Panasonic®

Operating Instructions Vol.2

Memory Card Portable Recorder

Model No. **AG-HPD24P**

Model No. **AG-HPD24E**

Volume 2

Note that Operation Instructions Vol.2 describes advanced operations of the Memory Card Portable Recorder.
For instructions on basic operations of the Memory Card Portable Recorder, refer to Operating Instructions Vol.1 (printed documents) supplied with the unit.
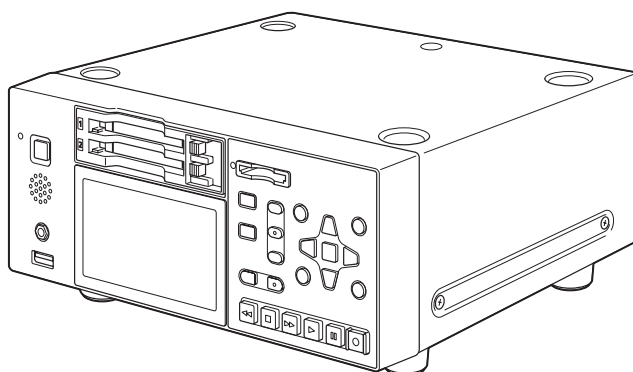
P2HD

HDMI™ HIGH-DEFINITION MULTIMEDIA INTERFACE

SD HC™

AVC INTRA   **DVCPRO HD**   **DVCPRO 50**   **DVCPRO**   **DV**

Before operating this product, please read the instructions carefully and save this manual for future use.

ENGLISH

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Illustrations in this manual
- Note that illustrations of the unit and menu screens may differ from those you actually see.

Note concerning screenshots in these instructions
- Screenshots from the AG-HPD24P are used in these operating instructions.

Page references
- In this manual, references to pages are indicated as: (→ page 00).

Terminology
- The term "SD memory card" is used below as a generic term for both SD and SDHC memory cards.
- A memory card with the "P2" logo (for example the separately sold AJ-P2E064XG) is referred to as a "P2 card."
- A recordable media device such as an external hard disk drive connected to a USB port is referred to as a "storage device."
- A single continuous video recording is referred to as a "clip."
- Orange button labels indicate alternate functions enabled by holding the SHIFT button. The operating instructions refer to the buttons only by label, without mentioning the Shift button.

Website URL
- URL: http://pro-av.panasonic.net/

About copyrights
- Copyright laws may prohibit use, except for personal pleasure, of your recorded video and audio content without permission of the rights holder.

Contents

Contents

Available Modes

This unit comes with four modes: Main mode, USB device mode, 3D recording/playback mode and synchronous playback mode. Press the MODE button to select or change modes in the menu that appears.

Each mode enables access to the "thumbnail screen" for displaying, managing and playing back clip thumbnails and the "recording/playback screen" for recording and playback, while synchronous playback mode provides a "playback screen". The figure below shows a schematic diagram of these modes.

- Recording/playback screen: Displays video, time code, remaining battery life and other data and enables recording and playback.
- Playback screen: Displays video, time code, remaining battery life and other data and enables playback.
- Thumbnail screen: Displays clip thumbnails and properties and manages and plays back clips.
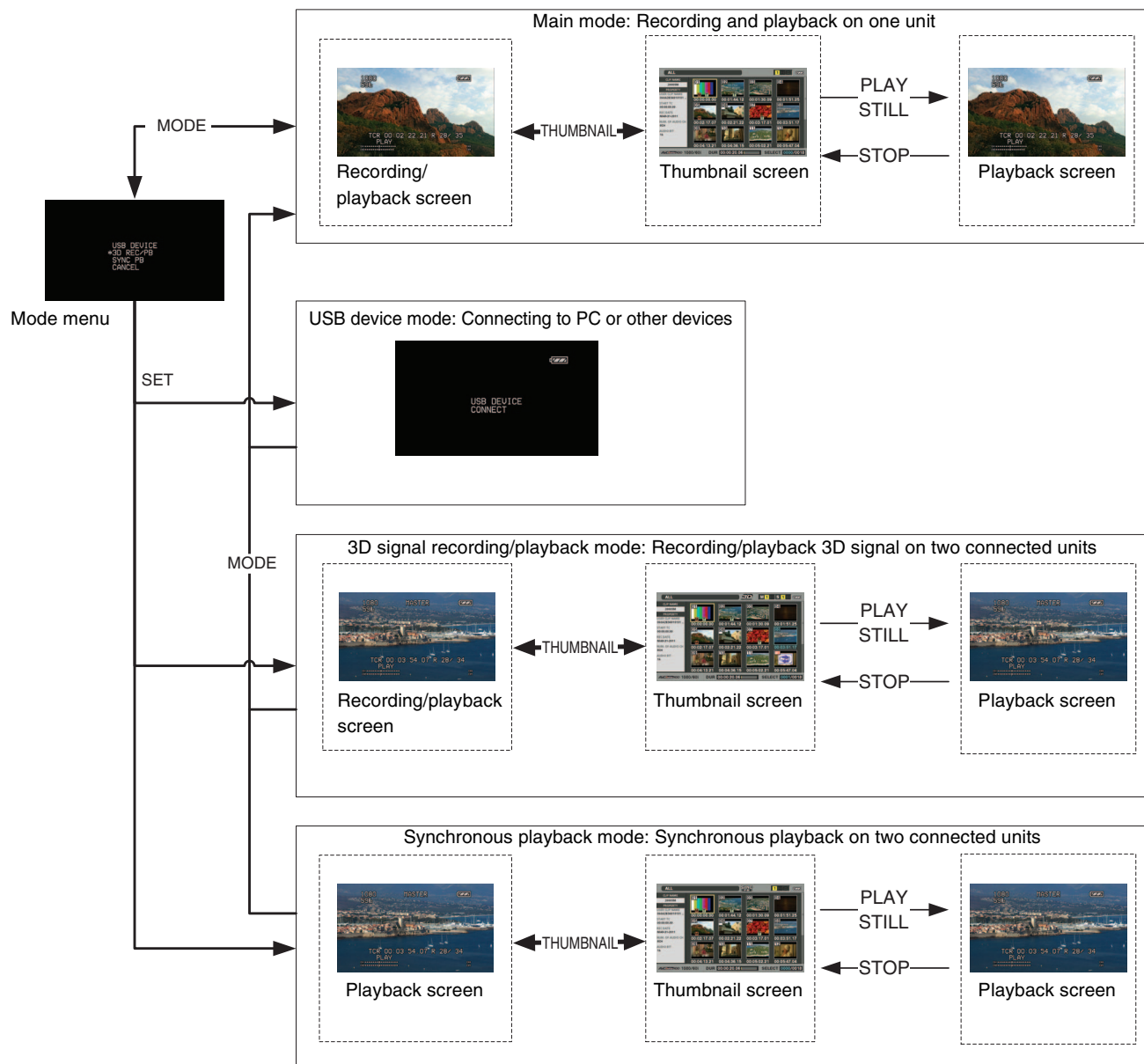
Main Mode

Recording/Playback Screen

Use the recording/playback screen for the following.

• Playing back all cards in the order they were recorded

• Recording to P2 cards

Recording Clips

Use the steps below to record audio and video clips.
Recording is available only in the record/playback screen.

Recording clips

Before you can start recording, you have to set the recording frequency, format and input signal in a menu.
(→ Setup Menu "SYSTEM" page 71)

◆ **NOTE:**

• Recording is not possible on the thumbnail screen or the screens other than the record/playback screen. On the thumbnail screen, press the THUMBNAIL button to close the thumbnail screen.

• Selecting analog audio creates an 8-channel audio file where channels 3 to 8 are mute.
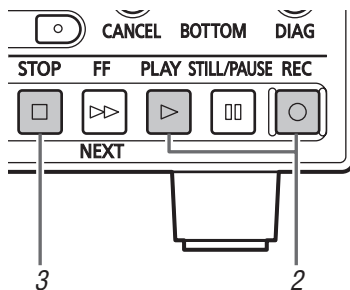
1 Insert a P2 card.

2 Press the REC ⌾ and PLAY ▷ buttons simultaneously.

Recording begins on the P2 card in the slot with its access lamp lit orange.

3 Press the STOP ⬜ button to stop recording.

■ **Adjusting the recording volume**

The level meters show CH1 and CH2 recording volume when you press the REC VOLUME button (assigned to a USER button) while the menu setting SETUP - AUDIO - INPUT SEL is set to analog audio input.
Use the Up/Down cursor buttons to select CH1 or CH2 level display. Use the Left/Right cursor buttons to adjust the level. Use the RESET button to restore the UNITY level.
Use the SET and EXIT buttons to return to normal display.

■ **Changing slots used for recording**

Slots used for recording can be changed during pauses in recording.
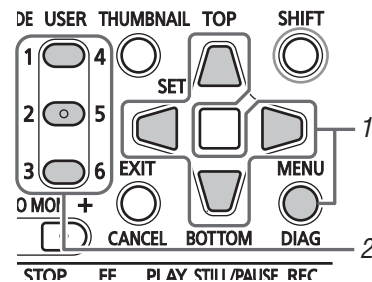
1. Assign the SLOT SEL function to a USER button choosing menu SETUP - USER BUTTON.
(→ Setup Menu "USER BUTTON" page 70)

2. Press the USER button during a pause in recording.
The slot used for recording changes at each press of the button.

◆ **NOTE:**

• When SLOT SELECT is not performed right after changing the P2 card used for recording and the SETUP - DISPLAY - OSD TC SELECT menu setting is set to T&S&M, the message "SLOT SEL INVALID" will appear on the third line of the OSD.

Various types of recording

■ Hot Swap Recording

With a P2 card in both card slots it is possible to make one continuous recording that spans both cards. You can also record continuously on 3 or more cards (hot swap recording) by replacing one card while recording on the other.

◆ NOTE:

• P2 card recognition may be delayed and prevent hot swap recording depending on when (immediately prior to or after recording continues onto the other card) a P2 card is inserted in the empty slot.
A P2 card should be inserted when there is still 1 minute or more time left on the card that is being recorded.

• This machine does not support hot-swapping during playback.

■ LOOP REC

When a P2 card is inserted in each slot, LOOP REC allows you to record continuously by successively switching cards. When available space on the P2 cards has been used up, recording continues from the first card overwriting previously recorded loop recording.
Choose the SETUP - BASIC - LOOP REC - ON menu setting to use the LOOP REC function.

◆ NOTE:

• Turning the unit off turns off the LOOP REC function and it will remain off when the unit is turned on next time.

• Loop recording requires P2 cards with at least one minute of free space each.

• During loop recording, the access LEDs for the two P2 cards used in the recording light orange. Note that removing any of the P2 cards will terminate loop recording.

• When the SETUP - BASIC - LOOP REC - ON menu setting is selected, "LOOP" is displayed on the first line of the OSD. However, if only one card is inserted, or remaining recording time on a card is less than 1 minute, the LOOP REC function will not work. even if LOOP REC is set to ON. Then the OSD flashes "LOOP."

• When the SETUP - BASIC - LOOP REC menu setting is ON, the standard guaranteed recording time remaining on the P2 cards is indicated for the selected recording format. When loop recording is stopped right after deleting old data, the time that remains on the card may be shorter than indicated.

• Shot marks cannot be added or deleted during loop recording.

• Text memos cannot be added during loop recording.

• LOOP REC is not available during VFR (Variable Frame Rate) recording.

Terminating Loop Recording Mode

Use one of the following two methods.
• Hold down the POWER button for 2 seconds to turn the unit off.
• Choose the SETUP - BASIC - LOOP REC - OFF menu setting.

■ Variable Frame Rate (VFR) Recording

Choose the SETUP - BASIC - VFR REC - ON menu setting to record only the active frames from the variable frame rate output of a variable frame rate camera. This enables instant viewing of slow-motion and fast-motion speed effects immediately after shooting.

◆ NOTE:

• The VFR function is enabled when the SETUP - SYSTEM - FORMAT menu setting is 720p, and the SETUP - SYSTEM - FREQUENCY menu setting is 59 - 23 or 60 - 24.

• Audio and external time codes cannot be recorded in this mode.

• The P2 card that is being recorded cannot be changed during recording.

• In this mode, the remaining P2 card capacity at 60p (50p), the slowest slow-speed effect, is indicated.

• When the SETUP - SYSTEM - FREQUENCY menu setting is set to 59 - 23 or 60 - 24, movement in HD SDI video output may look unnatural when the input frame rate is something other than 24p.

• Changing the frame rate while recording a video signal from a variable frame rate camera may result in frame loss in the changeover phase.

■ AUTO REC

When the unit is connected to a camera via SDI, starting and stopping recording on the unit can be automatically controlled using the REC START/STOP function on the camera.
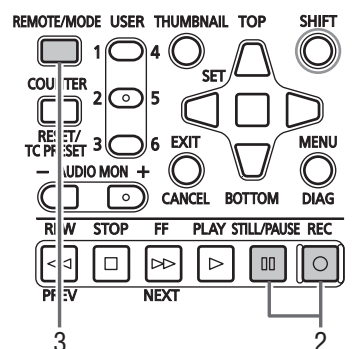
1. Choose the SETUP - BASIC - AUTO REC menu setting to make adjustments for the camera.
(→ Setup Menu "BASIC" - "AUTO REC" page 59)

2. Press the REC ○ button and STILL/PAUSE ▥ button simultaneously to engage REC PAUSE mode.

3. Press the REMOTE/MODE button to set REMOTE.
Now you can start and pause recording on the unit using the REC START/STOP function on the camera.

Playing Back Clips

Playback

Before you can start recording, you have to set the playback frequency, format and input signal in a menu. (→ Setup Menu "SYSTEM" page 71)

2   *1*

1 Press the PLAY ▷ button.

Playback starts. Clips play back in the order they were recorded.

◆ NOTE:
- Pressing the REW ◁◁ or FF ▷▷ button instead of the PLAY ▷ button results in rewind playback and fast forward playback, respectively.
- Video and audio playback may be disrupted between clips in different compression formats (DVCPRO HD, DVCPRO50, DVCPRO, DV, AVC-Intra 50 and AVC-Intra 100).
- In playback of different clips in the same video format but in audio recorded at different bit depths, the audio between clips will be muted.
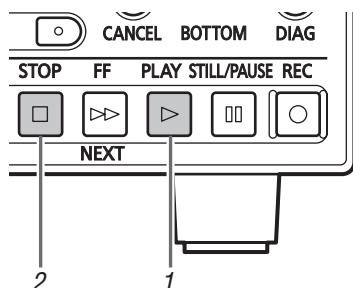- Clips with 24-bit audio will be played back as 16-bit audio in other than normal playback modes engaged using the PLAY ▷ button.

2 Press the STOP ▢ button.

Playback stops and the input video (EE) appears.

◆ NOTE:
- To show the image where playback stopped (PB image), set the SETUP - BASIC - STOP EE SEL menu settings to PB. (→ Setup Menu "BASIC" - "STOP EE SEL" page 59)

Variable speed playback

Playback speed can be varied to facilitate searches.

1,2
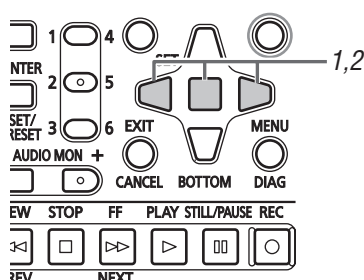
1 Press the Left/Right cursor buttons during playback or STILL.

Playback changes to high-speed or slow and indicated as SHTL +/− speed.

2 Press the Left/Right cursor buttons to change playback speed.

- The playback speed changes each time the buttons are pressed. Maximum playback speed depends on the value set by the SETUP - BASIC - SHUTTLE MAX menu setting (→ Setting Menu "BASIC" - "SHUTTLE MAX" page 60).
- Audio is not played back at speeds faster than 10 times normal speed.
- The Right cursor button changes the speed in forward direction and the Left cursor button changes the speed in backward direction.
- Press the STILL/PAUSE ▯▯ button or SET button to pause playback. To return to normal playback, press the PLAY ▷ button.

- The pulldown sequence may not be uniform for variable speed playback of native recorded (including x1 speed) video.

Frame-by-frame playback

2

1
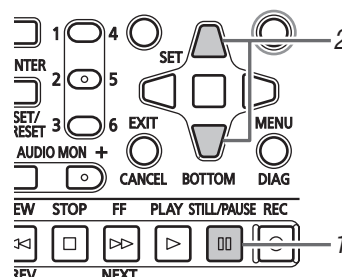
1 Press the STILL/PAUSE ▯▯ button to engage still image mode.

2 Press the Up/Down cursor buttons.

- The Up cursor button performs frame-by-frame playback in forward direction and the Down cursor button performs frame-by-frame playback in backward direction.
- Holding down a cursor button results in continuous frame-by-frame playback. To return to normal playback, press the PLAY ▷ button.

Clip and text forward/rewind

1 Engage playback, still or other image display mode.

2 Press PREV or NEXT.

The clip beginning or text memo position that is located depends on the value set choosing the SETUP - BASIC - SEEK POS SEL menu setting. (→ Setup Menu "BASIC" - "SEEK POS SEL" page 60)

Overview of all clip playback transitions

This unit allows you to vary audio and video playback speed. The figure below shows speed and transition changes.

Data in boxes: Status and speed

Arrows: Possible direction of transition

Arrow text: Cursor button operation

• Asterisks (*) in the diagram indicate stepwise changes in speed.

Example: Pressing the Right cursor button during PLAY ▷ results in double speed playback (SHTL + 2.0) and each press of the button increases the speed gradually towards the SHTL MAX setting.
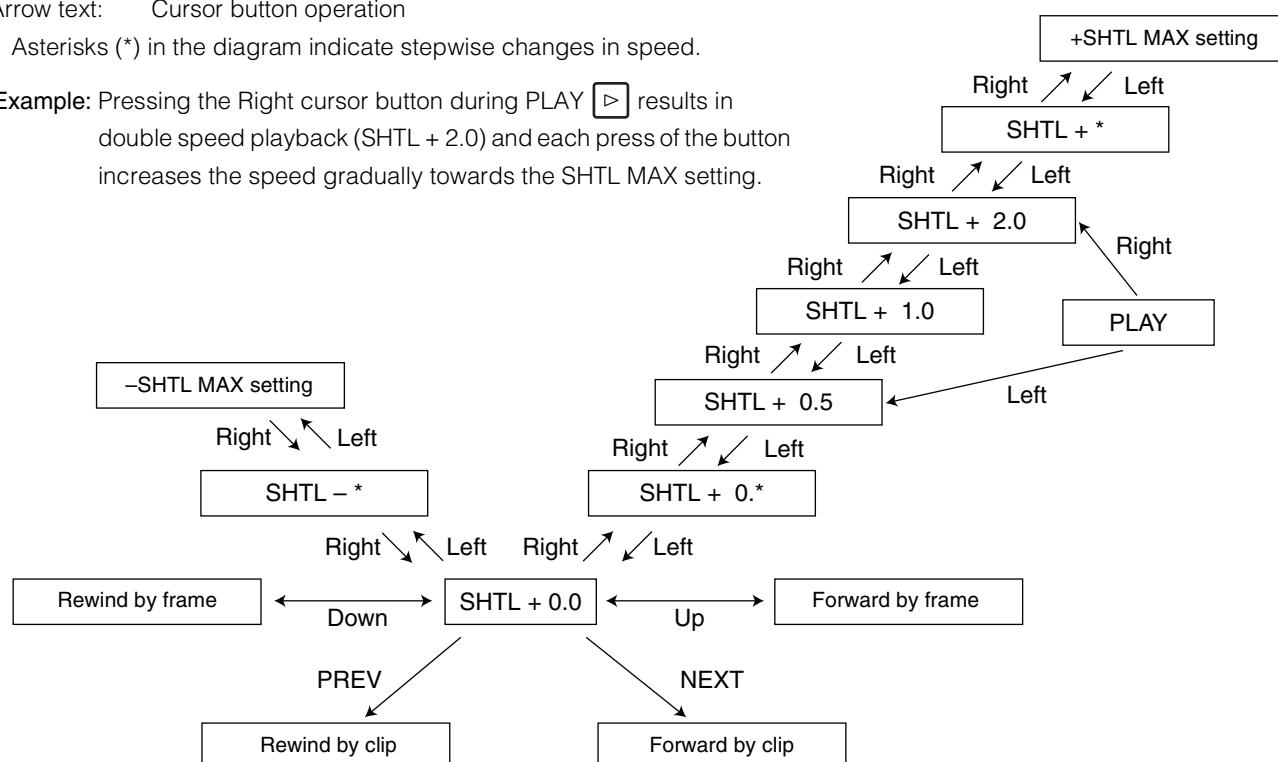
Repeat playback

Repeatedly plays back playable clips.

1 Press the MENU button.

2 Set the SETUP - BASIC - REPEAT PLAY menu setting to ON.

3 Close the menu.

4 Press the PLAY ▷ button to start playback.

All clips will be played repeatedly.

• Repeat playback continues until the STOP ▢ button is pressed.

• Repeated playback is not performed during playback other than normal playback, for example, variable playback, and playback stops at the beginning (BOS) or end (EOS) of a playable clip.

• During repeat playback, "REPEAT" appears in the OSD's operating status display.

Thumbnail Screen

The thumbnail screen enables the following functions:
- Displays clip thumbnails, information, P2 card status and other data
- Plays back clips on P2 cards
- Simple playback of clips on a storage medium
- Copies and deletes clips
- Formats P2 cards

◆ **NOTE:**
- Recording cannot start from the thumbnail screen or from playback of a thumbnail screen. To record, press the THUMBNAIL button to close the thumbnail screen, then start recording from the recording/playback screen.

Thumbnail Screen Names and Functions
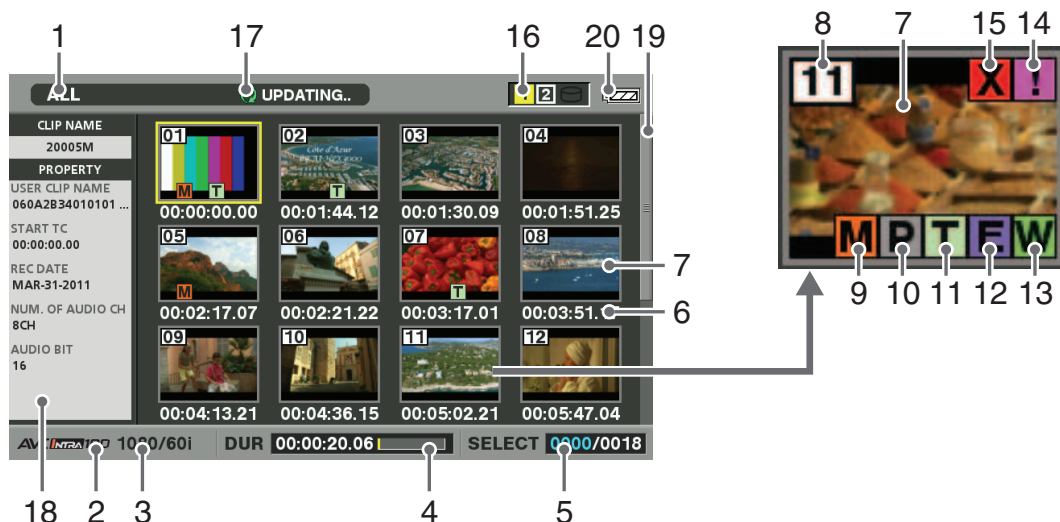
1. Display status

The following information listed below is displayed on the screen.

ALL:	All clips
SAME FORMAT:	Clips with the same format as the system
SELECT:	Clips selected with the SET button
MARKER:	Clips with shot markers
TEXT MEMO:	Clips with text memo data
SLOT n:	Clips on P2 card in slot No. n
PROPERTY:	Detailed clip information
P2 / REMAIN:	Media information (amount of remaining space)
P2 / USED:	Media information (amount of space used)
META DATA:	Set meta data

Procedures for switching between displays
(→ "Changing Thumbnail Display" page 12)

2. Record mode

Indicates the record mode of the clip at the cursor position.

3. System format

Indicates the recording format of the clip at the cursor position.

4. Duration

Indicates the length (duration) of the clip at the cursor location and the rough location of current playback.
The playback location is indicated when the SETUP - THUMBNAIL - PB POSITION - RESUME menu setting is selected.
(→ Setup Menu "THUMBNAIL" - "PB POSITION" page 57)
When the playback start position is not the beginning of the clip, the rough location of the playback position is displayed.

5. Selected number of clips

Indicates the number of selected clips and the total number of clips.

6. Time display

One of the following data is displayed: the TC (time code)/UB (user bit) at the start of clip recording/time of shooting/day of shooting/date and time of shooting/clip name/the user clip name/slot number.

(→ "Changing Thumbnail Display" page 12)

7. Thumbnail

Shows the thumbnails recorded for each clip. The EXCH.THUMBNAIL function allows you to replace this thumbnail.

(→ "Changing Thumbnail Display" page 12)

8. Clip no.

Indicates the numbers assigned to P2 card clips, which are normally assigned starting in order from the earliest shooting date. Numbers of clips that cannot be played back are shown in red. You can change the order clips appear using the display selected clips or the SORT function.

(→ "Changing Thumbnail Display" page 12)

9. M Shot mark indicator

Indicates that a shot mark has been attached to a clip.

10. P Proxy indicator

Indicates clips that contain a proxy video attached by the AG-HPX370 Series, AJ-HPX3100 or other camera.

◆ **NOTE:**
• This unit cannot record proxies.

11. T Text memo indicator

Indicates a clip that contains text memo data.

12. E Edit Copy indicator

Indicates an edit-copied clip.

13. W Wide indicator

Indicates a clip recorded in the 16:9 aspect ratio. This is not indicated for an HD format clip.

14. ! Incomplete clip indicator

Indicates a clip spanning multiple P2 cards where one of the cards that contain part of the clip has not been inserted.

15. X Bad clip ? Unknown clip indicator

Indicates a clip that became defective because the power was shut down during recording or was damaged for some other reason. Clips with the yellow bad clip(X) indicator can sometimes be repaired.

(→ "Repairing bad clips" page 19)

Clips with the red clip indicator(X) cannot be repaired and should be deleted. If deleting is not possible, format the P2 card.

Instead of X , ? appears to indicate that a clip is not in the P2 standard format.

16. Indication of P2 card slot and storage device status

The status of P2 card and storage device connections are indicated as shown below.

1 – 2 (White)	The numbers of P2 card slots that contain a P2 card are indicated in white.
1 (Yellow)	The number of the P2 card slot of the P2 card that contains the clip at the cursor position is indicated in yellow. When a clip spans multiple P2 cards, the numbers of all the slots housing cards that contain the clip are indicated.

◆ **NOTE:**

A slot number with a pink frame indicates either of the following conditions for an inserted P2 card.

• "RUN DOWN CARD"
  The maximum number of overwrites has been exceeded.
• "DIR ENTRY NG CARD"
  The P2 card directory structure does not conform to standard specifications.

(Gray)	Grey indicates that a storage device is not connected.
(White)	White indicates that a storage device is available.
(Yellow)	Yellow indicates that clips on a storage device appear as thumbnails.
(Red)	Red indicates that a storage device is connected but is not available.

17. Status message

Shows messages indicating processing status. For example, screen updating shows an "UPDATING" text message and a rotating ⟳ icon.

18. Simple property display

Displays the properties of clips at the cursor location. A menu allows you to select the information that will appear.

(→ "Selecting items to be displayed as properties" page 14)

◆ **NOTE:**

- When there are more characters than can be displayed, only the range of characters that can be displayed appear.

19. Thumbnail scroll bar

Indicates the location of the currently displayed thumbnail among displayed thumbnails.

20. Battery status indicator

Displays the following icons to indicate remaining battery charge.

When the battery is completely depleted the red icons ▭ (or ▭) appear.

When the AC adaptor is being used, an icon other than ▭ may appear; this is not a sign of malfunctioning.

Changing Thumbnail Display

The thumbnail screen can be customized to suit operating conditions and improve efficiency.

Example:

- Set the SETUP - THUMBNAIL menu setting as shown below.
  Set INDICATOR to ALL HIDE
  Set DATA DISPLAY to CLIP NAME
  Set THUMBNAIL SIZE to LARGE
- Set the THUMBNAIL menu setting to SELECTED CLIPS.

Figure showing thumbnail screen example

Setting thumbnails and other OSD display output
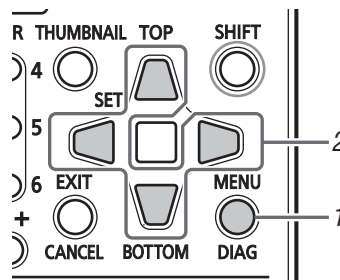
1 Press the MENU button.

2 Use the Up/Down/Left/Right cursor buttons to set the SETUP - DISPLAY - OSD OUTPUT menu setting to select output (LCD, VIDEO OUT or SDI OUT connectors) to display thumbnails and other OSD displays.

Setting the type of thumbnails that open
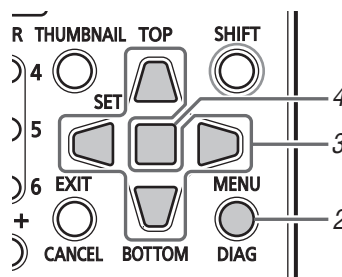
1 Open the thumbnail screen.

2 Press the MENU button.

3 Move the Up/Down/Left/Right cursor buttons to the type of clips you want to display under THUMBNAIL.
(→ Setup Menu "THUMBNAIL" page 56)

4 Press the SET button.

Setting thumbnail size
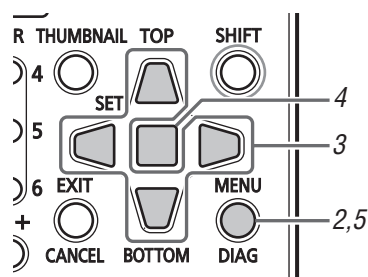
1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the Up/Down/Left/Right cursor buttons to choose the SETUP - THUMBNAIL - THUMBNAIL SIZE menu setting and select the size of clips you want to display with the cursor.
(→ Setup Menu "THUMBNAIL" - "THUMBNAIL SIZE" page 57)

4 Press the SET button.

5 Press the MENU button to end processing.

Setting thumbnail attributes

Use the steps below to customize the thumbnail display format.
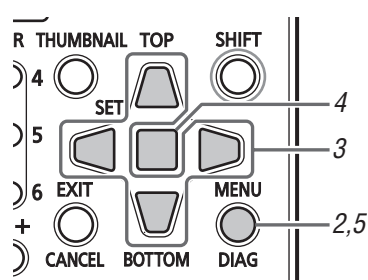
1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the Up/Down/Left/Right cursor buttons to choose the SETUP - THUMBNAIL - DATA DISPLAY menu setting and select the items you need.
Select the items you need and change settings as required.
(→ Setup Menu "THUMBNAIL" - "DATA DISPLAY" page 56)

4 Press the SET button.

5 Press the MENU button to end processing.

Setting order of date indication

Use the steps below to change the order of year, month and day in date indications.
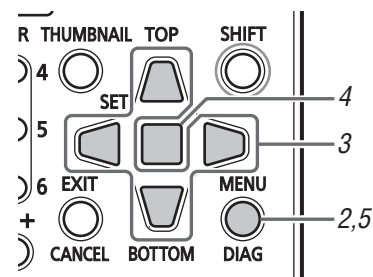
1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the Up/Down/Left/Right cursor buttons to choose the SETUP - THUMBNAIL - DATE FORMAT menu setting and select the items you need.
Select the items you need and change settings as required.
(→ Setup Menu "THUMBNAIL" - "DATE FORMAT" page 57)

4 Press the SET button.

5 Press the MENU button to end processing.

Selecting items to be displayed as properties

Select items that will appear in a simplified property display on the left side of the thumbnail.
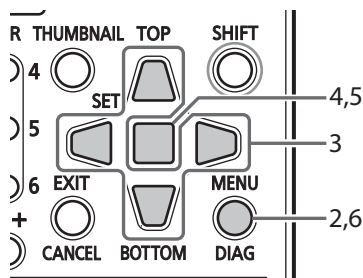
1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the Up/Down/Left/Right cursor buttons to choose the SETUP - THUMBNAIL - PROPERTY DISP. menu setting.

4 Press the SET button to open the setup menu.
All selected items are indicated by check marks.

5 Press the SET button and add check marks for items to be displayed.
Pressing the SET button causes unchecked items to be checked and checked items to be unchecked.

◆ **NOTE:**
- Up to six items can appear simultaneously.
- When the sixth item has been selected, no other unchecked item can be selected. Removing the check mark for a checked item makes it possible to select other items.

6 Press the MENU button to end processing.

Playing back Clips
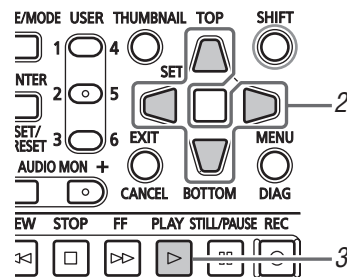
Playback

1 Open the thumbnail screen.

2 Move the Up/Down/Left/Right cursor buttons to the clip you want to play back.

3 Press the PLAY ▷ button.
Playback starts from the clip the cursor is on. After the clip at the cursor location has been played, subsequent clips are played back in order. When the last clip has been played, the thumbnail screen appears.

◆ **NOTE:**
- There is no need to select a clip (that is when the thumbnail appears inside a blue frame) to play it back.
- You can change the thumbnail display settings to play back clips only from selected slots or play back only clips that contain text memos.
- You can change the order that clips are played in.
  1 Select the clips in the order you want them to be played back.
  2 Choose the THUMBNAIL - SELECTED CLIPS menu setting and the thumbnails will play back only the selected clips in the selected order.
- Pressing the STILL/PAUSE ⎙ button instead of the PLAY ▷ button shows a still of the first frame in the clip.
- A clip whose clip number is red cannot be played back.
- Pressing the REW ◁◁ button instead of the PLAY ▷ button results in rewind playback, while pressing the FF ▷▷ results in fast forward playback.
- Pressing the STOP ☐ button during clip playback, stops playback and the thumbnail screen appears.

- When playback stops, the cursor moves to the clip played prior to stopping.
- Video and audio playback may be disrupted between clips in different video formats (1080i, 720p) or compression formats (DVCPRO HD, DVCPRO50, DVCPRO, DV, AVC-Intra 50 and AVC-Intra 100).
- If continuous playback is performed with clips whose video format is the same but whose audio bit depth is different, the audio is muted between clips.
- When a 24-bit audio clip is played back in a playback mode other than the normal mode using the PLAY ▷ button, the audio bit depth becomes 16-bit.
- Changing the thumbnail screen to text memo display makes it possible to start play back from text memo location. (→ "Playing back from text memo location" This page)
- You can select the location from which the thumbnail starts playback by selecting the SETUP - THUMBNAIL - PB POSITION menu setting. (→ Setup Menu "THUMBNAIL" - "PB POSITION" page 57)

Playing Back Single Clips

When ONE CLIP PLAY is assigned to a USER button, the USER button allows you to play back the clip at the cursor location.

◆ NOTE:
- The thumbnail screen appears when playback stops at the end of the clip or when the STOP □ button is pressed. The cursor then moves to the next clip.
- All buttons other than the STOP □ button are not available during single clip playback.
- Single clip playback starts from the position specified on the PB POSITION menu setting.
- When JOG/VAR/SHTL is used to display a still image during playback from the thumbnail screen, the USER button to which ONE CLIP PLAY has been assigned allows you to play the entire clip to its end from the still image. (→ Setup Menu "USER BUTTON" page 70)

Using variable speed playback and frame-by-frame playback

These functions operate in the same manner as in the record/playback screen.
(→ "Variable speed playback" page 8, "Frame-by-frame playback" page 8)

Playing back from text memo location
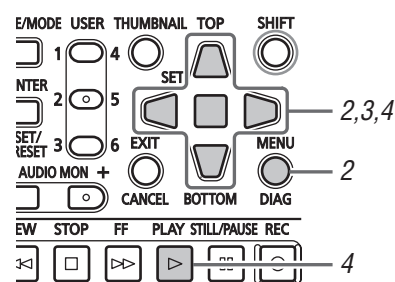
1 Open the thumbnail screen.

2 Press the MENU button to select the THUMBNAIL - TEXT MEMO CLIPS menu setting.

Thumbnails of clips with text memos appear at the top of the LCD monitor. Information on the selected clip text memo appears in the lower half of the LCD monitor.
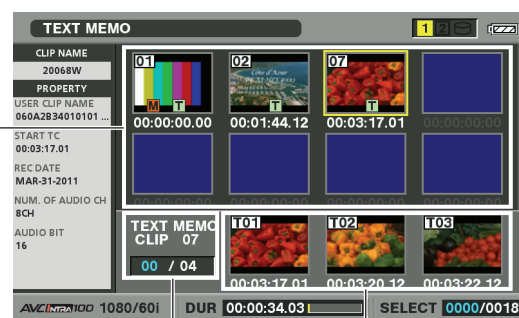
Thumbnail display

Blue indicates selected number of text memo clips and white indicates total number of text memo clips.

Indicates still images included with the text memos.

◆ NOTE:
- When a text memo clip for an AVC-Intra clip with a different SETUP - SYSTEM - FREQUENCY menu setting is displayed, the icon may appear at the text memo location in the lower half of the monitor instead of the thumbnail that should normally appear.

3 Select the clip (with a text memo) you want play back and press the SET button.

The cursor moves to the lower half of the LCD monitor.
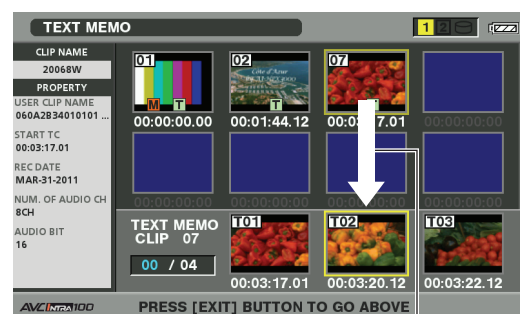
The cursor moves.

4 When the cursor is in the lower half of the monitor, use the Left/Right cursor buttons to select the thumbnail with the text memo you want to play and press the PLAY ▷ button.

The clip is played back from the text memo time code location selected with the cursor. When you press the STOP □ button to interrupt ongoing playback, or when playback stops upon reaching the end of the clip, the thumbnail screen reappears and the cursor returns to the thumbnail text memo location where playback was started. Press the EXIT button to return the cursor to the top of the thumbnail screen.

◆ **NOTE:**
• During playback all buttons other than the STOP □ button are not available.

Selecting and Deselecting Clips

Select clips you want to process on the thumbnail screen.

Selecting clips
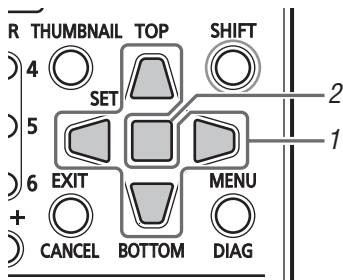
1 Use the Up/Down/Left/Right cursor buttons to place the yellow frame (cursor) on the desired clip.

◆ **NOTE:**
• Press the TOP/BOTTOM button to move the cursor to the first or last clip.

2 Press the SET button.

A blue frame appears on the clip selected with the cursor to indicate that it is selected.

◆ **NOTE:**
• Repeat steps 1 and 2 to select multiple clips.
• After selecting a clip, move the cursor to another clip, hold down the SHIFT button and press the SET button to select another clip. This method allows you to select the two clips as well as all the clips between them.
• Selecting a clip updates the number of selected clips shown in the lower right corner of the screen.

Deselecting clips
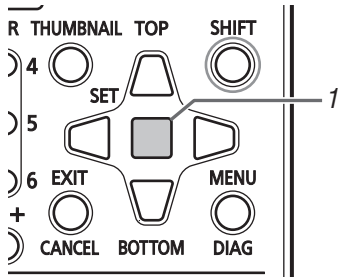
1 Place the cursor on a selected clip and press the SET button again.

This cancels the selection.

◆ **NOTE:**
• Press the CANCEL button to deselect selected clips.

Attaching Text Memos and Shot Marks

A text memo can be attached in a clip to mark a specific location. The user can attach shot marks to distinguish clips from each other. Clips on P2 cards where the write-protect switch is set to PROTECT cannot be added.

Attaching text memos

When a text memo is added, you can open a thumbnail at the text memo location for playback or copying and seek (move) text memo location by pressing the NEXT/PREV button during video playback.
(→ Setup Menu "BASIC" page 59)
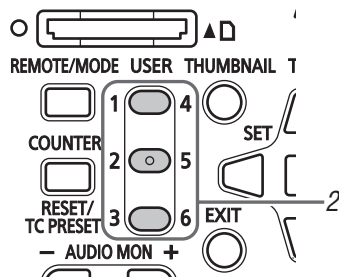
1 Assign TEXT MEMO to a USER button.

It is assigned to the USER3 button by default.
(→ Setup Menu "USER BUTTON" - "USER3" page 71)

2 Press the USER button to which TEXT MEMO has been assigned during recording, playback or thumbnail display.

- Press this button during recording and playback where you want to attach a text memo. The OSD will then show TEXT MEMO (when successful) or INVALID (when addition is not possible).
- Pressing this button on the thumbnail screen adds a text memo at the thumbnail clip location (normally at the beginning).

◆ **NOTE:**
- Up to 100 text memos can be attached in one clip.
- Pressing the USER button to which TEXT MEMO has been assigned during playback may temporarily freeges the playback screen. This is normal and not a malfunction.
- During LOOP REC, or during recording when the SETUP - BASIC - VFR REC menu setting is ON, text memo recording is not available.

Deleting text memos

Changing the thumbnail screen to the text memo display allows you to delete text memos.
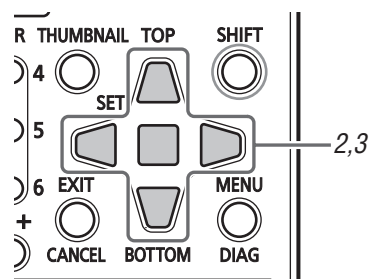
1 Change the thumbnail screen to the text memo display.

2 Use the Up/Down/Left/Right cursor buttons to move the cursor to the thumbnail you want to delete and press the SET button.
The cursor moves to the row below.

3 After pressing the SET button to select a thumbnail for deletion, choose the OPERATION - DELETE menu setting and press the SET button.
When DELETE is assigned to a USER button, you can delete the thumbnail by pressing the USER button instead of making a menu selection.

4 Select YES in the confirmation dialog that appears.
The text memo is deleted.

Attaching shot marks

Attach shot marks to clips to make it possible to distinguish them from each other.
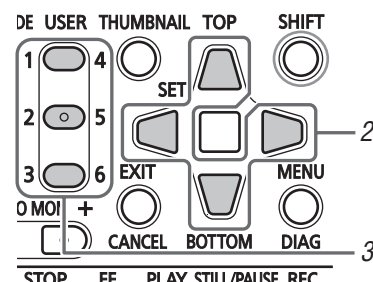
1 Assign MARKER to a USER button.
It is assigned to the USER6 button by default.
(→ Setup Menu "USER BUTTON" - "USER6" page 71)

2 Use the Up/Down/Left/Right cursor buttons to select a clip.

3 Press the USER button to which MARKER has been assigned.

Each press of this button turns the shot mark indicator on and off.

◆ **NOTE:**
- A shot mark is added to a clip even if the button is pressed in the record/playback screen.
- When attaching or deleting shot marks for clips that span multiple P2 cards, be sure to load all the P2 cards that the clip is recorded on.
- Shot marks cannot be added or deleted during loop recording.

Copying Clips

Use the steps below to copy clips to P2 cards or storage devices connected via USB.

◆ **NOTE:**
- Take care not to turn off the power or remove a card during copying. Otherwise the copied clip may become bad.
- If the copied clip is bad, delete it and make a new copy.
- Reconnect incomplete clips before copying them.
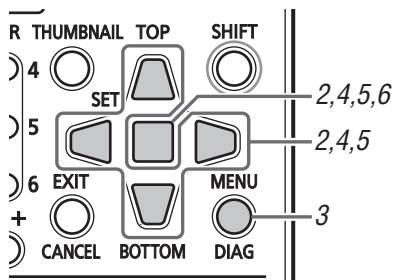
1 Open the thumbnail screen.

2 Select a clip to copy.

3 Press the MENU button.

4 Use the cursor buttons to choose the OPERATION - COPY menu setting, select destination from the list that appears and press the SET button.
- When multiple clips are selected, press the SET button to view how many clips are selected.
- When clips are copied to a storage device (→ "Connecting an External Device via the USB HOST Connector" page 27), select the destination of the copied data as required.
- When COPY is assigned to a USER button, you can copy the thumbnail by pressing the USER button instead of making a menu selection.

5 Select YES in the confirmation message that appears and press the SET button.

This starts copying.
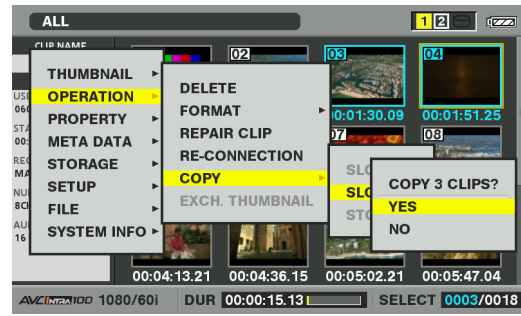
◆ **NOTE:**
- To interrupt copying, press the SET or the CANCEL button to cancel the operation. The incomplete copy at the destination is deleted.
- "OVERWRITE" appears when an attempt is made to place a copy (having the same GLOBAL CLIP ID) at a destination already containing an identical item. Select YES to overwrite or NO to cancel copying and then press the SET button.

6 Press SET button when the completion message appears.

◆ **NOTE:**
- No copying is performed when any of the following error messages appear.
  - "LACK OF CAPACITY"
    Copy failed because there is not enough space at the copy destination.
  - "UNKNOWN CONTENTS FORMAT!"
    Copy failed because the selected clip was bad.
  - "NO COPY TO SAME CARD!"
    Copy failed because an attempt was made to place the copy on the same disk.
  - "TOO MANY CLIPS!"
    Copy failed because too many clips were selected.
- Copying performed in the lower half of text memo display when the text memo is selected copies the section from the selected text memo to the next text memo. When there is no text memo beyond the selected text memo, the section from the selected text memo to the end of the clip is copied.

Deleting Clips

Use the following procedure to delete a clip from a P2 card.
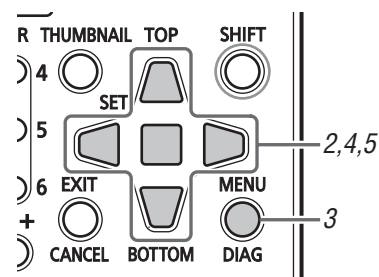
1 Open the thumbnail screen.

2 Select the clip to delete.

3 Press the MENU button.

4 Use the Up/Down/Left/Right cursor buttons to choose the OPERATION - DELETE menu setting and press the SET button.

5 Select YES in the confirmation message that appears and press the SET button.

This deletes all selected clips.

◆ **NOTE:**
- When DELETE is assigned to a USER button, you can delete the thumbnail by pressing the USER button instead of making a menu selection.
- To interrupt deletion, press the SET or the CANCEL button to cancel the operation. Note that partially deleted clips cannot be restored by canceling.

Repairing and Reconnecting Clips

Repairing bad clips

This section describes how to restore bad clips that have been damaged due sudden power outages during recording or for other reasons. Such clips are marked by the bad clip indicator (yellow X). Use the following procedure to repair bad clips.
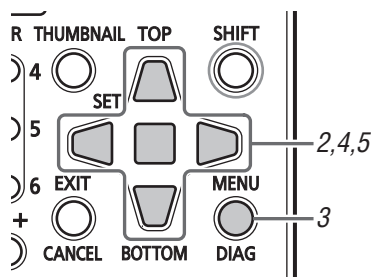
1 Open the thumbnail screen.

2 Select the bad clip to repair.

3 Press the MENU button.

4 Use the Up/Down/Left/Right cursor buttons to choose the OPERATION - REPAIR CLIP menu setting and press the SET button.

5 Select YES in the confirmation message that

appears and press the SET button.

Select NO when you do not want to repair the clip.

◆ **NOTE:**
- Some clips are so badly damaged they cannot be repaired. Such clips are indicated by a red X .

Reconnecting incomplete clips

A clip spanning multiple P2 cards that cannot be recognized as a complete clip is marked by the incomplete clip (! indicator). The reconnection function allows you to reconnect related clips and restore the original clip.

◆ **NOTE:**
- Incomplete clips occur under the following conditions.
  - When the individual clip segments on each P2 card that make up the clip are copied separately.
  - When the clip segments on each card that make up a clip recorded on multiple cards are separately copied to a storage device and then copied back to a P2 card.
  - When a 5-minute or longer DVCPRO HD or AVC-Intra 100 clip (10-minute or longer DVCPRO50 or AVC-Intra 50 and 20-minute or longer DVCPRO or DV clip) is copied to a storage device and later written back to a P2 card.
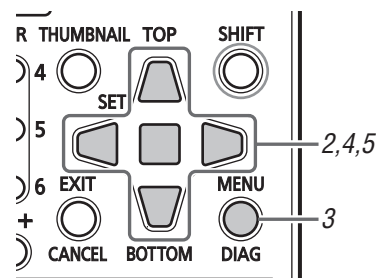
1 Open the thumbnail screen.

2 Select the incomplete clips to reconnect.

◆ **NOTE:**
- Thumbnails with an incomplete clip indicator(!) are usually grouped to together.

3 Press the MENU button.

4 Use the Up/Down/Left/Right cursor buttons to choose the OPERATION - RE-CONNECTION menu setting and press the SET button.

5 Select YES in the confirmation message that appears and press the SET button.

Select NO when you do not want to reconnect the clip.

◆ **NOTE:**

• When some but not all the clip segments in a clip that consists of three or more clip segments are reconnected, the incomplete clip indicator (❗) will remain.

Viewing and Revising Clip Information

Viewing clip meta data

Detailed clip information can be displayed on the screen.
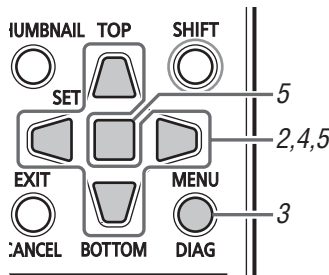
1 Open the thumbnail screen.

2 Use the Up/Down/Left/Right cursor buttons to select a clip.

3 Press the MENU button.

4 Use the Up/Down/Left/Right cursor buttons to choose the PROPERTY - CLIP PROPERTY menu setting and press the SET button.

This displays information on the selected clip.
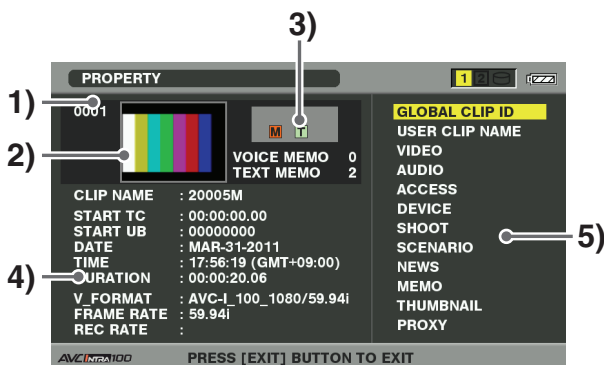
1) Clip no.
2) Thumbnail
3) Information added to clips

Indicates the number of indicators, attached text memos and voice memos in a clip. The 🔒 mark appears when the P2 card where the clip resides is write-protected.

◆ **NOTE:**

• 🅥 Voice memo/Indicator

Indicates that a voice memo has been attached to a clip.

This indicator appears only in the clip property mode.

• This unit cannot record and play back voice memos.

4) Clip information

The following information appears.

CLIP NAME:	Clip name
START TC:	Time code at start of recording
START UB:	User bit value at start of recording
DATE:	Date recorded
TIME:	Time at start of recording
DURATION:	Clip length
V_FORMAT:	Clip recording format
FRAME RATE:	Playback frame rate
REC RATE:	Recording frame rate

5) Clip meta data

This area shows more detailed information on a clip.

5 Browse the clip meta data as necessary.

Use the Up/Down/Left/Right cursor buttons to select a meta data item and press the SET button to view information similar to that shown below.

GLOBAL CLIP ID:	Global CLIP ID (This is a unique number. There is no clip anywhere in the world with the same number.)
USER CLIP NAME:	The name a user assigns to a **clip**. This normally includes a GLOBAL CLIP ID.
VIDEO:	Video signal system (FRAME RATE, PULL DOWN, ASPECT RATIO)
AUDIO:	Audio channel system and other information (SAMPLING RATE, BITS PER SAMPLE)

ACCESS:	The date of the last update and other information (**CREATOR**, CREATION DATE, LAST UPDATE DATE, LAST UPDATE PERSON)
DEVICE:	Manufacturer, serial number, and model name of recording equipment.
SHOOT:	**Date when recording started** and ended, etc. (**SHOOTER**, START DATE, END DATE, **ALTITUDE**, **LONGITUDE**, **LATITUDE**, SOURCE, **PLACE NAME**)
SCENARIO:	Program name, scene number, and other information. (**PROGRAM NAME**, **SCENE NO.**, **TAKE NO.**)
NEWS:	**Reporter**, **purpose** and **object**
MEMO:	Text memo number, OFFSET, **PERSON**, **TEXT**

◆ **NOTE:**

- Location is indicated in frame numbers from the start.
- Up to 1000 characters of text can be added, but only the first 500 characters will be displayed.
- Use the Left/Right cursor buttons to move text numbers.

THUMBNAIL:	Frame location (normally, start: 0) of video that makes up the thumbnail and its size (width, height)
PROXY:	Detailed information on proxy data (format, video codec, etc.)

◆ **NOTE:**

- **Bold items** indicate clip meta data that can be changed.

Changing clip meta data

Use the steps below to change clip meta data.
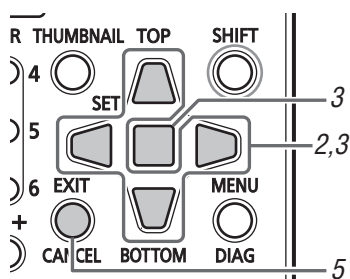
1 Display clip meta data.

2 Use the Up/Down/Left/Right cursor buttons to select the meta data you want to revise and press the SET button.

Data that can be revised is indicated as "TEXT", like in the illustration below.
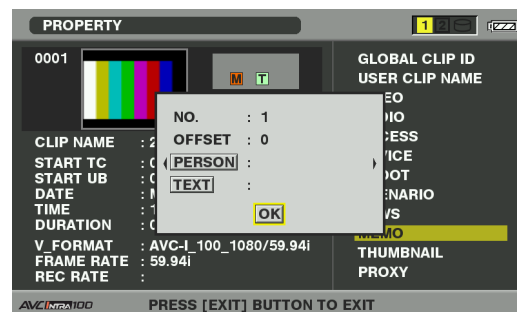
3 Use the Up/Down/Left/Right cursor buttons to move to the item you want to change and press the SET button.

The screen for changing meta data appears.
(→ "Using a Keyboard" page 80)
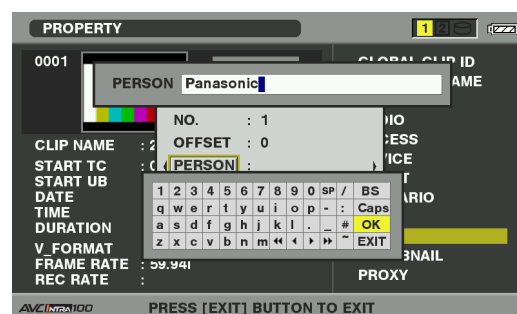
4 Select OK after completing your changes.

Changes made to the meta data are saved to the clip and the meta data display reappears.
Use EXIT to cancel the entry and return to the previous display.

◆ **NOTE:**

- To delete latitude and longitude, enter a blank for altitude. They cannot be deleted separately.
- Note that the meta data of an incomplete clip with an [!] indicator cannot be revised. Insert the P2 card/s with the remainder of the clip.
- MEMO of meta data item to which a 100 character or larger memo has been attached cannot be revised.

5 Press the EXIT button to end processing.

Thumbnail Editing

Use the following steps to change a thumbnail of video at a location to which a text memo has been attached.
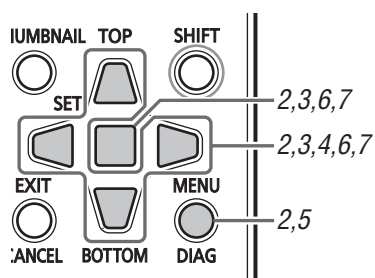
1 **Attach a text memo to video you want to edit.**

(→ "Attaching text memos" page 17)

2 **Change thumbnail display to text memo display.**

Choose the THUMBNAIL - TEXT MEMO CLIPS menu setting.

3 **Use the Up/Down/Left/Right cursor buttons to move to the thumbnail you want to change and press the SET button.**

The cursor moves to the row below.

4 **Use the Left/Right cursor buttons to the thumbnail you want to change.**

5 **Press the MENU button.**

6 **Use the Up/Down/Left/Right cursor buttons to choose the OPERATION - EXCH. THUMBNAIL menu setting and press the SET button.**

7 **Select YES in the confirmation message that appears and press the SET button.**

The menu closes and the thumbnail reflects the changes that have been made.

◆ **NOTE:**

• The THUMBNAIL field in the clip property display shows the change in thumbnail location (number of frames from the start). The number for a normal first thumbnail is 0.

• Playback starts from the beginning of the clip regardless of a change in thumbnail location.

• When a text memo clip for an AVC-Intra clip with a different SETUP - SYSTEM - FREQUENCY menu setting is displayed, the 🔔 icon may appear at the text memo location in the lower half of the monitor instead of the thumbnail that should normally appear.

Attaching Meta data to Clips During Recording

A meta data upload file containing the name of the person who shot the video, the reporter, the shooting location or a text memo and other information can be saved to an SD memory card. This data file can be loaded and recorded as clip meta data prior to a recording.

Use P2 viewer to create a meta data upload file
↓
Save the file to an SD memory card
↓
Read the meta data upload file to this unit
↓
When video is recorded the meta data will be added to the resulting clip
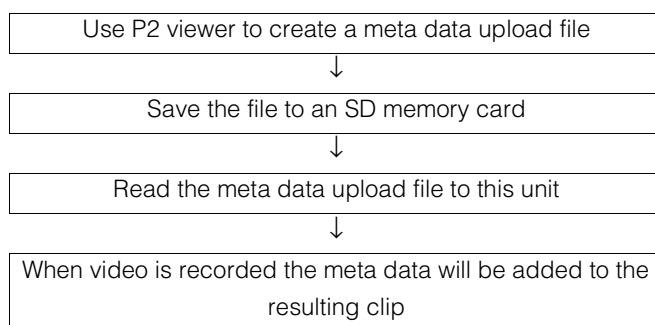
Preparing a meta data upload file

Use P2 viewer to create meta data upload files on a PC.
P2 viewer is software that allows you to use a Windows PC for processing clips recorded on a P2 card. You can download it from our website free of charge.
For details on URL (→ "Website URL" page 2).
Install P2 viewer on a PC, create a meta data upload file and write it to an SD memory card.

◆ **NOTE:**

• Use the latest version of the P2 viewer.

• For details on how to create a meta data upload file, refer to the help function in P2 viewer.

• Write the meta data upload file to an SD memory card formatted on this unit.

(→ "Formatting P2 and SD Memory Cards" page 25)

Setup to attach meta data

■ Preparing for meta data recording

Use this procedure to determine whether or not to attach the loaded meta data to clip that is recorded.
(→ Setup Menu "META DATA" page 54)

■ Select method for recording the USER CLIP NAME

Use this procedure to set the type of data recorded as USER CLIP NAME.
(→ Setup Menu "META DATA" page 54)
Choose the META DATA - USER CLIP NAME menu setting and the META DATA - RECORD menu setting combinations to record different data.

Recording method	USER CLIP NAME to be recorded	
Clip meta data RECORD=ON	TYPE1	Read meta data settings
	TYPE2	Read meta data settings + counter value
Clip meta data RECORD=OFF	TYPE1	Same as GLOBAL CLIP ID
	TYPE2	Same as CLIP NAME

■ Counter value

The counter value is indicated as a four-digit number. When recording method "TYPE 2" is selected for the USER CLIP NAME in the clip meta data that is loaded, the counter value is incremented by 1 for each new recording and a new clip is generated.
Use the following procedure to reset the counter value.

1. Press the MENU button.

2. Use the Up/Down/Left/Right cursor buttons to choose the META DATA - PROPERTY - USER CLIP NAME menu setting from the meta data screen and press the SET button.

```
META DATA                    1 2 ☐ 🔋
REC META DATA              USER CLIP NAME
  REC : OFF                CREATOR
  META NAME :              LAST UPDATE PERSON
                           SHOOT
                           PLACE NAME
                           SCENARIO
                           NEWS
                           MEMO


AVC INTRA100    PRESS [EXIT] BUTTON TO EXIT
```
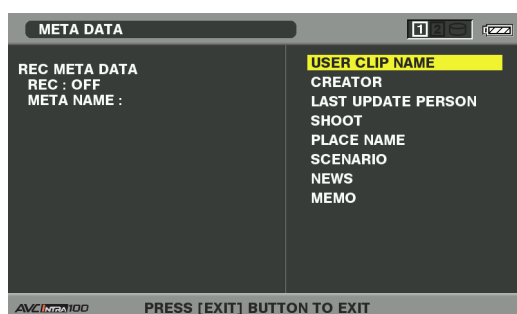
3. Use the Up/Down/Left/Right cursor buttons to choose COUNT RESET and press the SET button.
The counter value is reset to 1.

4. Press the EXIT button to end processing.

Incrementing the counter value of the USER CLIP NAME for clips exceeding 4 GB

In the following case, one shot is recorded as multiple clips and the counter value is automatically incremented and recorded for each shot.

- When an 8 GB or larger P2 card is used in this unit and each continuous recording exceeds a specified time.
  (→ "Dividing clips over 4 GB in length" Vol. 1, page 30).
- When one recording spans multiple cards.

Example of a recording on one P2 card (DVCPRO HD):

REC start   Stop
(start of recording)   (recording stop)

Recording duration = 6 minutes

Clip 1 Counter value = A	Clip 2 Counter value = A + 1	

Approx. 5 min.   Approx. 1 min.
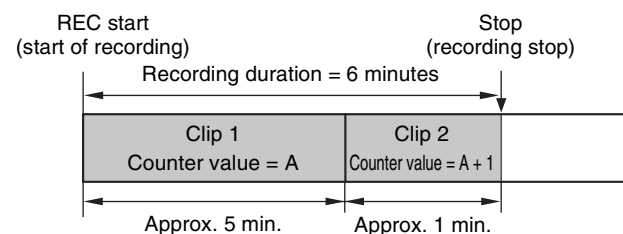
Example of recording a clip on two P2 cards:

REC start   Stop
(start of recording)   (recording stop)

Clip 1 Counter value = A	Clip 2 Counter value = A + 1	

1st card   2nd card
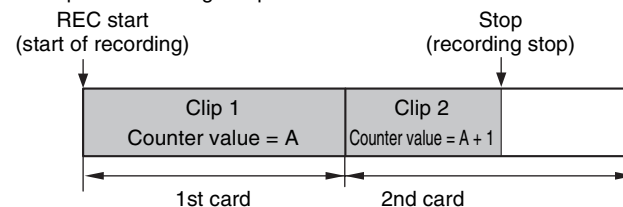
A P2 device will indicate the thumbnail and the counter value of clip 1 when thumbnails and property of the clip are displayed.

Meta data upload files

■ Loading files

Use the following procedure to load meta data from an SD memory card.

```
R THUMBNAIL  TOP      SHIFT

        SET

)4

)5                              — 4,5,6

)6  EXIT             MENU

+                               — 3,7

)  CANCEL  BOTTOM  DIAG
```
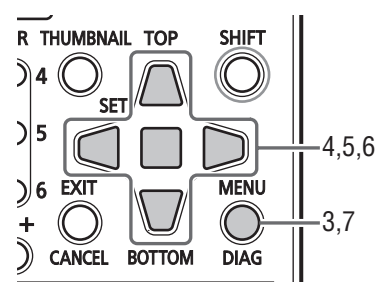
1. Insert the SD memory card storing the meta data upload file.

2. Open the thumbnail screen.

3. Press the MENU button.

4. Use the Up/Down/Left/Right cursor buttons to choose the META DATA - LOAD menu setting and press the SET button.
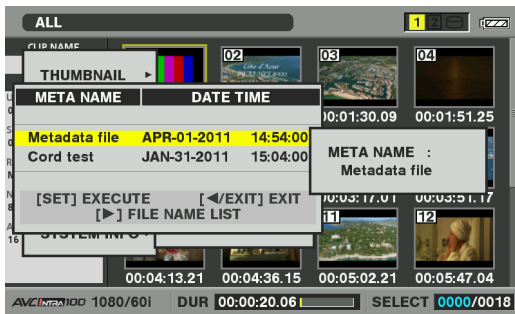
The meta data name of the meta data upload file on the SD memory card appears.

◆ **NOTE:**
- When the metatada name is displayed, use the right cursor button to show the file name. Use the left cursor button to show the meta data name.

5. Use the Up/Down/Left/Right cursor buttons to select the file to load and press the SET button.

6. Select YES in the confirmation message that appears and press the SET button.
The file is now loaded.

7. Press the MENU button to end processing.

■ Checking and revising loaded meta data

Use the following steps to check meta data loaded from an SD memory card.
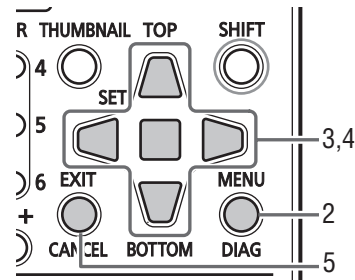
1. Open the thumbnail screen.

2. Press the MENU button and choose the META DATA - PROPERTY menu setting.
A screen like the one shown below opens to announce that meta data has been loaded.
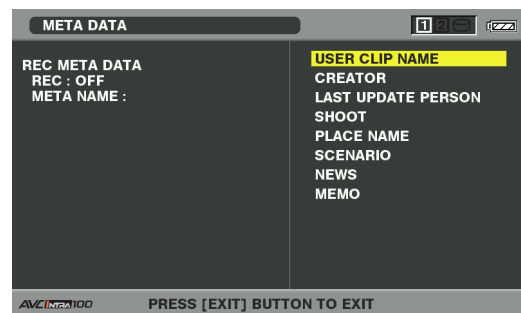
3. Use the Up/Down/Left/Right cursor buttons to move the cursor to the item you want to change and press the SET button.
Use this function to check loaded meta data settings.
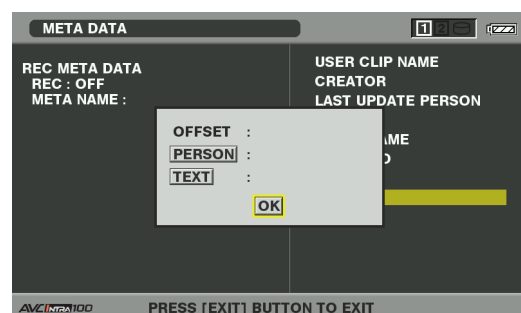
4. While viewing meta data settings, use the Up/Down/ Left/Right cursor buttons to move the cursor to the setting you want to change and press the SET button.

The on-screen keyboard appears. Make the required changes.
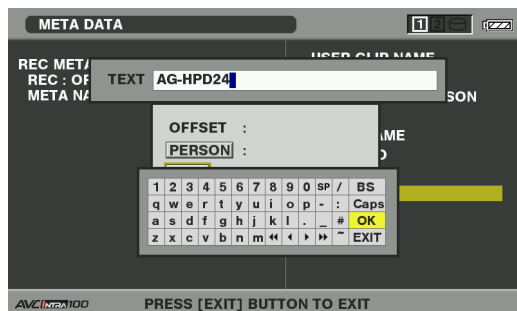
◆ **NOTE:**

<Meta data types that can be set>

• Use the Up/Down/Left/Right cursor buttons to select the meta data item you want to check and press the SET button to view related information.

USER CLIP NAME:	Loaded USER CLIP NAME, counter value and recorded data
CREATOR:	Creator
LAST UPDATE PERSON:	The person who last updated the data
SHOOT:	The person who shot
PLACE NAME:	Shooting location
SCENARIO:	Program name, scene No., take No.
NEWS:	Name of the reporter, purpose of data collection, object of data collection
MEMO:	Name of the person who recorded the text memo and text memo data

• Press the EXIT or SET button after confirming to close the window.
• Select OK after completing all changes.

5. Press EXIT to exit the meta data confirmation dialog.

■ **Deleting meta data**

Use the following steps to delete meta data stored in the unit and initialize settings.

(→ Setup Menu "META DATA" page 54)

Formatting P2 and SD Memory Cards
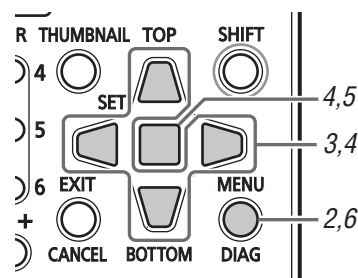
1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the Up/Down/Left/Right cursor buttons to select the OPERATION - FORMAT - SLOT n menu setting ("n" indicates the number of the slot containing the P2 card you want to format) and press the SET button.

◆ **NOTE:**
• Selecting SD CARD will format an SD memory card inserted in the SD memory card slot.

4 Select YES in the confirmation message that appears and press the SET button.

Card formatting starts.

◆ **NOTE:**
• To cancel formatting, select NO and press the SET button.
• Check that no important data remains on a device before formatting since data erased by formatting cannot be recovered.

5 When the confirmation message appears, select OK (and press the SET button).

◆ **NOTE:**
• Repeat the procedures in steps 3 to 5 to format P2 cards in other P2 card slots or SD memory cards.

6 Press the MENU button to end processing.

Checking Card Status

Use the following steps to view P2 card slot status, P2 card usage and other card information on the screen.
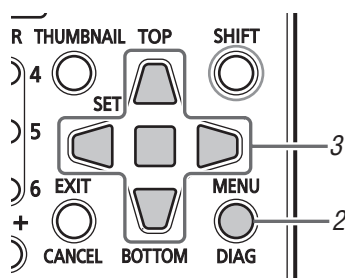
1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the Up/Down/Left/Right cursor buttons to choose the PROPERTY - CARD STATUS menu setting and press the SET button.

The status of P2 card will be displayed.

◆ **NOTE:**
- Choose the PROPERTY - PROPERTY SETUP - P2CARD CAP menu setting to switch between remaining free space and used space.
  (→ Setup Menu "PROPERTY" - "PROPERTY SETUP - P2 CARD CAP" page 53)
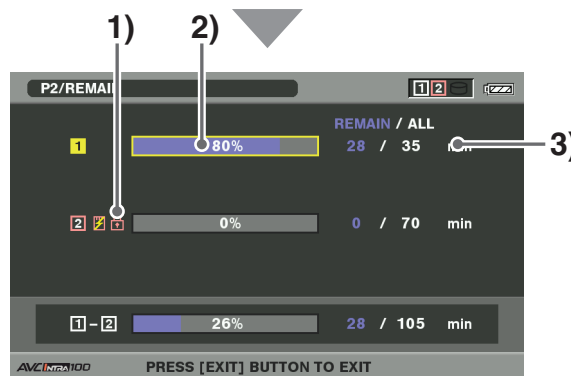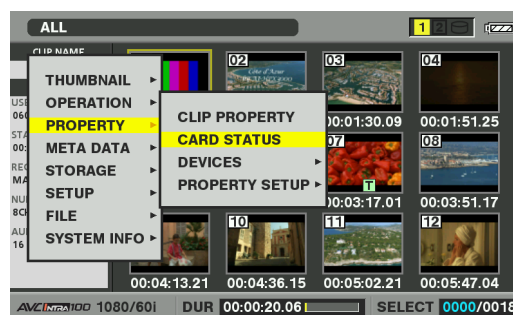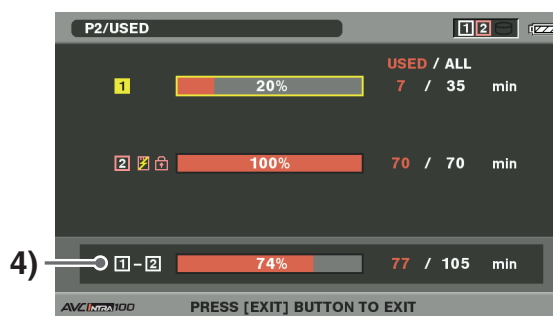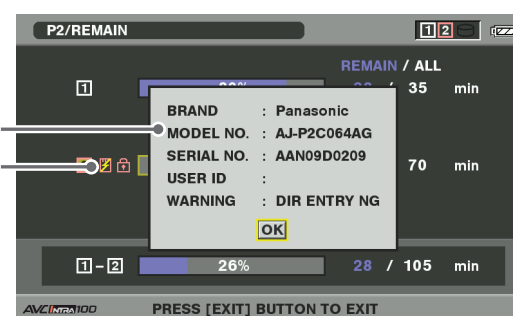
1) Write protect mark

A write-protected P2 card is indicated by the 🔒 mark displayed here.

2) P2 card status

The remaining free memory on the P2 card is displayed here in the form of a bar meter and a percentage value.
Memory used on the P2 card is also displayed in the form of a bar meter and a percentage value.
The following status information may also appear depending on card status.

FORMAT ERROR!:	An unformatted P2 card is inserted.
NOT SUPPORTED!:	This unit does not support the inserted card.
NO CARD!:	No P2 card has been inserted.

3) P2 card remaining memory (or memory used)/total memory

Indicates P2 card remaining free memory (or memory used)/total memory in time left in minutes. Fractions of a minute are rounded off on the display so that the sum total of the remaining memory available for recording on each P2 card may not tally with the figure for the total memory.

4) Slot remaining memory (or memory used) total

The figure obtained by totaling the remaining free memory (or memory used) on the two P2 slots is shown here.

◆ **NOTE:**
• Free space of write-protected P2 cards is not included in the free space total.

5) Detailed P2 card status

Select the slot of the P2 card whose status you want to check and press the SET button to view the P2 card model number and other detailed information.
Press the SET or EXIT button again to close the detailed information dialog.

6) Card warning messages

This warning appears when the following P2 cards are inserted.
Open Detailed P2 Card Status for more information on this warning.

• "RUN DOWN CARD"
The maximum number of overwrites has been exceeded.
• "DIR ENTRY NG"
The P2 card directory structure is not supported.

4 Press the EXIT button to end processing.

◆ **NOTE:**
• If the number of clips recorded on a P2 card exceeds the limit, "OVER MAX NUMBER CLIPS" appears in the detailed P2 card status indicating that the limit has been exceeded.

Connecting an External Device via the USB HOST Connector

Usable storage devices

The following storage devices can be used.
• Panasonic portable hard disk unit P2 store (AJ-PCS060G)
• Hard disk drives or solid state drives connected via USB 2.0/3.0.

◆ **NOTE:**
• The unit supports P2 store only in version Ver2.** or later version. P2 store hard disk in Ver1.** cannot be connected. Upgrade a hard disk using Ver1.** to the latest version before use.

Storage device types and available functions

Available functions depend on the type of storage device used. "PARTITION:" in the left half of the EXPLORE screen provides information on the particular storage device that is connected.
(→ "Viewing storage device information (EXPLORE screen)" page 31)

◆ **NOTE:**
- The USB 3.0 connector supports USB bus power (5 V, 0.9 A) and may not be enough to start up some storage devices. Should this happen, provide the storage device with a separate power supply.
- This unit does not support hard disks that are 2 TB (2048 GB) or larger.

Storage device types and available functions

Storage device type	Features	Available functions							
		Thumbnail display	P2 card unit		Clip unit		Playback check*3	Displaying clips	Format
			P2 → Storage	Storage → P2	P2 → Storage	Storage → P2			
TYPE S	A special disk format for high-speed writing/loading data by P2 card unit.	○	○	○	○*1	○	○	○	○
P2STORE	The P2 store (AJ-PCS060G) hard disk. Cannot be used for writing data.	○	×	○	×	○	○	○	×
FAT	A hard disk whose primary partition is formatted either using FAT16 or FAT32. The root partition or "CONTENTS" directory under any directory*2 is used.	○	○	×	○	○	○	○	○
OTHER	Hard disk other than those above • NTFS or other hard disk using a file system other than FAT16 or FAT32.	×	×	×	×	×	×	×	○*4

*1 Adding clips to a partition will prevent writing back data by the card to that partition.

*2 This enables up to 100 folders in up to three levels. Folders appear in order from the top level. Long file names and two-byte character file names are not supported.

Example:

/CONTENTS	Can be displayed
/SAMPLE/CONTENTS	Can be displayed
/SAMPLE/20090101/CONTENTS	Can be displayed
/SAMPLE/20090101/1200/CONTENTS	Cannot be displayed → This is the fourth level and will therefore not appear.

*3 Audio and video dropouts may occur during playback from a storage device depending on its performance and operating conditions. Perfect playback cannot be guaranteed.

*4 2 TB or larger storage devices cannot be formatted.

◆ **NOTE:**
- Use storage devices under the following conditions.
- Use storage devices within their operating specifications (temperature, etc.).
- Do not install storage devices in locations that are unstable or exposed to vibration.
- Some storage devices and cables may not operate normally.
- Use a storage device with sufficient space for copying.

- Do not connect a storage device to hubs or other connections that involve multiple units even if the other units are not powered. Do not connect devices other than storage devices to a storage device via a hub or other device.
- During formatting and copying, do not disconnect cables, do not remove a P2 card that is involved in any of these activities and do not power off this unit and the storage device. Otherwise this unit and the storage device must be rebooted.
- A storage device is a high-precision instrument whose read and write functions may fail if used in an unsuitable environment. Please note that Panasonic accepts no liability whatsoever for data loss or other losses either direct or indirect arising from hard disk damage or other defects.
- When data from this unit is copied to a storage device and is edited on another computer, the data may no longer work in this unit and storage device data may become corrupted.
- Repair bad clips on P2 cards before copying them to a storage device.
- SATA (serial ATA) or PATA (parallel ATA) interface storage devices connected using a USB converter cable may not be recognized.
- Do not connect or disconnect cables during recording or playback with the unit. Recording or playback may not occur normally if you do.
- On some storage devices, performance of the initial playback confirmation after connecting a hard disk may drop.

Connecting storage devices

1 Connect a storage device to the USB 3.0 connector on the front panel.

Portable storage device, etc.
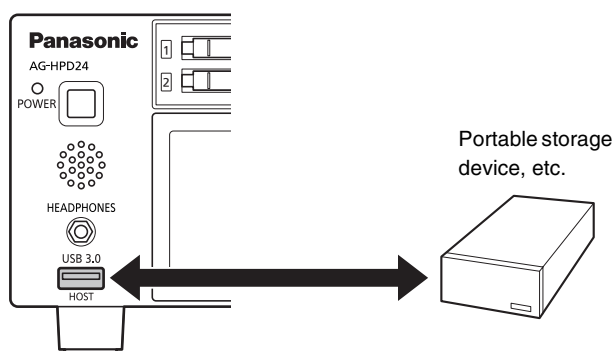
2 Set the STORAGE - USB HOST - ENABLE menu setting.

◆ NOTE:
- When set to ENABLE, recording and EE output is not available.
- Use cables that conform to the USB 3.0 standard when connecting USB 3.0 storage devices.
  USB 2.0 cables, if used, will only provide USB 2.0 transfer capacity.

3 The ▭ (gray) icon in the upper right corner of the thumbnail screen for a storage device that is recognized and can be used changes to ▭ (white).

Formatting storage devices

Follow the steps below to initialize a storage device in a TYPE S or FAT format.

◆ NOTE:
- Note that all data on a storage device is deleted when it is formatted.
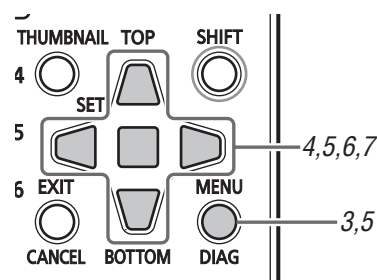
1 Open the thumbnail screen.

2 Connect a USB storage device.
When the storage device is recognized, the status indication (→ "Thumbnail Screen Display" Vol. 1, page 34) turns white (or red).

3 Press the MENU button.

4 Use the Up/Down/Left/Right cursor buttons to choose the STORAGE - EXPLORE menu setting and press the SET button.
The EXPLORE screen will now open.

5 Press the MENU button and use the Up/Down/Left/Right cursor buttons to choose the OPERATION - FORMAT(STORAGE) menu setting, press the SET button, select format type (TYPE S, FAT) and press the SET button.
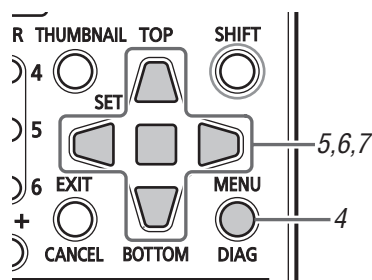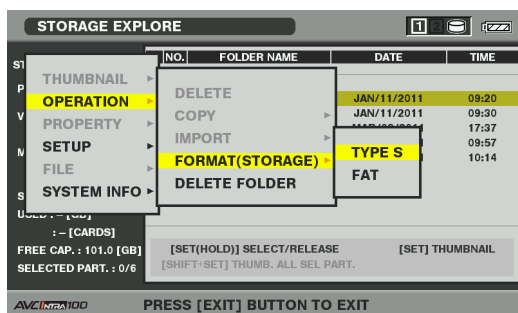
6 Select YES in the confirmation message that appears and press the SET button.

7 When the confirmation message appears again, select YES and press the SET button.

The storage device is now formatted.

◆ **NOTE:**
- Check that no important data remains on a device before formatting since data erased by formatting cannot be recovered.

Exporting data by card to a storage device

You can export all data on a P2 card to a storage device (writing data from a P2 card to the storage device). The result of copying and the number of copies will vary with the format of the storage device.

Storage device type	Copy result	Maximum number of copies*2
TYPE S	A partition is created by card and all the data included in the card are copied to that partition. The product number and serial number of the P2 card used for copying can be checked on the explorer screen of this unit.	23
FAT	A separate folder*1 is created for each card and all data on the card is copied to this folder. The folder name can be checked on the explorer screen of this unit.	100

*1Folders are created in two levels: date (year/month/date), and time (hour/minute/second).
Example: A folder created at 12:34:56 on March 30, 2011 will have the following structure:
/11-03-30/12-34-56
*2Copy volume is limited by the capacity of the storage device.

1 Connecting a Storage Device

A storage device that is not TYPE S or FAT will be formatted as a TYPE S or FAT storage device.
(→ "Formatting storage devices" page 29)

2 Insert a P2 card.

3 Open the thumbnail screen.

4 Press the MENU button.

5 Use the Up/Down/Left/Right cursor buttons to choose the STORAGE - EXPORT menu setting and press the SET button.

6 Select the number of the source P2 card slot and press the SET button.

When the hard disk is in the TYPE S format, selecting ALL SLOT will result in a batch export of all inserted cards.

7 Select YES in the confirmation message that appears and press the SET button.

The data will now be exported. A progress bar appears during exporting.
When the export operation ends, "COPY COMPLETED!" appears.

◆ **NOTE:**
- When using TYPE S formatting for exporting, you can have the system automatically verify (compare) the original P2 card data with data copied to the storage device after exporting. In the factory default settings, verify is enabled for export. The export operation will end earlier when Verify is not on and exported

data is not checked.

To disable verify, set the STORAGE - SETUP - VERIFY menu setting to OFF.

When exporting to a FAT volume, verify is not performed regardless of this setting.

• To interrupt exporting, press the SET button, select YES in the CANCEL confirmation that appears and press the SET button again.

• Data copied from a P2 card will not be affected if processing should be interrupted during verification.

• When the network and drive assignments on a computer conflict and a partition cannot be seen, use our drive mount converter available free of charge from our web site. This allows you to mount the specified folder when a storage device is connected to a Windows PC.

Copying clips to a storage device

Use the following steps to copy selected clips rather than entire cards to a storage device.
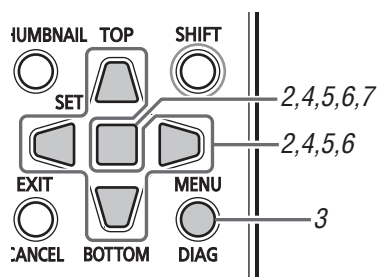
1 Connect a Storage Device.

2 Open the thumbnail screen and use the Up/Down/ Left/Right cursor buttons to select the clips you want to copy and press the SET button.

You can also select multiple clips.

3 Press the MENU button.

4 Use the Up/Down/Left/Right cursor buttons to choose the OPERATION - COPY - STORAGE menu setting and press the SET button.

5 Select the destination of the copied clip in the storage device folder or partition list that appears and press the SET button.
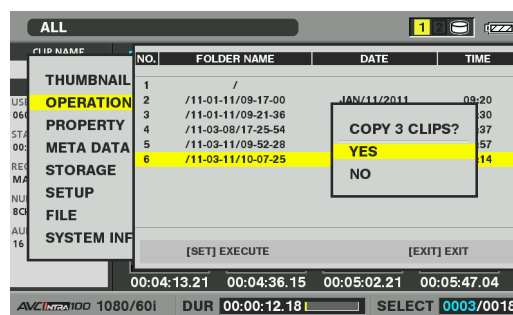
◆ **NOTE:**

• A storage device in the FAT format will display the following folders.
  - Root folder
  - Up to three levels of folders containing CONTENTS folder

• Copying is not possible on a TYPE S storage device without a single partition. To enable copying, format using a FAT format or use EXPORT to create a partition.

6 Select YES in the confirmation message that appears and press the SET button.

The clip will now be copied. A progress bar appears during copying.

When the copy operation ends, "COPY COMPLETED!" appears.

◆ **NOTE:**

• To interrupt copying, use the Up/Down/Left/Right cursor buttons to choose CANCEL and press the SET button. Then select YES in the CANCEL confirmation that appears and press the SET button again. The incomplete copy at the destination is deleted.

• When a clip is copied to a TYPE S storage device, it will not be possible to import data by card to that partition. The card model number is then displayed as "UNKNOWN".

7 Press the SET button to complete the operation.

Viewing storage device information (EXPLORE screen)

Use the steps below to display storage device information, select display of storage device partition and folder thumbnails and select the partition and folder to work on (open the EXPLORE screen).
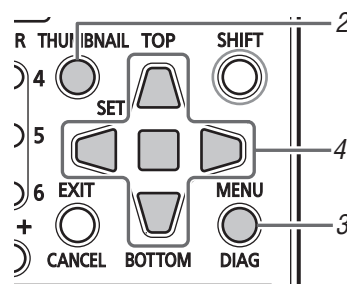
1 Connecting a Storage Device.

2 Open the thumbnail screen.

3 Press the MENU button.

4 Use the Up/Down/Left/Right cursor buttons to choose the STORAGE - EXPLORE menu setting and press the SET button.

The EXPLORE screen appears.
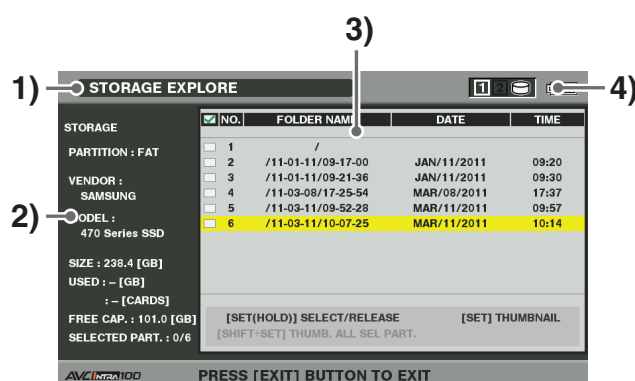
1) **Display status**

Indicates that the name of the screen is the EXPLORE screen for the storage device.

2) **Device information**

The following information appears.

Storage device that makes it possible to read and write data by card (TYPE S, P2 STORE).	PARTITION:	TYPE S / P2 STORE
	VENDOR:	Name of vendor
	MODEL:	Model name
	SIZE:	Total capacity (unit: GB)
	USED:	Memory used (unit: GB) Used P2 card area (unit: cards) up to 23 cards
	FREE CAP.:	Remaining capacity (Unit: GB)
	SELECTED PART.:	Number of selected partitions
Storage device other than above (FAT, OTHER)	PARTITION:	FAT/OTHER
	VENDOR:	Name of vendor
	MODEL:	Model name
	SIZE:	Total capacity (unit: GB)
	FREE CAP.:	Remaining capacity (Unit: GB)
	SELECTED PART.:	Number of selected folders

3) **Partition information (for a TYPE S storage device or P2 store disk)**

| ☑ : | Check marks appear for selected partition. |

NUMBER(NO.):	Partition number (1 -)
MODEL:	P2 card model name
PARTITION NAME:	Name assigned to partition (→ "Entering a partition name" page 33)
DATE / TIME:	Date and time of partition recording
SERIAL:	P2 card serial number

Folder information (for a FAT type storage device)

☑ :	Check marks appear for selected folder.
NUMBER(NO.):	Folder number (1 -)
FOLDER NAME:	Folder name (does not include CONTENTS folders)
DATE / TIME:	Folder creation date

◆ **NOTE:**

- Use the Left/Right cursor buttons to toggle between the partition names and serial names for TYPE S formatted storage devices.
- The partition information for an invalid partition on a P2 store is indicated in gray.
- Select the PROPERTY - FREE CAP. OF PARTITION menu setting in the menu to check the remaining capacity of the partition.

4) **Storage device indicator**

Indicates whether or not a storage device is connected and device type.

■ **Operations in the EXPLORE screen**

Selecting partition or folder as target

Selecting a partition or folder as target allows you to display all the clips in the selected partition or folder as thumbnails. (→ "Thumbnail Screen Display" Vol. 1, page 34)

Use the following steps to select up to six partitions or folders to use in this way.
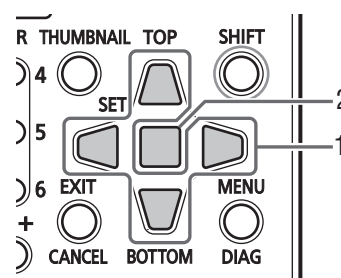
1. Select a partition or folder in the EXPLORE screen.

2. Hold down the SET button (1 sec or longer) to complete the operation.

A check mark ☑ appears on ☐ next to the selected partition or folder.

```
STORAGE EXPLORE                    [1][2][📷]  [🔋]
STORAGE           ☑ NO.    FOLDER NAME        DATE       TIME
PARTITION : FAT     □ 1         /
                    □ 2   /11-01-11/09-17-00  2011/JAN/11  09:20
VENDOR :            □ 3   /11-01-11/09-21-36  2011/JAN/11  09:30
  SAMSUNG           □ 4   /11-03-08/17-25-54  2011/MAR/08  17:37
MODEL :             ☑ 5   /11-03-11/09-52-28  2011/MAR/11  09:57
  470 Series SSD    ☑ 6   /11-03-11/10-07-25  2011/MAR/11  10:14

SIZE : 238.4 [GB]
USED : – [GB]
     : – [CARDS]
FREE CAP. : 101.0 [GB]   [SET(HOLD)] SELECT/RELEASE      [SET] THUMBNAIL
SELECTED PART. : 2/6     [SHIFT+SET] THUMB. ALL SEL PART.

AVCINTRA100       PRESS [EXIT] BUTTON TO EXIT
```

The selected areas remain available until the storage device is disconnected or the power is turned off. To release a selected partition, hold down the SET button again (for 1 sec or longer) in the selected partition. Use the CANCEL button to cancel all selected areas.

• A warning appears when an attempt is made to select a 7th area.

◆ NOTE:

• A clip recording that spans several partitions including one whose MODEL has become UNKNOWN*[1] on a TYPE S storage device will not run as a normal clip.

*[1] When a clip is copied to a TYPE S storage device, the MODEL of the partition storing the copy changes to UNKNOWN.

• A TYPE S storage device allows you to assign partition names. The selected partition name appears in PARTITION NAME in the EXPLORE screen.

Entering a partition name

A name (containing up to 20 characters) can be assigned to a TYPE S storage device.

◆ NOTE:

• The entered partition name appears in PARTITION NAME in the EXPLORE screen.
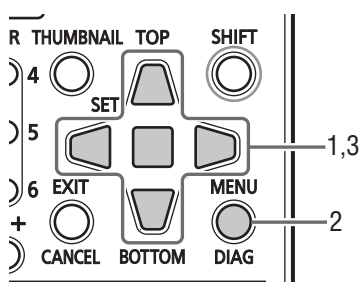
1. Place the cursor on the partition in the storage EXPLORE screen you want to assign a name to.
   You can also hold down the SET button to open the thumbnail list and enter a name for the partition.

2. Press the MENU button.

3. Use the Up/Down/Left/Right cursor buttons to select the OPERATION - CHANGE PARTITION NAME menu setting and press the SET button.
   The soft keyboard appears.

4. Enter a name for the partition and select OK.
   The name is assigned to the partition.

Deleting the last partition

Choose the OPERATION - DELETE LAST PARTITION menu setting (→ Setup Menu "OPERATION" - "DELETE LAST PARTITION" page 52) to delete the last partition on a storage device.

◆ NOTE:

• Move the cursor to the last partition before deleting.

• The last partition can only be deleted on a TYPE S storage device. This function can delete only the last partition and not any intermediate partitions.

• Make sure the partition to be deleted does not contain any data you need as it will not be possible to recover it after deletion.

■ Displaying thumbnails of clips on storage devices and viewing video on the monitor

Open a thumbnail

You can display thumbnails and manage clips stored on a storage device in the same way as clips on P2 cards.

1. Open the EXPLORE screen.
   A list of partitions and folders appears.

2. Use the Up/Down/Left/Right cursor buttons to choose the partition or folder where you want to display thumbnails and press the SET button.
   Thumbnails of the clips in the partition or folder will now appear. Press the EXIT button to return to the EXPLORE screen.

◆ NOTE:

• When a volume is selected, pressing the SHIFT + SET button will display the thumbnails for all the selected partitions.
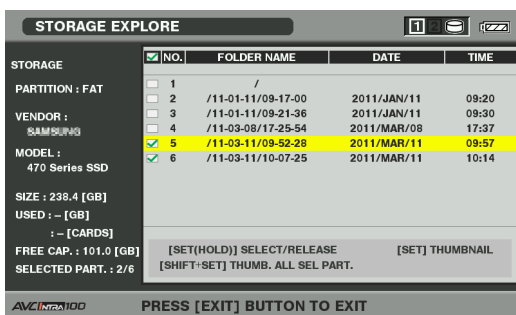
1) Clip information

Displays clip properties.

2) Storage device information

TYPE S device

SERIAL:	P2 card serial number	
MODEL:	P2 card model name	
SELECTED PART.:	A check mark ☑ appears for the selected partition.	
SELECTED PART. No.:	This indication appears only when multiple partitions are selected and a list of numbers of selected partitions is displayed.	
NUMBER (NO.):	Partition no. (1 -)	
DATE / TIME:	Date and time of partition recording	
VERIFY:	Verify setting and result of verification	
	ON: FINISHED	Verification was successful
	ON: FAILED	Verification failed • "- -" is displayed on P2 store.
	OFF:	No verification was performed
NAME:	User assigned partition name	
SIZE / USED / FREE CAP.:	Total storage device capacity/used capacity/remaining capacity	

FAT formatted device

SELECTED PART.:	A check mark ☑ appears for the selected partition.
SELECTED PART. No.:	This indication appears only when multiple folders are selected and a list of numbers of selected folders is displayed.

NUMBER (NO.):	Folder no. (1 -)
DATE / TIME:	Date and time of folder created
FOLDER:	Folder name *1
SIZE / FREE CAP.:	Storage device capacity/remaining capacity

*1: Date created is not shown for root.

◆ **NOTE:**
- Use the SHIFT and +/- buttons to move to thumbnail displays on adjacent partitions or folders without returning to the EXPLORE screen.
- Change the thumbnail screen display as necessary. These changes are performed in the same way as when using P2 cards. (→ "Changing Thumbnail Display" page 12)
- There is a limit of 1000 clips and clips that exceed this limit will not be displayed.

Viewing Clip Information

Use the steps below to view a variety of meta data on clips stored on a storage device. It shows information in the same way as the P2 card clip property.

1. Move the cursor to select a clip in a thumbnail screen on a storage device.

2. Press the MENU button.

3. Use the Up/Down/Left/Right cursor buttons to choose the PROPERTY - CLIP PROPERTY menu setting and press the SET button.

   (→ "Viewing and Revising Clip Information" page 20)
   But repairs cannot be made.

Deleting Clips

Use the steps below to delete clips that are no longer necessary on a storage device.

1. Select a clip to delete on the thumbnail screen on a storage device.

2. Press the MENU button.

3. Use the Up/Down/Left/Right cursor buttons to choose the OPERATION - DELETE menu setting and press the SET button.

4. Select YES in the confirmation message that appears and press the SET button.

◆ **NOTE:**
- It may not be possible to delete clips with the ❌ (bad clip indicator) and ❓ (unknown clip indicator).

Checking audio and video of a clip
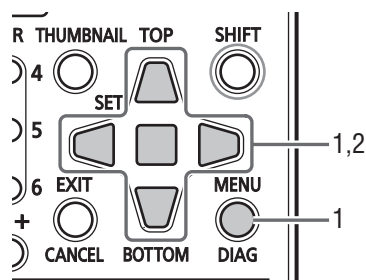
1. Opening the Thumbnail Screen on a Storage Device

2. Move the Up/Down/Left/Right cursor buttons to the clip you want to open.

3. Press the PLAY button ▷ .

Playback starts from the clip at the cursor position. When the clip at the cursor location ends, subsequent clips are played back in order. When the last clip has been played, the thumbnail screen on the storage device appears.

◆ **NOTE:**

• To play back a clip, it is not necessary to select it (so that the thumbnail appears inside a blue frame).

• The thumbnail display settings can be changed to play back only selected clips or play back only clips that contain text memos.

• Pressing the STILL/PAUSE 〔 ▯▯ 〕 button instead of the PLAY 〔 ▷ 〕 button shows a still of the first frame in the clip.

• To rewind or fast forward, press the REW 〔 ◁◁ 〕 or FF 〔 ▷▷ 〕 button instead of the PLAY 〔 ▷ 〕 button.

• A clip whose clip number is red cannot be played back.

• Pressing the STOP 〔 ▫ 〕 button during clip playback stops playback and reopens the thumbnail screen.

• When playback is stopped, the cursor moves to the clip played prior to stopping.

• Audio and video may be distorted during playback between clips in different video formats (DVCPRO HD, DVCPRO50, DVCPRO, DV, AVC-Intra 50 and AVC-Intra 100).

• Text memos, meta data or other data cannot be added or revised.

• When ONE CLIP PLAY is assigned to a USER button, the USER button allows you to play back the clip at the cursor location.

• Audio and video dropouts may occur during playback on some storage devices. Use high-speed storage devices to prevent dropouts. A warning (E-75) appears when video dropouts occur. Press STOP 〔 ▫ 〕 or other button to close the warning.

Writing back (importing) data from a storage device to a P2 card

■ Importing Data by Partition from a TYPE S storage device and P2 Store

Use the steps below to import (write back data from a storage device to a P2 card) data by partition (by P2 card) to a P2 card that has the same model number as the source card.

1. Insert the P2 card that will store the imported partition.

Be sure to insert a formatted P2 card.

2. Connect a storage device.

3. Select the STORAGE - EXPLORE menu setting to open the EXPLORE screen.

4. Display a thumbnail of a partition you want to import in the EXPLORE screen.

5. Choose the OPERATION - IMPORT menu setting.

6. Select the number of the P2 card slot that will store the imported data and press the SET button.

Importing starts when YES is selected in the confirmation message.

When the import operation ends, the message "COPY COMPLETED!" appears.

◆ **NOTE:**

• When data is imported to a P2 card that differs from the original P2 card, some clips may become incomplete (showing the indicator). Then use the reconnection function to rebuild the clip.

(→ "Reconnecting incomplete clips" page 19)

• Choose the STORAGE - SETUP - VERIFY menu setting to turn verification during copying on or off.

• It is not possible to import data by partition between P2 cards with different model numbers. Copy data by clip.

■ Copying Data to a P2 Card by Clip

Use the steps below to select a clip on a storage device and copy it to a P2 card.
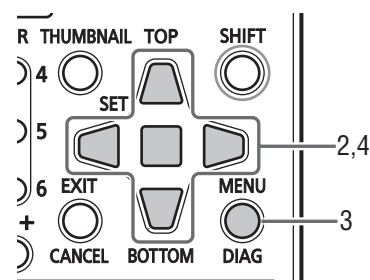
1. Opening the Thumbnail Screen on a Storage Device

2. Select a clip to copy.

3. Press the MENU button.

4. Use the cursor buttons to choose the OPERATION - COPY menu setting, select destination from the list that appears and press the SET button.

Copying starts when YES is selected in the confirmation message.

When the copy operation ends, the message "COPY COMPLETED!" appears.

USB Device Mode

A USB 2.0 connection with a PC allows you to use P2 cards inserted in the slots on this unit as mass storage. Note that a separate USB driver (found on the supplied CD-ROM) must also be installed on the PC.

Use of P2 viewer, which can be downloaded from the following site, free of charge, allows you to manipulate clips stored on a P2 card on a Windows PC.
For details on the URL (→ "Website URL" page 2)

◆ **NOTE:**
• For details regarding connections, refer to the Operating Instructions supplied with the PC and the application software.
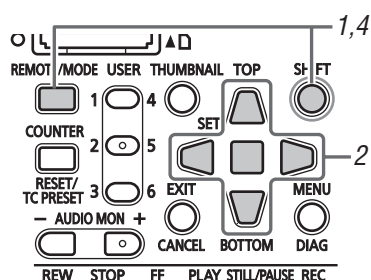
1 Press the MODE button when this unit is idle.

2 Select USB DEVICE in the confirmation dialog and press the SET button.

"USB DEVICE" flashes on the LCD monitor to indicate that the unit is entering the USB host mode. After the mode switch, "USB DEVICE DISCONNECT" appears on the LCD monitor.
This message is replaced by a "USB DEVICE CONNECT" message when the connection with the PC is completed.

◆ **NOTE:**
• Selecting 3D REC/PB or SYNC PB mode disables mode changes until communications with the slave device are established. When an incorrect mode is selected, turn the power off and then back on again to change modes.

3 Use USB device mode operations.

◆ **NOTE:**
• Please refer to the operating instructions supplied with your PC and software.

4 Press the MODE button to return to regular mode.

◆ **NOTE:**
• Recording, playback and most of other operations are not available in the USB device mode.
• When using a Windows PC, install the driver using the supplied CD-ROM.

3D Recording/Playback Mode (3D REC/PB)

This chapter describes the 3D recording/playback mode and how to record and playback Dual P2 3D clips.

For details on connections, recording and playback operations refer to the following section.

Displaying and Managing Clips

Although display and playback is limited to Dual P2 3D clips, basic operations (in main mode) are the same as for normal clips except for a few restrictions. The following sections will explain the differences from normal operation (main mode).

Thumbnail Screen Names and Functions

◆ **NOTE:**

• The thumbnail screen displays only Dual P2 3D clips recorded on this unit or on a 3D compliant P2 device. This mode does not display regular P2 clips and care is required to avoid formatting such cards.

☆ Pointer (yellow frame)

★ Selected clip (blue)

1) "3D" Logo

Indicates that a 3D thumbnail is displayed.

2) Slot status indication

L indicates the P2 card status on master side and R indicates that on slave side. (→ For details on displayed data, see "Thumbnail Screen" page 10).

3) Battery status indicator

Indicates remaining battery capacity on the master unit.

◆ **NOTE:**

• Battery capacity on the slave unit is indicated on the slave unit.

4) Bad Dual P2 3D clip indicator

Appears when an L or R clip has been inserted incorrectly or something else is wrong with a Dual P2 3D clip.

 An L clip is inserted in a slave unit, or an R clip is inserted in a master unit. Insert the clips correctly.

 No L or R clip has been inserted. Insert the missing clip.

◆ **NOTE:**

• If the bad clip indicator (yellow X) appears, repair the clip, see (→ Setting Menu "OPERATION" - "REPAIR CLIP" page 52).

Changing Thumbnail Display

Like in main mode, you can customize the thumbnail screen to suit operating conditions and improve efficiency.
(→ "Viewing and Revising Clip Information" page 39)

◆ **NOTE:**
• Some menu functions do not comply with the 3D REC/PB mode.

Selecting and Deselecting Clips

Like in main mode, select clips you want to process on the thumbnail screen.
(→ "Selecting and Deselecting Clips" page 16)
Clips other than Dual P2 3D clips will not be displayed as thumbnails and require main mode to be viewed properly.

Playing Back Clips

Playback is performed like in main mode.

◆ **NOTE:**
• During playback and variable speed playback, the clip cannot be forwarded or rewound. Press the STILL button to engage still (SHTL 0.0) mode before performing these operations.
• Text memo forward/rewind is not possible in 3D REC/PB mode.
• Video and audio distortion between clips may occur when playing back clips with different video formats (1080i and 720p), or different compression formats (AVC-Intra 50 and AVC-Intra 100).

Variable Speed Playback

The master side provides variable playback like main mode. However, since the slave side will not operate at the same time, 3D video cannot be viewed. Video output during variable speed playback depends on the output signal system.

• **Independent right and left systems**: Video is shown only on the LCD and no output is made to SDI/HDMI.
  However, when the SETUP - VIDEO - DISCRETE BLACK menu setting is set to OFF, the master side outputs video only via the SDI/HDMI outputs.
• **Side-by-side, frame packing system**: Only video from the L side is output to the LCD and SDI/HDMI (video on the R side is identical to L side video).

◆ **NOTE:**
• Clip seek is not performed during playback. Use seek from STILL (SHTL 0.0) status.
• When the stop state is controlled by an external device, depending on the control system, video output and non-output conditions may differ.

Adding Text Memos and Shot Marks

Text memos and shot marks can be added like in main mode. However, additions can only be made to clips on the master (L) side.

Copying Clips

Clip copying cannot be performed.

Deleting Clips

You can delete clips like in main mode. Note that clips on both the master (L) side and the slave (R) side are deleted.

◆ **NOTE:**
• Clips on a Dual P2 3D clip where the master and slave sides have been incorrectly inserted can also be deleted.
• You can also delete clips on a Dual P2 3D clip where the master or slave side is missing. Take care as a Dual P2 3D clip where the master or slave side is missing cannot be played back.
• A clip that spans across multiple P2 cards cannot be deleted if any of the cards is write protected.

Repairing and Reconnecting Clips

Repairing bad clips

Clips with bad clip indicators (yellow **X**) can be repaired in the same way as in main mode.

Reconnecting incomplete clips

The reconnect function cannot be used in 3D REC/PB mode.

◆ **NOTE:**
• Use main mode to reconnect incomplete clips.

Viewing and Revising Clip Information

The same operations for viewing and revising clip information as in main mode are available. However, viewing and revising can only be performed for the master (L) side clip.

◆ **NOTE:**
- Clip data cannot be revised for Dual P2 3D clips where the master side and slave side materials have been incorrectly inserted or where the master or slave side is missing.
- Clip data on a dual P2 3D clip with only a slave side will not be properly displayed.

Thumbnail Editing

Thumbnails can be revised like in main mode. However, revising can only be performed for the master (L) side clip.

◆ **NOTE:**
- Thumbnails cannot be revised on Dual P2 3D clips where the master side and slave side materials have been incorrectly inserted or where the master or slave side is missing.

Attaching Meta data to Clips During Recording

Meta data can be added to a recorded clip like in main mode. However, additions can only be made to clips on the master (L) side.

Formatting P2 Cards

P2 cards can be formatted like in main mode. However, this operation formats all P2 cards (slots cannot be specified) on both the master side and slave side devices.
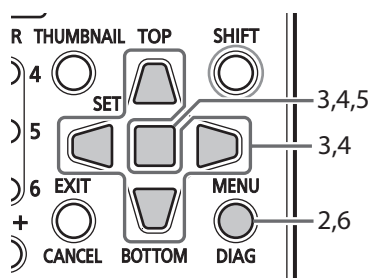
1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the Up/Down/Left/Right cursor buttons to choose the OPERATION - FORMAT - ALL P2 menu setting and press the SET button.

◆ **NOTE:**
- Selecting SD CARD will format an SD memory card inserted in the SD memory card slot on the master side.

4 Select YES and press the SET button.
Formatting of all cards starts.

◆ **NOTE:**
- To cancel formatting, select NO and press the SET button.
- Check that no important data remains on a card before formatting since data erased by formatting cannot be recovered.

5 When the completion message appears, select OK (press the SET button).

6 Press the MENU button to end processing.

◆ **NOTE:**
- It is not possible to format the cards if any of the inserted P2 cards is write protected.

Checking Card Status

Like in main mode, you can use the following steps to display and check P2 card slot status, P2 card usage and other card information on the screen. You can check both the master side and the slave side on the master unit.
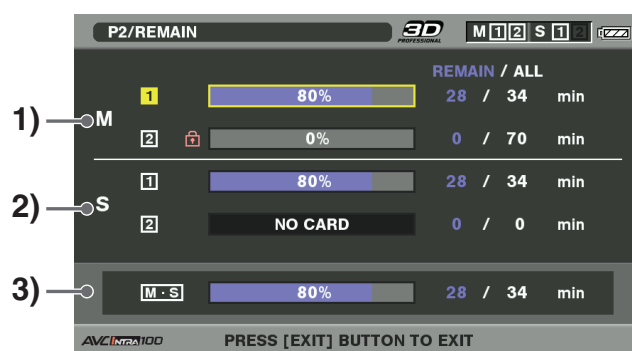
1) Display P2 card status for the master side.
On the master side, remaining recording time for slot 1 and 2 and used capacity are indicated on the meter and as a time value (minutes).

2) Display P2 card status for the slave side.
On the slave side, remaining recording capacity for slot 1 and 2 and used capacity are indicated on the meter and as a time value (in minutes).

3) Total remaining recording time (or used space)

Indicates the remaining capacity available for 3D recording or used space and space available for 3D recording.

◆ **NOTE:**

• The total of minimum card capacity for the master and slave side slots is total capacity, while the total of minimum recording capacity is total remaining recording capacity.

Synchronous Playback Mode (SYNC PB)

This chapter describes playback and other operations in synchronous playback mode with two connected AG-HPD24 units. For details on connecting and switching modes, see the following section.
(→ "Synchronous Playback" Vol. 1, page 48)

Playback

Synchonous playback of clips on 2 units is possible when the following conditions are satisfied. (→ "Synchronous Playback" Vol. 1, page 48)

- The master side and slave side video have the same time code and format.
- The thumbnail clip on the master side and slave side has the same number (arranged in the same date created order).
- Time code in the clip is continuous.
- The clips on the master side and slave side have the same length and the initial time code value is the same.

Correct playback is not possible unless these conditions apply.

Example 1:

The starting point of the clip 1 is the same, but their length differs (the slave side clip is shorter).

→ SDI output on the slave side is muted and turns black when the clip 1 on the slave side ends. At this time, you can use the SETUP - VIDEO - DISCRETE BLACK menu setting to select black/playback.

The following figure shows when the DISCRETE BLACK menu setting is OFF.
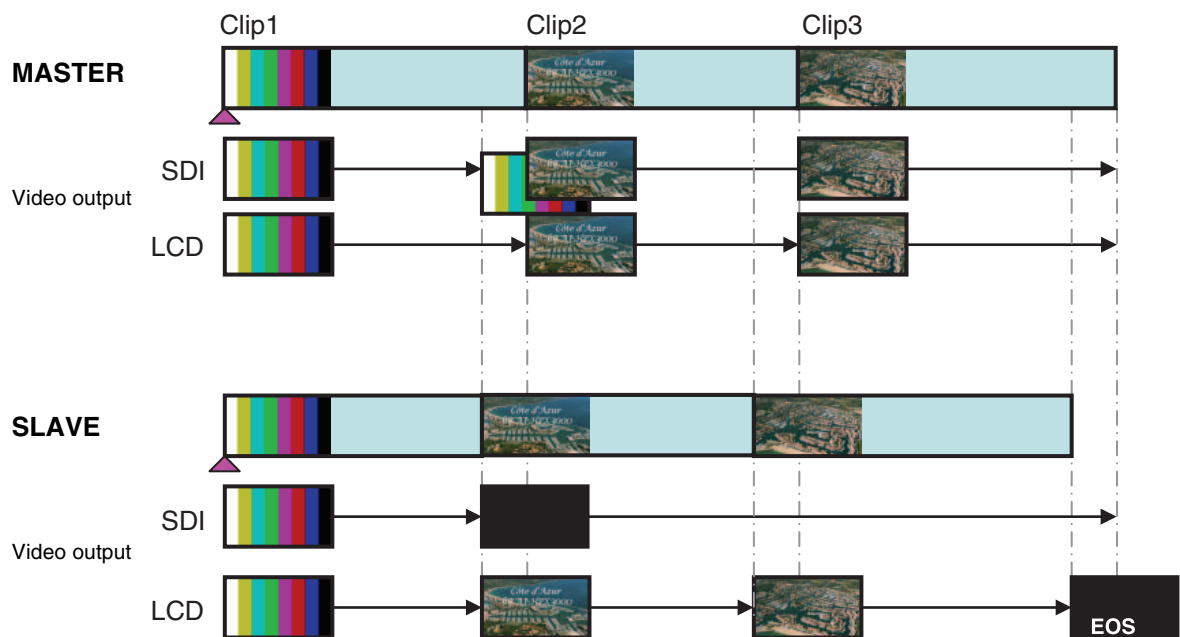
Example 2:

The starting point of Clip1 differs (but the length is the same).

→ Clip1 on the slave side starts after being aligned with the master side start position. In the meantime, L and R video is correctly output from SDI. Since the Clip number or time code differs when the slave Clip 1 playback ends, SDI is muted and turns black. At this time, you can use the SETUP - VIDEO - DISCRETE BLACK menu setting to select black/playback. The following figure shows when the DISCRETE BLACK menu setting is OFF. HDMI output does not turn black but shows master side (L) video for both L and R sides.

MASTER

SLAVE
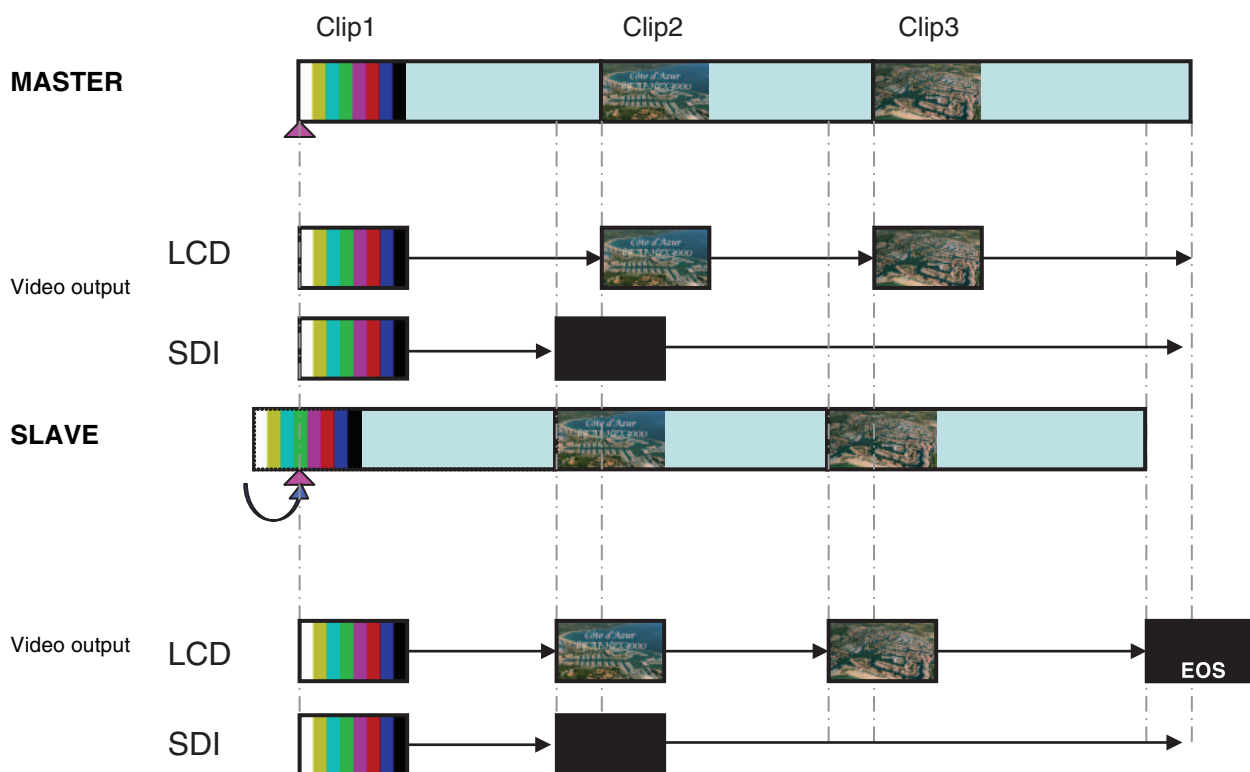
◆ **NOTE:**

• When playback starts from different master and slave frames (time code), only master side video is played back.

Displaying and Managing Clips

Operations are performed using the same operations as in main mode.

On the slave side, you can check clips by opening the thumbnail screen, but control is restricted to THUMBNAIL, Up/Down/Left/Right cursor button operations.

This chapter will explain the differences from main mode operations.

◆ **NOTE:**

- The following operations cannot be performed.
  - Copying clips
  - Deleting clips
  - Repairing bad clips
  - Reconnecting incomplete clips
  - Editing thumbnails
  - Adding meta data during recording (recording is not performed)
  - Formatting P2 cards

Changing Thumbnail Display

All thumbnail (ALL CLIP) selection is the only operation available in SYNC PB mode. Selected clips and TEXT MEMO clips cannot be displayed.

Playing Back Clips

Use the master side controls to start playback. Slave side controls are not available. Clip playback will not start when a thumbnail screen on the slave side is open.

◆ **NOTE:**

- Video and audio distortion between clips may occur when playing back clips with different video formats (1080i and 720p), or different compression formats (DVCPRO HD, DVCPRO50, DVCPRO, DV, AVC-Intra 50, and AVC-Intra 100).

Playing Back at Variable Speed

The master side enables variable playback like main mode. It does not function on the slave side.

◆ **NOTE:**

- **Independent right and left systems:** Video is shown only on the LCD and no output is made to SDI.
  However, when the SETUP - VIDEO - DISCRETE BLACK menu setting is set to OFF, video is output only via the SDI output on the master side.
- **Side-by-side, frame-packing system:** Only video from the master side is output to the LCD and SDI/HDMI (video on the R side is identical to master side video).

Viewing and Repairing Clip Information

Displaying and revising clip information on the master side is performed like in main mode. Clip information on the slave side cannot be displayed or revised.

Checking Card Status

Like in main mode, you can use the following steps to display and check P2 card slot status, P2 card usage and other card information for the master side on the screen. You can not display or revise the information on the slave side.

Screen Display
OSD Display

Formats, time codes and modes are indicated by abbreviations in playback and recording screens.

◆ **NOTE:**
• Use the SETUP - DISPLAY - OSD GRADE menu setting to display all (All)/display 1) to 6) only (MODE&TC).
  Use the SETUP - DISPLAY - OSD TC SELECT menu setting to switch MODE&TC settings.
• Use the SETUP - DISPLAY - OSD OUTPUT menu setting to switch destination of displayed output.
• The figure below displays their location on the LCD. Other output destinations depend on format and appear in the center of the display.
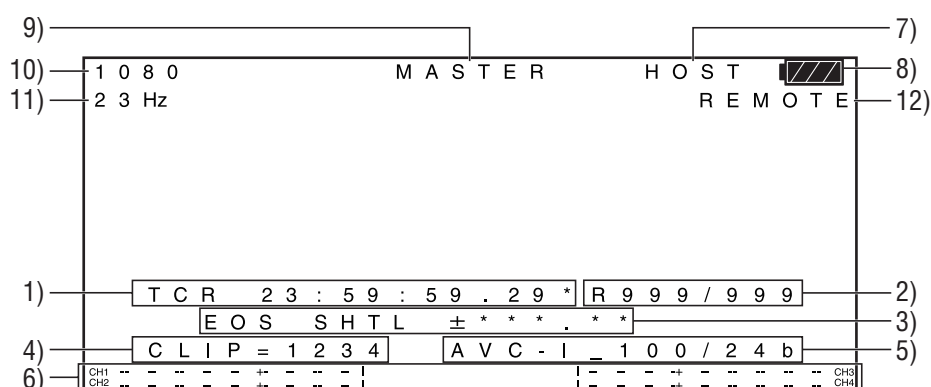
1) Time codes and other displayed information

CTL	Relative location from the beginning
TCR	Recorded time code data
TCR.	Time code data recorded in the VAUX area
UBR	Recorded user bit data
UBR.	User bit data recorded in the VAUX area
TCG	Time code data of the time code generator
UBG	User bit data of the time code generator
TIME	Time information recorded in the subcode
DATE	Date information recorded in the subcode

◆ **NOTE:**
• "T✱R" or "U✱R" appears when card data could not be properly read.
• "✱" is displayed after the frame in the 2nd and 4th fields.
• In drop-frame mode, a period "." is used instead of a colon ":" after seconds.

2) Remaining card capacity and total capacity
Remaining card capacity (available recording time) and total card capacity is displayed in minutes.

◆ **NOTE:**
• 600 minutes and longer time periods are displayed in hours with an "h" appended after the number.
• When remaining time and card length information is not defined, the time indication is blank.
• Time exceeding 99 hours is indicated as 99 h.

3) Operating status display
Indicates current deck status.

4) Clip no.
Indicates the clip number of displayed thumbnail.

5) Compression format indication
Indicates the compression format during recording or recording standby.
Indicates the compression format of played clips during playback.
Indicates also the quantization bit depth of audio during operation in the AVC-Intra (AVC-I) codec.

6) Audio level meter display

Indicates input level during recording or recording standby and audio level of played clip during playback.

Indicates value of set monitor volume in the upper rows (4 and 5) of the audio level meter when the AUDIO MON +/- buttons are pressed.

7) USB HOST indicator

Displays "HOST" when the USB HOST connector is enabled (and external input connectors are disabled).

8) Battery status indicator

Displays the following icons to indicate remaining battery charge.

◆ **NOTE:**

• The last two icons flash when displayed.
• When the AC adaptor is being used, an icon other than may appear; this is not a sign of malfunctioning.

9) Master side/slave side indicator

Indicates master side/slave side status in 3D REC/PB mode/SYNC PB mode.

10) System format indicator

Indicates system format of setting menus during recording

or recording standby.

Indicates the system format of the played clip during playback.

11) System frequency indicator

Indicates the system frequency.

12) REMOTE, REF ERROR, TEXT MEMO indicator

Displays the "REMOTE" icon in REMOTE status. "REF ERROR" appears when the REF IN connector signal differs from the system frequency or is not synchronized with SDI input signals, or in other situations when synchronization with the reference signal is not possible. This parameter also appears when the SETUP - DISPLAY - OSD GRADE menu setting is set to MODE&TC.

Also when the SETUP - DISPLAY - OSD TC SELECT menu setting is set to something other than T&S&M, messages notifying TEXT MEMO and MARKER attachment are output (these messages are provided temporary priority also when the REMOTE icon is on).

◆ **NOTE:**

• The unit will not operate normally when "REF ERROR" is displayed. Check connections and input signals.

Deck Information (DIAG) Icons

This menu shows deck information. Deck information includes USER button, video, audio and warning information.
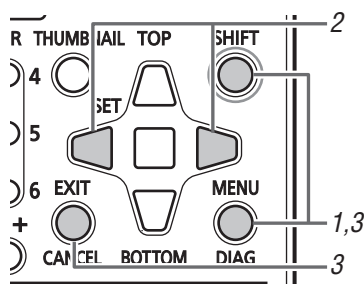
1 Press the DIAG button.

Indicates information on set user button values.

Once displayed, it will open the previously displayed page when pressed next time.

◆ **NOTE:**

• This information is not displayed when a menu is open.
• Use the SETUP - DISPLAY - OSD OUTPUT menu setting to switch destination of displayed output.
• Playback and other operations are not available during DIAG display.

2 Press the Left/Right cursor buttons.

The information displayed changes with each press of the button.
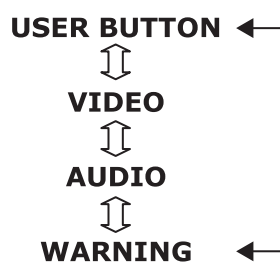
Information displayed

USER BUTTON:

Indicates the functions assigned to the USER buttons 1 - 6 and currently set values.

VIDEO:

• Format of input and output signals or absence of them
• System compression format
• Presence or absence of reference signals

and other information is displayed.

◆ **NOTE:**

• In 3D REC/PB and SYNC PB modes, "GENLOCK" indicates slave side status.

Example:
- HDSDI is selected for input and 720/59.94p signals are input
- The system is 1080/59.94i, DVCPRO HD
- SDI is selected for output
- Reference signals are not input
- The video input reference signal serves as a reference signal for the system

Light color indicates unselected items
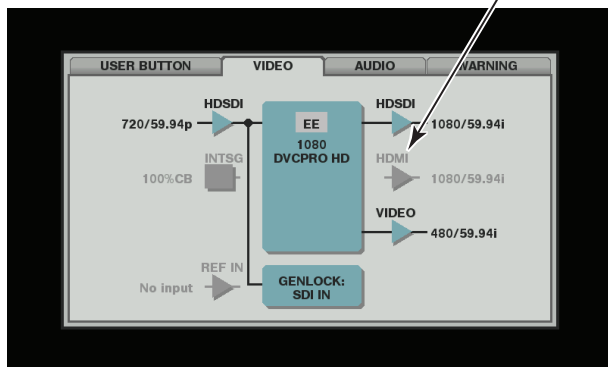
AUDIO:
- Input signals and number of channels
- Quantization bit depth for audio
- Output signals and number of channels
- Monitor channel setting

and other information is displayed.
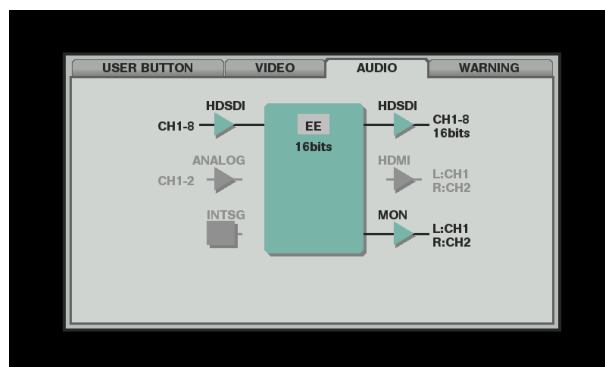
WARNING:

Warning and error information

(→ "Detailed Warning and Error Information" page 84)

3 Press the DIAG button.

The original display reappears.

You can also press the EXIT button or the MENU button to return to the original display.

Waveform Monitor (WFM) Display

This function displays a simple waveform monitor on the screen for monitoring video.

Choose the SETUP - DISPLAY - WFM TYPE menu setting to open the function.

WAVE: Waveform display

VECTOR: Vectorscope display

◆ **NOTE:**

- Use the SETUP - DISPLAY - OSD OUTPUT menu setting to switch destination of displayed output.
- This display always appears in upper right part of the screen. The size of the display depends on the destination.
- This information is not displayed when a menu or thumbnail is open.

Time Code, User Bits, CTL

Time Code

The time code is used when the time code signal generated by the time code generator is to be recorded. The time code values are indicated on the display and in the superimpose display.

TCR 00 : 07 : 04 : 24

HH
MM
SS
Frame
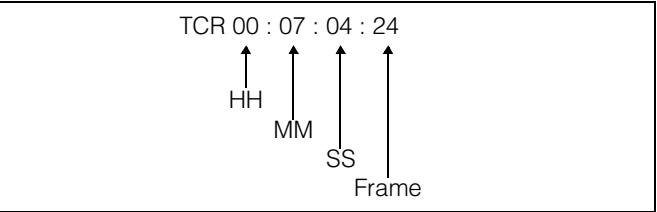
User Bits

"User bits" refers to the 32-bit (8 digits) data frame of the time code signal made available to users. It allows you to record operator numbers and other values. The alphanumeric characters that can be used in the user bit are the figures from 0 - 9 and the letters A to F.

CTL

During playback, the counter displays the play position relative to the start position. Recording starts from the counter value 0:00:00:00. When recording stops, the counter shows the position relative to the start position.

◆ **NOTE:**
• When menu setting SETUP - SYSTEM - FREQUENCY is set to 23.98 Hz, 24 Hz, 59 - 23 or 60 - 24, the playback screen and CTL may differ by one frame.

Time code and other settings
(→ Setup Menu "TC/UB/CTL" page 62)

Setting Time Code and User Bits

Internal mode
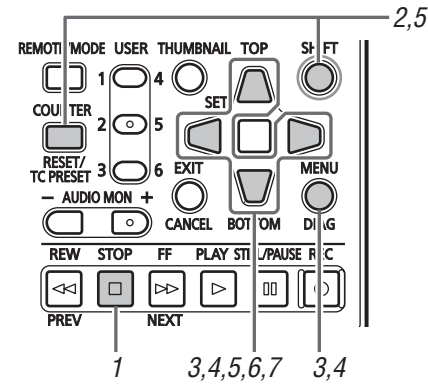
1 Engage the stop mode.
Press the STOP □ button to engage stop mode.

2 Use the COUNTER button to select TC or UB.

3 Use the SETUP - TC/UB/CTL - RUN MODE menu setting to set the run mode of the time code generator.

| REC RUN: | The time code generator advances during recording. |
| FREE RUN: | The time code generator advances regardless of operating mode. |

4 Use the SETUP - TC/UB/CTL - TCG MODE - UBG MODE menu setting to set TC and UB mode.
REGEN: Maintains continuity with the most recent time code recorded on a P2 card.

REGEN:	This mode maintains the continuity with the time code last recorded on a P2 card.
PRESET:	Starts recording from the value set with the TC PRESET button.
EXT:	Records according to external TC input.

5 Use the TC PRESET button to set the start value of the time code or user bits.

Steps for setting TC/UB:

1) Press the TC PRESET button.

The left-most digit starts flashing.

2) Press the Up/Down cursor buttons to change the value.

3) Press the Left/Right cursor buttons to select digits.

The selected digits start flashing.

The setting ranges are as follows:

Time code:	[59.94 Hz]
	00:00:00:00 - 23:59:59:29
	[50 Hz]
	00:00:00:00 - 23:59:59:24
	[23.98Hz] [24Hz] [59-23] [60-24]
	00:00:00:00 - 23:59:59:23
User bits:	00000000 - FF FF FF FF

6 Repeat steps 2 - 3 to change other values.

Pressing the RESET button resets the preset value to 0.

7 When the start value is set, press the SET button.

When menu SETUP - TC/UB/CTL - RUN MODE is set to FREE RUN, the time code starts advancing immediately. To cancel this setting, press the EXIT button or the CANCEL button.

■ Time code when no power is supplied

When no power is supplied, the backup function works enabling the time code generator to provide long-term (about one year) operation.

◆ **NOTE:**

• The backup function is enabled under the conditions listed below when the time code generator advances regardless of operation mode.
  - Set menu SETUP - TC/UB/CTL - TCG MODE to PRESET, when the SETUP - TC/UB/CTL - RUN MODE menu setting is set to FREE RUN.
  - Set menu SETUP - TC/UB/CTL - TCG MODE to EXT when input of external time code set by the SETUP - TC/UB/CTL - EXT TC SEL menu setting was removed from the rear panel connector.
• When menu SETUP - SYSTEM - FREQUENCY is modified, run data is cleared.
• When menu SETUP - BASIC - VFR REC is set to ON, RUN MODE is set to REC RUN regardless of menu setting.

External mode

2　　*1*　　　　*3,4*　*3,4*
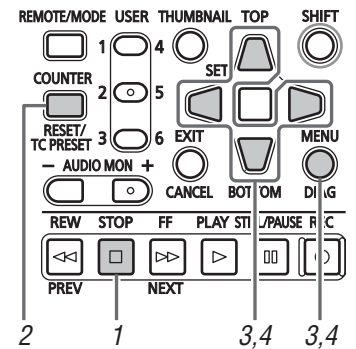
1 Press the STOP 🔲 button to stop recording.

2 Use the COUNTER button to select TC.

3 Use the SETUP - TC/UB/CTL - TCG MODE/UBG MODE menu setting to set EXT.

(External time code selection)

4 Use the SETUP - TC/UB/CTL - EXT TC SEL menu setting to select type of external time code.

| EXT LTC: | Records LTC signals input to the TIME CODE IN connector (BNC) on the rear panel. |
| SLTC: | Records LTC signals added to serial signal input to the SDI IN connector. |

◆ **NOTE:**

• When SLTC is set and an SD SDI input signal is selected, the VITC of the input video signal is recorded.
• When menu SETUP - SYSTEM - FREQUENCY is 59-23 or 60-24, menu SETUP - TC / UB / CTL EXT TC SEL does not appear. The unit is locked in SLTC in this mode.
• When menu SETUP - BASIC - VFR REC is set to ON, REC RUN is set regardless of TCG MODE menu setting.

Reproducing the Time Code and User Bits
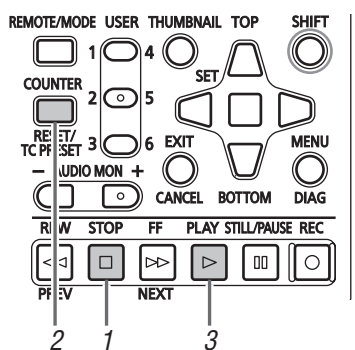
1 Engage the stop mode.

2 Use the COUNTER button to select TC or UB.

3 Press the PLAY $\triangleright$ button.

Playback starts and the time code appears on the LCD display.

T ∗ R 00:01:04:07∗

" " : Field 1, field 3
"∗" : Field 2, field 4

The colon between the seconds and the frames changes to a period (.) in drop frame mode.

When the time code signal cannot be read, an asterisk (∗) is displayed.
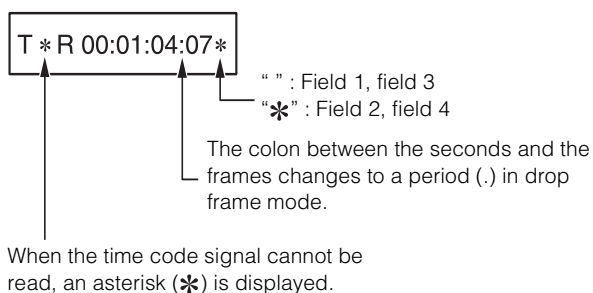
Setup Menu

Menu items

◆ **NOTE:**

• Take care when setting menu SETUP - DISPLAY - CROSS HATCH to something other than OFF since inputting output signals to a consumer monitor may turn the cross hatch pattern into a simulated image.

THUMBNAIL

Use this menu to perform thumbnail display settings.

```
MENU
  │
  ├── THUMBNAIL
  │
  ├── OPERATION
  │
  ├── PROPERTY
  │
  ├── META DATA
  │
  ├── STORAGE
  │
  ├── SETUP
  │
  ├── FILE
  │
  └── SYSTEM INFO
```

Item	Settings and brief function description	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
ALL CLIP	Displays thumbnails for all clips.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	
SAME FORMAT CLIPS	Displays thumbnails only for clips that have the same format as the system format and for which the same audio bit rate has been set in the menu (AUDIO SMPL RES). **NOTE:** • When the SETUP - SYSTEM - FREQUENCY is 23.98 Hz, 24 Hz, 59 - 23 or 60 - 24, only clips in a format that can be recorded are displayed. • Clips without an audio recording are identified by the value that has been set in the menu (AUDIO SMPL RES).	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	
SELECTED CLIPS	Displays thumbnails only for clips selected using the SET button. At this time the thumbnails appear in selected order.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	

Item	Settings and brief function description	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
MARKED CLIPS	Displays thumbnails only for clips to which shot marks have been attached.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	
TEXT MEMO CLIPS	Displays thumbnails only for clips with text memo data.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	
SLOT CLIPS	Displays only clips in selected slots as thumbnails.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○		

OPERATION

Use this menu to format P2 cards, delete and copy clips and other operations.

MENU

—— THUMBNAIL

—— **OPERATION**

—— PROPERTY

—— META DATA

—— STORAGE

—— SETUP

—— FILE

—— SYSTEM INFO

Item	Settings and brief function description	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
DELETE	Deletes selected clips. **NOTE:** • To interrupt deleting, press the SET button or the CANCEL (SHIFT + EXIT) button to cancel the operation. Clips being deleted will not be restored even though you interrupted deleting.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	
FORMAT	Formats P2 cards in the slot selected in the FORMAT menu. **NOTE:** • Check that no important data remains on a card before formatting since data erased by formatting cannot be recovered. • Formats all cards inserted in the slots in 3D REC/PB mode.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	

Item	Settings and brief function description	SYSTEM FREQ indications	Mode 2D (Main)	Mode 3D	Mode SYNC PB
REPAIR CLIP	Restores clips that have been damaged by sudden power outages during recording or by other causes and are marked by the bad clip indicator (yellow X). **NOTE:** • Some clips are so badly damaged they cannot be repaired. Bad clips that are beyond repair are indicated by a red indicator (X).	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	
RE-CONNECTION	Use the RECONNECTION function to rejoin continuous clips that span across multiple P2 cards but are not recognized as continuous clips and are indicated by the incomplete clip indicator (!). **NOTE:** Incomplete clips occur under the following conditions. • When the individual clip segments on each P2 card that make up the clip are copied separately. • When the segments of a continuous clip that are recorded on multiple cards are separately copied to a storage device and then copied back to a P2 card. • When a DVCPRO HD or AVC Intra100 clip that is 5 minutes or longer (10 minutes or longer for a DVCPRO50 or AVC Intra50 clip, and 20 minutes or longer for a DVCPRO/DV clip) is copied to a storage device and later written back to a P2 card. • When some but not all the clip segments in a clip that consists of three or more clip segments are reconnected, the incomplete clip mark (!) will remain.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○		
COPY	Copies selected clips to a P2 card in a P2 card slot or to a storage device. **NOTE:** • Take care not to turn off the power or remove/insert a card during copying. Otherwise the copied clip may become bad. If the copied clip goes bad, delete it and make a new copy. • Reconnect incomplete clips before copying.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○		
EXCH.THUMB NAIL	Replaces a clip thumbnail with images to which text memos have been attached. This function is available when a text memo clip is displayed.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	
CHANGE PARTITION NAME	Sets and changes the names of storage partitions. **NOTE:** • Displayed only when storage EXPLORE is open. • The date when the partition was created is the default partition name. • Enabled only for TYPE S storage devices.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○		
DELETE LAST PARTITION	Deletes the last partition on a storage device. **NOTE:** • Deletion is enabled only when the cursor is in the last partition. • Displayed only when storage EXPLORE is open.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○		

PROPERTY

Use this menu to display detailed information of clips and cards and perform display settings.

MENU

── THUMBNAIL

── OPERATION

── **PROPERTY**

── META DATA

── STORAGE

── SETUP

── FILE

── SYSTEM INFO

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
CLIP PROPERTY	Displays detailed clip information on the screen.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
CARD STATUS	Displays status of cards in a P2 card slot.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
DEVICES - SD CARD	Displays SD memory card information.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○

PROPERTY
SETUP - P2
CARD CAP
	Select whether remaining capacity or used capacity should appear in the P2 card information.
	  REMAIN: Remaining capacity indication
	  USED: Used capacity indication
		59.94 Hz **50 Hz**
		23.98 Hz **24 Hz**
		59-23 Hz **60-24 Hz**
			○	○	○

FREE CAP. OF PARTITION	Indicates free space on a partition when a STORAGE thumbnail is displayed.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○		

META DATA

Use this menu to set meta data.

MENU

— THUMBNAIL

— OPERATION

— PROPERTY

— **META DATA**

— STORAGE

— SETUP

— FILE

— SYSTEM INFO

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
LOAD	Loads the meta data upload file saved on an SD memory card.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	
RECORD	Determines whether the loaded meta data should be attached or not during recording. ON: Meta data is attached OFF: Meta data is not attached	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	
USER CLIP NAME	Sets recorded data as USER CLIP NAME. When RECORD is ON TYPE1: Records loaded data settings TYPE2: Records loaded data and counter values When RECORD is OFF TYPE1: Records the same value as GLOBAL CLIP ID TYPE2: Records the same value as CLIP NAME	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	
INITIALIZE	Deletes and initializes all loaded meta data.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	
PROPERTY	Checks and revises loaded meta data.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	

STORAGE

Use this menu to set up storage devices and switch display of information.

MENU

— THUMBNAIL

— OPERATION

— PROPERTY

— META DATA

— **STORAGE**

— SETUP

— FILE

— SYSTEM INFO

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
EXPORT	Exports (writes) data by card from a P2 card to a storage device.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○		
EXPLORE	Opens screens that show information on storage devices.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○		
SETUP - VERIFY	Determines whether or not verification will be made during exporting. <u>ON</u>: Verifies OFF: Does not verify **NOTE:** • Enabled only for TYPE S formatted storage devices.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○		
USB HOST	Select whether or not the unit should operate in USB HOST mode. ENABLE: Operates in USB HOST mode. EE and recording are not available. <u>DISABLE</u>: Disables operation in USB HOST mode. **NOTE:** • Turning the power OFF cancels this setting. The unit will then start up using the default value (DISABLE) next time it is powered up.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○		

SETUP

Use these menus to set up unit operations.

```
MENU
 ├── THUMBNAIL
 ├── OPERATION
 ├── PROPERTY
 ├── META DATA
 ├── STORAGE
 ├── SETUP
 ├── FILE
 └── SYSTEM INFO
```

THUMBNAIL

Use this menu to make thumbnail settings.

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB

INDICATOR	Select any of the following items you want to display and press SET to add a check mark to the item. Select ALL HIDE to disable item selection.
	   ALL HIDE: Hides all indicators
	   MARKER: Shows the shot mark indicator
	   TEXT MEMO: Shows the text memo indicator
	   WIDE: Shows the wide indicator
	   PROXY: Shows the proxy indicator
	 NOTE:
	 • Regardless of the above settings, the bad clip indicator X (yellow) X (red), unknown clip indicator ? and incomplete clip indicator ! are always shown.
	 • The WIDE indicator is not displayed in 3D REC/PB mode and SYNC PB mode.
		59.94 Hz **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○

DATA DISPLAY	Select items to appear in the time display.
	   TC: Time code
	   UB: User bits
	   TIME: Time of recording
	   DATE: Date of recording
	   DATE TIME: Date and time of recording
	   CLIP NAME: Clip name
	   USER CLIP NAME: The first fifteen characters in the user clip name
	   SLOT: Slot number
	   THUMBNAIL TC: Time code of thumbnail position
	 NOTE:
	 • SLOT is not displayed in 3D mode.
		59.94 Hz **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB

DATE FORMAT	Select the format for indicating the time.
	   Y - M - D: Year/month/day
	   <u>M - D - Y</u>: Month/day/year (AG-HPD24P dafault value)
	   <u>D - M - Y</u>: Day/month/year (AG-HPD24E default value)
	NOTE:
	  • This setting is reflected in the date of recording shown in the clip property, the date and time of recording that appears when DATE in DATA DISPLAY is selected and the date created that appears when loading meta data and opening files.
		59.94 Hz **50 Hz**
		23.98 Hz **24 Hz**
		59-23 Hz **60-24 Hz**
			○	○	○

THUMBNAIL SIZE	Determines the size of thumbnails that appear on the screen in thumbnail mode. LARGE: Large (thumbnail display: 3 × 2) <u>NORMAL</u>: Normal (thumbnail display: 4 × 3)	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○

PB POSITION	Set the playback start position for playback on the thumbnail screen.
	   RESUME: From the position where playback was stopped
	   THUMBNAIL TC: From the time code of the thumbnail position
	   <u>START TC</u>: From the start time code (beginning of the clip)
		59.94 Hz **50 Hz**
		23.98 Hz **24 Hz**
		59-23 Hz **60-24 Hz**
			○	○	○

SORT	Specify the order thumbnails appear. <u>OFF</u>: In recorded order ON: Slot order (clips in the same slot appear according to date and time of recording)	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○		

Setup Menu

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode 2D (Main)	Mode 3D	Mode SYNC PB
PROPERTY DISP.	Specifies the items that will appear in a simplified property display on the left side of the thumbnail. USER CLIP NAME: Indicates the name of a user clip START TC: Indicates start time code REC DATE: Indicates date recorded REC TIME: Indicates recording time NUM. OF AUDIO CH: Indicates the number of audio channels AUDIO RATE: Indicates audio sampling rate AUDIO BIT: Indicates audio bit rate CREATOR: Indicates the creator SHOOTER: Indicates the shooter PLACE NAME: Indicates the shooting location PROGRAM NAME: Indicates the name of the program SCENE NO.: Indicates the number of the scene TAKE NO.: Indicates the number of the take REPORTER: Indicates the reporter PURPOSE: Indicates the purpose OBJECT: Indicates the object START UB: Indicates start user bits REC RATE: Indicates recording frame rate LAST UP DATE: Indicates last update LAST UP PERSON: Indicates last person who updated the clip MANUFACTURER: Indicates the name of the manufacturer SERIAL NO.: Indicates the serial number MODEL NAME: Indicates the name of the model ALTITUDE: Indicates altitude LONGITUDE: Indicates longitude LATITUDE: Indicates latitude THUMBNAIL OFFSET: Indicates thumbnail offset 3D CLIP: Indicates whether a clip is a 2D, 3D (L) or 3D (R) clip **NOTE:** • Up to six items can appear simultaneously. • When the sixth item has been selected, no other unchecked item can be selected. • Removing the check mark for a checked item makes it possible to select other items. • A 3D CLIP is not displayed in 3D mode.	59.94 Hz　50 Hz 23.98 Hz　24 Hz 59-23 Hz　60-24 Hz	○	○	○
KEYBOARD	Sets the type of keyboard that will be connected. QWERTY(101) QWERTY(109) AZERTY QWERTZ	59.94 Hz　50 Hz 23.98 Hz　24 Hz 59-23 Hz　60-24 Hz	○	○	○

BASIC

Use this menu to set up basic operations.

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
POWER ON GUI	Determines whether or not the thumbnail screen will appear when the unit is powered up. THUMBNAIL: Opens the thumbnail screen OFF: Does not open the thumbnail screen	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○
STOP EE SEL	Specifies whether to invoke the EE mode or playback mode when STOP is pressed. EE: EE mode PB: Playback mode	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	
VFR REC	Specifies whether or not to make a VFR recording when the recording format is 720p. ON: Makes VFR recording OFF: Does not make VFR recording	59-23 Hz 60-24 Hz	○		
LOOP REC	Specifies whether or not to make loop recording. ON: Makes loop recording OFF: Does not make loop recording **NOTE:** • Turning the power off cancels this setting. The unit will then start up using the default value (OFF) next time it is powered up.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○		
AUTO REC	Determines whether record start and stop should be performed automatically according to the record and stop signals in the HD SDI input signals from a camera-recorder. TYPE1: Recording and stopping is performed automatically according to the recording/stopping signals in the LTC information attached to HD SDI signals. TYPE2: Recording and stopping is performed automatically according to the recording/stopping signals in the SVITC information attached to HD SDI signals. TYPE3: Set when other manufacturer's camera-recorders are used. OFF: No automatic recording/stopping **NOTE:** • When the thumbnail screen is displayed, this setting is disabled and has no effect. • When set to something other than OFF and REC PAUSE status is engaged in REMOTE mode, AREC appears in a superimposed screen. • Set the REMOTE mode. • For details on TYPE1 or TYPE2, refer to "Panasonic camera-recorders, recording format and record start/stop signals (Recording Mark)" (page 61). • To start automatic recording, press the REC and STILL buttons simultaneously to place this unit in REC PAUSE mode. Automatic recording does not start any mode other than REC PAUSE mode. The unit returns to REC PAUSE mode when automatic stop is activated. • In normal recording mode, this setting is not available and auto stop is not activated. • For the devices verified as TYPE3 devices, visit the following Web site: For English: http://panasonic.biz/sav/autorec_e	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode 2D (Main)	3D	SYNC PB
OUTPUT REF	Select reference for video output. AUTO: Uses the reference signal input to the REF connector as reference. When there is not input to the REF connector, the selected video input signal is used as reference. When there is no reference and video input signal, the internal clock is used. REF: The reference input signal is used as reference. If there is no such signal, the internal clock is used. INPUT: The video input signal is used as reference. If there is no such signal, the internal clock is used. **NOTE:** • In 2D/3D mode and at frequencies other than 59.94 Hz and 50 Hz, operation is fixed at AUTO. • In 3D REC/PB mode, slave side settings are used. The master side is fixed at REF. • In SYNC PB mode, the REF setting is used. • When the input video signal is INT SG, the internal reference signal is used as a reference for input video signals.	**59.94 Hz** **50 Hz**	○	○	
REPEAT PLAY	Determines whether or not to engage repeat play during playback. ON: Engages repeat play. Continues playback from the beginning when reaching the end of the last clip. OFF: Does not engage repeat play. Stops playback at the end of the last clip. **NOTE:** • Repeat play is not available during TEXT MEMO playback. • If the P2 card is removed during repeat play, playback is suspended when playback reaches the clip that is no longer exists. • Even if you insert a P2 card during repeat play, additional clips are not played back until you once stop repeat play and resume it.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
SHUTTLE MAX	Sets the maximum shuttle speed operation. X8: 8× normal speed X16: 16× normal speed X32: 32× normal speed X60: 60× normal speed X100: 100× normal speed	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
FF. REW MAX	Sets the maximum speed of FF and REW operation. X32: 32× normal speed X60: 60× normal speed X100: 100× normal speed SEEK: Seek operation to start of clip **NOTE:** • When SEEK is selected, FF and REW operations for FF and REW commands transferred via 9P are performed at 100x normal speed. Note that seek operations are initiated by the FF and REW commands via 9P when ORIGINAL is set in the ID OF 9P REMOTE menu. The cursor moves from left to right in thumbnail screens. • Seek (movement) is enabled in playback mode.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
SEEK POS SEL	Specifies the location where a NEXT (SHIFT + FF) and PREV (SHIFT + REW) seek operation moves to. CLIP: The start of the clip CLIP&TEXT MEMO: The start of the clip or video text memo	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○		

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode: 2D (Main)	Mode: 3D	Mode: SYNC PB
PLAY DELAY	Sets PLAY delay time in frame increments. 0 - 15	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
ID OF 9P REMOTE	Specifies the ID data that will be returned to the controller. 　DVCPRO: DVCPRO 　ORIGINAL: Proprietary ID 　OTHER: Other **NOTE:** 　• Select OTHER for ID data for a VTR other than a DVCPRO. 　• When ORIGINAL is selected, a STOP command transferred via 9P remote during thumbnail playback results in STILL (SHTL +0.0). The STANDBY OFF command engages the STOP mode and resumes thumbnail playback.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
LOCAL ENABLE	Restricts the number of available key panel buttons when REMOTE is set to ON. 　ENABLE: All buttons are available. 　STOP: Only the STOP button is available. 　DISABLE: No buttons are available.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
BEEP	Turns the BEEP function on or off. 　ON: Outputs a beep sound. 　OFF: Does not output a beep sound. **NOTE:** 　• A beep sound is also output from the ANALOG AUDIO MON output connectors.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○

Panasonic camera-recorders, recording format and record start/stop signals (Recording Mark)

Model	Recording format	Recording Mark TYPE	Remarks
AJ-HDC27F, H	720 / **p over 60p	TYPE1	
AJ-HDX900	720 / 59.94p	TYPE1	
	720 / 23.98p over 59.94p		
	720 / 29.97p over 59.94p		
	720 / 50p		
	720 / 50p over 50p		
	1080 / 59.94i	TYPE1 / TYPE2	When TYPE1 is used, set UB_MODE on the camera to FRAM_RATE. For TYPE2, switch VITC_UB_MODE on the camera to FRAM_RATE.
	1080 / 23.98p over 59.94i		
	1080 / 29.97p over 59.94i		
	1080 / 50i		
	1080 / 25p over 50i		
AJ-HDX400P	1080 / 59.94i		
AJ-HDX400E	1080 / 50i		
	1080 / 25p over 50i		
AG-HPX500/502	720 / **p		
AG-HPX170/171/172/174 AG-HPX300/301/302/304 AG-HPX370 AJ-HPX2000/2100 AJ-HPX3000[*1] AJ-HPX2700 AJ-HPX3100 AJ-HPX3700[*1]	1080 / **i		

[*1] Only the 1080 / **i recording format is available.

TC/UB/CTL

Use this menu to set the time code.

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
CTL DISPLAY	Selects 12 or 24 hour clock for the CTL counter display. ±12h: 12-hour clock display 24h: 24-hour clock display	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
VITC BLANK	Specifies whether or not a VITC signal will be output at the locations selected in the VITC POS-1 and VITC POS-2 menus. BLANK: VITC signals are not output. THROUGH: VITC signals are output. **NOTE:** • This setting is enabled only during VIDEO and SD SDI output. • In EE mode, the input signal is output with the VITC signal.	**59.94 Hz** **50 Hz**	○	○	○
VITC POS-1	Specifies the position where the VITC signal will be inserted. When set to 59.94 Hz: LINE 10 - LINE 16 - LINE 20 When set to 50 Hz: LINE 7 - LINE 11 - LINE 22 **NOTE:** • You cannot select the same line as in the VITC POS-2 menu. • This setting is enabled only during VIDEO and SD SDI output. • Pressing RESET will not restore the factory defaults. • VITC signals are not output when 23.98 Hz, 24 Hz, 59 - 23 or 60 - 24 is set in the SETUP - SYSTEM - FREQUENCY menu setting.	**59.94 Hz** **50 Hz**	○	○	○
VITC POS-2	Specifies the position where the VITC signal will be inserted. When set to 59.94 Hz: LINE 10 - LINE 18 - LINE 20 When set to 50 Hz: LINE 7 - LINE 12 - LINE 22 **NOTE:** • You cannot select the same line as in the VITC POS-1 menu. • This setting is enabled only during VIDEO and SD SDI output. • Pressing RESET will not restore the factory defaults. • VITC signals are not output when 23.98 Hz, 24 Hz, 59 - 23 or 60 - 24 is set in the SETUP - SYSTEM - FREQUENCY menu setting.	**59.94 Hz** **50 Hz**	○	○	○
TCG MODE	Sets the TC operating mode of the built-in time code generator. REGEN: Synchronizes the internal time code generator to maintain the continuity with the time code last recorded on the P2 card. PRESET: Starts recording from the value set with the TC PRESET button. EXIT: Uses the external time code input from the TIME CODE IN connector, video signal VITC or SLTC. Use menu (EXT TC SEL) to set.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23Hz** **60-24 Hz**	○	○	
UBG MODE	Sets the UB operating mode of the built-in time code generator. REGEN: Synchronizes the internal time code generator with the last user bits recorded on a P2 card. PRESET: Starts recording from the value set with the TC PRESET button. EXT: Uses the external UB from the TIME CODE IN connector, video signal VITC or SLTC. Use menu (EXT TC SEL) to set.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
RUN MODE	Specifies an operating mode that advances the internal time code generator. REC RUN: The internal time code generator is advanced only during recording. FREE RUN: When the power is on, the internal time code generator is advanced regardless of operating mode. **NOTE:** • When ON is selected in the SETUP - BASIC - VFR REC menu setting, the time code advances only during recording even when FREE RUN is selected.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	
EXT TC SEL	Specifies the time code used when an external time code is used. EXT LTC: Uses LTC from the TIME CODE IN connector. SLTC (VITC): Uses LTC data attached to serial signal input to HD SDI IN. When 480i or 576i is set in the SETUP - SYSTEM - FORMAT menu setting, VTIC data input to SD SDI IN is used.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz**	○	○	
DF MODE	Sets the DF or NDF mode for CTL and TCG. DF: Uses drop frame mode. NDF: Uses non-drop frame mode.	**59.94 Hz**	○	○	○
HD EMBD VITC	Specifies whether or not VITC data will be superimposed on HD SDI output. ON: Superimposes VITC. OFF: Does not superimpose VITC.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
HD EMBD LTC	Specifies whether or not LTC data will be superimposed on HD SDI output. ON: Superimposes LTC. OFF: Does not superimpose LTC.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
TC OUTPUT REF	Switches the phase of time code output from the TIME CODE OUT connector relative to external LTC input when TCG MODE is set to EXT. (Only in EE mode) VOUT: Synchronized with output video signal. TC IN: Synchronized with the external time code input.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz**	○	○	
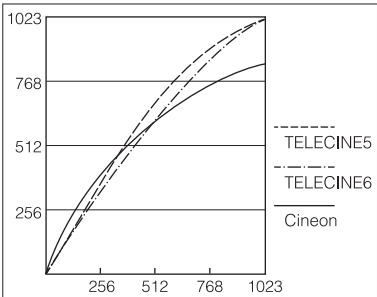
VIDEO

Use this menu to make video settings.

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
INPUT SEL	Selects the video input signal. SDI: Selects the SDI connector. INT SG: Selects the internal signal generator. The signal switches to the internal signal selected using the menu "INT SG".	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	
INT SG	Sets the internal signal type. SMPTE and ARIB signals are available in HD mode only (black in SD mode). 100 %CB: 100% color bar 75 %CB: 75% color bar SMPTE: SMPTE color bar ARIB: ARIB color bar BLACK: Black	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
CC (F1) BLANK	Turns on and off closed caption signals in the first field output from the SD SDI and analog composite output. 　BLANK: Signals are forcibly blanked. 　THROUGH: Signals are not blanked. **NOTE:** 　• In EE mode, the closed captions are output superimposed on the input signal.	`59.94 Hz`	○		○
CC (F2) BLANK	Turns on and off closed caption signals in the second field output from the SD SDI and analog composite output. 　BLANK: Signals are forcibly blanked. 　THROUGH: Signals are not blanked. **NOTE:** 　• In EE mode, the closed captions are output superimposed on the input signal.	`59.94 Hz`	○		○
CC REC	Specifies whether or not the closed caption signal that is superimposed on the SD SDI input signal will be recorded. 　ON: A closed caption signal that is superimposed on an input signal is recorded. 　OFF: Not recorded. The EE output is also blanked.	`59.94 Hz`	○		
COMPRESSION MODE	Selects the compression method used during video recording. 　DARK: Records video suppressing compression video distortion that is generated by dark areas that are about 10 IRE (70 mV) or less. 　NORMAL: Records using normal compression processing. **NOTE:** 　• This setting is available in DVCPRO HD 720p mode recording.	`59.94 Hz` `50 Hz` `59-23 Hz` `60-24 Hz`	○		
WIDE SEL	Specifies whether or not WIDE data will be recorded when the SETUP - SYSTEM - FORMAT menu setting is 480i or 576i. 　WIDE: Recorded 　NORMAL: Not recorded	`59.94 Hz` `50 Hz`	○		
SETUP	Selects output method for analog composite signals. 　OFF: Does not apply the setup to the output 　7.5 %: Applies 7.5 % setup to the output	`59.94 Hz` `23.98 Hz` `59-23Hz`	○	○	○
EDH(SD)	Specifies whether or not EDH is superimposed on SDI OUT signals. 　ON: Signals are superimposed. 　OFF: Signals are not superimposed.	`59.94 Hz` `50 Hz`	○		

OUTPUT SEL	Selects output connector to output digital audio and video.
	In main mode
	　SDI: Output from the SDI connector
	　HDMI: Output from the HDMI connector
	In 3D REC/PB mode and SYNC PB mode
	　SDI (S/S): Output from the SDI connector in a side-by-side format
	　DISCRETE L/R: Output from the SDI connector in a multicast format
	　HDMI (S/S): Output from the HDMI connector in a side-by-side format
	　HDMI (FP): Output from the HDMI connector in a framepacking format
		`59.94 Hz` `50 Hz`
		`23.98 Hz` `24 Hz`
		`59-23Hz` `60-24 Hz`
			○	○	○

DISCRETE BLACK	Selects output video for master side in playback modes other than PLAY or STILL when OUTPUT SEL is set to DISCRETE L/R.　Black output is used for the slave side. 　ON: Black output 　OFF: Outputs video	`59.94 Hz` `50 Hz` `23.98 Hz` `24 Hz`		○	○

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB

OUTPUT FORMAT	Specifies the video signal output from the video output connector.
	When 59.94 Hz is set
	   AUTO: Switches output automatically depending on current recording and playback format.
	   1080i: 1080 / 59.94i
	   720p: 720 / 59.94P
	   480i: 480 / 59.94i
	When 50 Hz is set
	   AUTO: Switches output automatically depending on current recording and playback format.
	   1080i: 1080 / 50i
	   720p: 720 / 50P
	   576i: 576 / 50i
	NOTE:
	• When something other than AUTO is selected, a signal that differs from the recording and playback format is automatically converted before output.
	• In 3D REC/PB mode and SYNC PB mode, 480i and 576i cannot be selected.
	• During playback of 480i / 576i formatted clips in SYNC PB mode and when AUTO is selected, SDI output is converted to the format selected with the SYSTEM - FORMAT menu setting.
		59.94 Hz　**50 Hz**	○	○	○

DOWNCONV. MODE	Specifies the aspect ratio during down conversion.
	   FIT-V: Side cut mode
	   FIT-H: Letter box mode
	   FIT-HV: Squeeze mode
		59.94 Hz　**50 Hz**
		23.98 Hz　**59-23Hz**
			○	○	○

UPCONV. MODE	Specifies the aspect ratio during up conversion.
	   FIT-V: Side panel mode
	   FIT-H: Top and bottom are cropped
	   FIT-HV: Stretch mode
		59.94 Hz　**50 Hz**
		23.98 Hz　**59-23Hz**
			○		○

Setup Menu

| Item | Settings and brief function description
XX indicates factory default settings. | SYSTEM FREQ
indications | Mode | | |
			2D (Main)	3D	SYNC PB
GAMMA SELECT	Selects gamma correction. 　GAMMA1: Corrects video shot by Varicam or in the FILM REC mode on an AJ-HPX3000 to film-quality video. (Equivalent to Telecine 5 on the AJ-GBX27 HD Gamma Corrector) 　GAMMA 2: Corrects video shot by Varicam or in the FILM REC mode on an AJ-HPX3000 to film-quality video. (Equivalent to Telecine 6 on the AJ-GBX27 HD Gamma Corrector) 　GAMMA 3: Converts video shot by Varicam or in the FILM REC mode on an AJ-HPX3000 by applying a Cineon curve to produce video appropriate for film recording. 　OFF: No gamma correction **NOTE:** • This setting is available during playback. • If something other than OFF is selected, the OSD will always display the gamma correction value (GM*). • Turning the power off cancels the GAMMA setting.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○

AUDIO

Use this menu to make audio settings.

| Item | Settings and brief function description
XX indicates factory default settings. | SYSTEM FREQ
indications | Mode | | |
			2D (Main)	3D	SYNC PB
INPUT SEL	Selects the audio input signal. 　SDI: Selects the SDI connector. 　ANALOG: Selects the ANALOG AUDIO IN connector. 　INT SG: Selects the internal signal generator. **NOTE:** • When ANALOG is selected in 3D REC/PB mode and SYNC PB mode, slave side audio is muted.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	
CH1 INPUT LEVEL	Selects level for CH1 analog audio input. 　4 dB 　0 dB 　-3 dB 　-20 dB	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	
CH2 INPUT LEVEL	Selects level for CH2 analog audio input. 　4 dB 　0 dB 　-3 dB 　-20 dB	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
REF LEVEL	Selects the standard level. FS-20: -20 dB (AG-HPD24P default value) FS-18: -18 dB (AG-HPD24E default value) FS-12: -12 dB	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○
EMBD CH SEL	Selects channels to multiplex on the SD SDI output. CH1-4: Outputs four channels (CH1-4). CH5-8: Outputs four channels (CH5-8). CH1-8: Outputs eight channels (CH1-8). **NOTE:** • Four channels (CH1-4) are always multiplexed during DV, DVCPRO and DVCPRO50 playback. • Some devices may not be able to receive 8 channels. Check the specifications of the receiving equipment before setting CH1-8.	59.94 Hz 50 Hz	○		
MONITOR CH	Selects audio output via monitor outputs. Selects CH1 and CH2 outputs. HDMI output audio also conforms to this setting. CH1 / CH2: Outputs CH1 to L and CH2 to R. CH3 / CH4: Outputs CH3 to L and CH4 to R. CH1 + 3 / CH2 + 4: Outputs CH1 + 3 to L and CH2 +4 to R. CH5 / CH6: Outputs CH5 to L and CH6 to R. CH7 / CH8: Outputs CH7 to L and CH8 to R. CH5 + 7 / CH6 + 8: Outputs CH5 + 7 to L and CH6 + 8 to R.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○
SPEAKER OUT	Turns the speaker output on or off. ON: Output is provided to the speakers. OFF: No output is provided to the speakers. (BEEP sounds are not output, either.)	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○
LEVEL METER	Switches the channels that are indicated on the audio level meter. CH1-4: Indicates the levels for CH1 to CH4. CH5-8: Indicates the levels for CH5 to CH8.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○

DISPLAY

Use this menu to make display settings.

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
OSD OUTPUT	Determines whether the thumbnail screen, menus, DIAG and other screens will be output via VIDEO OUT or SDI OUT. LCD: Not output (displayed only on LCD monitor) LCD&VIDEO: Output to VIDEO OUT. ALL: Output to both VIDEO OUT and SDI OUT. **NOTE:** • When the SETUP - SYSTEM - FREQUENCY menu setting is 23.98 Hz or 59-23, only LCD and LCD&VIDEO are available. • ALL can only be selected in main mode.	59.94 Hz 50 Hz 23.98 Hz 59-23 Hz	○	○	○
OSD GRADE	Places a superimposed display on the video screen. ALL: Displays all. MODE&TC: Displays mode and time code.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode 2D (Main)	3D	SYNC PB

OSD TC SELECT	Specifies the superimposed text.
	Here, data indicates the CTL/TC/UB value selected with the COUNTER button.
	  TIME: Data
	  T&STA: Data and operating status
	  T&S&M: Data, operating status, clip number, video format, audio bit number
	  T&RT: Data and REC TIME
	  T&RD: Data and REC DATE
	  T&UB: Data and user bits
	    However, when UB is selected with the COUNTER button, the time code is indicated after the user bits.
	  T&CTL: Data and CTL
	    However, when CTL is selected with the COUNTER button, the time code is indicated after CTL data.
	  T&T: Data and time code
	NOTE:
	  • An error message appears in the superimposed display if a warning or error occurs when T&S&M is selected.
	  • The audio bit number is indicated as 16b even for a clip without audio data.
		59.94 Hz **50 Hz**
		23.98 Hz **24 Hz**
		59-23 Hz **60-24 Hz**
			○	○	○

WFM TYPE	Selects waveform and vectorscope display.
	  WAVE: Waveform display
	  VECTOR: Vectorscope display
	  OFF: Not displayed
		59.94 Hz **50 Hz**
		23.98 Hz **24 Hz**
		59-23 Hz **60-24 Hz**
			○	○	○

CROSS HATCH	Selects cross hatch display for SDI or HDMI output.
	  1% - 6%: Displays a 1% wide pattern.
	  OFF: Not displayed
	NOTE:
	  • Not displayed for 480i or 576i output.
	  • Not displayed in 3D REC/PB mode and SYNC PB mode when the SETUP - VIDEO - OUTPUT SEL menu setting is HDMI (FP).
		59.94 Hz **50 Hz**
		23.98 Hz **24 Hz**
		59-23 Hz **60-24 Hz**
			○	○	○

4:3 MARKER	Determines whether or not the 4:3 marker appears on the LCD monitor.
	  ON: Displayed.
	  OFF: Not displayed.
		59.94 Hz **50 Hz**
		23.98 Hz **24 Hz**
		59-23 Hz **60-24 Hz**
			○		

LCD

Use this menu to make LCD settings.

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
TIMEOUT	Use the settings below to have the LCD monitor automatically turn off after a specified time (5 min) of inactivity. 5min: The LCD switches off automatically. OFF: The LCD does not switch off.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23Hz 60-24 Hz	○	○	○
BACKLIGHT	Adjusts LCD monitor backlight brightness. LIGHT: Bright DARK: Dark	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○
COLOR LEVEL	Adjusts the color level of the LCD monitor. 15 - 0 - -15	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23Hz 60-24 Hz	○	○	○
BRIGHTNESS	Adjusts the brightness of the LCD monitor. 15 - 0 - -15	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○
CONTRAST	Adjusts LCD monitor contrast. 30 - 0 - -30 **NOTE:** • This value multiplied by the R, G and B contrast setting becomes the contrast adjustment value for R, G and B.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○
R CONTRAST	Adjusts the R (Red) contrast of the LCD monitor. 30 - 0 - -30 **NOTE:** • This setting multiplied by the CONTRAST setting becomes the adjustment value.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○
G CONTRAST	Adjusts the G (Green) contrast of the LCD monitor. 30 - 0 - -30 **NOTE:** • This setting multiplied by the CONTRAST setting becomes the adjustment value.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○
B CONTRAST	Adjusts the B (Blue) contrast of the LCD monitor. 30 - 0 - -30 **NOTE:** • This setting multiplied by the CONTRAST setting becomes the contrast setting.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○

Setup Menu

USER BUTTON

Use this menu to assign specific functions set in menus to the USER1 - USER6 buttons. The settings are stored internally and persist even when the unit is turned off and on. Assigned functions and settings can be confirmed in the DIAG display.

Item	Settings and brief function description. XX indicates factory default settings.	SYSTEM FREQ indications	Mode 2D (Main)	3D	SYNC PB
USER1	TEXT MEMO: Functions as a text memo button.		○	○	
	MARKER: Functions as the marker ON/OFF button		○	○	
	DELETE: Functions as a MENU - OPERATION - DELETE shortcut button.		○	○	
	FORMAT: Functions as a MENU - OPERATION - FORMAT shortcut button.		○	○	
	COPY: Functions as a MENU - OPERATION - COPY shortcut button.		○		
	CLIP PROPERTY: Functions as a MENU - PROPERTY - CLIP PROPERTY shortcut button.		○	○	○
	CARD STATUS: Functions as a MENU - OPERATION - CARD STATUS shortcut button.		○	○	○
	STORAGE EXPLORE: Functions as a MENU - STORAGE - EXPLORE shortcut button.		○		
	REC VOLUME: Functions as a REC VOLUME button.		○	○	
	ONE CLIP PLAY: Functions as a ONE CLIP PLAY button.		○	○	○
	SLOT CLIPS: Switches thumbnail display between SELECTED CLIPS→SLOT1→SLOT2→.		○	○	
	SLOT SEL: Changes the P2 card slot used for recording.		○	○	
	DATA DISPLAY: Changes MENU - SETUP - THUMBNAIL - DATA DISPLAY settings.		○	○	○
	STOP EE SEL: Changes MENU - SETUP - BASIC - STOP EE SEL settings.		○	○	
	OUTPUT REF: Changes MENU - SETUP - BASIC - OUTPUT REF settings.		○	○	○
	SEEK POS SEL: Changes MENU - SETUP - BASIC - SEEK POS SEL settings.		○		
	CTL DISPLAY: Changes MENU - SETUP - TC/UB/CTL - CTL DISPLAY settings.		○	○	○
	TCG MODE: Changes MENU - SETUP - TC/UB/CTL - TCG MODE settings.		○	○	
	UBG MODE: Changes MENU - SETUP - TC/UB/CTL - UBG MODE settings.		○	○	
	RUN MODE: Changes MENU - SETUP - TC/UB/CTL - RUN MODE settings.		○	○	
	EXT TC SEL: Changes MENU - SETUP - TC/UB/CTL - EXT TC SEL settings.		○	○	
	VIDEO IN SEL: Changes MENU - SETUP - VIDEO - INPUT SEL settings.		○	○	
	INT SG: Changes MENU - SETUP - VIDEO - INT SG settings.		○	○	
	AUDIO IN SEL: Changes MENU - SETUP - AUDIO - INPUT SEL settings.		○	○	
	MONITOR CH: Changes MENU - SETUP - AUDIO - MONITOR CH settings.		○	○	○
	LEVEL METER: Changes MENU - SETUP - AUDIO - LEVEL METER settings.		○	○	○
	OSD OUTPUT: Changes MENU - SETUP - DISPLAY - OSD OUTPUT settings.		○	○	○

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
USER1	**OSD GRADE**: Changes MENU - SETUP - DISPLAY - OSD GRADE settings.		○	○	○
	WFM TYPE: Changes MENU - SETUP - DISPLAY - WFM TYPE settings.		○	○	○
	CROSS HATCH: Changes MENU - SETUP - DISPLAY - CROSS HATCH settings.		○	○	○
	USB HOST: Changes MENU - STORAGE - USB HOST settings.		○		
	NOTE: • Pressing the SET button for checked setting, cancels the assignment. • The same function can be assigned to other USER buttons.				
USER2	Provides the same functionality as USER1. The factory default setting is <u>MONITOR CH</u>.				
USER3	Provides the same functionality as USER1. The factory default setting is <u>TEXT MEMO</u>.				
USER4	Provides the same functionality as USER1. The factory default setting is <u>COPY</u>.				
USER5	Provides the same functionality as USER1. The factory default setting is <u>LEVEL METER</u>.				
USER6	Provides the same functionality as USER1. The factory default setting is <u>MARKER</u>.				

SYSTEM

Use this menu to set frequency and other device settings.

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB

FREQUENCY	Selects the system frequency.
	　<u>59.94 Hz</u>: Selects 59.94 Hz as the system frequency. (AG-HPD24P default value)
	　<u>50 Hz</u>: Selects 50 Hz as the system frequency. (AG-HPD24E default value)
	　23.98Hz: Selects 23.98 Hz as the system frequency.
	　24Hz: Selects 24 Hz as the system frequency.
	　59-23: Selects 23.98 Hz as the system frequency. Receives 59.94 Hz input. Select this frequency to record 2:3 pull-down converted (24 fps signal) output from an AJ-HDC27H camera.
	　60-24: Selects 24 Hz as the system frequency. Receives 60 Hz input. Select this frequency to record 2:3 pull-down converted (24 fps signal) output from an AJ-HDC27H camera.
	NOTE:
	• Only changing these settings will not reflect them to unit settings. To do that the unit must be restarted. A confirmation dialog appears when a restart is required.
	• In 3D REC/PB mode and SYNC PB mode, frequencies are hidden and cannot be changed. Frequencies can be changed only in MAIN mode.
	• Transition to 3D REC/PB mode and SYNC PB mode cannot take place when the frequency is set to 59 - 23 or 60 - 24.
		`59.94 Hz` `50 Hz`
		`23.98 Hz` `24 Hz`
		`59-23 Hz` `60-24 Hz`
			○		

Item	Settings and brief function description XX indicates factory default settings.	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
FORMAT	Specifies the recording/system format used by this unit. **1080i (1080p)**: 1080i mode (when 59.94 Hz or 50 Hz is set)/ 1080p mode (when 59-23 is set) **720p**: 720p mode **480i (576i)**: 480i mode (when 59.94 Hz is set)/576i mode (when 50 Hz is set) **NOTE:** • Not displayed when 23.98 Hz or 24 Hz is selected in the FREQUENCY menu setting. The 1080p recording format is used. • Not displayed when 60 - 24 is selected in the FREQUENCY menu setting. The 720p recording format is used. • In 3D REC/PB mode and SYNC PB mode, only 1080i (1080p) or 720p is available.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
REC FORMAT(SD)	Selects the recording format when FORMAT is set to 480i or 576i. **DV**: Selects DV (25 Mbps). **DVCPRO**: Selects DVCPRO (25 Mbps). **DVCPRO50**: Selects DVCPRO50 (50 Mbps).	**59.94 Hz** **50 Hz**	○		
REC FORMAT(HD)	Selects the recording format when FORMAT is set to 1080i, 1080p or 720p. **DVCPRO HD**: Selects DVCPRO HD (100 Mbps). **AVC-I 50**: Selects AVC-Intra 50. **AVC-I 100**: Selects AVC-Intra 100. **NOTE:** • DVCPRO HD cannot be selected when the FREQUENCY menu setting is 23.98 Hz or 24 Hz. If 1080p is selected for FORMAT, DVCPRO HD cannot be recorded even if DVCPRO HD is selected. AVC-Intra 100 is then used for recording. • In 3D REC/PB mode, DVCPRO HD cannot be selected.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	
AUDIO SMPL RES	Selects quantization bit rate for audio recording in the AVC-Intra 100/AVC-Intra 50 recording format. **16BIT**: Audio recording bit rate is 16 bits. 8 channels are recorded. **24BIT**: Audio recording bit rate is 24 bits. 4 channels are recorded. **NOTE:** • The recording format is 16-bits for DVCPRO HD, DVCPRO50, DVCPRO and DV.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	
25M REC CH	Specifies the number of audio channels that will be used for DVCPRO (25 Mbps) or DV (25 Mbps) recording. **0**: 2-channel (2CH) recording **1**: 4-channel (4CH) recording **NOTE:** • When AUDIO SMPL RES is 16 bits, 4 channels are recorded for AVC-Intra 50 and AVC-Intra 100 and when it is 24 bits, 8 channels are recorded. In DVCPRO HD and DVCPRO50, 8 channels and 4 channels, respectively are recorded regardless of AUDIO SMPL RES setting.	**59.94 Hz** **50 Hz**	○		
SYS H(HD)	Adjusts system phase of a HD SDI output (in 13.5 ns steps). **2750 - 0 - -2750** -: The phase is advanced. +: The phase is delayed.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○

Item	Settings and brief function description. XX indicates factory default settings.	SYSTEM FREQ indications	Mode 2D (Main)	3D	SYNC PB
SYS H(SD)	Adjusts system phase of analog composite output and SD SDI output (in 37 ns steps). 1728 - 0 - -1728 -: Is advanced +: Is delayed	59.94 Hz 50 Hz 23.98 Hz 59-23 Hz	○		
AUTO POWER OFF	Sets the time of button operation inactivity after which the power is automatically turned off. 10min: The power is turned off after 10 minutes of inactivity. 30min: The power is turned off after 30 minutes of inactivity. 60min: The power is turned off after 60 minutes of inactivity. (AG-HPD24E default value) 90min: The power is turned off after 90 minutes of inactivity. 120min: The power is turned off after 120 minutes of inactivity. OFF: Does not turn off the unit automatically, and allows the power to stay on. (AG-HPD24P default value) **NOTE:** • Even when set to something other than OFF, power is not turned off during playback (including variable speed playback, fast forward/fast rewind and pause) and recording. • When transfers are made to an external device via a USB cable, the power is not turned off even if there is no button activity.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○
CLOCK SET	Sets the internal calendar and clock.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○

FILE

Use this menu to write menu settings to or load from SD memory cards. You can also return menu settings to their factory defaults.

```
MENU
 ├── THUMBNAIL
 ├── OPERATION
 ├── PROPERTY
 ├── META DATA
 ├── STORAGE
 ├── SETUP
 ├── FILE
 └── SYSTEM INFO
```

Item	Settings and brief function description	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
LOAD	Displays a list of files on the SD memory card when data is selected for loading. Loads the specified files. 　ALL: All the data in the menu 　W/O SYSTEM: Items other than SETUP - SYSTEM **NOTE:** 　• Selecting ALL does not load menu items that are not backup items. 　Menus that are not backup items are: 　　STORAGE - USB HOST 　　SETUP - BASIC - LOOP REC 　　SETUP - BASIC - GAMMA SEL 　• Even when ALL is selected in 3D REC/PB mode and SYNC PB mode, values selected in the SETUP - SYSTEM - FREQUENCY menu setting are not loaded.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
SAVE AS	Saves selected data to an SD memory card after a file name has been entered. 　ALL: All the data in the menu 　W/O SYSTEM: Items other than SETUP - SYSTEM	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
SDCARD PROPERTY	Indicates capacity and used capacity for SD memory cards.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○
SDCARD FORMAT	Formats SD memory cards.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○

Item	Settings and brief function description	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
INITIAL MENU	Returns menu settings to their factory defaults. **ALL**: All the data in the menu **W/O SYSTEM**: Items other than SETUP - SYSTEM **NOTE:** • Even when ALL is selected in 3D REC/PB mode and SYNC PB mode, values selected in the SETUP - SYSTEM - FREQUENCY menu setting are not initialized.	**59.94 Hz** **50 Hz** **23.98 Hz** **24 Hz** **59-23 Hz** **60-24 Hz**	○	○	○

Setup Menu

LOAD

1 Open MENU.

Insert an SD memory card and select menu FILE - LOAD to select the item to load.

Select ALL (all item data) or W/O SYSTEM (other than menu setting SETUP - SYSTEM) and press the SET button.

2 Select FILE.

Select the file to load from the file list and press the SET button.

- The extension is not displayed.
- If ALL is selected, a file for which W/O SYSTEM is selected during saving does not appear in the file list.
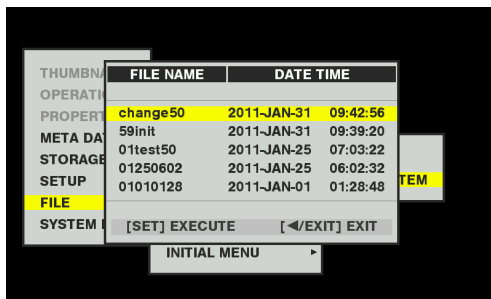
A confirmation dialog box appears.

3 Select YES in the YES/NO selection and press the SET button.

- When ALL is selected to load all items, the system will automatically be restarted if SETUP - SYSTEM - FREQUENCY differs from the current setting.

SAVE

1 Select MENU.

Insert an SD memory card and select menu item to save from FILE - SAVE AS.

Select ALL (all item data) or W/O SYSTEM (data other than menu setting SETUP - SYSTEM) and press the SET button.

- If the SD memory card has not been formatted, use FILE - SDCARD FORMAT to format the card.
- SAVE AS and SDCARD FORMAT are not available if the card is write protected.

2 Enter the file name.

Enter a file name that is up to 8 characters long. An extension is automatically appended.

- The month, date and time of the new folder is its default name.
- A file with an identical name cannot be saved.

SYSTEM INFO

Use this menu to view the system information.

MENU

├── THUMBNAIL

├── OPERATION

├── PROPERTY

├── META DATA

├── STORAGE

├── SETUP

├── FILE

└── **SYSTEM INFO**

This menu cannot be opened during recording / playback or from HDD EXPLORE.

Item	Settings and brief function description	SYSTEM FREQ indications	Mode		
			2D (Main)	3D	SYNC PB
VERSION	Indicates the version of the firmware.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○
MODEL	Indicates the model name and serial number.	59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○

HOUR METER	Displays the hour meter.
	   OPERATION: PowerON time
	   POWER ON: Power ON count
	   LCD ON: LCD on time
		59.94 Hz 50 Hz 23.98 Hz 24 Hz 59-23 Hz 60-24 Hz	○	○	○

■ **Menu reset**

Item reset

You can reset an item by selecting it and pressing the RESET button.

Items reset immediately after the RESET button is pressed.

Items that can be reset

• PROPERTY - PROPERTY SETUP

• META DATA - RECORD

• META DATA - USER CLIP NAME

• STORAGE - SETUP

• SETUP items excluding SYSTEM menu items

Setup Menu

List of Compatible Input and Output Formats

Use menu FREQUENCY, REC FORMAT to select the input /output formats listed below.

Recording format	Input signal	System frequency	SDI output [1]
AVC-Intra 50 / 100	1080 / 59.94i	59.94	1080 / 59.94i
			720 / 59.94P
			480 / 59.94i
	1080 / 50i	50	1080 / 50i
			720 / 50P
			576 / 50i
	1080 / 23.98P over 59.94i [2]	59-23	1080 / 23.98PsF
	1080 / 23.98PsF	23.98	1080 / 23.98PsF
	1080 / 24PsF	24	1080 / 24PsF
	720 / 59.94P	59.94	720 / 59.94P
			1080 / 59.94i
			480 / 59.94i
	720 / 50P	50	720 / 50P
			1080 / 50i
			576 / 50i
	720 / 23.98P over 59.94P [3]	59-23	1080 / 23.98PsF
	720 / 24P over 60P [3]	60-24	1080 / 24PsF
DVCPRO HD	1080 / 59.94i	59.94	1080 / 59.94i
			720 / 59.94P
			480 / 59.94i
	1080 / 50i	50	1080 / 50i
			720 / 50P
			576 / 50i

[1] Use menu SETUP - VIDEO - OUTPUT FORMAT to select.

[2] HD-SDI (1080 / 23.98P over 59.94i) output from AJ-HPX3100

[3] HD-SDI (variable frame rate signal) output from an AJ-HDC27 Series camera

Recording format	Input signal	System frequency	SDI output *4
DVCPRO HD	1080 / 29.97PsF	59.94	1080 / 29.97PsF
			720 / 59.94P *1
			480 / 59.94i *1
	1080 / 23.98P over 59.94i *5	59.94	1080 / 23.98PsF *3
			1080 / 59.94i *2
			720 / 59.94P *2
			480 / 59.94i *2
	1080 / 23.98PsF	---	---
	1080 / 24PsF	---	---
	1080 / 25PsF	---	---
	720 / 59.94P	59.94	720 / 59.94P
			1080 / 59.94i
			480 / 59.94i
	720 / 50P	50	720 / 50P
			1080 / 50i
			576 / 50i
	720 / 23.98P over 59.94P *7	59-23	1080 / 23.98PsF
	720 / 24P over 60P *6	60-24	1080 / 24PsF
DVCPRO50 / DVCPRO DV	480 / 59.94i	59.94	480 / 59.94i
			1080 / 59.94i
			720 / 59.94P
	480 / 29.97P over 59.94i	59.94	480 / 59.94i *1
			1080 / 29.97PsF
			720 / 59.94P *1
	480 / 23.98P over 59.94i	59.94	1080 / 23.98PsF *3
			480 / 59.94i *2
			1080 / 59.94i *2
			720 / 59.94P *2
	576 / 50i	50	576 / 50i
			1080 / 50i
			720 / 50P
	576 / 25P over 50i	50	576 / 50i *1
			1080 / 25PsF
			720 / 50P *1

*1 2:2 pull-down

*2 2:3 pull-down

*3 Only playback is enabled when menu SETUP - SYSTEM - FREQUENCY is set to 23.98 Hz or 59-23.

*4 Use menu SETUP - VIDEO - OUTPUT FORMAT to select.

*5 HD-SDI (1080 / 23.98P over 59.94i) output from AJ-HPX3100

*6 HD-SDI (variable frame rate signal) output from an AJ-HDC27 Series camera

*7 HD-SDI (720 / 25P over 50P) output from AJ-HPX2700

Using a Keyboard

Full Keyboard

The full keyboard appears when meta data input or other English input is required.
Move the cursor to the character you want to enter and press the SET button.
Use the Up/Down/Left/Right cursor buttons to move the cursor.
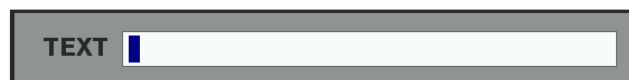
The keyboard keys have the functions listed below.

Key	Function
BS	Deletes one character
Caps	Toggles between upper and lower case
OK	Saves made entries and closes the on-screen keyboard
EXIT	Cancels made entries and closes the on-screen keyboard
◀◀	Moves the cursor to the first character
◀	Moves the cursor 1 character space back
▶	Moves the cursor 1 character space forward
▶▶	Moves the cursor to the location after the last character

◆ NOTE:
• Press the RESET button to delete all entered characters.
• Pressing the EXIT button displays a confirmation message before exiting the keyboard. Select YES and press the SET button to close the soft keyboard.
• Switching Caps also changes the symbols on the keyboard.

Numeric Keyboard

Use the numeric keyboard when you need to enter only numbers.
Move the cursor to the figure you want to enter and press the SET button.
Use the Up/Down/Left/Right cursor buttons to move the cursor.
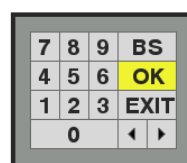
The keypad keys have the functions listed below.

Key	Function
BS	Deletes one character
OK	Saves made entries and closes the soft keyboard
EXIT	Cancels made entries and closes the soft keyboard
◀	<Decimal entries> Moves the cursor 1 character space back <Time code entries> Moves the cursor 1 item space back
▶	<Decimal entries> Moves the cursor 1 character space forward <Time code entries> Moves the cursor 1 item space forward

USB Keyboard

To use a USB keyboard for input, connect it to the KEYBOARD connector when a menu that displays a full keyboard or numeric keyboard is selected.
The type of keyboard must first be set in a menu.
(→ Setup Menu "THUMBNAIL" - "KEYBOARD" page 58)

If required, use the steps below to set the type of keyboard you want to use.
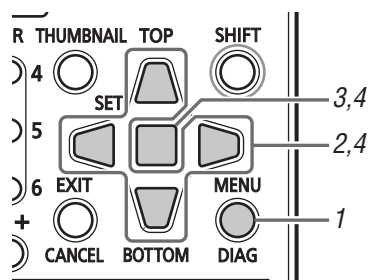
1 Press the MENU button.

2 Use the Up/Down/Left/Right cursor buttons to select the SETUP - THUMBNAIL menu setting and select KEYBOARD.

3 Press the SET button.

This opens a menu for keyboard setup.

4 Move the cursor to the keyboard layout you want and press the SET button.

◆ **NOTE:**
• If the keyboard draws more than 100 mA, a protective circuit may shut down the machine.
• Keyboard input is limited to alphanumeric characters.
• Some keyboards may not operate normally.

For Long and Trouble-Free Operation
Maintenance

Do not use benzene or thinner for cleaning.
- Benzene and thinner could deform the unit and cause the paint to peel off.
- Disconnect the battery or the power cord from the wall outlet before cleaning.
- Wipe the unit using a soft clean cloth. Stubborn soiling should be removed using a cloth dampened with a solution of a neutral detergent and water. Then wipe with a dry cloth.

Condensation

Condensation occurs due to the same principle involved when droplets of water form on a window pane of a heated room. It occurs when this unit or a card is moved between places where the temperature or humidity varies greatly or when, for instance:
- It is moved to a very humid place full of steam or a room immediately after it has been heated up.
- It is suddenly moved from a cold location to a hot or humid location.

When moving the unit to locations such as these, leave it standing for about 10 minutes rather than switching on the power immediately.

Storage Precautions

Before storing the unit, remove the battery.
Store the unit in a location where the humidity is low and the temperature is relatively constant.

Recommended ambient temperature: 15 °C – 25 °C (59 °F – 77 °F)
Recommended relative humidity: 40 % – 60 %

■ Memory card recorder
- Wrap the unit in a soft cloth to protect it from dust.
- Do not place it in a location exposed to direct sunlight, which could damage the finish and the LCD screen.

■ Battery pack
- Storing the battery pack in a location exposed to excessively high or low temperature will reduce its service life.
- Storing it in a location with oily smoke and heavy concentrations of dust and exposed to high humidity may corrode the terminals and cause other damage.
- Keep necklaces, hairpins and other metal objects away from the battery terminals. They could short-circuit the terminals generating heat that could cause burn injuries if touched.
- When the battery will be stored for an extended period of time, charge it at least once a year and use up the charge before storing it again.

■ P2 cards and SD memory cards
- After removing a P2 card from the unit, be sure to attach the card cap that protects the card connectors from sand and dust. Then place the card in the card case before storing or transporting it.
- After removing an SD memory card from the unit, be sure to place it in its case.
- Do not leave cards in locations where corrosive gases are present.
- Do not leave cards in automobiles, locations exposed to direct sunlight or other high-temperature locations.
- Do not leave cards in high humidity or excessively dusty locations.

Warning and Error Messages

When the unit generates a warning, the OSD of the record and playback screen shows an error number and an error message. When an operational malfunction occurs in the unit, an error number will flash on the OSD of the record and playback screen.

Error Information

The POWER lamp, the P2 card access lamp and a beep sound notify the operator of a malfunction that is detected during powering up or operation.
The beep notification is enabled when the SETUP - BASIC - BEEP menu setting is set to ON (→ Setup Menu "BASIC" - "BEEP" page 61).

Monitor display[*1]	Warning message	POWER lamp	Beep sound	Description	Countermeasure
E-37, 38[*2]	System error	Blinks 4 time per second	Repeated rapidly	P2 microprocessor or control failure. Operation stops.	To continue operation, turn the power off and then back on again.
E-30[*2]	Incorrect P2 card removal	Blinks 4 time per second	Repeated rapidly	A P2 card was removed during access and an error occurred in inner memory.	Turn the unit off. Repair any clips on the removed P2 card that are corrupted.
E-31[*2]	Recording error	Blinks 4 times per second	Repeated rapidly	Recorded data is corrupted.	Turn the power off, then turn it on again and try again. Replace a P2 card that does not enable normal recording.
E-BA Displayed during a preset time period[*2]	The battery is depleted.	Blinks 1 time per second	Repeated rapidly	The battery is depleted. Recording and playback stop. The unit is turned off automatically when the voltage drops further.	Replace the battery with a freshly charged battery.
E-21[*2]	Recording error	Blinks 4 time per second	Repeated rapidly	A recording error has occurred. Stop recording.	Turn the power off , then turn it on again and try again. Replace a P2 card that does not enable normal recording. Stop (STOP) and start playback to clear the error, displayed error message and beep sound.
E-80, 81, 83, 84[*2]	Connection error	Blinks 4 time per second	Repeated rapidly	A malfunction has occurred in the 3D REC/PB mode or SYNC PB mode system.	Turn the power off and check the connections and other factors.
One remaining battery capacity indicator blinks	Battery nearly empty	Blinks 1 time per second	None	The battery is near depletion.	Replace the battery as necessary.

[*1] Same range of destination output set in the SETUP - DISPLAY - OSD OUTPUT menu setting.

[*2] For details on display location, refer to the OSD display (→ Setup Menu "DISPLAY" - "OSD OUTPUT" page 67). The error number and "AUTO OFF" are alternately displayed.

For Long and Trouble-Free Operation

Detailed Warning and Error Information

Display of information on operational warnings

• The OSD displays messages when warnings or errors occur.

Monitor display	Description	Deck operation
CANNOT REC	Displayed when data cannot be recorded on a P2 card. [Meaning] • The card is write protected. • No more free space on the card. • You are trying to record on a card that cannot be used. • Card status changed during recording. • VFR recording started but no active frame data was input. • Recording was attempted when the unit was BUSY.	STOP
CANNOT LOOP REC	Displayed when ON is selected in menu SETUP - BASIC - LOOP REC and the P2 cards are not available for recording. [Meaning] • The card is write protected. • No more free space on the card. • You are trying to record on a card that cannot be used. • Card status changed during recording. • Recording was attempted when the unit was BUSY.	STOP
CANNOT PLAY	Displayed when playback was interrupted due to a clip error or other factor. [Meaning] • Playback was attempted on card without any clips. • Playback was attempted on a card not available for playback. • Other causes that prevent playback or stops playback. • Playback was attempted when the unit was BUSY.	STOP
TEXT MEMO INVALID	Displayed when a text memo cannot be recorded (for example, 100 or more text memos have been recorded).	Operation continues
INT SG	Displayed for the first 2 seconds when INT SG is selected in menu SETUP - VIDEO - INPUT SEL or in menu SETUP - AUDIO - INPUT SEL and the REC ⎕○ button is pressed to engage EE mode.	Operation continues
NO INPUT	Displayed for the first two seconds when the REC ⎕○ button is pressed to enter EE mode and INPUT SEL is set to a connector with no input except for analog audio signals.	Operation continues
TEXT MEMO	Displayed for two seconds when a text memo is added.	Operation continues
MARK ON / MARK OFF	Displayed for two seconds when a shot mark is added or deleted.	Operation continues
SLOT SEL INVALID	Displayed when the SLOT SEL button (when assigned to a USER button) was pressed when it is not possible to switch P2 card recording slot.	Operation continues
BUSY	Displayed while clip information is being read or when clip configuration has changed. No operations can be performed while BUSY is on the screen. [Meaning] • A card has been inserted or removed. • Updating is in progress • Recording post processing is in progress • Other causes	Operation continues
REF ERROR	Displayed when the REF IN connector signal differs from the system frequency or is not synchronized with SDI input signals, or in other situations when synchronization with the reference signal is not possible. The unit will not operate normally when this warning is displayed. Check connections and input signals.	Operation continues

Display of warning information for unit status

When there is a problem with unit status, a warning error "E-**" appears in the OSD display. Press the DIAG button to get detailed error information.

Display		Description	Deck operation
No	Character code		
75	STORAGE INTERMITTENT	Displayed for 3 seconds when reduced storage device performance or other cause has resulted in a dropout during clip playback. Use a storage device with higher specifications.	Operation continues
93	INVALID TC MODE	Appears during playback when the time code has been recorded in drop frame mode. The video output is distorted and audio output is muted at the drop point of the time code. Check the playback clip. Playing back a 24p frame-rate clip requires that the time code be recorded in non-drop frame mode. Appears when the time code in an HD SDI input is in the drop frame mode during EE or recording. Normal recording will not be possible under these conditions. Check signal input to the unit. Set the input time code to non-drop frame mode. (Appears when menu SETUP - SYSTEM - FREQUENCY is set to 23.98 Hz, 24 Hz, 59-23 or 60-24.)	Operation continues
95	INVALID EMBEDDED TC	Displayed when the time code does not advance at 1x speed when recorded video frames are synchronized with HD SDI input. (Displayed when the SETUP - SYSTEM - FREQUENCY menu setting is 59-23 or 60-24.)	Operation continues
96	INVALID TC SEQUENCE	Appears during playback when frame rate data in user bits cannot be detected or when the playback time code is not continuous. The video output is distorted and audio output is muted in sections where the time code is not continuous. Check the playback clip. Appears during EE or recording when frame rate data cannot be detected in the user bits data in an HD SDI input or when the input time code is not continuous. Normal recording will not be possible under these conditions. Check signal input to the unit. Input signals with a matching time code and pull-down sequence. (Appears when menu SETUP - SYSTEM - FREQUENCY is set to 23.98 Hz, 24 Hz, 59-23 or 60-24.)	Operation continues
97	NO ACTIVE FRAME	Appears when active frame data cannot be detected in the user bits in the HD SDI input during EE or recording. Normal recording will not be possible under these conditions. Check signal input to the unit. The input signal must contain the active frame data from a variable frame-rate camera. (Appears when menu SETUP - SYSTEM - FREQUENCY is set to 59 - 23 or 60-24 and VFR REC is set to ON.)	Recording is disabled [2] Operation continues during recording
26	CARD ERROR<✳✳>	Displayed when data was corrupted due to a P2 card error. If generated during recording, the message will stay on after recording is stopped until another operation takes place. (✳✳ indicates the slot number where the error occurred.) Replace the P2 card in the slot where the error occurred.	STOP
21	REC WARNING	Displayed when a video or audio error occurs during recording. To continue operation, turn the power off and then back on again. Corruption of an input signal during recording may terminate recording. Check signal input to the unit.	STOP during recording, Operation continues during recording pause due to corrupted input signals
50	BATTERY EMPTY	Displayed when a drop in the backup battery voltage for the internal clock is detected at power on.[1] Connect an AC adaptor and let the battery recharge for about 4 hours.	Operation continues

[1] After charging the battery, be sure to set the internal calendar and clock.

[2] Recording is initially accepted after which operation is cancelled and recording is not possible.

Display		Description	Deck operation
No	Character code		
70	DIR NG CARD<✳✳>	The directory configuration is incorrect. Immediately back up card data and format the card before using it again.(✳✳ indicates the slot number where the error occurred.)	Operation continues
71	RUNDOWN CARD<✳✳>	The card has been rewritten the maximum number of times. Replace the P2 card. (✳✳ indicates the slot number where the error occurred.)	Operation continues
60	HDMI MONI NOT ACCEPT	Displayed when the HDMI monitor cannot accept the machine's 3D output video. Use an HDMI monitor that accepts 3D video, or change the machine's settings to suit the monitor's capabilities.	Operation continues
62	SLAVE WARNING	A problem on the slave side prevented operation. Check status on the slave side.	STOP
63	SYNC POSI FAILED	Failed to synchronize clip location. Check the number and type of clips. If the reference signal or input signal is corrupted during playback of a 3D clip, it may not be possible to synchronize positions on the clip. Press the STOP button to stop, check connections and input signals before restarting playback.	Operation continues
64	INPUT L / R MISMATCH	SDI input L/R signals and connected input connectors do not match. Check connections and input signals.	Operation continues
65	REF IN NOT DETECT	The reference signal could not be detected. Check connections and input signals. Recording and playback cannot be started when this message is displayed.	STOP Operation continues during playback and recording

Display of thumbnail warning information

The following warning messages appear when an incorrect operation is attempted in a thumbnail.

Item	Message	Description	Measure
Thumbnails	CANNOT ACCESS!	Data cannot be accessed because it is corrupted or for other reasons.	Restore media and clips to normal state before access.
	CANNOT CHANGE!	A thumbnail containing a grayed out text memo [i] that cannot be generated is not available for editing.	Edit settings or content to enable thumbnail display.
	CANNOT DELETE!	Contents version mismatch prevents deletion.	Match devices and contents version.
	CANNOT FORMAT!	P2 card problem prevents formatting.	Check P2 card.
	CANNOT RE-CONNECT!	A clip that does not span multiple cannot be reconnected.	Check selected content.
	CANNOT REPAIR IN SELECTION!	Some of the selected clip could not be repaired.	Check selected content.
	CANNOT REPAIR!	Selected content cannot be repaired.	Check selected content.
	CANNOT SAVE! FILE NAME IN USE	A configuration file with the same file name already exists on the SD memory card.	Save to a different name.
	CARD FULL!	The P2 or SD memory card is full.	Insert media with sufficient capacity.
	INVALID VALUE!	Entered data was invalid.	Enter data in a valid range.
	LACK OF CAPACITY!	There is not enough recording capacity left on the card.	Insert a card with sufficient recording capacity.
	MISSING CLIP!	All cards that contain the clip must be inserted to allow attachment of shot marks.	Insert all cards that contain the clip.
	NO CARD!	No P2 or SD memory card is inserted.	Insert compatible media.
	NO COPY TO SAME CARD!	A clip cannot be copied to the card storing the original clip.	Copy the selected clip to a card that does not contain the original clip.
	NO INPUT!	No data is input.	Set after making input.
	NO SD CARD!	No SD memory card is inserted.	Insert an SD memory card.
	NOT SELECTED!	An attempt was made to delete an unselected clip.	Select the clip you want to delete.
	SAME CLIP IS SELECTED!	The selected clips contain multiple copies of the same clip (duplicated using COPY).	Multiple copies of the same clip (duplicated using COPY) cannot be simultaneously copied. Deselect all identical copies from the selected clips.
	TOO MANY CLIPS!	Too many clips are selected.	Reduce the number of selected clips.
	UNKNOWN CONTENTS FORMAT!	This warning appears when data not compatible with the unit is detected.	Match devices and contents version.
	UNKNOWN DATA!	The meta data character code is invalid.	Use UTF-8 for the meta data character code. Use the viewer to enter correct characters.
	USER CLIP NAME MODIFIED!	Characters in the clip name had to be deleted in adding the counter value.	The user clip name plus the counter value can only contain up to 100 bytes. Characters in the clip name are automatically deleted when the total exceeds 100 bytes.
	WRITE PROTECTED!	The P2 or SD memory card is write protected.	Insert write-enabled media.

Item	Message	Description	Measure
Storage	CANNOT ACCESS CARD!	An error occurred during P2 card access.	Check P2 card.
	CANNOT ACCESS TARGET!	An error occurred while trying to access the connection target.	Check storage device status and connections.
	CANNOT COPY! FORMAT STORAGE TO FAT	Clips cannot be copied to a storage device without partitions.	Format using a FAT format or export data from a P2 card to create a partition.
	CANNOT FORMAT!	A storage device cannot be formatted.	Connect a different storage device.
	CANNOT RECOGNIZE STORAGE	The storage device cannot be properly recognized.	Reboot the storage device or connect a different device.
	CANNOT SELECT! MAX.6 PARTITIONS	It is not possible to mount a storage device with more than 6 partitions.	Cancel some of the selected partitions.
	CARD IS EMPTY! CANNOT COPY!	The P2 selected for copying is empty.	Copying is not performed since the card is empty.
	FORMAT P2 CARD!	Importing is not possible to a P2 card containing clips.	Format the P2 card.
	LACK OF CAPACITY!	Not enough space left on the storage device.	Use a new storage device with enough free space or a formatted storage device.
	STORAGE DISCONNECTED!	The unit has been disconnected from the storage device.	Reconnect the USB cable to the HOST connector. If the device still does not operate normally, turn it off and then back on again.
	MISMATCH COMPONENT!	Copying is not possible since the model numbers of the two cards differ.	Use a P2 card with the same model number or import video in clip units.
	P2 CARD IS UNFORMATTED!	The P2 card is not formatted.	Use a formatted P2 card.
	TOO MANY PARTITIONS!	There are too many partitions.	Storage device can handle up to 23 partitions. Use a new storage device or formatted storage device.
	UNKNOWN DEVICE CONNECTED!	The connected DVD drive or other device is not supported.	Connect a compatible storage device, turn off the unit and turn it back on again.
	VERIFICATION FAILED!	Verification after copying failed.	Copy the data again.
Soft keyboard	CANNOT CHANGE!	An attempt was made to change PERSON when no text memo had been entered.	First enter a text memo.
	CANNOT SET! INVALID VALUE!	The entered value is invalid.	Enter a valid value.

Warning information displayed in 3D REC/PB mode and SYNC PB mode

Message	Description	Measure
ERROR REF IN NOT DETECT	A reference signal has not been connected or the slave side is not powered up.	Turn on the slave side and check connection of the reference signal line.
ERROR USB DISCONNECT	The LINK (USB) connection signal could not be detected after 2 minutes.	Check LINK (USB) cable connection. Turn on the slave side. If the error persists after the slave side starts operation, check the slave side.
ERROR SLAVE IS BUSY	Mode changes cannot be made during slave side operation. This message may also appear during startup when the slave side is started up simultaneously with or after master side startup.	Displayed during slave side operations such as recording, playback, menu display or remote status. Cancel the remote status, menu display, or other operation to enter the STOP status.
ERROR SERIAL NO. MISMATCH	The LINK (D-SUB) cable and the LINK (USB) cable is not connected to the same device.	Connect the cables to the same device.
ERROR VERSION FIRMWARE MISMATCH	The connected devices are using different firmware version.	Connect devices with the same firmware version.
ERROR D-SUB DISCONNECT	The LINK (D-SUB) cable is not connected.	Connect the LINK (D-SUB) cable.
WAITING FOR CONNECTION	The unit is waiting for connection for it takes time to detect the synchronized connection of the two units.	If the signal cannot be detected in 2 minutes, an error is generated. Locate the cause of the error before connecting again.

Error Information

Error		Description	Operation
No.	Message		
E-30	TURN POWER OFF	Displayed when an error occurs in reading and writing card data. To continue operation, turn the power off and then back on again.	STOP
E-31	REC ERROR	Displayed when an error occurs during recording. To continue operation, turn the power off and then back on again.	STOP
E-37	COMM ERROR	Displayed when a system controller command was not complied to. To continue operation, turn the power off and then back on again.	STOP
E-38	SYSTEM ERROR	Displayed when a communication error has occurred. To continue operation, turn the power off and then back on again.	STOP
E-BA	BATTERY	Appears when the input DV voltage is below the undercut voltage.	STOP
E-80	LINK D-SUB DISCONNECT	Displayed when a LINK D-SUB cable for the 3D REC/PB mode and SYNC PB mode is disconnected or other error occurs. Turn off the power and check the connection before use.	STOP
E-81	LINK USB DISCONNECT	Displayed when a LINK USB cable for the 3D REC/PB mode and SYNC PB mode is disconnected or other error occurs. Turn off the power and check the connection before use.	STOP
E-83	SLAVE ERROR	The slave side was turned off (AUTO OFF). Use after turning the slave and master sides off.	STOP
E-84	MASTER ERROR	The master side was turned off (AUTO OFF). Use after turning the master and slave sides off.	STOP

• If an error occurs, the OSD alternately displays an error number and "AUTO OFF".

Updating the Firmware in This Unit

The firmware can be updated using either of the following two methods.

(1) Customers who have registered for our P2HD 5 Year Warranty Repair Program

 Such customers can access a special web site to check for updates and download required firmware.

 Further details on this program are provided by web site listed below, which also handles customer registration.

 For English: http://panasonic.biz/sav/pass_e/

(2) Customers not registered for a P2HD 5 Year Warranty Repair Program

 Check firmware version of the unit in the PROPERTY - SYSTEM INFO in the menu. Then access the site listed below to check the most recent firmware information and download any firmware you require.

 Download the update file to the unit by placing it on an SD memory card.

 For details on update procedures, please visit our Website (→ "Website URL" page 2).

◆ **NOTE:**

• This unit uses only SD memory cards that comply with the SD or SDHC specifications.

 Be sure to format SD memory cards on this unit.

Handling P2 Card Recording

The P2 card is a semiconductor memory card designed for the P2HD series, Panasonic's line of professional video and broadcast equipment.

■ Since the P2 format records data as files, it is ideally suited for computer processing. Video and audio are recorded in the MXF file format while various important data are stored in the folders with the configuration shown at right.

If any of this data is changed or lost, it will not be recognized as P2 data or the P2 card may no longer be possible to use in a P2 device.

```
Drive: \
    └── CONTENTS
            ├── AUDIO
            ├── CLIP
            ├── ICON
            ├── PROXY
            ├── VIDEO
            └── VOICE
    └── LASTCLIP.TXT*1
```

All these folders are required.
*1This file contains the data for the last clip recorded on a P2 device.
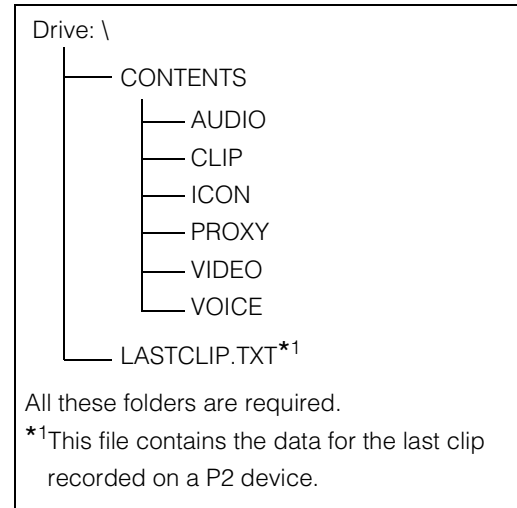
■ To prevent data loss in transferring P2 card data to a PC or write back PC data to a P2 card, use P2 Viewer (software exclusively designed for managing P2 card data), which can be downloaded from our Web site.
For details on the URL (→ "Website URL" page 2)

■ Follow the steps below to use general IT tools such as Microsoft Windows Explorer or Apple Finder to transfer the data to a PC. Be sure to use P2 Viewer to write data back to a P2 card.
  • Process the CONTENTS folder and the LASTCLIP.TXT file together.
    Do not modify the data below the CONTENTS folder.
    In copying, be sure to copy both the CONTENTS folder and the LASTCLIP.TXT file together.
  • When transferring data from multiple P2 cards, create separate folders for each P2 card to prevent overwriting clips with identical names.
  • Do not delete data on a P2 card.
  • Be sure to use a P2 device or the P2 Viewer to format P2 cards.

For Long and Trouble-Free Operation

Use of SD/SDHC Memory Cards

Use only SD and SDHC*1 memory cards that comply with the SD and SDHC specifications in this unit. Memory cards other than SD and SDHC cards (SDXC memory cards*3, multimedia cards*2 or other cards) cannot be used.

*1 The SDHC memory card is a new card standard (version 2.0), established by the SD Card Association in 2006, for memory cards with capacities exceeding 2 GB.

*2 The Multimedia Card (MMC) is a registered trademark of Infineon Technologies AG.

*3 The SDXC memory card is a new standard (version 3.0), established by the SD Card Association in 2009, for memory cards with capacities exceeding 32 GB.

• Be sure to use the correct adaptors with mini SD, mini SDHC, microSD and microSDHC cards. (Note that this unit will not operate normally when only an adaptor without a card is installed.)

• Be sure to use this unit to format cards.

• This unit supports the following SD/SDHC memory card capacities.

SD (8 MB to 2 GB)

8 MB	16 MB	32 MB	64 MB	128 MB
256 MB	512 MB	1 GB	2 GB	

SDHC (4 GB to 32 GB):

4 GB	8 GB	16 GB	32 GB

Use of Panasonic SD, SDHC, mini SD, mini SDHC, microSD and microSDHC cards is recommended.

• The latest information on the unit and supported memory cards is provided at our P2 Support Web site.
For details on the URL (→ "Website URL" page 2)

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MEMO

Information for Users on Collection and Disposal of Old Equipment and used Batteries

These symbols on the products, packaging, and/or accompanying documents mean that used electrical and electronic products and batteries should not be mixed with general household waste.
For proper treatment, recovery and recycling of old products and used batteries, please take them to applicable collection points, in accordance with your national legislation and the Directives 2002/96/EC and 2006/66/EC.

By disposing of these products and batteries correctly, you will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling.

EU

For more information about collection and recycling of old products and batteries, please contact your local municipality, your waste disposal service or the point of sale where you purchased the items.

Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

EU

For business users in the European Union
If you wish to discard electrical and electronic equipment, please contact your dealer or supplier for further information.

Information on Disposal in other Countries outside the European Union
These symbols are only valid in the European Union. If you wish to discard these items, please contact your local authorities or dealer and ask for the correct method of disposal.

Cd

Note for the battery symbol (bottom two symbol examples):
This symbol might be used in combination with a chemical symbol. In this case it complies with the requirement set by the Directive for the chemical involved.

Panasonic Corporation
Web Site: http://panasonic.net