera image.

[Note]
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.

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 change the information displayed using Customize View (page 105) >Thumbnail Caption in the Thumbnail 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

Playing Recorded Clips

You can play recorded clips when the camcorder is in recording standby (Stby) mode.

1 Insert an XQD memory card for playback.

2 Press the THUMBNAIL button.

3 Use the arrow buttons (page 7) or multi-function dial (page 4) to move the cursor to the thumbnail for the clip you want to play.

4 Press the SET button or multi-function dial.
Playback begins from the start of the selected clip.

You can control playback by pressing the following buttons.

Press the SET button or multi-function dial:
Pauses playback.
Press again to return to normal playback.

Press the left/right arrow buttons:
Jumps to start of clip/start of next clip.

Press and hold the left/right arrow 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 in the thumbnail screen and begin playback, there may be momentary picture breakup at the start of the clip. To start playback without distortion from the beginning of the clip, pause playback once after starting it, press the left arrow button to return to the start of the clip, then restart playback.
- You can also use the multi selector (page 9).

Clip Operations

On the thumbnail screen, you can operate the clips or check clip properties using the Thumbnail menu.
The Thumbnail menu (page 104) appears when you press the MENU button and select Thumbnail.

Thumbnail Menu Operations

Use the arrow buttons (page 7) or the multi-function dial (page 4) to select a function, then press the SET button or multi-function dial.
Press the CANCEL/BACK button (page 7) to return to the previous screen.

[Tip]
You can also use the multi selector (page 9).

[Note]
Some items cannot be selected, depending on the state when the menu was displayed.

Menu Items for Clip Operations

- Display Clip Properties
- Set Shot Mark
- Set Clip Flag
- Lock/Unlock Clip
- Delete Clip
- Copy Clip
- Copy Sub Clip
- Transfer Clip
- Transfer Clip (Proxy)
- Set Index Picture
- Thumbnail View
- Filter Clips
- Customize View

For details about clip operation menu items, see the Thumbnail menu (page 104).

Displaying clip properties

Select Display Clip Properties (page 104) in the Thumbnail menu to display the clip properties screen.

Displaying the essence mark thumbnail screen

Select Thumbnail View (page 105) >Essence Mark Thumbnail in the Thumbnail menu, and select the essence mark type to display a thumbnail view of the frames that have the specified essence mark.
To display all clips, set Thumbnail View >Essence Mark Thumbnail in the Thumbnail menu to All.

Displaying the filtered clip thumbnail screen

Select Filter Clips (page 105) in the Thumbnail 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 XQD memory cards.
Select Delete Clip >Select Clip or All Clips in the Thumbnail 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 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.

Setup Menu Configuration and Hierarchy

Press the MENU button to display the setup menu in the viewfinder to specify various items for shooting, recording, and playback (menu can also be displayed on an external monitor). The setup 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 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.

Setup Menu Hierarchy

User (Factory settings)	Base Setting
	Rec Format
	ISO/Gain/EI
	Focus
	S&Q Motion
	Monitor LUT
	Monitor LUT Setting
	Simul Rec
	4K & HD (Sub) Rec
	Proxy Rec
	Picture Cache Rec
	Assignable Button
	Assignable Dial
	Multi Function Dial
	All File
	Clip Name Format
	Format Media
	Output Format
	VF Setting
	Menu Settings
Edit User Menu	Add Item
	Customize Reset

Shooting	ISO/Gain/EI
	ND Filter
	Shutter
	Auto Exposure
	White
	White Setting
	Offset White
	Focus
	S&Q Motion
	Monitor LUT
	Monitor LUT Setting
	Monitor 3D LUT
	Noise Suppression
	Flicker Reduce
	SteadyShot
	Auto Black Balance
Project	Base Setting
	Rec Format
	Cine EI Setting
	Simul Rec
	4K & HD (Sub) Rec
	Proxy Rec
	Interval Rec
	Picture Cache Rec
	SDI/HDMI Rec Control
	Assignable Button
	Assignable Dial
	Multi Function Dial
	User File
	All File
	Planning Metadata

Paint	HDR Paint Setting
	Black
	Gamma
	Black Gamma
	Knee
	White Clip
	Detail(4K/QFHD)
	Detail(HD)
	Skin Detail
	Aperture
	Matrix
	Multi Matrix
	Scene File
TC/Media	Timecode
	TC Display
	Users Bit
	HDMI TC Out
	Clip Name Format
	Update Media
	Format Media
Monitoring	Output On/Off
	Output Format
	Output Setting
	Output Display
	Display On/Off
	Marker
	VF Setting
	Gamma Display Assist
	Peaking
	Zebra
Audio	Audio Input
	Audio Output

Thumbnail	Display Clip Properties
	Set Shot Mark
	Set Clip Flag
	Lock/Unlock Clip
	Delete Clip
	Copy Clip
	Copy Sub Clip
	Transfer Clip
	Transfer Clip (Proxy)
	Set Index Picture
	Thumbnail View
	Filter Clips
	Customize View
Technical	Color Bars
	Test Saw
	ND Dial
	Tally
	HOLD Switch Setting
	Touch Operation
	Rec Review
	Handle Zoom
	GPS
	Menu Settings
	Fan Control
	Lens
	Video Light Set
	APR
	Camera Battery Alarm
	Camera DC IN Alarm
	Ext. Unit Battery Alarm
	Ext. Unit DC IN Alarm

Network	Access Authentication
	Wireless LAN
	AP Mode Settings
	ST Mode Settings
	Wired LAN
	Modem
	Network Client Mode
	File Transfer
	Network Reset
Maintenance	Language
	Clock Set
	All Reset
	Hours Meter
	Version

Setup Menu Operations

Press the MENU button to display the setup menu in the viewfinder to specify various items for shooting, recording, and playback (menu can also be displayed on an external monitor).

Menu Controls

MENU button (page 7)
: Turns menu mode for setup menu operations on/off.

↑/↓/←/→/SET button (page 7)
: Press the arrows buttons to move the cursor up/down/left/right to select menu items or settings.
Press the SET button to apply the selected item.

[Tip]
You can also use the multi selector (page 9) in the same way.

Multi-function dial (page 4)
: 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 7)
: Press to return to the previous menu. An uncompleted change is canceled.

[Notes]
- The setup menu cannot be operated when in focus magnifier mode (page 36).
- Some items cannot be selected, depending on the state when the menu was displayed.
- Touch operation is not supported.

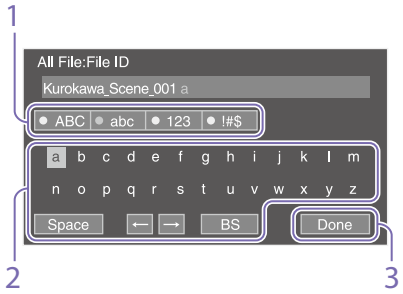
Setting Menu Items

Press the arrow buttons or turn the multi-function dial to move the cursor to the menu item to set, then press the SET button or multi-function dial to select the item.

- 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 Press the arrow buttons or turn the multi-function dial to select a character type, then apply the setting.
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.
Space: Enters a space character at the cursor position.
←/→: Moves the position of the cursor.
BS: Deletes the character on the left of the cursor (backspace).

3 When finished, select [Done] and apply the setting.
The character string is confirmed and the character entry screen disappears.

Locking and Unlocking the Menu

You can lock the setup menu so that only the User menu is displayed.
Settings on the status screen also cannot be changed.

Locking the menu

1 Press and hold the multi-function dial and press the MENU button.

2 Select Menu Settings >User Menu with Lock in the Technical menu.

[Note]
When only the MENU button is pressed to display the normal setup menu, User Menu Only is displayed under Menu Settings in the Technical menu. Press and hold the multi-function dial and press the MENU button to display User Menu with Lock.

3 Set to On, and press the SET button or multi-function dial.
The viewfinder screen 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 SET 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 SET 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 the MENU button.

2 Select Menu Settings >User Menu with Lock in the User menu.

[Note]
When only the MENU button is pressed to display the normal setup menu, User Menu Only is displayed under Menu Settings in the Technical menu. Press and hold the multi-function dial and press the MENU button to display User Menu with Lock.

3 Set to Off, and press the SET button or multi-function dial.
The viewfinder screen display switches to the passcode number input screen.

4 Enter the passcode number used to lock the menu.
Enter a number and press the SET 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 SET 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 setup menu items from the following tables 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.

Setup 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
Shooting >Auto Exposure >Auto ND Filter	Auto ND Filter
Shooting >Auto Exposure >Auto Shutter	Auto Shutter
Shooting >Auto Exposure >Level	Auto Exposure Level
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 >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
Technical >Touch Operation >Setting	Touch Operation
Technical >Handle Zoom >Setting	Handle Zoom
Network >Wireless LAN >NFC	NFC
Network >Network Client Mode >Setting	Network Client Mode
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
Rec Format	Project >Rec Format item
ISO/Gain/EI	Shooting >ISO/Gain/EI item
Focus	Shooting >Focus item
S&Q Motion	Shooting >S&Q Motion item
Monitor LUT	Shooting >Monitor LUT item
Monitor LUT Setting	Shooting >Monitor LUT Setting item
Simul Rec	Project >Simul Rec item
4K & HD (Sub) Rec	Project >4K & HD (Sub) Rec item
Proxy Rec	Project >Proxy Rec item
Picture Cache Rec	Project >Picture Cache 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
Output Format	Monitoring >Output Format item
VF Setting	Monitoring >VF Setting 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. The camcorder is configured with 20 items by default. To add an item, you first have to delete an existing item using Delete in the Edit User menu and then add an item using Add Item.

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.
ISO/Gain<H>	When Mode is set to ISO with dynamic range of 460% and Base Sensitivity is set to High: ISO 1600 / ISO 2000 / ISO 2500 / ISO 3200 / ISO 4000 / ISO 5000 / **ISO 6400** / ISO 8000 / ISO 10000 / ISO 12800 / ISO 16000 / ISO 20000 / ISO 25600 / ISO 32000 / ISO 40000 / ISO 51200 / ISO 64000 / ISO 80000 / ISO 102400 When Mode is set to ISO with dynamic range of 460% and Base Sensitivity is set to Low: ISO 320 / ISO 400 / ISO 500 / ISO 640 / ISO 800 / ISO 1000 / **ISO 1250** / ISO 1600 / ISO 2000 / ISO 2500 / ISO 3200 / ISO 4000 / ISO 5000 / ISO 6400 / ISO 8000 / ISO 10000 / ISO 12800 / ISO 16000 / ISO 20000 When Mode is set to ISO with dynamic range of 800% and Base Sensitivity is set to High: ISO 2500 / ISO 3200 / ISO 4000 / ISO 5000 / ISO 6400 / ISO 8000 / **ISO 10000** / ISO 12800 / ISO 16000 / ISO 20000 / ISO 25600 / ISO 32000 / ISO 40000 / ISO 51200 / ISO 64000 / ISO 80000 / ISO 102400 When Mode is set to ISO with dynamic range of 800% and Base Sensitivity is set to Low: ISO 500 / ISO 640 / ISO 800 / ISO 1000 / ISO 1250 / ISO 1600 / **ISO 2000** / ISO 2500 / ISO 3200 / ISO 4000 / ISO 5000 / ISO 6400 / ISO 8000 / ISO 10000 / ISO 12800 / ISO 16000 / ISO 20000	Sets the <H> gain preset value. [Tip] The dynamic range is determined by the gamma. The gamma in HDR mode is HLG. Gamma / Dynamic range STD / HG1 / HG2 / HG3 / HG4 / S-Cinetone: 460% HG7 / HG8: 800% S-Log3 / HLG: 1300%

Shooting >ISO/Gain/EI
Sets gain settings.

Item	Sub-item setting	Description
ISO/Gain<H>	When Mode is set to ISO with dynamic range of 1300% and Base Sensitivity is set to High: ISO 4000 / ISO 5000 / ISO 6400 / ISO 8000 / ISO 10000 / ISO 12800 / **ISO 16000** / ISO 20000 / ISO 25600 / ISO 32000 / ISO 40000 / ISO 51200 / ISO 64000 / ISO 80000 / ISO 102400 When Mode is set to ISO with dynamic range of 1300% and Base Sensitivity is set to Low: ISO 800 / ISO 1000 / ISO 1250 / ISO 1600 / ISO 2000 / ISO 2500 / **ISO 3200** / ISO 4000 / ISO 5000 / ISO 6400 / ISO 8000 / ISO 10000 / ISO 12800 / ISO 16000 / ISO 20000 When Mode is set to dB: –3dB to 27dB (**12dB**) (1dB increments)	

Shooting >ISO/Gain/EI Sets gain settings.		
Item	Sub-item setting	Description
ISO/Gain<M>	(Same settings as ISO/Gain<H>) The default values are given below. When Mode is set to ISO with dynamic range of 460% and Base Sensitivity is set to High: **ISO 3200** When Mode is set to ISO with dynamic range of 460% and Base Sensitivity is set to Low: **ISO 640** When Mode is set to ISO with dynamic range of 800% and Base Sensitivity is set to High: **ISO 5000** When Mode is set to ISO with dynamic range of 800% and Base Sensitivity is set to Low: **ISO 1000** When Mode is set to ISO with dynamic range of 1300% and Base Sensitivity is set to High: **ISO 8000** When Mode is set to ISO with dynamic range of 1300% and Base Sensitivity is set to Low: **ISO 1600** When Mode is set to dB: **6dB**	Sets the <M> gain preset value.

Shooting >ISO/Gain/EI Sets gain settings.		
Item	Sub-item setting	Description
ISO/Gain<L>	(Same settings as ISO/Gain<H>) The default values are given below. When Mode is set to ISO with dynamic range of 460% and Base Sensitivity is set to High: **ISO 1600** When Mode is set to ISO with dynamic range of 460% and Base Sensitivity is set to Low: **ISO 320** When Mode is set to ISO with dynamic range of 800% and Base Sensitivity is set to High: **ISO 2500** When Mode is set to ISO with dynamic range of 800% and Base Sensitivity is set to Low: **ISO 500** When Mode is set to ISO with dynamic range of 1300% and Base Sensitivity is set to High: **ISO 4000** When Mode is set to ISO with dynamic range of 1300% and Base Sensitivity is set to Low: **ISO 800** When Mode is set to dB: **0dB**	Sets the <L> gain preset value.

Shooting >ISO/Gain/EI
Sets gain settings.

Item	Sub-item setting	Description
Exposure Index<H>	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 4000: 1000EI / 4.0E 1250EI / 4.3E 1600EI / 4.7E 2000EI / 5.0E 2500EI / 5.3E 3200EI / 5.7E 4000EI / 6.0E 5000EI / 6.3E **6400EI / 6.7E** 8000EI / 7.0E 10000EI / 7.3E 12800EI / 7.7E 16000EI / 8.0E	Sets the <H> exposure index value. Available in Cine EI mode only.
Exposure Index<M>	(Same settings as Exposure Index<H>) When Base ISO is set to ISO 800: **1000EI / 6.3E** When Base ISO is set to ISO 4000: **5000EI / 6.3E**	Sets the <M> exposure index value.
Exposure Index<L>	(Same settings as Exposure Index<H>) When Base ISO is set to ISO 800: **800EI / 6.0E** When Base ISO is set to ISO 4000: **4000EI / 6.0E**	Sets the <L> exposure index value.
Shockless Gain	On / **Off**	Turns the shockless gain function on/off.
Base Sensitivity	High / **Low**	Sets the base sensitivity for SDR/HDR mode.

Shooting >ISO/Gain/EI
Sets gain settings.

Item	Sub-item setting	Description
Base ISO	ISO 4000 / **ISO 800**	Sets the base ISO sensitivity for Cine EI mode.

Shooting >ND Filter
Sets the preset values for the ND filter.

Item	Sub-item setting	Description
Preset1	**1/4** / 1/8 / 1/16 / 1/32 / 1/64 / 1/128	Sets the preset 1 value for the ND filter.
Preset2	1/4 / 1/8 / **1/16** / 1/32 / 1/64 / 1/128	Sets the preset 2 value for the ND filter.
Preset3	1/4 / 1/8 / 1/16 / 1/32 / **1/64** / 1/128	Sets the preset 3 value for the ND filter.

Shooting >Shutter
Sets electronic shutter operating condition settings.

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 operating condition settings.

Item	Sub-item setting	Description
Shutter Speed	64F to 1/8000 The available settings vary depending on the frame frequency of the selected video format. 59.94P / 59.94i: 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 50P / 50i: 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 operating condition settings.

Item	Sub-item setting	Description
ECS Frequency	23.99 to 8000 The available settings vary depending on the frame frequency of the selected video format. The default values are given below. 59.94P: **60.00** 59.94i: **60.00** 50P: **50.00** 50i: **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 >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 a subject 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.
AGC	On / **Off**	Turns the AGC (auto gain control) function on/off.

Shooting >Auto Exposure Sets automatic exposure adjustment settings.		
Item	Sub-item setting	Description
AGC Limit	When ISO/Gain/EI >Mode is set to dB: 3dB / 6dB / 9dB / 12dB / **15dB** / 18dB / 21dB / 24dB / 27dB When ISO/Gain/EI >Mode is set to ISO with dynamic range of 460% and Base Sensitivity is set to High: ISO 2000 / ISO 2500 / ISO 3200 / ISO 4000 / ISO 5000 / ISO 6400 / ISO 8000 / **ISO 10000** / ISO 12800 / ISO 16000 / ISO 20000 / ISO 25600 / ISO 32000 / ISO 40000 / ISO 51200 / ISO 64000 / ISO 80000 / ISO 102400 When ISO/Gain/EI >Mode is set to ISO with dynamic range of 460% and Base Sensitivity is set to Low: ISO 400 / ISO 500 / ISO 640 / ISO 800 / ISO 1000 / ISO 1250 / ISO 1600 / **ISO 2000** / ISO 2500 / ISO 3200 / ISO 4000 / ISO 5000 / ISO 6400 / ISO 8000 / ISO 10000 / ISO 12800 / ISO 16000 / ISO 20000 When ISO/Gain/EI >Mode is set to ISO with dynamic range of 800% and Base Sensitivity is set to High: ISO 3200 / ISO 4000 / ISO 5000 / ISO 6400 / ISO 8000 / ISO 10000 / ISO 12800 / **ISO 16000** / ISO 20000 / ISO 25600 / ISO 32000 / ISO 40000 / ISO 51200 / ISO 64000 / ISO 80000 / ISO 102400 When ISO/Gain/EI >Mode is set to ISO with dynamic range of 800% and Base Sensitivity is set to Low: ISO 640 / ISO 800 / ISO 1000 / ISO 1250 / ISO 1600 / ISO 2000 / ISO 2500 / **ISO 3200** / ISO 4000 / ISO 5000 / ISO 6400 / ISO 8000 / ISO 10000 / ISO 12800 / ISO 16000 / ISO 20000	Sets the maximum gain of the AGC function.

Shooting >Auto Exposure Sets automatic exposure adjustment settings.		
Item	Sub-item setting	Description
AGC Limit	When ISO/Gain/EI >Mode is set to ISO with dynamic range of 1300% and Base Sensitivity is set to High: ISO 5000 / ISO 6400 / ISO 8000 / ISO 10000 / ISO 12800 / ISO 16000 / ISO 20000 / **ISO 25600** / ISO 32000 / ISO 40000 / ISO 51200 / ISO 64000 / ISO 80000 / ISO 102400 When ISO/Gain/EI >Mode is set to ISO with dynamic range of 1300% and Base Sensitivity is set to Low: ISO 1000 / ISO 1250 / ISO 1600 / ISO 2000 / ISO 2500 / ISO 3200 / ISO 4000 / **ISO 5000** / ISO 6400 / ISO 8000 / ISO 10000 / ISO 12800 / ISO 16000 / ISO 20000	
AGC Point	When Lens >Iris Display in the Technical menu is set to F-Number, or when Iris Display is set to Auto and T value information cannot be obtained from the attached lens: **F2.8** / F4 / F5.6 When Lens >Iris Display in the Technical menu is set to Auto and T value information can be obtained from the attached lens: **T2.8** / T4 / T5.6	Sets the F-stop value of the iris where AGC operation starts when the AGC function is On.
Auto Shutter	On / **Off**	Turns the auto shutter control function on/off.
A.SHT Limit	1/100 / 1/150 / 1/200 / 1/250 / **1/2000**	Sets the fastest shutter speed of the auto shutter function.
A.SHT Point	When Lens >Iris Display in the Technical menu is set to F-Number, or when Iris Display is set to Auto and T value information cannot be obtained from the attached lens: F5.6 / F8 / **F11** / F16 When Lens >Iris Display in the Technical menu is set to Auto and T value information can be obtained from the attached lens: T5.6 / T8 / **T11** / T16	Sets the F-stop value of the iris where auto shutter operation starts.

Shooting >Auto Exposure Sets automatic exposure adjustment settings.		
Item	Sub-item setting	Description
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)
Detect Window Indication	On / **Off**	Turns the light metering range indication on/off.
Average Peak Level Ratio	–99 to +99 (**±0**)	Sets the ratio between the average value and the peak of the video signal used for Auto Exposure detection.
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.
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.

Shooting >White Setting
Adjusts white balance settings.

Item	Sub-item setting	Description
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.
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. [Note] Since Offset Color Temp is clipped at ±99 during R/B Gain operation, it may not be possible to display the correct Offset Color Temp value for the R/B Gain value.
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. [Note] Since Offset Tint is clipped at ±99 during R/B Gain operation, it may not be possible to display the correct Offset Tint value for the R/B Gain value.
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.

Shooting >Offset White
Sets white balance offset settings.

Item	Sub-item setting	Description
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. [Note] Since Offset Color Temp is clipped at ±99 during R/B Gain operation, it may not be possible to display the correct Offset Color Temp value for the R/B Gain value.
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. [Note] Since Offset Tint is clipped at ±99 during R/B Gain operation, it may not be possible to display the correct Offset Tint value for the R/B Gain value.
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 33). 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/eye detection AF.
Push AF Mode	**AF** / Single-shot AF(AF-S)	Sets the push auto focus mode.
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 45).

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	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 >Monitor LUT
Sets monitor LUT settings. Available only when shooting in Cine EI mode.

Item	Sub-item setting	Description
Category	**LUT** / User 3D LUT	Selects the monitor LUT category.

Shooting >Monitor LUT
Sets monitor LUT settings. Available only when shooting in Cine EI mode.

Item	Sub-item setting	Description
LUT Select	709(800%) / HG8009G40 / HG8009G33 / S-Log3 / **s709**	Selects the monitor LUT type. 709(800%): Signal with ITU-R709 base curve with extended dynamic range up to 800%. HG8009G40: Signal using HyperGamma with 800% dynamic range, 109% white limit, and 18% gray card video output of 40%. HG8009G33: Signal using HyperGamma with 800% dynamic range, 109% white limit, and 18% gray card video output of 33%. S-Log3: Log signal with 1300% dynamic range that mimics film characteristics, close to Cineon Log curve. s709: Cinema color equivalent to 709(800%). [Note] Configurable only when Category is set to LUT.
User 3D LUT Select	File name (01 to 16) of user 3D LUT files stored in internal memory	Selects the user 3D LUT file. [Note] Configurable only when Category is set to User 3D LUT.

Shooting >Monitor LUT Setting
Adjusts monitor LUT settings. Available only when shooting in Cine EI mode.

Item	Sub-item setting	Description
Internal Rec	MLUT On / **MLUT Off**	Selects whether to apply monitor LUT to the main video recorded on XQD memory cards.
Monitor Out	MLUT On / **MLUT Off**	Selects whether to apply monitor LUT to recorded video and video output, other than the main video recorded on XQD memory cards.
HD(Sub) Rec/ Proxy	Display only	Displays whether monitor LUT is applied to the HD (Sub) video and proxy recording video during 4K & HD (Sub) recording.

Shooting >Monitor LUT Setting
Adjusts monitor LUT settings. Available only when shooting in Cine EI mode.

Item	Sub-item setting	Description
SDI1	Display only	Displays whether monitor LUT is applied to the SDI1 video output.
SDI2	Display only	Displays whether monitor LUT is applied to the SDI2 video output.
HDMI	Display only	Displays whether monitor LUT is applied to the HDMI video output.
VF/Streaming	Display only	Displays whether monitor LUT is applied to the viewfinder and streaming video output.

Shooting >Monitor 3D LUT
Sets user 3D LUT settings.

Item	Sub-item setting	Description
Load SD Card		Loads user 3D LUT data from an SD card.
Reset		Resets a user 3D LUT data setting.
Reset All	Execute / Cancel	Resets all user 3D LUT data settings. Execute: Execute function.

Shooting >Noise Suppression
Sets noise suppression settings.

Item	Sub-item setting	Description
Setting (SDR/HDR)	**On** / Off	Turns the noise suppression function on/off in SDR and HDR mode.
Level (SDR/HDR)	Low / **Mid** / High	Sets the noise suppression level in SDR and HDR mode.
Setting (Cine EI)	On / **Off**	Turns the noise suppression function on/off in Cine EI mode.
Level (Cine EI)	Low / **Mid** / High	Sets the noise suppression level in Cine EI 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	Turns the image stabilization function on/off. [Note] Enabled when a compatible lens is attached.

Shooting >Auto Black Balance
Sets auto black balance settings.

Item	Sub-item setting	Description
Auto Black Balance	Execute / Cancel	Executes the auto black balance function. [Notes] • Run the auto black balance function with the lens cap attached. • Cannot be executed during recording or color bar display.

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	**SDR** / HDR / Cine EI	Sets the shooting mode (page 26).

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 6K** / FFcrop 5K / S35 4K / FF 2K / S35 2K	Sets the combination of imager readout method (all pixels/pixel binning) and imager size setting.
Codec	RAW / RAW & XAVC-I / RAW & XAVC-L / RAW & MPEG HD 422 / **XAVC-I** / XAVC-L / MPEG HD 422	Sets the recording/playback mode. [Note] The RAW settings are displayed only when an extension unit is attached.
RAW Output Format	The available settings vary depending on the Frequency, Imager Scan Mode, and Codec settings (page 53).	Sets the recording format for an external RAW recorder.

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 recording format.
	Frequency	Codec	Selection options
	59.94	RAW	–
		RAW & XAVC-I	1920×1080P
		RAW & XAVC-L	1920×1080P 50
		RAW & MPEG HD422	1920×1080i 50
		XAVC-I	4096×2160P 3840×2160P 1920×1080P 1920×1080i
		XAVC-L	3840×2160P 1920×1080P 50 1920×1080P 35 1920×1080i 50 1920×1080i 35 1920×1080i 25
		MPEG HD422	1920×1080i 50

Project >Rec Format
Sets recording format settings.

Item	Sub-item setting			Description
Video Format	50	RAW	–	
		RAW & XAVC-I	1920×1080P	
		RAW & XAVC-L	1920×1080P 50	
		RAW & MPEG HD422	1920×1080i 50	
		XAVC-I	4096×2160P 3840×2160P 1920×1080P 1920×1080i	
		XAVC-L	3840×2160P 1920×1080P 50 1920×1080P 35 1920×1080i 50 1920×1080i 35 1920×1080i 25	
		MPEG HD422	1920×1080i 50	
	29.97	RAW	–	
		RAW & XAVC-I	1920×1080P	
		RAW & XAVC-L	1920×1080P 50	
		RAW & MPEG HD422	1920×1080P 50	
		XAVC-I	4096×2160P 3840×2160P 1920×1080P	
		XAVC-L	3840×2160P 1920×1080P 50 1920×1080P 35	
		MPEG HD422	1920×1080P 50	

Project >Rec Format
Sets recording format settings.

Item	Sub-item setting			Description
Video Format	25	RAW	–	
		RAW & XAVC-I	1920×1080P	
		RAW & XAVC-L	1920×1080P 50	
		RAW & MPEG HD422	1920×1080P 50	
		XAVC-I	4096×2160P 3840×2160P 1920×1080P	
		XAVC-L	3840×2160P 1920×1080P 50 1920×1080P 35	
		MPEG HD422	1920×1080P 50	
	24	RAW	–	
		XAVC-I	4096×2160P	
	23.98	RAW	–	
		RAW & XAVC-I	1920×1080P	
		RAW & XAVC-L	1920×1080P 50	
		RAW & MPEG HD422	1920×1080P 50	
		XAVC-I	4096×2160P 3840×2160P 1920×1080P	
		XAVC-L	3840×2160P 1920×1080P 50 1920×1080P 35	
		MPEG HD422	1920×1080P 50	

Project >Cine EI Setting Sets Cine EI mode settings.		
Item	Sub-item setting	Description
Color Gamut	S-Gamut3/SLog3 / **S-Gamut3.Cine/SLog3**	Sets the color space in Cine EI mode. S-Gamut3/SLog3: Sets the color space in Cine EI mode to S-Gamut3. S-Gamut3.Cine/SLog3: Sets the color space in Cine EI mode to S-Gamut3.Cine.

Project >Simul Rec Sets simultaneous recording mode settings (page 48).		
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 >4K & HD (Sub) Rec Sets 4K & HD (Sub) recording mode settings.		
Item	Sub-item setting	Description
Setting	On / **Off**	Turns 4K & HD (Sub) recording mode on/off.

Project >Proxy Rec Sets proxy recording mode settings.		
Item	Sub-item setting	Description
Setting	On / **Off**	Turns proxy recording mode on/off.
Proxy Format	1920×1080(9Mbps) / 1280×720(9Mbps) / 1280×720(6Mbps) / **640×360(3Mbps)**	Sets the picture size for the proxy file. When set to 1920×1080(9Mbps) and the system frequency is 23.98, recording uses progressive scan. For system frequencies other than 23.98, recording uses interlaced scan. For settings other than 1920×1080(9Mbps), recording always uses progressive scan, regardless of the system frequency.
Audio Channel	**CH1/CH2** / CH3/CH4	Selects the audio channel to record to proxy data.

Project >Interval Rec Sets interval recording mode settings (page 46).		
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 (sec) 1 / 2 / 3 / 4 / 5 / 6 / 7 / 8 / 9 / 10 / 15 / 20 / 30 / 40 / 50 (min) 1 / 2 / 3 / 4 / 6 / 12 / 24 (hour)	Sets the interval between recordings in Interval Rec recording mode (when Interval Rec is set to On).
Number of Frames	1frame / 2frames / 3frames / 6frames / 9frames / 12frames The available settings vary depending on the frame frequency of the selected video format. 50P/59.94P: **2frames** / 6frames / 12frames 23.98P/25P/29.97P/50i/59.94i: **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** / 2sec / 5sec / 10sec	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 47).		
Item	Sub-item setting	Description
Setting	On / **Off**	Turns picture cache recording mode on/off.
Cache Rec Time	Settings vary according to the recording format setting.	Sets 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.

Project >Assignable Button
Sets function assignments to assignable buttons.

Item	Sub-item setting	Description
<1> to <10>, Focus Hold Button	Off / Base ISO/Sensitivity / AGC / Push AGC / ND Filter Position / Auto ND Filter / Push Auto ND / Auto Iris / Push Auto Iris / Auto Shutter / Auto Exposure Level / 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 / Focus Magnifier x3/x6 / Focus Magnifier x3 / Focus Magnifier x6 / S&Q Motion / SteadyShot / Rec / Picture Cache Rec / Rec Review / Last Clip Del. / Shot Mark1 / Shot Mark2 / 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 / Thumbnail / Touch Operation / Handle Zoom / NFC / Network Client Mode / Auto Upload (Proxy) / Direct Menu / 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. Auto Shutter: Turns the auto shutter function on/off. Auto Exposure Level: Displays/exits the Auto Exposure Level 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. ATW Hold: Pauses ATW function operation.

Project >Assignable Button
Sets function assignments to assignable buttons.

Item	Sub-item setting	Description
<1> to <10>, Focus Hold Button		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. Focus Magnifier x3/x6: Focus Magnifier x3: Focus Magnifier x6: Turns the focus magnifier function on/off. S&Q Motion: Turns Slow & Quick Motion on/off. Sets the recording frame rate if pressed and held. SteadyShot: Switches between Active, Standard, and Off. Rec: Starts/stops recording. Picture Cache Rec: Turns picture cache recording mode on/off.

Project >Assignable Button
Sets function assignments to assignable buttons.

Item	Sub-item setting	Description
<1> to <10>, Focus Hold Button		Rec Review: Turns the Rec Review function on/off. Last Clip Del.: Executes the last clip delete (for retake) function. Shot Mark1: Executes the Add Shot Mark1 function. Shot Mark2: Executes the Add Shot Mark2 function. 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. 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 (front) 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.

Project >Assignable Button
Sets function assignments to assignable buttons.

Item	Sub-item setting	Description
<1> to <10>, Focus Hold Button		VF Adjust: Displays the level bars for adjusting the brightness of the viewfinder screen. 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. Thumbnail: Displays/exits the thumbnail screen. Touch Operation: Turns touch operation on/off. Handle Zoom: Switches the handle zoom operation. NFC: Executes the NFC function. Network Client Mode: Turns network client mode on/off. Auto Upload (Proxy): Turns proxy file auto transfer on/off. Direct Menu: Displays/exits the direct menu. User Menu: Displays/exits the User menu. Menu: Displays/exits the setup menu.

Project >Assignable Dial
Sets function assignments for assignable dial and sets rotation direction.

Item	Sub-item setting	Description
Assignable Dial	Off / ISO/Gain/EI / ND Filter / **IRIS** / Audio Input Level	Assigns functions to the assignable dial. ISO/Gain/EI: Adjusts the gain or EI. ND Filter: Adjusts the ND filter. IRIS: Adjusts the iris. Audio Input Level: Adjusts the audio recording level.
Assignable Dial Direction	**Normal** / Opposite	Sets the direction of rotation of the 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 / Audio Input Level	Assigns the default function to the multi-function dial. IRIS: Adjusts the iris. ISO/Gain/EI: Adjusts the gain or EI. Audio Input Level: Adjusts the audio recording level.

Project >User File
Sets settings related to user file operations.

Item	Sub-item setting	Description
Load Utility SD/MS	Execute / Cancel	Loads user file settings from an SD card. Execute: Execute function.
Save Utility SD/MS	Execute / Cancel	Saves user file settings to an SD card. 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 Utility SD/MS is executed.
Load White Data	On / **Off**	Sets whether to load white balance information when Load Utility SD/MS is executed.

Project >All File
Sets settings related to ALL files.

Item	Sub-item setting	Description
Load Utility SD/MS	Execute / Cancel	Loads an ALL file Execute: Execute function.
Save Utility SD/MS	Execute / Cancel	Saves an ALL file. Execute: Execute function.
File ID		Assigns a name to the file.
Load Network Data	On / **Off**	Sets whether to load Network menu settings information when Load Utility SD/MS is executed.

Project >Planning Metadata
Sets settings related to planning metadata operations.

Item	Sub-item setting	Description
Load Media(A) or Load Media(B)	Execute / Cancel	Loads planning metadata from the memory card in slot A or B. Select Execute to display the list of the planning metadata files stored on the memory card in slot A or B. Select a file using Load and then select Execute to load the file. [Notes] • The file list displays up to 64 files. Even if the total number of planning metadata files is 64 or less, all of the planning metadata files may not appear if the directory where they are located in the memory card (XDROOT/General/Sony/Planning) contains 512 or more files. • After you start loading, do not remove the memory card until the completion message is displayed.

Project >Planning Metadata
Sets settings related to planning metadata operations.

Item	Sub-item setting	Description
Properties	Execute / Cancel	Select Execute to display the properties of the planning metadata loaded in the memory of the camcorder. File Name: File name Assign ID: Assigned ID Created: Time and date the file was created Modified: Time and date of most recent file modification Modified by: Name of person who modified the file Title1: Title1 specified in file (clip name in ASCII format) Title2: Title2 specified in file (clip name in UTF-8 format) Material Group: Number of material groups (groups of clips recorded using the same planning metadata) Shot Mark0 to 9: Names defined for shot marks 0 to 9
Clear Memory	Execute / Cancel	Select Execute to clear the planning metadata loaded in the memory of the camcorder.
Clip Name Display	**Title1(ASCII)** / Title2(UTF-8)	Sets the display mode of the clip name specified in planning metadata.

Paint Menu

This section describes the function and settings of each menu item.
Factory default settings are shown in bold (for example, **18dB**).

Paint >HDR Paint Setting Sets High Dynamic Range (HDR) settings.		
Item	Sub-item setting	Description
HLG Look	Natural / **Live**	Sets the type of HLG when Shooting Mode is set to HDR. Natural: Characteristic conforming to ITU-R BT.2100(HLG). Live: Characteristic conforming to ITU-R BT.2100(HLG) that delivers improved HDR performance. [Note] Using the Live setting may increase the noise level.
HDR Black Offset	–95 to +103 (**±0**)	Sets the HDR black offset relative to the SDR setting (Master Black) when Shooting Mode is set to HDR.
HDR Knee	On / **Off**	Turns the HDR signal knee correction function on/off when Shooting Mode is set to HDR.
HDR Knee Point	–99 to +99 (**±0**)	Sets the knee point for HDR signals when HDR Knee is set to On.
HDR Knee Slope	–99 to +99 (**±0**)	Sets the knee slope for HDR signals when HDR Knee is set to On.

Paint >Black Sets black settings.		
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 >Gamma Sets gamma correction settings.		
Item	Sub-item setting	Description
Setting	**On** / Off	Turns the gamma correction function on/off.
Step Gamma	0.35 to **0.45** to 0.90	Sets a gamma correction value in 0.05 steps.
Master Gamma	–99 to +99 (**±0**)	Sets the master gamma level.
R Gamma	–99 to +99 (**±0**)	Sets the R gamma level.
G Gamma	–99 to +99 (**±0**)	Sets the G gamma level.
B Gamma	–99 to +99 (**±0**)	Sets the B gamma level.
Gamma Category	**Original** / STD / HG / S-Log3	Selects original gamma (Original), standard gamma (STD), hypergamma (HG), or S-Log3.
Gamma Select	When Gamma Category is set to STD: STD1 DVW / STD2 ×4.5 / STD3 ×3.5 / STD4 240M / **STD5 R709** / STD6 ×5.0 When Gamma Category is set to HG: HG1 3250G36 / HG2 4600G30 / HG3 3259G40 / **HG4 4609G33** / HG7 8009G40 / HG8 8009G33 When Gamma Category is set to S-Log3: **S-Log3** When Gamma Category is set to Original: **S-Cinetone**	Selects the gamma table used for gamma correction. See the table below for details about hypergamma and S-Log3.

Name	Dynamic range	White limit	18% gray card video output (20% video input)
HG1 3250G36	325%	100%	36%
HG2 4600G30	460%	100%	30%
HG3 3259G40	325%	109%	40%
HG4 4609G33	460%	109%	33%
HG7 8009G40	800%	109%	40%
HG8 8009G33	800%	109%	33%
S-Log3	1300%	–	41%

Paint >Black Gamma
Sets black gamma correction settings.

Item	Sub-item setting	Description
Setting	On / **Off**	Turns the black gamma correction function on/off. (Enabled when Gamma >Gamma Category is set to STD) [Note] The Black Gamma and Knee >Knee Saturation functions cannot be used at the same time.
Range	Low / **L.Mid** / H.Mid	Selects the effective range of the black gamma correction.
Master Black Gamma	–99 to +99 (**±0**)	Sets the master black gamma level.

Paint >Knee
Sets knee correction settings.

Item	Sub-item setting	Description
Setting	**On** / Off	Turns the knee correction function on/off. (Enabled when Gamma >Gamma Category is set to STD)
Auto Knee	On / **Off**	Turns the auto knee function on/off.
Point	75% to 109% (**90%**)	Sets the knee point.
Slope	–99 to +99 (**±0**)	Sets the knee slope.
Knee Saturation	On / **Off**	Enables/disables knee saturation adjustment (adjusts coloring above the knee point). [Note] The Black Gamma and Knee >Knee Saturation functions cannot be used at the same time.
Knee Saturation Level	–99 to +99 (**±0**)	Sets the level for adjusting the coloring above the knee point (knee saturation).

Paint >White Clip
Sets white clip adjustment settings.

Item	Sub-item setting	Description
Setting	**On** / Off	Turns white clipping adjustment function on/off. (Enabled when Gamma >Gamma Category is set to STD) [Note] The setting is reset to On when the camcorder is turned off. To set to Off permanently, set Level to 109%.
Level	90.0% to **109.0%**	Sets the white clip level.

Paint >Detail(4K/QFHD)
Sets detail (4K/QFHD) adjustment settings.

Item	Sub-item setting	Description
Setting	**On** / Off	Turns the detail adjustment function on/off.
Level	–99 to +99 (**±0**)	Sets the detail level.
H/V Ratio	–99 to +99 (**±0**)	Sets the mix ratio between the H detail level and the V detail level.
Crispening	–99 to +99 (**±0**)	Sets the crispening level.
Frequency	–99 to +99 (**±0**)	Sets the center frequency of the detail (detail thickness). The detail is thinner the higher the center frequency, and thicker the lower the center frequency.
Knee Aperture	On / **Off**	Turns the knee aperture correction function on/off.
Knee Aperture Level	–99 to +99 (**±0**)	Sets the knee aperture level.
White Limit	–99 to +99 (**±0**)	Sets the white-side detail limiter.
Black Limit	–99 to +99 (**±0**)	Sets the black-side detail limiter.
V Detail Creation	NAM / Y / G / **G+R**	Sets the signal source for creating the V detail to NAM (G or R, whichever is higher), Y, G, or G+R.

Paint >Detail(HD)
Sets detail (HD) adjustment settings.

Item	Sub-item setting	Description
Setting	**On** / Off	Turns the detail adjustment function on/off.
Level	–99 to +99 (**±0**)	Sets the detail level.
H/V Ratio	–99 to +99 (**±0**)	Sets the mix ratio between the H detail level and the V detail level.
Crispening	–99 to +99 (**±0**)	Sets the crispening level.
Frequency	–99 to +99 (**±0**)	Sets the center frequency of the detail (detail thickness). The detail is thinner the higher the center frequency, and thicker the lower the center frequency.
Knee Aperture	On / **Off**	Turns the knee aperture correction function on/off.
Knee Aperture Level	–99 to +99 (**±0**)	Sets the knee aperture level.
White Limit	–99 to +99 (**±0**)	Sets the white-side detail limiter.
Black Limit	–99 to +99 (**±0**)	Sets the black-side detail limiter.
V Detail Creation	NAM / Y / G / **G+R**	Sets the signal source for creating the V detail to NAM (G or R, whichever is higher), Y, G, or G+R.

Paint >Skin Detail
Sets skin detail correction settings.

Item	Sub-item setting	Description
Setting	On / **Off**	Turns the skin detail correction function on/off.
Area Detection	Execute / Cancel	Detects the color used for skin detail correction. Execute: Execute function.
Area Indication	On / **Off**	Turns the function that displays the zebra pattern in the target color area for the skin detail correction on/off.
Level	–99 to +99 (**±0**)	Sets the skin detail level.
Saturation	–99 to +99 (**±0**)	Sets the saturation of the color targeted for skin detail correction.
Hue	**0** to 359	Sets the hue of the color targeted for skin detail correction.

Paint >Skin Detail
Sets skin detail correction settings.

Item	Sub-item setting	Description
Width	0 to 90 (**40**)	Sets the range for the hue of the color targeted for skin detail correction.

Paint >Aperture
Sets aperture correction settings.

Item	Sub-item setting	Description
Setting	**On** / Off	Enables/disables aperture correction (processing that improves resolution by adding a high-frequency aperture signal to the video signal to correct deterioration due to high-frequency characteristics).
Level	–99 to +99 (**±0**)	Sets the aperture correction level.

Paint >Matrix
Sets matrix correction settings.

Item	Sub-item setting	Description
Setting	**On** / Off	Turns the matrix correction function on/off.
Adaptive Matrix	On / **Off**	Turns the adaptive matrix function on/off.
Preset Matrix	**On** / Off	Turns the preset matrix function on/off.
Preset Select	**S-Cinetone** / Standard / FL Light / Cinema / BT.709 / BT.2020	Selects a preset matrix.
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.

Paint >Matrix Sets matrix correction settings.		
Item	Sub-item setting	Description
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 >Multi Matrix Sets multi matrix correction settings.		
Item	Sub-item setting	Description
Setting	On / **Off**	Turns the multi matrix correction function on/off.
Area Indication	On / **Off**	Turns the area indication function on/off.
Color Detection	Execute / Cancel	Detects the color used for multi matrix correction.
Reset	Execute / Cancel	Resets the hue and saturation of each axis color to the default values.
Axis	**B** / B+ / MG– / MG / MG+ / R / R+ / YL– / YL / YL+ / G– / G / G+ / CY / CY+ / B–	Selects the axis.
Hue	–99 to +99 (**±0**)	Sets the hue of the color used for multi matrix correction.
Saturation	–99 to +99 (**±0**)	Sets the saturation of the color used for multi matrix correction.

Paint >Scene File Sets settings related to scene files.		
Item	Sub-item setting	Description
Recall Internal Memory		Loads a scene file from internal memory.
Store Internal Memory	Execute / Cancel	Saves a scene file in internal memory. Execute: Execute function.
Load Utility SD/MS	Execute / Cancel	Loads a scene file from an SD card. Execute: Execute function.
Save Utility SD/MS	Execute / Cancel	Saves a scene file to an SD card. Execute: Execute function.
File ID		Assigns a name to the file.
Scene White Data	On / **Off**	Sets whether to apply the white balance data when loading scene files.

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 time 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	Title / **Plan**	Selects the clip naming format. Title: Sets naming specified by Title Prefix. Plan: Uses a clip name specified in planning metadata, if available. If no name is specified in planning metadata, the name specified by Title Prefix is used.

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) (Max. 7-digit display)	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 arrow buttons, and press the SET 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	When Auto Naming is set to Title: **0001** to 9999 When Auto Naming is set to Plan: **00001** to 99999	Sets the 4-digit number suffix of the clip name. Sets a 5-digit number if using a planning metadata file.

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 XQD memory card in slot A. Execute: Execute function.
Media(B)	Execute / Cancel	Updates the management file on the XQD memory card in slot B. Execute: Execute function.

TC/Media >Format Media
Initializes memory cards.

Item	Sub-item setting	Description
Media(A)	Execute / Cancel	Initializes the XQD memory card in slot A. Execute: Execute function.
Media(B)	Execute / Cancel	Initializes the XQD memory card in slot B. Execute: Execute function.
Utility SD/MS	Execute / Cancel	Initializes the UTILITY SD card. Execute: Execute function.

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
SDI1	**On** / Off	Turns SDI1 output on/off.
SDI2	**On** / Off	Turns SDI2 output on/off.
HDMI	**On** / Off	Turns HDMI output on/off.

Monitoring >Output Format Sets output format settings.		
Item	Sub-item setting	Description
SDI1	For details about settings, see “Output Formats and Limitations” (page 122).	Sets the SDI and HDMI output resolution. [Note] 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.
SDI2		
HDMI		
REF		

Monitoring >Output Setting Sets output conversion mode settings.		
Item	Sub-item setting	Description
RAW to HD Conv.	Edge Crop / **Letter Box**	Sets the conversion mode for HD video output of 17:9 video.

Monitoring >Output Display Sets output signal settings.		
Item	Sub-item setting	Description
Setting	**On** / Off	Selects whether to superimpose menus and status on the SDI output signal and HDMI output signal.
SDI1	Settings vary depending on the Output Format setting. For details, see “Output Formats and Limitations” (page 122).	Displays whether the menu and status information is embedded in the SDI1 output signal.
SDI2		Displays whether the menu and status information is embedded in the SDI2 output signal.
HDMI		Displays whether the menu and status information is embedded in the HDMI output signal.

Monitoring >Display On/Off Sets display item settings.		
Item	Sub-item setting	Description
Network Status	**On** / Off	Selects the items to display in the viewfinder.
File Transfer Status	**On** / Off	
NCM/ Streaming Status	**On** / Off	
Rec/Play Status	**On** / Off	
RAW Output Control Status	**On** / Off	
Tally	**On** / Off	
Battery Remain	**On** / Off	
Focus Mode	**On** / Off	
Focus Position	**On** / Off	
Focus Area Indicator	**On** / Off	
Focus Area Ind.(AF-S)	**On** / Off	
Face/Eye Detection Frame	**On** / Off	
Lens Info	On / **Off**	
Imager Scan Mode	**On** / Off	
Rec Format	**On** / Off	
Frame Rate	**On** / Off	
Zoom Position	**On** / Off	
UWP RF Level	**On** / Off	
GPS	**On** / Off	
SteadyShot	**On** / Off	

Monitoring >Display On/Off Sets display item settings.		
Item	Sub-item setting	Description
Gamma/LUT	**On** / Off	
SDI/HDMI Rec Control	**On** / Off	
Gamma Display Assist	**On** / Off	
Proxy Status	**On** / Off	
Base ISO/ Sensitivity	**On** / Off	
Media Status	**On** / Off	
Video Signal Monitor	**Off** / Waveform / Vector / Histogram	
Clip Name	**On** / Off	
White Balance	**On** / Off	
Scene File	**On** / Off	
Focus Indicator	**On** / Off	
Auto Exposure Mode	**On** / Off	
Auto Exposure Level	**On** / Off	
Timecode	**On** / Off	
ND Filter	**On** / Off	
Iris	**On** / Off	
ISO/Gain/EI	**On** / Off	
Shutter	**On** / Off	
Level Gauge	**On** / Off	
Audio Level Meter	**On** / Off	
Video Level Warning	**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	**4:3** / 13:9 / 14:9 / 15:9 / 16:9 / 17:9 / 1.66:1 / 1.85:1 / 2.35:1 / 2.39:1	Sets the mode when displaying the aspect marker.
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
Contrast	–99 to +99 (**±0**)	Adjusts the contrast (difference between light and dark) of the viewfinder image.

Monitoring >VF Setting Sets viewfinder settings.		
Item	Sub-item setting	Description
Brightness	–99 to +99 (**±0**)	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	In SDR or Cine EI mode: On / **Off** In HDR mode: **On** / Off	Turns the gamma display assist function on/off.

Monitoring >Peaking Sets peaking settings.		
Item	Sub-item setting	Description
Setting	On / **Off**	Turns the peaking function on/off.
Type	**Normal** / Color	Selects the peaking type. Normal: Normal peaking Color: Color peaking
Normal Peaking Frequency	**Normal** / High	Selects the peaking frequency.
Normal Peaking Level	0 to 99 (**50**)	Sets the normal peaking level.
Color	**B&W** / Red / Yellow / Blue	Selects the color of the color peaking signal.
Color Peaking Level	0 to 99 (**50**)	Sets the color peaking level.

Monitoring >Zebra Sets zebra pattern settings.		
Item	Sub-item setting	Description
Setting	On / **Off**	Turns the zebra function on/off.
Zebra Select	**1** / 2 / Both	Selects the zebra pattern type (Zebra 1, Zebra 2, Both).
Zebra1 Level	0% to 107% (**70%**)	Sets the Zebra 1 display level.

Monitoring >Zebra Sets zebra pattern settings.		
Item	Sub-item setting	Description
Zebra1 Aperture Level	1% to 20% (**10%**)	Sets the Zebra 1 aperture level.
Zebra2 Level	0% to 109% (**100%**)	Sets the Zebra 2 display level.

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 138).

Audio >Audio Input Sets audio input settings.		
Item	Sub-item setting	Description
CH1 MI SHOE Input Select	**Shoe CH1** / Wireless	Sets the external input function when the CH1 INPUT select switch (page 7) is set to MI SHOE. [Note] “Wireless” is displayed only when an extension unit is attached.
CH2 EXT Input Select	INPUT1 / **INPUT2**	Switches the external input source for recording on channel 2.
CH2 MI SHOE Input Select	**Shoe CH2** / Wireless	Sets the external input function when the CH2 INPUT select switch (page 7) is set to MI SHOE. [Note] “Wireless” is displayed only when an extension unit is attached.
CH3 Input Select	Off / **INPUT1** / Internal MIC / Shoe CH1 / Wireless	Switches the input source for recording on channel 3. [Note] “Wireless” can be selected only when an extension unit is attached.
CH4 Input Select	Off / INPUT1 / **INPUT2** / Internal MIC / Shoe CH2 / Wireless	Switches the input source for recording on channel 4. [Note] “Wireless” can be selected only when an extension unit is attached.
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.

Audio >Audio Input Sets audio input settings.		
Item	Sub-item setting	Description
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.
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.
Audio Input Level	0 to **99**	Sets the master 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.

Audio >Audio Input
Sets audio input settings.

Item	Sub-item setting	Description
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.
CH1 Level	Input without XLR adaptor Audio Input Level / Side / **Level+Side** Input with XLR adaptor (page 43) **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 138).
CH2 Level	Input without XLR adaptor Audio Input Level / Side / **Level+Side** Input with XLR adaptor (page 43) **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 138).
CH3 Level	Input without XLR adaptor Audio Input Level / Side / **Level+Side** Input with XLR adaptor (page 43) **Audio Input Level** / Through	Sets the combination of audio input level adjustments enabled for recording channel 3. [Note] "Side" refers to the AUDIO LEVEL (CH3) 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 139).
CH4 Level	Input without XLR adaptor Audio Input Level / Side / **Level+Side** Input with XLR adaptor (page 43) **Audio Input Level** / Through	Sets the combination of audio input level adjustments enabled for recording channel 4. [Note] "Side" refers to the AUDIO LEVEL (CH4) 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 139).

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.
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 Shot Mark Sets shot mark settings.		
Item	Sub-item setting	Description
Delete Shot Mark1		Deletes Shot Mark1.
Delete Shot Mark2		Deletes Shot Mark2.
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 >Copy Clip Copies clips.		
Item	Sub-item setting	Description
Select Clip		Copies selected clips.
All Clips		Copies all clips.
Thumbnail >Copy Sub Clip Copies sub-clips.		
Item	Sub-item setting	Description
All Clips		Copies all sub-clips recorded in 4K & HD (Sub) recording mode to another media as main clips.
Thumbnail >Transfer Clip Transfers clips. [Note] Transfer Clip cannot be configured when Access Authentication >Password in the Network menu is undefined.		
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 Access Authentication >Password in the Network menu is undefined.		
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 >Set Index Picture Sets the index picture of a clip.		
Item	Sub-item setting	Description
Set Index Picture		Sets the index picture of a clip.

Thumbnail >Thumbnail View Sets thumbnail screen display format settings.		
Item	Sub-item setting	Description
Essence Mark Thumbnail	**All** / Rec Start / Shot Mark1 / Shot Mark2 / Shot Mark3 / Shot Mark4 / Shot Mark5 / Shot Mark6 / Shot Mark7 / Shot Mark8 / Shot Mark9 / Shot Mark0	Displays thumbnails of frames with essence marks.
Clip Thumbnail		Displays thumbnails of recorded clips.

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. [Note] Cannot be set to On when S&Q Motion >Setting (page 84) in the Shooting menu is set to On.
Type	**ARIB** / 100% / 75% / SMPTE	Selects the color bar type.

Technical >Test Saw Sets test signal settings.		
Item	Sub-item setting	Description
Test Saw	On / **Off**	Turns the test signal on/off.

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	**On** / Off	Turns the recording/tally lamp (front) on/off.
Rear	**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 the recording button.
with Hand Grip Remote	**On** / Off	Sets whether to lock operation of the grip remote control.

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	**3sec** / 10sec / Clip	Selects the time for playback of clips just recorded for recording review.

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 >GPS Sets GPS settings.		
Item	Sub-item setting	Description
GPS	**On** / Off	Turns the GPS function on/off. [Note] The GPS module is built into the handle.

Technical >Menu Settings Sets settings related to the menu.		
Item	Sub-item setting	Description
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.
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 73.

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	Turns automatic shading compensation on/off. [Note] Shading compensation is not applied when Imager Scan Mode is set to S35.
Chroma Aberration Comp.	**Auto** / Off	Turns automatic chromatic aberration compensation on/off. [Note] Chromatic aberration compensation is not applied when Imager Scan Mode is set to S35.
Distortion Comp.	**Auto** / Off	Turns automatic distortion compensation on/off. [Note] Distortion compensation is not applied when Imager Scan Mode is set to S35.
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 >Lens
Sets settings related to lenses.

Item	Sub-item setting	Description
Iris Display	**Auto** / F-Number	Sets the iris display units. Auto: Displays the T value if T value information can be obtained from the attached lens. Otherwise, it displays the F value. F-Number: Always displays the F value.

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] Always attach the lens cap before running APR.

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).

Technical >Camera Battery Alarm Sets battery low-voltage alarm settings.		
Item	Sub-item setting	Description
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.

Technical >Ext. Unit Battery Alarm Sets XDCA-FX9 battery settings.		
Item	Sub-item setting	Description
Near End:Info Battery	**5%** to 100%	Sets the remaining battery level to display a Info-Lithium battery low-voltage alarm (5% increments).
End:Info Battery	**0%** to 5%	Sets the remaining battery level to display a Info-Lithium battery end alarm and to stop media access.
Near End:Sony Battery	**11.5V** to 17.0V	Sets the remaining battery level to display a battery low-voltage alarm for a non Info-Lithium battery.
End:Sony Battery	**11.0V** to 14.0V	Sets the remaining battery level to display a battery end alarm for a non Info-Lithium battery and to stop media access.
Near End:Other Battery	11.5V to 17.0V (**11.8V**)	Sets the remaining battery level to display a battery low-voltage alarm for an Anton/Bauer battery.
End:Other Battery	**11.0V** to 14.0V	Sets the remaining battery level to display a battery end alarm for an Anton/Bauer battery and to stop media access.

Technical >Ext. Unit Battery Alarm Sets XDCA-FX9 battery settings.		
Item	Sub-item setting	Description
Detected Battery		Displays the type of power source connected to the XDCA-FX9. If a battery is connected to the XDCA-FX9, “Info Battery,” “Sony Battery,” or “Other Battery” is displayed. If a DC source is connected, “DC IN” is displayed. If powered by a battery or DC source connected to the camcorder, “---” is displayed.

Technical >Ext. Unit DC IN Alarm Sets XDCA-FX9 input voltage alarm settings.		
Item	Sub-item setting	Description
DC Low Voltage1	**11.5V** to 17.0V	Sets the voltage to display a DC IN low input voltage alarm.
DC Low Voltage2	**11.0V** to 14.0V	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 >Access Authentication Sets settings related to authentication.		
Item	Sub-item setting	Description
User Name		Sets the user name for access authentication.
Password		Sets the password for access authentication.

Network >Wireless LAN Sets settings related to wireless LAN connections.		
Item	Sub-item setting	Description
Setting	Access Point Mode / Station Mode / **Off**	Selects the operation mode of the wireless LAN connection.
WPS	Execute / Cancel	Establishes a connection using WPS (Wi-Fi Protected Setup). Execute: Execute function.
NFC	Execute / Cancel	Establishes a connection using NFC (Near Field Communication). Execute: Execute function.
MAC Address		Displays the MAC address of the wireless LAN interface of the camcorder.

Network >AP Mode Settings Sets settings related to access point mode connections.		
Item	Sub-item setting	Description
Channel	Auto(5GHz) / **Auto** / CH1 / CH2 / CH3 / CH4 / CH5 / CH6 / CH7 / CH8 / CH9 / CH10 / CH11	Sets the wireless LAN channel. Auto(5GHz) is available on the PXW-FX9V/VK only.
Camera SSID & Password		Displays the SSID and password of the camcorder.
Regenerate Password	Execute / Cancel	Creates a new password. Execute: Execute function.
IP Address		Displays the IP address of the camcorder in access point mode.
Subnet Mask		Displays the subnet mask of the camcorder in access point mode.

Network >ST Mode Settings Sets settings related to station mode connections.		
Item	Sub-item setting	Description
Camera Remote Control	Enable / **Disable**	Sets whether to enable remote control from a device connected to the camcorder by wireless LAN in station mode.
Connected Network		Displays the connected wireless LAN network (access point).
	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. When Security is set to WEP or WPA: ******* When Security is set to None: (blank)
	DHCP	Displays whether DHCP is on/off.
	IP Address	Displays the IP address of the camcorder when DHCP is set to Off.
	Subnet Mask	Displays the subnet mask of the camcorder when DHCP is set to Off.
	Gateway	Displays the default gateway of the camcorder when DHCP is set to Off.
	DNS Auto	Displays whether DNS acquisition is on/off.
	Primary DNS Server	Displays the primary DNS server of the camcorder when DNS Auto is set to Off.
	Secondary DNS Server	Displays the secondary DNS server of the camcorder when DNS Auto is set to Off.

Network >ST Mode Settings Sets settings related to station mode connections.		
Item	Sub-item setting	Description
Scan Networks		Detects wireless LAN networks (access points) and displays a list. Select a destination from the list to connect.
	SSID	Displays the SSID for the access point to connect.
	Security	Displays the type of security for the access point to connect.
	Password	Enter the password for the access point to connect.
	DHCP **On** / Off	Turns DHCP on/off.
	IP Address	Enter the IP address of the camcorder when DHCP is set to Off.
	Subnet Mask	Enter the subnet mask of the camcorder when DHCP is set to Off.
	Gateway	Enter the default gateway of the camcorder when DHCP is set to Off.
	DNS Auto **On** / Off	Turns auto DNS acquisition on/off.
	Primary DNS Server	Enter the primary DNS server of the camcorder when DNS Auto is set to Off.
	Secondary DNS Server	Enter the secondary DNS server of the camcorder when DNS Auto is set to Off.

Network >ST Mode Settings Sets settings related to station mode connections.		
Item	Sub-item setting	Description
Manual Register		Registers settings for manual connection to an access point.
	SSID	Enter the SSID for the access point to connect.
	Security None / WEP / **WPA**	Set the type of security for the access point to connect. Select WPA if the type of security of the destination access point is WPA or WPA2.
	Password	Enter the password for the access point to connect.
	DHCP **On** / Off	Turns DHCP on/off.
	IP Address	Enter the IP address of the camcorder when DHCP is set to Off.
	Subnet Mask	Enter the subnet mask of the camcorder when DHCP is set to Off.
	Gateway	Enter the default gateway of the camcorder when DHCP is set to Off.
	DNS Auto **On** / Off	Turns auto DNS acquisition on/off.
	Primary DNS Server	Enter the primary DNS server when DNS Auto is set to Off.
	Secondary DNS Server	Enter the secondary DNS server when DNS Auto is set to Off.

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 camcorder by wired LAN.
Detail Settings		Configures properties of the wired LAN connection.
	DHCP **On** / Off	Turns DHCP on/off.
	IP Address	Enter the IP address of the camcorder when DHCP is set to Off.
	Subnet Mask	Enter the subnet mask of the camcorder when DHCP is set to Off.
	Gateway	Enter the default gateway of the camcorder when DHCP is set to Off.
	DNS Auto **On** / Off	Turns auto DNS acquisition on/off.
	Primary DNS Server	Enter the primary DNS server when DNS Auto is set to Off.
	Secondary DNS Server	Enter the secondary DNS server when DNS Auto is set to Off.

Network >Modem Sets settings related to modems.		
Item	Sub-item setting	Description
Setting	On / **Off**	Turns the modem connection on/off.
Modem1 Device Name		Displays the device name of modem 1.
Modem1 IP Address		Displays the IP address of modem 1.
Modem1 Subnet Mask		Displays the subnet mask of modem 1.
Modem2 Device Name		Displays the device name of modem 2.
Modem2 IP Address		Displays the IP address of modem 2.
Modem2 Subnet Mask		Displays the subnet mask of modem 2.

Network >Network Client Mode Sets settings related to network client mode.		
Item	Sub-item setting	Description
Setting	On / **Off**	Starts (On) or stops (Off) network client mode.
NCM Settings Select		Selects preset settings (NCM Settings1/ NCM Settings2/NCM Settings3) comprising network client mode connection settings configured beforehand.
NCM Settings1	Display Name	Sets the display name shown in the NCM Settings menu.
	CCM Address	Sets the address of the destination CCM to connect. Host name or IP address
	CCM Port (1 to 65535 (**8443**))	Sets the port number of the destination CCM to connect.
	User Name	Sets the user name for authentication of the CCM connection.
	Password	Sets the authentication password of the CCM connection.
	CCM Certificate Load / Clear / **None**	Loads a certificate when connecting to CCM or XDCAM air, and clears settings.
	CCM Certificate Status Loaded / **Default**	Displays the certificate loading status when connecting to CCM or XDCAM air.
	Camera Control Enable / **Disable**	Enables/disables camera control from a CCM, when a CCM is connected, or from XDCAM air.
	Camera Setting Always / Onetime / **Off**	Enables/disables All File operations from a CCM, when a CCM is connected, or from XDCAM air. Always: Enable All File operations from a CCM or XDCAM air all the time. Onetime: Enable All File operations from a CCM or XDCAM air one time only. Off: Disable All File operations from a CCM or XDCAM air.
	Reset Execute / Cancel	Resets the settings of NCM Settings to the defaults. Execute: Execute function.

Network >Network Client Mode Sets settings related to network client mode.		
Item	Sub-item setting	Description
NCM Settings2	Same as NCM Settings1.	
NCM Settings3	Same as NCM Settings1.	
Streaming Quality	**Normal** / High	Sets the streaming quality. [Note] This setting is also reset when All Reset >Reset without Network (page 114) in the Maintenance menu is executed.

Network >File Transfer Sets settings related to file transfers.		
Item	Sub-item setting	Description
Auto Upload (Proxy)	On / **Off**	Turns proxy file auto transfer on/off.
Default Upload Server		Selects the upload server for files. The server selected here becomes the auto upload destination for proxy files, and the upload destination for files from the thumbnail screen. Displays the display name configured in Server Settings (NCM) and 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 Settings (NCM)		Displays the display name of the NCM server and the service (CCM).
	Display Name	Displays the display name of the NCM server.
	Service	Displays the service.

Network >File Transfer Sets settings related to file transfers.		
Item	Sub-item setting	Description
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**	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.
	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.
Reset without Network	Execute / Cancel	Resets the menu settings, excluding Network menu settings, to the factory default state. [Note] Network Client Mode >Streaming Quality (page 112) in the Network menu is reset to the factory default setting.

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.
Ext. Unit Version Number	Vx.xx	Displays the software version of the XDCA-FX9.
Version Up	Execute / Cancel	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.

Saving and Loading Configuration Data

Configuration Data

You can save setup menu settings in the camcorder internal memory or on SD cards and “Memory Stick” media. 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 an SD card or “Memory Stick” media.
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 an SD card or “Memory Stick” media.

[Note]
Device specific data (shading, output levels, and other data that requires adjustment for the specific device) is not saved.

Scene files

Scene files save settings for paint items configured for scenes. You can save up to 5 files in the internal memory of the camcorder, and up to 64 files on an SD card or “Memory Stick” media.

Saving a User File / ALL File

1 Insert the SD card or “Memory Stick” media into the UTILITY SD/MS card slot (page 8) with the label facing right.

2 For a user file, select User File (page 91) >Save Utility SD/MS >Execute in the Project menu.
For an ALL file, select All File >Save Utility SD/MS (page 92) >Execute in the Project 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 is generated automatically, but you can modify it.

4 Select Execute on the confirmation screen.

Loading a User File / ALL File

1 Insert the SD card or “Memory Stick” media on which the file is saved into the UTILITY SD/MS card slot (page 8) with the label facing right.

2 For a user file, select User File (page 91) >Load Utility SD/MS >Execute in the Project menu.
For an ALL file, select All File >Load Utility SD/MS (page 92) >Execute in the Project 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 is set to Off, all settings in the ALL file are loaded except the Network menu settings.

Saving a Scene File

To save in internal memory

1 Select Scene File >Store Internal Memory >Execute in the Paint menu (page 96).
A scene file list screen appears.
If the File ID is set to “Standard” destination, preconfigured standard settings are saved.

2 Select a save destination.
The scene file is saved, overwriting any existing file, in the selected destination.

3 Select Execute on the confirmation screen.

To save on an SD card or “Memory Stick” media

1 Insert the SD card or “Memory Stick” media into the UTILITY SD/MS card slot (page 8) with the label facing right.

2 Select Scene File >Save Utility SD/MS >Execute in the Paint menu (page 96).
A scene 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 is generated automatically, but you can modify it.

4 Select Execute on the confirmation screen.

Loading a Scene File

To load from internal memory

1 Select Scene File >Recall Internal Memory >Execute in the Paint menu (page 96).
A scene file list screen appears.

2 Select a file to load.
A confirmation screen appears.

3 Select Execute.

[Tip]
Scene files can also be loaded using the direct menu (page 44).

To load from an SD card or "Memory Stick" media

1 Insert the SD card or "Memory Stick" media on which the scene file is saved into the UTILITY SD/MS card slot (page 8) with the label facing right.

2 Select Scene File >Load Utility SD/MS >Execute in the Paint menu (page 96).
A scene file list screen appears.

3 Select a file to load.
A confirmation screen appears.

4 Select Execute.

Changing the File ID

1 For a user file, select User File >File ID in the Project menu (page 91).
For an ALL file, select All File >File ID in the Project menu (page 92).
For a scene file, select Scene File >File ID in the Paint menu (page 96).
A screen for editing the File ID appears.

2 Use the arrow buttons (page 7) or the multi-function dial (page 4) to select a character, then press the SET button (page 7) 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 Output Display (page 99) in the Monitoring menu to On for the corresponding type of signal to output to the monitor.

SDI OUT Connector (BNC type)

Set the output on/off setting and the output format in the Monitoring menu (page 99).
Use a commercially available 75 Ω coaxial cable for connection.

[Note]
Check that the connection between the camcorder and the external device is grounded before turning the devices on.

(It is recommended that the camcorder and external device be turned on after connecting the 75 Ω coaxial cable.)
If the external device must be connected to the camcorder while the camcorder is on, connect the 75 Ω coaxial cable to the external device first and then connect it to the camcorder.

To start recording on the camcorder and external device simultaneously

With SDI signal output enabled, set SDI/HDMI Rec Control (page 89) >Setting 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 SDI 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 the record START/STOP button and the handle record START/STOP are set to control different media, the REC trigger signal is output in accordance with the operation of slot A.

HDMI OUT Connector (Type A connector)

Set the output on/off setting and the output format in the Monitoring menu (page 99).
Use a commercially available high-speed HDMI cable for connection.

External Synchronization

When shooting using multiple camcorder units, the camcorders can be synchronized to a specific reference signal or timecode via the genlock connector of the camcorders.

Synchronizing the Phase of the Video Signals (Genlock)

Set the IN/OUT select switch (page 8) of the camcorder to the IN position, and supply a reference signal to the GENLOCK IN/REF OUT connector (page 8) to enable genlock.
The reference signals that can be used vary depending on the system frequency of the selected recording format.

System frequency of recording format	Supported input reference signals
59.94P	1920×1080 59.94i 720×486 59.94i 1280×720 59.94P
50P	1920×1080 50i 720×576 50i 1280×720 50P
29.97P	1920×1080 59.94i 720×486 59.94i
25P	1920×1080 50i 720×576 50i
24P	1920×1080 48i(24PsF)
23.98P	1920×1080 47.95i (23.98PsF)
59.94i	1920×1080 59.94i 720×486 59.94i
50i	1920×1080 50i 720×576 50i

[Notes]
- If the reference signal is unstable, genlock cannot be achieved.
- The subcarrier is not synchronized.

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 97) in the TC/Media menu as follows.
Mode: Preset
Run: Free Run

2 Press the assignable button (page 44) assigned with the DURATION/TC/UBIT function to display the timecode on the screen.

3 Check that the IN/OUT select switch (page 8) is set to the IN position, then supply an HD or SD reference video signal to the GENLOCK IN/REF OUT connector and the reference timecode to the TC IN/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]
- Check that the supplied reference timecode and the reference video signal are in a phase relationship that complies with the SMPTE timecode standard.
- 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 video signal 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.
- If the external timecode source is disconnected, 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, or turn the camcorder off.
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 97) in the TC/Media menu.

2 Check that the IN/OUT select switch (page 8) is set to the OUT position, and connect the TC IN/OUT connector and GENLOCK IN/REF OUT connector to the timecode input and reference signal input, respectively, of the device you want to synchronize.

Managing/Editing Clips using a Computer

Connecting using a USB Cable

Using an XQD card reader (option)

Connect an XQD card reader using a USB cable, and insert a memory card in the 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

Connect the camcorder using a USB cable, and insert a memory card in XQD card slot A or B. The memory card is recognized as a computer extension drive.

1 Remove the grip remote control from the camcorder, and connect the USB/multi connector (page 4) to the computer using a USB cable.

2 Turn the camcorder POWER switch to the ON position.
A message appears on the viewfinder screen asking whether to enable USB connection.

[Note]
The USB connection confirmation message is not displayed while another confirmation message or progress message is displayed, for example, when formatting or restoring an XQD 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 Macintosh, 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. Disconnecting the power cord
  - Removing the XQD 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 3 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.

Image sensor auto adjustment

If APR has not been executed since a set time has elapsed after setting the time and date, a message prompting you to execute APR will be displayed.

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

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.

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.

Security precautions

- Use behind a securely designed firewall. Do not connect the unit to a network where there is a possibility of connection to untrusted devices.
- If FTPS is available, use FTPS. Contents, user names, and passwords are not encrypted using normal FTP.
- 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.
- From a safety standpoint, when using the unit connected with the network, it is strongly recommended to change the access limitation settings from the factory preset values (page 109). Specifically, exercise caution when connected to an open network.
  Also, from a security standpoint, it is recommended that you set a password with a sufficiently long character string that is hard to guess by others, and that you store it safely.
- Do not browse any other website in the Web browser while making settings or after making settings.
  Since the login status remains in the Web browser, close the Web browser when you complete the settings to prevent unauthorized third parties from using the unit or harmful programs from running.

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, Video Format, and other settings in the Project menu (page 86).
- No playback picture is output if the video output resolution is higher than the resolution of the picture.

SDI OUT/HDMI OUT Connector Output Formats

System frequency (Rec Format >Frequency in the Project menu)	Video format (Rec Format >Video Format in the Project menu)	Output format (Monitoring >Output Format)		
		SDI1	SDI2	HDMI
59.94 / 50	4096×2160P	4096×2160P	–	4096×2160P
		1920×1080P (Level A)	**1920×1080P (Level A)**	**1920×1080P**
		1920×1080P (Level B)	1920×1080P (Level B)	–
		1920×1080P (Level A)	1920×1080i	1920×1080i
		1920×1080P (Level B)	1920×1080i	1920×1080i
		1920×1080i	1920×1080i	1920×1080i
	3840×2160P	3840×2160P	–	3840×2160P
		1920×1080P (Level A)	**1920×1080P (Level A)**	**1920×1080P**
		1920×1080P (Level B)	1920×1080P (Level B)	–
		1920×1080P (Level A)	1920×1080i	1920×1080i
		1920×1080P (Level B)	1920×1080i	1920×1080i
		1920×1080i	1920×1080i	1920×1080i

System frequency (Rec Format >Frequency in the Project menu)	Video format (Rec Format >Video Format in the Project menu)	Output format (Monitoring >Output Format)		
		SDI1	SDI2	HDMI
59.94 / 50	1920×1080P / RAW only[1)]	**1920×1080P (Level A)**	**1920×1080P (Level A)**	**1920×1080P**
		1920×1080P (Level B)	1920×1080P (Level B)	–
		1920×1080P (Level A)	1920×1080i	1920×1080i
		1920×1080P (Level B)	1920×1080i	1920×1080i
	1920×1080i	**1920×1080i**	**1920×1080i**	**1920×1080i**
		–	–	720×480P/ 720×576P
29.97 / 25	4096×2160P	4096×2160P	–	4096×2160P
		1920×1080i(PsF)	**1920×1080i(PsF)**	**1920×1080i(PsF)**
	3840×2160P	3840×2160P	–	3840×2160P
		1920×1080i(PsF)	**1920×1080i(PsF)**	**1920×1080i(PsF)**
	1920×1080P / RAW only[1)]	**1920×1080i(PsF)**	**1920×1080i(PsF)**	**1920×1080i(PsF)**
24	4096×2160P	4096×2160P	–	4096×2160P
		1920×1080P	**1920×1080P**	**1920×1080P**
	RAW only[1)]	**1920×1080P**	**1920×1080P**	**1920×1080P**
23.98	4096×2160P	4096×2160P	–	4096×2160P
		1920×1080P	**1920×1080P**	**1920×1080P**
	3840×2160P	3840×2160P	–	3840×2160P
		1920×1080P	**1920×1080P**	**1920×1080P**
	1920×1080P / RAW only[1)]	**1920×1080P**	**1920×1080P**	**1920×1080P**

1) Without recording internally

Monitor LUT Limitations

The monitor LUT function is available in Cine EI mode when the recording resolution is 4096×2160 or 3840×2160.
When Monitor LUT Setting >Monitor Out in the Shooting menu is set to MLUT On and the image output resolution is 1920×1080, monitor LUT is applied to the output image.
When the image output resolution is 4096×2160 or 3840×2160, the same image as the recorded image is output.

Output Display Limitations

The menu and status embedding in each output signal (SDI1, SDI2, HDMI) is determined by the Output Format output resolution and Output Display >Setting setting in the Monitoring menu.

Output resolution	Output Display >Setting	Output Display >SDI1	Output Display >SDI2	Output Display >HDMI
4K	On	On	– (output Off)	On
	Off	Off	– (output Off)	Off
HD	**On**	Off	On	On
	Off	Off	Off	Off

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 17) or connect to AC power using an AC adaptor (page 18).
	The battery pack is completely exhausted.	Replace the battery pack with a fully charged one (page 17).
The power supply cuts while operating.	The battery pack becomes exhausted.	Replace the battery pack with a fully charged one (page 17).
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 17). 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 button.	The XQD memory card is full.	Replace the XQD memory card with one having sufficient space.
	The XQD memory card needs restoration.	Restore the XQD memory card (page 29).
Audio recording is not possible.	The AUDIO LEVEL (CH1/CH2/CH3/CH4) dials are set to the minimum level.	Adjust the audio recording levels with the AUDIO LEVEL (CH1/CH2/CH3/CH4) dials (page 42).
The recorded sound is distorted.	The audio level is too high.	Adjust the audio recording levels with the AUDIO LEVEL (CH1/CH2/CH3/CH4) dials (page 42).
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/CH3/CH4) dials (page 42). When an external microphone is selected, also adjust the INPUT MIC Reference setting under Audio Input in the Audio menu (page 102).
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.	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.
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 119).

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.
The web remote control does not appear.	Check the IP address setting.

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.	3G/4G signal conditions may be poor. Move to another location and try again.

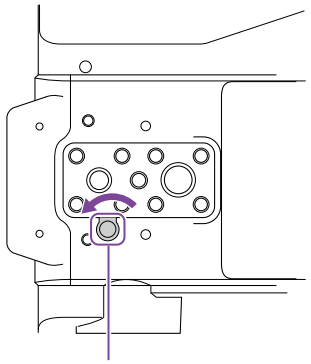
When using the ND Filter

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.).



Screwdriver hole
(with cap removed)

4 Set the ND PRESET/VARIABLE switch (page 6) to the PRESET position, and set the ND FILTER POSITION up/down buttons (page 6) 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 built-in speaker and 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.
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 XQD 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 XQD memory card. Replace immediately.
Clips Near Full	Intermittent	Flashing	The number of additional clips that can be recorded on the XQD 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 XQD 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 XQD memory card.
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

1) "(B)" is displayed for the card in slot B.

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 not supported 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 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.
Copy All Sub Clips NG: Reached Clip Number Limit NG: Same File Already Exists NG: Not Enough Capacity	Copying of all sub-clips using Copy All Sub Clips failed because of the displayed reason. • The maximum number of clips is reached. • There is a file with the same name. • There is not enough capacity for copying. Replace the media.
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.
Fan Stopped	The built-in fan stopped. Avoid use at high temperatures, disconnect the power, and contact your Sony service representative.
Invalid setting value was reset: Media/Clip Naming/Camera Position Please save All File again	The Clip Naming format setting was reset because an invalid ALL file was loaded. Configure the desired format settings, and try to save the ALL file again.
Lens I/F Error(xx:xx)	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. If the problem persists, contact your Sony service representative with the error code (five characters in parentheses).
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.
Cannot add auto upload job of Proxy file because maximum number of upload jobs was reached.	The maximum number of transfer jobs has been reached. Clear any unwanted jobs. The auto upload destination setting for 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 addresses of the wireless LAN, wired LAN, modem, or between modems. 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 of the wireless LAN access point mode was changed due to a conflict in the network addresses of the wireless LAN access point mode, wired LAN, or modem. Check the IP address setting.

1) "(B)" is displayed for the card in slot B.

Items Saved in Files

Items Configured in the Setup 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	Yes
		ISO/Gain<H>	Yes	Yes
		ISO/Gain<M>	Yes	Yes
		ISO/Gain<L>	Yes	Yes
		Exposure Index<H>	Yes	Yes
		Exposure Index<M>	Yes	Yes
		Exposure Index<L>	Yes	Yes
		Shockless Gain	Yes	Yes
		Base Sensitivity	Yes	Yes
		Base ISO	Yes	Yes
	ND Filter	Preset1	Yes	Yes
		Preset2	Yes	Yes
		Preset3	Yes	Yes
	Shutter	Mode	Yes	Yes
		Shutter Speed On/Off	Yes	Yes
		Shutter Speed	Yes	Yes
		Shutter Angle	Yes	Yes
		ECS On/Off	Yes	Yes
		ECS Frequency	Yes	Yes
Shooting	Auto Exposure	Level	Yes	Yes
		Mode	Yes	Yes
		Speed	Yes	Yes
		AGC	Yes	Yes
		AGC Limit	Yes	Yes
		AGC Point	Yes	Yes
		Auto Shutter	Yes	Yes
		A.SHT Limit	Yes	Yes
		A.SHT Point	Yes	Yes
		Clip High light	Yes	No
		Detect Window	Yes	No
		Detect Window Indication	Yes	Yes
		Average Peak Level Ratio	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	Yes*1
		Tint<A>	Yes	Yes*1
		R Gain <A>	Yes	Yes*1
		B Gain <A>	Yes	Yes*1
		Color Temp <B>	Yes	Yes*1
		Tint<B>	Yes	Yes*1
		R Gain <B>	Yes	Yes*1
		B Gain <B>	Yes	Yes*1
	White Setting	Shockless White	Yes	No
		ATW Speed	Yes	No
		White Switch<B>	Yes	Yes
		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
		AF Assist	Yes	No
	S&Q Motion	Setting	Yes	No
		Frame Rate	Yes	No
	Monitor LUT	Category	Yes	No
		LUT Select	Yes	No
		User 3D LUT Select	Yes	No
	Monitor LUT Setting	Internal Rec	Yes	No
		Monitor Out	Yes	No
		HD(Sub) Rec/Proxy	–	–
		SDI1	–	–
		SDI2	–	–
		HDMI	–	–
		VF/Streaming	–	–
	Monitor 3D LUT	Load SD Card	–	–
		Reset	–	–
		Reset All	–	–

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Shooting	Noise Suppression	Setting(SDR/HDR)	Yes	Yes
		Level(SDR/HDR)	Yes	Yes
		Setting(Cine EI)	Yes	No
		Level(Cine EI)	Yes	No
	Flicker Reduce	Mode	Yes	No
		Frequency	Yes	No
	SteadyShot	Setting	Yes	No
	Auto Black Balance	Auto Black Balance	–	–
Project	Base Setting	Shooting Mode	Yes	No
	Rec Format	Frequency	Yes	No
		Imager Scan Mode	Yes	No
		Codec	Yes	No
		RAW Output Format	Yes	No
		Video Format	Yes	No
	Cine EI Setting	Color Gamut	Yes	No
	Simul Rec	Setting	Yes	No
		Rec Button Set	Yes	No
	4K & HD (Sub) Rec	Setting	Yes	No
	Proxy Rec	Setting	Yes	No
		Proxy Format	Yes	No
		Audio Channel	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 Rec Time	Yes	No
	SDI/HDMI Rec Control	Setting	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Project	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
		<10>	Yes	No
		Focus Hold Button	Yes	No
	Assignable Dial	Assignable Dial	Yes	No
		Assignable Dial Direction	Yes	No
	Multi Function Dial	Default Function	Yes	No
	User File	Load Utility SD/MS	–	–
		Save Utility SD/MS	–	–
		File ID	No	No
		Load Customize Data	Yes	No
		Load White Data	Yes	No
	All File	Load Utility SD/MS	–	–
		Save Utility SD/MS	–	–
		File ID	Yes	No
		Load Network Data	No	No
	Planning Metadata	Load Media(A)	–	–
		Load Media(B)	–	–
		Properties	–	–
		Clear Memory	–	–
		Clip Name Display	Yes	No
Paint	HDR Paint Setting	HLG Look	Yes	Yes
		HDR Black Offset	Yes	Yes
		HDR Knee	Yes	Yes
		HDR Knee Point	Yes	Yes
		HDR Knee Slope	Yes	Yes

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Paint	Black	Master Black	Yes	Yes
		R Black	Yes	Yes
		B Black	Yes	Yes
	Gamma	Setting	Yes	Yes
		Step Gamma	Yes	Yes
		Master Gamma	Yes	Yes
		R Gamma	Yes	Yes
		G Gamma	Yes	Yes
		B Gamma	Yes	Yes
		Gamma Category	Yes	Yes
		Gamma Select	Yes	Yes
	Black Gamma	Setting	Yes	Yes
		Range	Yes	Yes
		Master Black Gamma	Yes	Yes
	Knee	Setting	Yes	Yes
		Auto Knee	Yes	Yes
		Point	Yes	Yes
		Slope	Yes	Yes
		Knee Saturation	Yes	Yes
		Knee Saturation Level	Yes	Yes
	White Clip	Setting	No	Yes
		Level	Yes	Yes
	Detail(4K/QFHD)	Setting	Yes	Yes
		Level	Yes	Yes
		H/V Ratio	Yes	Yes
		Crispening	Yes	Yes
		Frequency	Yes	Yes
		Knee Aperture	Yes	Yes
		Knee Aperture Level	Yes	Yes
		White Limit	Yes	Yes
		Black Limit	Yes	Yes
		V Detail Creation	Yes	Yes

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Paint	Detail(HD)	Setting	Yes	Yes
		Level	Yes	Yes
		H/V Ratio	Yes	Yes
		Crispening	Yes	Yes
		Frequency	Yes	Yes
		Knee Aperture	Yes	Yes
		Knee Aperture Level	Yes	Yes
		White Limit	Yes	Yes
		Black Limit	Yes	Yes
		V Detail Creation	Yes	Yes
	Skin Detail	Setting	Yes	Yes
		Area Detection	–	–
		Area Indication	No	No
		Level	Yes	Yes
		Saturation	Yes	Yes
		Hue	Yes	Yes
		Width	Yes	Yes
	Aperture	Setting	Yes	Yes
		Level	Yes	Yes
	Matrix	Setting	Yes	Yes
		Adaptive Matrix	Yes	Yes
		Preset Matrix	Yes	Yes
		Preset Select	Yes	Yes
		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

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Paint	Multi Matrix	Setting	Yes	Yes
		Area Indication	No	No
		Color Detection	–	–
		Reset	–	–
		Axis	No	No
		Hue	Yes	Yes
		Saturation	Yes	Yes
	Scene File	Recall Internal Memory	–	–
		Store Internal Memory	–	–
		Load Utility SD/MS	–	–
		Save Utility SD/MS	–	–
		File ID	No	Yes
		Scene White Data	Yes	No
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
		Title Prefix	Yes	No
		Number Set	No	No
	Update Media	Media(A)	–	–
		Media(B)	–	–
	Format Media	Media(A)	–	–
		Media(B)	–	–
		Utility SD/MS	–	–

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Monitoring	Output On/Off	SDI1	Yes	No
		SDI2	Yes	No
		HDMI	Yes	No
	Output Format	SDI1	Yes	No
		SDI2	Yes	No
		HDMI	Yes	No
		REF	No	No
	Output Setting	RAW to HD Conv.	Yes	No
	Output Display	Setting	Yes	No
		SDI1	Yes	No
		SDI2	Yes	No
		HDMI	Yes	No
	Display On/Off	Network Status	Yes	No
		File Transfer Status	Yes	No
		NCM/Streaming Status	Yes	No
		Rec/Play Status	Yes	No
		RAW Output Control Status	Yes	No
		Tally	Yes	No
		Battery Remain	Yes	No
		Focus Mode	Yes	No
		Focus Position	Yes	No
		Focus Area Indicator	Yes	No
		Focus Area Ind.(AF-S)	Yes	No
		Face/Eye Detection Frame	Yes	No
		Lens Info	Yes	No
		Imager Scan Mode	Yes	No
		Rec Format	Yes	No
		Frame Rate	Yes	No
		Zoom Position	Yes	No
		UWP RF Level	Yes	No
		GPS	Yes	No
		SteadyShot	Yes	No
		Gamma/LUT	Yes	No
		SDI/HDMI Rec Control	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Monitoring	Display On/Off	Gamma Display Assist	Yes	No
		Proxy Status	Yes	No
		Base ISO/Sensitivity	Yes	No
		Media Status	Yes	No
		Video Signal Monitor	Yes	No
		Clip Name	Yes	No
		White Balance	Yes	No
		Scene File	Yes	No
		Focus Indicator	Yes	No
		Auto Exposure Mode	Yes	No
		Auto Exposure Level	Yes	No
		Timecode	Yes	No
		ND Filter	Yes	No
		Iris	Yes	No
		ISO/Gain/EI	Yes	No
		Shutter	Yes	No
		Level Gauge	Yes	No
		Audio Level Meter	Yes	No
		Video Level Warning	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
		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	Contrast	Yes	No
		Brightness	Yes	No
		Color Mode	Yes	No
	Gamma Display Assist	Setting	Yes	No
	Peaking	Setting	Yes	No
		Type	Yes	No
		Normal Peaking Frequency	Yes	No
		Normal Peaking Level	Yes	No
		Color	Yes	No
		Color Peaking Level	Yes	No
	Zebra	Setting	Yes	No
		Zebra Select	Yes	No
		Zebra1 Level	Yes	No
		Zebra1 Aperture Level	Yes	No
		Zebra2 Level	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Audio	Audio Input	CH1 MI SHOE Input Select	Yes	No
		CH2 EXT Input Select	Yes	No
		CH2 MI SHOE 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
		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
		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 Shot Mark	Delete Shot Mark1	–	–
		Delete Shot Mark2	–	–
	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	–	–
	Copy Clip	Select Clip	–	–
		All Clips	–	–
	Copy Sub Clip	All Clips	–	–
	Transfer Clip	Select Clip	–	–
		All Clips	–	–
	Transfer Clip (Proxy)	Select Clip	–	–
		All Clips	–	–
	Set Index Picture		–	–
	Thumbnail View	Essence Mark Thumbnail	–	–
		Clip Thumbnail	–	–
	Filter Clips	OK	–	–
		NG	–	–
		KEEP	–	–
		None	–	–
		All	–	–
	Customize View	Thumbnail Caption	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Technical	Color Bars	Setting	No	No
		Type	Yes	No
	Test Saw	Test Saw	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
	Touch Operation	Setting	Yes	No
	Rec Review	Setting	Yes	No
	Handle Zoom	Setting	Yes	No
		High	Yes	No
		Low	Yes	No
	GPS	GPS	Yes	No
	Menu Settings	User Menu Only	Yes	No
		User Menu with Lock	No	No
	Fan Control	Setting	Yes	No
	Lens	Zoom Ring Direction	Yes	No
		Shading Compensation	Yes	No
		Chroma Aberration Comp.	Yes	No
		Distortion Comp.	Yes	No
		Distance Display	Yes	No
		Zoom Position Display	Yes	No
		Iris 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

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Technical	Ext. Unit Battery Alarm	Near End:Info Battery	Yes	No
		End:Info Battery	Yes	No
		Near End:Sony Battery	Yes	No
		End:Sony Battery	Yes	No
		Near End:Other Battery	Yes	No
		End:Other Battery	Yes	No
		Detected Battery	No	No
	Ext. Unit DC IN Alarm	DC Low Voltage1	Yes	No
		DC Low Voltage2	Yes	No
Network	Access Authentication	User Name	No	No
		Password	No	No
	Wireless LAN	Setting	Yes	No
		WPS	–	–
		NFC	–	–
		MAC Address	–	–
	AP Mode Settings	Channel	Yes	No
		Camera SSID & Password	–	–
		Regenerate Password	–	–
		IP Address	–	–
		Subnet Mask	–	–

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Network	ST Mode Settings	Camera Remote Control	Yes	No
		Connected Network		
		SSID	–	–
		Security	–	–
		Password	–	–
		DHCP	–	–
		IP Address	–	–
		Subnet Mask	–	–
		Gateway	–	–
		DNS Auto	–	–
		Primary DNS Server	–	–
		Secondary DNS Server	–	–
		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
		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

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
	Modem	Setting	Yes	No
		Modem1 Device Name	–	–
		Modem1 IP Address	–	–
		Modem1 Subnet Mask	–	–
		Modem2 Device Name	–	–
		Modem2 IP Address	–	–
		Modem2 Subnet Mask	–	–
	Network Client Mode	Setting	Yes	No
		NCM Settings Select	Yes	No
		NCM Settings1/NCM Settings2/NCM Settings3		
		Display Name	Yes	No
		CCM Address	Yes	No
		CCM Port	Yes	No
		User Name	No	No
		Password	No	No
		CCM Certificate	–	–
		CCM Certificate Status	–	–
		Camera Control	Yes	No
		Camera Setting	No	No
		Reset	–	–
		Streaming Quality	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Network	File Transfer	Auto Upload (Proxy)	Yes	No
		Default Upload Server	Yes	No
		Clear Completed Jobs	–	–
		Clear All Jobs	–	–
		View Job List	–	–
		Server Settings(NCM)	–	–
		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	–	–
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	–	–
	Hours Meter	Hours (System)	–	–
		Hours (Reset)	–	–
		Reset	–	–
	Version	Version Number	–	–
		Ext. Unit Version Number	–	–
		Version Up	–	–
		Lens Version Number	–	–

*1 Not loaded when Scene File >Scene White Data in the Paint menu is set to Off.

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	Yes
Auto Iris	Yes	Yes
ATW	Yes	Yes*1
Focus Setting	Yes	No
Display	Yes	No
VF Adjust	Yes	No

*1 Not loaded when Scene File >Scene White Data in the Paint menu is set to Off.

Items Configured by the Assignable Dial

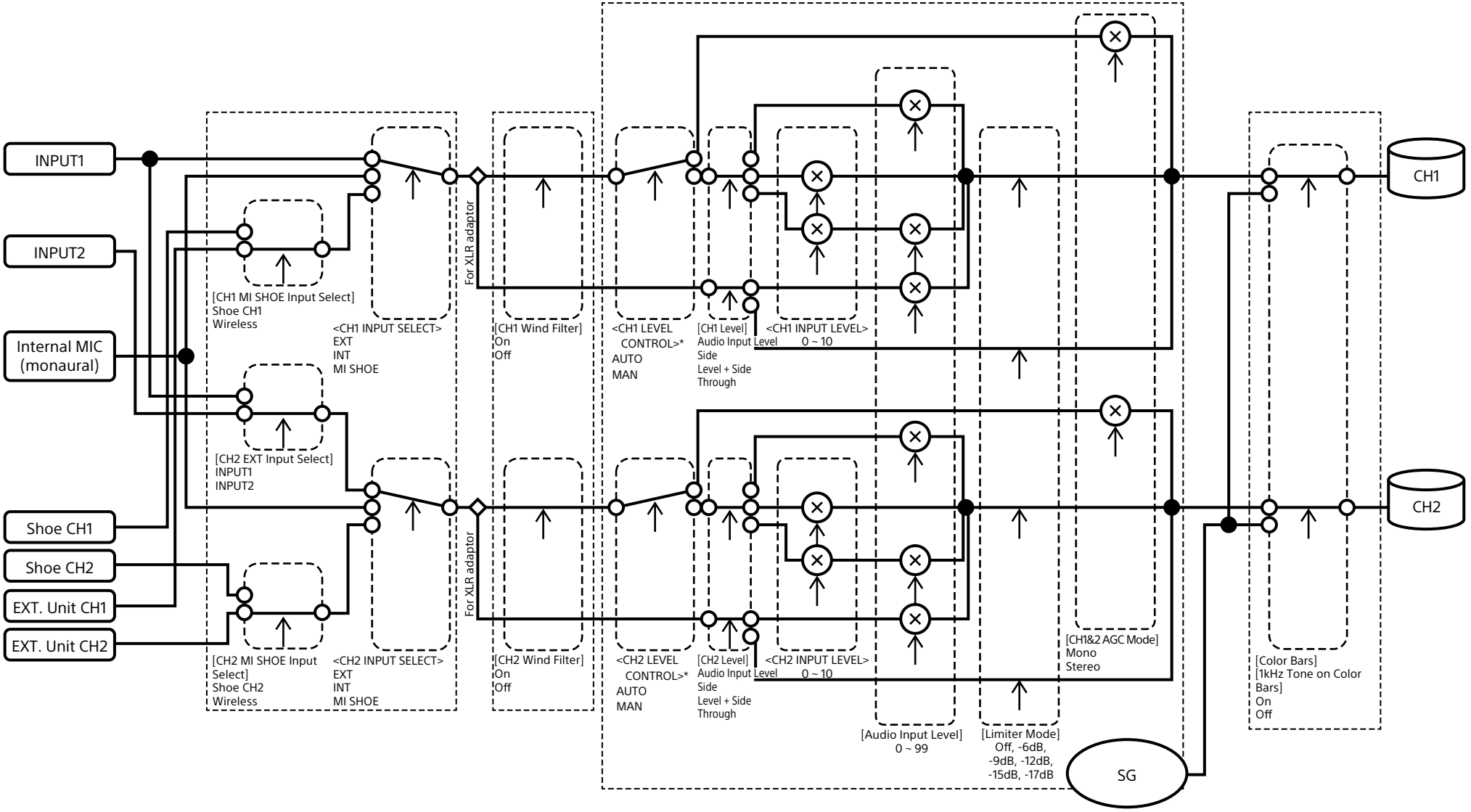
Yes: Item is saved.
No: Item is not saved.
–: Not saved (temporary setting)

Assignable dial selection	All File	Scene File
IRIS	Yes	Yes
ND Filter	Yes	Yes
Audio Input Level	Yes	No

Block Diagrams

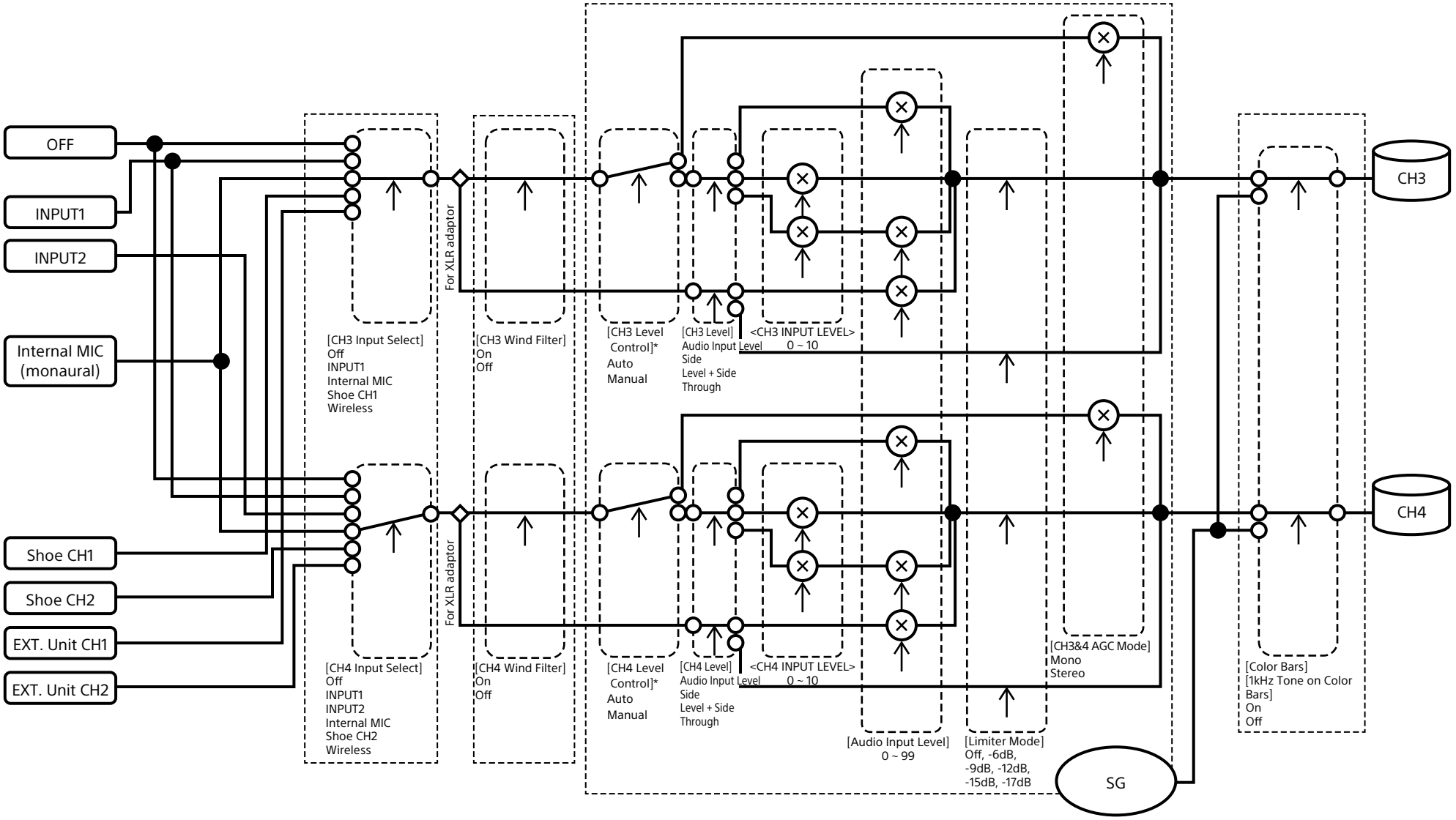
See related items in “Setting the Audio to Record” (page 42) and “Audio Menu” (page 102).

Audio Input (CH1&CH2)



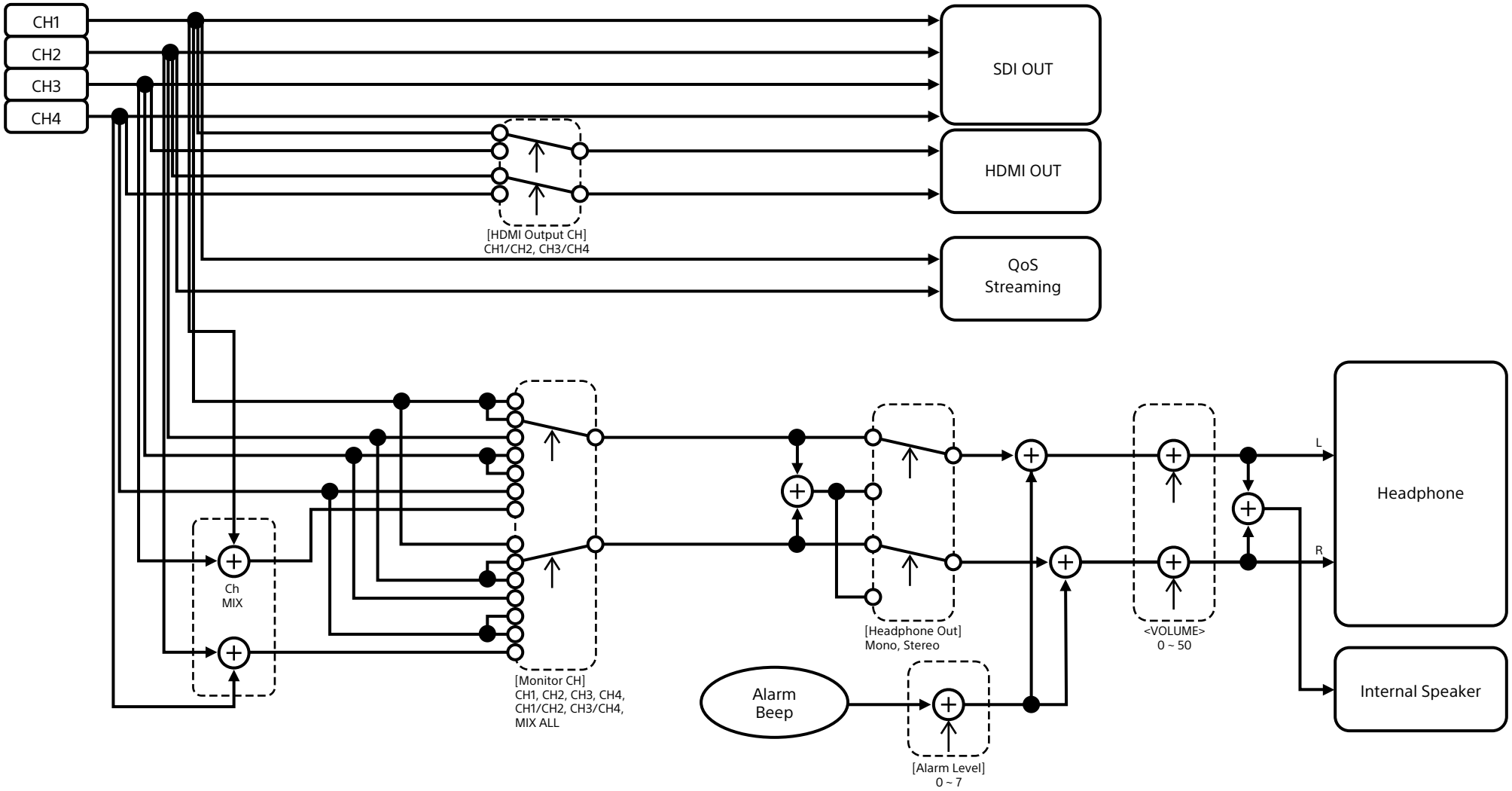
* Set to Manual when audio is input from XLR adaptor.

Audio Input (CH3&CH4)



* 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 21).

2 Select Version in the Maintenance menu to display Lens Version Number (page 114).
The software version number of the E-mount lens is displayed on the side.

Updating Software

Set the camcorder to mass storage mode (page 119).
Update the software following the procedure supplied with the lens software.

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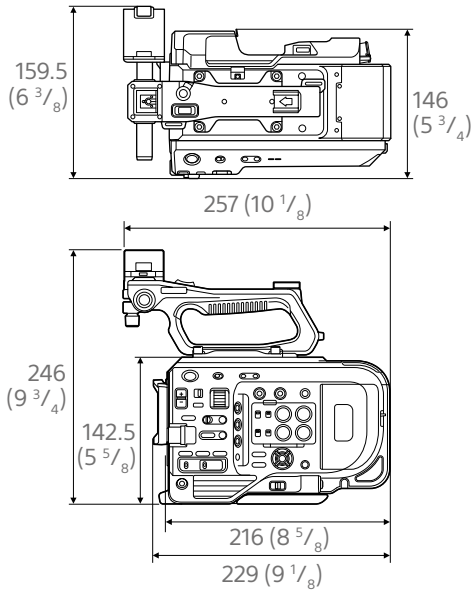
Specifications

General

Mass Approx. 2.3 kg (5 lb 1 oz) (body, including handle)

Dimensions

(Unit: mm (inch), body (including handle))[1)]



1) The values for dimensions are approximate.

Power requirements

19.5 V DC (18.0 V to 20.5 V)

Power consumption

Approx. 35.2 W (body, lens, XAVC-I QFHD 59.94P recording, viewfinder on, no external device connected)

Approx. 36.8 W (body, lens, XAVC-I QFHD 59.94P recording, viewfinder on, 3G-SDI×2, HDMI, 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. 54 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

XAVC-L HD 25 mode: VBR, 25 Mbps (max) bit rate, MPEG-4 H.264/AVC

MPEG-2 Long GOP

MPEG HD422 mode: CBR, 50 Mbps (max) bit rate, MPEG-2 422P@HL

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, 23.98P, 25P

XAVC-I HD mode: 1920×1080/59.94P, 50P, 59.94i, 50i, 29.97P, 23.98P, 25P

XAVC Long

XAVC-L QFHD mode: 3840×2160/59.94P, 50P, 29.97P, 23.98P, 25P

XAVC-L HD 50 mode: 1920×1080/59.94P, 50P, 59.94i, 50i, 29.97P, 23.98P, 25P

XAVC-L HD 35 mode: 1920×1080/59.94P, 50P, 59.94i, 50i, 29.97P, 23.98P, 25P

XAVC-L HD 25 mode: 1920×1080/59.94i, 50i

MPEG-2 Long GOP

MPEG HD422 mode: 1920×1080/59.94i, 50i, 29.97P, 23.98P, 25P

Recording/playback time

XAVC Intra

XAVC-I 4K/QFHD mode:

59.94P

Approx. 22 minutes (using QD-G128E/QD-G120F)

XAVC-I HD mode:

59.94P

Approx. 57 minutes (using QD-G128E/QD-G120F)

XAVC Long

XAVC-L QFHD mode:

59.94P

Approx. 86 minutes (using QD-G128E/G120F)

XAVC-L HD 50 mode:

59.94P

Approx. 110 minutes (using QD-G64E)

XAVC-L HD 35 mode:

59.94P

Approx. 150 minutes (using QD-G64E)

XAVC-L HD 25 mode:

59.94i

Approx. 200 minutes (using QD-G64E)

MPEG-2 Long GOP

MPEG HD422 mode:

59.94i

Approx. 105 minutes (using QD-G64E)

[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, single-chip CMOS image sensor

Number of pixels

20.5M (total)

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 800/4000 (Cine EI mode, D55 Light source)

Lens mount

E-mount (lever lock type)

Latitude

15+ stops

Video S/N
57 dB (Y) (typ)
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 to 60P, XAVC HD: 1 to 120P
White balance
2000 K to 15000 K
Gain
–3 dB to +27 dB (1 dB increments)
Gamma curve
S-Cinetone, STD1, STD2, STD3, STD4, STD5, STD6, HG1, HG2, HG3, HG4, HG7, HG8, S-Log3, HLG

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

Wireless LAN

Supported standards
IEEE 802.11a/b/g/n/ac
Frequency band
2.4 GHz band
5.2/5.3/5.6/5.8 GHz band (PXW-FX9V/VK only)
Supported security protocols
WEP/WPA-PSK/WPA2-PSK
NFC Forum Type 3 Tag compliant

Input/Output Section

Inputs

INPUT 1/2:
XLR type, 3-pin, female
LINE / MIC / MIC+48V switchable
MIC: Reference –30 dBu to –80 dBu
GENLOCK IN:
BNC type
TC IN:
BNC type

Outputs

SDI OUT1:
BNC type, 12G-SDI, 6G-SDI, 3G-SDI (Level A/B), HD-SDI
SDI OUT2:
BNC type, 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
REF OUT:
BNC type
TC OUT:
BNC type

Other

DC IN:
EIAJ compliant, 18 V to 20.5 V DC
Extension unit connector:
Dedicated (144-pin)
Multi-interface shoe:
Dedicated (21-pin)
REMOTE:
2.5 mm 3-pole sub-mini type
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

XQD card slots for video recording (2)
UTILITY SD/MS card slot (1)

Supplied Accessories

AC adaptor (1)
Power cord (1)
Battery charger (1)
Battery pack (1)
LCD monitor (including rod and clamp)
Eyepiece (1)
USB cable (1)
Grip remote control (1)
Lens mount cap (1)
Handle connector protective cap (1)
Accessory shoe kit (accessory shoe (1), shoe plate (1), screws (4))
Tape measure hook (1)
Circular-shaped clamp spacer (2)
Screws (5)
Before Using This Unit (1)
Warranty booklet (1)

Design and specifications are subject to change without notice.

Notes

- Always make a test recording, and verify that it was recorded successfully. SONY WILL NOT BE LIABLE FOR DAMAGES OF ANY KIND INCLUDING, BUT NOT LIMITED TO, COMPENSATION OR REIMBURSEMENT ON ACCOUNT OF FAILURE OF THIS UNIT OR ITS RECORDING MEDIA, EXTERNAL STORAGE SYSTEMS OR ANY OTHER MEDIA OR STORAGE SYSTEMS TO RECORD CONTENT OF ANY TYPE.
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Software Downloads

When the unit is used with a PC connection, download device drivers, plug-ins, and application software, where applicable, from the Sony Professional products web site.

Sony Professional products web site homepage:

U.S.A.	http://pro.sony.com
Canada	http://www.sonybiz.ca
Latin America	http://sonypro-latin.com
Europe	http://www.pro.sony.eu/pro
Middle East and Africa	http://sony-psmea.com
Russia	http://sony.ru/pro/
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Japan	http://www.sonybsc.com
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http://www.sonycreativesoftware.com/download/software_for_sony_equipment

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