Panasonic®

Operating Instructions
Memory Card Recorder

Model No. **AJ-HPD2500P**

Model No. **AJ-HPD2500E**

P2HD

AVCHD™   **SDHC**™   **DV**

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

Before operating this product, please read the instructions carefully and save this manual for future use.
• AVCHD capability is available when the optional AVCHD Codec board AJ-YCX250G is installed.

ENGLISH

VQT2P78(E)

CAUTION
RISK OF ELECTRIC SHOCK
DO NOT OPEN

CAUTION: TO REDUCE THE RISK OF ELECTRIC SHOCK, DO NOT REMOVE COVER (OR BACK). NO USER-SERVICEABLE PARTS INSIDE. REFER SERVICING TO QUALIFIED SERVICE PERSONNEL.

The lightning flash with arrowhead symbol, within an equilateral triangle, is intended to alert the user to the presence of uninsulated "dangerous voltage" within the product's enclosure that may be of sufficient magnitude to constitute a risk of electric shock to persons.

The exclamation point within an equilateral triangle is intended to alert the user to the presence of important operating and maintenance (servicing) instructions in the literature accompanying the appliance.

WARNING:

This equipment must be grounded.
To ensure safe operation, the three-pin plug must be inserted only into a standard three-pin power outlet which is effectively grounded through normal household wiring.
Extension cords used with the equipment must have three cores and be correctly wired to provide connection to the ground. Wrongly wired extension cords are a major cause of fatalities.
The fact that the equipment operates satisfactorily does not imply that the power outlet is grounded or that the installation is completely safe. For your safety, if you are in any doubt about the effective grounding of the power outlet, please consult a qualified electrician.

WARNING:

• To reduce the risk of fire or electric shock, do not expose this equipment to rain or moisture.
• To reduce the risk of fire or electric shock, keep this equipment away from all liquids. Use and store only in locations which are not exposed to the risk of dripping or splashing liquids, and do not place any liquid containers on top of the equipment.

CAUTION:

The mains plug of the power supply cord shall remain readily operable.
The AC receptacle (mains socket outlet) shall be installed near the equipment and shall be easily accessible.
To completely disconnect this equipment from the AC mains, disconnect the mains plug from the AC receptacle.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

CAUTION:

To reduce the risk of fire or electric shock and annoying interference, use the recommended accessories only.

CAUTION:

To reduce the risk of fire or electric shock, refer mounting of the optional interface boards to qualified service personnel.

CAUTION:

This apparatus can be operated at a voltage in the range of 100 – 240 V AC.
Voltages other than 120 V are not intended for U.S.A. and Canada.
Operation at a voltage other than 120 V AC may require the use of a different AC plug. Please contact either a local or foreign Panasonic authorized service center for assistance in selecting an alternate AC plug.

CAUTION:

Excessive sound pressure from earphones and headphones can cause hearing loss.

CAUTION:

A coin type battery is installed inside of the unit.
Do not expose the unit to excessive heat such as sunshine, fire or the like.

CAUTION:

• Keep the temperature inside the rack to between 5 °C to 40 °C.
• Bolt the rack securely to the floor so that it will not topple over when VTR is drawn out.

indicates safety information.

IMPORTANT SAFETY INSTRUCTIONS

1) Read these instructions.
2) Keep these instructions.
3) Heed all warnings.
4) Follow all instructions.
5) Do not use this apparatus near water.
6) Clean only with dry cloth.
7) Do not block any ventilation openings. Install in accordance with the manufacturer's instructions.
8) Do not install near any heat sources such as radiators, heat registers, stoves, or other apparatus (including amplifiers) that produce heat.
9) Do not defeat the safety purpose of the polarized or grounding-type plug. A polarized plug has two blades with one wider than the other. A grounding-type plug has two blades and a third grounding prong. The wide blade or the third prong are provided for your safety. If the provided plug does not fit into your outlet, consult an electrician for replacement of the obsolete outlet.
10) Protect the power cord from being walked on or pinched particularly at plugs, convenience receptacles, and the point where they exit from the apparatus.
11) Only use attachments/accessories specified by the manufacturer.
12) Use only with the cart, stand, tripod, bracket, or table specified by the manufacturer, or sold with the apparatus. When a cart is used, use caution when moving the cart/apparatus combination to avoid injury from tip-over.
13) Unplug this apparatus during lightning storms or when unused for long periods of time.
14) Refer all servicing to qualified service personnel. Servicing is required when the apparatus has been damaged in any way, such as power-supply cord or plug is damaged, liquid has been spilled or objects have fallen into the apparatus, the apparatus has been exposed to rain or moisture, does not operate normally, or has been dropped.

S3125A

Notice (U.S.A. only):

This product has a fluorescent lamp that contains mercury. Disposal may be regulated in your community due to environmental considerations. For disposal or recycling information, please contact your local authorities, or the Electronic Industries Alliance: http://www.eiae.org.

<For USA-California Only>

This product contains a CR Coin Cell Lithium Battery which contains Perchlorate Material - special handling may apply.
See www.dtsc.ca/gov/hazardouswaste.perchlorate.

FCC NOTICE (U.S.A.)

Declaration of Conformity

Model Number: AJ-HPD2500P

Trade Name: Panasonic

Responsible Party: Panasonic Corporation of North America

One Panasonic Way, Secaucus, NJ07094

Support contact: 1-800-524-1448

This device complies with Part 15 of FCC Rules.

Operation is subject to the following two conditions:

(1)This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

To assure continued compliance, follow the attached installation instructions and do not make any unauthorized modifications.

Note:

This equipment has been tested and found to comply with the limits for a class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses, and can radiate radio frequency energy, and if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

• Reorient or relocate the receiving antenna.

• Increase the separation between the equipment and receiver.

• Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

• Consult the dealer or an experienced radio/TV technician for help.

The user may find the booklet "Something About Interference" available from FCC local regional offices helpful.

Warning:

To assure continued FCC emission limit compliance, follow the attached installation instructions and the user must use only shielded interface cables when connecting to host computer or peripheral devices. Also, any unauthorized changes or modifications to this equipment could void the user's authority to operate this device.

Read this first! (For AJ-HPD2500E)

WARNING:

This equipment must be earthed.
To ensure safe operation, the three-pin plug must be inserted only into a standard three-pin power point which is effectively earthed through normal household wiring.
Extension cords used with the equipment must have three cores and be correctly wired to provide connection to the earth. Wrongly wired extension cords are a major cause of fatalities.
The fact that the equipment operates satisfactorily does not imply that the power point is earthed or that the installation is completely safe. For your safety, if you are in any doubt about the effective earthing of the power point, please consult a qualified electrician.

WARNING:

• To reduce the risk of fire or electric shock, do not expose this equipment to rain or moisture.
• To reduce the risk of fire or electric shock, keep this equipment away from all liquids. Use and store only in locations which are not exposed to the risk of dripping or splashing liquids, and do not place any liquid containers on top of the equipment.

CAUTION:

To reduce the risk of fire or electric shock and annoying interference, use the recommended accessories only.

CAUTION:

To reduce the risk of fire or electric shock, refer mounting of the optional interface boards to qualified service personnel.

CAUTION:

Do not remove panel covers by unscrewing them. To reduce the risk of electric shock, do not remove the covers. No user serviceable parts inside. Refer servicing to qualified service personnel.

CAUTION:

In order to maintain adequate ventilation, do not install or place this unit in a bookcase, built-in cabinet or any other confined space. To prevent risk of electric shock or fire hazard due to overheating, ensure that curtains and any other materials do not obstruct the ventilation.

CAUTION:

The mains plug of the power supply cord shall remain readily operable.
The AC receptacle (mains socket outlet) shall be installed near the equipment and shall be easily accessible.
To completely disconnect this equipment from the AC mains, disconnect the mains plug from the AC receptacle.

CAUTION:

Excessive sound pressure from earphones and headphones can cause hearing loss.

CAUTION:

A coin type battery is installed inside of the unit. Do not expose the unit to excessive heat such as sunshine, fire or the like.

CAUTION:

• Keep the temperature inside the rack to between 5 °C to 40 °C.
• Bolt the rack securely to the floor so that it will not topple over when VTR is drawn out.

⬚ indicates safety information.

Caution for AC Mains Lead

FOR YOUR SAFETY PLEASE READ THE FOLLOWING TEXT CAREFULLY.

This product is equipped with 2 types of AC mains cable. One is for continental Europe, etc. and the other one is only for U.K.
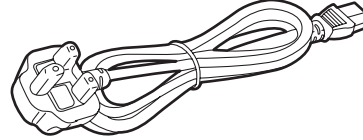
Appropriate mains cable must be used in each local area, since the other type of mains cable is not suitable.

FOR CONTINENTAL EUROPE, ETC.
Not to be used in the U.K.
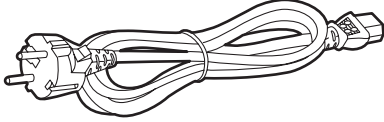
FOR U.K. ONLY

FOR U.K. ONLY

This appliance is supplied with a moulded three pin mains plug for your safety and convenience.
A 13 amp fuse is fitted in this plug.
Should the fuse need to be replaced please ensure that the replacement fuse has a rating of 13 amps and that it is approved by ASTA or BSI to BS1362.

Check for the ASTA mark ⟐ or the BSI mark ♡ on the body of the fuse.

If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.
If you lose the fuse cover the plug must not be used until a replacement cover is obtained.
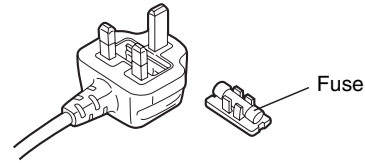A replacement fuse cover can be purchased from your local Panasonic Dealer.

How to replace the fuse
1. Open the fuse compartment with a screwdriver.
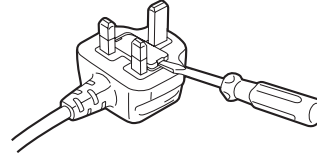
2. Replace the fuse.

Fuse

indicates safety information.

EEE Yönetmeliğine Uygundur.
EEE Complies with Directive of Turkey.

EMC NOTICE FOR THE PURCHASER/USER OF THE APPARATUS

1. Applicable standards and operating environment (AJ-HPD2500E)

The apparatus is compliant with:
- standards EN55103-1 and EN55103-2 1996.11, and
- electromagnetic environments E1, E2, E3 and E4

2. Pre-requisite conditions to achieving compliance with the above standards

<1> **Peripheral equipment to be connected to the apparatus and special connecting cables**
- The purchaser/user is urged to use only equipment which has been recommended by us as peripheral equipment to be connected to the apparatus.
- The purchaser/user is urged to use only the connecting cables described below.

<2> **For the connecting cables, use shielded cables which suit the intended purpose of the apparatus.**
- Video signal connecting cables
  Use double shielded coaxial cables, which are designed for 75-ohm type high-frequency applications, for SDI (Serial Digital Interface).
  Coaxial cables, which are designed for 75-ohm type high-frequency applications, are recommended for analog video signals.
- Audio signal connecting cables
  If your apparatus supports AES/EBU serial digital audio signals, use cables designed for AES/EBU.
  Use shielded cables, which provide quality performance for high-frequency transmission applications, for analog audio signals.
- Other connecting cables (IEEE1394, USB)
  Use shielded cables, which provide quality performance for high-frequency applications, as connecting cables.
- When connecting to the DVI signal terminal, use a cable with a ferrite core.
- If your apparatus is supplied with ferrite core(s), they must be attached on cable(s) following instructions in this manual.

3. Performance level

The performance level of the apparatus is equivalent to or better than the performance level required by these standards.

However, the apparatus may be adversely affected by interference if it is being used in an EMC environment, such as an area where strong electromagnetic fields are generated (by the presence of signal transmission towers, cellular phones, etc.). In order to minimize the adverse effects of the interference on the apparatus in cases like this, it is recommended that the following steps be taken with the apparatus being affected and with its operating environment:

1. Place the apparatus at a distance from the source of the interference.

2. Change the direction of the apparatus.

3. Change the connection method used for the apparatus.

4. Connect the apparatus to another power outlet where the power is not shared by any other appliances.

EU

To remove the battery
Back-up Battery (Lithium Battery)

- For the removal of the battery for disposal at the end of its service life, please consult your dealer.

- SDHC logo is a trademark of SD-3C, LLC.
- "AVCHD" and "AVCHD" logo are trademarks of Panasonic Corporation and Sony Corporation.
- Microsoft®, Windows® and Windows Vista® are registered trademarks or trademarks of Microsoft Corporation of the United States and/or other countries.
- Microsoft product screen shots reprinted with permission from Microsoft Corporation.
- Names of products, brands, etc., appearing in this manual are trademarks or registered trademarks of their respective owners.
- This product is licensed under the AVC Patent Portfolio License for the personal and non-commercial use of the following activities of a consumer but no license is granted or implied for any other use.
  - Encoding video in compliance with the AVC standard (hereafter referred to as "AVC video").
  - Decoding AVC video that was encoded by a consumer engaged in a personal and non-commercial activity.
  - Decoding AVC video that was obtained from a video provider licensed to provide AVC video.
    Additional information may be obtained from MPEG LA, LLC (http://www.mpegla.com).
  - Using this product to make recordings on SD memory cards for distribution to end users for a commercial purpose requires a separate license agreement from MPEG-LA. End user refers to a person or organization using content for private purposes.

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

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

Terminology
- The term "SD memory card" will be used below as a generic for SD and SDHC memory cards.
- A memory card with the "P2" logo (for example the separately sold AJ-P2C064AG) is referred to as a "P2 card."
- A hard disk drive (HDD) is referred to as a "hard disk."
- A continuous video recording created during a single recording is referred to as a "clip."
- The state when the THUMBNAIL and PLAY LIST buttons are off is referred to as the "recording/playback mode." (Refer to page 37.)

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Clip Select Function

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Setup

For Long and Trouble-Free Operation

■ Information on software for this product

1. Included with this product is software licensed under the GNU General Public License (GPL) and GNU Lesser General Public License (LGPL), and users are hereby informed that they have the right to obtain, change and redistribute the source codes of this software.

   To obtain the source codes, go to the following home page:

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

   The manufacturer asks users to refrain from directing inquiries concerning the source codes they have obtained and other details to its representatives.

2. Included with this product is software which is licensed under MIT-License.
3. This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (http://www.openssl.org/).
4. This product includes software which is licensed under OpenBSD License.
5. This product includes PHP, freely available from <http://www.php.net/>.
6. This software is based in part on the work of the Independent JPEG Group.

Details on the above software can be found on the installation CD provided with the unit. Refer to the folder called "LDOC". (Details are given in the original (English language) text.)

■ Panasonic makes no guarantees for your recordings

Please understand that Panasonic makes no guarantees for your recordings in cases where video and/or audio were not recorded as you intended due to problems with this unit, P2 cards, or SD memory cards.

■ What to remember when throwing memory cards away or transferring them to others

Formatting memory cards or deleting data using the functions of the unit or a PC will merely change the file management information: it will not completely erase the data on the cards. When throwing these cards away or transferring them to others, either physically destroy them or use a data deletion program for PCs (commercially available) to completely erase the data. Users are responsible for managing the data on their memory cards.

■ Place of Installation

Do not install this unit in a location exposed to direct sunlight as this may deform the cabinet or damage the LCD screen.

■ Liquid crystal displays

- While 99.99 % or more of the pixels on an LCD screen will function normally, 0.01 % may either be dead or constantly lit (seen as red, blue or green dots). This is not a malfunction.
- There may be some unevenness on the screen depending on the image displayed.
- Wiping or rubbing the LCD screen with a rough cloth may damage it.
- Leaving an unchanging image on the screen for a long period of time may create a temporary afterimage (burn-in).
- LCD response and brightness vary with ambient temperature.
- In a high-temperature and high-humidity location, the LCD panel characteristics may change and result in uneven image quality.

Accessories

Included Accessories

Power cable 1 (AJ-HPD2500P)

2 (AJ-HPD2500E)

CD-ROM 1

◆ **NOTE:**

- Be sure to appropriately dispose of the packing material when you have unpacked the product.
- Consult your supplier regarding purchase of accessories.

Optional Accessories

- Rack mount adapter

  AJ-MA75P

- AVCHD Codec board

  AJ-YCX250G

◆ **NOTE:**

- Do not use optional boards other than the above product.
- Have your supplier install optional boards.

P2HD 5 Year Warranty Repair Program[1]

Thank you for purchasing this Panasonic P2HD device.
Register as a user for this device to receive a special service warranty up to five years of free warranty repairs.

Customers who register as users on the website will receive an extended warranty repair valid for up to five years.

	1st year	2nd year	3rd year	4th year	5th year[5]
P2HD device[2]	Basic warranty[3]	Extended warranty repair[4]			

[1]: Please note that this extended warranty is not available in some countries/regions. [2]: Not all models eligible for extended warranty coverage.
[3]: The basic warranty period may vary depending on the country/region. [4]: Not all repair work is covered by this extended warranty.
[5]: The maximum warranty period may be adjusted depending on the number of hours the device has been used.

Purchase
P2 product
→
Register online
within 1 month
→
"Registration Notice"
e-mail sent

Free 5 years of Warranty Repairs

Make sure to save the "Registration Notice" e-mail during the warranty period.

Details about user registration and the extended warranty: http://panasonic.biz/sav/pass_e

Please note, this is a site that is not maintained by Panasonic Canada Inc. The Panasonic Canada Inc. privacy policy does not apply and is not applicable in relation to any information submitted. This link is provided to you for convenience.

Adjusting Lower Front Panel Tilt

◆**NOTE:**

• Take care to avoid pinching your fingers when adjusting the tilt of the lower front panel.

Opening the lower front panel

1 Raise the lower front panel to open it.
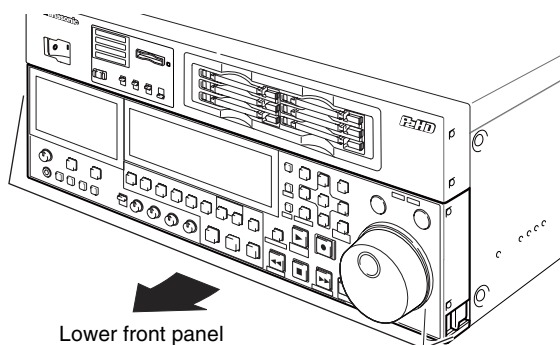
Lower front panel

2 Lock the lower front panel at one of the positions shown below.
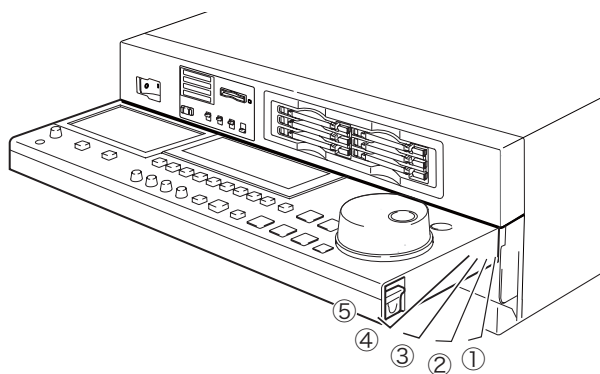
◆**NOTE:**

• The front panel can be adjusted to one of 5 positions.

• When opening the front panel, be sure to secure it at one of the 5 positions.

Closing the lower front panel

1 Pull up the levers at either end of the lower front panel to release the lock.
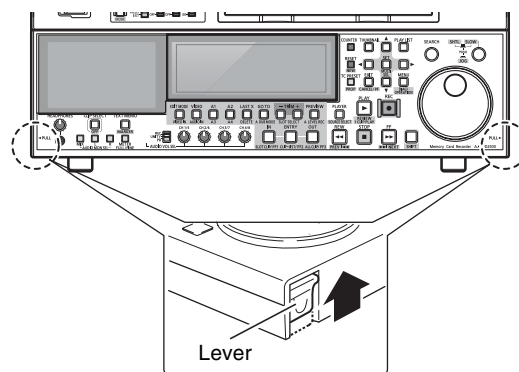
Lever

2 Lower the lower front panel while pulling on the lever to close it.
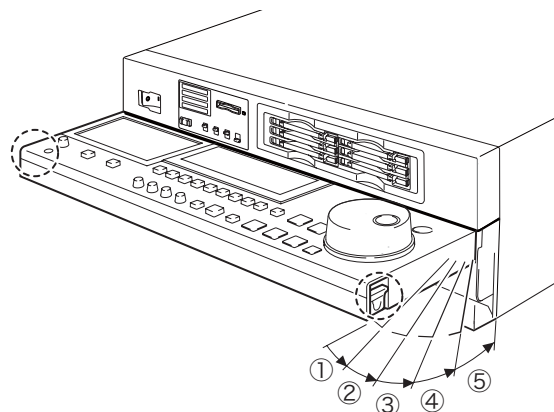
◆**NOTE:**

• When closing the lower front panel, make sure the eSATA, USB HOST and USB DEVICE connector cover is closed.

→Refer to "Closing the eSATA, USB HOST and USB DE-VICE connector cover" (page 17).

Opening the eSATA, USB HOST and USB DEVICE connector cover

1 Open the lower front panel.

2 Press the right end of the cover to release the lock.
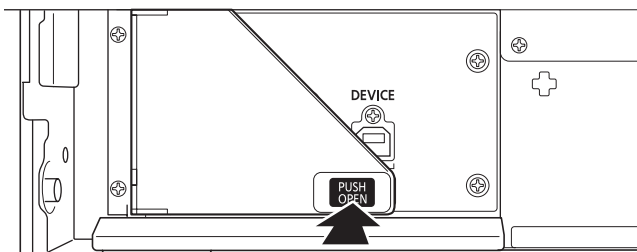
3 As shown below, open the cover to 90°.
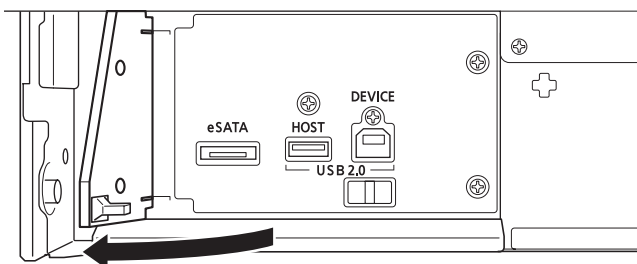
Closing the eSATA, USB HOST and USB DEVICE connector cover

1 Disconnect all connected cables and close the connector cover as shown below.
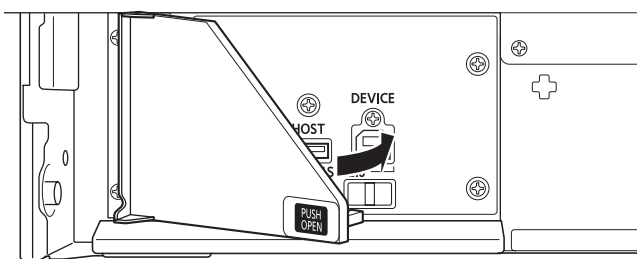
Introduction

Features

The AJ-HPD2500 is a memory card recorder equipped with six P2 card slots and a 4.3-inch color LCD monitor.
It allows you to record and play back audio and video in the compressed DVCPRO HD, DVCPRO50, DVCPRO, DV and AVC-Intra formats on the six P2 cards, to edit P2 card and hard disk video data and edit using an external VTR as a player. In addition, you can use the unit like a conventional editing VTR player. The AJ-HPD2500 comes with the following features.
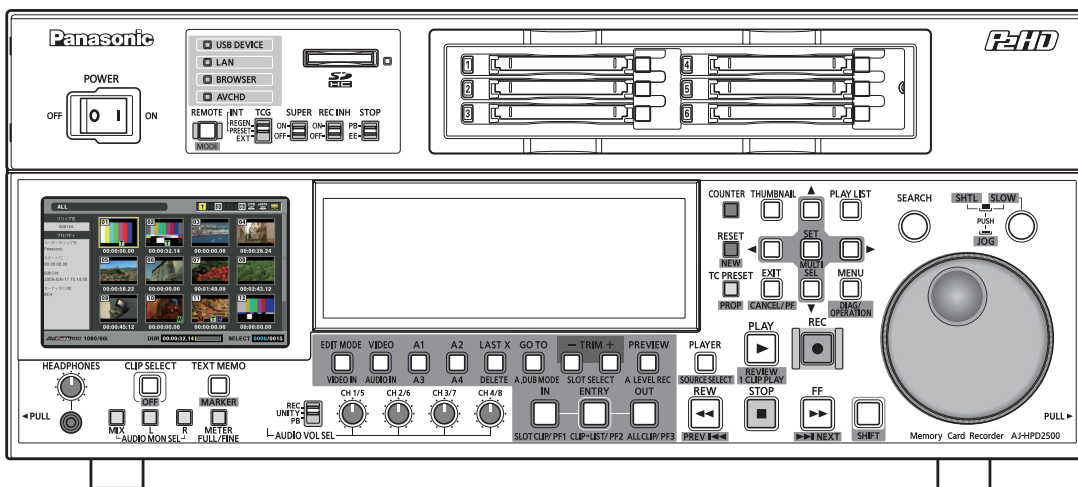
■ Connecting a P2 Card Camera

A P2 card recorded in a P2 camera recorder plugs directly into a PC card slot for immediate access. The P2 card is a semiconductor memory card that Panasonic developed for professional AV use.

■ Dial Jog/Dial Shuttle

The jog provides slow playback at rates between –1.0 to +1.0. The shuttle allows high-speed forward and reverse playback up to 100 times normal speed. At speeds up to 10x, the sound is also audible.

■ Thumbnails for Managing Clips Visually

The 4.3-inch color LCD monitor on the front panel displays clips (thumbnails) that represent P2 card content. Settings can be made to show only specific clips in the thumbnail screen.

Clips selected from the thumbnail list can be played back immediately, shot marks can be added, file data regarding the clips can be confirmed and edited and other clip management operations are also available.

<About clips>

A clip is a single data item that contains video, audio, metadata and other additional information. Normally, a clip is one shot generated from the start of recording until recording stops. However, when a shot spans multiple P2 cards, the video on each card is handled as an independent clip. The image at the start of recording appears in the thumbnail screen as a representative image of that clip.

■ Expanded high-speed hard disk interface

● High-speed eSATA interface

The unit now supports hard disks using the eSATA interface, which is faster than the regular USB interface. This interface provides faster backup of video data on a P2 card to hard disk and can restore hard disk data to a P2 card.

● Playback (best effort) and playlist editing of hard disk video data

Video data on a hard disk can be viewed as thumbnails or a smooth[*1] video stream. A protective feature ensures a continuous audio output even if reading performance drops due to use of a slow hard disk or through interference such as vibrations.

Playback of hard disk video data[*1] enables editing of video on a hard disk in the same way as editing video on a P2 card.

*1: This does not guarantee playback without frame skipping.

■ Gigabit Ethernet network supported

● FTP client

In the thumbnail screen, this network allows to select video stored on a P2 card or external hard disk and transfer it at high speed via an FTP server on the Internet. Video stored on an FTP server can be displayed and selected as a thumbnail for downloading to a P2 card or external hard disk. And SD memory card data can be sent by the card to and from an FTP server. The network also enables transmission of data encrypted using SSH.

● Browser

A browser mode enables the user to browse web sites with web page authentication required for connecting to the Internet.

● FTP server

The unit can operate as an FTP server allowing a PC or other FTP client to load video files stored on P2 cards or in an external hard disk.

● SAMBA server

When connected to a Windows PC or other network PC, the unit can operate as a SAMBA server to load video files stored on P2 cards or in an external hard disk.

● HTTP server

Using the unit as an HTTP server allows you to view lists of video data from a browser on a PC, view metadata, and play back proxy data.

■ Editing and GUI

● Independent audio and video editing

Any video and audio (4ch) tracks can be independently selected for editing.

● Insert editing and overwrite editing

Two types of editing are available: insert editing, in which new events are added between two editing events and overwrite editing, in which a new event overwrites an event.

● Two screens for editing material and playlist video

Editing material (player) and playlist (recorder) video appear in two screens at all times. A timeline indicating editing status appears simultaneous with these screens for intuitive editing.

● Capability to edit both tape and hard disk material

Use of a VTR or similar device with an RS-422A interface as player makes possible linear-like editing (deck-to-deck editing). Video data transferred to an eSATA or USB hard disk can also be edited.

● Function for adjusting audio level (variable) of any section

Audio level adjustments make it possible to operate the audio playback level for the required audio section to adjust the audio level (variable).

● Display and playback of player thumbnails

A player using P2 cards or a hard disk can display player thumbnails. Thumbnails can be set to limit the clips used by the player to the required clips.

■ Time code/Player function for editing provided

This unit has a built-in TCG (time code generator) and TCR (time code reader). In addition to the internal time code, external time code input or a VITC input signal can be

recorded as the time code.

The unit can also be used as a player for an editing system using RS-422A.

■ Compatible with HD and SD

This unit can record and play back HD and SD signals.

It can also handle analog video and SDI input and output.

■ Audio AES/EBU input and output supported (16-bit, 48 kbps/8ch)

The unit comes with a 8-channel AES/EBU input and output interface as standard. This enables interfacing with digital audio equipment and digital VTRs using a 48 kHz sampling rate.

In addition, 8-channel PCM audio where each channel (HD-SDI·AES/EBU has 8 independent channels while the analog interface has 2 independent channels) can be recorded separately or mixed.

■ AVCHD option (AJ-YCX250G)

Installation of the AJ-YCX250G, an optional AVCHD codec board, will enable recording and playback of the AVCHD format on SD memory cards.

This makes the following possible.

* Dubbing AVCCAM recorded clips onto a P2 card in the DVCPROHD or AVC-Intra format, playlist editing of such clips and ingesting such clips to non-linear editor.
* Dubbing P2 card clips recorded on a P2HD camera-recorder to an SD memory card in the AVCHD format.
* HD-SDI or other external input can be recorded as DVCPROHD or AVC-Intra to a P2 card simultaneous with recording of the same input in AVCHD format video on an SD memory card.

■ Waveform and vector display

The LCD screen can display either video waveform or vector waveform.

During up-conversion, a waveform is displayed after up-conversion.

◆ **NOTE:**
* A waveform is not displayed when there is no input signal.

■ HD-SDI remote

When the unit is connected to a camera-recorder with an external device control, start and stop of recording of HD-SDI signal input can be automatically controlled through recording start and stop signals in the input.

■ USB keyboard

A USB keyboard can be connected to enable the following functions.

● Entry and editing of clip metadata

● Network setup, operation on browser

◆ **NOTE:**
* Some USB keyboards may not enable normal input.

■ VANC data recording/playback function (59.94 Hz, 50 Hz only)

Recording and playback of ancillary data (VANC data) of up to 5760 bytes per frame conforming to SMPTE 291M is superimposed on the vertical blanking area of video.

■ Menu-based Setup

Perform setup while viewing the setup menus on the 4.3-inch color LCD monitor of this unit or a monitor TV display.

■ AVC-Intra standard feature

The AVC-Intra codec is provided as a standard feature.

An Intra-Frame compression format based on the H.264 video compression standard makes possible a high compression rate and high-quality image.

The AVC-Intra codec for this product is compatible with the following two formats.

AVC-Intra 100: High-quality video supporting full-bit HD

AVC-Intra 50: Low-rate and low-cost operation

■ Built-in up/down/cross converter for output and up converter for input

The AJ-HPD2500 provides a built-in up/down/cross converter for output as standard. It also up-converts composite and SD-SDI input signals to record in the same HD format as the system.

◆ **NOTE:**
* The cross converter function is not available during up-conversion recording.
* SD closed caption signals during up-conversion recording are recorded in the 608 HD (VANC) signal format (59.94 Hz only).
* Closed caption signals are not output during playback with down- and cross-conversion.
* Nor are closed caption signals output during playback of up-converted SD signals.

■ Frame rate conversion

Recording input from variable frame-rate cameras at 24PN (Native), the unit is also capable of playing back cards recorded at 24 fps and converting the output to 1080/24 PsF. It can also record input from a variable frame-rate camera at 25PN (Native).

◆ **NOTE:**
* Do not use cards that have been edited or contain clips shot in different formats as the loss of management data may prevent normal playback.

■ Native recording

The unit provides support for native recording, a mode that records only active frames. This provides longer recording time when a VariCam, AJ-HPX2000/2100 or AJ-HPX3000 is connected to the HD-SDI IN connector. Variable frame rate (VFR) recording becomes possible by connecting a VariCam.

● Native recording defined

Native recording extracts only the active frames during 1080i AVC-Intra recording as well as 720P DVCPRO HD and AVC-Intra recording. At 720P, this lengthens the recording time 2 to 2.5 times over pull-down recording. During native recording at a 59.94 Hz or 50 Hz setting in setup menu No. 25 (SYSTEM FREQ), the unit produces pull-down output.

Example of 1080-24PN (Native)

Camera video	A		B		C		D	
2:3 pull-down	Ao Ae	Bo Be	Bo Ce	Co De	Do De
Native recording	A	B		C	D	
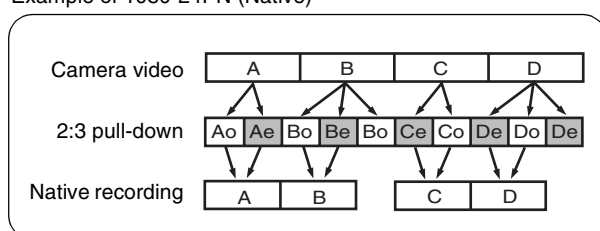
Example of 720-24PN (Native)

Camera video	A		B		C		D	
2:3 pull-down ★ Active frames	A★ A	B★ B B	C★ C	D★ D D
Native recording	A	B		C	D
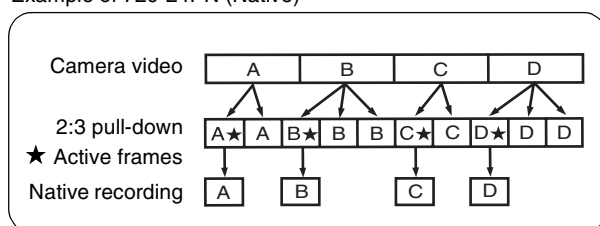
■ 4U rack mount

Use the optional rack mount adapter (AJ-MA75P) to place the 4U-size unit in a 19-inch rack.

Control Reference Guide

Audio and Video Controller
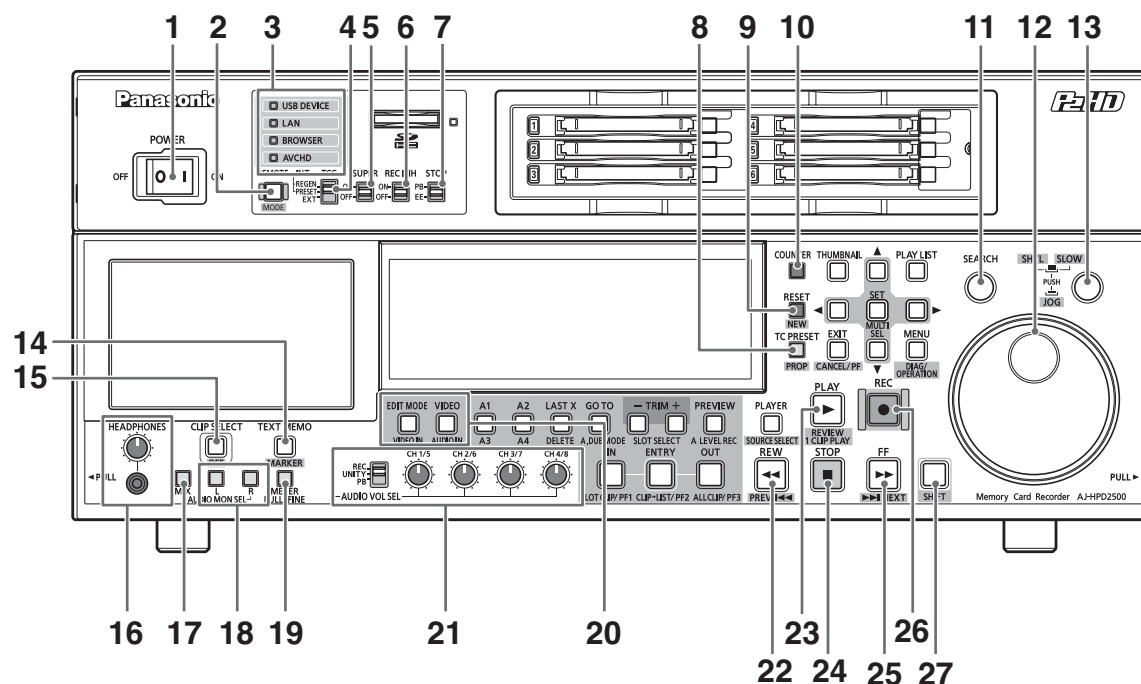
1. POWER switch (|/○)

Turns the power on and off.
Set the switch to "|" to turn it on.

2. REMOTE button (REMOTE indicator)

REMOTE button

Press to enable control of this unit from an external device.

REMOTE button is on:	This unit can be controlled via the 9-pin remote, RS-232C, parallel connector, or camera recorder.

MODE (SHIFT+REMOTE) button

Press the MODE and SHIFT buttons simultaneously, and the mode selection screen appears on the display panel.
Select the USB device mode to connect the unit to a PC, the LAN mode to use the unit as a network server, the browser mode, or the AVCHD mode (available only when an optional board is installed).

→Refer to "Using USB or eSATA Connectors" (page 116)
→Refer to "Connecting This Unit to a Network" (page 130)

→Refer to "Operating the AVCHD Thumbnail Screens" (page 152)

3. Mode indicators

A lamp corresponding to the currently selected mode lights up.

4. TCG switch

INT REGEN:	Synchronizes the internal time code generator with the time code read from the P2 card. Use setup menu No. 505 (TCG REGEN) to select whether to make TC or UB the REGEN.
INT PRESET:	Uses the internal time code generator of this unit. Settings can be preset on the operation panel and the remote control. →Refer to "Time Code, User Bit and CTL" (page 195)

EXT:	Uses the external time code input from the TIME CODE IN connector or VITC, SLTC or SVITC video input signals. Select in setup menu No. 507 (EXT TC SEL).

5. SUPER switch

Switches the super output as follows.

ON:	Outputs superimposed data such as time codes to the LCD monitor, SD SDI MON connector or the ANALOG VIDEO MON connector.
OFF:	Does not output any superimposed information.

6. REC INH switch

Select to enable or disable recording to P2 cards.

ON:	The REC INH lamp on the display panel lights indicating that recording is disabled.
OFF:	Turns off the REC INH function to enable P2 card recording.

7. STOP switch

Press to select signals in stop mode.

PB:	Outputs signals played back from a P2 card.
EE:	Outputs input signals selected with the VIDEO IN (SHIFT + EDIT MODE) / AUDIO IN (SHIFT + VIDEO) buttons.

8. TC PRESET button

Set the TC or UB value. To make a setting, first press this button to change the flashing digits.
Note that this button is not available in thumbnail mode, USB device mode, LAN mode and browser mode.

9. RESET/NEW button

RESET button

Press this button when the LCD panel counter is in the CTL mode to reset the counter display to [0:00:00:00]. Hold down the TC PRESET button and press this button when the LCD panel counter is in the TC mode (read time code) or UB mode (user bit of the read time code) to reset the time code generator.
When using the on-screen keyboard, use this button to delete all text, IN/OUT points in playlists, etc.

NEW (SHIFT + RESET) button

Use these buttons in the playlist.
→Refer to "Creating a New Playlist" (page 91).

10. COUNTER button

Press to switch the counter display of the LCD panel. Each press of this button changes the counter display as follows: [CTL (relative position from the beginning)] → [TC (read time code)] → [UB (user bit of the read time code)].

11. SEARCH button

Press this button to engage the search mode. Set the search dial to the SHTL mode, turn it to the desired position and press this button to start playback at the speed set with the search dial.

12. Search dial

Use to search and check video. Each time you press the dial, the SHTL (Shuttle)/SLOW mode and the JOG mode are engaged alternatively. The respective indicator lamp lights. When the power is turned on, the search dial will not operate unless it is first returned to the STILL position.

13. SHTL/SLOW button

Press this button when the search dial is in SHTL (shuttle)/SLOW mode to toggle between SHTL (shuttle) and SLOW modes.

14. TEXT MEMO/MARKER button

TEXT MEMO button

Press this button during recording and playback where you wish to enter a text memo. In the thumbnail screen, press this button to add a text memo to a clip thumbnail (normally at the start of a clip).
→Refer to "Attaching Text Memos" (page 61).

MARKER (SHIFT + TEXT MEMO) button

In the thumbnail screen, hold down the SHIFT button and press this button to turn the marker of the clip at the pointer position on and off.
→For details, refer to "Attaching Shot Marks" (page 62).

15. CLIP SELECT button

Press this button to play back video clip by clip.
→For details, refer to "Clip Select Function" (page 148).

16. HEADPHONES

Connect stereo headphones to the HEADPHONES jack to monitor the sound during recording and playback. Use the headphone volume control knob to adjust headphone volume.

Use setup menu No. 712 (MONI OUT) to determine whether or not MON L/R output connector output should be controlled by this knob.

17. AUDIO MON SEL MIX button

Switches audio mix signal output by the MON L/R connectors.

Hold down this button and press the AUDIO MON SEL L button to switch signals output from the MON L connector as follows: [CH1 + CH2] → [CH3 + CH4] → [CH5 + CH6] → [CH7 + CH8] → [Mix cancelled]. Use the AUDIO MON SEL R button to switch the mixed signals output by the MON R connector.

18. AUDIO MON SEL L/R buttons

Switches the audio signals that are output to the MON L/R connectors. Each press of the button switches the signals output to the MON L/R connectors as described below.

Pressing only the AUDIO MON SEL button:	CH1 → CH2 → CH3 → CH4 → CH5 → CH6 → CH7 → CH8 → CH1
Holding down the SHIFT button and pressing the AUDIO MON SEL button:	CH8 → CH7 → CH6 → CH5 → CH4 → CH3 → CH2 → CH1 → CH8

The L/R lamps in the audio level meter indicate which signal is selected. Steady L/R light indicates that channels specified in Menu No.767 (METER SELECT) are selected. Flashing L/R light indicates that channels not specified in Menu No.767 (METER SELECT) are selected.

19. METER FULL/FINE selector button

Switches the scale of the audio level meter.

FULL mode:	Selects the standard scale (− ∞ to 0 dB range)
FINE mode:	Selects a 0.5 dB increment scale. "━" shows the reference level, while "●" shows increments of 1 dB. Use setup menu No. 776 (REF LEVEL) to set the reference level.

20. VIDEO IN (SHIFT + EDIT MODE) / AUDIO IN (SHIFT + VIDEO) buttons

Switch between video and audio input signals.

VIDEO IN:	Press the VIDEO IN (SHIFT + EDIT MODE) button to open a screen for selecting input signal. Pressing the button when the screen is open enables selection of CMPST, HDSDI, SD SDI, 1394 or SG input. When SG is selected, the signal switches to the internal signal selected in setup menu No. 601 (VIDEO INT SG). Selecting composite or SD SDI when setup menu No. 020 (SYS FORMAT) is set to 1080i or 720p automatically up-converts SD to HD when recording. The unit indicates this as CMPST (U/C) and SDSDI (U/C).
AUDIO IN:	Press the AUDIO IN (SHIFT + VIDEO) button to open a screen for selecting input signal. Pressing the button when the screen is open enables selection of ANALOG, AES/EBU, SDI or SG input.

◆ **NOTE:**
- The selected input item blinks when there is no input signal.
- Press the input signal selection button once to show the current setting. When you do not want to change the setting, press the EXIT button or wait for 3 seconds to allow the display of the current setting to vanish.

21. AUDIO VOL SEL switch and audio level controls
REC/UNITY/PB switch

REC:	Audio level controls are used for adjusting recording level.
UNITY:	Records and plays back audio signals at a fixed level regardless of the positions of the audio level controls.
PB:	Audio level controls are used for controlling playback level.

Audio level controls

Use these controls to adjust the recording and playback levels of audio signals (CH1/CH2/CH3/CH4/CH5/CH6/CH7/CH8).

→For operation details, refer to "Setup Menu No. 790 (VOL SEL)" (page 189).

22. REW/PREV button

REW button

Press to rewind. Select the speed in setup menu No. 102 (FF. REW MAX).

PREV (SHIFT + REW) button

During playback or while displaying a still picture with JOG/VAR/SHTL, hold the SHIFT button and press this button to move to the beginning of the current or previous clip.

During playback of a recorder in playlist mode, the beginning of the previous video event is located. The operation interrupted by this function resumes when the beginning of a clip is located.

During thumbnail display, hold down the SHIFT button and press this button to move to the first thumbnail.

23. PLAY/REVIEW/1 CLIP PLAY button

PLAY button

Press to start playback.

Press this button and the REC button simultaneously to start recording.

REVIEW (SHIFT + PLAY) button

In playlist mode, hold down the SHIFT button and press this button to review the event at the cursor location (starting 3 seconds before the IN point to 1 second beyond the OUT point).

1 CLIP PLAY (SHIFT + PLAY) button

In the thumbnail display or while displaying a still picture by pressing the SEARCH button in the thumbnail display, hold down the SHIFT button and press this button to play back only the clip at the cursor position or the currently located clip. During playback only the STOP button is available.

24. STOP button

When the STOP switch is set to PB mode, press this button to engage the stop mode to view still pictures. Use setup menu No. 104 (REF ALARM) to determine whether or not this button should flash as a warning alarm when no reference video signal is input.

25. FF/NEXT button

FF button

Press to fast forward. Select the speed in setup menu No. 102 (FF. REW MAX).

NEXT (SHIFT + FF) button

During playback or while displaying a still picture with JOG/VAR/SHTL, press this button to move to the beginning of the next clip.

During thumbnail display, press this button to move to the last thumbnail.

26. REC button

In the stop mode, press this button and the PLAY button simultaneously to start recording. Press this button to check EE mode video and audio on the monitor in the stop mode with the STOP switch set to PB mode.

Press the STOP button to return to the original video and audio.

27. SHIFT button

This button is used in combination with other buttons.

GUI Operations

LCD Monitor   Display Panel
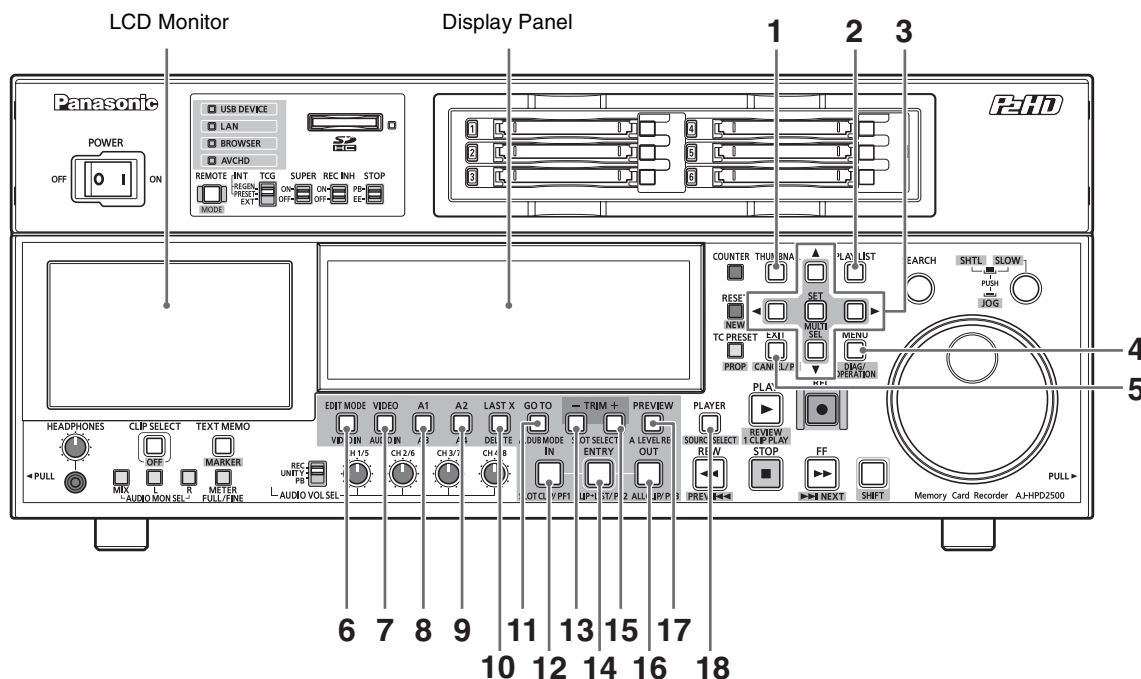
1. THUMBNAIL button

Press this button and the button lights, and the thumbnail screen appears on the LCD monitor. Press again to return to the recording/playback mode and the button goes out.

Setting setup menu No. 051 (GUI OUTPUT) allows you to transfer the thumbnail screen and the playlist screen to the video output.

2. PLAY LIST button

Press to start or end playlist mode.
→Refer to "Playlist Function" (page 78).

3. Cursor buttons (◄ / ► / ▲ / ▼)

The four outer buttons are cursor buttons. Use them to move the cursor in thumbnails, menus, events, etc. The SET button at the center is used to select menu items and clips.

In the thumbnail or playlist screen, hold down the SHIFT button and press a cursor button to move the cursor to the beginning or the end. Or hold down the SHIFT button and press the SET button to select multiple clips or events.

Holding down the SET button in the playlist screen, selects all track events with the same IN and OUT points as the event at the cursor.

4. MENU/DIAG/OPERATION button

MENU button

Press this button to open the setup menu, thumbnail or playlist menus. Press again to return to the previous screen.

→Refer to "Moving Between Screens and Menu Operations" (page 37).
Refer to "Setup" (page 164).

DIAG (SHIFT + MENU) button

When not in the thumbnail or playlist screen, press this button to show information about this unit. Press again to return to the previous screen. However, in the thumbnail or playlist screen, it has the same effect as pressing the OPERATION (SHIFT+MENU) button. Information about this unit includes [VIDEO SYSTEM], [WARNING], [HOURS METER] and [UMID]. Use the SET button or the right and left cursor buttons (◄ / ►) to switch among them.

[VIDEO SYSTEM] screen:	Shows current system frequency, recording format, input and output formats and other information.
[WARNING] screen:	Shows warning information.
[HOURS METER] screen:	Shows the unit serial number, the number of hours it has been on, and the number of times it has been switched on and off.

[UMID] screen: Shows UMID information for the current video.

OPERATION (SHIFT + MENU) button

In the thumbnail and playlist screen (when no menu is displayed), press the SHIFT button and this button simultaneously to show and select the [OPERATION] menu.

5. EXIT/CANCEL/PF button

When the PLAYLIST/ THUMBNAIL buttons are lit:	Press this button to return from clip property, card status or HDD thumbnail to the previous screen. Selecting [EXIT] in a menu has the same effect as pressing the SET button. Press the SHIFT button and this button simultaneously to cancel a selection.
When the PLAYLIST/ THUMBNAIL buttons are off:	Press this button to use the 12 (IN), 14 (ENTRY) and 16 (OUT) buttons as PF1 to PF3, respectively. Press this button again before pressing another button and this mode will close after a short interval. →Refer to "Making changes using the PF buttons" (page 165).

6. EDIT MODE button

Use to select edit mode in the playlist mode.
→Refer to "Buttons Used in Playlist Operations" (page 86).

7. VIDEO button

Use to select material for editing (video) in the playlist mode.
→Refer to "Buttons Used in Playlist Operations" (page 86).

8. A1/A3 button

Use to select target for editing in the playlist mode (audio channels 1 and 3).
→Refer to "Buttons Used in Playlist Operations" (page 86).

9. A2/A4 button

Use to select target for editing in the playlist mode (audio channels 2 and 4).
→Refer to "Buttons Used in Playlist Operations" (page 86).

10. LAST X/DELETE button

LAST X button

In the playlist mode, use this button to return a previous editing operation.
→Refer to "Buttons Used in Playlist Operations" (page 86).

DELETE (SHIFT+LAST X) button

In the thumbnail or playlist screen, press this button to delete the selected clip or event.

11. GO TO/A. DUB MODE button

GO TO button

Hold down this button and press the IN/OUT button to cue up to an IN or OUT point.

◆ **NOTE:**
• Cue up may fail when the time code is not continuous. Be sure to use a continuous time code.

A. DUB MODE (SHIFT + GOTO) button

Press this button to engage the A. DUB mode and record voice-overs.
→Refer to "Recording Voice-Overs" (page 106).

12. IN/SLOT CLIP/PF1 button

IN button

Use this button to perform the following functions during clip playback or when the unit is controlled externally.
• IN+ENTRY
 Press the ENTRY button and this button to set an IN point.
• IN
 Press this button to confirm a set IN point. "--:--:--:--" is displayed when no point has been set.
• IN+RESET
 Press the RESET button and this button simultaneously to delete the current IN point.
• IN+GOTO
 Press the GOTO button and this button simultaneously to cue up to the set IN point.

SLOT CLIP (SHIFT + IN) button

In the thumbnail screen, each simultaneous press of the SHIFT button and this button switches the clip display between a specific slot or selected clip.

PF1 button

In recording/playback mode, press this button after pressing the PF button to start the setup menu operation registered in the PF1 button.

13. TRIM – /SLOT SELECT – button

SLOT SELECT – (SHIFT + TRIM –) button

Hold down the SHIFT button and this button simultaneously to move to the previous recording slot position. Pressing this button when the unit is in slot 1 results in a move to slot 6.

TRIM – button

Use this button to move to a hard disk partition.

→Refer to "Displaying Clip Thumbnails on a Hard Disk" (page 125).

Use this function for trimming.

→Refer to "Buttons Used in Playlist Operations" (page 86).

14. ENTRY/CLIP → LIST/PF2 button

ENTRY button

During clip playback or control of an external device, press the IN or OUT button simultaneous with this button to set an IN or OUT point.

CLIP → LIST (SHIFT + ENTRY) button

Clip load function

→Refer to "Buttons Used in Playlist Operations" (page 86).

PF2 button

In recording/playback mode, press this button after pressing the PF button to start the setup menu operation registered in the PF2 button.

15. TRIM + /SLOT SELECT + button

SLOT SELECT + (SHIFT + TRIM +) button

Hold down the SHIFT button and this button simultaneously to move to the previous recording slot position. Pressing this button when the unit is in slot 6 results in a move to slot 1.

TRIM + button

Use this button to move to a hard disk partition.

→Refer to "Displaying Clip Thumbnails on a Hard Disk" (page 125).

Use this button for trimming.

→Refer to "Buttons Used in Playlist Operations" (page 86).

16. OUT/ALL CLIP/PF3 button

OUT button

Use this button to perform the following functions during clip playback or when the unit is controlled externally.

- OUT + ENTRY
  Press the ENTRY button and this button to set an OUT point.
- OUT
  Press this button to confirm a set OUT point. "--:--:--:--" is displayed when no point has been set.
- OUT + RESET
  Press the RESET button and this button simultaneously to delete the current OUT point.
- OUT + GOTO
  Press the GOTO button and this button simultaneously to cue up to the set OUT point.

ALL CLIP (SHIFT + OUT) button

In the thumbnail screen, press the SHIFT button and this button simultaneously to return the clip display to ALL.

PF3 button

In recording/playback mode, press this button after pressing the PF button to start the setup menu operation registered in the PF3 button.

17. PREVIEW/A LEVEL REC button

PREVIEW button

Press this button to preview (playback from the IN point of set preroll time to 1 sec past the OUT point) footage edited in play list mode.

→Refer to "Buttons Used in Playlist Operations" (page 86).

A LEVEL REC (SHIFT + PREVIEW) button

Adjust level of audio tracks.

→Refer to "Buttons Used in Playlist Operations" (page 86).

Use this button to preview playback of event that is being registered. Before the preview, the event is registered and appears on the time line. When the player is a P2 card, any level changes made using the audio level control during preview when registering an event are recorded.

→Refer to "Setting Audio Level" (page 109).

18. PLAYER/SOURCE SELECT button

PLAYER button

Use this button to control an external device or operate a player in playlist mode.

- In modes other than thumbnail or playlist mode:
  Switches to operation of an external device (RS-422A). Pressing PLAY or other operation button will remote control an external device and display externally input video, audio and time code.
- In playlist mode:
  Switches to player/recorder.
  →Refer to "Preparing for Playlist Creation" (page 90), "Buttons Used in Playlist Operations" (page 86).

SOURCE SELECT (SHIFT + PLAYER) button

- In recording/playback mode:
  Switches to operation of an external device (RS-422A).
- In playlist mode:
  Sets the source (interface) used as a player.
  →Refer to "Playlist Function" (page 78).

Introduction

Panel Control Unit and Card Slots
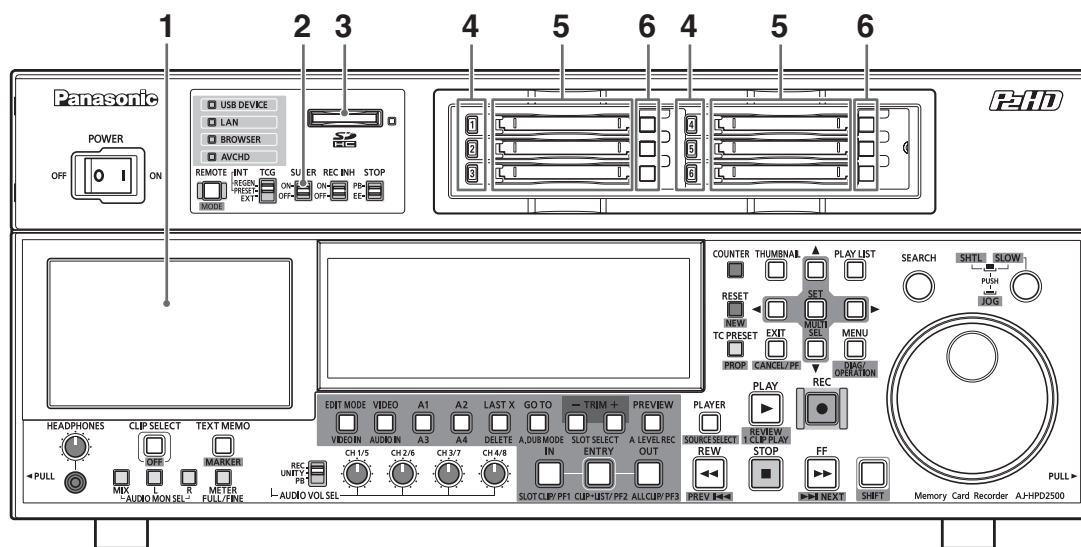
1. 4.3-inch Color LCD Monitor

Use this monitor for thumbnail screens and other screens to facilitate video/audio searches and checks.

2. SUPER switch

Switches the super output as follows.

ON:	Outputs superimposed data such as time codes to the LCD monitor and the output connector selected in setup menu No.005 (SUPER).
OFF:	Does not output any superimposed information.

3. SD/SDHC Memory Card Slot / Access Lamp

Insert the SD/SDHC memory card with the label side facing up and the end with the corner cut off facing in. Push in the card until it locks into place.
To remove the card, first make sure that the green lamp is on or orange lamp is not blinking, then push it in the direction of insertion to release the lock.

→When using an SD/SDHC memory card for AVCHD recording and playback (option), refer to "Using SD/SDHC Memory Cards" (page 72).

◆ NOTE:

<Precautions in using SD/SDHC[1] memory cards>

- Do not insert any cards other than SD/SDHC memory cards.
- This unit uses only SD/SDHC memory cards that comply with the SD/SDHC specifications. Other memory cards such as MultiMediaCard[2] cannot be used. When using a miniSD or microSD card, be sure to use an adaptor dedicated for use with the miniSD or microSD card.

  [1]: The SDHC (SD High Capacity)/miniSDHC/microSDHC memory card is a new standard, established by the SD Card Association in 2006, for large-scale memory cards with capacities above 2 GB.

  [2]: MultiMediaCard (MMC) is a registered trademark of Infineon Technologies AG.

- Cards that will be used on this unit should also be formatted on this unit.
- This unit supports the following SD and SDHC memory card capacities.
  - SD: 8 MB to 2 GB
  - SDHC: 4 GB to 32 GB
- For the latest information not available in the Operating Instructions, visit the P2 support desk at the following Web sites.

  For English: http://pro-av.panasonic.net/

  →When using an SD/SDHC memory card for AVCHD recording and playback (option), refer also to "Using SD/SDHC Memory Cards" (page 72).

4. P2 Card Access LEDs

These LEDs indicate P2 card status.

→Refer to "P2 card access LEDs and P2 card status" (page 42).

5. P2 Card Slots

Insert P2 cards into these slots.

Firmly insert the card until the EJECT button pops out.

After inserting a card, flip the EJECT button to the right.

6. EJECT button

Use this button to remove a P2 card inserted in a P2 card slot. Raise the button and press it in firmly. Do not use the EJECT button when a P2 card access LED flashes orange.

→Refer to "P2 card access LEDs and P2 card status" (page 42).

LCD Panel
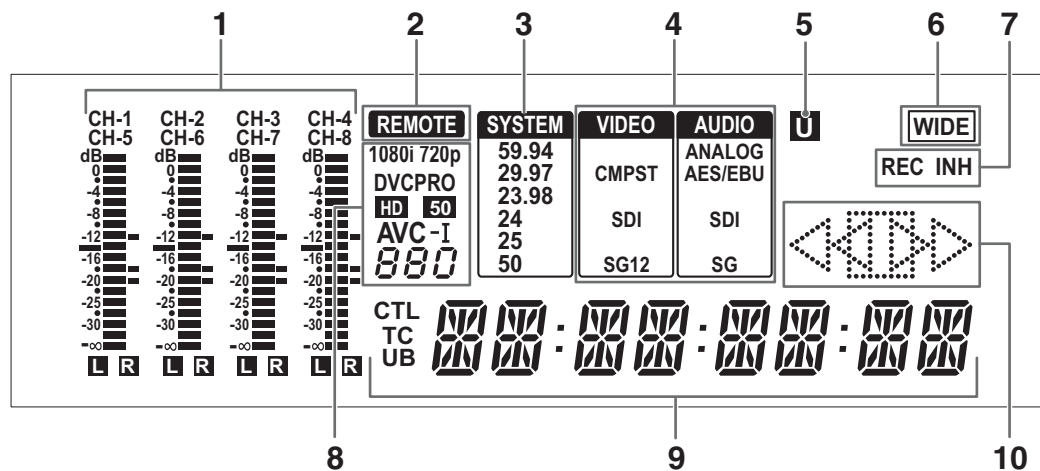
1. Level meter

Indicates the levels of audio signals for CH1, CH2, CH3 and CH4 (when setup menu No.767 (METER SELECT) is set to CH1-4.

When setup menu No.767 (METER SELECT) is set to CH5-8, the levels of audio signals for CH5, CH6, CH7 and CH8 are displayed.

It indicates the input signal level of audio signals during recording and when EE is selected. During playback the meter indicates output signal levels.

Use the METER FULL/FINE selector button to switch the audio level indication to FULL mode or FINE mode.

FINE mode   FULL mode
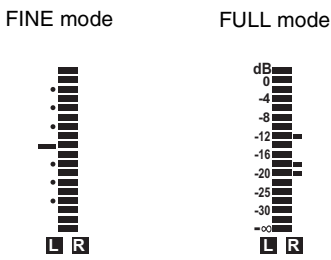
2. REMOTE lamp

Lights when REMOTE status is engaged with the REMOTE button.

3. TV system display

Indicates the selected TV system. Use the SYSTEM setting No. 25 (SYSTEM FREQ) setup menu to switch between 59.94 Hz or 50 Hz.

59.94:	Lights when a 59.94 Hz system frequency is selected.
29.97:	Lights when a 29.97 Hz system frequency is selected.
23.98:	Lights when 23.98, 59-23 Hz system frequencies are selected.
24:	Lights when 24, 60-24 Hz system frequencies are selected.
25:	Lights when 25, 60-25 Hz system frequencies are selected.
50:	Lights when a 50 Hz system frequency is selected.

4. Input selection display

Selected input for VIDEO and AUDIO are indicated. When there is no signal input excluding analog audio, the display blinks.

When SDI input is selected, the display also blinks if the input signal does not match the system format.

VIDEO

CMPST:	Analog composite video input signal
SDI:	Serial digital video input signal
SG:	Internal reference signal

AUDIO

ANALOG:	Analog audio input signal
AES/EBU[*1]:	8-channel digital audio input signal
SDI:	Serial digital audio input signal
SG:	Internal reference signal

*1: "AES/EBU" blinks when no recordable signal, according to the system settings, is input.

5. U lamp

In the EE mode, this lamp lights when an input signal contains UMID information.

Lights during playback when the recording contains UMID information.

Goes off in the playlist mode.

6. WIDE lamp

This lamp lights when 16:9 aspect ratio (wide) data is recorded on a P2 card in SD mode.

Use the setup menu No.645 (WIDE SELECT) to specify whether or not wide data be recorded.

This lamp lights to indicate that 16:9 aspect ratio data is recorded when playing back a clip recorded in SD mode.

This lamp goes off in the playlist mode.

7. REC/REC INH lamp

Indicates selected recording status of a P2 card.

REC lamp on:	Lights in recording mode.
REC INH lamp on:	Lights when recording is disabled (when the REC INH switch on the front panel is lit or all P2 cards are write protected). No recordings can be made on P2 cards when this lamp is on.

8. Format display

Indicates the recording format or the format of video recorded on inserted P2 cards.

9. Counter display

Indicates the CTL, TC and UB counter and time code values.

CTL:	Relative position from the beginning.
TC:	Read time code.
UB:	User bits of read time code.

10. Operating mode

Indicates the operating status of this unit.

▷ : Normal playback and recording

▷ : Playback at speeds lower than 1×

▷▷ : Playback at speeds higher than 1×

▷▷ : FF

◁ : Reverse playback at 1× speed

◁ : Reverse playback at speeds lower than 1×

◁◁ : Reverse playback at speeds higher than 1×

◁◁ : REW

: STILL
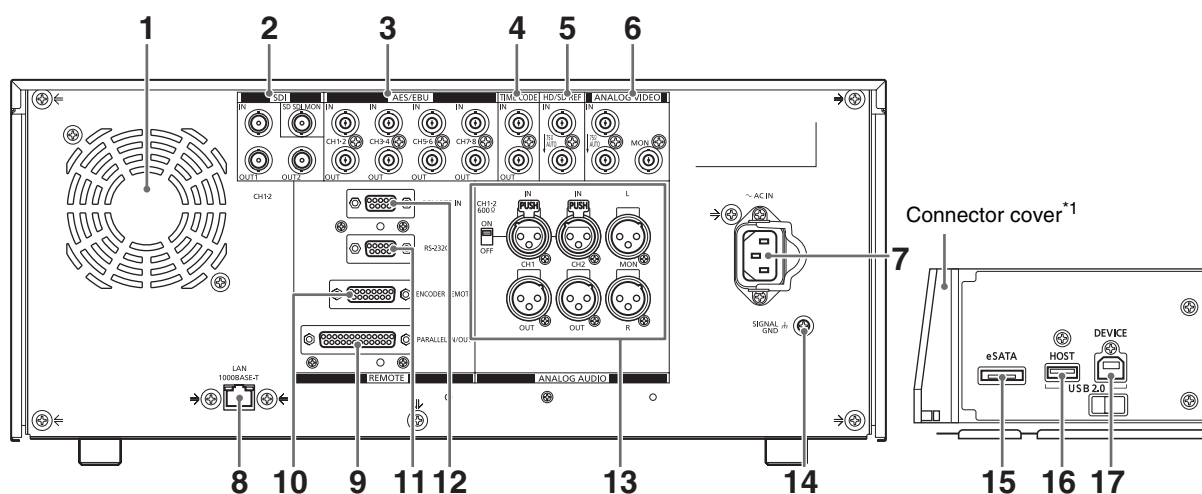
*1: For how to open the connector cover, refer to "Opening the eSATA, USB HOST and USB DEVICE connector cover" (page 17).

1. Fan

Cools this unit. Install the unit making sure that the air vents are not blocked. If the fan stops due to a breakdown, "E-10" will appear on the counter display. While the unit will operate even when the fan has stopped, it should be shut down immediately.

2. SERIAL DIGITAL COMPONENT AUDIO and VIDEO IN/OUT connectors

I/O connector for digital component audio and video data. The SD-SDI MONITOR connector outputs video signals with superimposed data.
Use setup menu No.005 (SUPER) and the SUPER switch at the top of the front panel to turn superimposing on or off.

◆ NOTE:
- The SD SDI MONITOR connector always outputs 480/ 59.94i or 576/50i signals.
- The input digital audio signals must be synchronized with the video input signals. Otherwise, the audio signals will be affected by noise.
- Use a 5C-FB compatible double-shielded cable for connection to the SERIAL DIGTAL COMPONET connector.

3. DIGITAL AUDIO IN/OUT connectors

This connector inputs and outputs digital audio signals compliant with the AES/EBU standard.

◆ NOTE:
- The input digital audio signals must be synchronized with the video input signals. Otherwise, the audio signals will be affected by noise.
- Use double shielded cable for making connections to DIGITAL AUDIO IN/OUT connectors.

4. TIME CODE IN/OUT connector

This connector inputs and outputs time code signals.

TIME CODE IN:	Use to record an external time code onto P2 cards.
TIME CODE OUT:	This terminal outputs the playback time code during playback. During recording, it outputs the time code generated by the time code generator.

◆ NOTE:
- When setup menu No.25 (SYSTEM FREQ) is set to 59-23, 60-24 or 60-25, time code signals cannot be input to the TIME CODE IN connector.
- Use double shielded cable for making connections to TIME CODE IN/OUT connectors.

5. REF VIDEO IN connectors

This connector inputs and outputs HD and SD reference video signals and outputs loop-through signals.

◆ NOTE:
- It is recommended that this unit be used with a system that inputs a reference video signal since video and audio output signals may otherwise deteriorate.
- Input tri-level sync signals with both positive and negative polarities as HD reference video signals. Input signals that meet the input signal and data format.
  → For a reference signal, refer to "Example of Connections in 23.98/24/29.97/25 Hz Mode" (page 45).
- Input a black burst signal that complies with SMPTE170M and ITU624-4 to use for SD reference video signals.
- When no cable is connected to the REF VIDEO loop

through connector, the REF VIDEO IN connector is automatically terminated at 75 ohm. Connecting a cable to this connector releases 75 ohm termination. When a cable is connected to the REF VIDEO loop-through connector, be sure to connect the other end of the cable to a connector.

- At 720P recordings that input or do not input an HD reference signal, the phase of the input signal may be displaced in the recording of the signal.
- When setup menu No. 25 (SYSTEM FREQ) is set to 59-23, 60-24 or 60-25, only playback is synchronized to the HD reference signal.
- Use double shielded cable for making connection to REF VIDEO IN connector.

6. ANALOG VIDEO IN/MON connector

IN connector:	Inputs analog composite video signals. When no cable is connected to the loop through connector, the IN connector is automatically terminated at 75 ohm. Connecting a cable to this connector releases 75 ohm termination.
MON connector:	Outputs analog composite monitor video signals.

◆ NOTE:
- Use double shielded cable for making connections to ANALOG VIDEO IN/MON connectors.

7. AC IN socket

Connect the supplied power cord to a power outlet.

8. LAN connector

Use this connector to connect to a 1000BASE-T/ 100 BASE-TX/10BASE-T network.

→Refer to "Connecting This Unit to a Network" (page 130).

◆ NOTE:
- Use a shielded cable for a connection to the LAN connector.
- A green LED lights to indicate that the LAN link is established in100BASE-T mode. An orange LED blinks during data transfer.

9. PARALLEL IN/OUT connector

This is a 25-pin parallel remote connector.
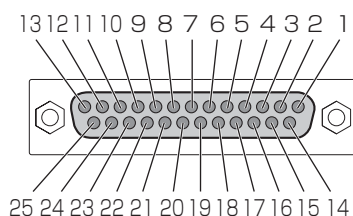
Pin No.	Signal
1	PLAY COMMAND
2	STOP COMMAND
3	FF COMMAND
4	REW COMMAND
5	REC COMMAND
6	—
7	SHTL 0.0 COMMAND
9	—
10	CLIP SELECT OFF COMMAND
11	1 CLIP PLAY COMMAND
12	+10 V or more, +300 mA max.
13	PLAY STATUS
14	STOP STATUS
15	FF STATUS
16	REW STATUS
17	REC STATUS
18	EJECT STATUS
19	STAND BY ON STATUS
20	—
21	—
22	OPERATION ENABLE STATUS
23	CLIP SELECT STATUS
24	—
25	GND

◆ NOTE:
- Use COMMAND at TTL level, low active (negative logic) and of electrical signals with an edge of 100 msec or more.
- STATUS outputs open collector and sync current up to 6 mA.
- OPERATION ENABLE STATUS becomes active when playback from PARALLEL REMOTE is available with the setup menu 213 EXTENDED CMD set to ON.
- OPERATION ENABLE STATUS becomes active at the REMOTE status with the setup menu 213 EXTENDED CMD set to OFF.
- Use shielded cable for making connections to PARALEL IN/OUT connectors.

10. ENCODER REMOTE connector

Connect an external encoder remote controller to adjust video output signal settings.
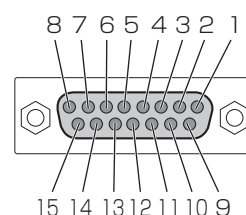
Pin No.	Signal
1	FRAME GROUND

4	REM(G)
7	REM RX(X)REMOTE CONTROL PROTOCOL RECEIVE
8	REM COMMANDREMOTE CONTROL PROTOCOL TRANSMIT
14	REM RX(Y)REMOTE CONTROL PROTOCOL RECEIVE
15	REM TX(Y)REMOTE CONTROL PROTOCOL TRANSMIT

◆ **NOTE:**
- The ENCODER REMOTE connector supports digital signals only.
- Use shielded cable for making connection to ENCODER REMOTE connector.

11. RS-232C connector

Use this connector to control this unit from a PC or other device.

Pin No.	Signal
1	—
2	TXD
3	RXD
4	DSR
5	SG
6	DTR
7	CTS
8	RTS
9	—
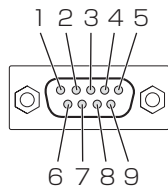
◆ **NOTE:**
- Use double shielded cable for making connection to RS-232C connector.

12. REMOTE connector

This unit can be connected to an external controller to enable remote operation of the unit or connect and control an external device.

RS-422A REMOTE(9P)

Pin No.	Signal
1	FRAME GROUND
2	TRANSMIT A
3	RECEIVE B
4	RECEIVE COMMON
5	—
6	TRANSMIT COMMON
7	TRANSMIT B
8	RECEIVE A
9	FRAME GROUND
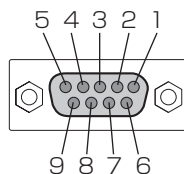
◆ **NOTE:**
- Use shielded cable for making connection to REMOTE connector.

13. ANALOG AUDIO connectors

Inputs and outputs analog audio signals.

CH1/CH2 IN connector:	Analog audio input connectors. A switch permits switching the input impedance of CH1 and CH2.
CH1/CH2 OUT connector:	Analog audio output connectors. Outputs signal selected in setup menu No.750 (A CH1/2 SEL).
MON L/R connector:	Analog audio output connectors. During playback, these connectors output the audio signals (CH1, CH2, CH3, CH4, CH5, CH6, CH7 and CH8) that are selected with the AUDIO MON SEL buttons.

14. SIGNAL GND connector

Connect this connector to the signal ground connector of connected devices to lower noise.
This is not a safety ground connector.

15. eSATA connector

Enables connection of a hard disk drive with an eSATA connector using the unit as host device.
→Refer to "Using This Unit With a Hard Disk" (page 118).

16. USB 2.0 HOST connector (Type A)

Connect P2 store and USB 2.0 compliant hard disk drives for use in the USB host mode.
→Refer to "Using USB or eSATA Connectors" (page 116).

17. USB 2.0 DEVICE connector (Type B)

Connect personal computers and other devices for use in the USB device mode.
→Refer to "Using USB or eSATA Connectors" (page 116).

◆ **NOTE:**
- Use double shielded cable for making connections to USB 2.0 connectors.

Moving Between Screens and Menu Operations

Operating Modes

This unit provides the three operating modes described below. Use the THUMBNAIL and PLAY LIST buttons to select these modes. Lamps indicate which mode is currently engaged.

There is also an external control mode for controlling externally connected devices. The figure below shows a schematic diagram of these modes.

Recording/playback mode	Displays video and performs recording or playback.
Thumbnail mode	Shows thumbnails of clips and manages clips.
Playlist mode	Creates playlists.
External control mode	In this mode, the unit controls an external device connected to the REMOTE connector and monitors audio and video from this device.
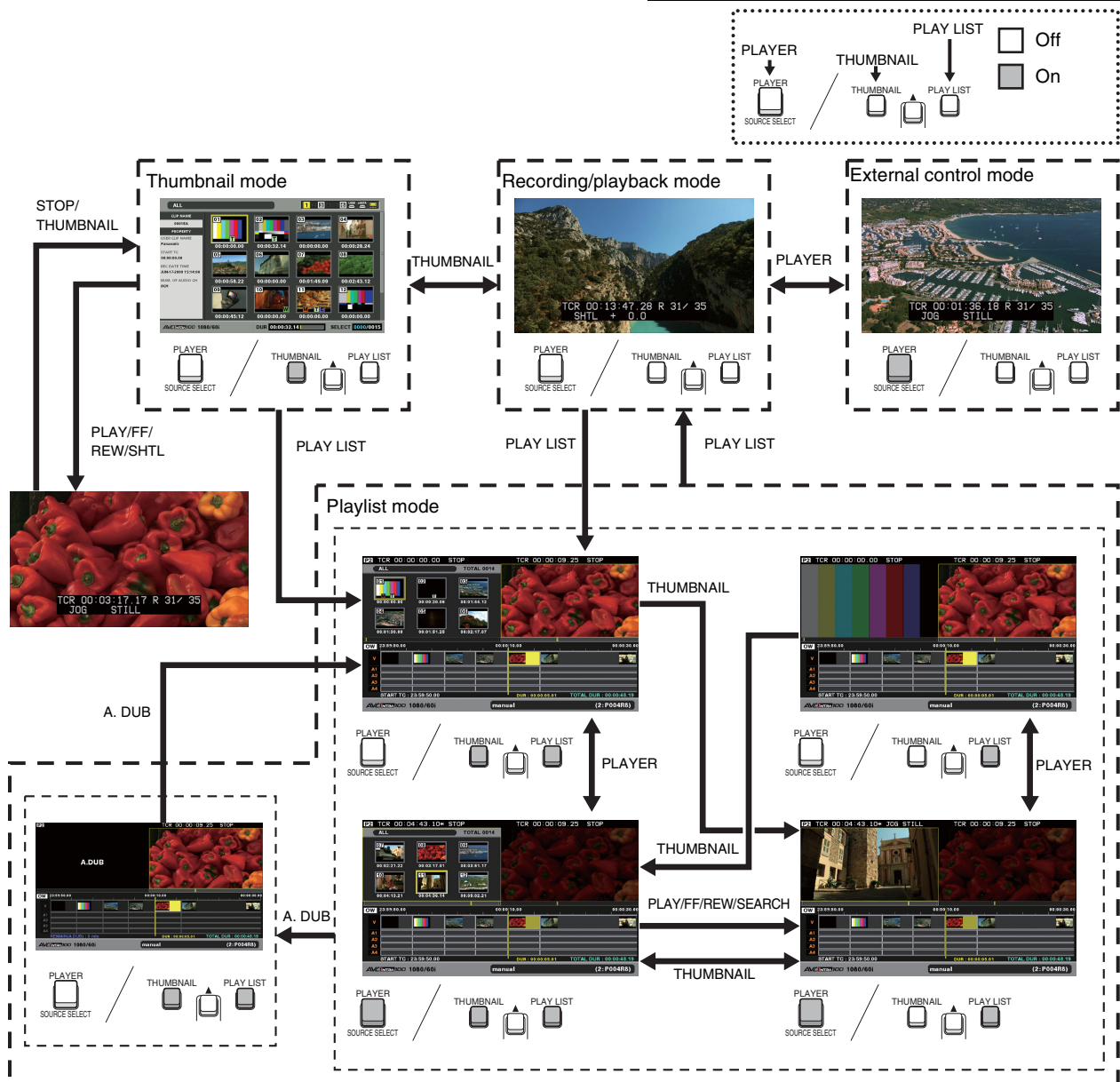
Menu Operations

In the playlist or thumbnail mode, press the MENU button to open the menu.

In the recording/playback mode, the setup menu appears.

→Refer to "Setup" (page 164).

To perform menu operation, proceed as follows.
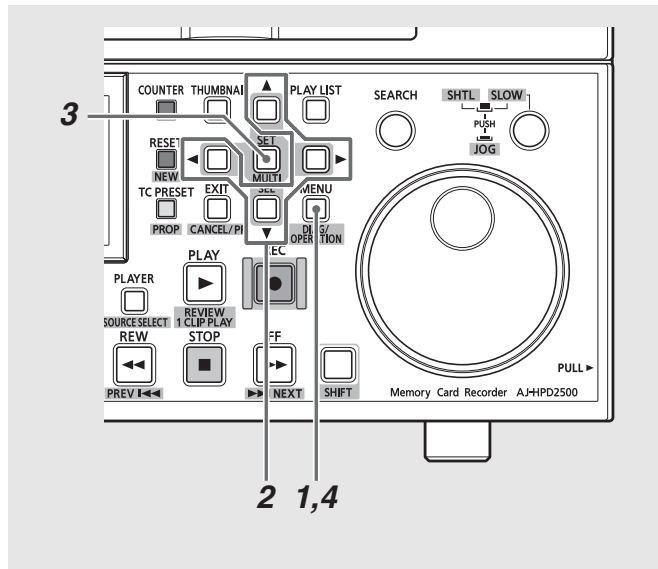
1 Press the MENU button to open the menu.

2 Use the cursor buttons to place the cursor on menu items.

► appears when a lower level menu exists.

◆ **NOTE:**

• Use the ▲ and ▼ buttons to move the cursor up and down.

• Press the ► button or the SET button to open submenus.

• Press the ◄ button or the EXIT button to return to a higher level.

3 Press the SET button.

◆ **NOTE:**

• Some menu items may display a confirmation dialog.

• Use the cursor buttons to select a process and press the SET button.

• A check mark appears at the beginning of the process set by the SET button.

4 Press the MENU button to exit the menu.

◆ **NOTE:**

• Some menu items, when selected, will automatically return you to the previous screen.

Using the On-screen Keyboard

Using the Full Keyboard

The full keyboard appears when necessary.

Move the cursor to the character you want to enter and press the SET button.

Use the cursor buttons to move the cursor.
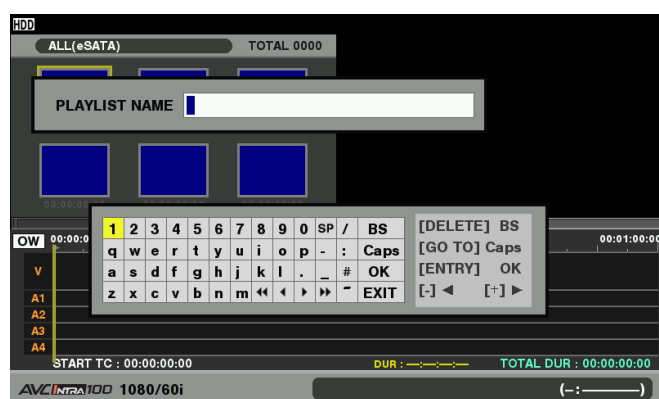
The keyboard keys have the functions listed below.

Key	Function	Shortcut keys
BS	Deletes one character	SHIFT+LAST X
Caps	Toggles between upper and lower case	GO TO
OK	Saves made entries and closes the on-screen keyboard	ENTRY
EXIT	Cancels made entries and closes the on-screen keyboard	EXIT
◄◄	Moves the cursor to the first character	SHIFT+REW
◄	Moves the cursor 1 character space back	–
►	Moves the cursor 1 character space forward	+
►►	Moves the cursor to the location after the last character	SHIFT+FF

◆ **NOTE:**

- The RESET button deletes all entered characters.
- When you press the shortcut EXIT button, a confirmation message appears. Select [YES] and press the SET button to close the on-screen keyboard.

Using the Ten Keypad

The ten keypad appears when necessary.

Move the cursor to the character you want to enter and press the SET button.

Use the cursor buttons to move the cursor.
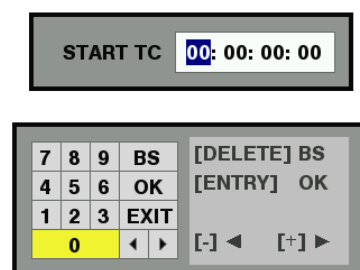
The keypad keys have the functions listed below.

Key	Function	Shortcut keys
BS	Deletes one character	SHIFT+LAST X
OK	Saves made entries and closes the soft keyboard	ENTRY
EXIT	Cancels made entries and closes the soft keyboard	EXIT
◄	<Decimal entries> Moves the cursor 1 character space back <Time code entries> Moves the cursor 2 character spaces back	–
►	<Decimal entries> Moves the cursor 1 character space forward <Time code entries> Moves the cursor 2 character spaces forward	+

Using a USB Keyboard

Connect a USB keyboard to the USB HOST terminal, select a full keyboard or ten keypad menu to enable input from a USB keyboard.

Selecting keyboard layout

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [THUMBNAIL] – [SET UP] – [KEYBOARD].

4 Press the SET button.
This opens a menu for keyboard setup.

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

◆ **NOTE:**
• Keyboard input is limited to alphanumeric characters.
• Some keyboards may not operate normally.

Recording, Playback and P2 Card Handling

Insert a P2 Card

◆ **NOTE:**
- When you use this unit for the first time, be sure to set the internal clock in setup menu No. 069 (CLOCK SET) (page 175).

1 Turn on the POWER switch of this unit.

2 Insert a P2 card in a P2 card slot, and push it in until the EJECT button pops out.
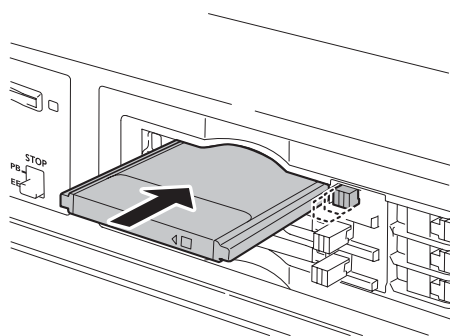
3 Flip the protruding EJECT button to the right.
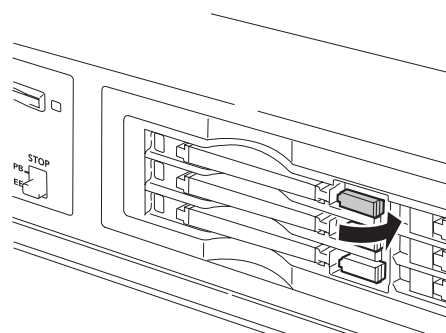
- The P2 card access LEDs on this unit show P2 card status when a P2 card is inserted.
  →For details on P2 card status, refer to "P2 card access LEDs and P2 card status" (page 42).

Recording and Playback

To start recording after a stop in the recording mode, press the REC ⬤ button and the PLAY ▶ button simultaneously. Recording starts on the P2 card whose access LED lights orange. Press the STOP ⬛ button to stop recording. Press PLAY ▶ to start playback.
Recording cannot be started from the thumbnail/playlist mode.

◆ **NOTE:**
- The P2 card access LED for a slot where a P2 card is inserted during playback of a previously inserted card will remain off and the second P2 card is not recognized. The second P2 card is recognized when playback ends.
- While a clip is selected, a newly inserted P2 card will not be recognized. The recorder will stay in this condition until the selected clip is cancelled.

- A P2 card inserted in another slot during recording of a previously inserted card will cause the P2 card access LED to flash and the card will be recognized. Do not remove the P2 card from the slot while it is being recognized.
- Removing or inserting P2 cards that are not being recorded during recording on other cards may disrupt EE audio after recording but will not affect the recording.
- P2 cards are played back and recorded in the following slot order: 1 → 2 → 3 → 4 → 5 → 6 → 1
- When the power is turned on and the slot selected for recording at the last power off contains the same P2 card, that slot will again be selected for recording. If the slot does not contain a P2 card or contains another P2 card, a card in a slot with the lowest number will be selected for recording.
- When a P2 card becomes full during recording, a slot with a higher number that contains a card with free space will be selected for recording.

<Precaution in using P2 cards>
- Format P2 cards only on a P2 card device.

P2 card access LEDs and P2 card status

P2 card access LED	P2 card status
Green light	Reading and writing are possible.
Orange light	Reading and writing are possible. The card is selected for recording (including loop recording).
Flashes orange	Reading or writing is being performed.
	The unit is in USB DEVICE mode and is accessing a P2 card.
	The unit is in LAN mode, and a P2 card can be accessed or is being accessed.

◆ NOTE:
• Do not turn the unit off or remove a P2 card during recording or when the LED flashes orange.

Flashes rapidly in orange	P2 card is being recognized.
Flashes green	The P2 card has no remaining memory capacity. Available only for reading.
	The write-protection switch on the P2 card is set to [PROTECT]. Available only for reading.
Off	The P2 card is not properly formatted. Reformat the card on this unit.
	This card cannot be used in this unit. Replace the card.
	No P2 card has been inserted.
	The unit is in the USB DEVICE mode and is not accessing the P2 card.

◆ NOTE:
• Detailed check of P2 card status is possible. Refer to "Checking Card Status" (page 75).

P2 card and recording times

Recording time on a single 64 GB P2 card

	HD mode		
Video format	Recording format and recording times		
	DVCPRO HD	AVC-Intra100	AVC-Intra50
1080-59.94/50i[*1]	Approx. 64 min.	Approx. 64 min.	Approx. 128 min.
1080-30PN/25PN (Native)	----	Approx. 64 min.	Approx. 128 min.
1080-24PN (Native)	----	Approx. 80 min.	Approx. 160 min.
720-59.94P/50P[*1]	Approx. 64 min.	Approx. 64 min.	Approx. 128 min.
720-30PN/25PN (Native)	Approx. 128 min.	Approx. 128 min.	Approx. 256 min.
720-24PN (Native)	Approx. 160 min.	Approx. 160 min.	Approx. 320 min.

*1: Includes recording with pull-down at 30P, 24P and 25P.

	SD mode		
Video format	Recording format and recording times		
	DVCPRO 50	DVCPRO[*2]	DV[*2]
480-59.94i/576-50i[*3]	Approx. 128 min.	Approx. 256 min.	Approx. 256 min.

*2: For 2-channel audio recording

*3: Includes recording at 30P, 24P and 25P with pull-down.

◆ NOTE:
• This unit cannot use AJ-P2C002SG (2 GB) cards.
• The recording time of 32 GB, 16 GB and 8 GB P2 cards are 1/2, 1/4 and 1/8, respectively of that provided by a 64 GB P2 card.

● Visit the web site below and go to P2 support desk page for the latest information on P2 card and SD/SDHC memory cards.
For English: http://pro-av.panasonic.net/

Dividing clips over 4 GB in length

A continuous recording that is longer than the durations given below when an 8 GB (or larger) P2 card is used in this unit will result in the automatic division of the recording into different clips. Even so, the recordings on the two clips can be handled as a single clip in thumbnail operations (display, delete, repair, copy, etc.) on a P2 device.
Such a recording may be handled as separate clips in nonlinear editing software or on PCs.

Recording format	Recording duration
DVCPRO HD	Approx. 5 min.
DVCPRO50	Approx. 10 min.
DVCPRO/DV	Approx. 20 min.
AVC-Intra50	Approx. 10 min.
AVC-Intra100	Approx. 5 min.

LOOP REC Function

When two or more P2 card slots contain cards, the unit records continuously by switching cards. When available space on the P2 cards has been used up, recording continues from the first card overwriting previously recorded loop recording.
To use the LOOP REC function, set setup menu No. 041 (LOOP REC) to ON.

Loop recording records the unrecorded areas (A → B → C order) on the P2 cards. When all unrecorded areas on the cards have been recorded, recording continues by overwriting previous loop recording in area A (D).
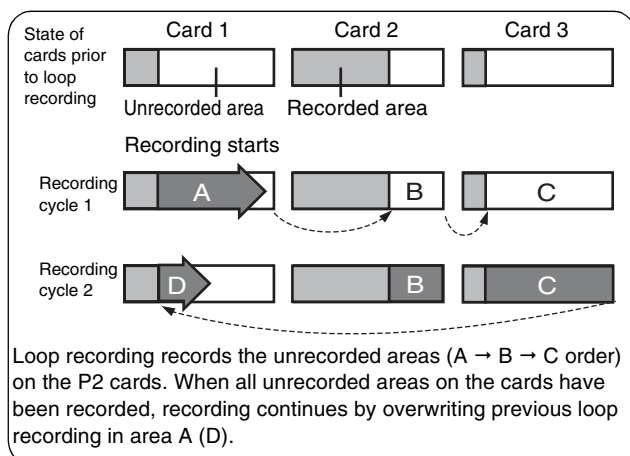
◆ **NOTE:**

• Turning the POWER switch OFF turns off the LOOP REC function and it will remain off when the unit is powered up next time.
• Loop recording requires P2 cards with at least one minute of free space each.
• During loop recording, the access LEDs for all P2 cards used in the recording light orange. Note that removing any of the P2 cards will terminate loop recording.
• When setup menu No. 041 (LOOP REC) is set to ON, the text "LOOP" is superimposed on the first line of the display. Loop recording is not available even if LOOP REC is set to ON when only one P2 card is inserted or when there is less than one minute of free space on the cards. The text "LOOP" superimposed on the screen flashes when loop recording is attempted under such conditions. However, this text does not appear when the THUMBNAIL and PLAYLIST buttons are on. When setup menu No.155 (AUTO REC) is set to something other than OFF in remote-control status, "LOOP&A" is displayed.
• When setup menu No. 041 (LOOP REC) is set to ON, P2 card remaining free space indicates the minimum guaranteed recording time. Minimum guaranteed recording time is the estimated time of a recording in a clip when loop recording stops immediately after deleting old data.
• Shot marks cannot be added or deleted during loop recording.
• Text memos cannot be added during loop recording.
• Loop recording is not available during AUTO CAPTURE when an external device is remote controlled.
• Loop recording is not available in VFR mode.

Terminating loop recording mode

Use one of the following two methods.
• Set the unit POWER switch to OFF.
• Set setup menu No. 041 (LOOP REC) to OFF.

Removing P2 Cards

◆ **NOTE:**

• Do not remove a P2 card or turn off the power during access or during recognition directly after insertion (when the P2 card access LED flashes orange).

1 Press the STOP ▣ button.

When the P2 card access LED of a card to be removed flashes orange, press the STOP ▣ button to stop the flashing.

2 Flip up the EJECT button.
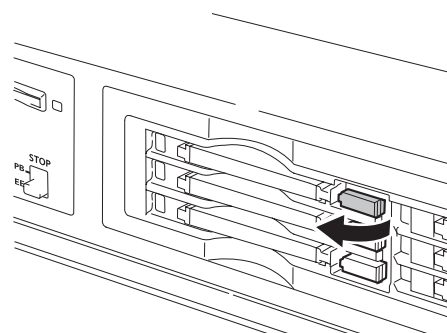
3 Press the EJECT button to eject the P2 card.
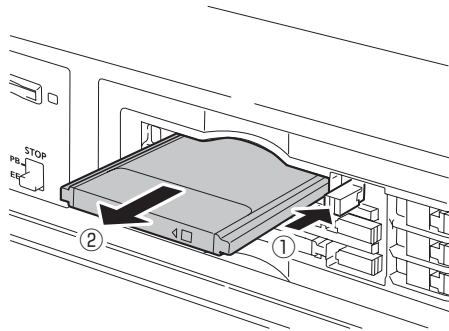
◆ **NOTE:**

- Removing a P2 card in the thumbnail screen automatically closes the thumbnail screen.
- Do not remove a P2 card or turn off the power during access or during recognition directly after insertion (when the P2 card access LED flashes orange) as this could damage it. If a P2 card by any chance is removed during access, [E-30] appears on the LCD monitor and the LCD panel displays the [AUTO OFF] warning. All P2 card access LEDs will flash rapidly in orange. Turn off the power, and then turn it back on.
- The clips on a P2 card that was removed during access may no longer be in the right order. Check the clips and perform the necessary repair operation.

  → Refer to "Repairing Bad Clips" (page 65).
- Removing a P2 card during formatting will in most cases destroy the formatting. Reformat the card after restarting the unit.
- Removing or inserting P2 cards that are not being recorded during recording on other cards may disrupt EE audio after recording but will not affect the recording.

Preventing Accidental Deletion

Set the write-protection switch to [PROTECT] to prevent accidental deletion of data recorded on a P2 card.

Write-protection switch
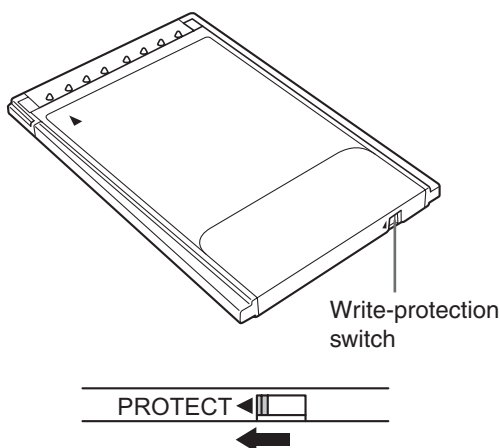
PROTECT ◀▯▭

◆ **NOTE:**

- Switching the write-protection switch during recording, playback or other access operation will not take effect until after these access operations complete.
- Setting the REC INH switch at the top of the front panel to ON will disable writing to all P2 cards, but formatting, deleting clips and turning shot marks ON and OFF are still possible.
- Sliding the write-protection switch to [PROTECT] on a P2 card disables recording, formatting, deleting clips and all other write operations on the card.

Connections

Example of Connections in 23.98/24/29.97/25 Hz Mode

When playing back a card recorded at a frame rate of 24 fps (25 fps), the unit is capable of converting the output to 1080/24 PsF (1080/25 PsF or 1080/50i) for recording on an AJ-HD3700 series.
Shown in the figure below is an example of deck-to-deck connections. Input the following reference signals as REF input.

AJ-HPD2500
(source rear panel)

Reference signal
23.98 Hz mode: HD REF 47.95 Hz (interlace)
24 Hz mode: HD REF 48 Hz (interlace)
25 Hz (HD)/50 Hz (HD) mode: HD REF 50 Hz (interlace) or SD REF 50 Hz (interlace)
29.97 Hz mode: HD REF 59.94 Hz (interlace) or SD REF 59.94 Hz (interlace)

HD SDI OUT   REMOTE IN/OUT   75 Ω termination OFF

HD SDI signal   Remote signal (9P)

AJ-HD3700B
(recorder rear panel)   HD REF signal   SD REF signal   REMOTE IN/OUT   HD SDI IN

75 Ω termination ON   75 Ω termination ON
HD REF IN   SD REF IN   Video monitor

◆ **NOTE:**
- Synchronization with REF input at start of playback in 23.98/24 Hz mode may distort the first number of frames and mute sound output. Note that movement in HD SD video output at speeds other than 1x may look unnatural.

- In 23.98 Hz mode, the composite monitor video signal output by the ANALOG COMPOSITE MONITOR OUT connector does not include VITC signals.
- For details on compatible input and output formats, refer to "List of Compatible Input and Output Formats" (page 199).
- In 23.98/24 Hz mode, HD SDI output is delayed by approximately 2 frames relative to analog VIDEO output.
- Composite monitor video is not output in 24 Hz mode.

Example of Connections for Remote Control

These connections make it possible to send commands via the remote control connector to enable remote control of external devices. The playlist mode allows control of the source device to capture video directly to the timeline.
Shown in the figure below is an example of deck-to-deck connections.
Set the CONTROL switch on the front panel of the external device to REMOTE.
Press the REMOTE button on this unit to turn the button off.

AJ-HD1400, etc.
(source rear panel)

HD SDI signal   Remote

AJ-HPD2500
(recorder rear panel)
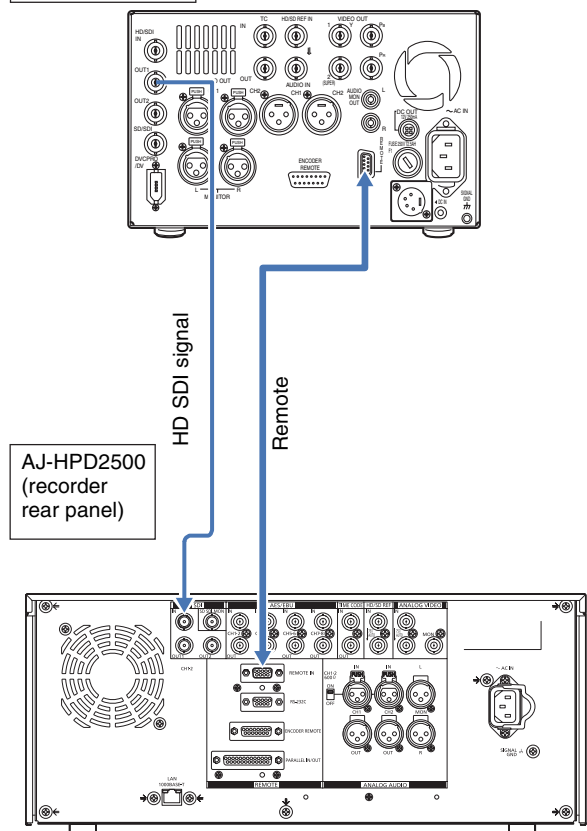
Recording From a Variable Frame-Rate Camera

Recording HD SDI Output Signals from a Variable Frame-rate Camera as 720/23.98p

Combined with a variable frame-rate camera (VariCam: AJ-HDC27 series), the unit makes it possible to record HD SDI (720/23.98p over 59.94p) output from the camera as DVCPRO HD or AVC-Intra 720/23.98p native recording.

Recording HD SDI signals from camera output

1 Connect the camera HD SDI (720/23.98p over 59.94p) output to the SDI IN connector and press the VIDEO IN (SHIFT + EDIT MODE) / AUDIO IN (SHIFT + VIDEO) button to select HD SDI.
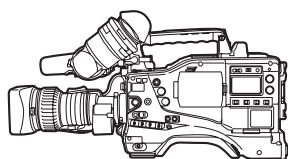
HD SDI (720/23.98p over 59.94p) output

SDI IN connector
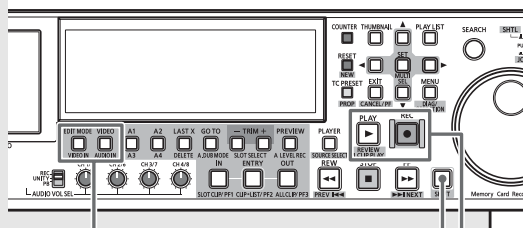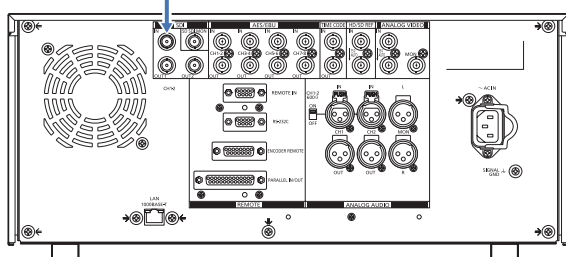
2 Make the following setup menu settings.

Item		Setting
No.25	SYSTEM FREQ	59-23
No.020	SYS FORMAT	720p
No.040	VFR REC	OFF

◆ **NOTE:**
- To record 720/24p over 60p output from a variable frame-rate camera, set menu No. 25 (SYSTEM FREQ) to 60-24. No output is made to a composite monitor video in this mode.

3 While confirming the camera HD SDI output video, press the REC button and PLAY button simultaneously.
Recording starts.

◆ **NOTE:**
- Set setup menu No. 155 (AUTO REC) to TYPE1 and press the REMOTE button to turn the button on. The unit will then automatically start and stop recording as the REC and STOP buttons are pressed on the camera.
- SDI is output in the 1080/23.98 PsF video format.
- No time code can be input to the TIME CODE IN connector.
- The SDI output is delayed relative to LCD monitor and monitor video output. Analog audio, speaker and headphone output is synchronized to the LCD monitor and monitor video output. To synchronize these outputs to SDI output, set setup menu No. 778 (AUD OUT DLY) to ON.
- Set camera TCG to FREE RUN/NDF (non drop frame) mode. A TC/UB of an SDI input that cannot be properly read cannot be normally recorded.

Variable Frame Rate-Recording

To record active frames from the output of a variable frame-rate camera, set setup menu No. 040 (VFR REC) to ON. This enables instant viewing of slow-motion and fast-motion speed effects during shooting.

◆ **NOTE:**
• 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 59-23 or 60-24 is set in setup menu No. 25 (SYSTEM FREQ), 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.

Recording HD SDI Signals Output by an HD Camera as 1080/23.98p

The unit is capable of AVC-Intra 1080/23.98p native recording of HD SDI (1080/23.98p over 59.94i) output from an HD camera.

Recording HD SDI signals from camera output

1 Connect the HD camera HD SDI (1080/23.98p over 59.94p) output to the SDI IN connector and press the VIDEO IN (SHIFT + EDIT MODE) / AUDIO IN (SHIFT + VIDEO) button to select HD SDI.

HD SDI (1080/23.98p over 59.94i) output

SDI IN connector

2 Make the following setup menu settings.

Item		Setting
No.25	SYSTEM FREQ	59-23
No.020	SYS FORMAT	1080p

3 While confirming the camera HD SDI output video, press the REC button and PLAY button simultaneously.
Recording starts.

◆ **NOTE:**
• Set setup menu No. 155 (AUTO REC) to TYPE2 and press the REMOTE button to turn the button on. The unit will then automatically start and stop recording as the REC and STOP buttons are pressed on the camera.

• SDI is output in the 1080/23.98 PsF video format.

• No time code can be input to the TIME CODE IN connector.

• The SDI output is delayed relative to LCD monitor and monitor video output. Analog audio, speaker and headphone output is synchronized to the LCD monitor and monitor video output. To synchronize these outputs to SDI output, set setup menu No. 778 (AUD OUT DLY) to ON.

• Set camera TCG to FREE RUN. A TC/UB of an SDI input that cannot be properly read cannot be normally recorded.

Jog and Shuttle Operations Using the Search Dial

The search dial is used to search and check video.

Each press of the dial switches it between the SHTL/SLOW mode and JOG mode.

When the power is turned on, the search dial will not operate unless it is first returned to the STILL position.

Jog Mode
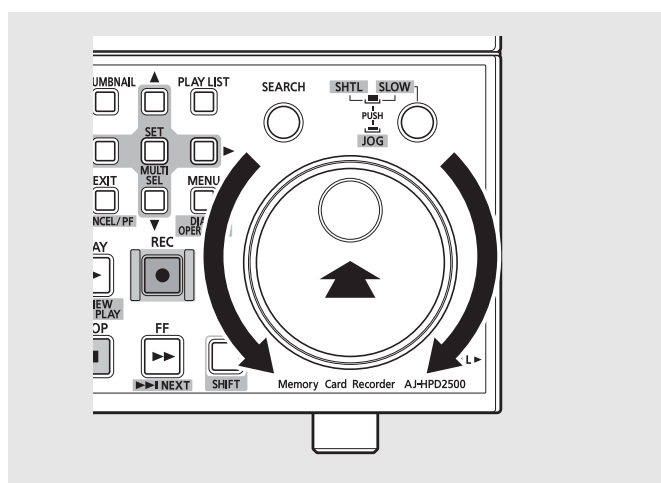
1 Press the search dial so that it remains pressed in.

The jog mode is now engaged.

2 Turn the search dial.

The dial's click stops are released and playback is performed at the speed the dial (−1 to +1×) is turned.

When the dial stops turning, the video becomes a still picture.

3 To go to another mode from the jog mode, press the button of the desired mode.

◆ **NOTE:**

- The direct search mode that allows you to go directly to the shuttle mode or jog mode by turning the search dial is a factory default.
- You can set setup menu No. 100 (SEARCH ENA) to KEY so that the unit will not engage the search mode unless you press the SEARCH button.

Shuttle Mode and Slow Mode (SHTL Mode/SLOW Mode)
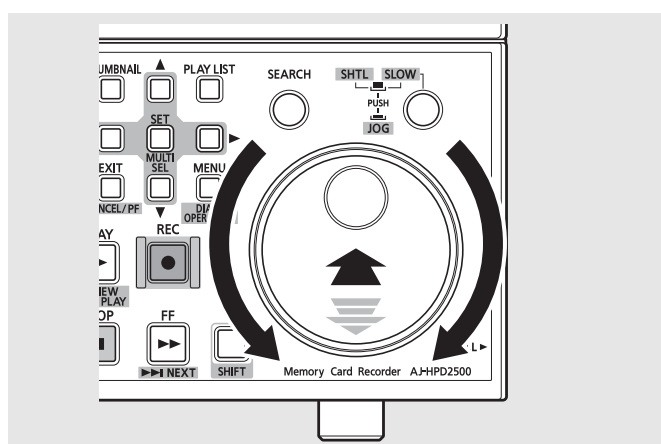
1 Press the search dial to release it.

This engages the shuttle mode.

When the power has just been turned on, turn the search dial to its center position.

2 Press the SHTL/SLOW button to select the SHTL (shuttle) mode or SLOW mode.

3 Turn the search dial.

The playback picture speed changes depending on dial position.

Use setup menu No. 101 (SHTL MAX) to set maximum speed in shuttle mode to ±8, ±16, ±32, ±60 or ±100×. The dial has a click-stop at the center for viewing still pictures.

4 To go to another mode from the shuttle mode, press the STOP ■ button or other button.

◆ **NOTE:**

- The playback audio is audible at speeds in the range −10 to +10× from the audio monitor output.
- The playback audio in the search mode contains noise.
- Playing back a clip that spans a multiple of P2 cards at speeds faster than ±1× may break up the sound in the transition to another card; this is normal and not indicative of a malfunction.
- Playing back a clip at speeds faster than −10× may break up the sound; this is normal and not indicative of a malfunction.
- Using search mode to play back a clip recorded in AVC-Intra 1080/23.98p format may result in uneven playback.

Clip Management

Thumbnail and Clip Management
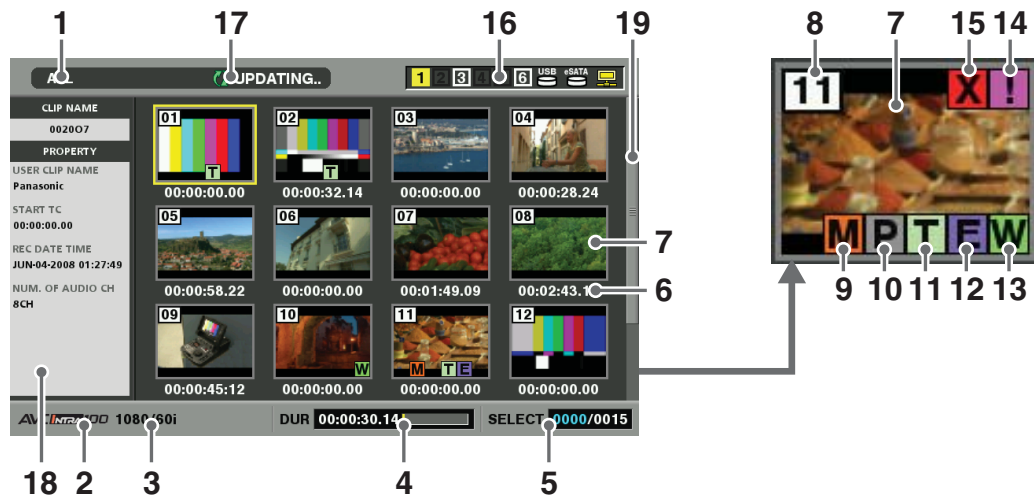
This unit provides a thumbnail screen for managing clips. A clip is a single data item that contains video, audio, metadata and other additional information. Normally, a clip is one shot generated from the start of recording until recording stops. A shot that spans multiple P2 cards is handled as a single clip. The thumbnail screen displays a list of thumbnails of the recorded clips. These thumbnails allow you check and also perform the following clip management operations.

• Play back, copy, delete and repair clips
• Attach text memos in clips
• Check and delete text memos
• Display and delete shot marks
• Format P2 cards
• Show clip property
• Show P2 card status

◆ **NOTE:**

• Thumbnails are generated from part of the captured video and therefore appear rougher than the actual video.

Thumbnail Screen Names and Functions

1. Display status

Display status indicates the type of thumbnails 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

→For details on how to change display, refer to "Switching the type of information that is displayed" (page 54).

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. When resume is set to on (→ Refer to "Setting items to display" (page 55)) and 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.
→Refer to "Setting items to display" (page 55).

7. Thumbnail

Shows the thumbnails recorded for each clip. The EXCH.THUMBNAIL function allows you to replace this thumbnail.
→Refer to "Thumbnail Editing" (page 57).

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. The SORT function allows you to change the order the clips appear.
→Refer to "Setting items to display" (page 55).

9. [M] Shot mark indicator

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

10. [P] Proxy indicator

Indicates that a clip contains a proxy attached using the AJ-HPX2700, AJ-HPX3700 or other camera. 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 indicator can sometimes be repaired.
→Refer to "Repairing Bad Clips" (page 65).
Clips with the red bad clip indicator 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. P2 card slot, hard disk and LAN status

P2 card, USB or eSATA hard disk drive and LAN status is indicated as shown below.

1 - **6** (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.

■ **Hard disk status display**

Hard disk drives are indicated as USB or eSATA depending on their interface.

USB (gray)	Gray indicates that the hard disk drive is not connected.
USB (white)	White indicates that the hard disk drive is available.
USB (yellow)	Yellow indicates that clips on the hard disk drive clips appear as thumbnails.
USB (red)	Red indicates that a hard disk drive is connected but is not available.

■ **LAN status display**

Indicates that the unit is connected to a LAN.

(gray)	Gray indicates that the LAN is set to OFF.
(white)	White indicates that the LAN is set to ON.
(yellow)	Yellow indicates that a LAN cable is connected and that the network is running.
(red)	Red indicates a problem occurred in the unit. Consult your supplier.

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.
→Refer to "Selecting items to be displayed as properties" (page 56).

◆ **NOTE:**
• When there are more characters than can be displayed, only those that can be displayed appear and the remaining characters are omitted.

19. Thumbnail scroll bar

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

Cursor operations in thumbnail screen

Use the up, down, right and left cursor buttons to move the cursor.

◆ **NOTE:**

• The search dial also allows you to move the cursor.

■ High-speed cursor movement and jumping

• Hold down the SHIFT button and press the up or down cursor button to move the cursor to the first or last clip.
• Hold down the SHIFT button and turn the search dial. The thumbnails change to blue and only the scroll bar moves to allow high-speed movement between cursor pages.

Thumbnail Menu

THUMBNAIL MENU

- THUMBNAIL
  - ALL CLIP
  - SAME FORMAT CLIPS
  - SELECTED CLIPS
  - MARKED CLIPS
  - TEXT MEMO CLIPS
  - SLOT CLIPS
  - SETUP

- OPERATION
  - DELETE
  - FORMAT
  - REPAIR CLIP
  - RE-CONNECTION
  - COPY
  - EXCH. THUMBNAIL

- PROPERTY
  - CLIP PROPERTY
  - CARD STATUS
  - DEVICES
  - PROPERTY SETUP
  - SYSTEM INFO

- META DATA
  - LOAD
  - RECORD
  - USER CLIP NAME
  - INITIALIZE
  - PROPERTY

- HDD (USB)
  - EXPORT
  - EXPLORE
  - SETUP

- HDD (eSATA)
  - EXPORT
  - EXPLORE
  - SETUP

- NETWORK
  - EXPORT
  - EXPLORE
  - SETUP
  - STATUS
  - TOOLS
  - INITIALIZE

Clip Management

Changing Thumbnail Display

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

Switching the type of information that is displayed
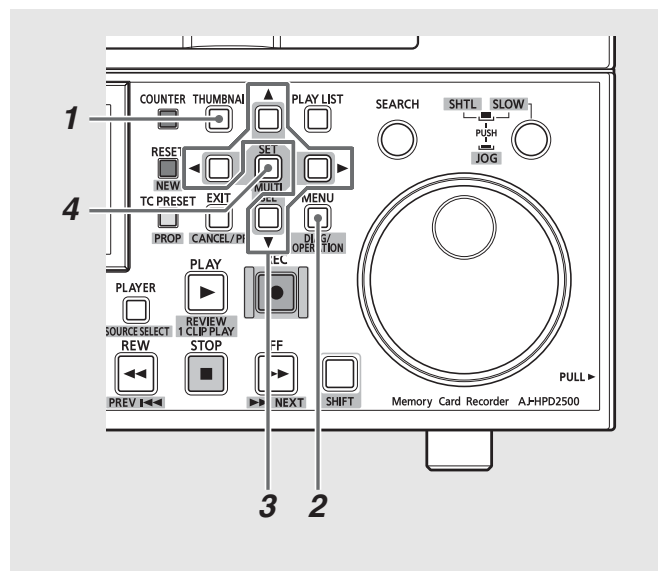
1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to select the clip type that should appear under [THUMBNAIL].

ALL CLIP:	Show all clips
SAME FORMAT CLIPS:	Show clips in the same format as the system

◆ NOTE:
• When 23.98, 24, 29.97, 59-23, 60-24, 25 or 60-25 is selected in setup menu No. 25 (SYSTEM FREQ) only clips in a format that can be recorded appear.

SELECTED CLIPS:	Show clips selected using the SET button. At this time the thumbnails appear in selected order. Use this function to change the order clips are played back.
MARKED CLIPS:	Show clips to which shot marks have been attached.
TEXT MEMO CLIPS:	Show clips that contain text memo data.

◆ NOTE:
When a text memo clip appears, the following type of thumbnails at the text memo location in the row below may be displayed as [!].
• An AVC-Intra clip with a different SYSTEM FREQ. setting

SLOT CLIPS:	Show clips on P2 card in slot No. n

4 Press the SET button.

◆ NOTE:
These operations can also be performed using buttons.
• Press SLOT CLIP (SHIFT + IN) and the indication changes in the following order each time these buttons are pressed: SELECTED → SLOT 1 → SLOT 2 … SLOT 6 → SELECTED. (Only slots with cards will appear.)
• Press ALL CLIP (SHIFT + OUT) to switch to ALL CLIP.

Setting items to display

The thumbnail display can be customized to suit different operating needs. The following describes procedures for changing thumbnail display indicators and data settings.
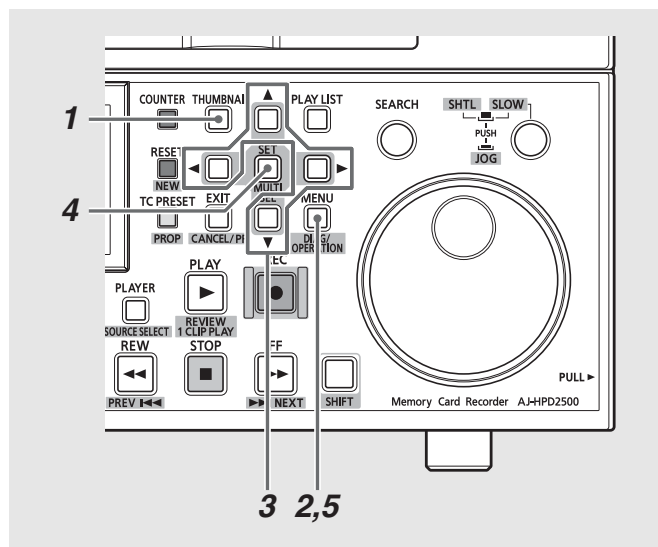
1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to select the item that should appear under [THUMBNAIL] – [SETUP].
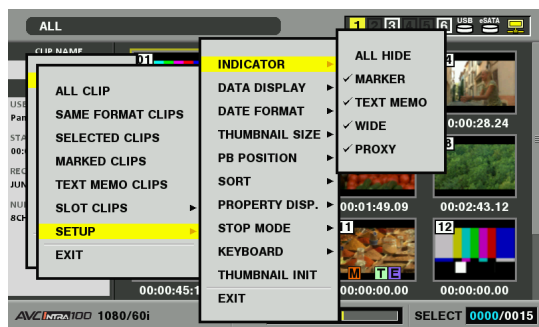
- *XX* indicates factory default settings.

INDICATOR:	Press SET to add a check mark for any of the following items you want to display. 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

DATA DISPLAY:	Select items to appear in the time display (→ refer to 6 in "Thumbnail Screen Names and Functions" (page 50)).	
	TC	Time code
	UB	User bit
	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

DATE FORMAT:	Select the format for indicating the time.	
	Y-M-D	Year/month/day
	M-D-Y[*1]	Month/day/year
	D-M-Y[*1]	Day/month/year

*1: The default setting for the AJ-HPD2500P is "M-D-Y", and for the AJ-HPD2500E is "D-M-Y".

◆ **NOTE:**

- This setting is reflected in the date of recording shown in the clip property, the date and time of recording indicated when selecting DATE in the DATA DISPLAY, the date of recording that appears in the clip information in the event property screen of a playlist and also in the created date indicated when loading metadata or in other file indications.

THUMBNAIL SIZE:	Determines the size of thumbnails that appear on the screen in thumbnail mode.	
	LARGE	Large (thumbnail display: 3 × 2)
	NORMAL	Normal (thumbnail display: 4 × 3)

PB POSITION:	Set the playback start position for playback in the thumbnail screen.	
	RESUME	From the position where playback was stopped
	THUMBNAIL TC	From the time code of thumbnail position
	START TC	From the start time code (beginning of the clip)
SORT:	Specify the order thumbnails appear.	
	OFF	In recorded order
	SLOT	Slot order (clips in the same slot appear according to date and time of recording).
PROPERTY DISP.:	Specifies the items that will appear in a simplified property display on the left side of the thumbnail. →Refer to "Selecting items to be displayed as properties" (this page).	
STOP MODE:	Specifies whether or not to return to the thumbnail screen after stopping playback started from the thumbnail screen.	
	STAY	Stays in playback mode
	RETURN	Return to thumbnail mode →Refer to "Playing Back Clips" (page 59).
THUMBNAIL INIT:	Return above settings to their factory defaults (initial values).	

4 Press the SET button.

◆ NOTE:
• Selecting [THUMBNAIL INIT] opens a confirmation dialog. Select [YES].

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 cursor buttons to choose [THUMBNAIL] – [SET UP] – [PROPERTY DISP.].
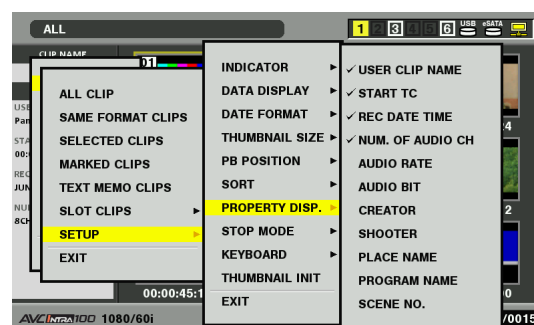
4 Press the SET button to open the setup menu.

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.

Thumbnail Editing

Use the following procedure for editing thumbnails.

Editing thumbnails by adding a text memo

1 Attach a text memo to video you want to edit.

→Refer to "Attaching Text Memos" (page 61).

2 Change thumbnail display to text memo display.

3 Move to the row below the text memo and move the cursor to the thumbnail you want to edit.

4 Press the MENU button.

5 Use the cursor buttons to choose [OPERATION] – [EXCH. THUMBNAIL] and press the SET button.

6 Select [YES] 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 information display shows the change in thumbnail location (number of frames from the start). The number for a normal first thumbnail is 0.
- For how to change the playback start position for playback in the thumbnail screen, refer to the NOTE in "Playing Back Clips" (page 59).

Replacing thumbnails during playback

1 Open the thumbnail screen.

2 Use the cross cursor buttons to select the clip where you want to replace a thumbnail.

3 Start playback.

→For details, refer to "Playing Back Clips" (page 59).

4 Hold down the ENTRY button and press the TEXT MEMO button during playback or while displaying a still picture with JOG/VAR/SHTL.

This selects the frame where the buttons were pressed as a thumbnail.

5 Press the STOP button to return to the thumbnail screen.

- The thumbnail is replaced.
- You can also move to the beginning of the clip or allow the clip to end to return to the thumbnail screen, and the thumbnail will still be replaced.

◆ **NOTE:**

- If the ENTRY and TEXT MEMO buttons are pressed several times, the frame where the two buttons were last pressed is selected.
- Pressing the ENTRY and the TEXT MEMO buttons simultaneously places a text memo where the buttons were pressed. When the number of text memos in a clip reaches 100, no further thumbnail changes can be made.
- When a thumbnail is being replaced, "UPDATING" appears and the icon spins in the location of the thumbnail. Do not remove P2 cards at this time.
- Do not remove the P2 card until the thumbnail screen returns. If the card is removed before this, the thumbnails will not be replaced.

Selecting Clips

Select clips for processing in the thumbnail screen as described below.

1 Use the cursor buttons to place the yellow frame (cursor) on the desired clip.

◆ **NOTE:**
- Hold down the SHIFT button and press the REW/FF button or the cursor buttons (▲ / ▼ / ◄ / ►) 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.
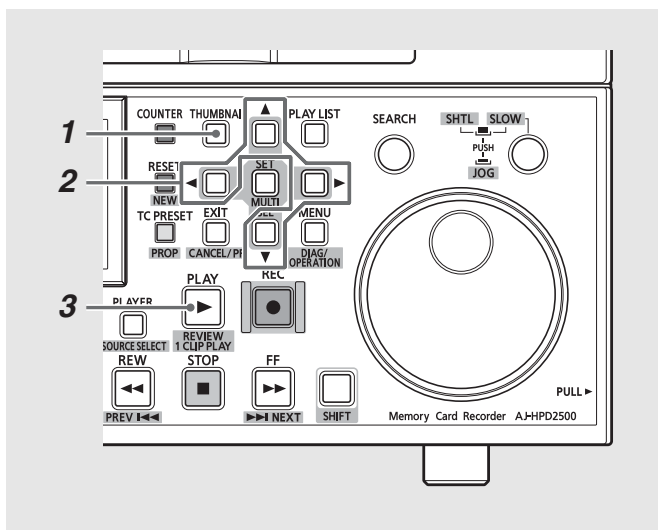
Canceling a selection

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

This cancels the selection.

◆ **NOTE:**
- Hold down the SHIFT button and press the EXIT button to cancel all the made selections.

Playing Back Clips

1 Open the thumbnail screen.

2 Use the cursor buttons to select 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.
- The thumbnail display settings can be changed to play back only selected clips or play back only clips that contain text memos. Selected clip thumbnails and selected clips are displayed and played back in the order of selection.
- Pressing the SEARCH 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 of different formats (DVCPRO HD, DVCPRO50, DVCPRO, DV, AVC-Intra50, AVC-Intra100). This is normal and not indicative of a malfunction.
- Changing the thumbnail screen to text memo display makes it possible to start play back from text memo location.
  →Refer to "Playing back from text memo location" (page 61).

◆ **NOTE:**

- Select [THUMBNAIL] – [SETUP] – [PB POSITION] from the menu to change the playback start position for playback in the thumbnail screen.

PB POSITION:	RESUME	Playback starts from the position playback was stopped, unless the cursor was not moved
	THUMBNAIL TC	Playback starts from the time code of thumbnail position
	START TC	Playback starts from the start time code (beginning of the clip)

- Select [THUMBNAIL] – [SETUP] – [STOP MODE] from the menu to determine whether or not to return to the thumbnail mode when playback in the thumbnail screen is stopped.

STOP MODE:	STAY	Stay in playback mode
	RETURN	Return to thumbnail mode

- *XX* indicates factory default settings.

Playing Back Single Clips

To play back the clip at the cursor location, hold down the SHIFT button and press the PLAY ► button.
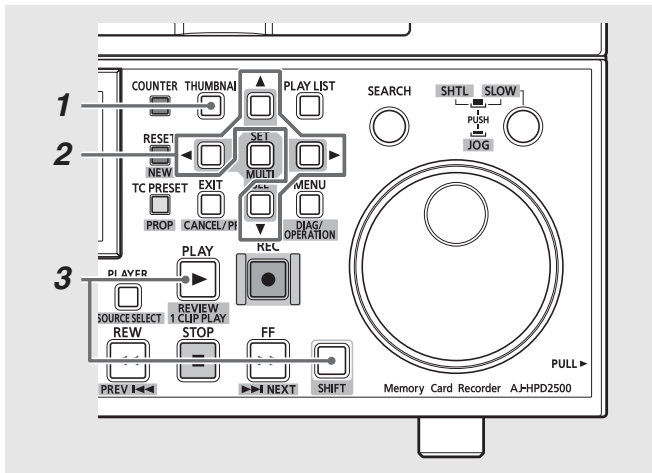
1 Open the thumbnail screen.

2 Use the cursor buttons to select the clip you want to play back.

3 Press the 1 CLIP PLAY (SHIFT + PLAY) button.

◆ **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.

- Select [PB POSITION] from the menu to determine the playback start position for the single clip playback.

- STOP MODE is disabled for playback of single clips.

- When playback is started in the thumbnail screen and a still picture is displayed by JOG/VAR/SHTL, pressing the 1 CLIP PLAY (SHIFT + PLAY) button starts playback from the still picture position to the end of the clip.

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. This function is not available on cards where the write protect switch has been set to PROTECT.

Attaching Text Memos

Use the NEXT and PREV buttons to locate attached text memos during video playback.
→Refer to "Setup menu No. 103 (SEEK SEL)" (page 177).
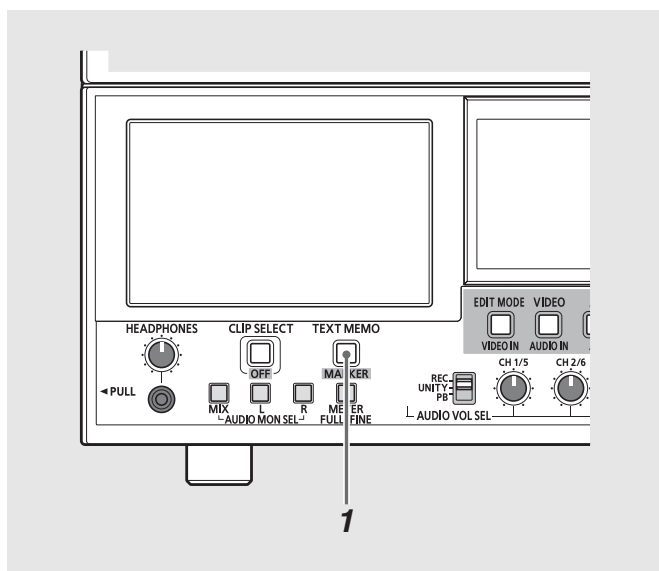
1 Press the TEXT MEMO button during recording, playback or when thumbnails are displayed.

- Press this button during recording and playback where you want to attach a text memo.
- Pressing this button in 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 TEXT MEMO button during playback may temporarily halt playback. This is normal and not a malfunction.
- Text memos are not recorded during LOOP REC or VFR ON recording.

Playing back from text memo location

1 Press the THUMBNAIL button.

The thumbnail screen appears on the LCD monitor.

2 Press the MENU button and choose [THUMBNAIL] – [TEXT MEMO CLIPS] from the thumbnail menu.

The 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:**
- In the following instances, the thumbnail in the row below at the text memo location may be replaced with a ⚠ when a text memo clip appears.
  - An AVC-Intra clip with a different SYSTEM FREQ setting.

3 Place the cursor on 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 LCD monitor, use the right and left (◄/►) cursor buttons to go to the thumbnail text memo you want to play back 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 MENU button to select EXIT or press the EXIT button and the cursor returns to the upper half of the thumbnail screen.

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

Deleting text memos

Opening the text memo display from the thumbnail screen allows you to delete text memos.

1 Open the text memo display from the thumbnail screen.

2 Use the cursor buttons to move to the thumbnail for which you want to delete the text memo and press the SET button.

The cursor moves to the row below.

3 Select the thumbnail for witch you want to delete the text memo and select [DELETE] from the menu.

4 Select [YES] in the confirmation dialog that appears.

The text memo is deleted.

Attaching Shot Marks

Attach shot marks to distinguish clips from each other.
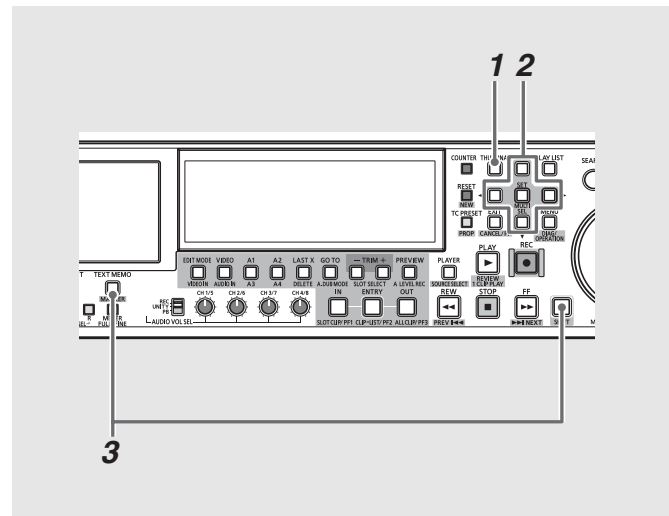
1 Open the thumbnail screen.

2 Use the cursor buttons to place the cursor on the desired clip.

3 Hold down the SHIFT button and press the TEXT MEMO button.

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

◆ **NOTE:**
• 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

Clips can be copied to a P2 card in any slot, a hard disk or FTP server.

◆ **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 [OPERATION] – [COPY], select destination from the list that appears and press the SET button.

When multiple clips are selected, the number of selected clips appear after pressing the SET button.
When copying to a hard disk or FTP server, select the destination of the copied data as required.
Hard disk and FTP server details:
→Refer to "Using This Unit With a Hard Disk" (page 118).
→Refer to "Connecting This Unit to a Network" (page 130).
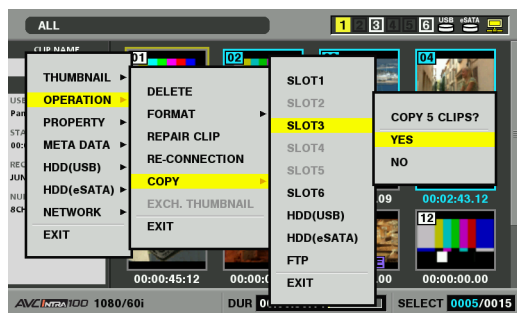
5 Select [YES] and press the SET button.

This starts copying.

◆ **NOTE:**
• To interrupt copying, press the SET button or the CANCEL (SHIFT + EXIT) button to cancel the operation.
  The incomplete copy at the destination is deleted.
• "OVER WRITE" 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 OK (SET button) when the completion message appears.

◆ **NOTE:**
• No copying is performed when any of the following error messages appear.
  • [LACK OF REC 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 defective clip from a P2 card.

1 Open the thumbnail screen.

2 Select the clip to delete.

3 Press the MENU button.

4 Use the cursor buttons to choose [OPERATION] – [DELETE] and press the SET button.
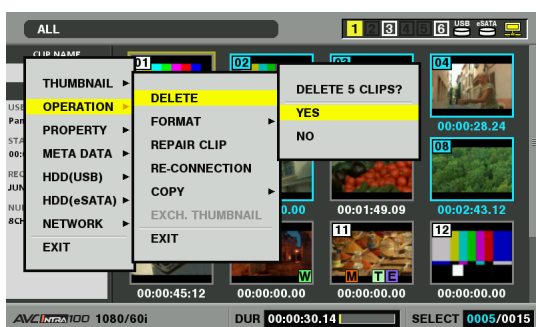
5 Select [YES] and press the SET button.

This deletes all selected clips.

◆ **NOTE:**
- Instead of steps 3 and 4, you can also use the DELETE (SHIFT + LAST X) button to delete a clip.
- 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.

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 cursor buttons to choose [OPERATION] – [REPAIR CLIP] and press the SET button.

5 Select [YES] and press the SET button.

◆ **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 hard disk and then copied back to a P2 card.
• When a 5-minute or longer DVCPRO HD or AVC Intra100 clip (10-minute or longer DVCPRO50 or AVC Intra50 and 20-minute or longer DVCPRO or DV clip) is copied to a hard disk drive and later written back to a P2 card.

1 Open the thumbnail screen.

2 Select the incomplete clips to reconnect.

◆ **NOTE:**
• Normally, thumbnails with the incomplete clip mark are usually grouped together.

3 Press the MENU button.

4 Use the cursor buttons to choose [OPERATION] – [RE-CONNECTION] and press the SET button.
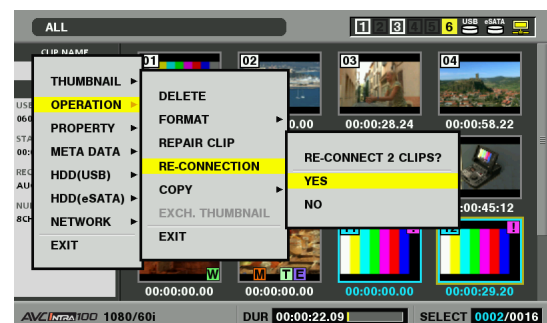
5 Select [YES] and press the SET button.

◆ **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 mark will remain.

Viewing and Revising Clip Information

Viewing Clip Information

Detailed clip information can be displayed on the screen.

1 Open the thumbnail screen.

2 Place the cursor on the desired clip.

3 Press the MENU button.

Or with the menu closed, press the PROP (SHIFT +
TC PRESET) button.

4 Use the cursor buttons to choose [PROPERTY] –
[CLIP PROPERTY] and press the SET button

This displays information on the selected clip.
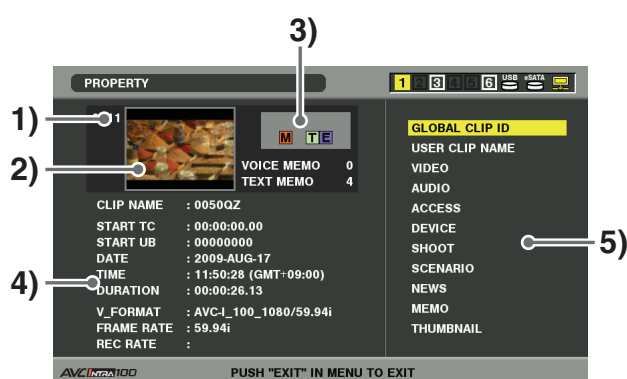
1) Clip no.

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:**

• [V] 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 metadata

This area shows more detailed information on a clip.

5 Browse the clip metadata as necessary.
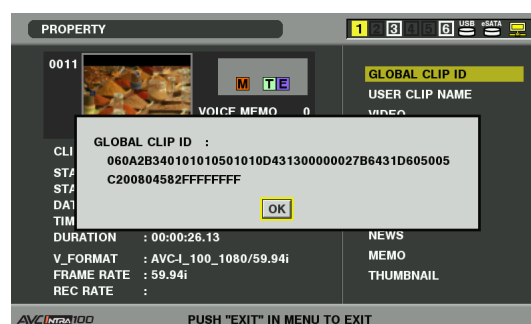
Use the cursor buttons to select a metadata item and
press the SET button to view the information.

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:	Serial number of recording equipment and other information (MANUFACTURER, SERIAL NUMBER, MODEL NAME)
SHOOT:	Date when recording started and ended, etc. (SHOOTER, START DATE, END DATE, LOCATION, ALTITUDE, LONGITUDE, LATITUDE, SOURCE, PLACE NAME)
SCENARIO:	Program name and other information. (PROGRAM NAME, SCENE NO., TAKE NO.)
NEWS:	Reporter and other information. (REPORTER, PURPOSE, OBJECT)
MEMO:	Text memo number and other information. (NO., OFFSET, PERSON, TEXT) ◆ **NOTE:** • OFFSET is indicated in frame numbers from the start. • Up to 1000 characters of text can be added, but only the first 100 characters will be displayed. • Use the right and left cursor buttons to move text numbers.
THUMBNAIL:	Frame location of video that makes up the thumbnail and size of the thumbnail. (OFFSET, WIDTH, HEIGHT)

◆ **NOTE:**
• Unsupported characters that are entered will not be correctly displayed.

6 Select EXIT from the menu or press the EXIT button to stop processing.

Revising Clip Metadata

Use the steps below to revise clip metadata.

1 Display clip metadata.

2 Use the cursor buttons to select the metadata 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 cursor buttons to move to the item you want to revise and press the SET button.

• The metadata revise screen (on-screen keyboard) appears. The USB keyboard also becomes available.
• Use the keyboard to revise metadata.
→Refer to "Using the On-screen Keyboard" (page 39).

4 Select [OK] after revising (or press the ENTRY button).

• This saves the revised metadata to the clip and the metadata display reappears.
• Select [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 metadata of a clip marked [!] cannot be revised. Insert the P2 card with the remainder of the clip.
• MEMO of metadata item to which a 100 character or larger memo has been attached cannot be revised.

Attaching Metadata to Clips

A metadata 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 read and recorded as clip metadata.

Create a metadata upload file on a Windows PC
↓
Save the file to an SD memory card
↓
Read the metadata upload file to this unit
↓
When video is recorded the metadata will be added to the resulting clip
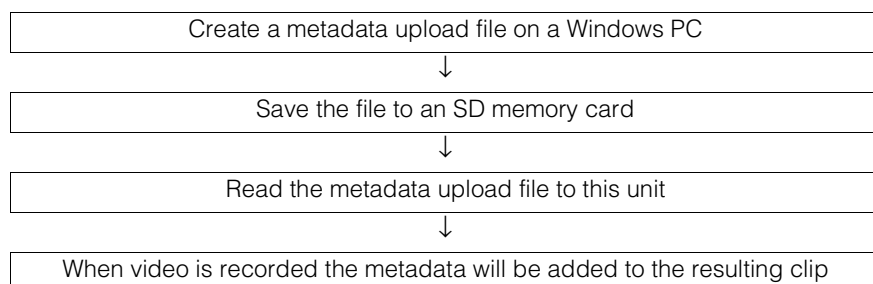
Preparing a Metadata Upload File

Use P2 viewer to create meta data upload files on a PC.
P2 viewer allows you to use a PC for processing clips recorded on a P2 card. Download the latest version of P2 viewer from the URL given below.
For English: http://pro-av.panasonic.net/
Install P2 viewer on a PC, create a metadata 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 metadata upload file, refer to the help function in P2 viewer.
- Write the metadata upload file to an SD memory card formatted on this unit.
  → Refer to "Formatting SD Memory Cards" (page 72).

Setup to Attach Metadata

Make the required settings to enable this unit to read the metadata upload file.

Select method for recording the USER CLIP NAME

Set the method for recording the USER CLIP NAME.

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [META DATA] – [USER CLIP NAME] and press the SET button.

4 Select [TYPE 1] or [TYPE 2] and press the SET button.

Recording method	USER CLIP NAME to be recorded	
Use clip metadata	TYPE 1	Read metadata settings
	TYPE 2	Read metadata settings + counter value
Do not use clip meta data [*1]	TYPE 1	Same as GLOBAL CLIP ID
	TYPE 2	Same as CLIP NAME

*1: The metadata upload file has been read, but [META DATA] – [RECORD] is set to [OFF]

5 Press the MENU button to end processing.

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 metadata that is loaded, the counter value is incremented by 1 for each new recording and a new clip is generated.

■ To reset the counter value

Use the following procedure to reset the counter value.

1. Open the thumbnail screen.

2. Press the MENU button.

3. Use the cursor buttons to choose [META DATA] – [PROPERTY] – [USER CLIP NAME] and press the SET button.

```
META DATA                    1 2 3 6 USB eSATA

REC META DATA                USER CLIP NAME
  REC : OFF                   CREATOR
  META NAME :                 LAST UPDATE PERSON
                             SHOOT
                             PLACE NAME
                             SCENARIO
                             NEWS
                             MEMO



AVC INTRA 100    PUSH "EXIT" IN MENU TO EXIT
```
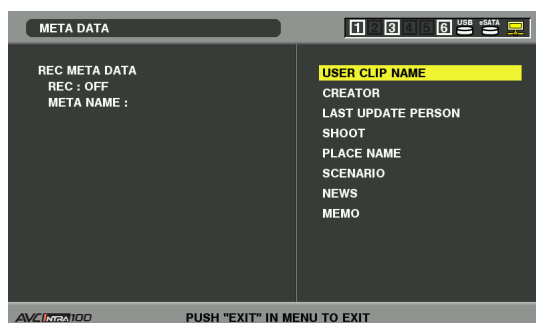
4. Use the cursor buttons to select [COUNT RESET] and press the SET button.

```
META DATA                    1 2 3 6 USB eSATA

REC META DATA                USER CLIP NAME
  REC : OFF                   CREATOR
  META NAME :                 E PERSON

        LOAD DATA   :
        COUNT       :  0001
        REC DATA    :  <GLOBAL CLIP ID>
          OK         COUNT RESET



AVC INTRA 100    PUSH "EXIT" IN MENU TO EXIT
```
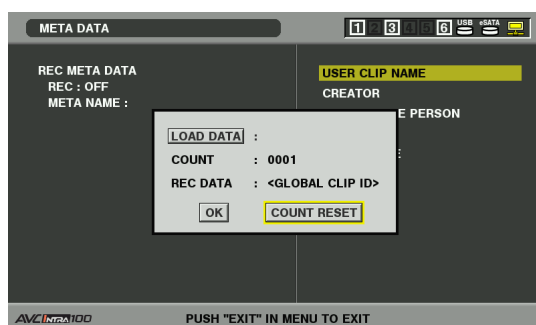
The counter value is reset to 1.

5. 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 preset time.
→For details, refer to "Dividing clips over 4 GB in length" (page 42)

• 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.
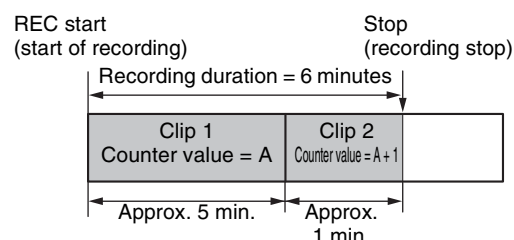
Example of recording a clip on two P2 cards:

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

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

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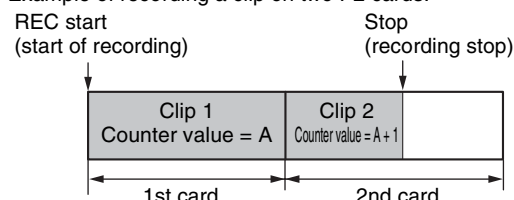
A P2 device will indicate the thumbnail and the counter value of clip 1 when thumbnails and property of the clip are displayed.

Loading Set Metadata Values

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

1 Insert the SD memory card storing the metadata upload file.

2 Open the thumbnail screen.

3 Press the MENU button.

4 Use the cursor buttons to select [META DATA] – [LOAD] and press the SET button.

The metadata name of the metadata 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 metadata name.

5 Use the cursor buttons to select the file to load and press the SET button.

6 Select [YES] and press the SET button.

The file is now loaded.

7 Press the MENU button to end processing.

Checking and revising loaded metadata

Use the following steps to check metadata loaded from an SD memory card.

1 Press the THUMBNAIL button.

The thumbnail screen appears on the LCD monitor.

2 Press the MENU button and select [META DATA] – [PROPERTY] from the thumbnail menu.

The screen shown below appears.
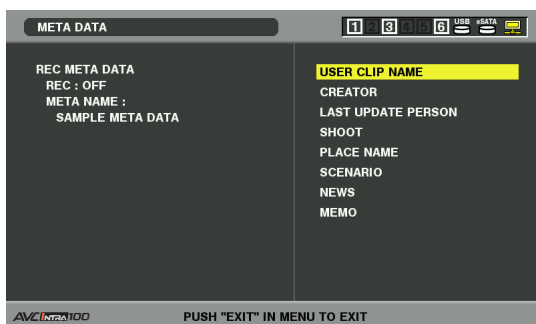
3 Use the cursor buttons to move the pointer and press the SET button.

Use this function to check loaded metadata settings.
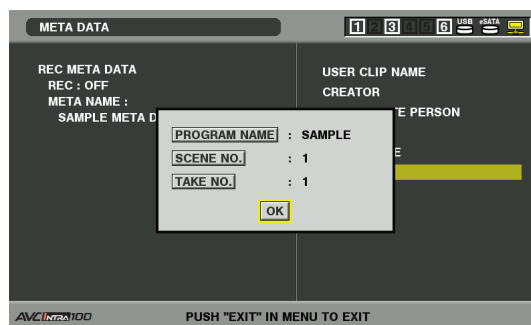
4 While viewing metadata settings, use the cursor buttons to move the cursor to the setting you want to change and press the SET button.

The on-screen keyboard appears. Make the required changes. The USB keyboard also becomes available.

→For details, refer to "Using the On-screen Keyboard" (page 39).
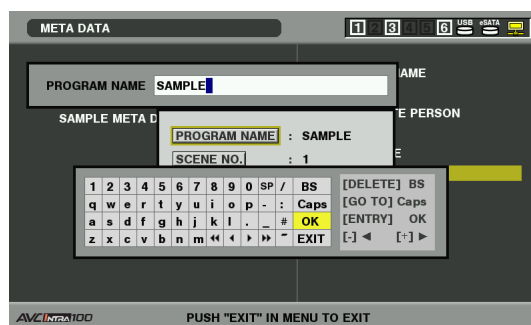
◆ **NOTE:**

<Metadata types that can be set>

• Use the cursor buttons to select a metadata item and press the SET button to view the 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 metadata confirmation dialog.

Deleting metadata

Use the following procedure to delete metadata stored in this unit.

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to select [META DATA] – [INITIALIZE] and press the SET button.

4 Select [YES] in the confirmation dialog and press the SET button.

This deletes the metadata.

5 Press the MENU button to end processing.

Recording Clips Containing Metadata

This procedure attaches the loaded metadata to clip that is recorded.

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [META DATA] – [RECORD] and press the SET button.

4 Select [ON] and press the SET button.

This setting records the loaded metadata simultaneous with video recording. The USER CLIP NAME is attached to metadata as specified by the recording method.

5 Press the MENU button to end setup.

6 Record video on this unit.

◆ NOTE:
• When [OFF] is selected in step 4, no metadata is attached to the clip.

Using SD/SDHC Memory Cards

This unit can use SD and SDHC memory to store setup menus, recorded metadata and AVCHD recordings[*1].

*1: Requires AVCHD codec board (optional accessory).

◆ **NOTE:**
- Further information on the above functions is provided in the following sections in this manual.
  - Loading metadata
    →Refer to "Attaching Metadata to Clips" (page 68).
  - Storing and loading setup menus
    →Refer to "Setup" (page 164).
  - AVCHD recording and playback
    →Refer to "Using an Optional AVCHD Board" (page 149).
- The SD memory card access lamp lights in orange during AVCHD recording and playback. It lights in green in the following cases.
  - While loading metadata
  - While storing and loading the setup menu
  - While formatting the card from the P2 card thumbnail screen or the setup menu
  - While reading the SD memory card property information on the P2 card thumbnail screen

Displaying Miscellaneous SD Memory Card Information

Use the following procedure to display SD memory card status on dialog for checking.

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [PROPERTY] – [DEVICES] – [SD CARD] and press the SET button.
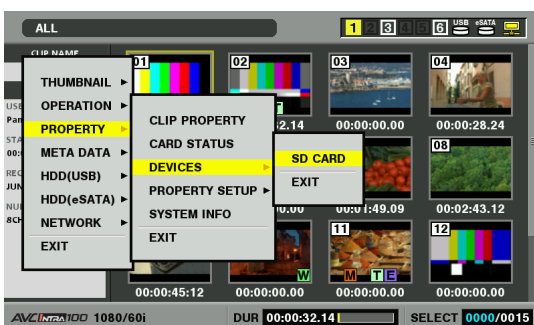
The following information may also appear depending on card status.
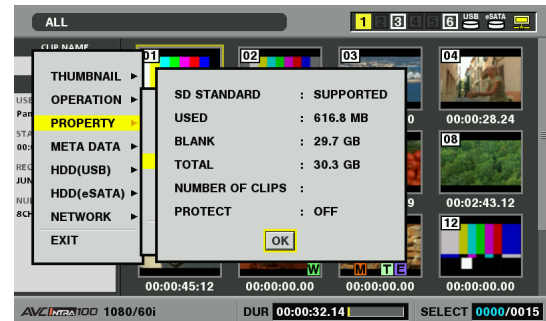
SD STANDARD:	Indicates that an SD memory card is formatted according to the SD/SDHC standard.
	SUPPORTED: Complies with SD/SDHC
	NOT SUPPORTED: Does not comply with SD/SDHC
USED:	Used capacity (bytes)
BLANK:	Free space (bytes)
TOTAL:	Total capacity (bytes)
NUMBER OF CLIPS:	The number of clips on an SD memory card when clips have been copied to an SD memory card using a proxy or a P2 camera recorder.
PROTECT:	Write protected

- This unit cannot record proxies.

4 Press the SET button and the MENU button to end processing.

Formatting SD Memory Cards

Use the following procedure to format an SD memory card inserted in an SD memory card slot.

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to select [OPERATION] – [FORMAT] – [SD CARD].

4 Select [YES] and press the SET button.
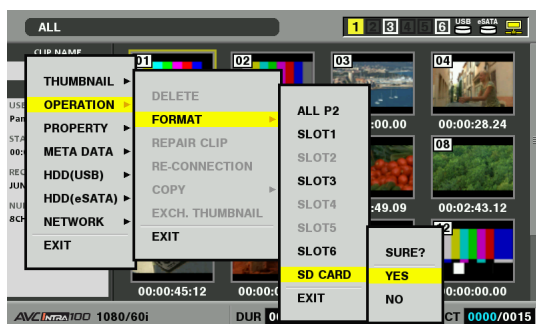
The card is now formatted.

◆ **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 Press OK (SET button) when the completion message appears.

6 Press the MENU button to end processing.

Formatting P2 Cards

Formatting Individual P2 Cards

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [OPERATION] – [FORMAT] – [SLOT n] (the number of the P2 card slot containing the card to format) and press the SET button.
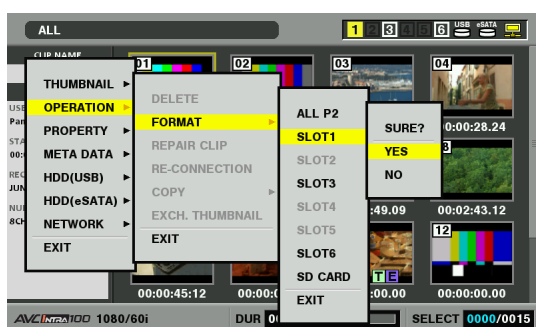
4 Select [YES] and press the SET button.

The card is now formatted.

◆ **NOTE:**
• To cancel formatting, select [NO] and press the SET button.

5 Press OK (SET button) when the completion message appears.

◆ **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.

Formatting All P2 Cards

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [OPERATION] – [FORMAT] – [ALL P2] and press the SET button.
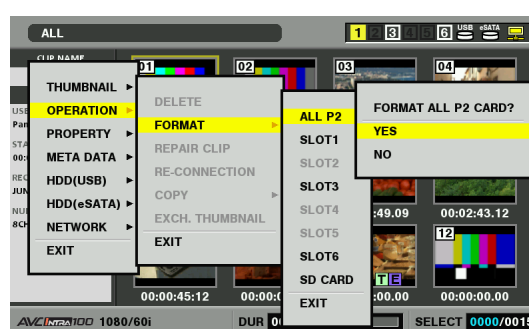
4 Select [YES] and press the SET button.

The card formatting starts.

◆ **NOTE:**
• To cancel formatting, select [NO] and press the SET button.

5 Press OK (SET button) when the completion message appears.

6 Press the MENU button to end processing.

Checking Card Status

Use the following procedure to display P2 card slot status and P2 card usage and other card information on the screen for checking.

Selecting Information to Display

Select whether remaining capacity or used capacity should appear in the P2 card information.

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [PROPERTY] – [PROPERTY SETUP] – [P2 CARD CAP] and press the SET button.
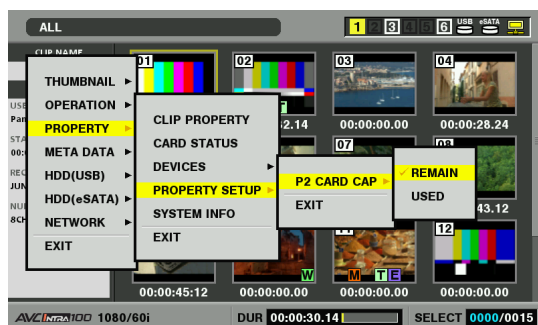
4 Use the cursor buttons to select an item and press the SET button.

REMAIN:	Remaining capacity indication (initial value)
USED:	Used capacity indication

• _XX_ indicates factory default settings.

5 Press the MENU button to end processing.

Displaying Card Status Information

After completing the settings described on the previous page, you can use the procedure described below to check the status of P2 cards in P2 card slots.

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [PROPERTY] – [CARD STATUS] and press the SET button to display P2 card status.
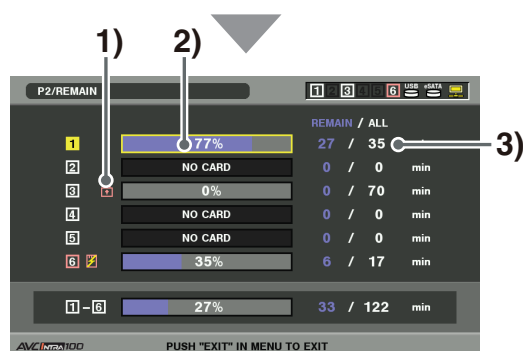
or
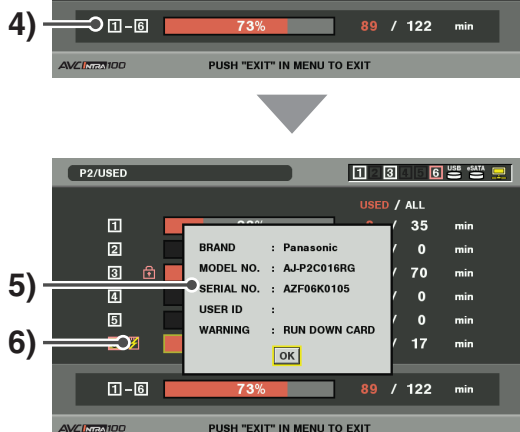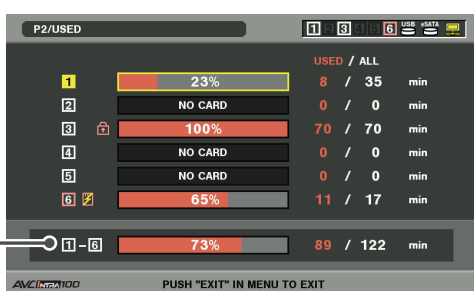
1) Write protect mark

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 on the six 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.

[RUN DOWN CARD]

The maximum number of overwrites has been exceeded.

[DIR ENTRY NG CARD]

The P2 card directory structure is not supported.

Open Detailed P2 Card Status for more information on this warning.

4 Press the EXIT button to end processing.

Editing

Playlist Function

This unit allows the user to create a playlist that combines the desired audio and video sections recorded on a P2 card. The user can play back the clip sections on the playlist to check what the created footage will look like after editing. Sections of audio and video selected for playback are referred to as an event and a list of such events is called a playlist. Editing results can easily be checked since editing does not involve any direct changes of clip data.

In normal playback, playback starts from the starting point and goes on until the last clip.
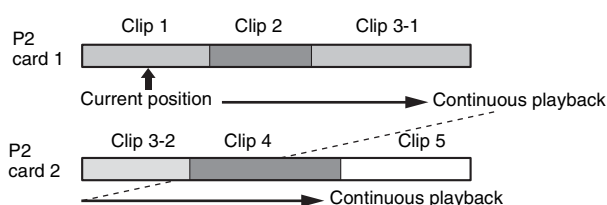
Playlist playback continuously plays back only the required clip sections.
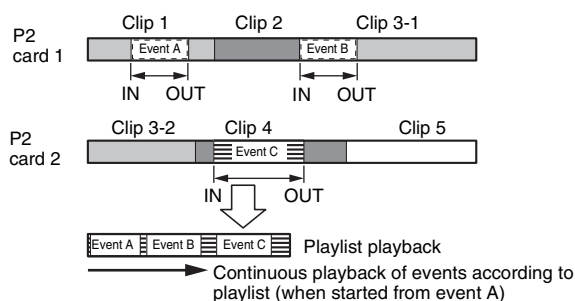
Use the playlist mode to create playlists.

◆ **NOTE:**
- Playlists are stored in the playlist area of memory in this unit and can always be accessed from the playlist screen. Playlists can also be stored on a P2 card.
- Voice-overs can also be recorded. Since the audio data should be saved to the same P2 card as the playlist, first save the playlist to a P2 card.
- Do not use 24PN clips that have undergone nonlinear editing in a playlist. Edit points may not be correctly recorded.
- Do not use and register multiple copies of the same clip since that may result in incorrect recognition.
- Up to 100 events can be created per track.
- The maximum duration of a playlist is 23:59:59.29. (23:59:59.24 when 50, 25 or 60-25 is selected in setup menu No.25 (SYSTEM FREQ), 24:01:26.13 in drop-frame indication and 23:59:59.20 in 24PN)

Editing Workflow

Playlist mode uses a player and a recorder to create a playlist that stores editing results.

Player

The player thumbnails or playback video appear on the left side of the playlist screen.

Normally, clips on a P2 card are used, but clips from a hard disk, VTR or other device connected and controlled via the REMOTE connector (RS-422A) can also be used.

→Refer to "Names and Functions of the Playlist Screen" (page 81).

Recorder

The recorder playback video appears on the right side of the playlist screen and the timeline is shown below. The recorder allows you to check playback and editing results.

→Refer to "Names and Functions of the Playlist Screen" (page 81).

Cut editing workflow

The following walks you through the steps to perform cut editing.
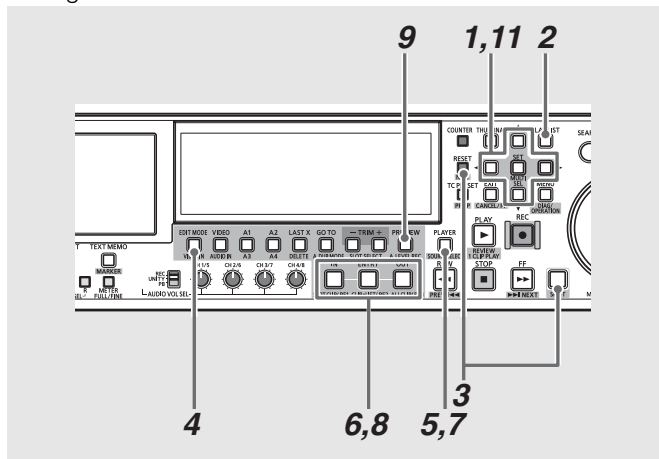
1 Determine the format for the clip playlist you want to edit in the setup menu.

→Refer to "Preparing for Playlist Creation" (page 90).

2 Press the PLAY LIST button to open the playlist screen.

3 Press the NEW (SHIFT + RESET) button to clear playlists stored in the unit.

4 Press the EDIT MODE button to select overwrite editing and select all tracks.

5 Press the PLAYER button to switch to player (left side) operations.

The PLAYER button goes on during player operation.

6 Start player playback, set the IN point (IN + ENTRY button) and OUT point (OUT + ENTRY button) to specify the section of the clip you need.

7 Press the PLAYER button to switch to recorder (right side) operations.

The PLAYER button goes out.

8 To add a cut when there are events in the recorder, start playback and set an IN point by pressing the IN + ENTRY button.

After the playlist has been cleared in step 3, an IN point is automatically set at the beginning of the recorder.

9 Press the PREVIEW button to preview and check editing results.

In the preview, the edited section is added to the timeline.

10 Repeat steps 5 to 9 to connect cut sections.

11 Finally, use the cursor buttons to move the cursor to the beginning of the event and start playback on the recorder.

The playlist is played back.

Use Edit Copy ([OPERATION] – [EDITCOPY] menu) as required to create a new clip from the created playlist.

Insert Editing Mode and Overwrite Editing Mode

In playlist mode, events can be added either in insert editing mode or in overwrite editing mode.
Use the EDITMODE button to switch between the two modes.

Insert editing mode

This mode inserts an event at the specified location and the event previously at this location now comes after the inserted event. This increases the duration of the entire playlist by the length of the inserted event.
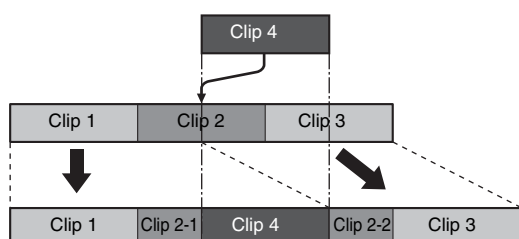
Overwrite editing mode

In overwrite editing mode, the inserted event overwrites other events starting from the specified point. The duration of other events will differ, but total playlist duration will remain the same.
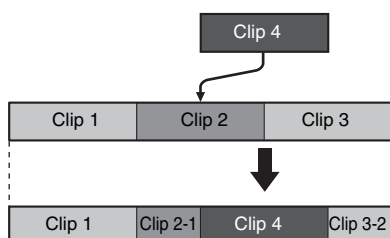
The result of other operations will also differ depending on whether they are performed in insert or overwrite editing mode.

Operation	Insert editing mode	Overwrite editing mode
Deleting events	Events following the deleted event are moved forward.	The deleted event becomes a section without video or sound.
Trim (extend)	Subsequent events are moved backwards by an amount that corresponds to the extension.	Subsequent events are overwritten by an amount that corresponds to the extension.
Trim (contract)	Subsequent events are moved forward by an amount that corresponds to the contraction.	Subsequent events are extended by an amount corresponding to the contraction.

Handling of Sections without Audio and Video

Overwrite editing can generate sections on the timeline missing both audio and video. When played back, sections without video generate no image (black) and sections without audio are silent. The same effect will be produced when a card with editing material is not inserted or by a section with an event that cannot be played back.

◆ **NOTE:**
• Edit Copy of sections that contain no video cannot be executed. However, Edit Copy of sections without audio can be executed.

Undoing and Redoing

Only the last edit operation in playlist mode can be undone. A cancelled operation can also be redone. Use the LAST X button to cancel or redo an operation.

◆ **NOTE:**
• The following operations cannot be cancelled or redone.
  - Menu operations other than OPERATION menu operations
  - Playlist name changes
    ([OPERATION] – [CHANGE PLAYLIST NAME])
• When something other than a P2 card is selected as the player, a cancellation of a temporary registration made using a three-point edit cannot be redone.
• An undo/redo operation cancels an event selection.
• An event created through registration or preview cannot be previewed after a redo.

Audio Fading between Events

The following fade settings can be made between audio events. Use setup menu No. 731 (PB FADE) to switch settings.

AUTO:	V fade (A fade out of the previous audio event is followed by a fade in of the next audio event.)
CUT:	No fade setting

Names and Functions of the Playlist Screen

The picture below shows that the playlist interface is made up of four elements.

Player screen   Recorder screen

Timeline   Data bar

Player screen

The player screen consists of the player thumbnail screen that shows thumbnails and the player playback screen that shows player video [1]. Use the THUMBNAIL button to switch between the player thumbnail screen and the player video screen.

[1]: The player video screen does not play back clips that are in different playlist formats. While the player thumbnail screen shows all clips, it displays the clip number of clips that cannot be played back, for example, because they are in a different format in red.

◆ **NOTE:**

• In A.DUB mode, the player screen does not show video but shows only the characters "A.DUB".

Player thumbnail screen

Player video screen

1. Player time code indication

Indicates the time code of the player playback position and other information.

• Displayed information

TCR:	Indicates player time code.
UBR:	Indicates player user bits.
CTL:	Indicates the position relative to player start position.
IN:	Indicates the time code of the IN point set on the player when the IN button is pressed.
OUT:	Indicates the time code of the OUT point set on the player when the OUT button is pressed.

DUR:	Indicates the duration between the set IN and the OUT points on the player when the IN and OUT buttons are simultaneously pressed.

◆ NOTE:
• When either one of the IN and OUT points has not been set, this function indicates the duration between the set IN or OUT point and the current location.

P2 :	When the player is a P2 card, this appears before the left end of the player time code display.
Ext :	When the player is an external device, this appears before the left end of the player time code display.
HDD :	When the player is a hard disk, this appears before the left end of the player time code display.

2. Player thumbnail status indication

Indicates the following player thumbnail status: [ALL], [SAME FORMAT], [SELECTED], [MARKER], [TEXTMEMO] and [SLOT n].

3. Player thumbnail display

Displays player thumbnails.
Displayed clip number, indicators and other information are the same as those displayed on the thumbnail display.
→Refer to "Thumbnail Screen Names and Functions" (page 50).

4. Player time bar indication

The total width of the time bar indicates the total length of the player (total duration). The background color of the time bar is light gray when the player is operating and dark gray when the recorder is operating.

Yellow bar (	):	Indicates the rough location of current playback.

◆ NOTE:
• When the player is an external device, the yellow bar (|) indicating playback location does not appear.

Green triangle (▶):	Indicates the rough location of the IN point when a player IN point is set.

◆ NOTE:
• When the player is an external device, the green triangle appears at 1/3 of the time bar regardless of IN point location.
• When player thumbnail status is set to SELECTED CLIPS or other status and the clip with the set IN point does not belong to these clips, a green bar (|) appears to the left of the time bar.

Red triangle (◀):	Indicates the rough location of the OUT point when a player OUT point is set.

◆ NOTE:
• When the player is an external device, the red triangle appears at a location 2/3 of the time bar regardless of OUT point location.
• When player thumbnail status is set to SELECTED CLIPS or other status and the clip with the set OUT point does not belong to these clips, a red bar (|) appears to the right of the time bar.

5. Player playback screen display

Displays video of player playback.

Recorder screen

The recorder screen shows video of events registered in the playlist.

1. Recorder time code indication

Indicates the time code of the recorder playback location.
• Displayed information

TCR:	Indicates recorder time code.
UBR:	Indicates recorder user bits.
CTL:	Indicates the position relative to recorder start position.
IN:	Indicates the time code of the IN point set on the recorder when the IN button is pressed.

OUT:	Indicates the time code of the OUT point set on the recorder when the OUT button is pressed.
DUR:	Indicates the duration between the set IN and OUT points of the recorder when the IN and OUT buttons are simultaneously pressed.

◆ **NOTE:**
- When either one of the IN and OUT points has not been set, this function indicates the duration between the set IN or OUT point and the current location.

2. Recorder playback screen display

Displays video of recorder playback.

3. Recorder time bar indication

The total length of the time bar indicates the total length of the recorder (total duration). The background color of the time bar is light gray when the recorder is operating and dark gray when the player is operating.

Yellow bar (	):	Indicates the rough playback location of the recorder in the playback list.
Green triangle (►):	Indicates the rough location of the IN point when a recorder IN point is set.
Red triangle (◄):	Indicates the rough location of the OUT point when a recorder OUT point is set.

Timeline

Indicates the state of events recorded in the playlist on the timeline.
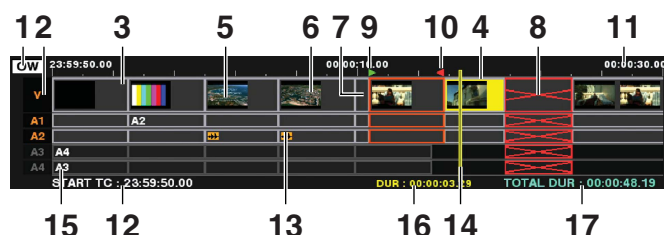
1. Editing mode indication

Indicates editing mode of an event.

INST:	Indicates insert editing
OW:	Indicates overwrite editing

2. Track name indication

Indicates track data and selected status.
- Displayed information

V:	Video
A1:	Audio channel 1
A2:	Audio channel 2

A3:	Audio channel 3
A4:	Audio channel 4

- Selected status

Orange:	Selected track
Gray:	Track not selected

3. Event indication

Gray event:	The source clip of the event is on the P2 card and can be played back normally.
Yellow event:	Event at cursor location. (→4. Cursor indication)
Black event:	A section without video or audio caused by the deletion of an event. (→7. Indication of section without video or audio)
Red (X) event:	Event whose source clip is not on a P2 card. (→8. Invalid event indication)
Thumbnail display:	Indicates thumbnails for IN and OUT point thumbnails of events with IN point priority when there is space for the indicator to display video track events. (→6. IN/OUT point thumbnail indication)

4. Cursor indication

The event at the cursor location is yellow.

Use the cursor buttons to move the cursor up, down, right and left. Hold down the SHIFT button and press the up, down, right and left cursor buttons (◄ / ► / ▲ / ▼) to move to events at the top.

◆ **NOTE:**
- The cursor cannot be moved during playback or search. It can be moved during standstill or pause.

5. Event frame

Blue:	Selected event
Orange:	Events that are temporarily registered when the player is an external device or hard disk.
Red (X):	Event whose source clip is not on a P2 card. However, a selected clip is indicated in a blue frame and has priority.

◆ **NOTE:**
- Follow the instructions below to make clip selections.

Editing

Editing: Playlist Function **83**

- SET button
  Selecting and deselecting an event at cursor location.
- Hold down the SET button for 1 second or longer
  Selecting the same IN/OUT events at the cursor location.
- Use of the MULTI SEL (SHIFT + SET) button after selecting one event:
  This operation selects all events from a previously selected location up to the current location.
- CANCEL (SHIFT + EXIT) button
  This operation cancels all selections.

6. IN/OUT point thumbnail indication

→Refer to "3. Event indication".

7. Indication of section without video or audio

→Refer to "3. Event indication".

8. Invalid event indication

→Refer to "3. Event indication".

9. Recorder IN point indication

A green triangle (▶) indicates the location of an IN point when a recorder IN point is set.

10. Recorder OUT point indication

A red triangle (◀) indicates the location of an OUT point when a recorder OUT point is set.

11. Scale indication

Displays the time code and scale according to the zoom ratio of the timeline.

When REPLACE TC is ON:	The timeline indicates the time code for start, middle and end positions.
When REPLACE TC is OFF:	The time code is not indicated.

12. Start time code indication

When REPLACE TC is ON:	The set start time code value is indicated.
When REPLACE TC is OFF:	"--:--:--:--" is displayed.

The A.DUB mode indicates time remaining for a voice-over, not the start time code.

13. Mark indicating change in audio level

This mark appears on events to indicate that a change in audio level has occurred, but only if the event has room for the mark.

14. Seek bar

Indicates the current playback position of the recorder. Next playback will start from the location indicated on the seek bar.

15. Indication of change in audio channels

Indicates the channel numbers where material was switched for events whose audio channels were switched.
No indication is made for events that remain unchanged or for events when the indication does not have room for channel numbers.

16. Display of duration of event at cursor location

Displays the time (duration) of the event at the cursor location.

17. Total playlist time indication

Indicates the total duration of all events.

Data bar

AVC**INTRA**100 1080/60i	manual	(2:P006MM)
1	2	3 4
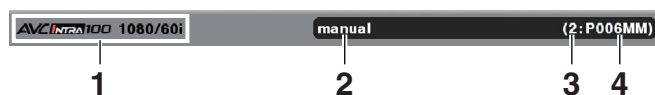
1. Playlist format indication

Indicates playlist format.

2. Playlist name indication

Indicates the name of a playlist.

◆ **NOTE:**
- No indication appears for playlists without names.
- Playlist names that are too long are abbreviated and end in "..".

3. Indication of slots storing playlist files

The numbers of slots that store playlist files are indicated in white.
Slots that do not store a playlist are indicated in white "-" symbol.
Slots containing read-only files are indicated in gray.
Slots with P2 cards that do not contain any saved files are indicated in red "-" symbol.

4. Playlist file name indication

Names of playlist files are indicated in white.

Gray file name:	Indicates read-only files.
Red file name:	Indicates that the P2 card storing the file has not been inserted.

◆ **NOTE:**

• When a card does not contain files, white "------" appears.

Editing

Buttons Used in Playlist Operations
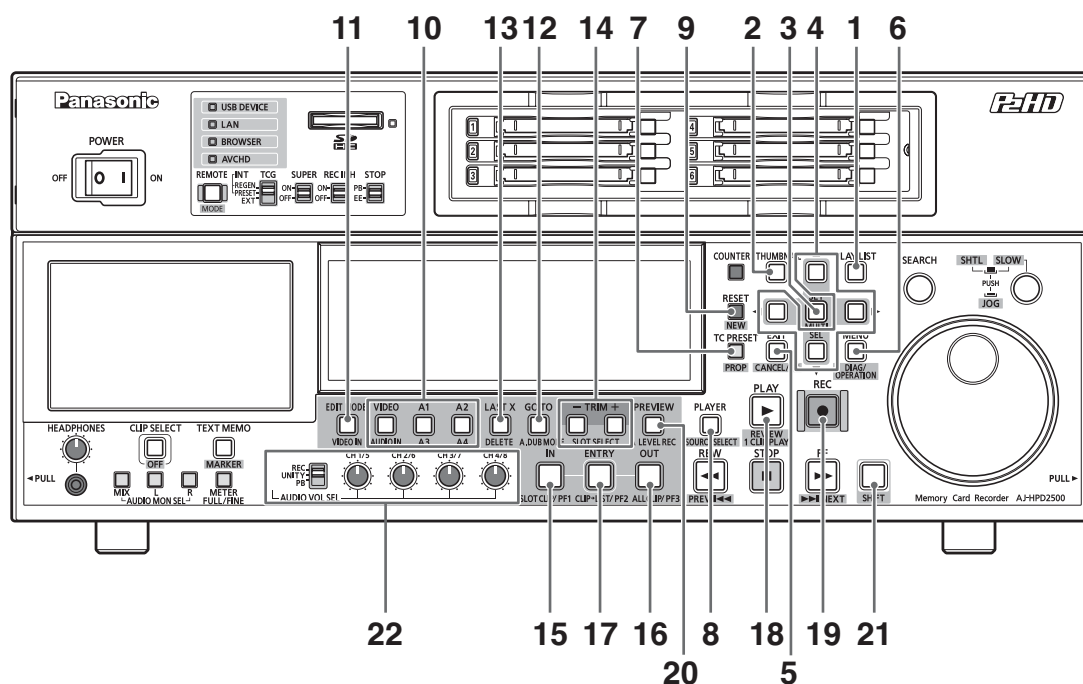
1. PLAY LIST button

Press to engage the playlist mode to create playlists or play back created playlists. This button lights in the playlist mode. Pressing this button in the playlist mode opens the recording/playback mode screen (GUI off).

2. THUMBNAIL button

Use this button in playlist mode to turn the thumbnail display on or off.

3. SET/MULTI SEL button

Use this button to select menus, run menu items and select an event or multiple events. Selected events are indicated in a blue frame.

• Event selection

SET:	Selects and deselects (toggle button) the event at cursor location.
Hold down the SET button for 1 second or longer:	Selects all events with the same IN and OUT points as the event at the cursor location.
MULTI SEL (SHIFT + SET) button after selecting an event:	This operation selects all events from a previously selected location up to the current location.

4. Cursor buttons (▲ / ▼ / ◄ / ►)

• During recorder operation

Moves the cursor up, down, right and left on the timeline. Also available for events without video (black) or audio.

Left and right cursor buttons (◄ / ►):	Moves the cursors and simultaneously the playback start position to the beginning of the event at the cursor location. Pressing the ► button beyond the event at the end of the track moves the cursor to the last frame of the playlist +1. Use this function to set the recorder IN point when registering new events. (The IN point is then entered as "**:**:**:**".) Holding down the SHIFT button and pressing the ◄ or ► button moves the cursor to the beginning or end of the track at the cursor location.
Up and down cursor buttons (▲ / ▼):	Moves up or down tracks in events at the current playback position. Hold down the SHIFT button and press the ▲ or ▼ button to move to the current playback location of the video track or the lowest audio track.

• During player thumbnail operation

These buttons move the cursor in the same way as the thumbnail screen.

→Refer to "Cursor operations in thumbnail screen" (page 52).

• During menu operations

These buttons operate in the same way as in the thumbnail menu.

→Refer to "Moving Between Screens and Menu Operations" (page 37).

5. EXIT/CANCEL button

EXIT button

This button performs the same function as EXIT in a menu.

CANCEL (SHIFT + EXIT) button

To cancel all selected events or temporary registrations, hold down the SHIFT button and press the EXIT button.

6. MENU/OPERATION button

MENU button

After entering the STOP status by pressing the STOP button, press the MENU button to open the menu window and press again to close it.

OPERATION (SHIFT + MENU) button

Hold down the SHIFT button and press the MENU button to open OPERATION in the GUI menu.

7. (TC PRESET)/PROP button

PROP (SHIFT + TC PRESET) button

Holding down the SHIFT button and pressing the TC PRESET button performs the following functions depending on the current operation.

• During recorder operation

Displays detailed information on the event at the cursor location.

• During player operation

Displays detailed information on the clip at the cursor location. However, the details that appear are the same as those obtained by the properties on the left side of the thumbnail screen in thumbnail mode. Press the EXIT button to return to the normal screen.

→Refer to "Viewing Event and Clip Information" (page 112).

8. PLAYER/ SOURCE SELECT button

PLAYER button

Use this button to switch between player and recorder operation. During player operation, the button lights and the player screen is available. During recorder operation, the button goes out and the recorder screen and timeline become available.

SOURCE SELECT (SHIFT + PLAYER) button

Press this button and select a player from the devices (interfaces) listed in the menu that appears. Select a device with the cursor and press the SET button to use it as the source player.

P2 CARD (default):	Select to use a clip on a P2 card as a player.
EXT PLAYER <RS422>:	Select EXT PLAYER to use an external device controlled via RS-422A. ◆ **NOTE:** • When the playlist format is 24PN or 30PN, you can only select the corresponding value (24PN or 30PN) in setup menu No. 25 (SYSTEM FREQ).
USB HDD:	Select USB HDD to use a hard disk connected via USB as a player[*1].
eSATA HDD:	Select eSATA HDD to use a hard disk connected via eSATA as a player[*1].
CANCEL:	Ends without making a selection.

*1: You must first use HDD EXPLORE to select partitions that allow playback.

→Refer to "Displaying Hard Disk Information (Explorer Screen)" (page 122) and "Selecting partition or folder as target" (page 123).

9. RESET/NEW button

RESET button

Resets the CTL counter.

RESET + IN/OUT button

Hold down the IN/OUT button and press the RESET button to reset the IN or OUT point for the player or recorder, whichever is active.

NEW (SHIFT + RESET) button

Hold down the SHIFT button and press the RESET button to create a new playlist (fulfils the same function as [FILE] – [NEW]).

10. VIDEO/A1/A2/A3 (SHIFT + A1)/A4 (SHIFT + A2) button

Selects tracks for editing. Audio channels 5 to 8 cannot be selected for editing, but when the source clip is available, choose [SETTING] – [AUDIO CH] – [CH5-8] from the menu to set output or disable output for playback or Edit Copy.

→Refer to "Creating New Clips from the Playlist (Edit Copy)" (page 115).

11. EDIT MODE button

Press this button to toggle between insert and overwrite editing.

12. GO TO/A. DUB MODE button

GOTO button

Hold down the GOTO button and press the IN/OUT button to move the playback location to the currently set IN/OUT point.

A. DUB MODE (SHIFT + GOTO) button

Hold down the SHIFT button and press the GOTO button to engage the A.DUB mode. The A.DUB mode allows you to record voice-overs.

→Refer to "Recording Voice-Overs" (page 106).

13. LAST X/DELETE button

LAST X button

Press this button to cancel the last edit operation and return to the previous editing stage. Pressing this button again after cancelling restores the operation.

DELETE (SHIFT + LAST X) button

Use this button to delete events during recorder operation. Place the cursor on the event you want to delete and press the SET button to select it. Then hold down the SHIFT button and press the LAST X button to delete the selected event.

14. TRIM (+/−)/SLOT SELECT button

TRIM (+/−) button

Use to zoom in (+) or zoom out (−) the timeline.

IN/OUT + TRIM (+/−) button

• When no event is selected

Use to fine adjust the IN and OUT points set for the player and recorder.

→Refer to "Revising IN and OUT points for the player and recorder" (page 97).

• When an event is selected (blue frame)

Use to fine adjust IN and OUT points for recorder of selected event.

→Refer to "Revising Registered Events" (page 99).

SHIFT + IN + TRIM (+/−) button

• When an event is selected (blue frame)

Use to simultaneously fine adjust the IN points for selected events on the player and recorder.

→Refer to "Revising Registered Events" (page 99).

SLOT SELECT (SHIFT + TRIM (+/−)) button

Select slot of card that will be used for loading video on the timeline from an external device (RS-422A) or hard disk.

15. IN/SLOT CLIP button

16. OUT/ALL CLIP button

IN/OUT button

Hold down the IN or OUT button to superimpose on the monitor the time code of IN or OUT point set on the player and recorder.

IN + OUT buttons

Hold down the IN and OUT buttons to display the duration between the IN and OUT points set on the player or recorder. If either one of the IN and OUT points has not been set, it will show the duration up to the current location.

SLOT CLIP (SHIFT + IN) button

During player thumbnail operation, hold down the SHIFT button and press the IN button to change the type of clips that are displayed.

→Refer to "Changing Thumbnail Display" (page 54).

ALL CLIP (SHIFT + OUT) button

During player thumbnail operation, hold down the SHIFT button and press the OUT button to change to display ALL clip types.

→Refer to "Changing Thumbnail Display" (page 54).

For details on other operations, refer to the descriptions of the ENTRY button, TRIM+ /− button, RESET button and GO TO button.

17. ENTRY/CLIP → LIST button

ENTRY button

Press to confirm trimming of IN and OUT points.

IN/OUT + ENTRY buttons

Hold down the IN or OUT button in the player or recorder and press the ENTRY button to set the current playback location as the IN or OUT point.

CLIP → LIST (SHIFT + ENTRY) button

Inserts a clip selected in a player thumbnail at the recorder IN point of the event at the cursor location.

18. PLAY/REVIEW button

PLAY button

Use to play back video on the player or recorder.

REVIEW (SHIFT + PLAY) button

Use to review playback of event at the cursor location or temporarily registered event during recorder operation.

19. REC button

Finalizes an edit operation, registers the event and displays it on the timeline. Imports video to a P2 card from an external device (RS-422A) or hard disk used as the player.

Use the REC + PLAY button during playback in the A.DUB mode to start voice-over recording.

→Refer to "Recording Voice-Overs" (page 106).

20. PREVIEW/A LEVEL REC buttons

PREVIEW button

Use this button to preview playback of event that is being registered. Before the preview, the event is registered and appears on the timeline. When the player is a P2 card, the level changes made using the audio level control during a preview are set in a registered event.

→Refer to "Setting Audio Level" (page 109).

◆ **NOTE:**

• Events created from external devices or hard disks are indicated in orange as temporarily registered events.

A LEVEL REC (SHIFT + PREVIEW) button

Press this button to enable adjustment of the audio level with the audio level control simultaneous with a preview of the IN and OUT points of the recorder. This mode allows you to dynamically change the audio level in the event.

→Refer to "Setting Audio Level" (page 109).

21. SHIFT button

This button is used in combination with other buttons.

22. REC/UNITY/PB selection switch and audio level controls

Select recording (REC position) or playback (PB position) by the selection switch and adjust the levels of audio signals by the audio level controls for audio recording/playback and voice-over recording (sound mixed with playback sound).

◆ **NOTE:**

• Levels cannot be adjusted during playback of a playlist.

Editing

Preparing for Playlist Creation

This chapter will describe the setup required prior to creating playlists.

Setting System Frequency

Use setup menu No. 25 (SYSTEM FREQ) to adjust the system frequency. Setting the system frequency determines what playlist formats are available.

Setting Playlist Format

A playlist format is the format that a playlist can handle and is determined using a combination of the setup menus given below.

No.020	SYS FORMAT
No.024/025	REC FMT(SD)/REC FMT(HD)
No.026	PLY LST FMT

For details on each menu, refer to "Setup" (page 164).
The playlist format is set when a new playlist is created. Thus a new playlist must be created when a change in playlist format is made.

Setting the Playback Time Code (TC)

During playlist playback, you can select whether the time code should be replaced and output as a continuous value or the separate time code of each clip should be retained.
You can set the time code start value when it is replaced at output.

1 Press the PLAY LIST button to open the playlist screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [SETTING] – [REPLACE TC] – [REPLACE] and press the SET button.

4 Select [ON] and press the SET button.
This setting replaces the time code during playback.

◆ **NOTE:**
- When set to [OFF], the time code is not replaced, instead the time code of each clip is output. Then the drop-frame flag of the clip referenced by the first event is used by all drop-frame flags in the playlist.
- During playback or Edit Copy on the recorder, the time code of the video track clips is output intact and this may result in non-continuous time code. [ON] is therefore the normal recommended setting.
- When set to [OFF], go to step 7 and end setup.

5 Use the cursor buttons to choose [SETTING] – [REPLACE TC] – [START TC] and press the SET button to enter the start value of the time code.
The initial value is 00:00:00:00.

6 Use the cursor buttons to choose [SETTING] – [REPLACE TC] – [DROP FRAME]. Then press the SET button and select [DF] (drop frame) or [NDF] (non drop frame).

◆ **NOTE:**
- A [DF] setting cannot be made for a playlist in the 24PN format.
- When an event is imported from a VTR or other external device during control via the REMOTE connector, a clip is created (recorded) from the external device when a playlist is registered. Events in a playlist follow the [REPLACE TC] setting, but the clip that is the source of the event retains its original time code.

7 Press the MENU button to end setup.

Other Settings

Setting preroll time

Set the preroll time for preview or voice-over recording.

1 Press the MENU button, use the cursor buttons to choose [SETTING] – [PREROLL TIME] and press the SET button.

2 Select 3, 5 or 7 seconds for the preroll time.

Changing audio channel content

You can replace audio content that will become available when creating events.

1 Press the MENU button, use the cursor buttons to choose [SETTING] – [AUDIO CH] and press the SET button.

2 Select the channels that will be switched.

Example: Select as shown below to switch CH1 and CH2 locations.

[AUDIO CH]-[CH1]=CH2
　　　　　　[CH2]=CH1
　　　　　　[CH3]=CH3
　　　　　　[CH4]=CH4

◆ **NOTE:**
- Press the MENU button, choose [SETTING] – [AUDIO CH] – [RESET] to reset all audio channels to their defaults.
- The settings described here can also be used for switching audio channel operations.
  →For details, refer to "Switching audio channels" (page 102).

Setting output for audio channels 5 - 8

Use the steps below to set output for audio channels 5 - 8 for playback or Edit Copy of playlists.

1 Press the MENU button, use the cursor buttons to choose [SETTING] – [AUDIO CH] and press the SET button.

2 Select [CH5-8] and press the SET button to change settings.

NONE:	Audio is not output via channels 5 - 8.
CH5-8:	Outputs audio for channels 5 - 8 of video clips as audio channels 5 - 8.

Setting audio fade

Use setup menu No. 731 (PB FADE) to set up audio fade that will become available when creating events.

Setting Auto Entry

When Auto Entry is enabled, after confirming edit using the PREVIEW or REC button, the IN point of the recorder is automatically set to the location after the last frame in the edited section.

1 Press the MENU button and use the cursor buttons to choose [SETTING] – [AUTO ENTRY].

2 Press the SET button, select [ON] and press the SET button.

◆ **NOTE:**
- When all the following conditions apply, the time code of the IN point for the recorder is displayed as "**:**:**:**.".
  - AUTO ENTRY is set to ON
  - REPLACE TC is set to OFF
  - Editing that includes the last frame of the recorder timeline is performed

Setting up voice-over recording

This sets the presence of mix recording and recorded audio output required for recording voice-overs (refer to "Recording Voice-Overs" (page 106)).
Use the following setup menus.

No.793	A DUB PB MIX
No.797	A DUB MONI

→For details on the menu, refer to "Setup" (page 164).

Creating a New Playlist

This section describes how to delete a playlist and prepare a new playlist.

1 Set the items in "Preparing for Playlist Creation" (→ refer to page 90).

2 Press the PLAY LIST button to open the playlist screen.

3 Press the MENU button.

4 Use the cursor buttons to choose [FILE] – [NEW] and press the SET button.

◆ **NOTE:**
- Pressing the NEW (SHIFT + RESET) button has the same effect as choosing [FILE] – [NEW].

5 Select [YES] and press the SET button.

This registers an event where the start of the clip is the IN point and its end is the OUT point.

Naming Playlists

Use the steps below to name playlists.

1 Press the PLAY LIST button to open the playlist screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [OPERATION] – [CHANGE PLAYLIST NAME] and press the SET button.

4 Use the on-screen keyboard to enter a name and press [OK].

5 Close the menu to register the name in [PLAYLIST NAME].

Creating Playlists

Registering Events in a Playlist

To register an event in a playlist, either set IN and OUT points using the player and the recorder, or select clips from the player thumbnails.

Setting IN and OUT points to assign an event

Defining any three of four points (the IN and OUT points of both the player and the recorder) automatically defines the remaining point.

It is also possible to set only the IN points for the player and the recorder.

◆ **NOTE:**
- When only the IN points for the player and the recorder are set and the player is a P2 card or hard disk, the audio and video of the event from the IN point of the player until the end of the clip where the IN point is set is inserted at or starts overwriting data from the recorder IN point.
- When an external device is used as the player, audio and video up to 24 hours (excluding the preview time) is inserted at or starts overwriting data at the IN point of the recorder.

Selecting player

Select a P2 card, hard disk or external device (RS-422A) as a player.

A P2 card is normally used as a player. Use the steps below to select other devices as a player or to again select a P2 card as a player.
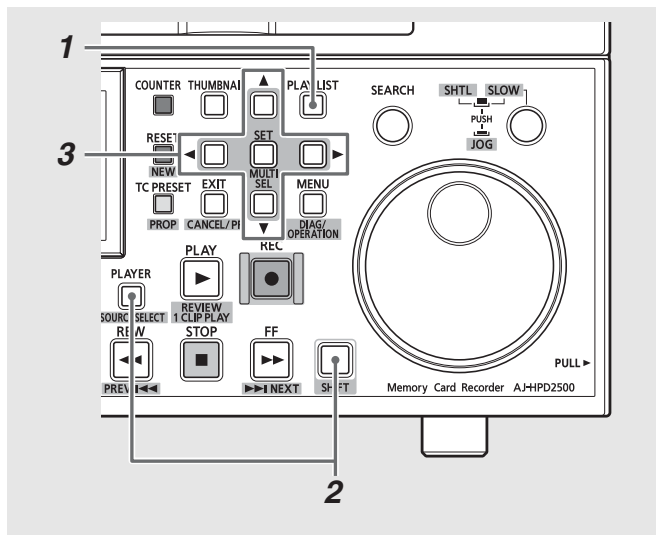
1 Press the PLAY LIST button to open the playlist screen.

2 Press the SOURCE SELECT (SHIFT + PLAYER) button.

3 Use the cursor buttons to select an interface for the player and press the SET button.

This determines the external device (interface) that can be remotely operated.

→For details on connecting and setting up external devices, refer to "Connections" (page 116) and "External Remote Control" (page 128).

Switching between player and recorder
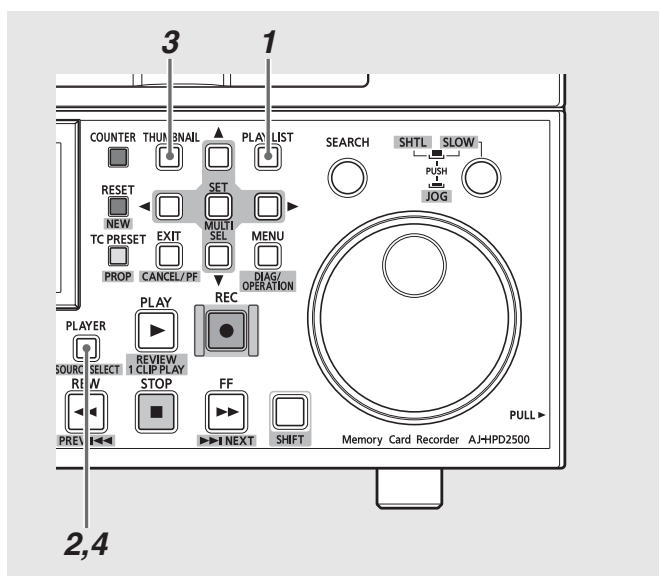
1 Press the PLAY LIST button to open the playlist screen.

The recorder (right side) is selected upon entering the playlist mode. The player (left side) displays thumbnails.

2 Press the PLAYER button to switch to player operations.

The PLAYER button goes on and the left side of the screen appears in a yellow frame.

3 Press the THUMBNAIL button to switch to player video.

The THUMBNAIL button goes off and the screen shows the video of the player.

4 Press the PLAYER button to switch to recorder operations.

The PLAYER button goes off and the right side of the screen appears in a yellow frame.
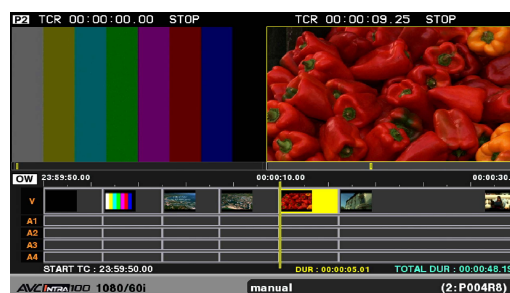
◆ **NOTE:**

- All clips in thumbnail display become available when clips on a P2 card or hard disk are used as a player, though it is possible to limit the number of clips.
  →Refer to"Limiting the number of clips used as a player" (page 95).
- When an external device (RS-422A) is used as a player, playback location (yellow bar) on the player bar is not displayed. Nor is it possible to switch to thumbnails.

Limiting the number of clips used as a player

The player is normally composed of all clips on a P2 card that conform to the playlist format. Use the steps below to limit the player to a clip or specific clips.

◆ **NOTE:**
- Clips not in the playlist format are indicated by red numbers and cannot be selected for playback.
- This function is not available on external devices.
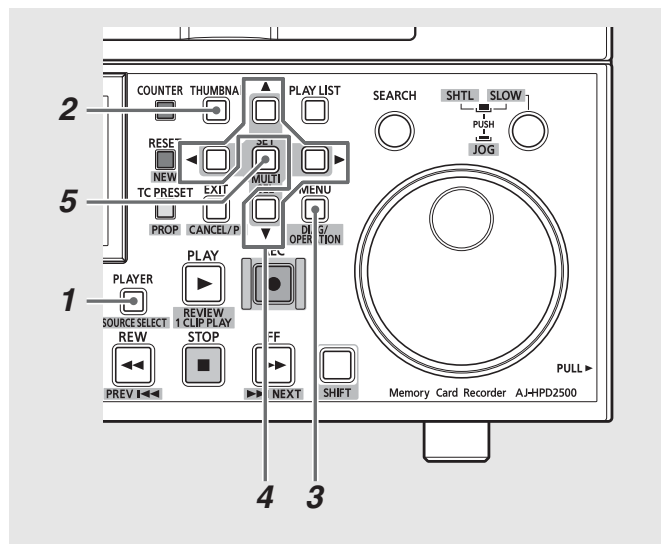
1 Switch to player operation.

Press the PLAYER button to switch to player operation.

2 Display player thumbnails.

During player operation, press the THUMBNAIL button to display thumbnails on the player screen.

3 Press the MENU button.

4 Use the cursor buttons to select the clip type that should appear under [THUMBNAIL].

ALL CLIP:	Selects all clips
SAME FORMAT CLIPS:	Selects clips of the playlist format
SELECTED CLIPS:	Only uses selected clips
MARKED CLIPS:	Selects clips to which shot marks have been attached
TEXT MEMO CLIPS:	Selects clips with text memos
SLOT CLIPS:	Selects clips on P2 card in slot No. n

◆ **NOTE:**
- To select specific clips as a player, select clips to be used from the player thumbnails and select [SELECTED CLIPS]. The clips then appear in the order they were selected.
- Each press of the SLOT CLIP (SHIFT + IN) button switches the clip in the following order SELECTED → SLOT1 → SLOT2…SLOT6 → SELECTED (only slots with cards).
- Press ALL CLIP (SHIFT + OUT) to switch to ALL CLIP.

5 Press the SET button.

The player screen opens and the player will now only use the selected clips.

Setting IN and OUT points
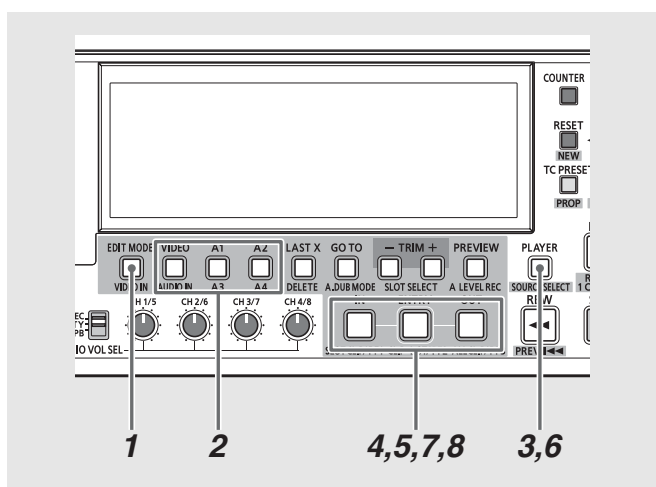
1 Selecting insert or overwrite editing.

Use the EDIT MODE button to select insert or overwrite editing.

2 Select tracks.

Use the VIDEO/A1/A2/A3/A4 buttons to select the tracks that should be imported. The names of selected tracks are indicated in yellow on the left side of the timeline.

3 Switch to player operation.

Press the PLAYER button to switch to player operation.

4 Set the IN point of the player.

While looking at the player screen, hold down the IN button and press the ENTRY button at the start location of the required section to set the player IN point. A green ▶ is added to the player bar. The time code of the set IN point appears on the player screen while the IN button is held down.

5 Set the OUT point of the player.

While looking at the player screen, hold down the OUT button and press the ENTRY button at the end location of the required section to set the player OUT point. A red ◀ is added to the player bar. The time code of the set OUT point appears on the player screen while the OUT button is held down.

6 Switch to recorder operation.

Press the PLAYER button to switch to recorder operation.

7 Set the IN point of the recorder.

Hold down the IN button and press the ENTRY button at the location to which you want to set the recorder IN point where the section specified by the player is to be inserted or overwritten. A green ▶ is added to the recorder bar. The time code of the set IN point appears on the recorder screen while the IN button is held down. When the playlist is new (and there are no events), the beginning of the recorder is used for insert and overwrite editing even if no recorder IN point has been set.

8 Set the OUT point of the recorder.

Hold down the OUT button and press the ENTRY button at the location where you want to set the recorder OUT point and end the overwrite using the section selected on the player. A red ◀ is added to the recorder bar. The time code of the set OUT point appears on the recorder screen while the OUT button is held down.

◆ NOTE:

• The IN and OUT points for the player and the recorder can be set in any order.
• Setting the fourth point when any three points of player or recorder IN and OUT points have been defined, automatically cancels the point corresponding to the fourth point (for example, the recorder IN point when the player IN point has been set).
• Set the IN point and OUT point so that the resulting events have a duration of at least 10 frames. A shorter event may not play back normally.
• In the 24PN playlist format, editing is performed in 4-frame units.

• When the IN and OUT points of the player spans multiple clips, multiple events are created.
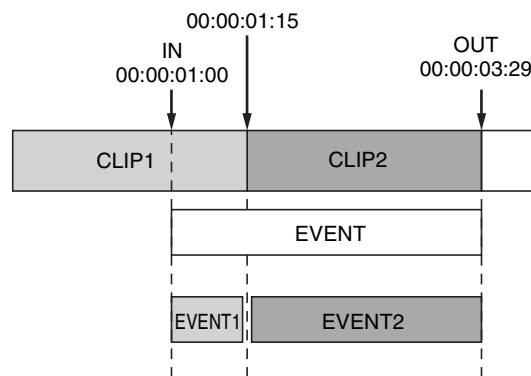
• When the IN and OUT points become reversed, the most recently set point has priority.
• When all the following conditions apply, the time code of the IN point for the recorder is displayed as "**:**:**:**".
  - REPLACE TC is set to OFF
  - The IN point for the recorder is set after the last frame on the timeline.
• To create consecutive events in the playlist (assembly editing), enable AUTO ENTRY in the menu. When events have been assigned, the recorder IN point is automatically set to the frame after the last frame in the playlist. Thus there is no need to set the IN point for the recorder as setting the IN point and OUT point for the player will automatically create consecutive events.
• The IN and OUT points for a P2 card or external device used as the player are retained after exiting the playlist mode.

Revising IN and OUT points for the player and recorder
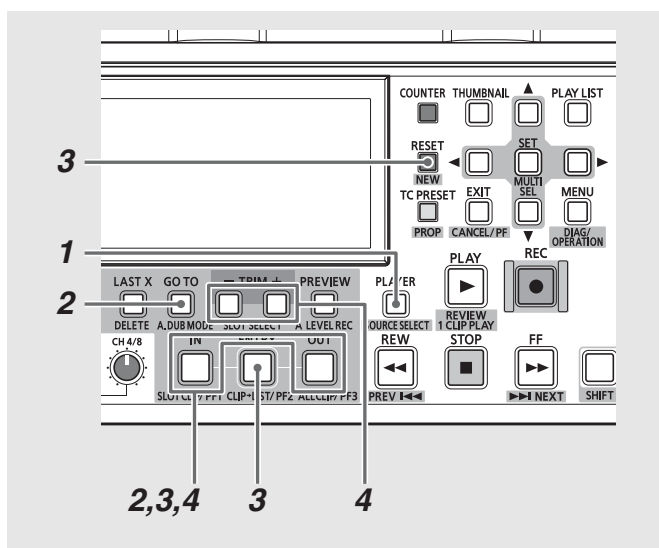
1. **Switch to player or recorder operation.**

   Press the PLAYER button to switch to player or recorder operation.

2. **Use the GOTO button and the IN or OUT button to find the IN or OUT point.**

   Hold down the IN or OUT button and press the GOTO button to move the playback location to the IN or OUT point.

3. **Set the IN or OUT point of the player or recorder.**

   While looking at the player or recorder screen, hold down the IN or OUT button and press the ENTRY button to set the IN or OUT point again. Or hold down the IN or OUT button and press the RESET button to cancel the IN or OUT point.

4. **Move the IN or OUT point of the player or recorder as necessary.**

   To fine adjust, hold down the IN or OUT button and press the TRIM+ or TRIM– button to move the IN or OUT point. Hold down the button for 1 second or more to make continuous settings.

Preview and assigning events (when the player is a P2 card)

After setting the IN or OUT point, preview to check edit result on the recorder.
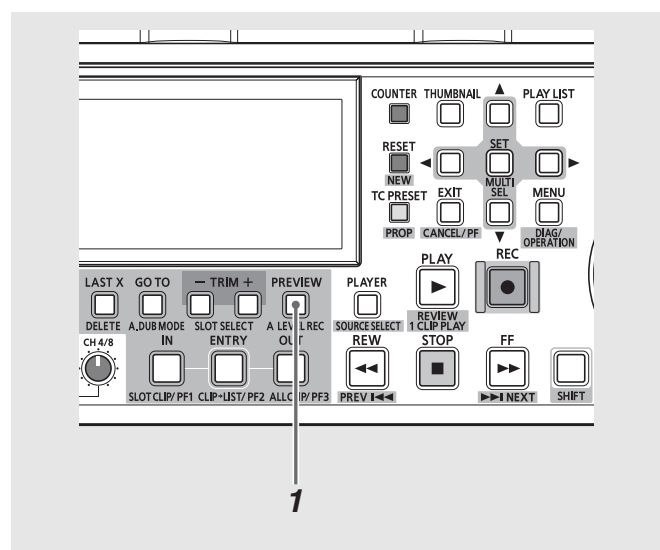
1. **Press the PREVIEW button to preview.**

   Start preview by pressing the PREVIEW button to play back the edited section on the recorder starting 3 seconds before the beginning of the edit section (PREROLL TIME setting) to 1 second beyond the end of the section.

2. **The result is assigned as events to the timeline.**

◆ **NOTE:**

- To end preview, press the STOP button.
- The audio level for each event can be separately set during preview.

  →Refer to "Setting Audio Level" (page 109).
- To confirm the edit result without previewing it, press the REC button.
- Setting the OUT point for the recorder during preview stops preview and newly starts editing with the set OUT point.
- When only the IN points for the player and the recorder are set, you can edit up to the end of the player clip, which becomes the OUT point for the player.
- When no other operation has been performed after confirming an edit, a second preview will play back the section edited immediately before. The audio level for this section can then be adjusted. This level is cancelled if an IN or OUT point is set or event operations are performed.

Preview and assigning events (when the player is something other than a P2 card)

After setting the IN or OUT point, preview to check edit result on the recorder.
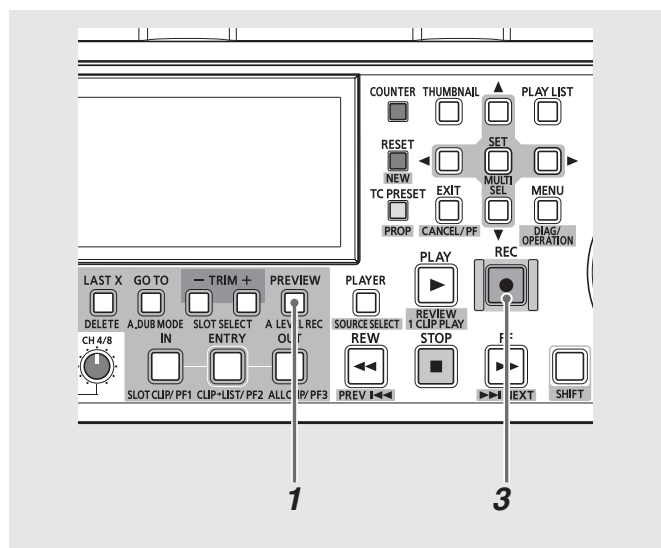
1 Press the PREVIEW button to preview.

Start preview by pressing the PREVIEW button to play back the edited section on the recorder starting 3 seconds before the beginning of the edit section (PREROLL TIME setting) to 1 second beyond the end of the section.

2 Events are indicated in orange during a preview.

During a preview, a temporary event (an event displayed in orange) that indicates a temporary edit section is created on the timeline. This is referred to as a temporary registration. In this state, the event is not imported (not stored on the P2 card).
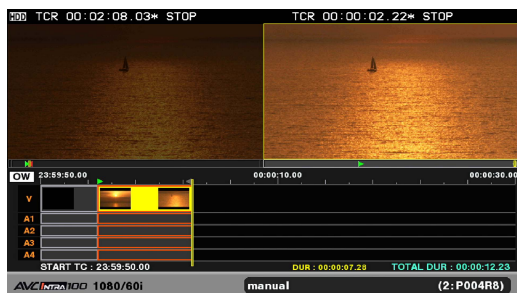
3 Press the REC button to register an event.

This operation records the required video section on the P2 card in the slot selected for recording. If required, use the SLOT SELECT button to select the slot to be used for recording prior to recording. This recording extends 2 seconds beyond the IN and OUT points to allow room for trimming after editing.

4 The event is recorded and appears on the timeline.

◆ **NOTE:**

- To end preview, press the STOP button.
- A temporarily registered section on an external device (RS-422A) used as the player is played back or reviewed without video or sound. A review plays back the entire temporarily registered section.
- To confirm the edit result without previewing it, press the REC button.
- When an edit is started by defining only IN points of the player and recorder, a temporary event of up to 24 hours will be created on the recorder. Set an OUT point during the preview or press the STOP button during capture to reset the length of the event.
- The margin before and after a temporarily registered section that is imported in a capture is a maximum of 2 seconds. Data that exceeds the IN and OUT points when a hard disk is used as the player, and data that exceeds the start and end points of material when the player is an external device are not imported. Also, the preroll needs a period of time equal to the set preroll time plus 2 seconds.
- When the player is a device other than a P2 card, a preview without defining the IN and OUT points is not possible after finalizing the edit (after capture).
- When an external device (RS-422A) is used as the player and the time code of the external device is intermittent, the event may not be properly imported to the timeline even if the capture operation works. As long as the OUT point shift is not longer than 2 seconds, it is possible to revise the event after using the trimming function for importing.
- Audio levels cannot be set during registration or preview of events when the player is something other than a P2 card.
- Audio channels cannot be switched during editing that uses an external device (RS-422A) as the player.
  →Refer to "Changing audio channel content" (page 91).
- Events cannot be selected and menu operations are not available during temporary registration. To cancel temporary registration, press the CANCEL (SHIFT + EXIT) button.

Registering Events by Clip

Use the following procedure to add selected clips to the playlist. This operation registers the start of a clip as the IN point and its end as the OUT point.
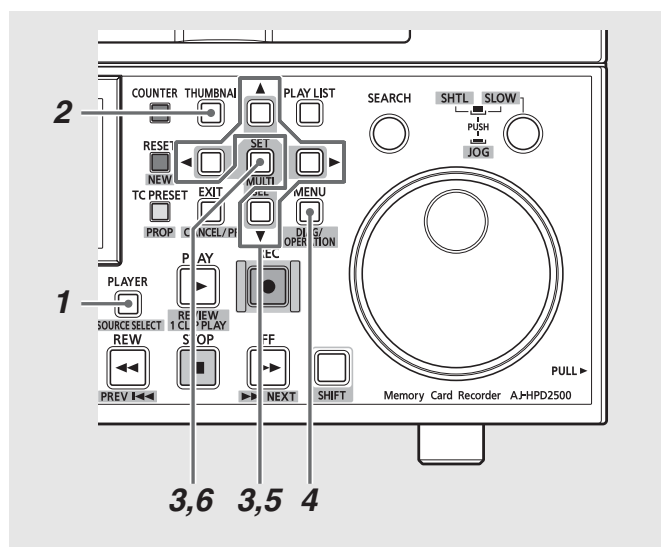
1 Switch to player operation.

Press the PLAYER button to switch to player operation.

2 Display player thumbnails.

During player operation, press the THUMBNAIL button to display thumbnails on the player screen.

3 Use the cursor buttons to select the clip you want to add to the event and press the SET button.

The frame of the clip turns blue.

4 Press the MENU button.

5 Use the cursor buttons to choose [OPERATION] – [APPEND SELECTED CLIPS].

6 Press the SET button.

An event is registered with the start of a selected clip as the IN point and its end as the OUT point.

◆ NOTE:

• Clips not in the playlist format are indicated by red numbers and cannot be registered.

• This operation inserts a clip right before the event at the cursor location. It is not possible to add the clip at any other location or through overwriting.

• It is possible to use CLIP → LIST (SHIFT + ENTRY) button instead of operation described in step 5 to add a clip as an event.

• The clip cannot be added when its addition causes the number of events in a track to exceed 100.

• You can also add multiple clips. The clips are added in the order they are selected.

• The selected clip will be inserted even when the overwrite editing is active.

Revising Registered Events

Events registered on the timeline can be revised.

Trimming events

You can change IN and OUT points for events in frame increments (in 4-frame increments at 24PN). The result of trimming will depend on whether insert or overwrite editing is selected.

Operation	Insert editing	Overwrite editing
Trim (extend)	Subsequent events are moved backwards by an amount that corresponds to the extension.	Previous or subsequent events will be overwritten by an amount corresponding to the extension.
Trim (contract)	Subsequent events are moved forward by an amount that corresponds to the contraction.	Previous and subsequent events are extended by an amount corresponding to the contraction.

Example showing overwrite editing of Event2 whose IN point is trimmed by 1 frame in + direction

(A1 is the first frame from the beginning of ClipA that Event1 references.)
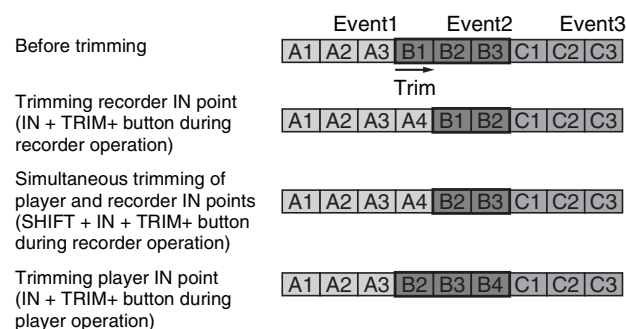
Example showing insert editing of Event2 whose OUT point is trimmed by 1 frame in + direction
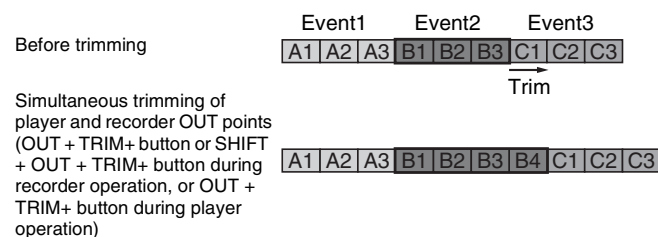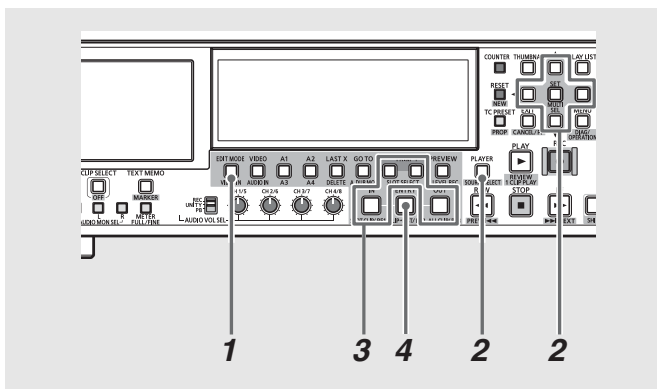
1 Select insert or overwrite editing.

Use the EDIT MODE button to select insert or overwrite editing.

2 Select the event to trim.

Press the PLAYER button to switch to recorder operation. Use the cursor buttons to move the cursor to the event to be trimmed and press the SET button.

◆ NOTE:

- Only events at the same location and of the same length in the source clip can be simultaneously selected for trimming. Trimming is not available when other types of events are selected. Use the CANCEL (SHIFT + EXIT) button to cancel selections.

3 Start trimming.

Hold down the IN (OUT) button and press the TRIM+ or TRIM– button to open the trimming dialog. Press TRIM+ or TRIM– button to extend or contract the IN point in frame increments (in 4-frame increments at 24PN).

◆ NOTE:

- In insert editing, trimming is performed simultaneously on the recorder and player.
- To trim the IN and OUT points of the player, press the PLAYER button to select the player and press the TRIM+ or TRIM– button.
- Hold down the SHIFT button and perform a trimming operation on the recorder side to enable simultaneous trimming on the player and recorder.

4 Press the ENTRY button to finalize trimming.

◆ NOTE:

- Performing any of the following operations will discard the changes and redisplay the playlist screen.
  - Pressing the EXIT button
  - Pressing the CANCEL (SHIFT + EXIT) button
- You cannot make changes that go beyond the start and end points of the source clip.
- You cannot make changes that reverse the IN and OUT points.
- The timeline stays the same during trimming. It is updated after finalizing the trimming results.
- During trimming, the search dial can be used to move video and the IN/OUT + ENTRY buttons can be used to register editing points in addition to the use of TRIM+ and TRIM– buttons.
- Events in red cannot be trimmed.
- Trimming cannot be performed on a player other than a P2 card.
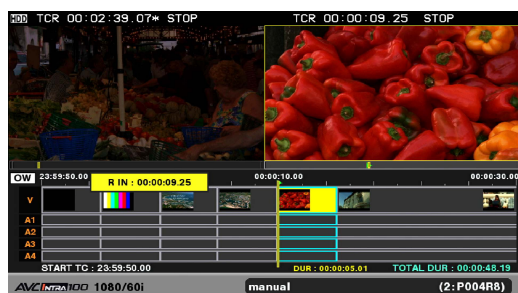
Cutting events

Events can be cut (divided) at the recorder playback location (indicated by the yellow bar on the timeline).
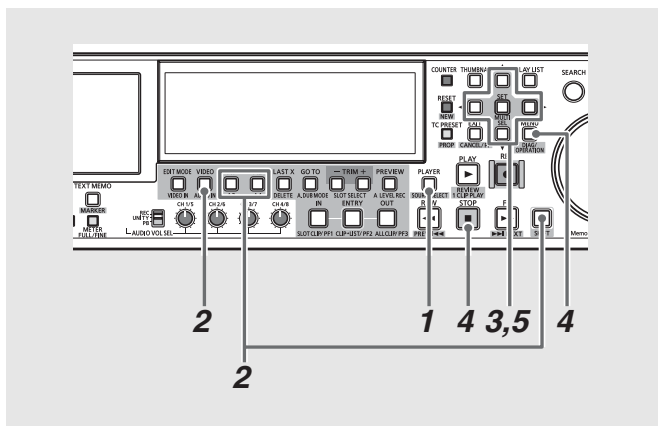
1 Switch to recorder operation.

Press the PLAYER button to switch to recorder operation.

2 Select the track of the event to be cut.

Use the VIDEO/A1/A2/A3 (SHIFT + A1)/A4 (SHIFT + A2) buttons to select the track. The names of selected tracks are indicated in yellow on the left side of the timeline.

3 Move the playback location to the location of the cut.

4 Press the STOP button, then press the MENU button.

5 Use the cursor buttons to choose [OPERATION] – [CUT SEQUENCE] and press the SET button.

This operation cuts the target events.

◆ **NOTE:**
• This operation cannot be performed on an event that cannot be played back (red event).
• Editing is performed in multiples of four frames in the 24PN playlist format.

Moving events

Selected events can be moved. V, A1 to A4 events whose IN and OUT points are aligned on the timeline can be moved. The destination is also limited to events at V and A1 to A4 cursor location with IN points.
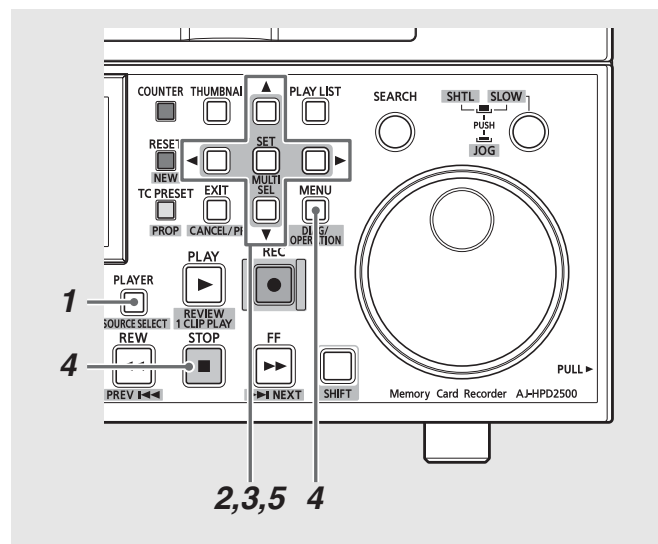
1 Switch to recorder operation.

Press the PLAYER button to switch to recorder operation.

2 Select the events to move.

Use the cursor buttons to move the cursor to the event to be moved and press the SET button to select it.

◆ **NOTE:**
• Select the events of all tracks (VIDEO, A1, A2, A3 and A4).
• Holding down the SET button for 1 second or longer will select all events with the same length as the event at the cursor location.

3 Move the events to the destination.

Use the cursor buttons to move the cursor to the location the event is to be moved to. (The event moved using the cursors is inserted before this point.)

4 Press the STOP button, then press the MENU button.

5 Use the cursor buttons to choose [OPERATION] – [MOVE EVENTS] and press the SET button.

This operation moves the selected events.

◆ **NOTE:**
• This operation moves the event to the location of the cut. It is not possible to select any location, nor is overwrite editing available. Insertion is possible only when the IN points on the timeline are lined up.
• Even if the selected events do not line up, they can be moved as long as the IN and OUT points of the overall events do.

Deleting events

Selected events can be deleted. The result of a deletion depends on whether the operation was performed in insert or overwrite editing.

| Insert editing: | Events following the deleted event are moved forward |
| Overwrite editing: | The deleted event becomes a section without video or sound |
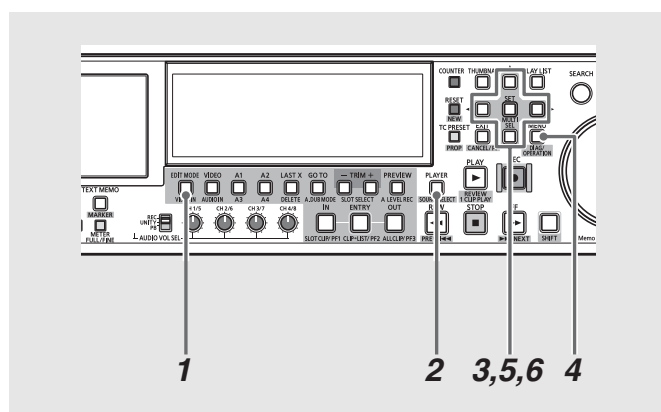
1 Select insert or overwrite editing.

Use the EDIT MODE button to select insert or overwrite editing.

2 Switch to recorder operation.

Press the PLAYER button to switch to recorder operation.

3 Select the event to delete.

Use the cursor buttons to move the cursor to the event to be deleted and press the SET button to select it.

4 Press the MENU button.

5 Use the cursor buttons to choose [OPERATION] – [DELETE SELECTED EVENTS] and press the SET button.

The DELETE (SHIFT + LAST X) button can also be used for deletion.

6 Select [YES] in the confirmation dialog and press the SET button.

This operation deletes the selected events.

Deleting all events

You can use the following function to delete all events in a playlist. This operation differs from creating new playlists (refer to "Creating a New Playlist" (page 91)); the playlist format and the name of the playlist remain the same and only the events are deleted.
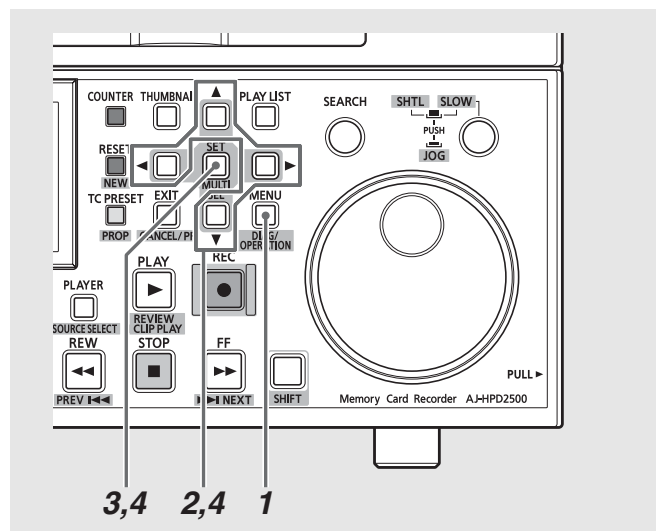
1 Press the MENU button.

2 Use the cursor buttons to choose [OPERATION] – [DELETE ALL EVENT].

3 Press the SET button.

4 Select [YES] in the confirmation dialog and press the SET button.

This operation deletes all events in the playlist.

Switching audio channels

Follow the steps below to switch audio channels after event creation.
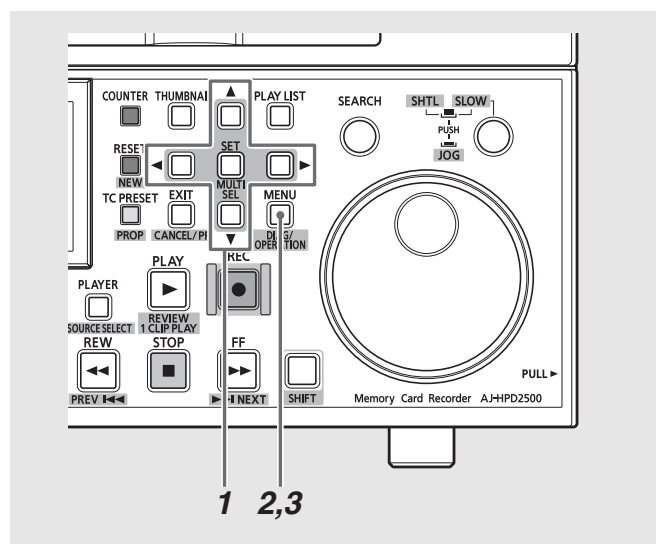
1 Select an event.

Select the event where audio channels should be switched. Multiple events can be selected.

2 Set the channel.

Press the MENU button, choose [SETTING] – [AUDIO CH] from the menu and set the channels to be input to each channel.

Example: Select as shown below to switch CH1 and CH2 locations.

[AUDIO CH]-[CH1]=CH2
               [CH2]=CH1
               [CH3]=CH3
               [CH4]=CH4

◆ **NOTE:**

• Press the MENU button, choose [SETTING] – [AUDIO CH] – [RESET] to reset all audio channels to their defaults.

3 Switch channels.

Press the MENU button and choose [OPERATION] – [EDIT AUDIO CH] from the menu to reflect operation made in step 2 above to the event.

◆ **NOTE:**

• The switching status is also indicated on the timeline.

Saving a Playlist to a P2 Card

Saving out a playlist

Use the steps below to save a playlist stored in the playlist area of memory of the unit to a P2 card.
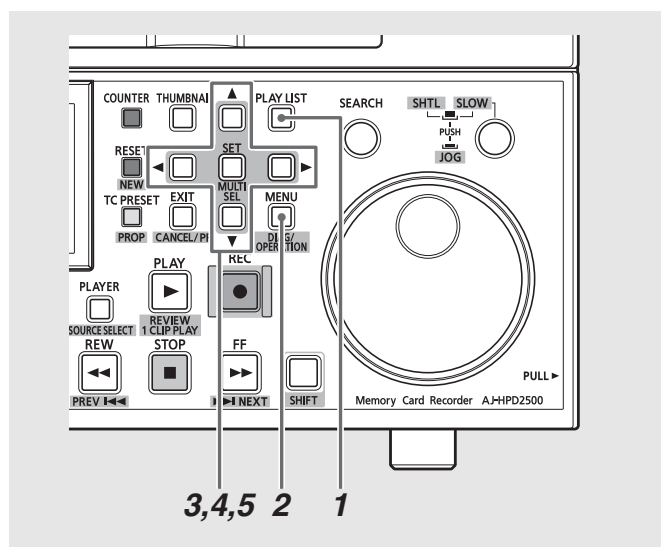
1 Press the PLAY LIST button to open the playlist screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [FILE] – [SAVE AS] and press the SET button.
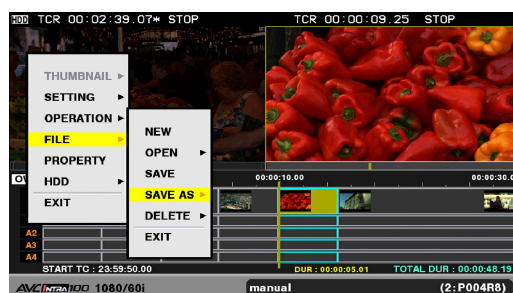
4 Use the cursor buttons to select the number of the P2 card slot that will store the file and press the SET button.

5 Select [YES] in the confirmation dialog and press the SET button.
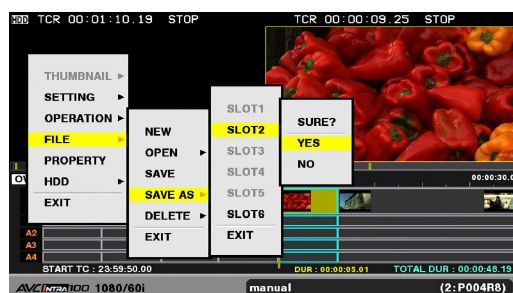
◆ **NOTE:**

• The file name is automatically generated and cannot be changed. Changing the file name on a PC will make it impossible to load.

• Playlists created on other devices should be opened as read-only files and saved out before use. Read-only files cannot be edited.

• Playlist files are created in the EDITLIST folder on a P2 card.

Saving playlist files

A loaded playlist file that is being edited or a playlist file that has been saved by choosing [FILE] – [SAVE AS] can subsequently be saved using the following procedure. Use [SAVE AS] for the first save operation.
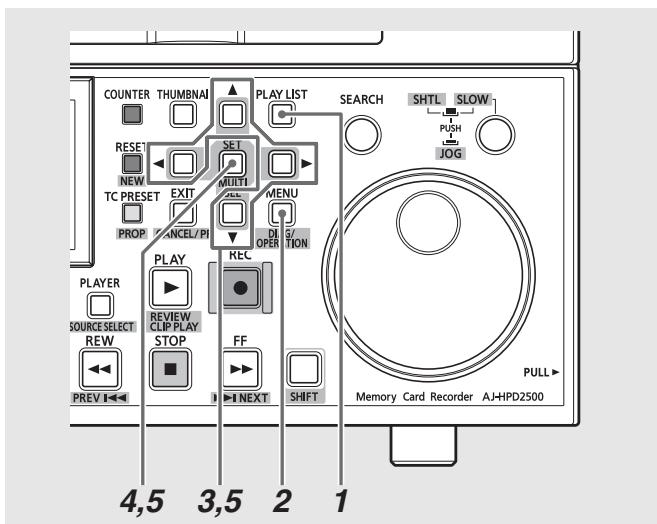
4,5 3,5 2 1

1 Press the PLAY LIST button to open the playlist screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [FILE] – [SAVE].

4 Press the SET button.

5 Select [YES] in the confirmation dialog and press the SET button.

This saves the playlist file.

Opening a Playlist File

The procedure below describes how to load a playlist file stored on a P2 card to replace a playlist.
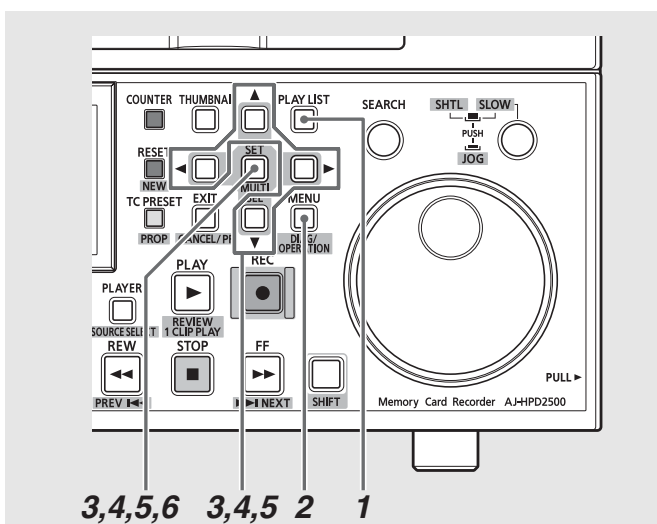
3,4,5,6 3,4,5 2 1

1 Press the PLAY LIST button to open the playlist screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [FILE] – [OPEN] and press the SET button.

4 Use the cursor buttons to select the number of the P2 card slot containing the file to import and press the SET button.
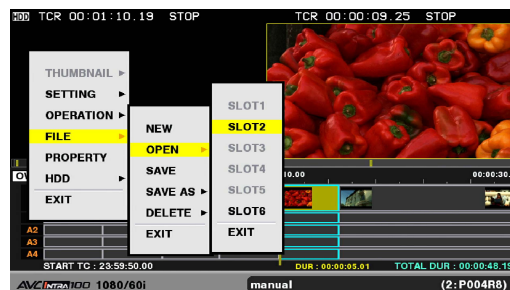
5 Select the playlist to be loaded and press the SET button.

Initially, a list of set playlist names appears as a list of playlist files.

Files not set as playlist name are displayed as file names. Press the right cursor button (►) to open a list of file names.
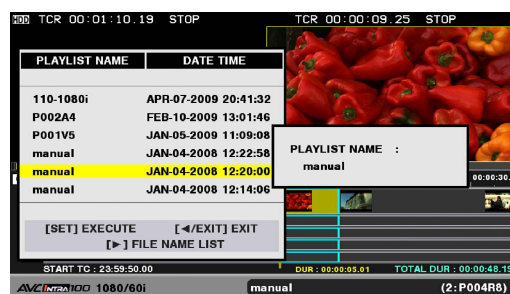
6 Select [YES] in the confirmation dialog and press the SET button.

The selected playlist is loaded.

◆ **NOTE:**
- A playlist file that contains more than 100 events per track cannot be opened.
- When the set audio level in a playlist file exceeds the level that the unit can handle, no audio level can be imported.
- Playlist files created on the AJ-SPD850, AJ-HPM100, AJ-HPM110 and AJ-HPS1500 are opened as read-only files. To edit such a playlist, save it out as a different playlist file ([SAVE AS]).
- Playlist files created on the AJ-SPD850, AJ-HPM100, AJ-HPM110 and AJ-HPS1500 can only be opened if the clips they use reside on a P2 card installed in the unit.
- Playlist files using the EXTRA audio events on an AJ-HPM100 or AJ-HPM110 will be overwritten by the corresponding compatible audio tracks when opened.
- Playlist files saved by the AJ-SPD850 on an SD memory card cannot be loaded. Save such list files to a P2 card before loading them.

Deleting Playlist Files

Use the steps below to delete a playlist files stored on a P2 card.

1 Press the PLAY LIST button to open the playlist screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [FILE] – [DELETE] and press the SET button.

4 Use the cursor buttons to select the number of the P2 card slot that stores the playlist files to be deleted and press the SET button.

5 Select the playlist files to be deleted and press the SET button.

A list of set playlist names appears as a list of playlist files. Files not set as playlist files are displayed as file names. Press the right cursor button (▶) to open a list of file names.

A selected playlist file is indicated by a check mark. These steps can be repeated as necessary to select multiple playlists.

6 Press the DELETE (SHIFT + LAST X) button, select [YES] and press the SET button.

The playlist files are deleted.

◆ **NOTE:**

- Press the MULTI SEL (SHIFT + SET) button to quickly select continuous files. Then all files from the file previously selected by pressing the SET button to the cursor location where the MULTI SEL button was pressed will be selected.
- To cancel a selection
  Place the cursor on a selected file and press the SET button to cancel the selection.
- To cancel all selections
  Press the CANCEL (SHIFT + EXIT) button to cancel all selected files.
- The currently being edited playlist is displayed in gray and cannot be selected.

Editing

Recording Voice-Overs

This function allows you to make voice-overs and use them in editing.
Recording can be performed on one or two channels. It is also possible to mix input sound with playback sound.
Voice-overs are displayed on the timeline as an audio event.

◆ **NOTE:**

- The audio data for a voice-over is written to the P2 card storing the playlist file. Thus the playlist must be saved before audio recording or a warning will be displayed and recording is disabled.
- A recording of up to 720 minutes can be made at a time.
- Check the remaining space on the P2 card before saving the playlist. Otherwise there may not be enough space for the voice-over recording. When the P2 becomes full, an error occurs and recording is disabled.
- Setting 24, 60-24 in setup menu No. 25 (SYSTEM FREQ) will disable voice-over recording.
- If the card with the voice-over is not inserted (and the event is indicated in red (X)), the audio event cannot be deleted and a playlist file cannot be saved.
- The audio channels for audio events created for voice-over recording cannot be switched.
  →For details on switching audio channels, refer to "Switching audio channels" (page 102).
- Voice-overs cannot be recorded on players other than a P2 card. Select a P2 card as the player before start of recording.

Preparing for Voice-Overs

Make the required settings prior to a voice-over recording.
→For details on settings, refer to "Setup" (page 164).

Mixing playback sound

You can select whether to mix the playback sound with input sound during a voice-over in setup menu No. 793 (A DUB PB MIX).

◆ **NOTE:**

- In playlist playback, playback level is fixed at UNITY or set to registered level and cannot be changed. However, the playback level of EE audio for tracks recorded during voice-over recording can be adjusted.
- The playback level of preroll for voice-over recording from still status cannot be changed.

Setting output audio during recording

In setup menu No. 797 (A DUB MONI), select whether the recorded audio should be output during the voice-over.

Setup example:
Connect a microphone to analog CH2 and mix the microphone input with CH2 playback audio in the recording. Use headphones to listen to the playback audio during recording.

Selecting recording tracks	Select only the A2 track in the GUI.
Mixing with playback sound	Set setup menu No. 793 (A DUB PB MIX) to ON.
Setting playback to start simultaneous with recording	Set setup menu No. 797 (A DUB PB MONI) to ON.

◆ **NOTE:**

- Input a reference signal when mixing using SDI input audio.

Starting voice-over recording
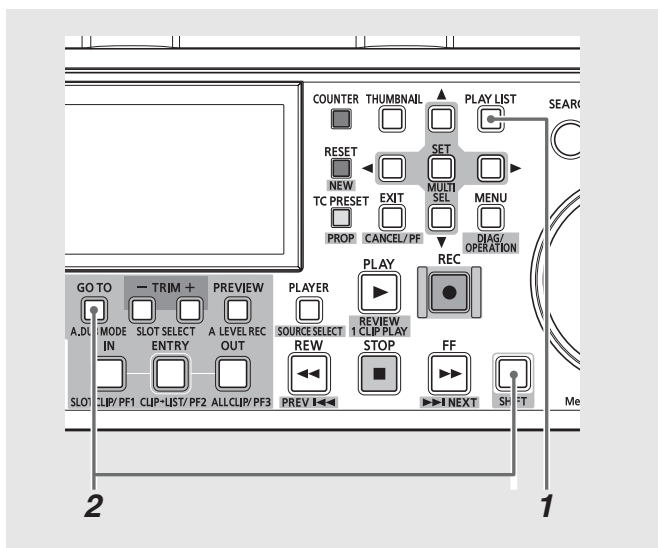
1 Press the PLAY LIST button to open the playlist screen.

2 Press the A. DUB MODE (SHIFT + GOTO) button to engage the voice-over mode.

"A.DUB" appears on the player screen in the voice-over mode.

◆ **NOTE:**
- Use the A. DUB MODE (SHIFT + GOTO) button to exit the voice-over mode.

Setting recording tracks
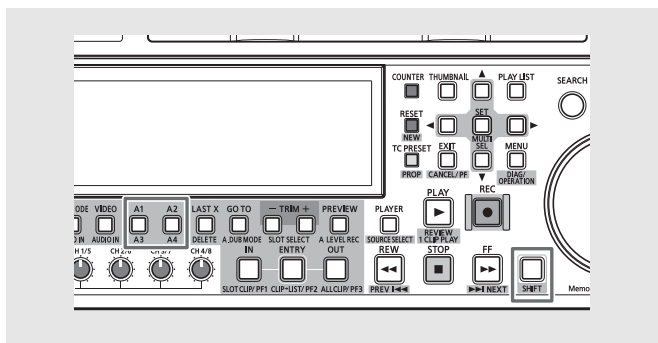
Use the A1/A2/A3 (SHIFT + A1)/A4 (SHIFT + A2) buttons to select track for voice-over. The names of selected tracks are indicated in orange on the left side of the timeline. One or two tracks can be selected. Selecting a third track will disable a voice-over recording.

Voice-Over after Assigning the IN and OUT Points
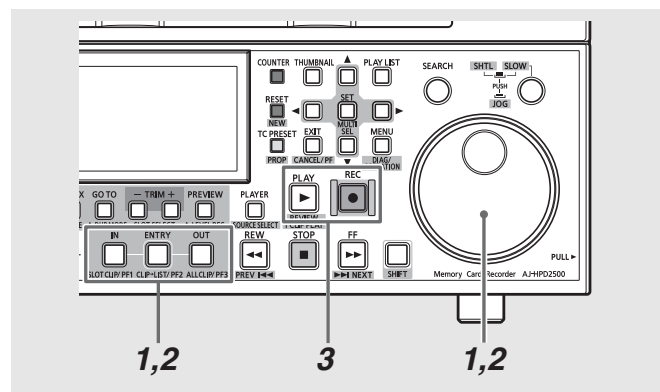
1 Find the starting point of the voice-over, and press the IN + ENTRY button.

Use the operation buttons or the search dial to find the starting point of the voice-over. Then, press the IN and ENTRY buttons simultaneously to assign an IN point. The IN button turns on.

2 Find the ending point of the voice-over, and press the OUT + ENTRY button.

Use the operation buttons or the search dial to find the ending point of the voice-over. Then, press the OUT and ENTRY buttons simultaneously to assign an OUT point. The OUT button turns on.

3 Hold down the REC button and press the PLAY button.

The P2 card is returned to start of set preroll time and recording starts after preroll. Recording stops when the OUT point is reached, an OUT POINT is registered again by the OUT + ENTRY button during recording or the STOP button is pressed.

Use the audio volume controls (VR) as necessary to adjust the playback sound level.

◆ **NOTE:**
- It is possible to start voice-over recording without setting an OUT point at step 2, if so required. The voice-over recording then continues to the end of the timeline, or until the STOP or OUT + ENTRY button is pressed.

◆ **NOTE:**
- When the 24PN playlist format is set in setup menu No. 026 (PLY LST FMT), the audio IN and OUT points are set in 4-frame increments. If the recording starts or stops elsewhere, the IN and OUT points are automatically corrected to fall within the recording range.
- Starting the voice-over recording at the beginning of the timeline is now allowed. Start recording at least 1 second from the beginning of the timeline.

Voice-over from playback status

2,3 4 3 1
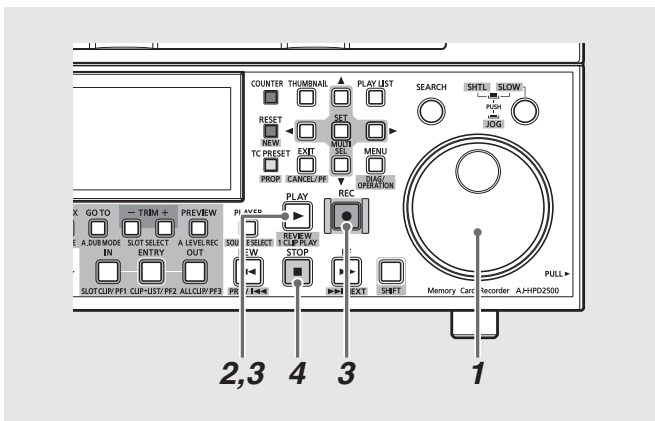
1 Find a location before the starting point of the voice-over.

Use the operation buttons or the search dial to move to a location before the starting point of the voice-over.

2 Use the PLAY button to start playback.

3 Hold down the REC button and press the PLAY button where you want to start a voice-over.

This starts audio recording.
Use the audio volume controls (VR) as necessary to adjust the playback sound level.

4 Press the STOP button to end the voice-over.

◆ **NOTE:**

• When the 24PN playlist format is set in setup menu No. 026 (PLY LST FMT), the audio IN and OUT points are set in 4-frame increments. If the recording starts or stops elsewhere, the IN and OUT points are automatically corrected to fall within the recording range.

Revising Voice-Overs

Like normal events, audio events such as voice-overs can also be revised.

→Refer to "Revising Registered Events" (page 99).

Setting Audio Level

A fixed or variable audio level can be set for a specified section of the playlist. Review or playlist playback occurs at the set audio level while Edit Copy generates material at the set audio level.

The audio level can be bet set when registering an event or for a specific audio section of already existing playlist.

◆ **NOTE:**

• The level setting is stored in memory, which limits capacity (time).

 Estimate: About 10 minutes per channel

 (Depends on level changes)

 Any settings that exceed the limit disable the setting.

Setting a Constant Audio Level for the Entire Event during Event Recording

When registering a new event in a playlist, set a constant audio level for the registered audio event.
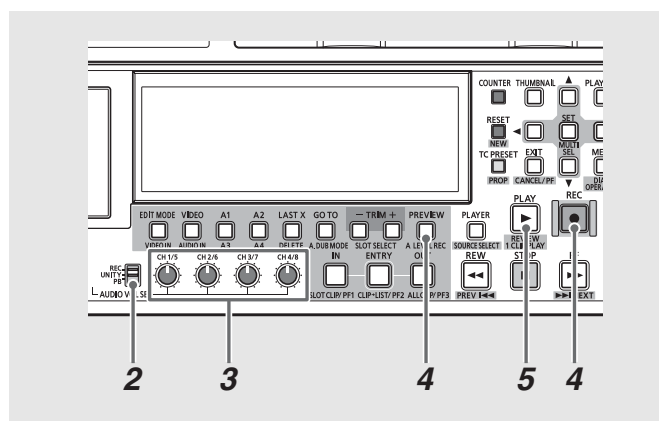
1 Assign IN and OUT points to enable event registration.

→Refer to "Registering Events in a Playlist" (page 93).

2 Set the AUDIO VOL SEL switch to PB.

3 Adjust the audio level using the audio level controls.

4 Use the REC button or PREVIEW button to register the event.

This operation registers the event and an icon ![icon] indicating that a constant audio level setting has been made appears on the event on the timeline.

5 Check audio level by performing a review or playlist playback.

Check events for which a level has been set by pressing the PLAY button or REVIEW (SHIFT + PLAY) button.

◆ **NOTE:**

• The audio level is not set if no new event has been registered in the channel selected in step 2.

• If the level value is a UNITY value, the icon indicating a level setting does not appear.

• To move the audio volume control during a preview, refer to "Changing Audio Level in an Event during Event Registration" (page 110).

• This method for setting the audio level is not available for a hard disk or an external device used as a player.

Changing Audio Level in an Event during Event Registration

When registering a new event in a playlist, change the audio level during the registration of the event.
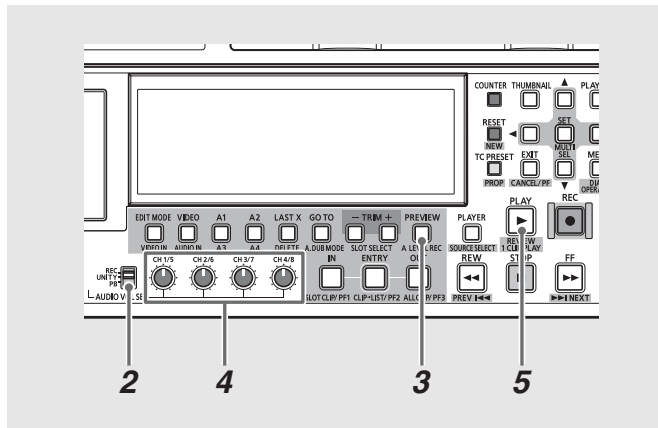
1 Assign IN and OUT points to enable event registration.

2 Set the AUDIO VOL SEL switch to PB.

3 Press the PREVIEW button to register the event.

During preview, the audio is output according to the set level.

4 Adjust the audio level using the audio level controls during preview.

After ending or interrupting a preview, the audio level set so far is reflected and an icon indicating that a level setting has been made appears on the event on the timeline.

5 Check audio level by performing a review or playlist playback.

◆ **NOTE:**

- If the level setting value for all sections in an event is UNITY, the icon indicating that an event level setting has been made does not appear.
- If a level setting for an entire playlist has been made for an extended period of time, a level setting cannot be added and an error is displayed.
- A level setting for the preroll and postroll playback section cannot be changed.
- This method for setting the audio level is not available when the player is a hard disk or an external device.
  When an event has been captured to a P2 card, set the audio level.
- Repeating previewing clears the level setting for the preview section where track selection is available at the start of each preview.
- When a preview is interrupted during the preroll section, the level setting is not made and the previous level setting is not cleared.

- Pressing the STOP button to interrupt preview makes settings valid until stopping. Audio level after the interruption point in the event is set to the same level as the interruption point.

Setting Audio Levels for Specific Sections

Use the following steps to change the audio level for specific sections in a playlist.
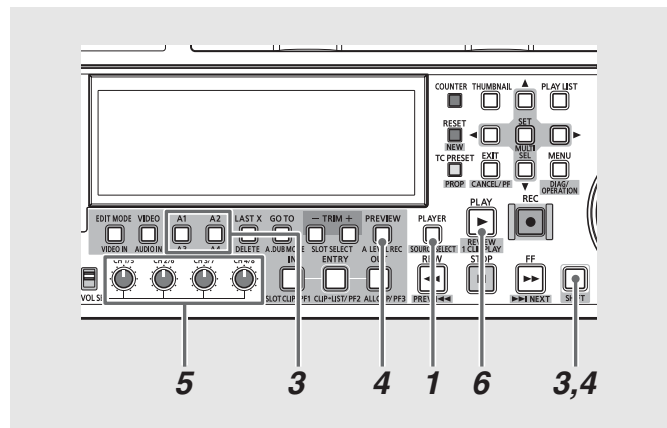
1 Press the PLAYER button to switch to recorder operations.

2 Set the IN point at the location where you want to start setting the audio level of the recorder and set the OUT point where you want it to end.

→Refer to "Setting IN and OUT points" (page 95).

3 Select the track where the audio level will be set.

Select using the A1/A2/A3 (SHIFT + A1)/A4 (SHIFT + A2) buttons.

4 Press the A LEVEL REC (SHIFT + PREVIEW) button to start audio level recording/playback.

Playback starts at the beginning of the preroll time section before the set IN point and stops 1 second later. During playback of audio level recording, the recorder screen displays "A LEVEL REC".

5 Use the audio level controls to adjust the level during playback of audio level recording.

After ending or interrupting a playback of an audio level recording, the audio level set so far is reflected and the icon indicating that a level setting has been made appears on the event on the timeline.

6 Check audio level by performing a review or playlist playback.

A review after setting the IN and OUT points in an event and changing the audio recording level will play back the event from start to end. To perform a playback check only of the section where the audio recording level was changed, press the SEEK TO IN POINT (IN + GOTO) button and playback will start after locating the IN point.

◆ **NOTE:**

- Refer to the NOTE in "Changing Audio Level in an Event during Event Registration" (page 110).
- This method for setting the audio level is not available for a hard disk or an external device temporarily registered as a player.

Viewing Event and Clip Information

Event Property Indication

The EVENT PROPERTY dialog provides a variety of
information on the event at the cursor location.
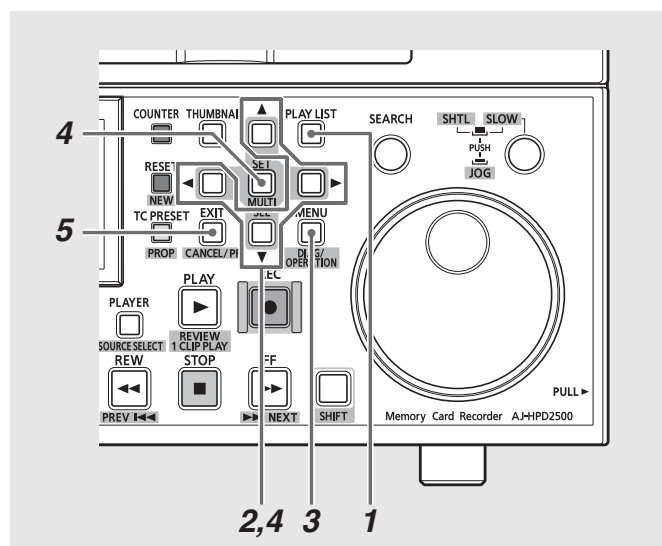
1 Press the PLAY LIST button to open the playlist
screen.

2 Use the cursor buttons to select the event that you
want information about.

3 Press the MENU button.

4 Use the cursor buttons to choose [PROPERTY] and
press the SET button.

Information on the event appears.

◆ **NOTE:**

• You can also press the PROP (SHIFT + TC PRESET) button
  instead of the operations provided after step 3.

1) Event information

   • IN point, OUT point thumbnails (video that corresponds to
     the IN and OUT points in the source material for audio
     event) and time code values

   • Duration (event length)

   • Number of events registered per track

2) Information on clips that are the source of an event

   • Clip number (same as thumbnail display number)

   • Clip thumbnail

   • Clip name

   • Recording date

   • Recording time

   • Duration (length of source clip)

   • Serial number of P2 card storing the source clip

   • Number of slot storing the source clip

5 Press the EXIT button to close the EVENT
PROPERTY dialog.

Clip Property Indication

The CLIP PROPERTY dialog provides a variety of information
on the clip at the cursor location.
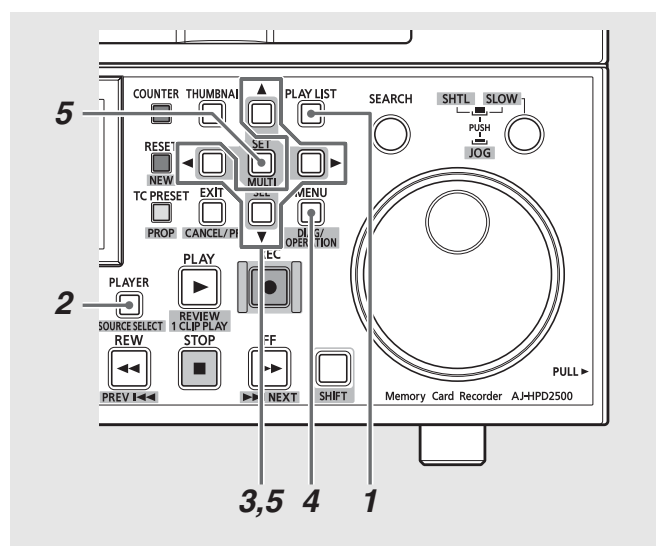
1 Press the PLAY LIST button to open the playlist
screen.

2 Press the PLAYER button to switch to player
operations.

3 Use the cursor buttons to select the thumbnail that you want information about.

4 Press the MENU button.

5 Use the cursor buttons to choose [PROPERTY] and press the SET button.

1)   **2)**
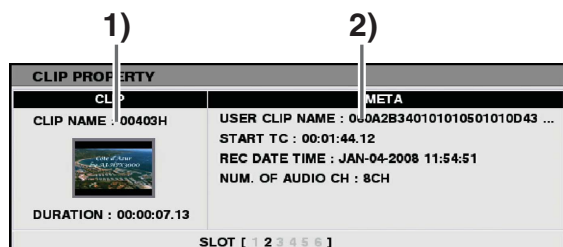
◆ **NOTE:**

• You can also press the PROP (SHIFT + TC PRESET) button instead of performing the operations provided after step 3.

1) Clip information

- Clip name
- Clip thumbnail
- Duration (clip length)

2) Clip metadata

- The metadata that appears is the information selected according to "Selecting items to be displayed as properties" (page 56).

Playing Back Playlists

Playing Back Playlists

Follow the steps below to play back a playlist.
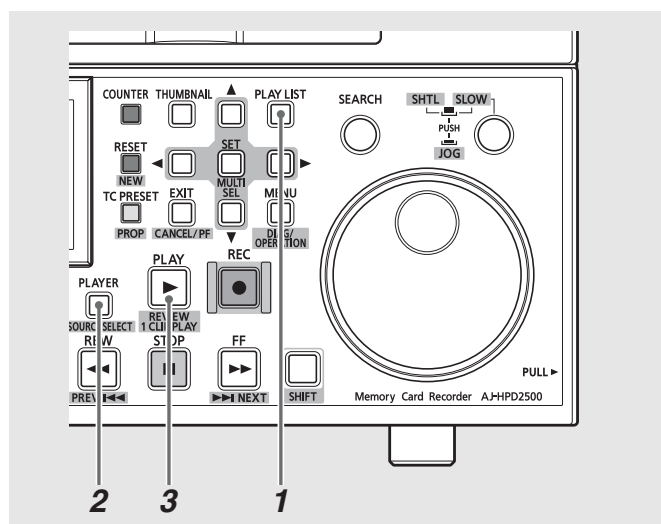
1 Press the PLAY LIST button to open the playlist screen.

2 Switch to recorder operation.

If recorder operation is not selected, press the PLAYER button to switch to recorder operation.

3 Press the PLAY button.

This starts playback from the start point of playback until the end of the playlist.

◆ **NOTE:**

• Before playlist playback, insert all the P2 cards that contain events that belong to the playlist. Otherwise the playlist will not be played back normally. Events where the source clips are missing are displayed in a red frame (X) and are played back without video (black) and sound.

• Use the STOP button to interrupt ongoing playback. Playback is resumed from the location it was interrupted.

• When the cursor is moved in an event, playback starts at the beginning of the event.

• Use the REMOTE button to enable control of playback via the external controller for the playlist playback. This is helpful when using the result of an edited playlist as a source for editing.

• When an external device is used as a player, the playback of temporarily registered edit operations will result in playback without video (black) and sound. Use preview to check edited sections.

• At the end of the playlist playback, no video (black) is output.

• In playlist playback, repeat playback is always disabled.

Reviewing Events

Use the steps below to play back and check the event at the cursor location.
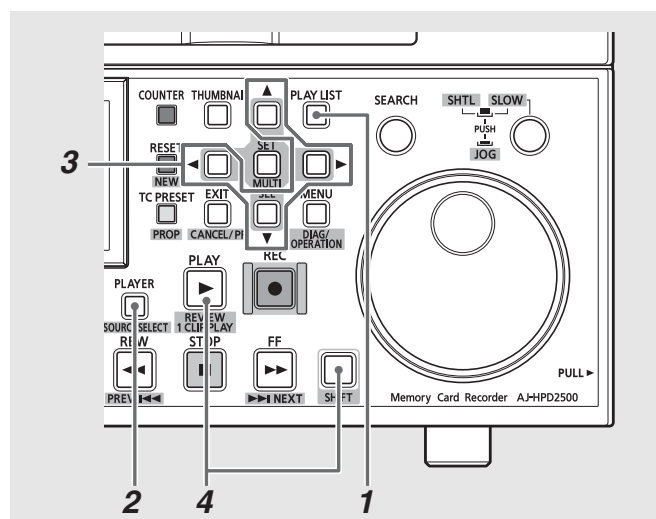
1 Press the PLAY LIST button to open the playlist screen.

2 Switch to recorder operation.

If recorder operation is not selected, press the PLAYER button to switch to recorder operation.

3 Use the cursor buttons to select the clip you want to review.

4 Press the REVIEW (SHIFT + PLAY) button.

Playback starts at the preroll time section preceding the IN point and ends 1 second after the OUT point.

◆ **NOTE:**

• Playback of the first event in the playlist starts at the beginning of the event regardless of preroll time setting.

• Playback of the last event in the playlist stops at the end of the event.

• Playback stops at the end of a review or when the STOP button is pressed.

• During review all buttons other than the STOP button are disabled.

• A review can be started again during a review.

Creating New Clips from the Playlist (Edit Copy)

Edit Copy is a function that allows you to use the playlist to create new clips.

3,4,5,6   3,4,5   2   1

1 Press the PLAY LIST button to open the playlist screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [OPERATION] – [EDIT COPY] and press the SET button.

4 Select the number of the P2 card slot or hard disk that will store the Edit Copy data and press the SET button.
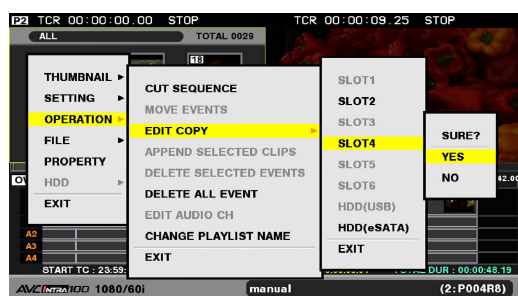
When a hard disk is selected, select a destination from the partition or directory screen that appears.

5 Select [YES] and press the SET button.

This starts Edit Copy.

6 A progress bar appears. Press the SET button when a message indicates that Edit Copy ended.

The clip created by Edit Copy is added to the P2 card or hard disk.

◆ **NOTE:**

• When there is not enough space on the installed P2 card to store the created Edit Copy clip, "LACK OF REC CAPACITY!" appears and Edit Copy will not start.

• Edit Copy can be made to multiple P2 cards. When the specified card does not have enough space to store all the data, the remaining data is automatically copied to the P2 card in the next number slot. The number of the slots where the data is copied is displayed during copying and when copying ends.

• Use the SET button or the CANCEL (SHIFT + EXIT) button to cancel an ongoing Edit Copy operation.

• Text memos are automatically inserted at the edit points (the start of each video event) of Edit Copy clips.

• Edit Copy cannot copy information other than user clip names.

• Edit Copy is not available for playlists that contain clips with different aspect ratios.

• Edit Copy is not available for events that cannot be played back and events without video (a video event indicated in a red frame). Edit Copy of a playlist that contains clips from seven or more P2 cards cannot be executed. To execute Edit Copy of such playlists, first copy the clips to six or fewer P2 cards.

• Do not remove a P2 card for which Edit Copy is being executed and the LED of the card slot flashes.

• When [SETTING] – [AUDIO CH] – [CH5-8] is set to NONE in the menu, channels 5 to 8 are not output. When set to channels 5 to 8, channels 5 to 8 of the video event are output to the clip at the destination of Edit Copy.

Connections

Using USB or eSATA Connectors

You can connect a PC to the USB device connector on this unit or connect a hard disk to the USB host connector or eSATA connector to save and manage clips efficiently.

When the on-screen keyboard is displayed, you can use a keyboard connected to the USB host connector.

→Refer to "Using the On-screen Keyboard" (page 39).

Using the Unit as a USB Device
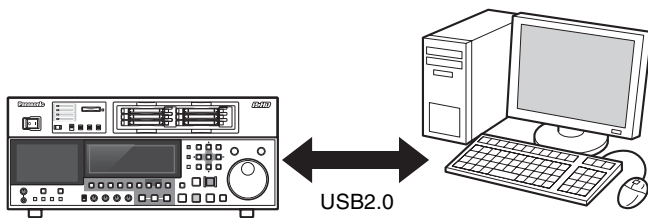
USB2.0

A USB 2.0 connection with a PC allows you to use P2 cards inserted in the slots on this unit as mass storage.

The PC then requires that a USB (USB 2.0) driver be installed. Use of P2 viewer, which can be downloaded from the following site, allows you to manipulate clips stored on a P2 card on a Windows PC.

For English: http://pro-av.panasonic.net/

◆ **NOTE:**

• For details regarding connections, refer to the Operating Instructions supplied with the PC and the application software.

Using the Unit as a USB Host

Portable hard disk
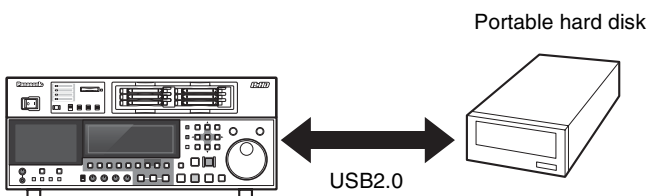
USB2.0

Connect a hard disk via USB 2.0 or eSATA to save P2 card data, view saved clip thumbnails and import them to P2 cards. Clips on hard disks can easily be played back for checking.

→Refer to "Using This Unit With a Hard Disk" (page 118).

Connecting a PC to This Unit

Switching to USB Device Mode

1,4

2

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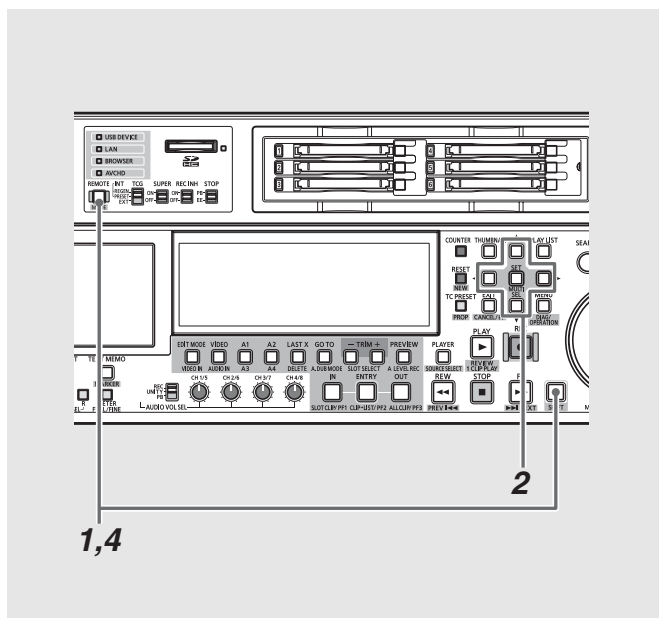
1 Press the MODE (SHIFT+REMOTE) button when this unit is idle.

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.

3 Use USB device mode operations.

---

4 Press the MODE (SHIFT+REMOTE) button to return to regular mode.

◆ **NOTE:**
- Recording and playback are not available in the USB device mode.
- In the playlist mode, the MODE (SHIFT+REMOTE) button is not available during remote operation.
- In USB device mode, "USB" appears on the display panel.
- When using a Windows PC, install the driver using the supplied CD-ROM.

Using This Unit With a Hard Disk

Supported Hard Disks

This unit supports the following hard disks types.

- Panasonic portable hard disk unit P2 store (AJ-PCS060G)
- A hard disk that supports the USB 2.0 interface
- A hard disk that supports the eSATA interface

◆ **NOTE:**

- It may not be possible to connect an eSATA hard disk that does not support the LINUX operating system.
- Some eSATA hard disks may prolong the startup time of the unit.
- 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 in Ver1.** to the latest version before use.

Hard disk types and available functions

Available functions depend on the type of hard disk used. Hard disk type is displayed next to the "PARTITION:" on the left side of the hard disk explorer screen.

→Refer to "Displaying Hard Disk Information (Explorer Screen)" (page 122).

◆ **NOTE:**

- This unit supports USB bus power (5 V, 0.5 A) but some hard disks may not be able to start up using USB bus power. Should this happen, provide the hard disk with a separate power supply.
- This unit does not support hard disks that are 2 TB (2048 GB) or larger.

(Hard disk types and available functions)

Hard disk type	Features	Available functions								
		Thumbnail display	P2 card unit		Clip unit		Playback check*3	Use of playlists*4	Displaying clips	Format
			P2→HDD	HDD→P2	P2→HDD	HDD→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"*2 directory under any directory is used.	○	×	×	○	○	○	○	○	○
OTHER	Hard disk other than those above. • NTFS or other hard disk using a file system other than FAT16 or FAT32.	×	×	×	×	×	×	×	×	○

*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 due to hard disk performance and operating conditions. Perfect playback cannot be guaranteed.

*4: Select clips on the playlist player to edit clips on a hard disk.

◆ NOTE:

• Use hard disks under the following conditions.
  - Operate hard disks within its specified operating conditions (temperature, etc.).
  - Do not use hard disks in locations that are unstable or exposed to vibration.
• Normal operation may not possible with some hard disks and cables.
• Use a hard disk with sufficient space for copying.
• Do not connect multiple hard disks to the unit via a hub, for example, even when the other hard disks are powered off. In addition, do not connect other devices to the unit via a hub when a hard disk is connected.
• 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 hard disk. Otherwise this unit and the hard disk must be rebooted.
• A hard disk 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 hard disk and is edited on another PC, the data may no longer work in this unit and hard disk data may become corrupted.
• Repair bad clips on P2 cards before copying them to a hard disk.
• SATA (serial ATA) or PATA (parallel ATA) interface hard disks 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 hard disks, the initial playback confirmation after connecting a hard disk may take time.

Connections

Formatting Hard Disks

Follow the steps below to initialize a hard disk in a TYPE S or FAT format.

◆ **NOTE:**
• Note that formatting a hard disk deletes all data on the disk.

4,5,6,7 *3,5*
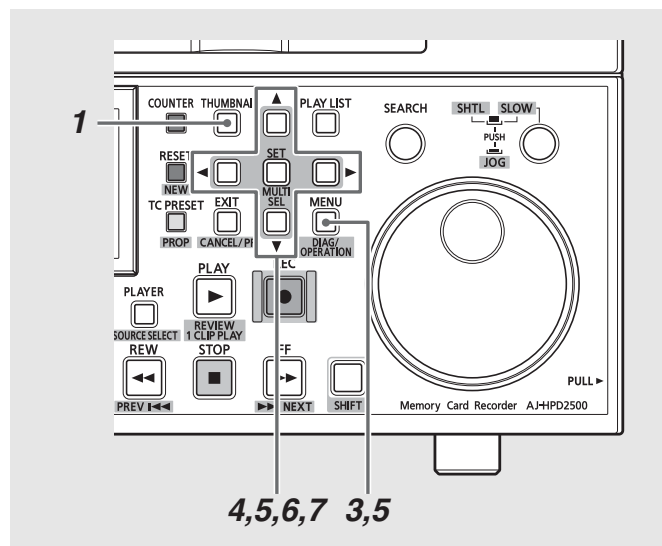
1 Press the THUMBNAIL button.

2 Connect a USB or eSATA hard disk.
Hard disk status (page 51) changes to white (or red) when a hard disk is recognized.

3 Press the MENU button.

4 Use the cursor buttons to select [HDD (USB or eSATA)] – [EXPLORE] and press the SET button.
The explorer screen will now open.

5 Press the MENU button, use the cursor buttons to choose [OPERATION] – [FORMAT (HDD)] and press the SET button. Then select the format (TYPE S or FAT) and press the SET button.
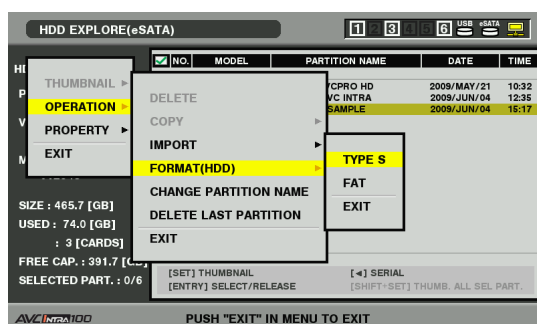
6 Select [YES] in the confirmation message that appears and press the SET button.

7 When the confirmation message appears again, select [YES] and press the SET button.
The hard disk will now be formatted.

◆ **NOTE:**
• Check that no important data remains on the hard disk before formatting since data erased by formatting cannot be recovered.

Exporting Data by Card to a Hard Disk

A TYPE S hard disk provides high-speed export (writing data from a P2 card to a hard disk) of data by P2 card to a hard disk. First format the hard disk using the TYPE S format. Up to 23 cards can be saved to a hard disk. Data from each exported P2 card is recognized as a separate drive on a PC, etc.

5,6,7 *4*
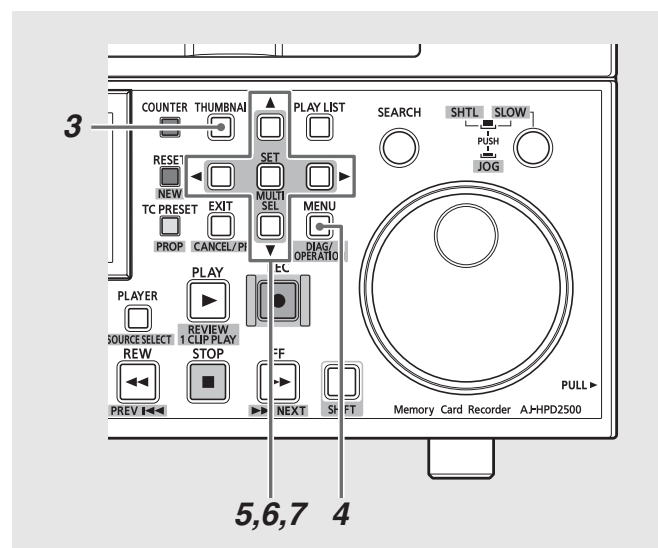
1 Connect a hard disk.
A hard disk not in the TYPE S format should be formatted using the TYPE S format.
→Refer to "Formatting Hard Disks" (this page).

2 Insert a P2 card.

3 Press the THUMBNAIL button to open the thumbnail screen.

4 Press the MENU button.

5 Use the cursor buttons to choose [HDD (USB or eSATA)] – [EXPORT] and press the SET button.
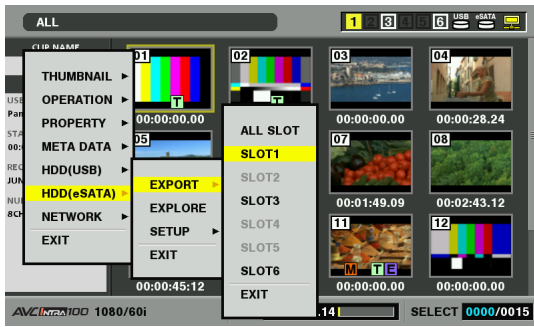
6 Select the number of the source P2 card slot and press the SET button.

Selecting ALL SLOT will result in a batch export of all inserted cards.

7 Select [YES] and press the SET button.

The data will now be exported. A progress bar appears during exporting.

◆ **NOTE:**

- In the factory default settings, verify is enabled for export. The export operation will end earlier when verify is disabled though exported data is not checked.
  To turn off this setting, choose [HDD (USB or eSATA)] – [SETUP] – [VERIFY] – [OFF].

- 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 a hard disk is connected to a PC and the network assignment conflicts with drive assignment and a partition cannot be seen, use our drive mount converter available free of charge from the URL listed below. This allows you to mount the specified folder when a hard disk is connected to a Windows PC.
  For English: http://pro-av.panasonic.net/

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

Copying Clips to a Hard Disk

Use the following steps to copy selected clips rather than entire cards to a hard disk.
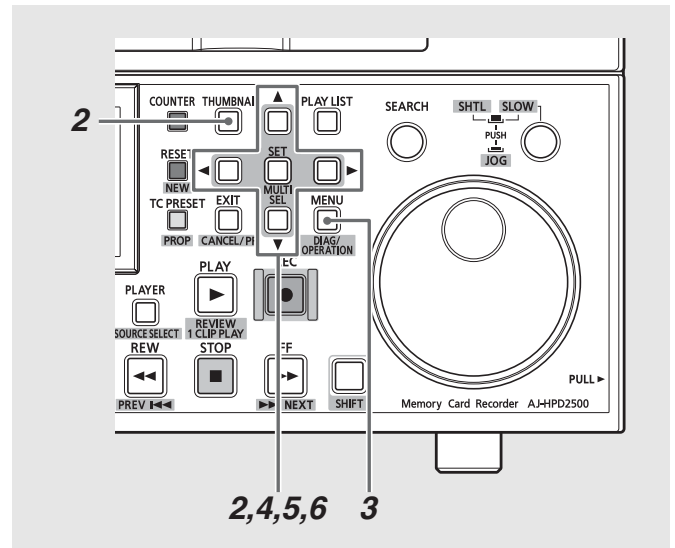
1 Connect a hard disk.

2 Press the THUMBNAIL button to open the thumbnail screen, select the clip to copy using the cursor buttons, and press the SET button to confirm.

You can also select multiple clips.

3 Press the MENU button.

4 Use the cursor buttons to select [OPERATION] – [COPY] – [HDD (USB or eSATA)] and press the SET button.
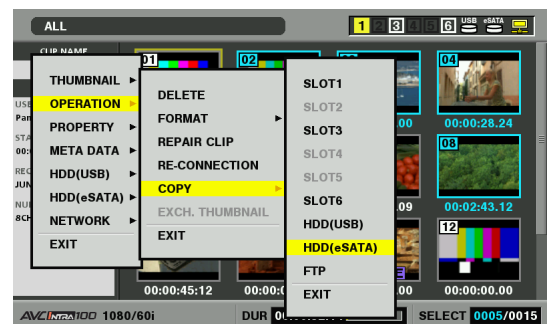
5 Select the location of the clip in the hard disk folder or partition list that appears and press the SET button.

◆ **NOTE:**
- A hard disk 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 hard disk without a single partition. To enable copying, format using a FAT format or create a partition by exporting data.

6 Select [YES] and press the SET button.

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

◆ **NOTE:**
- To interrupt copying, use the cursor buttons to select CANCEL and press the SET button. Then select [YES] in the confirmation dialog 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 hard disk, it will not be possible to import data by card from the partition. The card model number is then displayed as "UNKNOWN."

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

Displaying Hard Disk Information (Explorer Screen)

Use the steps below to display hard disk information and select hard disk partitions and folders. A selected partition can also easily be used as a player in editing playlists.

1 Connect a hard disk.

2 Press the MENU button in the thumbnail screen.

3 Use the cursor buttons to select [HDD] (USB or eSATA)] – [EXPLORE] and press the SET button.
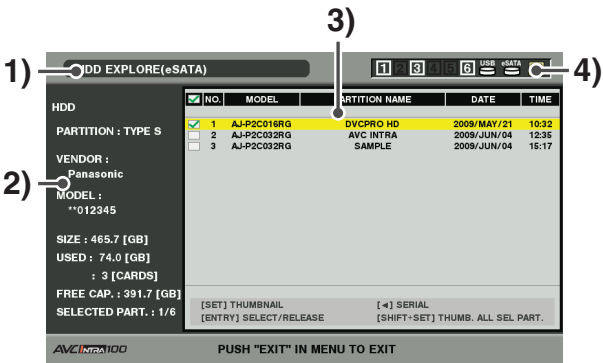
1) Display status

Indicates that the hard disk explorer screen is displayed.

2) Disk information

The following information appears.

Hard disk 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
Hard disks 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

◆ **NOTE:**
- When a hard disk with a capacity of 2 TB or more is connected, "OVER 2TB" is shown at "SIZE:".

3) Partition information (for a TYPE S hard disk 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 (→ Refer to "Naming a partition" (this page).)
DATE/TIME:	Date and time of partition recording
SERIAL:	P2 card serial number

Folder information (for a FAT type hard disk)

☑ :	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 right and left cursor buttons to toggle between the partition names and serial names for TYPE S hard disks.
- The partition information for an invalid partition on a P2 store is indicated in gray.
- Select [PROPERTY] – [FREE CAP. OF PARTITION] in the menu to check the remaining capacity of the partition.

4) Hard disk indicator

Indicates whether or not a hard disk is connected and hard disk type.

Hard Disk Operations

Selecting partition or folder as target

Selecting a partition or folder as target allows you to use the MULTI SEL (SHIFT + SET) buttons to select all the clips in the selected partition or folder and display them as thumbnails. Such partitions/folders can also be used as a playlist player to enable editing of hard disk data.
→Refer to "Creating Playlists" (page 93).

Use the following steps to select up to six partitions or folders to use in this way.

1 Use the cursor buttons to select a partition or folder in the hard disk explorer screen.

2 Press the ENTRY button.

3 Partitions or holders are selected and ☐ changes to ☑.
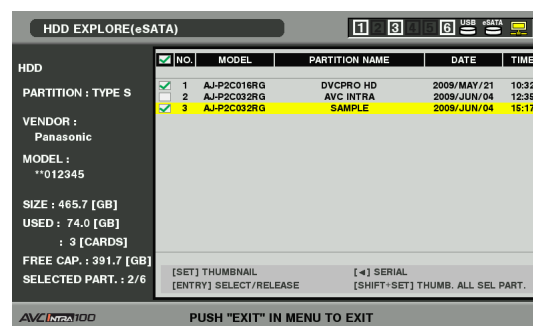
4 You can now use the selected partition or folder as a target for processing.

The selected areas remain available until the hard disk is disconnected or the power it turned off. To release a selected partition, press the ENTRY button again in the selected partition. Use the CANCEL (SHIFT + EXIT) 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 one of whose MODEL has become UNKNOWN[*1] on a TYPE S hard disk will not run as a normal clip.
  - *1: When a clip is copied to a TYPE S hard disk, the MODEL of the partition storing the copy changes to UNKNOWN.

Naming a partition

To name a partition (up to 20 characters), choose [CHANGE PARTITION NAME] in the [OPERATION] menu in hard disk thumbnail view.

◆ **NOTE:**

- A TYPE S hard disk makes it possible to set partition names. The selected partition name appears in "PARTITION NAME" in the explorer screen.

1 Use the cursor buttons to select a partition or folder to name. Or press the SET button repeatedly to open the thumbnail list screen.

2 Press the MENU button and use the cursor buttons to choose [OPERATION] – [CHANGE PARTITION NAME] and press the SET button.

3 Enter the name of the partition using the on-screen keyboard that appears.

4 Press the ENTRY button to confirm the name.
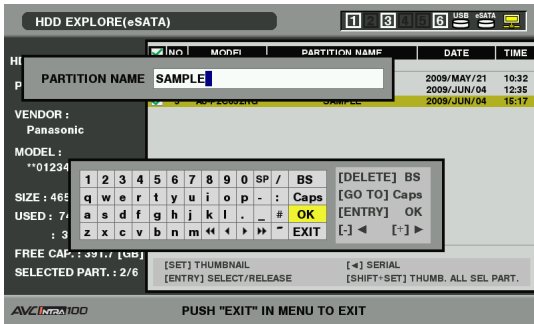
Deleting the last partition

Use the steps below to delete the last partition.

◆ NOTE:

- The last partition can only be deleted on a TYPE S hard disk. 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.

1 Move the cursor to the last partition in the hard disk explorer screen and open the menu.

2 Choose [OPERATION] – [DELETE LAST PARTITION] and press the SET button.
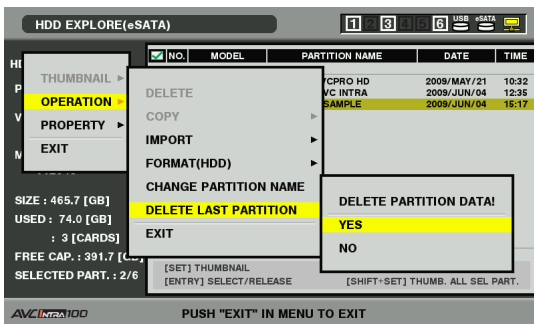
3 Select [YES] in the confirmation message that appears.

4 When the partition has been deleted, "COMPLETE" appears and the last partition disappears from the list of partitions.

Importing Data from a Hard Disk to a P2 Card

Importing data by partition (TYPE S hard disks and P2 Store disks only)

Use the steps below to import data (load data from a hard disk to a P2 card) by partition (by P2 card) to a P2 card that has the same capacity as the source card.

1 Insert the P2 card that will store the imported partition.
Be sure to insert a formatted P2 card.

2 Press the THUMBNAIL button to open the thumbnail display.

3 Connect the hard disk and wait until the hard disk indicator appears after disk recognition.

4 Press the MENU button.

5 Use the cursor buttons to select [HDD (USB or eSATA)] – [EXPLORE] and press the SET button.

6 Use the cursor buttons to select the partition from which data will be imported in the hard disk explorer screen. Or press the SET button repeatedly to open the thumbnail list screen.

7 Press the MENU button.

8 Use the cursor buttons to choose [OPERATION] – [IMPORT] and press the SET button.
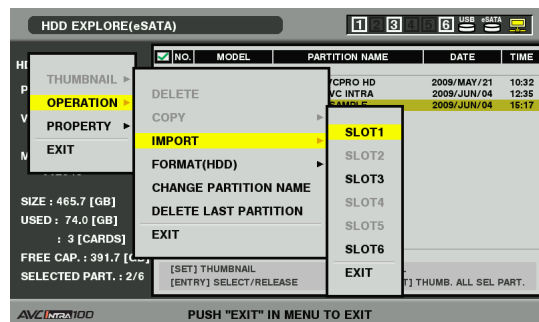
9 Select the number of the P2 card slot that will store the imported data and press the SET button.

10 Select [YES] and press the SET button.

The data will now be imported.

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.
  →Refer to "Reconnecting Incomplete Clips" (page 65).
- The [HDD (USB or eSATA)] – [SETUP] – [VERIFY] menu setting allows you 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 hard disk clip and copy it to a P2 card.

1 Insert the P2 card to which the clip will be copied.

2 Open the hard disk thumbnail screen.

3 Select a clip to copy.

4 Press the MENU button.

5 Use the cursor buttons to choose [OPERATION] – [COPY] and press the SET button.
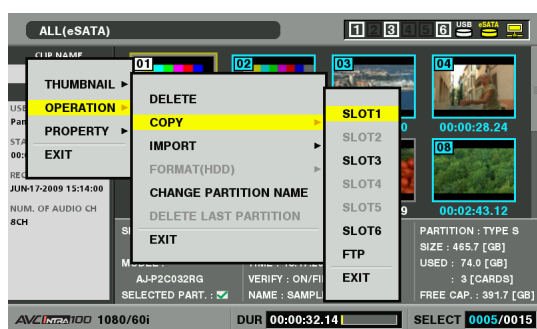
6 Select the number of the P2 card slot to which the data will be copied and press the SET button.

7 Select [YES] and press the SET button.

The clip will now be copied.

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

◆ **NOTE:**

- Copying of clips to a P2 card is not verified.

Displaying Clip Thumbnails on a Hard Disk

You can display thumbnails and manage clips stored on the hard disk in the same way as clips on P2 cards. You can also view video from the thumbnail display.

Thumbnail display (only for TYPE S hard disk and P2 store)

1 Open the hard disk explorer screen.

A list of partitions appears.

2 Use the cursor buttons to select the partition whose thumbnails you want to view and press the SET button.

Thumbnails of the clips on the partition appears.

◆ **NOTE:**

- When multiple partitions are selected as target, pressing the MULTI SEL (SHIFT + SET) button will display thumbnails for all partitions on the target partitions.
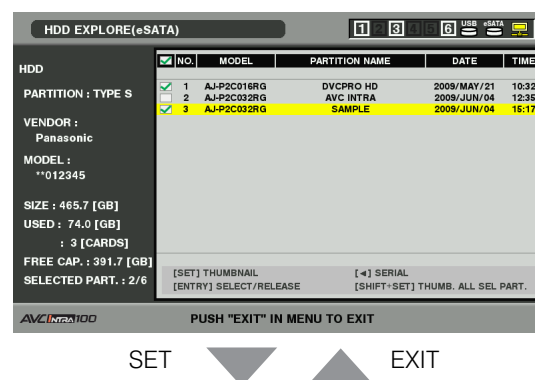
1) Clip information

Displays clip properties.

Connections

2) Hard disk information

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 during recording
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 hard disk capacity/used capacity/remaining capacity

◆ **NOTE:**

• Press the EXIT button to return to the hard disk explorer screen.

• Use the TRIM +/– buttons to move to thumbnail displays on previous and subsequent partitions without returning to the hard disk explorer screen.

• Press the ENTRY button to select a displayed partition as a target.

• Change the thumbnail screen display as necessary. These changes are performed in the same way as when using P2 cards.

→ Refer to "Changing Thumbnail Display" (page 54).

Thumbnail display (FAT)

1 Open the hard disk explorer screen.

A list of folders appears.

2 Use the cursor buttons to select the folder whose thumbnails you want to view and press the SET button.

Thumbnails of the clips in the folder will now appear.

◆ **NOTE:**

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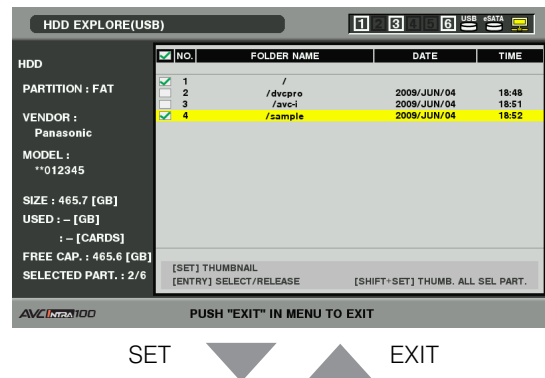
1) Clip information

Displays clip properties.

→Refer to "Thumbnail and Clip Management" (page 49).

2) Hard disk information

SELECTED PART.:	A check mark ☑ appears for the selected folder.
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 number (1 -)
DATE/TIME:	Folder creation date
FOLDER:	Folder name *1
SIZE/FREE CAP.:	Capacity and remaining capacity of hard disk space

*1: Date created is not shown for root.

◆ **NOTE:**

• Press the EXIT button to return to the hard disk explorer screen.

• Use the TRIM +/– buttons to move to thumbnail displays on previous and subsequent folders without returning to the hard disk explorer screen.

• Press the ENTRY button to select a displayed folder as a target.

• There is a limit of 1000 clips and clips that exceed this limit will not be displayed.

Viewing Hard Disk Clip Information

Use the steps below to view a variety of metadata on clips stored on a hard disk. It shows information in the same way as the P2 card clip property.

1 Move the cursor to a clip in the hard disk thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [PROPERTY] – [CLIP PROPERTY] and press the SET button.

You can also use the PROP (SHIFT + TC PRESET) button.

→For details, refer to "Viewing and Revising Clip Information" (page 66). (But repairs cannot be made.)

Deleting Hard Disk Clips (TYPE S and FAT Formatted Hard Disks)

Use the steps below to delete clips that are no longer necessary on a hard disk.

1 Select a clip to delete in the hard disk thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [OPERATION] – [DELETE] and press the SET button.

4 Select [YES] and press the SET button.

◆ **NOTE:**
• It may not be possible to delete clips with the ☒ (bad clip indicator) and ? (unknown clip indicator).

Playing Back Audio and Video of Hard Disk Clips for Confirmation

1 Open the hard disk thumbnail screen.

2 Use the cursor buttons to select the clip you want to view.

3 Press the PLAY button.

Playback starts from the clip at the cursor position. When the clip is completely played back, the following clips are played back. When the last clip is played back, the hard disk thumbnail screen returns.

◆ **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 SEARCH 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.
• To rewind or fast forward, press the REW or FF button instead of the PLAY button.
• 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.
• Video and audio playback may be disrupted between clips of different formats (DVCPRO HD, DVCPRO50, DVCPRO, DV, AVC-Intra50 and AVC-Intra100). This is normal and not a malfunction.
• Text memos, metadata or other data cannot be added or revised.
• To play back only the clip at the cursor location, hold down the SHIFT button and press the PLAY button.
• Audio and video dropouts may occur during playback of some hard disks. Use a high-speed hard disk drive preferably with an eSATA connector to avoid dropouts during playback. A warning (E-75) appears when video dropouts occur. Press STOP or other button to close the warning.

Connections

External Remote Control

Remote Operation of External Devices

Use the RS-422A interface to send commands to an external device to control it.
The following functions permit remote control.
- PLAY, STOP, SEARCH, FF, REW
- Counter and status LED indication

Setup Procedure

1
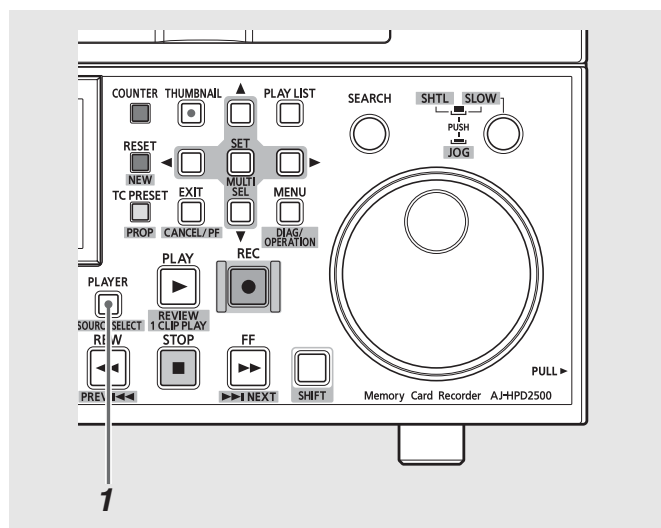
1 Press the PLAYER button.

This allows the unit to perform remote control of external devices.

◆ **NOTE:**
- When performing remote control of external devices, set setup menu No.25 (SYSTEM FREQ) to 59.94, 50, 23.98, 24, 29.97 or 25.
- Complete any settings required for controlling a remotely connected device before switching.

Indications during control of external devices

In external control mode, the PLAYER lamp goes on and the unit provides the following indications.
- The LED goes on to indicate external device status.
- Indicates the external device counter
- The unit is forcibly set to EE to enable reception of audio and video from the external device
- Counter, status and P mark indications for the external device are superimposed on the screen.

Remote operation procedure

The control buttons listed below enable remote control of an external device.

STOP	Sends the STOP command.
PLAY	Sends the PLAY command.
SEARCH	Sends the JOG, VAR or SHTL command.
REW	Sends the REW command.
FF	Sends the FF command.
Dial	Sends the JOG, VAR or SHTL command.
COUNTER	Sends the switch COUNTER command (CTL/TC only).
RESET	Sends the 0 reset command in CTL mode.

Automatic Recording of Cards

Registering IN and OUT points makes possible automatic recording (AUTO CAPTURE) between those two points.

1 Enter the mode that permits control of external devices.

Press the PLAYER button when the unit is in the recording/playback mode.

2 Select an area for capture.

• Use the following buttons to select an area for capture.

IN+ENTRY	Registers IN points
IN+RESET	Deletes IN points
OUT+ENTRY	Registers OUT points
OUT+RESET	Deletes OUT points
IN+GOTO	Sends a CUE-UP command to move to an IN point
OUT+GOTO	Sends a CUE-UP command to move to an OUT point
IN	Checks an IN point (counter indication)
OUT	Checks an OUT point (counter indication)
IN+OUT	Checks a DUR (counter indication)

3 Hold down the SHIFT button and press the REC button.

• The specified area is automatically registered on the card.
• The PLAYER button flashes during operation.
• The current point is registered as an IN point if an IN point has not been registered.
• Recording stops automatically when the OUT point is reached.
  If an OUT point has not been registered, recording continues until the STOP button is pressed.

Connections

Connecting This Unit to a Network

The network connector (1000Base-T, 100Base-TX, 10Base-T) allows you to connect the unit to a network to transfer clips to network servers, browse Web sites, launch network services to use them.

(Functions)
- FTP client function enables the unit to send and receive clips
- FTP/Samba server service that permits the unit to operate as a server for loading files
- HTTP server service for viewing thumbnails and metadata on computers and other devices
- Browser function for accessing web sites

Network Settings

Network functions require LAN setup and other settings. Make the settings that your needs require.

◆ **NOTE:**

- Made network settings are saved.

LAN setup

Use the steps below to make the LAN settings that are required to connect this unit to a network.

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [NETWORK] – [SETUP] – [LAN] and press the SET button.

4 The LAN setup screen appears.

Current settings appear.
Use the cursor buttons to select an item and press the SET button to set it.

5 Press the EXIT button to return to the thumbnail screen.

Setting:

Item	Description	Set value		Factory defaults
MAC ADDRESS	MAC ADDRESS (unique ID)	Cannot be changed.		Set value (cannot be changed)
DHCP	DHCP setting	ENABLE:	Uses DHCP (automatic assignment)	DISABLE
		DISABLE:	Does not use DHCP (automatic assignment)	
IP ADDRESS	IP address	Enter using the ten keypad		192.168.0.2
SUBNET MASK	Subnet mask	Enter using the ten keypad		255.255.255.128
DEFAULT GATEWAY	Default gateway	Enter using the ten keypad		192.168.0.1
PRIMARY DNS	Set primary DNS server	Enter using the ten keypad		0.0.0.0
SECONDARY DNS	Set secondary DNS server	Enter using the ten keypad		0.0.0.0
NETWORK	Network service start setting	ENABLE:	Starts network service when the unit is turned on.	DISABLE
		DISABLE:	Does not start network service.	

◆ **NOTE:**

• When NETWORK is set to ENABLE, starting up may take longer time since the unit will connect to the network when it is turned on.

• The network cannot be accessed when NETWORK is set to DISABLE. A switch between ENABLE and DISABLE does not take effect until the unit is restarted.

• A change in setting may lengthen the time required for the setup screen to close since the network service will have to be restarted using a different setting.

• When DHCP is set to ENABLE, settings other than MAC ADDRESS and NETWORK are disabled.

• IP address, subnet mask and default gateway must be correctly combined.
  If the "CANNOT ACCESS GATEWAY!" warning appears as the setup screen closes, consult the network administrator.

• Set 0.0.0.0 when default gateways or DNS will not be used.

• DHCP and DNS may not operate properly in some network environments.

Client setting

Follow the steps below to make the required settings such as an address of connection server to use the FTP client to transfer clips or the HTTP browser.

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [NETWORK] – [SETUP] – [CLIENT] and press the SET button.

4 The client setup screen appears.

Current settings appear.
Use the cursor buttons to select an item and press the SET button to set it.

FTP CLIENT:

Item	Description	Setup procedure		Factory defaults
URL	Name or address of connection server	Enter using the full keyboard. (up to 500 characters).		No setting
USER ID	ID of the user making the connection	Enter using the full keyboard. (up to 31 characters)		No setting
USER PASSWORD	Password for user making the connection.	Enter using the full keyboard. (up to 31 characters)		No setting
SSH	Set to use SSH for file transfers.	ENABLE:	Enables SSH.	DISABLE
		DISABLE:	Disables SSH.	

• The set password cannot be displayed on this unit.

HTTP CLIENT:

Item	Description	Setup procedure		Factory defaults
START PAGE URL	URL of page displayed when browser starts up	Enter using the full keyboard.		http://pro-av.panasonic.net/
PROXY SERVER	Turns PROXY server on or off	ENABLE:	Enables PROXY server	DISABLE
		DISABLE:	Disables PROXY server	
PROXY SERVER URL	Name or address of a PROXY server	Enter using the full keyboard		No setting
PROXY SERVER PORT	Number of port used for PROXY	Enter using the ten keypad		8080

Setting server service

Use the steps below to set up any of the following services. A service that is set to ENABLE can be started up and used.

FTP server service:	Receives access from an FTP client and transfers files. However, it cannot write files to P2 cards.
Samba server service:	Allows you to load P2 cards and hard disks externally as network drives. (But it cannot write data to P2 cards.)
HTTP server service:	Allows you to view P2 card thumbnails, metadata and play back proxy data (only when the client supports playback) using an external browser.

◆ NOTE:
• You must switch to LAN mode to use these network services. Recording and playback and other operations are not available in LAN mode.

→ Refer to "Using Server Functions" (page 140).

• A server service cannot be used to write data to a P2 card. Only an FTP client can be used to write data to P2 cards.

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [NETWORK] – [SETUP] – [SERVER] and press the SET button.
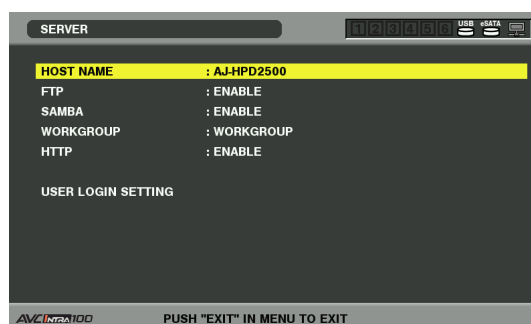
4 The server screen appears.

Current settings appear. Use the cursor buttons to select an item and press the SET button to set it.

Item	Description	Setting		Initial value
HOSTNAME	Host name (up to 31 characters)	Enter using the full keyboard.		AJ-HPD2500
FTP	FTP server setting	ENABLE:	Starts up FTP server.	ENABLE
		DISABLE:	Does not start up FTP server.	
SAMBA	SAMBA setting	ENABLE:	Starts up SAMBA service.	ENABLE
		DISABLE:	Does not start up SAMBA service.	
WORKGROUP	Work group (up to 31 characters)	Enter using the full keyboard.		WORKGROUP
HTTP	HTTP server setting	ENABLE:	Starts up HTTP server.	ENABLE
		DISABLE:	Does not start up HTTP server.	
USER LOGIN SETTING	User settings	Sets user ID and password for login user. (Opens a separate screen.)		Only guest is registered. (PASSWORD : p2guest)

• The set password cannot be displayed on this unit. If you forget the password, etc., choose [NETWORK] – [INITIALIZE] in the menu and press the SET button to initialize the settings. This clears user ID and password.

User settings for server service

Select [USER LOGIN SETTING] and open any of the following screens to make the required settings.

■ New user registration

1 Press the MENU button to open the menu.

```
USER LOGIN SETTING          [1][2][3][4][6] USB eSATA

▶  NEW USER
   DELETE USER
   CHANGE PASSWORD
   EXIT




   TOTAL    1 USER

  AVC INTRA100      PUSH "EXIT" IN MENU TO EXIT
```
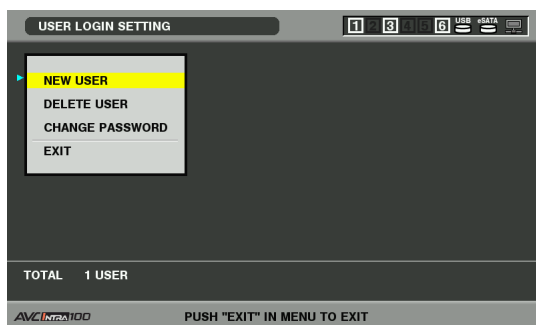
2 Select [NEW USER] and press the SET button.

Enter user name and password in the screen for registering users.

After entering the user name, press the LAST X button to move the cursor to the "PASSWORD" field, then input a password.

Press the LAST X button again to move the cursor to the "RETRY PASSWORD" field, and input the same password you entered immediately before.

◆ **NOTE:**

• If you click [OK] without entering a password, "CANNOT ADD! NO INPUT!" appears.

```
USER LOGIN SETTING          [1][2][3][4][6] USB eSATA

▶ USER NAME        Panasonic
  PASSWORD         *******
▶ RETRY PASSWORD   *******
              [LAST X]  NEXT ITEM

   1 2 3 4 5 6 7 8 9 0 @ /  BS   [DELETE]  BS
   q w e r t y u i o p - :  Caps [GO TO]  Caps
   a s d f g h j k l . _  # OK   [ENTRY]  OK
   z x c v b n m ◀◀ ◀ ▶ ▶▶  EXIT [-] ◀    [+] ▶

   TOTAL    1 USER

  AVC INTRA100      PUSH "EXIT" IN MENU TO EXIT
```
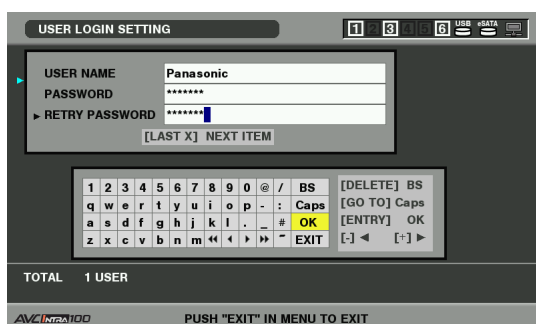
■ Changing password and deleting user

1 Move the cursor to the user whose password is to be changed or deleted.

```
USER LOGIN SETTING          [1][2][3][4][6] USB eSATA

   NO.   USER NAME
   01    guest
▶  02    Panasonic





   TOTAL    2 USERS

  AVC INTRA100      PUSH "EXIT" IN MENU TO EXIT
```

2 Select [DELETE USER] or [CHANGE PASSWORD] from the menu.

3 To change password, change it on the screen for changing passwords.

◆ **NOTE:**

• A password should be between 6 to 15 characters long.
• Use the LAST X button to go between items in the screens for registering users and changing passwords.

Saving and loading settings

Use the steps below to save settings to SD memory cards or load settings from SD memory cards.

■ Loading settings from an SD memory card

1 Open the network screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [LOAD FROM SD CARD] and press the SET button.

4 Select the file you want to load from the list of setup files that appears and press the SET button.

```
LAN                         [1][ ][3][4][6] USB eSATA

   LOAD FROM SD CARD    : 00:80:45:2F:1D:87
                        : DISABLE
   SAVE TO S     FILE NAME    SIZE      DATE TIME
   EXIT

              06051508.p2n   350B   2009-JUN-05   15:08:54
   PRIMARY DI 20090402.p2n   381B   2009-APR-02   19:42:46
   SECONDAR
                      [SET] EXECUTE
   NETWORK            [◀/EXIT] EXIT



  AVC INTRA100      PUSH "EXIT" IN MENU TO EXIT
```
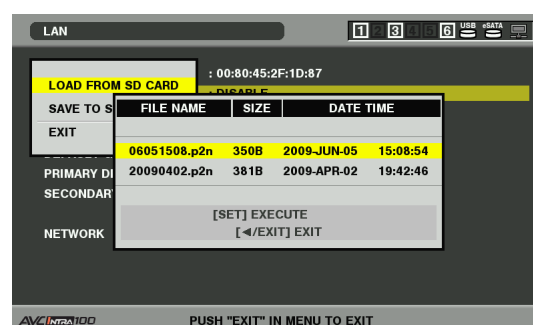
5 Use the cursor buttons to select [YES] when the message [SURE?] appears and press the SET button.

■ Saving settings to an SD memory card

1 Open the network screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [SAVE TO SD CARD] and press the SET button.

4 Enter a file name in the screen for entering file names that appears.

Numeric characters indicating the date and time are automatically entered for the name of the new file. Use the full keyboard to change it as required.
→Refer to "Using the Full Keyboard" (page 39).

5 Select [OK] and press the SET button or ENTRY button.

◆ **NOTE:**
- File names must not be longer than 8 characters.
- LAN, client and server settings can be saved and loaded at a time (regardless of whatever screen is open).
- User settings in the server setup screen and FTP USER PASSWORD in the client setup screen cannot be saved or loaded.

Tools for checking operation, status indication and initialization

Use the steps below to check FTP client network connection.

■ Checking connection (PING)

1 Open the thumbnail screen.

2 Press the MENU button to open the menu.

3 Use the cursor buttons to choose [NETWORK] – [TOOLS] – [PING] and press the SET button.

4 Check the status of set address connection.

When connection is confirmed, "PING SUCCESSFUL!" appears.
"PING FAILED!" appears if a connection cannot be established within 30 seconds. Use the log described in the next section to determine the cause of a failure.

■ Opening the connection log (LOG)

1 Open the thumbnail screen.

2 Press the MENU button to open the menu.

3 Use the cursor buttons to choose [NETWORK] – [TOOLS] – [LOG] and press the SET button.
Check the content of the log.

4 To return to the menu after checking, press the EXIT button.

◆ **NOTE:**
- The content of the log is cleared every time a connection (except PING) is made to an FTP server.
- Some operations may not generate any data in the log.
- The password is indicated as "*" in the log.

■ Status display

1 Open the thumbnail screen.

2 Press the MENU button to open the menu.

3 Use the cursor buttons to choose [NETWORK] – [STATUS] and press the SET button.
Connection status is displayed.

4 To return to the menu after checking, press the EXIT button.

◆ **NOTE:**
- Status data is not updated in real-time. To view the most recent data, perform the steps above again.
- When the DHCP setting is set to ENABLE, displayed value may differ from the LAN setup.
- In DHCP setup, status information is not correctly displayed when address information is being obtained.
- The default gateway is not displayed as status information if not correctly set up.
- A LAN setup that contains a secondary (substitute) DNS but no primary (priority) DNS is indicated as DNS1.

■ Initializing network settings (INITIALIZE)

1 Open the thumbnail screen.

2 Press the MENU button to open the menu.

3 Use the cursor buttons to choose [NETWORK] – [INITIALIZE] and press the SET button.
When initialization completes the menu reappears.

Using FTP Client Functions

Use of FTP client functions requires LAN and FTP client settings.

List of FTP server folders (FTP explorer screen)

Use the steps below to locate the FTP server folder tree to display a list of subfolders in folders and folder information. You can also display a list of thumbnails in a "CONTENTS" folder (folder storing P2 card clips).

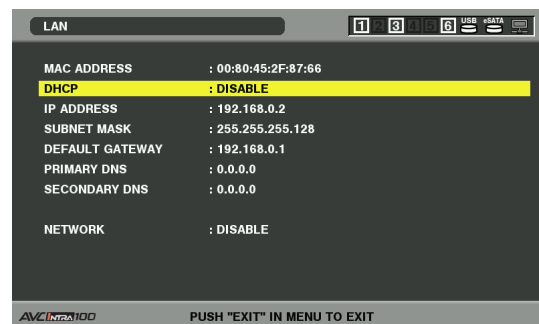*1* Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to select [NETWORK] – [EXPLORE] and press the SET button.
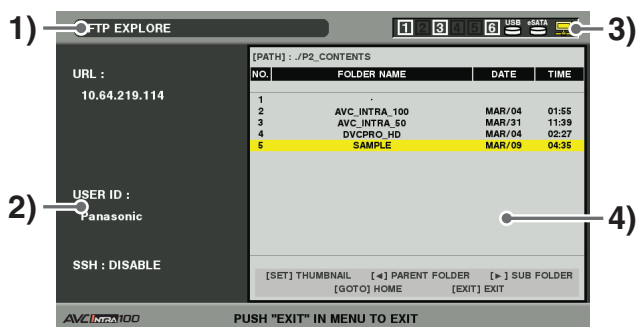
1) Display status

Indicates that the FTP explorer screen is displayed.

2) FTP server information

The following information appears.

URL:	URL of connected FTP server
USER ID:	ID of logged in user
SSH:	Indicates whether SSH is set to ENABLE or DISABLE.

3) Media status

This shows the presence or absence of P2 cards, whether or not a hard disk is connected, its type and LAN cable connection status.
The LAN indicator displays the following status.

Gray:	Gray indicates that the LAN is set to off.
White:	White indicates that the LAN is set to on.
Yellow:	Yellow indicates that a LAN cable is connected and that the network is running.
Red:	Red indicates a failure possibly caused by a unit malfunction. Consult your supplier.

◆ **NOTE:**
• The LAN indicator shows conditions a few seconds after the fact.

4) Folder information

PATH:	Path of current folder in FTP server
NUMBER(NO.):	Folder number (1 -)
FOLDER NAME:	Folder name
DATE /TIME:	Date and time of most recent update

◆ **NOTE:**
• The folder list displays only folders, and does not display ordinary files or link files.
• "." indicates the current folder. No time and date information is displayed.
• The date and time information displays either local time or world standard time, but depends on FTP server information.
  Sometimes only the year or time is displayed.
• Whether text is case sensitive or not depends on the FTP server.
• Folder names using multi-byte characters are not correctly displayed.
• Each folder can display up to 100 folders.
  The folder 101 and subsequent folders cannot be accessed in the FTP explorer screen.
  However, if folder names are directly described in the [FTP CLIENT URL:] of the FTP client setting, it is possible to access the contents of 101 and subsequent folders.
• Connectivity and folder display may differ from that of a PC connected to an FTP server.
• Depending on the FTP server and the connection environment, error messages may not be correctly displayed.
• Some Internet environments such as hotels and public facilities may require authentication via the browser prior to Internet connection. Then use the browser mode to complete authentication before connecting.
• To interrupt a connection, press the SET button.
• Perform the operation from the beginning if an error occurs.

- An error may be generated when network operations are performed right after connecting a LAN cable or when a previous operation was interrupted.
- Use PING to confirm when connection attempts repeatedly end in an error. If PING fails, check if LAN settings and LAN cable connections are correct and whether or not hubs or routers in the path operate normally. If PING is successful, check if server function services of the FTP server operates, if there is not a firewall in path of the connection and whether a user ID and password that permits access to the FTP server has been set. Note that it may be possible to connect using FTP even when PING fails.
- If the above checks do not enable connection, consult your system administrator in charge of your network environment.

Operations in the explorer screen

Right cursor button (►):	Indicates the contents of the subfolder at the cursor position.
Left cursor button (◄):	Indicates the contents of higher-level folders.
Up/down cursor buttons (▲ / ▼):	Moves the cursor.
GOTO button:	Returns to the home folder.
SHIFT + up/down cursor buttons (▲ / ▼):	Moves the cursor to the top or bottom level folder in the list.

◆ **NOTE:**
- Server operating specifications and access privileges may prevent display of folder contents, the correct folder path, etc.
- The unit remembers the previous cursor location. However, an error will reset it to the top level. And if a thumbnail has been displayed, it will only remember the cursor location of a previously displayed folder list.

Displaying Clip Thumbnails on the FTP Server (FTP Thumbnail Screen)

Use the steps below to display thumbnails for clips on the FTP server in the same way as clips on P2 cards.

FTP thumbnail display

1 Open the FTP explorer screen.

A list of folders appears.

2 Use the cursor buttons to select the folder storing the CONTENTS folder whose thumbnails you want to view and press the SET button.

Thumbnails of the clips in the folder appears.

◆ **NOTE:**
- Pressing the SET button in the CONTENTS folder will not display thumbnails. Be sure to press the SET button in folders above the CONTENTS folder or in the current folder, indicated by [.].
- When both upper case "CONTENTS" and lower case "contents" folders exist, the contents of the upper case folder is displayed.
- When there are folders with names in the upper case as and lower case letters below the CONTENTS folder, correct access may not be possible or error messages may be inappropriately displayed.
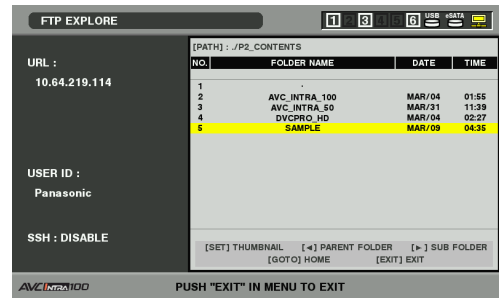
1) Clip information

Indicates properties of the clip at the cursor location.

→Refer to "Thumbnail and Clip Management" (page 49).

2) FTP server/folder information

URL:	URL of connected FTP server
USER ID:	ID of logged in user
SSH:	Indicates whether SSH is set to ENABLE or DISABLE.
PATH:	Path in FTP server of currently displayed thumbnail folder
DATE /TIME:	Date and time of most recent update

◆ **NOTE:**
- Press the EXIT button to return to the explorer screen.
- There is a limit of 1000 clips and clips that exceed this limit will not be displayed.
- The date and time information displays either local time or world standard time, but depends on FTP server information.
- Opening thumbnails using "." will not display the date and time.

Deleting Clips on the FTP Server

Clips on the FTP server that are no longer necessary can be deleted in the same way as clips on P2 cards.
→Refer to "Deleting Clips" (page 64).

◆ **NOTE:**

• The FTP server may stop the connection if an FTP thumbnail display is left open and it will not be possible to delete clips after this. Should this happen, return to the FTP explorer screen, open the FTP thumbnail display and delete the clip.

Viewing FTP Server Clip Information

Use the steps below to view metadata of clips on the FTP server. This function shows the same information in the same way as the P2 card clip property.

1 Move the cursor to the target clip in the FTP thumbnail screen.

It allows you to check detailed clip information in the screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [PROPERTY] – [CLIP PROPERTY] and press the SET button.

You can also use the PROP (SHIFT + TC PRESET) button.
→For details, refer to "Viewing and Revising Clip Information" (page 66).

◆ **NOTE:**

• Metadata can be viewed but not revised.
• The FTP server may stop the connection if an FTP thumbnail display or FTP properties are left open. This will prevent subsequent thumbnail displays. Should this happen, return to the FTP explorer screen and open the FTP thumbnail display or properties again.

Transferring Clips

Use the steps below to transfer clips on P2 cards or hard disks to an FTP server or write back clips from the FTP server to P2 cards or hard disks.

Transferring clips to the FTP server (export copy)

1 Open the thumbnail screen to select a clip to transfer (turning its frame blue).

2 Press the MENU button.

3 Use the cursor buttons to choose [OPERATION] – [COPY] – [FTP] and press the SET button.
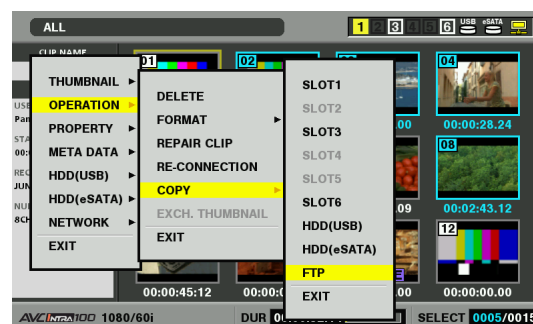
4 The server screen appears.

Use the cursor buttons when the selected server folder appears to select the folder the file will be transferred to.
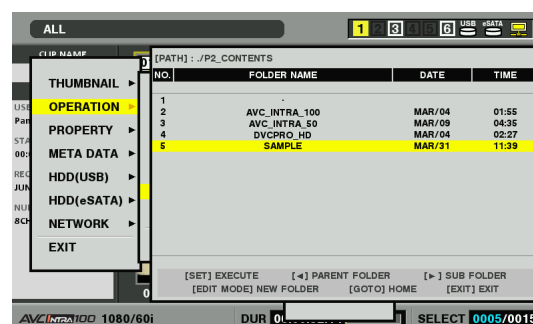
◆ **NOTE:**

• Folder names using multi-byte characters are not correctly displayed.
• Pressing the EDIT MODE button will show the new folder added to the list of current folders. (regardless of cursor location). Numeric characters indicating the date and time are automatically entered for the name of the new folder. Use the full keyboard to change it as required.
Note that some characters are not allowed in some FTP servers. Folders with the same name as an existing folder cannot be created.
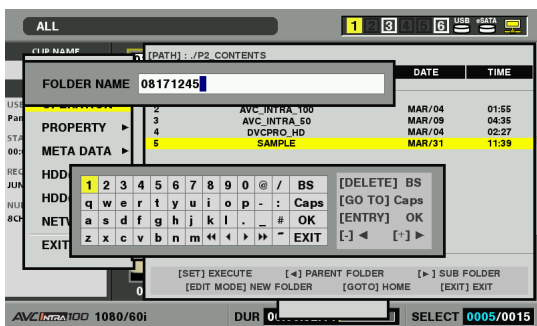
5 Select [YES] and press the SET button.

The clip will now be copied.

→For details on precautions in importing clips, refer to "Copying Clips" (page 63).
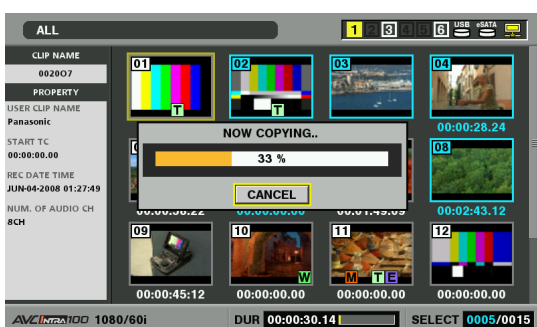
When copying ends, "COPY COMPLETED!" appears.

◆ NOTE:

• Depending on the number of clips on the server and network conditions, it may take some time to display thumbnails or copy them.

• To interrupt copying, press the SET button, select [YES] in the cancel confirmation dialog that appears and press the SET button again. The incomplete copy at the destination is deleted if the network connection has not been broken. If it has, an incomplete clip may remain on the FTP server.

• When copying starts, communications cut errors will no longer be detected. Use the above procedure to interrupt a copy operation that has stalled.

• Since it is not possible to check the remaining capacity of the FTP server, ask your FTP server administrator.

• Whether an error is generated when the remaining capacity of the FTP server reaches 0 depends on the FTP server. If an error is not generated, use the above procedure to interrupt operation.

• Clips cannot be copied to a folder on an FTP server that contains 1000 clips or more.

• To use SSH, the FTP server must be SSH compliant.

• Setting SSH to ENABLE will reduce transfer speed.

• To check the result of a transfer on a PC, it may be necessary to use refresh on the PC.

Writing back clips from the FTP server (import copy)

Use the steps below to write back selected clips from an FTP server on the network to a P2 card or hard disk.

1 Open the FTP thumbnail screen.

2 Select the clip to copy from the thumbnails displayed on the server.

3 Press the MENU button.

4 Use the cursor buttons to choose [OPERATION] – [COPY] and press the SET button.
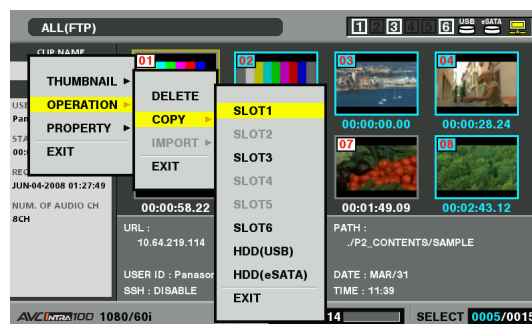
5 Select a destination (P2 slot or hard disk folder) from the menu list to start writing back data.

◆ NOTE:

• Depending on the number of clips on the server and network conditions, it may take some time to display thumbnails or copy them.

• To interrupt copying, press the SET button, select [YES] in the cancel confirmation dialog that appears and press the SET button again. The incomplete copy at the destination is deleted.

• When copying starts, communications cut errors will no longer be detected. Use the above procedure to interrupt a copy operation that has stalled.

• Clips cannot be copied to a folder on a P2 card or hard disk that contains 1000 clips or more.

• To use SSH, the FTP server must be SSH compliant.

• Setting SSH to ENABLE will reduce transfer speed.

• After an error occurred during operation such as copying, connection to the FTP server may be disabled and operation can no longer be continued. If this happens, return to the FTP explorer screen to display the FTP thumbnail screen, then restart operation such as copying.

When the copying ends, "COPY COMPLETED!" appears.

Transferring SD Memory Card Data

Use the steps below to transfer data from an SD memory card to an FTP server or write back data from an FTP server to an SD memory card.

Transferring SD memory card data to the FTP server (export)

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [NETWORK] – [EXPORT] – [SD CARD] and press the SET button.

◆ **NOTE:**
- The [SD CARD] menu appears only when an SD memory card is inserted.
- SD memory card data can only be exported as full cards. Unlike P2 cards, it is not possible to export selected clips.

4 The server screen appears.

Use the cursor buttons when the selected server folder appears to select the folder that disk data will be transferred to.

◆ **NOTE:**
- Folder names using multi-byte characters are not correctly displayed.
- Pressing the EDIT MODE button will show the new folder added to the list of current folders (regardless of cursor location). Numeric characters indicating the date and time are automatically entered for the name of the new folder. Use the full keyboard to change it as required.
  Note that some characters are not allowed in some FTP servers. Folders with the same name as an existing folder cannot be created.

5 Press the SET button to start exporting.

◆ **NOTE:**
- The number of files, their size, network status and other conditions may lengthen the time required for exporting.
- To interrupt an export operation, press the SET button, select [YES] in the cancel confirmation dialog that appears and press the SET button again. The partially exported files remaining on the FTP server are deleted if the network connection has not been broken. If it has, incomplete files may remain on the FTP server.
- When exporting starts, communications cut errors will no longer be detected. Use the above procedure to interrupt an export operation that has stalled.
- Since it is not possible to check the remaining capacity of the FTP server, ask your FTP server administrator.
- Whether an error is generated when the remaining capacity of the FTP server reaches 0 depends on the FTP server. If an error is not generated, use the above procedure to interrupt operation.
- An export of SD memory card data to an existing folder will overwrite files that have the same path name as SD memory card data without any warning messages.
  However, if the path name is the same but the object differs (folder or file), an error is generated.
- To prevent inadvertent overwriting, create new folders to export data.
- To use SSH, the FTP server must be SSH compliant.
- Setting SSH to ENABLE will reduce transfer speed.

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

Writing back clips from the FTP server (import)

Use the steps below to write back folders selected on a network FTP server to an SD memory card.

1 Open the FTP explorer screen.

2 The folder screen of the FTP server appears.

When the selected server folder appears, use the cursor buttons to move to the folder that will be imported.

3 Press the MENU button.

4 Use the cursor buttons to choose [OPERATION] – [IMPORT] – [SD CARD] and press the SET button.

Press [OK] in the SD import confirmation dialog box that appears to start writing back data to an SD memory card.

Connections
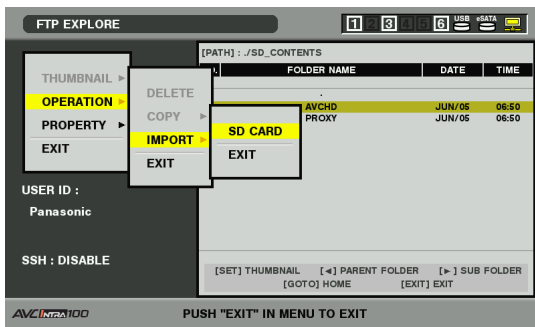
◆ NOTE:

- To interrupt an import operation, press the SET button, select [YES] in the cancel confirmation dialog that appears and press the SET button again. Files that were not successfully imported to an SD card are deleted, but successfully imported files remain.
- When importing starts, communications cut errors will no longer be detected. Use the above procedure to interrupt an import operation that has stalled.
- The number of files in the selected folder and their size, network conditions may lengthen the time it takes to write them back.
- Any files with the same path names on the SD memory card will be overwritten without any warning messages. However, if the path name is the same but the object differs (folder or file), an error is generated.
- To prevent inadvertent overwriting, format the SD memory card before importing.
- To use SSH, the FTP server must be SSH compliant.
- Setting SSH to ENABLE will reduce transfer speed.

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

Using Server Functions

Switching to FTP, Samba or HTTP server mode

1 Press the MODE (SHIFT+REMOTE) button.

2 Use the cursor buttons to select [LAN] and press the SET button.

3 "LAN" appears on the screen after switching modes.

4 To return to normal operating mode, press the MODE (SHIFT+REMOTE) button again.

"MAIN MODE" will appear to indicate that you have returned to the normal operating mode.

◆ NOTE:
- Operations including recording and playback are not available in server mode.
- Although P2 cards can be inserted without problem in server mode, removing a P2 card will result in an E-30 error message.
- SD memory cards cannot be accessed in server mode.

FTP and Samba server services

These services allow you to access P2 cards inserted in the unit or hard disks connected to it from a PC connected to the network.
They enable reading and writing of hard disks in the FAT format and reading of hard disks in other formats and P2 cards.

■ FTP server service

The FTP server service allows you use a PC on the network to transfer P2 card and hard disk clips to a PC using FTP software.

■ Samba server service

With P2viewer you can check P2 card and hard disk content from a PC connected to the network and transfer clips to a PC.

In case of an FTP server and Samba server, P2 cards and hard disks are located in the following folders.

P2 card:	/p2/slot1 - slot6
Hard disk (USB):	/usb/hdd_usb_01 - hdd_usb_23
Hard disk (eSATA):	/sata/hdd_sata_01 - hdd_sata_23

◆ NOTE:
- A "Printer and FAX" icon that may appear on a PC connected via Samba cannot be set up.
- Up to five clients can simultaneously connect to an FTP server.
- It may take some time to access using group names or host names in Samba.
- When the unit copies data to a hard disk, it saves the data to compatible partitions (01-23) on a TYPE S hard disk and to partition 01 on a FAT hard disk. It cannot see the 2nd or subsequent partitions on a FAT hard disk.

HTTP server service

This service allows you to access this unit using any of a variety of browsers from a PC.
The browser displays the screen shown below.

- P2 card thumbnail
- View clip metadata
- Play back proxy data (if the browser permits it)

■ Connection methods

1 Enter the IP address of this unit in the address bar of the browser.

2 Click [Go].

The browser shows the top page.
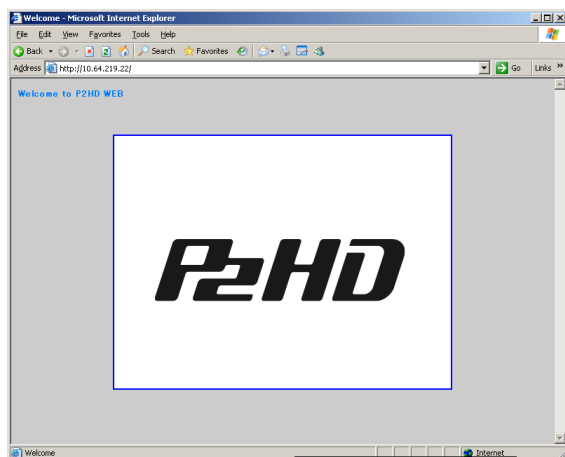
3 Click the illustration at the center.

A list of thumbnails appears.
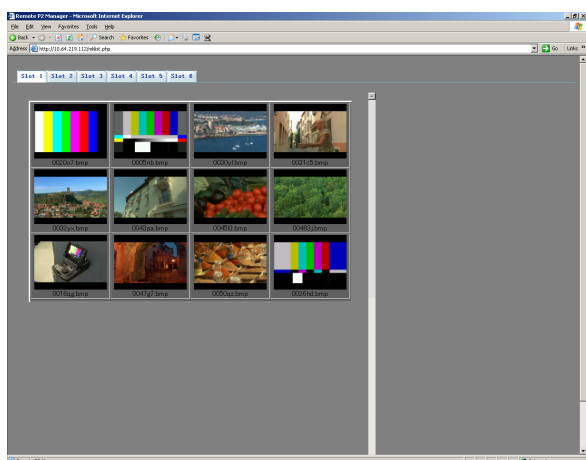
Click a slot number tab to open the list of clips of the specified slot.
Click the name of the clip to display its metadata.

Clips with proxy data appear in a light red cell. Clicking such thumbnails starts playback of proxy data.

◆ NOTE:

- Check browser settings (proxy server, etc.) when the page displays.
- Some settings may prevent correct display of clip metadata.
- Playing back proxy data requires a browser that supports MPEG4 format audio and video decoding.
- Clips that span two or more cards are handled as independent clips.
- Depending on browsers, display appearance may be different or incorrect.

Using Browser Functions

The unit comes with a browser. Use the browser to enter a user ID and password when access to a network requires authentication.
Press the MODE (SHIFT+REMOTE) button, select [BROWSER] to go to browser mode and open the browser screen. At startup, the browser accesses the URL selected in START PAGE URL.
To enter characters, press the SET button to display the keyboard.
→Refer to "Using the On-screen Keyboard" (page 39).

1 Press the MODE (SHIFT+REMOTE) button.

2 Use the cursor buttons to select [BROWSER] and press the SET button.

3 The browser screen appears on the screen after switching modes.

4 To return to normal operating mode, press the MODE (SHIFT+REMOTE) button again.

"MAIN MODE" will appear to indicate that you have returned to the normal operating mode.

◆ **NOTE:**
- Operations including recording and playback are not available during browsing.
- Some Web pages may not be correctly displayed. Sites may also display differently than when accessed from a PC.

- Some Web page content may generate system errors (E-37, E-38, etc.). Should this happen, turn the power off and then turn it back on again.
- Download functions on Web pages cannot be used.
- Video files on a web page or linked to this page cannot be played back.
- JAVA is not supported.

Using browser screen

■ Operating from unit panel

THUMBNAIL button:	Turns on/off the mouse mode.
Cursor buttons:	When mouse mode is on, moves the mouse cursor. When mouse mode is off, moves link focus.
SET button:	When mouse mode is on, press for click operation. When mouse mode is off, press to confirm setting.
MENU button:	Displays menus.
Search dial:	Vertical screen scrolling.
SHIFT + search dial:	Moves link focus.

(MENU description)

Menu	Menu item	Description
File	Go to URL	Enter the URL you want to visit.
		A dialog box for the destination URL appears. Make entries from the keyboard.
	Open new tab	Opens a new tab.
	Close tab	Closes current active tab.
	Switch tab	Switches to active tab.
History	Back	Returns to the previous page in history.
	Forward	Goes to the next step forward in history.
	Home	Displays the home page.
View	Stop	Stops page loading.
	Reload	Reloads a page.
	Encoding	Checks and changes text encoding for the displayed page.
	Text Size	Changes the size of text on the displayed page.
	Zoom	Enlarges or reduces the displayed page in the range 10 to 500 %.
Bookmark	Add	Saves the displayed page as a bookmark.
	Load	Opens a list of saved bookmarks and jumps to address of the selected bookmark.
Exit	Menu	Exits the menu.

■ Operations from USB keyboard

Connect a USB keyboard to control the browser.

Direction keys and TAB key:	Move link focus.
ENTER key:	Use to confirm settings.

Key	Description
[Alt]+[Home]	Displays the home page.
[Alt]+[left]	Returns to the previous page.
[Alt]+[right]	Proceeds to the next page.
[Ctrl]+[Tab]	Moves to the right tab.
[Ctrl]+[Shift]+[Tab]	Moves to the left tab.
[Ctrl]+[T]	Opens a new tab. A new tab shows the home page.
[Ctrl]+[D]	Adds page to book marks.
[Ctrl]+[B]	Displays list of book marks.
[F5]	Reloads the page (refresh giving priority to cache data).
[Shift]+[F5]	Reloads the page (overrides cache data giving priority to the server).
[Ctrl]+[Q]	Stops page loading.
[Ctrl]+[0]	Changes font to normal size.
[Ctrl]+[+]	Increases the font size one level.
[Ctrl]+[–]	Decreases the font size one level.

Connections

RS-232C Interface

An RS-232C interface connection with a PC makes it possible to operate this unit via commands.

Conditions for receiving commands via an RS-232C interface

- The front panel REMOTE button is on.
- If the above condition is not met, [ACK] + [STX] ERR001 [ETX] is returned to external devices.

Hardware Specifications

■ Connector Specifications

Connector: D-SUB 9-pin

Pin No.	Signal	Description
1		(Not used)
2	TXD	Transmitted data (data received from PC)
3	RXD	Received data (data sent to PC)
4	DSR	Data set ready (Positive voltage output announces communication ready status)
5	SG	Signal ground (signal GND)
6	DTR	Data terminal ready (no processing)
7	CTS	Clear to send (shorted with pin 8)
8	RTS	Request to send (shorted with pin 7)
9		(Not used)

Software Specifications (Protocol)

■ Communication parameters

Communication system	Asynchronous, full duplex
Communication speed	9600
Bit length	8 bit
Stop bit	1 bit
Parity bit	None
ACK	ACK code returned

Send Format

RS-232C Interface
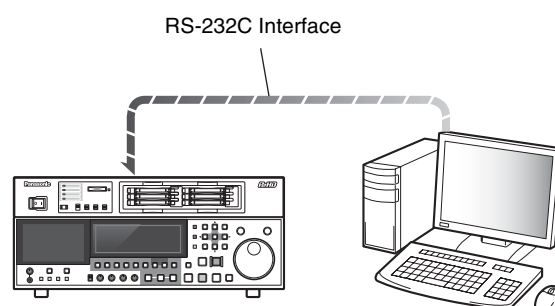
■ Data format

[STX] [command] [:] [data] [ETX]

02h   XX XX XX   3Ah   XX.....XX   03h

20H<XX<7FH

(XX = ASCII code: Symbols, numeric characters, upper case alphabetic characters)

command	A 3-byte command identifier. Sends a 3-byte identifier as a command (ASCII code: symbols, numeric characters, alphabetic upper case characters).
:	Colons delimits commands and data.
data	The required amount of data (ASCII code: symbols, numeric characters, alphabetic upper case characters) can be added.

■ Outline of send procedure from controller

The send command starts with STX (start of text = 02h). The command is then identified by COMMAND, which follows, and the required amount of data. The format ends with ETX (end of text = 03h).

Additional commands are sent upon receiving a response from the recorder.

If an additional STX is received prior to sending ETX, the reception data buffer in the recorder is cleared. An error is then returned to the controller, the data is then processed again after receiving data starting with STX.

Return format

RS-232C Interface
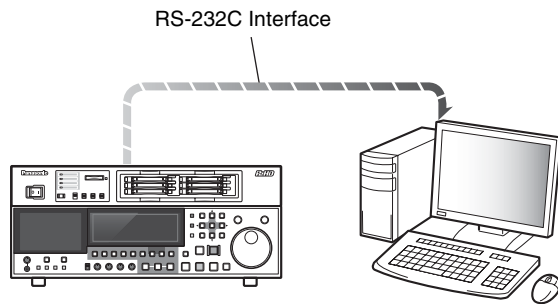
The following responses are made to a command. If necessary, more than one response may be made.

■ When communications end normally

1. Returns a reception completed message.

[ACK]

06h

2. Returns an execution completed message.

[STX] [command] [data]　[ETX]

02h　　XX XX XX　　XX.....XX　　03h

command	A return message (data) or execution completed message identifier
data	The data returned. This item may be omitted.

Example:

Send command　　　Return message (data)

[STX] OPL [ETX] → [ACK] [STX] OPL [ETX]

■ When communications end in an error

[NACK]

15h

■ When data is incorrect or an error has occurred in the deck

1. Returns a reception completed message.

[ACK]

06h

2. Returns an error code.

[STX]　[ERN$_1$N$_2$N$_3$]　[ETX]

02h　　Error code　　03h

Error code list

ER001	Invalid command
	• Incompatible command received
	• Command execution error
ER002	Parameter error
ER1FF	Deck system error

Command table

Operation control commands

◆ **NOTE:**

• The initial [STX] and final [ETX] codes in send commands and return (completion) messages are not included in the table.

• A return (completion) message returns [ACK] when data is received. Then an execution message is returned. The execution messages are described in the table below.

• When data reception is prohibited or for commands not supported, first [ACK] is returned, then ER001 (invalid command) is returned.

Command	Operation	Send command	Argument (data)	Return (completion) message
STOP	Stops current operation	OSP		OSP
PLAY	Start of playback	OPL		OPL
REWIND[*1]	Fast reverse	ORW		ORW
FAST FORWARD[*1]	Fast forward	OFF		OFF
REC	Start of recording	ORC		ORC
SHTL FORWARD[*2]	Forward shuttle	OSF:data	0: STILL 1:×0.03 2:×0.1 3:×0.2 4:×0.5 5:×1 6:×2 7:×4 8:×8 9:×16[*2] A:×32[*2]	OSF
SHTL REVERSE[*2]	Reverse shuttle	OSR:data	Same as the OS Fargument (data)	OSR
Device Select	Device select	$NI:data	0: Normal (LOCAL) 1:LAN 2:USB (DEVICE) 3: Normal (REMOTE) 5: BROWSER 6: AVCHD	$NI

*1: Maximum speed depends on setup menu No. 102 (FF. REW MAX) setting. For details, refer to each setup menu.

*2: 16× and 32× speed are restricted by setup menu No. 101 (SHTL MAX) setting.

Question commands

Command	Question	Send command	Return (completion) message	data

CTL/TC DATA REQUEST	Counter value	QCD	CD data	data = f w gh mm ss ff
				f = F
				w= S
				gh=
				 CTL mode
				  When plus g= SP (20h)
				  When minus – (2Dh)
				      h=0–9: hours
				 TC mode
				  gh=00–23: hours
				  mm= 00–59: minutes
				  ss= 00–59: seconds
				  [When set to 59.94 Hz]
				   ff=00–29: frames
				  [When set to 50 Hz]
				   ff=00–24: frames

STATUS REQUEST	Operating mode	QOP	data	OFF: FAST FORWARD OPL: PLAY ORC: REC ORW: REWIND OSP: STOP SRS: (IN/OUT) PREROLL OSF: SHTL FORWARD OSR: SHTL REVERSE OJG: JOG FORWARD/REVERSE OSW: VAR FORWARD/REVERSE
ID REQUEST	Device used	QID	data	AJ-HPD2500P: For the AJ-HPD2500P AJ-HPD2500E: For the AJ-HPD2500E

Connections

Clip Select Function

About the Clip Select Function

Use the clip select function to play back only one clip.

Clip Select Setting
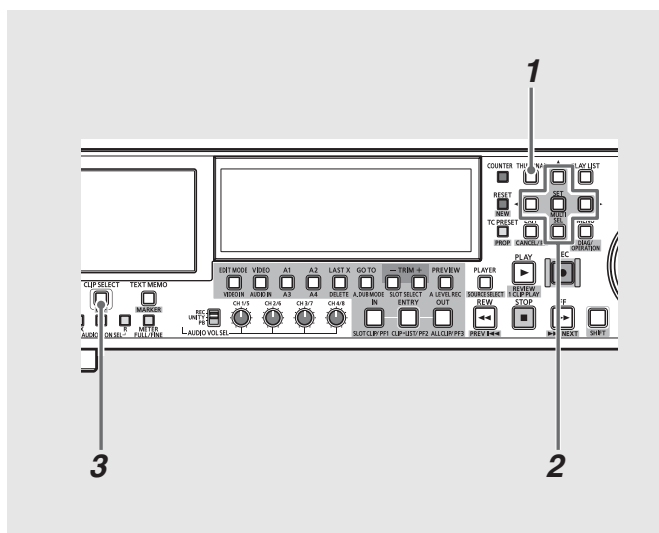
1 Open the thumbnail screen.

2 Use the cursor to select the clip to be played back.

3 Press the CLIP SELECT button.

The CLIP SELECT button lights and the first frame or thumbnail position[1] of the clip appears. Playback in clip select mode does not differ from normal playback, but enables playback with fixed delay. During playback the CLIP SELECT button flashes but the unit stays in clip select status.

Pressing the CLIP SELECT button when it is flashing in playback stop mode or playback pause mode changes flashing to steady light. When the CLIP SELECT button is lit, the unit is in PB mode regardless of PB/EE mode setting.

Changing the initial position will cause the CLIP SELECT button to flash and cancel fixed delay. Press the CLIP SELECT button to turn it on, and fixed delay resumes.

*1: This depends on the value set in setup menu No. 165 (CLIPSEL MODE) (page 179).

◆ **NOTE:**

- The clip select function is available when setup menu No.25 (SYSTEM FREQ) is set to 50 or 59.94.
- The CLIP SELECT function cannot be applied to clips in a hard disk.
- The clip select function does not work in the AVCHD mode.
- The CLIP SELECT function is not available on the playlist player thumbnail screen.
- If playback is started immediately after a USB, eSATA or LAN cable was disconnected and re-connected in the fixed delay mode, video dropouts may occur, or the fixed delay mode may be canceled.
- In clip select status, recording, play list, thumbnail screen, switching devices and other functions may not be available.
- When the CLIP SELECT button is on, the time that elapses from pressing the PLAY button until start of playback is the fixed delay. (Fixed delay)

Canceling Clip Select
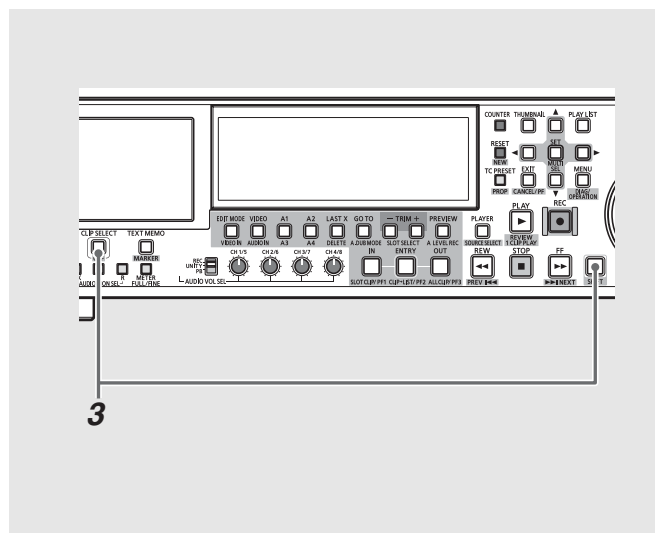
1 Press the SHIFT and CLIP SELECT buttons simultaneously.

The CLIP SELECT button goes off.

◆ **NOTE:**

- The clip select status can be canceled only in playback stop mode.
- When playback is stopped by pressing the STOP button during the CLIP SELECT mode, or if the CLIP SELECT mode is canceled, the thumbnail screen does not return.

AVCHD Recording and Playback

Using an Optional AVCHD Board

■ What is AVCHD?

AVCHD is a standard for recording and playback of high-vision video. Video is compressed in MPEG-4 AVC/H.264 and audio is recorded in Dolby digital.

◆ **NOTE:**

• SD memory cards can only be used for the frequency it was formatted for. The same SD memory card cannot be used for recording both 59.94 Hz and 50 Hz video.

(Compatibility of recorded video)

• AVCHD recorded materials can only be used in AVCHD compatible devices. For details, refer to the Operating Instructions supplied with your device.

• They cannot be used for playback with incompatible devices (devices not compatible with AVCHD).

• Playback may sometimes not be possible even on AVCHD compatible devices. If this happens, use this unit for playback.

SD/SDHC Memory Cards

Note the following about AVCHD recording and playback.

• It is recommended to use speed class 2 or better SD memory cards[1] and SDHC memory cards[1].

• Use of the Panasonic SD memory cards, miniSD memory cards and microSD cards is recommended.
  Be sure to format SD memory cards on this unit.
  For the latest information not available in the Operating Instructions, visit the support desk at the following Web site.
  For English: http://pro-av.panasonic.net/

*1: PH mode and HA mode recording requires class 4 or better cards.

◆ **NOTE:**

• SDHC memory cards can only be used in SDHC compatible devices.
  (SD speed class 4)

• Indicates class 4 (SD speed class) of the standard that regulates continuous write speeds between an SD compatible device and an SD memory card as determined by the SD standard. Use a class 4 or better card for an SD compatible device for which an SD speed class 4 is recommended to obtain stable recording.

Card type	Capacity	Recording and playback	Loading metadata
SD memory cards	8 MB 16 MB	Cannot be used.	Can be used.
	32 MB - 256 MB	Normal operation is not guaranteed. Some SD memory cards may stop during recording.	
	512 MB - 2 GB	Can be used.	
SDHC memory cards	4 GB - 32 GB	Can be used.	

◆ **NOTE:**

• This unit supports SD memory cards formatted using the FAT12 and FAT 16 format compatible with the SD standard and SDHC memory cards formatted using the FAT 32 format.

• This unit supports 4 GB or larger memory cards only if they are SDHC memory cards.
  Cards that are 4 GB or larger without an SDHC logo do not conform to the SD standard.

• Format SD memory cards on this unit. SD memory cards formatted on a computer or other device may delay start of recording or may not be used in this unit.

• MultiMediaCards cannot be used.

SD memory card slots and access lamps

Clips recorded on SD memory cards inserted in the SD/SDHC memory card slot on the AJ-HPD2500 can be played back as thumbnails and video clips corded on P2 cards.

■ Access lamps

Steady orange light:	Card is available for reading and writing.
Flashing orange light (fast):	Recognition phase to determine whether the card is defective or not
Flashing orange light (slow):	Card is being accessed.
Off:	Card is not available for reading and writing. No card is inserted, the card has not been formatted or a non-compatible card has been inserted. Write protect status, no free space left on card

◆ **NOTE:**
- During P2 card playback or in clip select status, an inserted SD memory card is not recognized, and the access lamps stay off. The SD memory card is recognized after PC card playback is stopped or the clip select status is released.

SD memory card protection

Set the write-protect switch to [LOCK] to prevent accidental deletion of data recorded on an SD card.

Write-protect switch
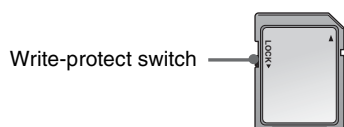
Formatting SD memory cards

Use the thumbnail menu to format SD memory cards.
→Refer to "Using SD/SDHC Memory Cards" (page 72).
You can also use the menu in the AVCHD mode for formatting SD memory cards.
→For how to switch to the AVCHD mode, refer to "Switching to AVCHD mode" (page 153).

1 Switch to the AVCHD mode and press the MENU button.

2 Select [CARD FUNCTIONS] – [CARD FORMAT] and press the SET button.

Select [YES] in the screen shown below that appears. To cancel formatting, select [NO].
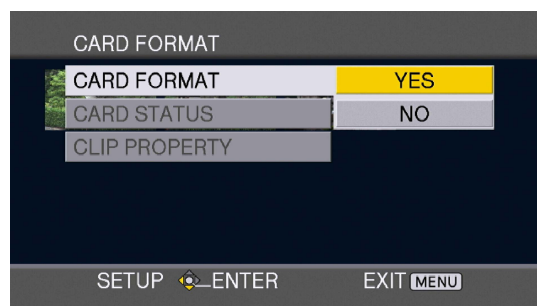
3 Select [YES] in the confirmation dialog.

The SD memory card will now be formatted.
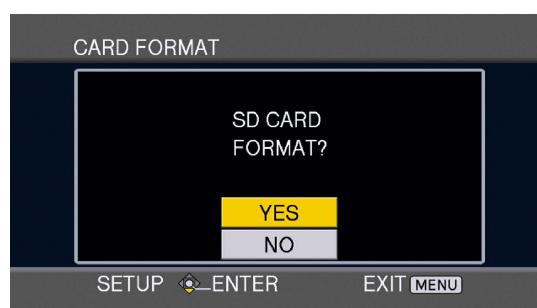
4 Press the MENU button to end processing.

- Check that no important data remains on a card before formatting since data erased by formatting cannot be recovered.

Removing SD memory cards

1 Check that the SD memory card access lamp is not flashing.

2 Press the center of the SD memory card and remove it after it bounces back by pulling it outwards.

◆ **NOTE:**
- Be sure to remove SD memory cards only when the access lamp is not blinking.
Removing an SD memory card when the access lamps are blinking could damage the SD memory card or the card slot.

Recovery of SD memory cards

Do not remove an SD memory card or turn the power off when the SD memory card access lamp is blinking. If an SD memory card is accidentally removed when the SD memory card access lamp is blinking or the power is turned off during recording or in the final phase of recording, turn the power on again, switch to AVCHD mode to open a screen that prompts you to repair the clip.
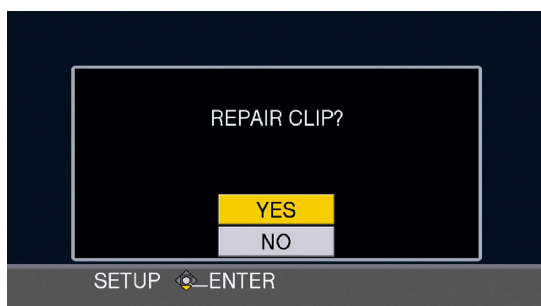
Select [YES] to start repair. When the repair ends, "REPAIR FINISHED" appears.

◆ **NOTE:**

- Selecting [NO] cancels repair and switches to the previous screen. Selecting [NO] means the card can no longer be repaired on this unit although it can still be repaired using AVCCAM Restorer[1], a content repair utility.
- An SD memory card that has not generated an error may display the "Repair Clip?" message, but a repair will not take place whether YES or NO is selected.
- The time required by a repair depends on the number of errors but can take up to 20 minutes.
- A repair that fails displays "SYSTEM ERROR TURN POWER OFF". Use the AVCCAM Restorer, a content repair utility, for cards that display this message.
- Some data may not enable a complete repair. Should this happen, it will not be possible to play back the recorded clip before the power is turned off.
- A clip that is shorter than 10 seconds may not be possible to repair.
- Indexes added during recording cannot be repaired.
- Metadata is not repaired.

*1: The AVCCAM Restorer is supplied with the AJ-YCX250G AVCHD codec board (optional).

Operating the AVCHD Thumbnail Screens

Screen configuration

This mainly involves regular AJ-HPD2500 operations and AVCHD (optional) operations. Screen configuration is shown below. AVCHD clips are played back from the AVCHD mode thumbnail screen.
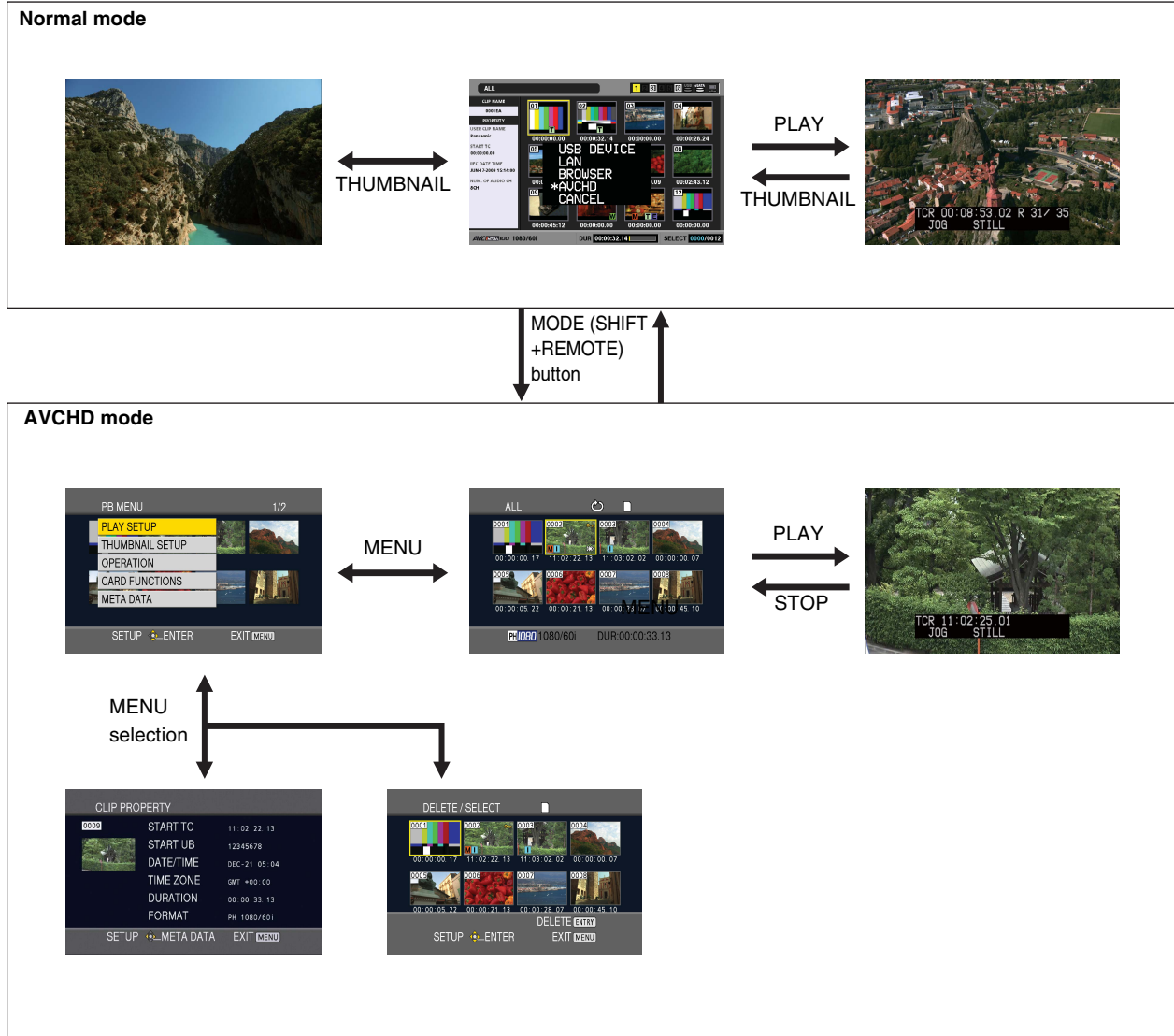
Switching to AVCHD mode

Use the steps below to switch to AVCHD mode.

1 Press the MODE (SHIFT+REMOTE) button to open the mode select menu.

◆ **NOTE:**

- AVCHD display and selection are available only when setup menu No. 25 (SYSTEM FREQ) is set to 50 or 59.94.

2 Select AVCHD from the menu.

The LCD monitor shows thumbnails of each SD memory card clip. (If there are a large number of clips, it may take time to display them all.)
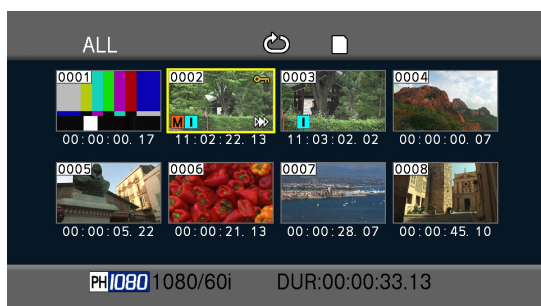
The thumbnail screen allows you to do the following.

- Play back, repair and delete clips
- Add and delete shot marks
- Formatting SD memory cards

Basic thumbnail screen operations

■ Selecting a thumbnail

Use the cursor buttons to select thumbnails.
(The yellow frame moves.)

■ Playing back clips

Select a thumbnail and press the PLAY button.
(For details of playback, refer to "Playing Back AVCHD Clips" (page 160).)

■ Opening menus

Press the MENU button when thumbnails are displayed.
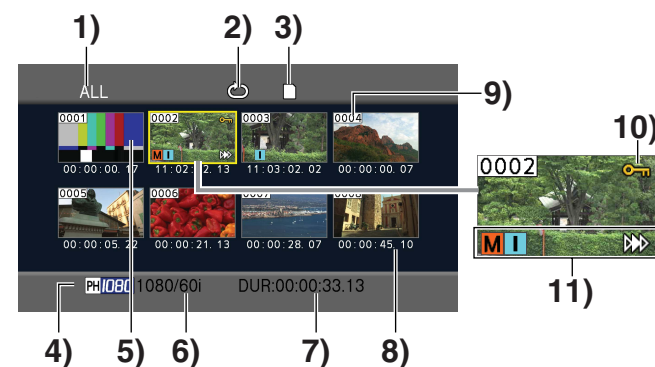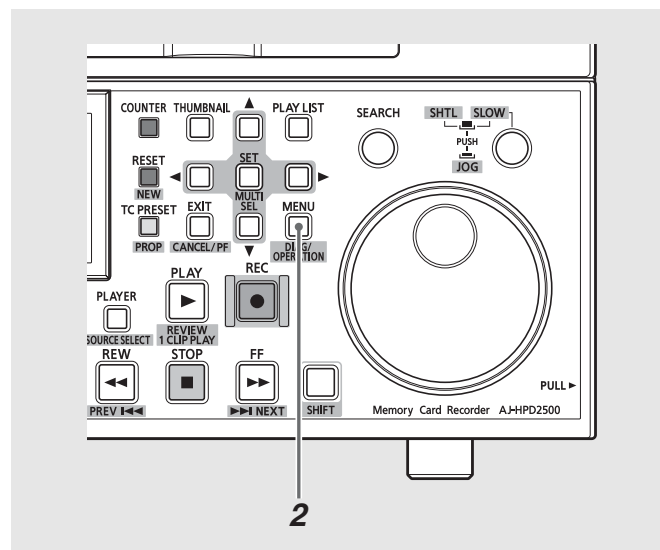
1) Thumbnail display status (→ page 154)

Displays the type of clips that displays thumbnails.

2) Repeat play indicator (→ page 159)

Indicates that repeat play is on.

3) Card status indicator (→ page 156)

Displays SD memory card status.

4) Record mode indicator

Indicates the recording mode of the clip at the cursor location.

5) Cursor (yellow frame)

Appears around the selected thumbnail.

6) Recording format indicator

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

7) Duration indicator

Indicates the duration of the clip at the cursor location.

8) Time indicator (→ page 154)

Depending on setting, this will show time code/user bit at start of clip recording, time of shooting, day of shooting or date and time of shooting.

9) Clip no.

Indicates the order clips were recorded (up to 1000 clips). The number of clips recorded in a different format or that for some other reason cannot be played back are indicated in red. To play back clips indicated in red, choose [PLAY SETUP] – [PB FORMAT] to adjust the recording format.

→Refer to "Setting playback format (PB FORMAT)" (page 159).

10) 🔒 Clip protect indicator

Indicates that a clip is protected.

11) Various indicators

M : Shot mark

Indicates the presence of a shot mark. (→ page 62)

▷►▷ : Resume playback indicator

Indicates clips selected for resume playback.

⫿ : Index

Indicates that an index has been recorded. The unit cannot record indexes.

Selecting thumbnail display method (THUMBNAIL SETUP)

Use the steps below to display thumbnails of the desired clip. More detailed settings of thumbnail display are also possible.

1 Press the MODE (SHIFT+REMOTE) button to switch to the AVCHD mode.

→Refer to "Switching to AVCHD mode" (page 153).

2 Press the MENU button.

3 Select [THUMBNAIL SETUP] and press the SET button.
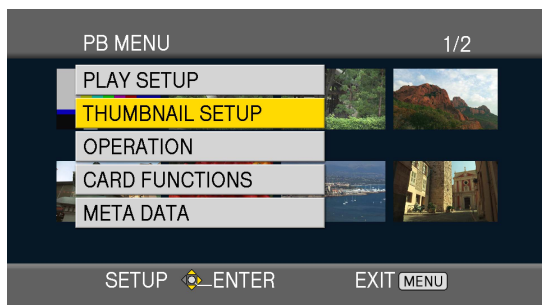
```
PB MENU                    1/2
   PLAY SETUP
   THUMBNAIL SETUP
   OPERATION
   CARD FUNCTIONS
   META DATA

   SETUP  ◆ENTER       EXIT MENU
```

4 Press the up and down (▲/▼) cursor buttons to select an item and press the SET button.

```
THUMBNAIL SETUP
   THUMBNAIL MODE    ▷    ALL
   INDICATOR              ON
   DATA DISPLAY           TC
   DATE FORMAT            Y-M-D

   SETUP  ◆ENTER       EXIT MENU
```
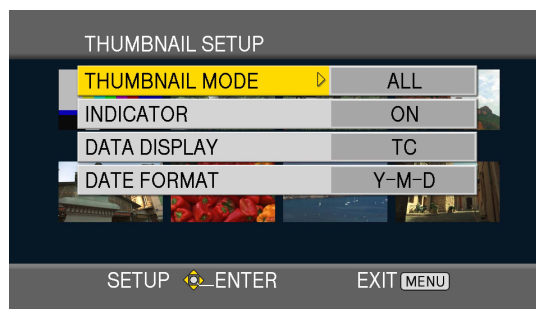
THUMBNAIL MODE:

Select the clip to display.

ALL:	Shows all clips.
SAME FORMAT:	Displays the clips in the same playback format.
MARKER:	Displays clips with shot marks.
INDEX:	Displays clips with indexes.

• *XX* indicates factory default settings.

INDICATOR:

Turns indicators on and off. (The factory default is on.) Clip protect indicator and resume playback indicator are displayed also when indicator is set to off.

DATA DISPLAY:

Select the data that should appear in the time display of a clip.

TC:	Time code
UB:	User bit
TIME:	Shooting time
DATE:	Day of shooting
DATE TIME:	Shooting date and time

• *XX* indicates factory default settings.

DATE FORMAT:

Select the order for indicating date and time of recording. This setting does not affect the date of recording displayed by the clip property.

Y-M-D:	Year/month/day
M-D-Y:[*1]	Month/day/year
D-M-Y:[*1]	Day/month/year

*1:The default setting for the AJ-HPD2500P is "M-D-Y", and for the AJ-HPD2500E is "D-M-Y".

5 Press the MENU button to return to the thumbnail screen.

Deleting and protecting clips (OPERATION)

Use the steps below to delete or protect clips.

1 Press the MODE (SHIFT+REMOTE) button to switch to the AVCHD mode.

→Refer to "Switching to AVCHD mode" (page 153).

2 Press the MENU button.

3 Select [OPERATION] and press the SET button.
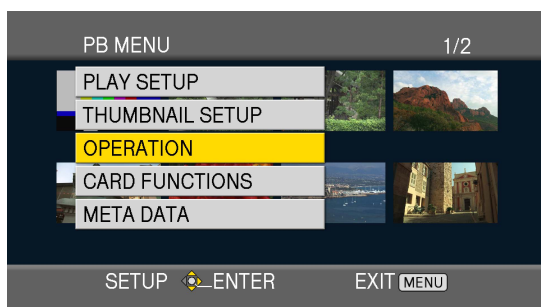
```
PB MENU                    1/2
    PLAY SETUP
    THUMBNAIL SETUP
    OPERATION
    CARD FUNCTIONS
    META DATA

    SETUP  ⟡ ENTER    EXIT MENU
```

4 Press the up and down (▲/▼) cursor buttons to select an item and press the SET button.

```
OPERATION
    DELETE         ▷      NO
    CLIP PROTECT          NO



    SETUP  ⟡ ENTER    EXIT MENU
```
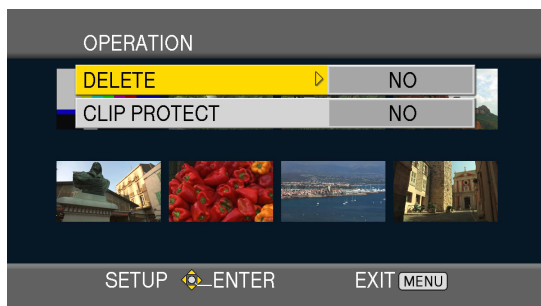
DELETE:

Deletes Clips.

ALL CLIPS:	Deletes all clips. Select [YES]/[NO] and press the SET button.
SELECT:	Deletes selected clips. Select [SELECT:], press the SET button, move the cursor to the clip you want to select, and then press the SET button again. The selected clip will be indicated by an orange frame. (This allows you to make multiple selections.) Pressing the SET button a second time cancels the selection. Pressing the ENTRY button after selecting deletes the clip.
NO:	The previous screen reappears.

◆ **NOTE:**

• Protected clips cannot be deleted.
• Deleting clips selected using ALL CLIPS may take time if the clips are large.

CLIP PROTECT:

| YES: | Protects clips or releases protection. Move the cursor to the clip to be protected, then press the SET button (a symbol mark is displayed). Or move the cursor to the protected clip and press the SET button to release protection (the symbol mark disappears). Repeat this procedure to protect a clip or release protection of a clip. |
| NO: | The previous display returns. |

◆ **NOTE:**

• Note that formatting an SD memory card will delete protected clips.

5 Press the MENU button to return to the thumbnail screen.

Checking model number and serial number (SYSTEM INFO)

Use this function to check the model number and serial number of the unit.

1 Press the MODE (SHIFT+REMOTE) button to switch to the AVCHD mode.

→Refer to "Switching to AVCHD mode" (page 153).

2 Press the MENU button.

3 Use the cursor buttons to choose [SYSTEM INFO] and press the SET button.

Formatting card, checking clip and card information (CARD FUNCTIONS)

Use the steps below to format SD memory cards and check clips and SD card information.

1 Press the MODE (SHIFT+REMOTE) button to switch to the AVCHD mode.

→Refer to "Switching to AVCHD mode" (page 153).

2 Press the MENU button.

3 Select [CARD FUNCTIONS] and press the SET button.
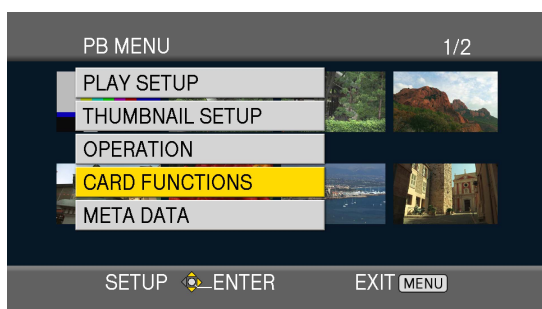
```
PB MENU                        1/2
      PLAY SETUP
      THUMBNAIL SETUP
      OPERATION
      CARD FUNCTIONS
      META DATA

      SETUP  ◇_ENTER        EXIT MENU
```

4 Press the up and down (▲/▼) cursor buttons to select an item and press the SET button.

```
CARD FUNCTIONS
      CARD FORMAT        ▷    NO
      CARD STATUS             NO
      CLIP PROPERTY           NO

      SETUP  ◇_ENTER        EXIT MENU
```
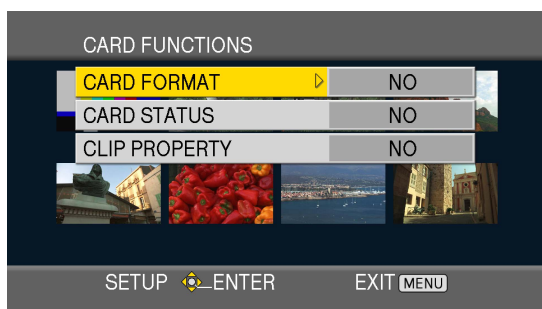
CARD FORMAT:

Insert the SD memory card you want to format in this unit.
Note that formatting will delete any data on the card.
Select whether or not you want to format the card ([YES]/ [NO]) and press the SET button.

CARD STATUS:

SD memory card information appears.

```
CARD STATUS
  REMAIN            REMAIN / ALL
    98%             196/199 min
  SD STANDARD       SUPPORTED
  PROTECT           OFF

                    EXIT MENU
```
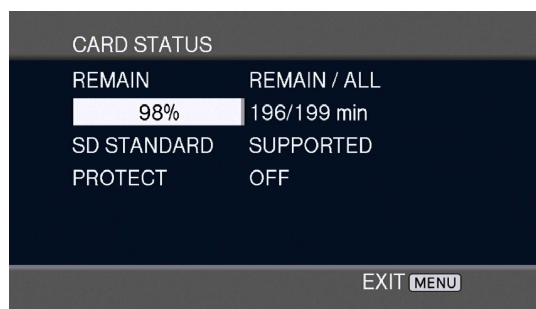
REMAIN:	Displays remaining SD memory card capacity.
SD STANDARD:	This indicates whether the SD memory card was formatted in compliance with the SD and SDHC standard (SUPPORTED/NOT SUPPORTED).
PROTECT:	This indicates whether the SD memory card is write protected or not.

CLIP PROPERTY:

Displays information regarding the selected clip.
Use the left and right (◀ / ▶) cursor buttons to view information on surrounding clips.

```
CLIP PROPERTY
1)  0010      O┓    START TC      11:03:02. 02
2)                  START UB      12345678
                    DATE/TIME     DEC-21 05:04
    M               TIME ZONE     GMT +00:00
3)                  DURATION      00:00:21. 28
                    FORMAT        PH 1080/60i
      SETUP  ◇_META DATA    EXIT MENU
```
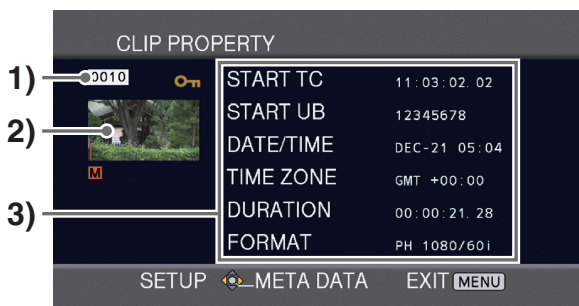
1) Clip no.

2) Thumbnail

3) Clip information

Displays indicators added to clips and a variety of data.

START TC:	Value of time code at start of recording
START UB:	User bit value at start of recording
DATE/TIME:	Date of recording and time of start of recording
TIME ZONE:	Displays time zone.
DURATION:	Clip length
FORMAT:	Recording format

■ Displaying clip metadata

Use the cursor buttons to select an item and press the SET button to check video and audio formats, information such as person who shot and other details.

◆ **NOTE:**
- This option permits use of only ASCII characters. Other characters are replaced by "*".
- This unit has a character length limit and may not be able to display all metadata. (This does not mean that the data is no longer there.) Use the AVCCAM Viewer[1] to see all metadata.
  - *1: AVCCAM Viewer can be downloaded from the site listed below.
    For English: http://pro-av.panasonic.net/

To clear the clip metadata screen, press the left (◄) cursor button.

5 Press the MENU button to return to the thumbnail screen.

About clip metadata

Video data that can be recorded on an SD memory card includes video and audio format, shooter, place name and text memos.

■ Clip metadata content

You can set the items underlined by loading the metadata upload file on the SD memory card. All other items are automatically set during shooting.

GLOBAL CLIP ID:	Global clip ID (This is a unique number. There is no clip anywhere else in the world with the same number.)
USER CLIP NAME:	Name assigned to a clip by the user[1]
VIDEO & AUDIO:	• FRAME RATE (frame rate of recorded video) • RESOLUTION (resolution) • PULL DOWN (pull down format) • AUDIO (recorded sound)
ACCESS:	• CREATOR (name of recorder) • CREATION DATE (date of recording) • LAST UPDATE DATE (last update date) • LAST UPDATE PERSON (last update person)

DEVICE:	• MANUFACTURER (name of optional board manufacturer) • SERIAL NO. (serial number of optional board) • MODEL NAME (model name of optional board: AJ-YCX250G)
SHOOT:	• SHOOTER (shooter) • PLACE NAME (name of shooting location)
LOCATION:	• ALTITUDE (altitude of shooting location) • LONGITUDE (longitude of shooting location) • LATITUDE (latitude of shooting location) • SOURCE (information source)
SCENARIO:[2]	• PROGRAM NAME (program name) • SCENE NO. (scene number) • TAKE NO. (take number)
NEWS 1:	• REPORTER (name of reporter) • PURPOSE (purpose of the news)
NEWS 2:	• OBJECT (object of the news)
MEMO:[3]	• PERSON (name of person who recorded text memo) • TEXT (text memo content)

*1: If there is no information in the metadata upload file, a 5-digit serial number is assigned to each clip on a card starting by assigning 0 to the first recorded clip. The USER CLIP NAME recording method is selectable. For details refer to page 158.

*2: To enter SCENARIO, be sure to enter a PROGRAM NAME. It is not possible to enter only the SCENE NO. and TAKE NO.

*3: To enter MEMO, be sure to enter TEXT. It is not possible to enter PERSON only.

◆ **NOTE:**
- It is not possible to repair metadata attached to a clip.

Uploading metadata (META DATA)

In addition to uploading metadata, use this function to perform the operations listed below.

Perform any preparations that may be required.

- Loading metadata
  Insert the SD memory card with the recorded metadata in the unit. (Use AVCCAM Viewer or P2 Viewer to create load data.)
- Selecting whether to record metadata on an SD memory card
- Initializing metadata on the unit
- Displaying metadata on the unit

1 Press the MODE (SHIFT+REMOTE) button to enter AVCHD mode.

2 Press the MENU button.

3 Press the up and down (▲/▼) cursor buttons to select [META DATA] and press the SET button.

PB MENU	1/2
PLAY SETUP	
THUMBNAIL SETUP	
OPERATION	
CARD FUNCTIONS	
META DATA	
SETUP ◊_ENTER	EXIT MENU

4 Use the cursor buttons to select an item and press the SET button.

META DATA		1/2
CARD READ	▷	NO
RECORD		OFF
USER CLIP NAME		TYPE1
CLIP COUNT RESET		NO
META DATA PROP		NO
SETUP ◊_ENTER		EXIT MENU
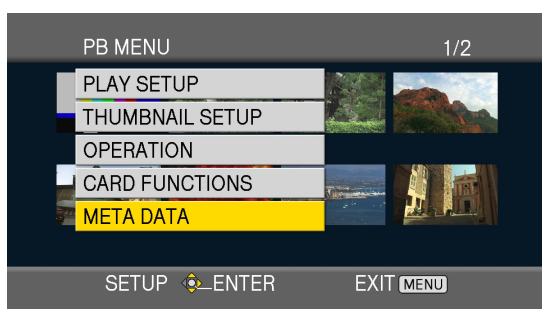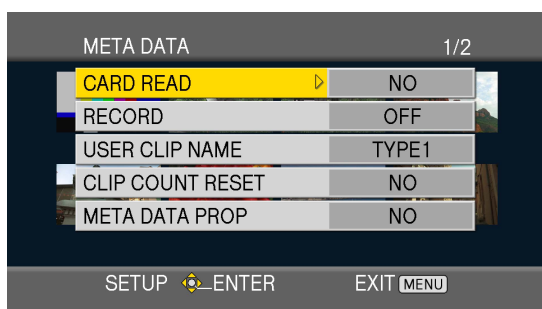
CARD READ:
Loads metadata stored on an SD memory card into this unit. Select whether or not you want to load the data ([YES]/[NO]) and press the SET button. This unit can show up to 10 metadata items on an SD memory card in order from the most recently created item.
File names of loaded metadata that use characters other than alphanumeric characters are replaced by "*".

RECORD:
Determines whether or not metadata loaded into the unit be recorded on an SD memory card.
Select whether to record or not ([ON]/[OFF]) and press the SET button.
The factory default setting is [OFF].

USER CLIP NAME:
You can select how to record the USER CLIP NAME. For details, refer to "Selecting method for recording USER CLIP NAME" (this page).

CLIP COUNT RESET:
Resets the counter to 1.
Select whether to reset or not ([YES]/[NO]) and press the SET button.

META DATA PROP:
Displays metadata loaded into the unit.

META INITIAL SET:
Initializes metadata loaded into the unit.
Select whether or not you want to initialize the data ([YES]/[NO]) and press the SET button.

5 Press the MENU button to exit the menu mode.

Selecting method for recording USER CLIP NAME

Press the MENU button and choose [META DATA] – [USER CLIP NAME] and select method for recording USER CLIP NAME.
There are two types: TYPE1 and TYPE2.

USER CLIP NAME to be recorded

• When clip metadata is loaded

TYPE1:	Loaded data
TYPE2:	Loaded data + counter value[*1]

• When clip metadata is not loaded or when loaded clip metadata is not to be recorded

TYPE1:	A 5-digit serial number assigned in shooting order
TYPE2:	A 5-digit serial number assigned in shooting order

*1:The counter value is indicated as a four-digit number.
The counter value is incremented by 1 each time a clip is played back when clip metadata is loaded and recording method TYPE2 is set for recording metadata.
Use the following procedure to reset the counter value.
Press the MENU button, choose [META DATA] – [CLIP COUNT RESET] – [YES] and press the SET button to reset the counter value to 1.

Adding shot marks to clips

Adding shot marks (M) makes it easier to find desired clip.

1 Press the cursor buttons to move the yellow frame to the clip to which you will add a shot mark.

2 Press the MARKER (SHIFT + TEXT MEMO) button.
To cancel a shot mark, repeat the above operation.

Setting up for Playback

Set playback format and playback type.

Setting playback format (PB FORMAT)

Use the steps below to set playback format.
→Refer to "Menu Operations" (page 38).

1 Press the MENU button.

2 Select [PLAY SETUP] and press the SET button.

3 Select [PB FORMAT] and press the SET button.

4 Press the up and down (▲/▼) cursor buttons to select playback format and press the SET button.
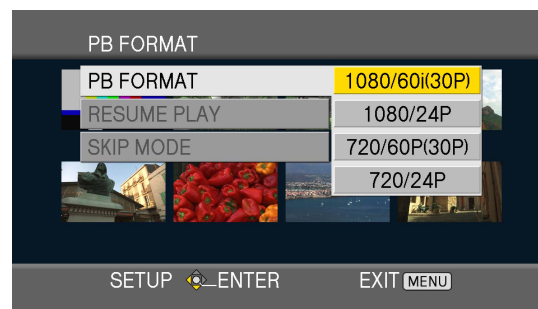
• Available formats
(When SYSTEM FREQ is set to 59.94 Hz)
1080/60i(30P), 1080/24P, 720/60P(30P), 720/24P
(When SYSTEM FREQ is set to 50 Hz)
1080/50i(25P), 720/50P(25P)

5 Press the MENU button to return to the thumbnail screen.
Clips with black numbers can be played while clips with red numbers cannot be played back.
Switching to the normal mode will replace a set playback format with a playback format set by the setup menu No. 020 (SYS FORMAT).

Repeat playback (REPEAT PLAY)

When setup menu No. 160 (REPEAT PLAY) is set to ON, all playable clips will be played continuously.
→Refer to "Setup" (page 164).

Resume playback (RESUME PLAY)

Resume play starts playback from where it was last interrupted.

1 Press the MENU button.

2 Select [PLAY SETUP] and press the SET button.

3 Select [RESUME PLAY] and press the SET button.

4 Select [ON] and press the SET button.

5 Press the MENU button to return to the thumbnail screen.

6 Select clip to play back.
When playback is interrupted, the resume play indicator appears on the clip thumbnail and playback continues from this point the next time playback is started.

To turn off resume playback, set to [OFF] in step 4.

◆ **NOTE:**
• A change in setting will not change the resume playback setting of a P2 card.

Setting up skip mode (SKIP MODE)

Select skip operation (cue up) to be performed during various playback operations and pause.

1 Press the MENU button.

2 Select [PLAY SETUP] and press the SET button.

3 Select [SKIP MODE] and press the SET button.

4 Select skip operation and press the SET button.

CLIP:	Press NEXT (SHIFT + FF), PREV (SHIFT + REW) buttons during a pause to move to the beginning of the next or previous clip.
CLIP & INDEX:	Press NEXT (SHIFT + FF), PREV (SHIFT + REW) buttons during a pause to move to the beginning of the next or previous clip or the location of the next or previous index location.

5 Press the MENU button to return to the thumbnail screen.

◆ **NOTE:**
• An index is attached to a certain video point of a clip being recorded or played back. You can then select only clips with indexes for display/playback. Note, however, that an index cannot be attached nor removed by this unit.

Playing Back AVCHD Clips

Playback

Use the steps below to play back clips, which are available only from thumbnails.

1 Use the cursor buttons to move the cursor to the clip you want to play.

2 Press the PLAY button.
The clip at the cursor location will now be played.
Press the STOP button to stop playback and return to thumbnails.

Slow/fast forward/rewind

Use the search dial during playback or pause to select playback speed.
Press the PLAY button to return to normal playback.

◆ **NOTE:**
• The audio is played back only at 1x speed.
• During reverse playback, video is played back with gaps every 0.5 sec interval.
• In JOG mode, not like during P2 card playback, a smooth playback is not possible.
• In SHTL mode, 16x playback speed is available (maximum).

Clip forward/rewind

1 Play back or enter pause mode.

2 Press the PREV (SHIFT + FF)/NEXT (SHIFT + REW) button.
The unit will now perform set skip operation.

Recording AVCHD Material on P2 Cards

Use the steps below to record AVCHD video to a P2 card in the DVCPRO HD or AVC-Intra format.

■ Preparing for recording

1 Set recording and playback format.
Set the recording format (1080i/720P) to the same format as the PB format from setup menu No. 020 (SYS FORMAT) and set the recording format (DVCPRO HD/AVC-I 100/AVC-I 50) using setup menu No. 025 (REC FORMAT (HD)).
Then set the playback format for AVCHD mode.
→Refer to "Setting playback format (PB FORMAT)" (page 159).

◆ **NOTE:**
• Dubbing is not available when setting of the setup menu No.020 (SYS FORMAT) differs from PB FORMAT.

2 Insert a P2 card that can be recorded.
Insert a card for dubbing or select a slot to enable recording.

◆ **NOTE:**
• Dubbing is not available when loop recording is activated.

3 Set the time code.

Use the TCG switch to set INT REGEN, INT PRESET or EXT. If EXT is set, recording of TC and UB values on AVCHD clips is permitted.

4 Set the audio level.

Perform AVCHD playback if required and use the PB level control to set the audio level for AVCHD clip playback.

◆ **NOTE:**

• The recording level control is disabled and recording is made using a UNITY level.

■ Recording operations

1 Display AVCHD thumbnails.

→Refer to "Switching to AVCHD mode" (page 153).
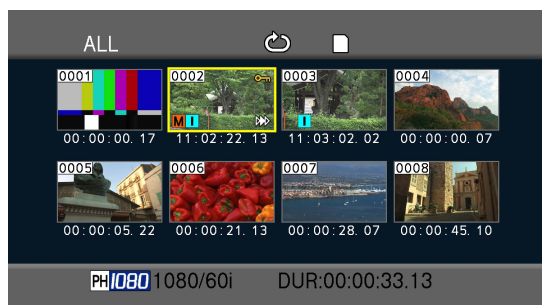
2 Use the cursor buttons to select the clip you want to dub.

To start dubbing midway in the clip, use the PLAY button or other button to locate the start position and press the STILL button to stop.

When dubbing is started by a thumbnail, dubbing starts from the start of the selected clip.

◆ **NOTE:**

• When resume play is activated, dubbing starts from the resume position.

3 Press the SHIFT + REC button.

Recording on the P2 card starts simultaneous with AVCHD clip playback.

If the P2 card is not ready for recording or if PB FORMAT and SYS FORMAT differ, pressing the SHIFT + REC buttons will not start operation.

4 Use the STOP button to stop dubbing.

Stopping P2 card recording stops AVCHD clip playback and the AVCHD thumbnail screen reappears.

◆ **NOTE:**

• During dubbing, recording does not start from the beginning of an SD memory card.
• If input reference signal is not stable during dubbing, dubbed video will be distorted.
  Input stable reference signal, or perform dubbing without inputting reference signal (internal reference).

Recording AVCHD to an SD Memory Card

SD memory card recording time

(SD memory card recording time (estimate))

SD memory card capacity	Recording mode			
	PH[*1] (Highest image quality mode[*3]/1920 x 1080 or 1280 x 720 pixels)	HA[*1] (High image quality mode/1920 x 1080 pixels)	HG[*2] (Standard image quality mode/1920 x 1080 pixels)	HE[*2] (Long playing mode/1440 x 1080 pixels)
512 MB	Approx. 2 min.	Approx. 3 min.	Approx. 4 min.	Approx. 10 min.
1 GB	Approx. 5 min.	Approx. 7 min.	Approx. 9 min.	Approx. 21 min.
2 GB	Approx. 10 min.	Approx. 15 min.	Approx. 20 min.	Approx. 45 min.
4 GB	Approx. 21 min.	Approx. 30 min.	Approx. 40 min.	Approx. 90 min.
8 GB	Approx. 45 min.	Approx. 60 min.	Approx. 80 min.	Approx. 180 min.
16 GB	Approx. 90 min.	Approx. 120 min.	Approx. 160 min.	Approx. 360 min.
32 GB	Approx. 180 min.	Approx. 240 min.	Approx. 320 min.	Approx. 720 min.

*1: To record in PH and HA modes, use a speed class 4 or better SD memory card. Recording will not be possible on an SD memory card in a speed class lower than speed class 4 or on a card that does not support speed classes.

*2: To record in HG and HE modes, use a speed class 2 or better SD memory card. Recording will not be possible on an SD memory card in a speed class lower than speed class 2.

*3: This is the highest image quality mode for this unit.

◆ **NOTE:**

• This unit supports VBR (Variable Bit Rate) recording, which automatically varies the bit rate (data rate per time period) for a subject. This recording mode uses more space for recording fast-moving subjects, so available recording time is reduced.

• The indicated capacities include a management area so the total area available for recording is somewhat smaller.

• Continuous recording provides up to 12 hours of recording.

• The recording conditions listed below may produce mosaic noise on a playback screen.
  - Background with a complex pattern
  - Recording fast-moving subjects (especially during shooting in the HE recording mode)

• The recording time may decrease on an SD memory card that is frequently recorded and deleted. Reformat such SD memory cards in the unit before use. Formatting an SD memory card will delete all data recorded on the card and make subsequent recovery impossible. Store important data on a PC.

• One recording session from start to end is one clip.

• Pressing the STOP button to stop a short recording will not immediately stop data write operations to an SD memory card. The unit will not recognize the pressing of the STOP button in a situation like this.

• When an SD memory card is inserted, SD memory card information is loaded into the unit, and the access lamp blinks in orange. Wait until the access lamp is lit steadily in orange, and press the REC + PLAY button to start recording.

• An SD memory card can record up to 900 clips.

Recording P2 card material in AVCHD

To make a recording in AVCHD from a P2 card, perform the required clip editing in playlist mode and play back the final video to record it on an SD memory card.

■ Preparing for dubbing

1 Set recording and playback format.

Perform the following settings in the listed setup menus.

020	SYS FORMAT	1080i or 720p
025	REC FORMAT(HD)	DVCPROHD, AVC-I 100, AVC-I 50

2 Set setup menu No.028 (AVCHD FMT) appropriately.

Select AVCHD recording rate (PH, HA, HG or HE).

◆ **NOTE:**
• Selecting 720P will engage PH mode regardless of AVCHD FMT setting.

3 Insert an SD memory card in the slot.

■ Starting dubbing to AVCHD

1 Create material required for dubbing using playlist.

2 Press the SHIFT + REC button.

Playback from the current playlist location starts simultaneous with recording to the SD memory card.
This type of recording records the time code in the playback material.
Recording stops when playback reaches the end or if the SD memory card becomes full and further recording is not possible.

3 Press STOP at the end.

Recording and playback stop.

◆ **NOTE:**
• If input reference signal is not stable during dubbing, dubbed video will be distorted.
  Input stable reference signal, or perform dubbing without inputting reference signal (internal reference).
• Recording from the beginning of the playlist playback cannot be made.
• The internal time code generator value will be updated to the dubbed time code.

Recording remote input signals

External signals are simultaneously recorded to a P2 card and an SD memory card. It is not possible to record only to an SD memory card.

■ Preparing for recording

1 Set up for AVCHD recording.

Set setup menu No. 170 (AVCHD REC) to ON.

2 Select a recording format.

Set the P2 card and AVCHD recording formats as shown below in the listed setup menus.

25	SYSTEM FREQ	59.94 or 50
020	SYS FORMAT	1080i or 720p
025	REC FORMAT(HD)	DVCPROHD, AVC-I 100, AVC-I 50
028	AVCHD FMT	PH, HA, HG, HE

3 Set recording audio channels.

AVCHD recording uses 2 channels for recording.
Use setup menu No. 774 (AVCHD A CH) to set recording channels.

■ Recording to P2 cards and SD memory cards

1 Engage P2 card recording/playback mode.

2 Press the REC + PLAY button to start recording.

Simultaneous recording on the P2 card and SD memory card starts.

◆ **NOTE:**
• If P2 card recording is not possible, AVCHD recording will not be possible either.
• The "REC P2&AVCHD" indicator appears in the LCD monitor when an AVCHD recording is made to an SD memory card.
• AVCHD recording is not available when 480i or 576i is set in setup menu No. 020 (SYS FORMAT).
• AVCHD recording is not available when something other than 59.94 or 50 is set in setup menu No. 25 (SYSTEM FREQ).
• The start and end of recording will not match the clip recorded on the P2 card.
• Loop recording is not performed in AVCHD even when setup menu No. 041 (LOOP REC) is set to ON.
• The same time code as that on the P2 card is recorded.
• Use the menu in AVCHD mode to set metadata for an AVCHD recording.
• AVCHD recording is not possible for composite signal input.

3 Press the STOP button to end recording.

Setup

Unit Setup

The settings for this unit consist of SYSTEM, BASIC, OPERATION, INTERFACE, EDIT, TIME CODE, VIDEO, AUDIO, LCD and MENU. The SYSTEM setting values are stored in the SYSTEM file. The other setting values are stored in the user setting file. Up to five user files (USER1 to USER5) can be saved. These settings (up to 4 files) can be written to and loaded from SD memory cards.
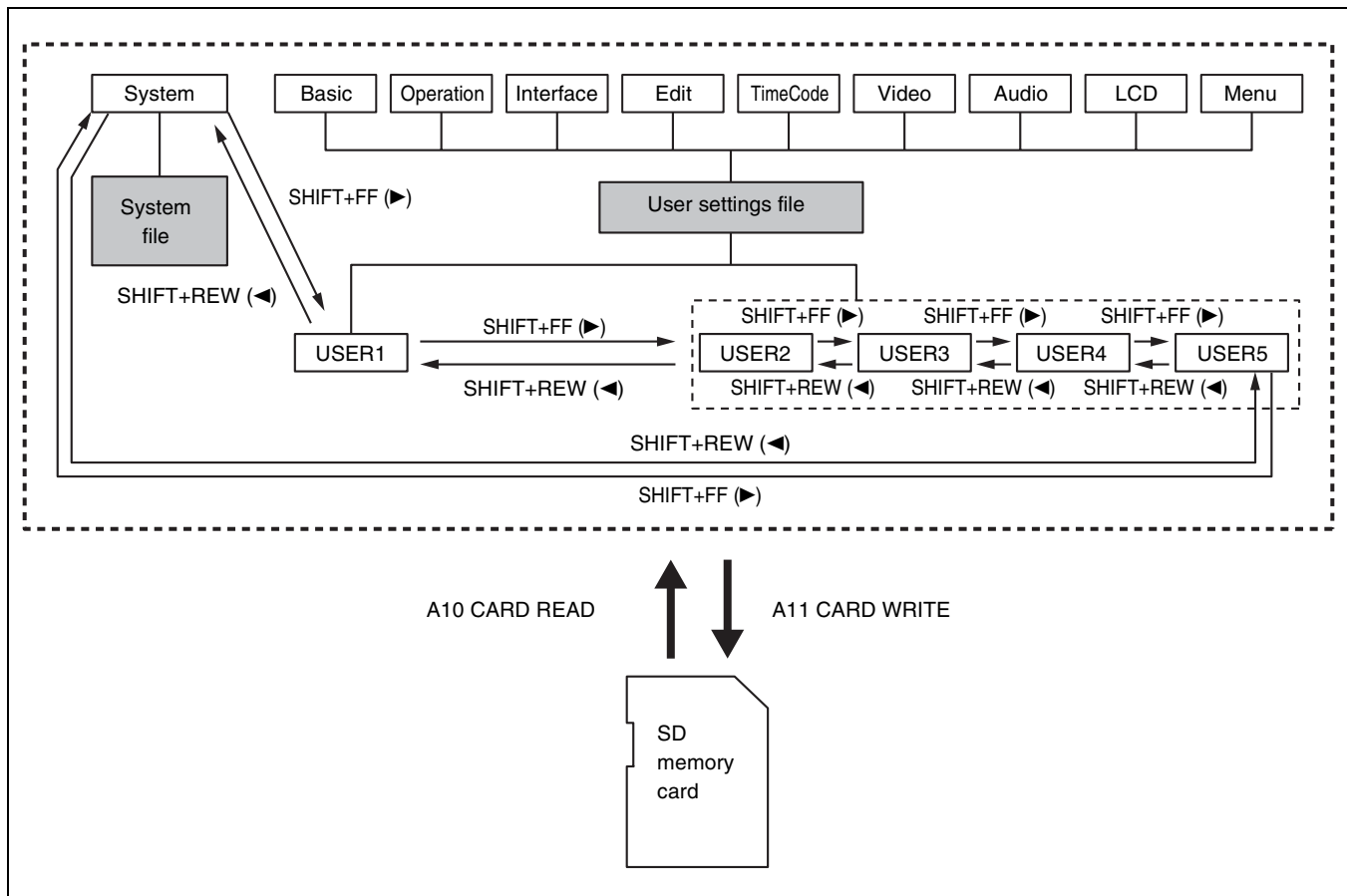
This unit can possess up to five user files, each of which can be selected from a menu setting.

Setting values can be changed as necessary.
→For details on change operations, refer to "Changing Settings" (page 165).

After a change, the content of USER1 can be saved (copied) to USER2 to USER5.
→For details, refer to "Setup menu No. A01 (SAVE)" (page 192).

SETUP menu settings can be saved to and loaded from an SD memory card.
→For details, refer to "Setup menu No. A10 (CARD READ) (page 192), A11 (CARD WRITE) (page 192)".

Automatic Loading of User Setting File at Power up

You can specify the user setting files that will be loaded in USER1 at power up. You can also decide to use the same settings as last time.
→For details, refer to "Setup menu No. A02 (P.ON LOAD)" (page 192).

Changing Settings

The menus superimposed on the LCD monitor and a monitor (when the SUPER switch on the upper front panel is set to "ON") connected to the MON OUT, SD SDI MON OUT or SDI OUT connector make it possible to change settings. Superimposed information to the output connectors can be selected in setup menu No.005 (SUPER).

Change Operations
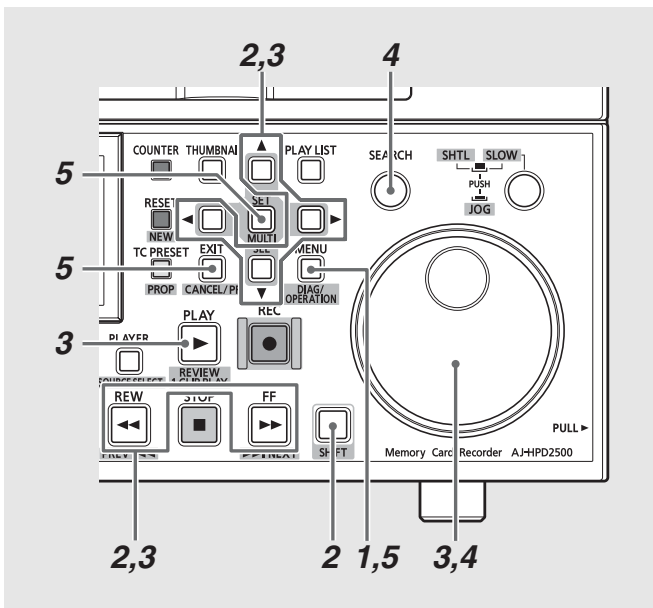
1 Press the MENU button.

The setup menu screen appears on the LCD monitor and the counter display indicates the setup menu number.

2 Select the file to change.

Hold down the SHIFT button and press the right cursor button (▶) or the FF ▶▶ button to go to the next file, press the left cursor button (◀) or the REW ◀◀ button to go to the previous file.

3 Select items to change.

Turn the search dial or press the up or down cursor button (▲/▼) to move the cursor (*) to the item you want to change.

- Use the search dial in JOG mode.
- Turn the dial clockwise to increment item numbers (001→002→003→004→) and counterclockwise to decrement them.
- To switch to the next item, hold down the PLAY ▶ button and press the FF ▶▶ button or the + button. To switch to a previous item, hold down the PLAY ▶ button and press the REW ◀◀ button or the − button.

4 Change set values.

Select the item to change, hold down the SEARCH button and turn the search dial or press the left or right cursor button (◀ / ▶) to change the setting.

- Turn the dial clockwise (or press the right cursor button (▶)) to increment the set number and turn it counterclockwise (or press the left cursor button (◀)) to decrement it.
- Release the SEARCH button after making the change.
- In the SHTL mode, set the search dial to the center position or items will move.
- Repeat the operations described in steps 3 and 4 when there are more items to change.
- Press and hold the SEARCH button and press the RESET button to reset the set values to the factory defaults.

5 Finalize the change.

Press the MENU button.

In the confirmation message that appears, press the SET button to accept the change or press the EXIT button to cancel it. The menu closes after this operation.

Making changes using the PF buttons
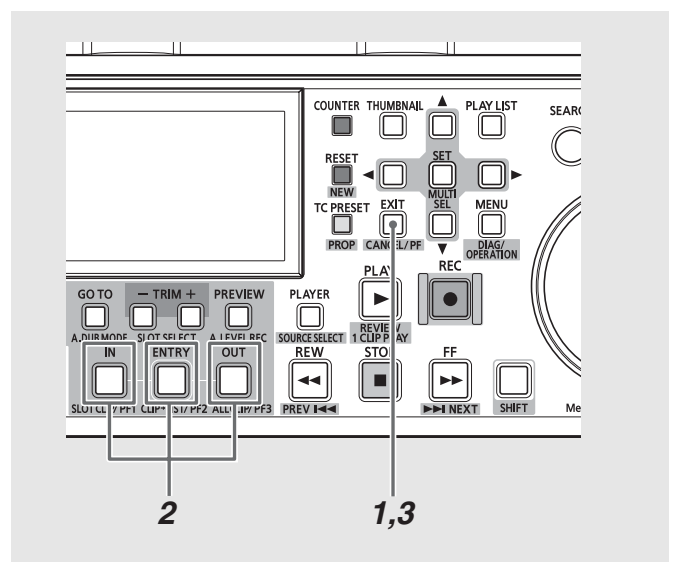
You can assign four of the items that are most often changed to the PF buttons to enable quick changes of the setting values.

Assign a setting item to the PF button and perform the following operation to change setting values.

→For details on how to assign items to the PF button, refer to "Setup menu No. A04 to A06 (PF1 ASSIGN to PF3 ASSIGN)" (page 192).

1 Press the PF (EXIT) button.

Registered items appear on the LCD monitor.

2 Press the PF button (1 to 3) required to bring up the item to change.

Each press of the button updates the setting value.

3 Press the PF (EXIT) button to end changing settings.

◆ **NOTE:**
- The change process is automatically disengaged if left idle for 5 seconds.
- The PF button is not available in the thumbnail and playlist modes.

Using a Lock to Protect the User Setting File

You can lock the system files and user setting files (USER2 to USER5) to prevent inadvertent changes.

→For details on releasing the system file lock setting, refer to "Setup menu No. 30 (MENU LOCK)" (page 170).

→For details on releasing the user file lock setting, refer to "Setup menu No. A03 (MENU LOCK)" (page 192).

◆ **NOTE:**
- Files can be loaded from the SD memory card even if they are locked. The status after load operation depends on the setting defined by the loaded data.

Returning to Factory Defaults (Initial Settings)

When the menu is open, you can return the content of the user setting file that appear on the screen to its factory defaults.

◆ **NOTE:**
- This operation returns the content of the user setting file displayed on the screen to its factory defaults. The setting files of other users are not affected.
- System settings cannot be returned to their factory defaults when a system file is open. Other settings are returned to their factory defaults.
- Settings cannot be returned to their factory defaults when MENU LOCK is engaged. Set MENU LOCK to OFF.
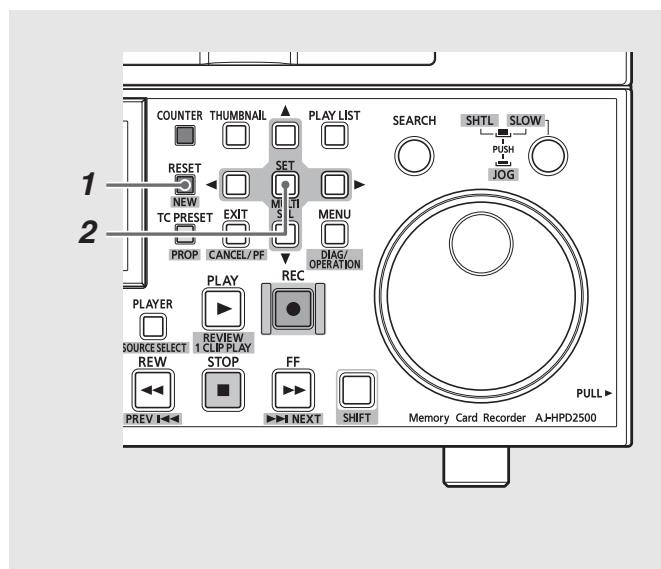
1 Press the RESET button when the menu is open.

2 Press and hold the SET button.

Setup Menu

SETUP MENU
- SYSTEM
  (→page 169)

- BASIC
  (→page 171)

001	LOCAL ENA
002	CTL DISP
003	REMAIN SEL
005	SUPER
006	DISPLAY SEL
007	CHARA H-POS
008	CHARA V-POS
009	CHARA TYPE
020	SYS FORMAT
024	REC FMT(SD)
025	REC FMT(HD)
026	PLY LST FMT
028	AVCHD FMT
031	OUT REF
032	REC REF
040	VFR REC
041	LOOP REC
050	P.ON GUI
051	GUI OUTPUT
052	GUI HOLD
069	CLOCK SET

05	ENCODER SEL
12	SYS H(HD)
14	SYS SC(SD)
15	SYS H(SD)
18	SCH COAR(SD)
19	SCH FINE(SD)
20	AV PHASE
25	SYSTEM FREQ
26	HD SYS H ADV
30	MENU LOCK

100	SEARCH ENA
101	SHTL MAX
102	FF.REW MAX
103	SEEK SEL
104	REF ALARM
108	PLAY DELAY
147	WFM DISP
148	WFM POS.
155	AUTO REC
160	REPEAT PLAY
165	CLIPSEL MODE
170	AVCHD REC

- OPERATION
  (→page 177)

- INTERFACE
  (→page 179)

202	ID SEL
213	EXTEND CMD

- EDIT
  (→page 180)

315	AFTER CUE-UP

- TIME CODE
  (→page 180)

500	VITC BLANK
501	VITC POS-1
502	VITC POS-2
504	RUN MODE
505	TCG REGEN
507	EXT TC SEL
508	BINARY GP
509	PHASE CORR
510	TCG CF FLAG
511	DF MODE
512	TC OUT REF
513	VITC OUT
514	HD EMBD VITC
515	HD EMBD LTC
518	VITC GEN
519	UB OUT SEL

Setup

VIDEO
(→page 183) ─────────────────────────────── 601 VIDEO INT SG
                                              602 SDI IN MODE
                                              620 DOWNCON MODE
AUDIO   701 CH1 IN LV 621 UPCONV MODE
(→page 187) ────────────────── 702 CH2 IN LV 626 D/C ENH H
                                706 CH1 OUT LV 627 D/C ENH V
                                707 CH2 OUT LV 638 IN U/C MODE
                                710 MONIL OUT LV 643 OUT MODE SEL
                                711 MONIR OUT LV 645 WIDE SELECT
                                712 MONI OUT   650 STYLE
                                725 REC CH1   651 HUE STYLE(SD)
                                726 REC CH2   653 Y LVL(HD)
                                727 REC CH3   654 Pb LVL(HD)
                                728 REC CH4   655 Pr LVL(HD)
                                731 PB FADE   656 BK LVL(HD)
                                732 EMBEDDED AUD 658 Y LVL(SD)
                                750 A CH1/2 SEL 659 Pb LVL(SD)
                                767 METER SELECT 660 Pr LVL(SD)
                                774 AVCHD A CH 661 BK LVL(SD)
                                775 25M REC CH 662 V LEVEL
                                776 REF LEVEL   663 C LEVEL
                                778 AUD OUT DLY 664 HUE/C PHASE
                                782 EMBD CH SEL 665 SETUP/BK LVL
                                785 PB MIX   669 SETUP
                                790 VOL SEL   676 BLK CLIP
                                793 A DUB PB MIX 677 LCD ASPECT
                                797 A DUB MONI 680 CC (F1) BLANK
                                                681 CC (F2) BLANK
                                                684 EDH(SD)
                                                685 ESR MODE(SD)
                                                688 CC REC
                                                689 COMP MODE
                                                690 UMID REC
                                                691 UMID GEN
                                                692 UMID POS

LCD   900 LCD PROTECT
(→page 191) ─────────────────── 905 BRIGHT
                                910 CONTRAST
                                911 R CONTRAST
                                912 G CONTRAST
                                913 B CONTRAST

MENU   A00 LOAD
(→page 192) ─────────────────── A01 SAVE
                                A02 P.ON LOAD
                                A03 MENU LOCK
                                A04 PF1 ASSIGN
                                A05 PF2 ASSIGN
                                A06 PF3 ASSIGN
                                A10 CARD READ
                                A11 CARD WRITE
                                A12 CARD FORMAT

Item Settings

SYSTEM

The system menu specifies HD SDI and SD SDI outputs, analog composite output, phase adjustment of audio output, system frequency, phase of SD REF input of HD SDI output, and system file lock.

• *XX* indicates factory default settings.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
05	ENCODER SEL	*0001* 0002	*LOCAL* BOTH	Determines whether video output signal adjustments will be made on this unit or on an external encoder remote controller. LOCAL: Video output signal adjustments are performed on this unit. BOTH: Video output signal adjustments are either performed on this unit or on an encoder remote controller. **NOTE:** • An RS-422A digital controller is available as an encoder remote controller. • For details on adjustments, refer to "Video Output Signal Adjustments" (page 171). • When adjustments are made on an external encoder remote controller, the adjustment values are reflected to adjustment parameters in setup menus. Note that it takes 1 min after completing adjustments for values reflected to adjustment parameters to be saved. Thus when adjustments using an external encoder remote controller are completed, wait 1 minute or more before turning off the unit.
12	SYS H(HD)	0000 | *1375* | 2750	−1375 | *0* | 1375	Adjusts system phase of a HD SDI output (in 13.5 ns steps). −: Advances the phase. +: Delays the phase. **NOTE:** • A reset does not return this setting to its factory default. • An item that flashes can be returned to its factory default by pressing the RESET button.
14	SYS SC(SD)	0000 | *0128* | 0255	−128 | *0* | 127	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Adjusts the system phase of the analog composite output and SD SDI output (total variable range: ±180°). **NOTE:** • A reset does not return this setting to its factory default. • An item that flashes can be returned to its factory default by pressing the RESET button.
15	SYS H(SD)	0000 | *0864* | 1728	−864 | *0* | 864	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Adjusts system phase of analog composite output and SD SDI output (in 37 ns steps). −: Advances the phase. +: Delays the phase. **NOTE:** • A reset does not return this setting to its factory default. • An item that flashes can be returned to its factory default by pressing the RESET button.
18	SCH COAR(SD)	*0000* 0001 0002 0003	*0* 90 180 270	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Adjusts the SCH phase of analog composite output (four 90° positions). Changes the SC phase but not the H phase.

Setup

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
19	SCH FINE(SD)	0000 | _0032_ | 0064	−32 | _0_ | 32	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Adjusts the SCH phase of analog composite output (total variable range ±45° or more). Changes the SC phase but not the H phase. Covers ±180° in combination with No. 18 SCH COAR(SD).
20	AV PHASE	0000 | _0128_ | 0255	−128 | _0_ | 127	Adjusts audio output phase relative to video output (in 20.8 μs steps). −: Advances audio output phase relative to video output. +: Delays audio output phase relative to video output.

25	SYSTEM FREQ	For AJ-HPD2500P
		
		_0000_
		0001
		0002
		0003
		0004
		0005
		0006
		0007
		0008
		For AJ-HPD2500E
		
		0000
		_0001_
		0002
		0003
		0004
		0005
		0006
		0007
		0008
			
			_59.94_
			50
			23.98
			24
			29.97
			59-23
			60-24
			25
			60-25
			
			59.94
			_50_
			23.98
			24
			29.97
			59-23
			60-24
			25
			60-25
				Sets system frequency.
				0: 59.94 Hz
				1: 50 Hz
				2: 23.98 Hz
				3: 24 Hz
				4: 29.97 Hz
				5: 59-23 Hz
				  Receives 59.94 Hz input. Select this frequency to record 2:3 pull-down converted (24-frame signal) output from VariCam: AJ-HDC27 series camera, AJ-HPX2700 or other camera.
				6: 60-24 Hz
				  Receives 60Hz input. Select this frequency to record 2:3 pull-down converted (24-frame signal) output from VariCam: AJ-HDC27 series and AJ-HPX2700 series camera.
				7: 25 Hz
				8: 60-25 Hz
				  Receives 60 Hz input. Select this frequency to record a variable frame rate set to 25p from VariCam: AJ-HDC27 series camera.

26	HD SYS H ADV	_0000_ 0001	_0H_ 90H	**59.94Hz** **29.97Hz** only Specifies whether or not HD SDI output should advance 90H phase relative to SD REF input during SD REF input. 0: Outputs HD SDI at the same phase as SD REF. 1: HD SDI output is output at a phase that is 90H advanced relative to SD REF. **NOTE:** • The audio output and TC output are output in the same phase as HD SDI output. • At 720p, the phase difference is 120H.
30	MENU LOCK	_0000_ 0001	_OFF_ ON	Sets/releases the system file lock mode. 0: Releases the lock (file data can be changed) 1: Lock is engaged (file data cannot be changed)

Video Output Signal Adjustments

The control matrix for adjustments is shown below.

When CMPNT is selected in setup menu No. 650 (STYLE)

Setting	Adjustment
05: ENCODER SEL	653: Y LVL 654: Pb LVL 655: Pr LVL 656: BK LVL
LOCAL	This unit
BOTH	External encoder remote controller/this unit

This unit:

Only setup menu adjustments are available.

External encoder remote controller/this unit:

External encoder remote controller and setup menu adjustments are available.

When CMPST is selected in setup menu No. 650 (STYLE)

Setting	Adjustment
05: ENCODER SEL	662: V LEVEL 663: C LEVEL 664: HUE/C PHASE 665: SETUP/BK LVL
LOCAL	This unit
BOTH	External encoder remote controller/this unit

This unit:

Only setup menu adjustments are available.

External encoder remote controller/this unit:

External encoder remote controller and setup menu adjustments are available.

BASIC

This menu sets buttons available on the key panel in REMOTE mode, switches display of the CTL counter display between 12 and 24-hour clock display, sets superimposed display, character displays in superimposed display, setup menu and other displays, sets recording formats, sets the formats that can be added to the playlist and sets the time of the internal clock.

• *XX* indicates factory default settings.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
001	LOCAL ENA	0000 *0001* 0002	DIS *STOP* ENA	Restricts the number of buttons on the key panel that are available when the REMOTE/LOCAL switch is set to REMOTE. 0: No buttons are available. 1: Only the STOP button is available. 2: All buttons are available.
002	CTL DISP	*0000* 0001	*±12h* 24h	Switches the CTL counter display between 12 and 24-hour clock display. 0: 12-hour clock display 1: 24-hour clock display
003	REMAIN SEL	0000 0001 *0002* 0003	OFF 2L *1L* P2&SD	Specifies whether to display the remaining time or total time via superimposed display. 0: No display. 1: The second line shows remaining time and total time of the P2 card. 2: The first line shows remaining time and total time of the P2 card. 3: The first line shows remaining time and total time of a P2 card, the second line shows remaining time on an SD memory card. **NOTE:** • These functions are not displayed when "2L" is selected and "TIME" is set in setup menu No. 006 (DISPLAY SEL). • Total tape time is not displayed when "P2&SD" is selected and "TIME" is set in setup menu No. 006 (DISPLAY SEL). • In the following cases, the remaining time is shown on the second line when a setting other than OFF is selected. - When setup menu No.040 (VFR REC) is set to ON - When setup menu No.041 (LOOP REC) is set to ON - When setup menu No.155 (AUTO REC) is set to something other than OFF so that recording and stopping can be performed automatically • The remaining time for P2 cards is not displayed when no P2 card has been inserted. • The remaining time for SD memory cards is not displayed when an AJ-YCX250G AVCHD codec board (optional) has not been installed or an SD memory card has not been inserted.

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Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
005	SUPER	0000 *0001* 0002	LCD *LCD&M* ALL	**59.94Hz** **50Hz** **23.98Hz** **29.97Hz** **59-23Hz** **25Hz** **60-25Hz** only Specifies whether superimposed information will be output to VIDEO/SD SDI MON or SDI OUT. 0: Not output (LCD monitor only) 1: Output to LCD monitor and VIDEO MON, SD SDI MON 2: Output to LCD monitor and VIDEO MON, SD SDI MON, SDI OUT **NOTE:** • Not displayed when the SUPER switch is set to OFF. • Only LCD and LCD&M can be set when setup menu No. 25 (SYSTEM FREQ) is set to something other than 59.94 and 50. • When setup menu No.147 (WFM DIDP) is set so that wave form is displayed, superimposed information is not output to SD SDI MON and SDI OUT connectors.
006	DISPLAY SEL	0000 *0001* 0002 0003 0004 0005 0006 0007 0008 0009	TIME *T&STA* T&S&M T&RT T&YMD T&MDY T&DMY T&UB T&CTL T&T	Specifies the superimposed text. Here, "data" indicates the CTL/TC/UB value selected with the COUNTER button. 0: Data only 1: Data and operating status 2: Data, operating status, mode and clip number 3: Data and REC TIME 4: Data and REC DATE (year/ month/day) 5: Data and REC DATE (month/day/year) 6: Data and REC DATE (day/month/year) 7: Data and user bit However, when UB is selected with the COUNTER button, the time code is indicated after the user bit. 8: Data and CTL However, when CTL is selected with the COUNTER button, the time code is indicated after CTL data. 9: 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.
007	CHARA H-POS	0000 | *0010* | 0037	0 | *10* | 37	Specifies the horizontal location of superimposed text.
008	CHARA V-POS	0000 | *0027* | 0032	0 | *27* | 32	Specifies the vertical location of superimposed text.
009	CHARA TYPE	*0000* 0001	*WHITE* W/OUT	Specifies the display type of superimposed text and setup menus. 0: White characters against a solid black background 1: White characters with a black border

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
020	SYS FORMAT	When set to 59.94 Hz		**59.94Hz** **50Hz** **29.97Hz** **59-23Hz** **25Hz** only
		0000	*1080i*	Specifies the recording format used by this unit.
		0001	720p	0: 1080i mode (when set to 59.94 Hz, 50 Hz)/1080p mode (when set to 29.97 Hz, 59-23 Hz, 25 Hz)
		0002	480i	1: 720p mode
		When set to 50 Hz		2: 480i mode (when set to 59.94 Hz)/576i mode (when set to 50 Hz)
		0000	*1080i*	**NOTE:**
		0001	720p	• Not indicated when 23.98 or 24 is selected in setup menu No. 25 (SYSTEM FREQ). The 1080p recording format is used.
		0002	576i	• Not indicated when 60-24 or 60-25 is selected in setup menu No. 25 (SYSTEM FREQ). The 720p recording format is used.
		When set to 29.97 Hz, 25 Hz, 59-23 Hz		
		0000	*1080p*	
		0001	720p	
024	REC FMT(SD)	*0000*	*50M*	**59.94Hz** **50Hz** only
		0001	25M	Specifies the recording format when setup menu No. 020 (SYS FORMAT) is set to 480i or 576i.
		0002	DV	0: DVCPRO50 (50 Mbps)
				1: DVCPRO (25 Mbps)
				2: DV (25 Mbps)
025	REC FMT (HD)	0000	DVCPRO	Specifies the recording format when 1080i or 720p is selected in setup menu No. 020 (SYS FORMAT).
		0001	AVC50	0: DVCPRO HD(100Mbps)
		0002	*AVC100*	1: AVC-Intra50
				2: AVC-Intra100
				NOTE:
				DVCPRO is not available when 23.98 or 24 is selected in setup menu No. 25 (SYSTEM FREQ). DVCPRO HD recording is not available even when DVCPRO is selected if 29.97, 25, or 59-23 is selected in setup menu No.25 (SYSTEM FREQ) and 1080p is selected in setup menu No.020 (SYS FORMAT). AVC-Intra100 is used for recording.

■ **Recording Format Comparison Table**

The table below shows the relationship between setup menu No. 25 (SYSTEM FREQ), No. 020 (SYS FORMAT) and No. 025 (REC FMT (HD)) settings and recording formats.

Setup menu setting		Recording format	
No.25: SYSTEM FREQ	No.020: SYS FORMAT	No.025: REC FMT(HD)	
		DVCPRO	AVC-Intra50/100
59.94	1080i	1080/59.94i	1080/59.94i
	720p	720/59.94p	720/59.94p
	480i	480/59.94i	---
50	1080i	1080/50i	1080/50i
	720p	720/50p	720/50p
	576i	576/50i	---
23.98	---	---	1080/23.98p
24	---	---	1080/23.98p
29.97	1080p	---	1080/29.97p
	720p	720/29.97p	720/29.97p
25	1080p	---	1080/25p
	720p	720/25p	720/25p
59-23	1080p	---	1080/23.98p
	720p	720/23.98p	720/23.98p
60-24	---	720/23.98p	720/23.98p
60-25	---	720/25p	720/25p

Setup

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
026	PLY LST FMT	When set to 59.94 Hz		**59.94Hz** **50Hz** only Specifies the format used by the playlist. <In the DVCPRO HD format> 0: Format set in setup menu No. 020 (SYS FORMAT) and No. 025 REC FMT (HD). 1: 720/30PN (when set to 59.94 Hz)/720/25PN (when set to 50 Hz) 2: 720/24PN <In the AVC-Intra format> 0: Format set in setup menu No. 020 (SYS FORMAT) and No. 025 (REC FMT (HD)). 1: 1080/30PN (when set to 59.94 Hz)/1080/25PN (when set to 50 Hz) or 720/30PN (when set to 59.94 Hz)/720/25PN (when set to 50 Hz) 2: 1080/24PN or 720/24PN **NOTE:** • When 480i or 576i is selected in setup menu No. 020 (SYS FORMAT), a 30PN and 24PN selection is handled as a SYSFMT setting. • The number of lines in the AVC-Intra format depends on the setting in the setup menu No. 020 (SYSFORMAT). • When a selection other than 59.94 or 50 is made in setup menu No. 25 (SYSTEM FREQ), the format selected in menu No. 020 (SYS FORMAT) and No. 025 (REC FMT (HD)) is used.
		0000	*SYSFMT*	
		0001	30PN	
		0002	24PN	
		When set to 50 Hz		
		0000	*SYSFMT*	
		0001	25PN	
028	AVCHD FMT	*0000* 0001 0002 0003	*PH* HA HG HE	**59.94Hz** **50Hz** only Specifies AVCHD recording rate. 0: PH mode (approx. 21 Mbps) 1: HA mode (approx. 17 Mbps) 2: HG mode (approx. 13 Mbps) 3: HE mode (approx. 6 Mbps) **NOTE:** • Displayed only when an AJ-YCX250G AVCHD codec board (optional) is installed. • In 720P mode, recording is always made in PH mode.
031	OUT REF	*0000* 0001 0002	*AUTO* REF INPUT	**59.94Hz** **50Hz** **29.97Hz** **25Hz** only Select reference for video output. 0: 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. 1: The reference input signal is used as reference. If there is no such signal, the internal clock is used. 2: The video input signal is used as reference. If there is no such signal, the internal clock is used.
032	REC REF	*0000* 0001	*NORMAL* SLTC	**59.94Hz** only Specifies the reference to synchronize the frames for recording. 0: The input video signal is automatically identified and serves as reference. 1: The time code which is input to the SD I IN connector is identified and serves as reference. **NOTE:** When the SLTC is selected, the following settings are necessary to validate the settings for this item: • Setup menu No. 25 (SYSTEM FREQ): 59.94 • Setup menu No. 020 (SYS FORMAT): 720p • VIDEO IN (SHIFT+EDIT MODE) button on the unit: HDSDI
040	VFR REC	*0000* 0001	*OFF* ON	**29.97Hz** **59-23Hz** **60-24Hz** **60-25Hz** only Specifies whether or not to make a VFR recording when the recording format is 720p. 0: Does not make VFR recording 1: Makes VFR recording → Refer to "Recording From a Variable Frame-Rate Camera" (page 46).

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
041	LOOP REC	*0000* 0001	*OFF* ON	Specifies whether or not to make loop recording. →For details, refer to "LOOP REC Function" (page 43). 0: Does not make loop recording 1: Makes 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.
050	P.ON GUI	0000 *0001* 0002	OFF *THUMB* PLYLST	Specifies whether or not the thumbnail screen or playlist screen appears when the power is turned on. 0: Does not display thumbnail screen and playlist screen. 1: Displays the thumbnail screen. 2: Displays the playlist screen.
051	GUI OUTPUT	*0000* 0001 0002 0003	*LCD* LCD&M LCD&S ALL	**59.94Hz** **50Hz** **23.98Hz** **29.97Hz** **59-23Hz** **25Hz** **60-25Hz** only Specifies whether the GUI screen will be output to ANALOG MONITOR OUT/SDI MONITOR OUT/SDI OUT. 0: Not output (LCD monitor only) 1: Output to LCD monitor and ANALOG MONITOR OUT, SDI MONITOR OUT 2: Output to LCD monitor and SDI OUT 3: Output to LCD monitor and ANALOG MONITOR OUT, SDI MONITOR OUT, SDI OUT **NOTE:** • When 23.98 or 59-23 is selected in setup menu No. 25 (SYSTEM FREQ), the refresh of the GUI screen output to SDI OUT may seem unnatural. Also, when the GUI screen switches to the video screen (and vice versa), the output signal may be distorted. • Some characters on the GUI screen output to ANALOG MONITOR OUT, SDI MONITOR OUT may not be clear.
052	GUI HOLD	*0000* 0001	*OFF* ON	**59.94Hz** **50Hz** **23.98Hz** **29.97Hz** **59-23Hz** **25Hz** **60-25Hz** only Determines whether a switch to full screen mode will be made or the GUI will be retained when thumbnail playback is started. 0: Switches to full screen mode. 1: Retains GUI. **NOTE:** • The GUI scroll bar and the yellow frame indicating cursor location is not available during playback. The screen is refreshed when playback stops. • The GUI retained screen may be distorted when clip playback format or the wide screen information is changed.
069	CLOCK SET			Sets the internal clock. **NOTE:** Press the STOP or SET button to open the subscreen for setting the time. Change the date in the subscreen and press the SET button to set the clock date. To exit the subscreen without setting a date, press the STOP or EXIT button again.
Subscreen				
00	YEAR	0000 | 0037	2000 | 2037	Sets the year.
01	MONTH	0001 | 0012	JAN | DEC	Sets the month. **NOTE:** Setting a nonexistent day for February, April, June, September and November will automatically set the equivalent day in the following month.
02	DAY	0001 | 0031	1 | 31	Sets the day. **NOTE:** Setting a nonexistent day for February, April, June, September and November will automatically set the first day in the following month.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
03	HOUR	0000 | 0023	0 | 23	Sets the hour. Set the hour according to the 24-hour clock.
04	MINUTE	0000 | 0059	0 | 59	Sets the minute.
05	TIME ZONE	*0000* 0001 | 0018 | 0027 | 0050	*00:00* +00:30 | +09:00 | −12:00 | −00:30	Sets the time difference from the world standard time. Use the table below for reference in setting the time.

Time difference	City/Region
00:00	Greenwich
+00:30	
+01:00	Central Europe
+01:30	
+02:00	Eastern Europe
+02:30	
+03:00	Moscow
+03:30	Teheran
+04:00	Abu Dhabi
+04:30	Kabul
+05:00	Islamabad
+05:30	Bombay
+06:00	Dacca
+06:30	Yangon
+07:00	Bangkok
+07:30	
+08:00	Beijing
+08:30	
+09:00	Tokyo
+09:30	Darwin Islands
+10:00	Guam
+10:30	Lord Howe Island
+11:00	Solomon Islands
+11:30	Norfolk Islands
+12:00	New Zealand
+12:45	Chatham Islands
+13:00	
−12:00	Kwajalein Atoll
−11:30	
−11:00	Midway Islands
−10:30	
−10:00	Hawaii
−09:30	Marquesas Islands
−09:00	Alaska
−08:30	

Time difference	City/Region
−08:00	Los Angeles
−07:30	
−07:00	Denver
−06:30	
−06:00	Chicago
−05:30	
−05:00	New York
−04:30	
−04:00	Halifax
−03:30	Newfoundland
−03:00	Buenos Aires
−02:30	
−02:00	Central Atlantic time
−01:30	
−01:00	Azores
−00:30	

◆ **NOTE:**
- The clock is accurate to within about ±30 seconds a month with the power off.
- When the precise time is required, check and reset the time before use.
- When the AJ-YCX250G AVC codec board (optional) is installed, time zones recorded on the SD memory card can be set in 30 minute steps. Thus +12:45 is set as +13:00.

OPERATION

This menu allows you to set method for engaging search dial operations, maximum shuttle speed operation, maximum speed of FF and REW operation, NEXT and PREV seek operations, display of warning messages when REF.VIDEO is not connected, PLAY delay time, display of warnings when power is too low, voltage when the power supply is turned off.

• *XX* indicates factory default settings.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
100	SEARCH ENA	*0000* 0001	*DIAL* KEY	Specifies method for transferring to the search mode (search dial operation). 0: Press the SEARCH button or turn the search dial to engage search dial operation. 1: Press the SEARCH button to engage search dial operation.
101	SHTL MAX	0000 *0001* 0002 0003 0004	×8 ×*16* ×32 ×60 ×100	Sets the maximum shuttle speed operation. 0: 8× normal speed 1: 16× normal speed 2: 32× normal speed 3: 60× normal speed 4: 100× normal speed
102	FF.REW MAX	*0000* 0001 0002 0003	×*32* ×60 ×100 SEEK	Sets the maximum speed of FF and REW operation. 0: 32× normal speed 1: 60× normal speed 2: 100× normal speed 3: Seek operation to start of clip **NOTE:** • When SEEK is selected, FF and REW operations for FF and REW commands transferred via 9P and RS-232C are performed at 100× normal speed. Note that seek operations initiated by the FF and REW commands via 9P behave differently when ORIG is set in setup menu No. 202 (ID SEL). The cursor moves to left or right in thumbnail screens. • The seek operation is available in playback mode.
103	SEEK SEL	*0000* 0001	*CLIP* CLIP&T	Specifies where a NEXT (SHIFT+FF) and PREV (SHIFT+REW) seek operation moves to. 0: The start of the clip 1: The start of the clip or video text memo **NOTE:** This setting is not available during FF and REW operation.
104	REF ALARM	0000 *0001*	OFF *ON*	Selects whether or not a warning should appear when REF.VIDEO is not connected. 0: Displays no warning 1: Flashes the STOP lamp to warn
108	PLAY DELAY	*0000* | 0015	*0* | 15	Sets PLAY delay time in frame increments.
147	WFM DISP	*0000* 0001 0002	*OFF* WAVE VECTOR	Selects wave form monitor (WFM) display mode. 0: Not displayed 1: Waveform display 2: Vector display **NOTE:** • Wave form is displayed on the output destination selected in setup menu No.005 (SUPER). • Wave form is not output to the composite connector. • When wave form is output to the destination other than the LCD monitor, superimposed information cannot be displayed. • Wave form of the original signal is displayed on the LCD monitor. Wave form of the signal adjusted by the encoder VR (setup menus No.662, No.663, No.664 (V LEVEL, C LEVEL, HUE/C PHASE)) is displayed on other destinations.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
148	WFM POS.	*0000* 0001 0002 0003	*RT* LT RB LB	Selects the position for the waveform monitor. 0: Top right 1: Top left 2: Bottom right 3: Bottom left
155	AUTO REC	*0000* 0001 0002 0003	*OFF* TYPE1 TYPE2 TYPE3	Select whether recording and stopping should be performed automatically according to the recording/stopping signals in the HD SDI input signals from Panasonic camera-recorders. 0: No automatic recording/stopping 1: Recording and stopping is performed automatically according to the recording/stopping signals in the LTC information attached to HD SDI signals. 2: Recording and stopping is performed automatically according to the recording/stopping signals in the SVITC information attached to HD SDI signals. 3: Set when other manufacturer's camera-recorders are used. **NOTE:** • When the thumbnail screen or playlist screen is displayed, this setting is disabled and has no effect. • When set to something other than OFF, "AREC" is displayed on the first line of the superimposed information screen. • Press the REMOTE button to turn the button on. Refer to "Panasonic camera-recorders, recording formats and recording/stopping signals (Recording Mark)" on this page before selecting TYPE1 or TYPE2. • To start automatic recording, press the STOP button to place this unit in the stop mode. Automatic recording does not start in the mode other than the stop mode. The unit returns to the stop 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

Panasonic camera-recorders, recording formats and recording/stopping 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 using in TYPE1, set UB_MODE on the camera to FRAM_RATE. When using in TYPE2, set 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-HPX3700[*1]	1080/**i		

*1: Only recording format of 1080/**i is available.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
160	REPEAT PLAY	*0000* 0001	*OFF* ON	Determines whether or not to engage repeat play during playback. 0: Does not engage repeat play. Stops playback at the end of the last clip. 1: Engages repeat play. Continues playback from the beginning when reaching the end of the last clip. **NOTE:** • Repeat play is not available when the PLAY LIST button is on and 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.
165	CLIPSEL MODE	*0000* 0001	*TOP* THUMB	**59.94Hz** **50Hz** only Selects position of clip displayed by clip select. 0: Uses the first frame of the clip to select clips. 1: Uses clip thumbnail position to select clips.
170	AVCHD REC	*0000* 0001	*OFF* ON	**59.94Hz** **50Hz** only Selects whether to make AVCHD recording to an SD card either in AVCHD mode or simultaneous with recording to a P2 card. 0: No AVCHD recording 1: Makes an AVCHD recording to an SD card either in AVCHD mode or simultaneous with recording to a P2 card. **NOTE:** • Displayed only when an AJ-YCX250G AVCHD codec board (optional) is installed. • AVCHD recording is not available when 480i or 576i is set in setup menu No. 020 (SYS FORMAT). Select up-conversion recording to record 480i and 576i input as AVCHD. • Use the setup menu No.774 (AVCHD A CH) to select channels to record. • The start and end of recording may not match the clip recorded on the P2 card. • AVCHD recording is not available when setup menu No. 041 (LOOP REC) is set to ON.

INTERFACE

This menu specifies the ID data that will be returned to the controller.

• *XX* indicates factory default settings.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
202	ID SEL	0000 *0001* 0002	OTHER *DVCPRO* ORIG	Specifies the ID data that will be returned to the controller. 0: OTHER 1: DVCPRO 2: ORIG **NOTE:** • Select [OTHER] for ID data for a VTR other than a DVCPRO. • Select [ORIG] only when specific Panasonic controllers (such as AJ-A850, separately sold accessory) are connected.
213	EXTEND CMD	*0000* 0001	*OFF* ON	Determines whether or not REMOTE connector commands should be extended to the clip select function and the LAN and USB switching function. 0: Not extended 1: Extended

Setup

EDIT

This function determines unit mode after a cue-up operation.

• *XX* indicates factory default settings.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
315	AFTER CUE-UP	0000 *0001* 0002	STOP *STILL* STILL2	Selects unit mode after cue-up operation. 0: STOP mode 1: Still picture (SHTL +0.0) mode 2: Still picture (VAR +0.0) mode

TIME CODE

This menu sets the time code.

• *XX* indicates factory default settings.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
500	VITC BLANK	0000 *0001*	BLANK *THRU*	**59.94Hz** **50Hz** **29.97Hz** **25Hz** only Specifies whether or not a VITC signal will be output at the positions selected in setup menu No. 501 (VITC POS-1) and No. 502 (VITC POS-2) during playback. 0: VITC signals are not output. 1: VITC signals are output. **NOTE:** • This setting is available only during analog composite output and SD SDI output. • In EE mode, the input signal is output with the VITC signal.
501	VITC POS-1	When set to 59.94 Hz, 29.97 Hz, 23.98 Hz, 24 Hz, 59-23 Hz, 60-24 Hz 0000 | *0006* | 0010 When set to 50 Hz, 25 Hz, 60-25 Hz 0000 | *0004* | 0015	 10L | *16L* | 20L 7L | *11L* | 22L	Specifies the position where the VITC signal will be inserted. **NOTE:** • You cannot select the same line as in setup menu No. 502 (VITC POS-2). • The VITC signal is not output when 23.98, 24, 59-23, 60-24, or 60-25 is selected in setup menu No.25 (SYSTEM FREQ). • You cannot select the same line as in setup menu No.692 (UMID POS). • This setting is available only during analog composite output and SD SDI output. • This setting does not return to the factory default even if you press the SEARCH button and RESET button simultaneously.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
502	VITC POS-2	When set to 59.94 Hz, 29.97 Hz, 23.98 Hz, 24 Hz, 59-23 Hz, 60-24 Hz		Specifies the position where the VITC signal will be inserted. **NOTE:** • You cannot select the same line as in setup menu No. 501 (VITC POS-1). • The VITC signal is not output when 23.98, 24, 59-23, 60-24, or 60-25 is selected in setup menu No.25 (SYSTEM FREQ). • You cannot select the same line as in setup menu No.692 (UMID POS). • This setting is available only during analog composite output and SD SDI output. • This setting does not return to the factory default even if you press the SEARCH button and RESET button simultaneously.
		0000 | *0008* | 0010	10L | *18L* | 20L	
		When set to 50 Hz, 25 Hz, 60-25 Hz		
		0000 | *0006* | 0015	7L | *13L* | 22L	
504	RUN MODE	*0000* 0001	*REC* FREE	Specifies an operating mode that advances the internal time code generator. 0: The internal time code generator is advanced only during recording. 1: When the power is on, the internal time code generator is advanced regardless of operating mode. **NOTE:** When setup menu No. 040 (VFR REC) is set to ON, the time code advances only during recording even when FREE is selected.
505	TCG REGEN	*0000* 0001 0002	*TC&UB* TC UB	Specifies the signal to regenerate when the time code generator (TCG) is in the REGEN mode. 0: Regenerates both the time code and the user bit 1: Regenerates only the time code 2: Regenerates only the user bit
507	EXT TC SEL	*0000* 0001 0002	*EXT_L* SLTC SVITC	**59.94Hz** **50Hz** **23.98Hz** **24Hz** **29.97Hz** **25Hz** only Specifies the time code used when an external time code is used. 0: LTC of the TIME CODE IN connector 1: LTC data attached to serial signal input to HD SDI IN 2: VITC data attached to serial signal input to HD SDI IN **NOTE:** When SLTC and SVITC are set, the VITC in the input video signal is used when an analog composite or SD SDI input signal is selected.
508	BINARY GP	*0000* 0001 0002 0003 0004 0005 0006 0007	*000* 001 010 011 100 101 110 111	Specifies user bit usage in time code generated by the TCG. 0: NOT SPECIFIED (character set not specified) 1: ISO CHARACTER (8-bit character set complying with ISO646 and ISO2022) 2: UNASSIGNED 1 (undefined) 3: UNASSIGNED 2 (undefined) 4: UNASSIGNED 3 (undefined) 5: PAGE/LINE 6: UNASSIGNED 4 (undefined) 7: UNASSIGNED 5 (undefined)
509	PHASE CORR	*0000* 0001	*OFF* ON	**59.94Hz** **50Hz** **23.98Hz** **24Hz** **29.97Hz** **25Hz** only Specifies whether or not LTC output from the TIME CODE OUT connector should be phase controlled. 0: No phase control 1: Phase controlled
510	TCG CF FLAG	*0000* 0001	*OFF* ON	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Sets the TCG CF flag. 0: OFF 1: ON

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
511	DF MODE	*0000* 0001	*DF* NDF	**59.94Hz** **29.97Hz** only Sets the DF or NDF mode for CTL and TCG. 0: Uses drop frame mode. 1: Uses non-drop frame mode.
512	TC OUT REF	*0000* 0001	*VOUT* TC_IN	**59.94Hz** **50Hz** **23.98Hz** **24Hz** **29.97Hz** **25Hz** only Specifies how the phase is switched for the time code output by the TIME CODE OUT connector for the external LTC input when the TC INT/EXT switch is set to EXT. (only in EE mode) 0: Synchronized with output video signal. 1: Synchronized with the external time code input.
513	VITC OUT	*0000* 0001	*SBC* VAUX	Specifies how to output VITC that will be superimposed on the SD output video signal. 0: Outputs the time code recorded in the SBC area as VITC 1: Outputs the time code recorded in the VAUX area as VITC **NOTE:** VITC data detected in the input video signal is automatically recorded in the VAUX area during video recording.
514	HD EMBD VITC	0000 *0001*	OFF *ON*	Specifies whether or not VITC data will be superimposed on HD SDI output. 0: Not superimposed 1: Superimposed
515	HD EMBD LTC	0000 *0001*	OFF *ON*	Specifies whether or not LTC data will be superimposed on HD SDI output. 0: Not superimposed 1: Superimposed
518	VITC GEN	*0000* 0001	*OFF* ON	**59.94Hz** **50Hz** only Specifies whether or not the internal time code generator value should be recorded in the VAUX area. 0: The internal time code generator value is not recorded. Record the time code value when it is superimposed on input video signals. 1: The internal time code generator value is recorded. **NOTE:** When 23.98, 24, 29.97, 59-23, 60-24, 25, 60-25 is selected in menu No. 25 (SYSTEM FREQ), the internal time code generator value is recorded as the time code in the VAUX area.
519	UB OUT SEL	0000 *0001*	SBC *F_RATE*	**59.94Hz** **50Hz** only Selects user bits in the LTC data output by the TIME CODE OUT and HD SDI connectors during playback of clips in 720/24PN, 720/30PN and 720/25PN formats as well as optional AVC-Intra 1080/24PN, 30PN and 25PN clip formats. 0: Outputs the user bits recorded in the SBC area. 1: Outputs the frame rate information recorded in the VAUX area.

Definition of terms:

SBC (Sub Code Data) area:	This area, which is separate from video and audio data area on a P2 card, stores SMPTE/EBU compliant time code, recording dates and other information.
VAUX (Video Auxiliary Data) area:	An area in the video data on a P2 card that stores additional information on video data.

VIDEO

This menu is used for video settings.

• *XX* indicates factory default settings.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
601	VIDEO INT SG	*0000* 0001 0002 0003 0004	*100%CB* 75%CB SMPTE ARIB BLACK	Sets the internal signal type. SMPTE and ARIB signals are available in HD mode only (black in SD mode). 0: 100 % color bar 1: 75 % color bar 2: SMPTE color bar 3: ARIB color bar 4: Black
602	SDI IN MODE	*0000* 0001	*DR_OFF* DR_ON	**59.94Hz** **50Hz** **29.97Hz** **59-23Hz** **60-24Hz** **25Hz** **60-25Hz** only Specifies the method for processing HD SDI input. (Available only for DVCPRO HD) 0: Records the 8 higher bits after rounding up the two lowest bits. 1: Records the signal with 8 higher bits, obtained by dynamic rounding. **NOTE:** Records 8 high-order bit signals after rounding off the 2 low-order bits during SD SDI input.
620	DOWNCON MODE	*0000* 0001 0002	*FIT_V* FIT_H FIT_HV	**59.94Hz** **50Hz** **23.98Hz** **29.97Hz** **59-23Hz** **25Hz** **60-25Hz** only Specifies the aspect ratio during down conversion. 0: Changes the ratio to adjust input size to output size as required by vertical axis. (The aspect ratio stays the same.) 1: Changes the ratio to adjust input size to output size as required by horizontal axis. (The aspect ratio stays the same.) 2: Changes the ratio to adjust input size to output size as required by horizontal and vertical axis. (The aspect ratio may be distorted.)
621	UPCONV MODE	*0000* 0001 0002	*FIT_V* FIT_H FIT_HV	**59.94Hz** **50Hz** **23.98Hz** **29.97Hz** **59-23Hz** **25Hz** **60-25Hz** only Specifies the aspect ratio during up conversion. 0: Changes the ratio to adjust input size to output size as required by vertical axis. (The aspect ratio stays the same.) 1: Changes the ratio to adjust input size to output size as required by horizontal axis. (The aspect ratio stays the same.) 2: Changes the ratio to adjust input size to output size as required by horizontal and vertical axis. (The aspect ratio may be distorted.)
626	D/C ENH H	0000 *0001*	0dB *+1dB*	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Specifies whether or not horizontal outlines be emphasized in down-conversion. 0: 0 dB 1: +1 dB
627	D/C ENH V	0000 *0001*	0dB *+1dB*	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Specifies whether or not vertical outlines be emphasized in down-conversion. 0: 0 dB 1: +1 dB
638	IN U/C MODE	*0000* 0001 0002	*FIT_V* FIT_H FIT_HV	**59.94Hz** **50Hz** only Selects aspect ratio for up-conversion recording. 0: Side panel mode 1: Top and bottom are cropped 2: Stretch mode

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
643	OUT MODE SEL	When set to 59.94 Hz, 29.97 Hz		**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only
		0000	*AUTO*	Specifies the video signal output from the video output connector.
		0001	1080i	0: Switches output automatically depending on current recording and playback format.
		0002	720p	1: 1080/59.94i or 1080/50i
		0003	480i	2: 720/59.94p or 720/50p
		When set to 50 Hz, 25 Hz, 60-25 Hz		3: 480/59.94i or 576/50i
				NOTE:
		0000	*AUTO*	When something other than AUTO is selected, a signal that differs from the recording and playback format is automatically converted before output.
		0001	1080i	
		0002	720p	
		0003	576i	
645	WIDE SELECT	0001	WIDE	**59.94Hz** **50Hz** only
		0002	*NORMAL*	Specifies whether or not WIDE data be recorded when 480i or 576i is selected in setup menu No. 020 (SYS FORMAT).
				1: Recorded
				2: Not recorded
650	STYLE	0000	CMPNT	Sets the level adjustment mode.
		0001	*CMPST*	0: Level adjustment mode for the component style
				1: Level adjustment mode for the composite style
651	HUE STYLE(SD)	0000	Pb-Pr	**59.94Hz** **23.98Hz** **24Hz** **29.97Hz** **59-23Hz** **60-24Hz** only
		0001	*U-V*	Specifies the rotational axis of chroma phase adjustment.
				0: Rotates in a perfect circle in an SDI (component style) vectorscope.
				1: Rotates in a perfect circle in an analog (composite style) vectorscope.
				NOTE:
				This menu is not displayed when 50 is selected in menu No. 25 (SYSTEM FREQ).
653	Y LVL (HD)	0000	0.0%	Adjusts the Y level of HD SDI output (– ∞ to 0 dB to +3 dB).
		|	|	**NOTE:**
		1000	*100.0%*	This setting is available when CMPNT is set in setup menu No. 650 (STYLE).
		|	|	
		1413	141.3%	
654	Pb LVL (HD)	0000	0.0%	Adjusts the PB level of HD SDI output (– ∞ to 0 dB to +3 dB).
		|	|	**NOTE:**
		1000	*100.0%*	This setting is available when CMPNT is set in setup menu No. 650 (STYLE).
		|	|	
		1413	141.3%	
655	Pr LVL (HD)	0000	0.0%	Adjusts the PR level of HD SDI output (– ∞ to 0 dB to +3 dB).
		|	|	**NOTE:**
		1000	*100.0%*	This setting is available when CMPNT is set in setup menu No. 650 (STYLE).
		|	|	
		1413	141.3%	
656	BK LVL (HD)	0050	−10.0%	Adjusts the black level of HD SDI output.
		|	|	**NOTE:**
		0150	*0.0%*	This setting is available when CMPNT is set in setup menu No. 650 (STYLE).
		|	|	
		0250	+10.0%	
658	Y LVL(SD)	0000	0.0%	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only
		|	|	Adjusts the Y level of SD SDI and analog composite output (– ∞ to 0 dB to +3 dB).
		1000	*100.0%*	**NOTE:**
		|	|	This setting is available when CMPNT is set in setup menu No. 650 (STYLE).
		1413	141.3%	

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
659	Pb LVL(SD)	0000 | *1000* | 1413	0.0% | *100.0%* | 141.3%	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Adjusts the P$_B$ level of SD SDI and analog composite output (− ∞ to 0 dB to +3 dB). **NOTE:** This setting is available when CMPNT is set in setup menu No. 650 (STYLE).
660	Pr LVL(SD)	0000 | *1000* | 1413	0.0% | *100.0%* | 141.3%	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Adjusts the P$_R$ level of SD SDI and analog composite output (− ∞ to 0 dB to +3 dB). **NOTE:** This setting is available when CMPNT is set in setup menu No. 650 (STYLE).
661	BK LVL(SD)	0050 | *0150* | 0250	−10.0% | *0.0%* | +10.0%	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Adjusts the black level of SD SDI and analog composite output. **NOTE:** This setting is available when CMPNT is set in setup menu No. 650 (STYLE).
662	V LEVEL	0000 | *1000* | 2000	0.0% | *100.0%* | 200.0%	Adjusts the video level (− ∞ to 0 dB to +6 dB). **NOTE:** • This setting is available when CMPST is set in setup menu No. 650 (STYLE). • Video output level adjustment is available only for output.
663	C LEVEL	0000 | *1000* | 1413	0.0% | *100.0%* | 141.3%	Adjusts the chroma level (− ∞ to 0 dB to +3 dB). **NOTE:** • This setting is available when CMPST is set in setup menu No. 650 (STYLE). • Chroma level adjustment is available only for output.
664	HUE/C PHASE	0000 | *0062* | 0124	−31.0 | *0.0* | 31.0	Adjusts chroma phase (approximately −30° to +30°) **NOTE:** • This setting is available when CMPST is set in setup menu No. 650 (STYLE). • Chroma phase level adjustment is available only for output.
665	SETUP/BK LVL	0050 | *0150* | 0250	−10.0% | *0.0%* | +10.0%	Adjusts setup level. **NOTE:** • This setting is available when CMPST is set in setup menu No. 650 (STYLE). • Setup level adjustment is available only for output.
669	SETUP	0000 *0001*	THRU *CUT&AD*	**59.94Hz** **23.98Hz** **29.97Hz** **59-23Hz** only Specifies recording and output method for analog composite signals. 0: Records the input signal in its original form and outputs it without setup. 1: Records the signal with the 7.5% setup processing removed and outputs it with the 7.5 % setup added.
676	BLK CLIP	*0000* 0001	*OFF* ON	**59.94Hz** **50Hz** **23.98Hz** **29.97Hz** **59-23Hz** **25Hz** **60-25Hz** only Specifies whether or not to clip signals below pedestal level for SD SDI and analog composite output Y (luminance) signals. 0: Does not clip the signal 1: Clips the signal
677	LCD ASPECT	*0000* 0001 0002 0003	*AUTO* 4:3 16:9 15:9	Specifies the aspect ratio of image displayed on the LCD monitor. 0: Switches aspect ratio automatically. 1: Displays 480i or 576i images in the 4:3 aspect ratio. (Displays 1080i or 720p video in the 16:9 aspect ratio.) 2: Displays images in the 16:9 aspect ratio. 3: Displays images in the 15:9 aspect ratio. **NOTE:** • Since the LCD monitor on this unit has an aspect ratio of 15:9, a black border may appear above and below the picture in AUTO or 16:9 mode. • When AUTO is set, video on the LCD monitor may be distorted at the time aspect ratio changes, etc. Distortion will be reduced by selecting something other than AUTO.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
680	CC (F1) BLANK	0000 *0001*	BLANK *THRU*	**59.94Hz** only Turns on and off closed caption signals in the first field output from the SD SDI and analog composite output during playback. 0: Signals are forcibly blanked. 1: Signals are not blanked. **NOTE:** In EE mode, the closed captions are output superimposed on the input signal.
681	CC (F2) BLANK	0000 *0001*	BLANK *THRU*	**59.94Hz** only Turns on and off closed caption signals in the second field output from the SD SDI and analog composite output during playback. 0: Signals are forcibly blanked. 1: Signals are not blanked. **NOTE:** In EE mode, the closed captions are output superimposed on the input signal.
684	EDH(SD)	0000 *0001*	OFF *ON*	**59.94Hz** **50Hz** **23.98Hz** **29.97Hz** **59-23Hz** **25Hz** **60-25Hz** only Specifies whether or not EDH is superimposed on SDI OUT signals. 0: Signals are not superimposed. 1: Signals are superimposed.
685	ESR MODE(SD)	0000 *0001*	OFF *AUTO*	**59.94Hz** **29.97Hz** only Specifies the operating mode for edge subcarrier reduction (ESR) in the playback circuit. 0: ESR is forcibly set to off. 1: ESR is automatically turned on and off depending on operating mode.
688	CC REC	0000 *0001*	OFF *ON*	**59.94Hz** only Specifies whether or not the closed caption signal that is superimposed on the SD SDI and analog composite input signals will be recorded. 0: Not recorded. The EE output is also blanked. 1: A closed caption signal that is superimposed on an input signal is recorded.
689	COMP MODE	*0000* 0001	*NORMAL* DARK	**59.94Hz** **50Hz** **29.97Hz** **59-23Hz** **60-24Hz** **25Hz** **60-25Hz** only Selects the compression method used during video recording. 0: Records using normal compression processing. 1: Records video suppressing compression video distortion that is generated by dark areas that are about 10 IRE (70 mV) or less. **NOTE:** This setting is available in DVCPRO HD 720p mode recording.
690	UMID REC	0000 *0001*	OFF *ON*	Specifies whether or not UMID data should be recorded. 0: UMID data is not recorded. 1: Recorded.
691	UMID GEN	0000 *0001*	INT *EXT*	Specifies the generation method of UMID information that is recorded when setup menu No. 690 (UMID REC) is set to ON. 0: Newly created UMID information is always recorded. 1: Records UMID data superimposed on the input signal. Newly created UMID information is recorded when not superimposed on an input signal.
692	UMID POS	0000 0001 | *0006* | 0008	BLANK 12L | *17L* | 19L	Specifies the line that superimposes UMID data. **NOTE:** • You cannot select the same line as in menu No. 501 VITC POS-1 and No. 502 VITCPOS-2. • Holding down the SEARCH button and pressing the RESET button will not restore the factory defaults. • UMID data is output before recorded VANC data. To output VANC data, set UMID POS to a line other than that which superimposed the data or select "BLANK." • During playback of DVCPRO HD native clip, UMID becomes NO-INFO.

AUDIO

This menu is used for audio settings.

• **_XX_** indicates factory default settings.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
701	CH1 IN LV	0000 _0001_ 0002 0003	4dB _0dB_ −3dB −20dB	Specifies the standard level for audio input (CH1).
702	CH2 IN LV	0000 _0001_ 0002 0003	4dB _0dB_ −3dB −20dB	Specifies the standard level for audio input (CH2).
706	CH1 OUT LV	0000 _0001_ 0002 0003	4dB _0dB_ −3dB −20dB	Specifies the standard level for audio output (CH1).
707	CH2 OUT LV	0000 _0001_ 0002 0003	4dB _0dB_ −3dB −20dB	Specifies the standard level for audio output (CH2).
710	MONIL OUT LV	0000 _0001_ 0002 0003	4dB _0dB_ −3dB −20dB	Selects how the reference level for the audio monitor output (Lch) is switched.
711	MONIR OUT LV	0000 _0001_ 0002 0003	4dB _0dB_ −3dB −20dB	Selects how the reference level for the audio monitor output (Rch) is switched.
712	MONI OUT	0000 _0001_	UNITY _VAR_	Selects whether or not to link the volume of the audio monitor output to the setting of the headphone volume control knob. 0: Outputs the sound at a fixed level regardless of volume control knob position. 1: Links the volume level to volume control knob position.
725	REC CH1	_0000_ 0001 0002 0003 0004 0005	_CH1_ CH2 CH3 CH4 CH1+2 CH3+4	Specifies the input signal to be recorded on the audio CH1. 0: Audio input CH1 signal 1: Audio input CH2 signal 2: Audio input CH3 signal 3: Audio input CH4 signal 4: Mixed audio input CH1 and CH2 signal 5: Mixed audio input CH3 and CH4 signal
726	REC CH2	0000 _0001_ 0002 0003 0004 0005	CH1 _CH2_ CH3 CH4 CH1+2 CH3+4	Specifies the input signal to be recorded on the audio CH2. 0: Audio input CH1 signal 1: Audio input CH2 signal 2: Audio input CH3 signal 3: Audio input CH4 signal 4: Mixed audio input CH1 and CH2 signal 5: Mixed audio input CH3 and CH4 signal
727	REC CH3	0000 0001 _0002_ 0003 0004 0005	CH1 CH2 _CH3_ CH4 CH1+2 CH3+4	Specifies the input signal to be recorded on the audio CH3. 0: Audio input CH1 signal 1: Audio input CH2 signal 2: Audio input CH3 signal 3: Audio input CH4 signal 4: Mixed audio input CH1 and CH2 signal 5: Mixed audio input CH3 and CH4 signal

Setup

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
728	REC CH4	0000 0001 0002 *0003* 0004 0005	CH1 CH2 CH3 *CH4* CH1+2 CH3+4	Specifies the input signal to be recorded on the audio CH4. 0: Audio input CH1 signal 1: Audio input CH2 signal 2: Audio input CH3 signal 3: Audio input CH4 signal 4: Mixed audio input CH1 and CH2 signal 5: Mixed audio input CH3 and CH4 signal
731	PB FADE	*0000* 0001	*AUTO* CUT	Specifies audio processing to be performed between clips and edit points created using playlist or Edit Copy. 0: Depends on recording status. (Refer to the section "Audio V Fade Function" (page 201).) 1: Forcible cut. **NOTE:** AVCHD playback (option) is disabled.
732	EMBEDDED AUD	0000 *0001*	OFF *ON*	Specifies whether or not audio data will be superimposed on HD SDI output and SD SDI output. 0: Audio data is not superimposed. 1: Audio data is superimposed.
750	A CH1/2 SEL	*0000* 0001 0002 0003	*CH1&2* CH3&4 CH5&6 CH7&8	Selects the audio signal channels to be output to ANALOG AUDIO CH1/CH2 connectors. 0: CH1/CH2 1: CH3/CH4 2: CH5/CH6 3: CH7/CH8
767	METER SELECT	*0000* 0001	*CH1-4* CH5-8	Selects the audio channels to be indicated by the audio level meter. 0: CH1-4 1: CH5-8

774	AVCHD A CH	*0000*
		0001
		0002
		0003
		0004
		0005
			CH1&2
			CH3&4
			CH5&6
			CH7&8
			12&34
			13&24
				59.94Hz **50Hz** only
				Specifies audio channels for AVCHD recording.
				0: Audio selected as REC CH1 and REC CH2 will be recorded as CH1 and 2.
				    CH1 and CH2 audio are recorded as CH1 and CH2 during dubbing from P2 cards to AVCHD.
				1: Audio selected as REC CH3 and REC CH4 will be recorded as CH1 and 2.
				    CH3 and CH4 audio are recorded as CH1 and CH2 during dubbing from P2 cards to AVCHD.
				2: Audio CH5 and 6 will be recorded a CH1 and 2.
				3: Audio CH7 and 8 will be recorded a CH1 and 2.
				4: Audio selected as REC CH1 and REC CH2 are mixed and recorded as CH1, audio selected as REC CH3 and REC CH4 are mixed and recorded as CH2.
				5: Audio selected as REC CH1 and REC CH3 are mixed and recorded as CH1, audio selected as REC CH2 and REC CH4 are mixed and recorded as CH2.
				NOTE:
				    Displayed only when an AJ-YCX250G AVCHD codec board (optional) is installed.

775	25M REC CH	*0000* 0001	*2CH* 4CH	**59.94Hz** **50Hz** only Specifies the number of audio channels that will be used for DVCPRO (25 Mbps) or DV (25 Mbps) recording. 0: Records on two channels. 1: Records on four channels. **NOTE:** DVCPROHD, AVC-Intra50 and AVC-Intra100 always record on 8 channels, and DVCPRO50 always records on 4 channels.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
776	REF LEVEL	For AJ-HPD2500P		Specifies the standard level. 0: −20 dB 1: −18 dB 2: −12 dB
		0000	*FS-20*	
		0001	FS-18	
		0002	FS-12	
		For AJ-HPD2500E		
		0000	FS-20	
		0001	*FS-18*	
		0002	FS-12	
778	AUD OUT DLY	*0000*	*OFF*	**23.98Hz** **24Hz** **59-23Hz** **60-24Hz** only Determines whether or not the output timing of analog audio output, headphones output, monitor output and AES/EBU output are delayed to synchronize them with SDI output. 0: Not delayed 　The output is synchronized with LCD monitor and VIDEO OUT output. 1: Delayed 　The output is synchronized with SDI output. **NOTE:** 　LCD monitor and VIDEO OUT are output about 66 msec earlier than SDI output.
		0001	ON	
782	EMBD CH SEL	*0000*	*CH1-4*	**59.94Hz** **50Hz** **23.98Hz** **29.97Hz** **59-23Hz** **25Hz** **60-25Hz** only Selects channels to multiplex on the SD SDI output. 0: Outputs four channels (CH1-4). 1: Outputs four channels (CH5-8). 2: Outputs the CH1-8 channels. **NOTE:** • Four channels (CH1-4) are multiplexed during 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. • Invalid signal is output at 24 Hz and 60-24 Hz.
		0001	CH5-8	
		0002	CH1-8	
785	PB MIX	*0000*	*OFF*	Sets a mix of analog and SDI audio output. **NOTE:** 　Press the STOP or SET button to open a subscreen and select the channels used in mixing audio output. To exit the subscreen, press the STOP or SET button again.
		0001	ON	
Subscreen				
01	PB CH1	*0000*	*CH1*	Specifies the playback channels that will be output via CH1.
		0001	CH1+2	
		0002	CH1+3	
02	PB CH2	*0000*	*CH2*	Specifies the playback channels that will be output via CH2
		0001	CH1+2	
		0002	CH2+4	
03	PB CH3	*0000*	*CH3*	Specifies the playback channels that will be output via CH3.
		0001	CH3+4	
		0002	CH1+3	
04	PB CH4	*0000*	*CH4*	Specifies the playback channels that will be output via CH4.
		0001	CH3+4	
		0002	CH2+4	
790	VOL SEL	*0000*	*CH1-4*	Specifies operation of the recording level controls. 0: CH1 to CH4 only are variable, CH5 to CH8 are UNITY level. 1: In addition to CH1 to CH4, which are variable, CH5 to CH8 also become variable, being linked to CH1 to CH4 operation.
		0001	CH1-8	

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
793	A DUB PB MIX	*0000* 0001	*OFF* ON	**59.94Hz** **50Hz** **23.98Hz** **29.97Hz** **59-23Hz** **25Hz** **60-25Hz** only Specifies whether or not the playback sound be mixed in the voice-over. 0: Playback sound is not mixed. 1: The input and playback sound are mixed in the recording. **NOTE:** Press the STOP or SET button to open the subscreen to select the channels that will be mixed. To exit the subscreen, press the STOP or SET button again.
Subscreen				
01	CH1 MIX	*0000* 0001 0002 0003	*CH1* CH2 CH3 CH4	Specifies the playback channels that will be mixed and recorded on CH1.
02	CH2 MIX	0000 *0001* 0002 0003	CH1 *CH2* CH3 CH4	Specifies the playback channels that will be mixed and recorded on CH2.
03	CH3 MIX	0000 0001 *0002* 0003	CH1 CH2 *CH3* CH4	Specifies the playback channels that will be mixed and recorded on CH3.
04	CH4 MIX	0000 0001 0002 *0003*	CH1 CH2 CH3 *CH4*	Specifies the playback channels that will be mixed and recorded on CH4.
797	A DUB MONI	0000 *0001*	OFF *ON*	**59.94Hz** **50Hz** **23.98Hz** **29.97Hz** **59-23Hz** **25Hz** **60-25Hz** only Specifies whether or not the recorded sound be output during a voice-over. 0: Recorded sound is not output 1: Recorded sound is output

LCD

This menu is used for setting up the LCD monitor.

• _XX_ indicates factory default settings.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
900	LCD PROTECT	0000 _0001_	OFF _ON_	Sets LCD protect mode. OFF: Protect mode is off. ON: Protect mode is on. **NOTE:** • LCD output is turned off when the front panel is not used or video is not updated for about 5 minutes. • To cancel protect mode, press a front panel button, dial or start playback from the controller. The operation that canceled LCD PROTECT mode will then take place.
905	BRIGHT	0000 | _0007_ | 0014	−7 | _0_ | 7	Adjusts the brightness of the LCD monitor.
910	CONTRAST	0000 | _0030_ | 0060	−30 | _0_ | 30	Adjusts the contrast of the LCD monitor. **NOTE:** This setting multiplied by the R, G and B contrast settings (setup menus No. 911 (R CONTRAST), No. 912 (G CONTRAST), No. 913 (B CONTRAST)) makes the R, G and B contrast setting.
911	R CONTRAST	0000 | _0030_ | 0060	−30 | _0_ | 30	Adjusts the R (Red) contrast of the LCD monitor. **NOTE:** This setting multiplied by the setting in setup menu No. 910 (CONTRAST) makes the contrast setting.
912	G CONTRAST	0000 | _0030_ | 0060	−30 | _0_ | 30	Adjusts the G (Green) contrast of the LCD monitor. **NOTE:** This setting multiplied by the setting in setup menu No. 910 (CONTRAST) makes the contrast setting.
913	B CONTRAST	0000 | _0030_ | 0060	−30 | _0_ | 30	Adjusts the B (Blue) contrast of the LCD monitor. **NOTE:** This setting multiplied by the setting in setup menu No. 910 (CONTRAST) makes the contrast setting.

Setup

MENU

This menu is used for menu settings.

- *XX* indicates factory default settings.

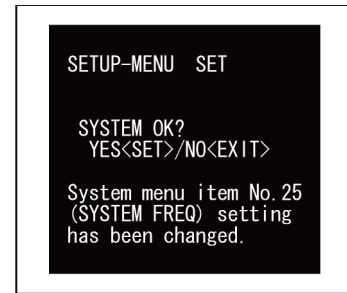| Item		Setting		Settings and brief function description	Remarks
FR No.	SUPER DISP.	FR No.	SUPER DISP.		
A00	LOAD	*0000* 0001 0002 0003	*USER2* USER3 USER4 USER5	Specifies user files loaded in USER 1. 0: Loads the contents of USER 2 1: Loads the contents of USER 3 2: Loads the contents of USER 4 3: Loads the contents of USER 5 **NOTE:** Pressing the MENU button when loading completes opens a confirmation dialog. Press the SET button to store the setting. Press the EXIT button to discard the change and retain the setting.	Setting available for USER1 only

A01	SAVE	*0000*
		0001
		0002
		0003
		0004
			USER2
			USER3
			USER4
			USER5
			LOCKED
				Specifies the user file that saves USER 1 settings.
				0: Saved to USER 2
				1: Saved to USER 3
				2: Saved to USER 4
				3: Saved to USER 5
				4: Appears when all user files are write protected.
				NOTE:
				  • A user file in change prohibit status cannot be selected.
				  • When all user files are in the change prohibit status, "LOCKED" appears and data cannot be saved.
					Setting available for USER1 only

A02	P.ON LOAD	*0000* 0001 0002 0003 0004	*OFF* USER2 USER3 USER4 USER5	Specifies which user files will be loaded into USER 1 and whether or not the USER 1 settings should be used in startup when the power is turned on. 0: Operation is started with the settings of the previously set user file. 1: The content of USER 2 is loaded into USER 1. 2: The content of USER 3 is loaded into USER 1. 3: The content of USER 4 is loaded into USER 1. 4: The content of USER 5 is loaded into USER 1.	Setting available for USER1 only

A03	MENU LOCK	*0000*
		0001
			OFF
			ON
				Sets/releases the user file (USER2 - USER 5) lock mode.
				0: Releases the lock. (File data can be changed.)
				1: Lock is engaged. (File data cannot be changed.)
				NOTE:
				  • USER 1 cannot be locked.
				  • Files can be loaded from the SD memory card even if they are locked. The status after load operation depends on the setting defined by the loaded data.
					Setting available for USER2 to USER5 only

A04	PF1 ASSIGN			Registers a setup menu item in the PF1 button.	
A05	PF2 ASSIGN			Registers a setup menu item in the PF2 button.	
A06	PF3 ASSIGN			Registers a setup menu item in the PF3 button.	
A10	CARD READ			Select files from the four SD memory card files to load into the menu. This function is available only to USER 1-5 (SYSTEM) and USER 1-5.	Setting available for USER1 only
A11	CARD WRITE			Select one of the four files on an SD memory card to write a menu setting. The write function is available only to USER 1-5 (SYSTEM). Titles can be added to the files and the files can be edited.	Setting available for USER1 only
A12	CARD FORMAT			Formats SD memory cards.	Setting available for USER1 only

■ Switching system frequency

Use the steps below to change system frequency.

1 Change setting in setup menu No. 25 (SYSTEM FREQ).

2 Press the MENU button.

The following confirmation dialog appears to enable the setting.

```
SETUP-MENU   SET

 SYSTEM OK?
  YES<SET>/NO<EXIT>

System menu item No. 25
(SYSTEM FREQ) setting
has been changed.
```
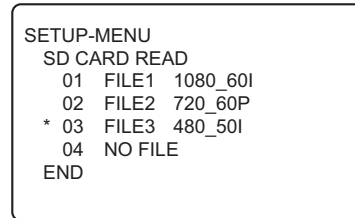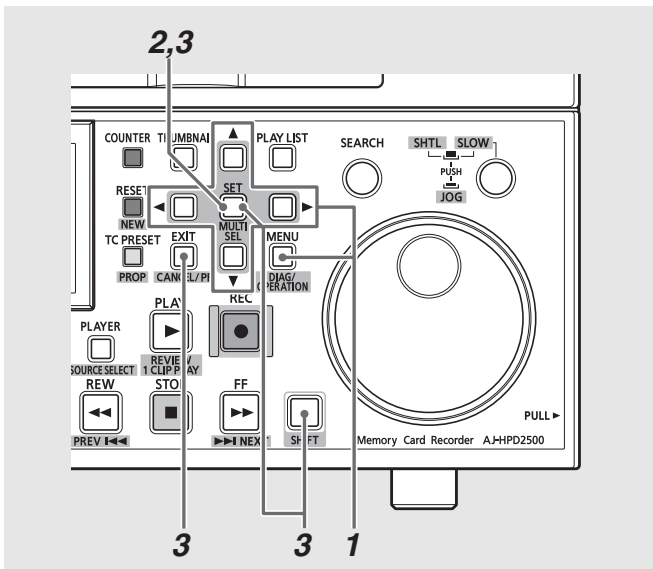
Press the SET button to enable the new setting.
Press the EXIT button to disable the new setting.

3 Turn off the power, then turn it back on again.

The system restarts with the selected system frequency.

Saving Menu Settings to SD Memory Cards

Use the steps below to write SETUP menu settings to or load from SD memory cards. The unit can handle up to four files and enables the input of titles.
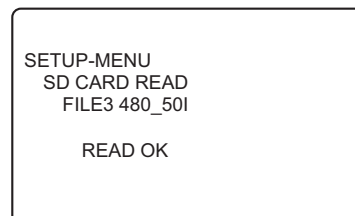

CARD READ

1 Press the MENU button, select A10 CARD READ from USER1 in the setup menu and press the SET button.

2 Select the files to be read in the file menu that appears and press the SET button.

- Files that are not written are indicated as [NO FILE].
- "NO CARD" is indicated when no SD memory card is inserted.

```
SETUP-MENU
  SD CARD READ
    01   FILE1  1080_60I
    02   FILE2  720_60P
  * 03   FILE3  480_50I
    04   NO FILE
  END
```

3 Press the button with the desired function (see below) in the load confirmation dialog that appears.

SET button:	Loads all SYSTEM settings and USER 1-5 data
MULTI SEL (SHIFT + SET) button:	Loads USER 1-5 data only
EXIT:	Cancels loading and returns to the previous screen

4 A completion message appears when the load progress bar closes.

```
SETUP-MENU
  SD CARD READ
   FILE3 480_50I

     READ OK
```

CARD WRITE

1 Press the MENU button, select A11 CARD WRITE from USER1 in the setup menu and press the SET button.

2 Select the files to be written in the file menu that appears and press the SET button.
- Files that are not written are indicated as [NO FILE].
- "NO CARD" is indicated when no SD memory card is inserted.

3 In the write confirmation dialog that appears, press the SET button to write or the EXIT button to cancel writing and return to the previous screen.
- You can edit the title before writing the file. Enter text at the flashing cursor that indicates the title.

Up/down cursor buttons (▲/▼)	Select text
Left/right cursor buttons (◄/►)	Move cursor location
RESET button:	Clears all text

- A completion message appears when the write progress bar closes.

```
SETUP-MENU   MENU
  SD CARD WRITE
    FILE4  _TITLE4

  SYSTEM+USER →   FILE4 OK?

     YES<SET>/NO<EXIT>
```

FORMAT

1 Press the MENU button, select A12 CARD FORMAT from USER1 in the setup menu and press the SET button.

2 The format confirmation dialog appears.
- Press the SET button to start formatting.
- To cancel formatting and return to the previous screen, press the EXIT button.

3 A completion message appears when the format progress bar closes.
- Check that no important data remains on a card before formatting since data erased by formatting cannot be recovered.

Time Code, User Bit and 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
       ↑       ↑       ↑        ↑
      Hours  Minutes Seconds  Frames
```

User bit

User bit 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.

Setting the internal time code
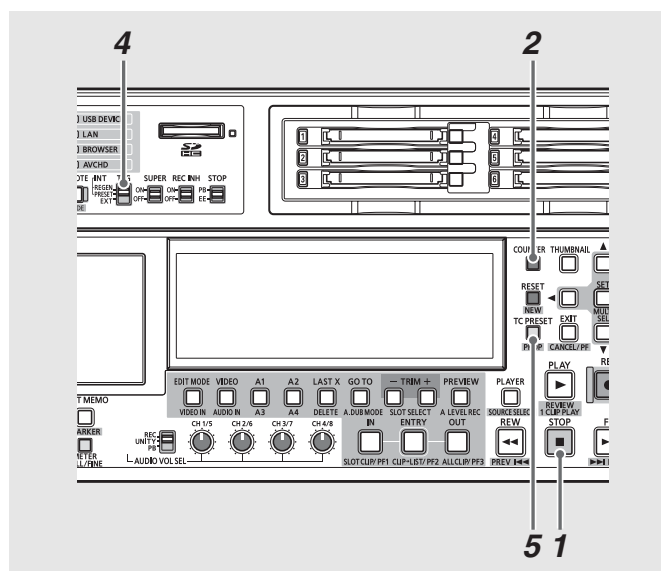
1 Engage the stop mode.

2 Use the COUNTER button to select [TC].

3 Use the setup menu No. 504 (RUN MODE) to set the run mode for the time code generator.

REC:	The internal time code generator advances during recording.
FREE:	The internal time code generator advances regardless of operating mode when the power is on.

4 Set the TCG switch to PRESET mode.

INT-REGEN:	This mode maintains the continuity with the time code last recorded on a P2 card.
INT-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 bit.

1. Press the TC PRESET button.

The left-most digit starts flashing.

2. Press the up or down cursor button (▲/▼) or hold down the SEARCH button and turn the search dial to change the value.

3. Press the left or right cursor button (◄/►) or turn the search dial to select digit to set.

The selected digits start flashing.
The setting ranges are as follows:

| Time code:	[59.94 Hz] [29.97 Hz]
	00:00:00:00-23:59:59:29
	[50 Hz] [25 Hz] [60-25 Hz]
	00:00:00:00-23:59:59:24
	[23.98Hz] [24Hz] [59-23Hz]
	[60-24Hz]
	00:00:00:00-23:59:59:23
User bit:	00000000-FF FF FF FF

4. Repeat steps 2 - 3 to change other values.

Pressing the RESET button resets the preset value to 0.

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

The time code starts to advance when [FREE] is set in step 3.
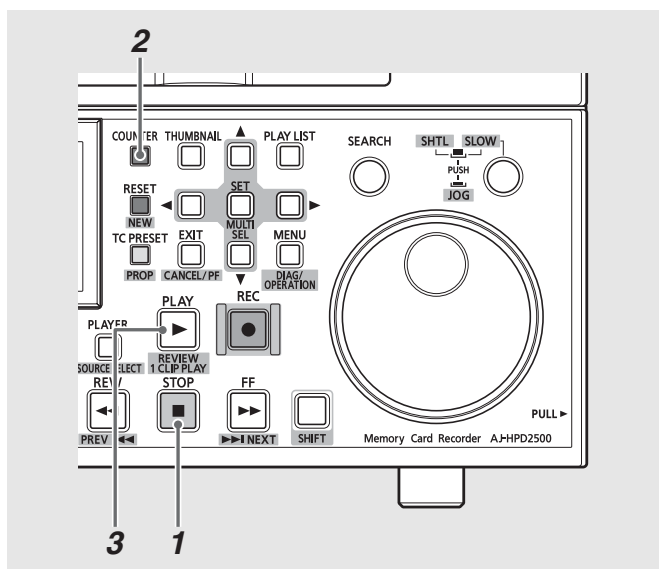
Setting the external time code
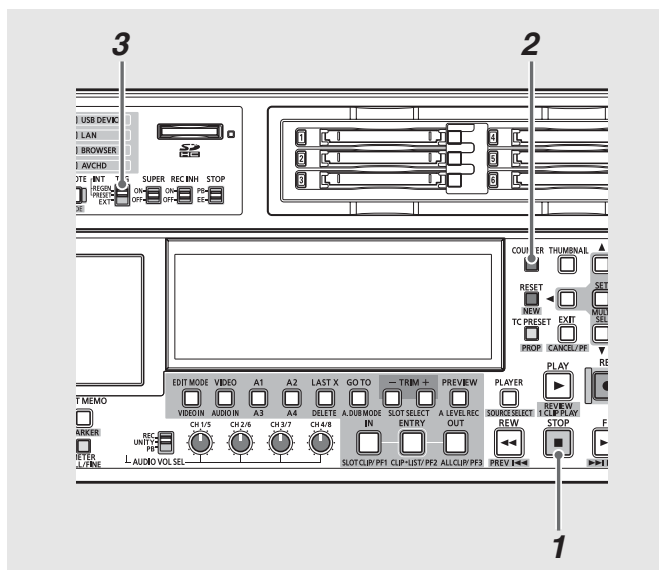
1 Engage the stop mode.

2 Use the COUNTER button to select [TC].

3 Set the TCG switch to [EXT].

(External time code selection)

4 Make the following settings in setup menu No. 507 (EXT TC SEL).

EXT_L:	The LTC signal input to the TIME CODE IN connector (BNC) on the rear panel is recorded as TC.
SVITC:	The VITC signal attached to the serial signal input to the SDI IN (HD) connector is recorded as a time code.
SLTC:	The LTC signal attached to the serial signal input to the SDI IN (HD) connector is recorded as a time code.

◆ **NOTE:**

• When SLTC and SVITC is set and an analog composite or SD SDI input signal is selected, the VITC on the input video signal is recorded.

• When setup menu No. 25 (SYSTEM FREQ) is set to 59-23, 60-24 or 60-25, setup menu No. 507 (EXT TC SEL) does not appear. The unit is locked in SLTC in this mode.

• When setup menu No. 040 (VFR REC) is set to ON, REC RUN is selected regardless of the TCG switch setting.

Reproducing the time code and user bit

1 Engage the stop mode.

2 Use the COUNTER button to select [TC] or [UB].
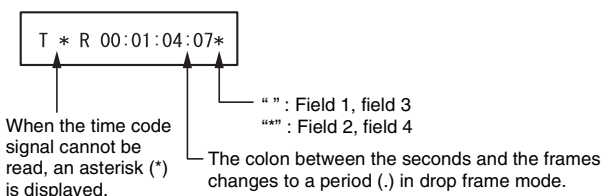
3 Press the PLAY ► button.

Playback starts and the time code appears on the display. When the SUPER switch is set to [ON], the time code is superimposed on the monitor.

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

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

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

■ Time code when no power is supplied

Also when no power is supplied, the backup function works enabling the time code generator to provide long-term (about one year) operation. Accuracy when no power is supplied is about ±30 s per month.

◆ **NOTE:**

• Under the conditions listed below when the time code generator advances regardless of operation mode, the backup function is enabled.

- When the TCG switch on the front panel is set to "PRESET" and setup menu No. 504 (RUN MODE) is set to "FREE."

- When the TCG switch on the front panel is set to "EXT" and the external time code set in setup menu No. 507 (EXT TC SEL) is disconnected from connector on the rear panel.

• When settings in setup menu No. 25 (SYSTEM FREQ) are revised, advance data is cleared.

| TCG switch [5] | Menu [4] No. 507 EXT TC SEL | Menu No. 518 VITC GEN | Selected video input signal | Recorded time code | |
				SBC area	VAUX area
INT (REGEN / PRESET)	---	OFF	HD SDI	Internal TCG value	SVITC on input video signal [3]
			CMPST / SD SDI [6]		VITC on input video signal [3]
		ON	HD SDI	Internal TCG value	
			CMPST / SD SDI [6]		
EXT	EXT_L	OFF	HD SDI	Time code on TIME CODE IN connector input [1]	SVITC on input video signal [3]
			CMPST / SD SDI [6]		VITC on input video signal [3]
		ON	HD SDI	Time code on TIME CODE IN connector input [1]	
			CMPST / SD SDI [6]		
	SLTC	OFF	HD SDI	SLTC on input video signal [2]	SVITC on input video signal [3]
			CMPST / SD SDI [6]	VITC on input video signal [2]	VITC on input video signal [3]
		ON	HD SDI	SLTC on input video signal [2]	
			CMPST / SD SDI [6]	VITC on input video signal [2]	
	SVITC	OFF	HD SDI	SVITC on input video signal [2]	SVITC on input video signal [3]
			CMPST / SD SDI [6]	VITC on input video signal [2]	VITC on input video signal [3]
		ON	HD SDI	SVITC on input video signal [2]	
			CMPST / SD SDI [6]	VITC on input video signal [2]	

*1: The internal TCG value is used when a signal cannot be detected from the TIME CODE IN connector input.

*2: The internal TCG value is used when the SLTC, SVITC and VITC cannot be detected on the input video signal.

*3: Nothing is recorded if the SVITC and VITC cannot be detected on the input video signal.

*4: When setup menu No. 25 (SYSTEM FREQ) is set to 59-23, 60-24 or 60-25, setup menu No. 507 (EXT TC SEL) does not appear. The unit is locked in SLTC in this mode.

*5: When setup menu No. 040 (VFR REC) is set to ON, REC RUN is selected regardless of the TCG switch setting.

*6: During up-conversion recording, the selected video input signal is displayed as CMPST (U/C) and SDSDI (U/C).
→ Refer to "VIDEO IN (SHIFT + EDIT MODE) buttons" (page 24).

CTL Mode
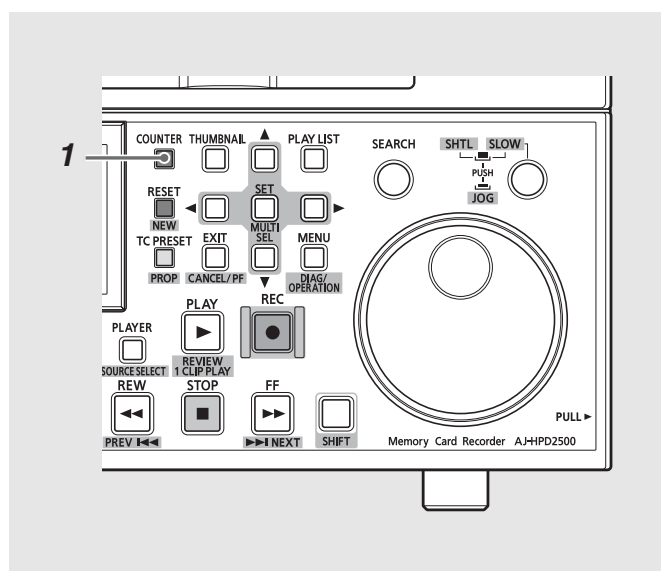
1 Use the COUNTER button to select [CTL].

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 23.98, 24, 59-23 or 60-24 is selected in setup menu No. 25 (SYSTEM FREQ), there is a 1-frame delay between playback video and CTL.

Superimpose Screen

Control signals, time code and other information are indicated by abbreviations.

Display monitor

TCR **:**:**:**
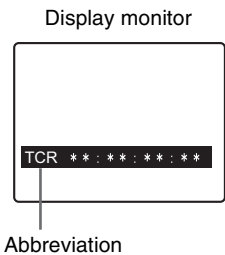
Abbreviation

Abbreviations:

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

◆ **NOTE:**
• [T*R] or [U*R] appears when card data could not be properly read.

Display characters

Use setup menu No. 009 (CHARA TYPE) to change the background of display characters in the superimposed display.
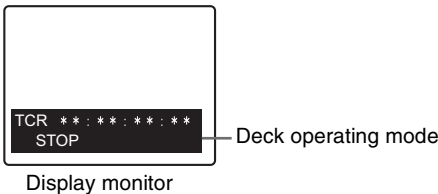

Display monitor   Display monitor
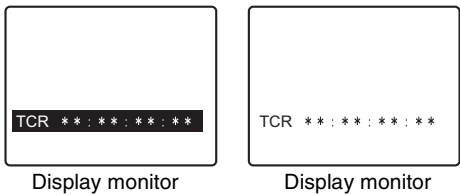
Display position

Use setup menu No. 007 (CHARA H-POS) and No. 008 (CHARA V-POS) to change the position of characters in the superimposed display.

Display monitor   Display monitor
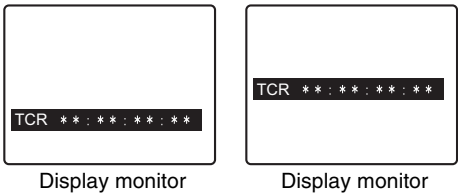
Operating mode

Use setup menu No. 006 (DISPLAY SEL) to indicate deck operating mode.

TCR **:**:**:** —— Deck operating mode
STOP

Display monitor

List of Compatible Input and Output Formats

■ **System Frequency Settings**

Use setup menu No. 25 (SYSTEM FREQ) to select the following input and output formats.

Recording format	Input signal	System frequency	SDI output [4]
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
	1080/29.97PsF	29.97	1080/29.97PsF
			720/59.94P [1]
			480/59.94i [1]
	1080/23.98P over 59.94i [5]	59-23	1080/23.98PsF
	1080/23.98PsF	23.98	1080/23.98PsF
	1080/24PsF	24	1080/24PsF
	1080/25PsF	25	1080/25PsF
			720/50P [1]
			576/50i [1]
	720/59.94P	59.94	720/59.94P
			1080/59.94i
			480/59.94i
	720/50P	50	720/50P
			1080/50i
			576/50i
	720/29.97P over 59.94P [6]	29.97	720/59.94P [1]
			1080/29.97PsF
			480/59.94i [1]
	720/23.98P over 59.94P [6]	59-23	1080/23.98PsF
	720/24P over 60P [6]	60-24	1080/24PsF
	720/25P over 50P [7]	25	720/50P [1]
			1080/25PsF
			576/50i [1]
	720/25P over 60P [6]	60-25	720/50P [1]
			1080/25PsF
			576/50i [1]
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: 2:2 pull-down

*4: Select SDI output in setup menu No. 643 (OUT MODE SEL).

*5: AJ-HPX2000/2100/3000 HD-SDI (1080/23.98P over 59.94i) output

*6: AJ-HDC27 series HD-SDI (variable frame-rate signal) output

*7: AJ-HPX2000/2100 HD-SDI (720/25P over 50P) output

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
	720/29.97P over 59.94P [6]	29.97	720/59.94P [1]
			1080/29.97PsF
			480/59.94i [1]
	720/23.98P over 59.94P [6]	59-23	1080/23.98PsF
	720/24P over 60P [6]	60-24	1080/24PsF
	720/25P over 50P [7]	25	720/50P [1]
			1080/25PsF
			576/50i [1]
	720/25P over 60P [6]	60-25	720/50P [1]
			1080/25PsF
			576/50i [1]
DVCPRO50 DVCPRO DV	480/59.94i [8]	59.94	480/59.94i
			1080/59.94i
			720/59.94P
	480/29.97P over 59.94i [8]	59.94	480/59.94i [1]
			1080/29.97PsF
			720/59.94P [1]
	480/23.98P over 59.94i [8]	59.94	1080/23.98PsF [3]
			480/59.94i [2]
			1080/59.94i [2]
			720/59.94P [2]
	576/50i [8]	50	576/50i
			1080/50i
			720/50P
	576/25P over 50i [8]	50	576/50i [1]
			1080/25PsF
			720/50P [1]

*1: 2:2 pull-down

*2: 2:3 pull-down

*3: Playback only when "2:23.98" or "5: 59-23" is selected in system menu No. 25 (SYSTEM FREQ).

*4: Select SDI output in setup menu No. 643 (OUT MODE SEL).

*5: AJ-HPX2000/2100/3000 HD-SDI (1080/23.98P over 59.94i) output

*6: AJ-HDC27 series HD-SDI (variable frame-rate signal) output

*7: AJ-HPX2000/2100 HD-SDI (720/25P over 50P) output

*8: When the recording format is HD, an SD input signal is up-converted, recorded and output as HD.
   → Refer to "VIDEO IN (SHIFT + EDIT MODE) / AUDIO IN (SHIFT + VIDEO) buttons" (page 24).

Audio V Fade Function

This section describes the differences between audio processing provided by setup menu No. 731 (PB FADE) settings. Setup menu No. 731 (PB FADE) settings make it possible to perform audio V fade or cut processing between clips and events during clip selection and playback or playlist playback.

Described below are examples that illustrate the differences in processing.

These examples involve a clip that spans multiple P2 cards and a second clip generated by Edit Copy.

- A clip that spans multiple P2 cards or a clip that has been automatically divided and recorded on an 8 GB P2 card
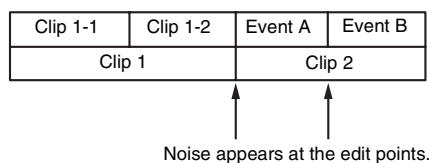
Clip 1-1	Clip 1-2
Clip 1	

- A clip created using the Edit Copy function on an AJ-SPD850
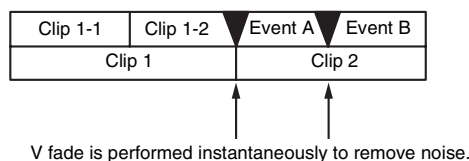
Event A	Event B
Clip 2	

Settings in setup menu No.731 allow you to play back the above two clips and do the following.

- When CUT is selected

Clip 1-1	Clip 1-2	Event A	Event B
Clip 1		Clip 2	

Noise appears at the edit points.

- When AUTO is selected

Clip 1-1	Clip 1-2	Event A	Event B
Clip 1		Clip 2	

V fade is performed instantaneously to remove noise.

V fade processing is performed automatically between clips and events.
The following items are not V fade processed.
- Clips that span multiple P2 cards
- Clips that have been automatically divided when using 8 GB or larger P2 cards

Audio Recording Channels Selection

Audio Recording Channels

Depending on setup menu 725 - 728 (REC CH1 to 4) settings, the VIDEO IN (SHIFT + EDIT MODE) / AUDIO IN (SHIFT + VIDEO) buttons on the front panel allows you to select the following input signals.

Analog input

Recorded track	Recorded signal[1]
CH1	CH1 input/CH2 input/CH3 input/CH4 input/CH1 + CH2 inputs/CH3 + CH4 inputs
CH2	CH1 input/CH2 input/CH3 input/CH4 input/CH1 + CH2 inputs/CH3 + CH4 inputs
CH3	CH1 input/CH2 input/CH3 input/CH4 input/CH1 + CH2 inputs/CH3 + CH4 inputs
CH4	CH1 input/CH2 input/CH3 input/CH4 input/CH1 + CH2 inputs/CH3 + CH4 inputs
CH5	No
CH6	No
CH7	No
CH8	No

[1]: No sound is input when CH3 and/or CH4 are selected.

SDI, AES/EBU input

Recorded track	Recorded signal
CH1	CH1 input/CH2 input/CH3 input/CH4 input/CH1 + CH2 inputs/CH3 + CH4 inputs
CH2	CH1 input/CH2 input/CH3 input/CH4 input/CH1 + CH2 inputs/CH3 + CH4 inputs
CH3	CH1 input/CH2 input/CH3 input/CH4 input/CH1 + CH2 inputs/CH3 + CH4 inputs
CH4	CH1 input/CH2 input/CH3 input/CH4 input/CH1 + CH2 inputs/CH3 + CH4 inputs
CH5	No (SD)/CH5 (HD)
CH6	No (SD)/CH6 (HD)
CH7	No (SD)/CH7 (HD)
CH8	No (SD)/CH8 (HD)

For Long and Trouble-Free Operation

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.

Maintenance

- Before starting any maintenance work, switch the power to off and, holding the plug, unplug the cable from the socket.
- Use a soft cloth to clean the outside of this unit.
- For stubborn dirt or stains, wipe the unit with a cloth that has been lightly dampened in well-diluted kitchen detergent and wrung out thoroughly. After wiping off the dirt with the damp cloth, finish it off with a dry cloth.
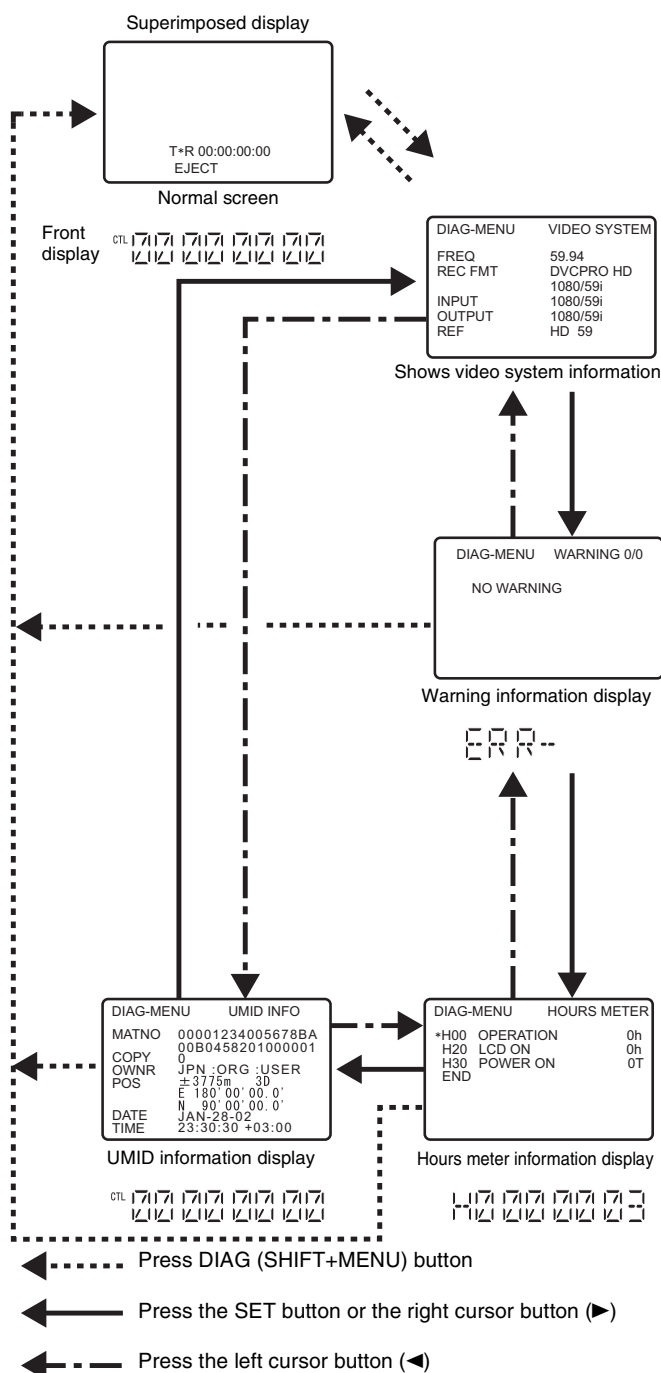
◆ **NOTE:**
- Do not use alcohol, benzene, thinner or any other solvents as they may discolor or damage the coating of the unit.

For Long and Trouble-Free Operation

Error Messages

When a warning occurs in this unit, the error number is indicated on the counter display. Open the DIAG menu to view a description of the error on the counter display or a LCD monitor. When an operational malfunction occurs in the unit, an error number will flash on the counter display.

Superimposed display

T*R 00:00:00:00
EJECT

Normal screen

Front display

CTL

DIAG-MENU   VIDEO SYSTEM

FREQ   59.94
REC FMT   DVCPRO HD
                  1080/59i
INPUT   1080/59i
OUTPUT   1080/59i
REF   HD 59

Shows video system information

DIAG-MENU   WARNING 0/0

NO WARNING

Warning information display

ERR--

DIAG-MENU   UMID INFO

MATNO   00001234005678BA
        00B0458201000001
COPY   0
OWNR   JPN :ORG :USER
POS   ±3775m   3D
        E 180' 00' 00. 0'
        N 90' 00' 00. 0'
DATE   JAN-28-02
TIME   23:30:30 +03:00

UMID information display

CTL

DIAG-MENU   HOURS METER

*H00   OPERATION   0h
 H20   LCD ON   0h
 H30   POWER ON   0T
 END

Hours meter information display

- - - - ▶ Press DIAG (SHIFT+MENU) button

──────▶ Press the SET button or the right cursor button (▶)

─ ─ ─ ◀ Press the left cursor button (◀)

DIAG menu

This menu shows deck information. Deck information includes "WARNING" information, serial No., "HOURS METER" (usage time) information and "UMID" (Unique Material Identifier) information. A DIAG menu appears on the LCD monitor and on the display monitor when it is connected to the VIDEO MON or SD SDI MON connector on the rear panel.

Opening the DIAG menu
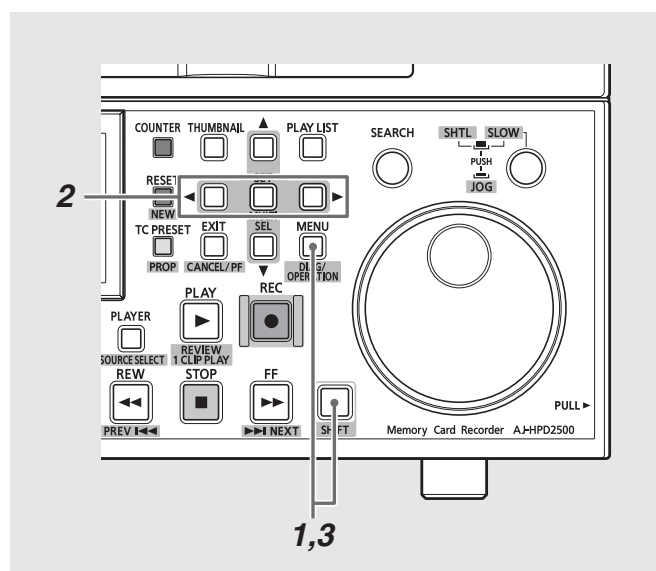
1 Press the DIAG (SHIFT + MENU) button.

The DIAG menu appears on the monitor screen and the message appears on the counter display.

2 Press the SET button or the left or right cursor button (◀/▶).

Each press of the button changes the display between "WARNING", "HOURS METER" and "UMID INFO", etc.

3 Press the DIAG button.

You return to the original display.

WARNING Information Display

- A warning message is displayed whenever a warning occurs.
  When no warnings have been detected, "NO WARNING" is displayed.
- When multiple warnings occur, turn the search dial to check the descriptions of each warning.
  If "T&S&M" is selected in setup menu No. 006 (DISPLAY SEL), a message appears in the mode display whenever a warning or error occurs.

Monitor display	Description	Deck operation	Counter display
BUSY	Displayed while clip information is being read or when clip configuration has changed. No operations can be performed while this display 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	BUSY
CANNOT A.DUB	Displayed when audio voice-over cannot be recorded on a P2 card. [Meaning] • An attempt was made to record on a card that could not be used. • An attempt was made to record when no card was inserted.	Operation continues	CANTADUB
CANNOT LOOP REC	Appears in LOOP REC mode when P2 card recording is not available. [Meaning] • An attempt was made to record to a write protected disk. • An attempt was made to record on a card with no free space available. • An attempt was made to record on a card that could not be used. • Card status changed during recording. • Recording was attempted when the unit was BUSY.	STOP	CANTLREC
CANNOT PLAY	Displayed when playback was interrupted due to a clip error or other factor. [Meaning] • An attempt was made to play a clip when no clips were present. • An attempt was made to play back a card that cannot be used. • The card could not be played back or playback stopped for some other reason. • Playback was attempted when the unit was BUSY.	STOP	CANTPLAY
CANNOT REC	Displayed when data cannot be recorded on a P2 card. [Meaning] • An attempt was made to record to a write protected disk. • An attempt was made to record data on a card with no more free memory space on it. • An attempt was made to record on a card with no free space available. • Card status changed during recording. • Recording was attempted when the unit was BUSY. • VFR recording started but no active frame data was input.	STOP	CANT REC
CANNOT REC SD	Displayed when a memory card is protected, there is not enough space or recording in PH/HA mode is not available. (When an AJ-YCX250G AVCHD codec board (optional) is installed.)	Operation continues	CANT REC
CHECK SD	Displayed when a non-compatible SD memory card, non-standard management information or mismatched thumbnail data was recognized. (When an AJ-YCX250G AVCHD codec board (optional) is installed.)	Operation continues	CHK SD
INT SG	Displayed for the first two seconds when the REC button is pressed to enter the EE mode and the VIDEO IN (SHIFT + EDIT MODE) button or the AUDIO IN (SHIFT + VIDEO) button is set to SG.	Operation continues	INT SG
INVALID IN/OUT POINT	Displayed when an attempt was made to set an IN or OUT point in a location where such points cannot be set.	Operation continues	Counter value
INVALID TRACK SELECT	Displayed when no audio track is selected or 3 or more channels are selected in a voice-over recording on a P2 card. Only 2 channels can be recorded in a voice-over recording.	Operation continues	CANTADUB

Monitor display	Description	Deck operation	Counter display
LACK OF REC CAP.	Displayed when a voice-over recording is attempted on a P2 card or when external device is selected for a player of the playlist and the REC button is pressed to start recording, while there is not enough free space on the card.	Operation continues	CANTADUB
MARK ON/OFF	Displayed for two seconds when a shot mark is added or deleted.	Operation continues	MARK ON / MARK OFF
MAX. EVENTS	The number of events that can be registered on the playlist has been reached.	Operation continues	Counter value
NEED TO REPAIR SD	Displayed when an SD memory card that needs to be repaired is detected. (When an AJ-YCX250G AVCHD codec board (optional) is installed.)	Operation continues	ND REP
NO INPUT	Displayed for the first two seconds when the REC button is pressed to enter the EE mode and the VIDEO IN (SHIFT + EDIT MODE) or AUDIO IN (SHIFT + VIDEO) is set to a connector with no input except for analog audio signals.	Operation continues	NO INPUT
PL FILE NOT FOUND	Displayed when a voice-over recording is attempted on a P2 card and there is no playlist file.	Operation continues	CANTADUB
REC LIMIT SD	Displayed when recording cannot continue because there is no space or because a 12-hour recording has been completed. (When an AJ-YCX250G AVCHD codec board (optional) is installed.)	Operation continues	LIMIT SD
REPAIRING SD	Displayed when an SD memory card clip is being repaired. (When an AJ-YCX250G AVCHD codec board (optional) is installed.)	Operation continues	REPAIR
R-OUT NOT AVAILABLE	Displayed when an attempt was made to use a recorder OUT point during insert editing in playlist mode.	Operation continues	Counter value
SLOT SEL INVALID	Displayed when the SLOT SELECT +/– button was pressed while it is not possible to switch P2 card recording slot.	Operation continues	INVALID
TEXT MEMO	Displayed for two seconds when a text memo is added.	Operation continues	TEXT MEMO
TEXT MEMO INVALID	Appears when there are already 100 text memos and no more memos can be added.	Operation continues	INVALID
WRITE PROTECTED	Appears when a voice-over recording is attempted on a write-protected P2 card.	Operation continues	CANTADUB

WARNING information

If "E- * * " lights in the monitor display, hold down the SHIFT button and press the MENU button to open the DIAG-MENU and read the warning information.

Display		Description	Deck operation
No	Character code		
10	FAN STOP	Displayed when the fan motor stops.	Operation continues
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.	STOP
26	CARD ERROR<******>	Displayed when data was corrupted due to a P2 card error during recording. This error is displayed after recording ends and remains on until the start of the next operation. This error is not displayed during playback. (* indicates the slot number where the error occurred.) Replace the P2 card in the slot where the error occurred.	STOP
49	LAN ERROR	Displayed when a LAN connection or disconnection failed. Power off, then power up again before use. Should E-49 appear again, consult your supplier.	STOP
50	BATTERY EMPTY	Displayed when a drop in the backup battery voltage for the internal clock is detected at power on. Replace the internal battery. [1]	Operation continues
70	DIR NG CARD<******>	The P2 card directory structure is not supported. (* indicates the slot number where the error occurred.) Make a quick backup of card data and format the card.	Operation continues
71	RUNDOWN CARD<******>	The maximum number of overwrites has been exceeded. (* indicates the slot number where the error occurred.) This P2 card should be replaced.	Operation continues [2]

◆ **NOTE**

[1]: "E-50" appears when the backup battery is depleted. Consult your supplier for information on a store that can provide you with a new battery (CR2032 or the equivalent). Be sure to use setup menu No. 069 (CLOCK SET) to set the clock after battery replacement.
[2]: Operation continues but normal recording or playback may not be possible.

Display		Description	Deck operation
No	Character code		
75	HDD INTERMITTENT	Displayed for 3 seconds when a dropout due to reduced hard disk performance occurs during hard disk playback for monitoring purposes. Use a faster hard disk.	Operation continues
93	INVALID TC MODE	**23.98Hz** **24Hz** **59-23Hz** **60-24Hz** **60-25Hz** only 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.	Operation continues
95	INVALID EMBEDDED TC	**29.97Hz** **59-23Hz** **60-24Hz** **25Hz** **60-25Hz** only Displayed while synchronizing recorded video frames to the time code of a signal input to the HD SDI connector when that time code is not advancing at 1× normal speed. (When "SLTC" is selected in setup menu No. 032 (REC REF) or 29.97, 59-23, 60-24, 25 or 60-25 is selected in setup menu No. 25 (SYSTEM FREQ).)	Operation continues
96	INVALID TC SEQUENCE	**23.98Hz** **24Hz** **59-23Hz** **60-24Hz** **60-25Hz** only Appears during playback when frame rate data in user bit 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 bit 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.	Operation continues
97	NO ACTIVE FRAME	**29.97Hz** **59-23Hz** **60-24Hz** **60-25Hz** only 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 29.97, 59-23, 60-24 or 60-25 is set in setup menu No. 25 (SYSTEM FREQ) and setup menu No 040 (VFR REC) is set to ON.)	Recording is disabled [*3] Operation continues during recording
98	INVALID FRAME RATE	**60-25Hz** only Appears when active frame data detected from the user bit in the HD SDI input during EE and recording exceeds 50p. Normal recording is not possible under these conditions. When SYSTEM FREQ is set to 60-25, set the frame rate on a variable frame-rate camera to 50p or less. Appears when SYSTEM FREQ is set to 60-25 and VFR REC is set to ON.	Operation continues

◆ **NOTE:**

*3: An attempt to start recording causes the button to temporarily light. It goes out a few seconds later and no recording is made.

The following warning messages appear when an incorrect operation is attempted in the thumbnail playlist screen.

Item	Message	Description	Measure
Thumbnail	CANNOT ACCESS GATEWAY! CHECK LAN SETTING	Cannot access gateway server.	Check if LAN setup is correct.
	CANNOT ACCESS!	Data cannot be accessed because it is corrupted or for other reasons.	Restore media and clips to normal state before access. When displayed during network operation, check LAN setup, make sure the LAN cable is correctly connected and check that your network environment is functioning properly.
	CANNOT ADD! NO INPUT	User name or password in not entered correctly.	Enter user name or password correctly.
	CANNOT CHANGE!	A thumbnail containing a grayed out text memo that cannot be generated is not available for editing.	Edit settings or content to enable thumbnail display.
	CANNOT CONNECT!	Connection to the network cannot be established.	Check LAN setup, make sure the LAN cable is correctly connected and check that your network environment is functioning properly.
	CANNOT DELETE!	Contents version mismatch prevents deletion.	Match devices and contents version.
	CANNOT FIND FTP-SERVER!	FTP server cannot be found.	Check if FTP client URL is correct.
	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.	
	CANNOT REPAIR!	Selected content cannot be repaired.	Check selected content.
	CANNOT SAVE! FILE NAME IN USE	A network setup file with the same file name 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.
	IP ADDRESS IS USED!	The set IP address is used on another device.	Consult the network administrator, and set another IP address.
	LACK OF REC CAPACITY!	There is not enough recording capacity left on the card.	Insert a card with sufficient recording capacity.
	LOGIN FAILED!	Login to destination FTP server failed.	Check if user ID and password for the FTP client are correct.
	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 CONTENTS!	No P2 data in the connected network folder.	Connect to a folder that contains P2 data.
	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.
	PING FAILED! CHECK LOG or SET FTP-URL	PING failed.	Check if LAN setup, FTP client URL and LAN cable connection are correct.
	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. • If a bad clip exists (in the copy destination in case of copy), repair or remove the bad clip.

Item	Message	Description	Measure
Thumbnail	UNKNOWN DATA!	The metadata character code is invalid.	Use UTF-8 for the metadata 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.
Hard disk	CANNOT ACCESS CARD!	An error occurred during P2 card access.	Check P2 card.
	CANNOT ACCESS TARGET!	An error occurred during hard disk access.	Check hard disk status and connection.
	CANNOT COPY! FORMAT HDD TO FAT	Clips cannot be copied to hard disk without partitions.	Format using a FAT format or export data from a P2 card to create a partition.
	CANNOT FORMAT!	The hard disk cannot be initialized.	Connect another hard disk drive.
	CANNOT RECOGNIZE HDD!	The destination target cannot be properly recognized.	Reboot the hard disk or connect a different hard disk.
	CANNOT SELECT! MAX.6 PARTITIONS	It is not possible to mount more than 6 hard disk partitions simultaneously.	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.
	HDD CAPACITY FULL!	Not enough space left on the hard disk.	There is not enough space on the connected hard disk. Use a new hard disk or formatted hard disk.
	HDD DISCONNECTED!	The unit is not connected to a hard disk.	Reconnect the USB cable. If the hard disk does not operate normally, turn it off and turn it 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.	Hard disks can handle up to 23 partitions. Use a new hard disk or formatted hard disk.
	TOO MANY TARGETS!	Multiple devices are connected.	Disconnect devices, turn off the unit and turn it back on again.
	UNKNOWN DEVICE CONNECTED!	The connected DVD drive is not compatible.	Disconnect devices, turn off the unit and turn it back on again.
	VERIFICATION FAILED!	The compare check after copying failed.	Copy the data again.
On-screen 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.
Playlist	CANNOT FIND CLIP!	Specified clip could not be found.	Insert the card with the clip.
	CANNOT FIND SAME FORMAT!	There are no clips in a matching playlist format.	Use clips that match the playlist format.
	CANNOT MOVE!	Move operation is not possible.	Select a consecutive area.
	CANNOT OPERATE AT "RED" EVENT!	Not allowed in a playback disable (marked red) event.	An illegal operation was attempted in a disabled event. Use a playback enable event or insert a card with suitable clips.
	CANNOT OPERATE WITH EXTERNAL PLAYER	A.DUB is not available when an external player is used.	Select a P2 card as a player.
	CANNOT OPERATE: "RED" A.DUB EVENT INCLUDED	Since the selected events include a red A.DUB event, operation is not possible.	Remove the red A.DUB event from the selection.

Item	Message	Description	Measure
Playlist	CANNOT OPERATE: A.DUB EVENT INCLUDED	Since the selected events include an A.DUB event, operation is not possible.	Remove the A.DUB event from the selection.
	CANNOT OPERATE: BLANK EVENT INCLUDED	Since the selected events include a blank event, operation is not possible.	Remove the blank event from the selection.
	CANNOT OPERATE: BLANK VIDEO EVENT INCLUDED	Since the selected events include a blank video event, operation is not possible.	Remove the blank video event from the selection.
	CANNOT OPERATE: COLLAPSE CLIP INCLUDED	Some of the clips are abnormal.	Use normal clips only. There may also be a bad clip at the location where the data is copied to.
	CANNOT OPERATE: DIFFERENT ASPECT RATIO INCLUDED	There are clips with different aspect ratios.	Aspect ratios cannot be mixed. Use only clips with the same aspect ratio.
	CANNOT OPERATE: DIFFERENT REFERRED POSITION	Since the location of the clip referenced by the event differs, operation is not possible.	Select only events whose source clips have the same time code.
	CANNOT OPERATE: ILLEGAL EVENT INCLUDED	There are illegal events.	Change the illegal events to the correct status.
	CANNOT OPERATE: INTERNAL MEMORY IS FULL	Internal memory is full and no new audio level values can be added.	Use the UNITY level to delete existing audio level or delete the event to which an audio level was added.
	CANNOT OPERATE: INVALID AUDIO FILE	This audio file cannot be used.	A playlist file with 24-bit audio data cannot be loaded.
	CANNOT OPERATE: MULTI FORMAT INCLUDED	The files are not in the same format.	Playlist files in different formats cannot be loaded.
	CANNOT OPERATE: MULTI SOURCE INCLUDED IN SELECTED EVENTS	Since the selected event references multiple clips, operation is not possible.	Select only events that reference the same clip.
	CANNOT OPERATE: PLAYLIST FILE IS NOT FOUND	No playlist file could be found.	Insert a card with a playlist file.
	CANNOT OPERATE: PLAYLIST IS NOT SAVED	The playlist has not been saved.	Save the playlist.
	CANNOT OPERATE: UNMATCH INPOINT	Since there is a track with a non-matching source IN point, operation is not possible.	Match up the IN points of all tracks.
	CANNOT OPERATE: UNMATCH INSERT POINTS	Since there is a track with a non-matching destination points, operation is not possible.	Match up the destination points of all tracks.
	CANNOT OPERATE: UNMATCH OUTPOINT	Since there is a track with a non-matching source OUT point, operation is not possible.	Match up the OUT points of all tracks.
	CAPTURE INCOMPLETED	A capture from an external player failed to capture the entire clip, but registered what was captured.	When OUT points are displaced due to intermittent time codes, for example, trimming could be used to revise.
	DIFFERENT FORMAT!	The playlist being edited and the event and clip selected for importing are in a different playlist format (codec or frame rate).	Use clips in a matching playlist format.
	DIFFERENT PLAYLIST VERSION!	The playlist contains files in different versions.	Playlist files in a different version cannot be imported.

Item	Message	Description	Measure
Playlist	DIFFERENT SYSTEM FREQUENCY!	Some files have a different system frequency.	Use only files with the same system frequency.
	DURATION LIMITATION!	The selected process cannot be performed because playlist duration exceeds 24 hours.	Delete data to reduce the duration to less than 24 hours to process.
	ILLEGAL FILE!	The playlist is not in a format that can be loaded into the unit.	Use a playlist file in a format that can be loaded into the unit.
	LACK OF REC CAPACITY!	The card selected for Edit Copy does not have enough capacity.	Insert a card with sufficient capacity.
	NO CARD!	The specified card does not exist.	Insert the card before attempting to process it.
	NO FILE!	The specified file does not exist.	Use SAVE AS to save or insert a normally operating card.
	NO SPACE!	There is not enough space on the card.	
	NOT AVAILABLE FORMAT!	Cannot edit data in the current format.	Use a compatible playlist format.
	NOT SELECTED!	No clip is selected.	Select the clip in the player thumbnail screen.
	NUMBER OF EVENT LIMITATION!	The number of events on a track has reached the upper limit.	The upper limit of the number of events on each track is 100. Operate within this limit.
	NUMBER OF FILE LIMITATION!	The number of playlist files has reached the upper limit.	One card can store up to 999 playlist files. Delete files no longer needed or use a new card.
	READ ONLY PLAYLIST VERSION!	The playlist file is opened as read only because it is in a different version.	Playlists created on the AJ-SPD850, AJ-HPM100, AJ-HPM110 or AJ-HPS1500 can only be opened as read only files. To edit such files on this unit save them out.
	R-OUT POINT IS NOT AVAILABLE IN INSERT MODE	An insert edit cannot use a recorder OUT point.	Select some point other than the recorder OUT point in editing.
	WRITE PROTECTED!	The specified card is write protected.	Insert write-enabled media.

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-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 the fan motor stops. To continue operation, turn the power off and then back on again.	STOP
E-55	OPT SYS ERROR	Displayed when an AJ-YCX250G AVCHD codec board (optional) malfunctions. Turn the power off and then back on again.	STOP
E-56	OPT NOT RESPONSE	Displayed when an AJ-YCX250G AVCHD codec board (optional) does not respond to communications. Turn the power off and then back on again.	STOP
E-57	OPT HALT	Displayed when communications from an AJ-YCX250G AVCHD codec board (optional) cannot be updated. Turn the power off and then back on again.	STOP

AVCHD warning information (when the AJ-YCX250G AVCHD codec board (optional) is installed)

The following lists major warning messages displayed on the LCD monitor. For details on other warning messages, follow the instructions given in the messages.

Message	Description
CANNOT BE USED DUE TO INCOMPATIBLE DATA.	This data conforms to a different standard and cannot be used.
CANNOT PLAY.	Cannot play.
CANNOT SELECT MORE CLIPS.	Too many clips selected to delete.
CANNOT SET. THE NUMBER OF INDEXES HAS EXCEEDED THE MAXIMUM LIMIT.	Cannot make settings since the number of indexes exceeds the limit.
CARD ERROR. PLEASE REFORMAT.	Formatting failed. This card must be reformatted.
CHECK CARD.	Check the card.
CONTROL DATA ERROR HAS BEEN DETECTED.	A control data error was detected.
NO CARD	No card is inserted.
NO FILE.	The metadata file cannot be found.
REPAIR CLIP?	Repair clip?
THE CLIP IS PROTECTED. PLEASE CANCEL PROTECTION.	The clip is protected. Cancel protection.
THUMBNAIL DATA ERROR IS DETECTED.	A thumbnail data error was detected.
UNABLE TO FORMAT.	Cannot be formatted.
WRITE PROTECT	The card is write protected.

■ Error indication

These messages appear when malfunctions occur with the unit or an SD memory card. If the problem cannot be solved by turning the unit off and turning it back on, try replacing the card as directed, or consult your supplier.

Message	Description
CANNOT RECORD	Indicates that an error occurred during shooting.
REC WARNING	Indicates that an error occurred during recording. Rerecord the card. If the warning still persists, contact your supplier. Turn the power off if the warning continues.
SYSTEM ERROR TURN POWER OFF	Indicates that a system error occurred. Turn the power off and then turn it back on again. If this message occurred during SD memory card access, for example when a clip was deleted, the SD memory card may be damaged. Replace the SD card with a new one. Use the AVCCAM Restorer, a repair utility, if this message is output during a repair. → Refer to "Recovery of SD memory cards" (page 151).

Continuous playback of multiple clips may not be smooth in the transition between clips.
In the following cases, playback may stop briefly in the transition between clips during continuous playback of multiple clips.

■ Multiple recording formats

Recording mode = PH mode
Playback format = 1080/60i (30P)

Recording format PH 1080/60i → Recording format PH 1080/60i → Recording format PH 720/60P → Recording format PH 1080/60i

Plays back smoothly.

This format does not match the playback format and will not be played back.

Video stops briefly during the switch between clips.
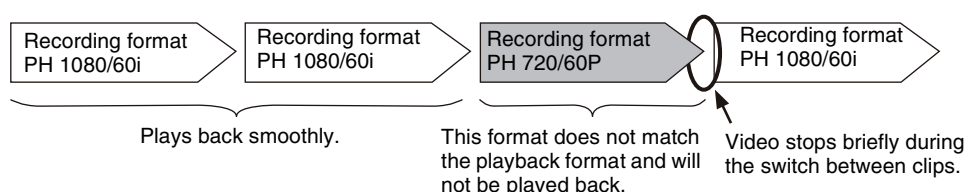
■ **Multiple recording modes**

Recording format = 1080/60i

Playback format = 1080/60i (30P)

Video stops briefly during the switch between clips.

Playback is smooth when going from HA mode to HG mode and from HG mode to HA mode.
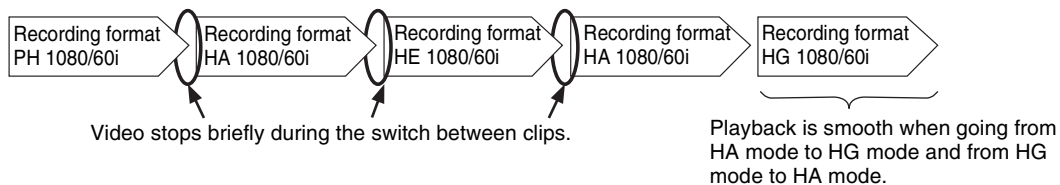
■ **When there are clips shorter than 3 seconds**

Plays back smoothly.

Video stops briefly during the transition between clips.
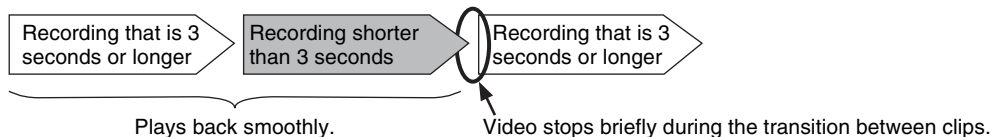
"HOURS METER" Information Display

Use the ▲/▼ buttons to move the cursor (*) and the item at the cursor appears on the counter display.

No.	Item	Description	Counter display
Ser	********	Displays the deck's serial number.	
H00	OPERATION	Indicates the number of hours that the unit has been on.	0h - 99999h
H20	LCD ON	Indicate the number of hours that the LCD monitor has been turned on.	0h - 99999h
H30	POWER ON	Indicates the number of times the power has been turned on.	0T - 99999T

◆ **NOTE:**

• The HOURS METER does not appear on the counter display when an error is indicated.

List of Shortcuts

■ When GUI display is on

Shortcut keys	Thumbnail GUI		Playlist GUI	
	Name	Description	Name	Description
SHIFT+ ▲ (UP)	TOP	Moves to first thumbnail.	TOP	Moves to first thumbnail.[*2] Moves to the top (video) track on the timeline.[*3]
SHIFT+ ▼ (DOWN)	BOTTOM	Moves to last thumbnail.	BOTTOM	Moves to last thumbnail.[*2] Moves to the bottom (A4) track on the timeline.[*3]
SHIFT+ ► (RIGHT)	BOTTOM	Moves to last thumbnail.	BOTTOM/ RIGHTMOST	Moves to last thumbnail.[*2] Moves to the rightmost event on the timeline.[*3]
SHIFT+ ◄ (LEFT)	TOP	Moves to first thumbnail.	TOP/LEFTMOST	Moves to the first thumbnail.[*2] Moves to the leftmost event on the timeline.[*3]
SHIFT+SET	MULTI SEL	Selects multiple thumbnails.	MULTI SEL	Selection of multiple thumbnails (player and thumbnail operation) Selection of multiple events (recorder)
Hold down the SET button for 1 second or longer.	---	---	SEQ SEL	Selection of events on the same position on the timeline (vertical line of matching IN and OUT points)
SHIFT+EXIT	CANCEL	Releases the selected item and interrupts copying and other operations.	CANCEL	Releases the selected item and interrupts copying and other operations.[*3]
SHIFT+MENU	OPERATION	Displays and selects OPERATION menu	OPERATION	Displays and selects OPERATION menu
SHIFT+PLAY	1 CLIP PLAY	Plays back only the clip at the cursor location (from the beginning to the end of the clip).	REVIEW	Reviews events at the cursor location.
SHFIT+IN	SLOT CLIP	Switches between thumbnail display of individual slot and selected clip. Changes with each press.	SLOT CLIP	Switches between thumbnail display of individual slot and selected clip. Changes with each press.[*3]
SHIFT+ENTRY	---	---	CLIP→LIST	Imports the selected clip as an event.[*2]
SHIFT+OUT	ALL CLIP	Switches to all clips thumbnail display.	ALL CLIP	Switches to all clips thumbnail display.
SHIFT+TRIM (+/–)	SLOT SELECT	Moves the recording slot forwards/ backwards.	SLOT SELECT	Moves the recording slot forwards/ backwards.[*2]
SHIFT+LAST X	DELETE	Deletes all selected clips.	DELETE	Deletes all selected events.[*3]
SHIFT+TC PRESET[*1]	CLIP PROPERTY	Shows properties of the clip at cursor location.	CLIP PROPERTY/ EVENT PROPERTY	Shows properties of the clip at cursor location.[*2] Shows properties of the event at cursor location.[*3]
SHIFT+RESET	---	---	NEW	Creates new playlists.

*1: When an AJ-YCX250G AVCHD codec board (optional) is installed, the unit can also operate in AVCHD mode.

*2: Player side, and on the thumbnail screen

*3: Recorder side

■ When GUI display is off

Shortcut keys	Name	Description
SHIFT+REW	PREV	Moves to the beginning of the previous clip (or text memo). [*1]
SHIFT+FF	NEXT	Moves to the beginning of the next clip (or text memo). [*1]
SHIFT+TRIM (+/−)	SLOT SELECT	Moves the recording slot forwards/backwards.

*1: When an AJ-YCX250G AVCHD codec board (optional) is installed, the unit can also operate in AVCHD mode.

List of Multiple Button Operations

■ When playlist GUI is on

Multiple button operation	Name	Description
IN+ENTRY	ENTRY IN POINT	Sets the IN point.
OUT+ENTRY	ENTRY OUT POINT	Sets the OUT point.
IN+OUT	DURATION	Displays duration between IN and OUT points.
IN+GOTO	SEEK TO IN POINT	Moves to the IN point.
OUT+GOTO	SEEK TO OUT POINT	Moves to the OUT point.
IN+TRIM (+/−)	IN TRIM	When an event is selected, the IN point of the event is trimmed. When no events are selected, the IN point is moved.
OUT+TRIM (+/−)	OUT TRIM	When an event is selected, the OUT point of the event is trimmed. When no events are selected, the OUT point is moved.
SHIFT+IN+TRIM (+/−)	IN TRIM	Trims IN points for both player and recorder.
IN+RESET	IN POINT RESET	Deletes the IN point.
OUT+RESET	OUT POINT RESET	Deletes the OUT point.
SHFIT+A1	A3	Selects/unselects A3 track.
SHFIT+A2	A4	Selects/unselects A4 track.
SHFIT+GOTO	A.DUB MODE	Starts/ends A.DUB mode.
SHIFT+PLAYER	SOURCE SELECT	Opens a menu for selecting devices to be used as a player.
SHIFT+PREVIEW	A LEVEL REC	Starts audio level recording of the area between the recorder IN point and OUT point.
SHIFT+REC	AUTO DUB	Records (dubs) playback of a playlist on a P2 card in AVCHD. [*1]

*1: When an AJ-YCX250G AVCHD codec board (optional) is installed, the unit can also operate in AVCHD mode.

■ When GUI display is off

Multiple button operation	Name	Description
IN+ENTRY	ENTRY IN POINT	Sets seek point (IN).
OUT+ENTRY	ENTRY OUT POINT	Sets seek point (OUT).
IN+OUT	DURATION	Displays duration between IN and OUT points (if not set, the current location).
IN+GOTO	SEEK TO IN POINT	Moves to seek point (IN).
OUT+GOTO	SEEK TO OUT POINT	Moves to seek point (OUT).
IN+TRIM (+/−)	IN TRIM	Trims the current seek point (IN).
OUT+TRIM (+/−)	OUT TRIM	Trims the current seek point (OUT).
IN+RESET	IN POINT RESET	Deletes seek point (IN).
OUT+RESET	OUT POINT RESET	Deletes seek point (OUT).

■ When thumbnail screen is on/off

Multiple button operation	Name	Description
SHIFT+REMOTE	MODE	Displays the mode (USB mode, LAN mode, etc.) selection menu.

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 P2 HD 5-year warranty 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 P2 HD 5-year warranty program

Check firmware version of the unit in the [PROPERTY] – [SYSTEM INFO] in the thumbnail 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 detailed information on the update procedure, visit the below site.

For English: http://pro-av.panasonic.net/

◆ **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.

Rack Mounting

This unit can be mounted into a 19-inch standard rack if optional rack-mounting adapters (AJ-MA75P) are used. For installation, it is recommended that the rail and the bracket for 18-inch length (part number C-300-S-118) of Chassis Track be used (The complete slide rail and bracket unit is not available from Panasonic).
For further details, consult your dealer.

Mounting the Recorder in the Rack

1 Attach the inner members of the slide rail.

The drawing below shows screw placement.

Screw placement on right (R) inner member
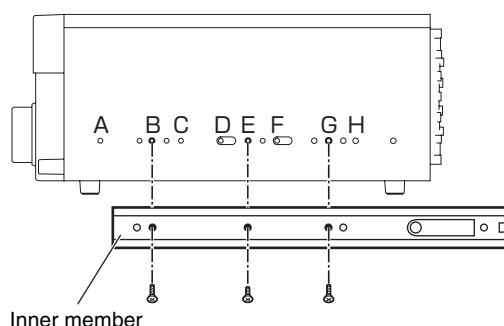
Inner member

◆ **NOTE:**

- Note that screw length is restricted.
  (B, G: 10 mm, E: 6 mm)
- Attach the left member (L) in the same way.
- Secure each inner member with 3 screws (a total of 6 screws).
- There is no alphabetic legend stamped on the side panels.

2 Attach the outer member brackets to the rack.

Check that the right and left brackets are the same height.

3 Remove the four screws on the front panel that attach the right and left side panels.

4 Use the removed screws to attach the AJ-MA75P rack mount adapter.

Rack mount adapter (AJ-MA75P)

Rubber feet (4 locations)
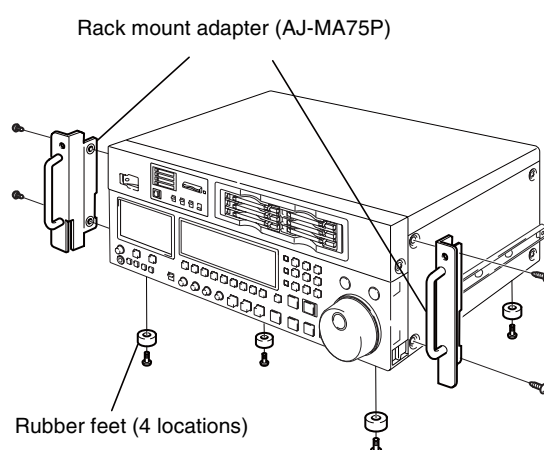
5 Remove the four rubber feet from the bottom of the recorder.

6 Fasten the recorder to the rack with securing screws.

Make sure that the recorder can be smoothly moved along the rail.
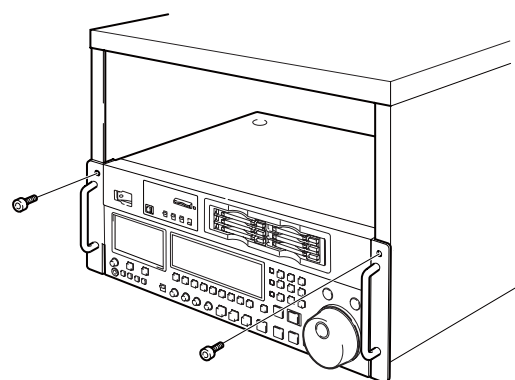
◆ **NOTE:**

- A temperature of between 5 °C to 40 °C (41 °F to 104 °F) should be maintained inside the rack.
- Bolt the rack securely to the floor so that it will not topple over when the recorder is pulled out.

Handling P2 Card Recording

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

■ Since the P2 format records data as files, it is ideally suited for PC processing. Video and audio are recorded in the MXF file format while the metadata is 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.

*1: This file contains the data for the last clip recorded on a P2 device.
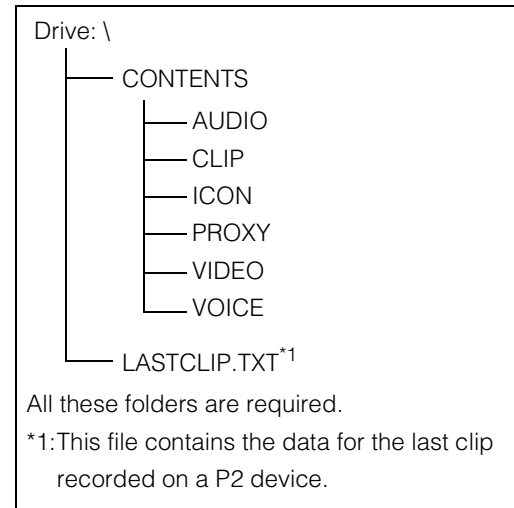
■ To prevent data loss in transferring P2 card data to a PC or write back PC data on a P2 card, use P2Viewer, which can be downloaded from the Web site listed below. For the operating environment of P2Viewer, visit also the Web site below.
For English: http://pro-av.panasonic.net/

■ 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.

Handling SD Memory Card Recording

The AVCHD format records data as files and is therefore ideally suited for PC processing. As shown in the figure to the right, the folder structure interrelates a variety of essential information not only audio and video. If any of this data is changed or lost, it will not be recognized as AVCHD data and the card may no longer be possible to use in an AVCHD device. To prevent data loss in transferring SD memory card data to a PC or when writing back PC data to an SD memory card, be sure to use AVCCAM Viewer, which you can download from the Web site below.

```
Drive: \
    └── PRIVATE
            └── AVCHD
                    ├── AVCHDTN
                    └── BDMV
                            ├── CLIPNF
                            ├── PLAYLIST
                            └── STREAM
```

For English: http://pro-av.panasonic.net/
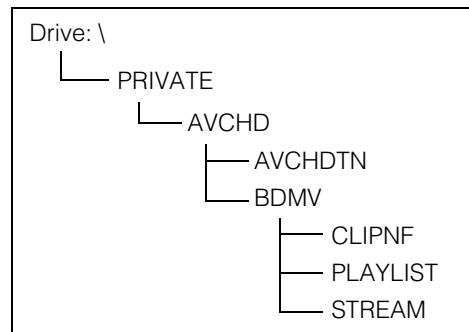
■ How this unit handles metadata

The metadata supported by this unit occupies a special area in the AVCD standard management file area. For this reason, using editing software and camera-recorders that do not support the metadata of this unit to delete and copy files, add and delete clip protect and other editing operations will delete the metadata area as well as shot marks, indexes, PH mode information, and other data created by this unit. Thus make sure that editing software or devices you use for editing support the metadata of this unit before you start editing.

Specifications

GENERAL

| Power supply: | 100-240 V AC, 50/60 Hz, |
| | 65 W (full options) |

☐ indicates safety information.

Operating ambient temperature:
 5 °C to 40 °C (41 °F to 104 °F)
Operating ambient humidity:
 10 % to 80 % (no condensation)
Ambient storage temperature:
 −20 °C to 50 °C (−4 °F to 122 °F)
Mass: 13 kg (28.66 lb)
Dimensions (W × H × D):
 424.0 mm × 175.2 mm × 414.7 mm
 ($16^2/_3$ inches × $6^8/_9$ inches × $16^1/_3$ inches)
 (not including the support legs, connectors
 and JOG dial)
Recording format: AVC-Intra100/AVC-Intra50/DVCPRO HD/
 DVCPRO50/DVCPRO/DV/AVCHD[*1]
 selectable
Recording video signal:
 1080/59.94i, 1080/23.98p, 1080/24p,
 1080/29.97p, 1080/25p, 1080/50i,
 720/59.94p, 720/50p, 480/59.94i, 576/50i
Recording audio signal:
 AVC-Intra100/AVC-Intra50/
 DVCPRO HD: 48 kHz 16bits 8CH
 DVCPRO50: 48 kHz 16bits 4CH
 DVCPRO/DV: 48 kHz 16bits 2/4 channels
 selectable
*1: When an AJ-YCX250G AVCHD codec board (optional) is installed.

Recording times:

Card	Recording format		
	AVC-Intra100/ DVCPRO HD	AVC-Intra50/ DVCPRO50	DVCPRO/DV
8 GB X 1	Approx. 8 minutes	Approx. 16 minutes	Approx. 32 minutes
16 GB X 1	Approx. 16 minutes	Approx. 32 minutes	Approx. 64 minutes
32 GB X 1	Approx. 32 minutes	Approx. 64 minutes	Approx. 128 minutes
64 GB X 1	Approx. 64 minutes	Approx. 128 minutes	Approx. 256 minutes

◆ **NOTE:**
• All of the above times apply when single clips are recorded
 continuously one after the other on the P2 card.
• Depending on the number of the clips to be recorded, the
 recordable time may be shorter than the times given above.

VIDEO

DIGITAL VIDEO

Sampling frequencies:
 AVC-Intra100/ DVCPRO HD:
 (59.94 Hz)
 Y: 74.1758 MHz
 P_B/P_R: 37.0879 MHz
 (50 Hz)
 Y: 74.2500 MHz
 P_B/P_R: 37.1250 MHz
 DVCPRO50:
 Y: 13.5 MHz
 P_B/P_R: 6.75 MHz
 DVCPRO:
 Y: 13.5 MHz
 P_B/P_R: 3.375 MHz
Quantizing: AVC-Intra100/AVC-Intra50: 10bits
 DVCPRO HD/DVCPRO50/DVCPRO/DV: 8bits

Video compression method:
 AVC-Intra100/AVC-Intra50:
 MPEG-4 AVC/H.264 Intra Profile
 DVCPRO HD:
 DV-Based Compression (SMPTE 370M)
 DVCPRO50/ DVCPRO:
 DV-Based Compression (SMPTE 314M)
 DV:
 DV Compression (IEC61834-2)
Color sampling: AVC-Intra100:
 $Y : P_B : P_R = 4 : 2 : 2$
Resolution: AVC-Intra 100:
 1920 × 1080 (1080/59.94i, 1080/50i)
 1280 × 720 (720/59.94p, 720/50p)
 AVC-Intra 50:
 1440 × 1080 (1080/59.94i, 1080/50i)
 960 × 720 (720/59.94p, 720/50p)

VIDEO INPUT

Analog composite input:

BNC × 1 (loop through × 1), automatic 75 Ω termination provided, 1.0 V[P-P] (75 Ω)

Reference input: Automatic switching of black burst/HD 3 value SYNC, BNC × 1 (loop through × 1), automatic 75 Ω termination provided

SDI input: BNC × 1, complies with SMPTE 292M/296M/299M during HD SDI input, complies with SMPTE 259M-C/272M-A, ITU-R BT.656-4 during SD SDI input

VIDEO OUTPUT

SD analog composite MON output:

BNC × 1 (superimpose ON/OFF)

HD SDI/SD SDI output (switchable):

BNC × 2, complies with SMPTE 292M/296M/299M during HD serial digital output, complies with SMPTE 259M-C/272M-A, ITU-R BT.656-4 during SD serial digital output

SD SDI MON output:

BNC × 1
Complies with SMPTE259M-C/272M-A, ITU-R BT.656-4

VIDEO ADJUSTMENT RANGES

Video output gain: Can be set to –∞ to +3 dB or –∞ to +6 dB depending on menu

Video output chroma gain:

–∞ to +3 dB

Video output HUE (chroma phase):

±30°

Video output setup level:

±10 %

Video output sync phase:

±15 µs

Video output SC phase:

±180°

AUDIO

DIGITAL AUDIO

Sampling frequencies:

48 kHz (synchronous with video)

Quantizing: 16 bits

Frequency response:

20 Hz to 20 kHz ±1.0 dB
(at the reference level)

Dynamic range: Better than 85 dB
(1 kHz emphasis off, "A" weighted)

Distortion: Less than 0.1 %
(1 kHz, emphasis off, reference level)

Crosstalk: Less than –80 dB
(1 kHz, between 2 channels)

Headroom: 12/18/20 dB selectable

De-emphasis: T1 = 50 µs, T2 = 15 µs (auto on/off)

AUDIO INPUT

Analog input (CH1, CH2):

XLR × 2, 600 Ω/high impedance selectable (factory setting: high impedance)
+4/0/–3/–20 dBu selectable

Digital input: BNC × 4 (CH1/2, CH3/4, CH5/6, CH7/8) AES/EBU format SMPTE276M

SDI input: BNC × 1, complies with SMPTE 292M/296M/299M during HD SDI input, complies with SMPTE 259M-C/272M-A (480/59.94i), ITU-R BT.656-4 (576/50i) during SD SDI input

AUDIO OUTPUT

Digital output: BNC × 4 (CH1/2, CH3/4, CH5/6, CH7/8) AES/EBU format SMPTE276M

SDI output: BNC × 2, complies with SMPTE 292M/296M/299M during HD SDI input, complies with SMPTE 259M-C/272M-A (480/59.94i), ITU-R BT.656-4 (576/50i) during SD SDI input

SD SDI MON output:

BNC × 1
Complies with SMPTE259M-C/272M-A, ITU-R BT.656-4

Analog output: XLR × 2, low impedance
+4/0/–3/–20 dBu selectable

Monitor output: XLR × 2, low impedance
+4/0/–3/–20 dBu selectable

Headphones: Stereo mini jack (3.5 mm diameter), 8 Ω, variable level

Other input/output

Time code input:	BNC × 1, 0.5 V[P-P] to 8.0 V[P-P], 10 kΩ
Time code output:	BNC × 1, 2.0 V[P-P] ±0.5 V[P-P], low impedance
RS-232C:	D-sub 9-pin, RS-232C interface × 1
RS-422A:	D-sub 9-pin, RS-422A interface × 1
Parallel:	D-sub 25-pin × 1
Remote encoder:	D-sub 15-pin × 1
USB 2.0:	Host × 1, Device × 1
LAN:	1000BASE-T/100BASE-TX/10BASE-T × 1
eSATA:	eSATA 3Gbit port × 1

Inrush current, measured according to European standard
EN55103-1: 7 A

Mass and dimensions are approximate values.

Specifications are subject to change without notice.

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HDD (USB or eSATA) Menu

NETWORK Menu

AVCHD Menu

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