

Solid-State Memory Camcorder

Operating Instructions

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

PXW-FS7

XDCM

XQD™

HDMI

MPEG HD422

Exmor™
Super35 CMOS

XAVC

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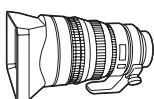
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Overview

System Configuration

This section shows an example of a camera system configuration.



SELFP28135G
SEL1635Z
SELP18200
Lens



LA-EA3, LA-EA4
A-Mount Adaptor



UWP-D11, UWP-D12
Wireless Microphone
Package



HVL-LBPC
Video Light



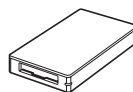
ECM-MS2
Microphone



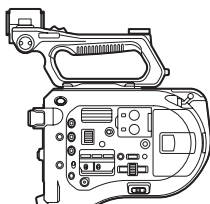
IFU-WLM3
USB Wireless LAN Module
(supplied)



S/N/H/G-series
XQD Memory Card



MRW-E80
XQD Card Reader



PXW-FS7



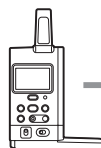
BP-U30, BP-U60,
BP-U60T, BP-U90
Battery Pack
(BP-U30 supplied)



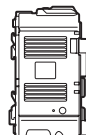
BC-U1, BC-U2
Battery Charger
(BC-U1 supplied)



AC Adaptor (supplied)¹⁾



HXR-IFR5
Interface Unit

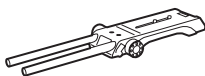


AXS-R5
Portable
Memory
Recorder

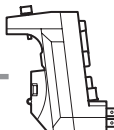


RMT-845
Infrared Remote Control
(supplied)

Grip Remote Control
(supplied)



VCT-FS7
Shoulder Adaptor



XDCA-FS7
Extension Unit



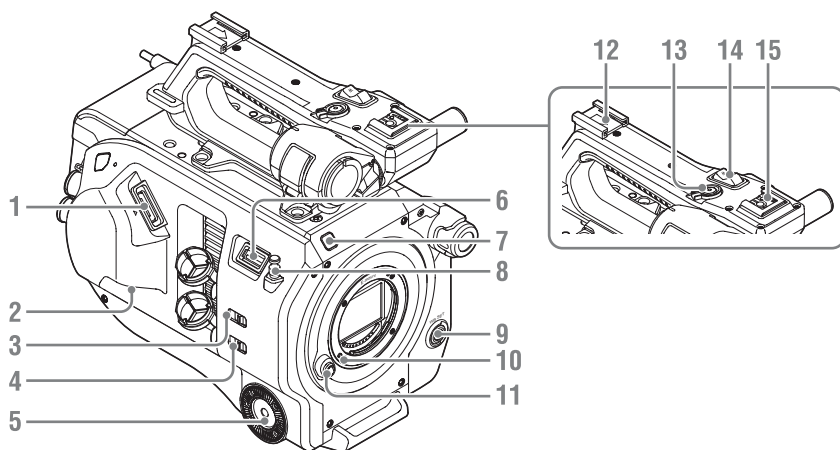
BP-GL65A, BP-GL95A, BP-L60S,
BP-L80S, BP-FL75
Battery Pack

Wireless Adaptor
CBK-WA100

1) MPA-AC1 (USA and Canada model only)
AC-NB12A (except USA and Canada model)

Location and Function of Parts

For details about the usage and function of each part, see the referenced page.



1. Viewfinder connector (page 21)

2. REMOTE connector (page 24)

3. INPUT1 (LINE/MIC/MIC+48V) switch
(page 40)

4. INPUT2 (LINE/MIC/MIC+48V) switch
(page 40)

5. Grip attachment (page 24)

6. USB wireless LAN module connector

7. Recording indicator (page 85)

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

8. 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.

9. WB SET (white balance set) button
(page 40)

10. Lens lock pin (page 23)

11. Lens release button (page 23)

12. Accessory shoe

13. Handle record START/STOP button

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

14. Handle zoom lever (page 61)

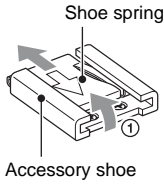
15. Multi-interface shoe

ni Multi
Interface Shoe

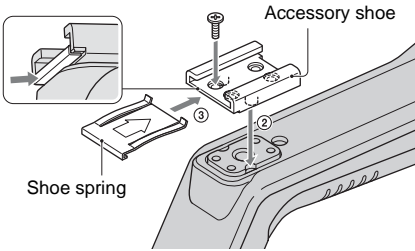
For details about accessories supported by the multi-interface shoe, contact your sales representative.

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.

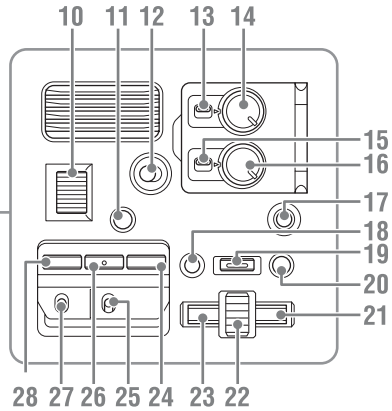
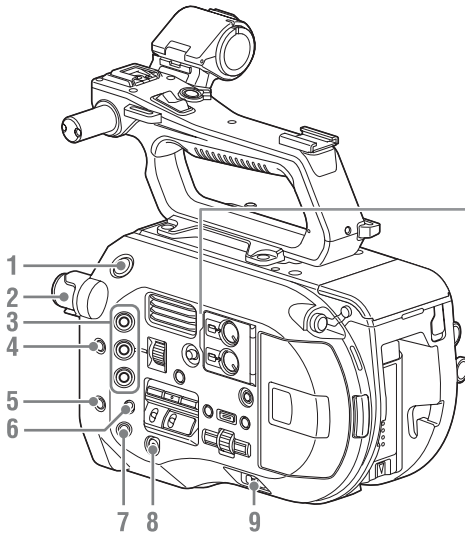


- 2 Position the accessory shoe on the accessory shoe mount, aligning the protrusions on the shoe with the corresponding points on the mount, and tighten the four screws.
- 3 Insert the shoe spring in the direction of the arrow so that the U-shaped portion fits onto the end of the accessory shoe.



Removing the Accessory Shoe

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



- 1. START/STOP button**
- 2. ND FILTER switch** (page 39)
- 3. ASSIGN (assignable) 1 to 3 buttons** (page 42)
- 4. PUSH AUTO IRIS button** (page 38)
- 5. PUSH AUTO FOCUS button** (page 36)
- 6. FOCUS switch** (page 36)
- 7. DISPLAY button** (page 13)
- 8. FULL AUTO button** (page 35)
- 9. POWER switch** (page 18)
- 10. IRIS dial** (page 42)
- 11. STATUS CHECK button** (page 15)
- 12. HOLD switch** (page 85)
- 13. CH1 (AUTO/MAN) switch** (page 40)
- 14. AUDIO LEVEL (CH1) dial** (page 40)
- 15. CH2 (AUTO/MAN) switch** (page 40)
- 16. AUDIO LEVEL (CH2) dial** (page 40)
- 17. SLOT SELECT (XQD memory card select) button** (page 27)
- 18. CANCEL/BACK button** (page 52)
- 19. MENU button** (page 54)
- 20. THUMBNAIL button** (page 51)

21. Right button

Used to set numeric values and to move the cursor to the right on thumbnail screens and menus.

22. 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.

23. Left button

Used to set numeric values and to move the cursor to the left on thumbnail screens and menus.

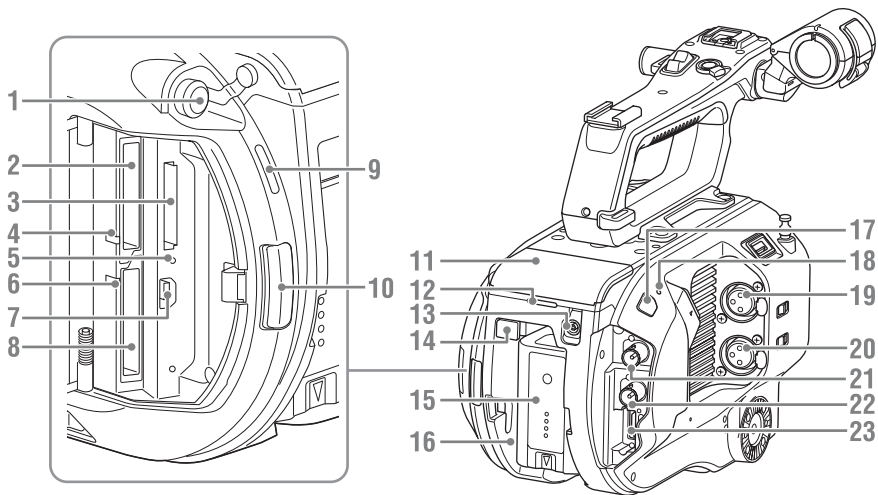
24. SHUTTER button (page 39)

25. WHT BAL (white balance memory select) switch (page 39)

26. WHT BAL (white balance) button (page 39)

27. GAIN (gain select) switch (page 38)

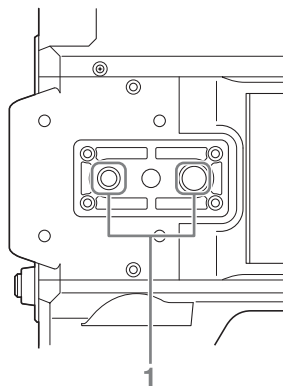
28. ISO/Gain button (page 38)



1. Headphone connector (page 37)
2. XQD card slot A (page 27)
3. SD card (for saving configuration data) slot (page 28)
4. XQD (A) access indicator (page 27)
5. SD card access indicator (page 28)
6. XQD (B) access indicator (page 27)
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 27)
9. Built-in speaker (page 37)
10. Media cover release button (page 27)
11. Extension unit connector (page 29)
12. Rear recording indicator (page 35)
13. DC IN connector (page 19)
14. BATT RELEASE (battery release) button (page 18)
15. Battery (page 18)
16. Battery pack attachment (page 18)
17. Infrared remote control receiver sensor (page 32)
18. Internal microphone (page 40)
19. INPUT1 (audio input 1) connector (page 40)

20. INPUT2 (audio input 2) connector (page 40)
21. SDI OUT 1 connector (page 89)
22. SDI OUT 2 connector (page 89)
23. HDMI OUT connector (page 89)

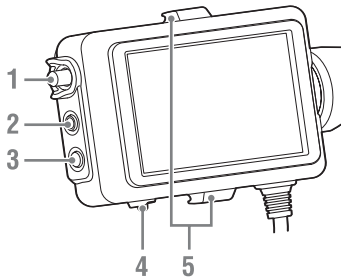
Underside



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

Viewfinder

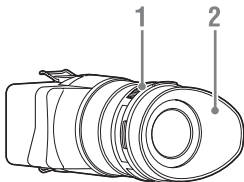
For details about attaching the viewfinder (supplied) and eyepiece, *see page 21*.



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 22*.



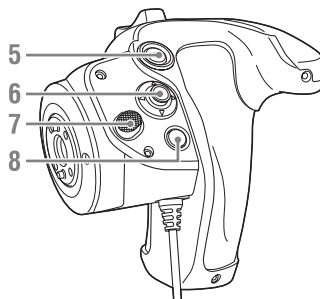
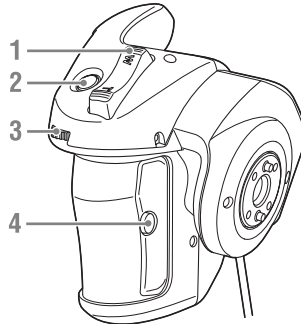
1. Diopter adjustment knob
2. Eyecup

Lens (PXW-FS7K only)

For details, refer to the operation manual for the lens.

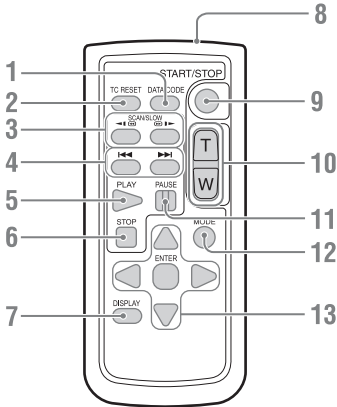
Grip Remote Control

For details about attaching the grip remote control (supplied), *see page 24*.



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

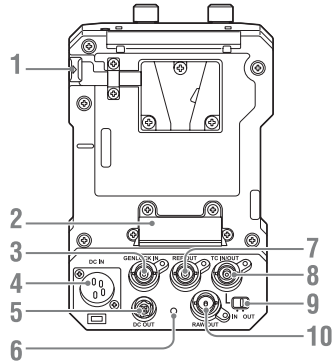
Infrared Remote Control



1. **DATA CODE button**
Not used on this version.
2. **TC RESET button**
3. **SCAN/SLOW button**
4. **◀◀/▶▶ (PREV/NEXT) button**
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 button**

Extension Unit (Option)

For details about attaching an extension unit (option), see page 29.



1. **BATT RELEASE button**
2. **Battery connector**
3. **GENLOCK IN**
4. **DC IN**
5. **DC OUT**
6. **Recording indicator**
7. **REF OUT**
8. **TC IN/OUT**
9. **TC IN/OUT switch**
10. **RAW OUT**

Screen Display

Viewfinder Screen

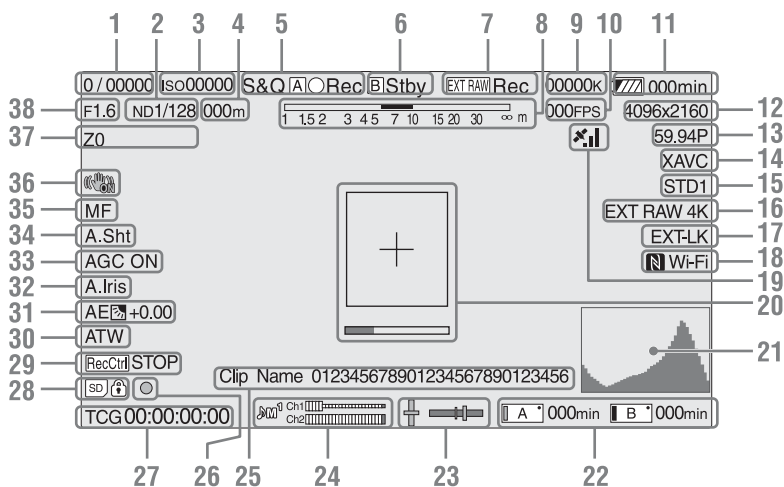
During shooting (recording/standby) and playback, the camcorder status and settings are superimposed on the image displayed in the viewfinder.

You can show/hide the information using the DISPLAY button.

You can also select to show/hide each item independently (*page 72*).

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 39*)

2. ND filter indicator (*page 39*)

3. Gain indicator (*page 38*)

Displayed as an EI value when Base Setting (*page 82*) > 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

| | |
|-------------------|---|
| 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 |
|------------------|---|



| | |
|---------------|-----------|
| [A]/[B] ● Rec | Recording |
|---------------|-----------|

| | |
|--------------|---------|
| [A]/[B] Stby | Standby |
|--------------|---------|

| | |
|-----------|-------------------------|
| [A]/[B] ● | Picture cache recording |
|-----------|-------------------------|

| | |
|-----------------|-----------------------|
| [A]/[B] ● Cache | Picture cache standby |
|-----------------|-----------------------|

6. Slot B icon and status indicators

| | |
|---|-----------|
|  ● Rec | Recording |
|  Stby | Standby |

7. External RAW recording indicator (page 46)

8. Depth-of-field indicator

9. Color temperature indicator (page 39)

10. S&Q Motion frame rate indicator (page 77)

11. Remaining battery capacity/DC IN voltage indicator (page 18)

12. Recording format (picture size) indicator (page 82)

Displays the picture size for recording on XQD memory cards.

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

14. Recording format (codec) indicator (page 38)

Displays the name of the format for recording on XQD memory cards.

15. Gamma/monitor LUT indicator (page 65, page 71)


Displays the gamma setting. When Shooting Mode (page 82) is set to “Cine EI,” it displays the gamma or monitor LUT setting for recording video on XQD memory cards.

16. External output format indicator (page 70)

17. Timecode external lock indicator

Displays “EXT-LK” when locked to the timecode of an external device.

18. Wi-Fi connection status indicator (page 47)

Displayed when the Wi-Fi function is set to “Enable.” When the IFU-WLM3 is not attached to the camcorder,  is not displayed.

19. GPS status indicator (page 46)

Displays the GPS status.

20. Focus assist indicator (page 43)

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 indicator (page 16)

Displays a waveform, vectorscope, and histogram.

22. Slot A/B media status/remaining capacity indicator (page 27)

Recording media when the left side of the icon is orange.

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 $\pm 1^\circ$ increments up to $\pm 20^\circ$.

24. Audio level meter

25. Clip name indicator (page 51)

26. Focus indicator

27. Time data indicator (page 41)

28. SD card indicator

29. SDI output control status indicator (page 89)

30. White balance mode indicator (page 39)

| | |
|-----|---------------|
| W:P | Preset mode |
| W:A | Memory mode A |
| W:B | Memory mode B |

31. AE mode indicator (page 38)

32. Auto iris indicator (page 38)

33. AGC indicator (page 38)

34. Auto shutter indicator (page 39)

35. Focus mode indicator

36. Image stabilization mode indicator

37. Zoom position indicator

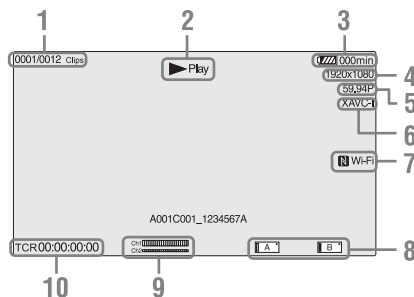
Displays the zoom position in the range 0 (wide angle) to 99 (telephoto) (if a lens that supports zoom setting display is attached).

38. 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 47)

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

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.

| | |
|----------------|--|
| ISO/Gain/EI<H> | ISO/Gain/EI<H> setting |
| ISO/Gain/EI<M> | ISO/Gain/EI<M> setting |
| ISO/Gain/EI<L> | ISO/Gain/EI<L> setting |
| Shutter | Shutter setting (Speed/Angle/ECS/Off) |
| Iris | F-stop value obtained from the lens |
| Zebra1 | Zebra1 On/Off setting and level |
| Zebra2 | Zebra2 On/Off setting and level |
| Gamma | Gamma Select setting |
| White | White balance mode and settings |
| Focal Length | Focal length value obtained from the lens |
| AE Level | AE level setting |
| 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 |
| AE Mode | AE mode setting (Backlight/Standard/Spotlight) |

Audio Status screen

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

| | |
|-----------------|--|
| 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 |
| Monitor CH | Monitor channel setting |
| Headphone Out | Headphone output type setting |

System Status screen

Displays the video signal settings.

| | |
|-------------------|--|
| 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 on/off indicator |

Video Output Status screen

Displays the SDI, HDMI, and video output settings.

| | |
|------|--|
| 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.

| | |
|-----------------|--|
| 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 |
| 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.

| | |
|-----------------------|---|
| 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).

| | |
|---------------------|---|
| 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. |
|----------------------------------|---|

| | |
|----------------------------------|--|
| 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 (for saving configuration data) is inserted in the SD card slot. |
|---------------------|---|

| | |
|--------------------|---|
| SD card protection | Displays the lock icon when the media inserted in the SD card slot (for saving configuration data) is protected (locked). |
|--------------------|---|

| | |
|----------------------------------|---|
| SD card remaining capacity meter | Displays the remaining capacity of media inserted in the SD card slot (for saving configuration data) expressed as a percentage on a bar graph. |
|----------------------------------|---|

| | |
|----------------------------|---|
| SD card remaining capacity | Displays the remaining capacity of media inserted in the SD card slot (for saving configuration data) expressed in units of GB. |
|----------------------------|---|

| | |
|--------------|---|
| SD card life | Displays the operating life of media in the SD card slot (for saving configuration data) as a percentage. |
|--------------|---|

Rec Button Settings Screen

Displays the settings of the record START/STOP buttons on the camcorder and handle.

| | |
|------------|---|
| 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. |
|-------------------|---|

Preparation

Power Supply

You can use a battery pack or AC power supply from an AC adaptor.

For safety, use only the Sony battery packs and AC adaptors listed below.

Lithium ion battery packs

BP-U30 (supplied)

BP-U60

BP-U60T

BP-U90

Battery chargers

BC-U1 (supplied)

BC-U2

AC adaptor (supplied)

MPA-AC1 (USA and Canada model only)

AC-NB12A (except USA and Canada model)

Caution

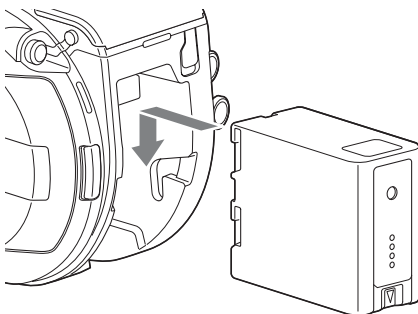
Do not store battery packs in locations exposed to direct sunlight, flame, or high temperature.

Notes

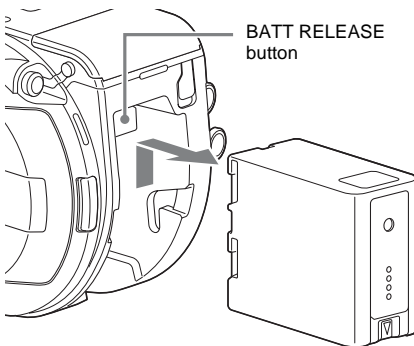
- The camcorder cannot be powered from the BC-U1/BC-U2 battery charger acting as an external power source.
- When operating from a power outlet, use the supplied AC adaptor.

Using a Battery Pack

To attach a battery pack, plug the battery pack into the attachment (*page 10*) 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 10*), slide the battery pack up and then pull it out of the attachment.



Notes

- Before attaching a battery pack, charge the battery using the dedicated BC-U1 or BC-U2 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 13*).

| 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.

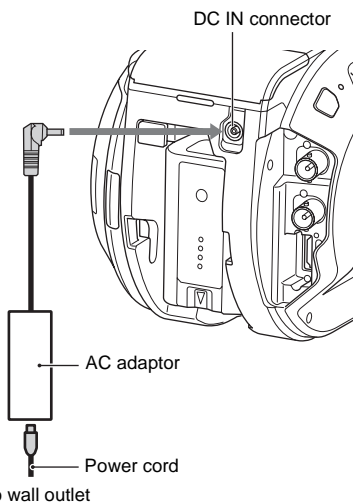
If the remaining battery charge falls below the level at which operation cannot continue (BATT Empty state), a battery-empty message appears. Replace with a charged battery pack.

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 87*) 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.



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

If the output voltage from the AC adaptor becomes low

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

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

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

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 87*) in the System menu.

AC adaptors

- Do not connect and use an AC adaptor in a confined space, such as between a wall and furniture.
- Connect the AC adaptor to the nearest 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 adaptor is connected.

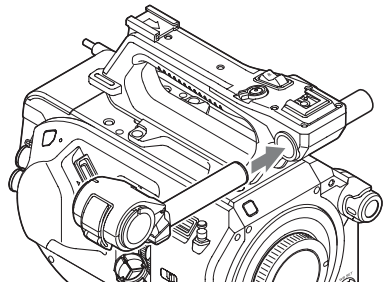
Attaching Devices

Attaching the Microphone Holder

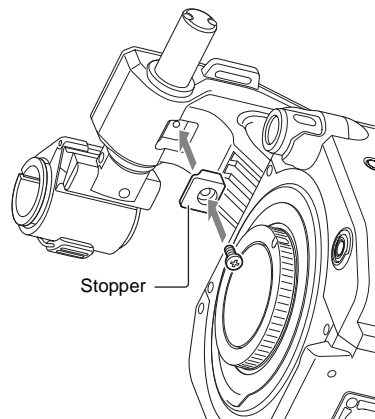
Notes

- The microphone holder is attached when shipped from the factory.
- Attach/remove the microphone holder while the camcorder is turned off.
- Attach/remove the microphone holder with the mount cap attached so as not to damage the image sensor.

- 1 Insert the microphone holder into the handle.**



- 2 Insert the stopper into the recess, and tighten the screw to secure the holder.**



Removing the microphone holder

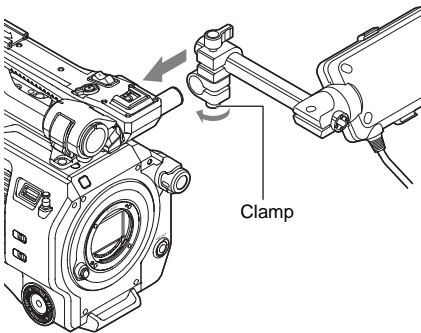
Remove the stopper, and use the reverse procedure of attaching the microphone holder.

Attaching the Viewfinder

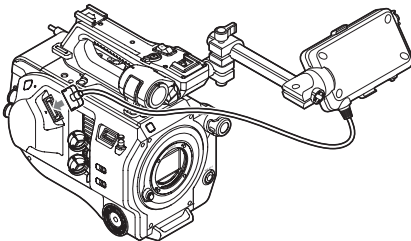
Note

Attach/remove the viewfinder while the camcorder is turned off.

- 1 Loosen the viewfinder clamp and insert the viewfinder onto the protrusion on the front of the handle.**



- 2 Adjust the left/right positioning of the viewfinder, tighten the clamp, and then connect the viewfinder cable to the viewfinder connector of the camcorder.**

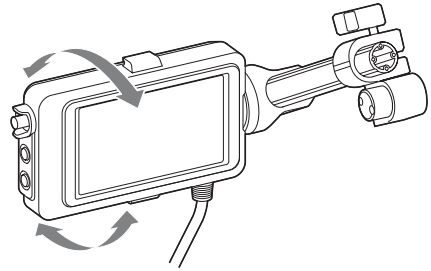


Note

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

Adjusting the angle of the viewfinder

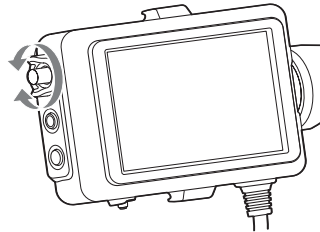
Tilt the viewfinder up/down to adjust the angle of the viewfinder.



You can adjust the angle so that the viewfinder is facing the subject. Setting the MIRROR switch (*page 44*) to the B/T 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 contrast

Turn the CONTRAST knob to adjust the contrast.



You can adjust the brightness in the viewfinder using VF Setting > Brightness (*page 72*) in the VF menu.

Removing the viewfinder

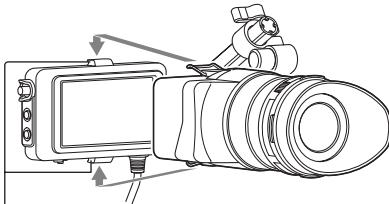
Loosen the viewfinder clamp, and use the reverse procedure of attaching the viewfinder.

Attaching the Eyepiece

Note

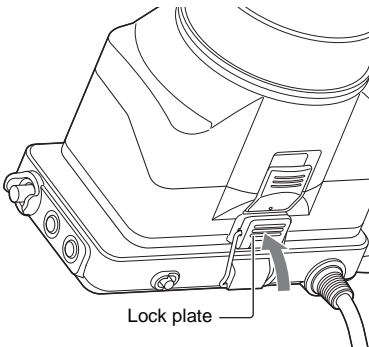
Attach/remove the eyepiece while the camcorder is turned off.

- 1 Attach the metal clips of the eyepiece to the eyepiece attachment hooks on the viewfinder.**



Eyepiece attachment hooks

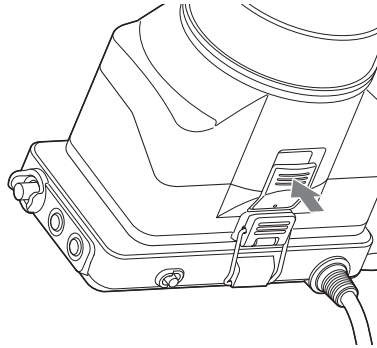
- 2 Push the lock plate on the bottom of the eyepiece in the direction of the arrow to lock the eyepiece into position.**



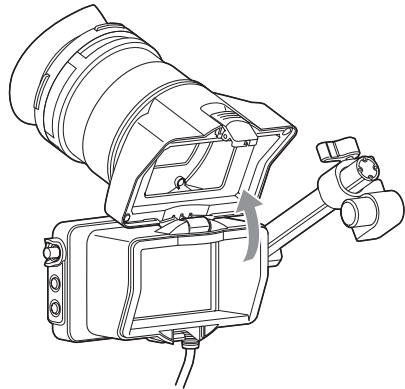
Lock plate

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 a Lens

Recommended lenses

SELP28135G
SEL1635Z
SELP18200

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

Caution

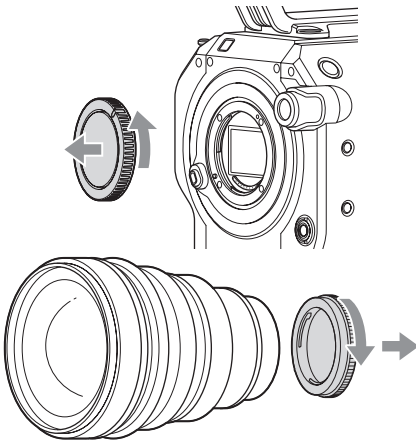
Do not leave the lens facing the sun. Direct sunlight can enter through the lens, be focused in the camcorder, and may cause a fire.

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.

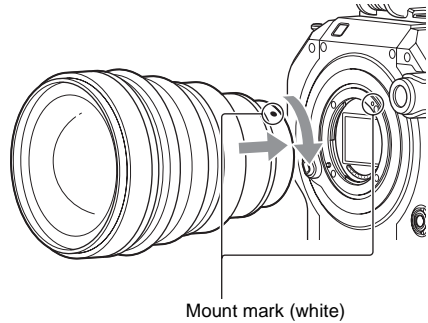
Attaching an E-mount lens

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



- 2 Align the lens mount mark (white) with the camcorder, carefully insert the lens, and then turn the lens clockwise.**

The lens makes a click sound when it locks into position.



Attaching an A-mount lens

To use an A-mount lens, attach a lens mount adaptor (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 Press and hold the lens release button and turn the lens counterclockwise.**
- 2 Pull the lens out in the forward direction.**

Note

If another lens will not be attached immediately, fit the lens mount into the recess part of the lens mount cap and turn clockwise.

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

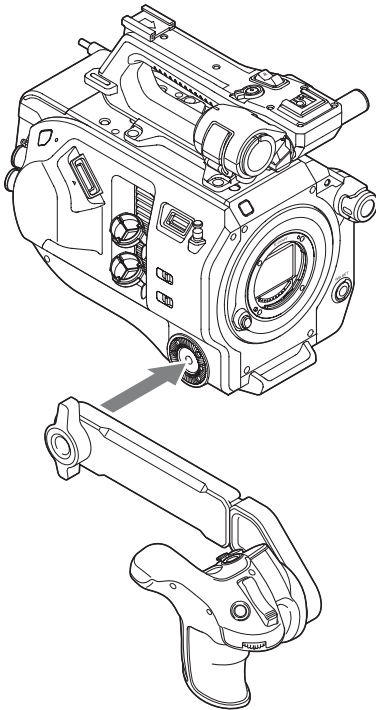
- When the lens focus switch is set to AF/MF or AF, the focus is adjusted automatically and can also be adjusted manually from the camcorder.
- When the lens focus switch is set to Full MF or MF, the focus can only be adjusted using the lens ring. Focus operation from the camcorder has no effect.

Attaching the Grip Remote Control

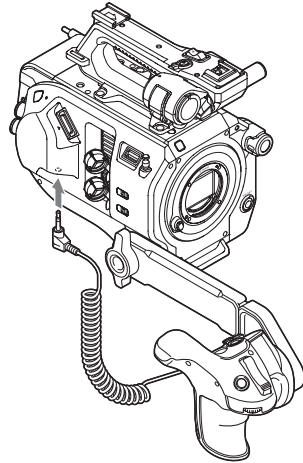
Note

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

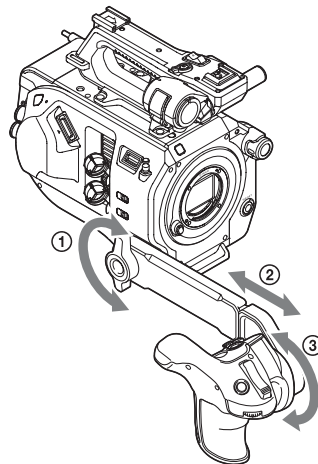
- Check that the arm and grip remote control are securely attached. They may fall off during shooting if the screws are loose.
- Do not support the weight of the camcorder by holding just the grip remote control.

Adjusting the position of the grip remote control

Adjust the arm angle (①).

Loosen the two screws on the rear side of the arm using a coin or similar object, adjust the arm length (②), and then tighten the two screws.

Press the grip rotation button (page 11) to adjust the angle of the grip remote control (③).



Removing the grip remote control

- 1 **Disconnect the grip remote control cable from the REMOTE connector on the camcorder.**
- 2 **Remove the arm from the camcorder.**

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 9*) 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 86*) 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 93*.

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 82) >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-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 82) >Color Space in the System menu.

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

G-series XQD memory cards

The recommended media varies depending on the recording format. For details, contact your Sony sales representative.

The use of memory cards other than Sony XQD memory cards is not guaranteed.

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

XQD is a trademark of Sony Corporation.

Inserting an XQD Memory Card

- 1 Press the media cover release button (page 10) 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 10) is lit red, then changes to green if the card is usable.
- 3 Close the media cover.

Note

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.

Ejecting XQD Memory Cards

Press the media cover release button (page 10) 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 9).

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 51) 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.

Select Format Media (page 79) >Media(A) or Media(B) in the Media menu, then select Execute. When a confirmation message appears, select Execute again.

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 media capacity indicators in the viewfinder (page 13).

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 10) 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 10) 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 10) 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. If a message appears when the SD card is inserted into the camcorder, format the SD card.

Select Format Media (page 79) > SD Card in the Media menu, then select Execute. When a confirmation message appears, select Execute again.

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 17).

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

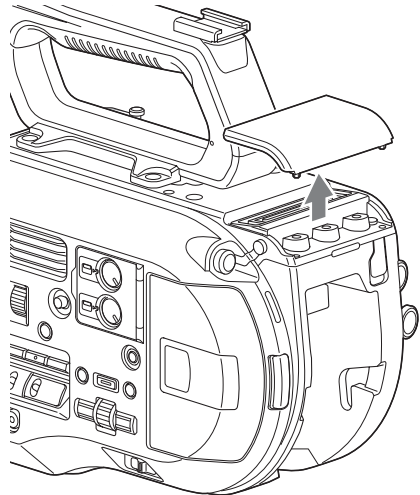
You can add functions to the camcorder, such as a V-shoe battery or external sync signal, by attaching an XDCA-FS7 Extension Unit (option) to the camcorder.

Attaching the XDCA-FS7

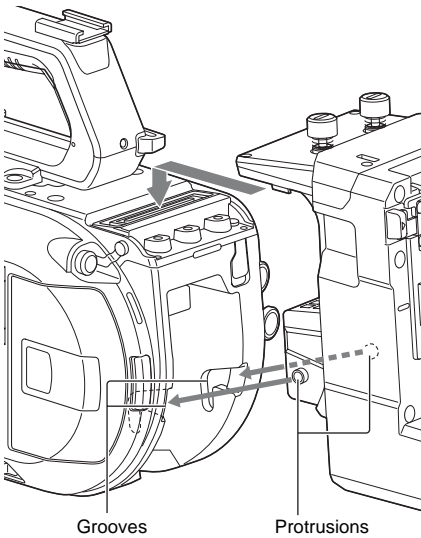
Notes

- 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.

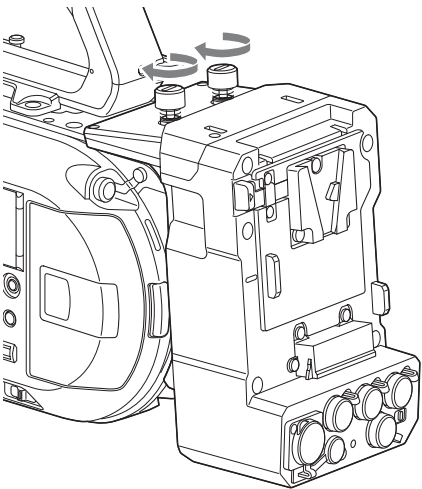
- 1 Remove the battery pack (page 18) attached to the camcorder.**
- 2 Remove the cover of the extension unit connector section.**



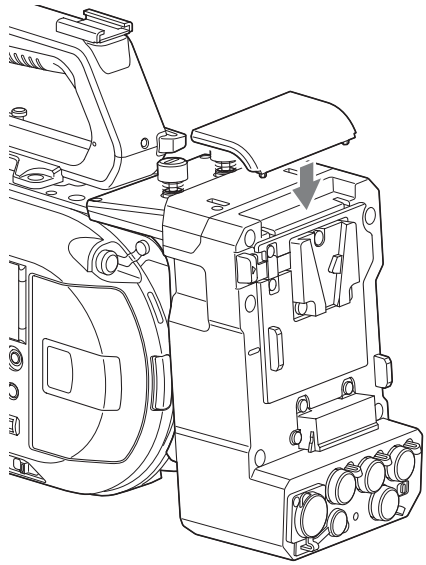
- 3** Align the protrusions of the XDCA-FS7 with the left and right grooves of the camcorder and slide all the way in, then slide the XDCA-FS7 down into the connector section.



- 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. The following Sony genuine battery packs are supported.

Lithium-ion battery packs

BP-GL65A

BP-GL95A

BP-L60S

BP-L80S

BP-FL75

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 12*).

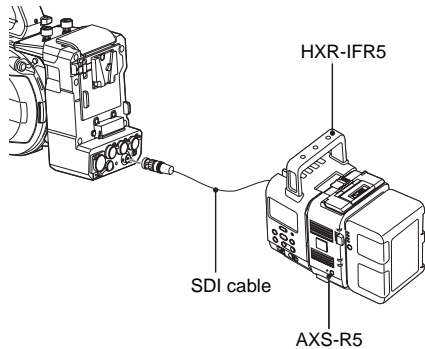
For details, see page 91.

Using an HXR-IFR5 and AXS-R5

You can record RAW video (*page 46*) to an AXS-R5 RAW Recorder (option) using an HXR-IFR5 Interface Unit (option) and an XDCA-FS7. 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 29*).
- 2 Connect the RAW OUT connector of the XDCA-FS7 to the SDI IN (RAW) connector of the HXR-IFR5 using an SDI cable.



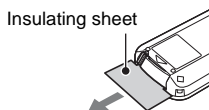
Removing the HXR-IFR5

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.



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 87*) in the System menu to On.

Notes

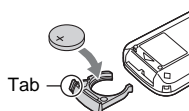
- Point the remote control at the remote control receiver sensor on the camcorder.
- Set up the camcorder so that the remote control receiver sensor is not exposed to direct sunlight or strong light from other sources. Strong light can prevent proper remote control operation.
- Other video decks may 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.**



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 of the Wi-Fi remote control setup procedure, see *page 50*.

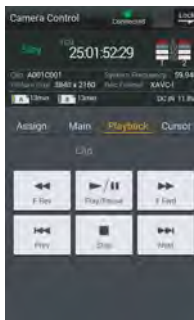
Wi-Fi Remote screen (smartphone)

Main screen



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

Playback screen



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

Cursor screen



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

Assign screen



- Status
- Assignable buttons
Assignable buttons 1 to 6

Wi-Fi Remote screen (tablet)

Main screen



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

Playback screen



- Status
- Playback button
Play/Pause, Stop, F Fwd, F Rev, Next, Prev

Cursor screen



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

Assign screen



- Status
- Assignable buttons
Assignable buttons 1 to 6

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 camera image appears in the viewfinder.

4 Press the record button (page 7).

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.

Shooting (Full Auto mode)

Press the FULL AUTO button, turning the button indicator on.

The auto iris (compatible lenses only), AGC, auto shutter, ATW (auto tracing white balance) functions are enabled to control the brightness and white balance automatically (full auto mode). To control each function manually, turn Full Auto mode off.

Recording continuously when 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. 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 Content Browser software.

Recording to memory cards A and B simultaneously (Simul Rec)

You can simultaneously record using both memory cards A and B.

Set Simul Rec >Setting in the Recording menu to “On.”

Note

Simultaneous recording is not supported in Slow & Quick Motion mode (page 77) or Picture Cache recording mode (page 77). Also, simultaneous recording is not supported for the following recording formats (page 82).

NTSC Area

XAVC-I

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, 2160 × 1080 59.94P,
2160 × 1080 29.97P, 2160 × 1080 23.98P

RAW & XAVC-I (with XDCA-FS7, HXR-IFR5, and AXS-R5 connected)

4096 × 2160 59.94P, 2160 × 1080 59.94P

PAL Area

XAVC-I

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,
2160 × 1080 50P, 2160 × 1080 25P

RAW & XAVC-I (with XDCA-FS7, HXR-IFR5, and AXS-R5 connected)

4096 × 2160 50P, 2160 × 1080 50P

Changing the settings of the record buttons on the camcorder and handle

When the 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]”

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 [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 9*) 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 24*).

Temporarily stopping auto focus (Focus Hold)

Press the PUSH AUTO FOCUS button (*page 9*) 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 9*) to “MAN.”

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 9*).

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.

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.

Focus 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 ASSIGN4 button on the grip remote control (*page 42*).

Press the ASSIGN4 button.

The focus magnifier screen appears 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.

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.

Monitoring Audio

You can monitor the audio that is being recorded using headphones.

Connecting a set of headphones to the headphone connector (*page 10*) enables you to monitor the audio being recorded. You can also monitor the playback audio (*page 52*) using the built-in speaker (*page 10*) or headphones.

You can select the audio channel to monitor and adjust the volume using Audio Output (*page 69*) in the Audio menu.

Switching Between XQD Memory Cards

When two XQD memory cards are inserted, press the SLOT SELECT button (*page 9*) 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

The maximum duration of a clip varies depending on the recording format.

The maximum duration of continuous recording is the same as the maximum duration of a clip. When the recording time reaches the maximum duration, recording stops.

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.

When adjusting the brightness without using ND filters, turn Full Auto mode (page 35) off.

You can adjust the brightness control target level in the setup menu.

Adjusting the control target level

Set the level using Auto Exposure (page 59) >Level in the Camera menu.

Note

The brightness cannot be adjusted automatically in Cine EI mode.

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 (page 42) to turn Auto Iris on.**

The setting toggles between on and off each time the IRIS button is pressed.

Adjusting the iris manually

Press the IRIS button to turn Auto Iris off, then adjust using the IRIS dial.

You can also assign the IRIS function to an assignable dial (page 42).

Turning auto iris on temporarily

Press and hold the PUSH AUTO IRIS button to turn auto iris on temporarily.

The iris returns to the previous setting when you release the button.

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 automatically

Press the ISO/Gain button (page 9) to turn AGC on.

Or select Auto Exposure (page 59) >AGC in the Camera menu and set 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 (page 9) to turn AGC off.**
- 2 Set the GAIN switch (page 9) to H, M, or L.**

Controlling the gain (fine adjustment)

Turn the IRIS dial, or the assignable dial assigned with the ISO/Gain/EI function, to adjust the gain value set by the GAIN switch.

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 GAIN switch or by turning AGC on.

Shooting using auto shutter

This function adjusts the shutter speed automatically in response to the image brightness.

Press the SHUTTER button (page 9).

If the settings screen was displayed, press the button again.

Or set Auto Exposure (page 59) > Auto Shutter in the Camera menu to On.

Shooting with a fixed shutter

You can shoot with a set shutter speed.

Press the SHUTTER button 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 enabled.

Setting in the Camera menu

Select Shutter (page 61) in the Camera menu and set the shutter mode and speed.

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.

Turn the ND FILTER switch (page 9) to select Clear → 1/4 → 1/16 → 1/64 → Clear in sequence.

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 (page 9) switches ATW on/off.

You can select the speed of adjustment (five steps) using White > ATW Speed (page 63) in the Paint menu.

You can freeze the current white balance setting by assigning the ATW Hold function to an assignable button (page 42), and pressing the assignable button to temporarily pause ATW mode.

Notes

- ATW does not operate in Cine EI mode. Also, when ATW mode is set to Preset, the available color temperature options are 3200K, 4300K, and 5500K only, and the auto white balance function does not operate.
- 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 35) off.**
- 2 When white balance is set to ATW mode, press the WHT BAL button (page 9) to set manual mode.**

3 Select B, A, or PRESET using the WHT BAL switch (page 9).

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.

Running auto white balance

1 Press the ISO/Gain button (page 9) to turn AGC on.

Or select Auto Exposure (page 59) >AGC in the Camera menu and set to “On.”

2 To save an adjustment value in memory, select memory A mode or memory B mode.

3 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.

4 Adjust the brightness.

Adjust the iris using the procedure in “Adjusting the iris manually” (page 38).

5 Press the WB SET button (page 7).

If auto white balance is set in memory mode, the adjustment value is saved in the memory (A or B) selected in step 2.

If auto white balance is set in ATW mode, the white balance adjustment returns to the ATW mode white balance when adjustment ends.

Notes

- You can enable auto white balance when in preset mode using White >AWB Enable<P> in the Paint menu. The setting is disabled again when the camcorder is turned off.
- 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 10)

INPUT2 connector (page 10)

INPUT1 switch (LINE/MIC/MIC+48V) (page 7)

INPUT2 switch (LINE/MIC/MIC+48V) (page 7)

Switches for setting the audio level

CH1 (AUTO/MAN) switch (page 9)

CH2 (AUTO/MAN) switch (page 9)

AUDIO LEVEL (CH1) dial (page 9)

AUDIO LEVEL (CH2) dial (page 9)

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, specify “Shoe 1” or “Shoe 2” in the same way.

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. LINE 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 +48 V source may damage the connected device. Check the setting before connecting the device.
- If noise is a concern on connectors with no device connected, set the corresponding INPUT1/INPUT2 (LINE/MIC/MIC+48V) switches to “LINE.”

Adjusting the audio recording level automatically

Set the CH1/CH2 (AUTO/MAN) switches for the channels to adjust automatically to “AUTO.”

Adjusting the audio recording level manually

Use the following procedure to adjust the audio recording level.

- 1 Set the CH1/CH2 (AUTO/MAN) switches for the channels to adjust manually to “MAN.”**
- 2 During shooting or standby, turn the AUDIO LEVEL (CH1)/(CH2) dials of the corresponding channels to adjust the audio level.**

You can also adjust the recording level using the assignable dial (*page 42*) if assigned with the Audio Input Level function, or from the setup menu.

Notes

- If Audio Input >CH1 Level and CH2 Level in the Audio menu are both set to “Side,” Audio Input Level in the menu is disabled as there is no target for the Audio Input Level setting. In this case, an assignable dial with Audio Input Level assigned also cannot be used to adjust the audio level.
- If Audio Input >CH1 Level or CH2 Level in the Audio menu is set to “Lvl + Side,” the adjustment value is the product of the Audio Input Level setting and the level set by the AUDIO LEVEL dial. If either level is set to the minimum value, the audio is muted. If both levels are set to the maximum value, the maximum level is selected.

Specifying Time Data

Setting the timecode

Set the timecode to record using Timecode (*page 76*) in the TC/UB menu.

Displaying time data

Press the DISPLAY button to display time data on the screen (*page 14*).

Set the timecode to display using TC Display (*page 76*) >Display Select in the TC/UB menu. Pressing an assignable button (*page 42*) 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 six assignable buttons (*page 9*, *page 11*) on the camcorder to which you can assign functions.

You can also assign functions to the IRIS dial (*page 9*) on the camcorder and the assignable dial (*page 11*) on the grip remote control.

Changing the button function

Use Assignable Button (*page 83*) in the System menu.

You can view the assigned functions on the Assignable Button Status screen (*page 16*).

The following functions are assigned to each assignable button by factory default.

| | |
|----------|-----------------------|
| Button 1 | S&Q Motion |
| Button 2 | IRIS |
| Button 3 | User Menu |
| Button 4 | Focus Magnifier x4/x8 |
| Button 5 | User Menu |
| Button 6 | 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
- VF Mode
- IRIS
- AGC
- SHUTTER
- Auto Exposure Level
- Push Auto Iris
- Push AGC
- 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 85*) in the System menu.

You can view the assigned functions on the Assignable Button Status screen (*page 16*). IRIS is assigned by factory default.

Assignable functions

- Off
- IRIS
- ISO/GAIN/EI
- Focus
- Audio Input Level

Slow & Quick Motion

When the video format (*page 82*) 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

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

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

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 | – (59.94P, 29.97P, 23.98P) |
| | 1080 | 1 to 60 fps | 72/75/80/90/96/ 100/110/120/125/ 135/144/150/160/ 168/175/180 fps (59.94P, 29.97P, 23.98P) |
| XAVC-L | 2160 | 1 to 60 fps | – (59.94P, 29.97P, 23.98P) |
| | 1080 | 1 to 60 fps | 72/75/80/90/96/ 100/110/120 fps (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 | – (59P, 25P) |
| | 1080 | 1 to 60 fps | 72/75/80/90/96/ 100/110/120/125/ 135/144/150 fps (59P, 25P) |
| XAVC-L | 2160 | 1 to 60 fps | – (59P, 25P) |
| | 1080 | 1 to 60 fps | 72/75/80/90/96/ 100/110/120 fps (50P 50, 50P 35, 25P 50, 25P 35) |

Picture Cache Recording (Picture Cache Rec)

The picture cache recording 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 77*) in the Recording menu.

Notes

- Picture Cache Rec cannot be on at the same time as Frame Rec, Interval Rec, or Slow & Quick Motion. When Picture Cache Rec is turned on, these other recording modes are forcibly turned off.
- Picture Cache Rec mode cannot be selected while recording or Rec Review is in progress.

- When Picture Cache Rec is on, the timecode is recorded in Free Run mode regardless of the setting in the TC/UB menu (*page 76*).

Configuring before shooting

Configure Picture Cache Rec (*page 77*) in the Recording menu before shooting.

You can also assign the Picture Cache Rec function to an assignable button (*page 42*) and switch Picture Cache Rec on/off using the button. When configured, the ● (green) indicator appears in the viewfinder (*page 13*).

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

Turn off Picture Cache Rec >Setting in the Recording menu 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 turned on/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 cache recording function is turned on. Video prior to the function being turned 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 42*) with Rec Review assigned.

The clip is played to the end, Rec Review ends, and the camcorder returns to STBY (standby) mode.

To stop Rec Review

Press the assignable button with Rec Review assigned.

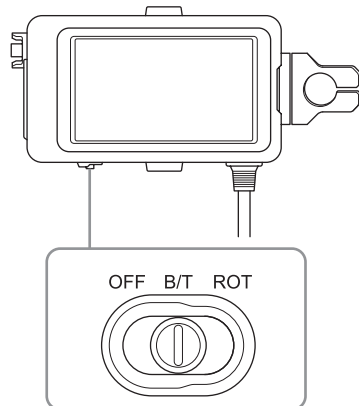
Note

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

Self Portrait Mode

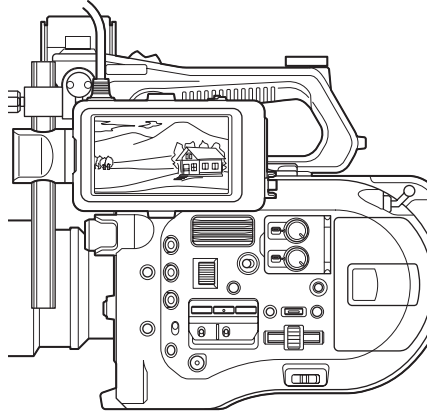
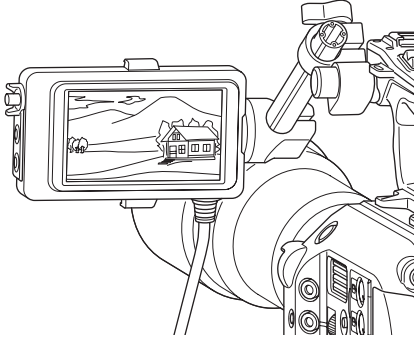
You can flip the image in the viewfinder (*page 11*) vertically or horizontally/vertically using the MIRROR switch.

This allows you to turn the viewfinder 180° toward the lens.



OFF

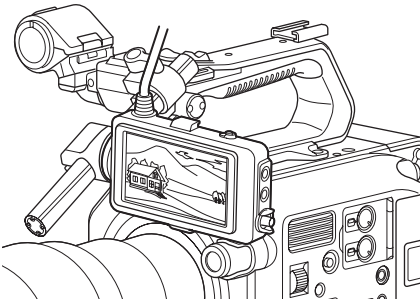
The image is not inverted.



B/T

The image is flipped vertically.

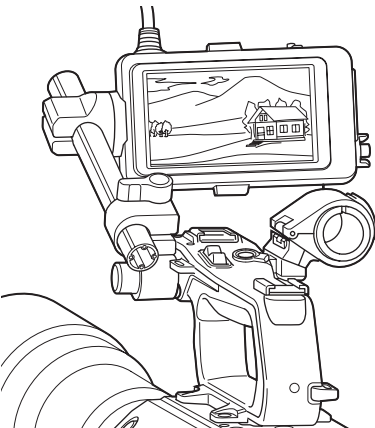
The information display is flipped vertically and horizontally.



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 on/off by pressing the PEAKING button on the viewfinder (*page 11*). You can turn peaking on/off and set the peaking type and peaking frequency using Peaking (*page 72*) in the VF menu.


Displaying Zebra

You can turn zebra pattern display on/off by pressing the ZEBRA button on the viewfinder (*page 11*).

You can turn zebra pattern display on/off, and set the zebra pattern type and display level using Zebra (*page 72*) in the VF menu.






Obtaining Location Information (GPS)

Set GPS to “On” in the System menu.

 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 turned on/off when the handle is not attached.
- The icon displayed varies, depending on the signal reception from the GPS satellites.

| Positioning status | Display | GPS reception state |
|---------------------------|--|---|
| Off | No display | GPS is set to “Off” or an error occurred. |
| Positioning not available |  | 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. |

- 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
 - Auto Exposure
- Functions that cannot be configured
 - Gain
 - Noise Suppression
 - Paint menu settings
 - Scene File
 - Lens File

Functions available in Cine EI mode only

- Exposure Index
- Monitor LUT
- 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 31*).

- 1 Set up the external RAW recorder unit (*page 31*).**
- 2 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.
- 3 Set Rec Format in the System menu to RAW Output Format.**
- 4 Check that the external recorder is turned on, then press the record button on the camcorder.**

The supported RAW output formats are shown below.

NTSC Area

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

PAL Area

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

Recording status indicator

If Display On/Off (page 74) >HXR-IFR5 Rec Control in the VF menu is set to “On,” the RAW recording status is displayed in the viewfinder using an icon.

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).

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.

Connecting 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 Adaptor (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 and audio monitoring (CBK-WA100 only)
Enables monitoring of the video and audio from the camcorder.
CBK-WA100 (option) and the Content Browser Mobile application are required.

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 4.3 | Chrome |
| | iOS7 | Safari |
| Tablet | Android 4.3 | Chrome |
| | iOS7 | Safari |
| Computer | Microsoft Windows 7/ | Chrome |
| | Microsoft Windows 8.1 | |
| | Mac OS 10.8/10.9 | Safari |

Attaching the IFU-WLM3

Plug the IFU-WLM3 into the USB wireless LAN module connector (page 7).

After attaching the unit, set Wi-Fi >Wi-Fi (page 86) in the System menu to “Enable” to enable wireless LAN.

Note

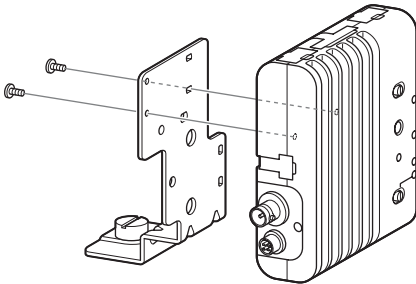
Attach/remove the IFU-WLM3 while the camcorder is turned off.

Attaching the CBK-WA100

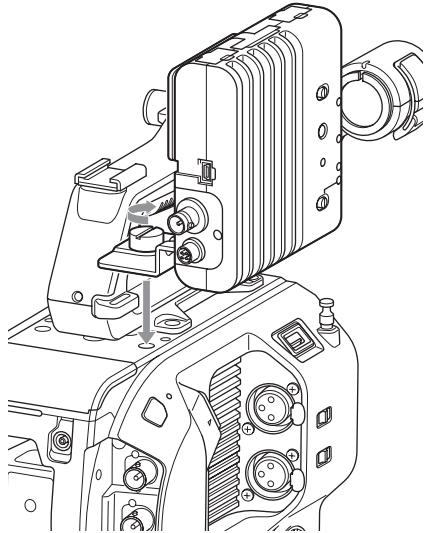
Note

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

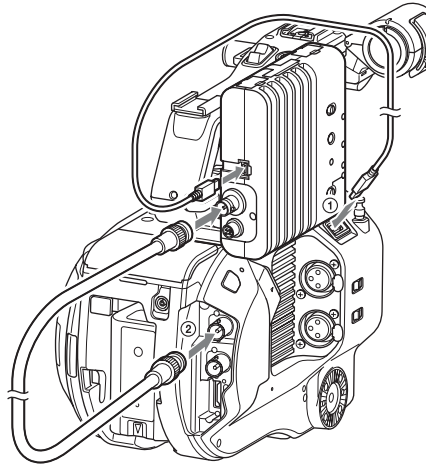
- 1 Attach the CBK-WA100 to the mounting bracket, and tighten the two screws.**



- 2 Attach the CBK-WA100 mounting bracket on the camcorder, and tighten the screws.**



- 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 When connection is completed, the wireless LAN must be enabled by setting Wi-Fi >Wi-Fi (page 86) in the System menu to Enable.**

Note

The SDI OUT output setting must be configured to use the CBK-WA100 with the camcorder (*page 77*).


About the CBK-WA100

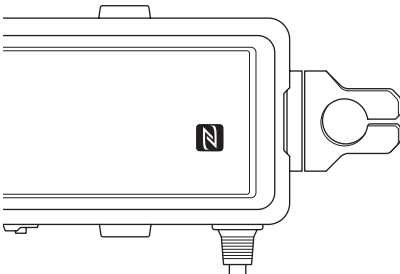
The CBK-WA100 has functions for recording proxy files (low-resolution files) on an SD card, and for transferring the files to a server via a wireless LAN. For details, refer to the operation manual for the CBK-WA100.

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 48*), and set Wi-Fi > Wi-Fi (*page 86*) in the System menu to “Enable” to enable wireless LAN.**

 appears on the screen.

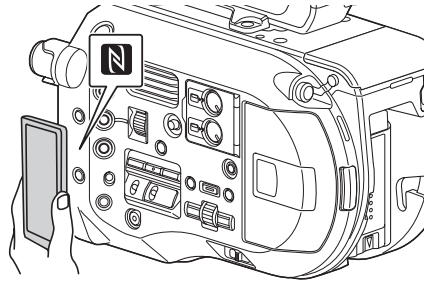


- 2 **Open “Settings” on the device, select “More,” and place a check mark in the NFC checkbox.**


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

- Some devices with a  mark support NFC. For details, refer to the operation manual for the device.
- 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 49).**
- 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

Thumbnail Screen

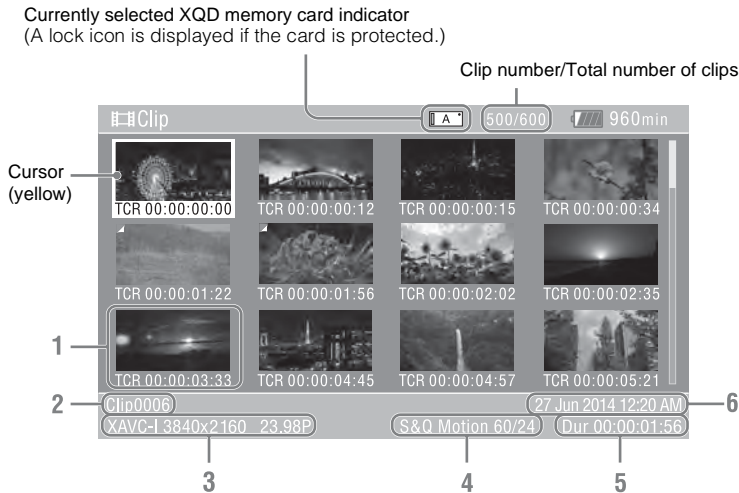
The thumbnail screen appears if you press the THUMBNAIL button (*page 9*). The thumbnail screen displays the clips stored on XQD memory cards as thumbnails (index pictures). You can select a clip on the thumbnail screen and start playback of that clip. The playback image can be displayed in the viewfinder and on an external monitor. Pressing the THUMBNAIL button again closes the thumbnail screen and returns to the camera image.

Note

Only the clips recorded in the currently selected recording format are displayed on the thumbnail screen. If an expected recorded clip is not displayed, check the recording format. Take special note of this fact before formatting (initializing) media.

Screen Layout

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



1. Thumbnail (index picture)

Displays the index picture of a clip. When a clip is recorded, its first frame is automatically set as the index picture.

Clip/frame information is displayed below the thumbnail. You change the information displayed using Customise View (*page 78*) >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 9) 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 78*) appears when you press the MENU button and select a thumbnail.

Thumbnail Menu Operations

Turn the SEL/SET dial (*page 9*) to select a function, then press the SEL/SET dial. Press the CANCEL/BACK button (*page 9*) 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 78*).

Displaying clip properties

Select Display Clip Properties (*page 78*) in the Thumbnail menu to display the clip properties screen.

Displaying the essence mark thumbnail screen

Select Thumbnail View (*page 78*) >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 78*) in the Thumbnail menu and select a clip flag type to display only those clips that have the specified flag.

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.

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 Organization

| | |
|-----------------------------------|---------------------|
| User (Factory settings) | Country |
| | Base Setting |
| | Rec Format |
| | Codec |
| | S&Q Motion |
| | Picture Cache Rec |
| | Simul Rec |
| | Output Format |
| | Monitor LUT |
| | Clip |
| | VF Setting |
| | Assignable Button |
| | Assignable Dial |
| | Format Media |
| Edit User Menu | |
| Edit User | Add Item |
| | Customize Reset |
| Camera | ISO/Gain/EI |
| | Auto Exposure |
| | Focus |
| | Shutter |
| | Color Bars |
| | Noise Suppression |
| | Flicker Reduce |
| | SteadyShot |
| | Handle Zoom |
| | Auto Black Balance |
| | AF Micro Adjustment |
| | Video Light Set |
| Paint | White |
| | Offset White |
| | Black |
| | Gamma |
| | Black Gamma |
| | Knee |
| | White Clip |
| | Detail(HD Mode) |
| | Skin Detail |
| | Aperture |
| | Matrix |
| | Multi Matrix |
| | Maintenance |
| Audio | Audio Input |
| | Audio Output |

| | |
|------------------|-------------------------|
| Video | Output On/Off |
| | Output Format |
| | Output Setting |
| | Monitor LUT |
| | Output Display |
| VF | VF Setting |
| | Peaking |
| | Zebra |
| | Marker |
| | Display On/Off |
| TC/UB | Timecode |
| | TC Display |
| | Users Bit |
| | HDMI TC Out |
| Recording | S&Q Motion |
| | 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 |
| | Rec Lamp |
| | Fan Control |
| | HOLD Switch Setting |
| | Lens |
| | Language |
| | Clock Set |
| | Country |
| | Hours Meter |
| | 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 9)

Turns menu mode for setup menu operations on/off.

Left button/Right button (page 9) and SEL/SET dial (page 9)

Press the left/right button to move the cursor left/right to select menu items or settings.

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 9)

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 37).

Setting menu items

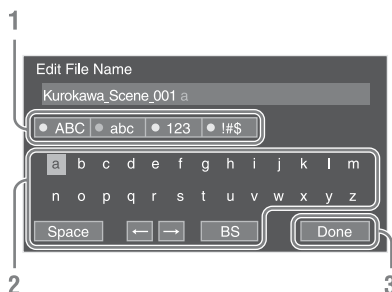
Turn the SEL/SET dial to move the cursor to the menu item to set, then press the SET/SEL dial to select the item.

- 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 (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, then 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. | |
| 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 Settings for assigning functions to assignable buttons | See Assignable Button in the System menu. | |
| Assignable Dial Settings for assigning functions to assignable dials | See Assignable Dial in the System menu. | |
| 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 | | Adds a menu item to the User menu. |
| Add an item to the User menu | | |
| Customize Reset | | Restores the menu items registered in the User menu to the factory default. |
| Reset the items in the User menu | | |
| 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 | | |
|--|--|---|
| Item | Sub-item setting | Description |
| ISO/Gain/EI | Mode | Selects the gain setting mode. |
| Gain settings | ISO/dB | |
| | ISO/Gain<H> | Sets the <H> gain preset value. |
| | When Mode is set to ISO and dynamic range is 460%. | When Mode is set to ISO and dynamic range is 1300% (Gamma Category is set to S-Log3). |
| | ISO 800 / ISO 1000 / | ISO 2000 / ISO 2500 / ISO 3200 / |
| | ISO 1250 / ISO 1600 / | ISO 4000 / ISO 5000 / ISO 6400 / |
| | ISO 2000 / ISO 2500 / | ISO 8000 / ISO 10000 / ISO 12500 / |
| | ISO 3200 / ISO 4000 / | ISO 16000 |
| ISO 5000 / ISO 6400 | When Mode is set to dB. | |
| When Mode is set to ISO and dynamic range is 800%. | -3dB / 0dB / 3dB / 6dB / | |
| ISO 1600 / ISO 2000 / | 9dB / 12dB / 18dB | |
| ISO 2500 / ISO 3200 / | | |
| ISO 4000 / ISO 5000 / | | |
| ISO 6400 / ISO 8000 / | | |
| ISO 10000 / ISO 12500 | | |
| ISO/Gain<M> | (Same settings as ISO/Gain<H>) | Sets the <M> gain preset value. |
| ISO/Gain<L> | (Same settings as ISO/Gain<H>) | Sets the <L> gain preset value. |

| Camera | | |
|--|--|--|
| Item | Sub-item setting | Description |
| | 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>) | Sets the <M> exposure index value. |
| | Exposure Index<L> (Same settings as Exposure Index<H>) | Sets the <L> exposure index value. |
| | Shockless Gain On/ Off | Turns the shockless gain function on/off. |
| Auto Exposure Automatic exposure adjustment settings | 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. |

| Camera | | |
|--------------------------------|---|--|
| Item | Sub-item setting | Description |
| | 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 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. |
| | 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. |
| Focus Focus settings | AF Assist On / Off | When set to On, allows you to temporarily override auto focus and set focus manually. |

| Camera | | |
|---|--|---|
| Item | Sub-item setting | Description |
| Shutter Electronic shutter operating condition settings | Mode | Selects the operating mode of the electronic shutter. |
| | Speed / Angle / ECS / Off | 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 in the viewfinder. |
| | Shutter Speed 1/3 to 1/9000 | Sets the shutter speed when Mode is set to Speed. The available settings vary depending on the frame frequency of the selected video format. |
| | Shutter Angle 5.625° / 11.25° / 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 (60) | Sets the ECS frequency when Mode is set to ECS. The available settings vary depending on the frame frequency of the selected video format. | |
| Color Bars Color bar settings | Setting On / Off | Turns the color bars on/off. |
| | Type ARIB / SMPTE / 75% / 100% | Selects the color bar type. |
| Noise Suppression Noise suppression settings | Setting On / Off | Turns the noise suppression function on/off. (Enabled when Base Setting >Shooting Mode in the System menu is set to Custom) |
| | Level Low / Mid / High | Sets the noise suppression level. |
| Flicker Reduce Flicker correction settings | 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. |
| SteadyShot Image stabilization settings | Setting Active SteadyShot / SteadyShot / Off | Turns the image stabilization function on/off. Note Enabled when a compatible lens is attached. |
| Handle Zoom Handle zoom settings | 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. |
| | | |
| Auto Black Balance Auto black balance settings | Auto Black Balance Execute / Cancel | Runs the auto black balance function. Notes <ul style="list-style-type: none"> The auto black balance function cannot be run if the iris is not closed. Attach the lens cap and then execute. Cannot be run during recording or color bar display. Cannot be run when in Interval Rec mode, Frame Rec mode, Slow & Quick Motion mode, or Slow Shutter mode. |

| Camera | | |
|--|---|---|
| Item | Sub-item setting | Description |
| AF Micro Adjustment Focus position micro adjustment (Enabled when LA-EA2/4 (option) is used) | 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. |
| Video Light Set Video light settings (when using HVL-LBPC (option)) | 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 | | |
|------------------------------------|--|--|
| Item | Sub-item setting | Description |
| White White balance settings | 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 1500K to 50000K (3200K) | Displays the white balance color temperature saved in memory B. |
| | Color Temp. Balance -99 to +99 (±0) | Sets the white balance gain values saved in memory B (linked R gain and B gain). |
| | R Gain -99 to +99 (±0) | Sets the white balance R gain value saved in memory B. |
| | B Gain -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. 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 Memory / ATW | Selects the white balance adjustment mode that is selected when the WHT BAL switch is set to B. |
| | ATW Speed 1 / 2 / 3 / 4 / 5 | Sets the response speed in ATW mode. 1: Fastest response speed |
| | Color Temp<P> 1500K to 50000K (3200K) | Sets the white balance preset value. |
| | C.Temp BAL <P> -99 to +99 (±0) | Sets more precise color temperature settings, for use when satisfactory video cannot be obtained with Color Temp <P>. |
| | R Gain <P> -99 to +99 (±0) | Specifies the R gain preset value. |
| | B Gain <P> -99 to +99 (±0) | Specifies the B gain preset value. |
| | AWB Enable<P> On / Off | Turns execution of auto white balance on/off when the WHT BAL switch is set to PRESET. |

| Paint | | |
|---|--|---|
| Item | Sub-item setting | Description |
| Offset White White balance offset settings | 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 On / Off | Selects whether to add (On) or not to add (Off) an offset value to the white balance in memory B. |
| | Warm Cool -99 to +99 (±0) | Sets the offset added to the white balance in memory B as a color temperature when Offset White is set to "On." |
| | Warm Cool Balance -99 to +99 (±0) | Sets a more precise color temperature, for use when a satisfactory image cannot be obtained using Warm Cool . |
| | 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>. |
| | Black Black settings | Setting On / Off |
| 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 | | | |
|---|--|--|---|
| Item | Sub-item setting | Description | |
| Gamma Gamma correction settings | 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. | |
| | Gamma Category STD / HG / User / S-Log3 | Selects use of standard gamma (STD), HyperGamma (HG), user gamma (User), or S-Log3. | |
| | Gamma Select When Gamma Category is set to STD. STD1 DVW / STD2 x 4.5 / STD3 x 3.5 / STD4 240M / STD5 R709 / STD6 x 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 S-Log3. S-Log3 | Selects the gamma table used for gamma correction. | |
| | Black Gamma | Setting On / Off | Turns the black gamma correction function on/off. |
| | Range Low / Mid / High | Note The Black Gamma and Knee >Knee Saturation functions cannot be used at the same time. | |
| | Master Black Gamma -99 to +99 (±0) | Selects the effective range of the black gamma correction. Sets the master black gamma level. | |

| Paint | | |
|---|---|---|
| Item | Sub-item setting | Description |
| Knee | 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). |
| White Clip White clip adjustment settings | Setting On / Off | Turns the white clip adjustment function on/off. |
| | Level When Country is not set to PAL Area. 90.0% to 109.0% (108.0%) When Country is set to PAL Area. 90.0% to 109.0% (105.0%) | Sets the white clip level. |
| | | |

| Paint | | |
|---|---|---|
| Item | Sub-item setting | Description |
| Detail Detail adjustment settings | 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. |
| | Crispensing -99 to +99 (±0) | Sets the crispensing 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. |
| | 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. |
| | Skin Detail Skin detail correction settings | Setting 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. |
| Aperture Aperture correction settings | 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 | | |
|--|---|--|
| Item | Sub-item setting | Description |
| Matrix Matrix correction settings | Setting On / Off | Turns the matrix correction function on/off. |
| | Adaptive Matrix On / Off | Turns the adaptive matrix function on/off. |
| | Preset Matrix On / Off | Turns the preset matrix function on/off. |
| | Preset Select Standard High Saturation FL Light Cinema F55 709 Like | Selects a preset matrix. |
| | 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. |
| | Multi Matrix Multi matrix correction settings | Setting 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. |
| Maintenance Maintenance settings | Test Saw On / Off | Turns the test signal on/off. |

Audio Menu

| Audio | | |
|--|---|---|
| Item | Sub-item setting | Description |
| Audio Input Audio input settings | 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. |
| | INPUT1 Reference -60dB / -50dB / -40dB | Sets the reference recording level for XLR microphone input from INPUT1. |
| | INPUT2 Reference -60dB / -50dB / -40dB | Sets the reference recording level for XLR microphone input from INPUT2. |
| | Audio Input Level 0 to +99 | Sets the audio input level. |
| | 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. |
| | Limiter Mode Off / -6dB / -9dB / -12dB / -15dB / -17dB | Selects the limiter characteristic for large input signals when adjusting the audio input level manually. |
| | AGC Mode Mono / Stereo | Sets the auto level adjustment mode. |
| | 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. |
| | CH1 Level Audio Input Level / Side / Lvl+Side | Sets the combination of audio input level adjustments enabled for recording channel 1. |
| | CH2 Level Audio Input Level / Side / Lvl+Side | Sets the combination of audio input level adjustments enabled for recording channel 2. |
| | Audio Output Audio output settings | Monitor CH MIX / CH1 / CH2 |
| Monitor Volume 0 to 15 (7) | | Adjusts the monitor audio level output to the headphone connector and built-in speaker. |
| Headphone Out Mono / Stereo | | Selects whether the headphone connector 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. |

Video Menu

| Video | | |
|--|--|--|
| Item | Sub-item setting | Description |
| Output On/Off Video output settings | SDI On / Off | Turns SDI output on/off. |
| | HDMI On / Off | Turns HDMI output on/off. |
| Output Format Output format settings | SDI | Sets the SDI and HDMI output resolution. |
| | HDMI | For details about settings, see “ <i>Video Formats and Output Signals</i> ” (page 94). |
| Output Setting Output conversion mode settings | HDMI Target Device Recorder / Monitor | Sets the type of HDMI input device connected to the HDMI output. Recorder: Applies the SDI1 MLUT settings when in Cine EI mode. Monitor: Applies the SDI2 MLUT and Output Display settings when in Cine EI mode. |
| | 4K/2K to HD Conv. Edge Crop / Letter Box | Sets the 17:9 to 16:9 video output conversion mode. |

| Video | | |
|---|---|---|
| Item | Sub-item setting | Description |
| Monitor LUT Monitor LUT settings Available in Cine EI mode only. | Category | Sets the type of Look applied as a monitor LUT. |
| | LUT / Look Profile / User 3D LUT | LUT: Outputs video with applied preset LUT or user LUT. |
| | 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. |
| | LUT Select | Selects the LUT type, when Monitor LUT >Category is set to LUT. |
| | P1: 709(800%) | 709(800%): Signal with ITU-R709 base curve with extended dynamic range up to 800%. |
| | P2: HG8009G40 | HG8009G40: Signal using HyperGamma with 800% dynamic range, 109% white limit, and 18% gray card video output of 40%. |
| | P3: HG8009G33 | HG8009G33: Signal using HyperGamma with 800% dynamic range, 109% white limit, and 18% gray card video output of 33%. |
| | P5: S-Log3 | 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 SGamut3.Cine/SLog3) |
| | U1 | U1 to U6: User LUT signals imported from an SD card. |
| U2 | | |
| U3 | | |
| U4 | | |
| U5 | | |
| U6 | | |
| Look Profile Select | Selects the type of Look profile, when Monitor LUT >Category is set to Look Profile. | |
| 1: LC-709 | | |
| 2: LC-709typeA | | |
| 3: SLog2-709 | | |
| 4: Cine+709 | | |
| User 3D LUT Select | Selects the type of user 3D LUT. | |
| User 3D-1 | | |
| User 3D-2 | | |
| User 3D-3 | | |
| User 3D-4 | | |
| SDI1 & Internal Rec | Selects whether to apply monitor LUT to the SDI OUT1 output video and the video recorded on XQD memory cards. | |
| MLUT On / MLUT Off | | |
| SDI2 | Selects whether to apply monitor LUT to the SDI OUT2 output video. | |
| MLUT On / MLUT Off | | |
| HDMI | Displays whether monitor LUT is applied to the HDMI output video. | |
| MLUT On / MLUT Off | | |
| Viewfinder | Selects whether to apply monitor LUT to the viewfinder output video. | |
| MLUT On / MLUT Off | | |
| Output Display | Selects whether to superimpose menus and status on the SDI output signal and HDMI output signal. | |
| SDI2 | | |
| Output signal settings | On / Off | |
| HDMI | | |
| | On / Off | |

VF Menu

| VF | | |
|---|---|---|
| Item | Sub-item setting | Description |
| VF Setting Viewfinder settings | 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. |
| Peaking Peaking settings | 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. |
| | Zebra Zebra pattern settings | Setting On / Off |
| Zebra Select 1 / 2 / Both | | Selects the zebra pattern type (Zebra 1, Zebra 2, Both). |
| Zebra1 Level 50% to 107% (70%) | | Sets the Zebra 1 display level. |
| Zebra1 Aperture Level 1% to 20% (10%) | | Sets the Zebra 1 aperture level. |
| Zebra2 Level 52% to 109% (100%) | | Sets the Zebra 2 display level. |

| VF | | |
|-----------------------------------|--|---|
| Item | Sub-item setting | Description |
| Marker Marker display settings | 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 relative to the signal inside the marker as a percentage. |
| | Aspect Safety Zone On / Off | Turns the aspect safety zone marker on/off. |
| | Aspect Safety Area 80% / 90% / 92.5% / 95% | Selects the size of the aspect safety zone marker (as a percentage of total screen size). |
| | Aspect Select 4:3 / 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 | | |
|--|---|---|
| Item | Sub-item setting | Description |
| Display On/Off Display item settings | Setting On / Off | Selects the items to display in the viewfinder. |
| | Shutter Setting On / Off | |
| | ND Filter Position On / Off | |
| | Gain Setting On / Off | |
| | Rec/Play Status On / Off | |
| | HXR-IFR5 Rec Control On / Off | |
| | Color Temp. On / Off | |
| | Frame Rate On / Off | |
| | Battery Remain On / Off | |
| | Timecode On / Off | |
| | Audio Manual On / Off | |
| | Audio Level Meter On / Off | |
| | Media Status On / Off | |
| | Focus Position Meter / Feet / Off | |
| | Iris Position On / Off | |
| | Zoom Position Number / Bar / Off | |
| | SteadyShot On / Off | |
| | Focus Mode On / Off | |
| | Focus Area Indicator On / Off | |
| | Focus Indicator On / Off | |
| | Auto Shutter On / Off | |
| | AGC On / Off | |
| | Auto Iris On / Off | |
| AE Mode On / Off | | |

| VF | | |
|------|------------------------|--|
| Item | Sub-item setting | Description |
| | 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 |
| | Video Signal Monitor | Off / Waveform / Vector / Histogram |
| | Clip Name | On / Off |
| | Focus Assist Indicator | On / Off |
| | Focus Area Marker | On / Off |
| | Video Level Warning | On / Off |
| | Clip Number | On / Off |
| | GPS | On / Off |
| | Level Gauge | On / Off |
| | Lens Info | Meter / Feet / Off |
| | Notice Message | On / Off |

TC/UB Menu

| TC/UB | | |
|--|--|--|
| Item | Sub-item setting | Description |
| Timecode Timecode settings | Mode Preset / Regen / Clock | Sets the timecode running mode. Preset: Starts running from a preset value. Regen: Starts running from the timecode of the end of the previous clip. Clock: Uses the internal clock as the timecode. |
| | Run Rec Run / Free Run | Rec Run: Runs only when recording. Free Run: Always running, regardless of camcorder operation. |
| | Setting | Sets the timecode to an arbitrary value. SET: Set the value. |
| | Reset Execute / Cancel | Resets the timecode to 00:00:00:00. Execute: Reset timecode |
| | TC Format DF / NDF | Sets the timecode format. DF: Drop Frame NDF: Non-Drop Frame |
| TC Display Time data display settings | Display Select Timecode / Users Bit / Duration | Switches the time data display. |
| Users Bit Settings related to user bits. | Mode Fix / Time | Sets the user bit mode. Fix: Uses an arbitrary fixed value in user bits. Time: Uses the current date and time in user bits. |
| | Setting | Sets the user bits to an arbitrary value. |
| HDMI TC Out | Setting On / Off | Sets whether to output the timecode to devices for other purposes, using HDMI. |

Recording Menu

| Recording | | |
|---|--|--|
| Item | Sub-item setting | Description |
| S&Q Motion Slow & Quick Motion mode settings | Setting On / Off | Turns Slow & Quick Motion on/off. |
| | High Frame Rate Mode Off / Full Scan | Enables higher speed imaging than 60P. Off: Higher speed imaging than 60P is disabled. Full Scan: Enables high-speed imaging at Super 35 frame size. |
| | Frame Rate Up to 240fps | Sets the frame rate for Slow & Quick Motion shooting (page 43). |
| Note | | |
| The initial value varies depending on the Codec, Country, Video Format, and RAW Output Format settings. | | |
| Picture Cache Rec Picture cache recording mode settings | 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. |
| Simul Rec Simultaneous recording settings | 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. |
| SDI/HDMI Rec Control SDI/HDMI recording control settings | Setting On / Off | Turns recording start/stop control for an external connected device, using SDI/HDMI signals, on/off. |

Thumbnail Menu

| Thumbnail | | |
|--|---|--|
| Item | Sub-item setting | Description |
| Display Clip Properties Display clip properties screen | | Displays the clip properties screen. |
| Set Index Picture Clip index picture settings | | Sets the index picture of a clip. |
| Thumbnail View Thumbnail screen settings | 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. |
| Set Shot Mark Shot mark settings | Add Shot Mark1 | Adds Shot Mark1. |
| | Delete Shot Mark1 | Deletes Shot Mark1. |
| | Add Shot Mark2 | Adds Shot Mark2. |
| | Delete Shot Mark2 | Deletes Shot Mark2. |
| Set Clip Flag Clip flag settings | Add OK | Adds an OK flag. |
| | Add NG | Adds an NG flag. |
| | Add KEEP | Adds a Keep flag. |
| | Delete Clip Flag | Deletes all flags. |
| Lock/Unlock Clip Clip protection | Select Clip | Selects and locks/unlocks a clip. |
| | Lock All Clips | Locks all clips. |
| | Unlock All Clips | Unlocks all clips. |
| Delete Clip Delete clips | Select Clip | Deletes the selected clip. |
| | All Clips | Deletes all of the displayed clips. |
| Filter Clips Filtered clip display settings | 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. |
| Customize View Thumbnail screen settings | Thumbnail Caption Date Time / Time Code / Duration / Sequential Number | Switches the information displayed below thumbnails. |

Media Menu

| Media | | |
|--|--|---|
| Item | Sub-item setting | Description |
| Update Media Update memory cards | 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 |
| Format Media Format (initializes) memory cards | 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 UTILITY SD card. Execute: Initialize card |
| Clip Clip name settings | Auto Naming Cam ID + Reel# / Title | Sets the method for naming clips. Cam ID + Reel#: Camera ID + Reel Number + Shot Number + Date + randomized string Title: String set using Title Prefix + Clip Number |
| | 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 | Sets the title portion of the clip name when Auto Naming is set to Title. (Initial value is a model-specific ID, comprising the last three digits of the serial number.) (The value is entered using the character entry screen (page 56).) |
| | Number Set 0001 to 9999 | Sets the numeric portion of the clip name when Auto Naming is set to Title. |

File Menu

| File | | |
|---|--|--|
| Item | Sub-item setting | Description |
| All File Settings related to ALL files. | 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. |
| Scene File Scene file settings | 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. |
| User Menu Item User menu item settings | 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. |
| User Gamma User gamma file settings | 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 |
| | 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 |
| Monitor LUT Monitor LUT file settings | 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 |
| | 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 | | |
|--|--|---|
| Item | Sub-item setting | Description |
| Monitor 3D LUT | Current Settings | Displays a list of the current monitor 3D LUT file settings (file names). |
| Monitor 3D LUT file settings | Load SD Card Execute / Cancel | Loads monitor 3D LUT settings on an SD card into internal memory. Execute: Load 3D LUT settings |
| | 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 |
| Lens File Lens file settings | 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. |

System Menu

| System | | |
|--------------------------------------|---|--|
| Item | Sub-item setting | Description |
| Base Setting Base settings | Shooting Mode Custom / Cine EI | Sets the shooting mode. |
| | Color Space S-Gamut3.Cine/SLog3 / S-Gamut3/SLog3 / Matrix | Sets the color space. |
| Codec Codec settings | Select RAW / RAW & XAVC-I / RAW & XAVC-L / RAW & MPEG HD 422 / XAVC-I / XAVC-L / MPEG HD 422 | Sets the recording/playback mode. Note RAW, RAW & XAVC-I, RAW & XAVC-L, and RAW & MPEG HD 422 are displayed when an XDCA-FS7 is connected. |
| | Rec Format Recording format settings | Video Format • For NTSC systems: When Codec >Select is set to XAVC-I. 3840×2160 59.94P 3840×2160 29.97P 3840×2160 23.98P 1920×1080 59.94P 1920×1080 59.94i 1920×1080 29.97P 1920×1080 23.98P When Codec >Select is set to 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 59.94i 50 1920×1080 59.94i 35 1920×1080 59.94i 25 1920×1080 29.97P 50 1920×1080 29.97P 35 1920×1080 23.98P 50 1920×1080 23.98P 35 When Codec >Select is set to MPEG HD422. 1920×1080 59.94i 50 1920×1080 29.97P 50 1920×1080 23.98P 50 1280×720 59.94P 50 1280×720 29.97P 50 1280×720 23.98P 50 |
| Notes | | <ul style="list-style-type: none"> “---”is grayed out when Codec >Select is set to RAW. The fixed values are grayed out when Codec >Select is set to RAW & XAVC-I, RAW & XAVC-L, or RAW & MPEG HD 422. |

| System | | |
|--|--|---|
| Item | Sub-item setting | Description |
| | RAW Output Format | Sets the recording format for an external RAW recorder. |
| | <ul style="list-style-type: none"> For NTSC systems: When Codec >Select is set to an item that includes RAW. 4096×2160 59.94P 4096×2160 29.97P 4096×2160 23.98P 2160×1080 59.94P 2160×1080 29.97P 2160×1080 23.98P For PAL systems: When Codec >Select is set to an item that includes RAW. 4096×2160 50P 4096×2160 25P 2160×1080 50P 2160×1080 25P | |
| Genlock Genlock settings | 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. |
| Assignable Button Assignable button settings | <1> to <6> Off / Marker / Zebra / Peaking / Video Signal Monitor / Focus Magnifier x4/x8 / Focus Magnifier x4 / Focus Magnifier x8 / VF Mode / IRIS / Push Auto Iris / AGC / Push AGC / SHUTTER / Auto Exposure Level / Spotlight / Backlight / ATW / ATW Hold / Push AF/Focus 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 / DURATION/TC/U-BIT / 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 display (histogram, etc.). Focus Magnifier x4/x8: Focus Magnifier x4: Focus Magnifier x8: Turns the focus magnifier function on/off. VF Mode: Switches the viewfinder display between color and B&W. IRIS: Switches the iris function between Auto and Manual. Push Auto Iris: Enables the auto iris function while the button is pressed. AGC: Turns the AGC function on/off. |

| System | | |
|--------|------------------|--|
| Item | Sub-item setting | Description |
| | | Push AGC: Enables the AGC function while the button is pressed. |
| | | SHUTTER: Switches the shutter between Auto and Manual. |
| | | Auto Exposure Level: Opens the Auto Exposure Level screen. |
| | | 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. |
| | | Push AF/Focus Hold: Runs the push auto focus function or focus hold function. |
| | | 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. |
| | | 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. |
| | | 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. |
| | | DURATION/TC/U-BIT: Switches between Time Code, Users Bit, and Duration. |
| | | High/Low Key: Switches between High Key, Low Key, and Off. |

| System | | |
|--|--|--|
| Item | Sub-item setting | Description |
| Assignable Dial Assignable dial settings | Assignable Dial Off / ISO/Gain/EI / IRIS / 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. Focus: Adjusts the focus. Audio Input Level: Adjusts the audio level. |
| | IRIS Dial (Same settings as Assignable Dial) | Assigns functions to the 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. Normal: Turn in forward direction. Opposite: Turn in opposite direction. |
| Rec Lamp Recording indicator settings | Rec Lamp On / Off | Turns the recording indicator on/off. |
| Fan Control Fan control mode settings | Fan Control Mode 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. |
| HOLD Switch Setting Hold switch settings | with Rec Button On / Off | Sets whether or not to lock the recording button. |
| | with Hand Grip Remote On / Off | Sets whether to lock operation of the grip remote control. |
| Lens Lens settings | 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. |
| | Distortion Comp. Auto / Off | Turns automatic distortion compensation on/off. Notes <ul style="list-style-type: none"> • Not available in picture cache recording mode or when recording. • Distortion compensation is not applied during QFHD recording. |
| Language Language settings | Select | Sets the display language. SET: Set language. |

| System | | | |
|--|--|---|---|
| Item | Sub-item setting | Description | |
| Clock Set Internal clock settings | Time Zone UTC 12:00 Kwajalein 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. | |
| | Country Region settings | NTSC/PAL Area NTSC Area / PAL Area | Sets the region of use. |
| Hours Meter Hours meter settings | Hours (System) | Displays the accumulated hours of use (cannot be reset). | |
| | Hours (Reset) | Displays the accumulated hours of use (can be reset). | |
| | Reset | Resets the Hours (Reset) display to 0. | |
| | Execute / Cancel | Execute: Reset | |
| Basic Authentication Basic network authentication settings | User Name (admin) | Sets a desired user name (1 to 16 alphanumeric characters). SET: Set the value. | |
| | Password (pxw-fs7) | Sets a password (1 to 16 alphanumeric characters). SET: Set the value. | |
| Wi-Fi Wireless LAN connection settings | Wi-Fi Enable / Disable | Selects whether to enable or disable Wi-Fi connection. | |
| | 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: Run | |
| | GPS GPS settings | GPS On / Off | Turns the GPS function on/off. Note The GPS module is built into the handle. |

| System | | |
|---|---|--|
| Item | Sub-item setting | Description |
| IR Remote Remote control settings | Setting On / Off | Enables/disables control from the supplied infrared remote control. |
| Camera Battery Alarm Battery low-voltage alarm settings | Low BATT 5% / 10% / 15% / ... / 45% / 50% BATT Empty 3% to 7% | Sets the remaining battery level to display a battery low-voltage alarm (5% increments). Sets the remaining battery level to display a battery empty alarm. |
| Camera DC IN Alarm Input voltage alarm settings | DC Low Voltage1 11.5 V to 17.0 V DC Low Voltage2 11.0 V to 14.0 V | Sets the voltage to display a DC IN low input voltage alarm. Sets the voltage to display a DC IN insufficient input voltage alarm. |
| Ext. Unit Battery Alarm XDCA-FS7 battery settings | Near End:Info Battery 5% to 100% End:Info Battery 0% to 5% Near End:Sony Battery 11.5V to 17.0V End:Sony Battery 11.0V to 11.5V Near End:Other Battery 11.5V to 17.0V (11.8V) End:Other Battery 11.0V to 14.0V Detected Battery | Sets the remaining battery level to display a Info-Lithium battery low-voltage alarm (5% increments). Sets the remaining battery level to display a Info-Lithium battery end alarm and to stop media access. Sets the remaining battery level to display a battery low-voltage alarm for a non Info-Lithium battery. Sets the remaining battery level to display a battery end alarm for a non Info-Lithium battery and to stop media access. Sets the remaining battery level to display a battery low-voltage alarm for an Anton/Bauer battery. Sets the remaining battery level to display a battery end alarm for an Anton/Bauer battery and to stop media access. 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. |
| Ext. Unit DC IN Alarm XDCA-FS7 input voltage alarm settings | DC Low Voltage1 11.5V to 17.0V DC Low Voltage2 11.0V to 14.0V | Sets the voltage to display a DC IN low input voltage alarm. Sets the voltage to display a DC IN insufficient input voltage alarm. |
| All Reset Reset factory defaults | Reset Execute / Cancel | Resets all settings to their factory defaults. Execute: Reset |
| APR Run APR | APR Execute / Cancel | Runs APR (Automatic Pixel Restoration) for image sensor auto adjustment. Execute: Run |
| Note | | |
| Always attach the lens cap before running APR. | | |
| Camera Config Down-converter output settings | HD/2K Modulation High / Low | Sets the down-converter output bandwidth for conversion to HD and 2K |

| System | | |
|-----------------------------------|--|---|
| Item | Sub-item setting | Description |
| Version Display version | Number x.xx | Displays the software version of the camcorder. |
| | Version Up Execute / Cancel | Upgrades the camcorder.* Execute: Run * Upgrading updates the camcorder software. |
| | 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: Run * 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 71*) 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 70*).

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 77*) >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.

Note

If a connected external device does not support a REC trigger signal, the device cannot be operated.

HDMI OUT connector (Type A connector)

Turn the output on/off and set the output format using the Video menu (*page 70*).

Use a commercially available high-speed HDMI cable for connection.

Select the type of the connected device using HDMI Target Device (*page 104*) 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 31*).

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 12) 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 connector (page 12) 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 | Valid 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 |
| 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 | Valid 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 in the TC/UB menu as follows.**
Mode: Preset
Run: Free Run
- 2 Press the assignable button (page 42) assigned with the DURATION/TC/ U-BIT function to display the timecode on the screen.**
- 3 Check that the TC IN/OUT switch (page 12) 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 the Timecode (page 76) in the TC/UB menu.**
- 2 Check that the TC IN/OUT switch (page 12) is set to the OUT position, and connect the TC IN/OUT connector and Genlock connector (page 12) 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
 - 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 adaptors) is a consumable part.

Power may not be supplied to the unit properly if the pins of the battery terminal are bent or deformed by shock or vibrations, or if they become corroded due to prolonged outdoor use.

Periodic inspections are recommended to keep the unit working properly and to prolong its usable lifetime.

Contact a Sony service or sales representative for more information about inspections.

About the built-in rechargeable battery

The camcorder has a built-in rechargeable battery for storing the date, time, and other settings even when the camcorder is turned off. The rechargeable battery will be fully discharged in about **3 months** if the AC adaptor is not connected or the camcorder is used without the battery pack attached. Use your camcorder after charging the battery.

However, even if the 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.

Output Formats and Limitations

Video Formats and Output Signals

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

SDI OUT connector output formats

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

| 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 |
|--|--|-------------------|--------------------------|
| | SDI | HDMI | |
| RAW Output Format 4096×2160 59.94P | 2048×1080P (Level A) | – | 2048×1080 59.94P Level-A |
| Video Format (fixed value) 1920×1080 59.94P | 2048×1080P (Level B) | – | 2048×1080 59.94P Level-B |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 59.94P Level-A |
| | 1920×1080P (Level B) | – | 1920×1080 59.94P Level-B |
| | 1920×1080i | 1920×1080i | 1920×1080 59.94i |
| RAW Output Format 4096×2160 59.94P | 2048×1080P (Level A) | – | 2048×1080 59.94P Level-A |
| Video Format (fixed value) 1280×720 59.94P | 2048×1080P (Level B) | – | 2048×1080 59.94P Level-B |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 59.94P Level-A |
| | 1920×1080P (Level B) | – | 1920×1080 59.94P Level-B |
| | 1280×720P | 1280×720P | 1280×720 59.94P |
| RAW Output Format – | – | 4096×2160P | No output |
| Video Format 3840×2160 59.94P | – | 3840×2160P | No output |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 59.94P Level-A |
| | 1920×1080P (Level B) | – | 1920×1080 59.94P Level-B |
| | 1920×1080i | 1920×1080i | 1920×1080 59.94i |
| RAW Output Format 2048×1080 59.94P | 2048×1080P (Level A) | – | 2048×1080 59.94P Level-A |
| Video Format (fixed value) 1920×1080 59.94P | 2048×1080P (Level B) | – | 2048×1080 59.94P Level-B |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 59.94P Level-A |
| | 1920×1080P (Level B) | – | 1920×1080 59.94P Level-B |
| | 1920×1080i | 1920×1080i | 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 |
|--|--|-------------------|--------------------------|
| | SDI | HDMI | |
| RAW Output Format 2048×1080 59.94P | 2048×1080P (Level A) | – | 2048×1080 59.94P Level-A |
| Video Format (fixed value) 1280×720 59.94P | 2048×1080P (Level B) | – | 2048×1080 59.94P Level-B |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 59.94P Level-A |
| | 1920×1080P (Level B) | – | 1920×1080 59.94P Level-B |
| | 1280×720P | 1280×720P | 1280×720 59.94P |
| RAW Output Format – | 2048×1080P (Level A) | – | 2048×1080 59.94P Level-A |
| Video Format 1920×1080 59.94P | 2048×1080P (Level B) | – | 2048×1080 59.94P Level-B |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 59.94P Level-A |
| | 1920×1080P (Level B) | – | 1920×1080 59.94P Level-B |
| | 1920×1080i | 1920×1080i | 1920×1080 59.94i |
| | – | 720×480i | No output |
| | – | 720×480P | No output |
| RAW Output Format – | 1920×1080i | 1920×1080i | 1920×1080 59.94i |
| Video Format 1920×1080 59.94i | – | 720×480i | No output |
| | – | 720×480P | No output |
| RAW Output Format – | 1280×720P | 1280×720P | 1280×720 59.94P |
| Video Format 1280×720 59.94P | – | 720×480i | No output |
| | – | 720×480P | No output |
| RAW Output Format 4096×2160 29.97P | 2048×1080PsF | – | 2048×1080 29.97PsF |
| Video Format (fixed value) 1920×1080 29.97P | 1920×1080PsF | 1920×1080i | 1920×1080 29.97PsF |
| RAW Output Format – | – | 4096×2160P | No output |
| Video Format 3840×2160 29.97P | – | 3840×2160P | No output |
| | 1920×1080PsF | 1920×1080i | 1920×1080 29.97PsF |
| RAW Output Format 2048×1080 29.97P | 2048×1080PsF | – | 2048×1080 29.97PsF |
| Video Format (fixed value) 1920×1080 29.97P | 1920×1080PsF | 1920×1080i | 1920×1080 29.97PsF |
| RAW Output Format – | 2048×1080PsF | – | 2048×1080 29.97PsF |
| Video Format 1920×1080 29.97P | 1920×1080PsF | 1920×1080i | 1920×1080 29.97PsF |
| | – | 720×480i | No output |
| RAW Output Format – | 1280×720P | 1280×720P | 1280×720 59.94P (2-2RP) |
| Video Format 1280×720 29.97P | – | 720×480i | No output |

| 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 |
|--|--|--------------------------|--------------------------|
| | SDI | HDMI | |
| RAW Output Format 4096×2160 23.98P | 2048×1080PsF | – | 2048×1080 23.98PsF |
| | 1920×1080PsF | – | 1920×1080 23.98PsF |
| Video Format (fixed value) 1920×1080 23.98P | – | 1920×1080P | No output |
| RAW Output Format – | – | 4096×2160P | No output |
| Video Format 3840×2160 23.98P | – | 3840×2160P | No output |
| | 1920×1080PsF | – | 1920×1080 23.98PsF |
| | – | 1920×1080P | No output |
| RAW Output Format 2048×1080 23.98P | 2048×1080PsF | – | 2048×1080 23.98PsF |
| | 1920×1080PsF | – | 1920×1080 23.98PsF |
| Video Format (fixed value) 1920×1080 23.98P | – | 1920×1080P | No output |
| RAW Output Format – | 2048×1080PsF | – | 2048×1080 23.98PsF |
| Video Format 1920×1080 23.98P | 1920×1080PsF | – | 1920×1080 23.98PsF |
| | – | 1920×1080P | No output |
| | 1920×1080i (2-3PD) | 1920×1080i (2-3PD) | 1920×1080 59.94i (2-3PD) |
| | – | 720×480i (2-3PD) | No output |
| | – | 720×480i (2-3PD) | No output |
| RAW Output Format – | 1280×720P (2-3PD) | 1280×720P (2-3PD) | 1280×720 59.94P (2-3PD) |
| Video Format 1280×720 23.98P | – | 720×480i (2-3PD) | No output |

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

| 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 |
|--|--|-------------------|-----------------------|
| | SDI | HDMI | |
| RAW Output Format 4096×2160 50P Video Format (fixed value) 1920×1080 50P | 2048×1080P (Level A) | – | 2048×1080 50P Level-A |
| | 2048×1080P (Level B) | – | 2048×1080 50P Level-B |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 50P Level-A |
| | 1920×1080P (Level B) | – | 1920×1080 50P Level-B |
| | 1920×1080i | 1920×1080i | 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 |
| | 2048×1080P (Level B) | – | 2048×1080 50P Level-B |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 50P Level-A |
| | 1920×1080P (Level B) | – | 1920×1080 50P Level-B |
| | 1280×720P | 1280×720P | 1280×720 50P |
| RAW Output Format – Video Format 3840×2160 50P | – | 4096×2160P | No output |
| | – | 3840×2160P | No output |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 50P Level-A |
| | 1920×1080P (Level B) | – | 1920×1080 50P Level-B |
| | 1920×1080i | 1920×1080i | 1920×1080 50i |
| RAW Output Format 2048×1080 50P Video Format (fixed value) 1920×1080 50P | 2048×1080P (Level A) | – | 2048×1080 50P Level-A |
| | 2048×1080P (Level B) | – | 2048×1080 50P Level-B |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 50P Level-A |
| | 1920×1080P (Level B) | – | 1920×1080 50P Level-B |
| | 1920×1080i | 1920×1080i | 1920×1080 50i |
| RAW Output Format 2048×1080 50P Video Format (fixed value) 1280×720 50P | 2048×1080P (Level A) | – | 2048×1080 50P Level-A |
| | 2048×1080P (Level B) | – | 2048×1080 50P Level-B |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 50P Level-A |
| | 1920×1080P (Level B) | – | 1920×1080 50P Level-B |
| | 1280×720P | 1280×720P | 1280×720 50P |

| 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 |
|--|--|-------------------|-----------------------|
| | SDI | HDMI | |
| RAW Output Format – | 2048×1080P (Level A) | – | 2048×1080 50P Level-A |
| Video Format 1920×1080 50P | 2048×1080P (Level B) | – | 2048×1080 50P Level-B |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 50P Level-A |
| | 1920×1080P (Level B) | – | 1920×1080 50P Level-B |
| | 1920×1080i | 1920×1080i | 1920×1080 50i |
| | – | 720×576i | No output |
| | – | 720×576P | No output |
| RAW Output Format – | 1920×1080i | 1920×1080i | 1920×1080 50i |
| Video Format 1920×1080 50i | – | 720×576i | No output |
| | – | 720×576P | No output |
| RAW Output Format – | 1280×720P | 1280×720P | 1280×720 50P |
| Video Format 1280×720 50P | – | 720×576i | No output |
| | – | 720×576P | No output |
| RAW Output Format 4096×2160 25P | 2048×1080PsF | – | 2048×1080 25PsF |
| Video Format (fixed value) 1920×1080 25P | 1920×1080PsF | 1920×1080i | 1920×1080 25PsF |
| RAW Output Format – | – | 4096×2160P | No output |
| Video Format 3840×2160 25P | – | 3840×2160P | No output |
| | 1920×1080PsF | 1920×1080i | 1920×1080 25PsF |
| RAW Output Format 2048×1080 25P | 2048×1080PsF | – | 2048×1080 25PsF |
| Video Format (fixed value) 1920×1080 25P | 1920×1080PsF | 1920×1080i | 1920×1080 25PsF |
| RAW Output Format – | 2048×1080PsF | – | 2048×1080 25PsF |
| Video Format 1920×1080 25P | 1920×1080PsF | 1920×1080i | 1920×1080 25PsF |
| | – | 720×576i | No output |
| RAW Output Format – | 1280×720P | 1280×720P | 1280×720 50P (2-2RP) |
| Video Format 1280×720 25P | – | 720×576i | No output |

HDMI OUT connector output formats

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

| 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) | | HDMI output signal |
|--|--|-------------------|--------------------|
| | SDI | HDMI | |
| RAW Output Format 4096×2160 59.94P Video Format (fixed value) 1920×1080 59.94P | 2048×1080P (Level A) | -- | No output |
| | 2048×1080P (Level B) | -- | No output |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 59.94P |
| | 1920×1080P (Level B) | -- | No output |
| | 1920×1080i | 1920×1080i | 1920×1080 59.94i |
| RAW Output Format 4096×2160 59.94P Video Format (fixed value) 1280×720 59.94P | 2048×1080P (Level A) | -- | No output |
| | 2048×1080P (Level B) | -- | No output |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 59.94P |
| | 1920×1080P (Level B) | -- | No output |
| | 1280×720P | 1280×720P | 1280×720 59.94P |
| RAW Output Format -- Video Format 3840×2160 59.94P | -- | 4096×2160P | 4096×2160 59.94P |
| | -- | 3840×2160P | 3840×2160 59.94P |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 59.94P |
| | 1920×1080P (Level B) | -- | No output |
| | 1920×1080i | 1920×1080i | 1920×1080 59.94i |
| RAW Output Format 2048×1080 59.94P Video Format (fixed value) 1920×1080 59.94P | 2048×1080P (Level A) | -- | No output |
| | 2048×1080P (Level B) | -- | No output |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 59.94P |
| | 1920×1080P (Level B) | -- | No output |
| | 1920×1080i | 1920×1080i | 1920×1080 59.94i |
| RAW Output Format 2048×1080 59.94P Video Format (fixed value) 1280×720 59.94P | 2048×1080P (Level A) | -- | No output |
| | 2048×1080P (Level B) | -- | No output |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 59.94P |
| | 1920×1080P (Level B) | -- | No output |
| | 1280×720P | 1280×720P | 1280×720 59.94P |

| 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) | | HDMI output signal |
|--|--|-------------------|-------------------------|
| | SDI | HDMI | |
| RAW Output Format – | 2048×1080P (Level A) | – | No output |
| Video Format 1920×1080 59.94P | 2048×1080P (Level B) | – | No output |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 59.94P |
| | 1920×1080P (Level B) | – | No output |
| | 1920×1080i | 1920×1080i | 1920×1080 59.94i |
| | – | 720×480i | 720×480 59.94i |
| | – | 720×480P | 720×480 59.94P |
| RAW Output Format – | 1920×1080i | 1920×1080i | 1920×1080 59.94i |
| Video Format 1920×1080 59.94i | – | 720×480i | 720×480 59.94i |
| | – | 720×480P | 720×480 59.94P |
| RAW Output Format – | 1280×720P | 1280×720P | 1280×720 59.94P |
| Video Format 1280×720 59.94P | – | 720×480i | 720×480 59.94i |
| | – | 720×480P | 720×480 59.94P |
| RAW Output Format 4096×2160 29.97P | 2048×1080PsF | – | No output |
| Video Format (fixed value) 1920×1080 29.97P | 1920×1080PsF | 1920×1080i | 1920×1080 29.97PsF |
| RAW Output Format – | – | 4096×2160P | 4096×2160 29.97P |
| Video Format 3840×2160 29.97P | – | 3840×2160P | 3840×2160 29.97P |
| | 1920×1080PsF | 1920×1080i | 1920×1080 29.97PsF |
| RAW Output Format 2048×1080 29.97P | 2048×1080PsF | – | No output |
| Video Format (fixed value) 1280×720 29.97P | 1280×720P | 1280×720P | 1280×720 59.94P (2-2RP) |
| RAW Output Format – | 2048×1080PsF | – | No output |
| Video Format 1920×1080 29.97P | 1920×1080PsF | 1920×1080i | 1920×1080 29.97PsF |
| | – | 720×480i | 720×480 59.94i (PsF) |
| RAW Output Format – | 1280×720P | 1280×720P | 1280×720 59.94P (2-2RP) |
| Video Format 1280×720 29.97P | – | 720×480i | 720×480 59.94i (PsF) |
| RAW Output Format 4096×2160 23.98P | 2048×1080PsF | – | No output |
| Video Format (fixed value) 1920×1080 23.98P | 1920×1080PsF | – | No output |
| | – | 1920×1080P | 1920×1080 23.98P (Pure) |
| RAW Output Format – | – | 4096×2160P | 4096×2160 23.98P |
| Video Format 3840×2160 23.98P | – | 3840×2160P | 3840×2160 23.98P |
| | 1920×1080PsF | – | No output |
| | – | 1920×1080P | 1920×1080 23.98P (Pure) |

| 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) | | HDMI output signal |
|--|--|--------------------------|--------------------------|
| | SDI | HDMI | |
| RAW Output Format 2048×1080 23.98P | 2048×1080PsF | – | No output |
| | 1920×1080PsF | – | No output |
| Video Format (fixed value) 1920×1080 23.98P | – | 1920×1080P | 1920×1080 23.98P (Pure) |
| RAW Output Format – | 2048×1080PsF | – | No output |
| Video Format 1920×1080 23.98P | 1920×1080PsF | – | No output |
| | – | 1920×1080P | 1920×1080 23.98P (Pure) |
| | 1920×1080i (2-3PD) | 1920×1080i (2-3PD) | 1920×1080 59.94i (2-3PD) |
| | – | 720×480i (2-3PD) | 720×480 59.94i (2-3PD) |
| RAW Output Format – | 1280×720P (2-3PD) | 1280×720P (2-3PD) | 1280×720 59.94P (2-3PD) |
| Video Format 1280×720 23.98P | – | 720×480i (2-3PD) | 720×480 59.94i |

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

| 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) | | HDMI output signal |
|--|--|-------------------|--------------------|
| | SDI | HDMI | |
| RAW Output Format 4096×2160 50P Video Format (fixed value) 1920×1080 50P | 2048×1080P (Level A) | – | No output |
| | 2048×1080P (Level B) | – | No output |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 50P |
| | 1920×1080P (Level B) | – | No output |
| | 1920×1080i | 1920×1080i | 1920×1080 50i |
| RAW Output Format 4096×2160 50P Video Format (fixed value) 1280×720 50P | 2048×1080P (Level A) | – | No output |
| | 2048×1080P (Level B) | – | No output |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 50P |
| | 1920×1080P (Level B) | – | No output |
| | 1280×720P | 1280×720P | 1280×720 50P |
| RAW Output Format – Video Format 3840×2160 50P | – | 4096×2160P | 4096×2160 50P |
| | – | 3840×2160P | 3840×2160 50P |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 50P |
| | 1920×1080P (Level B) | – | No output |
| | 1920×1080i | 1920×1080i | 1920×1080 50i |
| RAW Output Format 2048×1080 50P Video Format (fixed value) 1920×1080 50P | 2048×1080P (Level A) | – | No output |
| | 2048×1080P (Level B) | – | No output |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 50P |
| | 1920×1080P (Level B) | – | No output |
| | 1920×1080i | 1920×1080i | 1920×1080 50i |
| RAW Output Format 2048×1080 50P Video Format (fixed value) 1280×720 50P | 2048×1080P (Level A) | – | No output |
| | 2048×1080P (Level B) | – | No output |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 50P |
| | 1920×1080P (Level B) | – | No output |
| | 1280×720P | 1280×720P | 1280×720 50P |

| 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) | | HDMI output signal |
|--|--|-------------------|----------------------|
| | SDI | HDMI | |
| RAW Output Format – | 2048×1080P (Level A) | – | No output |
| Video Format 1920×1080 50P | 2048×1080P (Level B) | – | No output |
| | 1920×1080P (Level A) | 1920×1080P | 1920×1080 50P |
| | 1920×1080P (Level B) | – | No output |
| | 1920×1080i | 1920×1080i | 1920×1080 50i |
| | – | 720×576i | 720×576 50i |
| | – | 720×576P | 720×576 50P |
| RAW Output Format – | 1920×1080i | 1920×1080i | 1920×1080 50i |
| Video Format 1920×1080 50i | – | 720×576i | 720×576 50i |
| | – | 720×576P | 720×576 50P |
| RAW Output Format – | 1280×720P | 1280×720P | 1280×720 50P |
| Video Format 1280×720 50P | – | 720×576i | 720×576 50i |
| | – | 720×576P | 720×576 50P |
| RAW Output Format 4096×2160 25P | 2048×1080PsF | – | No output |
| Video Format (fixed value) 1920×1080 25P | 1920×1080PsF | 1920×1080i | 1920×1080 25PsF |
| RAW Output Format – | – | 4096×2160P | 4096×2160 25P |
| Video Format 3840×2160 25P | – | 3840×2160P | 3840×2160 25P |
| | 1920×1080PsF | 1920×1080i | 1920×1080 25PsF |
| RAW Output Format 2048×1080 25P | 2048×1080PsF | – | No output |
| Video Format (fixed value) 1920×1080 25P | 1920×1080PsF | 1920×1080i | 1920×1080 25PsF |
| RAW Output Format – | 2048×1080PsF | – | No output |
| Video Format 1920×1080 25P | 1920×1080PsF | 1920×1080i | 1920×1080 50i (PsF) |
| | – | 720×576i | 720×576 50i (PsF) |
| RAW Output Format – | 1280×720P | 1280×720P | 1280×720 50P (2-2RP) |
| Video Format 1280×720 25P | – | 720×576i | 720×576 50i (PsF) |

Note

No playback picture is output if the video output resolution is higher than the resolution of the picture.

HDMI output settings for HDMI 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 | |

Note

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.”

Operation Warnings

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. |
| 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.

| Viewfinder message | Cause and Solution |
|---|--|
| Battery Error Please Change Battery | An error was detected in the battery pack. Replace with a normal battery pack. |
| Backup Battery End Please Change | The remaining capacity of the backup battery is insufficient. Charge the backup battery. |
| Unknown Media(A) ¹⁾ Please Change | A memory card that has been partitioned or a memory card containing more clips that can be handled by the camcorder was inserted. The card cannot be used in the camcorder, and must be replaced. |
| Cannot Use Media(A) ¹⁾ Unsupported File System | A card using a different file system or an unformatted card was inserted. The card cannot be used in the camcorder, and must be replaced or formatted using the camcorder. |
| Media Error Media(A) ¹⁾ Needs to be Restored | An error occurred on the memory card, and the card must be restored. Restore the memory card. |
| Media Error Cannot Record to Media(A) ¹⁾ | The memory card may be damaged, and can no longer be used for recording. Playback is possible, so making a copy and replacing the memory card is recommended. |
| Media Error Cannot Use Media(A) ¹⁾ | The memory card may be damaged, and can no longer be used for recording or playback. The card cannot be used in the camcorder, and must be replaced. |
| Media(A) ¹⁾ Error Recording Halted Playback Halted | Recording and playback was stopped because an error occurred while using the memory card. If the problem persists, replace the memory card. |
| Media Reached Rewriting Limit Change Media (A) ¹⁾ | The memory card has reached the end of its life. Make a backup, and replace the card immediately. If you continue using the card, the card may not be able to record or play. <i>For details, refer to the operating instructions for the memory card.</i> |
| 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) "Media(B)" is displayed for the card in slot B.

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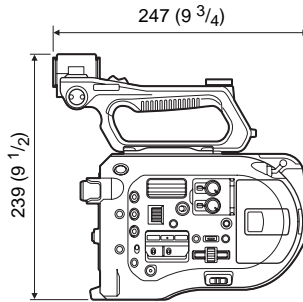
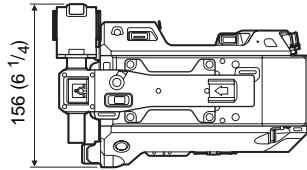
Specifications

General

Mass Approx. 2.0 kg (4 lb 6.5 oz) (body only)

Dimensions

(Unit: mm (inch), body only)¹⁾



1) The values for dimensions are approximate.

Power requirement

12 V DC (11 V to 17.0 V)

Power consumption

Approx. 19 W (body, SELP28135G lens, XAVC-I QFHD 59.94P recording, viewfinder on)

Operating temperature

0 °C to 40 °C (32 °F to 104 °F)

Storage temperature

-20 °C to +60 °C (-4 °F to +140 °C)

Continuous operating time

Approx. 60 minutes (using BP-U30)

Recording format (video)

XAVC Intra

AVC/H.264 High 4:2:2 Intra Profile

QFHD: CBG, 600 Mbps

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 HD422 MPEG-2 Long GOP HD422 mode: CBR, 50 Mbps, MPEG-2 422P@HL | Approx. 26 minutes: Using QD-G64A |
| Recording format (audio) LPCM 24-bit, 48 kHz, 4-channel (2-channel recording on camcorder) | XAVC Intra 1920 × 1080 59.94P Approx. 59 minutes: Using QD-G128A Approx. 30 minutes: Using QD-G64A |
| Recording frame rate XAVC Intra 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 | 50P Approx. 71 minutes: Using QD-G128A Approx. 35 minutes: Using QD-G64A 59.94i Approx. 118 minutes: Using QD-G128A Approx. 59 minutes: Using QD-G64A 50i Approx. 141 minutes: Using QD-G128A Approx. 70 minutes: Using QD-G64A 29.97P Approx. 118 minutes: Using QD-G128A Approx. 59 minutes: Using QD-G64A 23.98P Approx. 147 minutes: Using QD-G128A Approx. 74 minutes: Using QD-G64A 25P Approx. 141 minutes: Using QD-G128A Approx. 70 minutes: Using QD-G64A |
| Recording/playback time XAVC Intra 3840 × 2160 59.94P Approx. 22 minutes: Using QD-G128A Approx. 11 minutes: Using QD-G64A 50P Approx. 26 minutes: Using QD-G128A Approx. 13 minutes: Using QD-G64A 29.97P Approx. 44 minutes: Using QD-G128A Approx. 22 minutes: Using QD-G64A 23.98P Approx. 55 minutes: Using QD-G128A Approx. 27 minutes: Using QD-G64A 25P Approx. 52 minutes: Using QD-G128A | XAVC Long 3840 × 2160 59.94P/50P Approx. 87 minutes: Using QD-G128A Approx. 44 minutes: Using QD-G64A 29.97P/23.98P/25P Approx. 131 minutes: Using QD-G128A Approx. 66 minutes: Using QD-G64A |

XAVC Long 1920 × 1080

- 50M mode
 - Approx. 262 minutes: Using QD-G128A
 - Approx. 131 minutes: Using QD-G64A
- 35M mode
 - Approx. 374 minutes: Using QD-G128A
 - Approx. 187 minutes: Using QD-G64A
- 25M mode
 - Approx. 524 minutes: Using QD-G128A
 - Approx. 262 minutes: Using QD-G64A

MPEG HD 422

- Approx. 262 minutes: Using QD-G128A
- Approx. 131 minutes: Using QD-G64A

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/
 - 8.3 Megapixels @ 16:9 (effective)
- ND filters
 - 1: Clear
 - 2: 1/4ND
 - 3: 1/16ND
 - 4: 1/64ND
- Sensitivity
 - Video Gamma: T14 @ 24p
 - (2000 lx, 89.9% reflectance, 3200K)
- ISO sensitivity
 - S-Log3 Gamma ISO2000 (D55 light source)
- Minimum illumination
 - 0.7 lx (18 dB, 23.98P, Shutter: OFF, ND Clear, F1.4)
- Lens mount
 - E-mount

- 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
 - 4.2° to 359.7°
 - 5.6° to 180° (23.98P)
 - 5.6° to 216° (59.94P)
 - 5.6° to 300° (50P)
- Slow & Quick Motion
 - XAVC QFHD: 1 to 60P,
 - XAVC HD: 1 to 180P
- White balance
 - Preset mode, 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, HG7, HG8,
 - S-Log3, USER1, USER2, USER3,
 - USER4

Audio Section

- Sampling frequency
 - 48 kHz
- Quantization
 - 24-bit
- Frequency response
 - 50 Hz to 20 kHz (±3 dB or less)
- Dynamic range
 - 90 dB (typical)
- Distortion
 - 0.08% or lower (-40 dBu input level)
- Built-in speaker
 - Monaural
- Built-in 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 V_{p-p}, unbalanced (3G HD/1.5G HD output)
SMPTE ST424/425 Level-A/B, 292M standard compliant
4-channel audio

EARPHONE (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 17 V DC

Extension unit connector:
Dedicated (144-pin)

Multi-interface shoe:
Dedicated (21-pin)

REMOTE:

2.5 Φ 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)

Grip remote control

USB wireless LAN module (IFU-WLM3)

Infrared remote control (RMT-845)

AC Adaptor

MPA-AC1 (USA and Canada model
only)
Rated input: 100 V to 240 V AC,
50 Hz/60 Hz, 0.4 A to 0.75 A
Rated output: 12 V DC, 3 A

AC-NB12A (except USA and Canada
model)

Rated input: 100 V to 240 V AC,
50 Hz/60 Hz, 0.35 A to 0.65 A
Rated output: 12 V DC, 2.5 A

Battery pack (BP-U30)

Maximum voltage: 16.4 V DC
Nominal voltage: 14.4 V DC
Capacity: 28 Wh

Battery charger (BC-U1)

Power requirements: 100 V to 240 V
AC, 50 Hz/60 Hz
Power consumption: 38 W
Rated output: Charging 16.4 V, 1.9 A/
1.5 A

Power cords (2)

Mini USB cable (1)

Option mounting stay (1)

Lens mount cap (1)

Handle connector protective cap (including two
M2 screws) (1)

USB wireless LAN module cap (1)

W-LAN connector cover spare (1)

Extension unit connector cover spare (1)

Accessory shoe kit (accessory shoe (1), shoe plate
(1), screws (4))

Before Using this Unit (1)

Operating Instructions (CD-ROM) (1)

Design and specifications are subject to change
without notice.

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UNAVOIDABLE DATA LEAKS
RESULTING FROM TRANSMISSION
SPECIFICATIONS, OR SECURITY
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Notes

- Always make a test recording, and verify that it was recorded successfully.
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- Always verify that the unit is operating properly before use.
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Software Downloads

When the unit is used with a PC connection, download device drivers, plug-ins, and application software, where applicable, from the Sony Professional products web site.

Sony Professional products web site homepage:

| | |
|------------------------|---|
| U.S.A | http://pro.sony.com |
| Canada | http://www.sonybiz.ca |
| Latin America | http://sonypro-latin.com |
| Europe | http://www.pro.sony.eu/pro |
| Middle East and Africa | http://sony-psmea.com |
| Russia | http://sony.ru/pro/ |
| 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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