SONY®

Solid-State Memory Camcorder

Operating Instructions

PXW-FS7M2

XDCAM **XQD.**™ **HDMI**

MPEG HD422 *Exmor* Super35 CMOS **XAVC**

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Location and Function of Parts

Left Side, Front Side, and Handle

1. Handle (page 5)
2. Viewfinder connector (page 15)
3. REMOTE connector (page 18)
4. INPUT1 (LINE/MIC/MIC+48V) switch (page 35)
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6. INPUT2 (LINE/MIC/MIC+48V) switch (page 35)
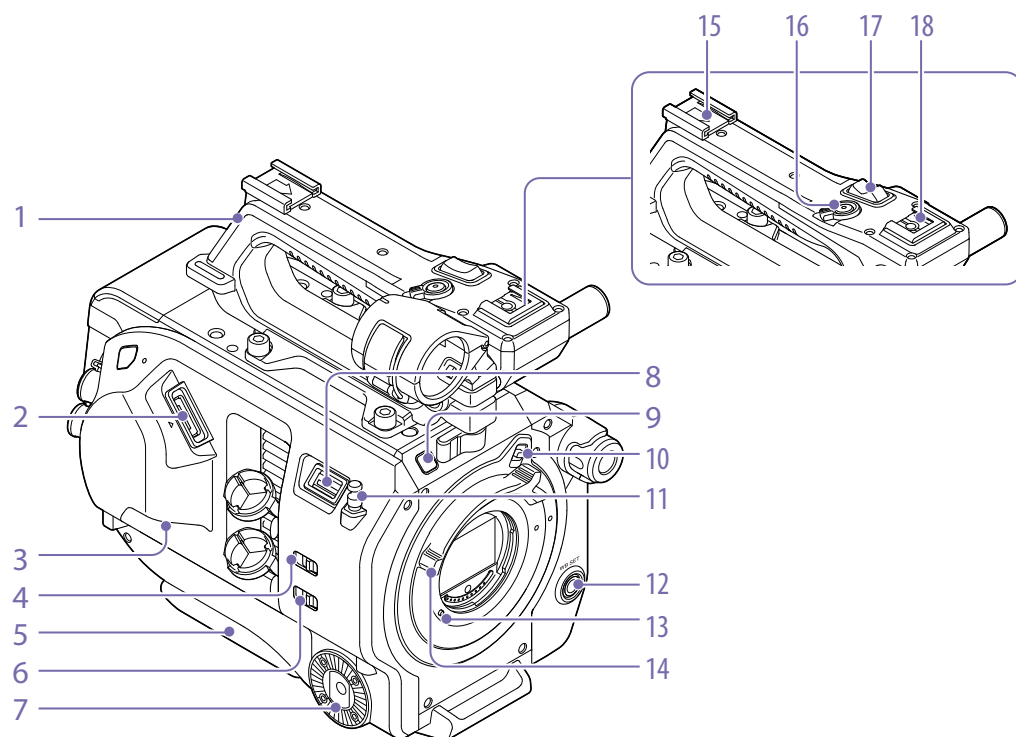7. Grip attachment (page 18)

8. USB wireless LAN module connector (page 41)
9. Recording indicator (page 72)
Flashes when the remaining capacity on the recording media or battery is low.
10. Lens lock ring stopper (page 17)
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. WB SET (white balance set) button (page 34)
13. Lens lock pin (page 17)
14. Lens lock ring (page 17)
15. Accessory shoe (page 4)
16. Handle record START/STOP button
The record button cannot be operated when the lock lever is in the lock position.
17. Handle zoom lever (page 54)
18. Multi-interface shoe

ni 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.
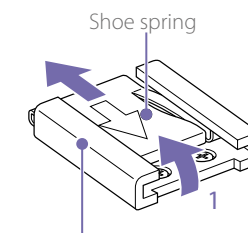
Shoe spring

Accessory shoe

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.

Accessory shoe
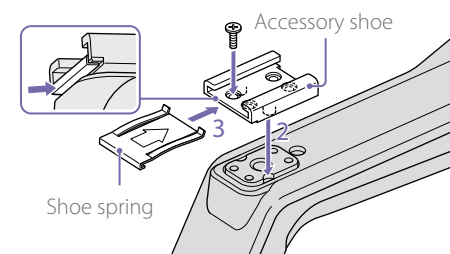
Shoe spring

Removing the accessory shoe

Remove the show spring as described in step 1 in "Attaching the accessory shoe" (page 4) unscrew the four screws, and remove the accessory shoe.

Attaching the USB wireless LAN module guard plate

1 Remove the handle attachment screw.

2 Attach the guard plate, and tighten the screw.
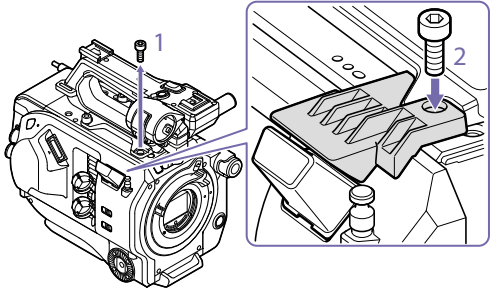
Removing the handle

Remove the four handle attachment screws, and remove the handle from the camcorder.
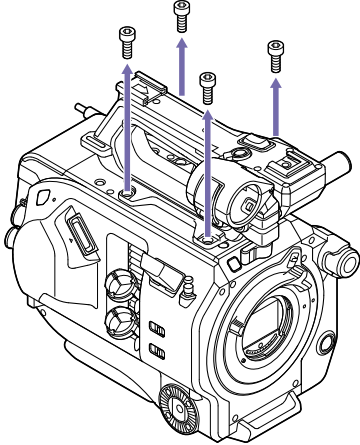
Attaching the handle connector protective cap (supplied)

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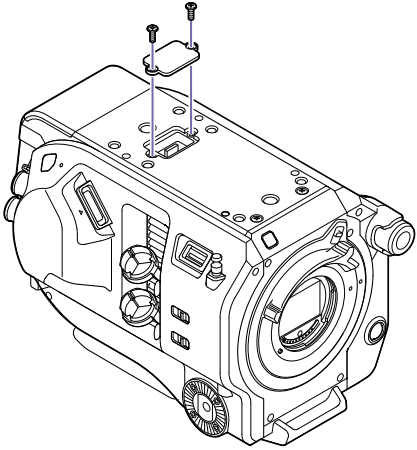
Protecting the connector terminals

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

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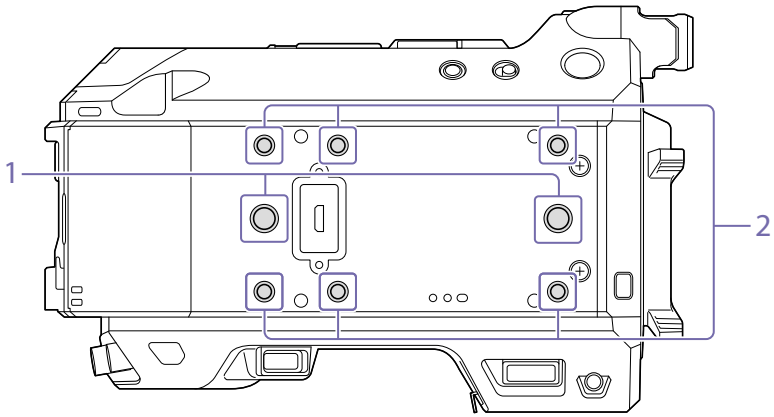
1. **Extension screw holes (3/8 inch)**
Compatible with 3/8-16 UNC screws (length of 10.0 mm or less).

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

Right Side

8. **ND/IRIS dial**
    The ND dial operates when the ND/IRIS switch is set to the ND position. The IRIS dial operates when the ND/IRIS switch is set to the IRIS position. You can assign another function to the IRIS dial (page 36).

9. IRIS button (page 33)

10. PUSH AUTO IRIS button (page 33)

11. FOCUS switch (page 31)

12. PUSH AUTO FOCUS button (page 31)

13. POWER indicator (page 30)

14. POWER switch (page 13)

15. ASSIGN (assignable) 7 to 10 buttons (page 36)

16. CH1 LEVEL CONTROL switch (page 35)

17. CH1 INPUT LEVEL dial (page 35)

18. CH2 LEVEL CONTROL switch (page 35)

19. CH2 INPUT LEVEL dial (page 35)

20. SLOT SELECT (XQD memory card select) button (page 23)

21. CANCEL/BACK button (page 45)

22. MENU button (page 47)

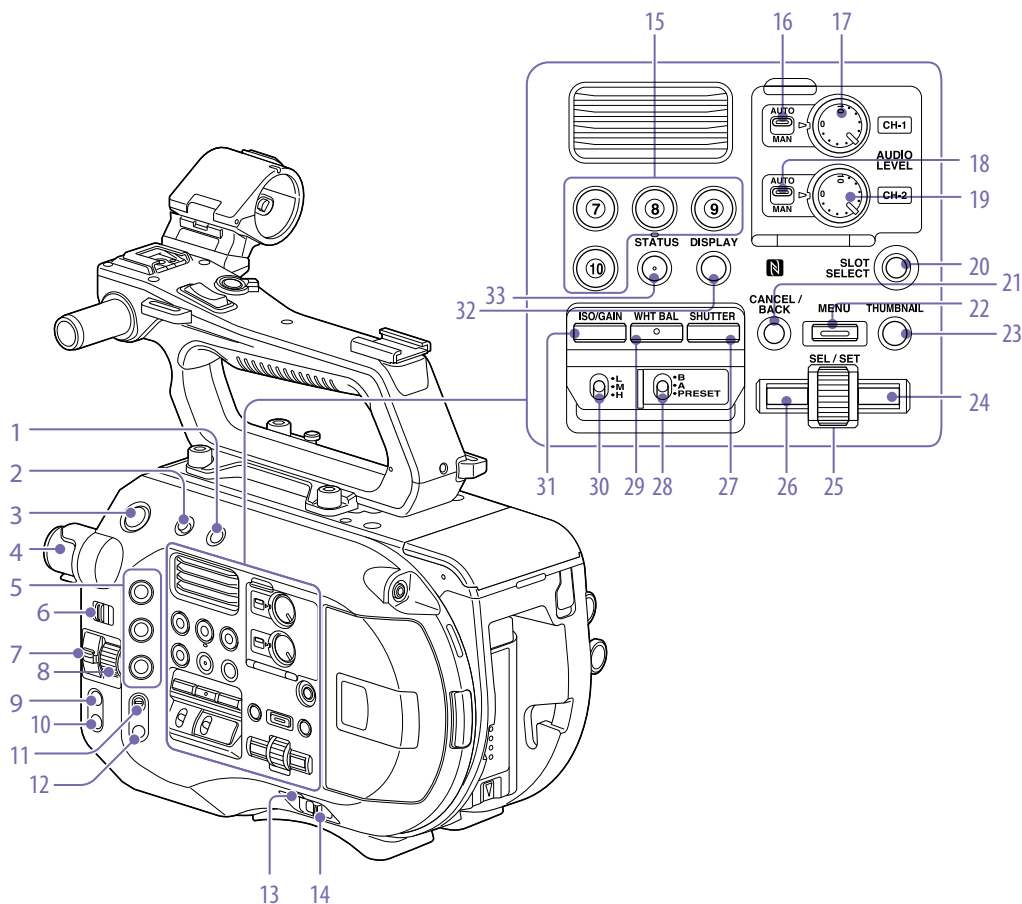23. THUMBNAIL button (page 44)

24. **Right button**
    Used to set numeric values and to move the cursor to the right on thumbnail screens and menus.

25. **SEL/SET (select/set) dial**
    Turn the dial to move the cursor up/down to select menu items or settings. Press to apply the selected item.

26. **Left button**
    Used to set numeric values and to move the cursor to the left on thumbnail screens and menus.

27. SHUTTER button (page 33)

28. WHT BAL (white balance memory select) switch (page 34)

29. WHT BAL (white balance) button (page 34)

30. ISO/GAIN switch (page 33)

31. ISO/GAIN button (page 33)

32. DISPLAY button (page 9)

33. STATUS CHECK button (page 11)

1. FULL AUTO button (page 30)

2. HOLD switch (page 72)

3. Record START/STOP button

4. ND FILTER dial (page 33)

5. ASSIGN (assignable) 1 to 3 buttons (page 36)

6. PRESET/VARIABLE switch (page 33)

7. ND/IRIS switch

Card Slot, Rear Side, and Terminals
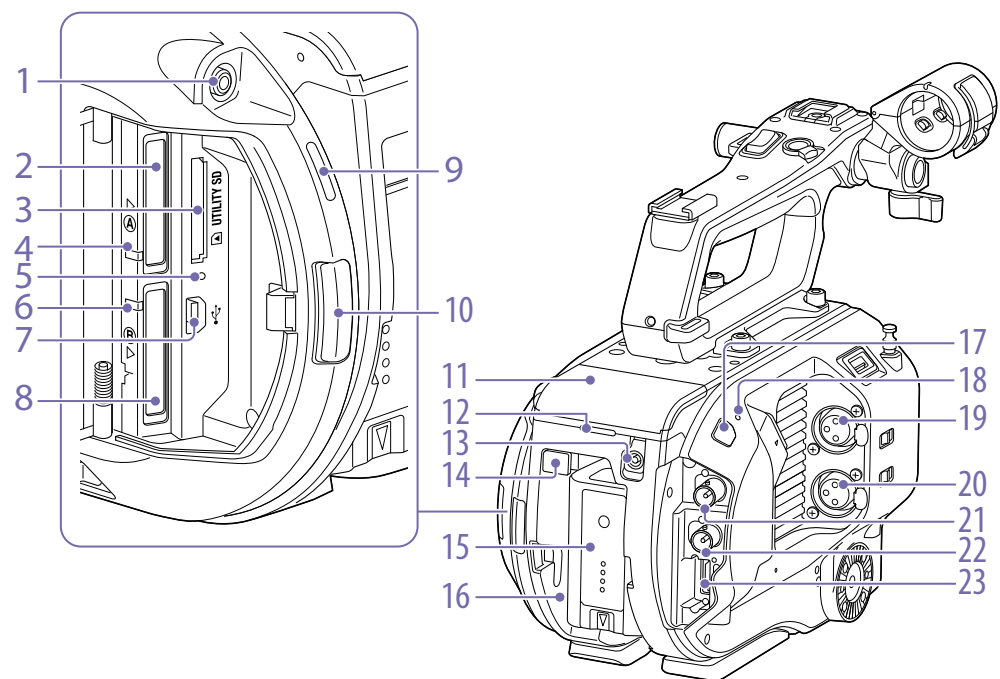
1. Headphone jack (page 31)
2. XQD card slot A (page 22)
3. UTILITY SD card slot (page 25)
4. XQD (A) access indicator (page 23)
5. SD card access indicator (page 25)
6. XQD (B) access indicator (page 23)
7. USB connector
Connect to a computer using a USB cable to access recording media in an XQD card slot on the camcorder.
8. XQD card slot B (page 23)

9. Built-in speaker (page 31)
10. Media cover release button (page 23)
11. Extension unit connector (page 26)
12. Rear recording indicator (page 30)
13. DC IN connector (page 13)
14. BATT RELEASE button (page 13)
15. Battery (page 13)
16. Battery pack attachment (page 13)
17. Infrared remote control receiver sensor (page 28)

18. Internal microphone (page 35)
Narration microphone for recording ambient sound.
19. INPUT1 (audio input 1) connector (page 35)
20. INPUT2 (audio input 2) connector (page 35)
21. SDI OUT 1 connector (page 76)
22. SDI OUT 2 connector (page 76)
23. HDMI OUT connector (page 76)

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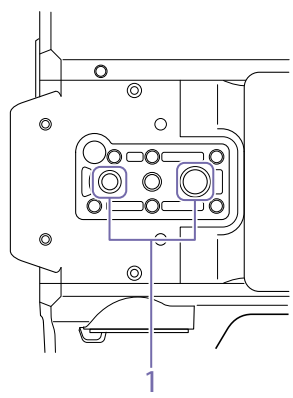
1. Tripod screw holes (1/4 inch, 3/8 inch)
Attach to a tripod (option, screw length of 5.5 mm or less) that supports 1/4-20 UNC or 3/8-16 UNC screws.

Viewfinder

For details about attaching the viewfinder (supplied) and eyepiece, see page 15.
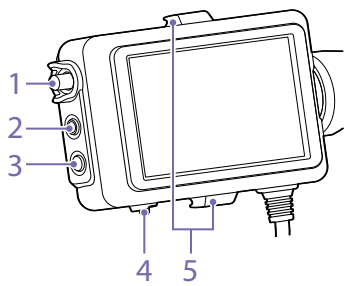
1. CONTRAST knob
2. PEAKING button
3. ZEBRA button
4. MIRROR switch
5. Eyepiece attachment hooks

Eyepiece

For details about attaching the eyepiece (supplied), see page 16.
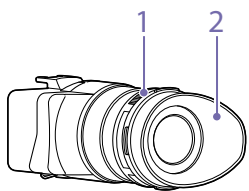
1. Diopter adjustment knob
2. Eyecup

Viewfinder Hood

For details about attaching the viewfinder hood (supplied), see page 17.
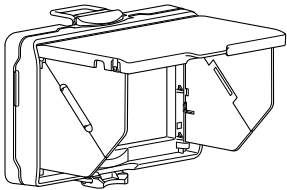
Grip Remote Control

For details about attaching the grip remote control (supplied), see page 18.
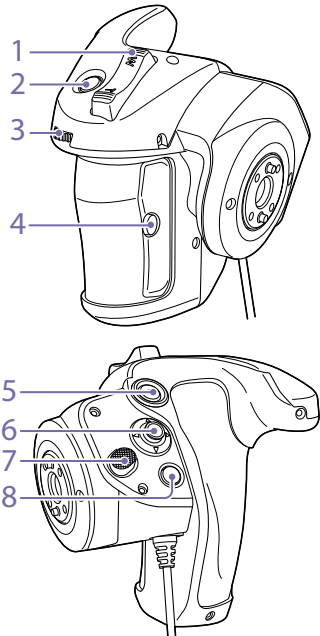
1. Zoom lever
2. ASSIGN (assignable) 4 button
3. Assignable dial
4. ASSIGN (assignable) 6 button
5. Record START/STOP button
6. Multi selector
7. Grip rotation button
8. ASSIGN (assignable) 5 button

Infrared Remote Control
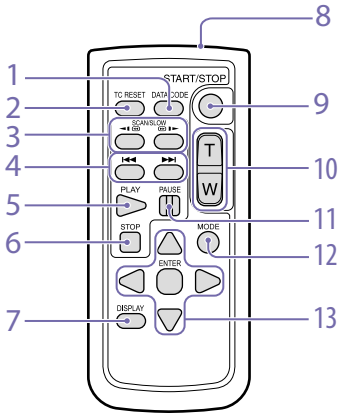
1. DATA CODE button
   Not used on this version.
2. TC RESET button
3. SCAN/SLOW button
4. ◄◄/►► (PREV/NEXT) buttons
5. PLAY button
6. STOP button
7. DISPLAY button
8. Remote control transmitter
9. START/STOP button
10. Zoom lever
11. PAUSE button
12. MODE button
    Not used on this version.
13. ◄/►/▲/▼/ENTER buttons

Extension Unit (Option)

For details about attaching an extension unit (option), see page 26.
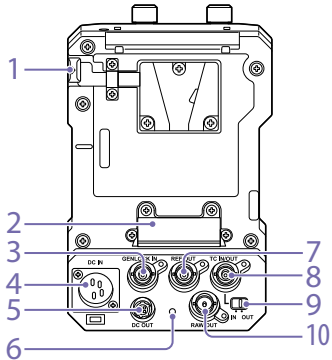
1. BATT RELEASE button
2. Battery connector
3. GENLOCK IN connector
4. DC IN connector
5. DC OUT connector
6. Recording indicator
7. REF OUT connector
8. TC IN/OUT connector
9. TC IN/OUT switch
10. RAW OUT connector

Screen Display

Viewfinder Screen

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 63).
The 17:9 aspect ratio picture captured by the image sensor is displayed in the viewfinder.
In 16:9 recording formats, the dark portions on the left and right edges are not recorded.

Information displayed on the screen while shooting
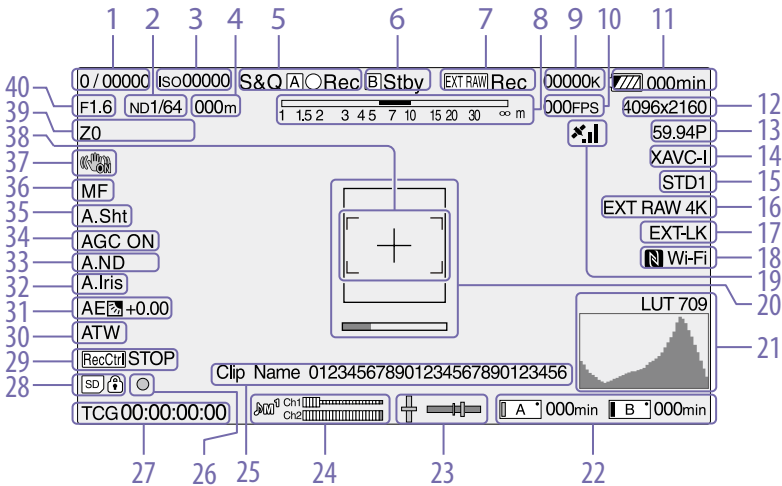
1. **Shutter mode/shutter speed indicator** (page 33)

2. **ND filter indicator (page 33)**

3. **Gain indicator (page 33)**
Displayed as an EI value when Base Setting (page 69) >Shooting Mode in the System menu is set to Cine EI.

4. **Focus position indicator**
Displays the focus position (if a lens that supports focus setting display is attached).

5. **Recording mode, slot A/B icon, and status indicators**

Display	Meaning
A/B ●Rec	Recording
A/B Stby	Standby
S&Q A/B ●Rec	Slow & Quick Motion, High Frame Rate mode recording
S&Q A/B Stby	Slow & Quick Motion, High Frame Rate mode standby
Int A/B ●Rec	Interval Rec recording
Int A/B ●Stby	Interval Rec image loading standby
Int A/B Stby	Interval Rec recording standby

Display	Meaning
A/B ●	Picture cache recording
A/B ●Cache	Picture cache standby

6. **Slot B icon and status indicators**

Display	Meaning
B ●Rec	Recording
B Stby	Standby

7. **External RAW recording indicator** (page 39)

8. **Depth-of-field indicator**

9. **Color temperature indicator (page 34)**

10. **S&Q Motion frame rate indicator** (page 36)/Interval Rec recording interval display (page 37)

11. **Remaining battery capacity/DC IN voltage indicator (page 13)**

12. **Recording format (picture size) indicator** (page 21, 70)
Displays the picture size for recording on XQD memory cards.
The image sensor scan mode (F: 2K Full, C: 2K Center) is displayed on the left of the picture size. Only the scan mode is displayed if Codec is set to RAW (2KF: 2K Full, 2KC: 2K Center).

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

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

15. **Gamma/monitor LUT indicator (page 56, 61)**
Displays the gamma setting. When Shooting Mode (page 69) is set to Cine EI, it displays the gamma or monitor LUT setting for recording video on XQD memory cards.

16. **External RAW output format indicator** (page 39)

17. **Timecode external lock indicator**
Displays "EXT-LK" when locked to the timecode of an external device.

18. **Wi-Fi connection status indicator** (page 41)
Displayed when the Wi-Fi function is set to Enable. When the IFU-WLM3 is not attached to the camcorder, N is not displayed.

19. **GPS status indicator (page 39)**
Displays the GPS status.

20. **Focus assist indicator (page 31)**
Displays a detection frame (focus area marker) indicating the area for detection of focus, and a level bar (focus assist indicator) indicating the degree of focus within that area.

21. **Video signal monitor**
Displays a waveform, vectorscope, and histogram (page 39).

22. **Slot A/B media status/remaining capacity indicator (page 24)**
Indicates recording media when the left side of the icon is orange.
Indicates playback media when the green indicator on the top right of the icon is on.

23. **Spirit level indicator**
Displays the horizontal level and the front-to-rear slope in ±1° increments up to ±20°.

24. **Audio level meter**
CH3 and CH4 can be monitored on the status screen.

25. **Clip name display (page 44)**

26. **Focus assist indicator (page 31)**

27. **Time data indicator (page 35)**

28. **UTILITY SD card indicator (page 25)**

29. SDI output control status indicator (page 76)

30. White balance mode indicator (page 34)

Display	Meaning
W:P	Preset mode
W:A	Memory mode A
W:B	Memory mode B

31. AE mode indicator (page 33)

32. Auto iris indicator (page 33)

33. Auto ND filter indicator (page 33)

34. AGC indicator (page 33)

35. Auto shutter indicator (page 33)

36. Focus mode indicator

37. Image stabilization mode indicator

38. Focus area indicator
Displays the focus area for auto focus.

When push auto focus is available
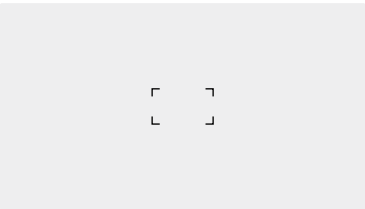
During auto focus
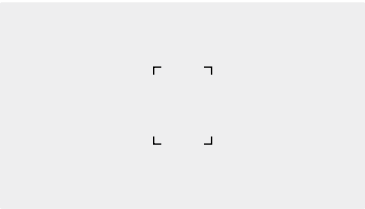
Not displayed when Focus Area (page 52) is set to Wide.

39. 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).
It can also be displayed as a bar graph (page 63).

40. Iris position indicator
Displays the iris position (if a lens that supports iris setting display is attached).

Information Displayed on the Screen During Playback

The following information is superimposed on the playback picture.
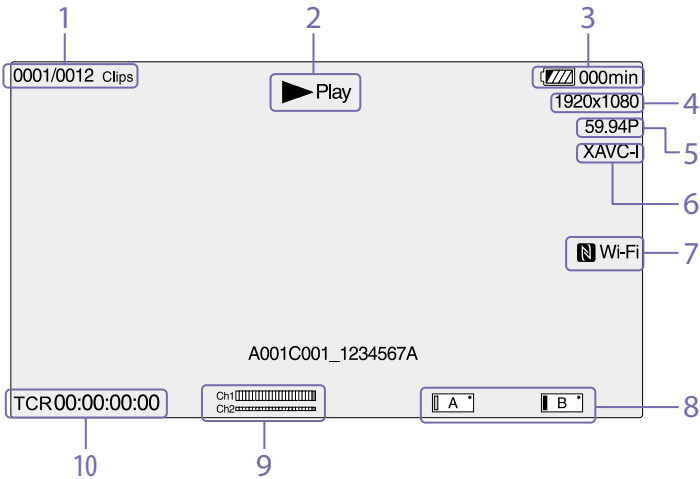
1. Clip number / total number of clips

2. Playback mode

3. Remaining battery capacity indicator

4. Playback format (picture size) indicator

5. Playback format (frame rate) indicator

6. Playback format (codec) indicator

7. Wi-Fi connection status indicator (page 41)
Displayed when the Wi-Fi function is set to Enable. When the IFU-WLM3 is not attached to the camcorder, 🅽 is not displayed.

8. Media indicator

9. Audio level indicator
Displays the audio level when recording.

10. Time data indicator
When Display On/Off >Timecode in the VF menu is set to On, it displays the time data when the DISPLAY button is pressed.

Status Screen

You can check the settings and status of the camcorder on the status screen.

To display the status screen:
- Push the STATUS CHECK button.

To switch to the status screen:
- Turn the SEL/SET dial.
- Move the multi selector up/down.

To hide the status screen:
- Push the STATUS CHECK button.

Camera Status screen

Displays the electronic shutter setting of the camera and the lens status.

Display item	Description
ISO/Gain<H>	ISO/Gain<H> setting
ISO/Gain<M>	ISO/Gain<M> setting
ISO/Gain<L>	ISO/Gain<L> setting
Gamma	Gamma Select setting
Matrix	Matrix >Preset Select setting
ND<Preset1>	Preset1 setting
ND<Preset2>	Preset2 setting
ND<Preset3>	Preset3 setting
Zebra1	Zebra1 On/Off setting and level
Zebra2	Zebra2 On/Off setting and level
AE Speed	AE control speed setting
AGC Limit	Maximum gain setting of the AGC function
A.SHT Limit	Fastest shutter speed of the auto shutter function
White	White balance mode and settings

Display item	Description
Focal Length	Focal length value obtained from the lens

Audio Status screen

Displays the input setting, audio level meter, and wind noise reduction filter setting for each channel.

Display item	Description
CH1 level meter	Channel 1 audio level meter
CH1 Source	Channel 1 input source
CH1 Ref./Sens.	Channel 1 input reference level
CH1 Wind Filter	Channel 1 microphone wind reduction filter setting
CH2 level meter	Channel 2 audio level meter
CH2 Source	Channel 2 input source
CH2 Ref./Sens.	Channel 2 input reference level
CH2 Wind Filter	Channel 2 microphone wind reduction filter setting
CH3 level meter	Channel 3 audio level meter
CH3 Source	Channel 3 input source
CH3 Wind Filter	Channel 3 microphone wind reduction filter setting
CH4 level meter	Channel 4 audio level meter
CH4 Source	Channel 4 input source
CH4 Wind Filter	Channel 4 microphone wind reduction filter setting
Audio Input Level	Audio input level setting
Monitor CH	Monitor channel setting
HDMI Output CH	HDMI output audio channel combination setting
Headphone Out	Headphone output type setting

System Status screen

Displays the video signal settings.

Display item	Description
Country	NTSC or PAL region setting
Rec Format	Format for recording to XQD memory cards
Picture Size	Picture size for recording to XQD memory cards
Frame Rate	Frame rate for recording to XQD memory cards
Rec Function	Enabled special recording format and settings
Simul Rec	Simul Rec On/Off status
Picture Cache Rec	Picture Cache Rec On/Off status
Video Light Set	HVL-LBPC Video Light (option) on/off indicator
Imager Scan	Scan mode of the image sensor

Video Output Status screen

Displays the SDI, HDMI, and video output settings.

Display item	Description
SDI1	Output picture size
	Color space
	Screen display output
	Gamma
SDI2	Output picture size
	Color space
	Screen display output
	Gamma
HDMI	Output picture size
	Color space
	Screen display output
	Gamma
REF	Output picture size
RAW	Output picture size

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
IRIS Dial	Function assigned to the IRIS 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 (XQD memory cards A and B).

Display item	Description
Media A information	Displays the media icon when recording media is inserted in slot A.
Media A protection	Displays the lock icon when the recording media inserted in slot A is protected (locked). [Note] XQD memory cards cannot be protected using the camcorder.
Media A remaining capacity meter	Displays the remaining capacity of recording media inserted in slot A expressed as a percentage on a bar graph.

Display item	Description
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 protection	Displays the lock icon when the recording media inserted in slot B is protected (locked). [Note] XQD memory cards cannot be protected using the camcorder.
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 card slot.
SD card protection	Displays the lock icon when the media inserted in the UTILITY SD card slot is protected (locked).
SD card remaining capacity meter	Displays the remaining capacity of media inserted in the UTILITY SD card slot expressed as a percentage on a bar graph.
SD card remaining capacity	Displays the remaining capacity of media inserted in the UTILITY SD card slot expressed in units of GB.

Rec Button Settings Screen

Displays the settings of the record START/STOP buttons on the camcorder and handle (page 30).

Display item	Description
Rec Button	Displays the slots for recording controlled by the recording START/STOP button.
Handle Rec Button	Displays the slots for recording controlled by the recording START/STOP button on the handle.

Power Supply

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

Lithium-ion battery packs
BP-U30 (supplied)
BP-U60
BP-U60T
BP-U90

## AC adapter/chargers
BC-U1A (supplied)
BC-U2A

[CAUTION]

Do not store battery packs in locations exposed to direct sunlight, flame, or high temperature.
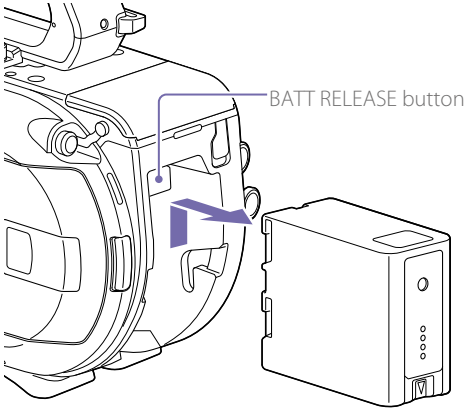
[Notes]
- When operating from a power outlet, use the supplied AC adapter.
- Always set the POWER switch to the Off position before connecting a battery or AC adapter. If it is connected with the POWER switch in the On position, the camcorder may be unable to start in some cases. If the unit cannot be started, set the POWER switch to the Off position and disconnect the battery pack or AC adapter temporarily, then wait about 30 seconds before attempting to connect again. (If the AC adapter is connected while the camcorder is operating from the battery pack, it can be connected with the POWER switch in the On position without problem.)

Using a Battery Pack

To attach a battery pack, plug the battery pack into the attachment (page 7) as far as it will go, and then slide it down to lock it into position.
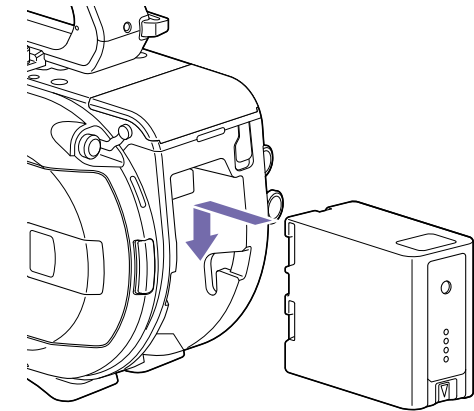
To remove a battery pack, press and hold the BATT RELEASE button (page 7), slide the battery pack up and then pull it out of the attachment.

BATT RELEASE button

[Notes]
- Before attaching a battery pack, charge the battery using the dedicated BC-U1A or BC-U2A battery charger.
- Charging a battery immediately after use while it is still warm 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 9).

Icon	Remaining capacity
	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-FS7 Extension Unit, the battery voltage or the remaining battery capacity is displayed, depending on the battery used.

[Note]
The camcorder battery pack cannot be used when an XDCA-FS7 unit is attached to the camcorder. You must attach a battery pack to the XDCA-FS7 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 BATT state), a low-battery message appears, the recording indicator starts flashing, and a beep sound will warn you.
If the remaining battery charge falls below the level at which operation cannot continue (BATT Empty state), a battery-empty message appears. Replace with a charged battery pack.

Changing the warning levels

The Low BATT level is set to 10% of full battery charge and the BATT Empty level is set to 3% by factory default. You can change the warning level settings using Camera Battery Alarm (page 74) in the System menu.

Using AC Power

Connecting the camcorder to a power outlet allows use without worrying about the need to recharge the battery pack.

Connection example: when connecting BC-U1A

DC IN connector

To power outlet
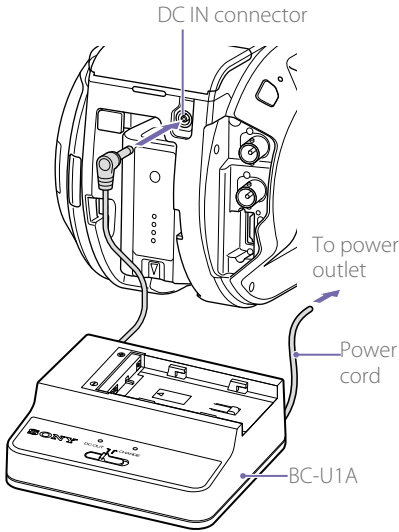
Power cord

BC-U1A

Connect the AC adapter to the DC IN connector on the camcorder, and connect the power cord (supplied) to a power outlet. Set the mode select switch on the BC-U1A to the DC OUT position.

If the output voltage from the AC adapter becomes low

If the output voltage from the AC adapter falls below a certain level during operation (DC Low Voltage1 state), a message appears informing you that the AC adapter output voltage has dropped, the recording indicator starts flashing, and a beep

sound is emitted.

If the output voltage from the AC adapter falls below the level at which operation cannot continue (DC Low Voltage2 state), a message appears informing you that the AC adapter output voltage is too low.

If this occurs, the AC adapter may be faulty. Check the AC adapter, as required.

Changing the warning levels

The DC Low Voltage1 level is set to 11.5 V and the DC Low Voltage2 level is set to 11.0 V by factory default. You can change the warning level settings using Camera DC IN Alarm (page 74) in the System menu.

AC adapters

- Do not connect and use an AC adapter in a confined space, such as between a wall and furniture.
- Connect the AC adapter to the nearest power outlet. If a problem occurs during operation, immediately disconnect the power cord from the outlet.
- Do not short-circuit the metal parts of the plug of the AC adapter. Doing so will cause a malfunction.
- The battery cannot be charged while attached to the camcorder, even if the AC adapter 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.
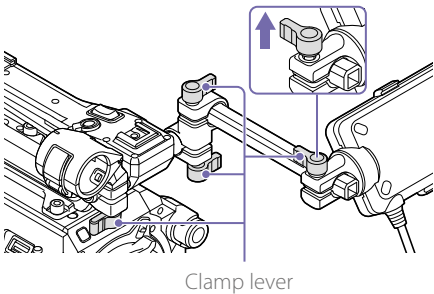
Clamp lever

Adjusting the Microphone Holder Position

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

Clamp lever
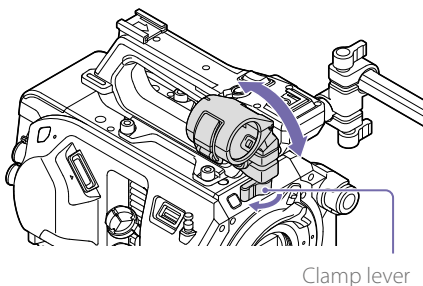
Microphone holder and microphone orientation

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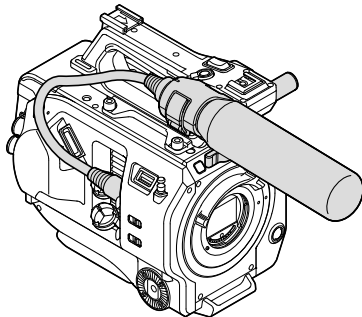
Replacing the Microphone Rod

[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.
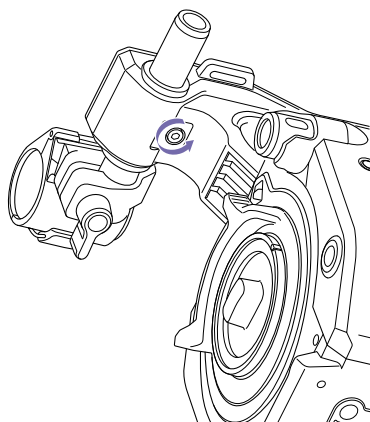
2 Withdraw the microphone rod.
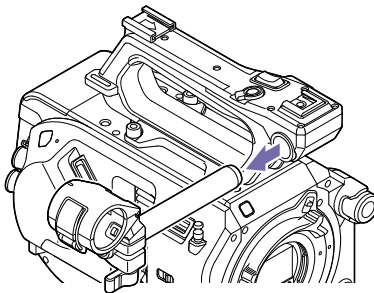
3 Attach the microphone rod in the reverse sequence.

Attaching the Viewfinder

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

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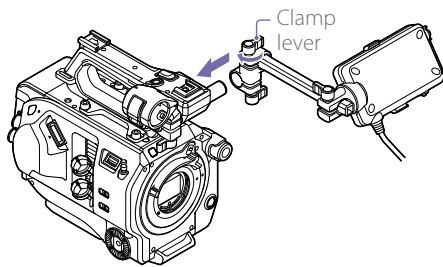
Clamp lever

2 Adjust the left/right positioning of the viewfinder, tighten the clamp lever, and then connect the viewfinder cable to the viewfinder connector of the camcorder.
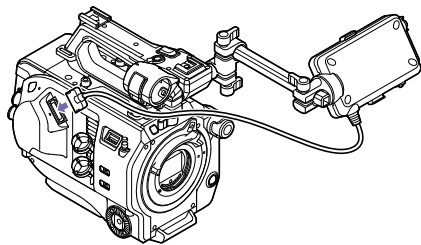
[Note]
Check that the viewfinder is securely attached. The viewfinder may fall off during shooting if the clamp lever is loose.

Adjusting the viewfinder orientation

Tilt the viewfinder up/down to adjust the angle of the viewfinder.
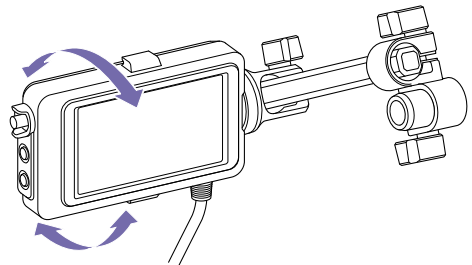
You can adjust the angle so that the viewfinder

is facing the subject. Setting the MIRROR switch (page 38) to the B/T position flips the left and right 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.
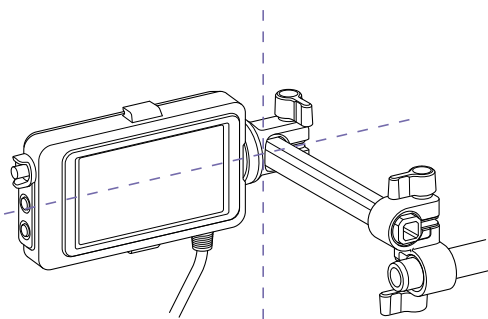
Arbitrary angle adjustment
If a circular-shaped clamp spacer is attached to the rod connection joint, you can turn the viewfinder on the rod to adjust the position of the viewfinder.
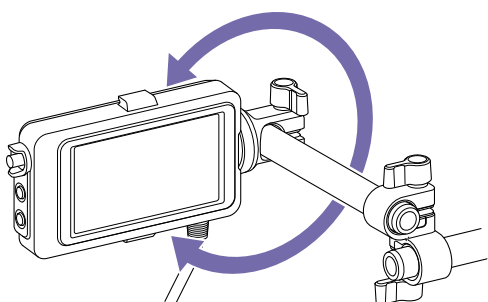
[Note]
When attaching a circular-shaped clamp spacer, attach to a commercial Ø15 mm rod.

[Tip]
A circular-shaped 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.

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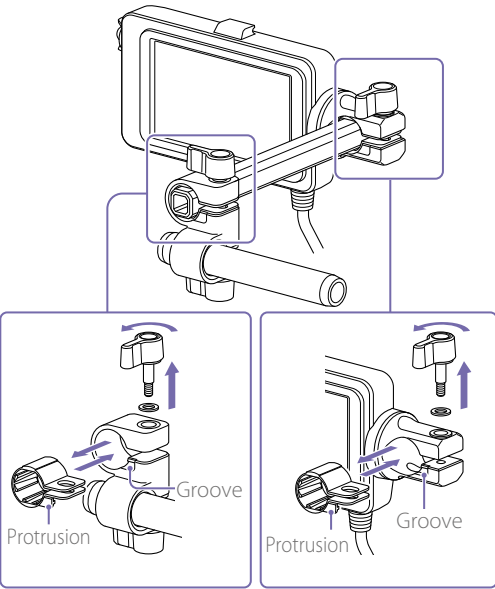
[Note]
Always attach a washer. If a washer is not attached, the clamping force on the rod may be insufficient and may cause the viewfinder to fall off.

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

Square-shaped clamp spacer

Square mark

Circular-shaped clamp spacer

Circle mark
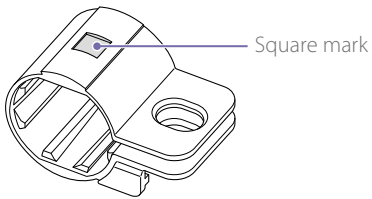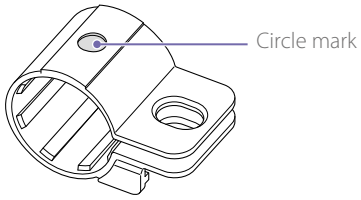
Adjusting the viewfinder contrast

Turn the CONTRAST knob to adjust the contrast.
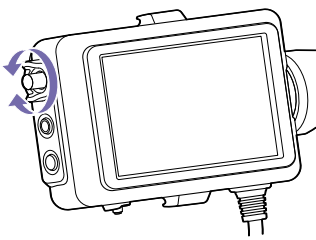
You can adjust the brightness in the viewfinder using VF Setting >Brightness (page 62) in the VF menu.

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.

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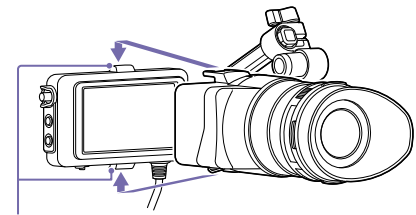
2   Push the lock plate on the bottom of the eyepiece in the direction of the arrow to lock the eyepiece into position.

Lock plate
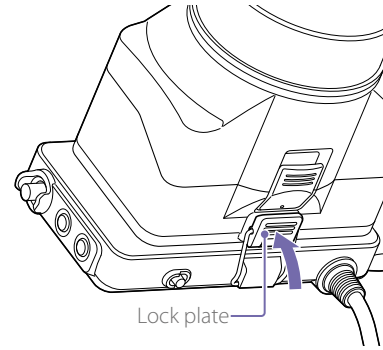
Opening the eyepiece

Press the button indicated by the arrow.
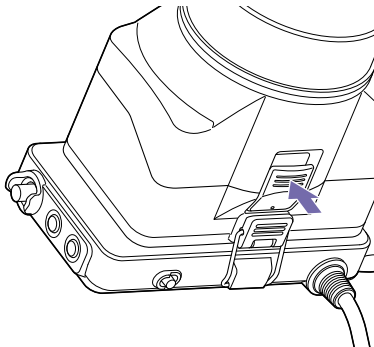
Open the eyepiece upwards when the lock disengages. The viewfinder is directly visible when the eyepiece is opened.
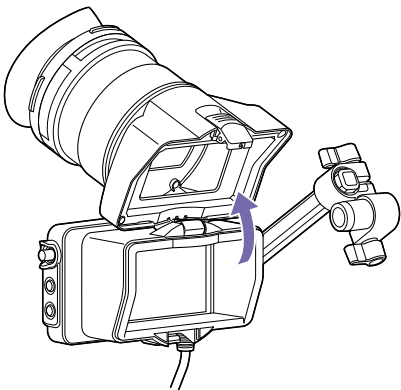
Removing the eyepiece

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

Attaching the Viewfinder Hood

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

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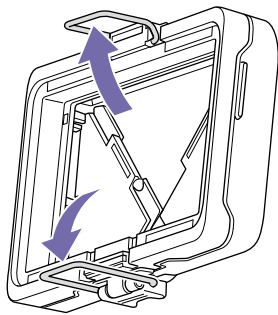
2 Attach the hook on the top of the viewfinder hood to the hook on the top of the viewfinder, and attach the metal clip on the bottom of the viewfinder hood to the hook on the bottom of the viewfinder.

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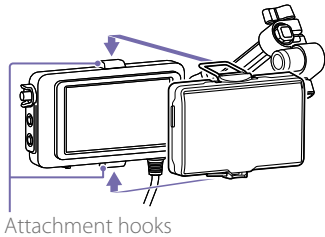
3 Push the lock plate on the bottom of the viewfinder hood in the direction of the arrow to lock the viewfinder hood into position.

Lock plate
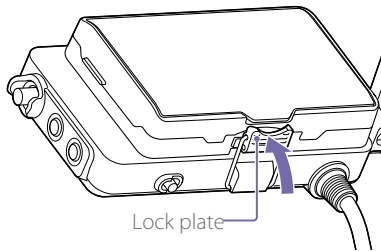
Opening the viewfinder hood

Pull the bottom center of the viewfinder hood out towards you, and then pull up to open the hood.
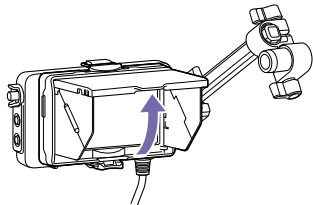
[Note]
Grasp the viewfinder when moving the viewfinder. Do not grasp the viewfinder hood.

Removing the viewfinder hood

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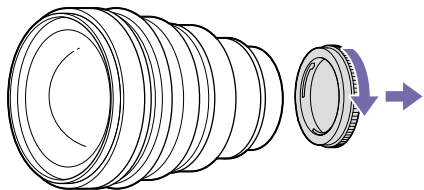
2 Release the lens lock ring stopper, turn the lens lock ring clockwise, and remove the body cap from the camcorder.

Lens lock ring stopper
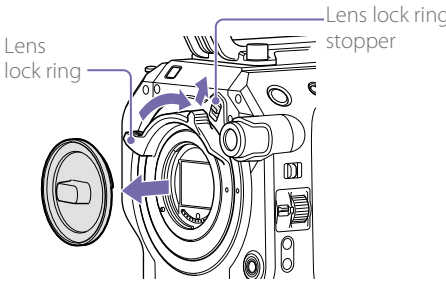
Lens lock ring

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.
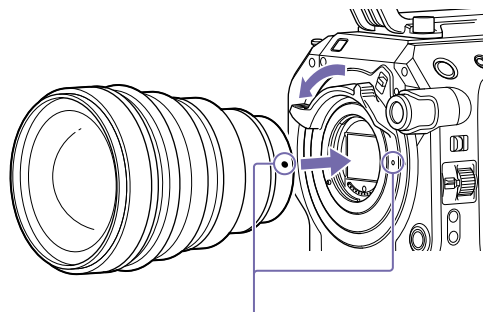
Mount marks (white)

[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 adapter (option) and then attach the A-mount lens.

[Notes]
- When using an A-mount lens, Iris is set to manual.
- When focus is set to AF with an LA-EA2 or LA-EA4 attached, Iris is set to F3.5 or fully open.

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 the camcorder.
- When the lens focus switch is set to Full MF or 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.
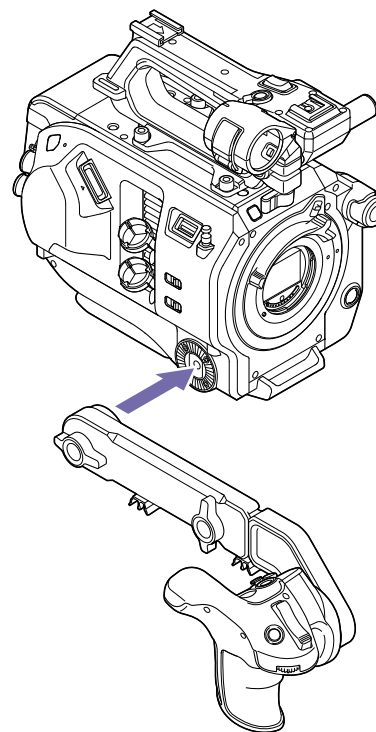
2 Connect the grip remote control cable to the REMOTE connector on the camcorder.
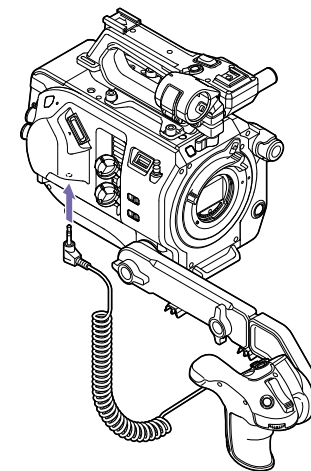
[Notes]
- Check that the arm is securely attached to the camcorder. The camcorder may fall while shooting if the screw is loose.
- Do not support the weight of the camcorder by holding just the grip remote control.

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 button (page 8) to adjust the angle of the grip remote control (3).
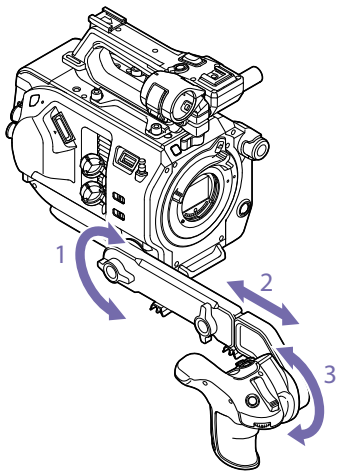
Attaching the grip close to the camcorder

1 Remove the arm mounting screw (1).

2 Loosen the arm extension screw (2), and extend the arm until a hole becomes visible (3).
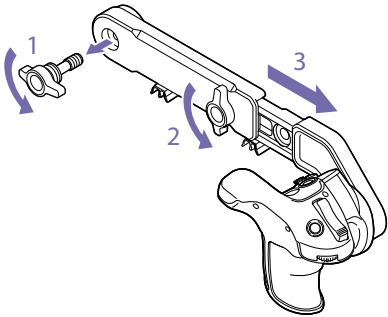
[Note]
After extending the arm, securely tighten the screw.

3 Connect the grip remote control cable to the REMOTE 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.
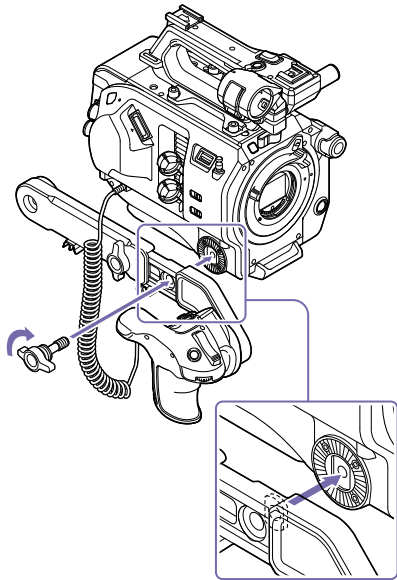
Removing the grip remote control

1 Remove the arm from the camcorder.

2 Disconnect the grip remote control cable from the REMOTE connector on the camcorder.

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.
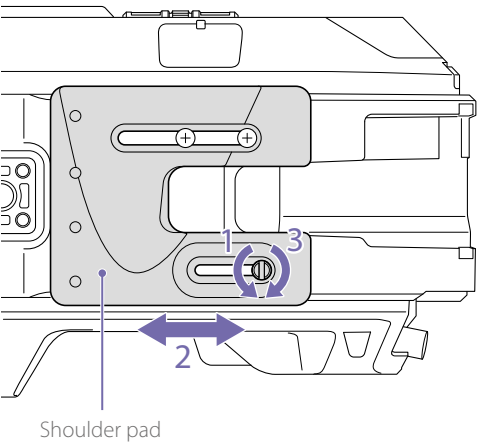
Shoulder pad

1 Loosen the shoulder pad screw.

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

3 Securely tighten the screw.

Setting the Clock

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

Time Zone

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

Setting the Date and Time

Turn the SEL/SET dial (page 6) to select items and settings, then press the SEL/SET 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 73) in the System 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 79.

Configuring Basic Camcorder Operation

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

Shooting Mode

You can switch the shooting mode between "Custom mode" to create images flexibly on-site, and "Cine EI mode" (where the camcorder is operated similarly to a film camera, with footage developed in post production).
You can select the mode using Base Setting (page 69) >Shooting Mode in the System menu.

Color Space

Color Space selects the base color gamut for recorded signals and output signals.
When the shooting mode is set to Custom mode, Color Space is set to Matrix.
- Matrix: Selects the color gamut using the Matrix setting, similar to conventional video cameras.

When the shooting mode is set to Cine EI mode, Color Space selects the color gamut of the video output with MLUT set to Off.
- S-Gamut/SLog2: Wide color gamut comparable to film cameras.
- S-Gamut3.Cine/SLog3: Easy to adjust color gamut for digital cinema (DCIP3).
- S-Gamut3/SLog3: Wide color gamut, for compatibility with future standard gamuts, optimized using Sony image distortion correction technology.

You can select the color gamut using Base Setting (page 69) >Color Space in the System menu.

Image Sensor Scan Mode

You can set the scan mode of the image sensor. You can select the mode using Base Setting (page 69) >Imager Scan Mode in the System menu.
- Normal: When not using Slow & Quick Motion high-frame rate mode, this scans the full angle-of-view of Super 35 mm size.
  When S&Q Motion (page 65) >High Frame Rate Mode in the Recording menu is set to Full Scan, this scans the full angle-of-view of Super 35 mm size and converts the signal to 2K data. When set to Center Scan, this scans a 2K angle-of-view of half Super 35 mm size at the center of the image.
- 2K Full: Scans the full angle-of-view of Super 35 mm size and converts the signal to 2K.
- 2K Center: Scans a 2K angle-of-view of half Super 35 mm size at the center of the image.

[Note]
The recording format resolution is restricted to 2K or lower when Imager Scan Mode (page 69) is set to 2K Full or 2K Center.

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
H-series XQD memory cards
N-series XQD memory cards
M-series XQD memory cards
G-series XQD memory cards
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

Format				XQD G XQD S (EB Stream)	XQD N XQD M	Discontinued XQD H XQD S (non EB Stream)
XAVC-I	4096×2160	–	59.94P	Yes	No	No
			50P	Yes	No	No
			29.97P	Yes	No	No
			25P	Yes	No	No
			24P	Yes	No	No
			23.98P	Yes	No	No

Format				XQD G XQD S (EB Stream)	XQD N XQD M	Discontinued XQD H XQD S (non EB Stream)
XAVC-I	3840×2160	–	59.94P	Yes	No	No
			50P	Yes	No	No
			29.97P	Yes	No	No
			25P	Yes	No	No
			23.98P	Yes	No	No
	1920×1080	Normal mode or S&Q (excluding HFR[*1])	59.94P	Yes	No	No
			59.94i	Yes	Yes	No
			50P	Yes	No	No
			50i	Yes	Yes	No
			29.97P	Yes	Yes	No
			25P	Yes	Yes	No
			23.98P	Yes	Yes	No
		S&Q (HFR mode)	59.94P	Yes	No	No
			50P	Yes	No	No
			29.97P	Yes	No	No
			25P	Yes	No	No
			23.98P	Yes	No	No
XAVC-L	3840×2160	–	59.94P	Yes	Yes	No
			50P	Yes	Yes	No
			29.97P	Yes	Yes	No
			25P	Yes	Yes	No
			23.98P	Yes	Yes	No
	1920×1080	Normal mode or S&Q (excluding HFR)	59.94P	Yes	Yes	Yes
			50P	Yes	Yes	Yes
			59.94i	Yes	Yes	Yes
			50i	Yes	Yes	Yes
			29.97P	Yes	Yes	Yes
			25P	Yes	Yes	Yes
			23.98P	Yes	Yes	Yes

Format				XQD G XQD S (EB Stream)	XQD N XQD M	Discontinued XQD H XQD S (non EB Stream)
XAVC-L	1920×1080	S&Q (HFR mode)	59.94P	Yes	Yes	No
			50P	Yes	Yes	No
			29.97P	Yes	50 Mbps: No 35 Mbps: Yes	No
			25P	Yes	No	No
			23.98P	Yes	No	No
MPEG HD 422	1920×1080	–	59.94i	Yes	Yes	Yes
			50i	Yes	Yes	Yes
			29.97P	Yes	Yes	Yes
			25P	Yes	Yes	Yes
			23.98P	Yes	Yes	Yes
	1280×720	–	59.94P	Yes	Yes	Yes
			50P	Yes	Yes	Yes
			29.97P	Yes	Yes	Yes
			25P	Yes	Yes	Yes
			23.98P	Yes	Yes	Yes
ProRes 422 HQ[*2]	1920×1080	–	59.94i	Yes	No	No
			50i	Yes	No	No
			29.97P	Yes	No	No
			25P	Yes	No	No
			23.98P	Yes	No	No
ProRes 422[*2]	1920×1080	–	59.94i	Yes	Yes	No
			50i	Yes	Yes	No
			29.97P	Yes	Yes	No
			25P	Yes	Yes	No
			23.98P	Yes	Yes	No

*1 HFR: High Frame Rate
*2 The XDCA-FS7 Extension Unit (option) is required for
   ProRes recording.

Inserting XQD Memory Cards

1 Press the media cover release button (page 7) to 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 7) 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

Press the media cover release button (page 7) to open the media cover of the card slot section, and lightly press the memory card in to eject the card.

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

Switching Between XQD Memory Cards

When XQD memory cards are loaded in both card slots A and B, you can switch the card used for recording by pressing the SLOT SELECT button (page 6).
If a card becomes full during recording, the camcorder automatically switches to the other card.

[Note]
The SLOT SELECT button is disabled during playback. The memory cards are not switched even if you press the button. The button is enabled while the thumbnail screen (page 44) is displayed.

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 67) in the 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 SEL/SET dial to dismiss the message.

If formatting fails

Protected XQD memory cards and 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.

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

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 9).
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.

[Note]
A 🔒 mark is displayed if the media is protected.

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 indicator 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 the message "Media Full" is displayed.

Using a UTILITY SD Card

You can save camera configuration data for the camcorder on an SD card (available separately). Saved data files can be imported from the SD card.

Supported SD Cards

SDHC memory cards[*]
SD memory cards[*]
* Referred to collectively as "SD cards" in this manual.

Inserting an SD Card

1 Press the media cover release button (page 7) to open the media cover of the card slot section.

2 Insert the SD memory card with the SD card label facing to the left.
The access indicator (page 7) is lit red, then goes off if the card is usable.

3 Close the media cover.

Ejecting the SD Card

Press the media cover release button (page 7) to open the media cover of the card slot section, and lightly press the SD card in to eject the card.

[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.

Formatting (Initializing) SD Cards

SD cards must be formatted the first time they are used in the camcorder.
SD cards for use in the camcorder should be formatted using the format function of the camcorder.

1 Select Format Media (page 67) in the Media menu.

2 Specify SD Card, 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 SEL/SET dial to dismiss the message.

[Note]
Formatting an SD card erases all data on the card. The card cannot be restored.

Checking the Remaining Capacity

You can check the remaining capacity on an SD card on the Media Status screen (page 12).

[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.

Using the XDCA-FS7

You can add functions to the camcorder, such as a V-shoe battery or external sync signal, by attaching an XDCA-FS7 Extension Unit (option) to the camcorder.

Attaching the XDCA-FS7

[Notes]
- The camcorder battery pack cannot be used when an XDCA-FS7 unit is attached to the camcorder. You must attach a battery pack to the XDCA-FS7 or connect an external power supply.
- Attach/remove the XDCA-FS7 while the camcorder is turned off.

1 Remove the battery pack (page 13) attached to the camcorder.

2 Remove the cover of the extension unit connector section.
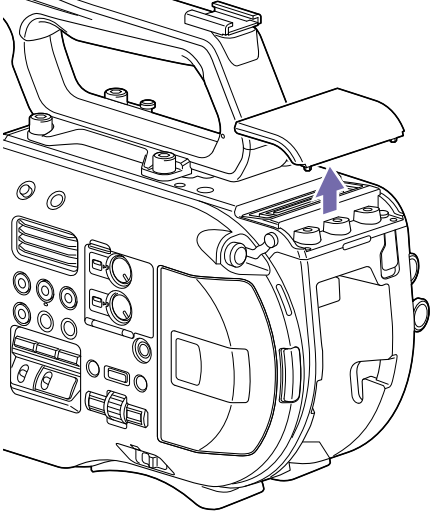
3 Align the protrusions of the XDCA-FS7 with the left and right grooves of the camcorder and slide all the way in, then slide the XDCA-FS7 down into the connector section.

Grooves   Protrusions
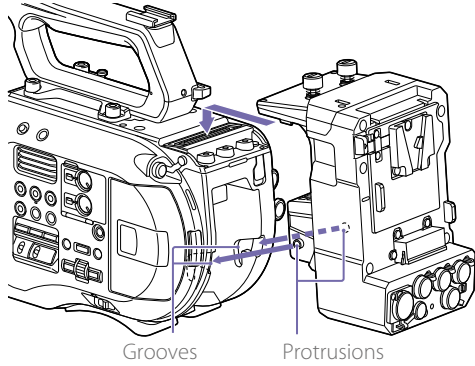
4 Tighten the two screws on the top of the XDCA-FS7 to secure the XDCA-FS7.
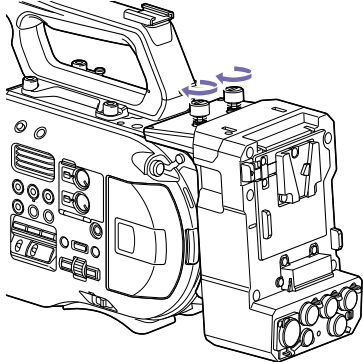
The cover of the extension unit connector section can be inserted into the top of the extension unit.
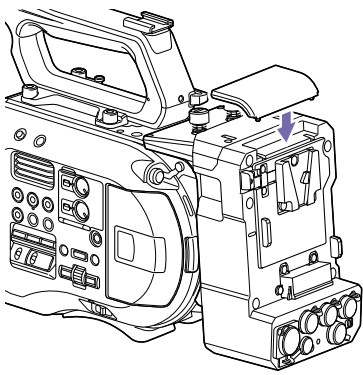
Removing the XDCA-FS7

Loosen the two screws on the top of the XDCA-FS7, and remove the XDCA-FS7 from the camcorder.

Attaching the Battery Pack

Insert the battery pack into the battery pack attachment on the XDCA-FS7.

Removing the Battery Pack

Pull the battery pack out from the battery pack attachment on the XDCA-FS7 while holding down the BATT RELEASE button.

Switching the Timecode Input/ Output

You can switch the timecode input/output using the TC IN/OUT switch (page 8).
For details, see page 77.

Using an HXR-IFR5 and AXS-R5

You can record RAW video (page 39) to an AXSR5 RAW Recorder (option) using an HXR-IFR5 Interface Unit (option) and an XDCA-FS7 (option). For details about setting up the HXR-IFR5 and AXS-R5, refer to the HXR-IFR5 operation manual.

Connecting the HXR-IFR5 to the Camcorder

1   Attach the XDCA-FS7 to the camcorder (page 26).

2   Connect the RAW OUT connector of the XDCA-FS7 to the SDI IN (RAW) connector of the HXR-IFR5 using an SDI cable.

HXR-IFR5

SDI cable

AXS-R5
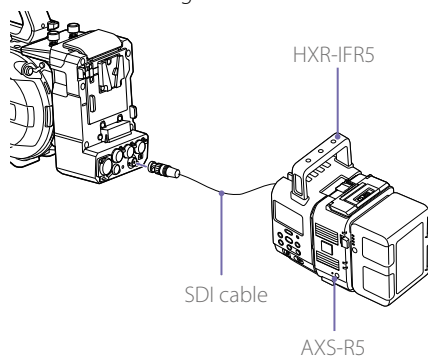
Removing the HXR-IFR5

Disconnect the SDI cable from the RAW OUT connector of the XDCA-FS7.

Using the Infrared Remote Control

When Using for the First Time

Pull out the insulating sheet from the battery holder when using the supplied infrared remote control for the first time.

Insulating sheet

A CR2025 lithium-ion battery is installed in the battery holder at the factory.

Controlling the Camcorder Using the Remote Control

To use remote control, first turn on the camcorder and then enable remote control operation.
Use the setup menu to enable/disable the remote control function.

To enable using the menu

Press the MENU button to switch the camcorder to menu mode, then set IR Remote (page 74) in the System menu to On.

[Notes]
- Point the remote control at the remote control receiver sensor on the camcorder.
- Set up the camcorder so that the remote control receiver sensor is not exposed to direct sunlight or strong light from other sources. Strong light can prevent proper remote control operation.
- Other video decks may operate by mistake when using the supplied remote control to operate the camcorder. In this case, switch the remote control mode switch on the video deck to DVD2, or shield the remote control receiver sensor using black paper.

Changing the Battery of the Remote Control

The remote control uses a standard CR2025 battery.
Do not use a battery other than the CR2025.

1   Push the tab in, and remove the battery holder by placing a fingernail in the groove.

2   Insert a new battery with the + terminal facing up.

3   Insert the battery holder until it clicks into place.
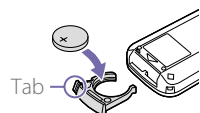
Tab

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

[Note]
Replacing the battery with a non-specified battery may cause device failure. Always replace with the specified battery. Dispose of used batteries in accordance with federal and local laws.

Using Wi-Fi Remote Control

You can operate the camcorder from a web browser by connecting a smartphone, tablet, or other device that supports a web browser to the camcorder using a wireless LAN connection. This function is called Wi-Fi remote control.

This function is useful when operating the camcorder from a remote location, for example, when the camcorder is mounted on a crane.

For details about the Wi-Fi remote control setup procedure, see page 43.

Wi-Fi Remote Screen (smartphone)

Main screen

- Shooting settings display
  S&Q FPS, Shutter, White, Sensitivity/Gain/Exposure Index, Gamma, MLUT, Color Bars, Auto Black, Auto White, Rec Start/Stop, Lock, ND, Iris, Focus, Zoom, Auto Iris, Auto Shutter, AGC, Auto ND, ATW
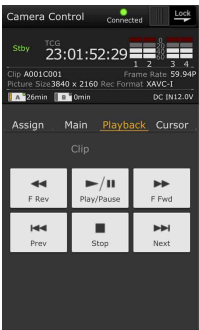
Playback screen

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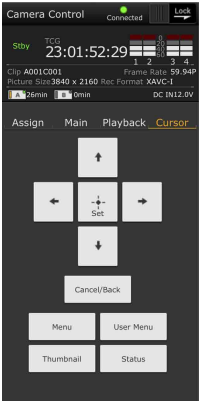
Cursor screen

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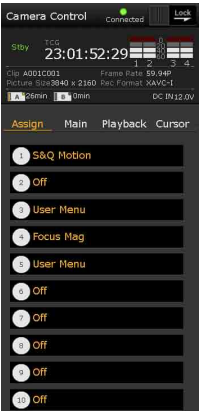
Assign screen

- Status display
- Assignable button display Assignable buttons 1 to 10

Wi-Fi Remote Screen (tablet)

Main screen
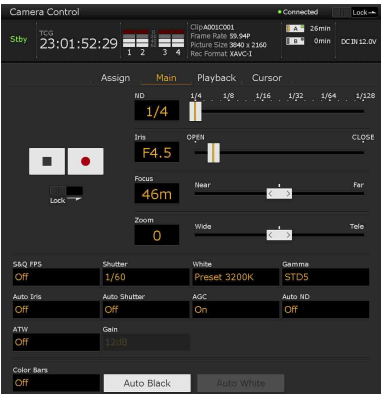
- Shooting settings display
  S&Q FPS, Shutter, White, Sensitivity/Gain/Exposure Index, Gamma, MLUT, Color Bars, Auto Black, Auto White, Rec Start/Stop, Lock, ND, Iris, Focus, Zoom, Auto Iris, Auto Shutter, AGC, Auto ND, ATW
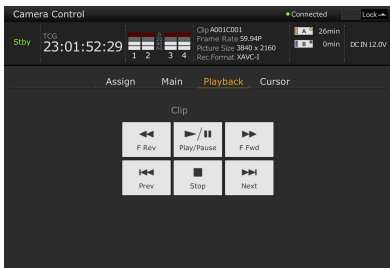
Playback screen

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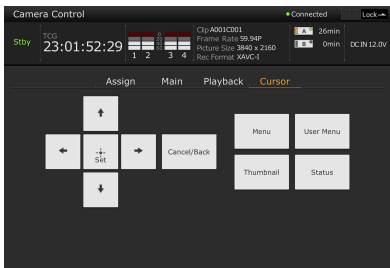
Cursor screen

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

Assign screen
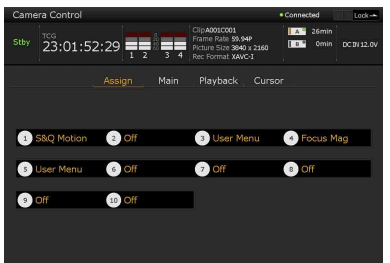
- Status display
- Assignable button display Assignable buttons 1 to 10

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 button (page 4).
The recording indicator turns on, and the camcorder starts recording.

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

[Note]
If the record button is pressed within a few seconds after turning the camcorder on, the recording indicator 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.

Shooting (Full Auto Mode)

Press the FULL AUTO button, turning the button indicator on.
The Auto Iris (compatible lenses only), AGC, Auto Shutter, and ATW (auto tracing white balance) functions are set to On to control the brightness and white balance automatically (full auto mode).
To control each function manually, turn full auto mode off.

[Tip]
If full auto mode is on and the ND filter dial is not set to Clear in ND filter variable mode (page 33), the ND filter is incorporated into the auto exposure adjustment.

Recording Continuously by Changing Memory Cards (Relay Rec)

When memory cards are inserted in both slots A and B, recording automatically switches to the second memory card just before the remaining capacity on the first card is reduced to zero.

[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.

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

You can record to both memory card A and memory card B simultaneously by setting Simul Rec >Setting in the Recording menu to On.

[Note]
Simultaneous recording is not supported in Slow & Quick Motion mode (page 65) or Picture Cache Rec mode (page 65). Also, simultaneous recording is not supported for the following recording formats (page 70).

NTSC Area
XAVC-I
4096×2160 59.94P, 4096×2160 29.97P,

4096×2160 24.00P, 4096×2160 23.98P, 3840×2160 59.94P, 3840×2160 29.97P, 3840×2160 23.98P, 1920×1080 59.94P
XAVC-L
3840×2160 59.94P, 3840×2160 29.97P, 3840×2160 23.98P
RAW (with XDCA-FS7, HXR-IFR5, and AXS-R5 connected)
4096×2160 59.94P, 4096×2160 29.97P, 4096×2160 23.98P, 2048×1080 59.94P, 2048×1080 29.97P, 2048×1080 23.98P
RAW & XAVC-I (with XDCA-FS7, HXR-IFR5, and AXS-R5 connected)
4096×2160 59.94P, 2048×1080 59.94P
ProRes 422 HQ, ProRes 422 (with XDCA-FS7 connected)
1920×1080 59.94i, 1920×1080 29.97P, 1920×1080 23.98P

PAL Area
XAVC-I
4096×2160 50P, 4096×2160 25P, 3840×2160 50P, 3840×2160 25P, 1920×1080 50P
XAVC-L
3840×2160 50P, 3840×2160 25P
RAW (with XDCA-FS7, HXR-IFR5, and AXS-R5 connected)
4096×2160 50P, 4096×2160 25P, 2048×1080 50P, 2048×1080 25P
RAW & XAVC-I (with XDCA-FS7, HXR-IFR5, and AXS-R5 connected)
4096×2160 50P, 2048×1080 50P
ProRes 422 HQ, ProRes 422 (with XDCA-FS7 connected)
1920×1080 50i, 1920×1080 25P

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 and RAW Rec Control follow the recording state of slot A.

To change the setting

Select Simul Rec >Rec Button Set in the Recording 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.

Adjusting the Focus Automatically

A lens that supports auto focus is required. Set the FOCUS switch (page 6) on 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 18).

[Note]
The LA-EA1/3 (option) supports push auto focus only.

Setting the auto focus area (Focus Area)

You can set the target area for auto focus using Focus >Focus Area (page 52) in the Camera menu.

[Note]
On the LA-EA2/4 (option), the position cannot be set.

Temporarily stopping auto focus (Focus Hold)

Press the PUSH AUTO FOCUS button (page 6) when in auto focus mode to override auto focus. This is useful, for example, when something crosses in front of the subject that you do not want to focus on, or when auto focus is lost.

Adjusting the Focus Manually

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 focus rapidly using manual focus (Push Auto Focus)

Position the subject that you want to adjust focus for in the center of the image, then press the PUSH AUTO FOCUS button (page 6).
The focus returns to the previous setting when you release the button.
This is useful when you want to quickly focus on a subject before starting to shoot.
You can set the position for focusing using Focus >Focus Area (Push AF) (page 52) in the Camera menu.

[Notes]
- The Push Auto Focus function does not operate if the lens is set for manual focusing.
- During Push Auto Focus operation when using an LA-EA2/4, full auto mode is on.
- During focus magnification, the focus adjusts to fit the magnified display position.

Focus assist indicator

Indicates the focus state.
- (On): Subject is in focus.
- (Flashing): Subject is out of focus. Since focusing is not automatic, change the composition and focus settings to achieve focus.

Focusing using magnified view (Focus Magnifier)

By factory default, the Focus Magnifier x4/x8 function is assigned to the ASSIGN 4 button on the grip remote control (page 36).
Press the ASSIGN 4 button to switch to the focus magnifier screen, with the center magnified by approximately four times. Press the button again to increase the magnification to approximately eight times. This function is useful for checking the focus.
Press the button again to return to the normal screen.
You can move the position to be magnified during focus magnification using the multi selector. Pressing the multi selector returns to the center of the image. You can also control the position using the left/right buttons and SEL/SET dial on the camcorder, infrared remote controller, or Wi-Fi remote controller.
If push auto focus is used during focus magnification, the focus adjusts to fit 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 CHECK button and menu buttons have no effect.
- The magnified position returns to the center of the screen when the camcorder is turned off.

Adjusting focus using the focus assist indicator

Focus detection window (Focus area marker)

Focus assist indicator

The focus position is indicated by the maximum reach of the bar. Adjust the focus to maximize the length of the bar.

In-focus: Position of maximum reach of the bar.
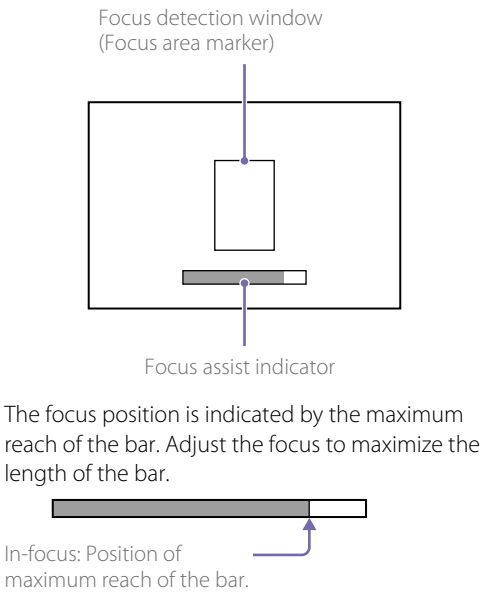
[Notes]
- The focus indicator may show little or no variation when you are shooting subjects with little surface variation or dark scenes.
- The detection range cannot be set.

Monitoring Audio

You can monitor the audio that is being recorded using headphones.
Connecting a set of headphones to the headphone jack (page 7) enables you to monitor the audio being recorded. You can also monitor the playback audio (page 45) using the built-in speaker (page 7) or headphones.
You can select the audio channel to monitor and adjust the volume using Audio Output (page 60) in the Audio menu.

Switching Between XQD Memory Cards

When two XQD memory cards are inserted, press the SLOT SELECT button (page 6) to switch cards.

[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
Each clip recorded by the camcorder is automatically assigned a clip name comprising the word "Clip" and a 4-digit number. The 4-digit number automatically increments with each recording.
You can change the "Clip" prefix using Clip in the Media menu.

Maximum clip duration
Up to 6 hours per clip.
Multiple clips are recorded in succession during relay recording, but recording will stop automatically after approximately 13 hours.

Changing Basic Settings

You can change the settings based on the video application or recording conditions.

Selecting the Recording Format

The formats available for selection vary depending on the Country (region of use) and Codec settings. Select a format using Rec Format >Video Format in the System menu.

Adjusting the Brightness
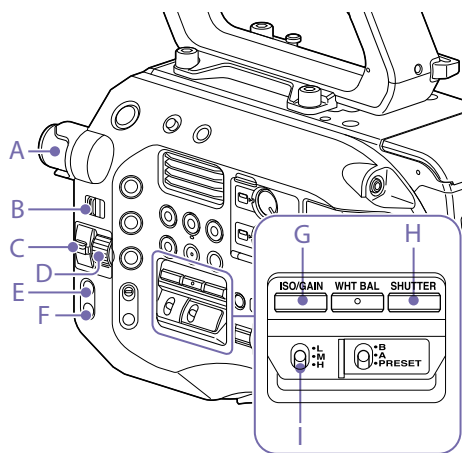
You can adjust the brightness by adjusting the iris, gain, shutter speed, and by adjusting the light level using ND filters. You can also make adjustments automatically.
The target level for automatic brightness adjustment is set using Auto Exposure (page 52) >Level in the Camera menu. You can also assign Auto Exposure Level to an assignable button (page 36).

[Note]
The gain cannot be adjusted in Cine EI mode. Also, the brightness cannot be adjusted automatically using the iris or shutter speed. Brightness auto adjustment using the ND filter is supported.

Adjusting the iris

You can adjust the iris to adjust the brightness.

[Note]
To adjust the iris, turn full auto mode (page 30) off.

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 the IRIS button (E) to set Auto Iris to On. The setting toggles between On and Off each time the IRIS button is pressed.

   [Tip]
   You can also assign the IRIS function to an assignable button (page 36).

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

Adjusting the iris manually

1 Press the IRIS button (E) to set Auto Iris to Off. The setting toggles between On and Off each time the IRIS button is pressed.

2 Set the ND/IRIS switch (C) to the IRIS position.

3 Turn the ND/IRIS dial (D) to adjust the iris.

   [Tip]
   You can also assign the IRIS function to an assignable dial (page 36).

Temporarily adjusting the iris automatically
Press and hold the PUSH AUTO IRIS button (F) to set Auto Iris to On temporarily.
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 36).

[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

You can adjust the gain to adjust the brightness.

[Note]
To adjust the gain, turn full auto mode (page 30) off.

Adjusting the gain automatically
Press the ISO/GAIN button (G) to set AGC to On. Or select Auto Exposure (page 52) >AGC in the Camera menu to set AGC to On.

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 the ISO/GAIN button (G) to set AGC to Off.

2 Set the ISO/GAIN switch (I) 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)
Turn the IRIS dial, or the assignable dial (page 36) assigned with the ISO/Gain/EI function, to adjust the gain value set by the ISO/GAIN switch (I).
This is useful when you want to adjust the exposure by one step without changing the depth of field.
The adjusted gain value is canceled by switching the ISO/GAIN switch (I), setting AGC to On, or turning the power off.

Adjusting the shutter

You can adjust the shutter to adjust the brightness.

[Note]
To adjust the shutter, turn full auto mode (page 30) off.

Adjusting the shutter automatically
Press the SHUTTER button (H) to adjust the shutter speed automatically in response to the image brightness.
If the settings screen is displayed, press the button again.
Or set Auto Exposure (page 52) >Auto Shutter in the Camera menu to On.

Adjusting the shutter manually
You can shoot with a set shutter speed.
Press the SHUTTER button (H) to display a screen with the supported shutter values, and select and set a value using the SEL/SET dial. If you press the SHUTTER button again instead of the SEL/SET dial, Auto Shutter is set to On.

[Tip]
You can also set the angle and adjust the frequency (page 53).

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 PRESET/VARIABLE switch (B).

Adjusting in preset mode

Set the PRESET/VARIABLE switch (B) to the PRESET position, and set the ND FILTER dial (A) to one of the following settings.
Clear: No ND filter
1: Transmittance set by ND Filter >Preset1 (page 51) in the Camera menu.
2: Transmittance set by ND Filter >Preset2 (page 51) in the Camera menu.
3: Transmittance set by ND Filter >Preset3 (page 51) in the Camera menu.

Adjusting in variable mode

Set the PRESET/VARIABLE switch (B) to the VARIABLE position. ND FILTER dial (A) positions 1, 2, and 3 select ND filter operation, regardless of the dial position.

[Note]
To adjust the level, turn full auto mode (page 53) off.

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

1 Set the ND FILTER dial (A) to 1, 2, or 3.

2 Set Auto Exposure (page 52) >Auto ND Filter in the Camera menu to On.

Adjusting the light level manually

1 Set the ND FILTER dial (A) to 1, 2, or 3.

2 Set Auto Exposure (page 52) >Auto ND Filter in the Camera menu to Off.

3 Set the ND/IRIS switch (C) to the ND position.

4 Turn the ND/IRIS dial (D) to adjust the transmittance of the filter.
The ND FILTER dial 1/2/3 position has no affect on the filter transmittance adjustment.

Temporarily adjusting the iris automatically

You can assign Push Auto ND to an assignable button (page 36), and temporarily set Auto ND Filter to On by pressing and holding the button. Releasing the button sets Auto ND Filter back to Off.
Set the ND FILTER dial (A) to 1, 2, or 3 beforehand.

[Note]
If the ND FILTER dial setting is changed during adjustment, the video may become distorted and a noise may occur in the audio.

[Tips]
● You can also assign ND Filter Position to an assignable button (page 36), and press the button instead of using the ND FILTER dial to change the setting.
Preset mode: Clear → Preset1 → Preset2 → Preset3 → Clear…
Variable mode: Clear → On → Clear…
The filter returns to the setting indicated by the ND FILTER dial when the camcorder is turned off.
● You can also assign Auto ND Filter to an assignable button (page 36), 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)
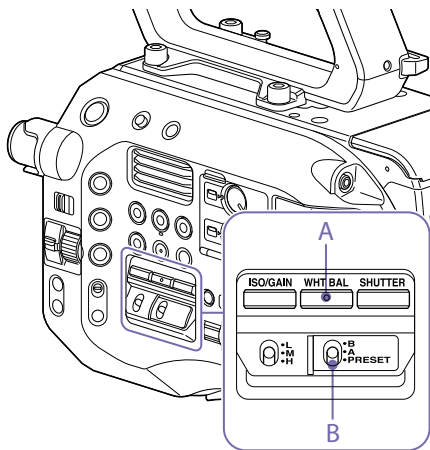
You can select the adjustment mode to suit the shooting conditions.

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.
Pressing the WHT BAL button (A) switches ATW between On and Off.
You can select the speed of adjustment (five steps) using White >ATW Speed (page 55) in the Paint menu.
You can freeze the current white balance setting by assigning the ATW Hold function to an assignable button (page 36), 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 colors 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 Turn full auto mode (page 30) off.

2 When white balance is set to ATW mode, press the WHT BAL button (A) to set manual mode.

3 Select B, A, or PRESET using the WHT BAL switch (B).
B: Memory B mode*
A: Memory A mode
PRESET: Preset mode
*   B can be assigned to ATW On.

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

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

[Note]
The settings of the WHT BAL switch in Cine IE mode are fixed as follows.
B: 5500K
A: 4300K
PRESET: 3200K

Running auto white balance

1 To save an adjustment value in memory, 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 33).

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.

[Notes]
- Auto white balance cannot be performed in Cine EI mode.
- If the adjustment is not successful, an error message is displayed on the screen for about three seconds. If the error message persists after repeated attempts to set white balance, contact your Sony service representative.

Setting the Audio to Record

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

External audio input connectors and selector switches
INPUT1 connector (page 7)
INPUT2 connector (page 7)
INPUT1 (LINE/MIC/MIC+48V) switch (page 4)
INPUT2 (LINE/MIC/MIC+48V) switch (page 4)

Switches for setting the audio level
CH1 LEVEL CONTROL switch (page 6)
CH2 LEVEL CONTROL switch (page 6)
CH1 INPUT LEVEL dial (page 6)
CH2 INPUT LEVEL dial (page 6)

Selecting the audio input device

1 Select the audio input connector.
Select the audio input using Audio Input >CH1 Input Select or CH2 Input Select in the Audio menu.
Set to INPUT1 or INPUT2 to correspond to the connector for the connected device. If using a shoe microphone or XLR adapter, specify Shoe 1 or Shoe 2 in the same way. For details about the XLR adapter, see "Adding Audio Input Connectors" (page 40).

[Note]
The camcorder is equipped with an internal microphone. Although it is not suitable for final audio, it can be used for syncing with other equipment. In such cases, specify 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 LEVEL CONTROL 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 58).

Adjusting the audio recording level manually

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

1 Set the CH1/CH2 LEVEL CONTROL switches for the channels to adjust manually to MAN.

2 During shooting or standby, turn the INPUT LEVEL (CH1)/(CH2) dials of the corresponding channels to adjust the audio level.
- You can also adjust the recording level using the assignable dial (page 36), assigned with the Audio Input Level function, or from the setup menu.
- 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 in CH3 Input Level and CH4 Input Level (page 58).

[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 95.
- If either Audio Input >CH1 Input Select or CH2 Input Select in the Audio menu is set to Internal MIC, CH2 is switched to automatic/manual in conjunction with the CH1 LEVEL CONTROL switch. Also, the CH2 audio recording level is set in conjunction with the CH1 INPUT LEVEL dial (page 58).
- The camcorder supports combinations of various settings. For details, see the diagram on page 95.

Specifying Time Data

Setting the timecode

Set the timecode to record using Timecode (page 64) in the TC/UB menu.

Displaying time data

Press the DISPLAY button to display time data on the screen (page 9).
Set the timecode to display using TC Display (page 64) >Display Select in the TC/UB menu.
Pressing an assignable button (page 36) with DURATION/TC/U-BIT assigned will switch the display between the timecode, user bits, and duration in sequence.

Useful Functions

Assignable Buttons/Dials

There are ten assignable buttons (page 6, 8) on the camcorder to which you can assign functions.
When the ND/IRIS switch is set to the IRIS position, you can also assign functions to the ND/IRIS dial (page 6) on the camcorder and the assignable dial (page 8) on the grip remote control.

Changing the button function

Use Assignable Button (page 71) in the System menu.
You can view the assigned functions on the Assignable Button Status screen (page 11).

Functions assigned to each assignable button by factory default

Button 1	S&Q Motion
Button 2	Off
Button 3	User Menu
Button 4	Focus Magnifier x4/x8
Button 5	User Menu
Button 6	Off
Button 7	Off
Button 8	Off
Button 9	Off
Button 10	Off

Assignable functions

- Off
- Marker
- Zebra
- Peaking
- Video Signal Monitor
- DURATION/TC/U-BIT
- Focus Magnifier x4/x8
- Focus Magnifier x4
- Focus Magnifier x8
- Push AF/Focus Hold
- Focus Area
- Focus Area (Push AF)
- VF Mode
- ND Filter Position
- IRIS
- AGC
- Auto ND Filter
- SHUTTER
- Auto Exposure Level
- Push Auto Iris
- Push AGC
- Push Auto ND
- Spotlight
- Backlight
- ATW
- ATW Hold
- SteadyShot
- Color Bars
- User Menu
- Rec Lamp
- S&Q Motion
- Picture Cache Rec
- Rec Review
- Thumbnail
- Shot Mark1
- Shot Mark2
- Clip Flag OK
- Clip Flag NG
- Clip Flag Keep
- High/Low Key

Changing the dial function

Use Assignable Dial (page 72) in the System menu.
You can view the assigned functions on the Assignable Button Status screen (page 11). IRIS is assigned by factory default.

Assignable functions

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

Slow & Quick Motion

When the video format (page 70) is set to one of the following values, you can specify a different value for the recording frame rate and playback frame rate.

NTSC Area

XAVC-I
4096×2160 59.94P, 4096×2160 29.97P, 4096×2160 24.00P, 4096×2160 23.98P, 3840×2160 59.94P, 3840×2160 29.97P, 3840×2160 23.98P, 1920×1080 59.94P, 1920×1080 29.97P, 1920×1080 23.98P
XAVC-L
3840×2160 59.94P, 3840×2160 29.97P, 3840×2160 23.98P, 1920×1080 59.94P 50, 1920×1080 59.94P 35, 1920×1080 29.97P 50, 1920×1080 29.97P 35, 1920×1080 23.98P 50, 1920×1080 23.98P 35

PAL Area

XAVC-I
4096×2160 50P, 4096×2160 25P, 3840×2160 50P, 3840×2160 25P, 1920×1080 50P, 1920×1080 25P
XAVC-L
3840×2160 50P, 3840×2160 25P, 1920×1080 50P 50, 1920×1080 50P 35, 1920×1080 25P 50, 1920×1080 25P 35

You can set the frame rate for recording by pressing and holding an assignable button to which S&Q Motion has been assigned.

[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 is disabled in Slow & Quick Motion mode.
- The following conditions apply when shooting at frame rates higher than 60 fps.
  - The focus assist indicator, depth of field indicator, focus position indicator, iris position indicator, and zoom position indicator are all turned off.

NTSC Area

Format	Resolution	Frame rate	High frame rate
XAVC-I	2160	1 to 60 fps	Not supported
		(59.94P, 29.97P, 24.00P, 23.98P)	
	1080	1 to 60 fps	72/75/80/90/96/100/110/120/125/135/144/150/160/168/175/180fps
		(59.94P, 29.97P, 23.98P)	
XAVC-L	2160	1 to 60 fps	Not supported
		(59.94P, 29.97P, 23.98P)	
	1080	1 to 60 fps	72/75/80/90/96/100/110/120fps
		(59.94P 50, 59.94P 35, 29.97P 50, 29.97P 35, 23.98P 50, 23.98P 35)	

PAL Area

Format	Resolution	Frame rate	High frame rate
XAVC-I	2160	1 to 60 fps	Not supported
		(59P, 25P)	
	1080	1 to 60 fps	72/75/80/90/96/100/110/120/125/135/144/150fps
		(59P, 25P)	
XAVC-L	2160	1 to 60 fps	Not supported
		(59P, 25P)	
	1080	1 to 60 fps	72/75/80/90/96/100/110/120fps
		(50P 50, 50P 35, 25P 50, 25P 35)	

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.
This function is enabled when the camcorder is set to any of the following video formats (page 69).

- XAVC-I
- XAVC-L*
- MPEG HD 422*
* 59.94i and 50i are not supported.

Shooting interval (Interval Time)
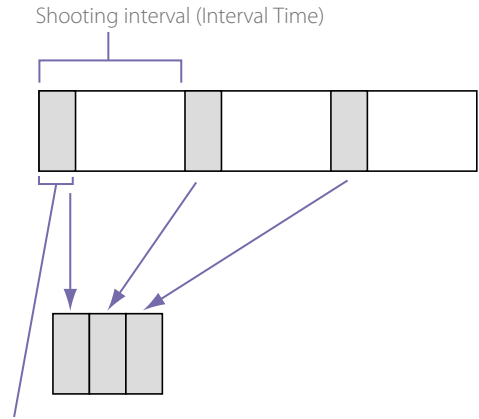
Number of frames in one take
(Number of Frames)

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 65) >Setting in the Recording 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 Recording 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 54) in the Camera 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 button to start recording. "Int A/B ●Rec" and "Int A/B ●Stby" appears 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 Recording 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 adapter, 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. The picture cache recording time is set using Picture Cache Rec >Cache Rec Time (page 65) in the

Recording menu.

Supported recording formats

Recording format	Resolution	Cache time [sec.]
RAW	4096×2160	Not supported
	2048×1080	
XAVC*1	4096×2160	0 to 2
	3840×2160	
	1920×1080	0 to 2/2 to 4/4 to 6/6 to 8
MPEG-2	1920×1080	0 to 2/2 to 4/4 to 6/6 to 8/ 8 to 10/13 to 15
ProRes422	1920×1080	Not supported

*1: XAVC-I 59.94P and 50P are not supported.

[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/UB menu (page 64).
- 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 65) in the Recording menu before shooting.
You can also assign the Picture Cache Rec function to an assignable button (page 36) and switch Picture Cache Rec >Setting between On and Off using the button.
When configured, the ● (green) indicator appears in the viewfinder (page 9).

Starting picture cache recording

When you press the record 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 Recording 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.
- You can change the cache recording time setting using the menu while recording is in progress, but the new value does not come into effect until after recording ends.

Reviewing a Recording (Rec Review)

You can check the video of the most recently recorded clip on the screen.
When recording is stopped, press the assignable button (page 36) with Rec Review assigned.
The clip is played to the end, Rec Review ends, and the camcorder returns to STBY (standby) mode.
Press and hold the button to start playback in the reverse direction. When the button is released, the clip is played to the end.

To stop Rec Review

Press the assignable button with Rec Review assigned.

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

Self Portrait Mode

You can flip the image in the viewfinder (page 7) vertically or horizontally/vertically using the MIRROR switch.
This allows you to turn the viewfinder 180° toward the lens.

OFF   B/T   ROT
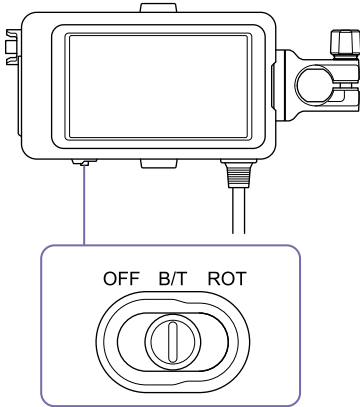
OFF

The image is not inverted.
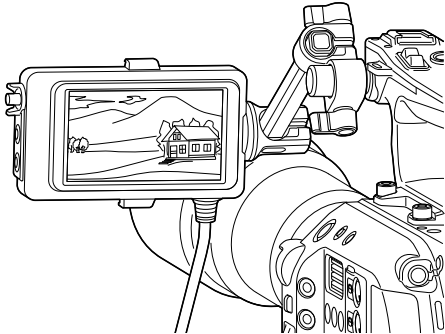
B/T

The image is flipped vertically.
The information display is flipped vertically and horizontally.
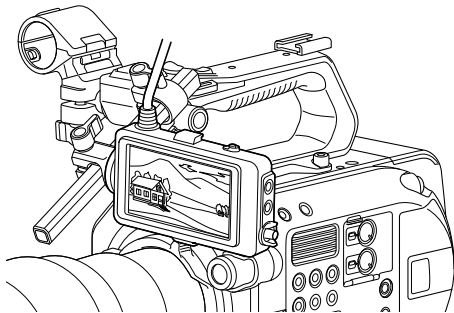
ROT

The image is flipped vertically and horizontally.
The information display is also flipped vertically and horizontally.
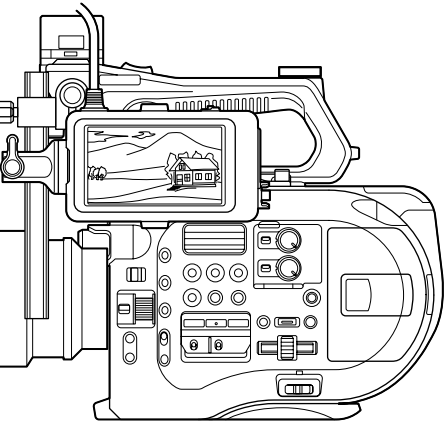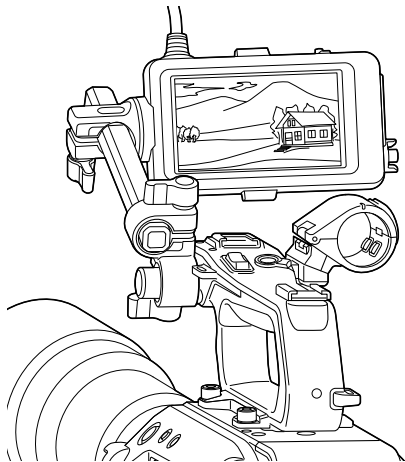
[Note]
The B/T and ROT view are displayed in the viewfinder only.
The output video and recorded video remain unaffected.

Displaying Peaking

You can turn peaking display On/Off by pressing the PEAKING button on the viewfinder (page 7).
You can turn peaking display On/Off, and set

the peaking type and peaking frequency using Peaking (page 62) in the VF menu.

Displaying Zebra

You can turn zebra pattern display On/Off by pressing the ZEBRA button on the viewfinder (page 7).
You can turn zebra pattern display On/Off, and set the zebra pattern type and display level using Zebra (page 62) in the VF menu.

[Note]
The camcorder measures the image in the viewfinder. In Cine EI mode, adjust the display level and other parameters in accordance with the viewfinder monitor LUT (page 61) setting.

Video Signal Monitor

You can set the type of video signal to display on the viewfinder screen to waveform, vectorscope, or histogram using Video Signal Monitor >Setting (page 64) in the VF 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.

Color space information indicator

When Matrix >Preset Select (page 58) is set to BT.2020 in Custom mode, the color space of the input image (based on the video output resolution, Output Color Space setting, and Source setting) is displayed in the top right of the video signal monitor.
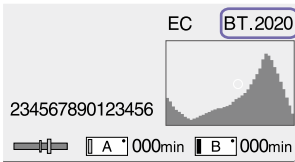
Displaying monitor LUT information

When the video output is set to 2K or lower in Cine EI mode, you can measure the video signal from either the SDI1 system or SDI2 system using Video Signal Monitor >Source (page 64) in the VF menu. The monitor LUT setting (page 61) of the specified SDI system is displayed at the top right of the video signal monitor.
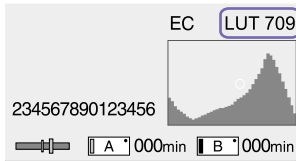
[Notes]
- When Display On/Off >Setting (page 63) is set to Off in the VF menu, the video signal monitor is not displayed.
- When the specified SDI system monitor LUT setting is set to Off, the Color Space setting (page 69) is displayed at the top right of the video signal monitor.

Obtaining Location Information (GPS)

When GPS in the System 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 System 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.

Shooting in Cine EI Mode

This mode mimics the way a film camera works, and assumes "developing" occurs in post-production.

Cine EI mode constraints

- Functions that cannot be adjusted automatically (tracking)
  – White balance
  – Gain
  – Shutter
  – Iris
- Functions that cannot be configured
  – ISO sensitivity/gain
  – Paint menu settings
  – Scene File
  – Lens File

Functions available in Cine EI mode only

- Exposure Index
- Monitor LUT
- High/Low Key
- RAW video recording

Recording RAW Video

You can record RAW video to an AXS-R5 (option) by converting the signal output from the RAW OUT connector of an XDCA-FS7 (option) attached to the camcorder using an HXR-IFR5 (option) (page 27).

1 Set up the external RAW recorder unit (page 27).

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

3   Set Codec >Select in the System 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   Set the resolution using Imager Scan Mode in the System menu.
When set to Normal, the RAW resolution is 4096×2160.

5   Set the frame rate in Rec Format >RAW Output Format in the System menu.

6   Check that the external recorder is turned on, then press the record 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.

The supported RAW output formats are shown below.

NTSC Area

Codec >Select setting	RAW output formats
RAW / RAW & XAVC-I / RAW &XAVC-L / RAW &MPEG HD422	4096×2160 59.94P
	4096×2160 29.97P
	4096×2160 23.98P
	2048×1080 59.94P
	2048×1080 29.97P
	2048×1080 23.98P

PAL Area

Codec >Select setting	RAW output formats
RAW / RAW & XAVC-I / RAW &XAVC-L / RAW &MPEG HD422	4096×2160 50P
	4096×2160 25P
	2048×1080 50P
	2048×1080 25P

Recording status indicator

If Display On/Off (page 63) >HXR-IFR5 Rec Control in the VF menu is set to On, the RAW recording status is displayed in the viewfinder using an icon.

[Note]
The RAW OUT connector of the camcorder only controls recording by transmitting a Rec Control signal to the external recorder, hence 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.

Slow & Quick Motion Recording

If S&Q Motion >Setting in the Recording menu is set to On, RAW video is recorded in Slow & Quick Motion mode.
RAW output Slow & Quick Motion is supported only for 2K resolution at 120/240 fps (NTSC) and 100/200 fps (PAL).

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 adapter (not supplied). Attach the XLR adapter to the MI shoe, and set Audio Input >CH3 Input Select to Shoe 1 and CH4 Input Select to Shoe 2 in the Audio menu. Camcorder functions that overlap will be disabled for channels on which the XLR adapter is selected as the input. Use the switches and dials on the XLR adapter to perform adjustments.

[Notes]
- 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 adapter.
Audio Input Level is also enabled when the XLR adapter switch is set to AUTO.
When "Through" is specified, audio will be recorded at the level adjusted with the XLR adapter (page 95).
- You can also assign to CH1 and CH2 by attaching an XLR adapter and setting Audio Input >CH1 Input Select and CH2 Input Select in the Audio menu to Shoe 1 and Shoe 2, respectively. However, if input from an XLR adapter is assigned to both CH1 and CH2, input from the INPUT1/INPUT2 connectors on the camcorder can no longer be assigned to the channels.

Connecting a Tablet or Other Devices using Wireless LAN

The camcorder can connect to smartphones, tablets, and other devices using wireless LAN connection by attaching the IFU-WLM3 USB Wireless LAN Module (supplied) or a CBK-WA100 Wireless Adapter (option).

[Note]
USB wireless modules other than the IFU-WLM3 are not supported.

The following are supported from devices connected by wireless LAN.
- Remote control
  Enables remote control of the camcorder.
- Video monitoring (CBK-WA100 only)
  Enables monitoring of the video from the camcorder.
  CBK-WA100 (option) and the Content Browser Mobile application are required.

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

Compatible Devices

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

Device	OS	Browser
Smartphone	Android 6.0	Chrome
	iOS 9	Safari
Tablet	Android 6.0	Chrome
	iOS 9	Safari
Computer	Microsoft Windows 7/Microsoft Windows 8.1/Microsoft Windows 10	Chrome
	Mac OS 10.10/10.11	Safari

Attaching the IFU-WLM3

Plug the IFU-WML3 into the USB wireless LAN module connector (page 4).
After attaching the unit, set Wi-Fi >Wi-Fi (page 73) in the System menu to Enable to enable wireless LAN.

[Note]
Attach/remove the IFU-WLM3 while the camcorder is turned off.

Attaching the CBK-WA100

[Note]
Attach/remove the CBK-WA100 while the camcorder is turned off.

1 Attach the CBK-WA100 to the mounting bracket, and tighten the two screws.
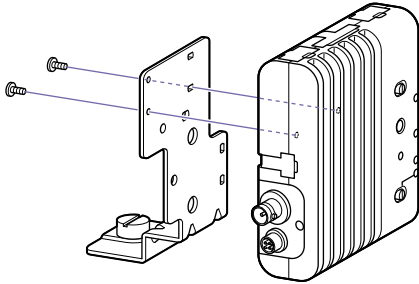
2 Attach the CBK-WA100 mounting bracket on the camcorder, and tighten the screw.
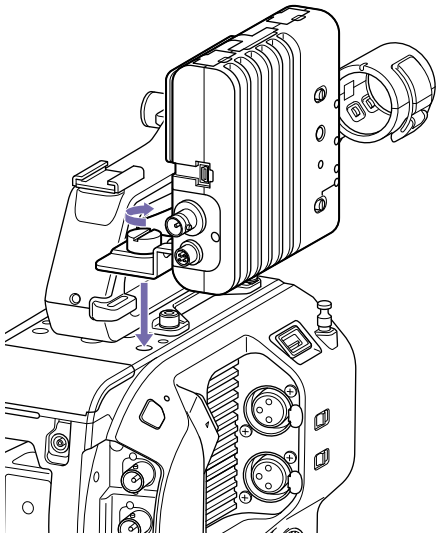
3 Connect the CBK-WA100 USB cable to the USB wireless LAN module connector (1), and the SDI cable to the SDI OUT connector (2).
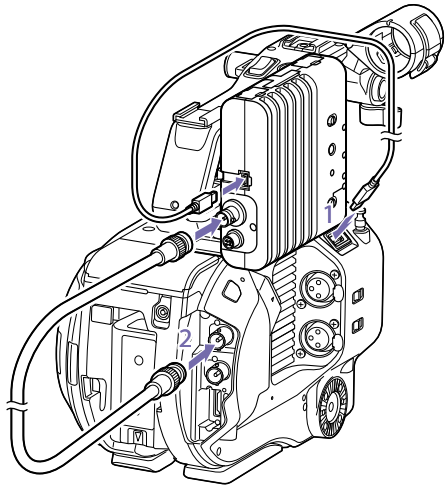
4 Turn the CBK-WA100 on, and then turn the camcorder on.

5 Set Wi-Fi >Wi-Fi (page 73) in the System menu to Enable to enable the wireless LAN.

[Note]
The SDI OUT output setting must be configured to use the CBK-WA100 with the camcorder. However, the camcorder cannot output a signal compatible with the CBK-WA100 when using XAVC-I 24.0P or ProRes 23.98P (page 60).

About the CBK-WA100

The CBK-WA100 has functions for low-resolution recording proxy files on an SD card, and for transferring the files to a server via a wireless LAN. For details, refer to the operation manual for the CBK-WA100.

One-touch Connection of NFC-enabled Devices (Using IFU-WLM3 Only)

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

1 Attach an IFU-WLM3 to the camcorder (page 41), and set Wi-Fi >Wi-Fi (page 73) in the System menu to Enable to enable wireless LAN.
N appears on the screen.
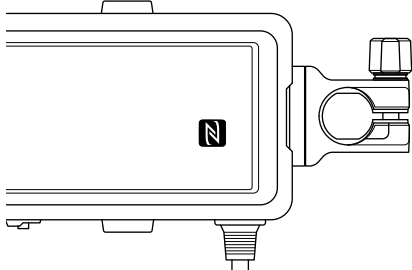
2 Open [Settings] on the device, select [More], and place a check mark in the NFC checkbox.

The various settings will vary depending on
the device. For details, refer to the instruction
manual for the device.

3 Touch the camcorder using the device.
The device connects to the camcorder,
launches a web browser, and displays the
Wi-Fi remote control. Authentication is
required the first time that the device
connects.
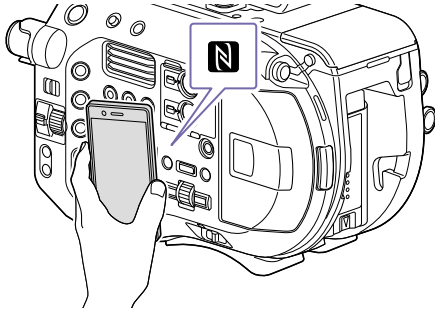
[Notes]
- Disable sleep mode and screen lock beforehand.
- Touch and hold the device still until the "Content Browser
  Mobile" application launches (1 to 2 seconds).

Displaying the Wi-Fi Remote Control

The Wi-Fi Remote screen is automatically resized to match the screen size of the connected device.

1 Connect the camcorder and device using a Wireless LAN connection (page 41).

2 Launch a browser on the device and enter "http://IP address of camcorder (Wi-Fi >IP Address in System menu)/rm.html" in the URL bar.
For example, if the IP address is 192.168.1.1, enter "http://192.168.1.1/rm.html" in the URL bar.

3 Enter the user name and password (Basic Authentication >User Name and Password in the System menu).
When connection is successful, the Wi-Fi Remote screen appears on the device.
You use the Wi-Fi Remote screen to operate the camcorder.
You can disable the record button operation by sliding the Lock knob to the right.

[Notes]
- To display the page for a smartphone, change "rm. html" to "rms.html" in the URL. To display the page for a tablet, change "rm.html" to "rmt.html" in the URL. When "rm.html" is entered, the page automatically switches for display on the corresponding device. However, the appropriate page may not be displayed, depending on the device.
- The Wi-Fi Remote 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 Wi-Fi remote control may not function if the wireless signal strength becomes weak.

Thumbnail Screen

The thumbnail screen appears if you press the THUMBNAIL button (page 6). 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.

[Notes]
- Only the clips recorded in the currently selected recording format are displayed on the thumbnail screen. If an expected recorded clip is not displayed, check the recording format. Take special note of this fact before formatting (initializing) media.
- When Codec >Select in the System menu is set to one of the following, recording cannot be started during playback or when the thumbnail screen is displayed.
  RAW & XAVC-I, RAW & XAVC-L, RAW & MPEG HD422

Screen Layout

Information for the clip at the cursor position is displayed at the bottom of the screen.

Currently selected XQD memory card indicator
(A lock icon is displayed if the card is protected.)

Clip number/Total number of clips

Cursor (yellow)
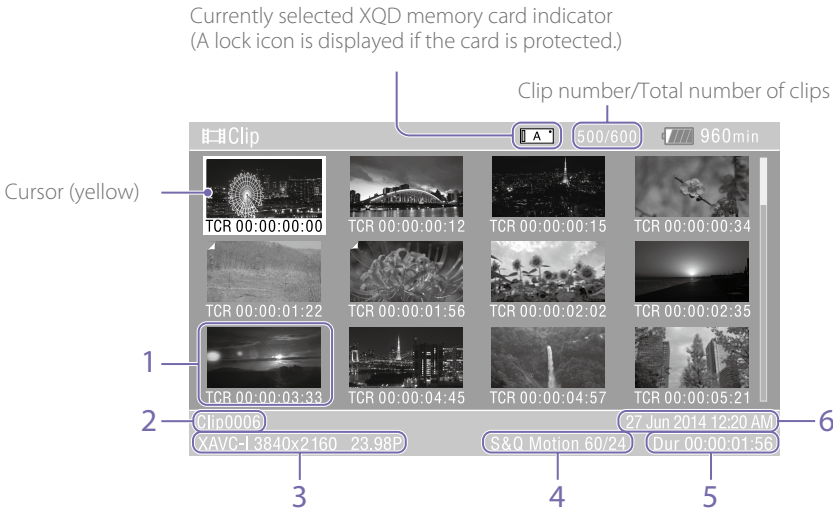
1. **Thumbnail (index picture)**
Displays the index picture of a clip. When a clip is recorded, its first frame is automatically set as the index picture.
Clip/frame information is displayed below the thumbnail. You change the information displayed using Customize View (page 67) >Thumbnail Caption in 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 Turn the SEL/SET dial (page 6) to move the cursor to the thumbnail for the clip you want to play.

4 Press the SEL/SET dial.
Playback begins from the start of the selected clip.

You can control playback by pressing the following buttons.

SEL/SET dial:
Pauses playback.
Press again to return to normal playback.

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

Press and hold left/right buttons:
Fast reverse/forward.
Returns to normal playback when you release the button.

CANCEL/BACK button:
Stops playback, and returns to recording standby mode.

[Notes]
- There may be momentary picture breakup or still image display at the boundary between clips. You cannot operate the camcorder during this period.
- When you select a clip in the thumbnail screen and begin playback, there may be momentary picture breakup at the start of the clip. To view the start of the clip without breakup, put the camcorder into playback mode, pause, then use the left button of the SEL/SET dial to return to the start of the clip, and start playback again.
- You can also control playback using the supplied remote control.

Clip Operations

On the thumbnail screen, you can operate the clips or check clip properties using the thumbnail menu.
The thumbnail menu (page 66) appears when you press the MENU button and select a thumbnail.

Thumbnail Menu Operations

Turn the SEL/SET dial (page 6) to select a function, then press the SEL/SET dial.
Press the CANCEL/BACK button (page 6) to return to the previous screen.

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

Thumbnail Menu Items

- Display Clip Properties
- Set Index Picture
- Thumbnail View
- Set Shot Mark
- Set Clip Flag
- Lock/Unlock Clip
- Delete Clip
- Filter Clips
- Customize View

For details about clip operation menus, see "Thumbnail Menu" (page 66).

Displaying clip properties

Select Display Clip Properties (page 66) in the Thumbnail menu to display the clip properties screen.

Displaying the essence mark thumbnail screen

Select Thumbnail View (page 66) >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.

Displaying the filtered clip thumbnail screen

Select Filter Clips (page 66) in the Thumbnail menu, and select a clip flag type to display only those clips that have the specified flag.
To display all clips, set Thumbnail View >Essence Mark Thumbnail in the Thumbnail menu to All.

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.
Camera menu
    Contains settings related to shooting.
Paint menu
    Contains settings related to image quality.
Audio menu
    Contains settings related to audio.
Video menu
    Contains settings related to video output.
VF menu
    Contains settings to the viewfinder display.
TC/UB menu
    Contains settings related to timecode and user bits.
Recording menu
    Contains settings related to recording.
Thumbnail menu
    Contains settings related to thumbnail display.
Media menu
    Contains settings related to media.

File menu
    Contains settings related to files.
System menu
    Contains settings related to the system.

Setup Menu Hierarchy

User (Factory settings)	Country	Paint	White
	Base Setting		Offset White
	Rec Format		Black
	Codec		Gamma
	S&Q Motion		Black Gamma
	Interval Rec		Knee
	Picture Cache Rec		White Clip
	Simul Rec		Detail
	Output Format		Skin Detail
	Monitor LUT		Aperture
	Clip		Matrix
	VF Setting		Multi Matrix
	Assignable Button		Maintenance
	Assignable Dial	Audio	Audio Input
	Format Media		Audio Output
	Edit User Menu	Video	Output On/Off
Edit User	Add Item		Output Format
	Customize Reset		Output Setting
Camera	ISO/Gain/EI		Monitor LUT
	ND Filter		Output Display
	Auto Exposure	VF	VF Setting
	Focus		Peaking
	Shutter		Zebra
	Color Bars		Marker
	Noise Suppression		Display On/Off
	Flicker Reduce		Video Signal Monitor
	SteadyShot	TC/UB	Timecode
	Handle Zoom		TC Display
	Auto Black Balance		Users Bit
	AF Micro Adjustment		HDMI TC Out
	Video Light Set	Recording	S&Q Motion
			Interval Rec
			Picture Cache Rec
			Simul Rec
			SDI/HDMI Rec Control

Thumbnail	Display Clip Properties
	Set Index Picture
	Thumbnail View
	Set Shot Mark
	Set Clip Flag
	Lock/Unlock Clip
	Delete Clip
	Filter Clips
	Customize View
Media	Update Media
	Format Media
	Clip
File	All File
	Scene File
	User Menu Item
	User Gamma
	Monitor LUT
	Monitor 3D LUT
	Lens File
System	Base Setting
	Codec
	Rec Format
	Genlock
	Assignable Button
	Assignable Dial
	ND Dial
	Rec Lamp
	Fan Control
	HOLD Switch Setting
	Lens
	Language
	Clock Set
	Country
	Hours Meter

System	Basic Authentication
	Wi-Fi
	GPS
	IR Remote
	Camera Battery Alarm
	Camera DC IN Alarm
	Ext. Unit Battery Alarm
	Ext. Unit DC IN Alarm
	All Reset
	APR
	Camera Config
	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 6)
Turns menu mode for setup menu operations on/off.

Left button/Right button (page 6)
Press the left/right button to move the cursor left/right to select menu items or settings.

SEL/SET dial (page 6)
- Turn the SEL/SET dial to move the cursor up/down to select menu items or settings.
- Press the SEL/SET dial to apply the selected item.

CANCEL/BACK button (page 6)
Cancels a setting before it is applied, and moves one level up in the menu hierarchy.

[Note]
The setup menu cannot be operated when in focus magnifier mode (page 31).

Setting Menu Items

Turn the SEL/SET dial to move the cursor to the menu item to set, then press the SET/SEL 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.
- If an item has a large range of available options (for example, –99 to +99), the selection 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.
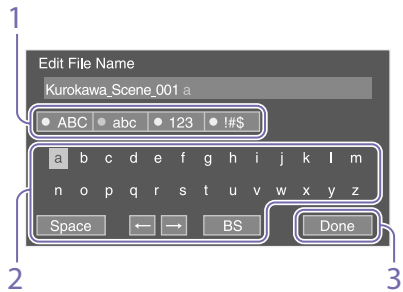
1 Turn the SEL/SET dial to select a character type, the press the dial.
ABC: Uppercase alphabetic characters
abc: Lowercase alphabetic characters
123: Numeric characters
!#$: Special characters

2 Select a character from the selected character type, then press the dial.
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 press the dial.

The character string is confirmed and the character entry screen disappears.

Setup Menu List

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

User Menu

User		
Item	**Sub-item setting**	**Description**
Country Region settings	See Country in the System menu.	
Base Setting Base settings	See Base Setting in the System menu.	
Rec Format Recording format settings	See Rec Format in the System menu.	
Codec Codec settings	See Codec in the System menu.	
S&Q Motion Slow & Quick Motion mode settings	See S&Q Motion in the Recording menu.	
Interval Rec Interval Rec mode settings	See Interval Rec in the Recording menu.	
Picture Cache Rec Picture cache recording mode settings	See Picture Cache Rec in the Recording menu.	
Simul Rec Simultaneous recording settings	See Simul Rec in the Recording menu.	
Output Format Output format settings	See Output Format in the Video menu.	
Monitor LUT Monitor LUT settings	See Monitor LUT in the Video menu.	
Clip Settings related to clip names	See Clip in the Media menu.	
VF Setting Viewfinder settings	See VF Setting in the VF menu.	
Assignable Button Assignable button settings	See Assignable Button in the System menu.	
Assignable Dial Assignable dial settings	See Assignable Dial in the System menu.	

User		
Item	**Sub-item setting**	**Description**
Format Media Format (initializes) memory cards	See Format Media in the Media menu.	
Edit User Menu Edit the User menu items		Edits the items in the User menu. When Edit User Menu is selected, the Edit User menu moves to the top level, and the menu items are displayed.

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	Deletes the registered menu sub-item in the User menu.

Camera Menu

Camera >ISO/Gain/EI Sets gain settings.		
Item	**Sub-item setting**	**Description**
Mode	ISO/**dB**	Selects the gain setting mode.

Camera >ISO/Gain/EI
Sets gain settings.

Item	Sub-item setting	Description
ISO/Gain<H>	When Mode is set to ISO and dynamic range is 460%: ISO 800 / ISO 1000 / ISO 1250 / ISO 1600 / ISO 2000 / ISO 2500 / ISO 3200 / ISO 4000 / ISO 5000 / ISO 6400 When Mode is set to ISO and dynamic range is 800%: ISO 1600 / ISO 2000 / ISO 2500 / ISO 3200 / ISO 4000 / ISO 5000 / ISO 6400 / ISO 8000 / ISO 10000 / ISO 12500 When Mode is set to ISO and dynamic range is 1300% (Gamma Category is set to S-Log2 or S-Log3): ISO 2000 / ISO 2500 / ISO 3200 / ISO 4000 / ISO 5000 / ISO 6400 / ISO 8000 / ISO 10000 / ISO 12500 / ISO 16000 When Mode is set to dB: –3dB / 0dB / 3dB / 6dB / 9dB / 12dB / 18dB	Sets the <H> gain preset value. [Tip] The dynamic range is determined by the gamma. <table><tr><td>Gamma</td><td>Dynamic range</td></tr><tr><td>STD / HG1 / HG2 / HG3 / HG4</td><td>460%</td></tr><tr><td>HG7 / HG8 / User</td><td>800%</td></tr><tr><td>S-Log2 / S-Log3</td><td>1300%</td></tr></table>
ISO/Gain<M>	(Same settings as ISO/Gain<H>) The default values are given below. When Mode is set to ISO and dynamic range is 460%: ISO1600 When Mode is set to ISO and dynamic range is 800%: ISO3200 When Mode is set to ISO and dynamic range is 1300% (Gamma Category is set to S-Log2 or S-Log3): ISO4000 When Mode is set to dB: 6dB	Sets the <M> gain preset value.

Camera >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 and dynamic range is 460%: ISO800 When Mode is set to ISO and dynamic range is 800%: ISO1600 When Mode is set to ISO and dynamic range is 1300% (Gamma Category is set to S-Log2 or S-Log3): ISO2000 When Mode is set to dB: 0dB	Sets the <L> gain preset value.
Exposure Index<H>	500EI / 4.0E 640EI / 4.3E 800EI / 4.7E 1000EI / 5.0E 1250EI / 5.3E 1600EI / 5.7E 2000EI / 6.0E 2500EI / 6.3E 3200EI / 6.7E 4000EI / 7.0E 5000EI / 7.3E 6400EI / 7.7E 8000EI / 8.0E	Sets the <H> exposure index value. Available in Cine EI mode only.
Exposure Index<M>	(Same settings as Exposure Index<H>) The default value is 1600EI / 5.7E.	Sets the <M> exposure index value.
Exposure Index<L>	(Same settings as Exposure Index<H>) The default value is 800EI / 4.7E.	Sets the <L> exposure index value.
Shockless Gain	On / Off	Turns the shockless gain function on/off.

Camera >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.

Camera >Auto Exposure
    Sets automatic exposure adjustment settings.

Item	Sub-item setting	Description
Level	−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	Sets the brightness level for the automatically detected exposure.

Mode	Backlight / Standard / Spotlight	Sets the control mode.
		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.
AGC	On / Off	Turns the AGC (auto gain control) function on/off.

AGC Limit	When ISO/Gain/EI Mode is set to dB:
	    3dB / 6dB / 9dB / 12dB / 15dB / 18dB
	When ISO/Gain/EI Mode is set to ISO and dynamic range is 460%:
	    ISO1000 / ISO1600 / ISO2000 / ISO3200 / ISO4000 / ISO6400
	When ISO/Gain/EI Mode is set to ISO and dynamic range is 800%:
	    ISO2000 / ISO3200 / ISO4000 / ISO6400 / ISO8000 / ISO12500
	When ISO/Gain/EI Mode is set to ISO and dynamic range is 1300%:
	    ISO2500 / ISO4000 / ISO5000 / ISO8000 / ISO10000 / ISO16000
		Sets the maximum gain of the AGC function.

Auto ND Filter	On / Off	Turns the auto ND filter function on/off (page 33).
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.
Clip High light	On / Off	Turns the function that ignores brightest areas to provide a flatter reaction to high luminance on/off.

Camera >Auto Exposure
    Sets automatic exposure adjustment settings.

Item	Sub-item setting	Description
Detect Window	1 / 2 / 3 / 4 / 5 / 6	Sets the light meter 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 Detect Window function on/off.

Camera >Focus
    Sets focus settings.

Item	Sub-item setting	Description

Focus Area	Wide / Center / Flexible Spot	Sets the target area for auto focus (page 31).
		Wide:
		    Searches for a subject over a wide angle of the image when focusing.
		Center:
		    Focuses on a subject in the center of the image.
		Flexible Spot:
		    Focuses on a specified position in the image.

Focus Area (Push AF)	Center / Flexible Spot	Sets the target area for push auto focus (page 31).
		Center:
		    Focuses on a subject in the center of the image.
		Flexible Spot:
		    Focuses on a specified position in the image.
		
		[Note]
		On the LA-EA2/4 (option), the position cannot be set.

AF Assist	On / Off	When set to On, allows you to temporarily override auto focus and set focus manually.

Camera >Shutter
Sets electronic shutter operating condition settings.

Item	Sub-item setting	Description
Mode	Speed / Angle / ECS / Off	Selects the operating mode of the electronic shutter. Speed/Angle (standard mode): Used for shooting fast-moving subjects clearly. Selects the mode for setting the shutter speed in seconds (Speed) or as a shutter angle (Angle). ECS (Extended Clear Scan): Used for shooting without scrolling horizontal bars appearing on the monitor screen.
Shutter Speed	1/3 to 1/9000 The available settings vary depending on the frame frequency of the selected video format. 59.94P/59.94i: 1/4, 1/8, 1/15, 1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/9000 50P/50i: 1/3, 1/6, 1/12, 1/25, 1/50, 1/60, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/9000 29.97P: 1/4, 1/8, 1/15, 1/30, 1/60, 1/90, 1/100, 1/125, 1/180, 1/250, 1/350, 1/500, 1/725, 1/1000, 1/1500, 1/2000, 1/3000, 1/4000, 1/6000, 1/9000 25P: 1/3, 1/6, 1/12, 1/25, 1/50, 1/60, 1/100, 1/120, 1/150, 1/215, 1/300, 1/425, 1/600, 1/1000, 1/1250, 1/1750, 1/2500, 1/3500, 1/6000, 1/9000 24P: 1/3, 1/6, 1/12, 1/24, 1/40, 1/48, 1/50, 1/60, 1/96, 1/100, 1/120, 1/144, 1/192, 1/200, 1/288, 1/400, 1/576, 1/1200, 1/2400, 1/4800, 1/9000 23.98P: 1/3, 1/6, 1/12, 1/24, 1/40, 1/48, 1/50, 1/60, 1/96, 1/100, 1/120, 1/144, 1/192, 1/200, 1/288, 1/400, 1/576, 1/1200, 1/2400, 1/4800, 1/9000	Sets the shutter speed when Mode is set to Speed. 1/1 can be set when the S&Q recording frame rate is set to 1fps.

Camera >Shutter
Sets electronic shutter operating condition settings.

Item	Sub-item setting	Description
Shutter Angle	5.6° / 11.2° / 22.5° / 45° / 90° / 120° / 144° / 150° / 172.8° / 180° / 216° / 300°	Sets the shutter angle when Mode is set to Angle.
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 24P: 24.02 23.98P: 23.99 25P: 25.02	Sets the ECS frequency when Mode is set to ECS.

Camera >Color Bars
Sets color bar settings.

Item	Sub-item setting	Description
Setting	On / Off	Turns the color bars on/off. [Notes] ● Cannot be set to On when configured to record RAW video. ● Color bars output BT.2020 color information when Matrix >Preset Select in the Paint menu is set to BT.2020. Some colors in the color bars may appear differently in the viewfinder and video output set to BT.709 color gamut. For details about the color gamut of each video output, see Output Color Space (page 60).
Type	ARIB / SMPTE / 75% / 100%	Selects the color bar type.

Camera >Noise Suppression
Sets noise suppression settings.

Item	Sub-item setting	Description
Setting	On / Off	Turns the noise suppression function on/off. [Tip] Default value is Off if Base Setting >Shooting Mode in the System menu is set to Cine El.
Level	Low / Mid / High	Sets the noise suppression level.

Camera >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.

Camera >SteadyShot
　　Sets image stabilization settings.

Item	Sub-item setting	Description
Setting	Active SteadyShot / SteadyShot / Off	Turns the image stabilization function on/off. [Note] Enabled when a compatible lens is attached.

Camera >Handle Zoom
　　Sets handle zoom settings.

Item	Sub-item setting	Description
Zoom Speed Type	Fix / Variable / Off	Sets the mode of the zoom lever on the handle. [Note] Disabled when the handle is not attached.
Zoom Speed	1 to 8 (3)	Sets the speed of the handle zoom. (Enabled when Zoom Speed Type is set to Fix) [Note] Disabled when the handle is not attached.

Camera >Auto Black Balance
　　Sets auto black balance settings.

Item	Sub-item setting	Description
Auto Black Balance	Execute / Cancel	Runs the auto black balance function. [Notes] • Run the auto black balance function with the lens cap attached. • Cannot be run during recording or color bar display. • Cannot be run when in Interval Rec mode or Slow & Quick Motion mode.

Camera >AF Micro Adjustment
　　Sets focus position micro adjustment. (Enabled when LA-EA2/4 (option) is used)

Item	Sub-item setting	Description
Setting	On / Off	Turns the auto focus micro adjustment function on/off.
Amount	−20 to 0 to +20	Sets the auto focus micro adjustment level. Use the following procedure to adjust A-mount lenses. 1　Attach the lens you want to adjust using an LA-EA2/4 (option). 2　Set Setting to On, and adjust the Amount value. 　Positive values move the focus behind the subject, and negative values move the focus in front of the subject. 　It is recommended that you check the result using one-push AF, for example, while adjusting the focus.
Clear All	Execute / Cancel	Initializes the saved adjustment values.

Camera >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/off when the camcorder is recording or in standby mode.

Paint Menu

Paint >White
Sets white balance settings.

Item	Sub-item setting	Description
Preset White	2100K to 10000K (3200K)	Sets the white balance preset value.
Color Temp <A>	1500K to 50000K (3200K)	Displays the white balance color temperature saved in memory A.
Color Temp. Balance <A>	−99 to +99 (±0)	Sets the white balance gain value saved in memory A (linked to R gain and B gain).
R Gain <A>	−99 to +99 (±0)	Sets the white balance R gain value saved in memory A.
B Gain <A>	−99 to +99 (±0)	Sets the white balance B gain value saved in memory A.
Color Temp <B>	1500K to 50000K (3200K)	Displays the white balance color temperature saved in memory B.
Color Temp. Balance <B>	−99 to +99 (±0)	Sets the white balance gain values saved in memory B (linked R gain and B gain).
R Gain <B>	−99 to +99 (±0)	Sets the white balance R gain value saved in memory B.
B Gain <B>	−99 to +99 (±0)	Sets the white balance B gain value saved in memory B.
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.
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.
White Switch<B>	Memory / ATW	Selects the white balance adjustment mode that is selected when the WHT BAL switch is set to B.

Paint >White
Sets white balance settings.

Item	Sub-item setting	Description
ATW Speed	1 / 2 / 3 / 4 / 5	Sets the response speed in ATW mode. 1: Fastest response speed

Paint >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.
Warm Cool <A>	−99 to +99 (±0)	Sets the offset added to the white balance in memory A as a color temperature when Offset White <A> is set to On.
Warm Cool Balance <A>	−99 to +99 (±0)	Sets a more precise color temperature, for use when a satisfactory image cannot be obtained using Warm Cool <A>.
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.
Warm Cool <B>	−99 to +99 (±0)	Sets the offset added to the white balance in memory <B> as a color temperature when Offset White B is set to On.
Warm Cool Balance <B>	−99 to +99 (±0)	Sets a more precise color temperature, for use when a satisfactory image cannot be obtained using Warm Cool <B>.
Offset White <ATW>	On / Off	Selects whether to add (On) or not to add (Off) an offset value to the ATW white balance.
Warm Cool<ATW>	−99 to +99 (±0)	Sets the offset added to the ATW white balance as a color temperature when Offset White <ATW> is set to On.
Warm Cool Balance <ATW>	−99 to +99 (±0)	Sets a more precise color temperature, for use when a satisfactory image cannot be obtained using Warm Cool<ATW>.

Paint >Black
Sets black settings.

Item	Sub-item setting	Description
Setting	On / Off	Turns black correction on/off.

Paint >Black
Sets black settings.

Item	Sub-item setting	Description
Master Black	−99 to +99 (±0)	Sets the master black level.
		[Note] Fine adjustment is supported by turning the SEL/SET dial slowly. In this case, the displayed value may not change.
R Black	−99 to +99 (±0)	Sets the R black level.
B Black	−99 to +99 (±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	STD / HG / User / S-Log2 / S-Log3	Selects use of standard gamma (STD), HyperGamma (HG), user gamma (User), S-Log2, 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 User: User 1 / User 2 / User 3 / User 4 / User 5 When Gamma Category is set to SLog2: S-Log2 When Gamma Category is set to SLog3: S-Log3	Selects the gamma table used for gamma correction. See the table below for details about hypergamma and S-Log2/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-Log2	1300%	–	32%
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 / Mid / High	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 correction 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 the white clip adjustment function on/off. [Notes] • The setting is reset to On when the camcorder is turned off. To set to Off permanently, set Level to 109%. • Cannot be set when Gamma >Gamma Category is set to S-Log2 or S-Log3.
Level	90.0% to 109.0% The default setting varies depending on the country of purchase. 　　NTSC Area: 108.0% 　　PAL Area: 105.0%	Sets the white clip level.

Paint >Detail
Sets detail 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.
Level Depend	On / Off	Turns the level dependence adjustment function on/off.
Level Depend Level	−99 to +99 (±0)	Sets the level dependence 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.
Limit	−99 to +99 (±0)	Sets the detail limiter for both the white-side and black-side directions.
White Limit	−99 to +99 (±0)	Sets the white-side detail limiter.
Black Limit	−99 to +99 (±0)	Sets the black-side detail limiter.

Paint >Detail
Sets detail adjustment settings.

Item	Sub-item setting	Description
V Black Limit	−99 to +99 (±0)	Sets the black-side V 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: Run detection
Area Indication	On / Off	Turns the function that displays zebra in areas of the color used for 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.
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.

Paint >Matrix
    Sets matrix correction settings.

Item	Sub-item setting	Description
Adaptive Matrix	On / Off	Turns the adaptive matrix function on/off.
Preset Matrix	On / Off	Turns the preset matrix function on/off.
Preset Select	Standard High Saturation FL Light Cinema F55 709 Like BT.2020	Selects a preset matrix. [Notes] • BT.2020 can be selected only when the recording format is 4K or QFHD. • For details about the color gamut of each video output when BT.2020 is selected, see "Output Menu Settings and Video Output Color Space when Preset Select is BT.2020" (page 86). • The following two types of signals have BT.2020 matrix correction enabled when BT.2020 is selected. – BT.2020 output signals described in "Output Menu Settings and Video Output Color Space when Preset Select is BT.2020" (page 86). – Video recorded in 4K or QFHD ITU-R BT.709 equivalent matrix correction is invoked for BT.709 output signals in "Output Menu Settings and Video Output Color Space when Preset Select is BT.2020" (page 86).
User Matrix	On / Off	Turns the user matrix correction function on/off.
Level	−99 to +99 (±0)	Adjusts the color saturation of the entire image.
Phase	−99 to +99 (±0)	Adjusts the color tone (phase) of the entire image.
User Matrix R-G	−99 to +99 (±0)	Sets a user-defined R-G user matrix.
User Matrix R-B	−99 to +99 (±0)	Sets a user-defined R-B user matrix.
User Matrix G-R	−99 to +99 (±0)	Sets a user-defined G-R user matrix.
User Matrix G-B	−99 to +99 (±0)	Sets a user-defined G-B user matrix.
User Matrix B-R	−99 to +99 (±0)	Sets a user-defined B-R user matrix.
User Matrix B-G	−99 to +99 (±0)	Sets a user-defined B-G user matrix.

Paint >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.
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 >Maintenance
    Sets maintenance settings.

Item	Sub-item setting	Description
Test Saw	On / Off	Turns the test signal on/off.

Audio Menu

Refer to "Block Diagrams" (page 95).

Audio >Audio Input
    Sets audio input settings.

Item	Sub-item setting	Description
CH1 Input Select	INPUT1 / Internal MIC / Shoe 1	Switches the input source for recording on channel 1.
CH2 Input Select	INPUT1 / INPUT2 / Internal MIC / Shoe 2	Switches the input source for recording on channel 2.
CH3 Input Select	Off / Internal MIC / Shoe 1	Switches the input source for recording on channel 3.
CH4 Input Select	Off / Internal MIC / Shoe 2	Switches the input source for recording on channel 4.
INPUT1 MIC Reference	−60dB / −50dB / −40dB	Sets the reference recording level for XLR microphone input from INPUT1.

Audio >Audio Input
Sets audio input settings.

Item	Sub-item setting	Description
INPUT2 MIC Reference	–60dB / –50dB / –40dB	Sets the reference recording level for XLR microphone input from INPUT2.
CH1 Wind Filter	On / Off	Enables/disables the wind reduction filter for channel 1 recording.
CH2 Wind Filter	On / Off	Enables/disables the wind reduction filter for channel 2 recording.
CH3 Wind Filter	On / Off	Enables/disables the wind reduction filter for channel 3 recording.
CH4 Wind Filter	On / Off	Enables/disables the wind reduction filter for channel 4 recording.
CH3 Level Control	Auto / Manual	Selects automatic audio input level adjustment or manual adjustment for recording channel 3. [Note] If both CH3 Input Select and CH4 Input Select are set to Internal MIC, CH4 is switched to automatic/manual in conjunction with this setting.
CH4 Level Control	Auto / Manual	Selects automatic audio input level adjustment or manual adjustment for recording channel 4. [Note] If both CH3 Input Select and CH4 Input Select are set to Internal MIC, CH4 is switched to automatic/manual in conjunction with the CH3 Level Control setting.
CH3 Input Level	0 to 99 (49)	Sets the audio input level for recording channel 3. [Note] If both CH3 Input Select and CH4 Input Select are set to Internal MIC, the CH4 Input Level is switched in conjunction with this setting.
CH4 Input Level	0 to 99 (49)	Sets the audio input level for recording channel 4. [Note] If both CH3 Input Select and CH4 Input Select are set to Internal MIC, the CH4 Input Level is switched in conjunction with the CH3 Input Level setting.

Audio >Audio Input
Sets audio input settings.

Item	Sub-item setting	Description
Audio Input Level	0 to 99	Sets the audio input level. Can be used as the master volume, according to the settings of CH1 Level to CH4 Level.
Limiter Mode	Off / –6dB / –9dB / –12dB / –15dB / –17dB	Selects the limiter characteristic for large input signals when adjusting the audio input level manually.
CH1&2 AGC Mode	Mono / Stereo	Sets the auto level adjustment mode for recording channel 1 and channel 2.
CH3&4 AGC Mode	Mono / Stereo	Sets the auto level adjustment mode for recording channel 3 and channel 4.
AGC Spec	–6dB / –9dB / –12dB / –15dB / –17dB	Selects the AGC characteristic.
1kHz Tone on Color Bars	On / Off	Turns the 1 kHz reference tone signal on/off when displaying color bars. [Note] When set to On, the 1 kHz reference tone signal is set for recording on channel 3 and channel 4, even if CH3 Input Select and CH4 Input Select are set to Off.

CH1 Level	Input without XLR adapter
	    Audio Input Level / Side / Level+Side
	Input with XLR adapter (page 40)
	    Audio Input Level / Through
		Sets the combination of audio input level adjustments enabled for recording channel 1.
		
		[Note]
		"Side" refers to the CH1 INPUT LEVEL 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 95).

CH2 Level	Input without XLR adapter
	    Audio Input Level / Side / Level+Side
	Input with XLR adapter (page 40)
	    Audio Input Level / Through
		Sets the combination of audio input level adjustments enabled for recording channel 2.
		
		[Note]
		"Side" refers to the CH2 INPUT LEVEL 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 95).

Audio >Audio Input
Sets audio input settings.

Item	Sub-item setting	Description

CH3 Level	Input without XLR adapter
	  Audio Input Level / CH3 Input Level /
	  Level+CH3 Input Level
	Input with XLR adapter (page 40)
	  Audio Input Level / Through
		Sets the combination of audio input level adjustments enabled for recording channel 3.
		
		[Note]
		When Level+CH3 Input Level is selected, the audio recording level is determined by the combination of the Audio Input Level and CH3 Input Level settings (page 95).

CH4 Level	Input without XLR adapter
	  Audio Input Level / CH4 Input Level /
	  Level+CH4 Input Level
	Input with XLR adapter (page 40)
	  Audio Input Level / Through
		Sets the combination of audio input level adjustments enabled for recording channel 4.
		
		[Note]
		When Level+CH4 Input Level is selected, the audio recording level is determined by the combination of the Audio Input Level and CH4 Input Level settings (page 95).

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.
Monitor Volume	0 to 15 (7)	Adjusts the monitor audio level output to the headphone jack and built-in speaker.
Headphone Out	Mono / Stereo	Selects whether the headphone jack output is monaural (Mono) or stereo (Stereo).
Alarm Volume	0 to 7 (4)	Adjusts the volume of the alarm.
Output Limiter	On / Off	Turns the audio output limiter on/off.
HDMI Output CH	CH1/CH2 / CH3/CH4	Sets the combination of audio channels on the HDMI output.

Video Menu

Video >Output On/Off
Sets video output settings.

Item	Sub-item setting	Description
SDI	On / Off	Turns SDI output on/off.
HDMI	On / Off	Turns HDMI output on/off.

Video >Output Format
Sets output format settings.

Item	Sub-item setting	Description
SDI	For details about settings, see "Output Formats and Limitations" (page 81).	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.
HDMI		
REF		

Video >Output Setting
Sets output conversion mode settings.

Item	Sub-item setting	Description

HDMI Target Device	Recorder / Monitor	Sets the type of HDMI input device connected to the HDMI output.
		Recorder:
		  Outputs the same video as SDI1 to HDMI when in Cine El mode.
		Monitor:
		  Outputs the same video as SDI2 to HDMI when in Cine El mode.

Output Color Space	When Matrix >Preset Select in the Paint menu is BT.2020 and Output Format in the Video menu is 2K or lower: SDI2 BT.709 / SDI2 BT.2020 / All BT.709 Not configurable for settings other than the above. Displays the output color space.	Sets the output color space. [Tip] For details about the color gamut of each video output when BT.2020 is selected, see "Output Menu Settings and Video Output Color Space when Preset Select is BT.2020" (page 86). [Note] When S&Q Motion is set to On, this is temporarily set to All BT.709.
4K/2K to HD Conv.	Edge Crop / Letter Box	Sets the conversion mode for HD video output of 17:9 video.

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

Item	Sub-item setting	Description
Category	LUT / Look Profile / User 3D LUT	Sets the type of Look applied as a monitor LUT. LUT: Outputs video with applied preset LUT or user LUT. Look Profile: Outputs video close to print film or video which is suitable as the start point of color grading, by selecting a Look number. User 3D LUT: Outputs video with applied user 3D LUT. [Notes] ● Monitor LUT may not be able to be set independently for each system (page 85). ● User 3D LUT cannot be selected if Base Setting >Color Space is set to S-Gamut/S-Log2 in the System menu.

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

Item	Sub-item setting	Description
LUT Select	P1: 709 (800%) P2: HG8009G40 P3: HG8009G33 P4: S-Log2 P5: S-Log3 U1 U2 U3 U4 U5 U6	Selects the LUT type, when Monitor LUT >Category is set to LUT. 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-Log2: Log signal with 1300% dynamic range that takes visibility on a video monitor into account, with footage developed in post production. (Enabled when Base Setting >Color Space in the System menu is set to S-Gamut/SLog2) S-Log3: Log signal with 1300% dynamic range that mimics film characteristics, close to Cineon Log curve. (Enabled when Base Setting >Color Space in the System menu is set to S-Gamut3.Cine/SLog3 or S-Gamut3/SLog3) U1 to U6: User LUT signals imported from an SD card. [Note] When creating a LUT using RAW Viewer, select F55/F5 as the output format. Create the following folder on the SD card and store LUT files in the folder. \PRIVATE\SONY\PRO\CAMERA\PMWF55_F5
Look Profile Select	1: LC-709 2: LC-709typeA 3: SLog2-709 4: Cine+709	Selects the type of Look profile, when Monitor LUT >Category is set to Look Profile.

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

Item	Sub-item setting	Description
User 3D LUT Select	User 3D-1 User 3D-2 User 3D-3 User 3D-4	Selects the type of user 3D LUT.
SDI1 & Internal Rec	MLUT On / MLUT Off	Selects whether to apply monitor LUT to the SDI OUT1 output video and the video recorded on XQD memory cards.
SDI2	MLUT On / MLUT Off	Selects whether to apply monitor LUT to the SDI OUT2 output video.
HDMI	MLUT On / MLUT Off	Displays whether monitor LUT is applied to the HDMI output video. [Tip] This setting follows the HDMI Target Device setting (page 85).
Viewfinder	MLUT On / MLUT Off	Selects whether to apply monitor LUT to the viewfinder output video.

Video >Output Display
Sets output signal settings.

Item	Sub-item setting	Description
SDI2	On / Off	Selects whether to superimpose menus and status on the SDI output signal and HDMI output signal.
HDMI	On / Off	

VF Menu

VF >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.

VF >Peaking
Sets peaking settings.

Item	Sub-item setting	Description
Setting	On / Off	Turns the peaking function on/off.
Peaking Type	Normal / Color	Selects the peaking type. Normal: Normal peaking Color: Color 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.

VF >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.
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.

VF >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	Turns the center marker on/off.
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.

VF >Marker
Sets marker display settings.

Item	Sub-item setting	Description
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 / 1.66:1 / 1.85:1 / 2.35:1 / 2.4:1	Sets the mode when displaying the aspect marker.
User Box	On / Off	Turns the box cursor display on/off.
User Box Width	3 to 479 (240)	Sets the box cursor width (distance from the center to the left and right edges).
User Box Height	3 to 269 (135)	Sets the box cursor 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 box cursor center.
User Box V Position	–266 to +266 (0)	Sets the vertical position of the box cursor center.
100% Marker	On / Off	Turns the 100% marker on/off.
Guide Frame	On / Off	Turns the guide frame display on/off.

VF >Display On/Off
Sets display item settings.

Item	Sub-item setting	Description
Setting	On / Off	Selects the items to display in the viewfinder.
Shutter Setting	On / Off	
ND Filter Value	On / Off	
Gain Setting	On / Off	
Rec/Play Status	On / Off	
HXR-IFR5 Rec Control	On / Off	
Color Temp.	On / Off	
Frame Rate / Interval	On / Off	
Battery Remain	On / Off	
Timecode	On / Off	
Audio Manual	On / Off	
Audio Level Meter	On / Off	
Media Status	On / Off	

VF >Display On/Off
Sets display item settings.

Item	Sub-item setting	Description
Focus Position	Meter / Feet / Off	Selects the items to display in the viewfinder.
Iris Position	On / Off	
Zoom Position	Number / Bar / Off	
SteadyShot	On / Off	
Focus Mode	On / Off	
Focus Area Indicator	On / Off	
Focus Area Ind. (Push AF)	On / Off	
Focus Indicator	On / Off	
Auto Shutter	On / Off	
AGC	On / Off	
Auto ND Filter	On / Off	
Auto Iris	On / Off	
AE Mode	On / Off	
Auto Exposure Level	On / Off	
White Balance Mode	On / Off	
SDI/HDMI Rec Control	On / Off	
Rec Format	On / Off	
Gamma	On / Off	
Timecode Lock	On / Off	
Wi-Fi Condition	On / Off	
Clip Name	On / Off	
Focus Assist Indicator	On / Off	
Focus Area Marker	On / Off	
Video Level Warning	On / Off	
Clip Number	On / Off	

VF >Display On/Off
Sets display item settings.

Item	Sub-item setting	Description
GPS	On / Off	Selects the items to display in the viewfinder.
Level Gauge	On / Off	
Lens Info	Meter / Feet / Off	
Notice Message	On / Off	

VF >Video Signal Monitor
Sets video signal monitor settings (page 39).

Item	Sub-item setting	Description
Setting	Off / Waveform / Vector / Histogram	Sets the type of video signal monitor. [Tip] Not displayed when Display On/Off >Setting is set to Off.
Source	In Custom mode, when Preset Select is set to BT.2020, video output resolution is 2K or lower, and Color Output Space is set to SDI2 BT.709: or In Cine EI mode with video output resolution 2K or lower: SDI1 & Internal Rec / SDI2	Sets the measurement target of the video signal monitor. Displays the measurement target if not configurable.

TC/UB Menu

TC/UB >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.

TC/UB >Timecode
Sets timecode settings.

Item	Sub-item setting	Description
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: Reset timecode
TC Format	DF / NDF	Sets the timecode format. DF: Drop Frame NDF: Non-Drop Frame

TC/UB >TC Display
Sets time data display settings.

Item	Sub-item setting	Description
Display Select	Timecode / Users Bit / Duration	Switches the time data display.

TC/UB >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/UB >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.

Recording Menu

Recording >S&Q Motion
Sets Slow & Quick Motion mode settings (page 36).

Item	Sub-item setting	Description
Setting	On / Off	Turns Slow & Quick Motion on/off. When set to On, the following functions are disabled. • Auto iris • Auto focus
High Frame Rate Mode	Off / Full Scan / Center Scan	Enables higher speed imaging than 60P. Off: Higher speed imaging than 60P is disabled. Full Scan: Enables high-speed imaging at Super 35 mm frame size. Center Scan: High-speed imaging of half the Super 35 mm size angle-of-view at the center of the image. [Note] This setting cannot be set to conform with Imager Scan Mode when Imager Scan Mode is set to 2K Full or 2K Center.
Frame Rate	Up to 240fps	Sets the frame rate for Slow & Quick Motion shooting. [Note] The initial value varies depending on the Codec, Country, Video Format, and RAW Output Format settings.

Recording >Interval Rec
Sets Interval Rec settings (page 37).

Item	Sub-item setting	Description
Setting	On / Off	Turns the 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).

Recording >Interval Rec
Sets Interval Rec settings (page 37).

Item	Sub-item setting	Description
Number of Frames	1frame / 2frames / 3frames / 6frames / 9frames / 12frames The available settings vary depending on the frame frequency of the selected video format. 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).

Recording >Picture Cache Rec
Sets Picture Cache Rec mode settings (page 37).

Item	Sub-item setting	Description
Setting	On / Off	Turns the picture cache recording function on/off.
Cache Rec Time	0-2sec / 2-4sec / 4-6sec / 6-8sec / 8-10sec / 10-12sec / 12-14sec / 13-15sec	Sets the picture cache recording time, when Picture Cache Rec is set to On.

Recording >Simul Rec
Sets Simul Rec settings (page 30).

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.

Recording >SDI/HDMI Rec Control		
Sets SDI/HDMI recording control settings.		

Item	Sub-item setting	Description
Setting	On / Off	Turns recording start/stop control for an external connected device, using SDI/HDMI signals, on/off. When different buttons are assigned using Rec Button Set, the recording control signal follows the recording state of slot A. [Tip] When set to On, this starts/stops recording on an external connected device, even if no XQD card is currently inserted.

Thumbnail Menu

Thumbnail		

Item	Sub-item setting	Description
Display Clip Properties		Displays the clip properties screen.
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 >Set Shot Mark		
Sets shot mark settings.		

Item	Sub-item setting	Description
Add Shot Mark1		Adds Shot Mark1.

Thumbnail >Set Shot Mark		
Sets shot mark settings.		

Item	Sub-item setting	Description
Delete Shot Mark1		Deletes Shot Mark1.
Add Shot Mark2		Adds Shot Mark2.
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 of the displayed 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.

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.

Media Menu

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

Media >Format Media
　　Initializes memory cards.

Item	Sub-item setting	Description
Media (A)	Execute / Cancel	Initializes the XQD memory card in slot A. Execute: Initialize card
Media (B)	Execute / Cancel	Initializes the XQD memory card in slot B. Execute: Initialize card
SD Card	Execute / Cancel	Initializes the UTIILITY SD card. Execute: Initialize card

Media >Clip
　　Sets settings related to clip names.

Item	Sub-item setting	Description
Auto Naming	Cam ID + Reel# / Title	Sets the method for naming clips. Cam ID + Reel#: 　　Camera ID + Reel Number + Shot 　　Number + Date + random string Title: 　　String set using Title Prefix + Clip 　　Number [Note] When Simul Rec is set to On, Cam ID + Reel# cannot be configured.
Camera ID	A to Z	Sets the camera ID when Auto Naming is set to Cam ID + Reel#.
Reel Number	001 to 999	Sets the numeric part of Reel Number when Auto Naming is set to Cam ID + Reel#.
Camera Position	C / L / R	Sets the Shot Number prefix when Auto Naming is set to Cam ID + Reel#.
Title Prefix	Initial value is a model-specific ID. Model-specific ID comprises the last three digits of the serial number.	Sets the title portion of the clip name when Auto Naming is set to Title. [Tip] The value is entered using the character entry screen (page 49).
Number Set	0001 to 9999	Sets the numeric portion of the clip name when Auto Naming is set to Title.

File Menu

File >All File
　　Sets settings related to ALL files.

Item	Sub-item setting	Description
Load SD Card	Execute / Cancel	Loads an ALL file. Execute: Load file
Save SD Card	Execute / Cancel	Saves an ALL file. Execute: Save file
File ID		Assigns a name to the file.

File >Scene File
Sets settings related to scene files.

Item	Sub-item setting	Description
Recall Internal Memory	Execute / Cancel	Loads a scene file from internal memory. Execute: Load file
Store Internal Memory	Execute / Cancel	Saves a scene file in internal memory. Execute: Save file
Load SD Card	Execute / Cancel	Loads a scene file from an SD card. Execute: Load file
Save SD Card	Execute / Cancel	Saves a scene file to an SD card. Execute: Save file
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.

File >User Menu Item
Sets settings related to User menu items.

Item	Sub-item setting	Description
Load SD Card	Execute / Cancel	Loads User menu settings on an SD card into internal memory. Execute: Load settings
Save SD Card	Execute / Cancel	Saves User menu settings on an SD card. Execute: Save settings
File ID		Displays the File ID specified for the file loaded using Load SD Card. Also sets (edits) the File ID when saving a file using this menu.

File >User Gamma
Sets settings related to user gamma files.

Item	Sub-item setting	Description
Current Settings		Displays a list of the current user gamma file settings (file names).
Load SD Card	Execute / Cancel	Loads user gamma settings on an SD card into internal memory. Execute: Load gamma To use user gamma files created using CvpFileEditor™ V4.2 with the camcorder, save files in the following folder on the SD card. PRIVATE\SONY\PRO\CAMERA\HD_CAM

File >User Gamma
Sets settings related to user gamma files.

Item	Sub-item setting	Description
Reset	1 / 2 / 3 / 4 / 5 / All Initial value: 709(800%)	Resets the user gamma files in internal memory to default values. 1 to 5: Reset individual user gamma All: Reset all user gammas

File >Monitor LUT
Sets settings related to monitor LUT files.

Item	Sub-item setting	Description
Current Settings		Displays a list of the current monitor LUT file settings (file names).
Load SD Card	Execute / Cancel	Loads monitor LUT settings on an SD card into internal memory. Execute: Load LUT settings Save user LUT files generated using RAW Viewer in the following folder on the SD card. PRIVATE\SONY\PRO\CAMERA\PMWF55_F5
Reset	1 / 2 / 3 / 4 / 5 / 6 / All	Resets the monitor LUT data in internal memory to default values. 1 to 6: Reset individual monitor LUT All: Reset all monitor LUTs

File >Monitor 3D LUT
Sets settings related to monitor 3D LUT files.

Item	Sub-item setting	Description
Current Settings		Displays a list of the current monitor 3D LUT file settings (file names).

File >Monitor 3D LUT
Sets settings related to monitor 3D LUT files.

Item	Sub-item setting	Description
Load SD Card	Execute / Cancel	Loads monitor 3D LUT settings on an SD card into internal memory. Execute: Load 3D LUT settings You can import CUBE files (*.cube) with lattice resolution of 17 or 33 created using Catalyst Browse, RAW Viewer, or BMD Da Vinci Resolve*. * Verified with Resolve V9.0, V10.0, and V11.0. If creating a CUBE file using Catalyst Browse and RAW Viewer, set the Source setting in Catalyst Browse and the Input setting in RAW Viewer to S-Gamut3.Cine/S-Log3. Set Format to Resolve when exporting the CUBE file. Save the created 3D LUT data (user 3D LUT file) in the following folder on the SD card. PRIVATE\SONY\PRO\CAMERA\PMWF55_F5 [Note] The monitor 3D LUT function cannot be used if Base Setting >Color Space is set to S-Gamut/S-Log2 in the System menu on the camcorder.
Reset	1 / 2 / 3 / 4 / All	Resets the monitor 3D LUT data in internal memory to default values. 1 to 4: Reset individual monitor 3D LUT All: Reset all monitor 3D LUTs

File >Lens File
Sets settings related to lens files.

Item	Sub-item setting	Description
White Offset R	−99 to +99 (±0)	Sets the white balance offset R channel correction value for the lens in the lens file.
White Offset B	−99 to +99 (±0)	Sets the white balance offset B channel correction value for the lens in the lens file.

[Note]
Place files in the following folders on the SD card.
ALL files, Scene files, User Menu Item:
    \PRIVATE\Sony\PRO\CAMERA\PXW-FS7M2
User gamma files:
    \PRIVATE\Sony\PRO\CAMERA\HD_CAM
Monitor LUT files, monitor 3D LUT files:
    \PRIVATE\Sony\PRO\CAMERA\PMWF55_F5

System Menu

System >Base Setting
Sets base settings.

Item	Sub-item setting	Description
Shooting Mode	Custom / Cine EI	Sets the shooting mode.
Color Space	S-Gamut/SLog2 / S-Gamut3.Cine/SLog3 / S-Gamut3/SLog3 / Matrix	Sets the color space.
Imager Scan Mode	Normal / 2K Full / 2K Center	Sets the scan mode for capturing information by the image sensor (page 21).

System >Codec
Sets codec settings.

Item	Sub-item setting	Description
Select	RAW / RAW & XAVC-I / RAW & XAVC-L / RAW & MPEG HD 422 / XAVC-I / XAVC-L / MPEG HD 422 / ProRes 422 HQ / ProRes 422	Sets the recording/playback mode. [Notes] ● RAW / RAW & XAVC-I / RAW & XAVC-L / RAW & MPEG HD 422 are available when an XDCA-FS7 is connected and Base Setting >Shooting Mode is set to Cine EI. ● ProRes 422 HQ / ProRes 422 are available only when an XDCA-FS7 is connected.

System >Rec Format
Sets recording format settings.

Item	Sub-item setting	Description
Video Format		Sets the recording format.
	• For NTSC systems:	• For PAL systems:
	When Codec >Select is set to XAVC-I:	When Codec >Select is set to XAVC-I:
	4096×2160 59.94P	4096×2160 50P
	4096×2160 29.97P	4096×2160 25P
	4096×2160 24.00P	3840×2160 50P
	4096×2160 23.98P	3840×2160 25P
	3840×2160 59.94P	1920×1080 50P
	3840×2160 29.97P	1920×1080 50i
	3840×2160 23.98P	1920×1080 25P
	1920×1080 59.94P	When Codec >Select is set to XAVC-L:
	1920×1080 59.94i	3840×2160 50P
	1920×1080 29.97P	3840×2160 25P
	1920×1080 23.98P	1920×1080 50P 50
	When Codec >Select is set to XAVC-L:	1920×1080 50P 35
	3840×2160 59.94P	1920×1080 50i 50
	3840×2160 29.97P	1920×1080 50i 35
	3840×2160 23.98P	1920×1080 50i 25
	1920×1080 59.94P 50	1920×1080 50P 25
	1920×1080 59.94P 35	1920×1080 25P 35
	1920×1080 59.94i 50	When Codec >Select is set to MPEG HD422:
	1920×1080 59.94i 35	1920×1080 50i 50
	1920×1080 59.94i 25	1920×1080 25P 50
	1920×1080 29.97P 50	1280×720 50P 50
	1920×1080 29.97P 35	1280×720 50P 25
	1920×1080 23.98P 50	When Codec >Select is set to ProRes 422 HQ or ProRes 422:
	1920×1080 23.98P 35	1920×1080 50i
	When Codec >Select is set to MPEG HD422:	1920×1080 25P
	1920×1080 59.94i 50	
	1920×1080 29.97P 50	[Notes]
	1920×1080 23.98P 50	• "---" is grayed out when Codec >Select is set to RAW.
	1280×720 59.94P 50	• The fixed values are grayed out when Codec >Select is set to RAW & XAVC-I, RAW & XAVC-L, or RAW & MPEG HD 422.
	1280×720 29.97P 50	• The recording format cannot be set to 4096×2160 or 3840×2160 when Imager Scan Mode is set to 2K Full or 2K Center.
	1280×720 23.98P 50	
	When Codec >Select is set to ProRes 422 HQ or ProRes 422:	
	1920×1080 59.94i	
	1920×1080 29.97P	
	1920×1080 23.98P	

System >Rec Format
Sets recording format settings.

Item	Sub-item setting	Description
RAW Output Format		Sets the recording format for an external RAW recorder.
	• For NTSC systems:	• For PAL systems:
	When Codec >Select is set to an item that includes RAW, and Imager Scan Mode is set to Normal:	When Codec >Select is set to an item that includes RAW, and Imager Scan Mode is set to Normal:
	4096×2160 59.94P	4096×2160 50P
	4096×2160 29.97P	4096×2160 25P
	4096×2160 23.98P	When Codec >Select is set to an item that includes RAW, and Imager Scan Mode is set to 2K Full or 2K Center:
	When Codec >Select is set to an item that includes RAW, and Imager Scan Mode is set to 2K Full or 2K Center:	2048×1080 50P
	2048×1080 59.94P	2048×1080 25P
	2048×1080 29.97P	
	2048×1080 23.98P	

System >Genlock
Sets genlock settings.

Item	Sub-item setting	Description
Reference	Internal / External (HD) / External (SD)	Displays the genlock state. It displays the signal type if genlock is applied. Internal: External genlock not applied. External (HD): Genlock to HD signal. External (SD): Genlock to SD signal.

System >Assignable Button
Sets function assignments to assignable buttons.

Item	Sub-item setting	Description

<1> to <10>	Off / Marker / Zebra / Peaking / Video Signal Monitor / DURATION/TC/U-BIT / Focus Magnifier x4/x8 / Focus Magnifier x4 / Focus Magnifier x8 / Push AF/Focus Hold / Focus Area / Focus Area (Push AF) / VF Mode / ND Filter Position / IRIS / AGC / Auto ND Filter / SHUTTER / Auto Exposure Level / Push Auto Iris / Push AGC / Push Auto ND / Spotlight / Backlight / ATW / ATW Hold / SteadyShot / Color Bars / User Menu / Rec Lamp / S&Q Motion / Picture Cache Rec / Rec Review / Thumbnail / Shot Mark1 / Shot Mark2 / Clip Flag OK / Clip Flag NG / Clip Flag Keep / High/Low Key	Assigns functions to assignable buttons.
		Marker:
		    Turns the marker function on/off.
		Zebra:
		    Turns the Zebra function on/off.
		Peaking:
		    Turns the peaking function on/off.
		Video Signal Monitor:
		    Switches the video signal monitor (such as a waveform monitor).
		DURATION/TC/U-BIT:
		    Switches between Time Code, Users Bit, and Duration.
		Focus Magnifier x4/x8:
		Focus Magnifier x4:
		Focus Magnifier x8:
		    Turns the focus magnifier function on/off.
		Push AF/Focus Hold:
		    Runs the push auto focus function or focus hold function.
		Focus Area:
		Focus Area (Push AF):
		    Opens the Focus Area setup screen.
		VF Mode:
		    Switches the viewfinder display between color and B&W.
		ND Filter Position
		    Switches ND filters.
		IRIS:
		    Switches the iris function between Auto and Manual.
		AGC:
		    Turns the AGC function on/off.
		Auto ND Filter
		    Turns the Auto ND Filter function on/off.
		SHUTTER:
		    Switches the shutter between Auto and Manual.
		Auto Exposure Level:
		    Opens the Auto Exposure Level screen.

Item	Sub-item setting	Description

<1> to <10>		Push Auto Iris:
		    Enables the auto iris function while the button is pressed.
		Push AGC:
		    Enables the AGC function while the button is pressed.
		Push Auto ND
		    Enables the Auto ND Filter function while the button is pressed.
		Spotlight:
		    Switches between Spotlight and Standard.
		Backlight:
		    Switches between Backlight and Standard.
		ATW:
		    Turns the ATW function on/off.
		ATW Hold:
		    Pauses ATW function operation.
		SteadyShot:
		    Switches between Active SteadyShot, SteadyShot, and Off.
		Color Bars:
		    Turns the color bars on/off.
		User Menu:
		    Opens/closes the User menu.
		Rec Lamp:
		    Turns the recording indicator on/off.
		S&Q Motion:
		    Turns Slow & Quick Motion on/off. Sets the recording frame rate if pressed and held.
		Picture Cache Rec:
		    Turns picture cache recording mode on/off.
		Rec Review:
		    Turns the Rec Review function on/off.
		Thumbnail:
		    Opens/closes the thumbnail screen.
		Shot Mark1:
		    Runs the Add Shot Mark1 function.
		Shot Mark2:
		    Runs the Add Shot Mark2 function.

System >Assignable Button
Sets function assignments to assignable buttons.

Item	Sub-item setting	Description
<1> to <10>		Clip Flag OK: 　Runs the Add OK function. 　Press twice to execute Delete Clip Flag. Clip Flag NG: 　Runs the Add NG function. 　Press twice to execute Delete Clip Flag. Clip Flag Keep: 　Runs the Add Keep function. 　Press twice to execute Delete Clip Flag. High/Low Key: 　Switches between High Key (display for checking for blown-out whites), Low Key (display for checking for underexposed areas), and Off (normal display) in that order. 　Applicable for systems where Monitor LUT is set to On.

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

Item	Sub-item setting	Description
Assignable Dial	Off / IRIS / ISO/Gain/EI / ND Filter / Focus / Audio Input Level	Assigns functions to the assignable dial on the grip remote control. ISO/Gain/EI: Adjusts the gain or EI. IRIS: Adjusts the iris. ND Filter: Adjusts the light level. Focus: Adjusts the focus. Audio Input Level: Adjusts the audio level.
IRIS Dial	(Same settings as Assignable Dial)	When the ND/IRIS switch is set to the IRIS position, this assigns functions to the ND/IRIS dial.
Assignable Dial Direction	Normal / Opposite	Sets the direction of rotation of the assignable dial on the grip remote control. Normal: Turn in forward direction. Opposite: Turn in opposite direction.
IRIS Dial Direction	Normal / Opposite	Sets the direction of rotation of the IRIS dial when the ND/IRIS switch is set to IRIS. Normal: Turn in forward direction. Opposite: Turn in opposite direction.

System >ND Dial
Sets the direction of rotation of the ND dial.

Item	Sub-item setting	Description
ND Dial Direction	Normal / Opposite	Sets the direction of rotation of the ND dial when the ND/IRIS switch is set to ND. Normal: Turn in forward direction. Opposite: Turn in opposite direction.

System >Rec Lamp
Sets recording indicator settings.

Item	Sub-item setting	Description
Rec Lamp	On / Off	Turns the recording indicator on/off.

System >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.

System >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.

System >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 shading compensation on/off.
Chroma Aberration Comp.	Auto / Off	Turns chrome aberration compensation on/off.

System >Lens
Sets settings related to lenses.

Item	Sub-item setting	Description
Distortion Comp.	Auto / Off	Turns automatic distortion compensation on/off. [Notes] • Not available in picture cache recording mode or when recording. • Distortion compensation is not applied during 4K or QFHD recording. • When Auto is selected, there are some restrictions on Monitor LUT (page 85).

System >Language
Sets the display language.

Item	Sub-item setting	Description
Select		Sets the display language. SET: Set language.

System >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.

System >Country
Sets the region of use.

Item	Sub-item setting	Description
NTSC/PAL Area	NTSC Area / PAL Area The default setting varies depending on the country of purchase.	Sets the region of use.

System >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: Reset

System >Basic Authentication
Sets basic network authentication settings.

Item	Sub-item setting	Description
User Name	User name (admin)	Sets a desired user name (1 to 16 alphanumeric characters). SET: Set the value.
Password	Password (pxw-fs7m2)	Sets a password (1 to 16 alphanumeric characters). SET: Set the value.

System >Wi-Fi
Sets wireless LAN connection settings.

Item	Sub-item setting	Description
Wi-Fi	Enable / Disable	Enables/disables Wi-Fi.
SSID & Password		Displays the SSID and password.
Wi-Fi Direct Connection	Execute / Cancel	Starts a Wi-Fi Direct network connection. Execute: Connect
Client		Displays information about the connected client device (model name and MAC address).
IP Address	192.168.1.1	Displays the IP address of the camcorder. [Note] Not displayed when using the CBK-WA100.
Subnet Mask	255.255.0.0	Displays the subnet mask. [Note] Not displayed when using the CBK-WA100.
MAC Address		Displays the MAC address of the Wi-Fi module attached to the camcorder.
Regenerate Password	Execute / Cancel	Creates a new password. Execute: Regenerate

System >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.

System >IR Remote
Sets infrared remote control settings.

Item	Sub-item setting	Description
Setting	On / Off	Enables/disables control from the supplied infrared remote control.

System >Camera Battery Alarm
Sets battery low-voltage alarm settings.

Item	Sub-item setting	Description
Low BATT	5% / 10% / 15% / … / 45% / 50%	Sets the remaining battery level to display a battery low-voltage alarm (5% increments).
BATT Empty	3% to 7%	Sets the remaining battery level to display a battery empty alarm.

System >Camera DC IN Alarm
Sets input voltage alarm settings.

Item	Sub-item setting	Description
DC Low Voltage1	11.5V to 17V	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.

System >Ext. Unit Battery Alarm
Sets XDCA-FS7 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 17V	Sets the remaining battery level to display a battery low-voltage alarm for a non Info-Lithium battery.

System >Ext. Unit Battery Alarm
Sets XDCA-FS7 battery settings.

Item	Sub-item setting	Description
End:Sony Battery	11.0V to 11.5V	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 17V (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.
Detected Battery		Displays the type of battery connected to the XDCA-FS7. If a battery is connected to the XDCA-FS7, "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.

System >Ext. Unit DC IN Alarm
Sets XDCA-FS7 input voltage alarm settings.

Item	Sub-item setting	Description
DC Low Voltage1	11.5V to 17V	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.

System >All Reset
Resets settings to factory defaults.

Item	Sub-item setting	Description
Reset	Execute / Cancel	Resets all settings to their factory defaults. Execute: Reset

System >APR
     Executes APR.

Item	Sub-item setting	Description
APR	Execute / Cancel	Runs APR (Automatic Pixel Restoration) for image sensor auto adjustment. Execute: Run [Note] Always attach the lens cap before running APR.

System >Camera Config
     Sets down-converter output settings.

Item	Sub-item setting	Description
HD/2K Modulation	High / Low	Sets the down-converter output bandwidth for conversion to HD and 2K.

System >Version
     Displays version information.

Item	Sub-item setting	Description
Number	x.xx	Displays the software version of the camcorder.
Version Up	Execute / Cancel	Upgrades the camcorder.* Execute: Upgrade * Upgrading updates the camcorder software.
Lens Version Number	xx	Displays the version of an E-mount lens.
Lens Version Up	Execute / Cancel	Updates the E-mount lens software (page 97). Execute: Upgrade
Ext. Unit Version Number	x.xx	Displays the software version of the XDCA-FS7.
Ext. Unit Version Up	Execute / Cancel	Upgrades the XDCA-FS7.* Execute: Upgrade * Upgrading updates the XDCA-FS7 software.

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 62) in the Video menu to On for the corresponding type of signal to output to the monitor.

SDI OUT Connector (BNC type)

Turn the output on/off and set the output format using the Video menu (page 60).
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 66) >Setting in the Recording menu to On 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.
- Only the REC trigger signal is output when there is no media currently inserted.

HDMI OUT Connector (Type A connector)

Turn the output on/off and set the output format using the Video menu (page 60).
Use a commercially available high-speed HDMI cable for connection.
Select the type of the connected device using HDMI Target Device (page 60) in the Video menu.

RAW OUT Connector (BNC type)

Attaching an XDCA-FS7 Extension Unit to the camcorder provides support for an external RAW recorder, such as the AXS-R5, to be connected to the RAW OUT connector of the XDCA-FS7 (page 27).

External Synchronization

When shooting using multiple camcorder units, the camcorders can be synchronized to a specific reference signal or timecodes synchronized via the Genlock connector of the XDCA-FS7 units (page 8) attached to the camcorders.

[Note]
The camcorder battery pack cannot be used when an XDCA-FS7 unit is attached to the camcorder. You must attach a battery pack to the XDCA-FS7 or connect an external power supply.

Synchronizing the Phase of the Video Signals (Genlock)

Enable genlock by supplying a reference signal to the GENLOCK IN connector (page 8) of the XDCA-FS7 units connected to the camcorders. The reference signals that can be used vary depending on the frame rate of the selected recording format.

For NTSC Area

Frame rate of recording format	Supported input reference signals
59.94P	1920×1080 59.94i 720×486 59.94i 1280×720 59.94P
29.97P	1920×1080 59.94i 720×486 59.94i
24.0P	1920×1080 48i (24PsF)
23.98P	1920×1080 47.95i (23.98PsF)
59.94i	1920×1080 59.94i 720×486 59.94i

For PAL Area

Frame rate of recording format	Supported input reference signals
50P	1920×1080 50i 720×576 50i 1280×720 50P
25P	1920×1080 50i 720×576 50i
50i	1920×1080 50i 720×576 50i

[Notes]
- If the selected recording format is 1280×720 60P, you must supply both a video signal and a time signal.
- 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 64) in the TC/UB menu as follows.
Mode: Preset
Run: Free Run

2   Press the assignable button (page 36) assigned with the DURATION/TC/UBIT function to display the timecode on the screen.

3   Check that the TC IN/OUT switch (page 8) on the XDCA-FS7 is set to the IN position, and supply an HD or SD reference video signal and a timecode synchronized to the video signal to the Genlock and TC IN/OUT connectors, respectively.

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/UB menu, or turn the camcorder off.
External lock is also released if you start recording in Slow & Quick Motion mode.

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 64) in the TC/UB menu.

2   Check that the TC IN/OUT switch (page 8) of the XDCA-FS7 is set to the OUT position, and connect the TC IN/OUT connector and GENLOCK IN connector (page 8) 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 MRW-E80 XQD Card Reader (option) using a USB cable, and insert a memory card in the slot. The memory card is recognized as a computer extension drive.

Using mass storage mode

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

1 Turn the camcorder POWER switch to the ON position.
A message appears on the screen or viewfinder 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.

2 Turn the SEL/SET dial and select Execute.

3 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 lamp is lit red.
– Turning the power off or disconnecting the power cord
– Removing the XQD memory card

– Disconnecting the USB cable
● Operation is not guaranteed to work on all computers.

Using nonlinear editing systems

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

The fan is a consumable part that will need periodic replacement.
When operating at room temperature, a normal replacement cycle will be about 5 years. However, this replacement cycle represents only a general guideline and does not imply that the life expectancy of this part is guaranteed. For details on parts replacement, contact your dealer.

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.

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.

The battery terminal of this unit (the connector for battery packs and AC adapters) 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 adapter 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 adapter is not connected or the camcorder is used without the battery pack attached. Use your camcorder after charging the battery. However, even if the built-in rechargeable battery is not charged, the camcorder operation will not be affected as long as you are not recording the time and date.

ND Filter Dial

If the ND filter will 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 3.2 cm (1 5/16 in.).
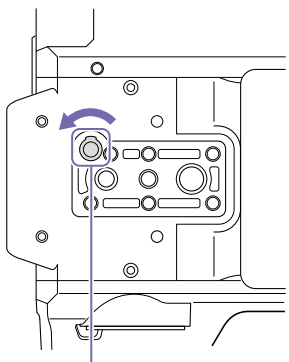
Screwdriver hole
(with cap removed)

4   Set the PRESET/VARIABLE switch (page 6) to the PRESET position, and set the ND FILTER dial (page 6) to Clear.

[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.

Output Formats and Limitations

Factory default settings are shown in bold (for example, 2048×1080P (Level A)).

[Notes]
- The resolution of the recording format is limited by the Base Setting >Imager Scan Mode setting in the System menu (page 69).
- 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

When Country >NTSC/PAL Area in the System menu is set to NTSC Area

When using basic configuration (XAVC-I / XAVC-L / MPEG HD)

Recording format settings (Rec Format >Video Format in the System menu)	SDI/HDMI output settings (Output Format >SDI and HDMI in the Video menu)		SDI output signal	HDMI output signal
	SDI	HDMI		
4096×2160 59.94P	–	4096×2160P	No output	4096×2160 59.94P
	–	3840×2160P	No output	3840×2160 59.94P
	1920×1080P (Level A)	1920×1080P	1920×1080 59.94P Level-A	1920×1080 59.94P
	1920×1080P (Level B)	–	1920×1080 59.94P Level-B	No output
	1920×1080i	1920×1080i	1920×1080 59.94i	1920×1080 59.94i
4096×2160 29.97P	–	4096×2160P	No output	4096×2160 29.97P
	–	3840×2160P	No output	3840×2160 29.97P
	1920×1080PsF	1920×1080i	1920×1080 29.97PsF	1920×1080 29.97PsF
4096×2160 24.00P	–	4096×2160P	No output	4096×2160 24P
	–	3840×2160P	No output	3840×2160 24P
	1920×1080PsF	–	1920×1080 24PsF	No output
	–	1920×1080P	No output	1920×1080 24P (Pure)
4096×2160 23.98P	–	4096×2160P	No output	4096×2160 23.98P
	–	3840×2160P	No output	3840×2160 23.98P
	1920×1080PsF	–	1920×1080 23.98PsF	No output
	–	1920×1080P	No output	1920×1080 23.98P (Pure)

Recording format settings (Rec Format >Video Format in the System menu)	SDI/HDMI output settings (Output Format >SDI and HDMI in the Video menu)		SDI output signal	HDMI output signal
	SDI	HDMI		
3840×2160 59.94P	–	4096×2160P	No output	4096×2160 59.94P
	–	3840×2160P	No output	3840×2160 59.94P
	1920×1080P (Level A)	1920×1080P	1920×1080 59.94P Level-A	1920×1080 59.94P
	1920×1080P (Level B)	–	1920×1080 59.94P Level-B	No output
	1920×1080i	1920×1080i	1920×1080 59.94i	1920×1080 59.94i
3840×2160 29.97P	–	4096×2160P	No output	4096×2160 29.97P
	–	3840×2160P	No output	3840×2160 29.97P
	1920×1080PsF	1920×1080i	1920×1080 29.97PsF	1920×1080 29.97PsF
3840×2160 23.98P	–	4096×2160P	No output	4096×2160 23.98P
	–	3840×2160P	No output	3840×2160 23.98P
	1920×1080PsF	–	1920×1080 23.98PsF	No output
	–	1920×1080P	No output	1920×1080 23.98P (Pure)
1920×1080 59.94P	2048×1080P (Level A)	–	2048×1080 59.94P Level-A	No output
	2048×1080P (Level B)	–	2048×1080 59.94P Level-B	No output
	1920×1080P (Level A)	1920×1080P	1920×1080 59.94P Level-A	1920×1080 59.94P
	1920×1080P (Level B)	–	1920×1080 59.94P Level-B	No output
	1920×1080i	1920×1080i	1920×1080 59.94i	1920×1080 59.94i
	–	720×480i	No output	720×480 59.94i
	–	720×480P	No output	720×480 59.94P
1920×1080 59.94i	1920×1080i	1920×1080i	1920×1080 59.94i	1920×1080 59.94i
	–	720×480i	No output	720×480 59.94i
	–	720×480P	No output	720×480 59.94P
1920×1080 29.97P	2048×1080PsF	–	2048×1080 29.97PsF	No output
	1920×1080PsF	1920×1080i	1920×1080 29.97PsF	1920×1080 29.97PsF
	–	720×480i	No output	720×480 59.94i (PsF)

Recording format settings (Rec Format >Video Format in the System menu)	SDI/HDMI output settings (Output Format >SDI and HDMI in the Video menu)		SDI output signal	HDMI output signal
	SDI	HDMI		
1920×1080 23.98P	2048×1080PsF	–	2048×1080 23.98PsF	No output
	1920×1080PsF	–	1920×1080 23.98PsF	No output
	–	1920×1080P	No output	1920×1080 23.98P (Pure)
	1920×1080i (2-3PD)	1920×1080i (2-3PD)	1920×1080 59.94i (2-3PD)	1920×1080 59.94i (2-3PD)
	–	720×480i (2-3PD)	No output	720×480 59.94i (2-3PD)
1280×720 59.94P	1280×720P	1280×720P	1280×720 59.94P	1280×720 59.94P
	–	720×480i	No output	720×480 59.94i
	–	720×480P	No output	720×480 59.94P
1280×720 29.97P	1280×720P	1280×720P	1280×720 59.94P (2-2RP)	1280×720 59.94P (2-2RP)
	–	720×480i	No output	720×480 59.94i (PsF)
1280×720 23.98P	1280×720P (2-3PD)	1280×720P (2-3PD)	1280×720 59.94P (2-3PD)	1280×720 59.94P (2-3PD)
	–	720×480i (2-3PD)	No output	720×480 59.94i

When using extension unit (RAW)

Recording format settings (Rec Format >RAW Output Format and Video Format in the System menu)	SDI/HDMI output settings (Output Format >SDI and HDMI in the Video menu)		SDI output signal	HDMI output signal
	SDI	HDMI		
RAW Output Format 4096×2160 59.94P Video Format (fixed value) 1920×1080 59.94P	2048×1080P (Level A)	–	2048×1080 59.94P Level-A	No output
	2048×1080P (Level B)	–	2048×1080 59.94P Level-B	No output
	1920×1080P (Level A)	1920×1080P	1920×1080 59.94P Level-A	1920×1080 59.94P
	1920×1080P (Level B)	–	1920×1080 59.94P Level-B	No output
	1920×1080i	1920×1080i	1920×1080 59.94i	1920×1080 59.94i

Recording format settings (Rec Format >RAW Output Format and Video Format in the System menu)	SDI/HDMI output settings (Output Format >SDI and HDMI in the Video menu)		SDI output signal	HDMI output signal
	SDI	HDMI		
RAW Output Format 4096×2160 59.94P Video Format (fixed value) 1280×720 59.94P	2048×1080P (Level A)	–	2048×1080 59.94P Level-A	No output
	2048×1080P (Level B)	–	2048×1080 59.94P Level-B	No output
	1920×1080P (Level A)	1920×1080P	1920×1080 59.94P Level-A	1920×1080 59.94P
	1920×1080P (Level B)	–	1920×1080 59.94P Level-B	No output
	1280×720P	1280×720P	1280×720 59.94P	1280×720 59.94P
RAW Output Format 2048×1080 59.94P Video Format (fixed value) 1920×1080 59.94P	2048×1080P (Level A)	–	2048×1080 59.94P Level-A	No output
	2048×1080P (Level B)	–	2048×1080 59.94P Level-B	No output
	1920×1080P (Level A)	1920×1080P	1920×1080 59.94P Level-A	1920×1080 59.94P
	1920×1080P (Level B)	–	1920×1080 59.94P Level-B	No output
	1920×1080i	1920×1080i	1920×1080 59.94i	1920×1080 59.94i
RAW Output Format 2048×1080 59.94P Video Format (fixed value) 1280×720 59.94P	2048×1080P (Level A)	–	2048×1080 59.94P Level-A	No output
	2048×1080P (Level B)	–	2048×1080 59.94P Level-B	No output
	1920×1080P (Level A)	1920×1080P	1920×1080 59.94P Level-A	1920×1080 59.94P
	1920×1080P (Level B)	–	1920×1080 59.94P Level-B	No output
	1280×720P	1280×720P	1280×720 59.94P	1280×720 59.94P
RAW Output Format 4096×2160 29.97P Video Format (fixed value) 1920×1080 29.97P	2048×1080PsF	–	2048×1080 29.97PsF	No output
	1920×1080PsF	1920×1080i	1920×1080 29.97PsF	1920×1080 29.97PsF

Recording format settings (Rec Format >RAW Output Format and Video Format in the System menu)	SDI/HDMI output settings (Output Format >SDI and HDMI in the Video menu)		SDI output signal	HDMI output signal
	SDI	HDMI		
RAW Output Format 2048×1080 29.97P Video Format (fixed value) 1920×1080 29.97P	2048×1080PsF	–	2048×1080 29.97PsF	No output
	1920×1080PsF	1920×1080i	1920×1080 29.97PsF	1920×1080 29.97PsF
RAW Output Format 4096×2160 23.98P Video Format (fixed value) 1920×1080 23.98P	2048×1080PsF	–	2048×1080 23.98PsF	No output
	1920×1080PsF	–	1920×1080 23.98PsF	No output
	–	1920×1080P	No output	1920×1080 23.98P (Pure)
RAW Output Format 2048×1080 23.98P Video Format (fixed value) 1920×1080 23.98P	2048×1080PsF	–	2048×1080 23.98PsF	No output
	1920×1080PsF	–	1920×1080 23.98PsF	No output
	–	1920×1080P	No output	1920×1080 23.98P (Pure)

When using extension unit (ProRes 422)

Recording format settings (Rec Format >Video Format in the System menu)	SDI/HDMI output settings (Output Format >SDI and HDMI in the Video menu)		SDI output signal	HDMI output signal
	SDI	HDMI		
1920×1080 59.94i	1920×1080i	1920×1080i	1920×1080 59.94i	1920×1080 59.94i
1920×1080 29.97P	1920×1080PsF	1920×1080i	SDI OUT 1 1920×1080 29.97P SDI OUT 2 1920×1080 29.97PsF	1920×1080 29.97PsF
1920×1080 23.98P	1920×1080P	1920×1080P	1920×1080 23.98P[*1]	1920×1080 23.98P (Pure)

*1 Cannot output a signal compatible with the CBK-WA100.

When Country >NTSC/PAL Area in the System menu is set to PAL Area

When using basic configuration (XAVC-I / XAVC-L / MPEG HD)

Recording format settings (Rec Format >Video Format in the System menu)	SDI/HDMI output settings (Output Format >SDI and HDMI in the Video menu)		SDI output signal	HDMI output signal
	SDI	HDMI		
4096×2160 50P	–	4096×2160P	No output	4096×2160 50P
	–	3840×2160P	No output	3840×2160 50P
	1920×1080P (Level A)	1920×1080P	1920×1080 50P Level-A	1920×1080 50P Level-A
	1920×1080P (Level B)	–	1920×1080 50P Level-B	No output
	1920×1080i	1920×1080i	1920×1080 50i	1920×1080 50i
4096×2160 25P	–	4096×2160P	No output	4096×2160 25P
	–	3840×2160P	No output	3840×2160 25P
	1920×1080PsF	1920×1080i	1920×1080 25PsF	1920×1080 25PsF
3840×2160 50P	–	4096×2160P	No output	4096×2160 50P
	–	3840×2160P	No output	3840×2160 50P
	1920×1080P (Level A)	1920×1080P	1920×1080 50P Level-A	1920×1080 50P Level-A
	1920×1080P (Level B)	–	1920×1080 50P Level-B	No output
	1920×1080i	1920×1080i	1920×1080 50i	1920×1080 50i
3840×2160 25P	–	4096×2160P	No output	4096×2160 25P
	–	3840×2160P	No output	3840×2160 25P
	1920×1080PsF	1920×1080i	1920×1080 25PsF	1920×1080 25PsF

Recording format settings (Rec Format >Video Format in the System menu)	SDI/HDMI output settings (Output Format >SDI and HDMI in the Video menu)		SDI output signal	HDMI output signal
	SDI	HDMI		
1920×1080 50P	2048×1080P (Level A)	–	2048×1080 50P Level-A	No output
	2048×1080P (Level B)	–	2048×1080 50P Level-B	No output
	1920×1080P (Level A)	1920×1080P	1920×1080 50P Level-A	1920×1080 50P
	1920×1080P (Level B)	–	1920×1080 50P Level-B	No output
	1920×1080i	1920×1080i	1920×1080 50i	1920×1080 50i
	–	720×576i	No output	720×576 50i
	–	720×576P	No output	720×576 50P
1920×1080 50i	1920×1080i	1920×1080i	1920×1080 50i	1920×1080 50i
	–	720×576i	No output	720×576 50i
	–	720×576P	No output	720×576 50P
1920×1080 25P	2048×1080PsF	–	2048×1080 25PsF	No output
	1920×1080PsF	1920×1080i	1920×1080 25PsF	1920×1080 50i (PsF)
	–	720×576i	No output	720×576 50i (PsF)
1280×720 50P	1280×720P	1280×720P	1280×720 50P	1280×720 50P
	–	720×576i	No output	720×576 50i
	–	720×576P	No output	720×576 50P
1280×720 25P	1280×720P	1280×720P	1280×720 50P (2-2RP)	1280×720 50P (2-2RP)
	–	720×576i	No output	720×576 50i (PsF)

When using extension unit (RAW)

Recording format settings (Rec Format >RAW Output Format and Video Format in the System menu)	SDI/HDMI output settings (Output Format >SDI and HDMI in the Video menu)		SDI output signal	HDMI output signal
	SDI	HDMI		
RAW Output Format 4096×2160 50P Video Format (fixed value) 1920×1080 50P	2048×1080P (Level A)	–	2048×1080 50P Level-A	No output
	2048×1080P (Level B)	–	2048×1080 50P Level-B	No output
	1920×1080P (Level A)	1920×1080P	1920×1080 50P Level-A	1920×1080 50P
	1920×1080P (Level B)	–	1920×1080 50P Level-B	No output
	1920×1080i	1920×1080i	1920×1080 50i	1920×1080 50i
RAW Output Format 4096×2160 50P Video Format (fixed value) 1280×720 50P	2048×1080P (Level A)	–	2048×1080 50P Level-A	No output
	2048×1080P (Level B)	–	2048×1080 50P Level-B	No output
	1920×1080P (Level A)	1920×1080P	1920×1080 50P Level-A	1920×1080 50P
	1920×1080P (Level B)	–	1920×1080 50P Level-B	No output
	1280×720P	1280×720P	1280×720 50P	1280×720 50P
RAW Output Format 2048×1080 50P Video Format (fixed value) 1920×1080 50P	2048×1080P (Level A)	–	2048×1080 50P Level-A	No output
	2048×1080P (Level B)	–	2048×1080 50P Level-B	No output
	1920×1080P (Level A)	1920×1080P	1920×1080 50P Level-A	1920×1080 50P
	1920×1080P (Level B)	–	1920×1080 50P Level-B	No output
	1920×1080i	1920×1080i	1920×1080 50i	1920×1080 50i

Recording format settings (Rec Format >RAW Output Format and Video Format in the System menu)	SDI/HDMI output settings (Output Format >SDI and HDMI in the Video menu)		SDI output signal	HDMI output signal
	SDI	HDMI		
RAW Output Format 2048×1080 50P Video Format (fixed value) 1280×720 50P	2048×1080P (Level A)	–	2048×1080 50P Level-A	No output
	2048×1080P (Level B)	–	2048×1080 50P Level-B	No output
	1920×1080P (Level A)	1920×1080P	1920×1080 50P Level-A	1920×1080 50P
	1920×1080P (Level B)	–	1920×1080 50P Level-B	No output
	1280×720P	1280×720P	1280×720 50P	1280×720 50P
RAW Output Format 4096×2160 25P Video Format (fixed value) 1920×1080 25P	2048×1080PsF	–	2048×1080 25PsF	No output
	1920×1080PsF	1920×1080i	1920×1080 25PsF	1920×1080 25PsF
RAW Output Format 2048×1080 25P Video Format (fixed value) 1920×1080 25P	2048×1080PsF	–	2048×1080 25PsF	No output
	1920×1080PsF	1920×1080i	1920×1080 25PsF	1920×1080 25PsF

When using extension unit (ProRes 422)

Recording format settings (Rec Format >Video Format in the System menu)	SDI/HDMI output settings (Output Format >SDI and HDMI in the Video menu)		SDI output signal	HDMI output signal
	SDI	HDMI		
1920×1080 50i	1920×1080i	1920×1080i	1920×1080 50i	1920×1080 50i
1920×1080 25P	1920×1080PsF	1920×1080PsF	SDI OUT 1 1920×1080 25P SDI OUT 2 1920×1080 25PsF	1920×1080 50i (PsF)

HDMI Output Settings for HDMI Target Devices

Output Setting >HDMI Target Device in the Video menu	Output Display >SDI/HDMI in the Video menu	HDMI output	
		OSD On/Off	MLUT On/Off
Recorder (default)	SDI=On, HDMI=On (default) * Grayed out, cannot be selected.	–	Follows SDI1
	SDI=On, HDMI=Off	Off	
	SDI=Off, HDMI=Off	Off	
Monitor	SDI=On, HDMI=On (default)	On	Follows SDI2
	SDI=On, HDMI=Off * Grayed out, cannot be selected.	–	
	SDI=Off, HDMI=Off	Off	

[Notes]
- If the current Output Display setting becomes unavailable for selection after changing HDMI Target Device, the Output Display setting changes as follows.
  – Forcibly changes to the default value.
  – If the default value is not available for selection, forcibly changes to "SDI=On, HDMI=On."
- HDMI Target Device cannot be set to Recorder if Codec is set to ProRes.

States When Monitor LUT Cannot be Configured Independently

In the following cases, Monitor LUT >SDI2, HDMI, and Viewfinder in the Video menu cannot be set individually. They are synced with the SDI1 & Internal Rec setting.
- When Output Format >HDMI in the Video menu is set to 4096×2160 or 3840×2160
- When S&Q Motion >Setting in the Recording menu is set to On
- When Lens >Distortion Comp. in the System menu is set to Auto

Output Menu Settings and Video Output Color Space when Preset Select is BT.2020

The color space of recorded video is BT.2020 when Matrix >Preset Select in the Paint menu is set to BT.2020. The color space of the video output varies as follows, depending on the Output Format and Output Color Space settings.

Output Format in the Video menu		Output Setting >Output Color Space in the Video menu	HDMI	SDI1	SDI2
HDMI	SDI				
4K/QFHD	–	BT.2020	BT.2020	–	–
HD	2K/HD	SDI2 BT.709	*1	BT.2020	BT.709
		SDI2 BT.2020	BT.2020	BT.2020	BT.2020
		All BT.709	BT.709	BT.709	BT.709

*1 The color space is BT.2020 when HDMI Target Device is set to Recorder, and BT.709 when set to Monitor.

[Note]
When playing clips recorded in BT.20202 color gamut and video is output on a video output set to BT.709 color gamut, the color space is not converted and some colors may appear differently.

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 indicators start 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 indicator	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.)

Warning Messages

Follow the instructions provided if the following display occurs.

Viewfinder message	Warning sound	Recording indicator	Cause and Solution
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, copied, or split because there is no remaining capacity on the XQD memory card. Replace immediately.
Battery Near End	Intermittent	Flashing	The remaining capacity of the battery pack is getting low. Recharge at the earliest convenience.

Viewfinder message	Warning sound	Recording indicator	Cause and Solution
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.

Caution and Operation Messages

The following caution and operation messages may appear in the center of the screen. Follow the instructions provided to resolve the issue.

Display message	Cause and Solution
Battery Error Please Change Battery	An error was detected in the battery pack. Replace with a normal battery pack.
Backup Battery End Please Change	The remaining capacity of the backup battery is insufficient. Charge the backup battery.
Unknown Media (A) [1] Please Change	A memory card that has been partitioned or a memory card containing more clips that can be handled by the camcorder was inserted. The card cannot be used in the camcorder, and must be replaced.
Cannot Use Media (A) [1] Unsupported File System	A card using a different file system or an unformatted card was inserted. The card cannot be used in the camcorder, and must be replaced or formatted using the camcorder.
Media Error Media (A) [1] Needs to be Restored	An error occurred on the memory card, and the card must be restored. Restore the memory card.
Media Error Cannot Record to Media (A) [1]	The memory card may be damaged, and can no longer be used for recording. Playback is possible, so making a copy and replacing the memory card is recommended.

Display message	Cause and Solution
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.
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.

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

Items Saved in Files

Yes: Item is saved.
No: Item is not saved.

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Camera	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
	ND Filter	Preset1	Yes	Yes
		Preset2	Yes	Yes
		Preset3	Yes	Yes
	Auto Exposure	Level	Yes	Yes
		Mode	Yes	Yes
		Speed	Yes	Yes
		AGC	Yes	Yes
		AGC Limit	Yes	Yes
		Auto ND Filter	Yes	Yes
		Auto Shutter	Yes	Yes
		A.SHT Limit	Yes	Yes
		Clip High light	Yes	Yes
		Detect Window	Yes	Yes
		Detect Window Indication	Yes	Yes
	Focus	Focus Area	Yes	No
		Focus Area (Push AF)	Yes	No
		AF Assist	Yes	No
	Shutter	Mode	Yes	Yes
		Shutter Speed	Yes	Yes
		Shutter Angle	Yes	Yes
		ECS Frequency	Yes	Yes
	Color Bars	Setting	No	No
		Type	Yes	No
	Noise Suppression	Setting	Yes	Yes
		Level	Yes	Yes

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Camera	Flicker Reduce	Mode	Yes	No
		Frequency	Yes	No
	SteadyShot	Setting	Yes	No
	Handle Zoom	Zoom Speed Type	Yes	No
		Zoom Speed	Yes	No
	Auto Black Balance	Auto Black Balance	–	–
	AF Micro Adjustment	Setting	No	No
		Amount	No	No
		Clear All	–	–
	Video Light Set	Video Light Set	Yes	No
Paint	White	Preset White	Yes	Yes
		Color Temp <A>	Yes	Yes
		Color Temp Balance <A>	Yes	Yes
		R Gain <A>	Yes	Yes
		B Gain <A>	Yes	Yes
		Color Temp <B>	Yes	Yes
		Color Temp Balance <B>	Yes	Yes
		R Gain <B>	Yes	Yes
		B Gain <B>	Yes	Yes
		Filter White Memory	Yes	No
		Shockless White	Yes	Yes
		White Switch<B>	Yes	No
		ATW Speed	Yes	Yes
	Offset White	Offset White <A>	Yes	Yes
		Warm Cool <A>	Yes	Yes
		Warm Cool Balance <A>	Yes	Yes
		Offset White <B>	Yes	Yes
		Warm Cool <B>	Yes	Yes
		Warm Cool Balance <B>	Yes	Yes
		Offset White<ATW>	Yes	Yes
		Warm Cool<ATW>	Yes	Yes
		Warm Cool Balance<ATW>	Yes	Yes

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Paint	Black	Setting	Yes	Yes
		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	Yes	Yes
		Level	Yes	Yes
	Detail	Setting	Yes	Yes
		Level	Yes	Yes
		H/V Ratio	Yes	Yes
		Crispening	Yes	Yes
		Level Depend	Yes	Yes
		Level Depend Level	Yes	Yes
		Frequency	Yes	Yes
		Knee Aperture	Yes	Yes
		Knee Aperture Level	Yes	Yes
		Limit	Yes	Yes
		White Limit	Yes	Yes
		Black Limit	Yes	Yes
		V Black Limit	Yes	Yes
		V Detail Creation	Yes	Yes

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Paint	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
		Level	Yes	Yes
		Phase	Yes	Yes
		User Matrix R-G	Yes	Yes
		User Matrix R-B	Yes	Yes
		User Matrix G-R	Yes	Yes
		User Matrix G-B	Yes	Yes
		User Matrix B-R	Yes	Yes
		User Matrix B-G	Yes	Yes
	Multi Matrix	Setting	Yes	Yes
		Area Indication	No	No
		Color Detection	–	–
		Axis	No	No
		Hue	Yes	Yes
		Saturation	Yes	Yes
	Maintenance	Test Saw	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Audio	Audio Input	CH1 Input Select	Yes	No
		CH2 Input Select	Yes	No
		CH3 Input Select	Yes	No
		CH4 Input Select	Yes	No
		INPUT1 MIC Reference	Yes	No
		INPUT2 MIC Reference	Yes	No
		CH1 Wind Filter	Yes	No
		CH2 Wind Filter	Yes	No
		CH3 Wind Filter	Yes	No
		CH4 Wind Filter	Yes	No
		CH3 Level Control	Yes	No
		CH4 Level Control	Yes	No
		CH3 Input Level	Yes	No
		CH4 Input Level	Yes	No
		Audio Input Level	Yes	No
		Limiter Mode	Yes	No
		CH1&2 AGC Mode	Yes	No
		CH3&4 AGC Mode	Yes	No
		AGC Spec	Yes	No
		1kHz Tone on Color Bars	Yes	No
		CH1 Level	Yes	No
		CH2 Level	Yes	No
		CH3 Level	Yes	No
		CH4 Level	Yes	No
	Audio Output	Monitor CH	Yes	No
		Monitor Volume	Yes	No
		Headphone Out	Yes	No
		Alarm Volume	Yes	No
		Output Limiter	Yes	No
		HDMI Output CH	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Video	Output On/Off	SDI	Yes	No
		HDMI	Yes	No
	Output Format	SDI	Yes	No
		HDMI	Yes	No
		REF	No	No
	Output Setting	HDMI Target Device	Yes	No
		Output Color Space	Yes	No
		4K/2K to HD Conv.	Yes	No
	Monitor LUT	Category	Yes	No
		LUT Select	Yes	No
		Look Profile Select	Yes	No
		User 3D LUT Select	Yes	No
		SDI1 & Internal Rec	Yes	No
		SDI2	Yes	No
		HDMI	Yes	No
		Viewfinder	Yes	No
	Output Display	SDI2	Yes	No
		HDMI	Yes	No
VF	VF Setting	Brightness	Yes	No
		Color Mode	Yes	No
	Peaking	Setting	Yes	No
		Peaking Type	Yes	No
		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
VF	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
		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
		100% Marker	Yes	No
		Guide Frame	Yes	No
	Display On/Off	Setting	Yes	No
		Shutter Setting	Yes	No
		ND Filter Value	Yes	No
		Gain Setting	Yes	No
		Rec/Play Status	Yes	No
		HXR-IFR5 Rec Control	Yes	No
		Color Temp.	Yes	No
		Frame Rate / Interval	Yes	No
		Battery Remain	Yes	No
		Timecode	Yes	No
		Audio Manual	Yes	No
		Audio Level Meter	Yes	No
		Media Status	Yes	No
		Focus Position	Yes	No
		Iris Position	Yes	No
		Zoom Position	Yes	No
		SteadyShot	Yes	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
VF	Display On/Off	Focus Mode	Yes	No
		Focus Area Indicator	Yes	No
		Focus Area Ind. (Push AF)	Yes	No
		Focus Indicator	Yes	No
		Auto Shutter	Yes	No
		AGC	Yes	No
		Auto ND Filter	Yes	No
		Auto Iris	Yes	No
		AE Mode	Yes	No
		Auto Exposure Level	Yes	No
		White Balance Mode	Yes	No
		SDI/HDMI Rec Control	Yes	No
		Rec Format	Yes	No
		Gamma	Yes	No
		Timecode Lock	Yes	No
		Wi-Fi Condition	Yes	No
		Clip Name	Yes	No
		Focus Assist Indicator	Yes	No
		Focus Area Marker	Yes	No
		Video Level Warning	Yes	No
		Clip Number	Yes	No
		GPS	Yes	No
		Level Gauge	Yes	No
		Lens Info	Yes	No
		Notice Message	Yes	No
	Video Signal Monitor	Setting	Yes	No
		Source	Yes	No
TC/UB	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

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Recording	S&Q Motion	Setting	Yes	No
		High Frame Rate Mode	Yes	No
		Frame Rate	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
	Simul Rec	Setting	Yes	No
		Rec Button Set	Yes	No
	SDI/HDMI Rec Control	Setting	Yes	No
Thumbnail	Display Clip Properties		–	–
	Set Index Picture		–	–
	Thumbnail View	Essence Mark Thumbnail	–	–
		Clip Thumbnail	–	–
	Set Shot Mark	Add Shot Mark1	–	–
		Delete Shot Mark1	–	–
		Add Shot Mark2	–	–
		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	–	–
	Filter Clips	OK	–	–
		NG	–	–
		KEEP	–	–
		None	–	–
	Customize View	Thumbnail Caption	Yes	Yes

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
Media	Update Media	Media(A)	–	–
		Media(B)	–	–
	Format Media	Media(A)	–	–
		Media(B)	–	–
		SD Card	–	–
	Clip	Auto Naming	Yes	No
		Camera ID	Yes	No
		Reel Number	Yes	No
		Camera Position	Yes	No
		Title Prefix	Yes	No
		Number Set	No	No
File	All File	Load SD Card	–	–
		Save SD Card	–	–
		File ID	Yes	No
	Scene File	Recall Internal Memory	–	–
		Store Internal Memory	–	–
		Load SD Card	–	–
		Save SD Card	–	–
		File ID	No	Yes
		Scene White Data	Yes	No
	User Menu Item	Load SD Card	–	–
		Save SD Card	–	–
		File ID	No	No
	User Gamma	Current Settings	–	–
		Load SD Card	–	–
		Reset	–	–
	Monitor LUT	Current Settings	–	–
		Load SD Card	–	–
		Reset	–	–
	Monitor 3D LUT	Current Settings	–	–
		Load SD Card	–	–
		Reset	–	–
	Lens File	White Offset R	No	No
		White Offset B	No	No

LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
System	Base Setting	Shooting Mode	Yes	No
		Color Space	Yes	No
		Imager Scan Mode	Yes	No
	Codec	Select	Yes	No
	Rec Format	Video Format	Yes	No
		RAW Output Format	Yes	No
	Genlock	Reference	–	–
	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
	Assignable Dial	Assignable Dial	Yes	No
		IRIS Dial	Yes	No
		Assignable Dial Direction	Yes	No
		IRIS Dial Direction	Yes	No
	ND Dial	ND Dial Direction	Yes	No
	Rec Lamp	Rec Lamp	Yes	No
	Fan Control	Setting	Yes	No
	HOLD Switch Setting	with Rec Button	Yes	No
		with Hand Grip Remote	Yes	No
	Lens	Zoom Ring Direction	Yes	No
		Distortion Comp.	Yes	No
	Language	Select	Yes	No
	Clock Set	Time Zone	Yes	No
		Date Mode	Yes	No
		12H/24H	Yes	No
		Date	No	No
		Time	No	No
	Country	NTSC/PAL Area	Yes	No

| LEVEL 1	LEVEL 2	LEVEL 3	All File	Scene File
System	Hours Meter	Hours (System)	–	–
		Hours (Reset)	–	–
		Reset	–	–
	Basic Authentication	User Name	No	No
		Password	No	No
	Wi-Fi	Wi-Fi	Yes	No
		SSID & Password	–	–
		Wi-Fi Direct Connection	–	–
		Client	–	–
		IP Address	–	–
		Subnet Mask	–	–
		MAC Address	–	–
		Regenerate Password	–	–
	GPS	GPS	Yes	No
	IR Remote	Setting	Yes	No
	Camera Battery Alarm	Low BATT	Yes	No
		BATT Empty	Yes	No
	Camera DC IN Alarm	DC Low Voltage1	Yes	No
		DC Low Voltage2	Yes	No
	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
	All Reset	Reset	–	–
	APR	APR	–	–
	Camera Config	HD/2K Modulation	Yes	No
	Version	Number	–	–
		Version Up	–	–
		Lens Version Number	–	–
		Lens Version Up	–	–
		Ext. Unit Version Number	–	–
		Ext. Unit Version Up	–	–

Block Diagrams

See related items in "Setting the Audio to Record" (page 35) and "Setup Menu List" (page 50).
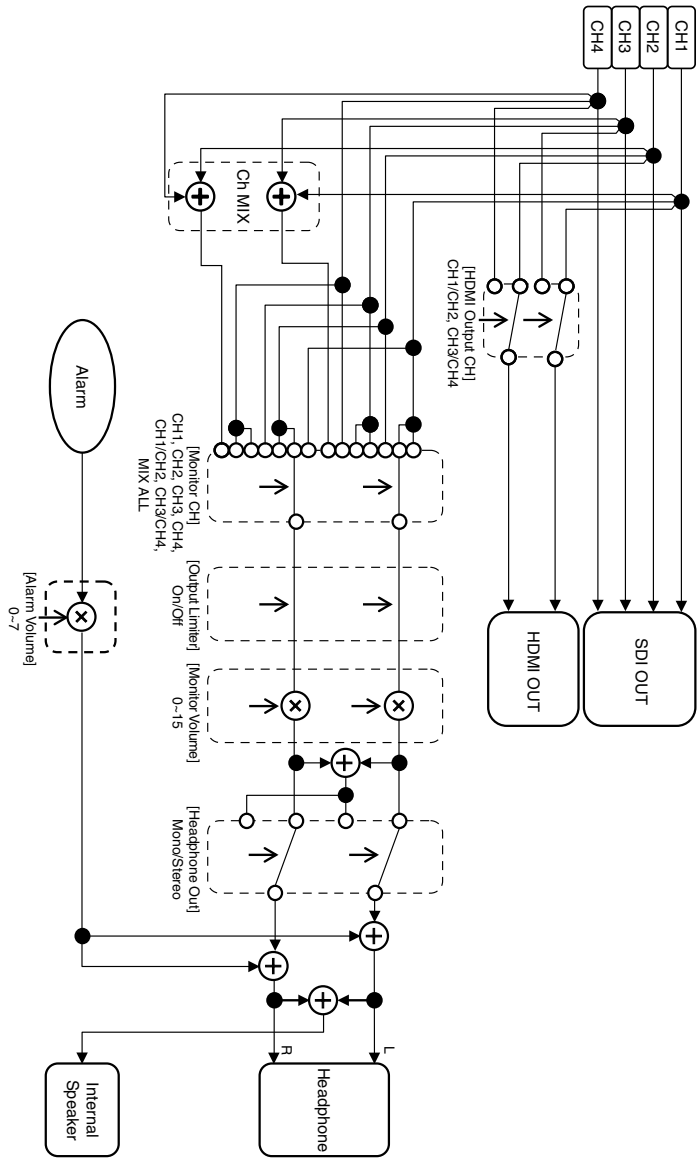
Audio Input (CH1&CH2)
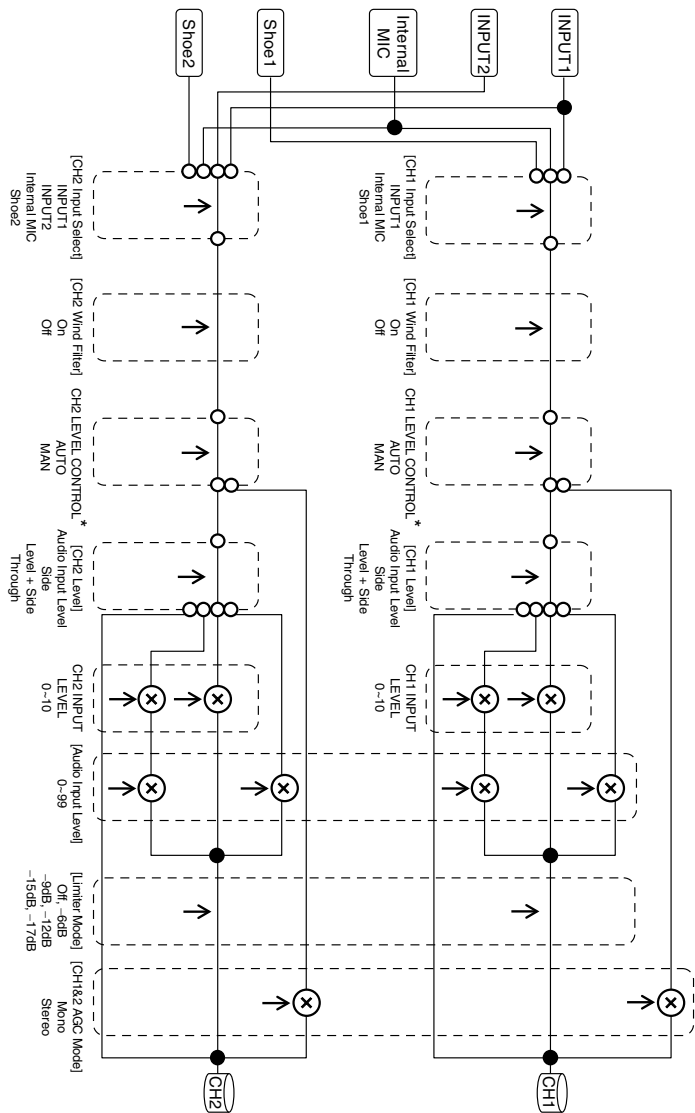
*   Set to MAN when audio is input from XLR adapter.

Audio Input (CH3&CH4)
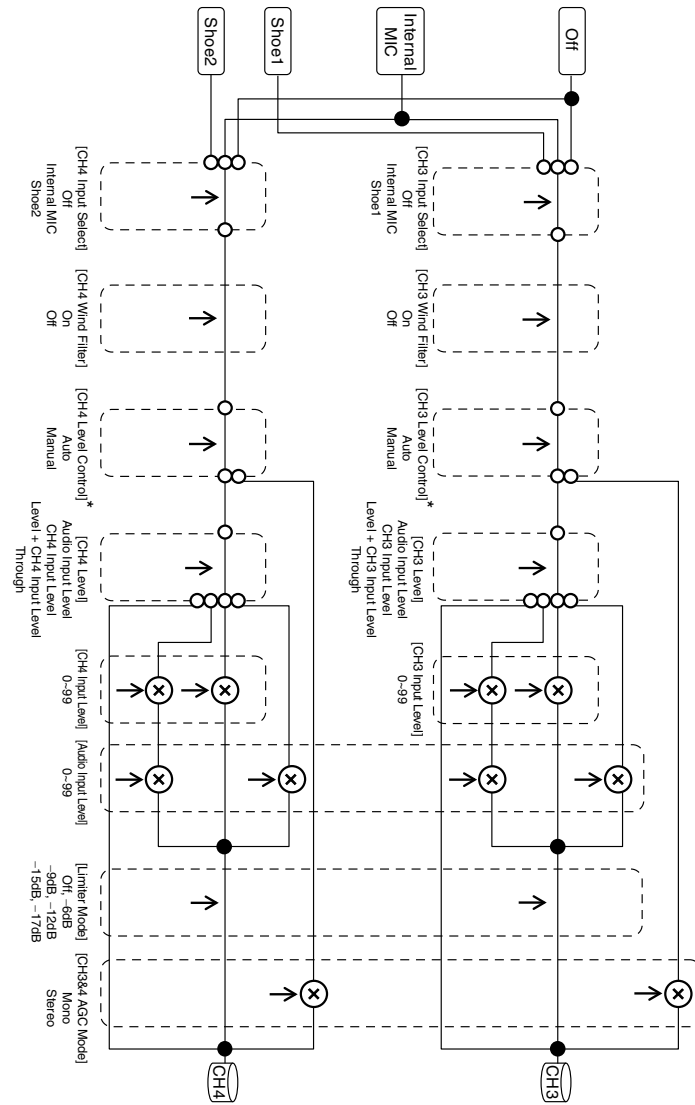
*   Set to Manual when audio is input from XLR adapter.

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 firmware.

Checking the Version

1 Attach an E-mount lens to the camcorder (page 17).

2 Select Version in the System menu to display Lens Version Number (page 75).
The version number of the E-mount lens is displayed on the side.

Updating Software

1 Connect the AC adapter (page 13).

   [Note]
   The use with a fully-charged battery is recommended.

2 Attach an E-mount lens to the camcorder (page 17).

3 Format an SD card using the camcorder (page 25).

4 Copy the Windows update software (".exe" file name extension) to the root folder of the SD card, and insert the SD card in the UTILITY SD card slot of the camcorder (page 25).

5 Select Execute in Version >Lens Version Up in the System menu (page 75).
A confirmation message appears.

6 Select Execute.
The version update preparation begins. When preparation is completed, a confirmation message appears.

7 Select Execute.
The version update is executed. When the version update is completed, "Lens Version Up OK" is displayed.

8 Turn the camcorder off.

[Notes]
- Do not perform the following tasks until after the update has finished.
  – Ejecting the SD card
  – Removing a lens
  – Turning the power off
- If "Lens Version Up NG" is displayed, check the contents of the displayed message, and then try updating again.

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Specifications

General

Mass   Approx. 2.0 kg (4 lb 6.5 oz) (body only)
Dimensions   (Unit: mm (inch), body only) [1]

159 (6 3/8)

247 (9 3/4)

245.5 (9 3/4)
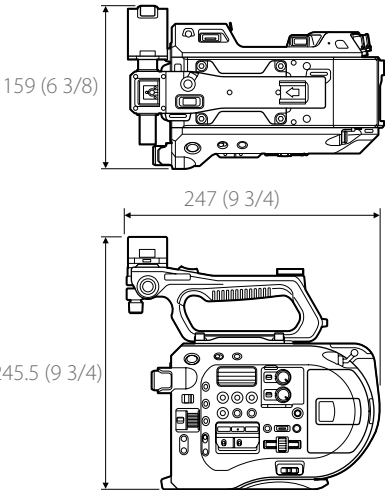
1)   The values for dimensions are approximate.

Power requirements
    12 V DC (11 V to 16.5 V)
Power consumption
    Approx. 19 W (body, lens, XAVC-I QFHD 59.94P
        recording, viewfinder on)
    Approx. 22 W (body, lens, XAVC-I QFHD 59.94P
        recording, viewfinder on, 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. 60 minutes (using BP-U30)
Recording format (video)
    XAVC Intra
        AVC/H.264 High 4:2:2 Intra Profile
        QFHD: VBR, 600 Mbps (max)
        4K: VBR, 600 Mbps (max)
        HD: CBG, 222 Mbps

XAVC Long
    AVC/H.264 High Profile
    QFHD: VBR, 150 Mbps (max),
        4:2:0 Long
    HD: VBR, 50 Mbps (max),
        4:2:2 Long
MPEG HD 422
    MPEG-2 Long GOP
    HD422 mode: CBR, 50 Mbps, MPEG-2
    422P@HL
ProRes 422 HQ [1]
    Apple ProRes 422 HQ
    4:2:2, 10-bit, VBR,
        220 Mbps (max)
ProRes 422 [1]
    Apple ProRes 422
    4:2:2, 10-bit, VBR,
        147 Mbps (max)
Recording format (audio)
    LPCM 24-bit, 48 kHz, 4-channel
Recording frame rate
    XAVC Intra
        4096×2160/59.94P, 50P, 29.97P, 24P,
            23.98P, 25P
        3840×2160/59.94P, 50P, 29.97P, 23.98P,
            25P
        1920×1080/59.94P, 50P, 59.94i, 50i,
            29.97P, 23.98P, 25P
    XAVC Long
        3840×2160/59.94P, 50P, 29.97P, 23.98P,
            25P
        1920×1080/59.94P, 50P, 59.94i, 50i,
            29.97P, 23.98P, 25P
    MPEG HD 422
        1920×1080/59.94i, 50i, 29.97P, 23.98P,
            25P
        1280×720/59.94P, 50P, 29.97P, 23.98P,
            25P
    ProRes 422 HQ [1]
        1920×1080/59.94i, 50i, 29.97P, 25P,
            23.98P
    ProRes 422 [1]
        1920×1080/59.94i, 50i, 29.97P, 25P,
            23.98P

Recording/playback time (using QD-G128E)
XAVC Intra
        4096×2160/3840×2160
    59.94P
        Approx. 22 minutes
    50P
        Approx. 26 minutes
    29.97P
        Approx. 44 minutes
    23.98P/24P
        Approx. 55 minutes
    25P
        Approx. 52 minutes
XAVC Intra 1920×1080
    59.94P
        Approx. 59 minutes
    50P
        Approx. 71 minutes
    59.94i
        Approx. 118 minutes
    50i
        Approx. 141 minutes
    29.97P
        Approx. 118 minutes
    23.98P
        Approx. 147 minutes
    25P
        Approx. 141 minutes

XAVC Long 3840×2160
    59.94P/50P
        Approx. 87 minutes
    29.97P/23.98P/25P
        Approx. 131 minutes
XAVC Long 1920×1080
    50M mode
        Approx. 262 minutes
    35M mode
        Approx. 374 minutes
    25M mode
        Approx. 524 minutes
    MPEG HD 422
        Approx. 262 minutes

ProRes 422 HQ [1]
    59.94i/29.97P
        Approx. 60 minutes
    50i/25P
        Approx. 72 minutes
    23.98P
        Approx. 74 minutes
ProRes 422 [1]
    59.94i/29.97P
        Approx. 90 minutes
    50i/25P
        Approx. 108 minutes
    23.98P
        Approx. 112 minutes
1)   With XDCA-FS7 (option) connected

[Note]
The recording/playback time may vary due to usage
conditions and memory characteristics.

Camera Section

Imaging device (type)
    Super 35 equivalent CMOS image sensor
Number of pixels
    11.6 Megapixels (total), 8.8 Megapixels@17:9/
        8.3Megapixels@16:9 (effective)
Internal ND filters
    CLEAR: OFF
    1: 1/4ND
    2: 1/16ND
    3: 1/64ND
    Linearly variable ND: 1/4ND to 1/128ND
Sensitivity
    Video Gamma: T14 @ 24p
    (2000 lx, 89.9% reflectance, 3200K)
ISO sensitivity
    S-Log3 Gamma ISO2000
    (D55 light source)
Minimum subject illumination
    0.7 lx (18dB, 23.98P, Shutter: OFF, ND: Clear,
        F1.4)

Lens mount
>E-mount (lever lock type)

Latitude
>14-stop

Video S/N
>57 dB (Video Gamma/Noise Suppression: off)

Shutter speed
>1/3 to 1/9000 sec. (23.98P)

Shutter angle
>5.6° to 300°

Slow & Quick Motion
>XAVC QFHD: 1 to 60P, XAVC HD: 1 to 180P

White balance
>Preset mode (2100K to 10000K), Memory mode A, B (1500K to 50000K)

Gain
>–3, 0, 3, 6, 9, 12, 18 dB

Gamma curve
>STD1, STD2, STD3, STD4, STD5, STD6, HG1, HG2, HG3, HG4, HG7, HG8, S-Log2, S-Log3, USER1, USER2, USER3, USER4, USER5

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

Input/Output Section

Inputs

INPUT 1/2:
>XLR type, 3-pin, female
>LINE / MIC / MIC+48V switchable
>MIC: Reference –40, –50, –60 dBu

Outputs

SDI OUT 1/2:
>BNC type, 0.8 Vp-p, unbalanced (3G HD/1.5G HD output)
>SMPTE ST424 Level A/B, SMPTE ST425 Level A/B, SMPTE ST292-1 standard compliant
>4-channel audio

Headphones (stereo mini jack):
>–16 dBu (reference level output, maximum monitor volume, 16 Ω load)

HDMI:
>Type A, 19-pin

Other

DC IN:
>EIAJ compliant, 11 V to 16.5 V DC

Extension unit connector:
>Dedicated (144-pin)

Multi-interface shoe:
>Dedicated (21-pin)

REMOTE:
>Ø2.5 3-pole sub-mini type

USB:
>2.0 standard compliant, type AB mini for mass storage (1)
>Type A for W-LAN connection (1)

VF:
>Dedicated (40-pin)

Display Section

LCD monitor

Screen size
>8.8 cm (3.5 inch) diagonal

Aspect ratio
>16:9

Number of pixels
>960 (H) × 540 (V)

Media Slot Section

XQD card slots for video recording (2)
UTILITY SD card slot (1)

Supplied Accessories

Viewfinder (including eyepiece, eyecup, rod, clamp)
Viewfinder hood (1)
Circular-shaped clamp spacer (2)
Grip remote control
USB wireless LAN module (IFU-WLM3)
Infrared remote control (RMT-845)
AC Adapter/Charger
Battery pack (BP-U30)
>Maximum voltage: 16.4 V DC
>Nominal voltage: 14.4 V DC
>Capacity: 28 Wh

Power cord (1)
Mini USB cable (1)
Option mounting bracket (1)
Body cap (1)
Handle connector protective cap (including two M2 screws) (1)
USB wireless LAN module cap (2)
W-LAN connector cover spare (1)
Extension unit connector cover spare (1)
Accessory shoe kit (accessory shoe (1), shoe plate (1), screws (4))
Tape measure hook (1)
Before Using This Unit (1)
Operating Instructions (CD-ROM) (1)

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- 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.

Notes
- Always make a test recording, and verify that it was recorded successfully.
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Preventing Interference from Mobile Phones and Other Wireless Devices

The use of mobile phones and wireless devices in the vicinity of the camcorder may cause a malfunction or may adversely affect the video and audio recording. Turn off any mobile phones and wireless devices near the camcorder, if possible.

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/
Brazil	http://sonypro.com.br
Australia	http://pro.sony.com.au
New Zealand	http://pro.sony.co.nz
Japan	http://www.sonybsc.com
Asia	http://pro.sony-asia.com
Korea	http://bp.sony.co.kr
China	http://pro.sony.com.cn
India	http://pro.sony.co.in

Sony Creative Software, software download page
http://www.sonycreativesoftware.com/download/software_for_sony_equipment

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