Panasonic

■ This product is eligible for the P2HD 5 Year Warranty Repair Program. For details, see page 12.

Operating Instructions

Memory Card Portable Recorder/Player

P2HD

Model No. **AJ-HPM110P**

Model No. **AJ-HPM110E**

SDHC™

DEUTSCH	**Für Erlauterungen in Deutsch, konsultieren Sie bitte die mitgelieferte CD-ROM.**
FRANÇAIS	**Pour des explications en français, veuillez vous reporter au CD-ROM fourni.**
ITALIANO	**Per le istruzioni in italiano, vedere il CD-ROM in dotazione.**
ESPAÑOL	**Para la explicación en español, consulte el CD-ROM uministrado.**

AVC-INTRA DVCPRO HD DVCPRO 50 DVCPRO DV

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

• AVC-Intra capability is available when the optional AVC-Intra Codec board AJ-YBX200G is installed to the unit.

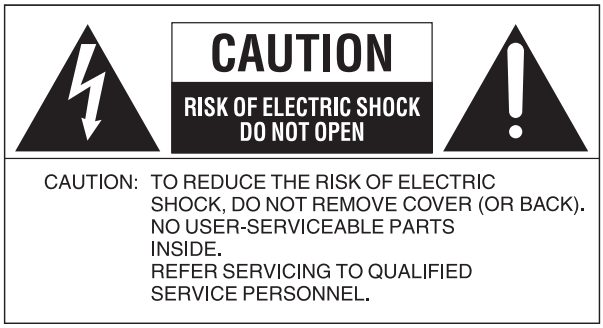
ENGLISH

S1207T0 -P D
Printed in Japan

VQT1Q19

Read this first!

For AJ-HPM110P



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.

■ 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.

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.

WARNING:

- **TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.**
- **TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, 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:

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 SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, 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.

The rating plate is on the underside of this equipment.

▭ indicates safety information.

For AJ-HPM110P

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.

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.

IMPORTANT

Unauthorized recording of copyrighted television programmes, video tapes and other materials may infringe the rights of copyright holders and contravene copyright laws.

<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.

For AJ-HPM110P

FCC NOTICE (U.S.A.)

Declaration of Conformity

Model Number:	AJ-HPM110P
Trade Name:	PANASONIC
Responsible Party:	Panasonic Corporation of North America
	One Panasonic Way, Secaucus, NJ07094
Support contact:	Panasonic Broadcast & Television Systems Company
	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, 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.

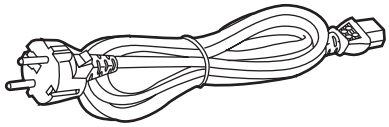
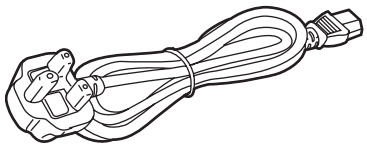
For AJ-HPM110E

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.	**FOR U.K. ONLY**
Not to be used in the U.K.	
	

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.

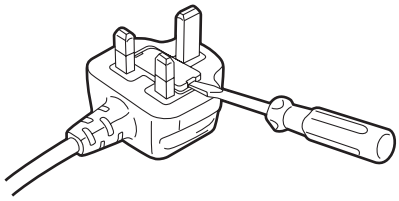
If the plug contains a removable fuse cover you must ensure that it is refitted when the fuse is replaced.

If you lose the fuse cover the plug must not be used until a replacement cover is obtained.

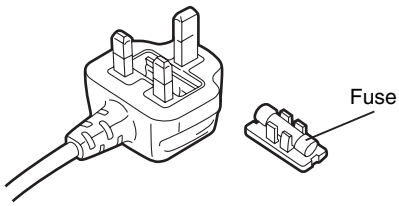
A replacement fuse cover can be purchased from your local Panasonic Dealer.

How to replace the fuse

1.Open the fuse compartment with a screwdriver.



2.Replace the fuse.



▭ indicates safety information.

For AJ-HPM110E

■ **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.

■ **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.

WARNING:

- **TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, DO NOT EXPOSE THIS EQUIPMENT TO RAIN OR MOISTURE.**
- **TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, 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 SHOCK HAZARD AND ANNOYING INTERFERENCE, USE THE RECOMMENDED ACCESSORIES ONLY.

CAUTION:

TO REDUCE THE RISK OF FIRE OR SHOCK HAZARD, REFER MOUNTING OF THE OPTIONAL INTERFACE BOARDS 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.

The rating plate is on the underside of this equipment.

IMPORTANT

Unauthorized recording of copyrighted television programmes, video tapes and other materials may infringe the rights of copyright holders and contravene copyright laws.

Operating precaution

Operation near any appliance which generates strong magnetic fields may give rise to noise in the video and audio signals. If this should be the case, deal with the situation by, for instance, moving the source of the magnetic fields away from the unit before operation.

Attention

Battery is used for the memory back-up in the product.
At the end of its useful life, you should not throw it away.
Instead, hand it in as small chemical waste.

Attentie

Voor het reservegeheugen van het apparaat wordt gebruik gemaakt van een batterij.
Wanneer de batterij uitgeput is, mag u deze niet gewoon weggooien, maar dient u hem als klein chemisch afval weg te doen.

indicates safety information.

Contents

Using Play List

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.
   Details on GPL and LGPL 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.)
   To obtain the source codes, go to the following home page:
   https://eww.pavc.panasonic.co.jp/pro-av/
   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.
   Details on MIT-License 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 images and/or sound were not recorded as you intended due to problems with this unit or P2 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 computer 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 computers (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.

*SDHC logo is a trademark.

Accessories

Included Accessories

Power cord 1 (AJ-HPM110P)
2 (AJ-HPM110E)
CD-ROM 1
Ferrite core* 4

* Attach a ferrite core at each cable end when making cable connections to the USB2.0 connector.

Optional Accessories

- AVC-Intra Codec board
  AJ-YBX200G

◆ **NOTE:**

- Do not use optional boards other than the above product.

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 a 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 see web site below for details. *2: Not all models eligible for extended warranty coverage. *3: The basic warranty period may vary depending on the country/region see enclosed warranty for warranty coverage. *4: Not all repair work is covered by this extended warranty see enclosed warranty card for warranty coverage. *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.

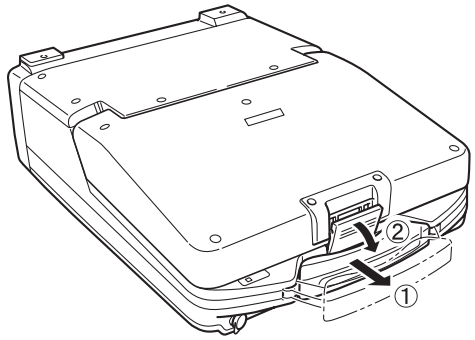
Opening and Closing the Top Panel

◆NOTE

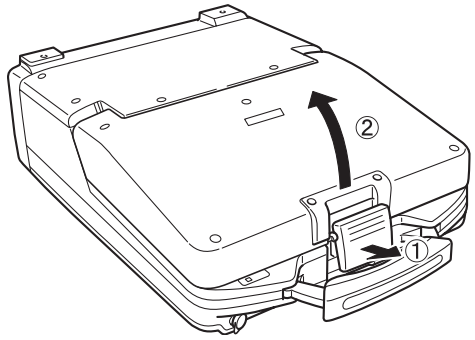
- Take care to avoid pinching your fingers when opening and closing the top panel.
- Check that the card lock is set to on before closing the top panel. Be sure to set the card lock to on before closing the top panel. Never use force to close it when the lock is not set to on as this will damage the unit.

Opening the Top Panel

1 Pull out the handle, then pull the top of the lever towards you to release the lock.

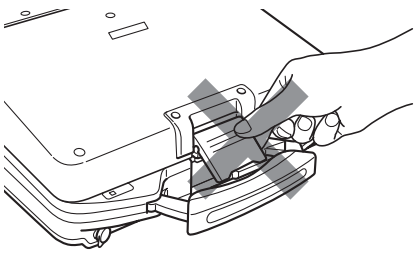


2 Free the bottom of the lever. Then hold the top panel and raise it to open.



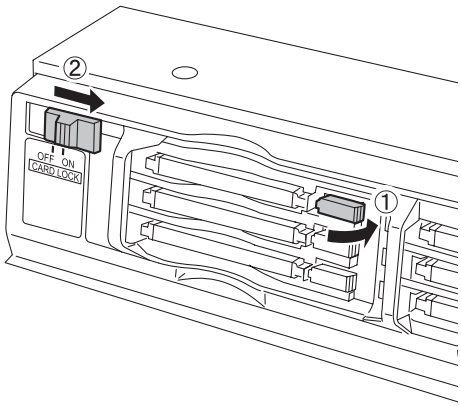
◆NOTE

- Do not expose the lever to excessive force.

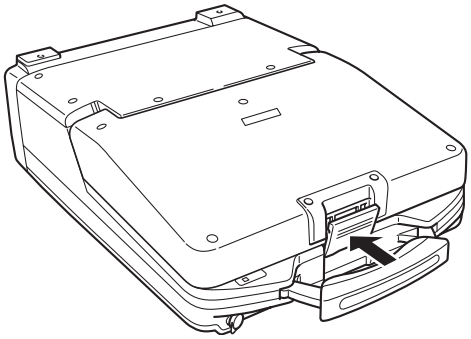


Closing the Top Panel

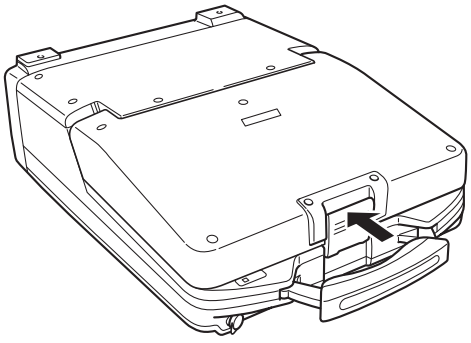
1 Make sure the EJECT button is folded downwards.
If not folded, fold the EJECT button to the right and set the card lock to on.



2 Close the top panel and engage the bottom of the lever with the receptacle in the lower portion of the panel assembly.



3 While making sure that the bottom of the lever has been properly seated, press the top of the lever towards the rear to lock it.

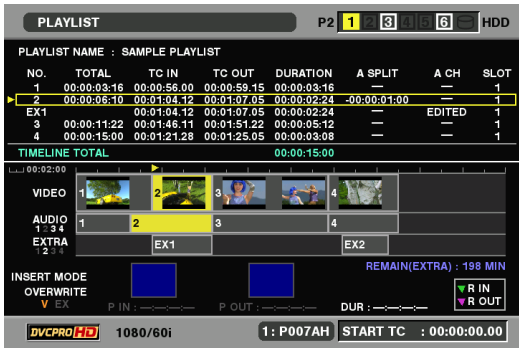


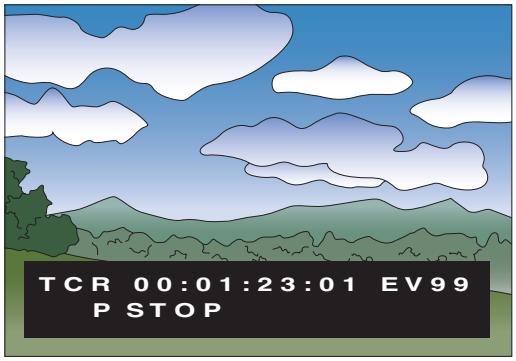
Introduction

Features

The AJ-HPM110 is a portable memory card recorder/player equipped with six P2 card (*) slots and a 9-inch color LCD monitor. Capability to record and play back audio and video in the compressed DVCPRO HD, DVCPRO50, DVCPRO/DV and AVC-Intra (option) formats on six P2 cards (*) allows you to use the unit like a conventional editing VTR player. The AJ-HPM110 comes with the following features.

MEMO: A memory card with the “P2” logo (for example, the separately sold AJ-P2C032RG) is referred to as a “P2 card” in this manual.





■ Connecting a P2 Card Camera

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

● P2 card and recording times

Recording time on a single 32 GB P2 card

HD mode			
Video format	Recording format and recording times		
	DVCPRO HD	AVC-Intra100[*1]	AVC-Intra50[*1]
1080-59.94/ 50i[*2]	Approx. 32 min.	Approx. 32 min.	Approx. 64 min.
1080-30PN/ 25PN (Native)	----	Approx. 32 min.	Approx. 64 min.
1080-24PN (Native)	----	Approx. 40 min.	Approx. 80 min.
720-59.94P/ 50P[*2]	Approx. 32 min.	Approx. 32 min.	Approx. 64 min.
720-30PN/ 25PN (Native)	Approx. 64 min.	Approx. 64 min.	Approx. 128 min.
720-24PN (Native)	Approx. 80 min.	Approx. 80 min.	Approx. 160 min.

*1 Assumes installation of an AJ-YBX200G AVC-Intra Codec board.

*2 Includes recording of DVCPRO HD with pull-down at 30P, 24P and 25P.

SD mode			
Video format	Recording format and recording times		
	DVCPRO 50	DVCPRO[*3]	DV[*3]
480-59.94i/ 576-50i[*4]	Approx. 64 min.	Approx. 128 min.	Approx. 128 min.

*3 For 2-channel audio recording

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

◆ NOTE:

- This unit supports the following P2 cards.
  - ·AJ-P2C004HG(4GB)
  - ·AJ-P2C008HG(8GB)
  - ·AJ-P2C016RG(16GB)
  - ·AJ-P2C032RG(32GB)

  (These are the card types that will available in January 2008. This is subject to change with the introduction of cards of higher capacity.)

  This unit cannot use AJ-P2C002SG (2 GB) cards.
- The recording time of 16 GB, 8 GB and 4 GB P2 cards are 1/2, 1/4 and 1/8, respectively of that provided by a 32 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.
English: https://eww.pavc.panasonic.co.jp/pro-av/

■ 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

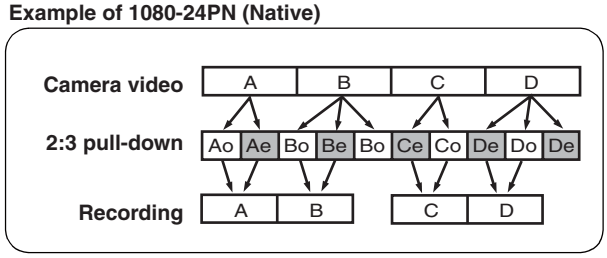
The unit provides support for native recording, a mode that records only active frames. This provides longer recording time when a VariCam, AJ-HPX2000/2100 or AJ-HPX3000 is connected to the HD-SDI IN connector. Variable frame rate (VFR) recording becomes possible by connecting a VariCam.

● Native recording defined

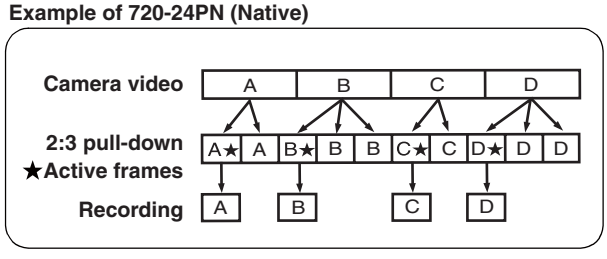
Native recording extracts only the active frames during 1080i AVC-Intra (requires optional board) recording as well as 720P DVCPRO HD and AVC-Intra (requires optional board) recording. At 720P, this lengthens the recording time 2 to 2.5 times over pull-down recording.

Even during native recording at a system frequency of 59.94 Hz or 50 Hz, the unit will still produce pull-down output.

Example of 1080-24PN (Native)



Example of 720-24PN (Native)



■ Film-style cine-like gamma correction

The unit is capable of correcting video shot using the film-style cine-like gamma mode provided by variable frame rate cameras to create film-quality video.

■ 9-inch Wide LCD Monitor

A 9-inch wide LCD monitor is provided for ease of viewing HD video.

■ Dial Jog/Dial Shuttle

The jog provides slow playback[*1] 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.

*1 When 59.94, 50, 29.97, 25 or 60-25 is selected in setup menu No. 25 SYSTEM FREQ.

■ Thumbnails for Managing Clips Visually

The 9-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 added 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.

■ Control of external devices

The RS-422A and IEEE1394 interfaces enable control of a connected device. RS-422A enables automatic capture of audio and video by specifying IN/OUT on an external device.

■ Creating Play Lists and the Playback Function

You can select video and audio recorded on the P2 cards installed in the unit for playback in the desired order.

● A wealth of play list editing functions

- Audio IN point split: The play list makes it possible to move the audio IN point forward or backward relative to the video IN point.
- Voice-over: Separately recorded audio data can replace an audio segment on one or two channels during playback.
- AV overwrite editing: This feature allows you to overwrite edit and play back any audio and video segment (for 2 channels) on the play list.

■ 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.

■ Support for 59.94 Hz, 50 Hz, 23.98 Hz, 24 Hz and 25 Hz HD/SD

This unit can record and play back 59.94 Hz, 50 Hz, 23.98 Hz, 24 Hz and 25 Hz HD and SD video.

It can also handle analog video, SDI as well as IEEE1394 input and output.

■ High-quality 8-channel digital audio

8-channel PCM audio where each channel (HD SDI has 8 independent channels while the analog interface has 4 independent channels) can be recorded separately or mixed.

■ Built-in up and down cross conversion

Built-in up and down cross conversion playback function is provided as standard.

■ Menu-based Setup

Perform setup while viewing the setup menus on the 9-inch color LCD monitor of this unit or a monitor TV display.

■ Hard Disk connection permits saving card data to disk

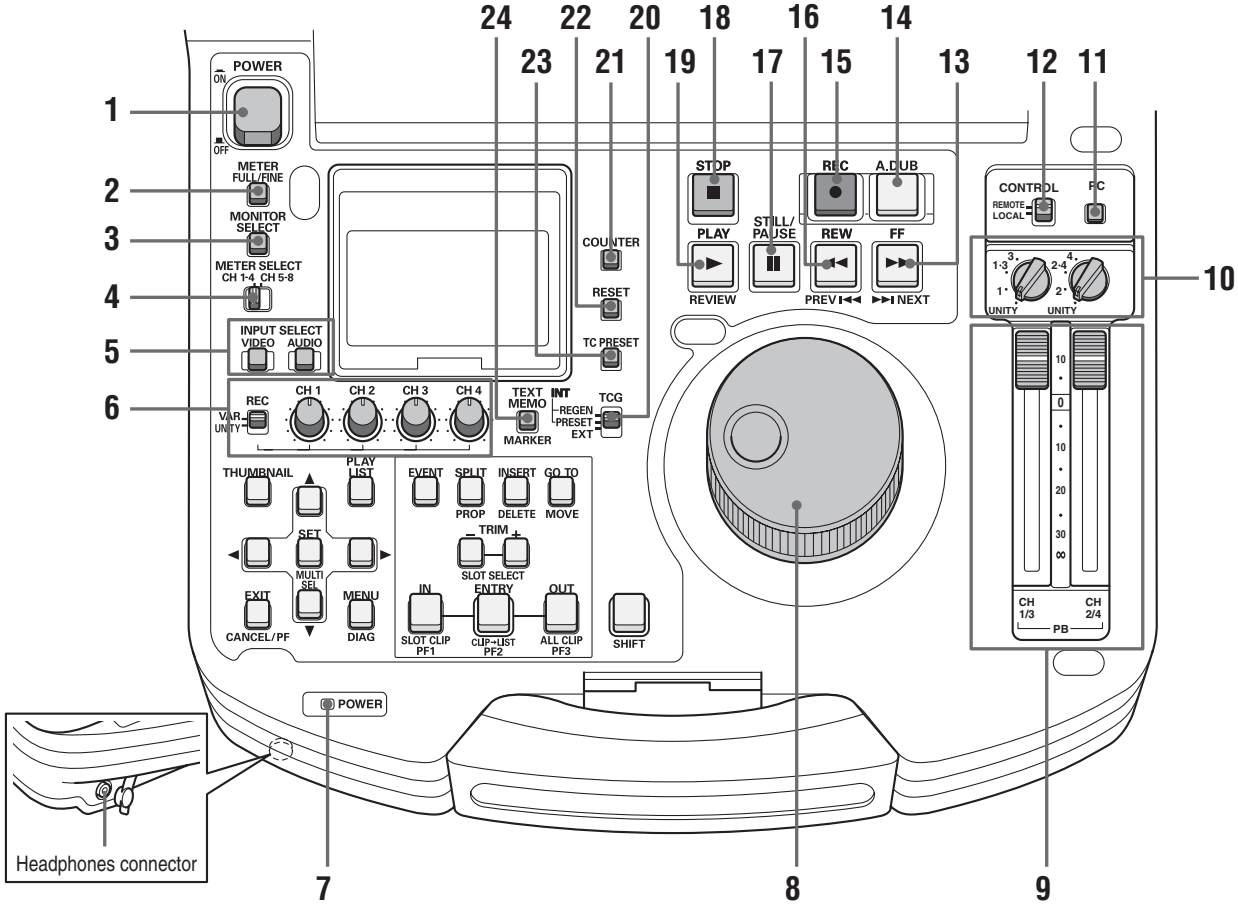
Card data can be saved onto a hard disk that is equipped with a USB 2.0 interface. Data stored on HDD can be written back to a card. A USB 2.0 connection with a PC allows you to use P2 cards inserted in the slots on this unit as mass storage. This setup provides direct nonlinear editing.

■ AVC-Intra Codec Option Supported

The addition of an optional AVC-Intra Codec board AJ-YBX200G will enable use of the AVC-Intra Codec.

Control Reference Guide

Audio and Video Controller



1. POWER switch

Turns the power on and off.

2. 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 scale divided into 0.5 dB increments. " ▬ " indicates reference level (as set in setup menu) on a scale divided into 0.5 dB increments.

3. AUDIO MONITOR SELECT button

Switches the audio signals to be output to the MONITOR L/R connectors and the headphones jack. Each press of the button switches the output signals to the MONITOR L/R connectors and the headphones jack as described below.

When the METER SELECT switch is set to CH 1 to 4:	[CH1 / 2]→[CH3 / 4]→ [CH1 / 1]→[CH2 / 2]→ [CH3 / 3]→[CH4 / 4]→ [CH1+2 / 1+2]→ [CH3+4 / 3+4]
When the METER SELECT switch is set to CH 5 to 8: (selectable only with HD format)	[CH5 / 6]→[CH7 / 8]→ [CH5 / 5]→[CH6 / 6]→ [CH7 / 7]→[CH8 / 8]→ [CH5+6 / 5+6]→ [CH7+8 / 7+8]

The L/R lamps in the audio level meter indicate which signal is selected.

4. METER SELECT switch

Switches to CH1-4 or CH5-8 in the audio meter and the monitor.

5. INPUT SELECT buttons

Switch between video and audio input signals. You can also switch the input signals to internal signals selected in setup menu No. 601 (VIDEO INT SG).

VIDEO:	Each press of the VIDEO button switches the input video signal in the following order: [CMPST] → [SDI] → [1394] → [SG]. When SG is selected, the signal switches to the internal signal selected in setup menu No. 601 (VIDEO INT SG).
AUDIO:	Each press of the AUDIO button switches the input audio signal in the following order: [ANALOG] → [SDI] → [SG]. When VIDEO is set to 1394, AUDIO is forcibly set to 1394.

◆ **NOTE:**

- Switching of input signals is not available when the THUMBNAIL and PLAY LIST buttons are on.
- The INPUT TRACK setting is available in overwrite mode when the PLAY LIST button is on.

→For details, refer to “Setting Tracks for Overwriting” (page 87).

6. AUDIO REC VOL SEL switch

UNITY/VAR switch

UNITY:	Records the audio signals at a fixed level regardless of the positions of the audio level controls.
VAR:	Records audio signals at the level set with the audio level controls.

Audio level controls

Use these controls to adjust the recording levels of the audio signals (CH1/CH2/CH3/CH4). However, the recording level cannot be adjusted during 1394 input.

7. POWER indicator

Lights when the power is on.

8. Search dial

Use to search and check video. Each press of the dial alternates it between SHTL (shuttle) 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.

9. Audio playback level controls

Adjust the playback level of audio signals (of channels selected using the UNITY/VAR channel select switch). However, they cannot adjust the playback level of 1394 output signals. CH5 to 8 are at all times played back at a fixed level.

10. UNITY/VAR channel select switches

UNITY:	Plays back audio signals at a fixed level regardless of the positions of the audio level controls.
1(2):	Plays back and outputs audio CH1(2) at the level adjusted using the audio level controls to CH1(2) and at a fixed level to CH3(4).
1+3 (2+4):	Plays back and outputs audio CH1(2) and CH3(4) at the level adjusted using the audio level controls to CH1(2) and CH3(4).
3(4):	Plays back and outputs audio CH3(4) at the level adjusted using the audio level controls to CH3(4) and at a fixed level to CH1(2).

11. PC button

Switches between the USB host mode for connecting to a hard disk drive and the USB device mode for connecting to a personal computer.

Press this button to open the mode selection screen on the LCD monitor and select the desired mode.

→For details, refer to “Using USB Connectors” (page 103).

12. CONTROL switch

Use this switch to enable remote control of this unit via the 9-pin REMOTE.

13. FF/NEXT buttons

Press to fast forward. Select the speed in setup menu No. 102 (FF. REW MAX). In the playback mode, hold down the SHIFT button and press the FF button to move to the beginning of the next clip.

During GUI display (thumbnail display and play list display), hold down the SHIFT button and press the FF button to move to the last thumbnail or event.

14. A. DUB button

Press this button to make a voice over recording in the play list mode, or to overwrite copy an event audio to an EXTRA track.

→For details, refer to “Simplified Voice-Over” (page 95), and “Copying Event Audio to EXTRA track” (page 87).

15.REC button

Press this button and the PLAY button simultaneously to start recording. Press this button during playback mode to check EE mode video and audio on the monitor (EE mode is not available during IEEE1394 input). Press the STOP button to return to the original video and audio.

To start AUTO CAPTURE when the unit is controlled from an external device, hold down the SHIFT button and press the REC button.

→Refer to “External Remote Control” (page 113).

16.REW/PREV button

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

During playback, hold down the SHIFT button and press the REW button to move to the beginning of the current or previous clip.

During GUI display (thumbnail display and event list display), hold down the SHIFT button and press the REW button to move to the first thumbnail or event.

17.STILL/PAUSE button

Press this button to engage the search mode and display a still picture. In the search mode, you can use the search dial for JOG and SHTL (shuttle) operations.

18.STOP button

Press this button to stop. When the setting in setup menu No. 122 (STOP EE SEL) is PB, you can monitor still pictures and when set to EE, you can monitor input video.

19.PLAY/REVIEW button

Press to start playback.

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

When the play list is displayed, hold down the SHIFT button and press this button to review (playback starting 3 seconds before the IN point continuing to 1 second beyond the OUT point) an event at the pointer position. The overwrite edit mode permits preview of unfinalized events.

To play back the clip at the cursor location in the thumbnail screen, hold down the SHIFT button and press this button.

20.TCG switch

INT REGEN:	The internal time code generator synchronizes with the time code read by the time code reader from the P2 card. Select whether to make TC or UB the REGEN in setup menu No. 505 (TCG REGEN).
INT PRESET:	Uses the internal time code generator of this unit. Settings can be preset on the operation panel and the remote control panel. →Refer to “Time Code, User Bit and CTL” (page 142).
EXT:	Uses the external time code input from the TIME CODE IN connector or video signal VITC, SLTC, SVITC and IEEE1394 digital input connectors. Select in setup menu No. 507 (EXT TC SEL).

21.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)].

22.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 points in play lists, etc.

23.TC PRESET button

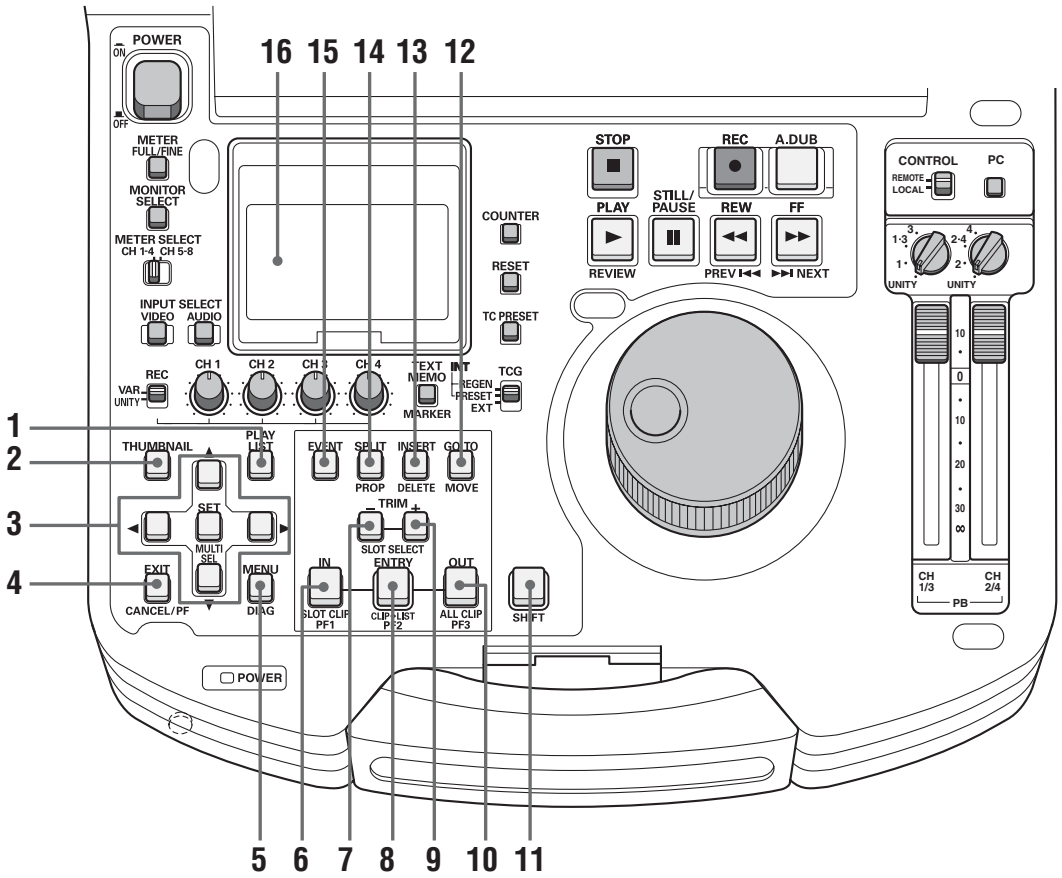
Set the TC (read time code) or UB (user bit of read time code) value.

To make a setting, first press this button to change the flashing digits. However, this function is not available while in thumbnail mode, play list mode, and USB host mode.

24. TEXT MEMO/MARKER button

TEXT MEMO:	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 at the start of a clip. →For details, refer to “Attaching Text Memos” (page 50).
MARKER:	In the thumbnail screen, while pressing the SHIFT button, press this button to turn marker display of the clip at the pointer position on and off. →For details, refer to “Attaching Shot Marks” (page 51).

GUI Operations



1. PLAY LIST button

Press to create play lists or to play a created play list. The PLAY LIST button lights and the play list screen appears on LCD panel or on a monitor output image. Press again to exit the play list screen. The PLAY LIST button goes off.

A play list menu setting makes it possible to select whether ending playback in the play list screen should return you to the play list screen or show a still image.

2. THUMBNAIL button

Press this button and the THUMBNAIL button lights and the thumbnail screen appears on LCD panel or on a monitor output image. Press again to exit the thumbnail screen and return to the previous screen. The THUMBNAIL button goes out.

3. Cursor buttons

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

4. EXIT/CANCEL/PF button

When the PLAY LIST/ THUMBNAIL buttons are lit:	Press to return to the thumbnail display from property. Selecting [EXIT] in a menu has the same effect as pressing the SET button. Hold down the SHIFT button and this button simultaneously to cancel an action (for example, canceling the selection of an item).
When the PLAY LIST/ THUMBNAIL buttons are off:	Press this button and buttons 6, 8 and 10 will function as the PF1, PF2 and PF3 keys. Press this button again before pressing another button to exit this mode.

5. MENU/DIAG button

MENU button

Press this button to open the MENU. Press again to return to the previous screen.

DIAG (SHIFT+MENU) button

Press to show information about this unit. Press again to return to the previous screen. However, this function is not available while thumbnails or play lists are displayed.

Information about this unit includes [VIDEO SYSTEM], [HOURSMETER], [WARNING], [UMID] and [DIF]. Use the SET button or cross 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.
[DIF] screen:	Shows various information on the current DIF (the IEEE 1394 interface).

6. IN/SLOT CLIP/PF1 button

Use these functions to create play lists. Press the ENTRY button and this button simultaneously when registering an event (when the PLAY LIST button and the EVENT button are both on) to set an event IN point. Hold down this button and press the RESET button to cancel the IN point of the selected event.

→Refer to the Section “Using Play List” (page 67).

- Press the SHIFT button and this button simultaneously while thumbnails are displayed to switch the clip display between SELECTED and specific SLOT.
- Press the ENTRY button and this button simultaneously when the PLAY LIST button is off to register a cue-up point.
- Press this button after the PF button when the THUMBNAIL and PLAY LIST buttons are off to obtain access to the setup menu registered using the PF1 button.

7. TRIM–/SLOT SELECT– button

Hold down the IN, OUT or SPLIT button and press this button in play list mode to shift the IN, OUT and SPLIT points 1 frame backward (4 frames at 24PN).

Hold down the SHIFT button and this button simultaneously when the PLAY LIST button is off 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.

8. ENTRY/CLIP (LIST/PF2 button)

Use these functions to create play lists.

Pressing the IN, OUT or SPLIT button simultaneous with this button while registering an event (the PLAY LIST and EVENT buttons are on), allows you to set the IN, OUT and SPLIT points.

- Pressing the SHIFT button simultaneous with this button in the play list mode allows you to add a clip selected from a thumbnail display to the play list.
- Press this button after the PF button when the THUMBNAIL and PLAY LIST buttons are off to obtain access to the setup menu registered using the PF2 button.

9. TRIM+/SLOT SELECT+ button

Hold down the IN, OUT or SPLIT button and press this button in play list mode to shift the IN, OUT and SPLIT points 1 frame forward (4 frames at 24PN).

While the PLAY LIST button is off, 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.

10. OUT/ALL CLIP/PF3 button

Use these functions to create play lists. Press the ENTRY button and this button simultaneously when registering an event (when the PLAY LIST button and the ENTRY button are both on) to set an event OUT point.

Hold down this button and press the RESET button to cancel the OUT point of the selected event.

→For details, refer to “Using Play List” (page 67).

- Press the SHIFT button and this button simultaneously while thumbnails are displayed to return the clip display to ALL.
- Press the ENTRY button and this button simultaneously when the PLAY LIST button is off to register a cue-up point.

- Press this button after the PF button when the THUMBNAIL and PLAY LIST buttons are off to obtain access to the setup menu registered using the PF3 button.

11. SHIFT button

Use this button together with the FF, REW and SET buttons.

12. GO TO/MOVE button

Use this button to move the IN, OUT, or SPLIT point of events registered in a play list. It can also be used for CUE UP when the THUMBNAIL and PLAY LIST buttons are off. Hold down the IN/OUT button and press the GO TO button to move and cue up to the IN and OUT points. Hold down the SHIFT button and press this button in the play list mode to move events.

→For details, refer to “Using Play List” (page 67).

13. INSERT/DELETE button

Use this button to insert a new event between events in the play list (when set to the insert edit mode).

Also use to select audio and video to overwrite event audio and video (when set to the overwrite edit mode).

Hold down the SHIFT button and press this button (DELETE) when thumbnails are displayed to delete a selected clip.

In the play list, hold down the SHIFT button and press this button to delete a selected event.

→For details, refer to “Using Play List” (page 67).

The DELETE button allows you to perform on-screen keyboard and file delete operations.

14. SPLIT/PROP button

Press the ENTRY button and this button simultaneously in the play list register mode to register an event after shifting the audio IN point relative to the video IN point.

Press the SHIFT button and this button simultaneously during thumbnail, or play list display (when no menu is displayed) to show the property of a clip or an event.

15. EVENT button

Press this button when the PLAY LIST button is on to light the EVENT button. This engages the play list event register/edit modes and allows you to set the IN, OUT, and SPLIT points.

Press again to exit the event register/edit mode and return to the previous screen. The EVENT button goes out.

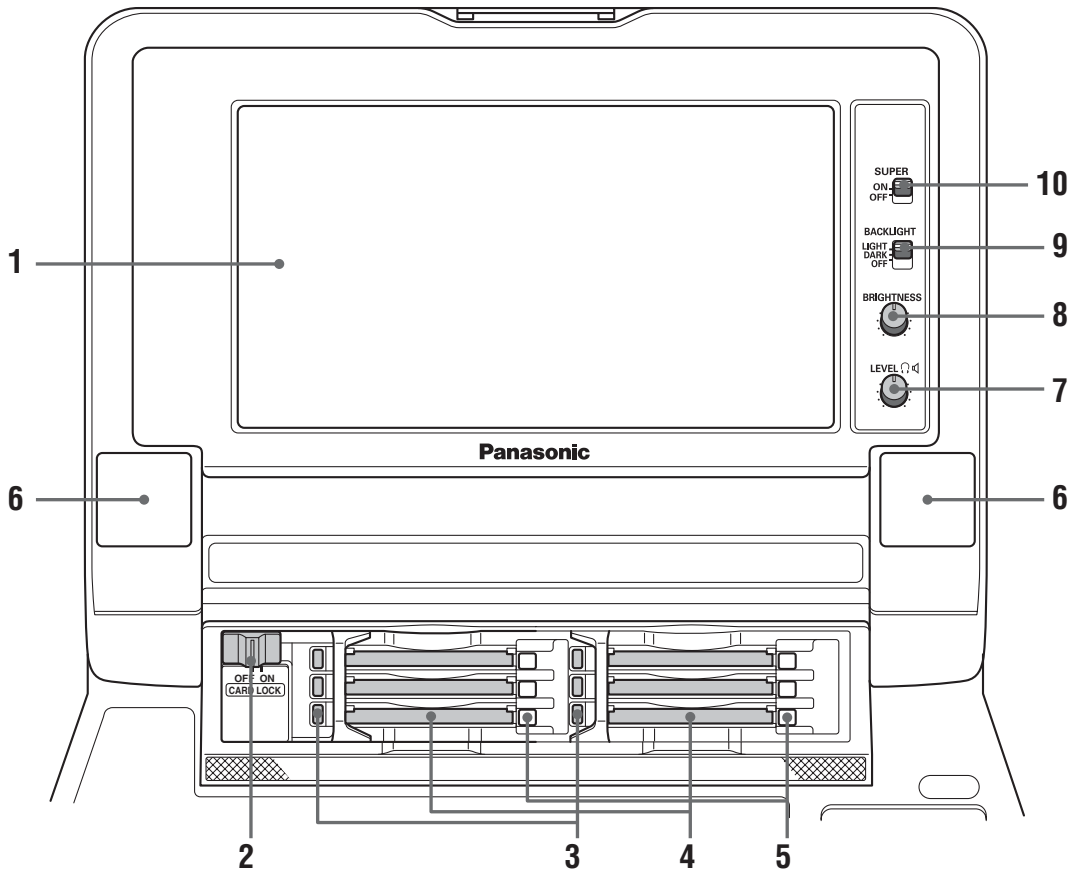
Use the EVENT button to enable control of an external device connected to the unit via the RS-422A or IEEE1394 interface when the THUMBNAIL and PLAY LIST buttons are off.

→Refer to “External Remote Control” (page 113).

16. LCD panel

→For details, refer to “LCD Panel” (page 25).

Panel Control Unit and Card Slots



1. 9-inch Color LCD Monitor

Thumbnail screens facilitate video searches and checks.

2. Card Lock

This lever locks the cards in place when the top panel is closed. Set the lever to ON before closing the top panel.

3. P2 Card Access LEDs

These LEDs indicate P2 card status.

→For details, refer to “P2 Card Access LEDs and P2 Card Status” (page 35).

4. P2 Card Slots

Insert P2 cards into these slots.

Firmly insert the card until the EJECT button pops out. After inserting a card, fold the EJECT button downward.

5. 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.

→For details, refer to “P2 Card Access LEDs and P2 Card Status” (page 35).

6. Stereo speakers

Outputs the audio monitor sound.

7. LEVEL control

Adjusts the sound volume of the internal speaker and headphones.

8. BRIGHTNESS control

Adjusts the brightness of the LCD monitor.

However, it cannot adjust the brightness of time codes and other superimposed indications.

9. BACKLIGHT switch

Switches the brightness of the LCD panel backlight as shown below.

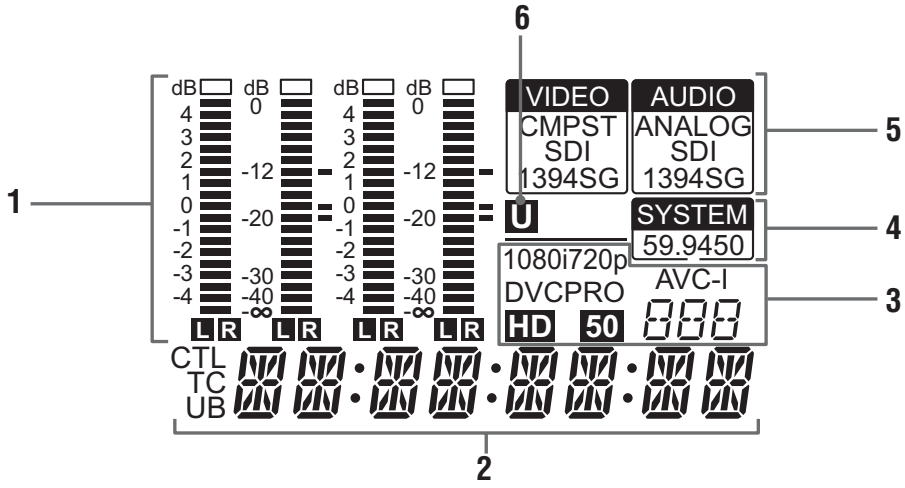
LIGHT:	Bright
DARK:	Dark
OFF:	Turns the LCD off

10. SUPER switch

Switches the super output as follows.

ON:	Outputs the time code and other superimposed information to the LCD monitor and monitor output image.
OFF:	Does not output any superimposed information.

LCD Panel

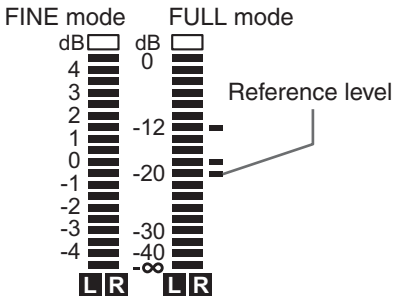


1. Level meter

Indicates the level of audio signals for CH1, CH2, CH3 and CH4.

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

Use the METER selector button to switch the audio level display to FULL mode or FINE mode. Use the setup menu to change the reference level.



2. Counter display

This function shows the counter and time codes.

It displays CTL (relative position from the beginning), TC (read time code) and UB (user bit of the read time code).

3. Format display

Indicates the set record format and the format of video recorded on an inserted P2 card.

4. TV system display

Indicates the selected TV system. Use the SYSTEM setting in setup menu No. 25 SYSTEM FREQ to switch between 59.94 Hz, 50 Hz or other settings.

59.94:	Lights when a 59.94 Hz system frequency is selected.
50:	Lights when a 50 Hz system frequency is selected.

◆ **NOTE:**

- When a frequency other than 59.94 Hz and 50 Hz is selected, also the SYSTEM indicator goes off.

5. INPUT SELECT display

Indicates selected VIDEO and AUDIO status. Except for analog audio signals, the indicator flashes when there is no input for the selected signal.

When SDI input is selected, this display flashes if the input signal is not compatible with the system format.

VIDEO	
CMPST:	Analog composite video input signals
SDI:	Serial digital video input signals
1394:	IEEE1394 input signals
SG:	Internal reference signals

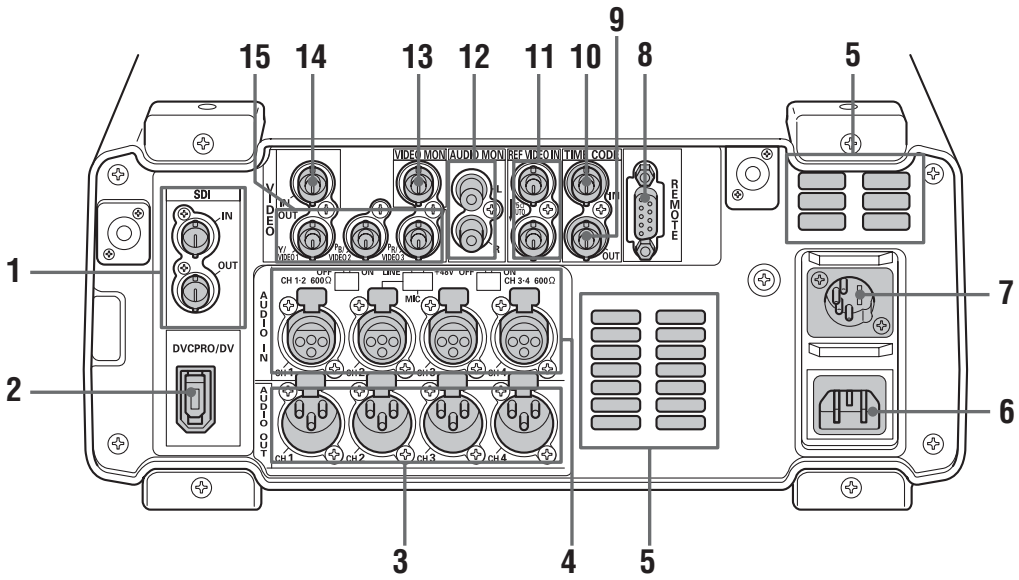
AUDIO	
ANALOG:	Analog audio input signals
SDI:	Serial digital audio input signals
1394:	IEEE1394 input signals
SG:	Internal reference signals

6. 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.

Rear Panel



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

These connectors enable input and output of serial digital component audio and video signals.

◆ **NOTE:**

- 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 or equivalent double-shielded cable to make connections to the SERIAL DIGITAL COMPONENT connector.

2. IEEE 1394 digital input/output

This is an IEEE1394 digital interface. It inputs/outputs IEEE1394 compressed digital signals that comply with the IEC61883-1, IEC61883-2 and SMPTE396M standards. Use 6-pin connectors. This connector does not support bus power.

◆ **NOTE:**

- Use a double-shielded cable to make connections to the IEEE1394 digital input/output connector.
- AVC-Intra 50 and AVC-Intra 100 (optional) recording and playback do not support input/output via the IEEE 1394 connector.
- No input or output is available via the IEEE1394 connector when something other than 59.94 or 50 is selected in setup menu No. 25 SYSTEM FREQ.

3. ANALOG AUDIO OUT connectors

Output analog audio signals.

4. ANALOG AUDIO IN connectors/impedance switches/CH2 input switches

Analog audio input connectors

The input impedance of CH1-2 to CH3-4 can be switched. The LINE, MIC and 48V switches make it possible to use CH2 as a microphone input.

LINE:	Line input for audio input signals from audio device
MIC:	Audio input signal from microphone with internal power supply (this unit does not provide phantom microphone power).
+48 V:	Audio input signal from microphone with external power supply (this unit provides phantom microphone power).

5. 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.

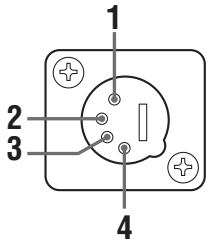
6. AC IN socket

Connect the supplied power cord to a power outlet.

7. DC IN socket

Connect a 12 V DC power supply here. Use an external 12 V DC, 4.8 A (15 A peak or more) DC power supply. When the voltage goes below approx. 10.6 V, the power supply of this unit shuts down (when menu No. 180 BATTERY SEL is not “TYPE-A” or “TYPE-B”). The unit does not automatically recover when the power comes back on. First turn the POWER switch off, wait a few seconds before turning the switch back on.

Pin No.	Signal
1	Ground
2	—
3	—
4	+12V



Be sure to check the rating of any external DC power supply you intend to use to confirm that it is compatible with this unit. Also check the pin arrangement of the DC OUT socket of an external DC power supply with the DC IN socket of this unit to make sure the polarity is right.
Erroneously applying +12 V to the GND terminal could cause a fire or lead to injuries.
Connecting a cord with incorrect polarity to the DC IN connector of another device that is also connected to this unit could lead to fire or injury.

◆ **NOTE:**

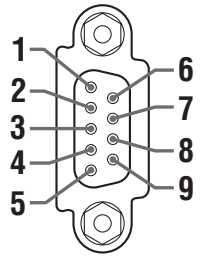
- When using an external DC power supply, be sure to first turn on the power to the DC power supply and then turn on the POWER switch on this unit. If the order of the above procedure is reversed, this unit will malfunction since the voltage of an external DC power supply rises slowly.
- Inadvertently connecting an input of 18 V or more triggers an internal protection circuit that shuts down the unit. The unit will operate normally once the power voltage returns to normal levels. Be sure not to connect an AC power supply to this socket.
- When the external DC power supply is connected and set to on, a minute amount of current will still flow even if the POWER switch on this unit is set to OFF.

8. Remote control connector

This unit can be connected to an external controller to enable remote operation of the unit.

RS422A REMOTE IN/OUT (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



9. TIME CODE OUT connector

Outputs the playback time code during playback. Outputs the time code generated by the internal time code generator during recording.

◆ **NOTE:**

The TIMECODE OUT connector does not output a time code when 23.98, 24, 29.97, 59-23, 60-24, 25 or 60-25 is set in setup menu No. 25 SYSTEM FREQ.

10. TIME CODE IN connector

Use to record an external time code onto P2 cards.

◆ **NOTE:**

The time code from the TIMECODE IN connector cannot be input when 23.98, 24, 29.97, 59-23, 60-24, 25 or 60-25 is set in setup menu No. 25 SYSTEM FREQ.

11. REF VIDEO IN connectors

Input connectors for HD and SD reference video 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 information on the reference signal, refer to “Example of connections in 23.98/24/29.97/25 Hz mode” (page 38).

- 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 REF VIDEO OUT connector, the REF VIDEO IN connector is automatically terminated at 75 Ω. Connecting a cable to this connector releases 75 Ω termination.
- When 59-23, 60-24 or 60-25 is selected in setup menu No. 25 SYSTEM FREQ, synchronization is provided only for playback HD reference signals.

12. AUDIO MONITOR OUT connector

This connector outputs the audio signal (CH1, CH2, CH3 and CH4) that is selected with the MONITOR SELECT button.

13. ANALOG COMPOSITE MONITOR OUT connector

Outputs analog composite monitor video signals.

14. ANALOG COMPOSITE VIDEO IN connector

Inputs analog composite video signals.

15. ANALOG COMPONENT VIDEO OUT connectors

Inputs analog composite video signals during output of HD signals. When SD is selected as the output signal, three composite signals are output.
Setup menu 643 OUT MODE SEL determines the signals that are output.

◆ **NOTE:**

- Use only shielded cable for cables (except the AC cable) that are connected to the rear panel. Cables connected to serial digital signal connectors (SDI IN/OUT connectors) should be double shielded cables.

IEEE 1394 Digital Interface

■ Basic Setup

Make sure that setup menu No. 882 DIF IN CH and No. 883 DIF OUT CH on this unit are set to “AUTO.”

◆ **NOTE:**

- Only signals that comply with the format selected in setup menu No. 020 SYS FORMAT can be input. When the SYS FORMAT is 480i (576i at 50 Hz), operations are limited to setup menu No. 024 REC FMT (SD) settings.
- The selected recording format and the format of a recording on an inserted P2 card determine the output format.

* Select CH1/CH2 or CH3/CH4 as the output audio channels (in DVCPRO/DV).

■ Precautions

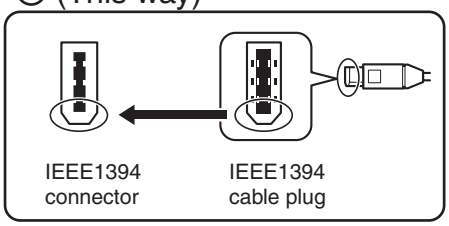
- Connect this unit to only one other device.
- If the E-92 warning (1394 INITIAL ERROR) appears, reconnect the connecting cable or turn the power off and back on again.
- AV signals may be disrupted when connected devices are turned on and off or when the interface cable is connected or disconnected.
- It may take the system a few seconds to stabilize after switching input signals or changing modes. Start recording after the system has stabilized.
- The following applies to recordings made via the IEEE 1394 digital interface as well as to the signals it outputs.
  - The audio level control knobs on the front panel do not work.
  - The settings in menu No. 680 and 681 regarding blanking periods are ignored.
  - Video and audio recording and EE type video and audio of signal inputs other than 1x speed playback signals are not guaranteed.
- The following applies to video input via the IEEE 1394 digital interface.
  - In the EE mode, SDI, analog video output signals and time codes become irregular. Do not use these signals for recording.
- Unprocessed video and audio signals are output via the IEEE 1394 digital interface during SLOW and STILL playback. When monitored on another device, these video and audio signals may sound different than when played back on this unit. Do not start up any other application program when this unit is connected to other devices during nonlinear editing. Such applications could adversely affect the video output by such a device during nonlinear editing.

◆ **NOTE:**

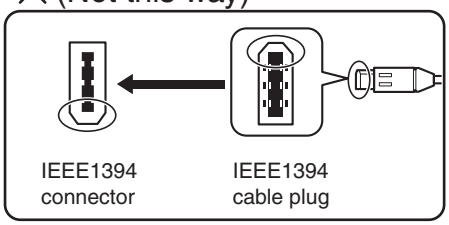
Observe the following when connecting an IEEE 1394 cable (separately sold). (An incorrect connection may damage this unit or external devices.)

- Turn off all connected devices before connecting or disconnecting IEEE1394 cables.
  Connect all devices provided with a ground connector to ground (or to a common ground).
- When connecting the unit to a device with a 4-pin connector, connect the cable to the 6-pin connector on this unit first.
- Be sure to correctly connect an IEEE1394 cable to a connector.
- When connecting a cable to a 6-pin IEEE1394 connector, make sure that it mates properly with the connector.

○ (This way)

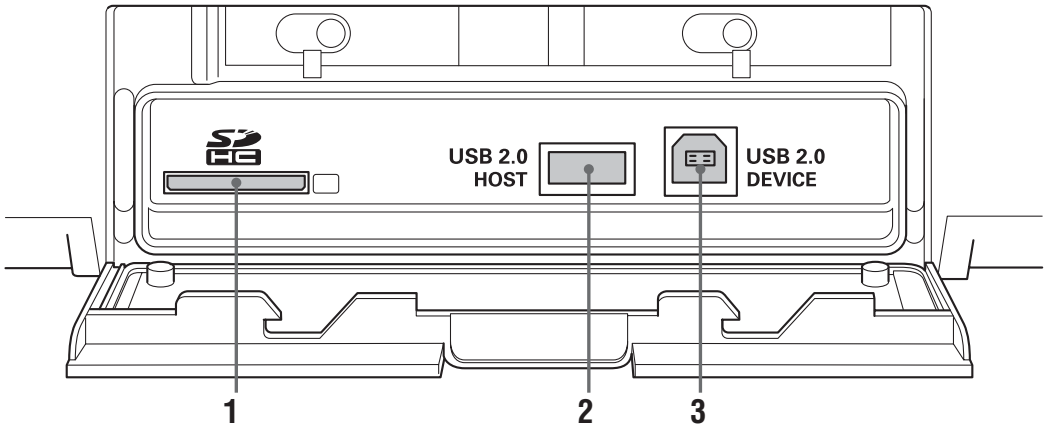


× (Not this way)



- When connecting this unit to an external device, first connect the IEEE1394 cable to the external unit and then to this unit. Connecting the cable to this unit first may damage it by the static electricity generated.
- AVC-Intra 50 and AVC-Intra 100 (optional) recording and playback do not support input/output via the IEEE 1394 connector.
- No input or output is available via the IEEE1394 connector when something other than 59.94 or 50 is selected in setup menu No. 25 SYSTEM FREQ.

Side Panel



1. SD/SDHC Memory Card Slot

Insert an SD/SDHC memory card.

Insert the 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 lamp is not on, then push it in the direction of insertion to release the lock.

◆ **NOTE:**

<Precautions in using SD/SDHC 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 cannot be used. When using a miniSD card, be sure to use an adaptor dedicated for use with the miniSD card to insert the card into the SD Memory Card Slot.
  - * MultiMediaCard (MMC) is a registered trademark of Infineon Technologies AG.
  - * The SDHC (SD High Capacity) card is a new standard, established by the SD Card Association in 2006, for large-scale memory cards with capacities above 2 GB.
- To format an SD card on a PC, use the following software that can be downloaded from the support sites listed below.
- This unit supports the following SD and SDHC memory card capacities.
  SD (8 MB to 2 GB): 8 MB, 16 MB, 32 MB, 64 MB, 128 MB, 256 MB, 512 MB, 1 GB, 2 GB
  SDHC (4 GB to 16 GB): 4 GB, 8 GB, 16 GB
- For the latest information not available in the Operating Instructions, visit the P2 support desk at the following Web sites.
  For English: https://eww.pavc.panasonic.co.jp/pro-av/
- The term “SD memory card” will be used below as a generic for SD and SDHC memory cards.

2. USB 2.0 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 Connectors” (page 103).

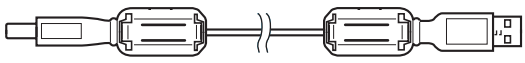
3. USB 2.0 connector (Type B)

Connect personal computers and other devices for use in the USB device mode.

→Refer to “Using USB Connectors” (page 103).

◆ **NOTE:**

- Use double shielded cable for making connections to USB 2.0 connectors.
- Attach the supplied ferrite cores near the cable connector at each cable end when making cable connections to the USB 2.0 connector.

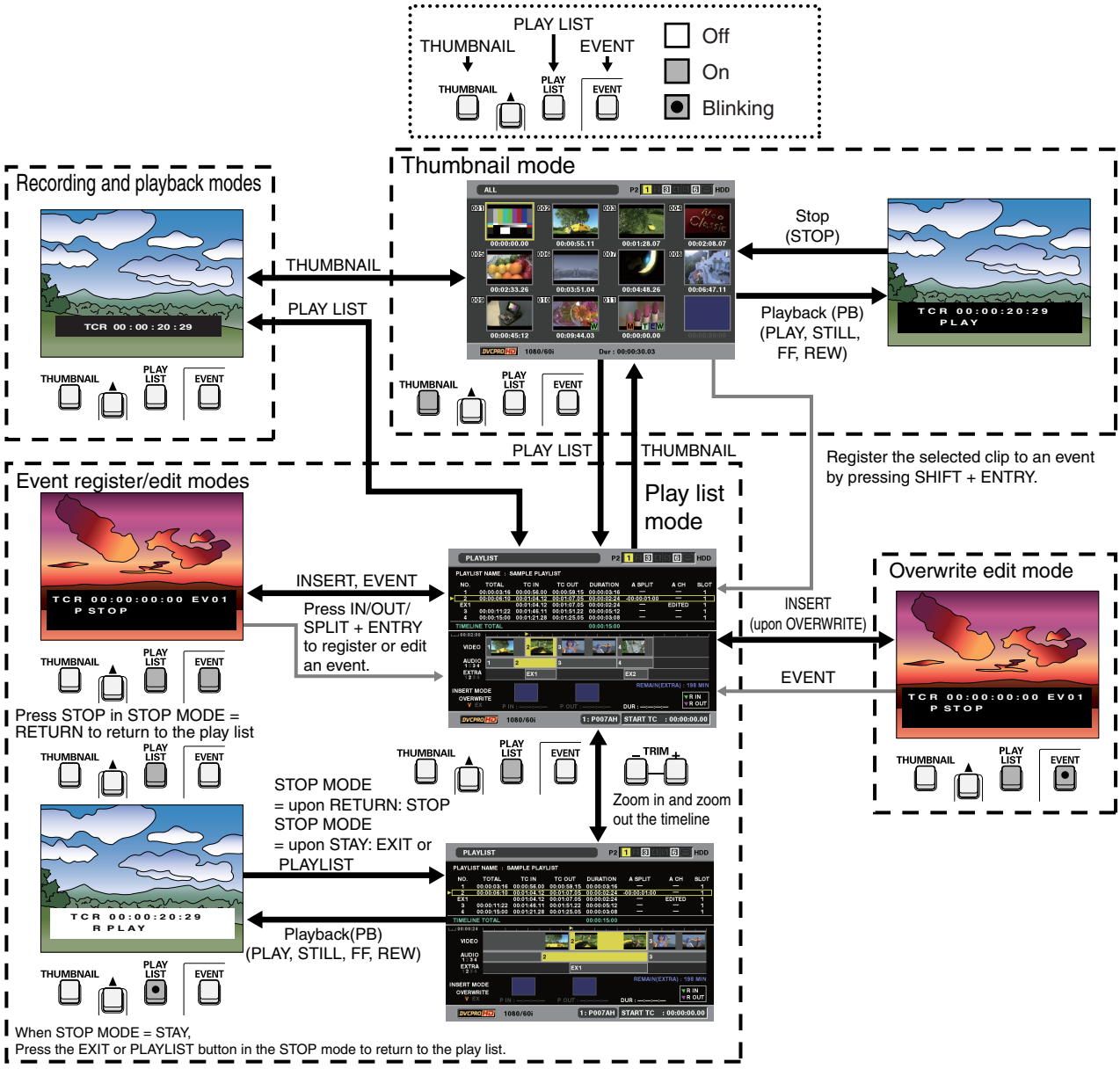


Moving Between Screens and Menu Operations

Operating Modes

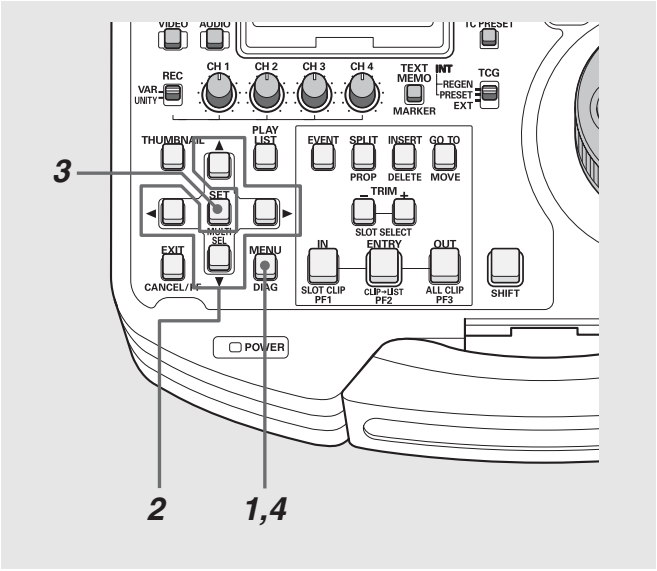
This unit provide the three operating modes described below. Use the THUMBNAIL and PLAY LIST buttons to select these modes. Lamps indicate which mode is currently engaged.

Recording and playback modes	Displays video and performs recording or playback.
Thumbnail mode	Shows thumbnails of clips and manages clips.
Play list mode	Creates play lists. The play list mode also provides the event register mode screen (the PLAY LIST and EVENT lamps light).



Menu Operations

Press the MENU button in each mode to open the menu. Perform menu operations as described below.



1 Press the MENU button to open the menu.

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

◆ **NOTE:**

- Press the ▲ and ▼ buttons to move the cursor up and down.
- Press ► to open a submenu.
- Press ◄ or the EXIT button to return to a higher level.

3 Press the SET button.

◆ **NOTE:**

- Some menu items may display a confirmation screen.
- Use the cursor buttons to select a process and press the SET button.

4 Press the MENU button to end processing.

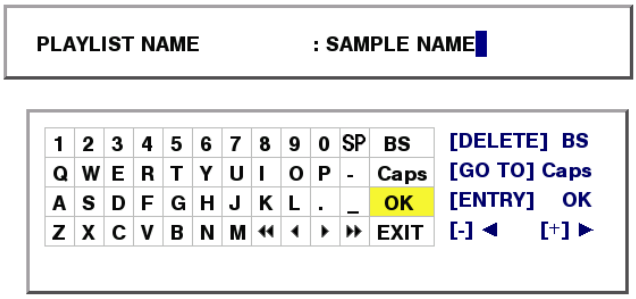
◆ **NOTE:**

- 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.

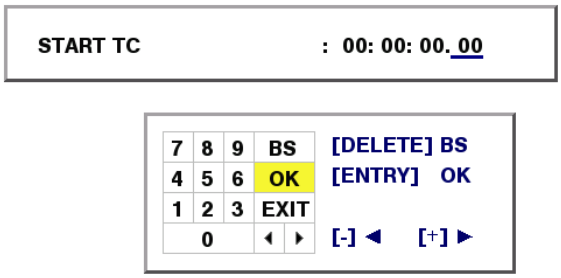
Key	Function	Shortcut keys
BS	Deletes one character	SHIFT+INS
Caps	Toggles between upper and lower case	GO TO
OK	Saves made entries and closes the on-screen keyboard	ENTRY
EXIT	Cancels made entries and closes the on-screen keyboard	EXIT
◀◀	Moves the cursor to the first character	SHIFT+REW
◀	Moves the 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:**

- RESET 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+INS
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	+

Recording, Playback and P2 Card Handling

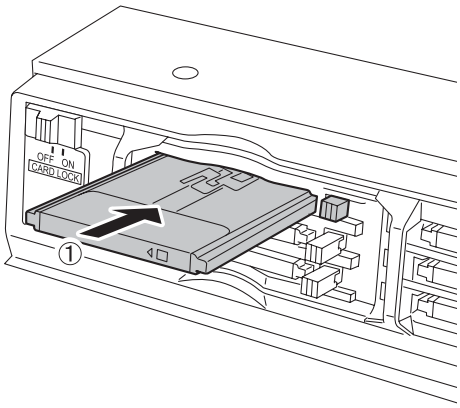
Insert a P2 Card

◆ **NOTE:**

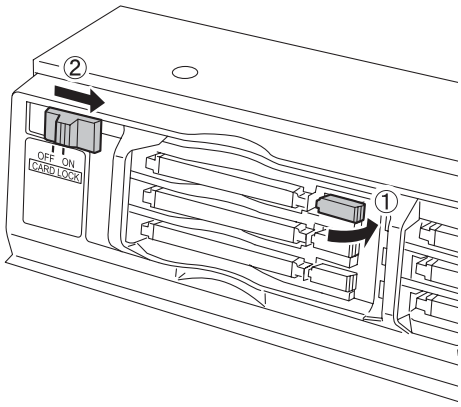
- When you use this unit for the first time, be sure to set the internal clock in setup menu No. 069 (CLOCK SET).

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 Bend the protruding EJECT button downwards to the right and set the card lock to ON.



- 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 35).

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/play list mode.

→For details, refer to “Control Reference Guide” (page 17).

◆ **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.
- 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.
- 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 and writing are possible.
	◆ **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” on page 64.

Dividing clips over 4 GB in length

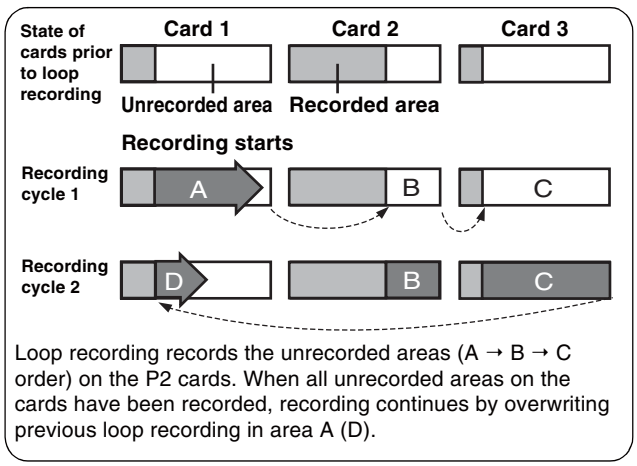
A continuous recording that is longer than the durations given below when an 8 GB P2 card is used in this unit will result in the automatic division of the recording into different clips. Even so, the recordings on the two clips can be handled as a single clip in thumbnail operations (display, delete, 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.

* Available when the optional AVC-Intra Codec board AJ-YBX200G is installed

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 this function, set LOOP REC in the setup menu to “ON”.
→For details, refer to “Setup Menu No. 041 (LOOP REC)” (page 123).



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 the menu option LOOP REC MODE 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 MODE 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 PLAY LIST buttons are on.
- When LOOP REC MODE 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 REC is not available during AUTO CAPTURE when an external device is remote controlled.
- LOOP REC 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 the menu option LOOP REC MODE to OFF.

Removing P2 Cards

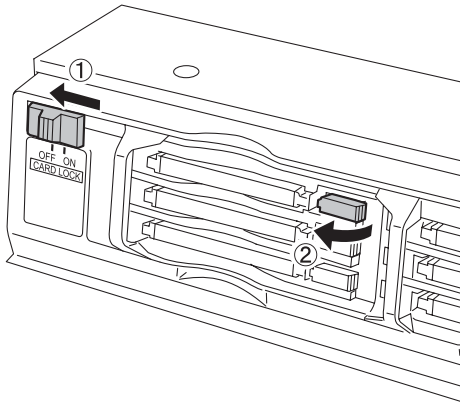
◆ **NOTE:**

- Do not remove P2 cards during access or during recognition directly after insertion (when the P2 card access LED flashes orange).

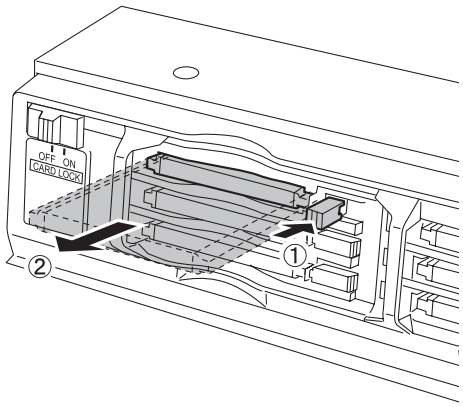
1 Press the STOP ■ button.

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

2 Set the card lock to OFF and raise the EJECT button.



3 Press the EJECT button to eject the P2 card.

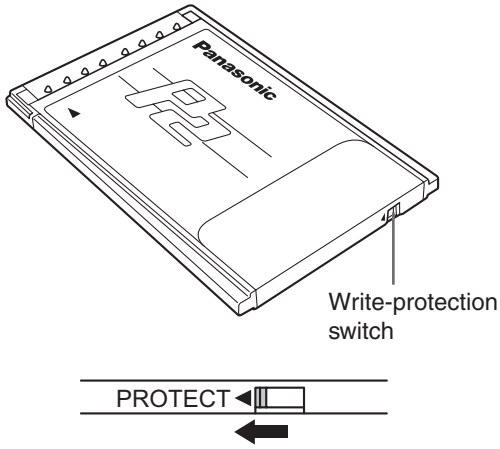


◆ **NOTE:**

- Removing a P2 card in the thumbnail screen automatically closes the thumbnail screen.
- Do not remove P2 cards during access or during recognition directly after insertion (when the P2 card access LED flashes orange); otherwise the P2 cards may be damaged. 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.
  → For details, refer to "Repairing Bad Clips" (page 54).
- Removing a P2 card during formatting will in most cases destroy the formatting. Reformat the card after restarting the PC.

Preventing Accidental Deletion

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



◆ **NOTE:**

- Switching the write-protection switch during recording, playback or other access operation will not take effect until after these access operations (playback, recording, etc.) complete.

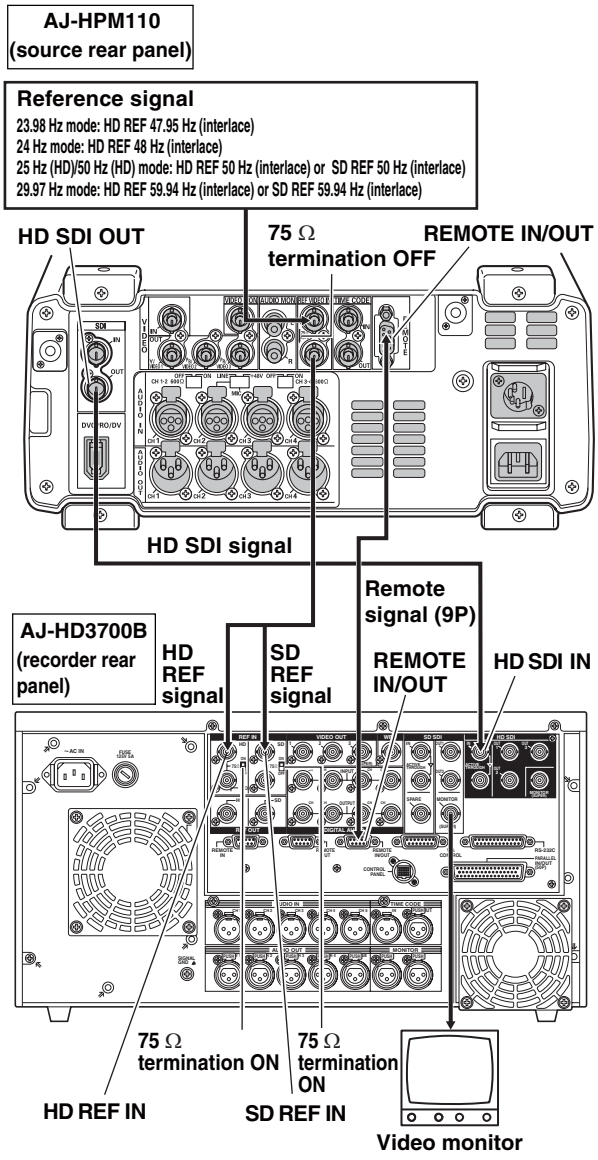
For the latest information on P2 cards and SD memory cards

For the latest information not available in the Operating Instructions of P2 cards and SD memory cards, visit the P2 support desk at the following Web sites.
For English: https://eww.pavc.panasonic.co.jp/pro-av/

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.

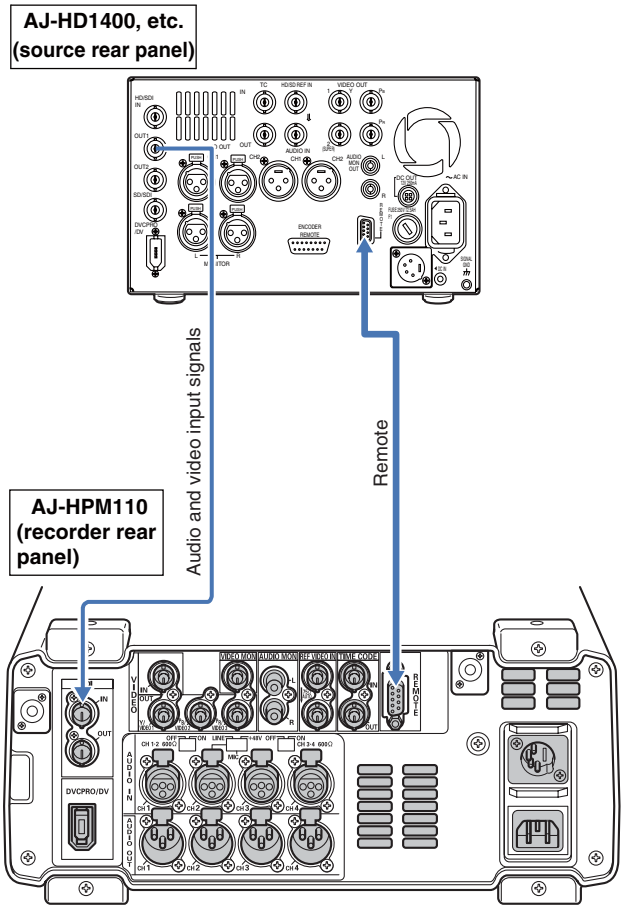


◆ **NOTE:**

- 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 147).
- In 23.98/24/29.97/25 Hz mode, the TIME CODE OUT connector does not output a time code and a time code cannot be input to the TIME CODE IN connector.
- In 23.98/24 Hz mode, HD SDI output is delayed by approximately 2 frames relative to analog VIDEO output.
- In 23.98/24 Hz mode, the analog video signals are not 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.
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.
Set the CONTROL switch on the front panel of this unit to LOCAL.



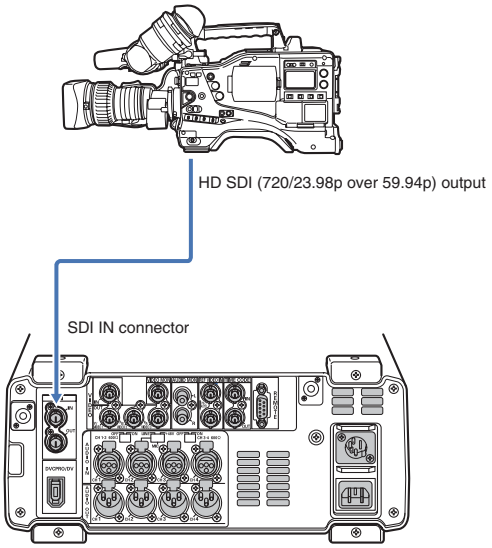
Recording From a Variable Frame-Rate Camera

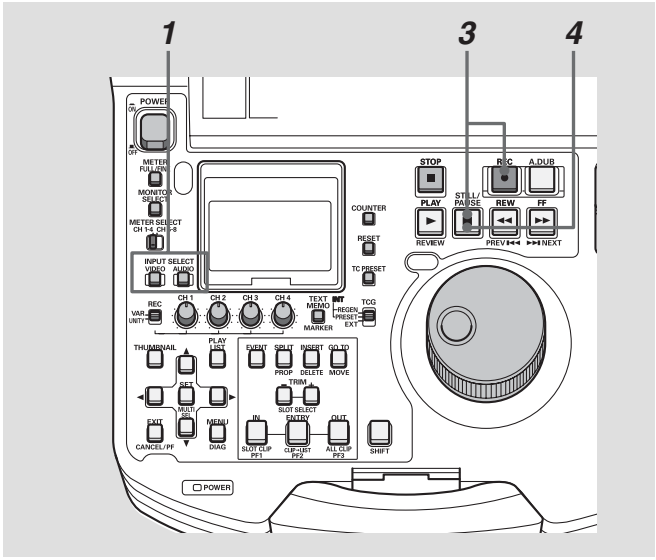
Recording HD SDI output signals from a variable frame-rate camera as 720/23.98p

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 (requires optional board) 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 INPUT SELECT button to select SDI.





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 monitor video in this mode.

3 Hold down the REC button and the STILL/PAUSE button simultaneously to set the unit to REC PAUSE mode.

4 To start recording, press the STILL/PAUSE button while viewing the video output from the camera HD SDI output.

◆ **NOTE:**

- Set setup menu No. 155 AUTO REC to TYPE1 and set the CONTROL switch to REMOTE. 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. Analog video and IEEE1394 are not output.
- The TIME CODE OUT connector does not output a time code and 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:**

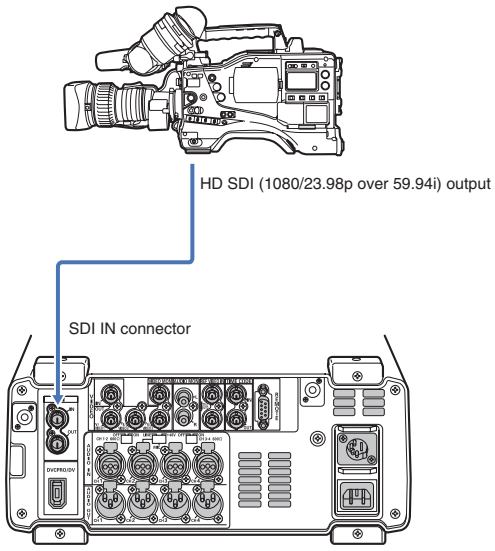
- Audio and external time codes cannot be recorded in this mode.
- In this mode, the remaining P2 card capacity at 60p (50p), the slowest slow-speed effect, is indicated.
- When 59-23 or 60-24 is set in setup menu No. 25 SYSTEM FREQ, movement in HD SDI video output may look unnatural when the input frame rate is something other than 24p.

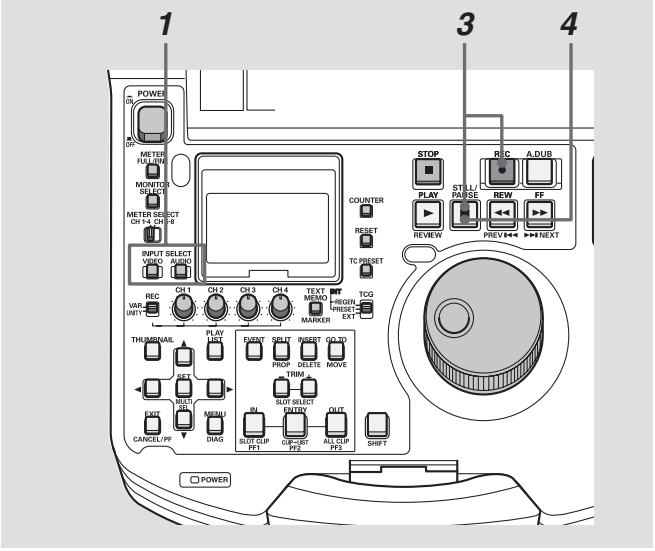
Recording HD SDI signals output by an HD camera as 1080/23.98p (requires optional accessories)

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 SDI (1080/23.98p over 59.94i) output from an HD camera recorder to the SDI IN connector and press the INPUT SELECT button to select SDI.





2 Make the following setup menu settings.

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

3 Hold down the REC button and the STILL/PAUSE button simultaneously to set the unit to REC PAUSE mode.

4 To start recording, press the STILL/PAUSE button while viewing the video output from the camera HD SDI output.

◆ **NOTE:**

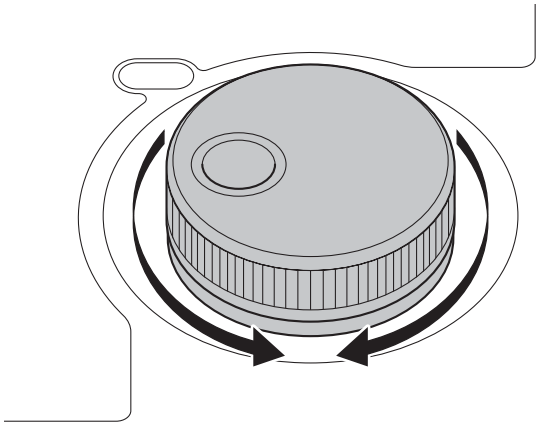
- Setup menu No. 155 AUTO REC to TYPE2 and set the CONTROL switch to REMOTE. The unit will then automatically start and stop recording as the REC and STOP buttons are pressed on the camera.
- SDI is output in the 1080/23.98 PsF video format. Analog video and IEEE1394 are not output.
- The TIME CODE OUT connector does not output a time code and 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 alternates it between SHTL 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



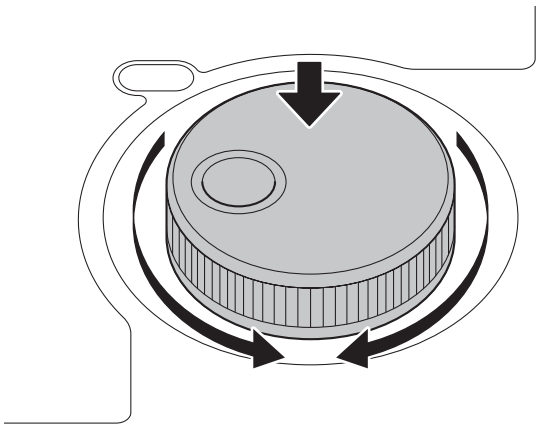
1 Press the search dial so that it remains pressed in.
The jog mode is now engaged.

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:**
- In the factory default setting, turning the search dial engages the direct search mode for immediate access to a search mode (jog mode or shuttle mode).
- You can select [KEY] in setup menu No. 100 (SEARCH ENA) so that the unit will not engage the search mode unless you press the STILL/PAUSE button.

Shuttle Mode (SHTL 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 STILL/PAUSE button.

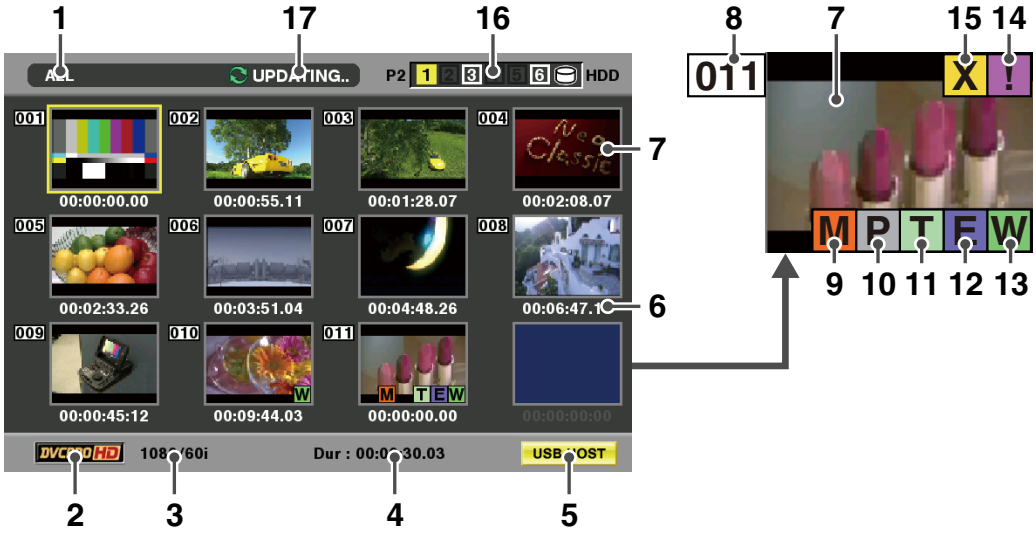
3 Turn the search dial.
The playback picture speed changes from 0 to ±16× depending on dial position.
Use setup menu No. 101 (SHTL MAX) to set maximum speed to ±8, ±16, ±32, ±60 or ±100×. The dial has a click-stop at the center for viewing still pictures.

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.

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 shows a list of thumbnails. Each thumbnail, which is the first frame of each clip, represents that clip. These thumbnails allow you check and also perform the following clip management operations.

- Play back, copy, delete and repair clips
- Insert text memos in clips
- Check and delete text memos
- Display and delete markers
- 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 screens are output also via the VIDEO MONITOR connector but may run off the screen depending on the type of monitor that is connected.

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
SLOTn:	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 45).

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 duration of the clip at the cursor position.

5. USB host mode indicator

Appears in the USB host mode.

6. Time display

Indicates the TC (time code) at the start of clip recording, UB (user bit at the start of clip recording), time of shooting, day of shooting, date and time of shooting or the user clip name.

→Refer to "Setting Items to Display" (page 46).

7. Thumbnail

Indicates the initial frame of the clip that represents it.

8. Clip no.

Indicates the numbers assigned to P2 card clips. Numbers are assigned starting in order from the earliest shooting date. Numbers of clips that cannot be played back are shown in red.

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-SPX800, AJ-HPX2000/2100, AJ-HPX3000 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 54).

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 number and hard disk drive status

P2 card and USB hard disk drive status is indicated as described below.

[1] - [6] (white)	The number of the P2 card slot that contains a P2 card is indicated in white.
[1] - [6] (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:** The pink frame indicates either of the following conditions for an inserted P2 card. • [RUN DOWN CARD] The card has been overwritten the maximum number of times. • [DIR ENTRY NG CARD] Directory structure does not conform to standard specifications.
(gray)	Gray indicates that the USB host mode is not engaged or that it is but no hard disk drive is connected.
(white)	White indicates that the USB host mode is engaged and that the hard disk drive is available.
(yellow)	Yellow indicates that the USB host mode is engaged and that clips on the hard disk drive appears as thumbnails.
(red)	Red indicates that the USB host mode is engaged and that the hard disk drive does not permit copying.

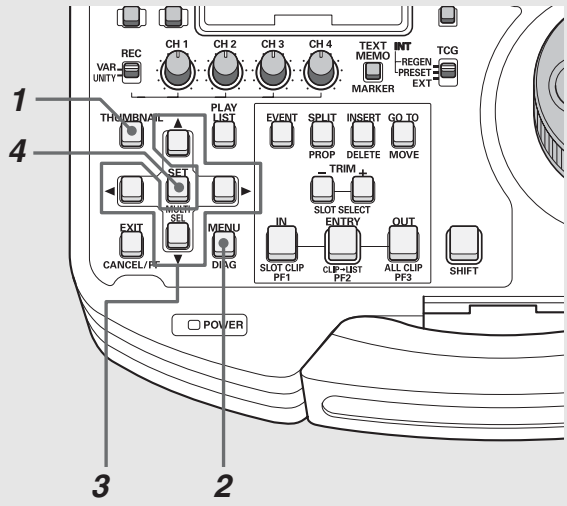
17. Status message

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

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
MARKED CLIPS:	Show clips to which shot marks have been attached
TEXT MEMO CLIPS:	Show clips that contain text memo data

◆ **NOTE:**

In the following instances, the thumbnail in the row below at the text memo location may be grayed out when a text memo clip appears.

- An AVC-Intra clip when an optional AVC-Intra codec board has not been installed.
- 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.

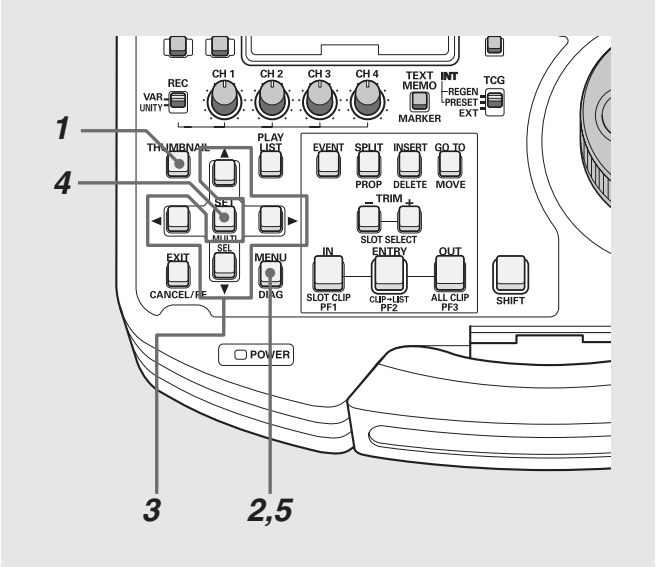
◆ **NOTE:**

(These operations can also be performed using buttons.)

- Press 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 SHIFT + OUT to switch to ALL CLIP.

Setting Items to Display

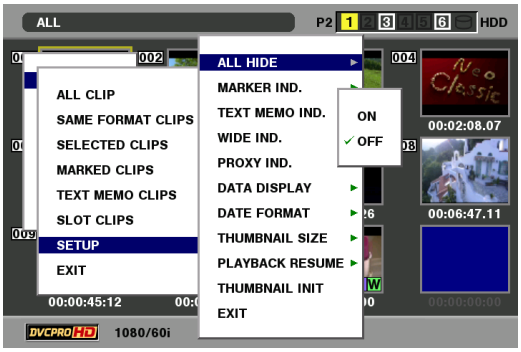
The thumbnail display can be customized to suit different operating needs. The following describes procedures for changing thumbnail display indicators and data settings.



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].



* An underlined ***setting*** indicates an initial value.

ALL HIDE:	ON	Hides all indicators
	OFF	Indicators are displayed according to the settings made below
MARKER IND.:	***ON***	Shows the shot mark indicator
	OFF	Hides the shot mark indicator
TEXT MEMO IND.:	***ON***	Shows the text memo indicator
	OFF	Hides the text memo indicator
WIDE IND.:	***ON***	Shows the wide indicator
	OFF	Hides the wide indicator
PROXY IND.:	***ON***	Shows the proxy indicator
	OFF	Hides the proxy indicator
DATA DISPLAY:	Select items to appear in the time display (→ refer to 6 of the "Thumbnail Screen Names and Functions" (page 43)).	
	TC	Time code
	UB	User bit
	TIME	Time of recording
	DATE	Date of recording
	DATE TIME	Date and time of recording
	USER CLIP NAME	The first fifteen characters (English display mode) in the user clip name
DATE FORMAT:	Select the format for indicating the time	
	Y-M-D	Year, month, day
	M-D-Y*	Month, day, year
	D-M-Y*	Day, month, year

◆ **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 DATE DISPLAY, the date of recording that appears in the clip information in the event property screen of a play list and also in the created date indicated when loading metadata or in other file indications.

* The initial value for the AJ-HPM110P is "M-D-Y", and for the AJ-HPM110E is "D-M-Y".

THUMBNAIL SIZE:	The size of thumbnails that appears in one LCD monitor screen	
	LARGE	Large
	NORMAL	Normal
PLAYBACK RESUME:	Select whether or not to resume playback from the last playback location after a stoppage when the cursor has not been moved.	
	ON	Store stop position
	OFF	Play back from start
THUMBNAIL INIT:	Returns above settings to their factory defaults (initial values).	

4 Press the SET button.

◆ **NOTE:**

- Selecting [THUMBNAIL INIT] opens a confirmation screen. Select [YES].

5 Press the MENU button to end processing.

Thumbnail editing

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

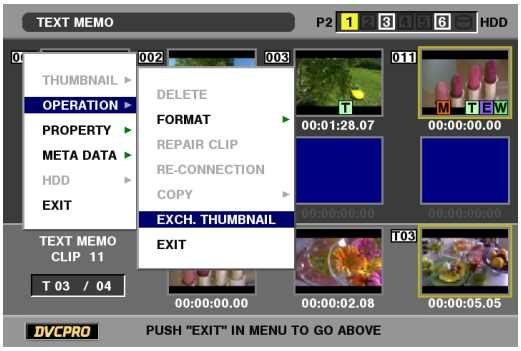
→For details, refer to “Attaching Text Memos” (page 50).

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.

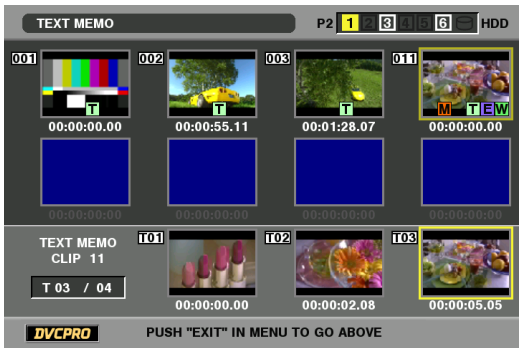
4 Press the MENU button.

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.

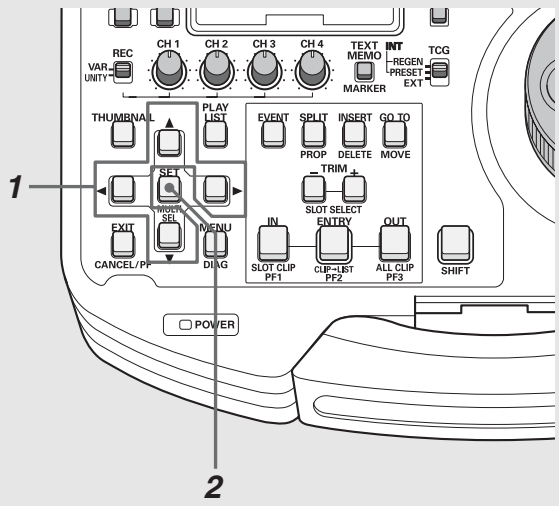


◆ **NOTE:**

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

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 ▲/▼ 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 both clips.

Canceling a Selection

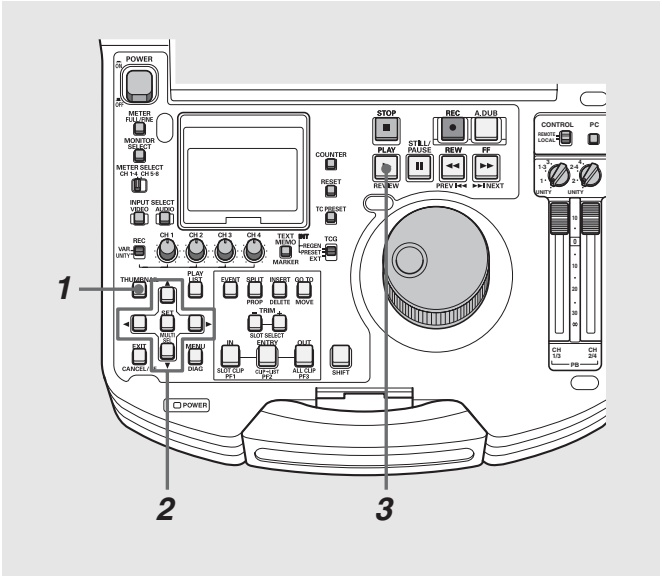
1 Place the cursor on a selected clip and press the SET button again.

This cancels the selection.

◆ **NOTE:**

- Holding down the SHIFT button while pressing the EXIT button cancels made selections.

Playing Back Clips



1 Open the thumbnail screen.

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

◆ **NOTE:**

- The search dial can also move the cursor.
- Hold down the SHIFT button and press the REW/FF button or the ▲/▼ buttons to move the cursor to the first or last clip.

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 (that is when the thumbnail appears inside a blue frame) a clip 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.
- Pressing the STILL ❚❚ 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.
- Pressing the THUMBNAIL button to close the thumbnail screen will in most cases change the playback start position back to the clip with the oldest recording time (clip number 1).
- Changing the thumbnail screen to text memo display makes it possible to start play back from text memo location.
  →For details, refer to “Attaching Text Memos” (page 50).
  * Available when the optional AVC-Intra Codec board AJ-YBX200G is installed

Playing Back Single Clips

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

◆ **NOTE:**

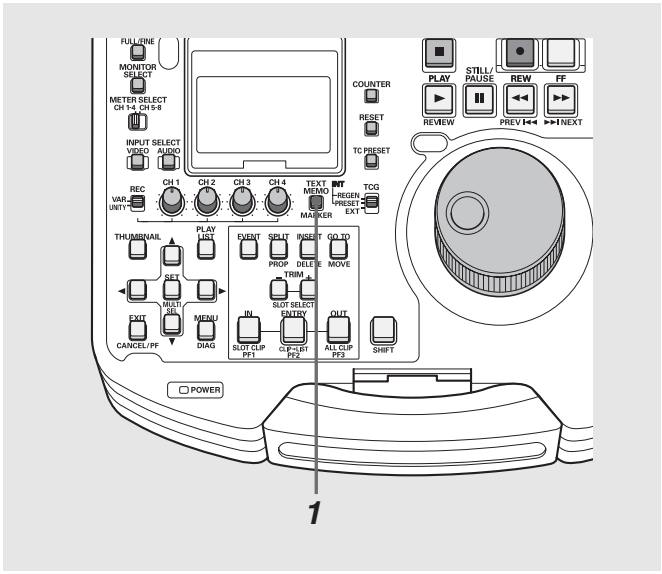
- The play list screen appears when playback stops at the end of the clip or when the STOP ■ button is pressed. The cursor then moves to the next clip.
- All buttons other than the STOP ■ button are not available during single clip playback.
- Single clip playback starts from the beginning of the clip.

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.



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 thumbnail 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

Indicates the total number of text memos attached to clips

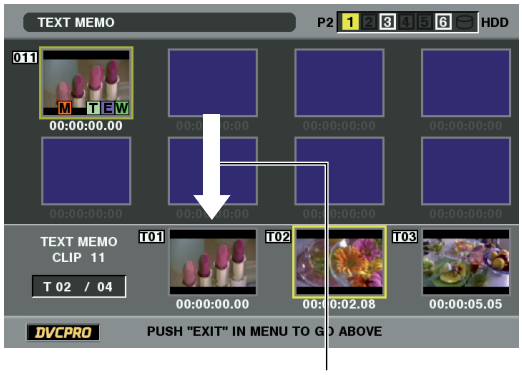
Indicates still images included with the text memos

◆ NOTE:

- In the following instances, the thumbnail in the row below at the text memo location may be grayed out when a text memo clip appears.
  - An AVC-Intra clip when an optional AVC-Intra Codec board has not been installed.
  - 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 thumbnail 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.

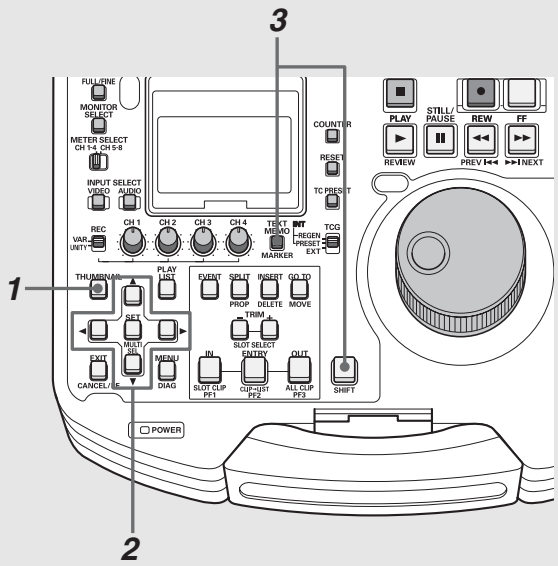
3 Select the thumbnail for witch you want to delete the text memo and select [DELETE] from the menu.

4 Select [YES] in the confirmation screen 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.

◆ 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.

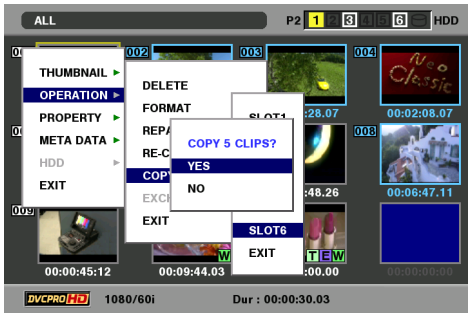
1 Open the thumbnail screen.

2 Select a clip to copy.

3 Press the MENU button.

4 Use the cross cursor buttons to choose [OPERATION] – [COPY] – [SLOTn] (the number of the P2 card slot where the copy will be placed) and press the SET button.

When multiple clips are selected, the number of selected clips appear after pressing the SET button.



5 Select [YES] and press the SET button.

This starts copying.

◆ NOTE:

- To interrupt copying, press the SHIFT and EXIT buttons or the SET button to cancel the job.
  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 the SET button when the completion message appears.

7 Press the MENU button to end processing.

◆ 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 at the bottom row of a text memo when the text memo is selected copies the selected text memo and the next text memo. When there is no text memo beyond the selected text memo, all data 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].

5 Select [YES] and press the SET button.

This deletes all selected clips.

6 Press the MENU button to end processing.

◆ **NOTE:**

- Instead of steps 3 to 4, you can also hold down SHIFT and press the INSERT button to delete a clip.
- To interrupt deleting, press the SHIFT and EXIT buttons or the SET button to cancel the operation.
  Partially deleted clips cannot be restored by canceling.

Repairing and Reconnecting Clips

Repairing Bad Clips

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

1 Open the thumbnail screen.

2 Select the bad clip to repair.

3 Press the MENU button.

4 Use the cursor buttons to choose [OPERATION] – [REPAIR CLIP].

5 Select [YES] and press the SET button.

6 Press the MENU button to end processing.

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

1 Open the thumbnail screen.

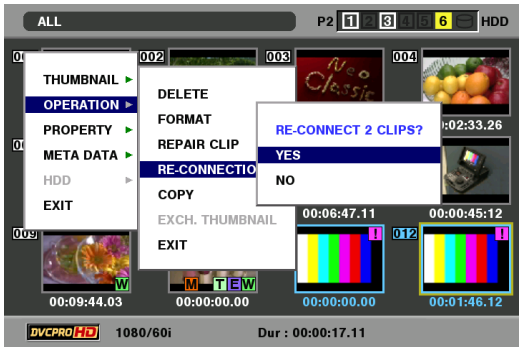
2 Select the incomplete clips to reconnect.

◆ **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].



5 Select [YES] and press the SET button.

6 Press the MENU button to end processing.

◆ **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.

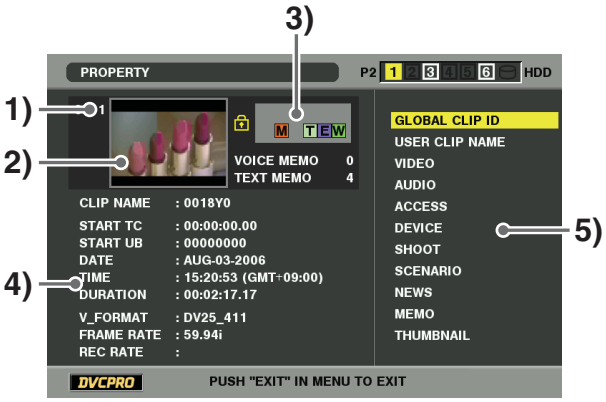
2 Place the cursor on the desired clip

3 Press the MENU button.

Or with the menu closed, hold down the SHIFT button and press the SPLIT 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) Clip information

Indicates the number of indicators, inserted 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

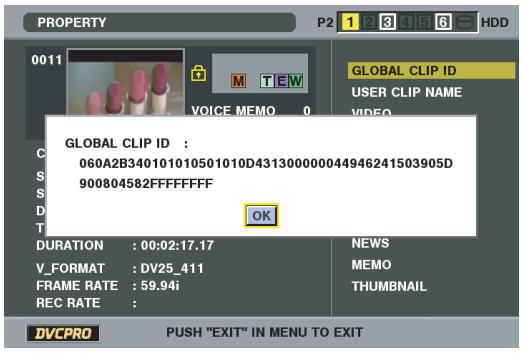
The following information appears.

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, SCENE NO., etc. (program name, scene number, take number)
NEWS:	REPORTER, OBJECT and other information (reporter, purpose, object)
MEMO:	TEXT MEMO number, location, name and text content (NO., RECORDING LOCATION, person, text)
THUMBNAIL:	Frame location and size (frame offset, height, width) of video that makes up the thumbnail

◆ **NOTE:**

- Offset is indicated in frame numbers from the start. During text memo display of thumbnails, the offset is converted to TC.
- While up to 1000 characters of text can be added only the first 100 characters will appear.
- Use the right and left cursor buttons to move text numbers.

6 Press the MENU button or the EXIT button to end processing.

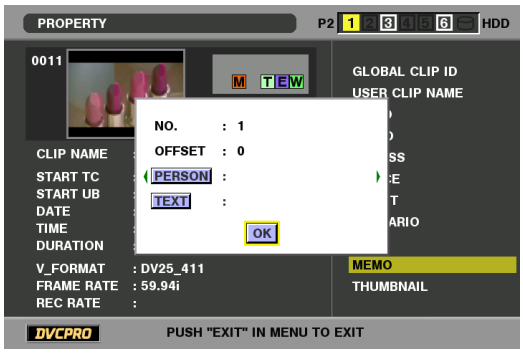
Revising Clip Metadata

Use the steps below to revise clip metadata.

1 Display clip metadata.

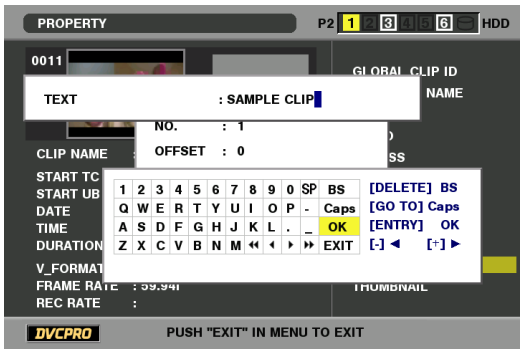
2 Use the cursor buttons to select the metadata you want to revise and press the SET button.

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.
- Use the on-screen keyboard to revise metadata.



◆ **NOTE:**

- Use the cursor buttons to move keyboard location, then press the SET button at the BS location.
- Use ◄► to move the insertion point one character to the right or left and ◄◄ ►► to move it to the beginning or end.

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.
- Metadata 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.
English: https://eww.pavc.panasonic.co.jp/pro-av/
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.
- For details on SD memory cards, refer to the NOTE on page 162.

Setup to Attach Metadata

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

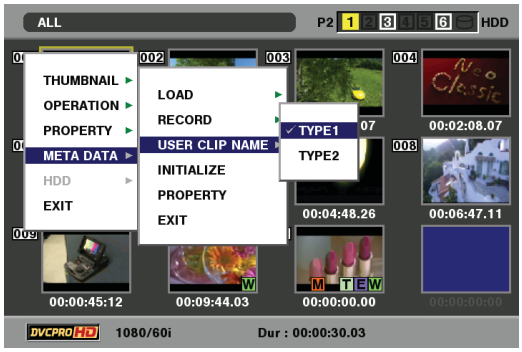
Select Method for Recording the USER CLIP NAME

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].



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 + COUNT value
Do not use clip meta data *	TYPE 1	Same as GLOBAL CLIP ID
	TYPE 2	Same as CLIP NAME

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

5 Press the MENU button to end processing.

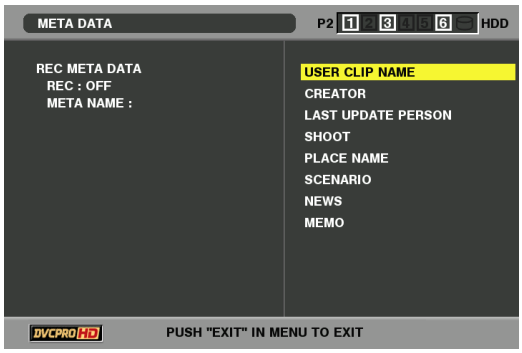
COUNT Value

The count 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 COUNT value is incremented by 1 for each new recording and a new clip is generated.

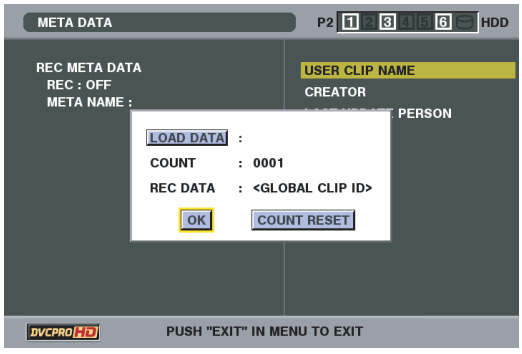
■ To reset the COUNT value

Use the following procedure to reset the COUNT 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.



4. Use the cursor buttons to select [COUNT RESET] and press the SET button.



The COUNT value is reset to 1.

5. Press the MENU or EXIT button to end processing.

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

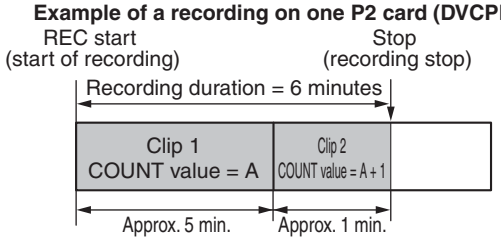
In the following case, one shot is recorded as multiple clips and the COUNT value is automatically incremented and recorded for each shot.

- When an 8 GB or larger P2 card is used in this unit and each continuous recording exceeds a preset time.

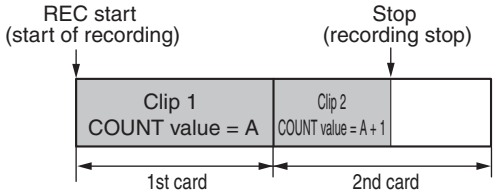
→For details, refer to “Dividing clips over 4 GB in length” (page 35)

- When one recording spans multiple cards.

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



Example of recording a clip on two P2 cards:



A P2 device will indicate the thumbnail and COUNT 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 filename of the metadata upload file on the SD memory card appears.

◆ **NOTE:**

- When the file name is displayed, use the right cursor button to show the metadata name. Use the left cursor button to show the file 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

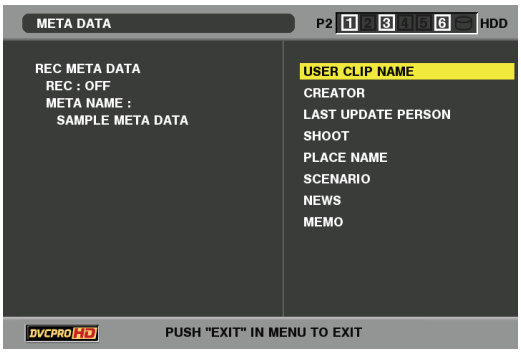
Use the following steps to check metadata loaded from an SD memory card.

1 Press the THUMBNAIL button.

The thumbnail screen appears on the LCD monitor.

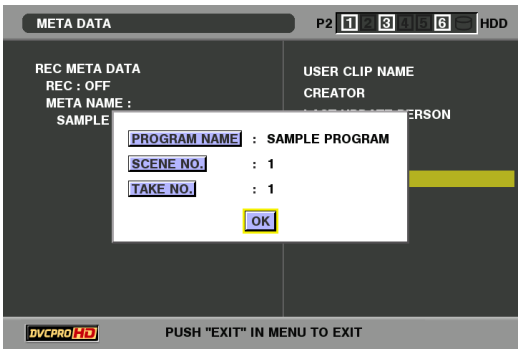
2 Press the thumbnail menu button and select [META DATA] – [PROPERTY] from the Thumbnail menu.

The screen shown below appears.



3 Use the cursor buttons to move the pointer and press the SET button.

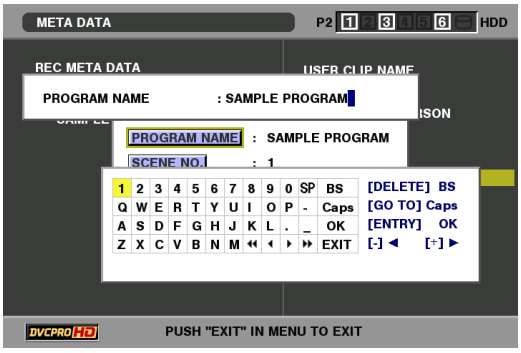
Use this function to check loaded metadata settings.



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.

→For details, refer to “Using the On-screen Keyboard” (page 33).



◆ **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:	Name of user clip
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, target 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 screen.

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 screen 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].

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:**

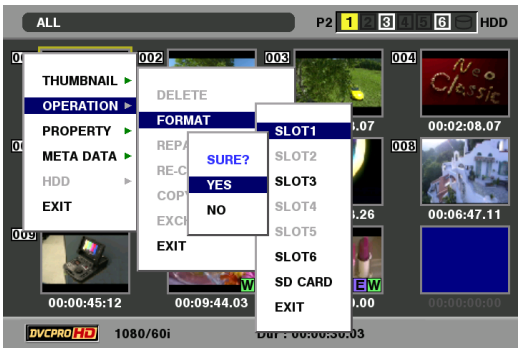
- When [OFF] is selected in step 4, no metadata is attached to the clip.

Formatting P2 Cards

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [OPERATION] – [FORMAT] – [SLOTn] (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 the 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.

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].

4 Use the cursor buttons to select an item and press the SET button.

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

MEMO: An underlined ***setting*** indicates a factory preset value.

5 Press the MENU button to end processing.

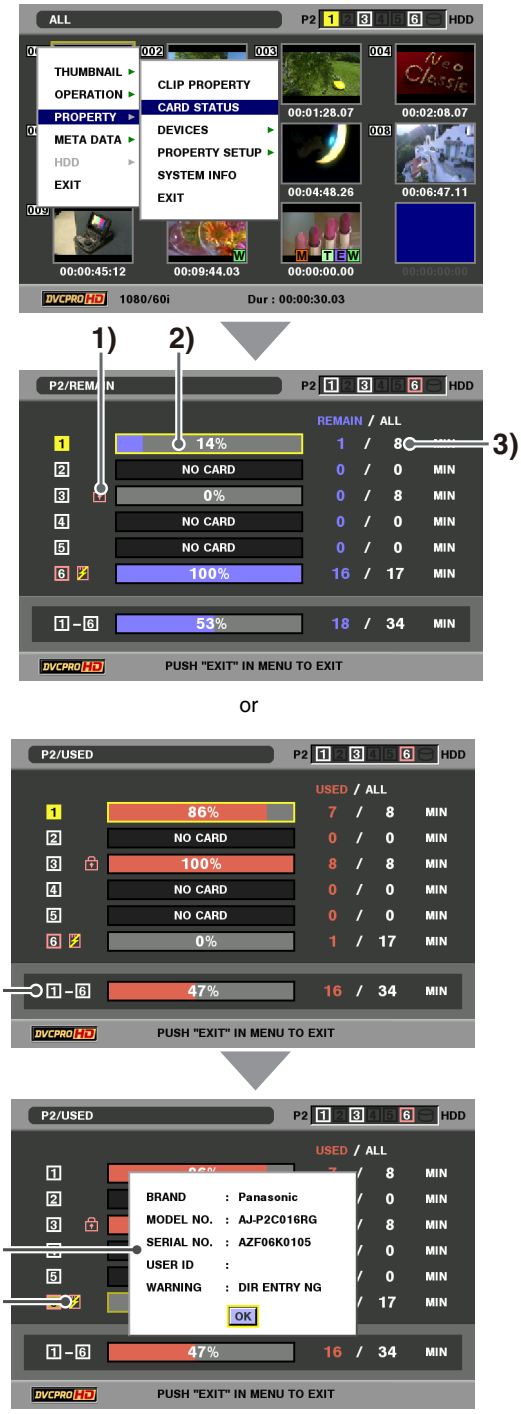
Displaying Card Status Information

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.



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 screen.

6) Card warning messages

This warning appears when the following P2 cards are inserted.

[RUN DOWN CARD]

The card has been overwritten the maximum number of times.

[DIR ENTRY NG CARD]

Directory structure does not conform to standard specifications.

Use Detailed P2 Card Status for more information.

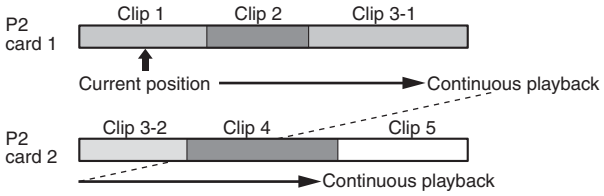
4 Press the EXIT button to end processing.

Using Play List

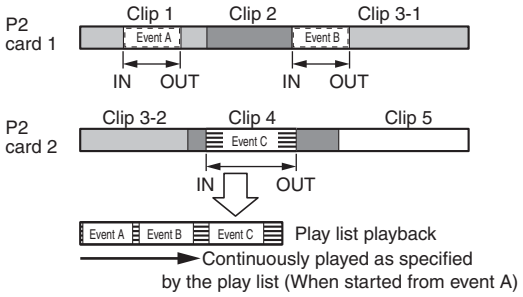
Play List Function

The play list function allows you to create lists (play lists) that register clip sections recorded on P2 cards to continuously play them back in list order. List editing is fast and efficient since no actual data is involved.

In normal playback, playback starts from the starting point and goes on until the last clip.



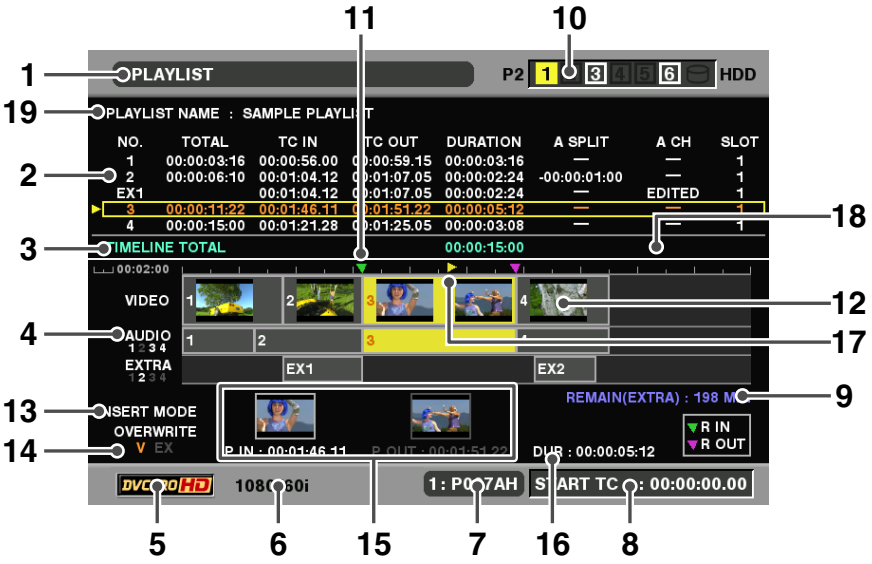
In a play list playback, the user first creates a play list that defines the IN points (start position) and OUT points (end position) of the clip segments that should be played. The subsequent play list playback will play only the sections specified on the play list as a single continuous section.



◆ **NOTE:**

- The play list function is accessed by opening the play list screen (press the PLAY LIST button to turn it on).
- The play list is stored in the play list area of memory in this unit and can always be accessed from the play list screen. Play list can also be stored on a P2 card. To save the voice-over audio data to the same P2 card as the play list, first save the play list to a P2 card.
- The processing activities entered on each line in the play list screen to run the play list are called events.
- During play list playback, only formats set as edit formats can be played and registered.
- Do not add a 24PN clip created in non-linear editing to a play list. Editing points may not be registered correctly.
- The play list stores the playback volume set during audio overwriting and uses this volume setting during playback. For this reason, the sound volume cannot be adjusted during play list playback.
- Do not use and register multiple copies of a clip at the same time since that may result in incorrect recognition.

Play List Screen Names and Functions



1. Display status

The following type of event screens are displayed.

PLAYLIST:	Event list
EVENT PROPERTY:	Detailed event information
P2 / USED:	Media information (amount of space used)
P2 / REMAIN:	Media information (amount of free space)

2. Play list

The play list shows a list of events. Up to 100 events (up to 100 audio events can also be added). The current cursor position is shown by a yellow frame. The selected event is shown by blue characters. The overwrite edit mode uses orange to indicate unfinalized status.

NO:	Event serial number
TOTAL:	Total time from event 01
TC IN:	Time code at IN point
TC OUT:	Time code at OUT point
DURATION:	Event length
A SPLIT:	Split amount at audio IN point
A CH:	Indicates channel status after editing channels using the EDIT AUDIO CH menu.

–	No change
EDITED:	Channels have been edited
NONE:	No corresponding channels

SLOT:	Number of P2 card slot with card storing event clip

The number of the first and subsequent events that cannot be played back are indicated in red.
Play lists created on the AJ-SPD850 can be loaded but not edited. The file name is indicated in gray.

3. Total play list time

Indicates the total play time of all events.

4. Time line display

The events appear in the time line around the event at the cursor position. Use the TRIM+/– button to zoom in (right) and to zoom out (left).

VIDEO:	Video time line
AUDIO:	Audio time line
1 2 3 4:	Channel numbers for channels other than EXTRA audio
EXTRA	EXTRA audio time line
1 2 3 4:	Channel numbers set using setup menu No.792 (A DUB CH) in the SETUP menu.

5. Record mode

6. System format

→Refer to “Thumbnail Screen Names and Functions” (page 43).

7. Filename

Shows the number of the P2 card slot where the current play list is stored and its filename.

P2 card slot number:	Filename
P2 cards slot and file name are displayed in white:	Normal
Filename is gray:	The file can be loaded but not edited. To edit such a file, store it on a P2 card to enable editing.
P2 card slot number is red:	The card storing the saved file is not inserted. The file stored on a P2 card cannot be found.

8. Start TC

Displays the start time code value for changing the time code during playback.

9. REMAIN(EXTRA)

Indicates the remaining time available for voice-over recording.

A play list not saved to a P2 card is indicated in gray and has no time indication.

10. P2 card slot status

Displays P2 card and USB hard disk status.

→Refer to "Thumbnail Screen Names and Functions" (page 43).

11. Play list IN and OUT point indication

Indicates the IN and OUT points of the play list (recorder) in ▽ (green) and ▼ (pink), respectively during overwrite mode. The indicators do not appear if no IN/OUT points is registered. When the IN and OUT points of the play list is not registered (not yet finalized, for example), ▼ (gray) is used.

12. Event IN/OUT point thumbnail

Indicates the thumbnails at the event IN/OUT points. This indication appears only when there is enough space in the timeline.

13. INSERT mode

Indicates currently set insert mode (selected by the [SETTING] – [INSERT MODE] menu).

INSERT:	Insert edit mode Adds and edits events.
OVERWRITE:	Overwrite mode Overwrites the track set by the INPUT TRACK menu at the designated position in the play list.

14. Overwrite track indication

Indicates INPUT menu settings in overwrite edit mode.

V:	Overwrites VIDEO and AUDIO.
EX:	Overwrites EXTRA
V EX:	Overwrites VIDEO, AUDIO and EXTRA.

15. Source IN/OUT points

Indicates source (player) IN point, OUT point, TC and thumbnails. Items that are not registered are hidden.

16. Duration indication

Shows the length of events for which overwrite edit is in unfinalized status.

17. Playback location

Indicates the current playback location by ▷ (yellow). Next playback starts from this location.

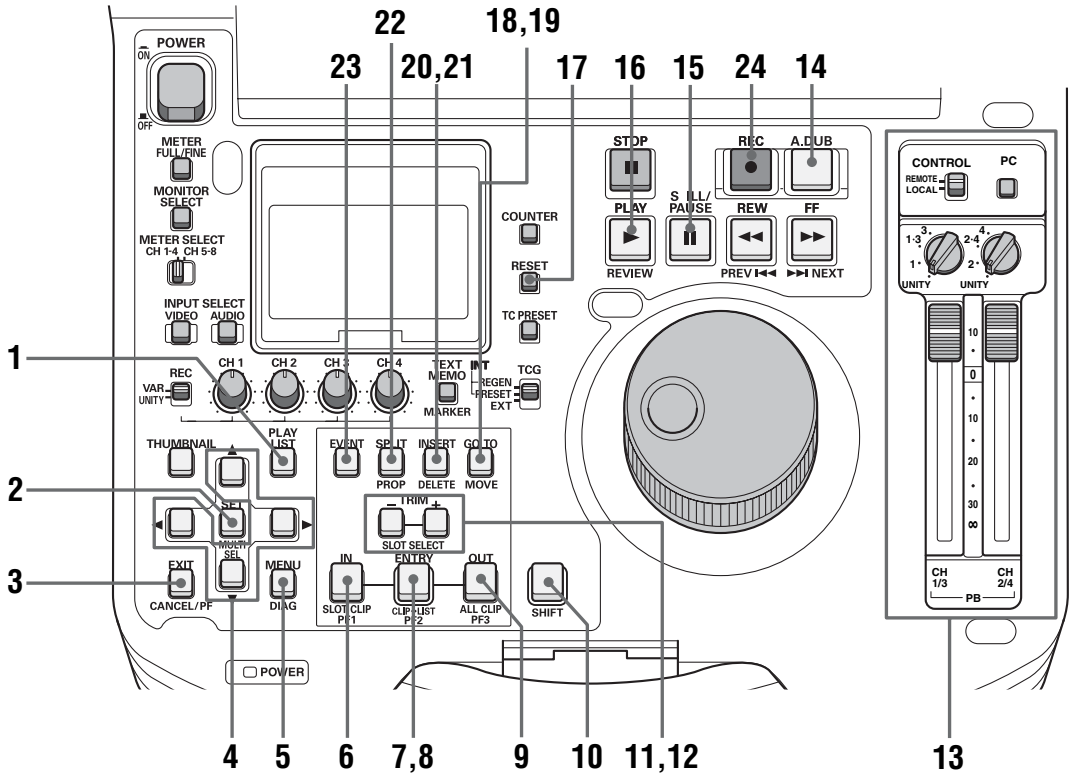
18. Scale indication

Indicates the timeline scale. The time for one graduation is indicated on the left.

19. PLAYLIST NAME

Names can be attached and to play lists and the name can be displayed.

Buttons Used in Play List Operations



1. PLAY LIST button

Press to switch to play list mode. This button lights in the play list mode.

In the stop mode or when thumbnails are displayed, press this button to open the play list screen.

To exit the play list mode, press this button (which is lit), the light goes out and the stop mode reappears.

You cannot switch to the PLAY LIST mode from the USB mode.

2. SET/MULTI SEL button

Use to make single or multiple selections. First press the SET button to select an event. Then move the cursor and hold down the SHIFT button while pressing this button to select all events from the first selected event to the event at the cursor position.

Characters for the selected event are highlighted in blue.

3. EXIT/CANCEL button

• EXIT button

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

• CANCEL button

To cancel all selected events and release items in unfinalized status in the overwrite edit mode, hold down the SHIFT button and press the EXIT button.

4. ▲▼◄ ► Cursor buttons

In the play list, press this button to move the play list and time line pointer location.

Use the right and left buttons to move the timeline horizontally. Use the up and down buttons to move the event list up and down.

Hold down the SHIFT button and press the ▲/▼ buttons to move the cursor to the beginning or end of an EVENT.

5. MENU/DIAG button

Press to open the MENU, press again to close it and return to the previous screen.

6. IN button

Pressing the IN button will show the time code value for the IN point currently set. (In the playback screen)

10.SHIFT + 6.IN buttons

In the overwrite edit mode, hold down the SHIFT button and press the IN button to change the P IN (player) and R IN (recorder) points. Each press of the button changes the indication between P IN → R IN → OFF. Use the 12.TRIM +/– button to change the time code as necessary. Press 7. [ENTRY] (or SET) button to finalize all changes. (When the play list is displayed in overwrite edit mode.)

6.IN + 9.OUT buttons

Pressing the IN and OUT buttons simultaneously will show the duration between the IN and OUT points. If an OUT point has not been registered, it will show the duration up to the current location. (In the playback screen)

10.SHIFT + 6.IN + 9.OUT buttons

Holding down the SHIFT button and pressing the IN and OUT buttons will show the total time (TOTAL DURATION) for all events. (In the playback screen)

For details on other operations, refer to the descriptions of 7. ENTRY button, 12. TRIM+ / – button, 17. RESET button and 19. GO TO button.

7. ENTRY button

7.ENTRY + 6.IN / 9.OUT buttons

During insert editing in the insert mode, hold down the ENTRY button and press the IN or OUT button where you want to register an IN or OUT point in the event registration/revision mode (and the EVENT button is on or flashes). When an OUT point has been registered in a new event, it automatically becomes possible to register a new event (auto event increment function).

Registering an OUT point but no IN point in a clip automatically makes the beginning of that clip the IN point.

In overwrite editing, selecting three of the four IN and OUT points in a play list and in an overwriting video will register the event as an unfinalized event.

The playback location can be registered as an IN or OUT point also in the play list.

7.ENTRY + 22.SPLIT buttons

Use these buttons for splitting audio. In the event register/edit mode (when the EVENT button is on), hold down the SPLIT button and press the ENTRY button. The location where the button was pressed will become the audio split IN point.

8. CLIP → LIST button

Use this button to import a clip selected in the thumbnail screen into the play list. Select a clip in a thumbnail display (multiple clips can be selected) and switch to the play list display. Hold down the SHIFT button and press the ENTRY button and the beginning of the clip at the cursor position in the play list becomes the IN point and its end point becomes the OUT point.

9. OUT button

Pressing the OUT button will show the time code value for the registered point. (In the playback screen)

10.SHIFT + 9.OUT buttons

In the overwrite edit mode, hold down the SHIFT button and press the OUT button to change the P OUT (player) and R OUT (recorder) points. Each press of the button changes the indication between P OUT → R OUT → OFF. Use the 12. TRIM +/– button to change the time code as necessary. Press 2.SET or 7.ENTRY after completing all changes. (When the play list is displayed in overwrite edit mode)

For details on other operations, refer to the descriptions of 7. ENTRY button, 12. TRIM+ / – button, 17. RESET button and 19. GO TO button.

10. SHIFT button

11. + / – button

In the play list, press this button to zoom in (+) or zoom out (–) the time line.

12. TRIM + / – buttons

Use these functions to change play list events. Select the event you want to change in the play list, hold down the IN, OUT and SPLIT buttons and press the TRIM+/– button to change the color of the IN, OUT and SPLIT points. Use this button to increment (+) and decrement (–) the IN, OUT or SPLIT point one frame at a time. Then press ENTRY to return to the original color and apply the change.

◆ **NOTE:**

- At a 24PN frame rate, the frame rate can be changed in multiples of 4 frames.

13. UNITY/VAR/channel select switches and audio playback level controls

- Use to select playback signal channels and perform level control during audio level adjustment and voice-overs.

◆ **NOTE:**

- Levels are not adjusted during play list playback.

14. A. DUB button

Use to make voice-overs and to copy to EXTRA.

→For details, refer to “Simplified Voice-Over” (page 95).

15. STILL/PAUSE button

16. REVIEW button

To review all events at the cursor position, hold down the SHIFT button and press the PLAY button. Playback starts 3 s before the IN point and stops 1 s after the OUT point.

Any unfinalized events are also previewed in the overwrite edit mode regardless of cursor location. Thus all unfinalized events are played back.

17. RESET button

17.RESET + 6.IN / 9.OUT / 22.SPLIT buttons

In the event register/edit screen or in the overwrite edit player/recorder screen, hold down the IN, OUT or SPLIT button and press the RESET button to delete the IN, OUT or SPLIT point of the selected event. (The SPLIT point is available also in the play list.) Pressing the RESET button when trimming R IN/OUT or P IN/OUT point (SHIFT + IN/OUT) deletes the registered points.

10.SHIFT + 17.RESET buttons

In the play list screen, hold down the SHIFT button and press the RESET button to create a new play list file (fulfils the same function as [FILE] – [NEW]).

18. MOVE button

Use this function to move an event to another line while the play list is displayed. Use the SET button to select an event you want to move when the play list is displayed. Then move the cursor to the line you want to move the event to and press this button to move the selected event to the location right before the cursor.

19. GO TO button

19.GO TO + 6.IN / 9.OUT / 22.SPLIT buttons

Use these buttons in the event register/edit screen and in the overwrite edit player/recorder screen (the EVENT button blinks) to locate the IN, OUT and SPLIT points. During normal playback, still playback and other playback operations, hold down the IN (OUT or SPLIT) button and press the GO TO button to move to the IN (OUT or SPLIT) point and resume playback from there.

In the overwrite edit mode, the playback location (▼ in yellow) can be moved to the IN or OUT point of an event at the cursor location in the play list.

20. DELETE button

Use this button to delete events when the play list is displayed. 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 INSERT button to delete the selected event.

21. INSERT button

Insert editing in the insert mode allows you to enter new events between existing play list events. Place the cursor on the event you want to insert and press this button to engage the event register mode and insert the event while viewing the video of the event. During overwrite editing in the insert mode, you can select the overwriting segment while viewing the video of overwriting event (player side).

Press this button again or the EVENT button to return to the play list screen.

22. SPLIT button

10.SHIFT + 22.SPLIT buttons

Holding down the SHIFT button and pressing the SPLIT button in the play list displays detailed event information at the cursor.

For details on other operations, refer to the description of 7. ENTRY button, 12. TRIM+ / – button and 17. RESET button.

23. EVENT button

Use to open the event register/edit mode when the play list is displayed. At this time the screen shows video.

24. REC button

Use the REC button in the overwrite edit mode to finalize any unfinalized events. When there are no overwritten unfinalized events, the event at the cursor can be turned into an overwritten unfinalized event (recalled).

Stop Mode Setup

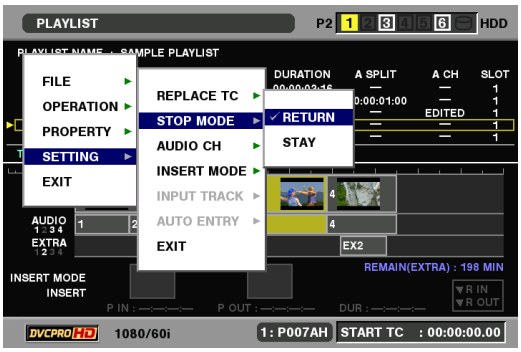
You can set whether pressing the STOP ■ button during play list playback should return you to the play list after playback or not. Use the following procedure to make the desired setting.

1 Open the play list screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [SETTING] – [STOP MODE].

4 Select [RETURN] or [STAY] and press the SET button.



RETURN:	A return is made to the play list screen when the STOP ■ is pressed (or when an automatic stop occurs at the start or end of all events). The cursor position moves to the event where the button was pressed.
STAY:	A return to the play list screen is not made and a still picture is output when the STOP ■ button is pressed (or when an automatic stop occurs at the start or end of all events). To return to the event list after making this setting, press the PLAY LIST button or the EXIT button.

5 Press the MENU button to end setup.

◆ **NOTE:**

- STAY is the recommended setting during playback of a play list from an external controller or other device connected to the remote control connector.

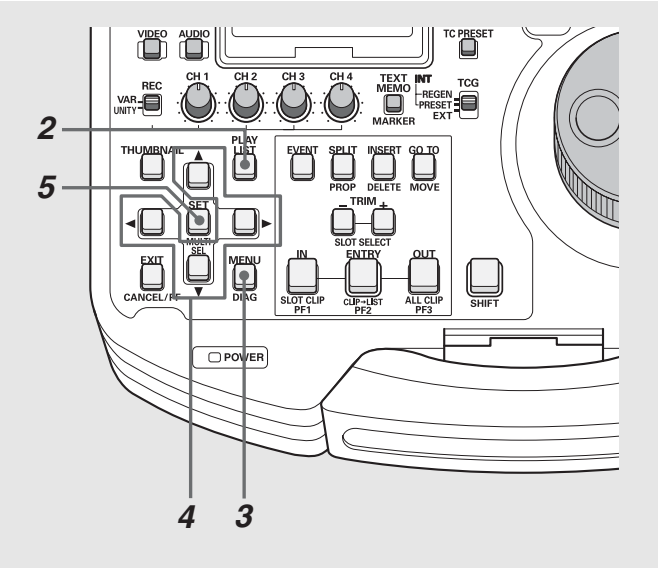
Creating Play Lists

The workflow for creating a play list is given below. A play list can be up to 24 hours long.

Preparing new play lists
↓
Registering events and adding existing play lists
↓
Saving play lists

Preparing New Play Lists

This section describes how to delete a play list stored in the play list area of this unit and how to prepare a new play list.



1 Select an edit format in the setup menu.

- Select an edit format. The unit will then be able to play back only the selected format.
- Select playback channels for added audio.

◆ **NOTE:**

The settings in the following setup menus and play list menu determine the edit format.

- 25 SYSTEM FREQ (→Refer to page 119.)
- 020 SYS FORMAT (→Refer to page 121.)
- 024 REC FMT(SD) (→Refer to page 121.)
- 025 REC FMT (HD) (→Refer to page 121.) *1
- 026 PLY LST FMT (→Refer to page 122.)

*1 The following setup menu determines voice over settings only when an AJ-YBX200G AVC-Intra codec board (optional board) is installed.

- 792 A DUB CH (→Refer to page 137.)
- 793 A DUB PB MIX (→Refer to page 137.)

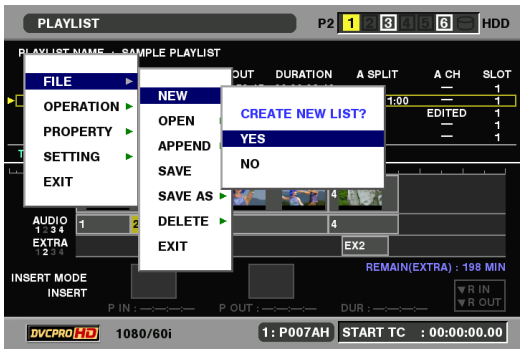
2 Open the play list screen.

3 Press the MENU button.

4 Use the cursor buttons to choose [SETTING] – [INSERT MODE] and press the SET button.

This selects INSERT and engages the insert edit mode.

5 Use the cursor buttons to choose [FILE] – [NEW].



◆ **NOTE:**

Holding down the SHIFT button and pressing the RESET button performs the same function as [FILE] – [NEW].

6 Select [YES] and press the SET button.

This deletes the open play list and displays a new play list without any events.

◆ **NOTE:**

- Be sure to choose [FILE] – [NEW] after changing the edit format in the setup menu. Otherwise the edit format does not change.

Audio Channel Replacement During Editing

Follow the steps below to replace audio channels after event registration.

1 Select one or multiple events whose channels you want to replace in the play list screen.

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

3 Select the channels that will be replaced.

Example: Make the following registration to switch CH1 and CH2 locations.

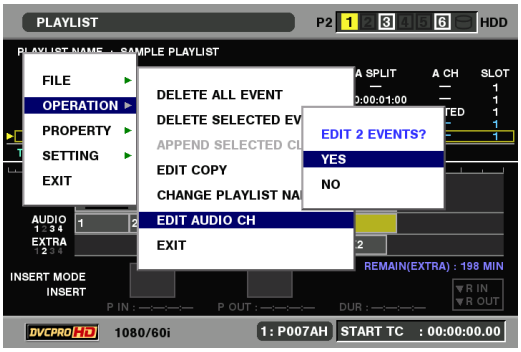
[AUDIO CH]-[CH1]=CH2
[CH2]=CH1
[CH3]=CH3
[CH4]=CH4

◆ **NOTE:**

- Select [SETTING] – [AUDIO CH] – [RESET] to return channel settings to their factory defaults.

4 Press the MENU button, use the cursor buttons to choose [OPERATION] – [EDIT AUDIO CH] and press the SET button.

Then select [YES] to switch channel locations.



◆ **NOTE:**

- A channel switch is indicated by “EDITED” in the A CH field. The status after the switch also shows up in the event property.

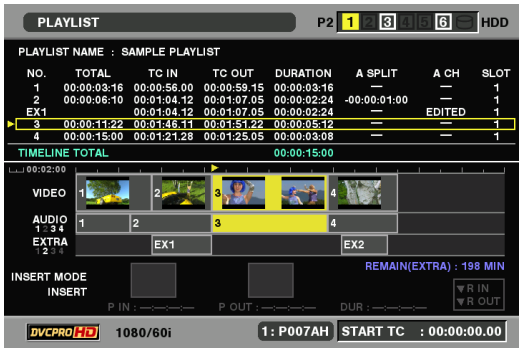
→ For details, refer to “Viewing Event Information” (page 98).

Registering Events for Selected Clips

Use the following procedure to add selected clips to the play list. This operation registers the start of a clip as the IN point and its end as the OUT point.

1 Select the clip you want to register in the play list from the thumbnail screen.

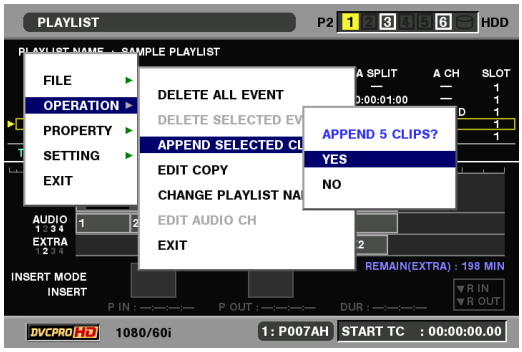
2 Open the play list screen.



3 Use the cursor buttons to select the location where you want to add the clip.

4 Press the MENU button.

5 Use the cursor buttons to choose [OPERATION] – [APPEND SELECTED CLIP].



6 Press the SET button.

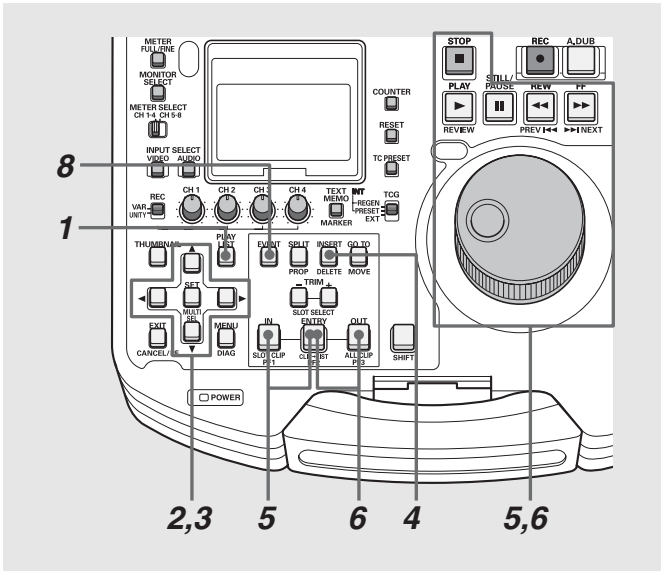
This registers an event where the start of the clip is the IN point and its end is the OUT point.

◆ **NOTE:**

- When the selected clip has a different format from that of the current play list, an error occurs and the clip cannot be registered.
- In the play list screen, you can also hold down the SHIFT button and press the ENTRY button to add a clip as an event.
- When added events exceed 100, no more events can be added.

Registering Events From Video

You can specify an IN point and OUT point while playing back a video and register this as an event.



1 Open the play list screen.

2 Enter the insert edit mode.

Press the MENU button, use the cursor buttons to select [SETTING] – [INSERT MODE], and press the SET button. Move the cursor to [INSERT] and then press the SET button.

3 Use the cursor buttons to place the cursor where you want to insert an event or in a line where no event is registered.

4 Press the INSERT button.

This activates the event register mode.

On the line with no event registered, the EVENT button can be used to enter the event register mode, regardless of the insert mode setting. On the line with an event registered, pressing the EVENT button engages the event edit mode, regardless of the insert mode setting.

→For details, refer to “Changing Event IN and OUT Points” (page 81).

5 Register an IN point.

Use the operation buttons or search dial to look for a location to start an event. Then hold down the IN button and press the ENTRY button.

6 Register an OUT point.

Use the operation buttons or search dial to look for a location to end an event. Then hold down the OUT button and press the ENTRY button.

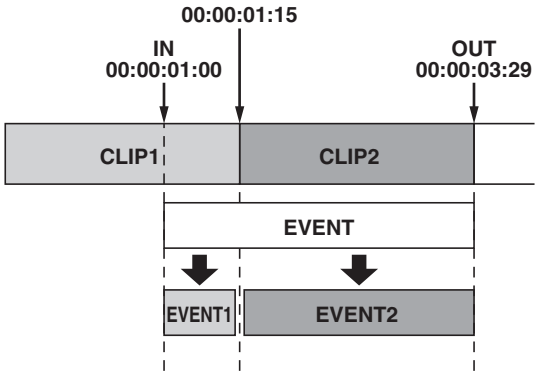
7 Repeat steps 5 and 6 as necessary to register other events.

8 Press the EVENT button to end registration.

The INSERT button will also terminate registration.

◆ **NOTE:**

- Set the IN point and OUT point so that the resulting event has a duration of at least 10 frames. If a shorter events are registered in succession, playback may not be made correctly.
- If the event following the event where the cursor is located has not been registered, the auto event increment function will increment the event number by one.
- If a registered event spans multiple clips, the events are registered separately.



- The registered content will be neglected if the unit is turned off during registration of an event from video.
- If the IN and OUT points become reversed, the beginning of the clip is registered as the IN point.

Importing and Adding to Existing Play List Files

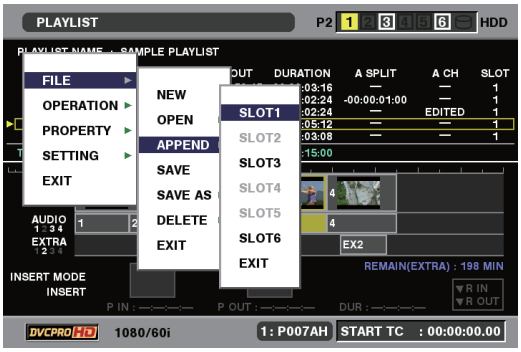
This section describes how to import play lists stored on a P2 card and how to add an event at the cursor location.

1 Open the play list screen.

2 Use the cursor buttons to choose the location where you want to insert the event.

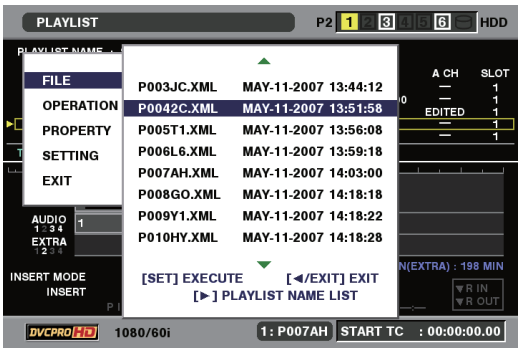
3 Press the MENU button.

4 Use the cursor buttons to choose [FILE] – [APPEND].



5 Use the cursor buttons to select the number of the P2 card slot containing the play list you want to import and press the SET button.

6 Select a file in the file import screen and press the SET button.



The specified play list event is added at the cursor location.

◆ **NOTE:**

- You cannot import a play list file whose format differs from the format of the current play list.
- If the number of selected events exceeds 100, the events that exceed the limit will not be imported.
- Press the right cursor button (►) in the file import screen to view the playlist name. Press the left cursor button (◄) to view file names.

Saving Play Lists

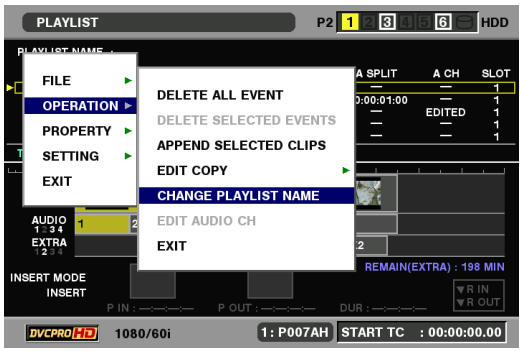
Naming Play Lists

Use the steps below to name play lists.

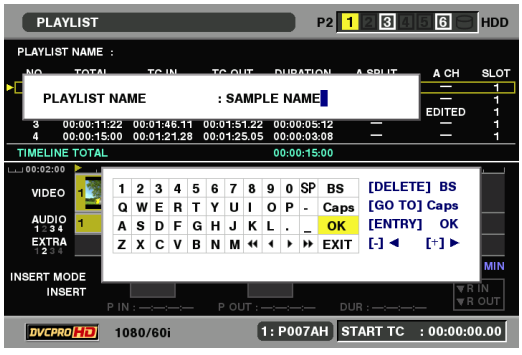
1 Open the play list screen.

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 and register the name in PLAYLIST NAME.

◆ NOTE:

- The file name must be saved using [FILE] – [SAVE] or [FILE] – [SAVE AS].

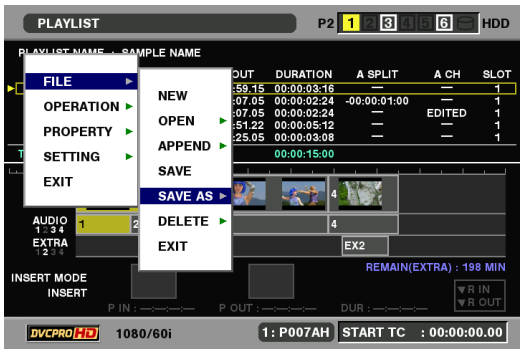
Saving a Play List to a P2 Card

Use the steps below to save a play list stored by the unit in the play list area of memory to a P2 card.

1 Open the play list screen.

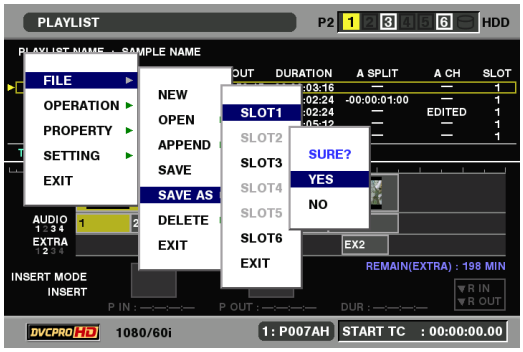
2 Press the MENU button.

3 Use the cursor buttons to choose [FILE] – [SAVE AS].



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 Check the file name in the save file screen, choose [YES] and press the SET button.



This saves the play list.

◆ **NOTE:**

- The filename is automatically generated and cannot be changed. Changing the filename on a PC will make it impossible to load.
- Updated play list files cannot be loaded by older versions or devices. Store old versions of the play list in the unit before using them. They cannot be edited in the form they are loaded.

Editing Play Lists

Play lists can be edited in a number of different ways.

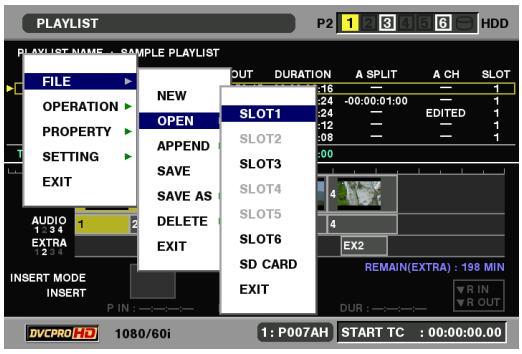
Opening an Existing Play List File

Open the play list screen to view the play list in the play list area of memory in this unit.
The procedure below describes how to load a play list stored on a P2 card or SD memory card to replace the play list in the play list area of memory in this unit.

1 Open the play list screen.

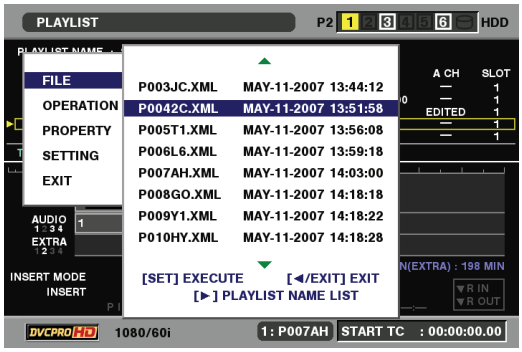
2 Press the MENU button.

3 Use the cursor buttons to choose [FILE] – [OPEN].

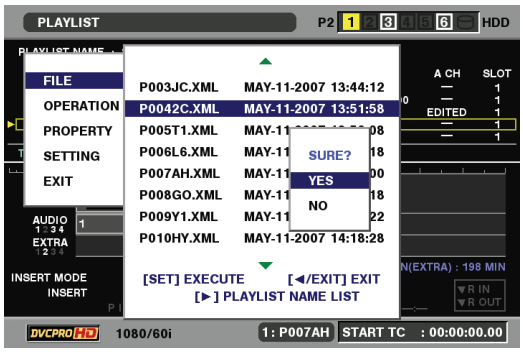


4 Use the cursor buttons to select the number of the P2 card slot or [SD CARD] containing the play list you want to import and press the SET button.

5 Select the file to import in the file import screen and press the SET button.



6 Select [YES] in the confirmation screen and press the SET button



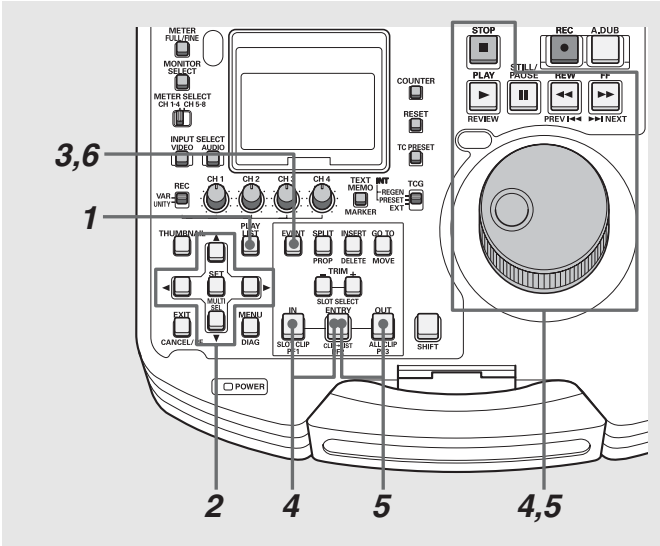
The play list is now loaded.

◆ NOTE:

- If a play list file that contains more than 100 events is opened, the event data exceeding 100 is not imported and the play list becomed a read-only file.
- Play lists created on the AJ-SPD850 cannot be directly edited on this unit and open as read-only files. To edit such play lists, save them on this unit.
- In the file import screen, press the right cursor button (►) to view the play list name. Press the left cursor button (◄) to view file names.

Changing Event IN and OUT Points

You can change the IN and OUT points for a play list event during video playback.



1 Open the play list screen.

2 Select the event you want to change.

3 Press the EVENT button.

This activates the event edit mode.

4 Register a new IN point.

Use the operation buttons or search dial to look for a location to start an event. Then hold down the IN button and press the ENTRY button.

5 Register a new OUT point.

Use the operation buttons or search dial to look for a location to end an event. Then hold down the OUT button and press the ENTRY button.

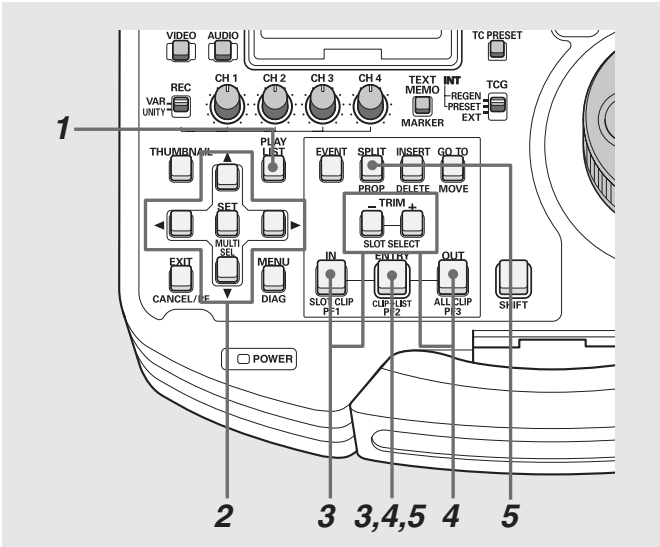
6 Press the EVENT button to end the change operation.

◆ **NOTE:**

- Steps 4 and 5 can be handled as alternatives, you do not have to carry out both steps.
- If the new IN point comes after an already registered OUT point, the existing OUT point will be reset. A return to the play list screen will show that the OUT point has automatically been changed to the end of the clip.
- If the new OUT point comes before an already registered IN point, a return to the play list will show that the IN point of that clip has automatically been changed and registered at the beginning of the clip.
- An event with a voice-over cannot be modified. Delete the voice-over before modifying the event.
- The changed content will be neglected if the unit is turned off during change of an event from video.

Trimming Events

You can change IN and OUT points for events in frame increments (in 4-frame increments at 24PN).



1 Open the play list screen.

2 Select the event you want to change.

3 Use the cursor buttons to change the IN point.

Hold down the IN button and press the TRIM+ button or the TRIM– button. The IN point is incremented or decremented in frame increments (in 4-frame increments at 24PN).

Press the ENTRY button to finalize.

4 Change the OUT point.

Hold down the OUT button and press the TRIM+ button or the TRIM– button. The OUT point is incremented or decremented in frame increments (in 4-frame increments at 24PN).

Press the ENTRY button to finalize.

5 Change the SPLIT point

Hold down the SPLIT button and press the TRIM+ or the TRIM– button. The split point is incremented or decremented in frame increments (in 4-frame increments at 24PN).

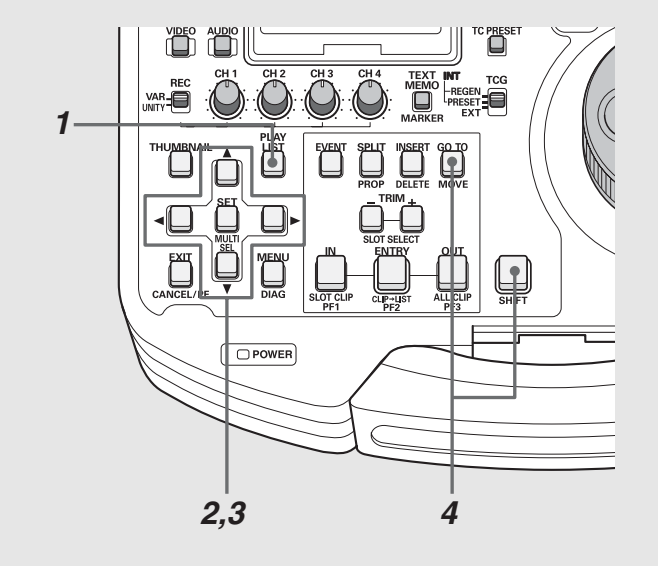
Press the ENTRY button to finalize.

◆ NOTE:

- Pressing the following buttons will also finalize a change.
  - Pressing the cursor buttons.
  - Pressing the SET button.
- Performing any of the following operations will discard the changes and make you return to the play list screen.
  - Pressing the EXIT button.
  - Holding down the SHIFT button and pressing the EXIT button.
  - Pressing the PLAY LIST button.
- You cannot make changes that go beyond the start and end points of a clip.
- You cannot make changes that reverse the IN and OUT point locations.
- An event with an EXTRA track cannot be modified. Delete the EXTRA track before modifying the event.
- The IN, OUT and SPLIT buttons allow you to use the TRIM+/– button for trimming in the event register screen when the time code is displayed.

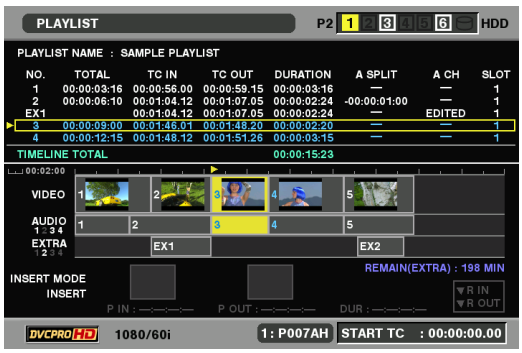
Changing Event Order

You can move and change the order of play list events.



1 Open the play list screen.

2 Select the event you want to move and press the SET button.



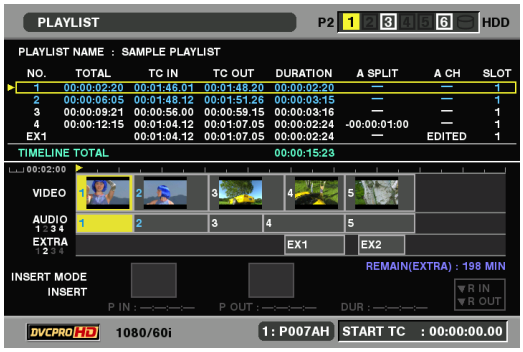
The event is selected and appears in blue. This procedure can be repeated as necessary to select multiple events.

◆ NOTE:

- To quickly select successive lines
  Hold down the SHIFT button and press the SET button (MULTI SEL) to select all events from the previous time the SET button was pressed and up to the cursor location where the MULTI SEL button was pressed.
- To cancel a selection
  Place the cursor on a selected event and press the SET button to cancel the selection.
- To cancel all selections
  Hold down the SHIFT button and press the EXIT button (CANCEL) to cancel all selected lines.

3 Use the cursor buttons to select a destination.

4 Hold down the SHIFT button and press the GO TO button.



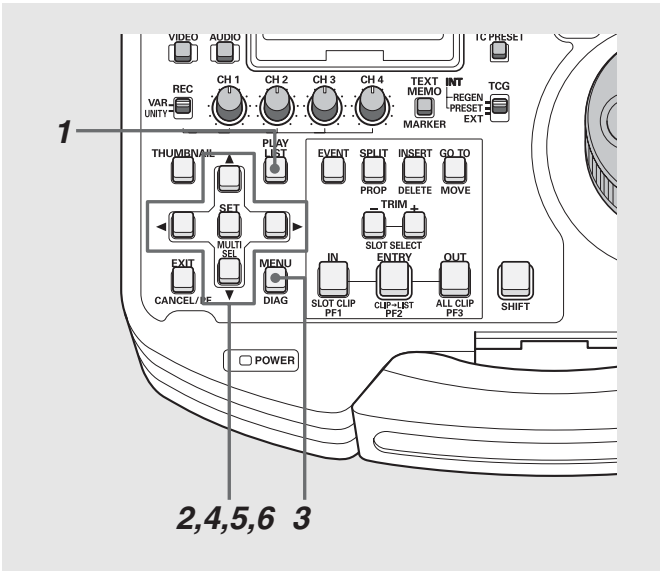
The selected event moves to the location right before the cursor and the events at the cursor location move downwards.

◆ NOTE:

- It is not possible to move only the event if that event contains an EXTRA track. Move the event and the EXTRA track.

Deleting Events

You can use the following procedure to delete events in the play list.



1 Open the play list screen.

2 Select the event to delete and press the SET button.

The event is selected and appears in blue. This procedure can be repeated as necessary to select multiple events.

◆ **NOTE:**

- To quickly select successive lines, hold down the SHIFT button and press the SET button (MULTI SEL) to select all events from the previous time the SET button was pressed and up to the cursor location where the MULTI SEL button was pressed.
- To cancel a selection
  Place the cursor on a selected event and press the SET button to cancel the selection.
- To cancel all selections
  Hold down the SHIFT button and press the EXIT button (CANCEL) to cancel all selected lines.

3 Press the MENU button.

4 Use the cursor buttons to choose [OPERATION] – [DELETE SELECTED EVENT].

5 Press the SET button.

6 Select [YES] in the delete confirmation screen and press the SET button.

This deletes all selected events.

◆ **NOTE:**

- You can also delete a selected event in step 3 by holding down the SHIFT button and pressing the INSERT button (DELETE).
- It is not possible to delete only the event if that event contains an EXTRA track. Delete the EXTRA track before deleting the event, or delete the event and the EXTRA track.
- If there is an EXTRA event that span multiple events, and when events beyond a certain event in a play list are no longer needed, use the following steps to delete such events.
  1. Move to the events you want to delete.
  2. Press the A. DUB button to copy audio to the EXTRA track.
  3. Since the events become separated from the copied portion, select the latter part of the EXTRA event and delete it.
  4. Select the events and delete them.

To Delete All Events

The OPERATION menu allows you to delete all events.

1 Open the play list screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [OPERATION] – [DELETE ALL EVENT].

4 Press the SET button.

5 Select [YES] in the delete confirmation screen and press the SET button.

This deletes all play list events.

Saving Events

While editing a loaded play list file or the play list file has been saved using [FILE] – [SAVE AS], the file can subsequently be saved using the following procedure.
Use [SAVE AS] for the first save operation.

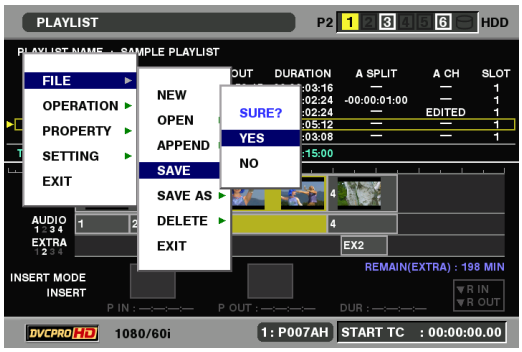
1 Open the play list screen.

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 screen and press the SET button.



This saves the play list.

Deleting Play Lists

Use the following procedure to delete a play list stored on a P2 card.

1 Open the play list screen.

2 Press the MENU button.

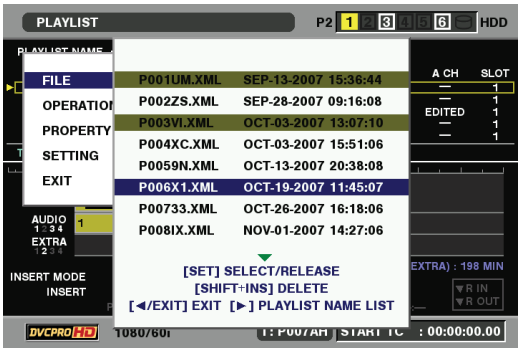
3 Use the cross cursor buttons to choose [FILE] - [DELETE].

4 Use the cross cursor buttons to select the number of the P2 card slot that stores the play list to be deleted and press the SET button.

5 Select the play list to be deleted and press the SET button.

The selected play list appears in yellow. This procedure can be repeated as necessary to select multiple play lists.

6 Press the SHIFT and INSERT buttons simultaneously, select [YES] and press the SET button.



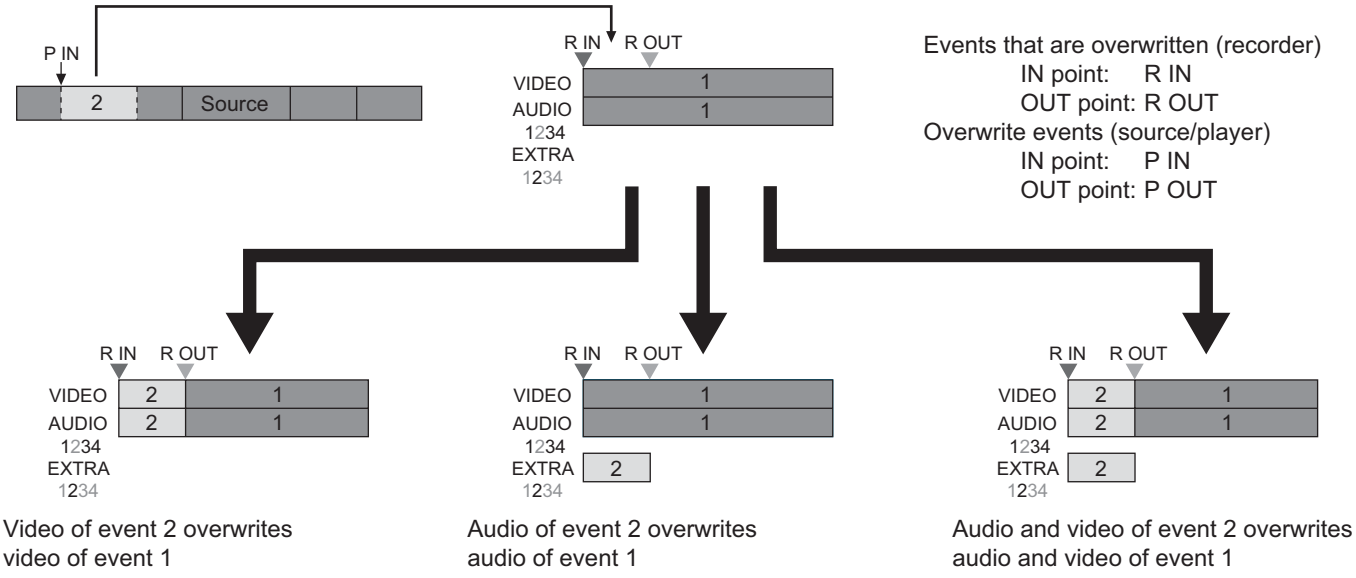
This deletes the play list.

◆ **NOTE:**

- To quickly select successive files
  Hold down the SHIFT button and press the SET button (MULTI SEL) to select all files from the first file selected with the SET button to the file at the cursor location selected with the MULTI SEL button.
- To cancel a selection
  Place the cursor on a selected file and press the SET button to cancel the selection.
- To cancel all selections
  Hold down the SHIFT button and press the EXIT button (CANCEL) to cancel all selected files.

Overwrite Editing of Play Lists

When an event is registered, an event can be overwritten on video and audio, or on EXTRA track. Overwrite editing is performed by specifying the IN and OUT points of the event that will be overwritten (recorder side) and the event that will overwrite it (player side). Switching channels and audio level adjustments are available in an overwrite edit.



◆ **NOTE:**

This edit function uses the play list as a recorder. In the overwrite mode, press the INSERT button and locate video and audio for overwriting from clips that match the play list format. Using selected audio and video as a source/player, register IN and OUT points on both the recorder and source/player.

Preparing for Event Overwriting

Engaging Overwrite Mode

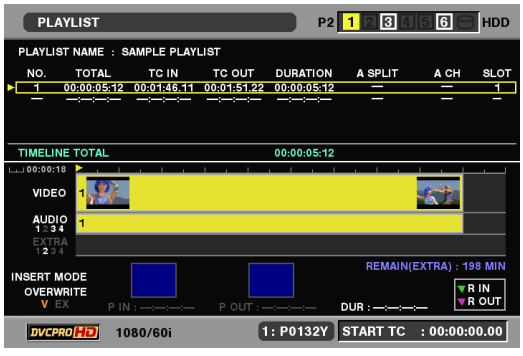
Set the overwrite mode from the menu.

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

2 Press the SET button, choose [OVERWRITE] and press the SET button.

◆ **NOTE:**

- The insert edit mode is the default setting.
- Activating auto entry will automatically register the OUT point (R OUT) registered in the play list as the IN point (R IN) of the next event.
  1. Press the MENU button and use the cursor buttons to choose [SETTING] – [AUTO ENTRY].
  2. Press the SET button, choose [ON] and press the SET button.
- Use the overwrite edit mode with REPLACE TC enabled.
  If REPLACE TC is disabled, the time code value of the play list will take on the value of the time code of the overwriting event with the result that the registered time code will differ from time code after registration.



Setting Tracks for Overwriting

Select tracks to overwrite. When V is selected, audio on the channel other than that selected by video and EXTRA is overwritten. When VIDEO and EXTRA TRACK are selected, all audio and video tracks are overwritten.

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

2 Press the SET button, choose [VIDEO], [EXTRA AUDIO], and select desired tracks. Then press the SET button.

◆ **NOTE:**

- You can also use the INPUT SELECT AUDIO and VIDEO buttons to select INPUT TRACKS.
- Overwriting takes place only when VIDEO or EXTRA AUDIO is selected.
- In overwriting, you can use the AUDIO CH menu to switch audio channel location in overwriting.

→For details, refer to “Audio Channel Replacement During Editing” (page 75).

Copying Event Audio to EXTRA track

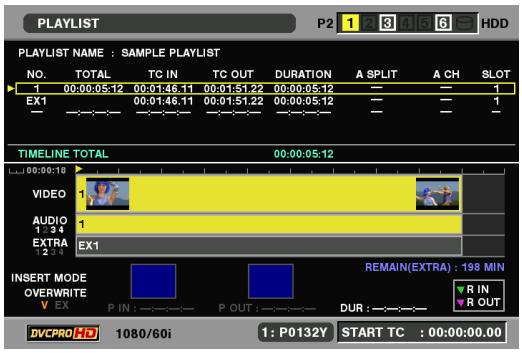
Use the steps below to copy audio registered to an event to an EXTRA track.

1 Move the cursor to the event you want to copy.

2 Press the A.DUB button to copy event audio on the EXTRA track.

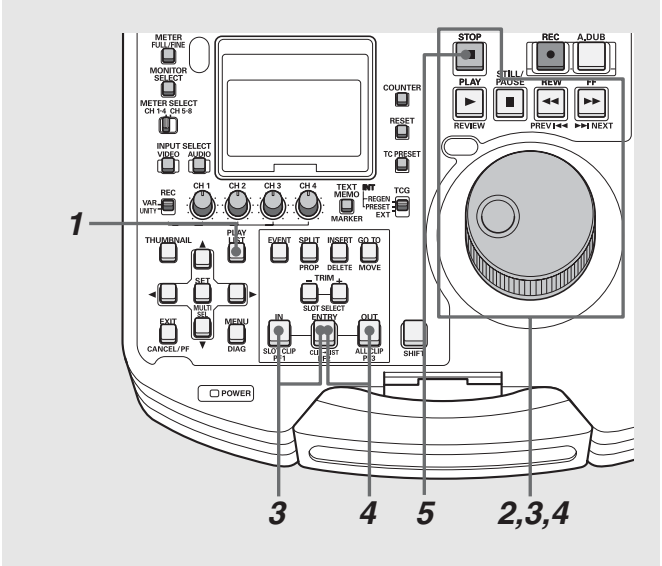
◆ **NOTE:**

- Pressing the A-DUB button after selecting multiple events simultaneously copies the events on the EXTRA track.



Selecting Write Location and Audio/Video to Import

Use the IN and OUT buttons to select the location (R IN/R OUT) for inserting video from the play list and the location (P IN/P OUT) for inserting the source video. As soon as three IN and OUT points are defined the remaining point is automatically determined and completes registration. When both IN points are defined, the end of the source clip automatically becomes the OUT point.



Registering the Overwrite Location

1 Open the play list screen.

2 Play back video to locate the overwrite location.

Use the operation buttons or search dial to play back video.

3 Register an IN point.

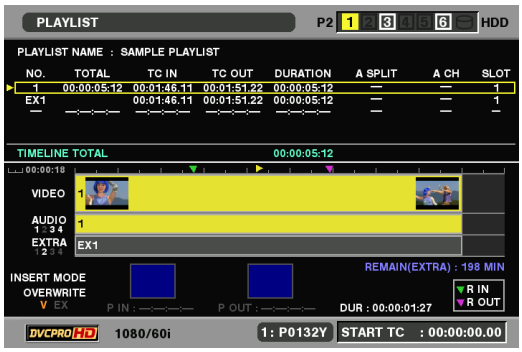
Use the PLAY or STILL button to find a location to insert audio and video. Then hold down the IN button and press the ENTRY button.

4 Register an OUT point.

Use the operation buttons or search dial to locate the end of audio and video. Then hold down the OUT button and press the ENTRY button.

5 Press STOP to return to the play list screen.

The registered IN and OUT points appear as R IN ▼ (green) and R OUT ▼ (pink) at the top of the timeline.



Registering Audio and Video for Importing

1 Find audio and video to import.

Press the INSERT button to find audio and video to import. Find audio and video to import in all clips in the matching format that will be played back.

2 Register an IN point.

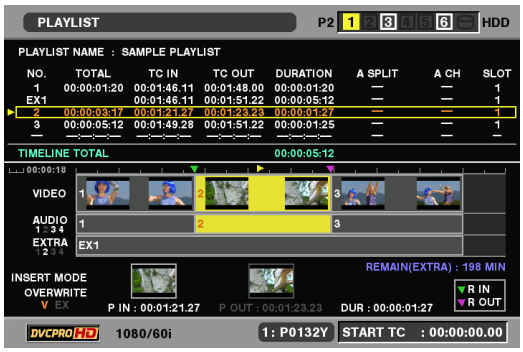
Use the operation buttons or search dial to find the start location for audio and video insertion. Then hold down the IN button and press the ENTRY button.

3 Register an OUT point.

Use the operation buttons or search dial to locate the end of audio and video. Then hold down the OUT button and press the ENTRY button.

4 Press the EVENT button to return to the play list.

The registered IN and OUT point thumbnails and time code appear as P IN and P OUT points below the timeline.



◆ **NOTE:**

- Pressing the INSERT button will also return you to the play list screen.
- The IN and OUT buttons light when an event is registered and pressing the IN and OUT buttons display the time code of the IN and OUT points.
- Pressing the IN and OUT button simultaneously shows the interval between the two points. If an OUT point is not registered, it shows the duration from the IN point to the current location.
- Holding down the SHIFT button and pressing the IN and OUT buttons simultaneously will show the total time (TOTAL DURATION) for all events.
- Holding down the IN (OUT) button and pressing the RESET button will clear the registered point.
- Pressing the IN (OUT) + ENTRY buttons in the play list will register the current playback location (yellow ▷) to R IN (R OUT).
- Pressing the IN (OUT) + GOTO buttons in the play list will move the playback location to the IN (OUT) point of the event at the cursor.
- The time code of the IN and OUT points of an EXTRA event becomes the time code of the video at that location after finalizing.

Temporary Registration and Revision of Events

When three IN and OUT points of the four IN and OUT points of the player and recorder are specified, or both IN points are specified, an event is created in unfinalized status. The event is shown in orange.

Overwrite edited events in unfinalized status can be revised.

◆ **NOTE:**

- When only the two IN points are registered, the end of the clip automatically becomes the P OUT point.
- When the fourth point is specified after specifying three points, the registration point corresponding to the fourth point is automatically cleared.

Revising P IN/P OUT while Viewing Video

1 Press the INSERT button in the play list screen to display video.

2 Press the IN (OUT) + GOTO buttons or operation buttons and press the IN (OUT) + ENTRY buttons where the revision will be made to reregister.

You can perform fine adjustment (trimming) by hold down the IN (OUT) button and pressing the TRIM (+/–) button.

◆ **NOTE:**

- Holding down the IN (OUT) button and pressing the RESET button will clear the registered point.

Revising R IN/R OUT while Viewing Video

1 Press the PLAY button in the play list screen to display video.

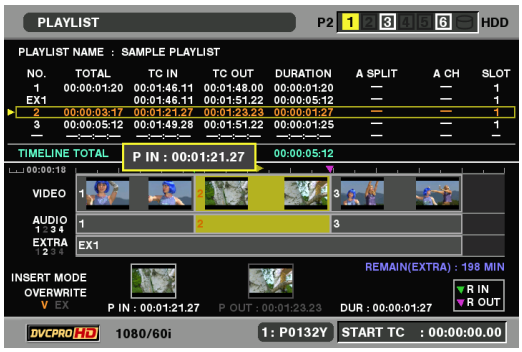
2 Press the IN (OUT) + GOTO buttons or operation buttons and press the IN (OUT) + ENTRY buttons where the revision will be made to reregister.

You can perform fine adjustment (trimming) by hold down the IN (OUT) button and pressing the TRIM (+/–) button.

Revising in the Play List Screen

1 Hold down the SHIFT button in the play list screen and press the IN (OUT) button.

2 The screen for revising IN/OUT points appears in P IN (P OUT) → R IN (R OUT) → OFF order.



3 Press the TRIM+/– button to trim.

◆ **NOTE:**

- The RESET button clears registered points.
- Holding down the button enables fast-forwarding.

4 Press the ENTRY button to finalize the change.

Or press the SET button to finalize.

Previewing and Adjusting Sound Volume

Use the following steps to preview overwritten area (in orange) to check audio and video.

1 Hold down the SHIFT button and press the PLAY button

Playback starts 3 seconds prior to the overwritten area and 1 second after the area.

◆ **NOTE:**

- Press the STOP button to stop previewing.
- Overwrite edited events in unfinalized status (all events if more than one) are played back regardless of pointer location.
- The sound can be adjusted only during a preview.

2 Use the playback volume to adjust playback level during preview.

- The playback level is fixed at the level set during preview.
- Review and play list playback plays back events at the imported sound volume.

◆ **NOTE:**

- When there are multiple events, all events are played back at the same sound volume.
- The same sound volume is used in an event and cannot be changed.

Finalizing Overwrite Editing

Use the steps below to finalize overwrite edited events in unfinalized status and return to normal event operation.

1 When there are any unfinalized events, press the REC button.

2 This finalizes the event and changes the orange of the unfinalized event to white.

◆ **NOTE:**

- When an event is not to be registered, clear the IN or OUT point or use CANCEL (hold down the SHIFT button and press the EXIT button) to clear all IN and OUT points.
- Exiting the play list by pressing the PLAYLIST button clears all unfinalized events and all IN and OUT points.
- Use the following steps to change channel settings after finalizing an event.
  1. Select an event or multiple events to edit.
  2. Choose [SETTING] – [AUDIO CH] from the menu to change the channel setting.
  3. Choose [OPERATION] – [EDIT AUDIO CH] from the menu.
  4. Select YES.

  The recalling method can also be used.

  →Refer to “Recalling Events” (page 90).

Recalling Events

The IN and OUT points of a finalized event can be registered again to allow editing at the same location. (Recall function)

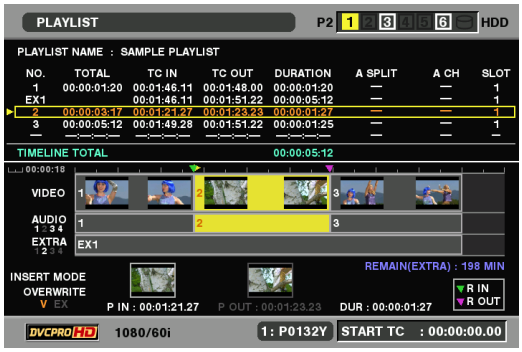
1 Move the cursor to the event you want to recall.

2 Press the REC button.

3 Register the time code at the R IN/R OUT and P IN points of the selected event to clear the finalized status.

4 Revise the IN and OUT points as necessary, adjust recording level, and set audio channels.

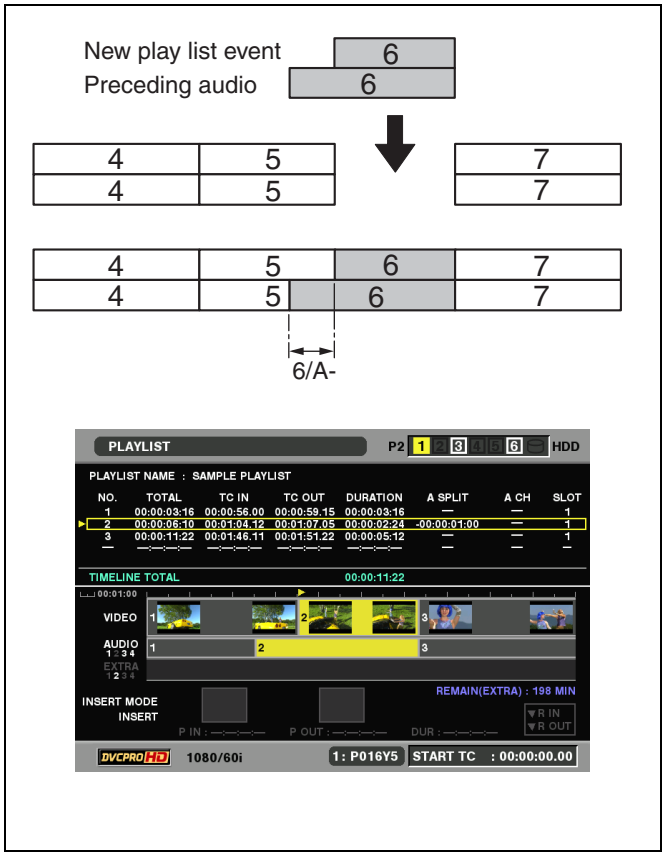
5 After revising, press the REC button to register the event.



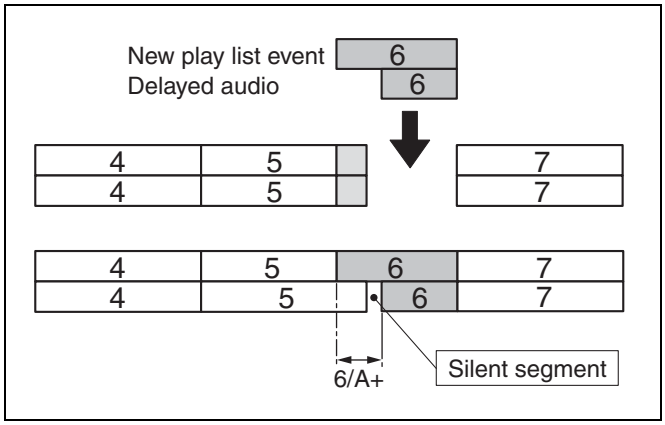
Audio Split Editing

Use audio split to shift the audio IN point relative to the video IN point (audio IN point split). Note that audio channels cannot be selected in this procedure. This function is performed on all channels together.

Play list example 1



Play list example 2

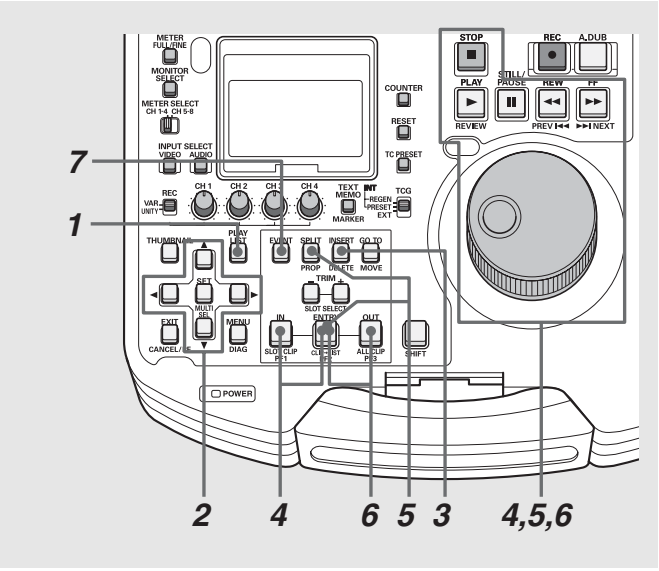


Registering From Video

Use the following procedure to newly register an event containing an audio split.

◆ **NOTE:**

- Refer to the “Adding and Registering Audio Split Point (Changing Registered Point)” section to add an audio split to a registered event.
- First set the insert mode to INSERT.



1 Open the play list screen.

2 Use the cursor buttons to choose the location where you want to add the event.

3 Press the INSERT button.

This activates the event register mode.

4 Register an IN point.

Use the operation buttons or search dial to look for a location to start an event. Then hold down the IN button and press the ENTRY button.

5 Register the audio split point.

Use the operation buttons or search dial to look for a location for an audio SPLIT point. Then hold down the SPLIT button and press the ENTRY button.

6 Register an OUT point

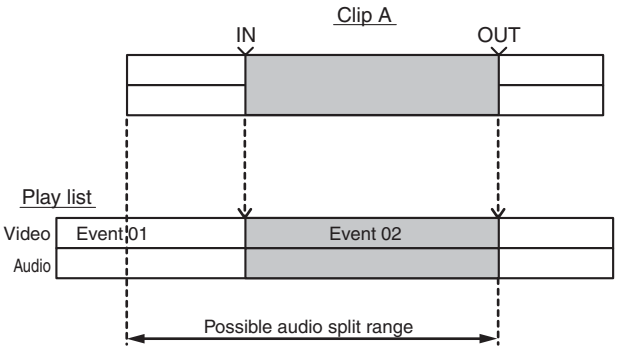
Use the operation buttons or search dial to look for a location to end an event. Then hold down the OUT button and press the ENTRY button.

7 Press the EVENT button to end registration.

The INSERT button will also terminate registration.

◆ **NOTE:**

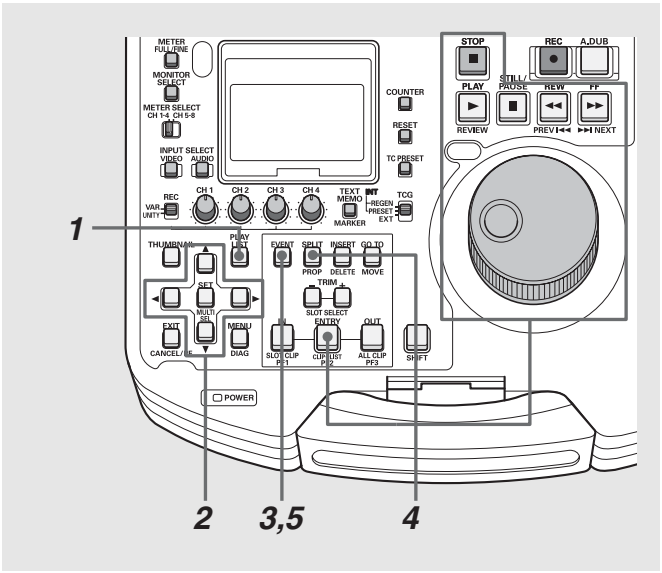
- In the split display, “–” indicates forward while “+” indicates reverse direction.
- A split can be registered from the start of the original clip to the event OUT point.



- Set the IN point before the split point.
- A SPLIT where the audio precedes the video cannot be made for an event whose IN point is at the start of the clip.
- When using the INSERT button to register a new event or using the EVENT button in a final event to register an event, register a SPLIT point before registering an OUT point as a new event will otherwise be registered.

Adding and Registering Audio Split Point (Changing Registered Point)

You can add an audio split to an event registered in the play list and change the audio split point.



1 Open the play list screen.

2 Use the cursor buttons to select the event where you want to add (or change) an audio split point.

3 Press the EVENT button.

This activates the event edit mode.

4 Register the audio split point.

Use the operation buttons or search dial to look for a location for an audio split point. Then hold down the SPLIT button and press the ENTRY button.

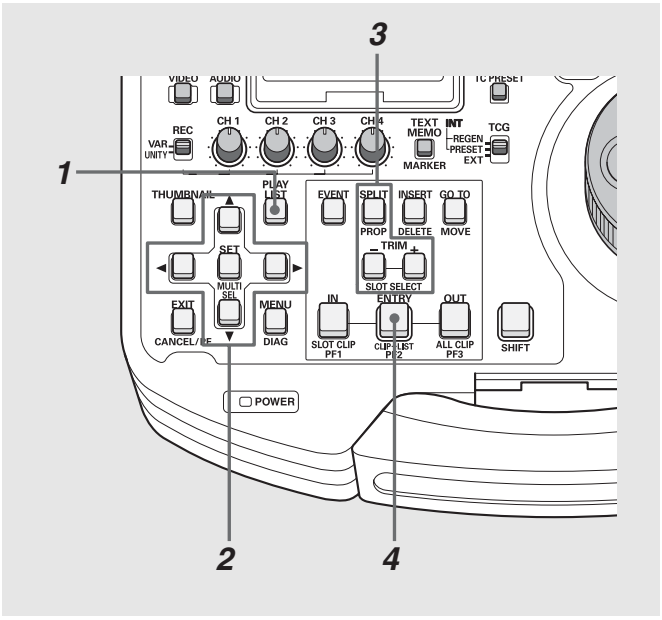
5 Press the EVENT button to end registration.

◆ **NOTE:**

- Addition can take place even when the IN point is changed before step 4 or the OUT point is changed after step 4.

Trimming the Audio Split Point

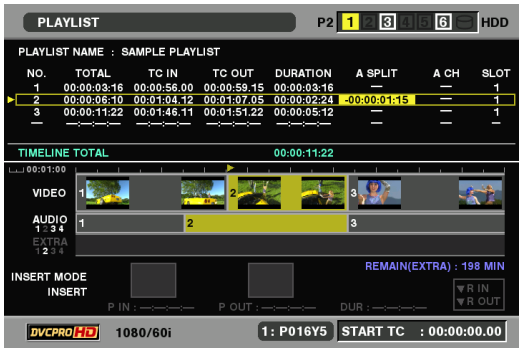
You can change audio split points in frame increments (in 4-frame increments at 24PN).



1 Open the play list screen.

2 Use the cursor buttons to select the event where you want to change an audio split point.

3 Change the audio split point.



Hold down the SPLIT button and press the TRIM+ button or the TRIM– button. The IN point is incremented or decremented in frame increments (in 4-frame increments at 24PN).

◆ **NOTE:**

- During trimming the split point is indicated in black numerals against a yellow background in the event list display of the event list split screen.

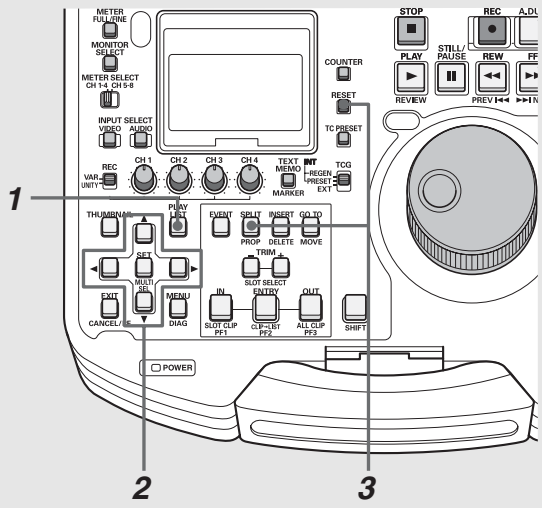
4 Press the ENTRY button to finalize the change.

◆ **NOTE:**

- Trimming cannot be performed beyond the start point of an original clip.
- The IN, OUT and SPLIT buttons allow you to use the TRIM+/– button for trimming in the event register screen when the time code is displayed.

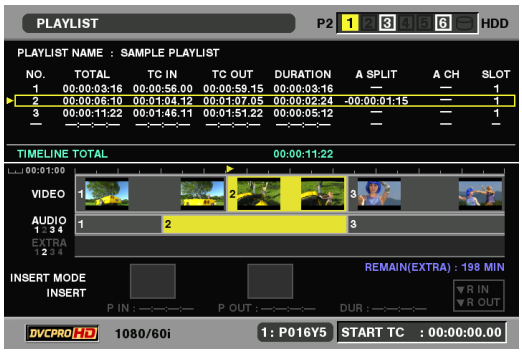
Cancelling an Audio Split Setting

Use the following procedure to cancel an audio split setting.



1 Open the play list screen.

2 Use the cursor buttons to select the event where you want to cancel the split setting.



3 Hold down the SHIFT button and press the RESET button.

This cancels the audio split setting.

◆ **NOTE:**

- Use the play list screen or the event register mode to cancel a split setting.
- An audio split point is also cancelled by deleting the event IN point or by moving to a different clip.

Simplified Voice-Over

This function allows you to make voice-overs and give priority to the voice-over during playback. Recording is performed on one or two channels. The channel input during recording can be mixed with the playback sound.

◆ **NOTE:**

- The voice-over data is written to the same card storing the play list. Thus the play list must be saved before audio recording or an error will be generated and recording cannot be performed.
- The maximum recording time is 720 minutes.
- The maximum number of voice-overs is 99.
- Check the remaining time on the P2 card before saving the play list. Otherwise there may not be enough time for the voice-over recording. When the P2 becomes FULL, an error occurs and recording cannot be started.
- Simplified voice over is not available when 24 or 60-24 is selected in setup menu No. 25 SYSTEM FREQ.

Preparing for Voice-Over

Make the required settings in the related setup menu prior to a voice over recording.

→For details on settings, refer to “Setup” (page 115).

Selecting a Track for Recording

Select the voice-over track from one of the following tracks in setup menu No. 792 (A DUB CH):
CH1, CH2, CH3, CH4, CH1+2, CH3+4

◆ **NOTE:**

- Recording tracks can be selected when the play list does not contain any voice-overs. When it does contain a voice-over, subsequent voice-overs use the same recording track.

Mixing Playback Sound

You can select whether to mix the playback sound during a voice-over in setup menu No. 793 (A DUB PB MIX).
When mixing is selected, select the channels to mix in setup subscreen.
The playback sound of the selected channels is mixed with A DUB CH and recorded.
When there are multiple A DUB CH, make separate settings for each.

◆ **NOTE:**

- In play list playback, playback level is set to UNITY fixed, or registered recording level and cannot be changed. However, EE audio while the A.DUB button is pressed and during A.DUB can be adjusted.
- The playback level of short playback of voice-overs from still status cannot be changed.

Selecting Method for Connecting Audio IN and OUT Points

In setup menu No. 796 (A DUB FADE), select whether the voice-over should be blended with the original audio using cut or V-fade.
This setting is reflected to play list playback and edit copy.

→Refer to “Playing Back the Play List” (page 101).
→Refer to “Creating New Clips From the Play List (Edit Copy)” (page 102).

◆ **NOTE:**

- When an audio is overwritten and added using cut to an audio added by V-fade, V-fade will be applied to the connecting point.

Setting Output Voice During A DUB

In setup menu No. 797 (A DUB MONI), select whether the audio being recorded should be output during the voice-over.

Setup Example

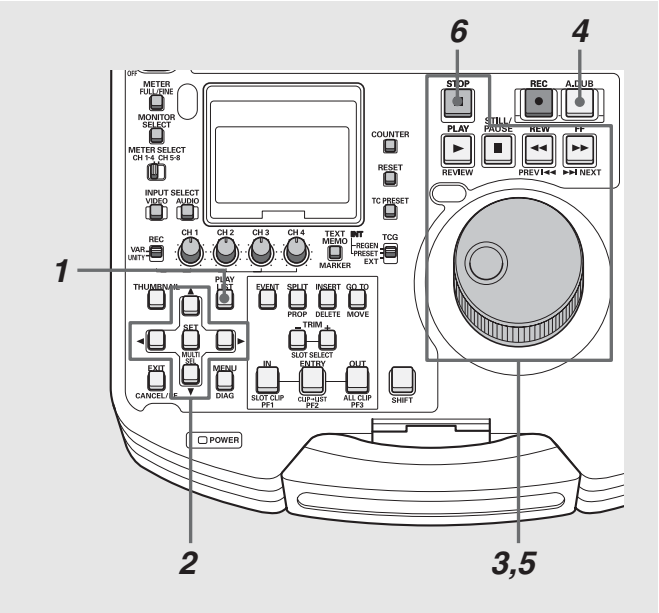
Connect a microphone to analog CH2 and mix the microphone input with CH2 playback audio and use cut processing to record on CH2. Use headphones to listen to the playback audio during recording.

Selecting recording tracks	A DUB CH = CH2
Selecting mixing with playback sound	A DUB PB MIX = ON
	CH2 MIX = CH2
Selecting audio connection	A DUB FADE = CUT
During simultaneous A DUB setting	A DUB MONI = OFF

◆ **NOTE:**

- Input a reference signal when mixing SDI input audio.
- IEEE1394 input audio cannot be used for voice-overs.

Voice-Over From Still Image Status



1 Open the play list screen.

2 Use the cursor buttons to select the event where you want to perform a voice-over.

3 Find the location for the voice-over.

Use the operation buttons or the search dial to find a location for a voice-over and press STILL [❚❚].

4 Press the A.DUB button.

This generates an A DUB PAUSE state while a still image is output at the still location.

5 Press the STILL [❚❚] button.

Press the STILL [❚❚] button again. After a 2-second auto reverse and a 2-second playback interval, sound recording starts.

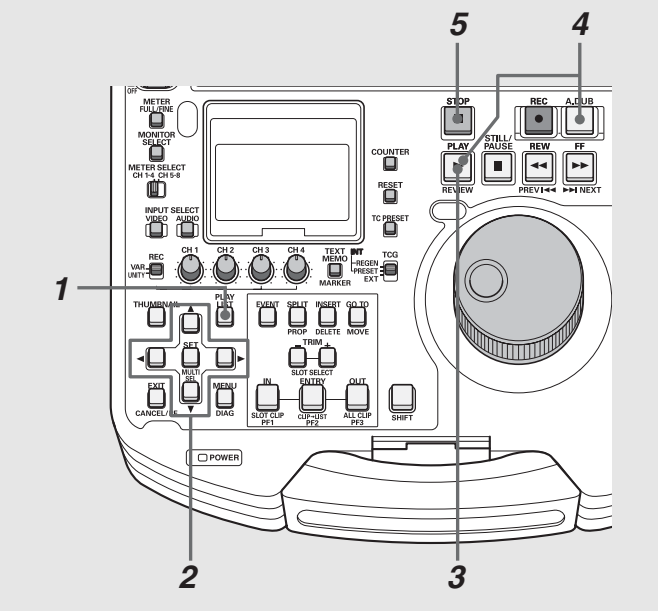
Use the VR (audio volume) controls as necessary to adjust the playback sound level.

6 Press the STOP [■] button to end the voice-over.

◆ **NOTE:**

- When the 24PN play list 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 at some other points, the IN and OUT points are automatically corrected within the recording range.

Voice-Over From Playback Status



1 Open the play list screen.

2 Use the cursor buttons to select the event where you want to perform a voice-over.

3 Press the PLAY [►] button to start playback at a location before the voice-over.

4 Hold down the A.DUB button and press the PLAY [►] button at the voice-over location.

This starts the audio recording.

Use the VR (audio volume) controls as necessary to adjust the playback sound level.

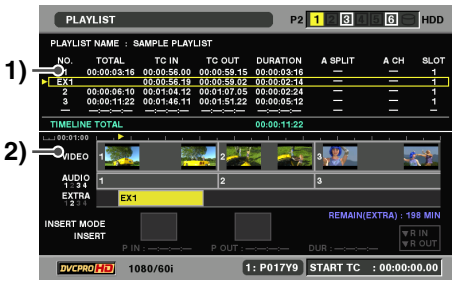
5 Press STOP [■] button to end the voice-over.

◆ **NOTE:**

- When the 24PN play list 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 at some other points, the IN and OUT points are automatically corrected to fall within the recording range.

Displaying Voice-Over Events

The voice-over appears in the play list screen as shown below.



1) Play List

- The voice-over is added to the line after an event with an audio start point.
- The "No." column shows "EX*," not an event number.
- The "SLOT" column shows P2 card slot numbers storing audio data (same as P2 card slots storing the play list).

2) Timeline

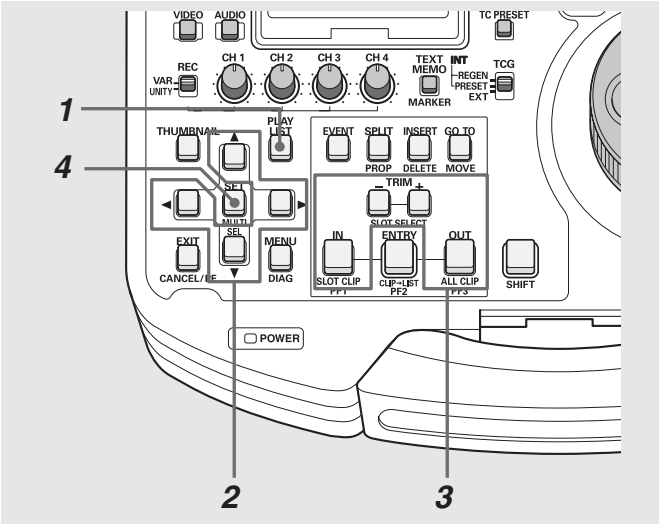
- Extended tracks are indicated in the "EXTRA" part.
- Recorded channel numbers are also shown.

◆ **NOTE:**

- Use the TRIM button to zoom in (+) and zoom out (–).
- When a card with a voice-over is not inserted (and NONE is indicated), play list files cannot be saved and EXTRA audio event cannot be deleted.

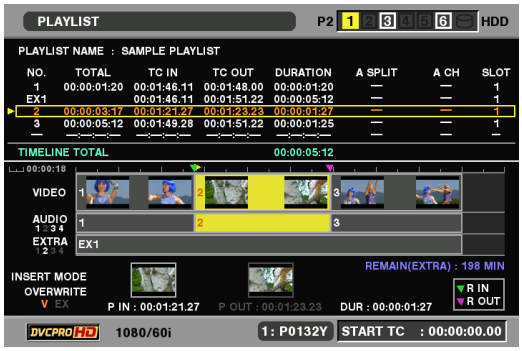
Changing the Trimming of Audio Recording Location

This function allows you to adjust the location of a voice-over in frame increments (at 24PN in 4-frame increments).

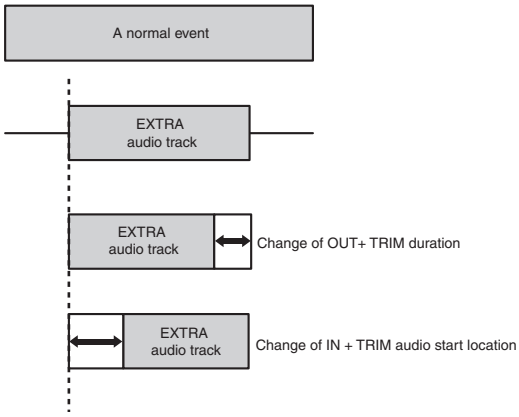


1 Open the play list screen.

2 Select the event you want to change.



3 Use the following procedure to change offset and duration.



Change of start location:	Hold down the IN button and press the TRIM+ button or the TRIM– button. The start location is incremented or decremented in frame increments (in 4-frame increments at 24PN).
Change of end location:	Hold down the OUT button and press the TRIM+ button or the TRIM– button. The OUT point is incremented or decremented in frame increments (in 4-frame increments at 24PN).

4 Press the ENTRY button to finalize the change.

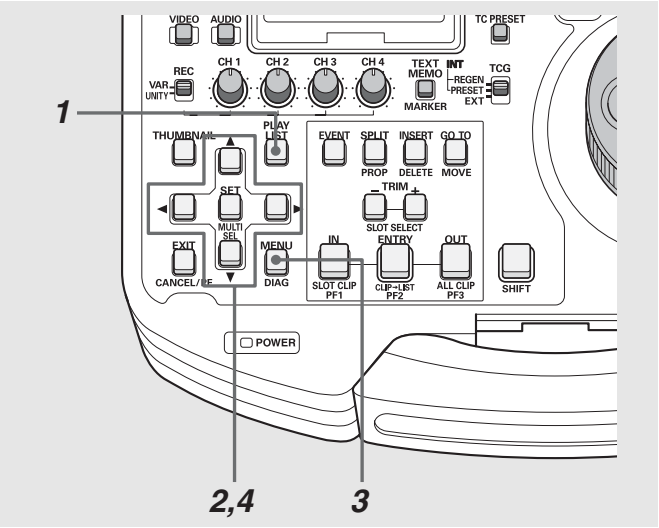
◆ **NOTE:**

- Except for the ENTRY button, you can also use the SET button or move the cursor with the cursor buttons to finalize a change.

Viewing Event Information

Indicating Event Property

You can use this function to view and confirm miscellaneous event information.

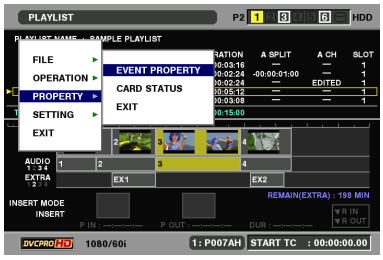


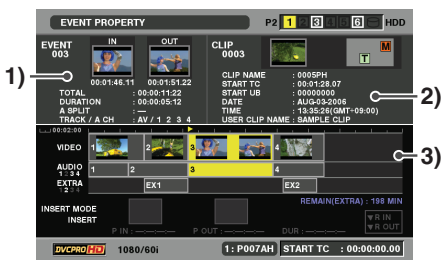
1 Open the play list screen.

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] – [EVENT PROPERTY] and press the SET button.





Information on the event appears.

◆ **NOTE:**

- Holding down the SHIFT button in step 2 while pressing the SPLIT button will also open the event information screen.
- You can use the cross cursor buttons to move to the previous or next event while viewing event information.

1) Event information

Event number
IN point and OUT point thumbnails and TC value
TOTAL (length from the beginning of the 1st event to the end of the current event)
DURATION (event length)
A SPLIT (audio split length)
TRACK / A CH
(Track status and audio channel status: AV = audio and video/FADE (CUT) = EXTRA audio splicing, indication of channels inserted in channels 1 - 4.)

2) Original clip information for an event

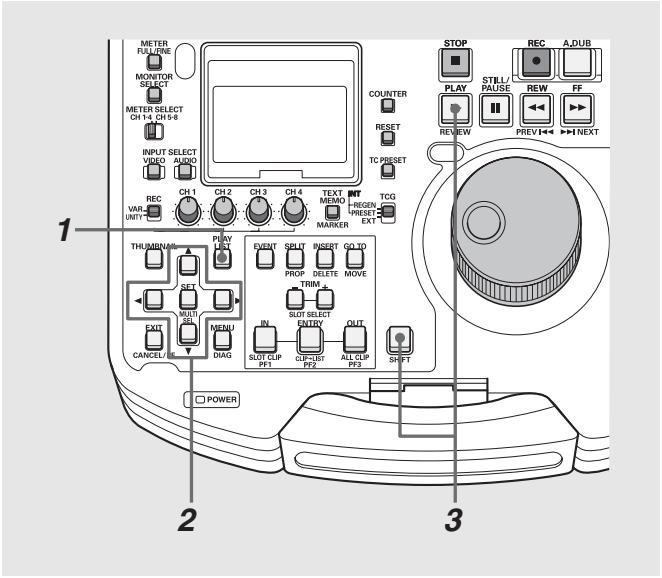
Clip number (same as thumbnail display number)
Clip thumbnail
Various indicators and write protect status
CLIP NAME (name of clip)
START TC (start value of time code)
START UB (user bit start value)
DATE (record date)
TIME (recording time)
USER CLIPNAME (clip name assigned by the user)

3) Timeline

5 Press the EXIT button to end information display.

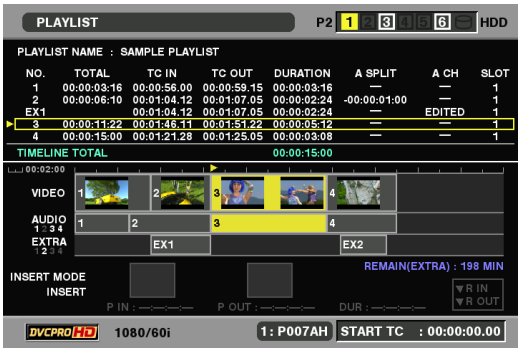
Event Review

You can use this function to check the content of an event by playing if from its IN point to its OUT point.



1 Open the play list screen.

2 Use the cursor buttons to select the clip you want to review.



3 Hold down the SHIFT button and press the PLAY [►] button.

This plays back the clip from before the IN point (preroll time is 3 s) to beyond its OUT point (postroll time is 1 s).

◆ **NOTE:**

- The preroll time and postroll time for the first and last clip are both 0 s.
- When review stops or you press the STOP [■] button, playback stops and you return to the play list screen.
  During review all buttons other than the STOP [■] button are not available.
- A review operation can be re-started during the review currently in progress.

Playing Back Play Lists

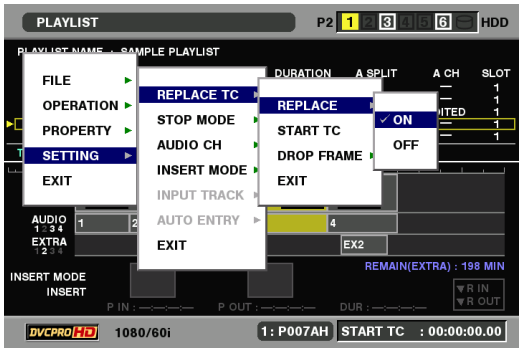
Setting the Playback Time Code (TC)

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

1 Open the play list screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [SETTING] – [REPLACE TC] – [REPLACE].



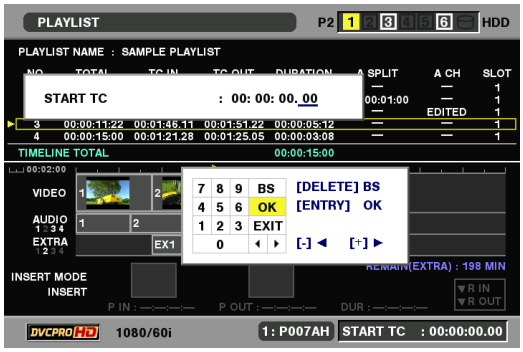
4 Select [ON] and press the SET button.

This replaces the playback time code.

◆ **NOTE:**

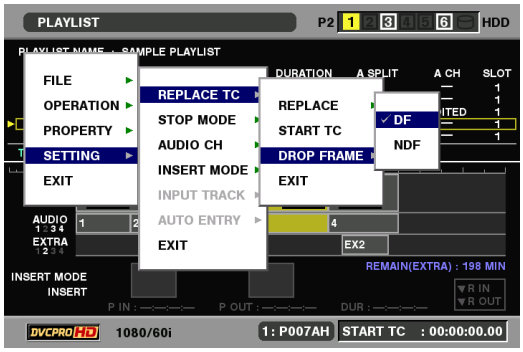
- When [OFF] is set, the time code is not replaced, instead the time code of each clip is output.
- When [OFF] is set, go to step 7 and end setup.

5 Use the cursor buttons to choose [SETTING] – [REPLACE TC] – [START TC] and press the SET button to enter the start time code.



The initial value of the start time code is 00:00:00:00 when replaced.

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).



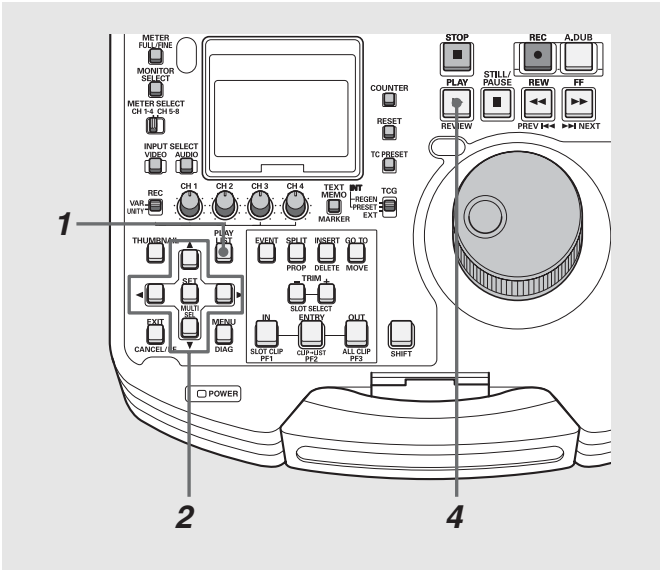
◆ **NOTE:**

- A [DF] setting cannot be made at 24PN.
- [DROP FRAME] does not appear when 50, 25 or 60-25 is selected in setup menu No. 25 SYSTEM FREQ.

7 Press the MENU button to end setup.

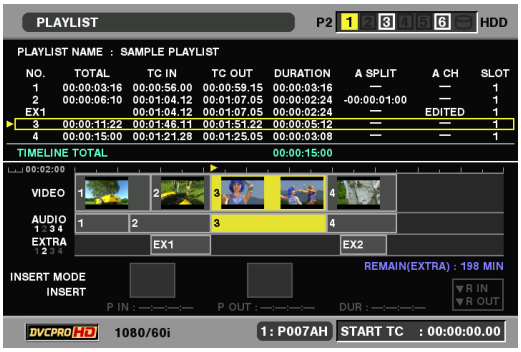
Playing Back the Play List

Use the following procedure to play back the play list.



1 Open the play list screen.

2 Use the cursor buttons to select the event you want to start playback.



3 Set the playback time code as necessary.

→ For details, refer to “Setting the Playback Time Code (TC)” (page 100).

4 Press the PLAY ► button.

Playback starts from the cursor location and continues until the end of the play list or until all playable events have been played.

◆ NOTE:

- During play list playback, insert all the P2 cards that contain events that belong to the play list or normal playback will not be possible. The number of the first and subsequent events that cannot be played back are indicated in red.
- Use the STOP ■ button to stop ongoing playback.
- The default stop mode setting of this unit is RETURN. Thus you return to the play list screen when playback is stopped by pressing the STOP ■ button or the automatic stop function stops playback upon reaching the beginning or end of all events. The cursor position then moves to the event where the STOP button was pressed.
- If the menu stop mode is set to STAY, stopping playback does not return you to the play list screen but a still image is continuously displayed.
- If the menu stop mode is STAY, press the PLAY LIST button or the EXIT button after playback stops to return to the play list.
- Remote switching is available also during play list playback. The STAY stop mode is a convenient setting in remote control using RS-422A.

Creating New Clips From the Play List (Edit Copy)

You can use the play list to create a new clip.
This function is called edit copy.

◆ **NOTE:**

- The playback time code setting allows you to start the time code from a set value after edit copy. Set the playback time code as necessary.
  → For details, refer to “Setting the Playback Time Code (TC)” (page 100).
- Play list files created on the AJ-SPD850 can be loaded but not edited. However, edit copy becomes available after saving the file under another name using SAVE AS.

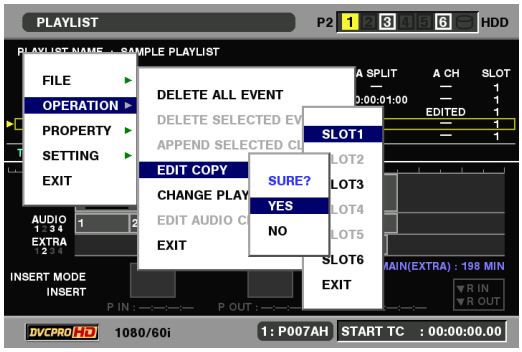
1 Open the play list screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [OPERATION] – [EDIT COPY].

4 Select the number of the P2 card slot that will store the edit copy data and press the SET button.

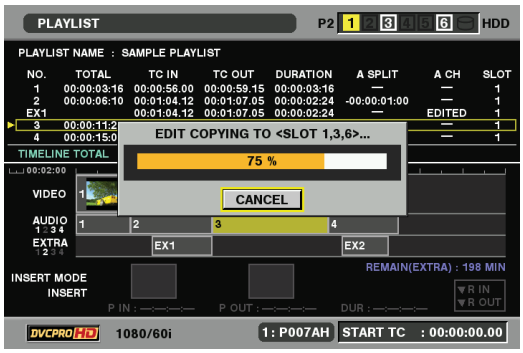
5 Select [YES] and press the SET button.



This starts edit copy.

◆ **NOTE:**

- If total free space on an inserted P2 card is not sufficient to store edit copy data, the message “WARNING: LACK OF REC CAPACITY!” appears and edit copy does not start.
- Edit copying indicates its approximate progress during operation.
- Use the SET button or the CANCEL button to cancel an ongoing edit copy operation.
- Text memos are automatically inserted at the edit points (the start of each event) of edit-copied clips.
- Edit copying does not copy any information other than the user clip name.
- The presence of different aspect ratios in the data will generate an error.
- Edit copy will copy only events that can be played back.
- Do not remove a P2 card that is being accessed (the LED of the related P2 card slot flashes).
- When the specified card does not have enough space to store all the data, the remaining data is automatically copied to a P2 card in the next number slot. The number of the slots where the data is copied is displayed during copying or when copying ends.

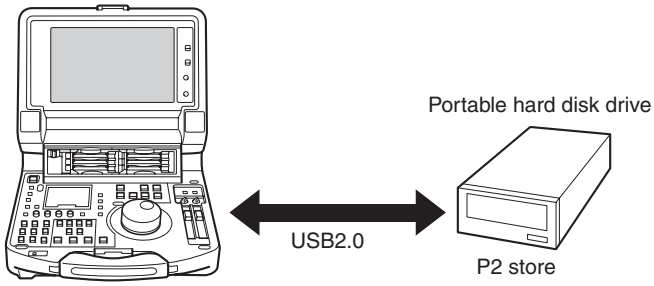


Using USB Connectors and SD/SDHC Memory Cards

Using USB Connectors

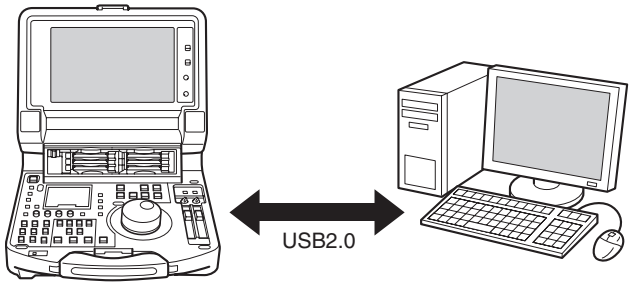
You can use the USB 2.0 connector on this unit to connect a hard disk or a PC to save and manage clips efficiently.

Using the Unit as a USB Host



Connect a USB 2.0 hard disk to save P2 card data, view saved data and import data to P2 cards.

Using the Unit as a USB Device



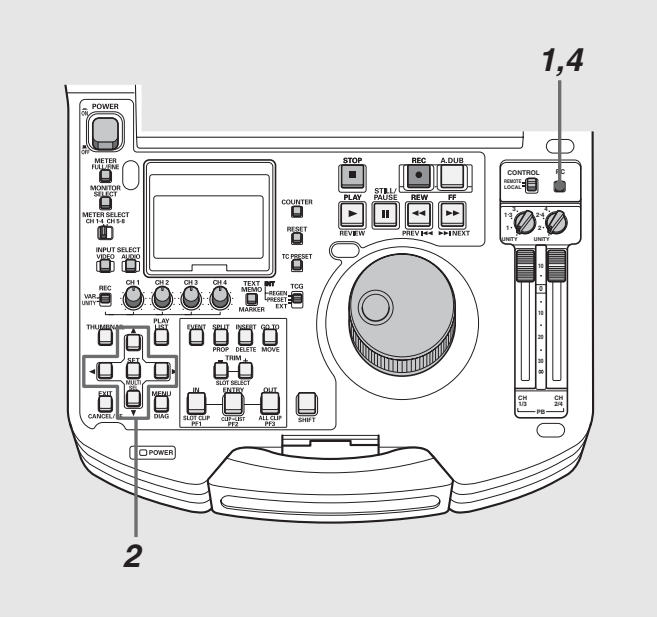
A USB 2.0 connection with a PC allows you to use P2 cards inserted in the slots on this unit as mass storage. The PC then requires that a USB (USB 2.0) driver be installed.
Use of P2 viewer, which can be downloaded from the following site, allows you to manipulate clips stored on a P2 card on a Windows PC.
https://eww.pavc.panasonic.co.jp/pro-av/

◆ **NOTE:**

- For details regarding connections, refer to the Operating Instructions supplied with the PC and the application software.

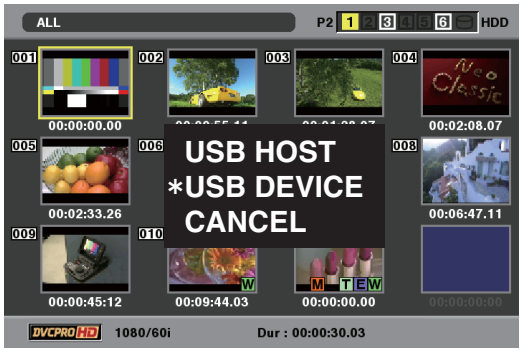
Connecting a PC to This Unit

Switching to USB Device Mode



1 Press the PC button when this unit is idle.

2 Select [USB DEVICE] in the confirmation screen 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 screen. 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 PC button to return to regular mode.

◆ **NOTE:**

- Recording and playback are not available in the USB device mode.
- In the play list mode, the PC button is not available during remote operation.
- In the USB device mode, USB is displayed on the panel and the VIDEO and AUDIO INPUT SELECT indications disappear.

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

Hard Disk Types and Available Functions

Available functions depend on the type of hard disk used. In the host mode, “PARTITION:” in the left half of the Explorer screen provides information on the hard disk that is connected to the unit.

◆ **NOTE:**

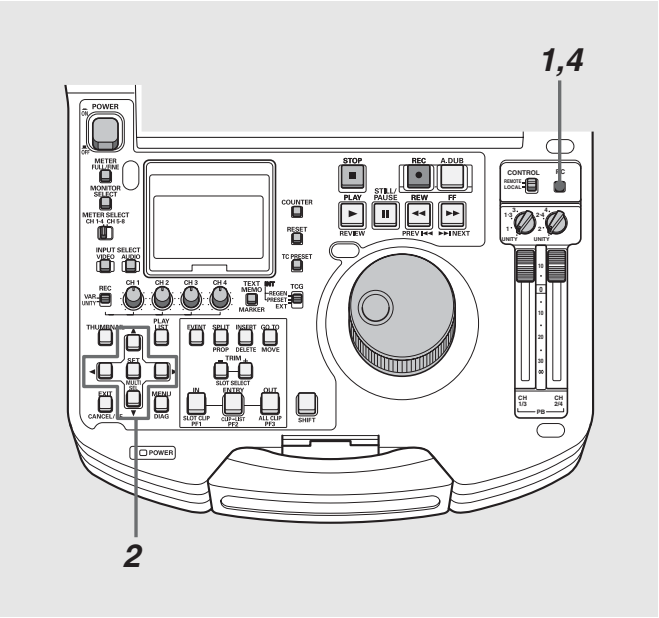
- This unit supports USB bus power (5 V, 0.5 A) but some hard disks may not be able to use USB bus power. Use a separate power supply with hard disks that do not support USB bus power.
- This unit does not support hard disks that are 2 TB (2048 GB) or larger.

Hard disk type	Features	available functions
TYPE S	A special format that permits high-speed loading of and writing in card units. This unit uses this format for formatting.	Loading and writing in card units, thumbnail display, loading and formatting in clop units.
P2STORE	This is a P2 store (AJ-PCS060G). It cannot be written to.	Loading in card units, thumbnail display, loading in clip units.
FAT	The basic primary partition on a PC is FAT 16 or FAT 32 that require a CONTENTS directory created in its foot directory.	Thumbnail display, loading in clip units, formatting * After formatting on this unit, the card is handled as a “TYPE S” hard disk.
OTHER	Hard disk other than those above * If root does not contain a directory called “CONTENTS” or if a file system other than NTFS, FAT16 or FAT32 is used.	Formatting * After formatting on this unit, the card is handled as a “TYPE S” hard disk.

◆ **NOTE:**

- Use hard disks under the following conditions.
  1) Operate hard disks within its operating specifications (temperature, etc.).
  2) Do not use hard disks in locations that are unstable or exposed to vibration.
- Some hard disks may not operate normally.
- Use a hard disk with sufficient space for copying.
- Do not connect a hard disk to hubs or other connections that involve multiple units even if it is not powered on. Do not use other devices that are connected via hubs with a hard disk.
- 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 precision instrument whose read and write functions may fail in some operating environments.
  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 managed on another PC, the data can no longer be guaranteed to work in this unit and the integrity of the hard disk data cannot be guaranteed, either.
- Repair bad clips on P2 cards before copying them to a hard disk.
- Clips on hard disks cannot be played back.
- SATA (serial ATA) or PATA (parallel ATA) interface hard disks connected using a USB cable may not be recognized.

Switching to USB Host Mode

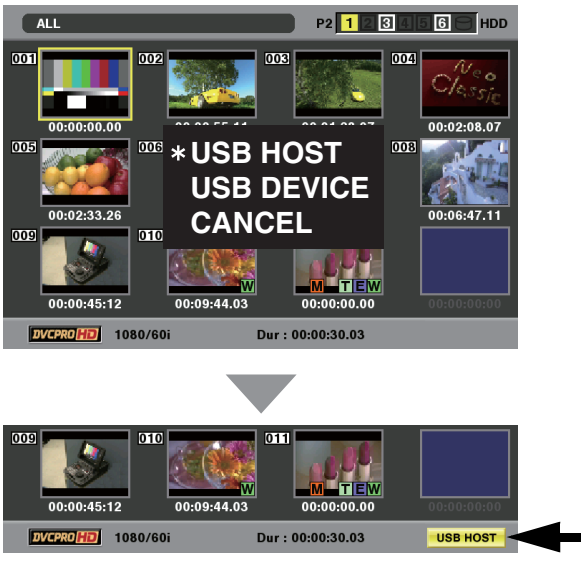


1 Press the PC button when this unit is idle.

◆ **NOTE:**

- In the play list mode, the PC button is not available during remote operation.

2 Select [USB HOST] in the confirmation screen and press the SET button.



"USB HOST" flashes on the LCD monitor to indicate that the unit is entering the USB host mode. After the mode switch, the thumbnail screen appears and "USB HOST" is indicated in the lower right corner.

3 Use USB host mode operations.

◆ **NOTE:**

- While P2 cards played back in USB host mode will appear on the LCD monitor, the inputs and output on the rear panel will not work.
- Recording on P2 cards is not available, either.

4 Press the PC button to return to regular mode.

The PC button will not work during card access.

◆ **NOTE:**

<When switching to the USB host mode>

- You cannot switch to the play list mode from the USB mode.
- In USB host mode, the VIDEO and AUDIO INPUT SELECT indications in the display panel disappear.

Formatting Hard Disks

Initialize the hard disk in a TYPE S format.

◆ **NOTE:**

- Formatting a hard disk deletes all data on the disk.

1 Switch to the USB host mode.

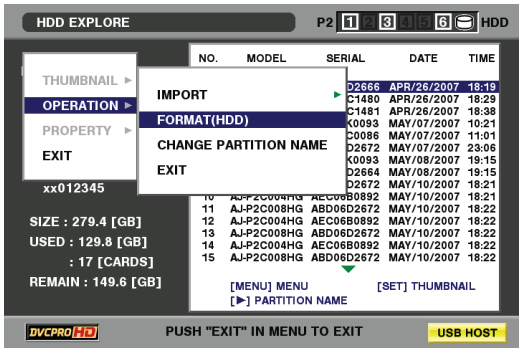
2 Connect a USB hard disk.

3 Press the MENU button.

4 Use the cursor buttons to choose [HDD] – [EXPLORE] and press the SET button.

This opens Explorer.

5 Press the MENU button and use the cross cursor buttons to choose [OPERATION] – [FORMAT (HDD)] and press the SET button.



6 Select [YES] and press the SET button.

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

This starts hard disk formatting.

Exporting to a Hard Disk in Card Units

A TYPE S hard disk allows you to export data to a hard disk (by writing data from a P2 card to a hard disk) in P2 card units. First use this unit to format the hard disk. Up to 23 cards can be exported to a hard disk.

The exported data from a P2 card is recognized as a separate drive on a computer.

1 Switch to the USB host mode.

2 Connect a USB hard disk.

If the hard disk has not been formatted by this unit, use this unit to format it.

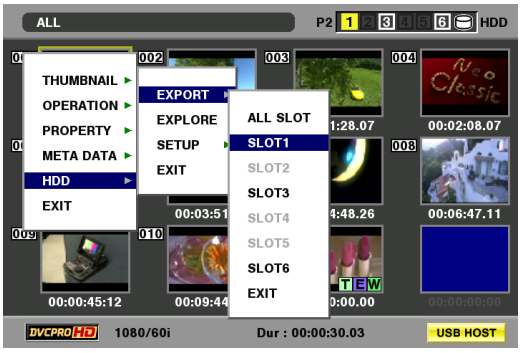
→For details, refer to “Formatting Hard Disks” (page 106).

3 Insert a P2 card

4 Open the thumbnail screen.

5 Press the MENU button.

6 Use the cursor buttons to choose [HDD] – [EXPORT].



7 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 cards.

8 Select [YES] and press the SET button.

This starts exporting.

◆ **NOTE:**

- A progress bar appears during exporting.
- To interrupt exporting, press the SET button, select [YES] in the cancel confirmation screen and press the SET button again.
- The export operation will end earlier if the verify setting is not engaged.
  To turn off this setting, choose [HDD] – [SETUP] – [VERIFY] – [OFF].
- Copying of a P2 card that is interrupted during verification will still be successful.
- To export data to the specified folder when the hard disk is connected to a PC running under Windows, use the drive mount converter that you can download freely from the following web site. You may use the drive mount converter when there is un invisible partition because the drive overlaps an already assinged network.
  https://eww.pavc.panasonic.co.jp/pro-av/

When the export operation ends, “COPY COMPLETED!” appears.

Displaying Hard Disk Information (Explorer Screen)

Use this function to view hard disk information.

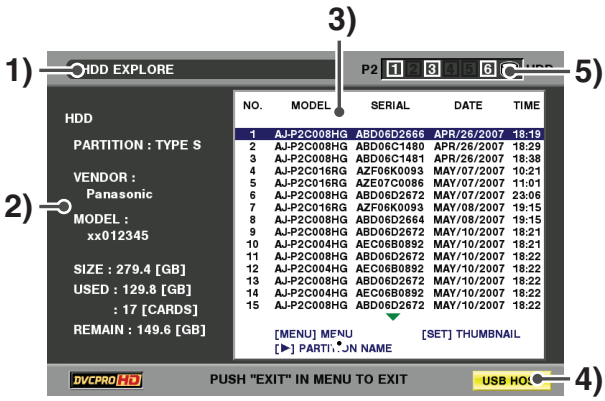
1 Switch to the USB host mode.

2 Connect a USB hard disk.

3 Open the thumbnail screen.

4 Press the MENU button.

5 Use the cursor buttons to choose [HDD] – [EXPLORE] and press the SET button.



◆ **NOTE:**

- Use the right and left cursor buttons to switch between date lists and partition names.

1) Display status

The name of the screen (HDD-EXPLORE)

2) Disk information

The following information appears.

Hard disk that makes it possible to read and write data by the card.	PARTITION:	TYPE S/ P2STORE
	VENDOR:	Name of vendor
	MODEL:	Model name
	SIZE:	Size (unit: GB)
	USED:	Memory used (unit: GB) Used P2 card area (unit: cards) up to 23 cards
	REMAIN:	Remaining memory (unit GB)
Regular hard disk	PARTITION:	FAT/OTHER
	VENDOR:	Name of vendor
	MODEL:	Model name
	SIZE:	Memory used (unit: GB)

3) Partition information

→Details are provided on the next page.

◆ **NOTE:**

- The partition information for an invalid partition on a P2 store is indicated in gray.
- Only information for the primary partition is displayed for a hard disk that is formatted using FAT.

4) USB HOST

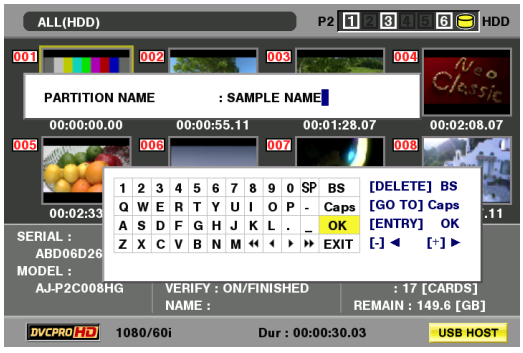
The USB host mode indicator

5) Hard disk drive status

Indicates whether or not a hard disk is connected and hard disk type.

◆ **NOTE:**

- To name a partition (up to 20 characters), choose [CHANGE PARTITION NAME] in the [OPERATION] menu in hard disk thumbnail screen.



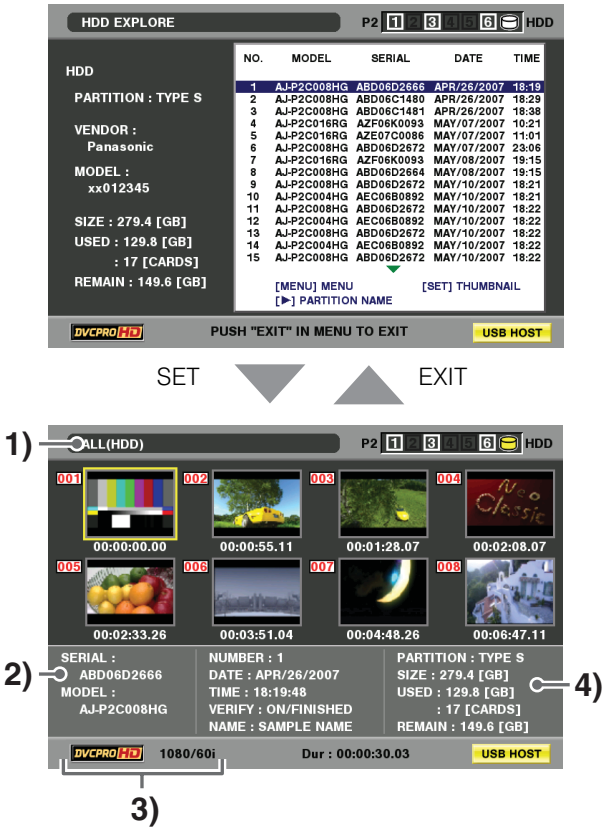
Displaying Clip Thumbnails on a Hard Disk

You can display thumbnails and manage clips stored on the hard disk in the same way as clips on P2 cards.

1 Open the explorer screen.

2 Use the cursor buttons to select the partition where you want to view thumbnails and press the SET button.

A thumbnail of the clip on the partition now appears.



1) Display status

Indicates the status of thumbnails of hard disk clips.

2) Partition information

The following information appears.

SERIAL:	P2 card serial number
MODEL:	P2 card model name
NUMBER (No.):	Partition number (1 -)
DATE/ TIME:	Date and time of partition recording
VERIFY:	Verify setting and result at time of recording
	ON: FINISHED — Verification was successful
	ON: FAILED — Verification failed
	OFF — No verification
	* "--" is displayed on P2 store.
NAME:	User assigned partition names

3) Record mode and system format

Indicates the record mode and system format of the clip at the cursor location.

4) Disk information

→Details are provided on the previous page.

◆ **NOTE:**

- Press the EXIT button to return to the explorer screen.
- Change the thumbnail screen display as necessary. These changes are performed in the same way as when using P2 cards.

→For details, refer to "Changing Thumbnail Display" (page 45).

- Hard disks formatted using FAT can handle up to 1000 clips. Any clips beyond that limit cannot be opened.
- Use the TRIM+ / – buttons to move to thumbnail displays on previous and subsequent partitions.

Viewing Hard Disk Clip Information

You can view a variety of metadata on clips stored on a hard disk. The content is the same as that displayed by a P2 card clip property.

1 Select a clip in the hard disk thumbnail screen.

Detailed clip information is displayed on the screen.

2 Press the MENU button.

3 Use the cursor buttons to select [PROPERTY] – [CLIP PROPERTY] and press the SET button.

→For details, refer to "Viewing and Revising Clip Information" (page 55).

Importing Data from the Hard Disk to a P2 Card

Importing Data in Partition units from TYPE S Hard Disks and P2 Store

You can import (loading data from a hard disk to a P2 card) data in partition units (card units) at high-speed to a P2 card that has the same capacity as the source card.

1 Insert the P2 card to which the data will be imported.

2 Open the P2 thumbnail screen.

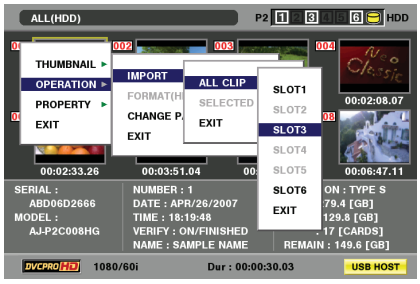
3 Press the MENU button.

4 Use the cursor buttons to select [HDD] – [EXPLORE] and press the SET button.

5 Select the partition that will be copied and press the SET button.

6 Press the MENU button.

7 Use the cursor buttons to choose [OPERATION] – [IMPORT] – [ALL CLIP] and press the SET button.



8 Select the number of the P2 card slot where the formatted P2 card resides to which the data will be imported and press the SET button.

9 Select [YES] and press the SET button.

This starts importing. When the import operation ends, “COPY COMPLETED!” appears.

◆ **NOTE:**

- When data is imported to a P2 card that differs from the original P2 card, some clips may become incomplete (! indicator). Then use the reconnection function to rebuild the clip. Refer to “Reconnecting Incomplete Clips” (page 54).
- A menu setting allows you to turn verification during copying on or off.

Importing Data to a P2 Card in Clip Units

You can select a hard disk clip and import it to a P2 card.

1 Insert the P2 card where the data will be imported to.

2 Open the hard disk thumbnail screen.

3 Press the MENU button.

4 Use the cursor buttons to select [HDD] – [EXPLORE] and press the SET button.

5 Select the partition that will be copied and press the SET button.

6 Select a clip to copy.

7 Press the MENU button.

8 Use the cursor buttons to choose [OPERATION] – [IMPORT] – [SELECTED CLIPS].

9 Select the number of the P2 card slot that will import the data and press the SET button.

10 Select [YES] and press the SET button.

This starts importing.

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

◆ **NOTE:**

- Verification is not performed when an entire clip is imported.
- The operation of “importing data in clip units” is almost the same as that of “copying clips.”

  →For cautions to be observed when importing data in clip units, refer to “Copying Clips” (page 52).

Using SD/SDHC Memory Cards

This unit supports SD/SDHC memory cards.

◆ NOTE:

• Current SETUP menu settings can be saved to and loaded from an SD memory card. For details, refer to page 140.

Displaying Miscellaneous SD Memory Card Information

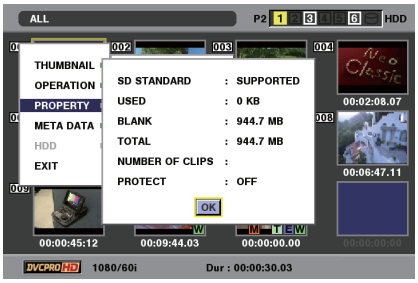
Use the following procedure to display SD memory card status on screen for checking.

1 Open the thumbnail screen.

2 Press the MENU button.

3 Use the cursor buttons to choose [PROPERTY] – [DEVICE] – [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

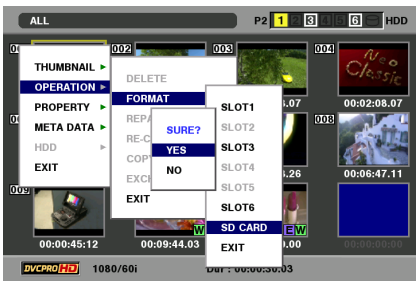
Use the following procedure to format an SD memory card inserted in an SD memory card slot.

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.

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

◆ **NOTE:**

- Repeat the procedures in steps 2 to 4 to format P2 cards in other P2 card slots.

6 Press the MENU button to end processing.

External Remote Control

Remote operation of external devices

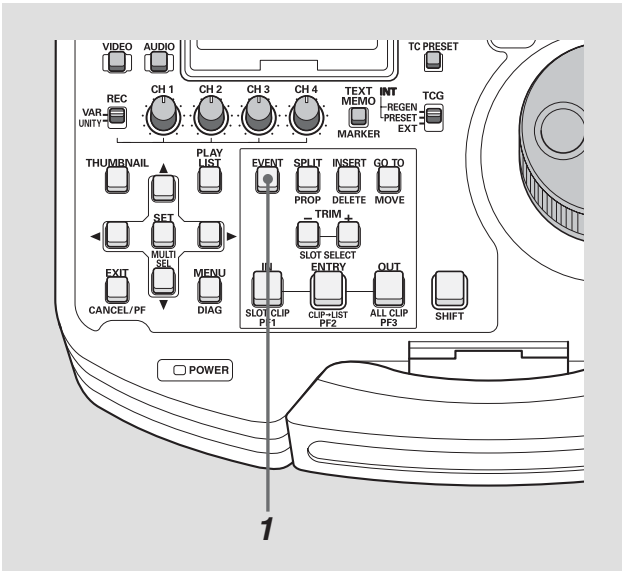
Use the RS-422A or IEEE1394 interface to send commands to an external device to control it.
The following functions permit remote control.

- PLAY, STOP, STILL, FF, REW, SHTL, JOG
- Counter and status LED indication

Setup Procedure

1 Perform either of the following steps when the THUMBNAIL and PLAY LIST buttons are off.

- In the RS-422 interface, press the EVENT button.
- In the IEEE1394 interface, hold down the SHIFT button and press the EVENT button.



- This allows the unit to perform remote control of external devices.

◆ **NOTE:**

- Select 59.94, 50, 23.98, 24, 29.97 or 25 in setup menu No. 25 SYSTEM FREQ when using RS-422A.
- Select 59.94 or 50 in setup menu No. 25 SYSTEM FREQ when using IEEE1394.
- In AVC-Intra50[*1] and AVC-Intra100[*1] formats, IEEE1394 input and output are not available.
- Complete any settings required for controlling a remotely connected device before pressing the EVENT button.

*1 Available when the optional AVC-Intra Codec board AJ-YBX200G is installed

Indications during control of external devices

In external control mode, the EVENT 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.

◆ **NOTE:**

When 1394 input is selected and the unit is in STILL mode, it goes into EE mode after engaging STOP mode.

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.
STILL	Sends the STILL +0.0 command
REW	Sends the REW command.
FF	Sends the FF command.
Dial	Sends the SHTL or JOG command.
COUNTER[*1]	Sends the switch COUNTER command (CTL/TC only).
RESET[*1]	Sends the 0 reset command in CTL mode.

*1 Available only when using RS-422A

Automatic Recording of Cards

Using the RS-422A interface

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 EVENT button when the THUMBNAIL and PLAY LIST buttons are off.

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 EVENT 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.

Using the IEEE1394 interface

Audio and video played back from the current location can be recorded to a card.

1 Enter the mode that permits control of external devices.

Hold down the SHIFT button and press the EVENT button when the THUMBNAIL and PLAY LIST buttons are off.

2 Select the start of a section you want to capture.

- Use the PLAY, STILL or other buttons to locate the start of the section you want to capture.

3 Hold down the SHIFT button and press the REC button.

- Start playback on the external device to start recording.
- To end recording, press the STOP button.

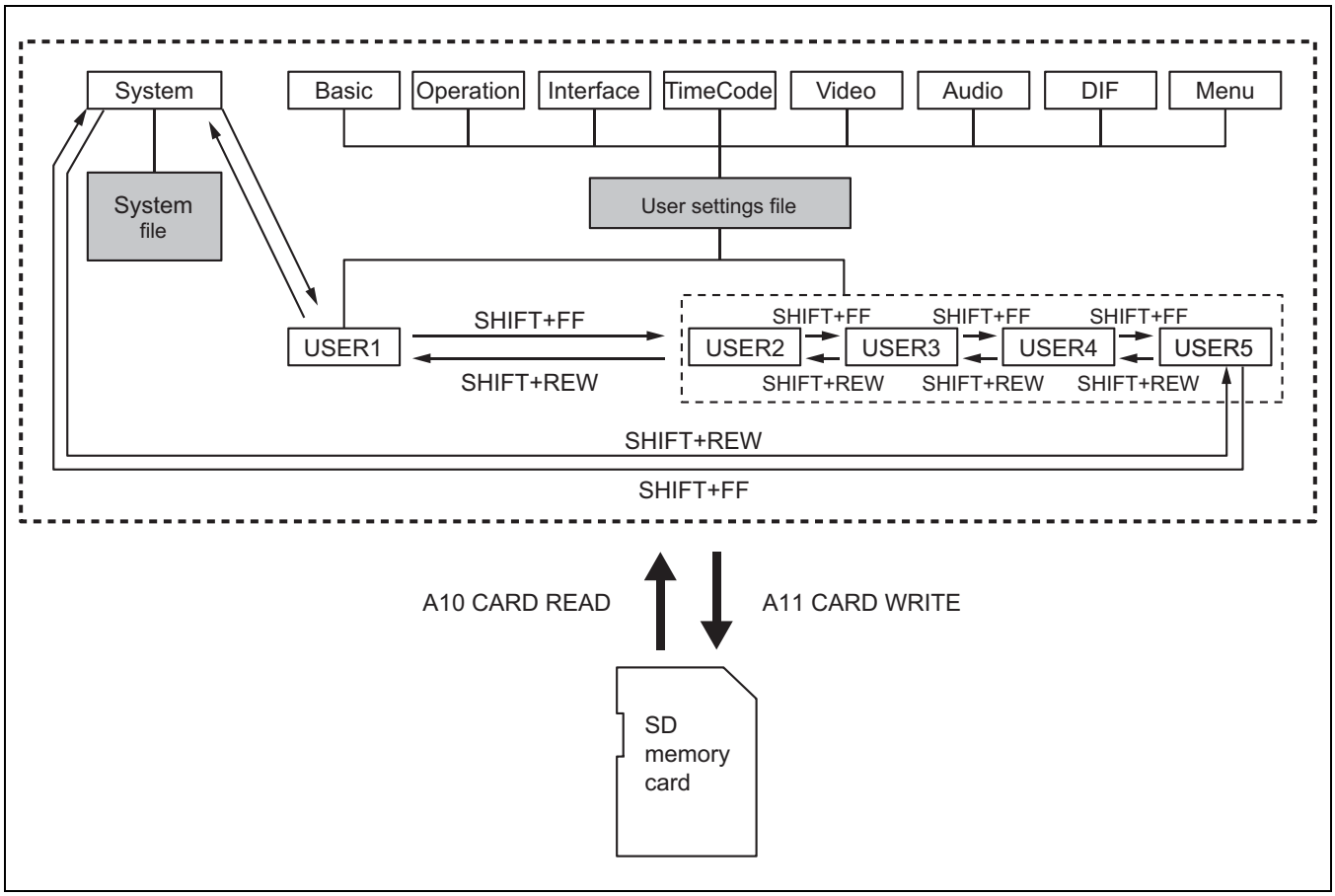
◆ **NOTE:**

- The accuracy of recording start varies with the connected external device.

Setup

Unit Setup

The settings for this unit consist of SYSTEM, BASIC, OPERATION, INTERFACE, TIME CODE, VIDEO, AUDIO, DIF 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 116).

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 139).

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 139), A11 (CARD WRITE) (page 140)”.

Automatic Loading of User Setting File at Power up

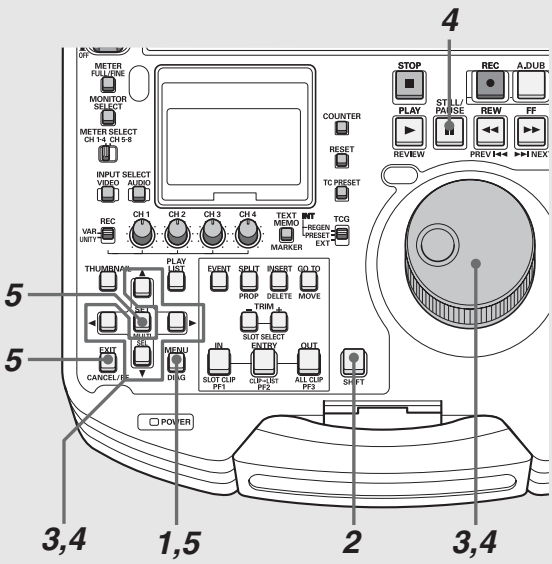
You can specify the user setting files that will be loaded in USER1 at power up. You can also decide to use the same settings as last time.

→For details, refer to “Setup menu No. A02 (P.ON LOAD)” (page 139).

Changing Settings

The menus on the LCD monitor or a monitor (when the SUPER switch on the right side of the LCD monitor is set to “ON”) connected to the ANALOG COMPOSITE MONITOR OUT connector make it possible to change settings.

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 FF ►► button or the REW ◄◄ button to switch to the next or previous file.

3 Select items to change.

Turn the search dial or press the up (▲) or down (▼) buttons 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 STILL/PAUSE ❚❚ button and turn the search dial or press the left (◄) or right (►) button to change the setting.

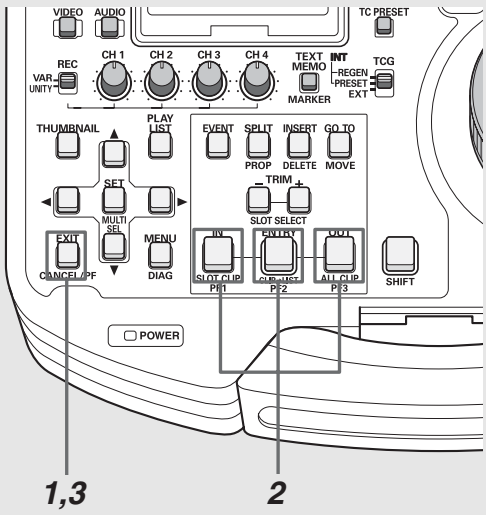
- Turn the dial clockwise (or press the right (►) button) to increment the set number and turn it counterclockwise (or press the left (◄) button) to decrement it.
- Release the STILL/PAUSE button after making the change.
- In the SHTL mode, set the search dial to the center position or items will move.
- Repeat the operations described in steps 3 and 4 when there are more items to change.

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 three 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 139).

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 play list 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 119).

→For details on releasing the user file lock setting, refer to "Setup menu No. A03 (MENU LOCK)" (page 139).

◆ **NOTE:**

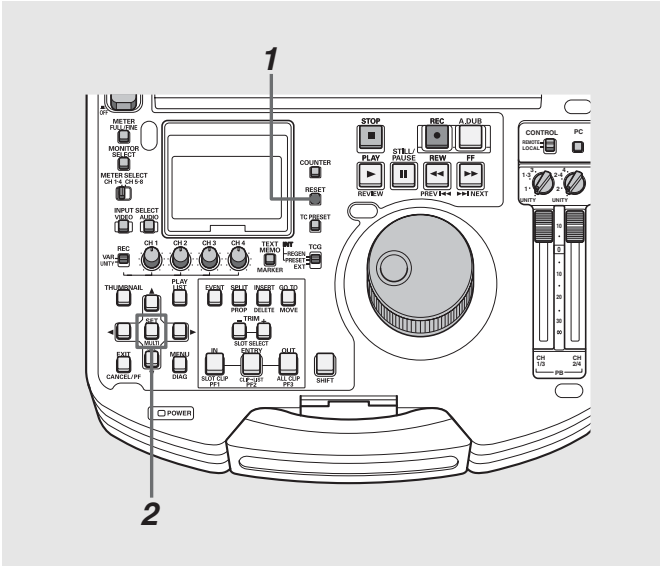
- Files can be loaded from the SD memory card even if they are locked. The status after load operation depends on the setting defined by the loaded data.

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 the SET button.

Item Settings

SYSTEM

The system menu specifies analog component (HD) output, analog composite output, phase adjustment of audio output, system frequency, phase of SD REF input of HD output, and system file lock.

* An underlined ***setting*** indicates an initial value.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
12	SYS H(HD)	0000 | ***1375*** | 2750	–1375 | ***0*** | 1375	Adjusts system phase of analog component (HD) output and 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.
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.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
25	SYSTEM FREQ	For AJ-HPM110P		Sets system frequency. 0: 59.94Hz 1: 50Hz 2: 23.98 Hz 3: 24 Hz 4: 29.97 Hz 5: 23.98 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-HPX2000/2100, AJ-HPX3000 or other camera. 6: 24Hz Receives 60Hz input. Select this frequency to record 2:3 pull-down converted (24-frame signal) output from VariCam: AJ-HDC27 series camera. 7: 25Hz 8: 25Hz Receives 60Hz input. Select this frequency to record a variable frame rate set to 25p from VariCam: AJ-HDC27 series camera. **NOTE:** • Changing this item will only cause the menu item to flash but the setting is not actually reflected to this unit. For the changes to take effect, turn the power off and turn it back on again. • 2: 23.98 Hz and 3: 24 Hz are available only when the AJ-YBX200G AVC-Intra codec board (optional board) is installed.
		0000	***59.94***	
		0001	50	
		0002	23.98	
		0003	24	
		0004	29.97	
		0005	59-23	
		0006	60-24	
		0007	25	
		0008	60-25	
		For AJ-HPM110E		
		0000	59.94	
		0001	***50***	
		0002	23.98	
		0003	24	
		0004	29.97	
		0005	59-23	
		0006	60-24	
		0007	25	
		0008	60-25	
26	HD SYS H ADV	***0000***	***0H***	**59.94Hz** **29.97Hz** only Specifies whether or not HD output should advance 90H phase relative to SD REF input during SD REF input. 0: Outputs HD at the same phase as SD REF. 1: HD 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 output. • At 720p, the phase difference is 120H.
		0001	90H	
30	MENU LOCK	***0000***	***OFF***	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)
		0001	ON	

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 play list and sets the time of the internal clock.

* An underlined ***setting*** indicates an initial value.

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*** R/TTL	Specifies whether to display the remaining time or total time via the VIDEO MON connector and via superimposed display of the LCD panel. 0: No display. 1: Displays remaining media time on the second line. 2: Displays remaining media time on the first line. 3: Displays the remaining media time on the first line and total media time on the second line. **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 “R/TTL” is selected and “TIME” is set in setup menu No. 006 DISPLAY SEL. • When setup menu No. 041 LOOP REC is set to ON, the remaining time is indicated on the second line when a setting other than OFF is selected. • When setup menu No. 040 VFR REC is set to ON, the remaining time is indicated on the second line when a setting other than OFF is selected. • When setup menu No.693 GAMMA SEL is set to a value other than OFF, the remaining time is indicated on the second line when a setting other than OFF is selected.
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 output of the VIDEO MON connector or what is displayed in the superimposed display of the LCD panel. 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 and mode 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.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
007	CHARA H-POS	0000 | ***0004*** | 0016	0 | ***4*** | 16	Specifies the horizontal character position output via the VIDEO MON connector or displayed in the superimposed display of the LCD panel.
008	CHARA V-POS	When set to 59.94 Hz, 23.98 Hz, 24 Hz, 29.97 Hz, 59-23 Hz, 60-24 Hz		Specifies the vertical character position output via the VIDEO MON connector or displayed in the superimposed display of the LCD panel.
		0000 | ***0020*** | 0022	0 | ***20*** | 22	
		When set to 50 Hz, 25 Hz, 60-25 Hz		
		0000 | ***0022*** | 0028	0 | ***22*** | 28	
009	CHARA TYPE	***0000*** 0001	***WHITE*** W/OUT	Specifies the display type output via the VIDEO MON connector or in the superimposed display, SETUP-MENU and other LCD panel displays. 0: White characters against a solid black background 1: White characters with a black border
020	SYS FORMAT	When set to 59.94 Hz		**59.94Hz** **50Hz** **29.97Hz** **59-23Hz** **25Hz** only Specifies the recording format used by this unit. 0: 1080i mode 1: 720p mode 2: 480i mode (when set to 59.94 Hz)/576i mode (when set to 50 Hz) **NOTE:** • Not indicated when the AJ-YBX200G AVC-Intra codec board (optional board) is not installed and 29.97, 59-23 or 25 is selected in setup menu No. 25 SYSTEM FREQ. The 720p recording format is used. • Not indicated when 23.98 or 24 is selected in setup menu No. 25 SYSTEM FREQ. The 1080i recording format is used. • Not indicated when 60-24 or 60-25 is selected in setup menu No. 25 SYSTEM FREQ. The 720p recording format is used.
		0000 0001 0002	***1080i*** 720p 480i	
		When set to 50 Hz		
		0000 0001 0002	***1080i*** 720p 576i	
		When set to 29.97 Hz, 25 Hz, 59-23Hz		
		0000 0001	***1080p*** 720p	
024	REC FMT(SD)	***0000*** 0001 0002	***50M*** 25M DV	**59.94Hz** **50Hz** only Specifies the recording format when setup menu No. 020 SYS FORMAT is set to 480i or 576i. 0: DVCPRO50 (50 Mbps) 1: DVCPRO (25 Mbps) 2: DV (25 Mbps)
025	REC FMT (HD)	***0000*** 0001 0002	***DVCPRO*** AVC50 AVC100	Specifies the recording format when 1080i or 720p is selected in setup menu No. 020 SYS FORMAT. 0: DVCPRO HD(100Mbps) 1: AVC-Intra50 2: AVC-Intra100 **NOTE:** • Appears only when an optional AJ-YBX200G AVC-Intra Codec board is installed. • 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-Intra 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 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

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 play list. <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 No. 020 SYSFORMAT menu. • 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	

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
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 INPUT SELECT: SDI
040	VFR REC	***0000*** 0001	***OFF*** ON	**59-23Hz** **60-24Hz** **29.97Hz** **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
041	LOOP REC	***0000*** 0001	***OFF*** ON	Specifies whether or not to make loop recording. →For details, refer to “LOOP REC Function” (page 35).. 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***	OFF ***THUMB***	Specifies whether or not the thumbnail screen appears when the power is turned on. 0: Thumbnail screen does not appear. 1: Thumbnail screen appears.
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 | 0030	2000 | 2030	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.
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	Rangoon
+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	
–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

Time difference	City/Region
–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 while the power is on.

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, battery type, display of warnings when power is too low, voltage when the power supply is turned off.

* An underlined ***setting*** indicates an initial value.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
100	SEARCH ENA	***0000***	***DIAL***	Specifies method for transferring to the search mode (search dial operation). 0: Press the STILL button or turn the search dial to engage search dial operation. 1: Press the STILL button to engage search dial operation.
		0001	KEY	
101	SHTL MAX	0000	×8	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
		0001	***×16***	
		0002	×32	
		0003	×60	
		0004	×100	
102	FF.REW MAX	***0000***	***×32***	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 1394 are performed at 100× normal speed. • The seek operation is available in playback mode.
		0001	×60	
		0002	×100	
		0003	SEEK	
103	SEEK SEL	***0000***	***CLIP***	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.
		0001	CLIP&T	
104	REF ALARM	***0000***	***OFF***	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
		0001	ON	
108	PLAY DELAY	***0000***	***0***	Sets PLAY delay time in frame increments.
		|	|	
		0015	15	
122	STOP EE SEL	***0000***	***EE***	Specifies whether to invoke the EE mode or playback mode when STOP is pressed. 0: EE mode 1: Playback mode **NOTE:** During IEEE1394 signal input, the EE mode is invoked regardless of this menu setting.
		0001	PB	

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
155	AUTO REC	***0000***	***OFF***	Select whether recording and stopping should be performed automatically according to the Recording Marks 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 Marks in the LTC information attached to HD SDI signals. 2: Recording and stopping is performed automatically according to the Recording Marks in the SVITC information attached to HD SDI signals. **NOTE:** • Set the CONTROL switch to REMOTE. Refer to "Panasonic camera-recorders, recording formats and Recording Mark" on the next page before selecting TYPE1 or TYPE2. • Select TYPE1 or TYPE2. To start automatic recording, simultaneously press the REC button and the STILL button to place this unit in the REC PAUSE mode. This function will not work in any mode other than REC PAUSE. The unit returns to REC PAUSE mode when automatic stop is activated. • In normal recording mode, this setting is not available and auto stop is not activated.
		0001	TYPE1	
		0002	TYPE2	
160	REPEAT PLAY	***0000***	***OFF***	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 PLAYLIST 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.
		0001	ON	
180	BATTERY SEL	***0000***	***NiCd12***	Sets the battery type. 0: Settings for 1 pc. 12 V battery (NEAR: 11.2 V, END: 10.6 V) 1: Settings for 1 pc. 13 V battery (NEAR: 12.0 V, END: 10.6 V) 2: Settings for 1 pc. 14 V battery (NEAR: 13.6 V, END: 10.6 V) 3: Settings for 1 pc. lithium-ion battery (BP-L90A) (NEAR: 11.0 V, END: 10.6 V) 4: Settings for 1 pc. lithium-ion battery (ENDURA80) (NEAR: 13.4 V, END: 10.6 V) 5: Battery specified by menu No. 181 TYPE-A NEAR item and No. 182 TYPE-A END item 6: Battery specified by menu No. 183 TYPE-B NEAR item and No. 184 TYPE-B END item
		0001	NiCd13	
		0002	NiCd14	
		0003	S-LION	
		0004	I-LION	
		0005	TYPE-A	
		0006	TYPE-B	
181	TYPE-A NEAR	0000 | ***0023*** | 0044	10.6 | ***12.9*** | 15.0	Specifies the voltage (in 0.1 V steps) when the counter display will flash to warn that the voltage of a TYPE-A battery selected in menu No. 180 BATTERY SEL item has dropped. **NOTE:** • When a setting is made in the vicinity of 15.0 V, the counter display may flash also when AC power is used. • A setting that is smaller than END cannot be made.
182	TYPE-A END	0000 | ***0018*** | 0034	10.6 | ***12.4*** | 14.0	Specifies the voltage (in 0.1 V steps) when this unit will automatically power off because the voltage of a TYPE-A battery selected in menu No. 180 BATTERY SEL item has dropped. **NOTE:** A setting that is larger than NEAR cannot be made.
183	TYPE-B NEAR	0000 | ***0023*** | 0044	10.6 | ***12.9*** | 15.0	Specifies the voltage (in 0.1 V steps) when the counter display will flash to warn that the voltage of a TYPE-B battery selected in menu No. 180 BATTERY SEL item has dropped. **NOTE:** • When a setting is made in the vicinity of 15.0 V, the counter display may flash also when AC power is used. • A setting that is smaller than END cannot be made.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
184	TYPE-B END	0000 | ***0018*** | 0034	10.6 | ***12.4*** | 14.0	Specifies the voltage (in 0.1 V steps) when this unit will automatically power off because the voltage of a TYPE-B battery selected in menu No. 180 BATTERY SEL item has dropped. **NOTE:** A setting that is larger than NEAR cannot be made.

Panasonic camera-recorders, recording formats and Recording Mark

Model	Recording format	Recording Mark TYPE	Remarks
AJ-HDC27F,H	720/**p over 60p	TYPE1	
AJ-HDX400P	1080/59.94i	—— *1	Provides switching between TYPE1 and TYPE2. For operating details, see respective operating instructions.
AJ-HDX400E	1080/50i	—— *1	
	1080/25p over 50i	—— *1	
AJ-HDX900	720/59.94p	TYPE1	
	720/23.98p over 59.94p	TYPE1	
	720/29.97p over 59.94p	TYPE1	
	1080/59.94i	—— *1	
	1080/23.98p over 59.94i	TYPE2	
	1080/29.97p over 59.94i	—— *1	
	1080/50i	—— *1	
	1080/25p over 50i	—— *1	
	720/50p	TYPE1	
	720/50p over 50p	TYPE1	
AG-HPX500 AJ-HPX2000/2100 AJ-HPX3000	720/**p	TYPE1, 2	
	1080/**i	TYPE 2	

*1: Recording Marks are not added to the HD SDI signal in default mode.

INTERFACE

This menu specifies the ID data that will be returned to the controller.

* An underlined ***setting*** indicates an initial value.

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.

TIME CODE

This menu sets the time code.

* An underlined ***setting*** indicates an initial value.

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 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		**59.94Hz** **50Hz** **29.97Hz** **25Hz** only Specifies the position where the VITC signal will be inserted. **NOTE:** • You cannot select the same line as in menu No. 502 VITC POS-2. • This setting is available only during analog composite output and SD SDI output.
		0000 | ***0006*** | 0010	10L | ***16L*** | 20L	
		When set to 50 Hz, 25 Hz		
		0000 | ***0004*** | 0015	7L | ***11L*** | 22L	
502	VITC POS-2	When set to 59.94 Hz, 29.97 Hz		**59.94Hz** **50Hz** **29.97Hz** **25Hz** only Specifies the position where the VITC signal will be inserted. **NOTE:** • You cannot select the same line as in menu No. 501 VITC POS-1. • This setting is available only during analog composite output and SD SDI output.
		0000 | ***0008*** | 0010	10L | ***18L*** | 20L	
		When set to 50 Hz, 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 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

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
507	EXT TC SEL	***0000***	***EXT_L***	**59.94Hz** **50Hz** 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. When 1394 is selected as the input signal, the IEEE 1394 digital input signal time code is used regardless of this setting.
		0001	SLTC	
		0002	SVITC	
508	BINARY GP	***0000***	***000***	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)
		0001	001	
		0002	010	
		0003	011	
		0004	100	
		0005	101	
		0006	110	
		0007	111	
509	PHASE CORR	***0000***	***OFF***	**59.94Hz** **50Hz** only Specifies whether or not LTC output from the TIME CODE OUT connector should be phase controlled. 0: No phase control 1: Phase controlled
		0001	ON	
510	TCG CF FLAG	***0000***	***OFF***	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Sets the TCG CF flag. 0: OFF 1: ON
		0001	ON	
511	DF MODE	***0000***	***DF***	**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.
		0001	NDF	
512	TC OUT REF	***0000***	***VOUT***	**59.94Hz** **50Hz** 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.
		0001	TC_IN	
513	VITC OUT	***0000***	***SBC***	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.
		0001	VAUX	
514	HD EMBD VITC	0000	OFF	Specifies whether or not VITC data will be superimposed on HD SDI output. 0: Not superimposed 1: Superimposed
		0001	***ON***	
515	HD EMBD LTC	0000	OFF	Specifies whether or not LTC data will be superimposed on HD SDI output. 0: Not superimposed 1: Superimposed
		0001	***ON***	

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
518	VITC GEN	***0000***	***OFF***	**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 1394 is selected as the input signal, the time code signal superimposed on the compressed input signal is recorded regardless of settings in this menu. • 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.
		0001	ON	
519	UB OUT SEL	0000	SBC	**59.94Hz** **50Hz** only Selects user bits in the LTC data output by the TIME CODE OUT and HD SDI connectors or user bits in the SBC area (DVCPRO HD only) output via the IEEE 1394 terminal 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 VAVX area.
		0001	***F_RATE***	

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.

* An underlined ***setting*** indicates an initial value.

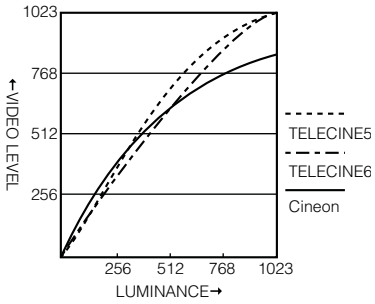
Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
601	VIDEO INT SG	***0000***	***100%CB***	Sets the internal signal type. SMPTE and ARIB signals are available in HD mode only (black in SD mode). 0: 100% color bar 1: 75% color bar 2: SMPTE color bar 3: ARIB color bar 4: Black
		0001	75%CB	
		0002	SMPTE	
		0003	ARIB	
		0004	BLACK	
602	SDI IN MODE	***0000***	***DR OFF***	**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.
		0001	DR ON	

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
620	DOWNCON MODE	***0000***	***FIT_V***	**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.)
		0001	FIT_H	
		0002	FIT_HV	
621	UPCONV MODE	***0000***	***FIT_V***	**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.)
		0001	FIT_H	
		0002	FIT_HV	
626	D/C ENH H	0000	0dB	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Specifies whether or not horizontal outlines be emphasized in down-conversion. 0: 0dB 1: +1dB
		0001	***+1dB***	
627	D/C ENH V	0000	0dB	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Specifies whether or not vertical outlines be emphasized in down-conversion. 0: 0dB 1: +1dB
		0001	***+1dB***	
643	OUT MODE SEL	When set to 59.94 Hz, 29.97 Hz		**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Specifies the video signal output from the video output connector. 0: Switches output automatically depending on current recording and playback format. 1: 1080/59.94i or 1080/50i 2: 720/59.94p or 720/50p 3: 480/59.94i or 576/50i **NOTE:** When something other than AUTO is selected, a signal that differs from the recording and playback format is automatically converted before output.
		0000	***AUTO***	
		0001	1080i	
		0002	720p	
		0003	480i	
		When set to 50 Hz, 25 Hz, 60-25 Hz		
		0000	***AUTO***	
		0001	1080i	
		0002	720p	
		0003	576i	
645	WIDE SELECT	0001	WIDE	**59.94Hz** **50Hz** only Specifies whether or not WIDE data be recorded when 480i or 576i is selected in menu No. 020 SYS FORMAT. 1: Recorded 2: Not recorded **NOTE:** When 1394 is selected as the input signal, input data is recorded in its original form.
		0002	***NORMAL***	
650	STYLE	0000	CMPNT	Sets the level adjustment mode. 0: Level adjustment mode for the component style 1: Level adjustment mode for the composite style
		0001	***CMPST***	

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
651	HUE STYLE(SD)	0000 ***0001***	Pb-Pr ***U-V***	**59.94Hz** **23.98Hz** **24Hz** **29.97Hz** **59-23Hz** **60-24Hz** only 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 | ***1000*** | 1413	0.0% | ***100.0%*** | 141.3%	Adjusts the Y level of HD SDI and HD analog component output (– ∞ to 0 dB to +3 dB). **NOTE:** This setting is available when CMPNT is set in menu No. 650 STYLE.
654	Pb LVL (HD)	0000 | ***1000*** | 1413	0.0% | ***100.0%*** | 141.3%	Adjusts the PB level of HD SDI and HD analog component output (– ∞ to 0 dB to +3 dB). **NOTE:** This setting is available when CMPNT is set in menu No. 650 STYLE.
655	Pr LVL (HD)	0000 | ***1000*** | 1413	0.0% | ***100.0%*** | 141.3%	Adjusts the PR level of HD SDI and HD analog component output (– ∞ to 0 dB to +3 dB). **NOTE:** This setting is available when CMPNT is set in menu No. 650 STYLE.
656	BK LVL (HD)	0050 | ***0150*** | 0250	–10.0% | ***0.0%*** | +10.0%	Adjusts the black level of HD SDI and HD analog component output. **NOTE:** This setting is available when CMPNT is set in menu No. 650 STYLE.
658	Y LVL(SD)	0000 | ***1000*** | 1413	0.00% | ***100.00%*** | 141.30%	**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). **NOTE:** This setting is available when CMPNT is set in menu No. 650 STYLE.
659	Pb LVL(SD)	0000 | ***1000*** | 1413	0.0% | ***100.0%*** | 141.3%	**59.94Hz** **50Hz** **29.97Hz** **25Hz** **60-25Hz** only Adjusts the PB level of SD SDI and analog composite output (– ∞ to 0 dB to +3 dB). **NOTE:** This setting is available when CMPNT is set in 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 PR level of SD SDI and analog composite output (– ∞ to 0 dB to +3 dB). **NOTE:** This setting is available when CMPNT is set in 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 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 menu No. 650 STYLE. • Video output level adjustment is available only for output.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
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 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 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 menu No. 650 STYLE. • Setup level adjustment is available only for output.
669	SETUP	0000 ***0001***	THRU ***CUT&AD***	**59.94Hz** **29.97Hz** 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.
673	CONTRAST	0000 | ***0030*** | 0060	–30 | ***0*** | 30	Adjusts LCD monitor contrast.
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 panel. 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.
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. 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.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
684	EDH(SD)	0000 ***0001***	OFF ***ON***	**59.94Hz** **50Hz** **29.97Hz** **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. **NOTE:** • When 1394 is selected as the input signal, the closed caption signal superimposed on the compressed input signal is recorded in its original form regardless of settings in this menu.
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 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 SHIFT 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.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
693	GAMMA SEL	***0000***	***OFF***	Selects gamma correction. 0: No gamma correction 1: Corrects video shot by Varicam or in the FILM REC mode on an AJ-HPX3000 to film-quality video. (Equivalent to TELECINE 5 on the AJ-GBX27HD Gamma Corrector) 2: Corrects video shot by Varicam or in the FILM REC mode on an AJ-HPX3000 to film-quality video. (Equivalent to TELECINE 6 on the AJ-GBX27HD Gamma Corrector) 3: Converts video shot by Varicam or in the FILM REC mode on an AJ-HPX3000 by applying a Cineon curve to produce video appropriate for film recording.  **NOTE:** • This setting is available during playback. • Selecting something other than OFF superimposes the text GAMMA on the screen. • Turning the power off cancels the GAMMA setting. • This item has no effect during 1394 output.
		0001	GAMMA1	
		0002	GAMMA2	
		0003	GAMMA3	

AUDIO

This menu is used for audio settings.

* An underlined ***setting*** indicates an initial value.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
701	CH1 IN LV	0000	4dB	Specifies the standard level for audio input (CH1).
		0001	***0dB***	
		0002	–3dB	
		0003	–20dB	
702	CH2 IN LV	0000	4dB	Specifies the standard level for audio input (CH2).
		0001	***0dB***	
		0002	–3dB	
		0003	–20dB	
703	CH3 IN LV	0000	4dB	Specifies the standard level for audio input (CH3).
		0001	***0dB***	
		0002	–3dB	
		0003	–20dB	
704	CH4 IN LV	0000	4dB	Specifies the standard level for audio input (CH4).
		0001	***0dB***	
		0002	–3dB	
		0003	–20dB	
706	CH1 OUT LV	0000	4dB	Specifies the standard level for audio output (CH1).
		0001	***0dB***	
		0002	–3dB	
		0003	–20dB	
707	CH2 OUT LV	0000	4dB	Specifies the standard level for audio output (CH2).
		0001	***0dB***	
		0002	–3dB	
		0003	–20dB	

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
708	CH3 OUT LV	0000 ***0001*** 0002 0003	4dB ***0dB*** –3dB –20dB	Specifies the standard level for audio output (CH3).
709	CH4 OUT LV	0000 ***0001*** 0002 0003	4dB ***0dB*** –3dB –20dB	Specifies the standard level for audio output (CH4).
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
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 play list or edit copy. 0: Depends on recording status. (Refer to the section “Audio V Fade Function” (page 149).) 1: Forcible cut. **NOTE:** The IEEE1394 connector output is forcibly cut also in the AUTO setting.
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.
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: Does not supply microphone current. 1: Records on four channels. **NOTE:** DVCPRO HD, AVC-Intra50 (option) and AVC-Intra100 (option) 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-HPM110P		Specifies the standard level. 0: 20 dB 1: 18 dB 2: 12 dB
		0000	***FS-20***	
		0001	FS-18	
		0002	FS-12	
		For AJ-HPM110E		
		0000	FS-20	
		0001	***FS-18***	
		0002	FS-12	
777	CH2 MIC PWR	0000	OFF	Turns on and off the CH2 microphone power supply. 0: Does not use the microphone power supply. 1: Uses the jack switch to turn the microphone power supply on and off.
		0001	***ON***	
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 (including headphones and monitor output) is delayed to synchronize it with SDI output. 0: Not delayed The output is synchronized with LCD panel and monitor output. 1: Delayed The output is synchronized with SDI output. **NOTE:** LCD panel and video monitor output is output about 66 msec earlier than SDI output.
		0001	ON	
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	
792	A DUB CH	0000	CH1	Specifies tracks to be used for voice-overs.
		0001	***CH2***	
		0002	CH3	
		0003	CH4	
		0004	CH1+2	
		0005	CH3+4	
793	A DUB PB MIX	***0000***	***OFF***	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.
		0001	ON	

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
Subscreen				
01	CH1 MIX	***0000***	***CH1***	Specifies the playback channels that will be mixed and recorded on CH1.
		0001	CH2	
		0002	CH3	
		0003	CH4	
02	CH2 MIX	0000	CH1	Specifies the playback channels that will be mixed and recorded on CH2.
		0001	***CH2***	
		0002	CH3	
		0003	CH4	
03	CH3 MIX	0000	CH1	Specifies the playback channels that will be mixed and recorded on CH3.
		0001	CH2	
		0002	***CH3***	
		0003	CH4	
04	CH4 MIX	0000	CH1	Specifies the playback channels that will be mixed and recorded on CH4.
		0001	CH2	
		0002	CH3	
		0003	***CH4***	
796	A DUB FADE	0000	CUT	Specifies audio processing for the IN and OUT points during voice-overs. 0: Cut processing 1: V fade processing
		0001	***FADE***	
797	A DUB MONI	0000	OFF	Specifies whether or not the recorded sound be output during a voice-over. 0: Recorded sound is not output 1: Recorded sound is output
		0001	***ON***	

DIF

This menu is used for setting up the digital video interface.

* An underlined ***setting*** indicates an initial value.

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
880	DIF SPEED	0000	S100	**59.94Hz** **50Hz** only Specifies the transfer speed of digital video interface output. 0:100 Mbps 1:200 Mbps 2:400 Mbps **NOTE:** A DVCPRO HD format signal cannot be output when S100 is selected.
		0001	S200	
		0002	***S400***	
882	DIF IN CH	0000	0	**59.94Hz** **50Hz** only Specifies input channels. 0 - 63: These channels are fixed to assigned values. 64: This channel is not fixed to assigned values. When the power is on, the input channel is initialized to 63.
		|	|	
		0063	63	
		0064	***AUTO***	
883	DIF OUT CH	0000	0	**59.94Hz** **50Hz** only Specifies output channels. 0 - 63: These channels are fixed to assigned values. 64: This channel is not fixed to assigned values. When the power is on, the output channel is initialized to 63.
		|	|	
		0063	63	
		0064	***AUTO***	
886	DIF CONFIG	***0000***	***DFLT***	**59.94Hz** **50Hz** only Specifies the extension menu. Normally, DFLT is used.
		0001	1	
		|	|	
		0255	255	

Item		Setting		Settings and brief function description
FR No.	SUPER DISP.	FR No.	SUPER DISP.	
890	DIF AUD OUT	***0000***	***CH1+2***	**59.94Hz** **50Hz** only Specifies the output channels when the audio signals are in 4-channel mode and output in the DVCPRO (25 Mbps) format and a DV clip is played back. 0: CH1 and CH2 1: CH3 and CH4
		0001	CH3+4	

MENU

This menu is used for menu settings.

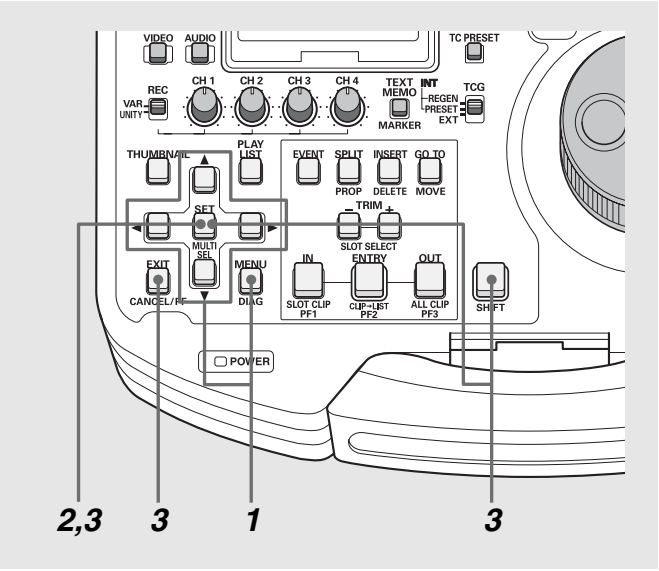
* An underlined ***setting*** indicates an initial value.

Item		Setting		Settings and brief function description	Remarks
FR No.	SUPER DISP.	FR No.	SUPER DISP.		
A00	LOAD	***0000***	***USER2***	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 screen. 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
		0001	USER3		
		0002	USER4		
		0003	USER5		
A01	SAVE	***0000***	***USER2***	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
		0001	USER3		
		0002	USER4		
		0003	USER5		
		0004	LOCKED		
A02	P.ON LOAD	***0000***	***OFF***	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
		0001	USER2		
		0002	USER3		
		0003	USER4		
		0004	USER5		
A03	MENU LOCK	***0000***	***OFF***	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
		0001	ON		
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

Item		Setting		Settings and brief function description	Remarks
FR No.	SUPER DISP.	FR No.	SUPER DISP.		
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

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 screen that appears.

SET button:	Loads all SYSTEM settings and USER 1-5 data
SHIFT + SET buttons:	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.

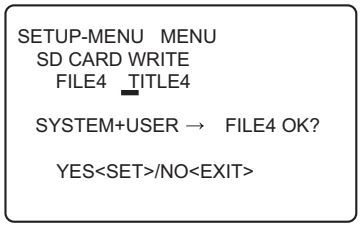
- Files that are not written are indicated as [NO FILE].
- "NO CARD" is indicated when no SD memory card is inserted.

3 In the write confirmation screen that appears, select SET to write or EXIT 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 cursors):	Select text
◄► (Right and left cursors):	Move cursor location
RESET button:	Clears all text

- A completion message appears when the write progress bar closes.



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 screen 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.

Time Code, User Bit and CTL

Time code

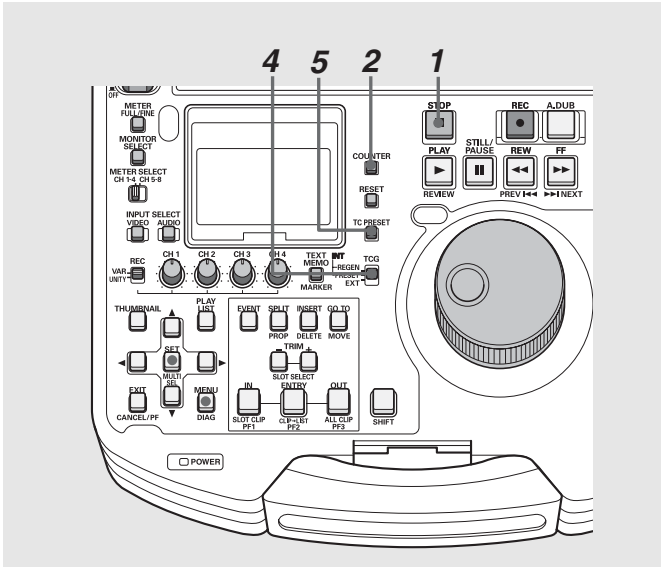
The time code is used when the time code signal generated by the time code generator is to be recorded. The time code values are indicated on the display and in the superimpose display.

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 number 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 (▼) button or hold down the STILL ❚❚ button and turn the search dial to change the value.

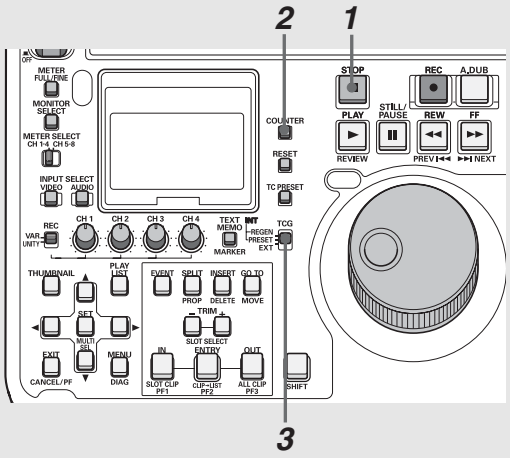
3. Press the LEFT (◄) or RIGHT (►) button or turn the search dial to select digit to set.
The selected digits start flashing.
The setting ranges are as follows:

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 number 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)

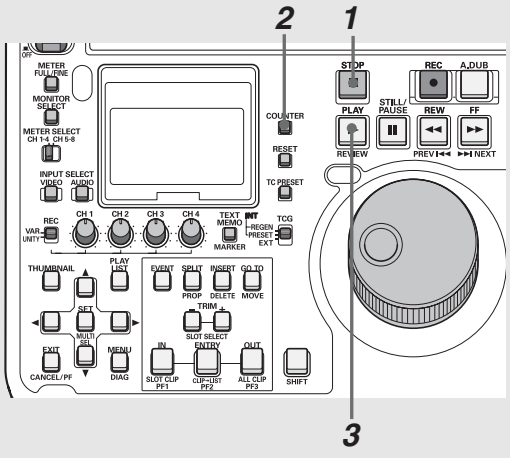
4 Make the following settings in setup menu No. 507 (EXT TC SEL).

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 1394 is selected as the input signal, the IEEE 1394 digital input signal time code is recorded.
- Setup menu No. 507 EXT TC SEL does not appear in modes other than 59.94 Hz and 50 Hz. 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

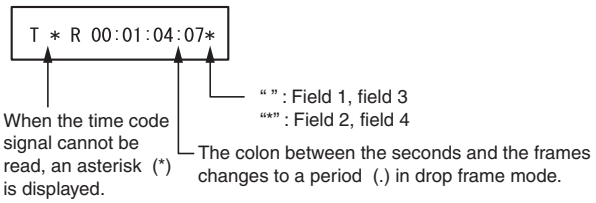


1 Engage the stop mode.

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.



■ 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	1394	Internal TCG value	Time code on IEEE1394 digital input (VAUX area)
			HD SDI		SVITC on input video signal [*3]
			CMPST / SD SDI		VITC on input video signal [*3]
		ON	1394		Time code on IEEE1394 digital input (VAUX area)
			HD SDI	Internal TCG value	
			CMPST / SD SDI		
EXT	EXT_L	OFF	1394	Time code on IEEE1394 digital input (SBC area)	Time code on IEEE1394 digital input (VAUX area)
			HD SDI	Time code on TIME CODE IN connector input [*1]	SVITC on input video signal [*3]
			CMPST / SD SDI		VITC on input video signal [*3]
		ON	1394	Time code on IEEE1394 digital input (SBC area)	Time code on IEEE1394 digital input (VAUX area)
			HD SDI	Time code on TIME CODE IN connector input [*1]	
			CMPST / SD SDI		
	SLTC	OFF	1394	Time code on IEEE1394 digital input (SBC area)	Time code on IEEE1394 digital input (VAUX area)
			HD SDI	SLTC on input video signal [*2]	SVITC on input video signal [*3]
			CMPST / SD SDI	VITC on input video signal [*2]	VITC on input video signal [*3]
		ON	1394	Time code on IEEE1394 digital input (SBC area)	Time code on IEEE1394 digital input (VAUX area)
			HD SDI	SLTC on input video signal [*2]	
			CMPST / SD SDI	VITC on input video signal [*2]	
	SVITC	OFF	1394	Time code on IEEE1394 digital input (SBC area)	Time code on IEEE1394 digital input (VAUX area)
			HD SDI	SVITC on input video signal [*2]	SVITC on input video signal [*3]
			CMPST / SD SDI	VITC on input video signal [*2]	VITC on input video signal [*3]
		ON	1394	Time code on IEEE1394 digital input (SBC area)	Time code on IEEE1394 digital input (VAUX area)
			HD SDI	SVITC on input video signal [*2]	
			CMPST / SD SDI	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.

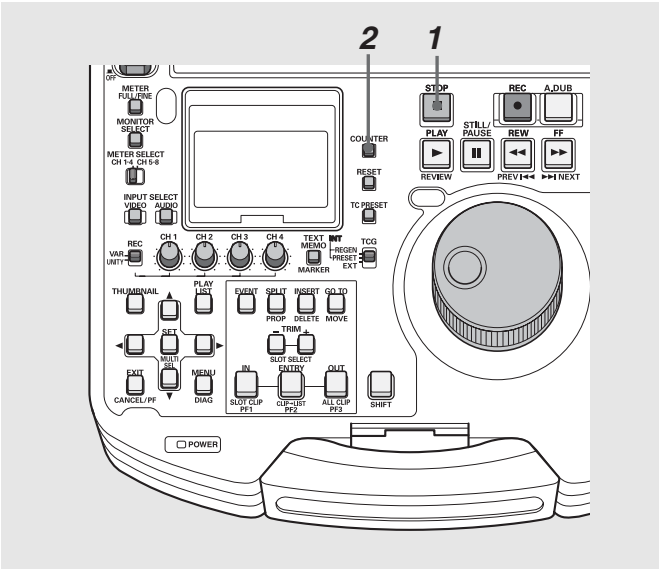
*2: The internal TCG value is used when the SLTC, SVITC and VITC cannot be detected on the input video signal.

*3: Nothing is recorded if the SVITC and VITC cannot be detected on the input video signal.

*4: In modes other than 59.94 Hz and 50 Hz, 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.

CTL Mode



1 Engage the stop mode.

2 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].

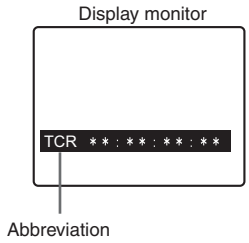
When recording stops, the counter shows the position relative to the start position.

◆ **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.



Abbreviations:

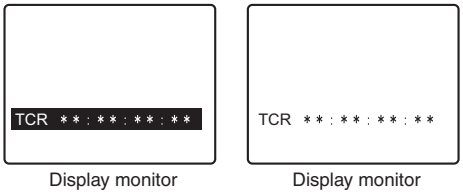
CTL	Relative location from the beginning
TCR	Recorded time code data
TCR.	Time code data recorded in the VAUX area
UBR	Recorded user bit data
UBR.	User bit data recorded in the VAUX area
TCG	Time code data of the time code generator
UBG	User bit data of the time code generator

◆ **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.

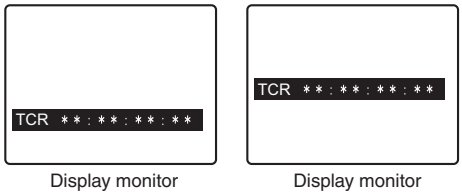


◆ **NOTE:**

• During play list playback, black text appears on a white background regardless of menu setting.

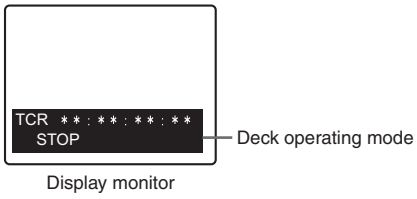
Display Position

Use setup menu No. 007 (CHARA H-POS) and No. 008 (CHARA V-POS) to change the position of characters in the superimposed display.



Operating Mode

Use setup menu No. 006 (DISPLAY SEL) to indicate deck operating mode.



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	Analog video output *4	IEEE1394 output	Time code output
AVC-Intra 50/100 (when an AJ-YBX200G codec board is installed)	1080/59.94i	59.94	1080/59.94i	1080/59.94i	---	O
			720/59.94P	720/59.94P		
			480/59.94i	480/59.94i		
	1080/50i	50	1080/50i	1080/50i	---	O
			720/50P	720/50P		
			576/50i	576/50i		
	1080/29.97PsF	29.97	1080/29.97PsF	1080/59.94i *1	---	---
			720/59.94P *1	720/59.94P *1		
			480/59.94i *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	1080/50i *1	---	---
			720/50P *1	720/50P *1		
			576/50i *1	576/50i *1		
	720/59.94P	59.94	720/59.94P	720/59.94P	---	O
			1080/59.94i	1080/59.94i		
			480/59.94i	480/59.94i		
	720/50P	50	720/50P	720/50P	---	O
			1080/50i	1080/50i		
			576/50i	576/50i		
	720/29.97P over 59.94P *6	29.97	720/59.94P *1	720/59.94P *1	---	---
			1080/29.97PsF	1080/59.94i *1		
			480/59.94i *1	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	720/50P *1	---	---
			1080/25PsF	1080/50i *1		
			576/50i *1	576/50i *1		
	720/25P over 60P *6	60-25	720/50P *1	720/50P *1	---	---
			1080/25PsF	1080/50i *1		
			576/50i *1	576/50i *1		
DVCPRO HD	1080/59.94i	59.94	1080/59.94i	1080/59.94i	1080/59.94i	O
			720/59.94P	720/59.94P		
			480/59.94i	480/59.94i		
	1080/50i	50	1080/50i	1080/50i	1080/50i	O
			720/50P	720/50P		
			576/50i	576/50i		

*1: 2:2 pull-down

*4: Select SDI output in setup menu No. 643 OUT MODE SEL. SDI output alternates with analog output.

*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]	Analog video output [*4]	IEEE1394 output	Time code output
DVCPRO HD	1080/29.97PsF	59.94	1080/29.97PsF	1080/59.94i [*1]	1080/59.94i [*1]	○
			720/59.94P [*1]	720/59.94P [*1]		
			480/59.94i [*1]	480/59.94i [*1]		
	1080/23.98P over 59.94i [*5]	59.94	1080/23.98PsF [*3]	---	---	---
			1080/59.94i [*2]	1080/59.94i [*2]	1080/59.94i [*2]	○
			720/59.94P [*2]	720/59.94P [*2]		
			480/59.94i [*2]	480/59.94i [*2]		
	1080/23.98PsF	---	---	---	---	---
	1080/24PsF	---	---	---	---	---
	1080/25PsF	---	---	---	---	---
	720/59.94P	59.94	720/59.94P	720/59.94P	720/59.94P	○
			1080/59.94i	1080/59.94i		
			480/59.94i	480/59.94i		
	720/50P	50	720/50P	720/50P	720/50P	○
			1080/50i	1080/50i		
			576/50i	576/50i		
	720/29.97P over 59.94P [*6]	29.97	720/59.94P [*1]	720/59.94P [*1]	---	---
			1080/29.97PsF	1080/59.94i [*1]		
			480/59.94i [*1]	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]	720/50P [*1]	---	---
			1080/25PsF	1080/50i [*1]		
			576/50i [*1]	576/50i [*1]		
	720/25P over 60P [*6]	60-25	720/50P [*1]	720/50P [*1]	---	---
			1080/25PsF	1080/50i [*1]		
			576/50i [*1]	576/50i [*1]		
DVCPRO 50DVCPRO DV	480/59.94i	59.94	480/59.94i	480/59.94i	480/59.94i	○
			1080/59.94i	1080/59.94i		
			720/59.94P	720/59.94P		
	480/29.97P over 59.94i	59.94	480/59.94i [*1]	480/59.94i [*1]	480/59.94i [*1]	○
			1080/29.97PsF	1080/59.94i [*1]		
			720/59.94P [*1]	720/59.94P [*1]		
	480/23.98P over 59.94i	59.94	1080/23.98PsF [*3]	---	---	---
			480/59.94i [*2]	480/59.94i [*2]	480/59.94i [*2]	○
			1080/59.94i [*2]	1080/59.94i [*2]		
			720/59.94P [*2]	720/59.94P [*2]		
	576/50i	50	576/50i	576/50i	576/50i	○
			1080/50i	1080/50i		
			720/50P	720/50P		
	576/25P over 50i	50	576/50i [*1]	576/50i [*1]	576/50i [*1]	○
			1080/25PsF	1080/50i [*1]		
			720/50P [*1]	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. SDI output alternates with analog output.

*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

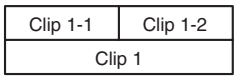
Audio V Fade Function

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 play list playback.

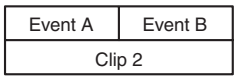
Described below are examples that illustrate the differences in processing.

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

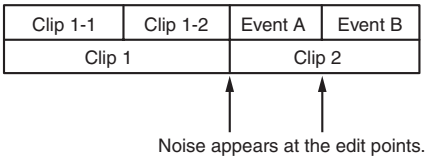


- A clip created using the edit copy function on an AJ-SPD850

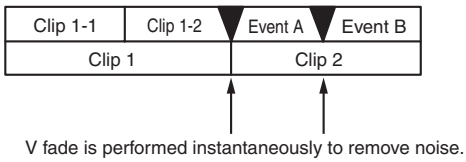


Settings in setup menu No.731 allow you to play back the above two clips and do the following.

- When CUT is selected



- When AUTO is selected



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
- 1394 digital output signals are not fade processed.

Audio Recording Channels Selection

Audio Recording Channels

Depending on setup menu 725 - 728 (REC CH1 to 4) settings, the INPUT SELECT button on the front panel allows you to select the following input signals. When 1394 is selected, the input signal is recorded in its original form regardless of setting.

Analog input

Recorded track	Recorded signal
CH1	CH1 input/CH2 input/CH1 + CH2 inputs
CH2	CH1 input/CH2 input/CH1 + CH2 inputs
CH3	CH3 input/CH4 input/CH3 + CH4 inputs
CH4	CH3 input/CH4 input/CH3 + CH4 inputs
CH5	No
CH6	No
CH7	No
CH8	No

SDI input

Recorded track	Recorded signal
CH1	CH1 input/CH2 input/CH1 + CH2 inputs
CH2	CH1 input/CH2 input/CH1 + CH2 inputs
CH3	CH3 input/CH4 input/CH3 + CH4 inputs
CH4	CH3 input/CH4 input/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

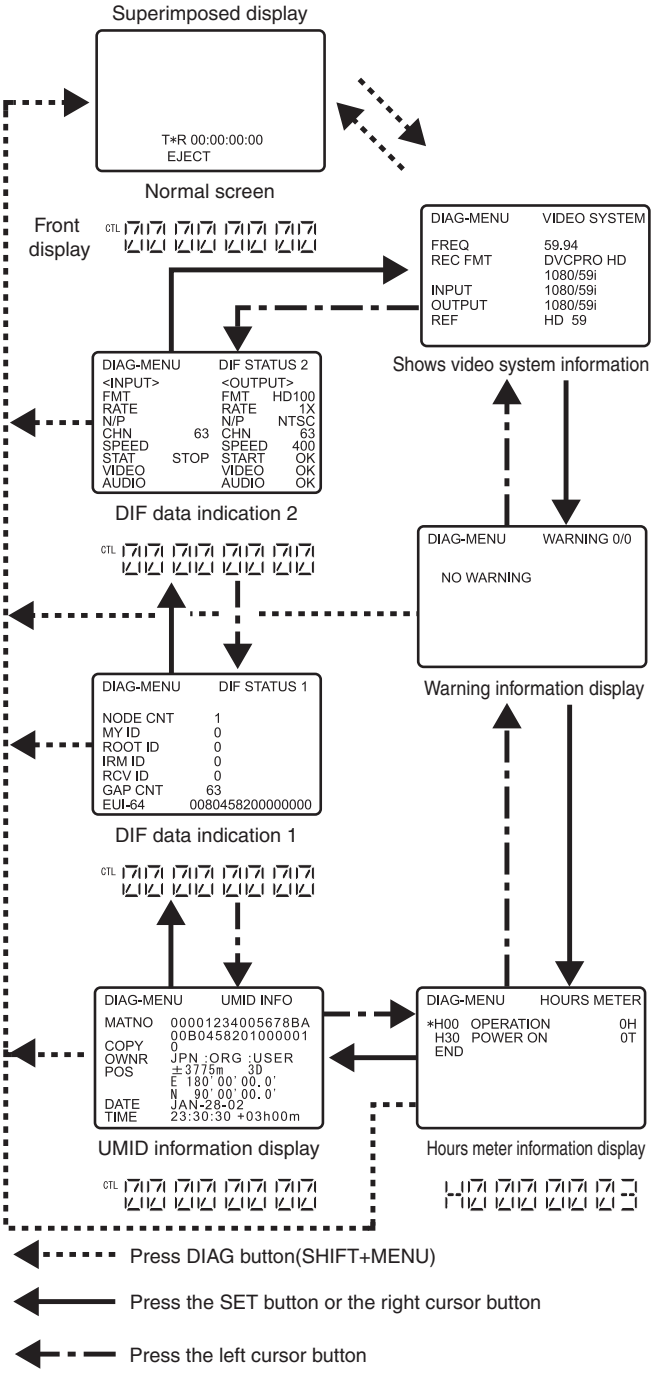
- Before starting any maintenance work, switch the power to off and, holding the plug, unplug the cord from the socket.
- Use a soft cloth to clean the outside of this unit.
- For stubborn dirt or stains, wipe the unit with a cloth that has been lightly dampened in well-diluted kitchen detergent and 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.

Error Messages

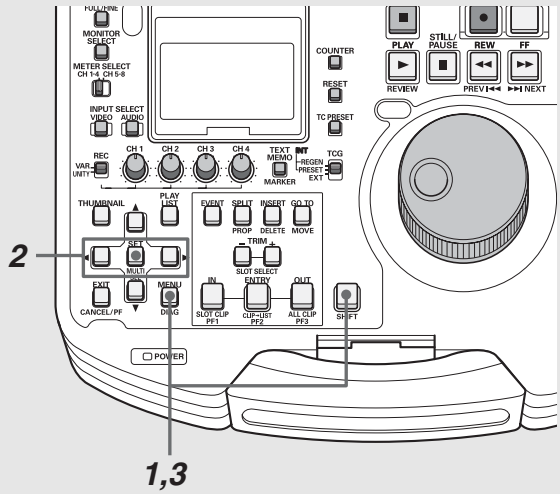
When a warning occurs in this unit, the error number is indicated on the counter display. Open the DIAG menu to view a description of the error on the counter display or a LCD monitor. When an operational malfunction occurs in the unit, an error number will flash on the counter display.



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 display monitor when the LCD monitor is connected to the ANALOG COMPOSITE MONITOR OUT connector on the LCD monitor and rear panel of the unit.

Opening the DIAG menu



1 Press the DIAG button (hold down the SHIFT button and press the 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 right or left 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
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	STOP	CANTADUB
PLEASE SAVE PLAYLIST	Displayed when A. DUB is started without saving the play list.	STOP	CANTADUB
WRITE PROTECTED	Appears when a voice-over recording is attempted on a write-protected P2 card.	STOP	CANTADUB
LACK OF REC CAP.	Appears when a voice-over recording is attempted on a P2 card without enough capacity.	STOP	CANTADUB
MAX A.DUB EVENTS	Appears when a voice-over recording is attempted on a P2 card where the number of voice-over audio recordings has already reached the upper limit.	STOP	CANTADUB
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 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 ENTRY	Displayed when an attempt was made to register an IN, OUT or SPLIT point in a location where such points cannot be registered.	Operation continues	CANT ENT
CHECK A.SPLIT POINT	Displayed when an audio split setting prevents the registration of an IN, OUT and SPLIT points.	Operation continues	CANT ENT
OVER DUR TIME	Displayed when an attempt was made to register a duration exceeding 24 hours.	Operation continues	CANT ENT
CHECK RECORDER RANGE	Recorder range not large enough for registered player IN and OUT points.	Operation continues	CANT ENT
CHECK PLAYER RANGE	Player range not large enough for registered recorder IN and OUT points.	Operation continues	CANT ENT
MAX EVENTS	The number of events that can be registered on the play list has been reached.	Operation continues	CANT ENT

Monitor display	Description	Deck operation	Counter display
INVALID	Appears when there are already 100 text memos and no more memos can be added.	Operation continues	INVALID
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
INT SG	Displayed for the first two seconds when the REC button is pressed to enter the EE mode and the INPUT SELECT VIDEO button or the INPUT SELECT AUDIO button is set to SG.	Operation continues	INT SG
NO INPUT	Displayed for the first two seconds when the REC button is pressed to enter the EE mode and the INPUT SELECT button is set to a connector with no output except for analog audio signals.	Operation continues	NO INPUT
TEXT MEMO	Displayed for two seconds when a text memo is added.	Operation continues	TEXT MEMO
MARK ON/OFF	Displayed for two seconds when a shot mark is added or deleted.	Operation continues	MARK ON / MARK OFF

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		
04	UNKNOWN SIG	Displayed when a signal input from the 1394 interface is not a DVCPRO or DV format signal.	Recording is disabled
10	FAN STOP	Displayed when the fan motor stops.	Operation continues
11	NOT 1× 25M SIG	Displayed when a signal input from the 1394 interface is not a DVCPRO (25 Mbps) 1× normal speed transfer signal.	Recording is disabled
12	NOT 1× 50M SIG	Displayed when a signal input from the 1394 interface is not a DVCPRO50 (50 Mbps) 1× normal speed transfer signal.	Recording is disabled
14	NO MATCH SIG	Displayed when signal input via the 1394 interface differs from the system format set on this unit.	Recording is disabled
15	NOT 1× DV SIG	Displayed when a signal input from the 1394 interface is not a DV (25 Mbps) 1× normal speed transfer signal.	Recording is disabled
16	INVALID VIDEO SIG	Displayed when the compressed video data of a signal input from the 1394 interface is irregular.	Recording is disabled
17	INVALID AUDIO SIG	Displayed when the audio data of a signal input from the 1394 interface is irregular.	Operation continues *1
18	INVALID TC SIG	Displayed when the time code data of a signal input from the 1394 interface is irregular.	Operation continues *2
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 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

◆ **NOTE:**

*1 This warning appears only during recording. Then the audio is recorded mute.

*2 This warning appears only during recording. The internally generated time code is recorded.

Display		Description	Deck operation
No	Character code		
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. *4	Operation continues
70	DIR NG CARD<******>	Directory structure does not comply with the P2 card standard.(* 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 P2 card has been rewritten the maximum number of times.(* indicates the slot number where the error occurred.) You are recommended to replace the card with a new card.	Operation continues
90	NOT 1× 100M SIG	Displayed when a signal input from the 1394 interface is not a DVCPRO HD (100 Mbps) 1× normal speed transfer signal.	Recording is disabled
91	COPY PROTECTED	Displayed when DV format recording is available and the copy guard signal input via the 1394 interface is in the copy inhibit mode.	Recording is disabled
92	1394 INITIAL ERROR	Displayed when the 1394 interface connection is irregular.	*3
93	INVALID TC MODE	Appears during playback when the time code has been recorded in drop frame mode. The video output is distorted and audio output is muted at the drop point of the time code. Check the playback clip. Playing back a 24p frame-rate clip requires that the time code be recorded in non-drop frame mode. Appears when the time code in an HD SDI input is in the drop frame mode during EE or recording. Normal recording will not be possible under these conditions. Check signal input to the unit. Set the input time code to non-drop frame mode. (Appears when 23.98, 24, 59-23, 60-24 or 60-25 is set in setup menu No. 25 SYSTEM FREQ.)	Operation continues
95	INVALID EMBEDDED TC	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	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 (Appears when 23.98, 24, 59-23, 60-24 or 60-25 is set in setup menu No. 25 SYSTEM FREQ.)	Operation continues
97	NO ACTIVE FRAME	Appears when active frame data cannot be detected in the user bits in the HD SDI input during EE or recording. Normal recording will not be possible under these conditions. Check signal input to the unit. The input signal must contain the active frame data from a variable frame-rate camera. (Appears when 29.97, 59-23, 60-24 or 60-25 is set in menu No. 25 SYSTEM FREQ and menu No. 040 VFR REC is set to ON.)	Recording is disabled *5 Operation continues during recording
98	INVALID FRAME RATE	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 This warning appears at any time. This error disables input to the digital video interface.

*4 “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.

*5 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 play list screen.

Item	Message	Description	Measure
Thumbnails	CANNOT ACCESS!	Data cannot be accessed because it is corrupted or for other reasons.	Restore media and clips to normal state before access.
	WRITE PROTECTED!	The P2 or SD memory card is write protected.	Insert write-enabled media.
	CARD FULL!	The P2 or SD memory card is full.	Insert media with sufficient capacity.
	NO CARD!	No P2 or SD memory card is inserted.	Insert compatible media.
	CANNOT DELETE!	Contents version mismatch prevents deletion.	Match devices and contents version.
	UNKNOWN CONTENTS FORMAT!	Warning displayed to indicate contents version mismatch.	Match devices and contents version.
	CANNOT FORMAT!	P2 card problem prevents formatting.	Check P2 card.
	CANNOT REPAIR!	Selected content cannot be repaired.	Check selected content.
	CANNOT RE-CONNECT!	A clip that does not span multiple cannot be reconnected.	Check selected content.
	NO INPUT!	No data is input.	Set after making input.
	INVALID VALUE!	Entered data was invalid.	Enter data in a valid range.
	UNKNOWN DATA!	The metadata character code is invalid.	Use UTF-8 for the metadata character code. Use the viewer to enter correct characters.
	CANNOT REPAIR IN SELECTION!	Some of the selected clip could not be repaired.	
	NO SD CARD!	No SD memory card is inserted.	Insert an SD memory card.
	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.
	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.
	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.
	TOO MANY CLIPS!	Too many clips are selected.	Reduce the number of selected clips.
	LACK OF REC CAPACITY!	There is not enough recording capacity left on the card.	Insert a card with sufficient recording capacity.
	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.
	NOT SELECTED!	An attempt was made to delete an unselected clip.	Select the clip you want to delete.
	MISSING CLIP!	All cards that contain the clip must be inserted to allow attachment of markers.	Insert all cards that contain the clip.

Item	Message	Description	Measure
HDD	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.
	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.
	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.
	CANNOT FORMAT!	The hard disk cannot be initialized.	Connect another hard disk drive.
	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.
	CANNOT ACCESS TARGET!	An error occurred during hard disk access.	Check hard disk status and connection.
	CANNOT RECOGNIZE HDD!	The destination target cannot be properly recognized.	Reboot the hard disk or connect a different hard disk.
	CANNOT ACCESS CARD!	An error occurred during P2 card access.	Check P2 card.
	MISMATCH COMPONENT!	Copying cannot be made because the destination card is in the wrong format.	Use a P2 card with appropriate capacity.
	P2 CARD IS UNFORMATTED!	The P2 card is not formatted.	Use a formatted P2 card.
	CARD IS EMPTY! CANNOT COPY!	The P2 selected for copying is empty.	Copying is not performed since the card is empty.
	VERIFICATION FAILED!	The compare check after copying failed.	Copy the data again.
	PLEASE FORMAT P2 CARD!	This warning indicates that data could not be imported from a hard disk to a P2 card because the P2 card contained recorded data.	You cannot copy to a P2 card that contains data. Format the card on a P2 device and copy 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.
Play list	NO FILE!	The specified file does not exist.	Use SAVE AS to save or insert a normally operating card.
	READ ONLY PLAYLIST VERSION!	The play list file is opened as read only because it is in a different version.	Play lists created on the AJ-SPD850 can only be opened as read only files. To edit such files on this unit save them out.
	CANNOT FIND CLIP!	Specified clip could not be found.	Insert the card with the clip.
	INCLUDE MULTI FORMAT!	The files are not in the same format.	Play list files in different formats cannot be loaded.
	READ ONLY 100 EVENTS!	The play list file exceeds the upper limit on events.	The upper limit on events is 100 events. Files are opened as read only.

Item	Message	Description	Measure
Play list	DIFFERENT PLAYLIST VERSION!	The play list contains files in different versions.	Play list files in a different version cannot be imported.
	INCLUDE ILLEGAL EVENT!	The play list contains illegal events.	Repair or delete as necessary.
	WRITE PROTECTED!	The specified card is write protected.	Insert write-enabled media.
	NO SPACE!	There is not enough space on the card.	
	ILLEGAL FILE!	The file selected for importing is in an unknown format.	Use clips in a matching format.
	DIFFERENT FORMAT!	The play list being edited and the event and clip selected for importing are in a different edit format (codec or frame rate).	Use clips in a matching edit format.
	NUMBER OF FILE LIMITATION!	The number of play list files has reached the upper limit.	One card can store up to 999 play list files. Delete files no longer needed or use a new card.
	NUMBER OF EVENT LIMITATION!	The number of events has reached the upper limit.	The upper limit is 100 events. Operate within this limit.
	NUMBEER OF EXTRA EVENT LIMITATION!	The number of EXTRA audio events has reached the upper limit.	The upper limit for EXTRA audio events is 100 events. Operate within this limit.
	CANNOT OPERATE AT A.DUB EVENT!	This operation is not available in an EXTRA audio segment.	An illegal operation was attempted in an EXTRA audio segment. Perform the operation elsewhere or first delete the EXTRA audio event.
	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.
	DURATION LIMITATION	The selected process cannot be performed because play list duration exceeds 24 hours.	Delete data to reduce the duration to less than 24 hours to process.
	DIFFERENT SYSTEM FREQUENCY!	Some files have a different system frequency.	Use only files with the same system frequency.
	NOT SELECTED!	No clip is selected.	Select the clip in the thumbnail screen.
	INCLUDE COLLAPSE CLIP!	Some of the clips are abnormal.	Use normal clips only.
	CANNOT FIND SAME FORMAT!	There are no clips in a matching edit format.	Use clips that match the edit format.
	NO CARD!	The specified card does not exist.	Insert the card before attempting to process it.
	INCLUDE DIFFERENT ASPECT RATIO!	There are clips with different aspect ratios.	Aspect ratios cannot be mixed. Use only clips with the same aspect ratio.
	LACK OF REC CAPACITY!	The card selected for edit copying does not have enough capacity.	Insert a card with sufficient capacity.
	NOT AVAILABLE FORMAT!	Cannot edit data in the current format.	Install an AVC-Intra Codec board AJ-YBX200G to enable editing of this format.
	CANNOT OPERATE AT RECORDED EXTRA AUDIO!	Recorded EXTRA audio cannot be edited.	Delete EXTRA audio or use another event.
	DIFFERENT EXTRA AUDIO CH!	Play list files using channels that differ from the current EXTRA audio cannot be imported.	Import play list files that use the same channels as the current EXTRA audio.

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-39	CONFIG ERROR	Appears when an optional AVC-Intra Codec board (AJ-YBX200G) cannot be initialized. This may be caused by a board malfunction. Consult your supplier.	STOP
E-BA	BATTERY	Appears when the input DC voltage is below the undercut voltage.	STOP

“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
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

Shortcut keys	Thumbnail GUI		Play list GUI	
	Name	Description	Name	Description
REC	---	---	FINALIZE/ RECALL	Finalizes overwrite edited unfinalized event / Turns the overwrite edited event at the cursor position into unfinalized status.
SHIFT+FF/UP	TOP	Moves to first thumbnail	TOP	Moves to first event
SHIFT+REW/DOWN	BOTTOM	Moves to last thumbnail	BOTTOM	Moves to last event
IN + GOTO	---	---	GOTO IN	Locates the IN point of event at the current location.
OUT + GOTO	---	---	GOTO OUT	Locates the OUT point of event at the current location.
SHIFT+RESET	---	---	NEW	Clears a new list
INPUT SELECT VIDEO	---	---	INPUT VIDEO	Sets and releases overwrite to video track
INPUT SELECT AUDIO	---	---	INPUT EXTRA	Sets and releases overwrite to EXTRA audio
IN+ENTRY	---	---	R IN	Registers the current playback location as a recorder IN point for overwrite editing
OUT+ENTRY	---	---	R OUT	Registers the current playback location as a recorder OUT point for overwrite editing
A DUB	---	---	COPY TO EXTRA	Copies the audio of event at current location as EXTRA audio
SHIFT+PLAY	1 CLIP PLAY	Plays back only the clip at the cursor location (from the beginning to the end of the clip).	PREVIEW/ REVIEW	Plays back the event at current location or 3 seconds prior to the overwrite area to 1 second after the area
SHIFT+ENTRY	---	---	CLIP→EVENT	Imports the selected clip as an event.
SHIFT+IN	DISP.SLOT CLIPS	Toggles between thumbnail display of each individual slot and selected clip display.	IN TRIM	Selects trimming of R IN/P IN.
SHIFT+OUT	DISP.ALL CLIP	Changes thumbnail display to all clip display.	OUT TRIM	Selects trimming of R OUT/P OUT.
SHIFT+INSERT	DELETE	Deletes all selected clips.	DELETE	Deletes all selected events.
SHIFT+SPLIT	CLIP PROPERTY	Shows properties of the clip at cursor location.	EVENT PROPERTY	Shows properties of the event at cursor location.
RESET	KB CLEAR	Clears on-screen keyboard text.	KB CLEAR	Clears on-screen keyboard text.
			IN/OUT CLEAR	Clears P IN/OUT and R IN/OUT points.
SHIFT+SET	MULTI SELECT	Selects multiple thumbnails.	MULTI SELECT	Selects multiple events.
SHIFT+EXIT	CANCEL	Releases selected item and interrupts copying procedure.	CANCEL	Releases selected item and interrupts copying procedure.

Shortcut keys	Thumbnail off and playback from thumbnail		Play list event/INSERT registration	
	Name	Description	Name	Description
IN+OUT	---	---	DURATION	Shows duration between IN and OUT points
IN+RESET	IN POINT RESET	Clears IN points	IN POINT RESET	Clears IN points
OUT+RESET	OUT POINT RESET	Clears OUT points	OUT POINT RESET	Clears OUT points

Shortcut keys	Thumbnail off and playback from thumbnail		Play list event/INSERT registration	
	Name	Description	Name	Description
SPLIT+RESET	---	---	SPLIT POINT RESET	Clears SPLIT points
IN+ENTRY	ENTRY IN POINT	Registers CUEUP point to IN button	ENTRY IN POINT	Registers event IN point
OUT+ENTRY	ENTRY OUT POINT	Registers CUEUP point to OUT button	ENTRY OUT POINT	Registers event OUT point
IN+GOTO	CUEUP TO IN POINT	Cues up to point for IN button registration	SEEK TO IN POINT	Locates the IN point
OUT+GOTO	GUEUP TO OUT POINT	Cues up to point for OUT button registration	SEEK TO OUT POINT	Locates the OUT point

Shortcut keys	Thumbnail On/Off	
	Name	Description
SHIFT+ +	SLOT SELECT(+)	Moves to recording slot in forward direction.
SHIFT+ –	SLOT SELECT(–)	Moves to recording slot in reverse direction.

Shortcut keys	Name	Description
TRIM +/–	File name display	
	PAGE JUMP	Jumps/returns to page
	Hard disk EXPLORE display	
	PARTITION JUMP	Jump/return to partition
	Play list display	
	TL ZOOM	Zoom in and zoom out the timeline
	R IN/OUT, P IN/OUT trim selected	
	TRIM	Trims each registered point

Shortcut keys	On-screen keyboard operation
	Description
DELETE	BACKSPACE
GOTO	CAPS LOCK
ENTRY	OK
EXIT	EXIT
SHIFT+REW	Moves to beginning of text.
–	Moves 1 character to the left
+	Moves 1 character to the right
SHIFT+FF	Moves to end of text.
RESET	Deletes al text

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.

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.

http://eww.pavc.panasonic.co.jp/pro-av/

◆ **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. To format an SD card on a PC, use the following software that can be downloaded from the site listed above.

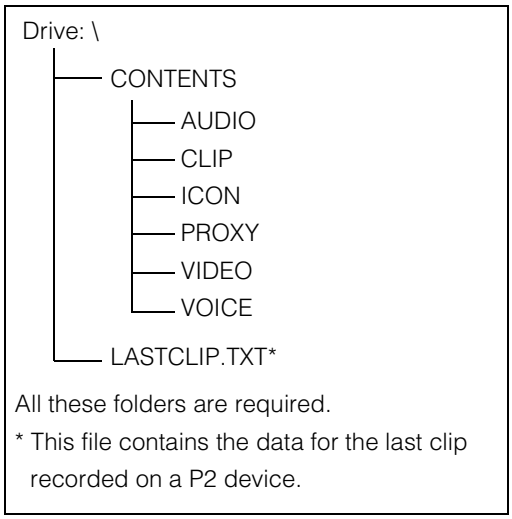
Handling P2 Card Recording

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 DVCPRO P2 format records data as files, it is ideally suited for computer processing. Video and audio are recorded in the MXF file format while the metadata (XML) 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.

■ 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. (Supported operating systems: Windows 2000, Windows XP, Windows Vista)
https://eww.pavc.panasonic.co.jp/pro-av/



All these folders are required.
* This file contains the data for the last clip recorded on a P2 device.

■ 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.

- Microsoft and Windows are registered trademarks of Microsoft Corporation in the United States and/or other countries.
- Apple and Macintosh are registered trademarks or trademarks of Apple, Inc. in the United States and/or other countries.

Specifications

GENERAL

Power supply: 100-240 V AC, 50/60 Hz, 60 W
12 V DC, 4.8 A (full options)

indicates safety information.

Operating ambient temperature:
0 °C to 40 °C (32 °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: 6.5 kg (14.33 lb)
Dimensions (W × H × D):
301 mm × 120 mm × 412 mm
($11^7/_8$ inches × $4^3/_4$ inches × $16^1/_4$ inches)
(not including the support legs)
Recording format: AVC-Intra100*/AVC-Intra50*/DVCPRO HD/DVCPRO50/DVCPRO/DV 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 16-bits 2/4 channels selectable

* Assumes installation of an optional AVC-Intra Codec board AJ-YBX200G.

Recording times:

Card model	Number of Cards	Recording format		
		DVCPRO (2-channel audio)	DVCPRO 50 (4-channel audio) AVC-Intra50 (8-channel audio)*	DVCPRO HD (8-channel audio) AVC-Intra100 (8-channel audio)*
AJ-P2C004HG	1	approx. 16 minutes	approx. 8 minutes	approx. 4 minutes
	6	approx. 96 minutes	approx. 48 minutes	approx. 24 minutes
AJ-P2C008HG	1	approx. 32 minutes	approx. 16 minutes	approx. 8 minutes
	6	approx. 3 hour 12 minutes	approx. 96 minutes	approx. 48 minutes
AJ-P2C016RG	1	approx. 64 minutes	approx. 32 minutes	approx. 16 minutes
	6	approx. 6 hour 24 minutes	approx. 3 hour 12 minutes	approx. 96 minutes
AJ-P2C032RG	1	approx. 2 hour 8 minutes	approx. 64 minutes	approx.32 minutes
	6	approx. 12 hour 48 minutes	approx. 6 hour 24 minutes	approx. 3 hour 12 minutes

* Assumes installation of an optional AVC-Intra Codec board AJ-YBX200G.

◆ **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.

Digital slow: –1.0× to +1.0× speed*

* Excluded when setup menu No. 25 SYSTEM FREQ is set to 23.98, 24, 59-23 or 60-24.

VIDEO

DIGITAL VIDEO

Sampling frequencies:
AVC-Intra100/AVC-Intra50/DVCPRO HD:
Y: 74.176 MHz
(1080/59.94i, 1080/23.98p, 1080/29.97p, 720/59.94p)
74.25 MHz (1080/24p, 1080/25p, 1080/50i, 720/50p)
P_B/P_R: 37.088 MHz
(1080/59.94i, 1080/23.98p, 1080/29.97p, 720/59.94p)
37.125 MHz
(1080/24p, 1080/25p, 1080/50i, 720/50p)
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: H.264/AVC-Intra Profile
DVCPRO HD: DV base (SMPTE370M)
DVCPRO50/DVCPRO/DV:
DV base (SMPTE314M)

Bit rate: AVC-Intra100/DVCPRO HD: 100Mbps
AVC-Intra50/DVCPRO50: 50 Mbps
DVCPRO: 25 Mbps

VIDEO INPUT

Analog composite input:
BNC × 1 (VIDEO IN), 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

Analog component (switchable):
BNC × 3 (Y, P_B, P_R)
Y: 1.0 V[p-p], 75 Ω during HD output mode

Analog composite output (switchable):
BNC × 3, video 1, video 2, video 3,
1.0 V[p-p], 75 Ω during SD output mode

HD SDI/SD SDI output (switchable):
BNC×1, 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

Monitor output: BNC × 1, 1.0 V[p-p], 75 Ω

VIDEO ADJUSTMENT RANGES

Video output gain: Can be set to -∞ to +3 dB or -∞ to 6 dB depending on menu

Video output chroma gain:
±3 dB

Video output HUE (chroma phase):
±30°

Video output setup level:
±14 IRE

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: 18/20 dB selectable

De-emphasis: T1 = 50 µs, T2 = 15 µs (auto on/off)

AUDIO INPUT

Analog input (CH1, CH2, CH3, CH4):
XLR × 4, 600 Ω/high impedance selectable (factory setting: high impedance)
+4/0/–3/–20 dBu selectable
Only CH2 input can be switched between LINE/MIC/MIC +48 V

MIC: –60 dBu

MIC+48V: Phantom +48V supported, –60 dBu

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

Analog output (CH1, CH2, CH3, CH4):
XLR × 4, low impedance,
+4/0/–3/–20 dBu selectable

SDI output: 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

Monitor output: Pin jacks × 2, –8 dBV, 600 Ω

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-422A input/output:
D-sub 9pin, RS-422A interface

IEEE1394 input/output:
IEEE1394 6pin × 1
400/200/100 Mbps selectable
Complies with IEEE1394-1995
Complies with IEC61883-Part1,Part2
Complies with SMPTE 396M
AV/C Command Set supported

USB 2.0: Host × 1, Device × 1

Inrush current, measured according to European standard EN55103-1: 20.5 A

Mass and dimensions are approximate values.

Specifications are subject to change without notice.

Menu index

Information on Disposal for Users of Waste Electrical & Electronic Equipment (private households)

This symbol on the products and/or accompanying documents means that used electrical and electronic products should not be mixed with general household waste.
For proper treatment, recovery and recycling, please take these products to designated collection points, where they will be accepted on a free of charge basis. Alternatively, in some countries you may be able to return your products to your local retailer upon the purchase of an equivalent new product.
Disposing of this product correctly will help to save valuable resources and prevent any potential negative effects on human health and the environment which could otherwise arise from inappropriate waste handling. Please contact your local authority for further details of your nearest designated collection point.
Penalties may be applicable for incorrect disposal of this waste, in accordance with national legislation.

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

Information on Disposal in other Countries outside the European Union
This symbol is only valid in the European Union.
If you wish to discard this product, please contact your local authorities or dealer and ask for the correct method of disposal.

Panasonic®

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Broadcast PARTS INFORMATION & ORDERING:
9:00 a.m. - 5:00 p.m. (EST) (800) 334-4881/24 Hr. Fax (800) 334-4880
Emergency after hour parts orders (800) 334-4881

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