



DVD Master Recorder

Model **DV40** Operation Manual



 <div style="display: inline-block; background-color: black; color: white; padding: 2px 10px; font-weight: bold; text-align: center;">CAUTION</div> 
<p>RISK OF ELECTRIC SHOCK DO NOT OPEN</p>
<p>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.</p>

CAUTION:

TO PREVENT ELECTRIC SHOCK, MATCH WIDE BLADE OF PLUG TO WIDE SLOT, FULLY INSERT.

ATTENTION:

POUR ÉVITER LES CHOCS ÉLECTRIQUES, INTRODUIRE LA LAME LA PLUS LARGE DE LA FICHE DANS LA BORNE CORRESPONDANTE DE LA PRISE ET POUSSER JUSQU' AU FOND.



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



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

"WARNING"

"TO REDUCE THE RISK OF FIRE OR ELECTRIC SHOCK, DO NOT EXPOSE THIS APPLIANCE TO RAIN OR MOISTURE."

SAFETY INSTRUCTIONS

1. Read Instructions - All the safety and operating instructions should be read before the appliance is operated.
2. Retain Instructions - The safety and operating instructions should be retained for future reference.
3. Heed Warnings - All warnings on the appliance and in the operating instructions should be adhered to.
4. Follow Instructions - All operating and use instructions should be followed.
5. Water and Moisture - The appliance should not be used near water - for example, near a bathtub, washbowl, kitchen sink, laundry tub, in a wet basement, or near a swimming pool, and the like.
6. Carts and Stands - The appliance should be used only with a cart or stand that is recommended by the manufacturer.



An appliance and cart combination should be moved with care. Quick stops, excessive force, and uneven surfaces may cause the appliance and cart combination to overturn.

7. Wall or Ceiling Mounting - The appliance should be mounted to a wall or ceiling only as recommended by the manufacturer.
8. Ventilation - The appliance should be situated so that its location or position does not interfere with its proper ventilation. For example, the appliance should not be situated on a bed, sofa, rug, or similar surface that may block the ventilation openings; or, placed in a built-in installation, such as a bookcase or cabinet that may impede the flow of air through the ventilation openings.

9. Heat - The appliance should be situated away from heat sources such as radiators, heat registers, stoves, or other appliances (including amplifiers) that produce heat.
10. Power Sources - The appliance should be connected to a power supply only of the type described in the operating instructions or as marked on the appliance.
11. Grounding or Polarization - The precautions that should be taken so that the grounding or polarization means of an appliance is not defeated.
12. Power Cord Protection - Power supply cords should be routed so that they are not likely to be walked on or pinched by items placed upon or against them, paying particular attention to cords at plugs, convenience receptacles, and the point where they exit from the appliance.
13. Cleaning - The appliance should be cleaned only as recommended by the manufacturer.
14. Nonuse Periods - The power cord of the appliance should be unplugged from the outlet when left unused for a long period of time.
15. Object and Liquid Entry - Care should be taken so that objects do not fall and liquids are not spilled into the enclosure through openings.
16. Damage Requiring Service - The appliance should be serviced by qualified service personnel when:
 - A. The power supply cord or the plug has been damaged; or
 - B. Objects have fallen, or liquid has been spilled into the appliance; or
 - C. The appliance has been exposed to rain; or
 - D. The appliance does not appear to operate normally or exhibits a marked change in performance; or
 - E. The appliance has been dropped, or the enclosure damaged.
17. Servicing - The user should not attempt to service the appliance beyond that described in the operating instructions. All other servicing should be referred to qualified service personnel.

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About this manual

This manual is intended to be used as a guide for using the Fostex DV40, a DVD master recorder.

It is divided into Chapters. Each Chapter covers instructions for a specific subject or feature of the DV40 which you should know for using the unit, as well as safety instructions, precautions, etc. Please retain this manual at hand so that you can read it whenever necessary.

<Manual construction>

The following shows a brief description of each chapter though you may know the contents of each chapter by the "Table of Contents".

Chapter 1: Before using the DV40

Before using the DV40, you must carry out some preparations. This chapter describes how to set the internal clock, as well as details about formatting a DVD-RAM disk, including UDF format details, format modes ("**Normal mode**" and "**Tape mode**") and audio file types ("**BWF**" and "**SDII**").

Read this chapter first before using the DV40.

Chapter 2: Names of Functions

This chapter describes names and functions of keys and controls on the front panel, as well as those of connectors on the rear panel.

If you are familiar with digital equipment, you may roughly understand the functions the DV40 offers.

Chapter 3: Reformatting/optimizing a DVD-RAM disk

This chapter describes how to reformat a DVD-RAM disk and how to optimize a disk. To format a new disk, see Chapter 1.

Chapter 4: Recording/playback the audio signal

This chapter describes audio recording/playback (for both analog and digital) using the DV40. Two recording modes, "**NEW FILE**" and "**INSERT**" modes, are available. You can choose the appropriate mode depending on the situation.

You can also find description about mute recording, slate tone recording, cueing by the jog/shuttle mode, etc.

Chapter 5: Time code recording

This chapter describes how to record SMPTE/EBU time code to the DV40, as well as the TC Setup mode which provides preferences/settings for time code recording/playback. Read this chapter when carrying out the operations for internal time code generator setting, force-jamming to an external time code, chase offset to an external time code, etc.

Chapter 6: Storing time data

This chapter describes how to store time data to location memories (CUE and MEMORY points). It also describes how to erase or edit time data.

Chapter 7: Locate Function

This chapter describes various locate functions including direct location to the beginning or end of an audio file, location to a "CUE" or "MEMORY" point, etc.

Chapter 8: Preview Function

This chapter describes the fade-in/fade-out preview (point rehearsal) function at an edit/CUE/MEMORY point. It also describes how to trim the point while previewing.

Chapter 9: Audio file management

This chapter describes the management of audio files ("BWF" and "SDII") created on a DVD-RAM disk. It includes details about how to create a new audio file, select an audio file, edit a file name, and delete/copy an audio file.

Chapter 10: Editing track data

This chapter describes how to edit track data using the paste, insert, cut and erase functions.

Chapter 11: List play function

This chapter describes the list play function. This function allows you to play back more than one recorded track continuously in order of file number or by assigning files at appropriate LTC positions.

Chapter 12: Using a PS/2 keyboard

This chapter describes how to control the DV40 using a PS/2 keyboard connected to the [KEYBOARD] terminal. You can edit a file name or volume label by a PS/2 keyboard.

Chapter 13: FTP server function

This chapter describes the FTP (File Transport Protocol) server function of the ETHER card mounted on the DV40. The ETHER card can be used as an FTP server by connecting the ETHER connector on the DV40 rear panel to a personal computer using a LAN cable. You can transfer an audio file between the DV40 and a personal computer via the TCP/IP.

Chapter 14: Importing an audio file to a computer

This chapter describes how to import an audio file created by the DV40 to a computer software (Digidesign Pro Tools).

Chapter 15: Setup mode

This chapter describes details about the menu in the Setup mode. You can set preferences, etc. of the DV40.

Chapter 16: Utility mode

This chapter describes the Utility mode.

This mode, as well as the Setup mode, deals with preference menus of the DV40.

Precautions

<Precautions on installation>

Do not install the unit in the following conditions.

- in a extremely hot or cold place
- in a moist place
- in a dusty place
- in a strong magnetic field or near a device which generates a magnetic field
- in the direct sunshine

<Precautions on safety>

- Be sure to connect the unit to the power supply specified in the specification section of this manual.
If you use the unit in an area with a different power voltage, first consult your dealer or the nearest Fostex service station.
- When you unplug the power cord from AC outlet or the unit, hold the plug, to avoid possible electric shock.
- Do not plug or unplug the power cord from or to AC outlet or the unit while your hands are wet to avoid possible electric shock.
- Plug the power cord firmly to AC outlet and the unit.
- It is very dangerous to use a power cord that is frayed or damaged. In such a case, stop using the unit immediately and change the cord to a new one.
- If the unit is not going to be used for a long period of time, we recommend to disconnect the power cord form AC outlet.
- Do not let water or other liquid, or metal objects such as pins, accidentally enter the inside of the unit (especially the inside of the tray) because this may lead to electric shock or damage. Should water enter the inside of the unit, remove the power cord from AC outlet, and consult your dealer or the nearest Fostex service station.
- Do not drop or the unit or give a strong shock to the unit, which may lead to damage of the internal circuits or FL display.

DV40 main features

- Using a DVD-RAM disk as a recording media, you can directly record or play back audio data. For recording, the Verify Write recording method, with which data is always verified, is applied, allowing the highly reliable recording.
- The most popular "**UDF format**" is used for the DVD-RAM disk format. Audio data recorded to a DVD-RAM disk is stored as an "**SDII**" or "**BWF**" file in an appropriate directory ("**sd2f**" for an SDII file, "**bwff**" for a BWF file). Therefore, two kinds of audio files can share a single disk.
- The "**TAPE mode**" is available, in which audio data currently being recorded is never lost even if the unit is accidentally shut down by the power failure, etc. A very useful mode for live recording, etc.
- Three track modes are available; mono track, stereo (2 tracks), and multitrack (4 tracks).
- The supporting sampling frequencies are 44.1 kHz, 48 kHz, 88.2 kHz, 96 kHz, 176.4 kHz and 192 kHz. In addition, the 0.1 % pull-up/pull-down function is available.
Note: You cannot record audio data of 88.2 kHz/4-track mode, 96 kHz/4-track mode, 176.4 kHz and 192 kHz.
- Non-destructive editing (copy, paste, insert, cut and erase) for track data is possible.
- Two recording modes, "**NEW FILE mode**" and "**INSERT mode**", are available. In the "**INSERT mode**", you can undo recording to go back to the desired take by selecting the date/time when the take is executed (multiple undo function).
- Equipped with four XLR analog inputs (24 bit/192 kHz A/D) and four sets of XLR and 1/4-inch phone analog outputs (24 bit/192 kHz AD).
- Equipped with two sets of digital inputs/outputs (AES/EBU).
- Equipped with the WORD IN and VIDEO IN connectors, allowing synchronization to a word or video signal.
- Equipped with a 15-pin remote connector which conforms to the Sony 9-pin protocol, allowing the unit to be controlled by an editor.
- The chase mode function allows chase-sync to external LTC.
- Built in a time code generator which supports "**24H RUN**", "**REC RUN**", "**FREE RUN**" and "**EXT RUN**" modes.
- Supports all kinds of time code frame rates, including "**23.97**" for tele-cine conversion.
- The "**List play**" function allows continuous playback of multiple audio files in order of file number or LTC start time.
- The comprehensive locate function allows you to locate to any of various edit points and memory locate points.
- Precision analog scrub using a jog dial is possible.
- A PS/2 keyboard can be used for file name/label name editing.
- You can transfer an audio file on TCP/IP between the DV40 and a personal computer by using the ETHER card as an FTP server.
- You can record a blank space or slate tone manually, or automatically by setting the desired time range in the Setup menu.
- The file management on a VGA monitor, a waveform editing using a PS/2 keyboard, playback of a DVD Audio disc, etc. are planned to be available by version-up or adding an option in the future.

Chapter-1

Before using the DV40

Before using the DV40, you must carry out some preparations. This chapter describes how to set the internal clock and how to format a DVD-RAM disk.

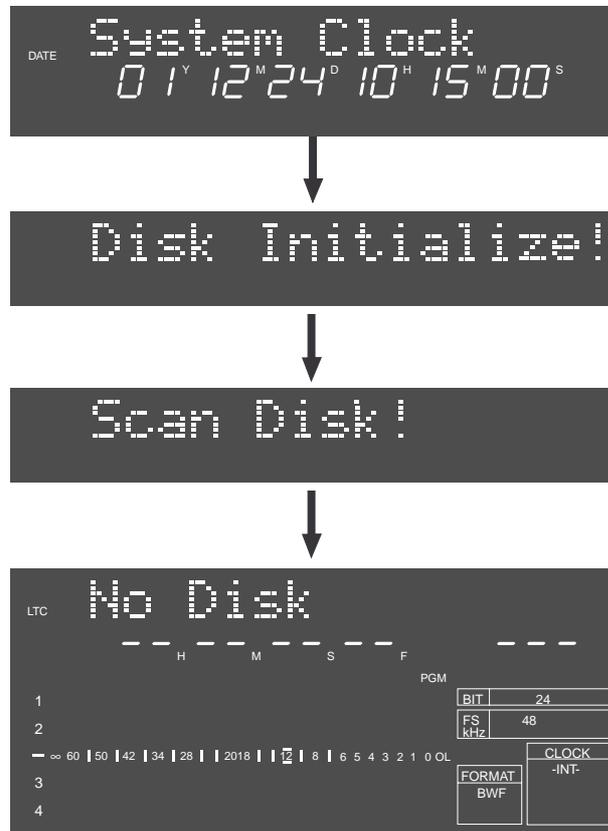


Turning on the power

After connecting the supplied power cord, you can turn on the power of the unit.

1. Press down the [POWER] switch.

After showing the start-up display (showing the system clock, followed by "Disk Initialize!"), the unit activates and scans the disk (showing "Scan Disk!"), then shows "No Disk".



<Note>

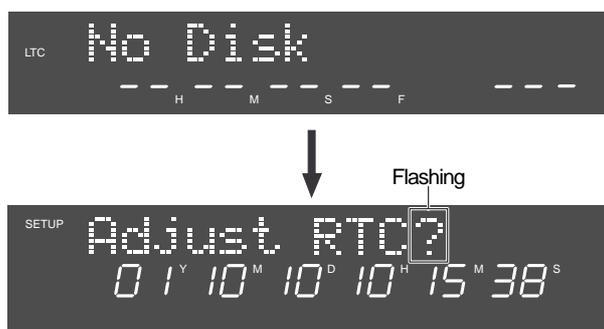
When turning off the power, make sure that the unit is not in the Setup mode and ceases disk access.

Setting the internal clock

The internal clock is built in the unit, which is adjusted to the Japanese time when shipped. Set the clock to your local time before using according to the following procedure. The internal clock time is used for date information and a tentative name when creating an audio file, as well as necessary data for executing the multiple undo function.

1. Press the [SETUP] key.

The display changes to the "Adjust RTC?", one of menu items in the Setup mode, from "No Disk". The current internal clock time is shown.



2. Press the [ENTER/YES] key.

"?" disappears while the number in the "second" digit starts flashing, showing that the date/time value now can be edited.

Set the date/time value appropriately according to the following methods.



- Use the [SKIP/CURSOR] |</>| keys to move the editing point, and use the jog dial to enter the value.

or

- Use the numeric keys to enter the date/time value directly.

When entering data using the numeric keys, regardless of the current editing point, the value is entered from the right-hand (second) digit which moves left as additional digits are entered.

For example, to set the clock to 3:10:00 p.m. of April 1, 2002, press the numeric keys in the following order.

0 -> 2 -> 0 -> 4 -> 0 -> 1 -> 1 -> 5 -> 1 -> 0 -> 0 -> 0

3. Press the [ENTER/YES] key after enter the value.

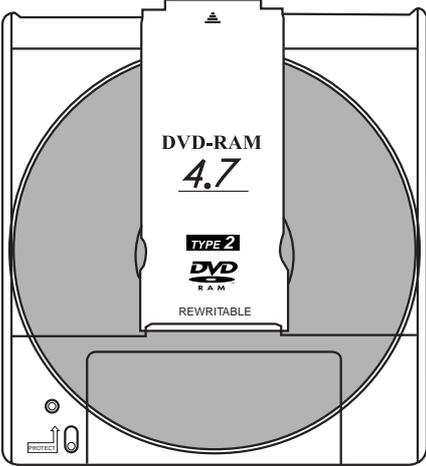
The internal clock starts from the entered date/time value.

You can precisely set the clock by listening to the time signal when pressing the [ENTER/YES] key.

4. Press the [EXIT/NO] key.

The unit exits the Setup mode and the display shows "No Disk" again.

Loading a DVD-RAM disk



About usable DVD-RAM disks

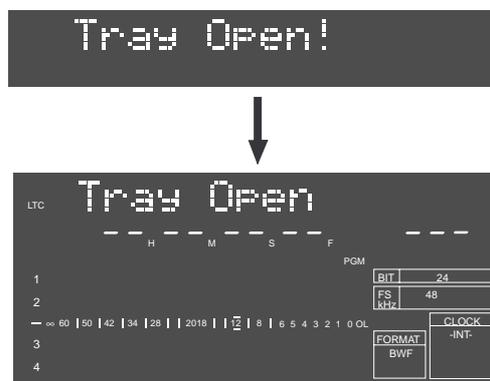
TYPE 2, one-side disks with 4.7 GB capacity can be used with the DV40.

<Note>
 Use a 4.7GB/TYPE 2 DVD-RAM disk with the DV40. The DV40 only can play back data on a 2.6GB disk recorded by other equipment. Please note that the DV40 does not guarantee recording and editing operations with a 2.6GB disk.

<Note>
 Do not use a DVD-RAM disk whose tab (indicated by an allow in the figure on the left) is removed in order to take out the disk from the case. If you use such a disk, 2- or 4-track recording with 176.4kHz/24 bit or 192kHz/24 bit may not be properly executed. Also note that, if you use an used DVD-RAM disk with the DV40, we recommended to format the disk by a computer first, then format it by the DV40.

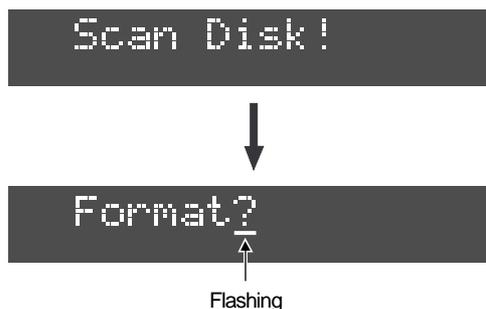
1. Press the [OPEN/CLOSE] key.

The display shows "Tray Open!" and the tray opens.



2. Place a DVD-RAM disk in the tray, and press the [OPEN/CLOSE] key again (or push the front of the tray lightly).

The disk is loaded. After the unit scans the disk ("Disk Scan!" is shown as a flashing display while scanning), it automatically recognizes that the disk is unformatted and enters the "Format" menu ("Format" with flashing "?" is shown).



You can format the disk by the following procedure in the next page.

Formatting a DVD-RAM disk

To make a DVD-RAM disk usable with the DV40, format the disk by the “UDF format”. Two format modes, “Normal” and “Tape”, are available with this unit. Use either format according to the situation.

<About UDF format>

The DV40 formats a disk in the UDF “R1.50” format. It can read a disk formatted in the “R1.50” or “R2.0*” format using a personal computer without any difficulty. Note that MAC OS 9.1 supports the “R1.50” format but does not support the “R2.0*” format. Therefore, a Macintosh computer running on MAC OS 9.1 cannot read a disk formatted in the “R2.0*” format using a Windows 98 computer. To ensure the compatibility among the DV40 and computers, we recommend to format a disk in the “R1.5” format if you have a Windows 98 computer.

Normal Mode	Tape Mode
<p>Normally, format a disk by selecting the format mode to Normal. No audio file is automatically created when formatting the disk in the Normal mode ("No Audio Files!" is shown after formatting is completed). On a "Normal format" disk, a "Normal mode" audio file ("BWF" or "SDII") is automatically created when executing recording in the NEW FILE mode. Or you can also create "Normal mode" audio files using the file select function before recording. Up to 200 audio files can be created.</p>	<p>Two "Tape mode" audio files ("BWF" or "SDII") of approximately 2 GB each are automatically created on a disk when formatting the disk in the Tape mode. Like an analog tape, a "Tape mode" audio file has the fixed available space, and can playback recorded data even if the system unexpectedly shuts down during recording and the system data is destroyed. Therefore, a "Tape mode" audio file is suitable for live recording or preserving recorded data for a long period of time.</p>
<p>A disk formatted in the Tape mode reserves the “Normal mode” area (approx. 0.7GB) in addition to the “Tape mode” area (2GB + 2GB = 4GB). In the Normal mode area, you can create “Normal mode” audio files (“BWF” or “SDII”). See “About audio files on a formatted disk” on page 1-7 for details.</p>	

<Tips for using a disk formatted in the Tape mode effectively>

The following shows tips for using a disk formatted in the Tape mode effectively.

- If a 2GB “Tape mode” file is too large for you to handle, we recommended to create a “Normal mode” file and copy & paste the necessary data on the “Tape mode” file to it. This allows you to handle data, originally recorded on the “Tape mode” file, on a small file.
- If the 0.7GB “Normal mode” area on a “Tape mode” file is too small, delete one of the “Tape mode” files and optimize the disk. This increases the “Normal mode” area to 2.7GB.

<Notes for formatting a disk in the Tape mode>

When a disk is formatted in the Tape mode, an audio file is automatically created. Therefore, before formatting, you must set the AUDIO FILE, TR MODE and SAMPLING FREQ switches on the front panel appropriately. Note that you cannot change the settings after formatting.)

When formatting a disk in the Normal mode, you do not need to set these switches. However, you must set them appropriately when making recording in the NEW FILE mode or creating a new audio file using the file select function.

1. While "Format" with flashing "?" is shown on the display, press the [ENTER/YES] key.

The display changes to show "Format Disk DVD" (in which "DVD" is flashing).

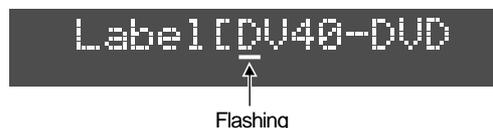


2. Press the [ENTER/YES] key again.

The display changes to show "Label [DV40-DVD" (in which "D" of "DV40" is flashing).

This shows the label name of the disk can be edited and "DV40-DVD" is the tentative name.

See the following Tips for details about how to enter a desired label name. Of course, you may use the tentative name when formatting. (You can also rename the tentative name in the Utility mode described later.)



Tips: How to enter a desired label name

Press the [MARGIN RESET/CLR] key repeatedly until the tentative name currently shown is erased. By using the Jog dial (or using the appropriate numeric key), you can enter the desired character at the editing point (flashing point). You can move the editing point by pressing [SKIP/CURSOR] [←/→] key after entering a character.

3. After entering a volume name, press the [ENTER/YES] key.

The display changes to show "Format Md?" with flashing "Norm". You can select the format mode between "Norm" (Normal) and "Tape" using the jog dial.



4. Select the format mode and press the [ENTER/YES] key.

If you select "Norm", the display shows "If enter key is pushed, will start formatting and delete DVD area data. Are you sure?". If you are sure, proceed to the next step.



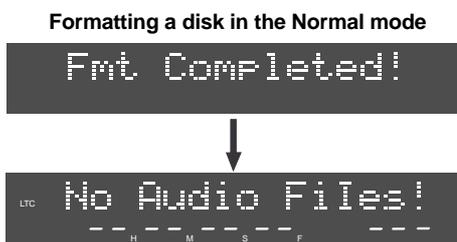
If you select "Normal", go to the next step after the message above is shown. When selecting "Tape", select "New" or "Used" using the jog dial, and then press the [ENTER/YES] key. Go to the next step after the same message as above (shown when selecting "Norm") is shown.

<Note>

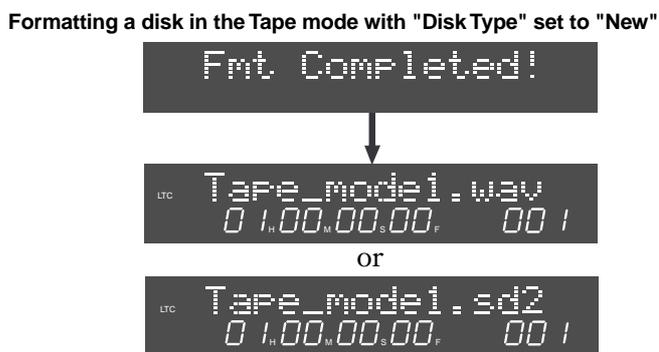
- When formatting a used disk in the Tape mode, select "Used". If you select "New", the existing data may not be erased, with the result that a noise may generated when playing back the disk or a recording error may occur when a new recording is made.
- If you format a disk in the Tape mode with "Disk Type" set to "used", it takes some time for formatting because the audio data area is also formatted. The display counts down the unformatted area. Because each of two "Tape mode" audio files reserves approximately 2GB of recording space, the countdown of REMAIN starts from approximately 4GB.

5. Press the [ENTER/YES] key.

If you set the disk type to "New", regardless of the format mode ("Norm" or "Tape"), the formatting is completed quickly and "Fmt Completed!" is shown, followed by the screens as below depending on the formatting mode.



After completing formatting a disk in the Normal mode, "No Audio Files!" appears, showing that there is no audio file on the disk. Note that the display shows the file format, track mode and Fs/bit according to the settings of [AUDIO FILE], [TR MODE] and [SAMPLING FREQ] switches when the disk is formatted. When performing recording in the NEW FILE mode or creating file format, track format and Fs/bit for a newly create audio file can be selected by the settings of these switches.



After completing formatting, two "Tape mode" audio files are created, with appropriate audio file format (BWF or SDII), track mode and Fs/bit according to the settings of the [AUDIO FILE], [TR MODE] and [SAMPLING FREQ] switches. Also, the "TAPE MODE" indicator (red) on the front panel is lit.

About audio files on a formatted disk

As described earlier, two format modes, **Normal** and **Tape**, are available with this unit, and in result, there are two audio file types; "**Normal mode**" file and "**Tape mode**" file.

In short, a "Normal mode" file is a typical disk recorder file that can be edited comprehensively, while a "Tape mode" file is more straightforward and you may regard it as a tape-like file.

The following describes detail information about disks formatted in Normal and Tape modes.

•A disk formatted in the "Normal" format mode

As described earlier in "Formatting a DVD-RAM disk", the display shows "No Audio Files!" when formatted in the "Normal" format mode, showing that no audio file is created on the disk.



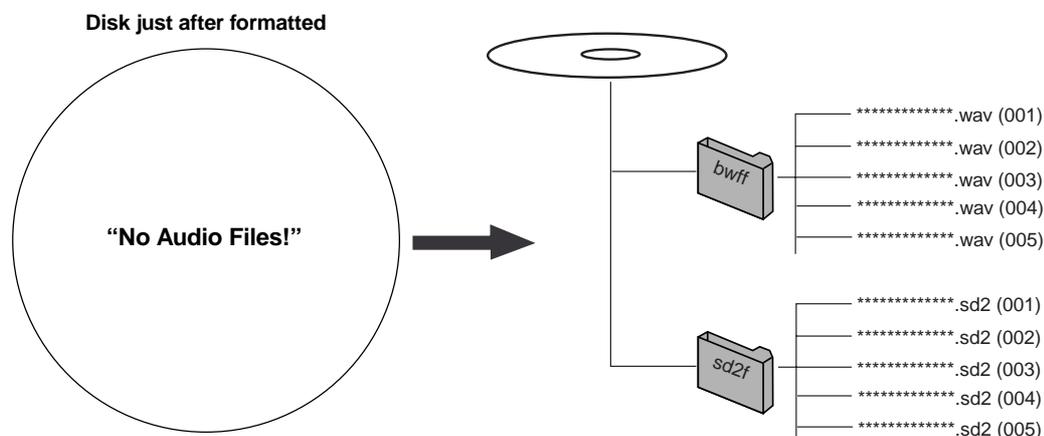
To create a "Normal mode" audio file on a disk formatted in the "Normal" format mode, perform recording in the NEW FILE mode or use the file select function.

Performing recording in the NEW FILE mode creates an audio file automatically, while the file select function allows to create an audio file before performing recording.

You can create audio files of two formats, BWF (Broadcast Wave Format) and SDII (Sound Designer II), decided by the setting of the [AUDIO FILE] switch on the front panel.

A created file is stored in either of two directories, "bwff" for BWF (Broadcast Wave Format) and "sd2f" for SDII (Sound Designer II) files.

You can create up to 200 audio files on a disk formatted in the "Normal" mode.



<Notes>

On a disk formatted in the "Normal" mode, the maximum recording space for each audio file is approximately 2.0GB (the maximum recording time differs depending on the track mode, Fs and bit length). If a file exceeds the maximum recording space during recording, the unit automatically stops recording, while showing "File Size Over!" on the display.

Up to 200 audio files can be created on a disk, however, if the available space on the disk is short, the number of audio files are limited.

For example, if there are two audio files each of which occupies 2.0GB disk space, the remaining space is approximately 0.7GB.

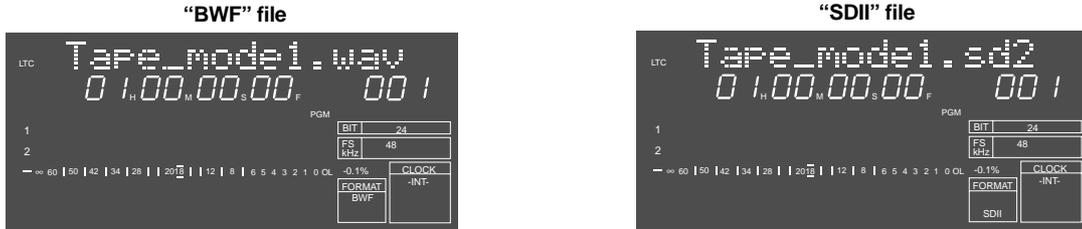
If you create another audio file which occupies 0.7GB, you cannot create an audio file anymore. If you try to make recording in the NEW FILE mode or to create an audio file using the file select function, "Disk Full!" is shown on the display and the operation is rejected.

•A disk formatted in the "Tape" format mode

Two "Tape mode" audio files ("BWF" or "SDII") of approximately 2 GB size are created on a disk formatted in the "Tape" format mode.

A created file are stored in either of two directories, "bwff" for BWF (Broadcast Wave Format) and "sd2f" (Sound Designer II) files, according to the [AUDIO FILE], [TR MODE] and [SAMPLING FREQ] switch settings.

The two "Tape mode" audio files are more tape-like, so you may regard as if there were two analog tapes on a disk. If an accident, such as a sudden power failure or shutdown of the unit, may happens during recording, data on a "Tape mode" audio file recorded before the accident happens will survive (while, in the same situation, all data on a "Normal mode" audio file will be lost).



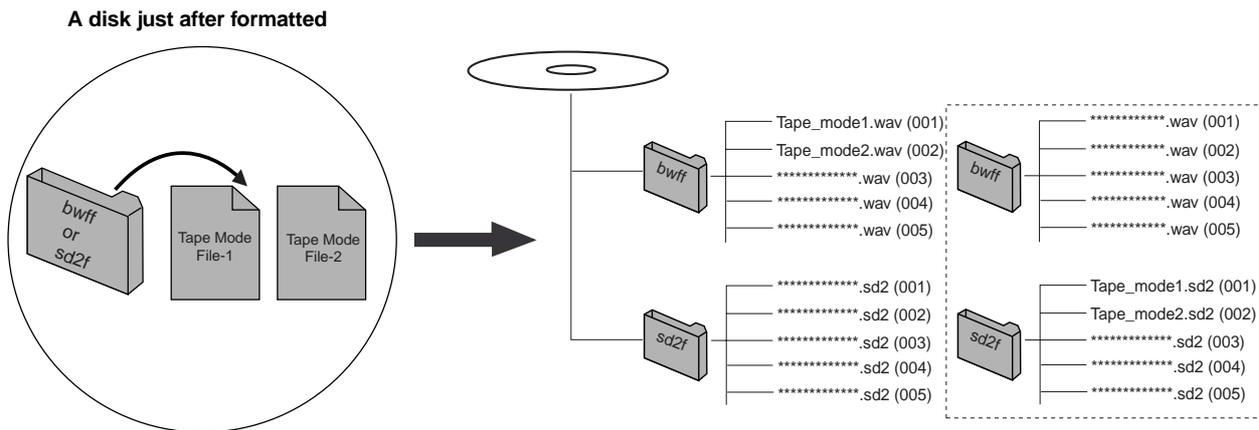
<About the time display>
 After completing formatting, the time of an audio file is shown in the LTC mode with one-hour offset to ABS 0 (LTC 01H: 00M: 00S: 00F). You can switch it to the ABS mode by pressing the [DISP TIME] key as many times as required.

On a disk formatted in the "Tape" mode, two 2GB "Tape mode" files are automatically created, and no more "Tape mode" audio file can be created.

Note that you can make recording to a "Tape mode" audio file only in the INSERT mode.

You can use the approximately 0.7GB remaining area on a disk formatted in the Tape mode as the "Normal mode" area, to create "Normal mode" audio files ("BWF" or "SDII"). "Normal mode" audio files are stored in the appropriate directories as shown in the figure below.

<Note>
 When first time creating a "Normal mode" audio file in the "Normal mode" area (of approximately 0.7GB size) on a disk formatted in the Tape mode, use the file select function (See 4-12 for details).
 However, if any "Normal mode" audio file created is selected, you can create a new audio file by making recording in the NEW FILE mode.



<Note>
 With a "Tape mode" audio file, you cannot make editing such as inserting or cutting track data, and converting, deleting or duplicating a file.

See "Chapter 4: Audio recording/playback" and "Chapter 9: Editing an audio file" for details about how to create a new audio file.

About REMAIN display

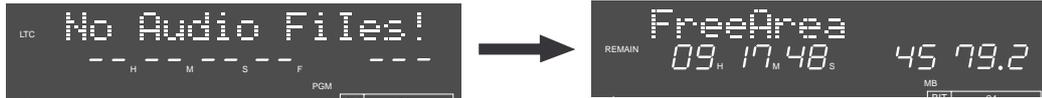
You can check the remaining (recordable) time/space by selecting the appropriate display using the [DISP TIME] key. The unit can show the remaining time and space that can be used for "Normal mode" files, regardless of whether the disk is formatted in the "Normal" or "Tape" mode.

• If a disk is formatted in the Normal mode

1. While a disk is stopped and the display shows "No Audio Files!", press the [DISP TIME] key three times.

The display shows the "FreeArea" screen, in which the recordable space (in MB) and time (in hours/minutes/seconds) for files with the current [TRACK MODE] and [SAMPLING FREQ] switch settings are shown.

The screen example on the right below shows the recordable time and space when the disk is formatted with the [TR MODE] and [SAMPLING FREQ] switch settings to "MONO" and "44.1 kHz/24 bit" respectively.



2. Press the [TR MODE] and [SAMPLING FREQ] switches as desired.

By changing the [TRACK MODE] and [SAMPLING FREQ] switch settings, you can check the recordable space and time according to the current switch settings.

The screen examples below show the values in two cases when the [TR MODE] switch is set to "STEREO" and "MULTI (4TR)" while the [SAMPLING FREQ] switch is fixed to "44.1 kHz/24 bit".



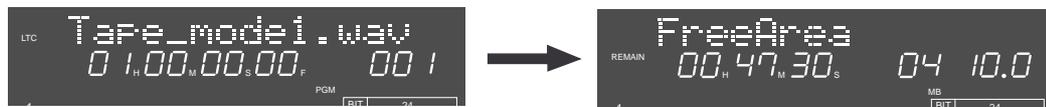
• If a disk is formatted in the Tape mode

1. While the "Tape mode" audio file is selected, press the [DISP TIME] key three times.

The display shows the "FreeArea" screen, as with a disk formatted in the Normal mode. In this screen, the recordable space (in MB) and time (in hours/minutes/seconds) for "Normal mode" files, with the same track mode and sampling frequency/bit length settings as when the disk is formatted, are shown. In other words, the recordable space shown here is the value calculated by subtracting 4.0 GB from all recordable space of the disk. The screen example on the right below shows the values when the disk is formatted by setting the [TR MODE] and [SAMPLING FREQ] switches to "MONO" and "48kHz/24bit" respectively.

The recording time in mono is 47 minutes 30 seconds, while the available space is 0.4 GB.

Note that, with a disk formatted in the Tape mode, if you change the settings of the [TR MODE] and [SAMPLING FREQ] switches, the values on the display may not be changed.



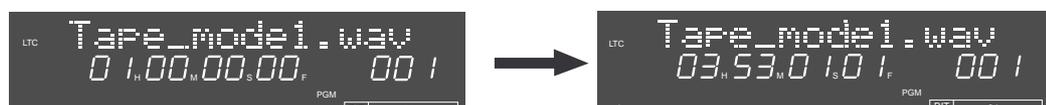
<Tips>

The recordable space of each "Tape mode" file is fixed to approximately 2.0 GB, which is not included in the Free Area, as shown above. You can see the maximum recordable time of the "Tape mode" audio file by following the operation below.

- While a disk is stopped, press the [F FWD] key while holding down the [STOP] key.

The current position moves to the end of the "tape", and the maximum recordable time of a "Tape mode" file, with the track mode and sampling frequency/bit length selected by the [TR MODE] and [SAMPLING FREQ] switches when formatted, is shown on the display.

You can calculate the remaining time of a "tape mode" file by subtracting the elapsed time from the maximum recordable time.



Chapter-2

Names and Functions

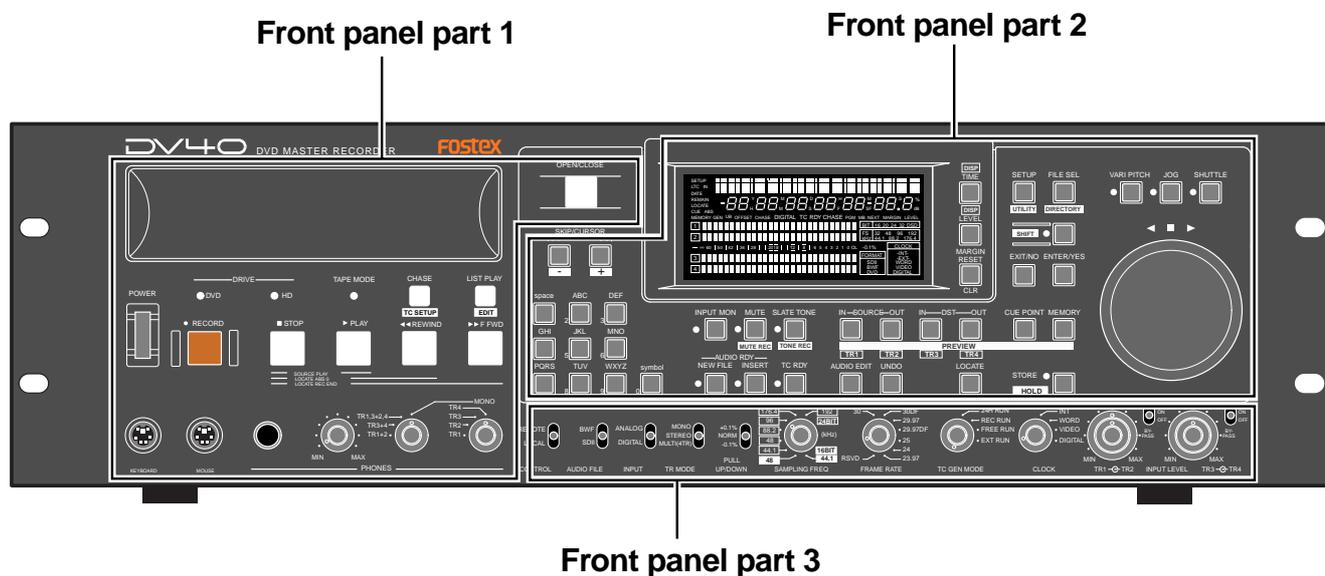
This chapter describes names and functions of controls on the front panel, as well as those of connectors on the rear panel.



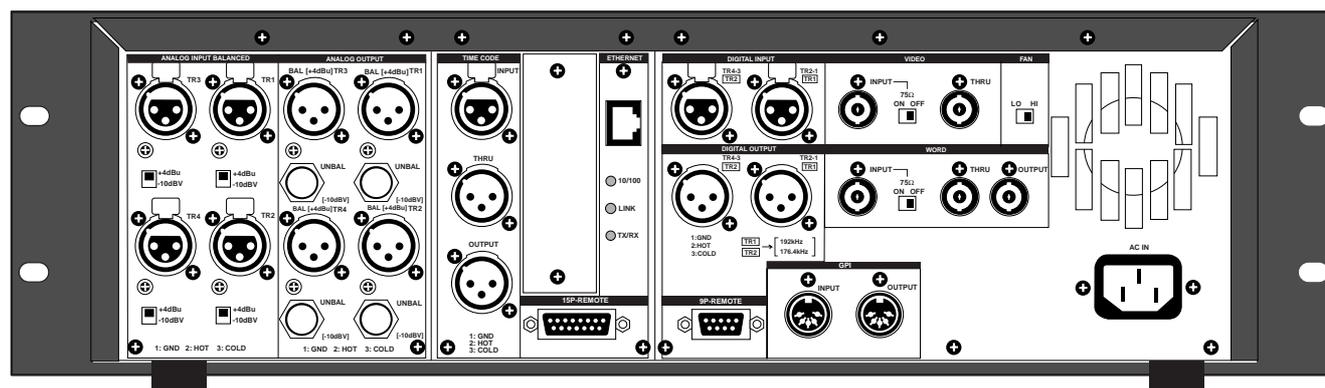
Front panel

We divide the front panel into three parts and describe names and functions of controls for each section.

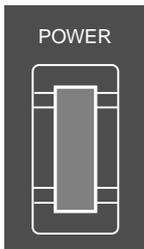
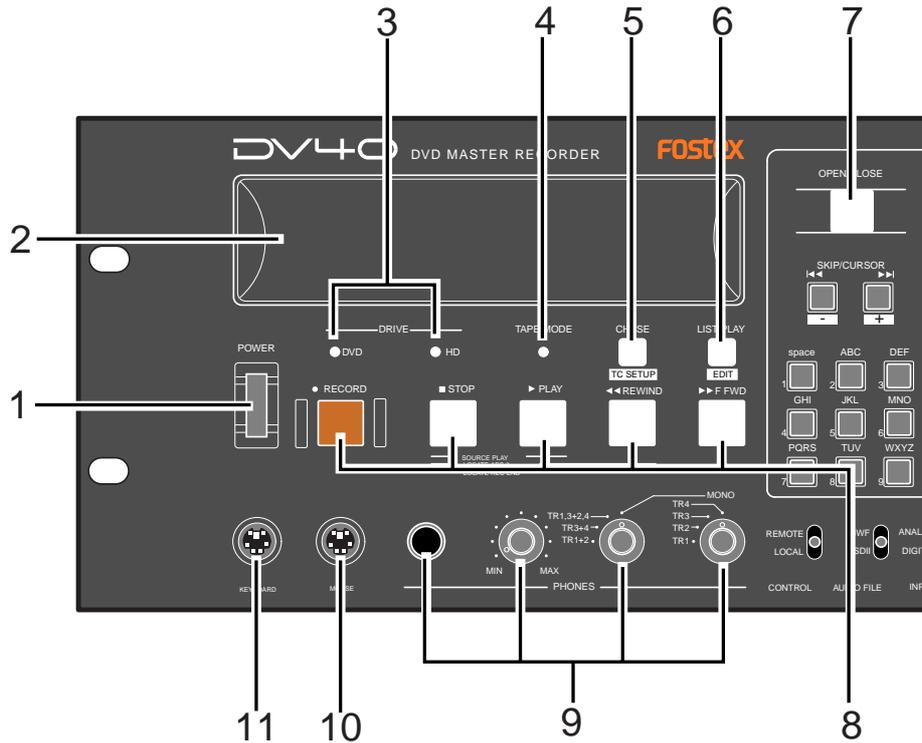
*Some keys have the secondary function which is available when the SHIFT indicator is lit, while the primary function is available when the SHIFT indicator is unlit. In this manual, we sometimes say "when shifted" and "when unshifted" instead of "when the SHIFT indicator is lit" and "when the SHIFT indicator is unlit" respectively.



Rear panel



Front panel part 1



1. [POWER] switch
Turns on or off the power of the unit.



3. [DRIVE (DVD/HD)] indicators
The indicator for the current (currently selected) drive is lit. In the initial condition, the "DVD" drive is selected.



4. [TAPE MODE] indicator
It is lit when a "Tape mode" audio file is loaded. See "Chapter 1: Before using the DV40" for details about the format mode.



5. [CHASE] ([TC SETUP]) key
This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

Turns on or off the chase mode.

When on, "CHASE" flashes in red on the display, which lights steadily when the unit chase-locked to the external device.

When SHIFTed:

Enters the TC (Time code) setup mode, in which you can make settings for recording/playback of time code.

See "Chapter 5: Time code recording" for details.



6. [LIST PLAY] ([EDIT]) key

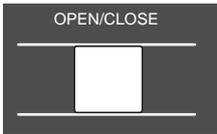
This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

Pressing this key allows you to select a list for executing the list play. You can select between “SongLink” and “LTC_Link” lists. After selecting the desired list, pressing the [PLAY] key starts the list play. See “Chapter 11: List Play function” for details.

When SHIFTed:

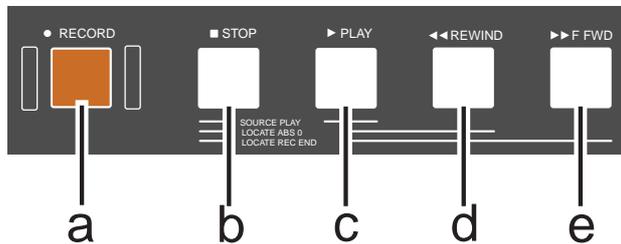
Pressing this key enables editing of the recorded play list (Not supported!).



7. [OPEN/CLOSE] key

Opens or closes the disk tray.

8. Transport keys



a. [RECORD] key

Normally, pressing this key starts recording when one of the AUDIO RDY indicators ([NEW FILE] or [INSERT]) is lit.

• In the NEW FILE mode:

Starts recording to a new file which is automatically created. If the "TC RDY" indicator is lit, time code is also recorded.

• In the INSERT mode:

Starts recording from the current position of the current file. If the "TC RDY" indicator is lit, time code is also recorded.

See "Chapter 4: Audio recording/playback" and "Chapter 5: Time code recording" for details.

<Note>

If you press the [RECORD] key when the "REC PROTECT" setting in the Utility mode is set to "On", "Protected!" is shown and you cannot start recording.

b. [STOP] key

Normally, pressing this key stops the recorder.

In the Setup, Utility and all sort of editing mode, pressing this key exits the current mode.

Also, pressing the [PLAY], [<< REWIND] or [>> F FWD] key while holding down this key executes the following.

• [STOP] + [PLAY]

Plays back sound data on the clipboard and stops the recorder.

• [STOP] + [<< REWIND]

Locates to ABS 0 (the beginning position of the file) and stops the recorder.

• [STOP] + [>> F FWD]

Locates to REC END and stops the recorder.

c. [PLAY] key

Normally, pressing this key starts playback.

Pressing this key during recording stores cross fade data to the memory and stops. If any sound data is available on the clipboard, pressing this key while holding down the [STOP] key plays back the sound data.

d. [REWIND] key

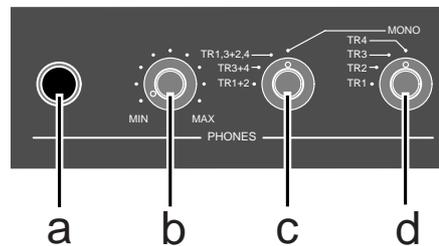
Pressing this key while stopped rewinds the recorder at maximum 30 x speed.

Pressing this key during playback rewinds with sound (cues backwards) at 2 x speed. Pressing this key while holding down the [STOP] key locates the "REC END" position (the last recording position).

e. [F FWD] key

Pressing this key while stopped fast-forwards the recorder at maximum 30 x speed. Pressing this key during playback fast-forwards with sound (cues forwards) at 2 x speed.

Pressing this key while holding down the [STOP] key locates the "ABS 0" position (the beginning position of the file).

9. Monitor section**a. PHONES jack**

Connects headphones for monitoring.

b. Headphones level control

Adjust the level of headphones.

c. Monitor track selection switch

Selects tracks to be monitored from among "1, 3+2, 4", "3+4" or "1+2", or selects MONO. When selecting MONO, you can select any mono track by using the Mono track select switch.

d. Mono track select switch

Selects a track to be monitored from among tracks 1 through 4 when the Monitor track selection switch is set to MONO.

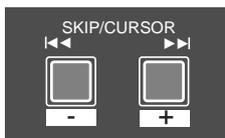
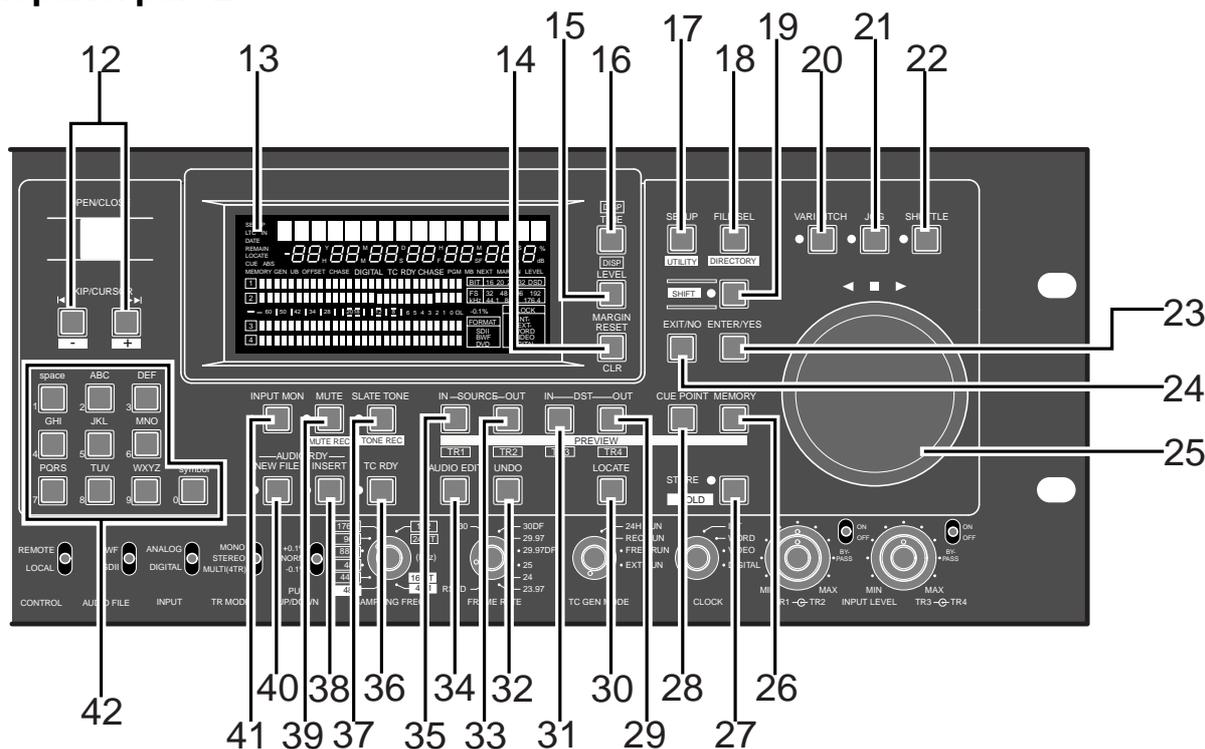
**10. [MOUSE] connector**

Connecting a mouse to this connector (Not supported!).

**11. [KEYBOARD] connector**

Connecting a PS/2 keyboard to this connector. See "Chapter 13: FTP server function" for details.

Front panel part 2



12. [SKIP/CURSOR |<<, >>|] ([-], [+]) keys

This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

- Skips to the next (>>|) or previous (|<<) "ABS 0" of an audio file, cue point or MEM point, depending on the setting of the "Skip Mode?" menu in the Setup mode. In the initial setting, "File" is selected, so each press of the key skips to the next or previous "ABS 0 (the beginning position)" of an audio file.
- In a character entering mode in which you have to move the cursor to a position to be edited, pressing the key moves the cursor.
- While executing the list play, pressing the key moves to the next (>>|) or previous (|<<) CUE point.

When SHIFTed:

- Enters the plus or minus sign while editing a time value.

13. FL display

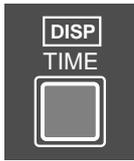
Displays time information, track levels and other setting items, etc.



14. [MARGIN RESET/CLR] key

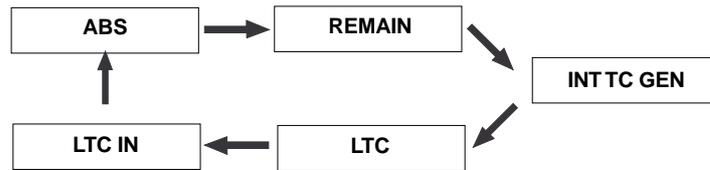
When the margin level is shown on the display, pressing this key resets the margin level.

When editing a file name, volume name and cue name, pressing this key clears the character in the current cursor position.



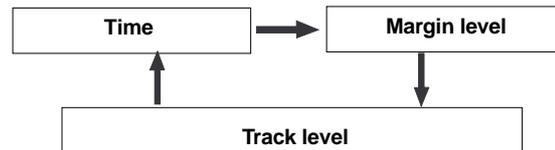
15. [DISP TIME] key

Cycles through the time display modes as follows.



16. [DISP LEVEL] key

When selecting any time display mode except "REMAIN" using the [DISP TIME] key, this key cycles through the display mode as follows.



The track level display varies depends on the track mode when recorded. For example, if it is recorded with the mono track mode, only the level for track 1 is shown.



17. [SETUP] ([UTILITY]) key

This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

- Pressing this key while stopped enters the Setup mode, in which you can make Setup menu settings.

When SHIFTed:

- Pressing this key while stopped enters the Utility mode, in which you can make Utility menu settings.

To exit the mode, press the [EXIT/NO] key or [STOP] key.

See "Chapters 15 and 16" for details about the Setup and Utility modes.



18. [FILE SEL] ([DIRECTORY]) key

This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

- Pressing this key while stopped enters the File select mode, in which you can select an audio file or create a new file in the directory ("SDII" or "BWF") the current file belongs to.

When SHIFTed:

- Pressing this key while stopped enters the Directory mode, in which you can select an audio file from both "SDII" and "BWF" directories (Not supported!).

See "Chapter 9: Audio file management" for details.



19. [SHIFT] key

Turns the shift mode on or on. When on, the indicator is lit.

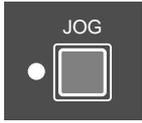
You can execute a SHIFTed (secondary) function of a key which has dual functions. The SHIFTed functions are labeled inversely on the panel, such as (PREVIEW) and (HOLD).



20. [VARI PITCH] key

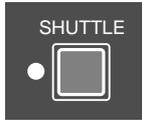
Turns the vari speed playback mode on or off. When on, the indicator is lit.

When the vari speed playback mode is active, you can change the speed directly using the jog dial.



21. [JOG] key

Pressing this key while stopped enters the jog mode, in which you can jog the recorder as if operating an analog recorder. When the jog mode is active, the indicator is lit. To exit the jog mode, press any of the transport keys.



22. [SHUTTLE] key

Pressing this key during playback or while stopped enters the shuttle mode, in which, using the jog dial, you can perform analog-tape-like shuttle at the speed between 0 and double speed or high-speed shuttle (audio is muted) at the speed between 0 and 32 times of the normal speed. When the shuttle mode is active, the indicator is lit.



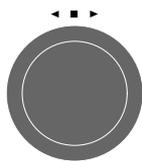
23. [ENTER/YES] key

Used to confirm a setting or data entry or execute an operation.



24. [EXIT/NO] key

Used to cancel a setting or data entry or stop the current operation.



25. Jog dial

Used to jog or shuttle the recorder.

It is also used for increasing or decreasing the numeric value when editing a memory, or used for selecting an item in the Setup mode.



26. [MEMORY] ([PREVIEW]) key

This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

- In the normal display mode, pressing this key enters the memory edit mode, in which you can edit memory point data.
Pressing this key after pressing the [STORE] key stores the holding time to a memory point.
99 memory points (01 through 99) are available. You can give a name for each point. (Note that memory points 01 through 03 are fixed and the rest (04 through 99) are user memory points.) See "**Chapter 6: Storing time data**" for details.

When SHIFTed:

- Pressing this key while stopped executes the fade-in preview at the desired memory point. See "**Chapter 8: Preview function**" for details.



27. [STORE] ([HOLD]) key

This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

- Pressing this key during playback or while stopped holds the displayed time and makes it possible to be edited. After editing the time, pressing this key again followed by any of location memory keys (the MEMORY, CUE POINT, DEST-OUT, DEST-IN, SOURCE-OUT and SOURCE-IN keys) stores the time to the appropriate memory. See "**Chapter 6: Storing time data**" for details.

When SHIFTed:

- Pressing this key during playback or while stopped holds the displayed time and makes it editable. After editing the time, pressing this key again and then any of keys that can store time data (the MEMORY, CUE POINT, DEST-OUT, DEST-IN, SOURCE-OUT and SOURCE-IN keys) stores the time to the appropriate memory. See "**Chapter 6: Storing time data**" for details.



28. [CUE POINT] ([PREVIEW]) key

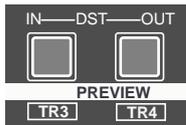
This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

- In the normal display mode, pressing this key enters the cue point edit mode, in which you can edit cue point data. Pressing this key after pressing the [STORE] key stores the holding time to a cue point. 99 cue points (01 through 99) are available. You can give a name for each point. See "Chapter 6: Storing time data" for details.

When SHIFTed:

- Pressing this key while stopped executes the fade-in preview at the desired cue point. See "Chapter 8: Preview function" for details.



29. [DEST-OUT] ([PREVIEW]/[TR 4]) key

This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

- Displays time data stored in this key so that you can edit the data.
- Pressing this key after pressing the [STORE] key stores the holding time or edited time to the DEST-OUT point.
- When editing track data, this key selects track 4.

When SHIFTed:

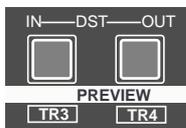
- Pressing this key while stopped executes the fade-in preview at the DEST-OUT point.



30. [LOCATE] key

Locates to the point where you pressed the [LOCATE] key last time.

The data stored in this key is overwritten each time you press the key.



31. [DEST-IN] ([PREVIEW]/[TR 3]) key

This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

- Displays time data stored in this key so that you can edit the data.
- Pressing this key after pressing the [STORE] key stores the holding time or edited time to the DEST-IN point.
- When editing track data, this key selects track 3.

When SHIFTed:

- Pressing this key while stopped executes the fade-out preview at the DEST-OUT point.

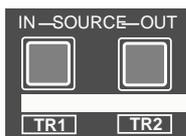


32. [UNDO] key

By pressing this key, the history of the current audio file can be referred to, allowing execution of the multiple undo function.

To execute the multiple undo function, select a desired history item using the jog dial and press the [ENTER/YES] key.

See "Chapter 4: Audio recording/playback" for details.



33. [SOURCE-OUT] ([PREVIEW]/[TR 2]) key

This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

- Displays time data stored in this key so that you can edit the data.
- Pressing this key after pressing the [STORE] key stores the holding time or edited time to the SOURCE-OUT point.
- When editing track data, this key selects track 2.

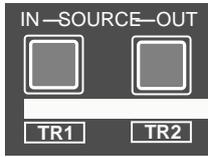
When SHIFTed:

- Pressing this key while stopped executes the fade-in preview at the SOURCE-OUT point.



34. [AUDIO EDIT] key

pressing this key while stopped enters the menu selection mode for audio editing. In this mode, you can select the editing menu by pressing this key repeatedly or by using the jog dial. See "**Chapter 9: Audio file management**" and "**Chapter 10: Editing track data**" for details.



35. [SOURCE-IN] ([PREVIEW]/[TR 1]) key

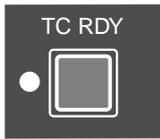
This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

- Displays time data stored in this key so that you can edit the data.
- Pressing this key after pressing the [STORE] key stores the holding time or edited time to the SOURCE-IN point.
- When editing track data, this key selects track 1.

When SHIFTed:

- Pressing this key while stopped executes the fade-out preview at the SOURCE-IN point.



36. [TC RDY] key

Only when the NEW FILE or INSERT mode is active, pressing this key arms or unarms the time code track.

See "**Chapter 5: Time code recording**" for details.



37. [SLATE TONE] ([TONE REC]) key

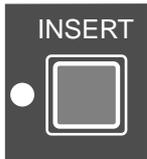
This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

- While pressing down this key, the 1-kHz slate tone is output from all the output connectors at the reference level.
- During recording, the 1-kHz slate tone is recorded while pressing down this key.

When SHIFTed:

- During recording, pressing this key records the slate tone for the time set by the "**Tone Rec?**" menu in the Setup mode, and then continues normal recording.
- When the INSERT mode is active, pressing this key while stopped records the slate tone for the time set by the "**Tone Rec?**" menu in the Setup mode, and then stops.



38. [AUDIO RDY - INSERT] key

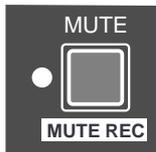
Pressing this key alternates on and off of the INSERT mode.

When the mode is active, you can turn on [TC RDY].

By recording to an existing file in the INSERT mode, you can replace the current audio data with new one or add new audio data to the current one.

If you are going to make recording in the INSERT mode when there is no audio file, the display shows "**No Audio Files!**".

See "**Chapter 4: Audio recording/playback**" for details about how to use this key.



39. [MUTE] ([MUTE REC]) key

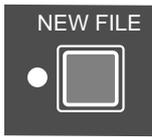
This key has primary (unSHIFTed) and secondary (SHIFTed) functions.

When unSHIFTed:

- While holding down this key during playback, both the analog and digital outputs except the PHONES output are muted.
- While holding down this key during recording, audio is muted and silence is recorded.

When SHIFTed:

- During recording, pressing this key starts mute recording for the time set by the "**Mute Rec?**" menu in the Setup mode, and then continues normal recording.
- When the INSERT mode is active, pressing this key while stopped starts mute recording for the time set by the "**Mute Rec?**" menu in the Setup mode, and then stops. See "**Chapter 4: Audio recording/playback**" for details about how to use this key.



40. [AUDIO RDY - NEW FILE] key

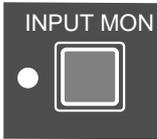
Pressing this key alternates on and off of the NEW FILE mode.

When the mode is active, you can turn on [TC RDY].

In the NEW FILE mode, starting recording automatically creates a new file to be recorded. If the time code track is armed then, time code is also recorded simultaneously.

Note that you cannot record to a "Tape mode" audio file in the NEW FILE mode.

See "Chapter 4: Audio recording/playback" for details about how to use this key.

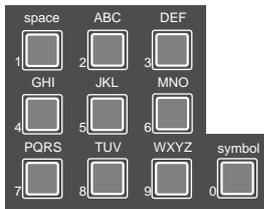


41. [INPUT MON] key

Turns on or off the input monitor mode. When on, the indicator is lit.

During recording, you always monitor the input signals regardless of the status of the input monitor mode.

Also, when the "Auto EE MD?" menu in the Setup mode is set to "On", you always monitor the input signals except for during playback, regardless of the status of the input monitor mode.



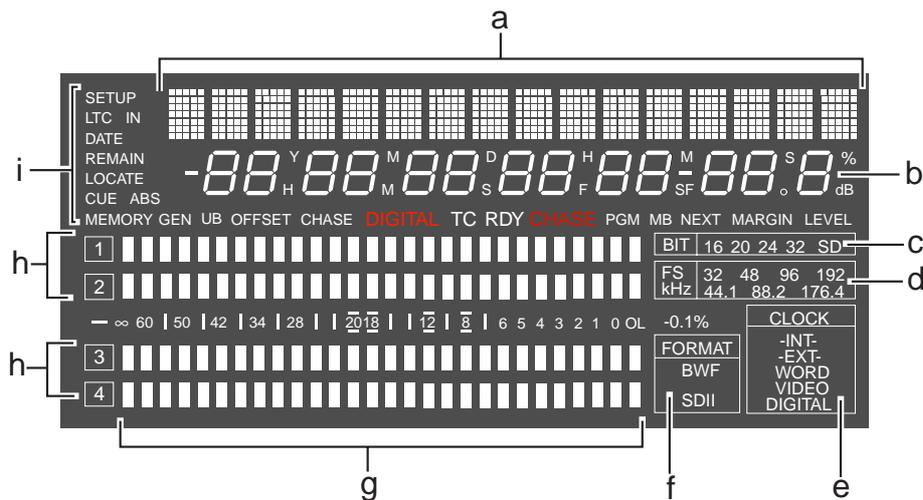
42. Alphanumeric keys

These keys are used to directly enter alphanumeric characters when editing a name or time, or specifying a memory or cue point.

For example, you can also use the "2" key to enter "a", "b", "c", "A", "B" and "C".

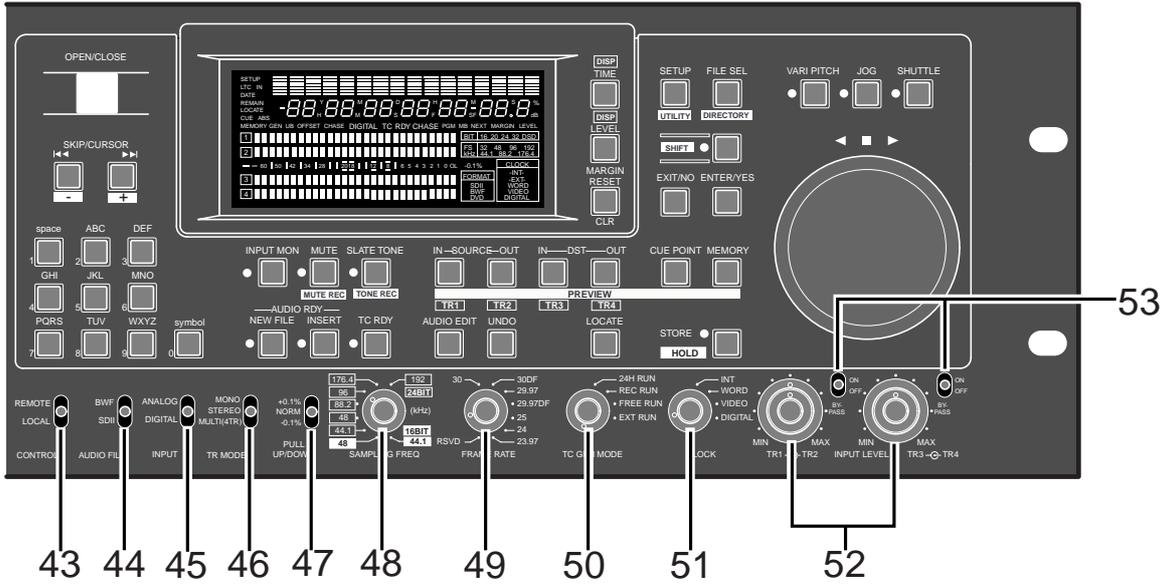
After entering the desired character, pressing one of the other alphanumeric keys automatically moves the cursor to the next digit.

FL display



- a. Displays a file name, menu title, etc.
- b. Displays time data, system clock date, etc.
- c. Displays the quantization bit number of the current audio file. If it does not match the setting of the [SAMPLING FREQ] switch on the front panel, the bit number that matches the switch setting flashes.
- d. Displays the sampling frequency of the current audio file. If it does not match the setting of the [SAMPLING FREQ] switch on the front panel, the sampling frequency that matches the switch setting flashes.
- e. Displays the current system clock. You can set the system clock in the Setup mode.
- f. Displays the current audio file format ("BWF" or "SDII"). If it does not match the setting of the [AUDIO FILE] switch on the front panel, the file format that matches the switch setting flashes for warning.
- g. Displays the input/output levels of tracks 1 through 4. When performing the preview function, it displays the status of the fade-in/out.
- h. Displays the track mode of the current audio file. If it does not match the setting of the [TR MODE] switch on the front panel, the track mode that matches the switch setting flashes for warning.
- i. Displays the current display content or status information.

Front panel part 3



43. [CONTROL] switch

Selects whether controlling the unit remotely or from the panel.

REMOTE	The unit is controlled remotely via the [9P-REMOTE] or [15P-REMOTE] connector on the rear panel. Also, you can send or receive file data using FTP via the ethernet.
LOCAL	The unit is controlled from the front panel controls.
When selecting REMOTE, you can prohibit the key operation of the front panel controls. See "Chapter 15: Setup mode" for details.	

44. [AUDIO FILE] switch

Selects the audio file format ("BWF" or "SDII") when recording is made in the NEW FILE mode or when creating or selecting an audio file by the file select function.

- "OPTION" does not currently function.

45. [INPUT] switch

Selects the input between ANALOG and DIGITAL.

- When selecting "DIGITAL", "DIGITAL" flashes on the display, which lights steadily when the unit receives a correct external digital signal.

46. [TR MODE] switch

Selects the track mode for recording from among MONO, STEREO and MULTI (4-track).

- If "MONO" is selected when the [INPUT] switch is set to "DIGITAL", only the L-channel signal is recorded to the mono track.

47. [PULL UP/DOWN] switch

Selects pull-up (+0.1 %) or pull-down (-0.1 %) of the sampling clock/TC frame rate.

+0.1%	Pulls up the selected sampling clock/TC frame rate +0.1%.
NORM	Normal operation (0% = no pull-up or pull-down)
-0.1%	Pulls down the selected sampling clock/TC frame rate -0.1%.

48. [SAMPLING FREQ] switch

Selects the sampling frequency and quantization bit for recording.

16BIT/44.1	Up to 4 tracks of recording/playback
16BIT/48	Up to 4 tracks of recording/playback
24BIT/44.1	Up to 4 tracks of recording/playback
24BIT/48	Up to 4 tracks of recording/playback
24BIT/88.2	Up to 2 tracks of recording, up to 4 tracks of playback
24BIT/96	Up to 2 tracks of recording, up to 4 tracks of playback
24BIT/176	Up to 2 tracks of playback only
24BIT/192	Up to 2 tracks of playback only

49. [FRAME RATE] switch

Selects the frame rate for recording, playback and internal TC generator.

OPTION	
23.976	American motion picture -0.1%
24	American motion picture
25	European film/PAL-SECAM video EBU
29.97DF	NTSC color with real time adjust
29.97	NTSC color
30DF	NTSC video/film
30	NTSC video/film

50. [TC GEN MODE] switch

Selects the generator mode for time code recording.

EXT RUN	The external time code value is recorded as the start time.
FREE RUN	Runs the internal generator by the free run mode, and records the current internal generator time as the start time.
REC RUN	When recording time code to a new file, the generator records time code from the value which continues to the last time code value of the previous file.
24H RUN	Time code starts from the current time of the internal clock of the unit.

51. [CLOCK] switch

Selects the system master clock.

INT	The internal clock is the master. "-INT-" is lit on the display.
WORD	The external word clock is the master. "-WORD-" flashes on the display, which lights steadily when the unit locks to the word clock.
VIDEO	The external video clock is the master. "-VIDEO-" flashes on the display, which lights steadily when the unit locks to the video clock.
DIGITAL	The external clock available in the digital signal received via the [DIGITAL INPUT] connector is the master. "-DIGITAL-" flashes on the display, which lights steadily when the unit locks to the clock.

52. Analog Input Signal controls

Adjust the input levels for tracks 1, 2, 3, and 4 when recording analog signals.

The outer knob controls track 1 and 3, while the inner knob controls track 2 and 4.

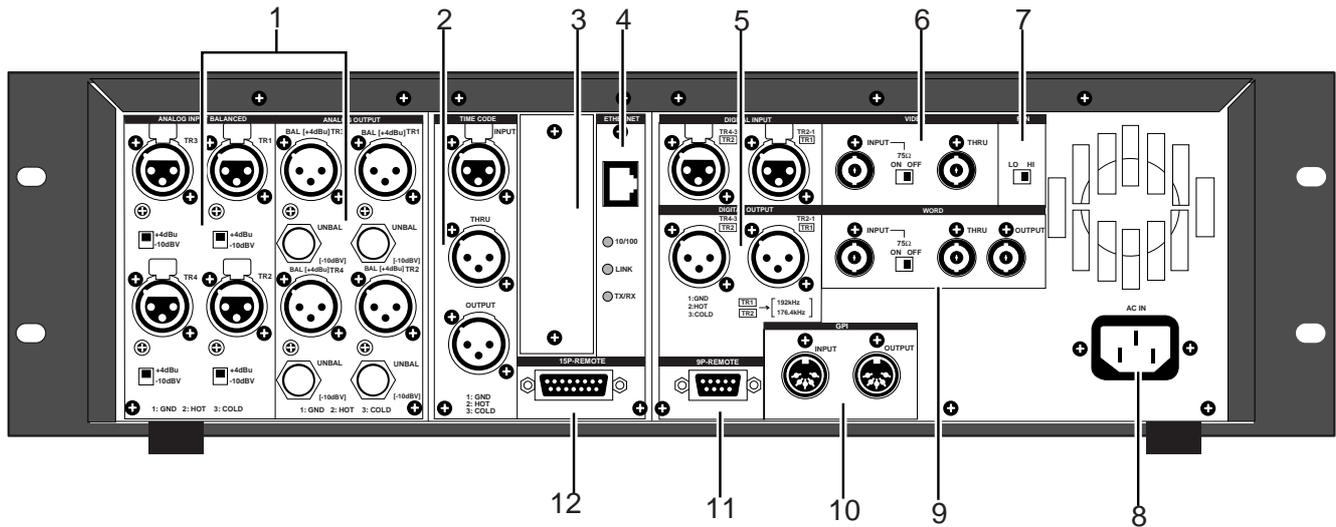
53. [BYPASS ON/OFF] switch

Select whether bypassing the [INPUT LEVEL] controls or not when recording analog signals.

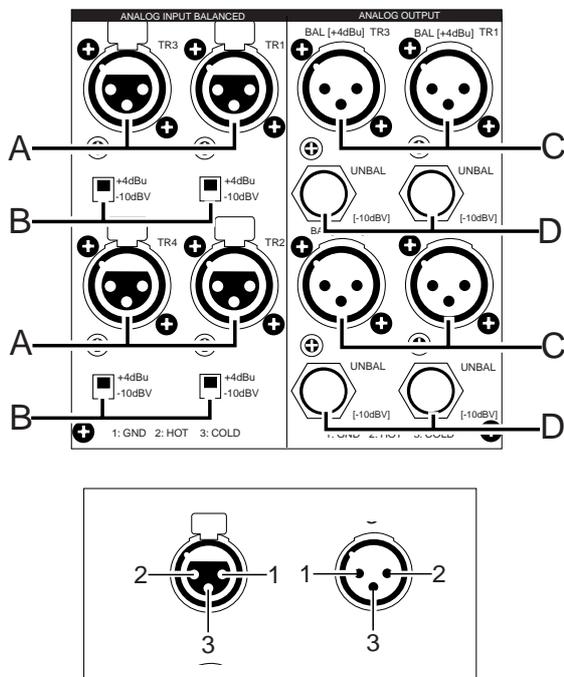
When set to OFF, the corresponding [INPUT LEVEL] controls are active.

When set to ON, the corresponding [INPUT LEVEL] controls are inactive.

Rear panel



1. Analog input/output section



A. ANALOG INPUT (BALANCED) connectors (TR1 through TR4)

- Each of these connectors receives a balanced analog audio signal, which is fed to the corresponding track.
- Connectors: XLR-3-31 type (#2 = hot)
- Nominal input level: +4 dBu/-10 dBV selectable

B. Input level switches

- Each of these switches selects the nominal input level between +4 dBu and -10 dBV for the corresponding ANALOG INPUT connector.

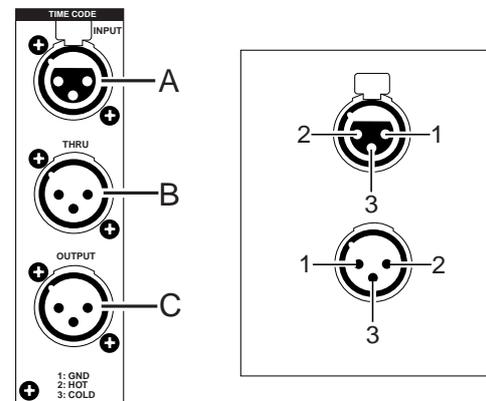
C. ANALOG OUTPUT (BAL) connectors (TR1 through TR4)

- Each of these connectors outputs a balanced analog audio signal of the corresponding track.
- Connectors: XLR-3-32 type (#2 = hot)
- Nominal output level: +4 dBu

D. ANALOG OUTPUT (UNBAL) connectors (TR1 through TR4)

- Each of these connectors outputs an unbalanced analog audio signal of the corresponding track.
- Connectors: Phone type
- Nominal output level: -10 dBV

2. Time code input/output section



A. TIME CODE INPUT connector

- Receives external SMPTE/EBU time code.
- Connectors: XLR-3-31 type (#2 = hot)

B. TIME CODE THRU connector

- Echoes incoming SMPTE/EBU time code.
- Connectors: XLR-3-32 type (#2 = hot)

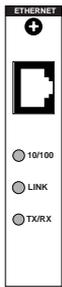
C. TIME CODE OUTPUT connector

- Outputs SMPTE/EBU time code from the unit.
- Connectors: XLR-3-32 type (#2 = hot)

3. Expansion slot

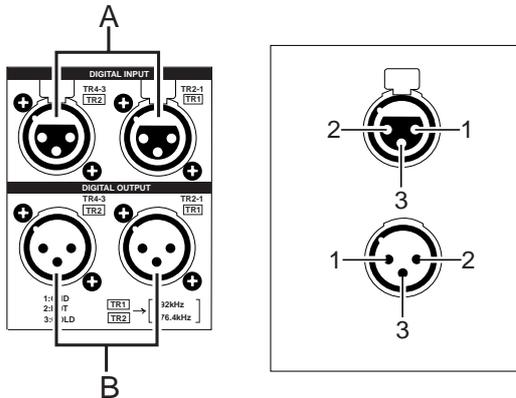
This expansion slot is used to fit the optional card. Do not remove the blank panel unless you fit the optional card.

4. ETHERNET port



- Connects to an Ethernet network.
- Connector: IEEE802.3, conformed to 10BASE-T/100BASE-T
- LED indicators
 - * 10/100: When the connection to a network is established by 100BASE-TX, this indicator is lit. (It is not lit when the connection is established by 10BASE-T.)
 - * LINK: When the unit recognizes the network, this indicator is lit.
 - * TX/RX: When data is transmitted or/and received, this indicator is lit.

5. Digital input/output section



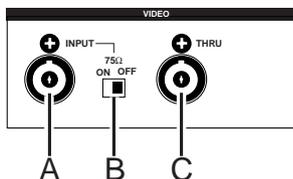
A. DIGITAL INPUT connectors

- Each connector accepts a digital signal conformed to the IEC 60958 (AES/EBU) or IEC 60958 (S/P DIF) format. The unit can automatically detect the format.
- Connectors: XLR-3-31 type

B. DIGITAL OUTPUT connectors

- Each connector outputs a digital signal conformed to the IEC 60958 (AES/EBU) or IEC 60958 (S/P DIF) format. The format is selected in the Setup mode.
- Connectors: XLR-3-32 type

6. Video clock section



A. VIDEO INPUT connector

- Accepts a video clock signal.
- Connector: BNC type

B. 75Ω (ON/OFF) switch

- To terminates the video clock, set this switch to ON.

C. VIDEO THRU connector

- Echoes an incoming video signal.
- Connector: BNC type

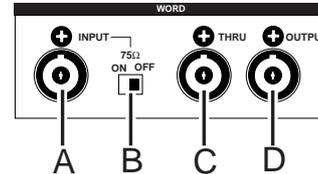
7. Cooling fan motor speed select switch

Switches the cooling fan motor speed between LOW and HI. Setting it to LOW lowers the motor noise.

8. AC IN connector

Connect the supplied power cord.

9. Word clock section



A. WORD INPUT connector

- Accepts a word clock signal.
- Connector: BNC type

B. 75Ω (ON/OFF) switch

- To terminates the word clock, set this switch to ON.

C. WORD THRU connector

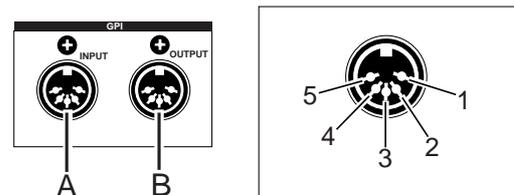
- Echoes an incoming word clock signal.
- Connector: BNC type

D. WORD OUTPUT connector

- Outputs a word clock signal from the unit.
- Connector: BNC type

10. GPI input/output connectors

These connectors are active only when the "GPI ON/OFF" menu in the Setup mode is set to "On". It is set to "Off" in the initial setting, therefore, you have to change it to "On" before using the GPI connectors.



A. GPI INPUT connector

- Connector: DIN-5 pin
- The following table shows the pin assignment. A TTL-level, low active input signal activates the operation.

Pin-1	GND	
Pin-2	STOP	The low plus signal activates the operation equivalent to the STOP key operation.
Pin-3	PLAY	The low pulse signal activates the operation equivalent to the PLAY key operation.
Pin-4	>>	The low pulse signal activates the operation equivalent to the SKIP >> key operation.
Pin-5	<<	The low pulse signal activates the operation equivalent to the SKIP << key operation.

* The minimum input pulse width is 15 msec (except for Pin 2 PLAY, whose minimum input pulse width is 5 msec).

B. GPI OUTPUT connector

- Connector: DIN-5 pin
- The following table shows the pin assignment for event outputs.

Pin-1	GND	
Pin-2	EVENT 1	Outputs an event at Cue point 1.
Pin-3	EVENT 0	Outputs an event at Cue point 0.
Pin-4	EVENT 2	Outputs an event at Cue point 2.
Pin-5	EVENT 3	Outputs an event at Cue point 3.

Each event signal is output by a 60 msec width, low level pulse during recording/playback.

11. 9-pin remote connector

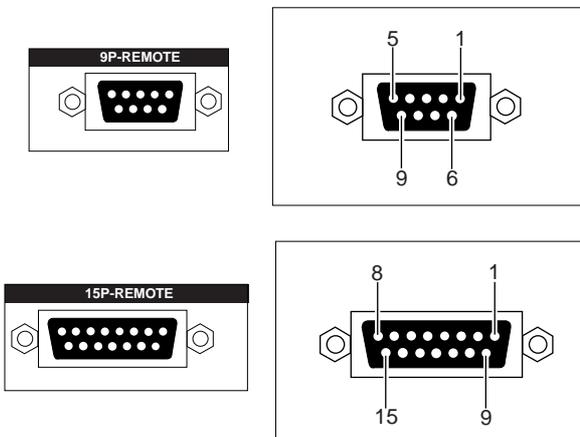
12. 15-pin remote connector

These connectors are used for controlling the unit from external devices.

The 9-pin and 15-pin remote connectors are tied in parallel so you can use either of them depending on the controller's hardware.

The 15-pin connector can supply the DC 12 V power, so you can use it with a controller that requires the power supply via the remote connector.

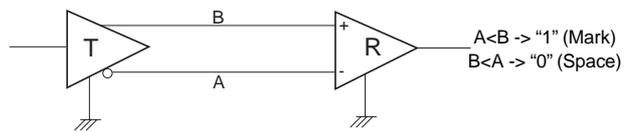
The hardware of these connectors conforms to the RS-422A, which can be selected in the Setup mode.



- Connector: 9-pin, D-sub connector (female)/9P-REMOTE
15-pin, D-sub connector (female)/15P-REMOTE
- Protocol: Conformed to Sony 9-pin protocol.

Pin No	Controller Out DATA OUT	D-sub 9P DATA IN	D-sub 15P DATA IN
1	Frame Ground	Frame Ground	Frame Ground
2	Receive A	Transmit A	Transmit A
3	Transmit B	Receive B	Receive B
4	Transmit Common	Receive Common	Receive Common
5	Spare	Spare	Spare
6	Receive Common	Transmit Common	Transmit Common
7	Receive B	Transmit B	Transmit B
8	Transmit A	Receive A	Receive A
9	Frame Ground	Frame Ground	Frame Ground
10			NC
11			NC
12			NC
13			NC
14			NC
15			+12V

A and B in the table above are defined as follows.



Use a straight cable.

Chapter 3

Reformatting/optimizing a disk

This chapter describes how to reformat a formatted disk and optimize a disk.



Reformatting a DVD-RAM disk

The following describes how to reformat a used disk, while chapter 1 describes how to format a new disk. We assume that a used DVD-RAM disk is inserted in the tray and stopped.

<Note for reformatting a disk in the Tape mode>

Before reformatting a used disk in the Tape mode, set the [AUDIO FILE], [SAMPLING FREQ] and [TR MODE] switches on the front panel appropriately, which determine the behavior of the newly created "Tape mode" file.

<Note>

Memory point data still remain after reformatting a disk. Therefore, if you do not need the old memory point data, delete them using the delete function. See "Chapter 6: Editing/storing time data" for details about how to delete memory point data.

<Note>

- Before reformatting, make sure that the DVD-RAM disk is not write-protected.
- If you use an used DVD-RAM disk, we recommended to format the disk by a computer first, then format it by the DV40.

1. While stopped, press the [SHIFT] key to turn on the indicator.

2. Press the [SETUP] key.

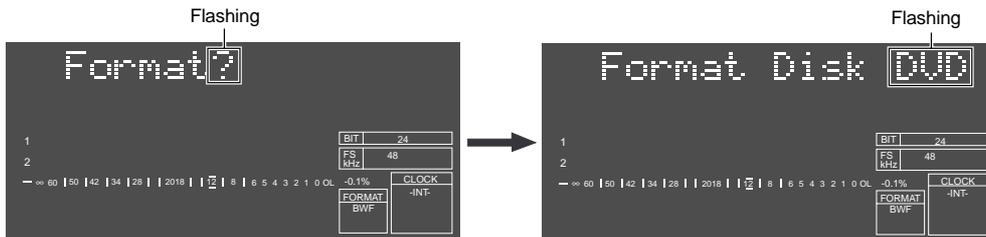
The unit enters the Utility mode and the display shows a setting menu.

The first time the unit enters the Utility mode after turning on the unit, the "Rec Protect?" menu is shown. Otherwise, the previously used setting menu is shown.



3. Use the jog dial to select the "Format?" menu and press the [ENTER/YES] key.

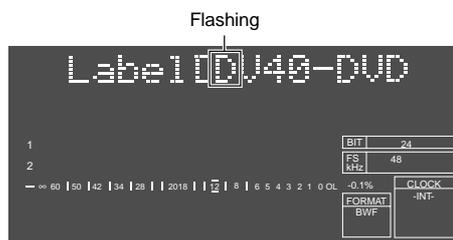
The display changes to show "Format Disk DVD".



4. Press the [ENTER/YES] key again.

The display shows the following and now you can edit the label name of the disk (which is tentatively named "DV40-DVD").

See the next "Tips" about how to edit a label name, although you may go to the next step without editing the label name.



Tips: How to edit a label name

While the leftmost character of the tentative name is flashing, press the **[MARGIN RESET/CLR]** key repeatedly to delete the name. Then, enter the desired alphanumeric characters using the **numeric keys** or the **jog dial**.

When using the **numeric keys**, the editing point (flashing point) moves by pressing any of the numeric keys after entering a character. When using the **jog dial**, you can move the editing point by using the **[SKIP/CURSOR]** (**[<<]** and **[>>]**) keys.

5. Press the [ENTER/YES] key again.

The display changes to show "Format Md?" with flashing "Norm". You can select the format mode between "Norm" (Normal) and "Tape" using the jog dial.

See "Formatting a DVD-RAM disk" in "Chapter 1 Before using the DV40" for details about the format mode.

**6. Select the format mode and press the [ENTER/YES] key.**

Depending on the format mode selected, the display shows as follows.

•When selecting "Norm":

The display scrolls "If enter key is pushed, will start formatting and delete DVD area data. Are you sure?".

**•When selecting "Tape":**

The display shows "Disk Type?" with flashing "New" for selecting disk type. Select "Used" using the jog dial, and then go to the next step.



If you select "Normal", go to the next step after the message above is shown.

When selecting "Tape", select "New" or "Used" using the jog dial, and then press the **[ENTER/YES]** key. Go to the next step after the same message as above (shown when selecting "Norm") is shown.

<Note>

When a used disk previously formatted in the Tape mode is reformatted in the Tape mode by selecting "New" for the disk type, the "Tape mode" file data is not erased (while "Normal mode" files are erased).

Therefore, if you record a new material to the old "Tape mode" file, new and old materials may exist together.

To erase all sound data when reformatting a disk in the Tape mode, make sure to select "Used" for the disk type.

Tips: Special usage of "New"

In general, "New" for the disk type is selected when formatting a new DVD-RAM disk.

However, there is a special case. If you cannot playback a recorded "Tape mode" file for any reason, reformat the disk in the Tape mode by selecting "New" for the disk type.

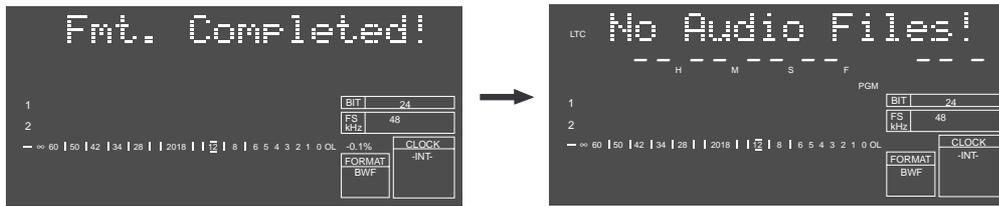
Audio data on the "Tape mode" file still remains after reformatting and can be played back correctly.

<Note>

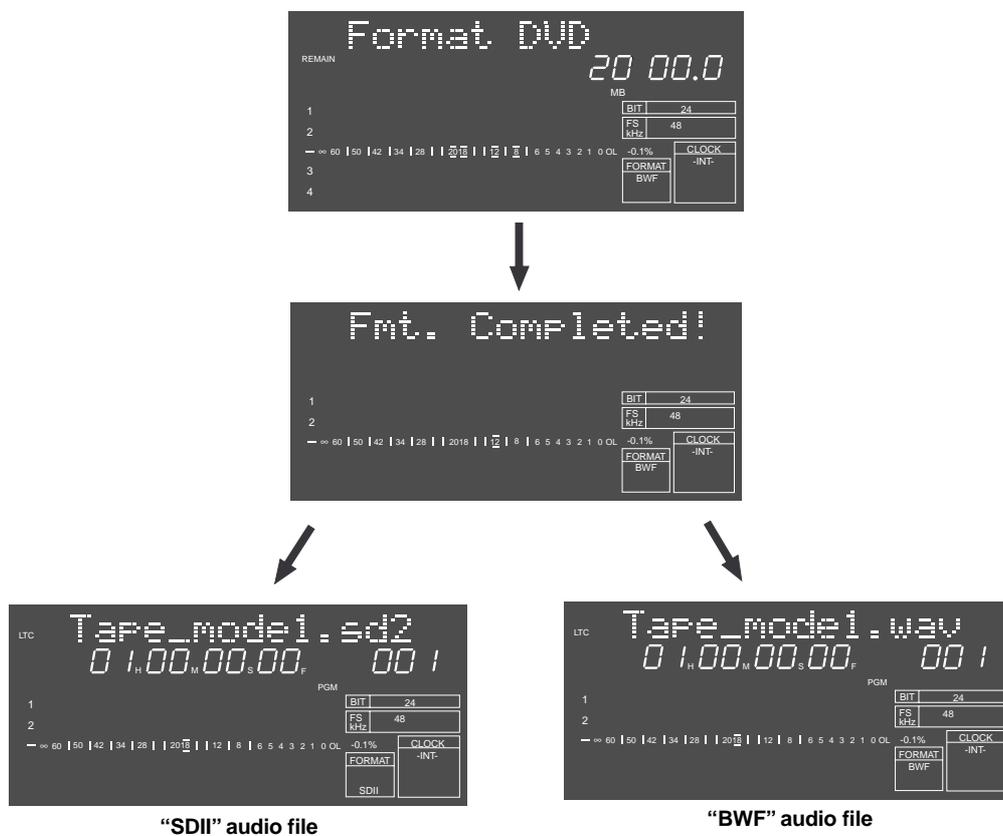
All the "Normal mode" files on the disk are erased.

7. Press the [ENTER/YES] key.

- If you reformat the disk in the "Norm" mode, the formatting is completed quickly and "Fmt Completed!" is shown, followed by "No Audio Files!" showing that there is no audio file on the disk.



- If you reformat a disk in the "Tape" mode with "Disk Type?" set to "Used", it takes some time for formatting. The display counts down the unformatted area as the format is in progress. When the format is completed, "Fmt Completed!" is shown, followed by the beginning of the "Tape mode" audio file ("BWF" or "SDII").



Optimizing a disk

By optimizing a used disk, the deleted files are completely erased and you can reserve maximum free block space of the disk.

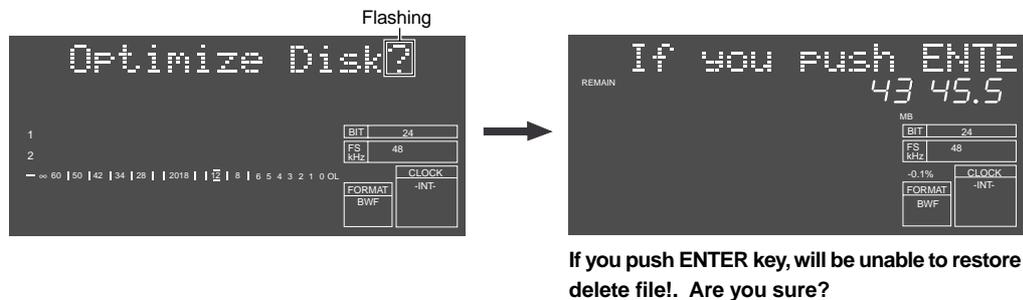
<Note>

After optimizing a disk, you cannot restore a deleted file.

<Note>

Before optimizing, make sure that the DVD-RAM disk is not write-protected. If it is write-protected, you cannot optimize the disk.

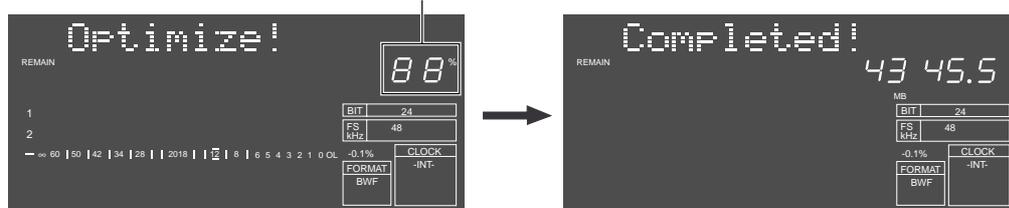
1. While stopped, press the [SHIFT] key to turn on the indicator.
2. Press the [SETUP] key.
The unit enters the Utility mode and the display shows a setting menu.
3. Use the jog dial to select the "Optimize Disk?" menu and press the [ENTER/YES] key.
The display scrolls the warning message.



If you push ENTER key, will be unable to restore delete file!. Are you sure?

4. Press the [ENTER/YES] key.
The unit starts optimizing.
The display counts down the number as optimizing is in progress.
When optimizing is completed, "Completed!" is shown.

The number is counted down as optimizing is in progress.



5. Press the [EXIT/NO] (or [STOP]) key.
The unit quits the Utility mode and the display shows the previous screen before entering the Utility mode.

Chapter 4

Audio recording/playback

This chapter describes the basic audio recording/playback (for both analog and digital), mute recording, slate tone recording, cueing by the jog/shuttle mode, etc.



• About the expression for audio files in this manual

As described in chapter 1, there are two types of audio file; "Normal mode" audio file and "Tape mode" audio file. "Tape mode" audio file is rather special and can be created only when formatting. The following descriptions are mainly associated with a "Normal mode" audio file, therefore, a "Normal mode audio file" is sometimes referred to as "audio file" in this manual.

About the NEW FILE and INSERT mode

There are two recording modes; **NEW FILE** and **INSERT** modes.

• NEW FILE mode:

When performing recording in the **NEW FILE** mode, a new audio file is created automatically. The recording is made from the beginning (ABS 0) of the new file, even if there is another audio file on the disk.

• INSERT mode

By recording to an existing file in the **INSERT** mode, you can replace the current audio data with new one or add new audio data to the current one. When recording to a "Tape mode" audio file, always use the **INSERT** mode.

Recording/playback capabilities depending on the recording conditions (Fs/Bit/Track)

The table below shows the recording and playback capabilities depending on the recording conditions (Fs, Bit length and the number of tracks) and the DVD-RAM disk capacity.

<Recording capabilities>

Recording conditions	4.7GB DVD
44.1kHz/16Bit Mono	○
48kHz/16Bit Mono	○
44.1kHz/24Bit Mono	○
48kHz/24Bit Mono	○
88.2kHz/24Bit Mono	○
96kHz/24Bit Mono	○
176.4kHz/24Bit Mono	○
192kHz/24Bit Mono	○
44.1kHz/16Bit Stereo	○
48kHz/16Bit Stereo	○
44.1kHz/24Bit Stereo	○
48kHz/24Bit Stereo	○
88.2kHz/24Bit Stereo	○
96kHz/24Bit Stereo	○
176.4kHz/24Bit Stereo	△
192kHz/24Bit Stereo	△
44.1kHz/16Bit Multi (4)	○
48kHz/16Bit Multi (4)	○
44.1kHz/24Bit Multi (4)	○
48kHz/24Bit Multi (4)	○
88.2kHz/24Bit Multi (4)	△
96kHz/24Bit Multi (4)	△
176.4kHz/24Bit Multi (4)	X
192kHz/24Bit Multi (4)	X

△: Verify Write: OFF

<Playback capabilities>

Recording conditions	4.7GB DVD
44.1kHz/16Bit Mono	○
48kHz/16Bit Mono	○
44.1kHz/24Bit Mono	○
48kHz/24Bit Mono	○
88.2kHz/24Bit Mono	○
96kHz/24Bit Mono	○
176.4kHz/24Bit Mono	○
192kHz/24Bit Mono	○
44.1kHz/16Bit Stereo	○
48kHz/16Bit Stereo	○
44.1kHz/24Bit Stereo	○
48kHz/24Bit Stereo	○
88.2kHz/24Bit Stereo	○
96kHz/24Bit Stereo	○
176.4kHz/24Bit Stereo	○
192kHz/24Bit Stereo	○
44.1kHz/16Bit Multi (4)	○
48kHz/16Bit Multi (4)	○
44.1kHz/24Bit Multi (4)	○
48kHz/24Bit Multi (4)	○
88.2kHz/24Bit Multi (4)	○
96kHz/24Bit Multi (4)	○
176.4kHz/24Bit Multi (4)	X
192kHz/24Bit Multi (4)	X

Recording an analog source in the NEW FILE mode

When performing recording in the NEW FILE mode, an audio file is newly created automatically and the recording is made from the beginning (ABS 0) of the new file. Note that you cannot record to a "Tape mode" file or an existing "Normal mode" file in the NEW FILE mode.

In the following description, we assume that we are going to record an analog audio source in stereo to a DVD-RAM disk just after formatted in the Normal mode.

<Note>

The first time you make recording to a disk just after formatted, the maximum recording size of the audio file to be created is 2GB (the maximum recording time depends on the track mode and Fs/bit settings). If the recording size exceeds 2GB during recording, the DV40 automatically stops recording.

Preparation

Connection to external devices

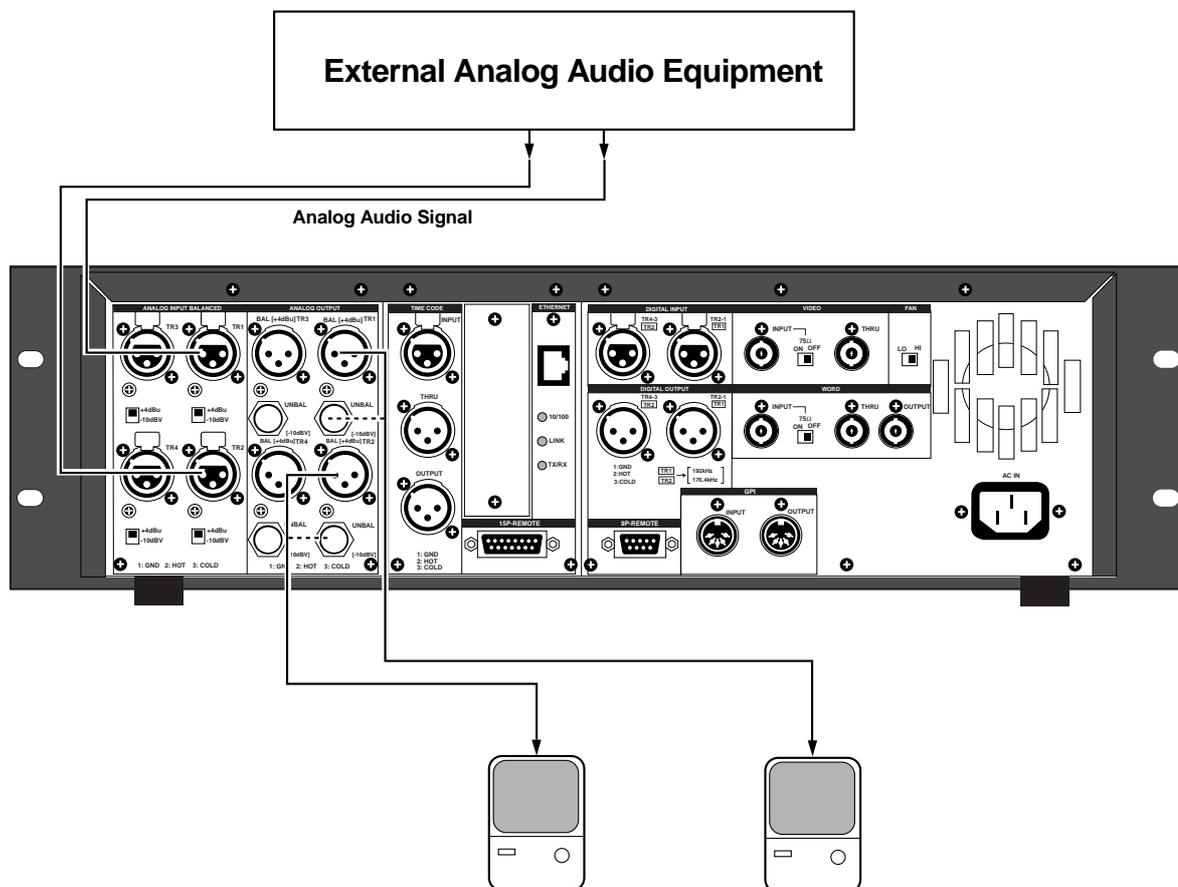
1. Connect the external source outputs to the [TR 1] and [TR 2] connectors of the [ANALOG INPUT BALANCED] section of the unit.

The connectors used varies depending on the track mode setting.

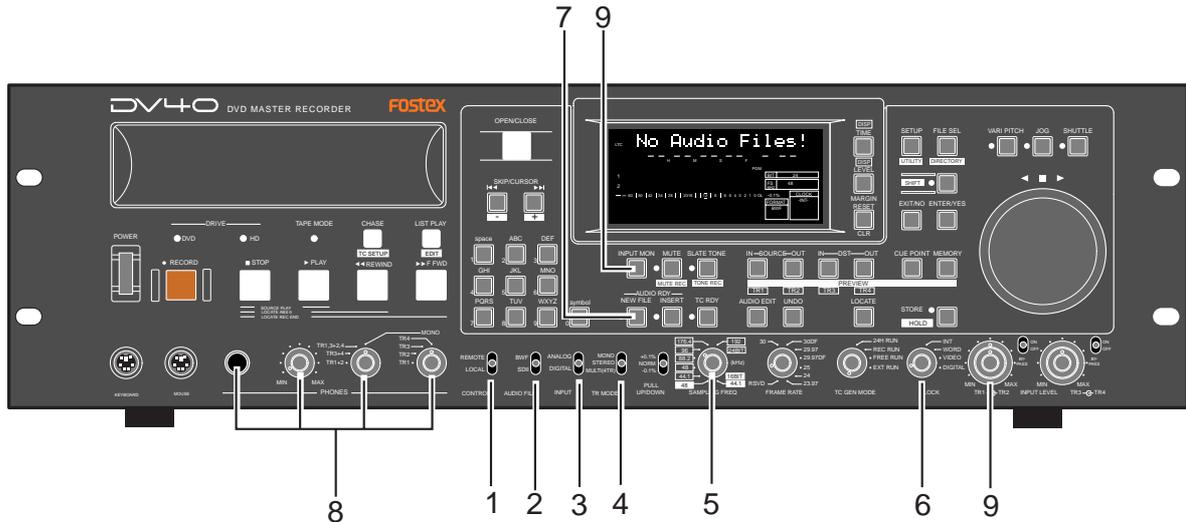
2. Select the Input level switches appropriately according to the source output level.

3. Connect a pair of monitor speakers with built-in amplifiers or an amplifier/speaker system to the [TR 1] and [TR 2] connectors of the [ANALOG OUTPUT] section of the unit.

Use either of **BAL** or **UNBAL** connectors according to the inputs of the monitor device.



Preparation for recording



1. Set the [CONTROL] switch to "LOCAL".
2. Set the [AUDIO FILE] switch to "BWF" or "SDII" appropriately.
When starting recording, an audio file with the selected file format is automatically created.
3. Set the [INPUT] switch to "ANALOG".
4. Set the [TR MODE] switch to "STEREO".
5. Set the [SAMPLING FREQ] switch to the desired Fs/Bit position.
6. Set the [CLOCK] switch to "INT".
7. Press the [AUDIO RDY - NEW FILE] key to select the NEW FILE mode (the NEW FILE indicator is lit).
If you wish to record time code simultaneously, press the [TC RDY] key to turn on the indicator.
See "Chapter 5: Time code recording" for details about time code recording.
8. Connect a pair of headphones to the [PHONES] jack, and set the monitor track select switch to "TR1 + TR2" position.
9. Press the [INPUT MON] key to turn on the indicator, and use the [INPUT LEVEL] (TR 1 and TR 2) controls to adjust the input levels of tracks 1 and 2.
See "Tips" below for details about the input level adjustment.
Even though you press the [INPUT MON] key to turn off the indicator after adjusting levels, the monitor source automatically switches to the input source during recording.
From the "Auto EE MD?" menu in the Setup mode to "On" (which is defaulted to "Off"), you can set the condition in which the input source can be monitored automatically. See "Chapter 15: Setup mode".

Tips: [BYPASS] switch

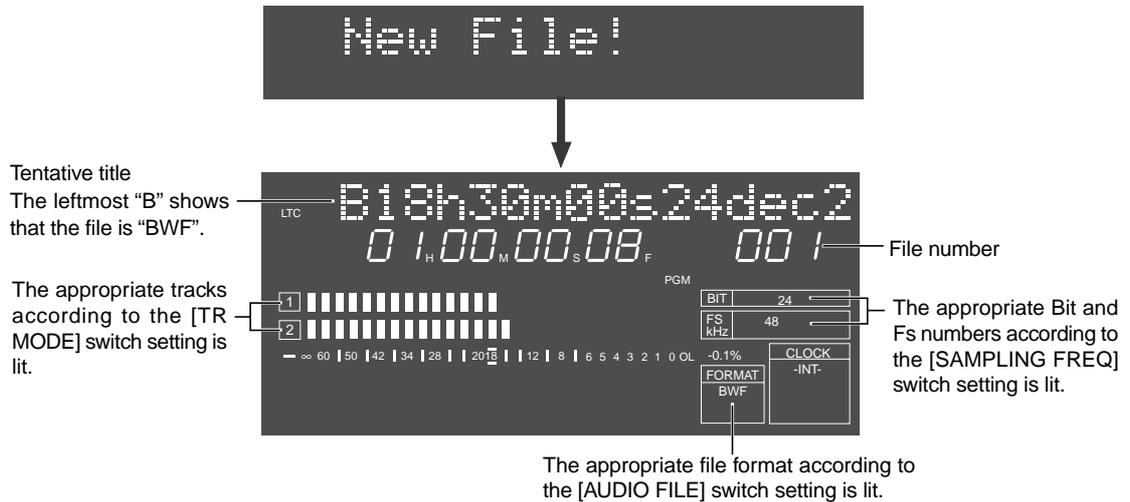
By setting the [BYPASS] switches beside the INPUT LEVEL controls to "ON", the INPUT LEVEL controls are disabled.

Recording

1. Press the [RECORD] key.

"New File!" appears for a short time on the display and the unit starts recording on the newly created file with the file format set in the procedure described in the previous "Preparation for recording". A tentative title of the newly created audio file is automatically created and registered. The tentative title contains date/time information. In the following example, the tentative title shows that the recording started at 18H: 30M: 00S on 24th, December, 2001. The date/time is based on the internal clock, which should be adjusted before using the unit. (See "Setting the internal clock" in Chapter 1 for details about how to set internal clock.)

You can edit the tentative title using the "Edit File Name?" menu in the Utility mode.



Tips: File number for a newly created file

Audio files automatically created are internally counted independently by "BWF" and "SDII" files. For example, if you make recordings twice to a disk on which no audio file is available by setting the [AUDIO FILE] switch to "BWF", two "BWF" files are created, whose file numbers are "001" and "002". Then if you make a recording to this disk by setting the [AUDIO FILE] switch to "SDII", the file number of the newly created file is "001". In result, two BWF files and one SDII file are created. A new file number is one greater than the number of existing files of the same file format.

2. After recording, press the [STOP] key to stop the unit.

See the next page for details about how to playback a recorded audio file.

Tips: Recording level adjustment of analog audio signals

Each level meter on the display holds peak value of the corresponding input signal (see the display example below).

The peak hold time is initially set to 3 seconds, however, you can select the time among from 0 to 9 seconds in 1 second steps and infinity using the "Peak Hold?" menu in the Setup mode. See "Chapter 15: Setup mode" for details.

You can also check the margin between the allowable maximum input level (= 0 dB) and the actual loudest level. The margin value (in dB) is updated each time when the loudest signal is fed to the unit.

So you can use the margin display function instead of setting the peak hold time to infinity. You can reset the current margin value by pressing the [MARGIN RESET/CLR] key.

Using the [DISP LEVEL] key, you can choose what is shown on the display among the margin level, track level and time.



Notes for level adjustment:

- Set the recording level with the [INPUT MON] indicator lit.
- Adjust the recording level using the [INPUT LEVEL] control so that the "OL" indicator does not light at the loudest part of the signal (i.e. the margin value is larger than 00.0 dB). If the input signal is too high, it clips at the full scale level.

Playback of recorded audio

To check the recorded audio file after recording, follow the procedure below.

1. While holding down the [STOP] key, press the [REWIND] key.
The unit immediately locates to the beginning of the audio file.
2. Press the [PLAY] key to start playback from the beginning of the audio file.
3. Monitor the playback audio via headphones or a monitor system.

If the analog outputs are connected to a mixing console, adjust the monitor level using the control of the console. When the playback position reaches to the end of the audio file, the unit automatically stops.

Tips:

After the audio file is recorded in the NEW FILE mode, you can overwrite the file or make recording following the end of the file. See page 4-7 for details about the INSERT mode.

You can create an audio file before recording.

As explained earlier, when making recording in the NEW FILE mode, a new audio file is created on the disk. Therefore, each time you make recording in the NEW FILE mode, the number of audio files increases by one. However, you can create a new audio file before making recording regardless of whether "No Audio Files!" is shown or any audio file is already created. Note that you can only make recording to the existing file in the INSERT mode described later. To create an audio files before making recording, follow the procedure below.

1. Set the [AUDIO FILE], [TR MODE] and [SAMPLING FREQ] switches to the desired positions.

<Note>

A new file will be created with the appropriate audio file format, track mode and sampling frequency/bit length combination according to the switch settings.

2. Press the [FILE SEL] key.

- When "No Audio Files!" is shown (i.e. there is no audio file on the disk), pressing the key brings up "New File?" with flashing "001" on the display.



- If any audio file exists, the audio file number currently selected starts flashing. By rotating the jog dial in this condition, you can bring up "New File?" with flashing "*" on the display (where "*" is one greater than the number of the existing audio files). In the display examples on the right, the number "001" file is selected. The new file number is "003", because two audio files exist on the disk.



3. Press the [ENTER/YES] key.

A new file is created and selected. The display shows the tentative title of the newly created file with "LTC" time. You can make recording in the INSERT mode to an audio file created before recording. You can also give a desired file title to the created file, or delete unnecessary files. See "Chapter 9: Audio file management" for details.

<Note>

If you create a new audio file when one or more audio files are available, the file number is counted independently by "BWF" and "SDII" files. For example, if you create an "SDII" file to a disk on which three "BWF" audio files are available, the file number of the created "SDII" file is "001". Therefore, when selecting a desired audio file from among more than one file, you must set the [AUDIO FILE] switch appropriately. See "Selecting a desired file on a disk" on page 4-9 for details.

Recording an analog source in the INSERT mode

In the INSERT mode, recording is made to an existing audio file. You can overwrite the file from the beginning or in the middle of the file, as well as make recording following the end of the file.

In the following description, as with the earlier description in “Recording an analog source in the NEW FILE mode”, we assume that we are going to record an external stereo analog audio source from the [ANALOG INPUT - TR1] and [ANALOG INPUT - 2] connectors to a DVD-RAM disk loaded in the tray.

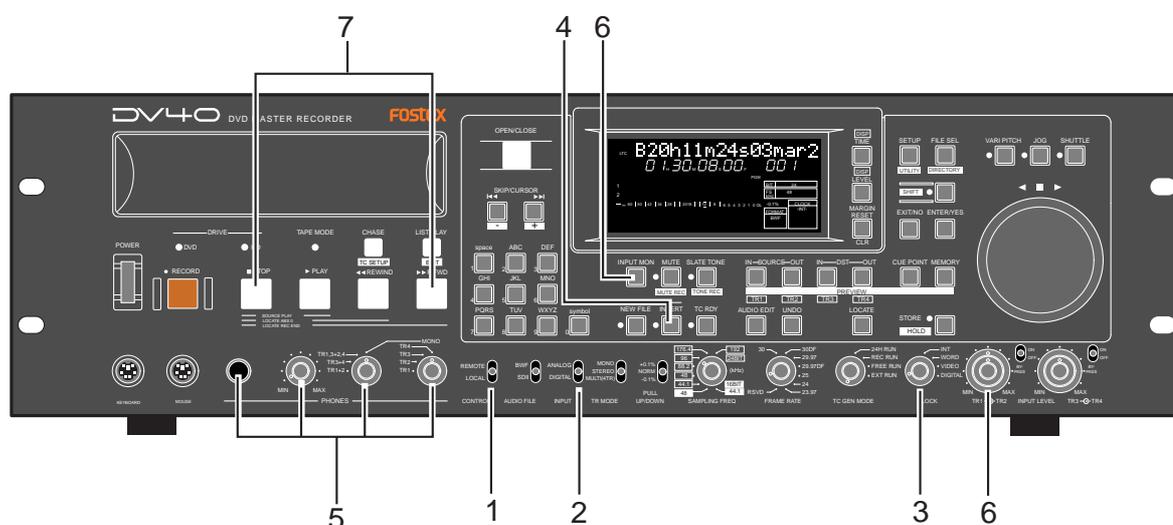
We also assume to perform recording from the end point of the current audio file.

Tips:

In the INSERT mode, recording is made to an existing audio file. Therefore, set the [AUDIO FILE], [TR MODE] and [SAMPLING FREQ] switches to the appropriate positions that match the audio file.

If you set any of these switches inappropriately, the switch position name flashes on the display for warning.

• Preparation for recording



1. Set the [CONTROL] select switch to "LOCAL".
2. Set the [INPUT] select switch to "ANALOG".
3. Set the [CLOCK] select switch to "INT".
4. Press the [AUDIO READY - INSERT] key to turn on the INSERT indicator.
If you want to record a time code simultaneously, press the [TC RDY] key to turn on the indicator. See "Chapter 5: Time code recording" for details about time code recording.
5. Connect a pair of headphones to the [PHONES] jack, and set the monitor track selection switch to "TR 1/TR 2".
6. Press the [INPUT MON] key to turn on the indicator, and use the [INPUT LEVEL] (TR 1 and TR 2) controls to adjust the input levels of tracks 1 and 2.
See "Tips" on page 4-5 for details about the input level adjustment.
7. Press the [F FWD] key while holding down the [STOP] key.
The recorder skips to the recording end point.

• Recording

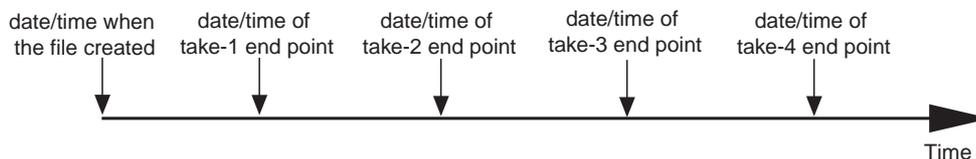
1. Press the [RECORD] key.
The recorder starts recording from the end point of the current file.
2. After recording, press the [STOP] key to stop the unit.
Play back and check the recorded sound. If you are not satisfied with the result, use the multiple undo function to go back to the previous condition and make recording again.

Multiple-undo function

To undo recording, use the multiple-undo function.

Tips:

The history of takes starts by the date/time when the file was created, followed by the ending date/time of each recording take, as illustrated below. By selecting the desired history event and performing the undo function, you can recall the desired take.



<Notes for performing the multiple-undo function>

- You cannot undo recording on a "Tape mode" audio file.
- The ending date/time of each take is memorized based on the internal clock, therefore, it is important to adjust the date/time of the internal clock correctly.
- The unit keeps all takes on the disk in order to make the multiple-undo function for all takes of the current audio file possible, therefore, the remaining disk space gets smaller each time you record another take. To release the unnecessary take history (= undo file), use the "Release Undo File?" menu in the Utility mode. See "Chapter 16: Utility mode" for details.

1. Press the [UNDO] key.

The display changes to show "Select History?", as below.

The history keeps the date/time when the file was created and the ending date/time of each recording take.



2. Select the desired event from the history using the [JOG] dial (or the [SKIP/CURSOR] <</>> keys), and press the [ENTER/YES] key.

After the first take has been completed, if you wish to return to the condition before recording, select the date/time when the file was created.

"Multi Undo!" appears for a short time on the display, followed by "Undo Completed!", showing that the undo operation is completed. The display changes to show the beginning of the audio file.

Selecting a desired file on a disk

When there is more than one audio file (regardless of "BWF" or "SDII") on a disk, you can select a desired file using the file select function, or using the **[SKIP/CURSOR] [I<<|/|>>]** keys if the "skip mode" menu is set to "File".

The following describes how to select an audio file using the file select function. See "Chapter 9: Audio file management" for details about how to select an audio file in the skip mode.

The following assumes that there are five "BWF" and three "SDII" files on the disk.

Tips:

When setting a disk that contains both "BWF" and "SDII" audio files, the "001" file of the type ("BWF" and/or "SDII") set by the AUDIO FILE switch is selected.

• To select a file of the same file type

Follow the procedure below.

1. Press the **[FILE SEL]** key while stopped.

The current file number starts flashing.

2. Rotate the jog dial to select a desired file number, and press the **[ENTER/YES]** key.

You can select from among files of the same file type. For example, if "001" of the five "BWF" files is currently selected, you can select among "001" through "005", as well as flashing "New File?" which appears by rotating the jog dial fully clockwise. As explained earlier, "New File?" should be selected when you create a new audio file.

After selecting the desired file number, pressing the **[ENTER/YES]** key switches the current audio file to the selected one, and the display shows the beginning of the file.

• To select a file of the different file type

Follow the procedure below.

1. Set the **[AUDIO FILE]** switch to the desired position.

For example, if you want to select an "SDII" file when a "BWF" file is currently selected, set the **[AUDIO FILE]** switch to "SDII".

In the "FORMAT" section on the display, "BWF" is lit while "SDII" flashes.

2. Press the **[FILE SEL]** key while stopped.

The current file number starts flashing.

3. Rotate the jog dial to select a desired file number, and press the **[ENTER/YES]** key.

You can select from among files of the selected file type in step 1 above. For example, if selecting from among "SDII" files, you can select among "001" through "003", as well as flashing "New File?" which appears by rotating the jog dial fully clockwise. As explained earlier, "New File?" should be selected when you create a new audio file.

After selecting the desired file number, pressing the **[ENTER/YES]** key switches the current audio file to the selected one, and the display shows the beginning of the file.

<Note>

When selecting an audio file, the track mode or Fs/bit shown on the display may flashes. This shows that the position of the **[TR MODE]** or **[SAMPLING FREQ]** switch does not match the selected file. In such a case, set the switch appropriately to match the file.

Tips:

See "Chapter 9: Audio file management" for details about how to create, select, delete an audio file or how to edit a file name.

Recording to a "Tape mode" audio file in the INSERT mode

You can record to a "Tape mode" audio file only in the **INSERT** mode.

If an accident may happens, such as a sudden power failure or shutdown of the unit, recorded data on a "Tape mode" audio file will survive. Therefore, it will be suitable for live recording or preserving data for a long period of time.

<Note>

- When formatting a disk in the Tape mode, two "Tape mode" audio files are created automatically. Unlike a "Normal mode" audio file, you cannot create more than one "Tape mode" audio file on a disk. however, note that you can create "Normal mode" audio files on a disk formatted in the Tape mode. (See the next page.)
- You cannot undo a recording to a "Tape mode" file. If you press the [UNDO] key, "History File Non" is shown on the display and the key operation is ineffective.
- When "Rec Protect" menu in the Utility mode is set to "ON", you cannot make recording. See "Chapter 16: Utility mode" for details about how to release the protection.
- You can record up to 2-GB audio data to a "Tape mode" audio file. The recorder automatically stops when it elapses the maximum recording time. You can check the maximum recording time by pressing the [F FWD] key while holding down the [STOP] key.

You can record to a "Tape mode" audio file when either one of the displays below is shown.

The recording procedure is same as described in "Recording an analog source in the INSERT mode" on page 4-7.

"SDII" audio file (file No.: 001)



OR

"BWF" audio file (file No.: 001)



"SDII" audio file (file No.: 002)



OR

"BWF" audio file (file No.: 002)



Creating a "Normal mode" audio file on a disk formatted in the Tape mode

Two "Tape mode" audio files of approximately 2.0GB size are created on a disk formatted in the Tape mode, spending 4GB disk space. Therefore, in the remaining 0.7GB space, you can create "Normal mode" audio files.

1. While a "Tape mode" audio file is selected, press the [FILE SEL] key.

The current "Tape mode" file number flashes.

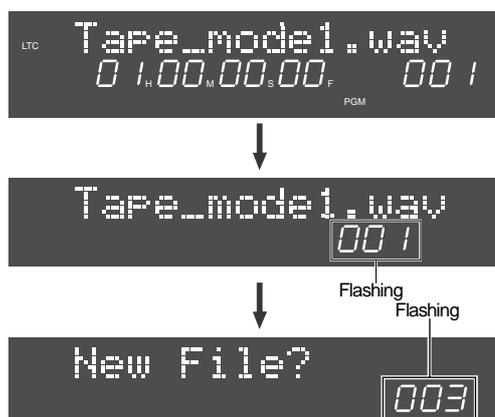
2. Rotate the [JOG] dial to show "New File?" with the flashing file number.

Depending on whether you change the [AUDIO FILE] switch setting or not before pressing the [FILE SEL] key, the file number shown is different.

The following assumes that the current "Tape mode" file is "BWF".

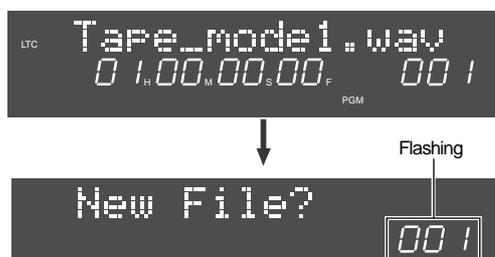
- When the [AUDIO FILE] switch is not changed (set to "BWF"):

"003" is shown, because a new "Normal mode" file is the third "BWF" file on the disk.



- When the [AUDIO FILE] switch is changed (set to "SDII"):

"001" is shown, because a new "Normal mode" file is the first "SDII" file on the disk.



3. Press the [ENTER/YES] key.

A new "Normal mode" file is created.

Tips:

If more than one "Normal mode" audio file is created on a disk formatted in the Tape mode and any "Normal mode" audio file is currently selected, you can make recording in either the "NEW FILE" or "INSERT mode".

- To select a desired audio file in the disk formatted in the Tape mode

Follow the same procedure as describe in "Selecting a desired file on a disk" on page 4-9.

<Note>

When loading a disk formatted in the Tape mode to the disk tray, the "001" audio file with the same type as [AUDIO FILE] switch setting (BWF or SDII) is selected.

For example, if you load a disk which contains both "Tape mode" BWF and "Normal mode" SDII files, with the [AUDIO FILE] switch set to "SDII", the latter is selected.

Recording a digital source in the NEW FILE mode

The following describes how to record a digital source in the **NEW FILE mode**.

In the same way as recording an analog source, you can record a digital source in the NEW FILE mode to a disk formatted in the Normal mode.

We assume that we are going to record a digital audio source in stereo.

<Note>

The first time you make recording to a disk just after formatted, the maximum recording size of the audio file to be created is 2GB (the maximum recording time depends on the track mode and Fs/bit settings). If the recording size exceeds 2GB during recording, the DV40 automatically stops recording.

Preparation

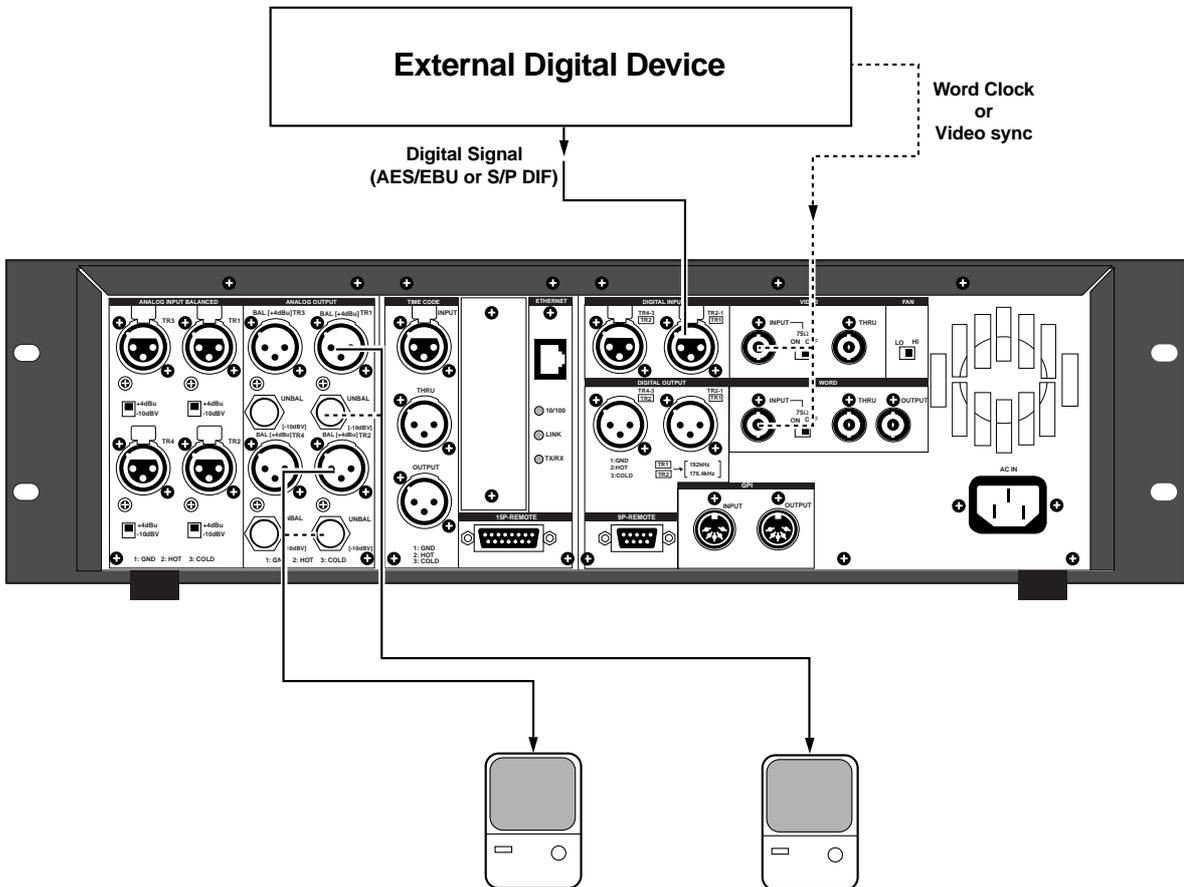
Connection to external devices

1. Connect the external digital source outputs to the [TR2-1] of the [DIGITAL INPUT] section of the unit. Channels L and R of the source are assigned to tracks 1 and 2 of the unit respectively. The digital input signal format (AES/EBU or S/P DIF) is automatically recognized.

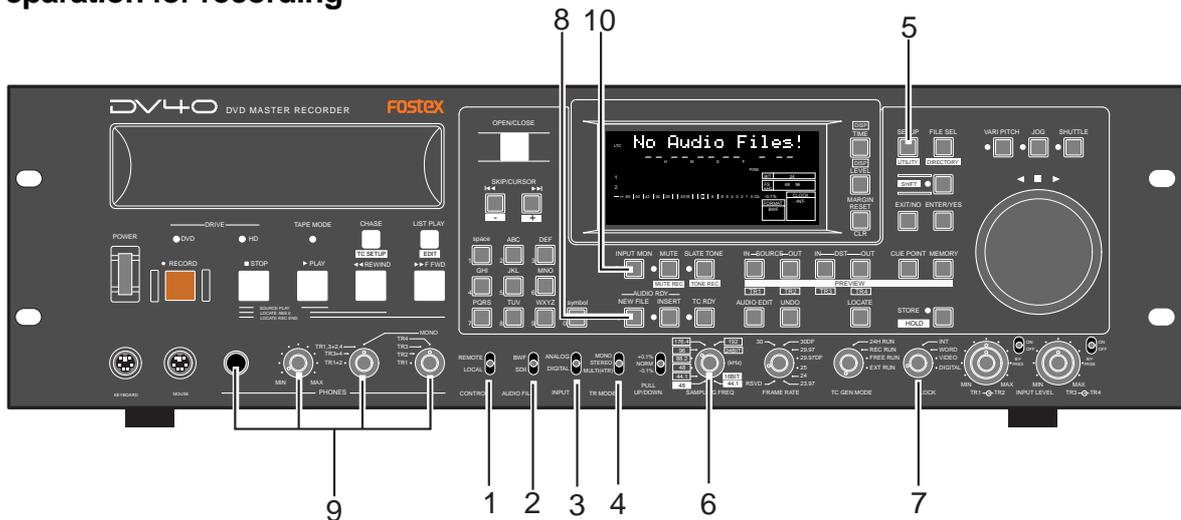
<Note>

When receiving a stereo digital signal with 176.4 kHz or 192 kHz Fs, connect channels L and R of the source to [TR2-1] and [TR4-3] of the [DIGITAL INPUT] section respectively.

2. Connect a pair of monitor speakers with built-in amplifiers or an amplifier/speaker system to the [TR 1] and [TR 2] connectors of the [ANALOG OUTPUT] section of the unit.
3. If you want to lock the unit to a word or video signal, feed an appropriate external clock signal to the [WORD IN] or [VIDEO IN].



Preparation for recording



1. Set the [CONTROL] switch to "LOCAL".
2. Set the [AUDIO FILE] switch to "BWF" or "SDII" appropriately.
When starting recording, an audio file with the selected file format is automatically created.
3. Set the [INPUT] switch to "DIGITAL".
"DIGITAL" is shown on the display. It lights steadily or flashes depending on whether the appropriate digital signal is fed or not.
4. Set the [TR MODE] switch to "STEREO".
5. Select the digital input tracks using the "D. IN Tr?" menu in the Setup mode, if necessary.
The "D. IN Tr?" menu is initially set to "Auto", in which the track numbers correspond to the input numbers. See "Chapter 15: Setup mode" for details about the "D. IN Tr?" menu.
6. Set the [SAMPLING FREQ] switch to the desired Fs/Bit position.
7. Set the [CLOCK] switch to "DIGITAL".
"DIGITAL" and "-EXT-" light up in the "CLOCK" section on the display, showing that the system clock is derived from the digital input signal.
If you wish to make the unit slaved to a video or word clock, select the [CLOCK] switch to "VIDEO" or "WORD" appropriately.
8. Press the [AUDIO RDY - NEW FILE] key to select the NEW FILE mode (the NEW FILE indicator is lit).
If you wish to record time code simultaneously, press the [TC RDY] key to turn on the indicator.
See "Chapter 5: Time code recording" for details about time code recording.
9. Connect a pair of headphones to the [PHONES] jack, and set the monitor track select switch to "TR1 + TR2" position.
10. Press the [INPUT MON] key to turn on the indicator.
You do not need to adjust the input level for digital recording.
You can check digital input levels from the level meters by activating the input monitor mode.

Recording

1. Press the [RECORD] key.
"New File!" appears for a short time on the display and the unit starts recording on the newly created file.
2. After recording, press the [STOP] key to stop the unit.
If you are not satisfied with the result, undo the recording.

Recording a digital source in the INSERT mode

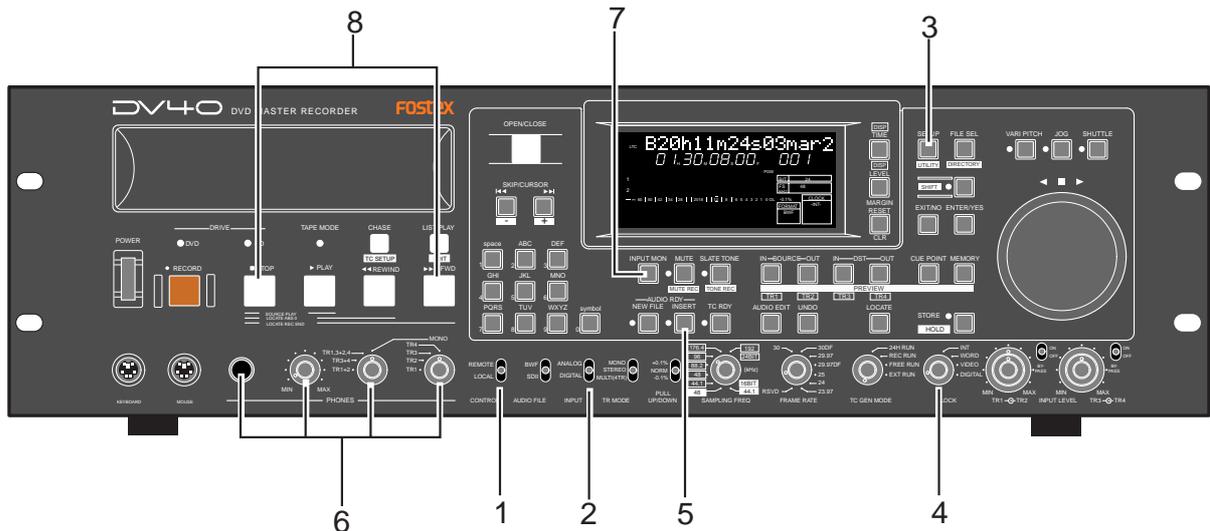
In the following description, we assume to perform recording from the end point of the current audio file, as in the description of the “Recording an analog source in the INSERT mode” described earlier.

Tips:

In the INSERT mode, recording is made to an existing audio file. Therefore, set the [AUDIO FILE], [TR MODE] and [SAMPLING FREQ] switches to the appropriate positions that match the audio file.

If you set any of these switches inappropriately, the switch position name flashes on the display for warning.

• Preparation for recording



1. Set the [CONTROL] select switch to "LOCAL".
2. Set the [INPUT] select switch to "DIGITAL".
3. Select the digital input tracks using the "D. IN Tr?" menu in the Setup mode, if necessary.
The "D. IN Tr?" menu is initially set to "Auto", in which the track numbers correspond to the input numbers. See "Chapter 15: Setup mode" for details about the "D. IN Tr?" menu.
4. Set the [CLOCK] switch to "DIGITAL".
"DIGITAL" and "-EXT-" light up in the "CLOCK" section on the display, showing that the system clock is derived from the digital input signal.
If you wish to make the unit slaved to a video or word clock, select the [CLOCK] switch to "VIDEO" or "WORD" appropriately.
5. Press the [AUDIO READY - INSERT] key to turn on the INSERT indicator.
If you want to record time code simultaneously, press the [TC RDY] key to turn on the indicator.
See "Chapter 5: Time code recording" for details about time code recording.
6. Connect a pair of headphones to the [PHONES] jack, and set the monitor track selection switch to "TR 1/TR 2".
7. Press the [INPUT MON] key to turn on the indicator.
You do not need to adjust the input level for digital recording.
You can check digital input levels from the level meters by activating the input monitor mode.
8. Press the [F FWD] key while holding down the [STOP] key to move to the record end point.

Recording

1. Press the [RECORD] key.
The unit starts recording.
2. After recording, press the [STOP] key to stop the unit.
If you are not satisfied with the result, undo the recording.

MUTE recording

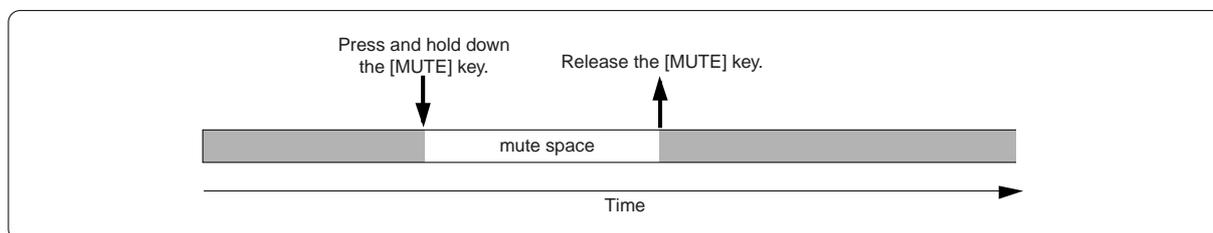
You can make mute recording while maintaining the continuity of the ABS time (or LTC), or insert a mute space at the beginning of an audio file or between songs.

• Creating a mute space during recording

You can create a mute space during audio recording (analog or digital) in both the **NEW FILE** and **INSERT mode**.

The following description assumes that all preparation for recording is made.

1. Press the **[RECORD]** key to start recording.
2. Press and hold down the **[MUTE]** key from the desired position (the **MUTE** indicator is lit).
The unit mutes recording.
The headphones and analog outputs are also muted.
3. To stop muting, release the **[MUTE]** key (the **MUTE** indicator turns off).
The unit continues recording a signal.



Tips:

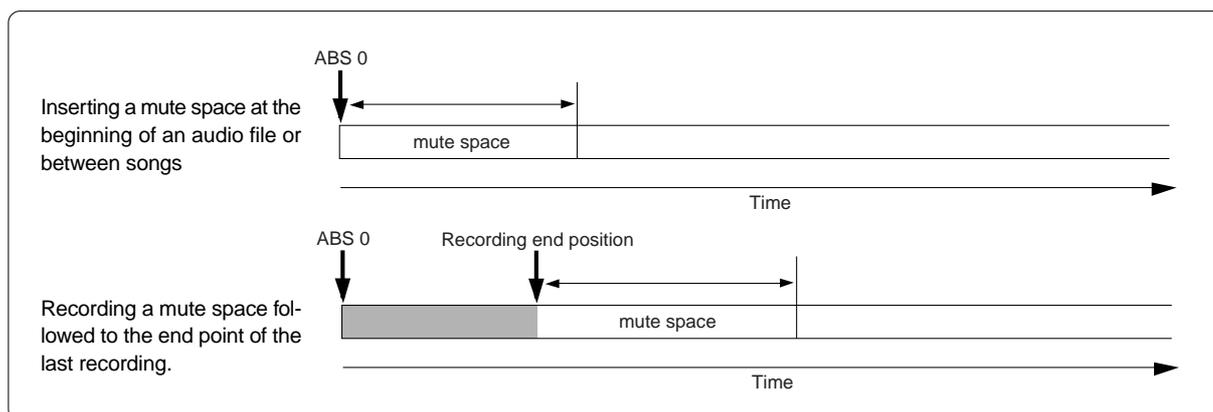
Pressing the **[MUTE]** key during playback mutes all the (both analog and digital) audio outputs except the monitor outputs (PHONES and MON OUT).

• Inserting a mute space at the beginning of an audio file or between songs

You can insert a mute space at the beginning of an audio file or between songs while stopped. This operation is possible only in the **INSERT mode**.

The following assumes that the audio file is stopped at the beginning or at the end of the last recording.

1. Press the **[AUDIO RDY - INSERT]** key to turn on the **INSERT** indicator.
2. Press the **[SHIFT]** key to turn on the **SHIFT** indicator.
3. Press the **[MUTE]** key to turn on the **MUTE** indicator.
The unit performs mute recording for a duration set by the "Mute time setting" menu in the Setup mode. The Mute time is initially set to **3 seconds**.
After finishing mute recording, the unit stops.
See "Chapter 15: Setup mode" for details about the "Mute time setting" menu.



Slate tone function

During playback or while stopped, you can feed the 1-kHz slate tone from all the outputs, as well as record the slate tone for a specified duration at the beginning of an audio file or between songs.

• Feeding the slate tone

1. Press and hold down the [SLATE TONE] key during playback or while stopped (the SLATE TONE indicator is lit).

While holding down the [SLATE TONE] key, the 1-kHz slate tone is fed from all the (digital and analog) outputs of the unit.

2. To stop feeding the tone, release the [SLATE TONE] key (the SLATE TONE indicator turns off).

Tips:

During recording, pressing and holding down the [SLATE TONE] key records the slate tone for the duration.

• Recording the slate tone at the beginning of an audio file or between songs

You can insert the slate tone at the beginning of an audio file or between songs while stopped. This operation is possible only in the **INSERT mode**.

The following assumes that the audio file is stopped at the beginning or at the end of the last recording.

1. Press the [AUDIO RDY - INSERT] key to turn on the INSERT indicator.

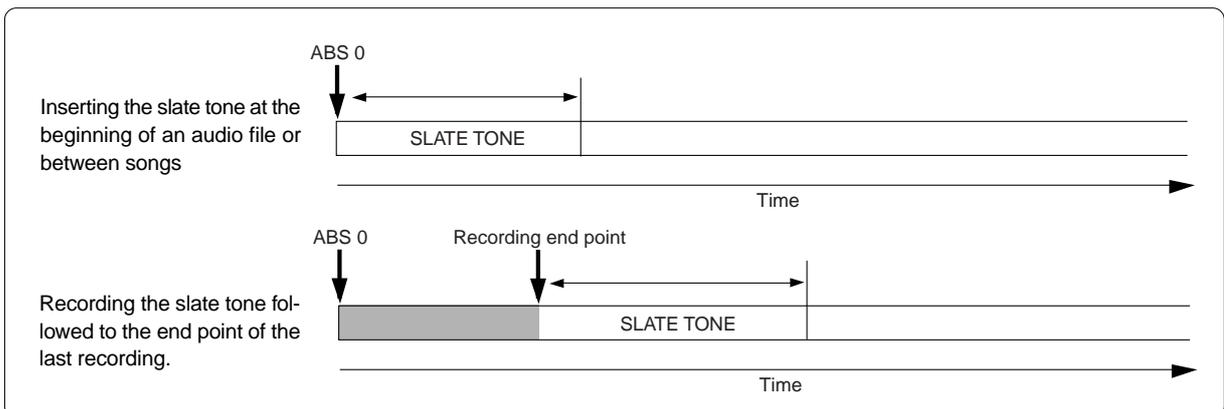
2. Press the [SHIFT] key to turn on the SHIFT indicator.

3. Press the [SLATE TONE] key to turn on the SLATE TONE indicator.

The unit performs slate tone recording for a duration set by the "Slate tone time setting" menu in the Setup mode. The Slate tone time is initially set to 10 seconds.

After finishing slate tone recording, the unit stops.

See "Chapter 15: Setup mode" for details about the "Slate tone time setting" menu.



Cueing by the jog function

You can cue audio sound using the jog function as if you operate an analog tape recorder.

1. While stopped, press the [JOG] key (the JOG indicator lights up).

The jog mode is active.

The indicator above the jog dial lights up, showing that the recorder stills.

2. Rotate the jog dial to cue audio.

You can cue audio as if you are using an analog tape recorder.

While cueing, the appropriate < or > indicator above the jog dial is lit according to the rotating direction.

3. To quit the jog mode, press any of the transport keys (the [STOP] key, etc.).

Cueing/high speed shuttle by the shuttle function

Using the shuttle function, you can perform the shuttle cueing or the high-speed search.

• Shuttle cueing

1. Press the [SHUTTLE] key during playback (the SHUTTLE indicator lights up).

The shuttle mode is active.

The indicator light up, showing that the recorder stills.

2. Rotate the jog dial to start cueing.

You can cue forward or backward at a speed between 0 and twice the normal speed as if you are using an analog tape recorder.

While cueing, the appropriate < or > indicator above the jog dial is lit according to the rotating direction.

3. To quit the shuttle mode, press any of the transport keys (the [STOP] key, etc.).

If the cueing position comes to the ABS 0 or REC END point, the recorder automatically quits the shuttle mode and stops.

• High-speed search

1. Press the [SHUTTLE] key while stopped (the SHUTTLE indicator lights up).

The shuttle mode is active.

The indicator light up and the recorder stills.

2. Rotate the jog dial to start searching.

You can search forward or backward at a speed between 0 and 32 times of the normal speed.

While searching, the appropriate < or > indicator above the jog dial is lit according to the rotating direction.

3. To quit the shuttle mode, press any of the transport keys (the [STOP] key, etc.).

If the cueing position comes to the ABS 0 or REC END point, the recorder automatically quits the shuttle mode and stops.

Chapter 5

Time code recording

This chapter describes how to record time code generated by the internal time code generator or external time code.



Time code recording

The unit can be referenced to SMPTE/EBU time code. SMPTE time code is applied to countries adopting the NTSC television system, while EBU time code is applied to countries adopting the PAL/SECAM system.

Selecting the recording mode

Two methods are available for recording time code.

- **Recording time code together with audio simultaneously**

When recording audio and time code while creating a new file:
Use the **[NEW FILE]** mode.

When recording new time code to an existing file:
Use the **[INSERT]** mode to record both audio and time code simultaneously.

Selecting source time code

Two time code sources to be recorded are available.

- **Time code generated by the internal time code generator.**
- **External time code received from the [TIME CODE INPUT] connector.**

<Note>

Actually, the DV40 records only the starting time of time code in the dedicated area and does not stripe it throughout a track. Therefore, recording time code does not consume the recording space of a disk.

<Notes about recordable time code value>

*Normally you can stripe any time code values in 24 hours to a file.
However, with a high-sampling "SDII" file, the recordable time code values are limited.*

Recording time code generated by the internal time code generator

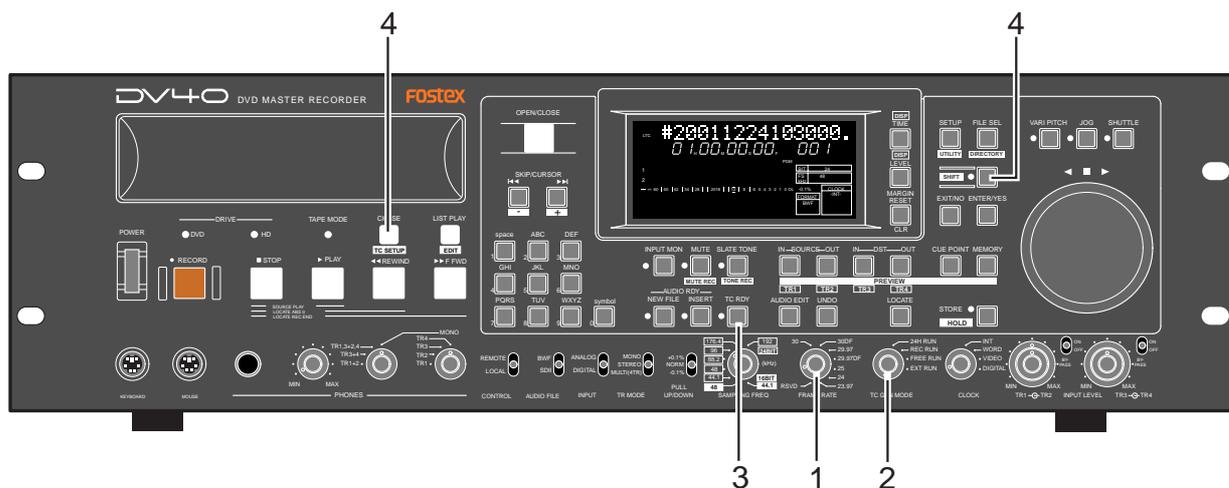
You can record time code generated by the internal time code generator together with audio simultaneously.

This section describes **settings and operations for time code recording**. See "Chapter 4: Audio recording/playback" for details about settings and operations for audio recording.

The following description assumes that one of the [AUDIO RDY] key indicators ([NEW FILE] or [INSERT]) is lit.

Settings of the DV40

• Front panel switch settings



1. Set the [FRAME RATE] switch appropriately according to time code to be recorded.
2. Set the [TC GEN MODE] switch appropriately according to the situation.

24H RUN	Time code starts from the current time of the internal clock of the unit.
REC RUN	When recording time code to a new file, the generator records time code from the value which continues to the last time code value of the previous audio file.
FREE RUN	Runs the internal generator by the free run mode, and records the current internal generator time as the start time.
EXT RUN	The external time code value is recorded as the start time.

<Note>

Unlike time code striped on an audio or video tape, time code on a disk is not striped from the beginning to the end. Only the offset between the ABS time and time code at the recording start point is recorded.

Therefore, if you record a discontinuous time code value in the middle, the unit cannot recognize it. Also, the user bit when time code starts recording is valid throughout the time code, so the unit cannot handle the user bit that changes in the middle.

3. Press the [TC RDY] key to arm the time code track.
The TC RDY indicator is lit while "TC RDY" is shown on the display.
4. After pressing the [SHIFT] key to make the SHIFT mode active, press the [CHASE/(TC SETUP)] key to enter the TC SETUP mode, then preset the internal time code generator time if necessary.
See page 5-6 for details about how to preset the internal time code generator time.

Recording external time code

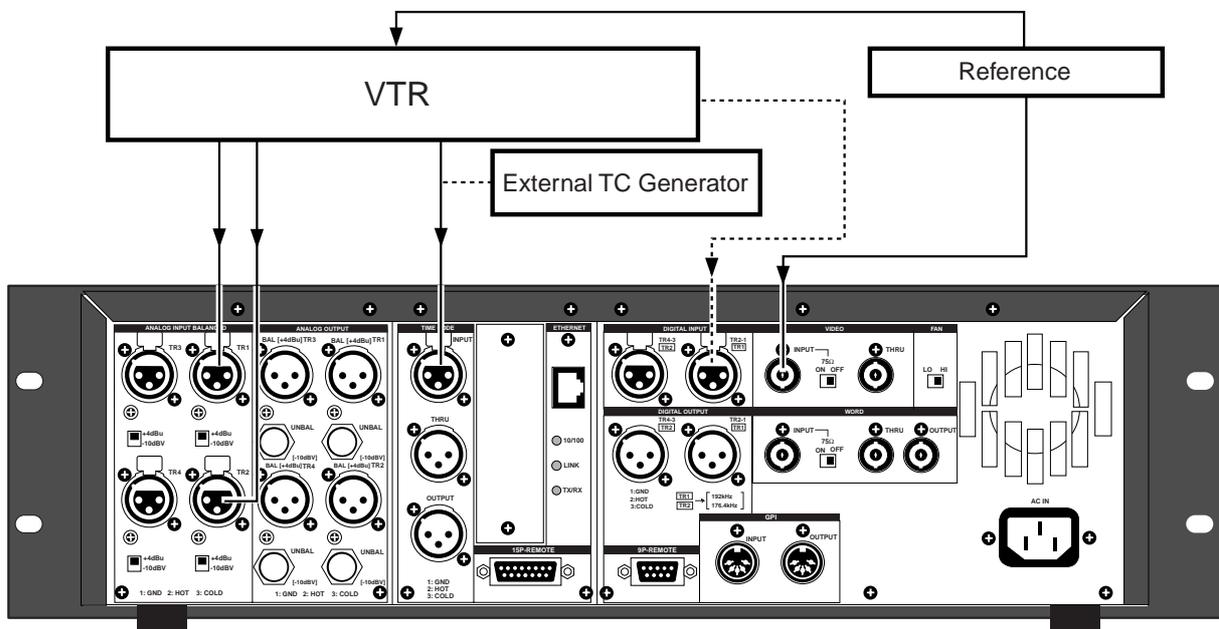
You can record time code together with audio while synchronizing the unit to external time code generated by an external generator or striped on a video/audio tape, etc. This section describes settings and operations for time code recording. See "**Chapter 4: Audio recording/playback**" for details about settings and operations for audio recording.

The following description assumes that one of the [AUDIO RDY] key indicators ([NEW FILE] or [INSERT]) is lit.

Connection to external devices/Settings of the DV40

• Connection to external devices

1. Connect the [ANALOG IN] (or [DIGITAL IN]) connectors to the audio outputs of a VCR.
2. Connect the [TIME CODE IN] connector to the time code output of a VCR.
3. If the video reference is available, connect it to the video inputs of both a VCR and the DV40.



• Front panel switch settings

1. Set the [FRAME RATE] switch appropriately to match the external time code.
2. Set the [TC GEN MODE] switch appropriately for recording the external time code.
3. If the video reference is available, set the [CLOCK] switch to "VIDEO".
If you record time code by synchronizing the unit to digital clock from a VCR, set the switch to "DIGITAL".
4. Press the [TC RDY] key to arm the time code track.
The TC RDY indicator is lit while "TC RDY" is shown on the display.
5. After pressing the [SHIFT] key to make the SHIFT mode active, press the [CHASE/(TC SETUP)] key to enter the TC SETUP mode, then make the necessary settings for recording time code.
See 5-5 and subsequent pages for details about the TC Setup mode.

TC Setup mode details

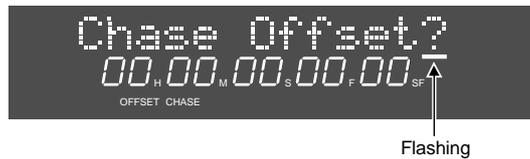
The TC Setup mode allows you to set the following which are necessary for recording/playback of time code or synchronizing the unit to external time code.

1. Editing time code generated by the internal TC generator
2. Editing the chase offset to external time code
3. Trimming the chase offset
4. Chase mode selection
5. Capturing the LTC time for storing it as the chase offset (Catch offset)
6. Editing the LTC start time
7. Force jamming to external time code
8. Selecting output time code
9. Time code output on/off selection while paused
10. TC user bit output selection

• To enter the TC Setup mode

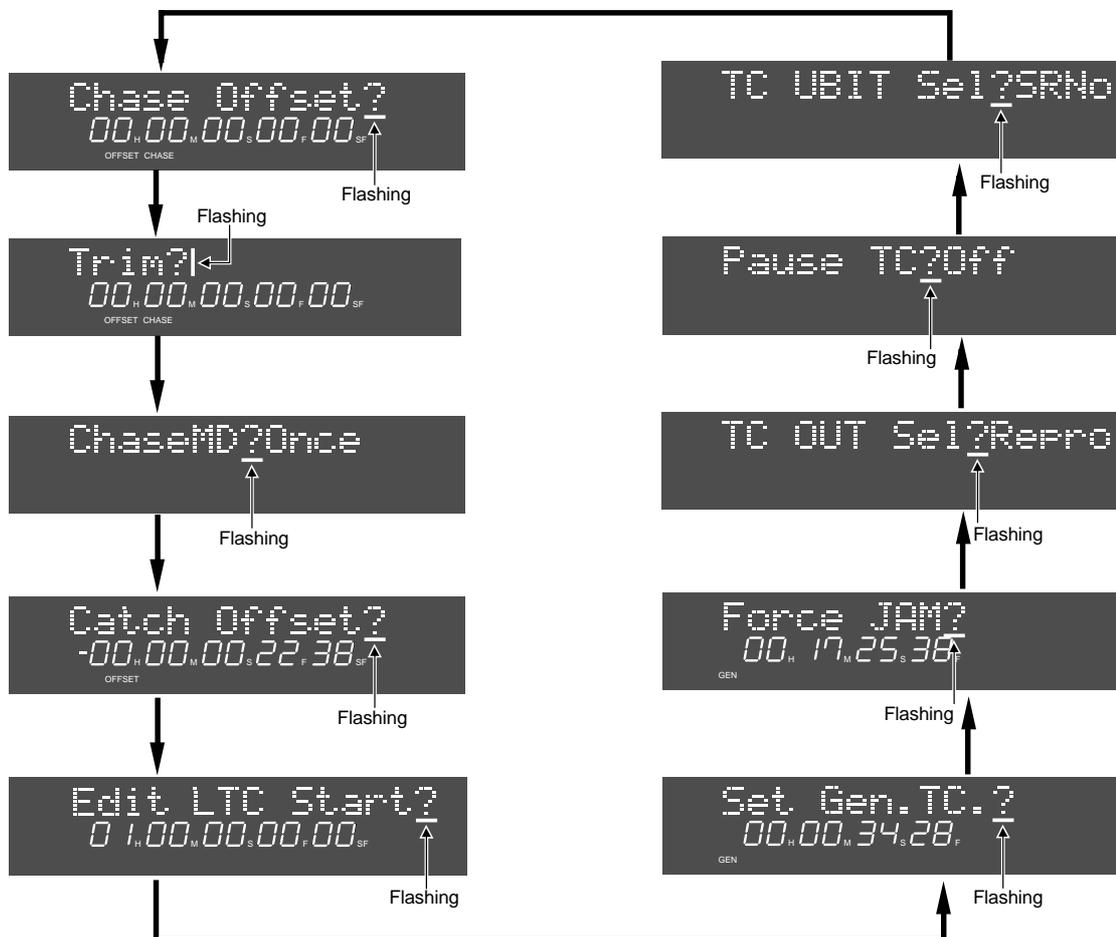
1. Press the [SHIFT] key to turn on the indicator, then press the [CHASE/(TC SETUP)] key.

The unit enters the TC Setup mode and the display shows a menu. The first time the unit enters the TC Setup mode after turning on the power, the "Chase Offset?" menu is shown. Otherwise, the display shows the menu previously selected.



2. Use the jog dial (or [SKIP/CURSOR] [<<] / [>>] keys) to select the desired menu.

You can cycle through menus in the following order (or reverse order).



• **Setting the internal TC generator start time**

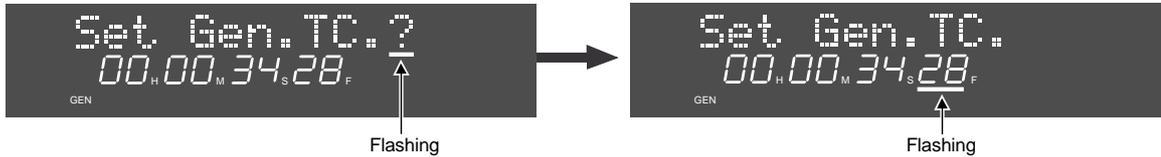
To set the internal TC generator start time, you must set the "TC GEN MODE" switch to "FREE RUN".

1. Use the jog dial (or [SKIP/CURSOR] [<<] / [>>] keys) to select "Set Gen.TC?".

The display shows the internal TC generator time code running, together with "Set Gen.TC?".

2. Press the [ENTER/YES] key.

The current time is held and now it can be edited (with the flashing frame digit).



3. Use the jog dial or numeric keys to enter a numeric value.

When using the jog dial to enter a value, you can move the (flashing) digit to be edited by using the [SKIP/CURSOR] [<<] / [>>] keys.

When using the numeric keys to enter a time value, each number is entered from the right digit, which moves left as additional digits are entered.

You can enter up to "23H 59M 59S **F" (in which ** is one smaller than the frame rate number).

4. After entering the time, press the [ENTER/YES] key.

The internal generator starts from the entered time when the [TC GEN MODE] switch is set to "FREE RUN".

The DV40 can start recording from the entered time when the [TC GEN MODE] switch is set to "REC RUN".

• **Force-jamming to external time code**

You can force-jam the internal generator time code to external time code.

To force-jam to external time code, you must set the "TC GEN MODE" switch to "FREE RUN".

The following procedure assumes that the unit receives external time code from the [TIME CODE INPUT] connector.

1. Use the jog dial (or [SKIP/CURSOR] [<<] / [>>] keys) to select "Force JAM?" and press the [ENTER/YES] key.

The unit force-jams to external time code and the force-jammed time code value is shown in realtime.



<Notes>

- When carrying out the above operation, if the [FRAME RATE] switch setting on the front panel does not match the frame rate of external time code, "Illegal Frame!" appears and the operation is invalid.
- When carrying out the above operation, if no external time code is available, "Void LTC In!" appears.



• Selecting output time code

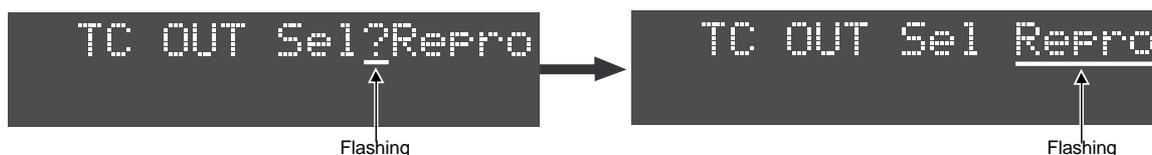
When setting the [TC GEN MODE] switch to "FREE RUN" or "24H RUN", you can output time code generated by the internal TC generator or recorded on the disk.

<Notes>

- The time code output selection is not effective when setting the [TC GEN MODE] switch to "REC RUN" or "EXT RUN".
- While the unit outputs time code, the vari-pitch and word sync functions are not available.
- By turning off the power of the unit and then on, the selection of the "TC OUT Sel?" menu returns to "REPRO" which is the default.

1. Use the jog dial (or [SKIP/CURSOR] [<< / >>] keys) to select "TC OUT Sel?" and press the [ENTER/YES] key.

The currently selected option (which is initially "Repro") starts flashing, showing it now can be edited.



2. Use the jog dial to select the desired option and press the [ENTER/YES] key.

You can select between "Repro" and "Gen.". Pressing the [ENTER/YES] key confirms the selection.

Repro	The recorded time code on the disk is output from the [TOME CODE OUTPUT] connector.
Gen.	The time code generated by the internal TC generator is output from the [TOME CODE OUTPUT] connector.

3. To exit the TC Setup mode, press the [EXIT/NO] key (or the [STOP] key).

• Editing the chase offset

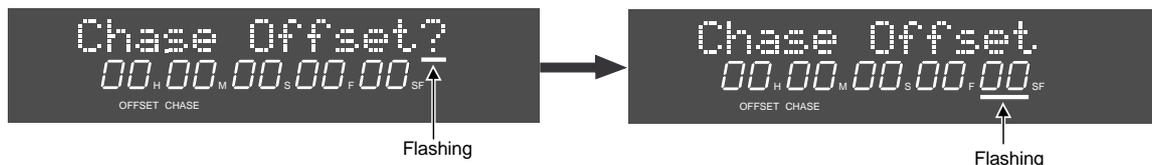
You can edit the current chase offset value. The edited value is stored to "CUE 00".

1. Use the jog dial (or [SKIP/CURSOR] [<< / >>] keys) to select "Chase Offset?".

The current chase offset is shown.

2. Press the [ENTER/YES] key.

The subframe digit starts flashing, showing it now can be edited.



3. Use the jog dial or numeric keys to enter a offset value.

When using the jog dial to enter a value, you can move the (flashing) digit to be edited by using the [SKIP/CURSOR] [<< / >>] keys.

When using the numeric keys to enter a time value, each number is entered from the right digit, which moves left as additional digits are entered.

You can enter a value between "-12H 00M 00S **F 00SF" and "11H 59M 59S **F 99SF" (in which ** is one smaller than the frame rate number).

4. After entering the offset value, press the [ENTER/YES] key.

The offset is set and the display returns to show "Chase Offset?".

If you enter an illegal value in step 3 and press the [ENTER/YES] key, "Illegal Time!" appears on the display and the operation is canceled.

5. To exit the TC Setup mode, press the [EXIT/NO] key (or the [STOP] key).

• Trimming the chase offset

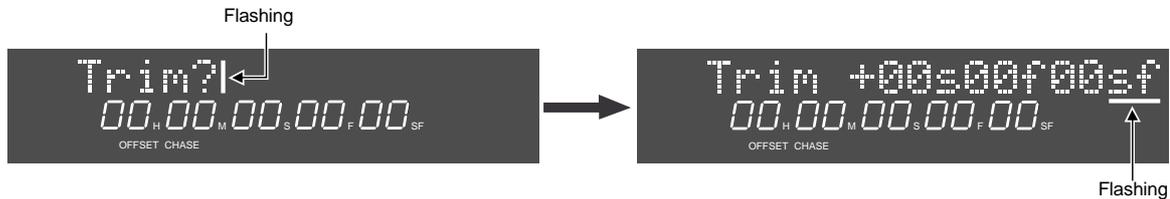
You can trim the chase offset set by the procedure described above in "Editing the chase offset".

1. Use the jog dial (or [SKIP/CURSOR] [||<<| / |>>|] keys) to select "Trim?".

The current chase offset is shown.

2. Press the [ENTER/YES] key.

"+00s 00f 00sf" appears, in which "sf" flashes.



3. Use the jog dial or numeric keys to trim the value.

You can trim the value in sub-frame unit between "-59s **f 99sf" and "+59s **f 99sf" (in which ** is one smaller than the frame rate number).

After trimming the value, do not forget the next step!

4. After trimming the value, press the [ENTER/YES] key.

The trimmed value is set and the display returns to show "Trim?".

5. To exit the TC Setup mode, press the [EXIT/NO] key (or the [STOP] key).

• Editing the LTC start time

You can set the LTC start time at the "ABS 0" (beginning of an audio file) position to a desired value. The start time of time code recorded with the [TC READY] key set to ON can be edited later. If you record time code with the [TC READY] key set to OFF, "01H 00M 00S 00F 00SF" (default) is recorded as the start time.

Tips:

The unit records only the LTC start time. It generates and outputs time code in reference to the start time.

In a BWF file, the start time is stored in "Time Reference" in "Broadcast Audio Extension Chunk", while, in a SDII file, it is stored in "Time Stamp" in "Region List Resource Spec".

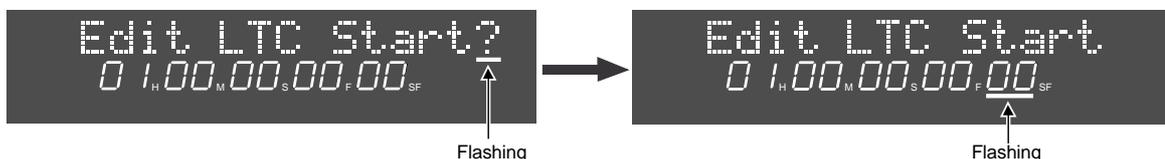
Therefore, if you want to use this LTC by the Digidesign Pro Tools, make the User Time Code valid after importing the audio file.

1. Use the jog dial (or [SKIP/CURSOR] [||<<| / |>>|] keys) to select "Edit LTC Start?".

The current LTC time is shown.

2. Press the [ENTER/YES] key.

The subframe value of the LTC starts flashing, showing that it now can be edited.



3. Use the jog dial or numeric keys to enter a desired value.

When using the jog dial to enter a value, you can move the (flashing) digit to be edited by using the [SKIP/CURSOR] [||<<| / |>>|] keys.

When using the numeric keys to enter a time value, each number is entered from the right digit, which moves left as additional digits are entered.

You can enter up to "23H 59M 59S **F" (in which ** is one smaller than the frame rate number).

4. After editing the start time, press the [ENTER/YES] key.

The start time is set and the display returns to show "Edit LTC Start?".

5. To exit the TC Setup mode, press the [EXIT/NO] key (or the [STOP] key).

To check the start time, press the [DISP TIME] key repeatedly until the display shows LTC.

• **Catch offset**

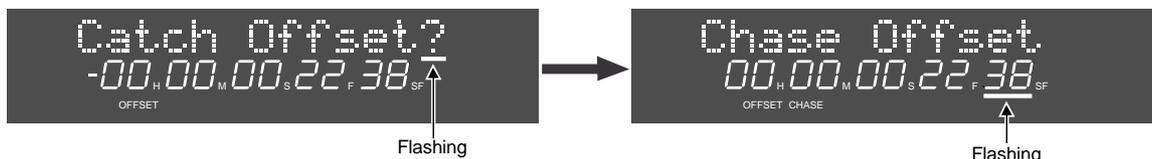
you can capture the current LTC and store it as the chase offset by the "Catch Offset" function. This function is available both during playback and while stopped.

1. Use the jog dial (or [SKIP/CURSOR] [[<<] / [>>]] keys) to select "Catch Offset?".

The current LTC is shown. (During playback, you can see LTC running.)

2. At the desired point, press the [ENTER/YES] key.

The currently displayed LTC value is set as the chase offset.



3. To exit the TC Setup mode, press the [EXIT/NO] key (or the [STOP] key).

• **Chase mode selection**

You can select the chase mode to the reference time code from among the following 3 modes.

Tips:

To make the unit chase to the reference time code, press the [CHASE] key to activate the chase mode. When activating the chase mode, the [CHASE] key flashes, as well as "CHASE" flashes in red on the display. When the unit locks to the reference time code, both the [CHASE] key and "CHASE" on the display are lit steadily.

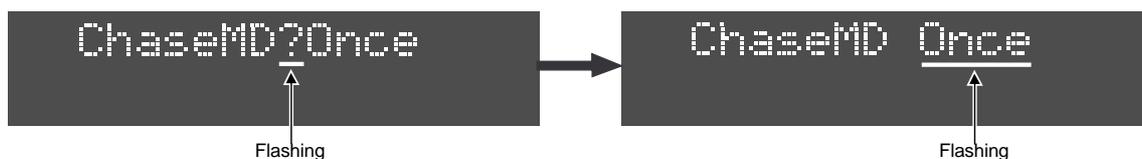
Once	In this mode, once the unit locks to the incoming time code after activating the chase mode (by pressing the [CHASE] key), it stops chasing and runs freely, ignoring the incoming time code. The unit does not rebase the time code even if it runs out of sync to the time code.
Continue	In this mode, once the unit locks to the incoming time code after activating the chase mode (by pressing the [CHASE] key), it stops chasing and runs freely, ignoring the incoming time code. The unit rebases the incoming time code if it runs out of sync to the time code.
Frame Sync	In this mode, after the unit locks to the incoming time code, it continues to monitor the incoming time code and control the speed to keep locking to the incoming time code by using the small amount of vari speed which is inaudible. The unit rebases the incoming time code if it runs out of sync to the time code.

1. Use the jog dial (or [SKIP/CURSOR] [[<<] / [>>]] keys) to select "Chase MD?".

The current chase mode is shown.

2. Press the [ENTER/YES] key.

The current chase mode starts flashing.



3. Use the jog dial to select a desired chase mode and press the [ENTER/YES] key.

The selected chase mode is set and the display returns to show "ChaseMD?".

4. To exit the TC Setup mode, press the [EXIT/NO] key (or the [STOP] key).

• Time code output on/off selection while paused

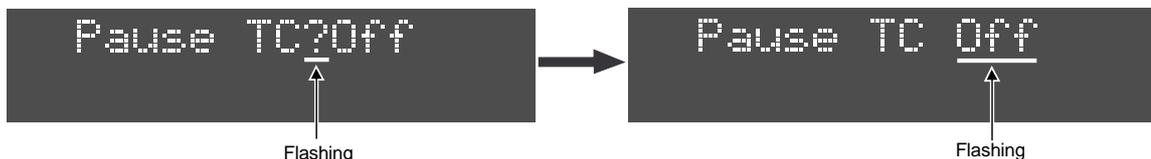
you can select whether to output time code from the [TIME CODE OUTPUT] connector while paused.

1. Use the jog dial (or [SKIP/CURSOR] [|<< | / |>> |] keys) to select "Pause TC?".

The current setting is shown (the default is "Off").

2. Press the [ENTER/YES] key.

The currently value flashes and you can now edit it.



3. Use the jog dial (or [SKIP/CURSOR] [|<< | / |>> |] keys) to select "On" or "Off" and press the [ENTER/YES] key.

Off (default setting)	Time code is not output from the [TIME CODE OUTPUT] connector while paused.
On	Time code is output from the [TIME CODE OUTPUT] connector while paused.

4. To exit the TC Setup mode, press the [EXIT/NO] key (or the [STOP] key).

• TC user bit output selection

This menu allows to select the TIME CODE UBIT information attached to the time code output from the DV40.

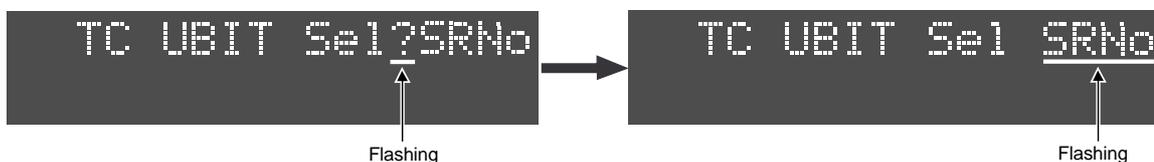
The date information on "MDYf" and "DMYf" is taken out from the internal clock on DV40 and is based on the time when the file is created. "SRNo" information is derived from the 3-digit REEL NUMBER attached to the VOLUME LABEL set in the "Edit Volume Lbl?" Utility menu or SCENE/REEL NUMBER set in the "Set SCENE & REEL?" menu.

1. Use the jog dial (or [SKIP/CURSOR] [|<< | / |>> |] keys) to select "TC UBIT Sel?".

The current setting is shown (the default is "SRNo").

2. Press the [ENTER/YES] key.

The currently value flashes and you can now edit it.



3. Use the jog dial (or [SKIP/CURSOR] [|<< | / |>> |] keys) to select the desired option and press the [ENTER/YES] key.

You can select from among the following options.

SRNo (default setting)	BG_76543: SSSSS/BG_210: RRR
MDYf (for U.S.A.)	BG_76: MM (month)/BG_54: DD (day)/BG_32: YY (year)/BG_10: xx
DMYf (for European countries)	BG_76: DD (day)/BG_54: MM (month)/BG_32: YY (year)/BG_10: xx
SSSSS : SCENE No. *SSSSS = sssss (Volume Label sssss) + File No. RRR : REEL No. (Tape No.) xx : File No. (Hexadecimal, 01 ~ c7)	

- **Selecting “SRNo” as TC UBIT information**

If “SRNo” is selected, the following 8-digit TC UBIT information derived from the 3-digit REEL NUMBER attached to the VOLUME LABEL set in the “Edit Volume Lbl?” Utility menu or the SCENE/REEL NUMBER set in the “Set SCENE & REEL?” Utility menu will be output.

SSSSRRR SSSS: SCENE No. derived from “Set SCENE & REEL?” Utility menu + File No.
 RRR: 3-digit REEL No. derived from “Edit Volume Lbl?” Utility menu or “Set
 SCENE & REEL?” Utility menu.

<Example-1>

VOLUME LABEL: DV40-002
 SCENE/REEL No.: 00000 / 002
 File No.: 001



TC UBIT Information: 00001002

<Example-2>

VOLUME LABEL: DV40-005
 SCENE/REEL No.: 00006 / 005
 File No.: 002



TC UBIT Information: 00008005

- **Selecting “MDYf” as TC UBIT information**

If “MDYf” is selected, the following 8-digit TC UBIT information based on the date when the file is originally created will be output.

MMDDYYff MM : Month by 2-digit (01~12)
 DD : Day by 2-digit (01~31)
 YY : Year by 2-digit (00~99)
 ff : File No. by 2-digit in hexadecimal (01~C7)

<Example-1>

File No.: 001
 Created date: July 4, 2002



TC UBIT Information: 07040201

<Example-2>

File No.: 184
 Created date: December 23, 2005



TC UBIT Information: 122305B8

- **Selecting “DMYf” as TC UBIT information**

If “DMYf” is selected, the following 8-digit TC UBIT information based on the date when the file is originally created will be output.

DDMMYYff DD : Day by 2-digit (01~31)
 MM : Month by 2-digit (01~12)
 YY : Year by 2-digit (00~99)
 ff : File No. by 2-digit in hexadecimal (01~C7)

<Example-1>

File No.: 001
 Created date: 6 June, 2001



TC UBIT Information: 06060101

<Example-2>

File No.: 169
 Created date: 15 November, 2007



TC UBIT Information: 151107A9

Chapter 6

Storing time data

This chapter explains how to store time data to location memories for the track editing or locate functions.

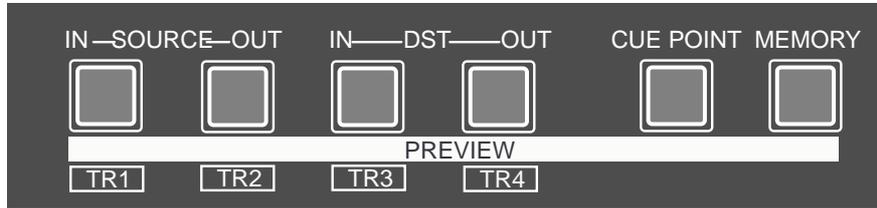


Location memory keys

6 location memory keys are used to store location data for the track editing (for copy, paste, insert, erase, etc.) and locate functions.

The location memory keys include four "edit point keys" and two "locate point keys".

The table below shows their names and usage of the corresponding location memories.



[SOURCE IN] key	<ul style="list-style-type: none"> • Start point of a copy clip for copy operation • Start point of a copy clip for insert operation • Start point of a erase clip for erase operation • Start point of a cut clip for cut operation
[SOURCE OUT] key	<ul style="list-style-type: none"> • End point of a copy clip for copy operation • End point of a copy clip for insert operation • End point of a erase clip for erase operation • End point of a cut clip for cut operation
[DEST IN] key	<ul style="list-style-type: none"> • Paste start point for paste operation • Insert start point for insert operation
[DEST OUT] key	<ul style="list-style-type: none"> • DEST OUT memory for Auto Edit operation when controlling the unit via the RS422 P2 protocol.
[CUE POINT] key	<ul style="list-style-type: none"> • CUE points 01 through 99 for location
[MEMORY] key	<ul style="list-style-type: none"> • MEMORY points 00 through 99 for location (MEMORY points 01 through 03 are assigned for the specific time data.)

Tips:

The CUE points can be used only for the current audio file, while the edit points and MEMORY points are common to all audio files.

When turning off the power, the CUE and MEMORY point data do not disappear, while the edit point data are cleared and reset to the initial value (00H 00M 00S 00F 00SF).

Tips:

See "**Chapter 7: Locate functions**" for details about comprehensive locate functions using location memories.

Storing a time to an edit point memory

The following describes how to store a time to an edit point memory required for track editing. There are two methods for enter a time; "on the fly" and "numerical entry".

<Notes>

- If you want to store a time based on LTC instead of ABS time, select the displayed time to LTC using the [DISP TIME] key in advance.
- Edit point memories can be used by all audio files, however, turning off the power clears all the memories and resets them to the initial value (00H 00M 00S 00F 00SF).

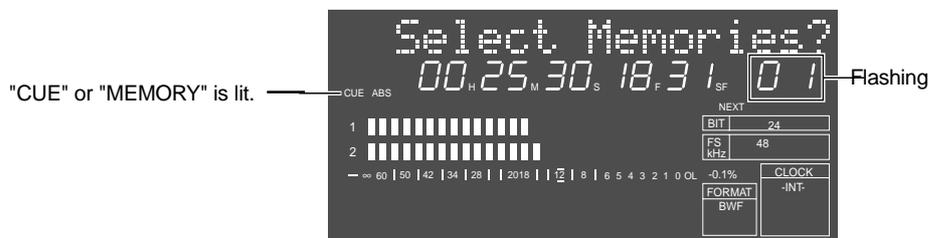
• Capturing a time "on the fly"

During playback, you can capture a time at the desired point "on the fly" and store it to an edit point memory.

1. Press the [PLAY] key to start playback.

2. Press the [STORE] key at the point you want to capture the time.

The time data at the point when pressing the key is held and the display shows something like the example below. To store the time to any of the edit point memories, ignore the display and go to step 3.



Tips:

The display example shown above is used to select a memory when storing the time to a locate point memory, which will be described later. To store the time to any of the edit point memories, ignore this display and go to step 3.

Tips:

In the above step, if you press the [STORE] key when the [SHIFT] indicator is lit, the current time is held and the subframe digit flashes. In this condition, you can edit the value before storing the data. Use the [SKIP/CURSOR] [◀◀] [▶▶] keys to move the flashing digit and use the jog dial to enter the value. (Or you can directly enter the time data using the numeric keys.)

To store edited data, press the [STORE] key again, followed by a desired edit point key.



3. Press a desired edit point key ([SOURCE IN], [SOURCE OUT], [DEST IN] or [DEST OUT]).

The time data held is stored to the appropriate edit point memory. The display returns to the previous screen and the unit resumes playback.

<Note>

You must always set an IN point earlier than the corresponding OUT point. (i.e. SOURCE IN < SOURCE OUT, DEST IN < DEST OUT)

4. To store another edit point time, repeat steps 2 and 3 above.

5. After completing data entry, press the [STOP] key to stop playback.

Tips:

To check the edit point time stored, press the desired edit point key while stopped. The time data is shown on the display.

The edit point memories are used for the audio data editing (such as copy, paste, insert, erase and cut) and the direct locate function. See "Chapter 10: Editing track data" for details.

• **Storing a time to an edit point using the numeric keys**

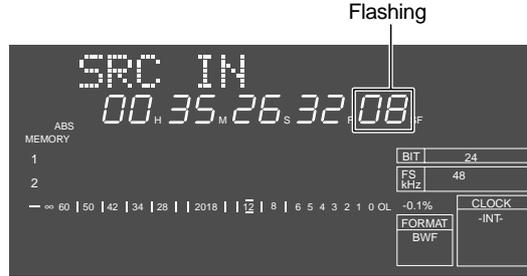
You can recall and edit an edit point time and store the edited time.

1. While stopped, press a desired edit point key.

The display shows the appropriate edit point time.

You can now edit the time.

The following example shows the display after pressing the [SOURCE IN] key, in which the subframe value is flashing, showing that it can be edited.



Tips:

If you press an edit point key whose corresponding memory does not hold data, "00H 00M 00S 00SF" is shown. You can enter the desired time from this condition and store it to the edit point memory.

2. Enter the desired time.

There are two methods for time entry as below.

• **Use the |<</>>| keys to move the flashing (edit) point, and use the jog dial to enter a value.**

If the value of the edit point overruns or underruns, the value of the left digit increments or decrements respectively.

• **Use the numeric keys to enter a time directly.**

Each number is entered from the right digit, which moves left as additional digits are entered.

For example, to enter "00H 12M 15S 00F 00SF", press 0 -> 0 -> 1 -> 2 -> 1 -> 5 -> 0 -> 0 -> 0 -> 0.

<Note>

You must always set an IN point earlier than the corresponding OUT point. (i.e. SOURCE IN < SOURCE OUT, DEST IN < DEST OUT)

Tips:

If you enter an inappropriate value to one of these digits, the unit automatically calculates and set the proper time.

For example, if you enter "00H 12M 75S 00F 00SF", the stored time value is "00H 13M 15S 00S 00SF".

3. Press the [STORE] key.

"Select Memories?" is shown on the display, as in step 2 on the previous page.

Ignore the display and go to the next step.

4. Press a desired edit point key.

The edited time data is stored to the appropriate memory.

Storing a time to a locate point memory (CUE/MEMORY)

Using the [CUE POINT] or [MEMORY] key, you can store a desired point time to a locate point memory, and use it to locate there later. You can also give desired names to them or clear the data.

In the same way as with edit point memories, there are two methods for storing a time data to a locate point memory; "on the fly" and "numerical entry".

<Notes>

- If you want to store a locate point based on LTC instead of ABS time, select the displayed time to LTC using the [DISP TIME] key in advance.
- 99 CUE point memories (01 through 99) are available in the CUE bank. The CUE point memories can be used only for the current audio file.
- 99 MEMORY points (01 through 99) are available in the MEMORY bank, however, you can freely store a desired time to MEMORY points 04 through 99. MEMORY points 01 through 03 are reserved for the specific points as below and data are automatically stored.

MEMORY 01: Last Play Memory

The last playback start time is automatically stored. This memory is overwritten each time playback starts.

MEMORY 02: Last Record In

The last recording start time is automatically stored. This memory is overwritten each time recording starts.

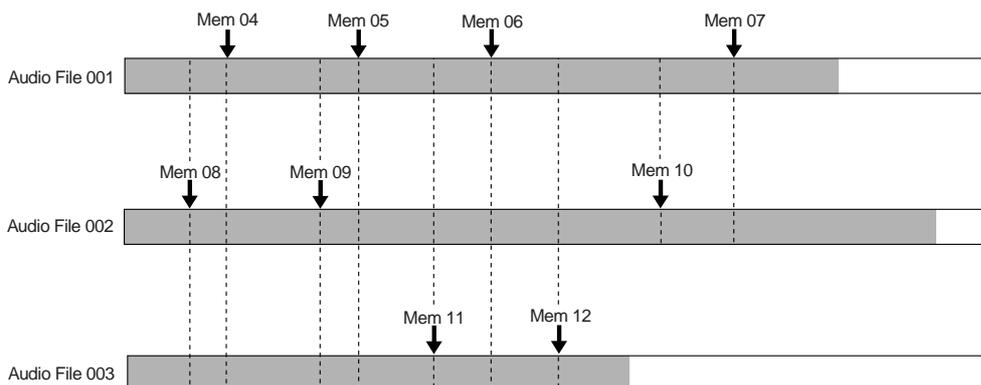
MEMORY 03: Last Record Out

The last recording end time is automatically stored. This memory is overwritten each time recording ends.

The MEMORY point data are stored to the flash ROM in the unit, therefore, you can use the MEMORY data with any audio files on any disks.

Tips:

If you change the current audio file to another one and store a time to a new MEMORY point, the MEMORY point numbers used in the previous file(s) cannot be used, as shown below. However, All the MEMORY points can be used with any audio files.



In the diagram above, MEMORY points 04 through 07 were stored when Audio File 001 was selected. However, you can use MEMORY points 04 through 11 with Audio File 001.

However, only the MEMORY points within the recorded area are effective, so MEMORY points 07 and 10 are not effective with Audio File 003.

If you select Audio File 003 and check MEMORY 07 or 10, "--H--M--S--F--SF" is shown.

MEMORY point data are not cleared when reformatting a disk. To clear unnecessary MEMORY point, see "Clearing a CUE or MEMORY point".

As shown in the above drawings, if you have stored MEMORY point data on more than one audio file, the MEMORY points are not always numbered in order of ABS time.

In the above example, the MEMORY points in order of ABS time are; MEMORY 08 -> 04 -> 09 -> 05 -> 11 -> 06 -> 12 -> 10 -> 07 .

• **Storing a time to a locate point memory (CUE or MEMORY point memory) "on the fly"**

During playback, you can store a desired time to a locate point memory (CUE or MEMORY point memory) "on the fly".

1. Press the [PLAY] key to start playback.

2. Press the [STORE] key at the point you want to store.

The time data at the point when pressing the key is held and the display shows "Select Memories?" with a flashing point number. The first time you press the [STORE] key after turning on the power, "CUE" is lit and "01" flashes, showing that the time data is going to be stored to CUE "01".

If one or more CUE points already hold data, one greater than the highest CUE point number which holds data is shown.



Tips: Bank selection

When storing time data to a locate point memory "on the fly" by pressing the [STORE] key, the destination bank (the CUE or MEMORY bank) is initially selected to the one previously used for storing time data. The first time you press the [STORE] key after turning on the power, the CUE bank is selected (shown by "CUE" lit on the display).

If you store time data to a locate point memory in the currently selected bank, go to step 3-1.

If you store time data to a locate point memory in the bank which is not currently selected, go to step 3-2. (Pressing the appropriate locate point key for the first time switches the bank.)



3-1. To store the time data to a locate point memory in the current bank, press the appropriate locate point key ([MEMORY] or [CUE POINT] key).

The time data is stored to the flashing locate point memory in the current bank, and the display returns to the previous screen.

Tips:

You can select the locate point memory number using the jog dial while the memory number is flashing.

3-2. To store the time data to a locate point memory in the bank which is not currently selected, press the appropriate locate point key ([MEMORY] or [CUE POINT] key) twice.

Pressing the key for the first time switches the current bank. Pressing the key again stores the time data to the flashing locate point memory in the newly selected bank, and the display returns to the previous screen.

Tips:

If you store another time data to a locate point memory in the newly selected bank, you do not need to press the appropriate key twice.

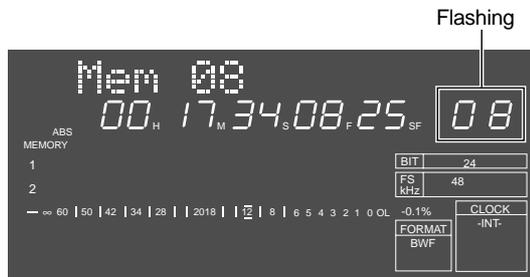
• **Storing a time to a locate point using the numeric keys**

You can recall and edit a locate point (CUE or MEMORY point) time and store the edited time.

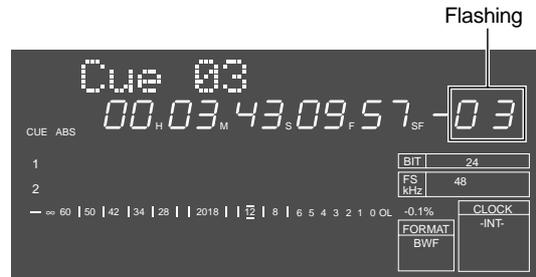
1. While stopped, press a desired locate point key ([CUE POINT] or [MEMORY] key).

The display shows the locate bank and memory number (e.g. "Cue 03"), and a locate point time with flashing memory number.

When pressing a locate point key ([CUE POINT] or [MEMORY] key) for the first time after turning on the power, locate point memory "01" of the appropriate locate bank is shown.



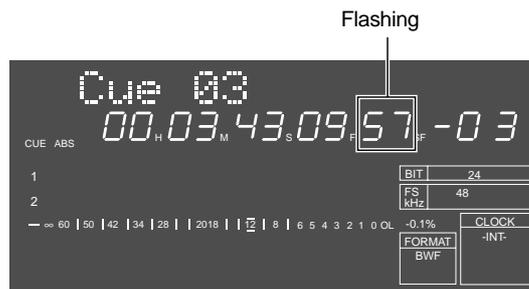
Example after pressing the [MEMORY] key



Example after pressing the [CUE POINT] key

2. Use the jog dial (or the numeric keys) to select a desired locate point memory number, and press a desired locate point key ([CUE POINT] or [MEMORY] key) again.

The subframe value of the selected memory data starts flashing, showing that it can be edited. There are two methods for time entry as described below.



<Note>

If you select a locate point memory number that does not hold time data, "--H--M--S--F--SF" is shown and you cannot edit the time.

• **Use the [SKIP/CURSOR] |<</>| keys to move the flashing (edit) point, and use the jog dial to enter a value.**

If the value of the edit point overruns or underruns, the value of the left digit increments or decrements respectively.

• **Use the numeric keys to enter a time directly.**

Each number is entered from the right digit, which moves left as additional digits are entered. For example, to enter "00H 12M 15S 00F 00SF", press 0 -> 0 -> 1 -> 2 -> 1 -> 5 -> 0 -> 0 -> 0 -> 0.

3. After completing time entry, press the [ENTER/YES] key.

The edited time data is stored to the selected locate point memory and the display returns to the Normal screen.

Editing a name of CUE or MEMORY point

When storing time data to a locate point memory, the tentative name, such as "Cue 01" and "Mem 05", is given to the memory. You can edit the name later.

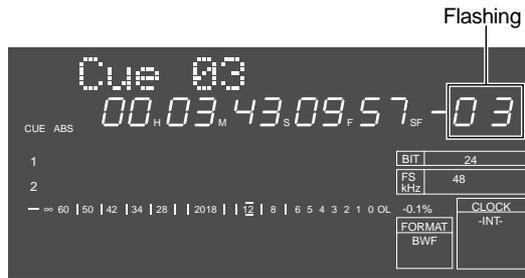
<Note>

You cannot edit/change the names for MEMORY 01 (Last Play), 02 (Last Record In) and 03 (Last Record Out).

1. While stopped, press a desired locate point key ([CUE POINT] or [MEMORY] key).

The display shows the locate bank and memory number (e.g. "Cue 03"), and a locate point time with flashing memory number.

The following is a display example when pressing the [CUE POINT] key.



2. Use the jog dial (or the numeric keys) to select a locate point memory number whose name you want to edit, and press a desired locate point key ([CUE POINT] or [MEMORY] key) twice.

Pressing the key twice moves the flashing (edit) point to the left-hand character of the name, showing that it can be edited.



3. Press the [MARGIN RESET/CLR] key repeatedly until all characters are deleted.

Each press of the [MARGIN RESET/CLR] key deletes a left-hand character and moves the character string to the left. When all characters are deleted, "__" flashes.



4. Use the jog dial or the numeric keys to enter a desired character at the flashing point.

When using the jog dial to enter a character, you can move the flashing point using the [SKIP/CURSORS] |<<| >>| keys. When using the numeric keys, each entry moves the flashing point to the right.

5. After completing the name entry, press the [ENTER/YES] key.

The new name is stored and the display returns to the Normal screen.

Clearing a CUE or MEMORY point memory

You can clear an unnecessary locate point memory (CUE or MEMORY).

1. While stopped, press a desired locate point key ([CUE POINT] or [MEMORY] key).

The display shows the locate bank and memory number (e.g. "Cue 03"), and a locate point time with flashing memory number.

The following is a display example when pressing the [CUE POINT] key.



2. Use the jog dial (or the numeric keys) to select a locate point memory you want to clear, and press a desired locate point key ([CUE POINT] or [MEMORY] key) three times.

"CUE Delete" is shown with flashing "Sure?".



3. Press the [ENTER/YES] key.

The selected locate point memory is cleared and the display returns to the Normal screen.

Tips:

After a memory is cleared, "--H --M --S --F --SF" (showing that the memory is vacant) is shown on the display.

When locate point memory numbers are not continuous after some are cleared, or when memories are not numbered in order of ABS time, you can renumber them continuously in order of ABS time.

Chapter 7

Locate functions

This chapter describes various locate functions including direct location to the beginning or end of an audio file, location to a locate or edit point, and skip location between locate points or audio files.



A variety of locate functions

The following locate functions are available.

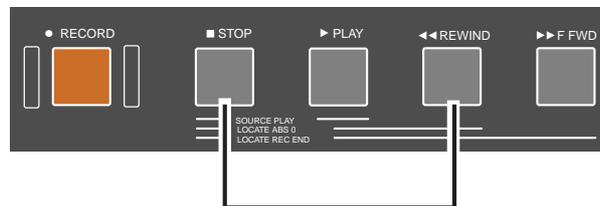
1. Location to the beginning (ABS0) of the current audio file
2. Location to the end (REC END) of the current audio file
3. Location to the last playback start position
4. Location to the last recording start position
5. Location to the last recording end position
6. Location to the point where the recorder located last time
7. Location to an audio edit point
8. Location to a CUE point
9. Location to a MEMORY point
10. Location to the next or previous CUE/MEMORY point using the skip mode

• Location to the beginning (ABS0) of an audio file

Regardless of the current position, you can locate to the beginning (ABS0) of the current audio file.

1. **When the recorder is stopped, press the [REWIND] key while holding down the [STOP] key.**

The recorder locates to the beginning (ABS0) of the current audio file and the display shows ABS 00H: 00M: 00S: 00F".

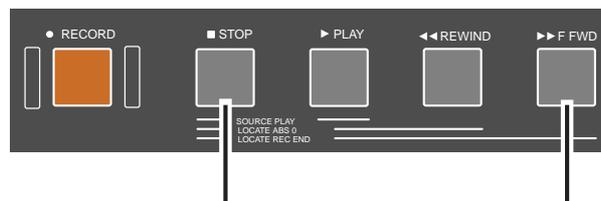


• Location to the end (REC END) of the current audio file

Regardless of the current position, you can locate to the end (REC END) of the current audio file.

1. **When the recorder is stopped, press the [E FWD] key while holding down the [STOP] key.**

The recorder locates to the end (REC END) of the current audio file and the display shows the appropriate time.



<Notes>

- With a "Tape mode" audio file, the recorder locates to the end of the audio file. It is equivalent to winding an analog tape to the end. Therefore, regardless of whether recording is made or not, you can check the maximum recording time of the "Tape mode" audio file.
- To locate to the record end point of a "Tape mode" audio file, use the locate function using the [MEMORY] key described later.

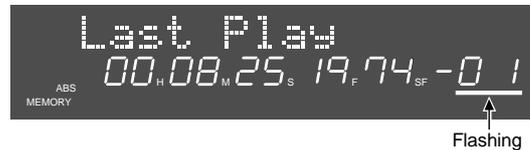
• Location to the last playback start position

You can locate to the point between ABS 0 and REC END where playback started last time.

1. When the recorder is stopped, press the [MEMORY] key.

The display shows the screen for recalling a locate point memory.

The first time you press the [MEMORY] key after turning on the power, "Last Play" is shown with flashing "01". This shows that locate memory "01" of the MEMORY bank holds time data of the point where playback started last time.



2. Press the [LOCATE] key.

The recorder locates to the **MEMORY "01"** point and the display returns to the Normal screen. Each time the recorder is played back, the **MEMORY "01"** point is overwritten.

• Location to the last recording start position

You can locate to the point between ABS 0 and REC END where recording started last time.

1. When the recorder is stopped, press the [MEMORY] key and use the jog dial to select "02".

When "02" is selected, "Last Record In" is shown, as **MEMORY "02"** holds time data of the point where recording started last time.



2. Press the [LOCATE] key.

The recorder locates to the **MEMORY "02"** point and the display returns to the Normal screen. Each time you make recording, the **MEMORY "02"** point is overwritten.

• Location to the last recording end position

You can locate to the point between ABS 0 and REC END where recording ended last time.

1. When the recorder is stopped, press the [MEMORY] key and use the jog dial to select "03".

When "03" is selected, "Last Record Out" is shown, as **MEMORY "03"** holds time data of the point where recording ended last time.



2. Press the [LOCATE] key.

The recorder locates to the **MEMORY "03"** point and the display returns to the Normal screen. Each time you make recording, the **MEMORY "03"** point is overwritten.

<Note>

The recorder does not always locate to the REC END of an audio file when selecting MEMORY "03". If you started insert recording and stopped recording before the REC END point last time, the recorder locates to the point where recording ended last time, instead of the REC END point.

• **Location to the point where the recorder located last time**

You can locate to the point between ABS 0 and REC END where the recorder located last time.

1. **When the recorder is stopped, press only the [LOCATE] key.**

The recorder locates to the point where the recorder located last time.

Note that the [LOCATE] key always holds the time data of the point where the recorder located last time.

• **Location to an audio edit point**

You can locate to an edit point by pressing the corresponding edit point key ([SOURCE IN], [SOURCE OUT], [DEST IN], or [DEST OUT] key).

1. **When the recorder is stopped, press a desired edit point key.**

The display shows the edit point time assigned to the key you pressed.

The display below shows an example when pressing the [SOURCE OUT] key.



2. **Press the [LOCATE] key.**

The recorder locates to the edit point and the display returns to the Normal screen.

Tips:

You can edit the time shown on the display after carrying out step 1 above.

By pressing the [LOCATE] key after editing the time, you can locate to the edited time. See "Chapter 6: Storing time data" for details about how to edit time data.

• **Location to a CUE point**

By specifying a desired CUE point memory (among 01 through 99), you can locate to the point.

1. **When the recorder is stopped, press the [CUE POINT] key.**

The display shows a CUE point time with the flashing point number.



2. **Use the jog dial to select a desired CUE point memory (between "01" and "99") and press the [LOCATE] key.**

The recorder locates to the CUE point and the display returns to the Normal screen.

If you select a CUE point memory which does not hold time data, "--H--M--S--F--SF" is shown on the display.

Tips:

You can edit the time shown on the display after carrying out step 1 above.

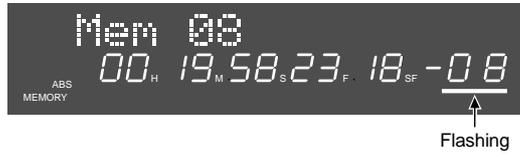
By pressing the [LOCATE] key after editing the time, you can locate to the edited time. See "Chapter 6: Storing time data" for details about how to edit time data.

• **Location to a MEMORY point**

By specifying a desired MEMORY point memory (among 04 through 99), you can locate to the point.

1. **When the recorder is stopped, press the [MEMORY] key.**

The display shows a MEMORY point time with the flashing point number.



2. **Use the jog dial to select a desired MEMORY point number (between "04" and "99") and press the [LOCATE] key.**

The recorder locates to the MEMORY point and the display returns to the Normal screen.

If you select a MEMORY point which does not hold time data, "--H--M--S--F--SF" is shown on the display.

Tips:

You can edit the time shown on the display after carrying out step 1 above. By pressing the [LOCATE] key after editing the time, you can locate to the edited time. See "Chapter 6: Storing time data" for details about how to edit time data.

• **Location to the next or previous CUE/MEMORY point using the skip mode (Skip locate function)**

By setting the "Skip Mode?" menu in the Setup mode appropriately, you can locate to a CUE or MEMORY point quickly.

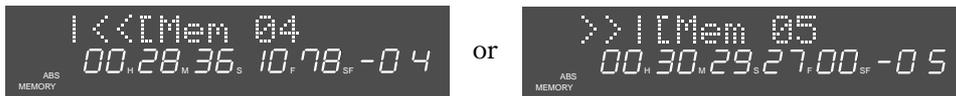
1. **Set the "Skip Mode?" menu in the Setup mode to "CUE" or "MEM".**

The "Skip Mode?" menu is initially set to "FILE". See "Chapter 15: Setup mode" for details.

2. **Press [SKIP/CURSOR] I<< or >>I key.**

Each time you press the key, the display shows something like the examples below and the recorder locates the next or previous locate point (CUE or MEMORY point depending on the selection in step 1).

- **If the skip mode is set to "MEM":**



- **If the skip mode is set to "CUE":**



<Notes for location to a MEMORY point>

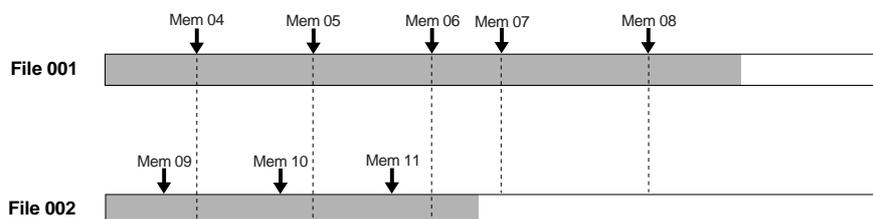
You can locate (including the skip locate function) to a desired time assigned to any of MEMORY points 04 through 99.

MEMORY points holding time data can be used in common by all audio files, however, you cannot locate to a MEMORY point which holds a time greater than the REC END time (except for "Tape mode" files).

If you are going to locate to a such point, the display shows "Out of Zone!" and the operation is ignored.

In the following example, if file 002 is currently selected, you cannot locate to MEMORY 07 or 08.

In other words, you can locate to MEMORY points 04 through 06 and 09 through 11. If file 002 is currently selected, you can locate all MEMORY points 04 through 11).



Chapter 8

Preview function

This chapter describes the fade-in/fade-out preview function at the edit or locate points assigned to the location memory keys.



Preview function

The preview (point rehearsal) function allows you to preview (monitor) an edit or locate point assigned to the [SOURCE IN], [SOURCE OUT], [DEST IN], [DEST OUT], [CUE POINT] or [MEMORY] key.

When previewing an edit IN or locate point, you can monitor audio faded in from the point (fade-in preview). When previewing an edit OUT point, you can monitor audio faded out to the point (fade-out preview).

You can not only preview (monitor) audio from or to a point but also trim the point.

• Preview at an edit point

The following procedure is assumed that the edit point you want to preview is stored. At the SOURCE IN or DEST IN point, you can preview audio faded in.

At the SOURCE OUT or DEST OUT point, you can hear audio faded out to the point.

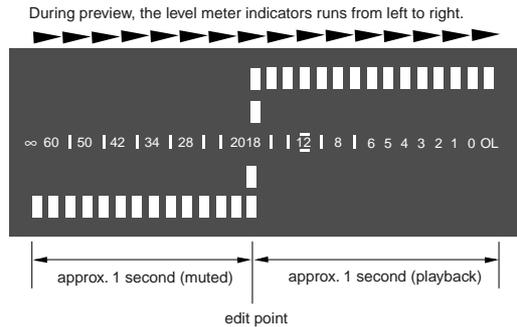
1. Press the [SHIFT] key to turn on the indicator.

2. Press a desired edit point key.

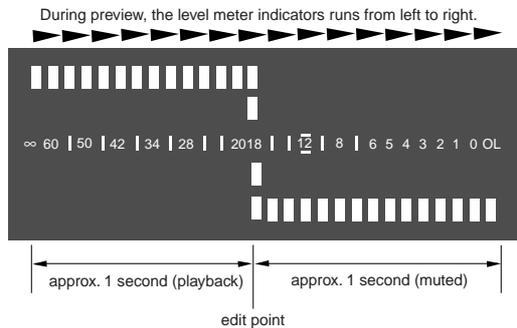
The recorder repeatedly previews the edit point assigned to the key pressed until stopped.

During preview, you can monitor audio via the monitor speaker or headphones, while the level meter indicators runs from left to right.

<Display example of the fade-in preview at the SOURCE IN point>



<Display example of the fade-out preview at the SOURCE OUT point>



<Note>

At the edit point where no time data is stored (i.e. "00H 00M 00S 00F 00SF", the initial setting), the fade-out preview cannot be performed. If you press the [SOURCE OUT] or [DEST OUT] key in step 2 above in such a condition, "Void!" appears on the display and the operation is ignored.

3. To stop preview, press the [STOP] (or [EXIT/NO]) key.

The preview function is canceled and the display returns to the previous screen.

• **Preview at a locate point**

You can preview audio faded in from a desired locate point (selected from among CUE points 01 through 99 and MEMORY point 01 through 99). The following procedure is assumed that the locate point you want to preview is stored.

<Note>
 You cannot preview a locate point (CUE or MEMORY point) with a "Tape mode" audio file.

1. Press the [CUE POINT] or [MEMORY] key.

The display shows a locate point with flashing point number.

Screen example when pressing the [CUE POINT] key.



Screen example when pressing the [MEMORY] key.



2. Use the jog dial to select a desired point number you want to preview.

3. Press the [SHIFT] key to turn on the indicator and press the [CUE POINT] or [MEMORY] key again.

The display shows something like below and the unit performs the fade-in preview at the selected point. During preview, the level meter indicators runs from left to right.

<Display example of preview at the CUE point>



<Display example of preview at the MEMORY point>



4. To stop preview, press the [STOP] (or [EXIT/NO]) key.

The preview function is canceled and the display returns to the previous screen.

• Trimming while previewing audio

You can trim time data using the jog dial while previewing audio, allowing the fine adjustment of an edit or locate point.

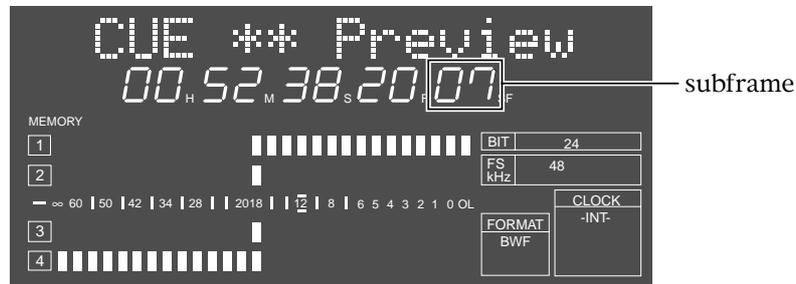
<Note>

- When trimming time data while previewing, the trimmed data is reflected from the next preview. Therefore, you can check the result in the next preview.
- While trimming time data, if the point moves out of the preview playback area, "Void Data!" appears on the display. When it appears, you cannot continue preview, therefore, move back the point to the playback area.

1. Start preview by following the procedure shown in the previous page.

2. Use the jog dial to trim the point during preview,

You can trim the point in subframe unit.



3. After trimming, press the [ENTER/YES] key.

The trimmed time data is stored to the point and the unit exits the preview mode.

Chapter 9

Audio file management

This chapter describes the management of audio files.



Creating a new audio file

Regardless of whether a disk is formatted in the Normal or Tape mode, you can newly create only a "Normal mode" audio file by using the file select function.

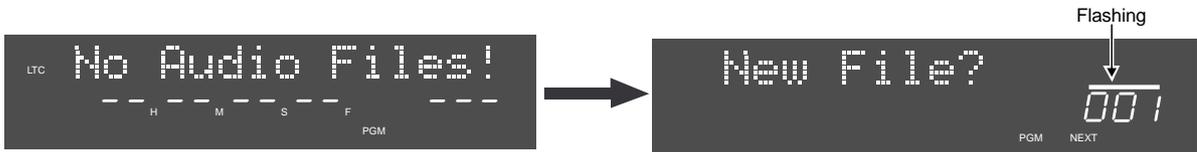
<Note>

To record to an audio file created by the file select function, use the INSERT mode.

• **Creating a new file on a disk just after formatted in the Normal mode**

In the following procedure, we assume that a disk just after formatted is loaded and the display shows "No Audio Files!".

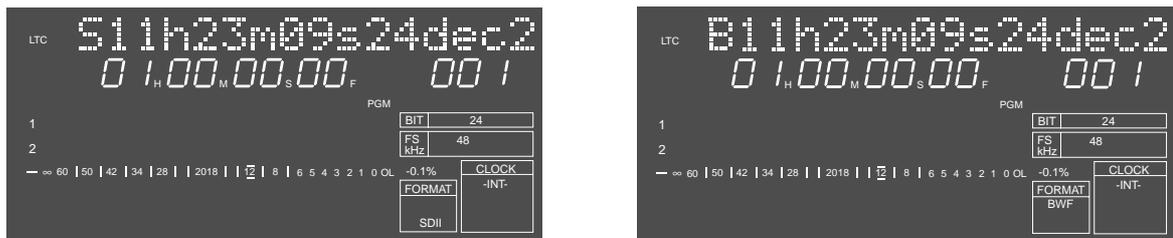
1. Select a desired audio file format between "BWF" and "SDII" using the [AUDIO FILE] switch.
2. Select a desired track mode using the [TR MODE] switch.
3. Select a desired sampling frequency/bit length combination using the [SAMPLING FREQ] switch.
4. Press the [FILE SEL] key.
"New File?" appears with flashing "001", showing that audio file "001" is newly created.



5. Press the [ENTER/YES] key.

Audio file "001" is created and the display shows the tentative file name, as well as the beginning of the file. The tentative name begins by "S" or "B" which shows the file format ("S" for "SDII" and "B" for "BWF") selected by the [AUDIO FILE] switch in step 1 above, followed by the time and date when the file is created. The display example below left shows that an SDII file is created at 11h: 23m: 09s on the 24th of December. A tentative name can be edited. See "Editing a file name" described later.

Also "FORMAT", "FS kHz" and "BIT" information according to the switch settings in steps 1 through 3 above are shown appropriately on the display.

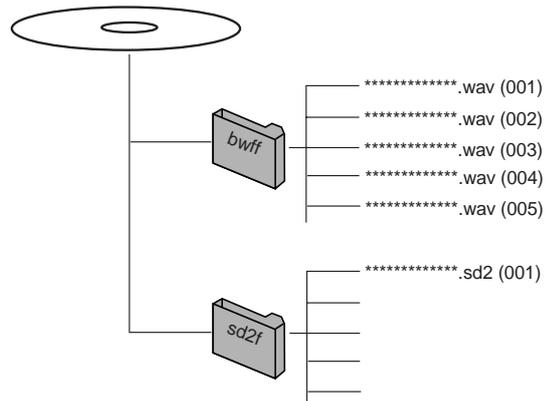


If you create another audio file, carry out steps 1 through 4 above and then use the jog dial to show "New File?", followed by pressing the [ENTER/YES] key.

Tips:

File numbers are managed separately by the file format. One higher than the number of existing files of the same format is assigned to the file number of a newly created audio file.

For example, if five "BWF" and a single "SDII" files are created on a disk, the BWF ("001" through "005") are stored in the "bwff" directory, while the SDII file ("001") is stored in the "sd2f" directory.



• **Creating a new file on a disk just after formatted in the Tape mode**

You can create more than one "Normal mode" audio file (of the "BWF" or "SDII" format) on a disk formatted in the Tape mode.

In the following procedure, we assume that a disk just after formatted in the Tape mode is loaded and a "Tape mode" audio file of the "BWF" format is selected.

<Note>

"Normal mode" audio files are created in the remaining area of a disk after two "Tape mode" audio files (occupying approximately 2 GB per each file) are created when the disk is formatted in the Tape mode. Therefore, approximately 0.7 GB space can be used by "Normal mode" audio files.

1. Select a desired audio file format between "BWF" and "SDII" using the [AUDIO FILE] switch.
2. Select a desired track mode using the [TR MODE] switch.
3. Select a desired sampling frequency/bit length combination using the [SAMPLING FREQ] switch.
4. Press the [FILE SEL] key.

"New File?" appears with flashing "001" or "003", depending on the [AUDIO FILE] switch selection in step 1 above.

If you select "SDII", "001" flashes because this will be the first "SDII" file in the "sd2f" directory.

If you select "BWF", "003" flashes because this will be the third "BWF" file in the "bwff" directory (two "Tape mode" BWF files are already created).



5. Press the [ENTER/YES] key.

A "Normal mode" audio file is created and the display shows the tentative file name, as well as the "ABS 0" time (the beginning of the file). The tentative name begins by "S" or "B" which shows the file format ("S" for "SDII" and "B" for "BWF") selected by the [AUDIO FILE] switch in step 1 above, followed by the time and date when the file is created.

A tentative name can be edited. See "Editing a file name" described later.

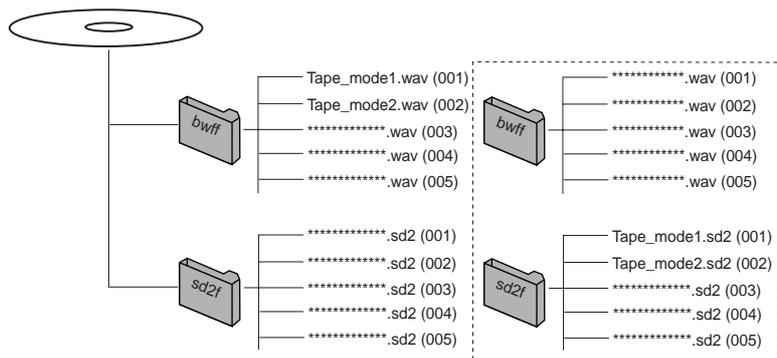
If you create another audio file, regardless of whether the currently selected audio file is "Tape mode" or "Normal mode", carry out steps 1 through 4 above and then use the jog dial to show "New File?", followed by pressing the [ENTER/YES] key.

Tips:

The file number of a newly created "Normal mode" audio file depends on the format of the two "Tape mode" audio files.

If you create a "Normal mode" audio file of the same format as the "Tape mode" audio files, "003" is assigned to the file number.

If you create a "Normal mode" audio file of the different format from the "Tape mode" audio files, "001" is assigned to the file number.



Selecting an audio file

You can select an audio file by using the file select or skip function.

Tips:

By using the "File Sort?" menu in the Setup mode, you can sort audio files by name or date, allowing file selection easier. See "Chapter 15: Setup mode" for details.

• Selecting a file using the file select function

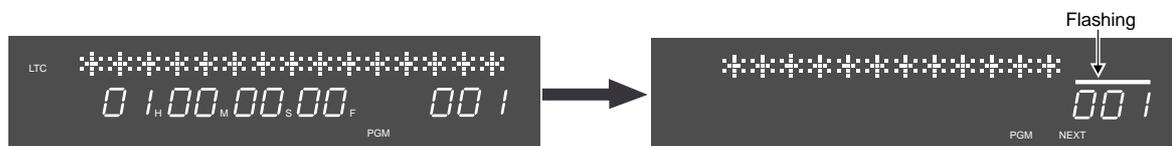
The following assumes that three "BWF" and two "SDII" files are created on a disk and the "BWF 001" file is currently selected.

1. Select a desired audio file format between "BWF" and "SDII" using the [AUDIO FILE] switch.

If you select "SDII", "SDII" is lit instead of "BWF" in the FORMAT information area on the display.

2. Press the [FILE SEL] key.

"001", the audio file number of the selected file format in step 1, flashes on the display, showing that a file number can be selected.



3. Use the jog dial or [SKIP/CURSOR] [[<<] / [>>]] keys to select a desired file number, and press the [ENTER/YES] key.

The display shows the beginning of the selected audio file.

Tips:

By pressing the [FILE SEL] key after pressing the [SHIFT] key (to turn on the indicator), you can select audio files from among both the file directories ("bwff" and "sd2f").

• Selecting a file using the skip function

You can select an audio file using the [SKIP/CURSOR] ([<<] / [>>]) keys by setting the "Skip Mode?" menu in the Setup mode to "File". "File" is the initial setting, therefore, as long as you keep this setting, you can carry out the file selection using the skip function.

If the "Skip Mode?" menu is set to "CUE" or "MEM", change the option to "File".

See "Chapter 15: Setup mode" for details about how to set the "Skip Mode?" menu.

<Note>

Using the skip function, you can select an audio file among those in the same directory ("bwff" or "sd2f").

1. While stopped, press the [SKIP/CURSOR] [[<<] or [>>]] key.

Pressing the [<<] key skips to the beginning of the previous audio file, while pressing the [>>] key skips to the beginning of the next audio file.

You can skip to the beginning of a desired file by pressing [<<] or [>>] key repeatedly as many times as required.

When the file is skipped, the display shows the beginning of the selected audio file, as shown in the examples below. where ***** shows a file name.



Skipped from "004" to "005".



Skipped from "004" to "003".

Deleting an audio file

You can delete an unnecessary audio file.

Before carrying out the following, select an audio file you want to delete as the current file.

1. While stopped, press the [SHIFT] key to turn on the indicator.

2. Press the [SETUP] key.

The unit enters the Utility mode.

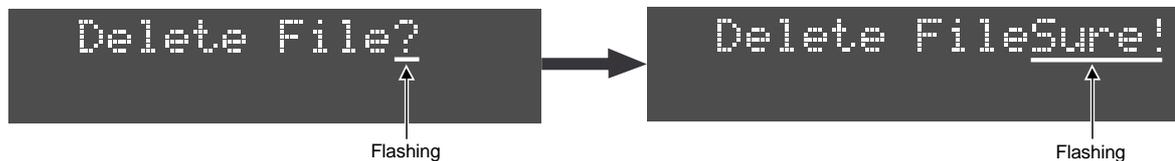
The first time the unit enters the mode after turning on the power, the "Rec Protect?" menu appears.



3. Use the jog dial to select the "Delete File?" menu and press the [ENTER/YES] key.

"Sure?" flashes to confirm deleting the current file.

To cancel deleting, press the [EXIT/NO] key while "Sure?" flashing.



4. Press the [ENTER/YES] key.

The audio file is deleted. The display shows "Completed!" momentarily, followed by the ABS 0 point (the beginning) of the next audio file.

Tips: Restoring a deleted file

A deleted file still remains on the disk as a hidden file, therefore, you can restore a deleted file.

See "Restoring a deleted audio file" on the next page.

When selecting an audio file using the file select function, the deleted file is shown on the display as "<<Hidden File>>". The display example below shows that audio file 008 which has been deleted still remains on the disk as a hidden file.



<Note>

If you optimize the disk when any deleted audio file is hidden, the hidden audio file is completely deleted from the disk and you cannot restore the file anymore.

If you select the completely deleted file using the file select function, "<<Deleted File>>" is shown, instead of "<<Hidden File>>", indicating that the file is completely deleted.

Tips:

If you delete all the (two) "Tape mode" audio files on a disk formatted in the Tape mode and then optimize the disk, the disk becomes equivalent to the one formatted in the "Normal" mode.

Restoring a deleted audio file

You can restore a deleted audio file.

<Note>

The restored audio file returns to the position where it was before the delete operation. However, the editing data carried out before deleting the file does not remain, therefore, you cannot carry out the undo operation with the restored file.

1. While stopped, press the [SHIFT] key to turn on the indicator.

2. Press the [SETUP] key.

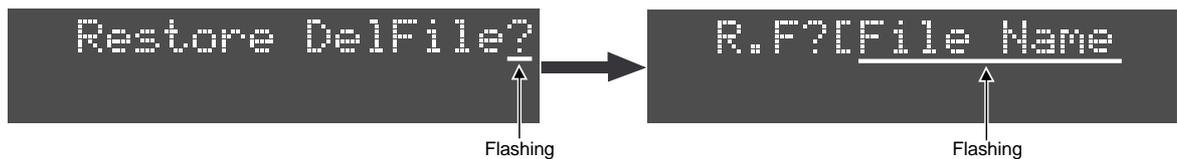
The unit enters the Utility mode.

The first time the unit enters the mode after turning on the power, the "Rec Protect?" menu appears.



3. Use the jog dial to select the "Restore DelFile?" menu and press the [ENTER/YES] key.

The name of a deleted audio file flashes on the display.



4. Use the jog dial to select the file you want to restore and press the [ENTER/YES] key.

If there is more than one deleted audio file, you can select a desired file using the jog dial.

Pressing the [ENTER/YES] key restores the file immediately and the display shows "Completed!" followed by "Restore DelFile?".

5. Press the [EXIT/NO] or [STOP] key to exit the Utility mode.

The display shows the beginning of the restored file.

Tips:

The restored file is numbered the same as before it was deleted.

Duplicating an audio file

You can duplicate the currently selected audio file.

By making a duplication of the current audio file before executing the undo operation, you do not lose the current file.

Tips: File number of the duplication file

The duplication file is numbered one more than the number of existing files of the same format ("BWF" or "SDII").

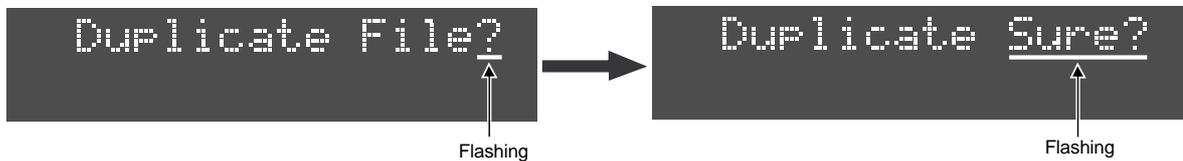
<Note>

You cannot duplicate a "Tape mode" audio file.

1. While stopped, press the [AUDIO EDIT] key repeatedly until "Duplicate File?" appears on the display and press the [ENTER/YES] key.

"Sure?" flashes on the display.

To stop duplication, press the [EXIT/NO] key while "Sure?" flashes.

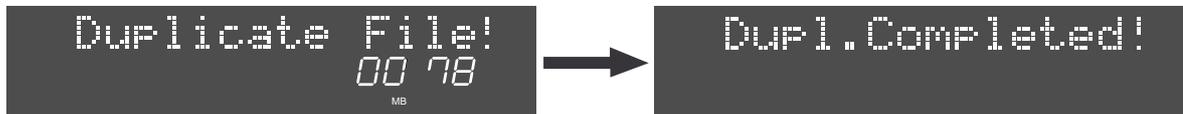


2. Press the [ENTER/YES] key.

The unit starts duplication of the current file.

The display shows the required time for duplicating the file, which is counted down while duplication is in progress.

When completed, "Dupl. completed!" is shown on the display.



3. Press the [EXIT/NO] or [STOP] key.

The unit exits the Audio edit mode, and the display shows the beginning of the duplication file.

The name of a duplication file has "_**" (** refers to the duplication number) added to the original file name, in order to distinguish it from the original.



Chapter 10

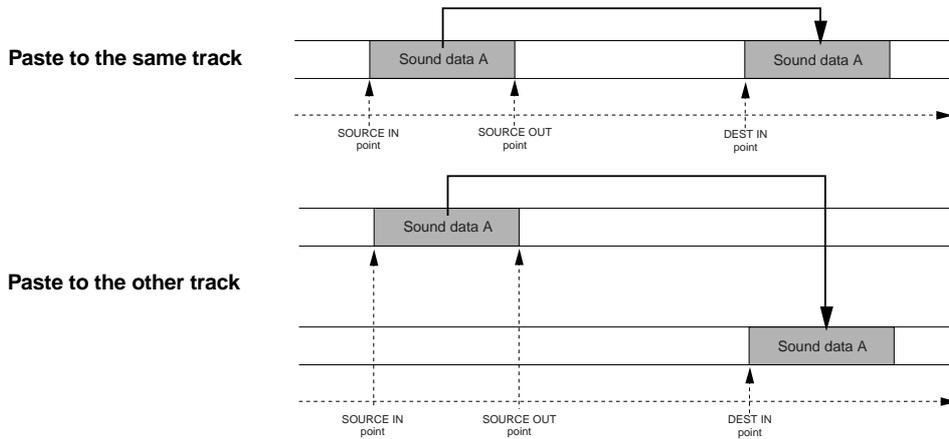
Editing track data

This chapter describes how to edit track data using the paste, insert, cut and erase functions.



Pasting track data

You can copy track data between the "SOURCE IN" and "SOURCE OUT" points to the clipboard and paste it from the "DEST IN" point on the same or a different track.



<Note>

The table below shows the relations among the track modes, selectable source tracks and selectable destination tracks. You can paste data to a different track only when selecting a single track in a STEREO or MULTI (4TR) file as the source track. When selecting 2 or 4 tracks in a STEREO or MULTI (4TR) file, you can paste data only to the same tracks.

Track mode	Selectable source tracks	Selectable destination tracks
MONO mode	track 1 only	track 1
STEREO mode	track 1 or 2	track 1 or 2 freely
	tracks 1 and 2	same tracks as the source
MULTI (4TR) mode	any one of tracks 1 through 4	any one of tracks 1 through 4 freely
	any two of tracks 1 through 4	same 2 tracks as the source
	tracks 1 through 4	same tracks as the source

1. Store the "SOURCE IN", "SOURCE OUT" and "DEST IN" points.

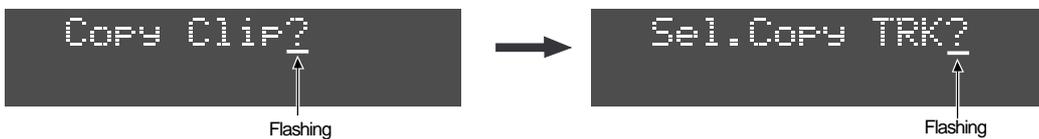
See "Chapter 6: Storing time data" for details about how to store edit points.

2. If necessary, trim these edit points using the preview function.

See "Chapter 8: Preview function" for details about how to trim edit points.

3. While stopped, press the [AUDIO EDIT] key to show "Copy Clip?" on the display, followed by the [ENTER/YES] key.

If you press the [AUDIO EDIT] key once for the first time after turning on the power, "Copy Clip?" is shown on the display. By pressing the [ENTER/YES] key, "Sel.Copy TRK?" appears on the display.

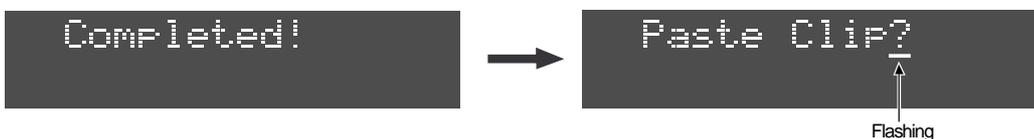


4. Press the appropriate edit point key(s) ([SOURCE IN], [SOURCE OUT], [DEST IN] or [DEST OUT] keys) to select the copy source track(s), and press the [ENTER/YES] key.

*These edit point keys are used to select tracks 1 through 4 (TR 1 through TR 4), as labeled below the keys. Depending on the track mode of the audio file, the selectable tracks are restricted (see the <note> above). Pressing the [ENTER/YES] key copies data to the clipboard immediately.

The display shows "Completed!" momentarily followed by "Paste Clip?".

Note that the clipped data also can be used for the cut, erase and insert function.



Tips: SOURCE-PLAY

You can monitor the track data copied to the clipboard using the **SOURCE-PLAY** function before carrying out the paste operation.

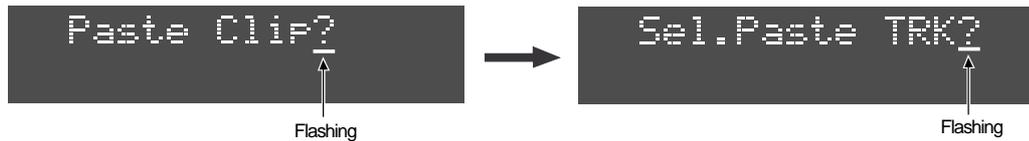
Pressing the **[PLAY]** key while holding down the **[STOP]** key carries out the SOURCE-PLAY function, which plays back the track data on the clipboard and stops.

After finishing the SOURCE-PLAY, press the **[AUDIO EDIT]** key to show "Paste Clip?" on the display.



5. While "Paste Clip?" is shown on the display, press the [ENTER/YES] key.

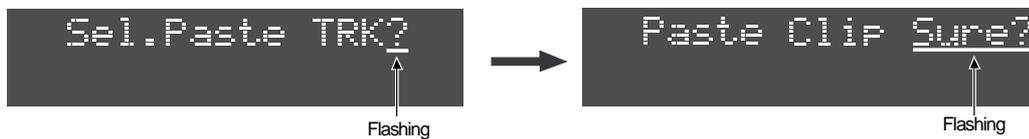
"Sel. Paste TRK?" appears on the display, in which you can select the destination track(s) to be pasted.



6. If you select a single track as a copy source, select a destination track for paste by pressing the appropriate edit point keys (as step 4) and press the [ENTER/YES] key.

If you select 2 or 4 tracks as copy sources, simply press the [ENTER/YES] key again.

"Paste Clip" is shown with flashing "Sure?".



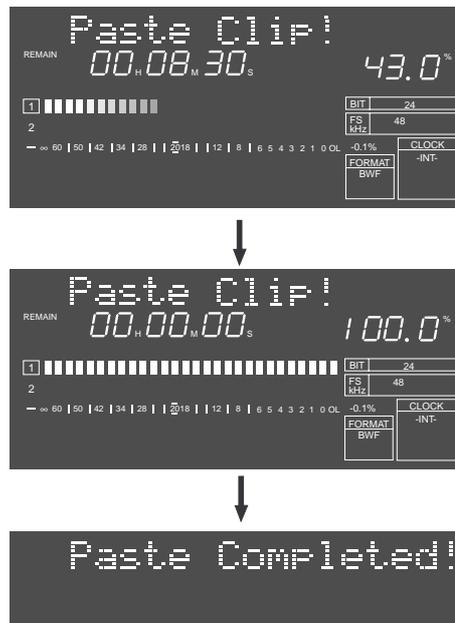
7. Press the [ENTER/YES] key again.

The unit starts pasting the copied track data on the clipboard to the specified track(s) from the "DEST IN" point.

The display shows the required time together with the achieved percentage for paste.

The time is counted down while the percentage is counted up as the paste operation is in progress.

Also, the status is graphically shown by the track 1 level indicators which gradually light up from left to right. When all the data is pasted, "Paste Completed!" is shown and the unit stops.



8. Press the [EXIT/NO] or [STOP] key repeatedly to exit the AUDIO EDIT mode.

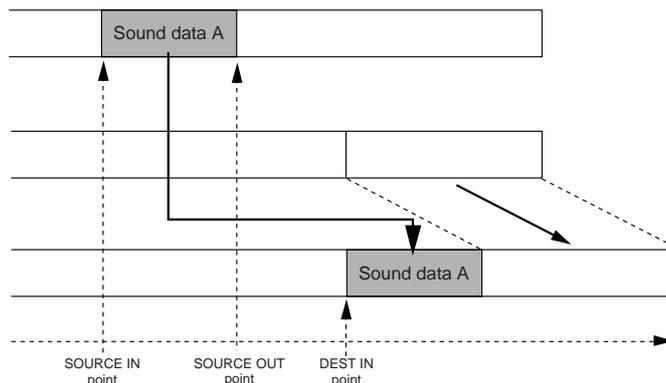
Tips:

If you are not satisfied with the result, you can undo the paste operation.

Note that, however, you cannot undo the paste operation with a "Tape mode" audio file.

Inserting track data

You can copy track data between the "SOURCE IN" and "SOURCE OUT" points to the clipboard and insert it to the "DEST IN" point on the same or a different track.



Tips:

The REC END point of the file to which track data is inserted to moves backward.

<Note>

You cannot carry out the insert operation with a "Tape mode" audio file.

<Note>: The source and destination

The table below shows the relations among the track modes, selectable source tracks and selectable destination tracks. You can insert data to a different track only when selecting a single track in a STEREO or MULTI (4TR) file as the source track. When selecting 2 or 4 tracks in a STEREO or MULTI (4TR) file, you can insert data only to the same tracks.

Track mode	Selectable source tracks	Selectable destination tracks
MONO mode	track 1 only	track 1
STEREO mode	track 1 or 2	track 1 or 2 freely
	tracks 1 and 2	same tracks as the source
MULTI (4TR) mode	any one of tracks 1 through 4	any one of tracks 1 through 4 freely
	any two of tracks 1 through 4	same 2 tracks as the source
	tracks 1 through 4	same tracks as the source

1. Store the "SOURCE IN", "SOURCE OUT" and "DEST IN" points.

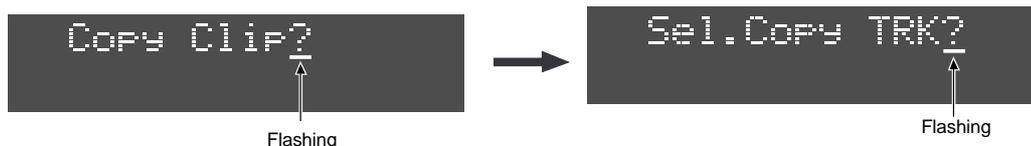
See "Chapter 6: Storing time data" for details about how to store edit points.

2. If necessary, trim these edit points using the preview function.

See "Chapter 8: Preview function" for details about how to trim edit points.

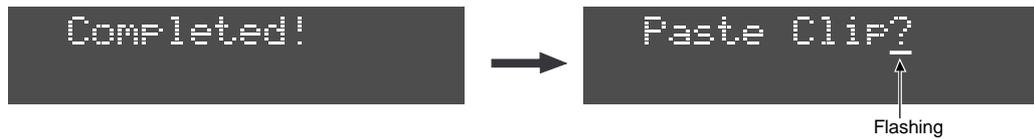
3. While stopped, press the [AUDIO EDIT] key to show "Copy Clip?" on the display, followed by the [ENTER/YES] key.

By pressing the [ENTER/YES] key, "Sel.Copy TRK?" appears on the display.



4. Press the appropriate edit point key(s) ([SOURCE IN], [SOURCE OUT], [DEST IN] or [DEST OUT] keys) to select the copy source track(s), and press the [ENTER/YES] key.

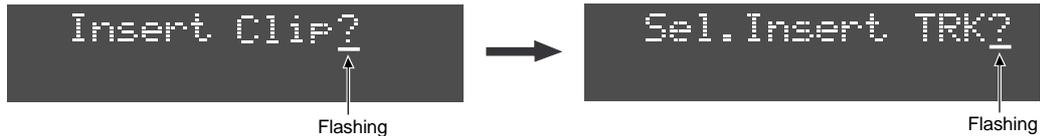
These edit point keys are used to select tracks 1 through 4 (TR 1 through TR 4), as labeled below the keys. Depending on the track mode of the audio file, the selectable tracks are restricted (see the <note> above). Pressing the [ENTER/YES] key copies data to the clipboard immediately. The display shows "Completed!" momentarily followed by "Paste Clip?".

**Tips:**

You can monitor the track data copied to the clipboard using the SOURCE-PLAY function before carrying out the insert operation. See "**Tips: SOURCE-PLAY**" on page 10-3.

5. Use the jog dial to select "Insert Clip?" and press the [ENTER/YES] key.

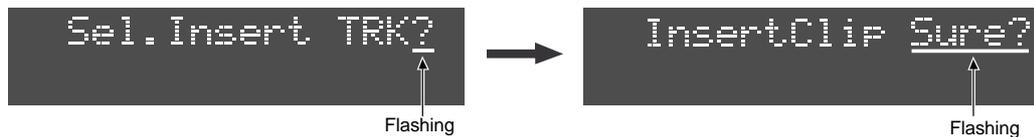
"Sel.Insert TRK?" appears on the display, in which you can select the destination track(s) to be inserted. If you select a single track as a copy source, you can select the same or a different track as a destination. If you select 2 or 4 tracks as copy sources, the destination are restricted to the same tracks.



6. If you select a single track as a copy source, select a destination track for insert by pressing the appropriate edit point keys (as step 4) and press the [ENTER/YES] key.

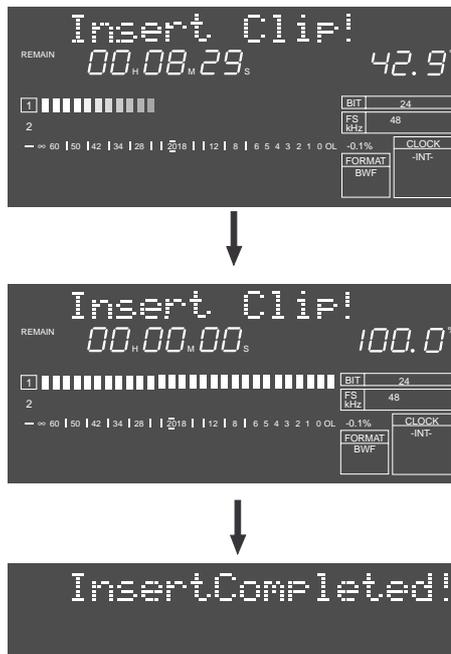
If you select 2 or 4 tracks as copy sources, simply press the [ENTER/YES] key again.

"Insert Clip" is shown with flashing "Sure?".



7. Press the [ENTER/YES] key again.

The unit starts inserting the copied track data on the clipboard to the specified track(s) from the "DEST IN" point. The display shows the required time together with the achieved percentage for insert. The time is counted down while the percentage is counted up as the insert operation is in progress. Also, the status is graphically shown by the track 1 level indicators which gradually light up from left to right. When all the data is inserted, "Insert Completed!" is shown and the unit stops.



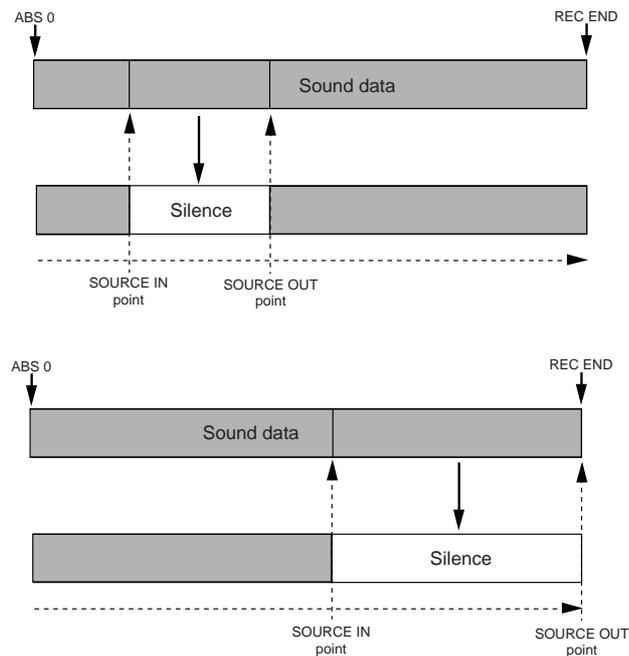
8. Press the [EXIT/NO] or [STOP] key repeatedly to exit the AUDIO EDIT mode.

Tips:

If you are not satisfied with the result, you can undo the insert operation.

Erasing track data

You can erase track data between the "SOURCE IN" and "SOURCE OUT" points.



Tips:

The erase operation erases only sound data, therefore, by erasing track data of a specified area between "ABS 0" and "REC END", the REC END point does not change and the time code is not affected.

1. Store the "SOURCE IN" and "SOURCE OUT" points.

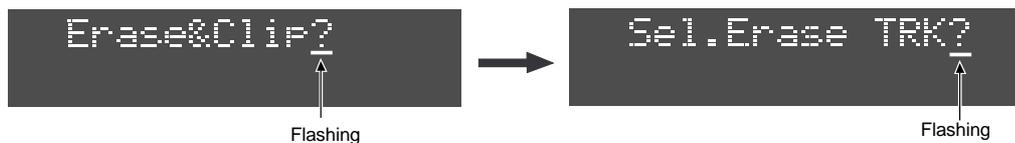
See "Chapter 6: Storing time data" for details about how to store these points.

2. If necessary, trim these edit points using the preview function.

See "Chapter 8: Preview function" for details about how to trim edit points.

3. While stopped, press the [AUDIO EDIT] key to show "Erase & Clip?" (or "Erase?" when selecting a "Tape mode" audio file) on the display, followed by the [ENTER/YES] key.

By pressing the [ENTER/YES] key, "Sel.Erase TRK?" appears on the display.



Tips:

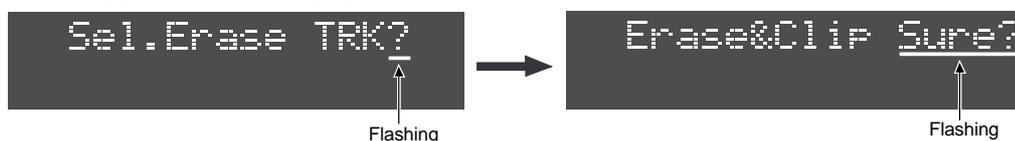
You can select any one or more tracks to be erased available in the file. With a MONO file, only track 1 can be selected.

4. Press the appropriate edit point key(s) ([SOURCE IN], [SOURCE OUT], [DEST IN] or [DEST OUT] keys) to select the track(s) to be erased, and press the [ENTER/YES] key.

*These edit point keys are used to select tracks 1 through 4 (TR 1 through TR 4), as labeled below the keys.

The selected track number(s) surrounding by a box flash(es) in red.

By pressing the [ENTER/YES] key, "Erase & Clip" (or "Erase" when selecting a "Tape mode" audio file) with flashing "Sure?" appears on the display.



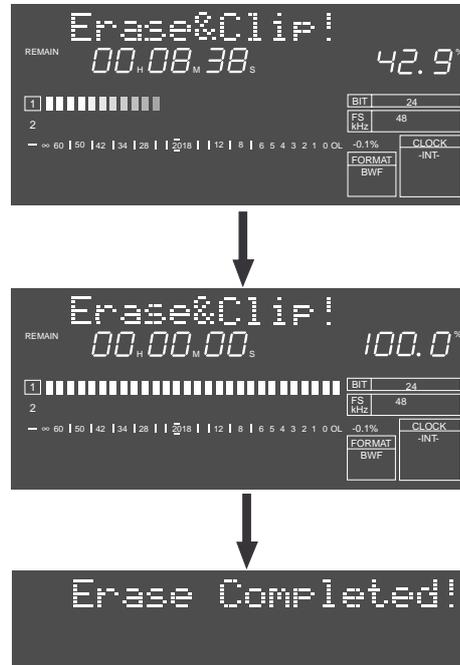
5. Press the [ENTER/YES] key.

The unit starts erasing track data between the "SOURCE IN" and "SOURCE OUT" points of the specified track(s).

The display shows the required time together with the achieved percentage for erase.

The time is counted down while the percentage is counted up as the erase operation is in progress.

Also, the status is graphically shown by the track 1 level indicators which gradually light up from left to right. When all the data is erased, "Erase Completed!" is shown and the unit stops.



Tips:

When a "Tape mode" audio file is selected, "Erase!" appears.

6. Press the [EXIT/NO] or [STOP] key repeatedly to exit the AUDIO EDIT mode.

Tips:

If you are not satisfied with the result, you can undo the erase operation.

Note that, however, you cannot undo the erase operation with a "Tape mode" audio file.

Tips:

The erased track data still remains in the clipboard after the erase operation is completed.

To check the erased track data, press the [PLAY] key while holding down the [STOP] key to perform the "SOURCE PLAY" function.

While the erased data remains in the clipboard, you can paste or insert the erased data by executing "Clip Paste?" or "Clip Insert?" described earlier in this chapter.

<Note>

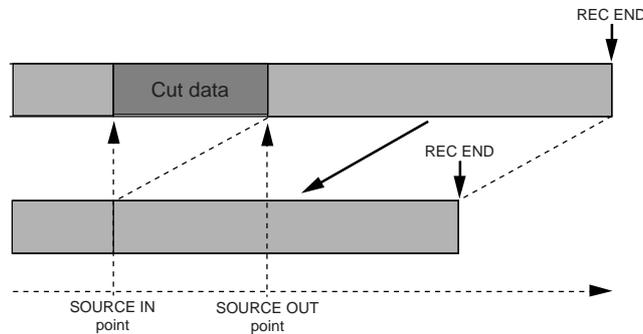
With a "Tape mode" audio file, the erased track data does not remain in the clipboard. Therefore, if you are going to perform the paste or "SOURCE PLAY" function, "Empty Clipboard!" appears and the operation is canceled.

Cutting track data

You can cut track data between the "SOURCE IN" and "SOURCE OUT" points.

<Note>

You cannot cut operation with a "Tape mode" audio file.



Tips:

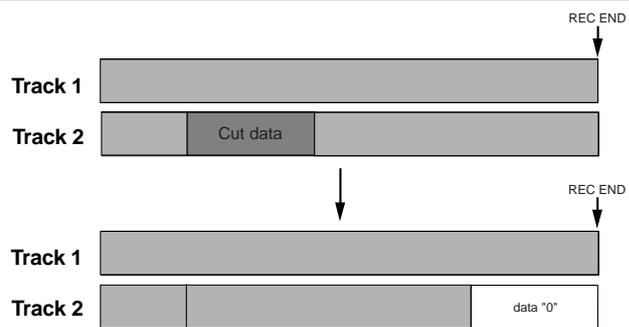
If you cut data for all tracks, the REC END point of the file moves forward.

If you cut data for some of tracks, "0" data replaces the previous data, and the file length does not change.

<Note>

If only data on a single track of a STE-REO audio file is cut, the REC END point of the file does not change.

For example, if only data on track 2 is cut as illustrated on the right, the REC END point of the audio file does not change because the REC END point of track 1 does not change.



1. Store the "SOURCE IN" and "SOURCE OUT" points.

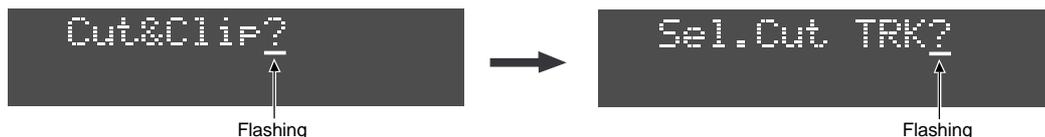
See "Chapter 6: Storing time data" for details about how to store these points.

2. If necessary, trim these edit points using the preview function.

See "Chapter 8: Preview function" for details about how to trim edit points.

3. While stopped, press the [AUDIO EDIT] key to show "Cut & Clip?" on the display, followed by the [ENTER/YES] key.

By pressing the [ENTER/YES] key, "Sel.Cut TRK?" appears on the display.



Tips:

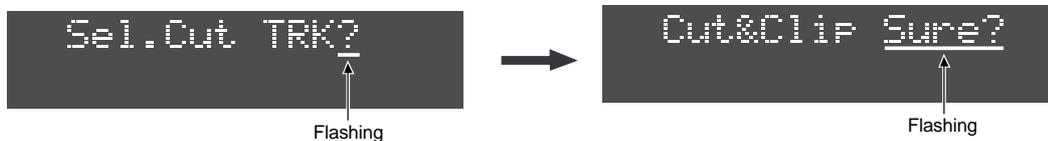
You can select any one or more tracks to be cut available in the file. With a MONO file, only track 1 can be selected.

4. Press the appropriate edit point key(s) ([SOURCE IN], [SOURCE OUT], [DEST IN] or [DEST OUT] keys) to select the track(s) to be cut, and press the [ENTER/YES] key.

* These edit point keys are used to select tracks 1 through 4 (TR 1 through TR 4), as labeled below the keys.

Depending on the track mode of the audio file, the selectable tracks are restricted.

By pressing the [ENTER/YES] key, "Cut & Clip" with flashing "Sure?" appears on the display.



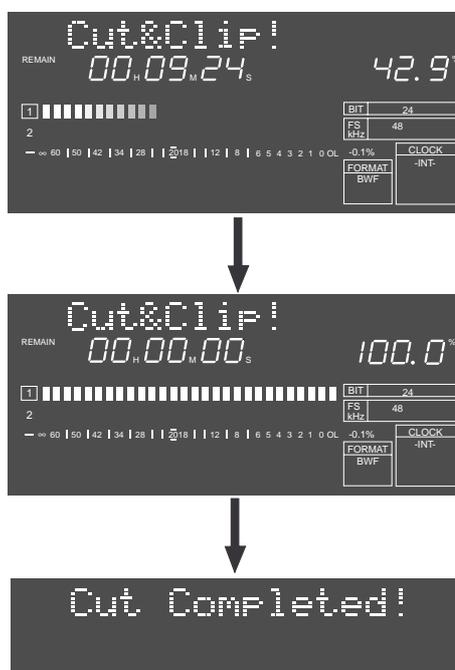
5. Press the [ENTER/YES] key.

The unit starts cutting track data between the "SOURCE IN" and "SOURCE OUT" points of the specified track(s).

The display shows the required time together with the achieved percentage for cut.

The time is counted down while the percentage is counted up as the cut operation is in progress.

Also, the status is graphically shown by the track 1 level indicators which gradually light up from left to right. When all the data is cut, "Cut Completed!" is shown and the unit stops.



6. Press the [EXIT/NO] or [STOP] key repeatedly to exit the AUDIO EDIT mode.

Tips:

If you are not satisfied with the result, you can undo the cut operation.

Tips:

The cut track data still remains in the clipboard after the cut operation is completed.

While the cut data remains in the clipboard, you can paste or insert the data by executing "Paste Clip?" or "Insert Clip?" described earlier in this chapter.

Chapter 11

LIST PLAY function

This chapter describes the list play function, by which you can play back more than one recorded audio file continuously.



LIST PLAY function

The LIST PLAY function allows to link multiple audio files recorded by the same condition (e.g. TR MODE, Fs, AUDIO FILE) and reproduce the files continuously while maintaining TC continuity. There are two LIST PLAY modes; One is the “LTC_Link” and the other the “SongLink” available on DV40.

LTC_Link

In the “LTC_Link” mode, based on the recorded LTC Start Time in each file, multiple files are linked and reproduced continuously. This mode should be used when the LTC address has to be matched in conjunction with other equipment such as a video camera.

SongLink

The “SongLink” mode links audio files in the file number ascending order (e.g. file No.1 -> file No.2 -> file No.3 ...). LTC Start Time will be set according to the one recorded in the first link file (default setting: 01h 00m 00s 00f) and the LTC will be jammed regardless of recorded LTC Start Time in the following linked files. This mode is convenient when reproducing multiple audio files continuously.

<CAUTION 1>
 In order to link multiple audio files recorded on DV40, each SW setting, audio file format (BWF or SDII), sampling frequency, resolution (quantization bits) and track mode (mono, stereo or multi) must be the same in all the files to be linked.

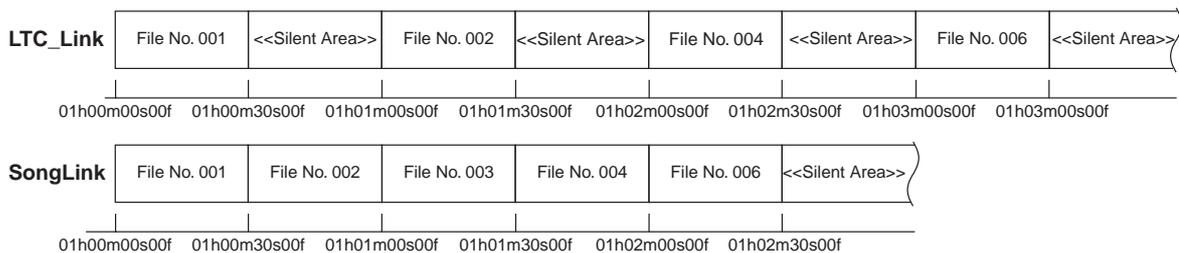
<CAUTION 2>
 The message “<<Silent Area>>” indicating no audio to be reproduced exists will be displayed on the DV40 FL display when in the following condition.

- If there is an overlapping LTC address between the files in the LTC_Link mode, <<Silent Area>> is displayed while reproducing the overlapped latter file.
- There are hidden files (deleted files) in the LTC_Link mode.
- When the last linked file finishes reproducing.

Presume that the following six files (including deleted File No.5) recorded by the same condition (Fs, resolution, etc.) exist on the DVD-RAM disk.

File No.	001	002	003	004	005 (DELETED)	006
LTC Start Time	01h00m00s00f	01h01m00s00f	01h01m25s00f	01h02m00s00f	-	01h03m00s00f
Duration	30 sec	30 sec	30 sec	30 sec	-	30 sec

When executing the LIST PLAY function in the “LTC_Link” and “SongLink” mode, the linked files and the order are indicated in the drawing below.



In the LTC_Link mode, there is a gap of LTC address (01h00m30s00f ~ 01h01m00s00f) between the File No. 001 and 002. Although LTC is continuously output in this section, <<Silent Area>> is displayed. There is an overlapping LTC address between the File No. 002 and 003. Since a smaller File No. has a priority, File No. 002 is reproduced and File No. 003 will not be reproduced. Thus, <<Silent Area>> is displayed from 01h01m30s00f ~ 01h02m30s00f. <<Silent Area>> is also displayed in the deleted File No. 005 LTC section (01h02m30s00f ~ 01h03m00s00f).

In the SongLink mode, DV40 just simply links the File No. 001 ~ 004 and 006 regardless of LTC START address setting on the File No. 002 ~ 004 and 006. Then, it reproduces each file continuously.

In both Link modes, DV40 keeps on playing and outputting LTC even after reproducing the last link file is completed. In this section, <<Silent Area>> is displayed.

Refer to the following explanation to turn on the LIST PLAY mode.

Turning On LIST PLAY mode

1. Press the [LIST PLAY/(EDIT)] key and rotate the jog dial.

When the [LIST PLAY/(EDIT)] key is pressed, the following appears on the DV40 FL display.

The default setting of the LIST PLAY mode is "LTC_Link". By rotating the jog dial C.W., you can choose the "SongLink" mode.



2. Press the [ENTER/YES] key.

After pressing the [ENTER/YES] key, "<<Wait!>>" message starts flashing for a short while indicating that DV40 is creating a linked file list on the DV40 FL display. Then, the [LIST PLAY/(EDIT)] key will be lit solid. This indicates that the selected LIST PLAY mode is turned ON.

3. Press the [PLAY] key.

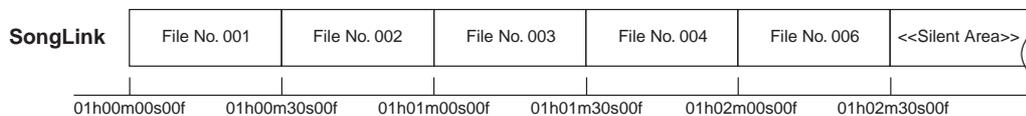
Pressing the [PLAY] key allows to reproduce the linked multiple files.

<Note>

Pressing the [FILE SEL] key when the LIST PLAY mode is on allows to select either the "LTC_Link" or "SongLink" mode.

Confirming Linked Files

Pressing the [SKIP/CURSOR >>|] or [SKIP/CURSOR |<<] key allows to locate to the beginning of each linked file in the ascending/descending order respectively. When the files 001 ~ 006 are linked as shown in the drawing below.



by pressing the [SKIP/CURSOR >>|] or [SKIP/CURSOR |<<] key, the followings appear on the DV40 FL display.



Reprogramming PLAY LIST

If you find that there are unnecessary linked files exist, you can reprogram the PLAY LIST by deleting them.

1. Turn off the LIST PLAY mode.

If the LIST PLAY LED is lit solid, press the **[LIST PLAY/(EDIT)]** key to turn the mode off.

2. Recall the File you would like to delete.

Press either the **[SKIP/CURSOR >>I]** or **[SKIP/CURSOR I<<]** key and recall the file you would like to delete.

3. Press the **[SHIFT]** key and then **[SETUP]** key to enter the Utility mode.

4. Rotate the jog dial or press the **[SKIP/CURSOR >>I]** / **[SKIP/CURSOR I<<]** key to select the “Delete File?” menu.

The following appears on the FL display. (“?” is flashing.)



5. Press the **[ENTER/YES]** key.

“Sure?” message starts flashing.



6. Press the **[ENTER/YES]** key.

The file is deleted.

<CAUTION>

Even after unnecessary files are deleted, they can be restored by the “**Restore DelFile?**” Utility menu. This indicates that the files have not been completely erased from the DVD-RAM disk yet. However, if you optimize the DVD-RAM disk by the “**Optimize Disk?**” Utility menu, deleted files are completely erased from the DVD-RAM disk. After optimizing, they can be no longer restored.

<Note>

A deleted file before optimizing on DV40 is categorized as a “**hidden file**”. It can be seen as a translucent file on a personal computer. (If the folder option “A hidden files are not displayed.” on the computer is selected, change the folder option setting to allow to display hidden files.) In the condition that the translucent hidden file can be seen on the computer, display the file property and uncheck the “**check mark**” on the “**hidden file**”. By doing so, can restore the deleted file even on the computer.

Locating to Beginning of PLAY LIST

While the LIST PLAY mode is on (**[LIST PLAY/(EDIT)]** key is lit), executing “**LOCATE ABS 0**” (pressing the **[<< REWIND]** key while holding down the **[STOP]** key) allows to locate to the beginning of the first linked file (the closest file to the LTC 00h00m00s00f).

Locating to End of PLAY LIST

While the LIST PLAY mode is on (**[LIST PLAY/(EDIT)]** key is lit), executing “**LOCATE REC END**” (pressing the **[F FWD >>]** key while holding down the **[STOP]** key) allows to locate to the end of the last linked file.

Chapter 12

Using a PS/2 keyboard

This chapter describes how to control the DV40 using a PS/2 keyboard connected to the [KEYBOARD] terminal.

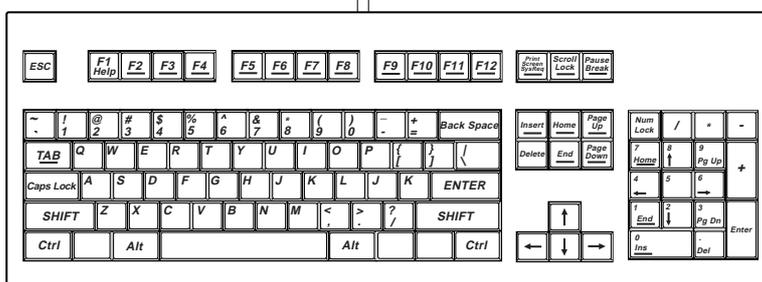


Controlling the DV40 from a PS/2 keyboard

By connecting a PS/2 keyboard to the [KEYBOARD] terminal on the front panel of the DV40, you can easily carry out various operation such as file name or volume label editing.



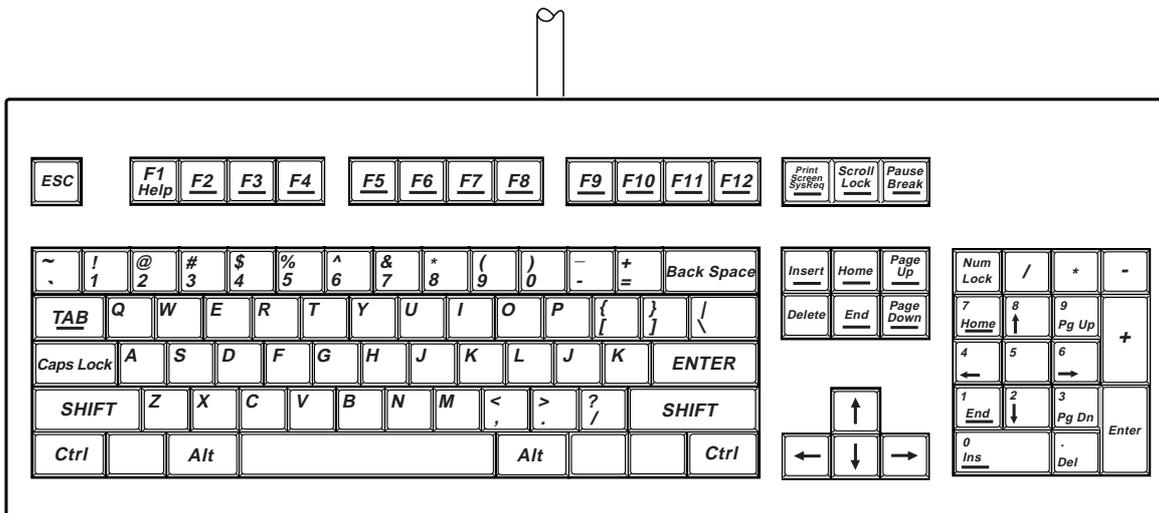
DV40



PS/2 keyboard

<Ineffective keys>

In the following figure, the keys with an underline, such as F12 and Insert do not function.



<Note>

During controlling the DV40 from a keyboard, if the DV40 does not accept key operations, unplug then plug the keyboard cable connector.

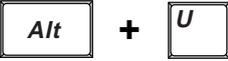
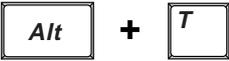
The common functions between keys on the DV40 and a PS/2 keyboard

The PS/2 keyboard keys shown below act the same function as the associated keys or jog dial on the DV40 front panel.

PS/2 keyboard						
DV40	Pressing the [SKIP/CURSORSkip/Cursor] key	Pressing the [SKIP/CURSORSkip/Cursor] key	Rotating the Jog dial clockwise	Rotating the Jog dial counter clockwise	Pressing the [ENTER/YES] key	Pressing the [EXIT/NO] key

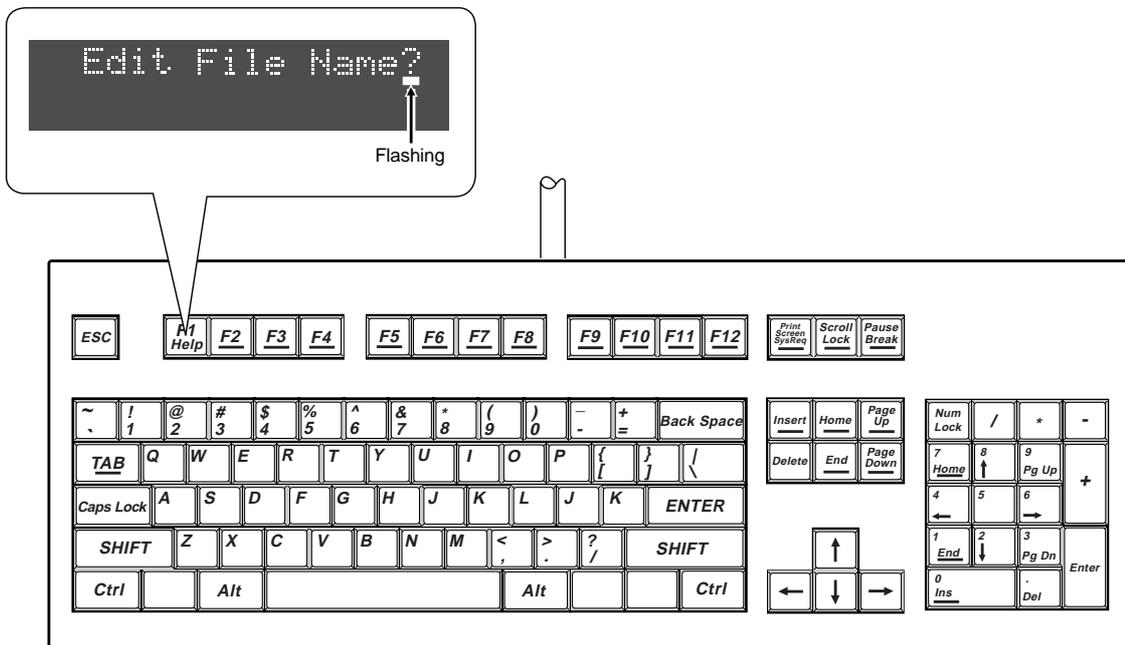
Accessing setting menus using the [Alt] key

Pressing the [Alt] key together with the following keys access the appropriate setting menus.

PS/2 keyboard			
DV40	Accesses the Utility mode	Accesses the Setup mode	Accesses the TC Setup mode

Tips:

Pressing the [F1] key on the PS/2 keyboard directly accesses the “Edit File Name?” menu in the Utility mode.



Chapter 13

FTP Server Function

This chapter describes the FTP server function using the ETHER card mounted on the DV40.



FTP Server Function

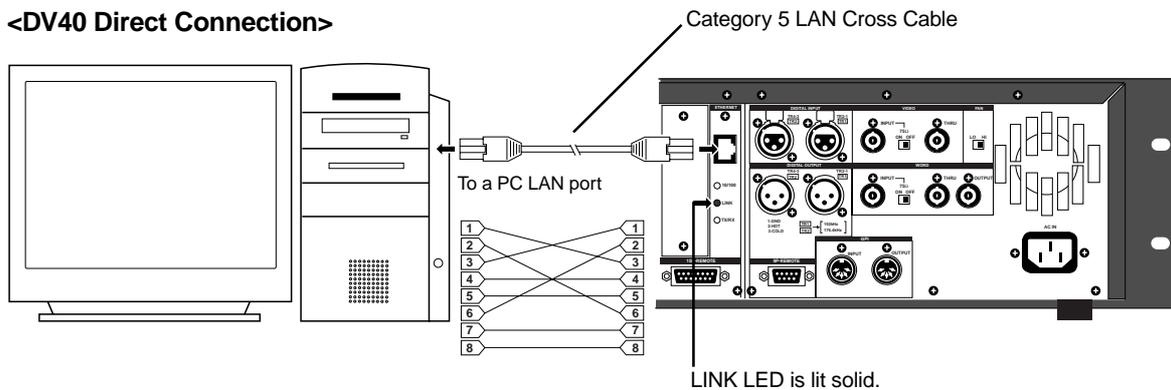
Working as a FTP (File Transfer Protocol) server, DV40 can send and receive BWF and SDII files to and from a client PC using TCP/IP (Transmission Control Protocol/Internet Protocol). When sending and receiving data, a FTP client application is required.

- <Notes>**
- Audio file can be transferred only while the DV40 is stopped (however, it is possible to log in only while the DV40 is running).
 - Set the **[CONTROL]** switch on the DV40 front panel to **"REMOTE"** when using the FTP function. If the **[CONTROL]** switch is set to **"LOCAL"**, the FTP function does not work (however, you can log in even if the switch is set to **"LOCAL"**).
 - While transferring audio file data, the display shows **"TCP CONNECTED"** and all key operations are disabled. To interrupt the data transfer, send the **"abort"** command from the FTP client or alter the **[CONTROL]** switch on the DV40 front panel to **"LOCAL"**.
 - When the DV40 is in the initial condition, you can log in even if you do not enter the login name and password.
To control logging in, enter the desired login name and password in the TCP/IP Setup menu.
See **"Chapter 15: Setup mode"** for details about how to set them.

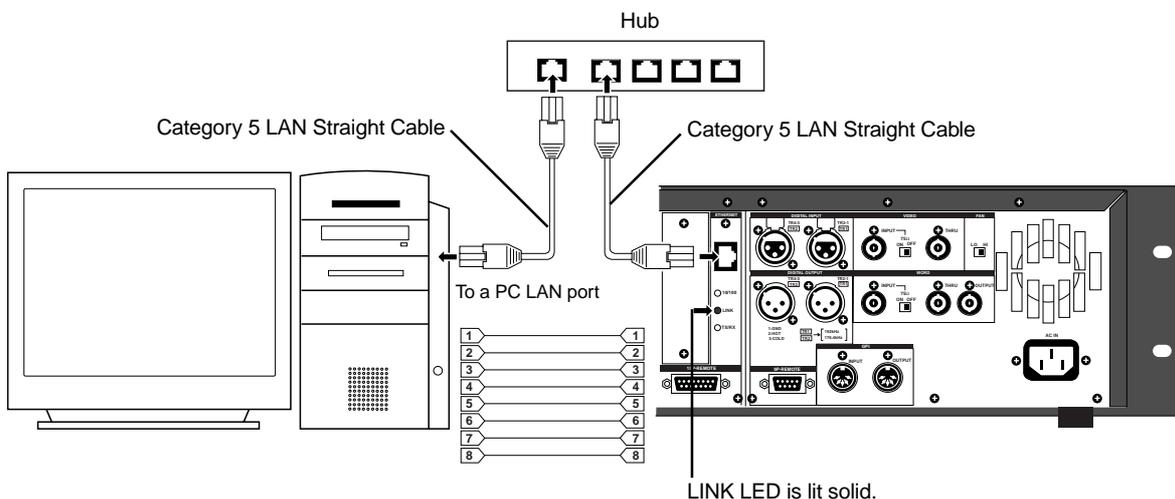
Connection

When connecting DV40 to a client PC, a "Category 5" cable which complies to 10BASE-T and 100BASE-TX must be used. If DV40 is directly connected to a client PC, a cross cable must be used. In the case DV40 is connected to a client PC via hub, a straight cable must be used. When DV40 recognizes a client PC, the "LINK" LED on the DV40 rear panel is lit solid.

<DV40 Direct Connection>



<DV40 Connection via Hub>



FTP Command Compliance

The following FTP commands can be used when DV40 works as a FTP server.

USER	Identifying user name.
PASS	Identifying password.
QUIT	Terminating FTP connection. TCP connection for Control is also cut off.
PORT	When transferring data, relay the connection state open port number for data transferring at client side to server. Format: PORT IP1, IP2, IP3, IP4, P1, P2 (IPx: IP address, Px: port number represented by decimal number in every 1 byte unit)
TYPE	Designating data type (ASCII, BECIDIC, BINARY, LOCAL).
RETR	Instructing server to transfer file through data connection.
STOR	Instructing server to write data transferred through data connection into a new file.
LIST	Requesting server to send a list of files.
NLST	Requesting server to send a detailed list of files.
CWD	Changing current directory.
CDUP	Changing current directory to upper level.
PWD	Displaying current directory.
NOOP	Doing nothing.
SYST	Acquire server OS type.

The following FTP commands cannot be used when DV40 works as a FTP server.

APPE	Instructing server to write data transferred through data connection into an existing file additionally.
DELE	Deleting designated file.
RNFR	Designating current file name for renaming.
RNTO	Changing current file name for renaming.
HELP	Displaying command description.
ACCT	Identifying user account.
PASV	Opening command state designated port except default data port (No. 20) on server.
STRU	Designating file structure.
MODE	Designating file transfer mode (Stream, Block, Compressed).
RMD	Deleting designated directory.
MKD	Creating designated directory.
STAT	Requesting server condition.

Note that

- Deleting files
- Renaming files
- Creating a new directory

cannot be executed when using a FTP client application.

Saved File Location

- **BWF File**

The files recorded by BWF AUDIO FILE SW setting are saved in the “**bwff**” folder. Note that only a file with “.wav” extension can be saved in the “**bwff**” folder.

- **SDII File**

The files recorded by SDII AUDIO FILE SW are saved in the “**sd2f**” folder. Note that the file type to send and received data is “**MacBinary version 2**”. Because of this, the “*.bin” file extension is added to a file name.

FTP Client Application^o

The FTP client applications we confirmed the operation are

- **Fetch** (Shareware for Macintosh computer)
- **WS FTP** (Shareware for Windows computer)

The FTP client application we found inoperative is

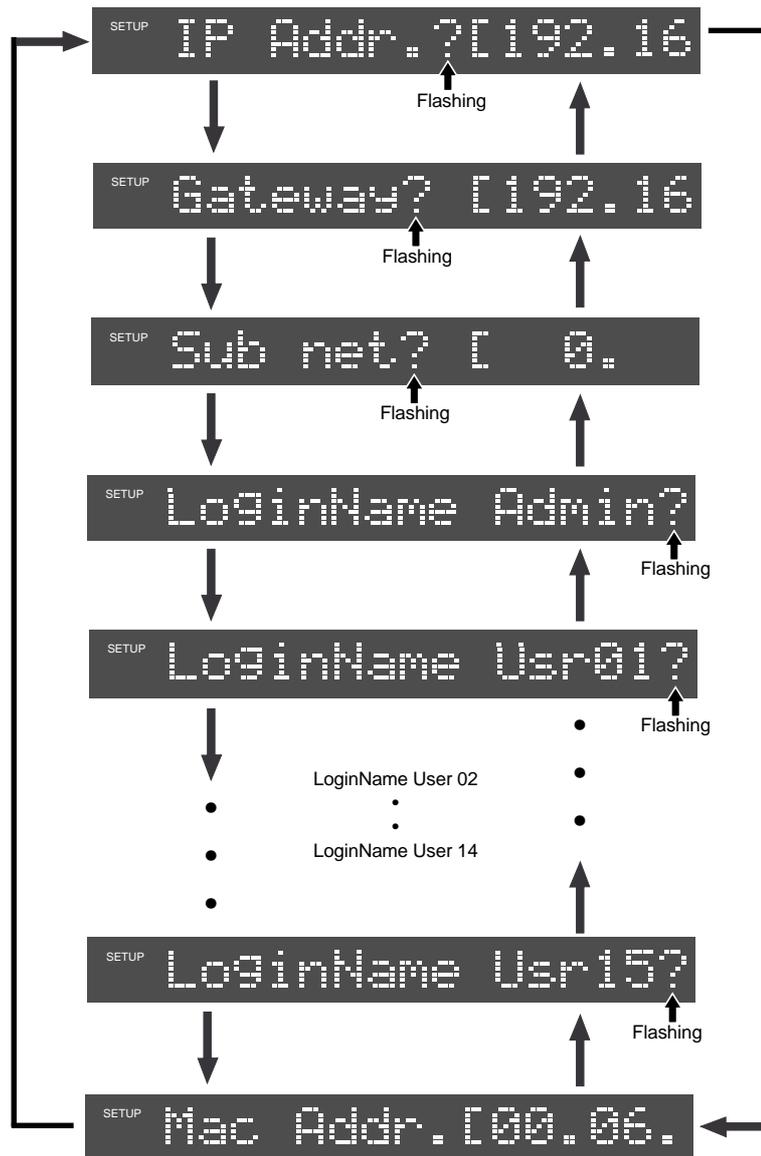
- **FTP Explorer** (Shareware for Windows computer)

Checking TCP/IP Menus

There are several menus in the TCP/IP settings on DV40. First, press the **[SETUP]** key and then rotate the jog dial. While the menu “TCP/IP Setup?” is displayed, press the **[ENTER/YES]** key.



By rotating the **Jog** dial, the menu changes as shown below.



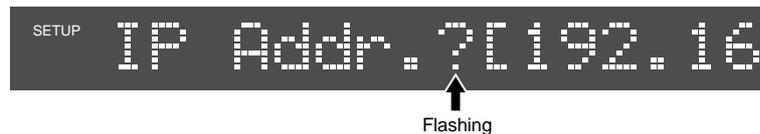
Changing the TCP/IP setting

There are cases that the TCP/IP settings must be changed. For example, if 2 x DV40s exist in a single network environment, the IP Address on one of the DV40s must be changed. This section describes how to change the TCP/IP settings.

• IP Address

The IP Address on DV40 is set in this menu.

1. Rotate the jog dial to select “IP Addr.? [192.16” and press the [ENTER/YES] key.



To check the full digits of IP address, press the [SKIP/CURSOR >>|] key once. If you do so, the following will appear on the DV40 FL display.



Now you can see that the current IP Address setting on DV40 is [192. 168. 1. 64].

2. Press the [ENTER/YES] key.

If the [ENTER/YES] key is pressed, the section “192” starts flashing.



3. Move the cursor and change the IP Address.

Move the cursor by the [SKIP/CURSOR >>|] or [SKIP/CURSOR |<<] key and rotate the jog dial to change the IP Address. The alphanumeric keys can be also used to change the IP Address.

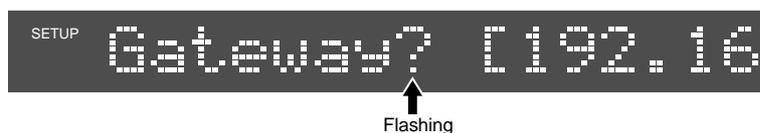
4. Press the [ENTER/YES] key.

Pressing the [ENTER/YES] key defines the change on the IP Address.

• Gateway

The Gateway should be set when the Gateway server exists in the network DV40 is connected. If there is no Gateway server exists, you do not have to set the Gateway.

1. Rotate the jog dial to select “Gateway? [192. 16” and press the [ENTER/YES] key.



To check the full digits of Gateway, press the [SKIP/CURSOR >>|] key once. If you do so, the following will appear on the DV40 FL display.

Now you can see that the current Gateway setting on DV40 is [192. 168. 1. 2].



2. Press the [ENTER/YES] key.

If the [ENTER/YES] key is pressed, the section “192” starts flashing.



3. Move the cursor and change the Gateway.

Move the cursor by the [SKIP/CURSOR >>|] or [SKIP/CURSOR |<<] key and rotate the jog dial to change the Gateway. The alphanumeric keys can be also used to change the Gateway.

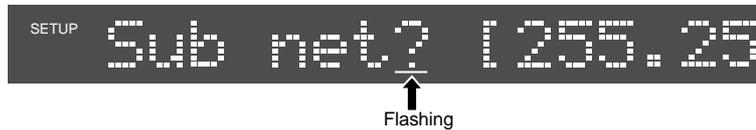
4. Press the [ENTER/YES] key.

Pressing the [ENTER/YES] key defines the change on the Gateway.

• Sub net

The Sub net mask value in the network DV40 exists should be set. In the case the Sub net mask is not used, you do not have to set this value.

1. Rotate the jog dial to select “Subnet? [255.25” and press the [ENTER/YES] key.



To check the full digits of Sub net value, press the [SKIP/CURSOR >>|] key once. If you do so, the following will appear on the DV40 FL display.

Now you can see that the current Subnet setting on DV40 is [255. 255. 255. 0].



2. Press the [ENTER/YES] key.

If the [ENTER/YES] key is pressed, the section “255” starts flashing.



3. Move the cursor and change the Sub net mask.

Move the cursor by the [SKIP/CURSOR >>|] or [SKIP/CURSOR |<<] key and rotate the jog dial to change the Sub net value. The alphanumeric keys can be also used to change the Sub net value.

4. Press the [ENTER/YES] key.

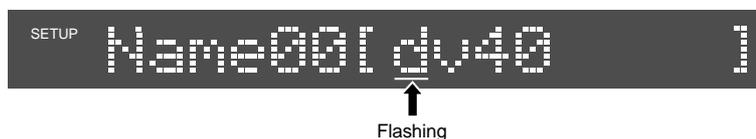
Pressing the [ENTER/YES] key defines the change on the Sub net value.

• Login Name (Administrator)

Using the Login Name and the Password set in this menu, log in from a FTP client application.

1. Rotate the jog dial to select “LoginName Admin?” and press the [ENTER/YES] key.

The first letter “d” of default login name “dv40” starts flashing.

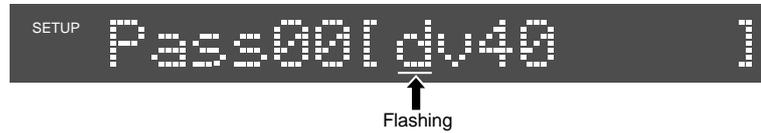


2. Press the [ENTER/YES] key.

Move the cursor by the [SKIP/CURSOR >>|] or [SKIP/CURSOR |<<] key and rotate the jog dial to change the Login Name to a desired one. The alphanumeric keys can be also used to change the Login Name.

3. Press the [ENTER/YES] key.

Pressing the [ENTER/YES] key defines the Login Name. Then the first letter “d” of default password “dv40” starts flashing.



4. Move the cursor and change the Password.

Move the cursor by the [SKIP/CURSOR >>|] or [SKIP/CURSOR |<<] key and rotate the jog dial to change the Password to a desired one. The alphanumeric keys can be also used to change the Password.

5. Press the [ENTER/YES] key.

Pressing the [ENTER/YES] key defines the change on the Password.

6. Press the [EXIT/NO] key.

Pressing the [EXIT/NO] key goes back to the normal display.

• Login Name (Usr 01 ~ 15)

Set the Usr (User 01 ~ 15) Login Name and the Password in the same manner as explained in the section LogIn Name.

• MAC Address

The MAC (Machine Access Control) address is the 48-bit machine-specific fixed address, so that DV40 used in a network environment can be identified. It can be checked but not changed.

1. Rotate the jog dial to select “Mac Addr. [00. 06.”.



2. Press the [SKIP/CURSOR >>|] key several times.

Pressing the [SKIP/CURSOR >>|] key several times allows to check the full digits of machine-specific MAC address. The MAC address of the example below is [00. 06. 64. 01. 00. 14].



Chapter 14

Importing an audio file to a computer

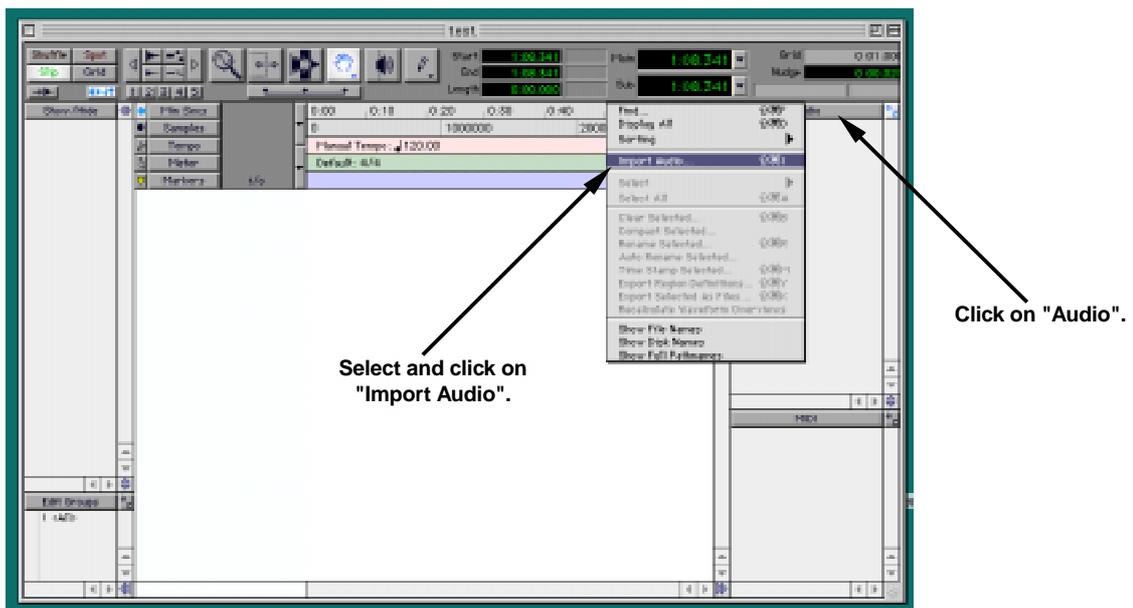
This chapter describes how to import an audio file created by the DV40 to a computer.



Importing an audio file to the Digidesign Pro Tools

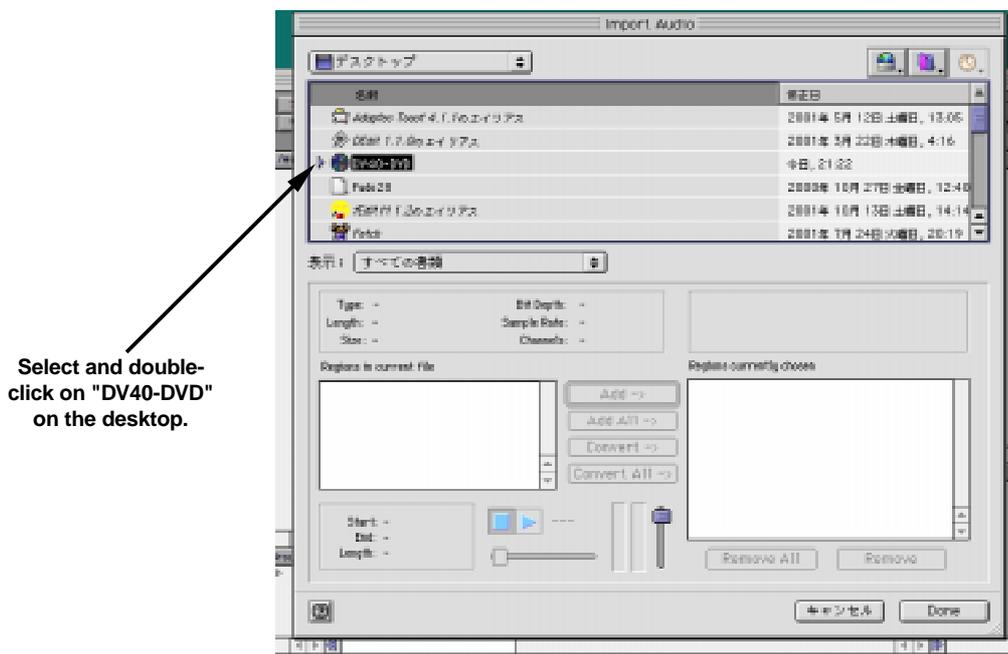
You can import an audio file to the Digidesign Pro Tools on your computer. In the following description, we assume that the Pro Tools application program for Macintosh is running on a Macintosh computer and a recorded DVD-RAM disc is set on the DVD-RAM drive connected to the computer. For details about the Pro Tools, see the documentation attached to the Pro Tools.

1. Click on "Audio" in the Pro Tools window to popup the audio region list.
2. In the popup menu, select and click on "Import Audio".

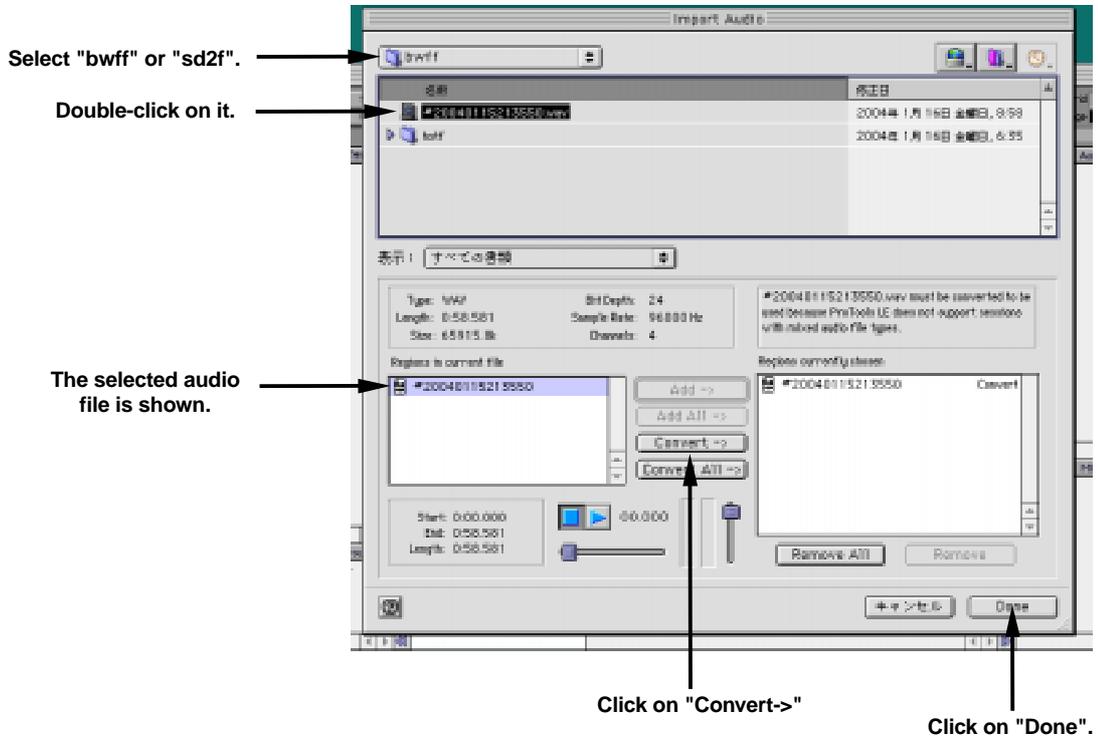


3. Select and double-click on "DV40-DVD" on the desktop.

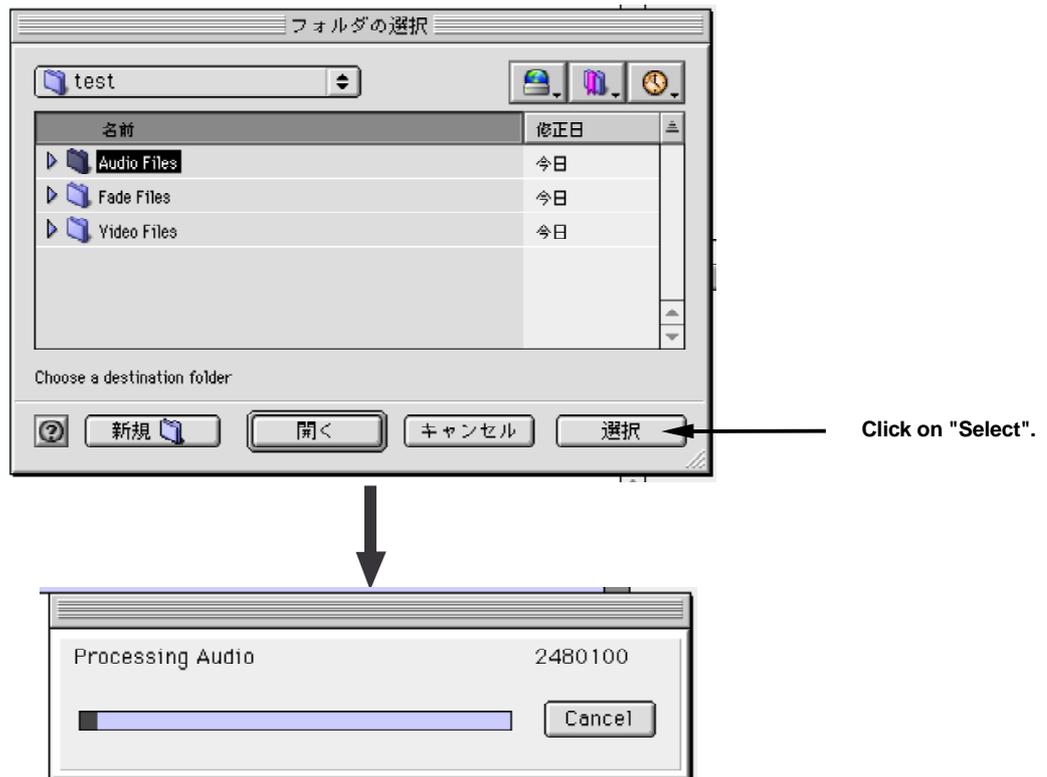
The disc volume name in the following example shows the default tentative name. If you edited the volume name during formatting of the DVD-RAM disc by the DV40, the edited name is shown.



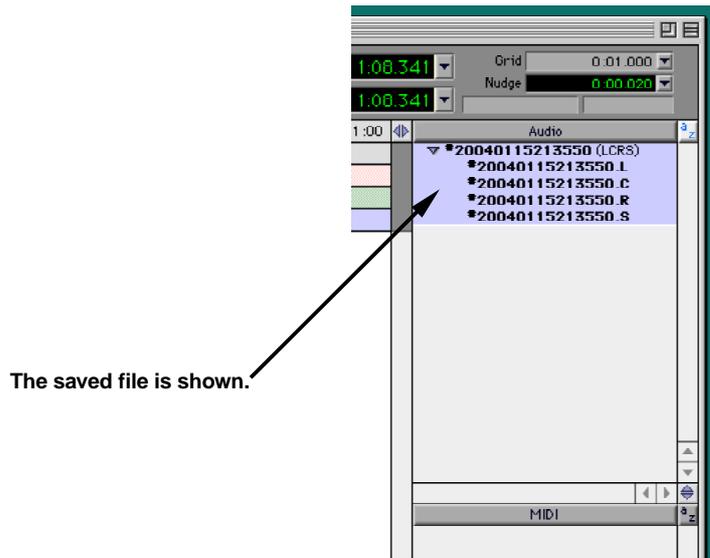
4. Select the desired directory ("bwff" or "sd2f") on the disc.
5. Double-click on a desired audio file in the selected directory.
The selected audio file is shown in the "Region in current file" box.
6. Click on "Convert->", followed by "Done".
The window for selecting a destination folder for the saved file appears.



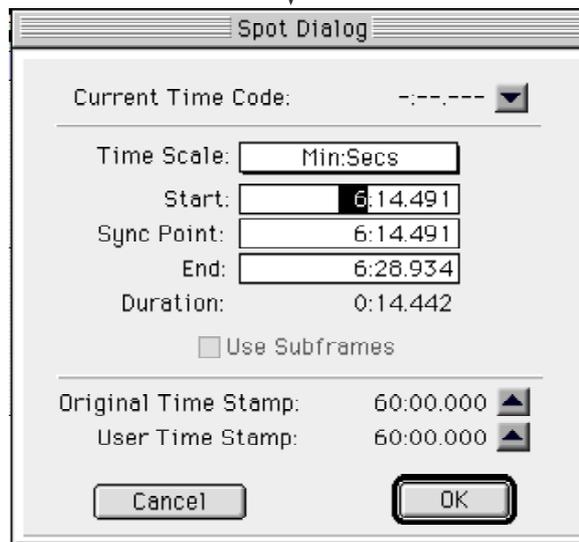
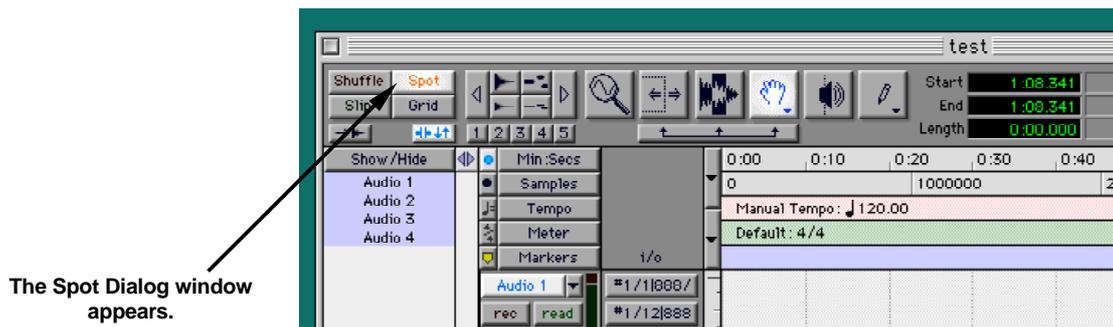
7. Select a desired directory to which the audio file is saved, and click on "Select".
The computer starts saving the file.



The saved file is shown in the Audio region list.

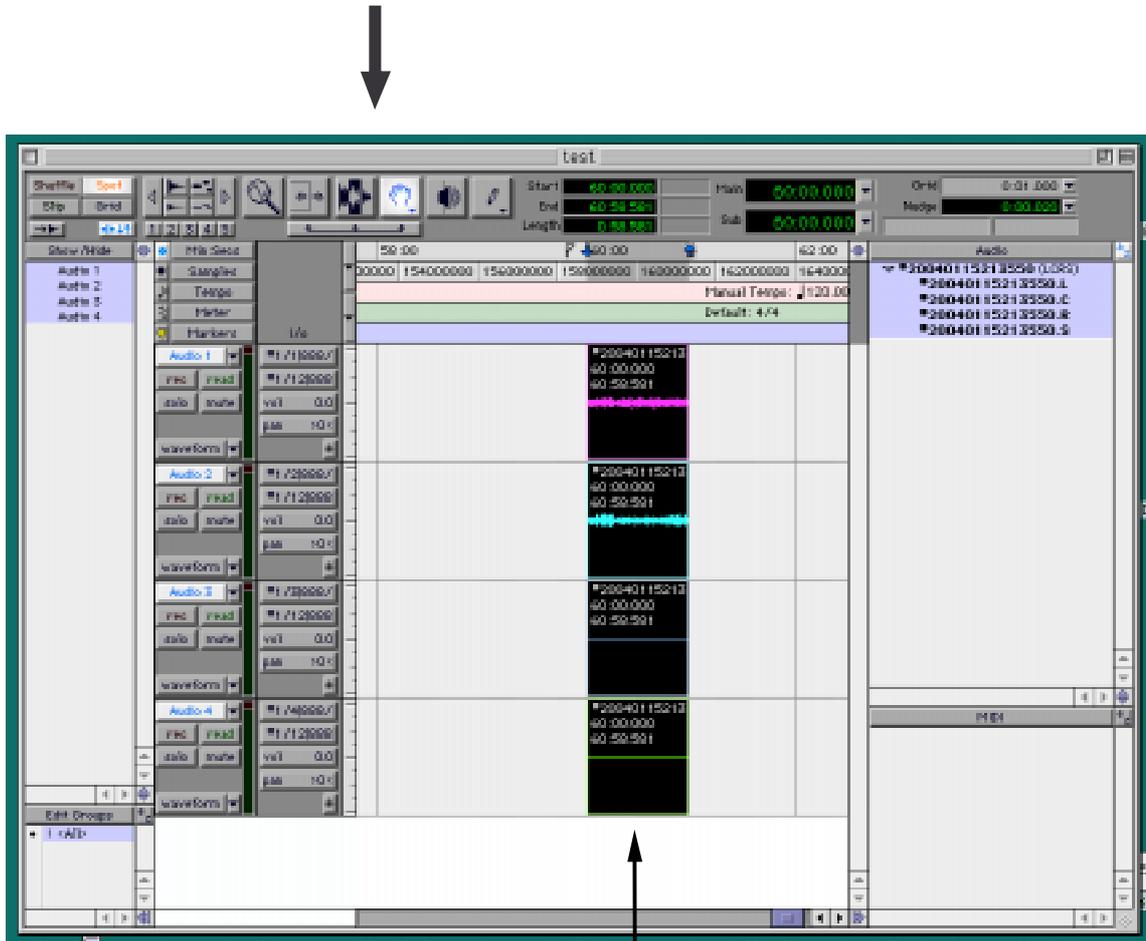
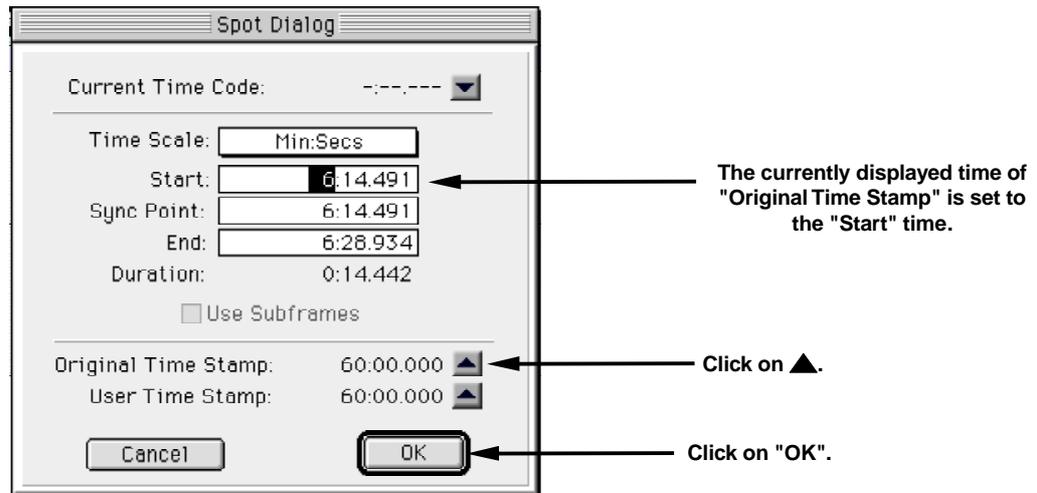


8. Click on "Spot" to make it active, and drag & down the Audio region list to the track area.



9. Click on ▲ in the Spot Dialog window, followed by "OK".

Clicking on ▲ sets the currently displayed time of "Original Time Stamp" to the "Start" time. Then clicking on "OK" imports audio data from the "Start" time position.



Chapter 15

Setup mode

In the Setup mode, you can set preferences, etc. of the unit as below.

1. Internal clock time adjustment (see chapter 1 for details.)
2. Display contrast setting
3. Reference level setting
4. Digital input track selection
5. Digital output signal format selection
6. Skipped item selection for the skip mode
7. Self diagnoses on/off
8. Auto EE mode on/off
9. Panel lock on/off
10. RS-422 setting
11. Peak hold time setting
12. GPI on/off
13. Slate tone recording time
14. Mute recording time
15. File name mode setting
16. Default file name setting
17. Saving setup data to a User box
18. Loading setup data from a User box
19. TCP/IP settings
20. Main CPU version display
21. Ethernet version display

How to access and set a Setup menu

<Note>

You can access the Setup menu while the unit is stopped and is not in the Utility or TC Setup mode.

Note that the operation procedure shown below is not applied to the "RS422 Setup" and "TCP/IP Setup" menus. See the explanations described later about how to access and set those menus.

1. While the unit is stopped and the SHIFT indicator is unlit, press the [SETUP] key.

The unit enters the Setup mode.

The first time the unit enters the Setup mode after turning on the power, the first level of the "Adjust RTC?" menu is shown on the display. Otherwise, the first level of the Setup menu previously accessed is shown.



2. Use the jog dial (or the [SKIP/CURSOR <<] / [SKIP/CURSOR >>] keys) to select a desired Setup menu, and press the [ENTER/YES] key.

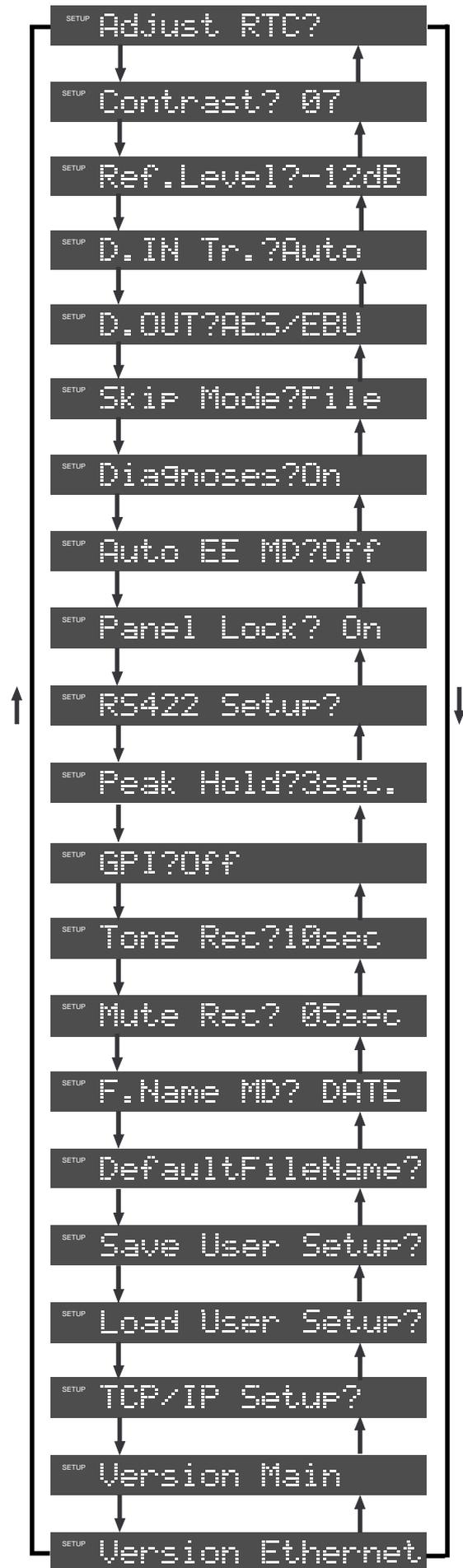
You can now set the selected menu.

The Setup menu changes in the order shown on the right.

3. Use the jog dial (or the [SKIP/CURSOR <<] / [SKIP/CURSOR >>] keys) to select a desired option, and press the [ENTER/YES] key.

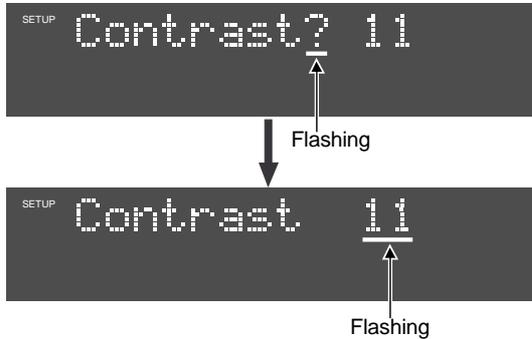
The selected option is confirmed and the display returns to the first level.

4. Press the [EXIT/NO] or [STOP] key to exit the Setup mode.



Display contrast setting

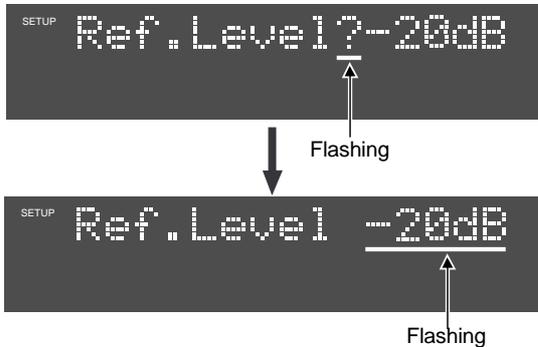
You can control the display contrast via the "Contrast?" menu. This setting is global and is not dependent on files. The setting is maintained after you turn off the power. You can save or load the setting.



"00" - "15"	The lower value softens the contrast and the higher value hardens the contrast. The default setting is "11".
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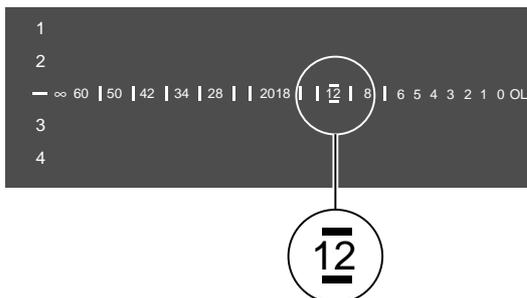
Reference level setting

You can set the reference level of the unit. This setting is global and is not dependent on files. The setting is maintained after you turn off the power. You can save or load the setting.



"-12dB"	The reference level is -12 dB.
"-18dB"	The reference level is -18 dB.
"-20dB"	The reference level is -20 dB (the default setting).

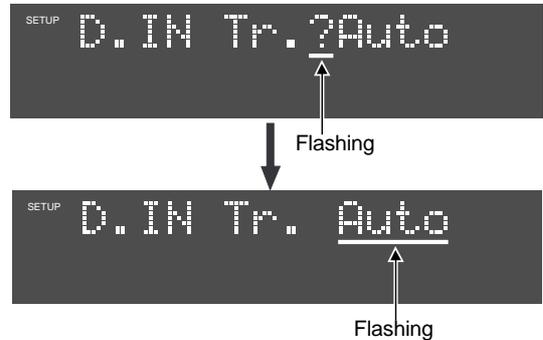
You can see the reference level by red bars above and below the appropriate numerical value of the level meter on the display.



Digital input track selection

You can select tracks which record digital input signals. With a MULTI-track audio file, the tracks which are not selected here can record analog input signals at the same time while the selected tracks record digital input signals.

This setting is dependent on files and is maintained after you turn off the power. You can save or load the setting.



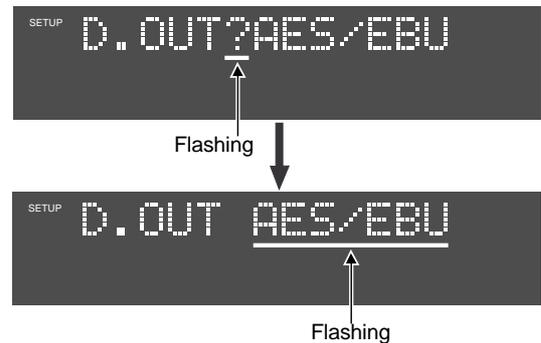
"Auto"	The tracks which receive digital inputs and are locked are automatically selected to record digital input signals. This is the default setting.
"1-2"	Tracks 1-2 are selected to record digital input signals, while tracks 3-4 are selected to record analog input signals.
"3-4"	Tracks 3-4 are selected to record digital input signals, while tracks 1-2 are selected to record analog input signals.

Digital output signal format selection

You can select the digital format of signals output from the DIGITAL OUT connector.

This setting is dependent on files and is maintained after you turn off the power.

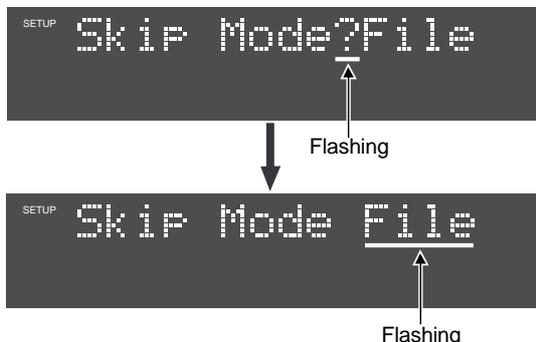
You can save or load the setting.



"AES/EBU"	Signals conformed to the IEC 60958 (AES/EBU) format are output from the DIGITAL OUT connector. This is the default setting.
"S/P DIF"	Signals conformed to the IEC 60958 (S/P DIF) format are output from the DIGITAL OUT connector.

Skipped item selection for the skip mode

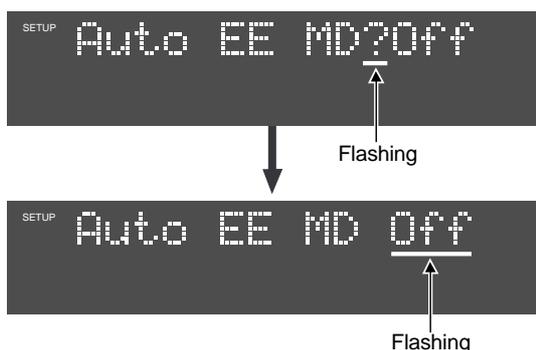
You can select the item to be skipped in the skip mode. This setting is dependent on files and is maintained after you turn off the power. You can save or load the setting.



"File"	Skips through audio files currently created. This is the default setting.
"CUE"	Skips through the CUE points stored in ABS time order.
"MEM"	Skips through the MEMORY points stored in ABS time order.

Auto EE mode on/off

You can set the auto EE mode to "On" or "Off". When set it to "On", you can always monitor the input signal except during playback or cueing. This setting is dependent on files and is maintained after you turn off the power. You can save or load the setting.

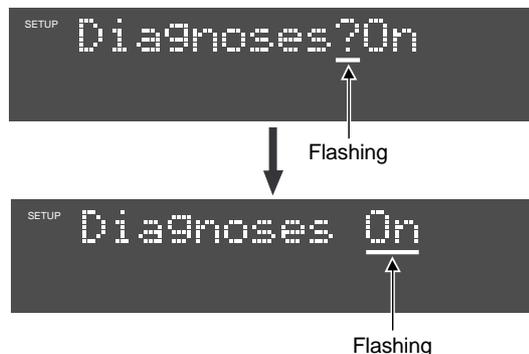


"Off"	You can monitor the input signal by using the INPUT MON key. This is the default setting.
"On"	You can always monitor the input signal except during playback or cueing.

Self diagnoses on/off

You can create and store self diagnoses files which record errors detected during recording. This setting is dependent on files and is maintained after you turn off the power. You can save or load the setting.

You can see the associated self diagnoses file by exporting an audio file to your computer.



"Off"	A self diagnoses file is stored on a DVD-RAM disk. This is the default. Note that if "Verify Write" is set to OFF, the file is not stored.
"On"	Self diagnoses files are created. This is the default setting.

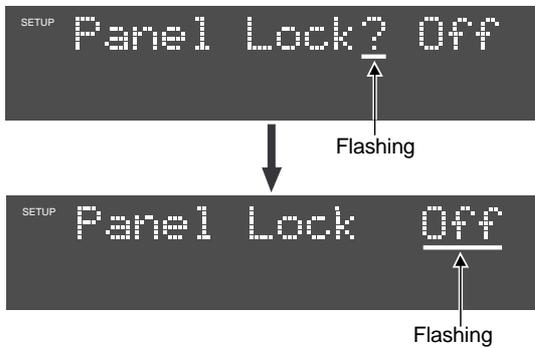
A self diagnoses file is stored on a disk with the ".dia" extension. A file is created in the text format so you can open it with a text editor.

Diagnoses list file
S18h 48m 49s 02 nov2001.sd2
2001-11-03 16:53:38
ABS time 00: 00: 04 Rec time-out error!
ABS time 00: 00: 09 Rec time-out error!
ABS time 00: 00: 15 Rec time-out error!
ABS time 00: 00: 21 Rec time-out error!

Diagnoses list file
S18h 48m 49s 02 nov2001.sd2
2001-11-03 17:51:22
ABS time 00: 00: 12 Rec time-out error!
ABS time 00: 00: 23 Rec time-out error!
ABS time 00: 00: 37 Rec time-out error!
ABS time 00: 00: 45 Rec time-out error!

Panel lock on/off

You can select whether or not the keys/controls on the front panel of the unit are disabled (locked) when setting the [CONTROL] key to "REMOTE". This setting is global and is not dependent on files. The setting is maintained after you turn off the power. You can save or load the setting.



"Off"	The keys/controls on the front panel of the unit are not disabled (locked). This is the default setting.
"On"	The keys/controls on the front panel of the unit are disabled (locked).

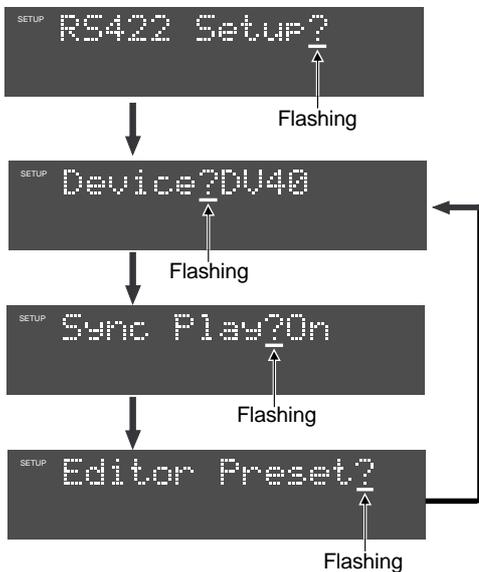
Setting RS-422

You can set the following items related with the RS-422.

1. Device code
2. Sync Play On/Off
3. Editor preset

These setting items are dependent on files and are maintained after you turn off the power. You can save or load the settings.

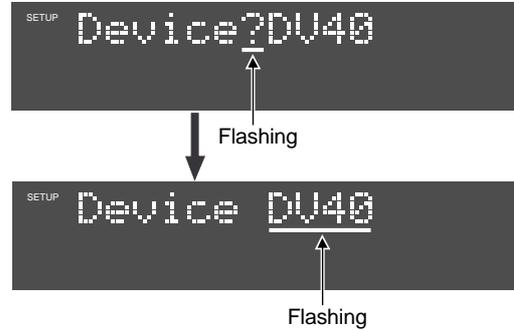
By pressing the [ENTER/YES] key while "RS422 Setup?" is shown, "Device?DV40" appears (in the initial condition). Pressing the jog dial switches between the setting items.



To make setting, select the desired setting items and press the [ENTER/YES] key, then select the desired option using the jog dial and press the [ENTER/YES] key.

1. Device code

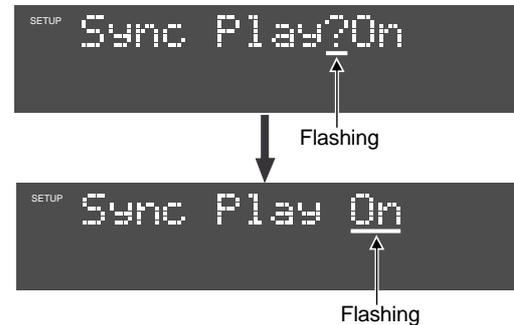
You can emulate the device code of the DV40 to the other device.



"DV40"	Device code is "DV40" (default setting).
"BVW-75"	Device code is "BVW-75". The unit emulates the BVW-75.

2. Sync play On/Off

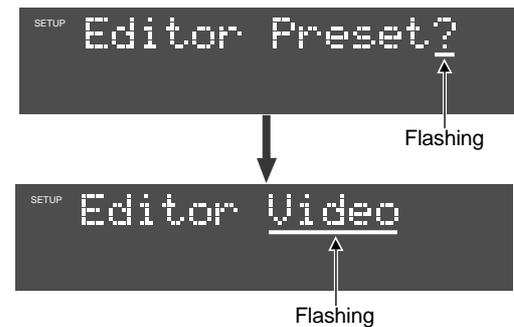
This items sets whether or not to lock to the incoming video reference frame when receiving the RS-422 play command. If you connect the DV40 to an editor, set it to "On".



"Off"	The Sync play function is not active.
"On"	The Sync play function is active (default setting).

3. Editor Preset

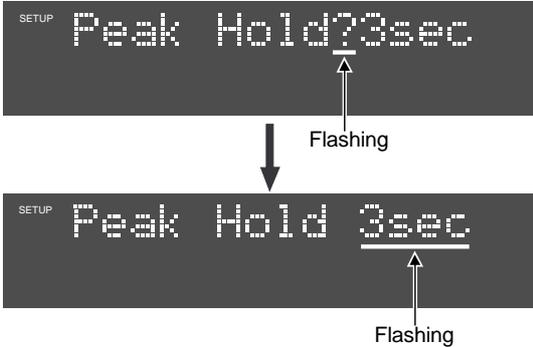
Set this item appropriately to match the editor connected, so that the DV40 can respond correctly.



"Video"	for connecting with a video editor (default setting).
"Lynx"	for connecting with a Lynx synchronizer.

Peak hold time setting

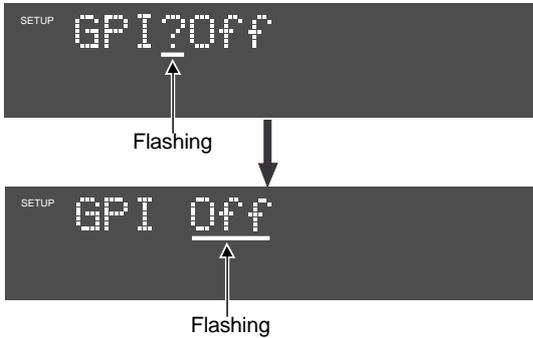
You can set the peak hold time of the level meters on the display. This setting is global and is not dependent on files. The setting is maintained after you turn off the power. You can save or load the setting.



“0 sec” ~ “9sec” or “∞”	The default is “3sec”.
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GPI on/off

You can activate or deactivate the GPI function. This setting is global and is not dependent on files. The setting is maintained after you turn off the power. You can save or load the setting.



“Off”	The GPI function is deactivated. This is the default.
“On”	The GPI function is activated.

GPI IN ports

By making "TTL level, low active" ports to low, the following functions are taken place.

Pin 1	GND	
Pin 2	STOP	Feeding the "low" pulse signal is equivalent to pressing the [STOP] key.
Pin 3	PLAY	Feeding the "low" pulse signal is equivalent to pressing the [PLAY] key.
Pin 4	>>	Feeding the "low" pulse signal is equivalent to pressing the [>>] key.
Pin 5	<<	Feeding the "low" pulse signal is equivalent to pressing the [<<] key.

The minimum input pulse width: 15 msec (except for Pin 3/PLAY, whose minimum input pulse width is 5 msec).

GPI OUT ports

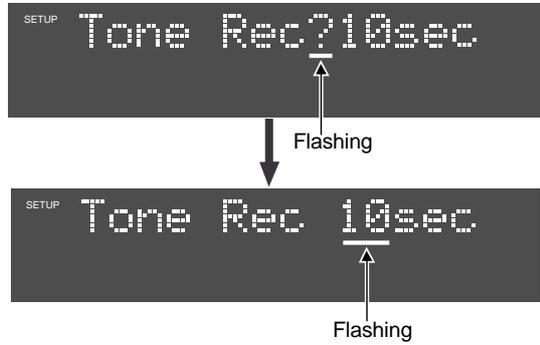
The following events can be output during playback.

Pin 1	GND	
Pin 2	EVENT 1	The event is output at CUE point 1.
Pin 3	EVENT 0	The event is output at CUE point 0.
Pin 4	EVENT 2	The event is output at CUE point 2.
Pin 5	EVENT 3	The event is output at CUE point 3.

A low level, 60 msec width pulse is output during recording and playback.

Slate tone recording time

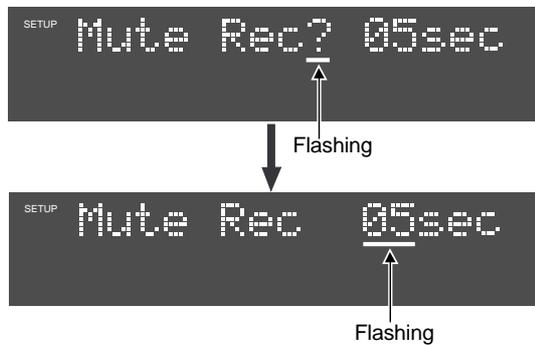
You can set the recording time of the slate tone when the SHIFT indicator is lit. This setting is dependent on files and is maintained after you turn off the power. You can save or load the setting.



“0 sec” ~ “30sec”	Default: 10 sec.
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Mute recording time

You can set the mute recording time when the SHIFT indicator is lit. This setting is dependent on files and is maintained after you turn off the power. You can save or load the setting.

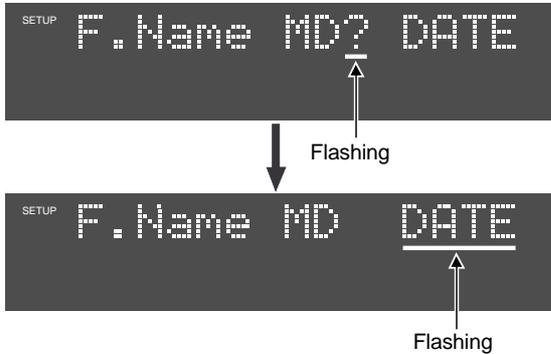


“0 sec” ~ “30sec”	Default: 5 sec.
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File name mode setting

When creating a new audio file, you can give a name in either of two formats; a desired file name followed by a take number which automatically increments, or a name including date/time information.

This setting is dependent on files and stored in the Flash ROM.



<p>"DATE"</p>	<p>Each name starts by the file type ("S" for SD2 or "B" for BWF), followed by time and date information and ends by the file extension. This is the default. For example, if you create a new SDII audio file at 15H:30M:40S on the 10th of May in 2002, the file name will be "S15h 30m 40s may 2002.sd2". If a new BWF audio file is created at the same date/time, the file name will be "B15h 30m 40s may 2002.wav".</p>
<p>"TAKE"</p>	<p>Each name starts by the file name which can be set in the "Default File Name?" menu described below, followed by a Take number which automatically increments, and ends by the file extension.</p>

<Note>
If you do not set the default file name correctly in the "Default File Name?" menu (described below), the DV40 automatically gives a name to a newly created file in the "DATE" mode regardless of the "F.Name MD?" setting.

Default file name setting

When creating a new audio file, you can specify a desired file name (default file name) followed by a take number which automatically increments. The default file name and starting take number can be set in the "DefaultFileName?" menu and are effective only when setting "F.Name MD?" to "TAKE".

If you create a new audio file, the DV40 gives a file name starting by the specified file name, followed by the take number and ended by the file extension. Each time recording in the NEW FILE mode is made, a new audio file with an incremented take number is created.

See Tips on the next page.

<Note>
You do not need to set the file extension (".sd2" or ".wav"), which is automatically added to the file name/take number.

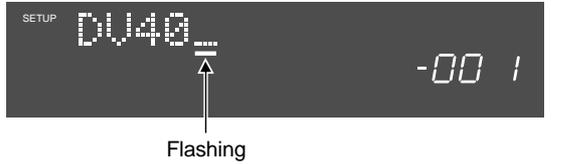
Setting a file name and take number

1. Bring up "Default File Name?" menu and press the [ENTER/YES] key.

The following appears on the DV40 FL display. ("_" flashes.)



2. Input a desired file name.
Using alphanumerical keys, jog dial and [SKIP/CURSOR >>] / [SKIP/CURSOR <<] key, input a desired file name. The following example names the file as "DV40".



3. Press the [ENTER/YES] key.
By pressing the [ENTER/YES] key, the file name is defined as "DV40" and 3-digit number "-001" start flashing.



<CAUTION>

When naming a file using PS/2 keyboard, be careful about the use of special characters. The file name with the following characters are not correctly recognized by the Windows OS platform.

"/", "?", ".", "<“, ">“, "|“, “¥“, “-“

Remember that the 1st character of the file name must start from an alphabet and the following use only ASCII characters. Although up to 247 numbers of characters can be used as a file name, the maximum number of characters recognized by SDII and BWF specifications are 23 and 55 respectively.

4. Set the 3-digit number and press the [ENTER/YES] key.

Set the 3-digit number by rotating the jog dial and/or using the 10 alphanumeric keys (001~999). The input 3-digit number sets the number attached to the default file name. The following example sets the default file name as “DV40-005”.



<Note>

If you enter "000" using the numeric (0) key then press the [ENTER/YES] key, the take number is automatically set to "001".

5. Press the [EXIT/NO] key or [STOP] key.

“DefaultFileName?” appears again. Pressing the [EXIT/NO] key or [STOP] key goes back to the normal display. By the above procedures, the default file name is set to “DV40-005”. If the “TAKE” File Name Mode is selected, every time a file is newly created, it will be named as “DV40-5”, “DV40-6”,“DV40-9”, “DV40-10”, “DV40-11”,“DV40-111”,“DV40-999”.

<Example>

• After recording the first take:



• After recording the second take:



• After recording the third take:



Save/load of setup data

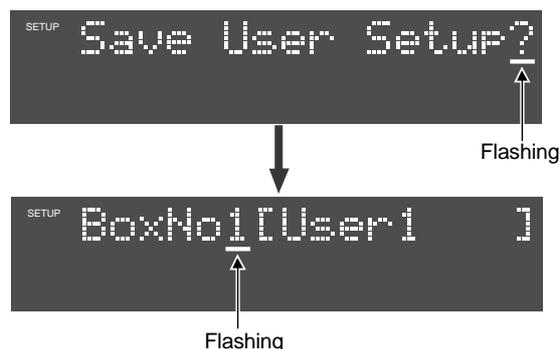
you can save a set of setup data to a User Box and load it whenever you want.

All data for 12 items explained above can be saved to a User Box, to which you can give a desired user name.

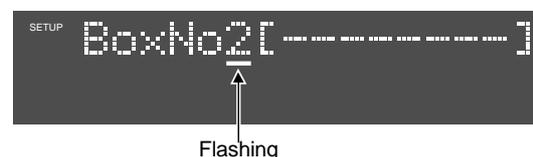
• Saving setup data

1. Select "Save User Setup?" and press the [ENTER/YES] key.

Now you can select a User Box to which the data is saved. The first time you enter this menu, "BoxNo1[User1]" is shown where "1" is flashing, as below. "User1" is the tentative name.

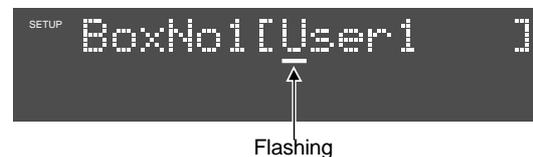


While the display above is shown, you can select a User Box from among Box numbers 1 through 9 by using the jog dial (or the [SKIP/CURSOR >>]/[SKIP/CURSOR <<] keys). If you select any of Box numbers 2 through 9, "-----" is shown in the bracket as below, showing that the tentative name is not specified.



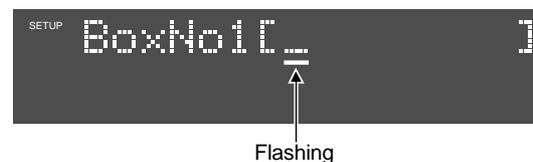
2. Select a desired Box number and press the [ENTER/YES] key.

The leftmost character of the tentative name flashes, showing that you can edit the name.



3. Enter the desired Box name.

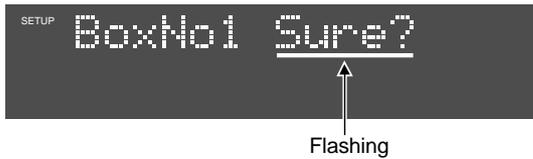
- You can erase the tentative name by pressing the [MARGIN RESET/CLR] key repeatedly.



- Use the jog dial (or the numeric keys) to enter the desired characters. A name can be up to 8 characters.

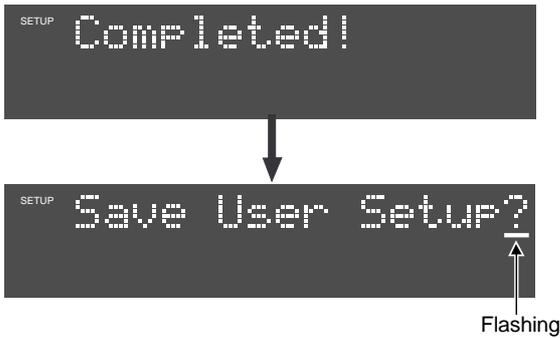
4. After entering a desired name, press the [ENTER/YES] key.

"Sure?" flashes on the display.



5. Press the [ENTER/YES] key again.

The unit immediately saves the name and shows "Completed!", followed by "Save Use Setup?".



6. To exit the Setup mode, press the [EXIT/NO] key (or the [STOP] key).

• Loading setup data

You can load a setup data box from among the default box (Box number 0) and user boxes (Box numbers 1 through 9) which holds data you saved.

Tips:

Normally, when making recording in the NEW FILE mode or creating a new audio file in the file select mode, the setup data of the file previously selected is copied to the new file.

Therefore, if you want to work with the new file with a desired setup data set saved in a box, load the box after creating the file.

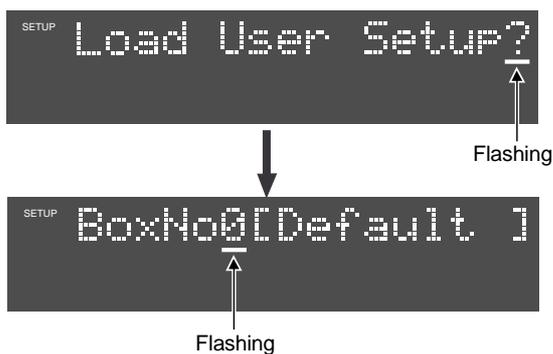
1. Select "Load User Setup?" and press the [ENTER/YES] key.

"BoxNo0" is shown where "0" is flashing.

You can now select a desired box by using the jog dial (or the [SKIP/CURSOR >>]/[SKIP/CURSOR <<] keys).

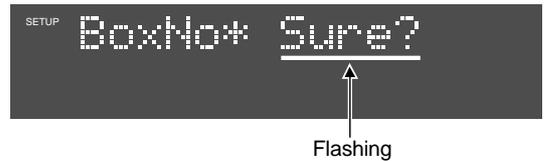
If you select "BoxNo0[Default]", the default settings will be loaded.

If you select any of User Boxes, an appropriate user setup data set is loaded.



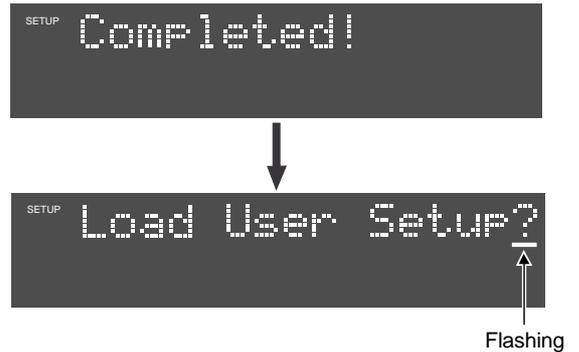
2. Select a desired box and press the [ENTER/YES] key.

"Sure?" flashes on the display ("*" shows the selected box number).



3. Press the [ENTER/YES] key again.

The unit immediately loads the data and shows "Completed!", followed by "User Setup Load?".



4. To exit the Setup mode, press the [EXIT/NO] key (or the [STOP] key).

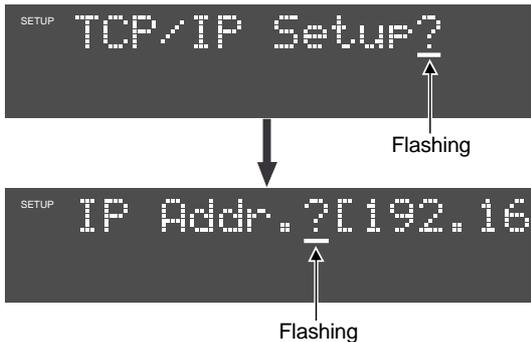
TCP/IP settings

The "TCP/IP Setup?" menu allows you to set parameters for transferring audio file data between the DV40 and your personal computer via the TCP/IP.

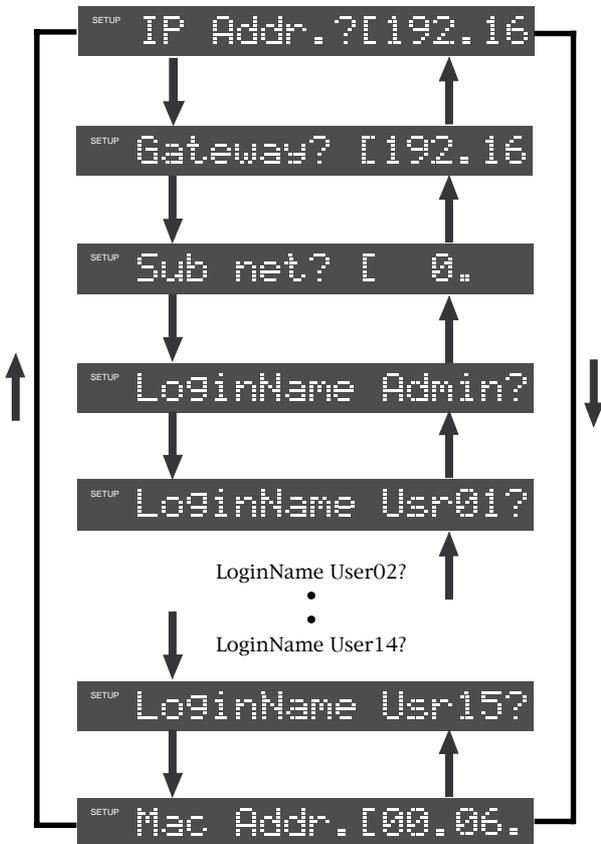
<Note>

When changing the TCP/IP setting, turn the DV40 power off then on. Otherwise, the new setting is not effective.

By selecting the "TCP/IP setup?" menu and pressing the [ENTER/YES] keys, the IP address setting sub-menu is shown



You can now use the jog dial to select a sub-menu in the following order. You can check or/and edit the setting of each sub-menu.



Showing and setting the IP address

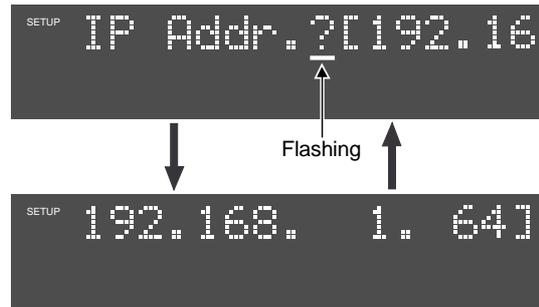
You can check or/and assign the IP address for the DV40.

Showing the IP address

1. Select "IP Addr.?" and press the [SKIP/CURSOR >>|] key.

The current IP address is shown (the default is 192.168.1.64).

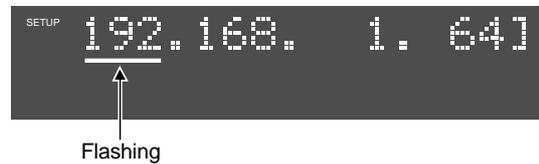
Pressing the [SKIP/CURSOR <<|] or [SKIP/CURSOR >>|] key alternates the following screens.



Setting the IP address

1. While either of the screen above is shown, press the [ENTER/YES] key.

The leftmost three-digit value of the current IP address starts flashing, showing that you can now edit it.



2. Use the [SKIP/CURSOR <<|]/[SKIP/CURSOR >>|] keys to move the flashing (editing) point and use the jog dial or numeric keys to enter a desired value.
3. After entering the desired value, press the [ENTER/YES] key. "Wait!" flashes for a while, and the new IP address is set.
4. To exit the Setup mode, press the [EXIT/NO] key or [STOP] key.

• Showing and setting the router IP address

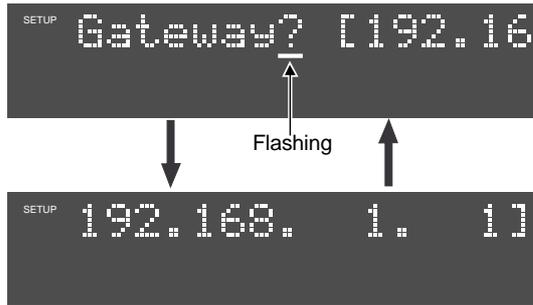
You can check or/and assign the IP address for a gateway server in the network. If a gateway server is not used, this setting is not necessary.

Showing the router IP address

1. Select "Gateway?" and press the [SKIP/CURSOR >>] key.

The current IP address is shown (the default is 192.168.1.1).

Pressing the [SKIP/CURSOR <<] or [SKIP/CURSOR >>] key alternates the following screens.



Setting the router IP address

1. While either of the screen above is shown, press the [ENTER/YES] key.

The leftmost three-digit value of the current IP address starts flashing, showing that you can now edit it.



2. Use the [SKIP/CURSOR <<]/[SKIP/CURSOR >>] keys to move the flashing (editing) point and use the jog dial or numeric keys to enter a desired value.

3. After entering the desired value, press the [ENTER/YES] key.

"Wait!" is shown for a while, and the new IP address is set.

4. To exit the Setup mode, press the [EXIT/NO] key or [STOP] key.

• Showing and setting the subnet mask

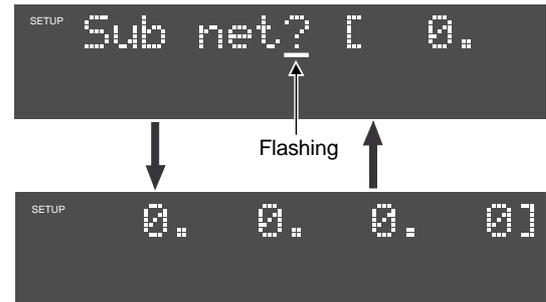
You can check or/and set values for the subnet mask in the network. If a subnet mask is not used, this setting is not necessary.

Showing the subnet mask

1. Select "Sub net?" and press the [SKIP/CURSOR >>] key.

The current subnet mask is shown (the default is 0.0.0.0).

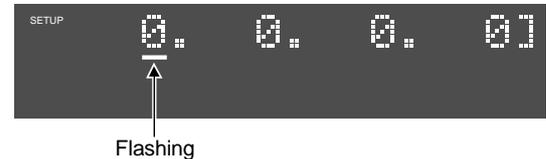
Pressing the [SKIP/CURSOR <<] or [SKIP/CURSOR >>] key alternates the following screens.



Setting the subnet mask

1. While either of the screen above is shown, press the [ENTER/YES] key.

The leftmost value of the current subnet mask starts flashing, showing that you can now edit it.



2. Use the [SKIP/CURSOR <<]/[SKIP/CURSOR >>] keys to move the flashing (editing) point and use the jog dial or numeric keys to enter a desired value.

3. After entering the desired value, press the [ENTER/YES] key.

"Wait!" is shown for a while, and the new subnet mask is set.

4. To exit the Setup mode, press the [EXIT/NO] key or [STOP] key.

• Login name/password settings

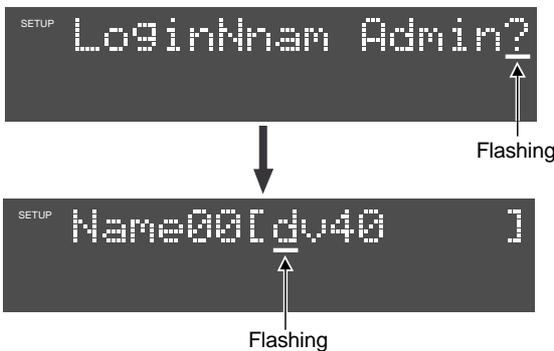
You can check or/and set a login name and password, which are used for logging in from the FTP client.

In the initial condition, you can log in if both the login name and password are not entered. If you want to restrict logging in, set the login name and password of Administrator or User 01 through 15.

Showing the login name/password

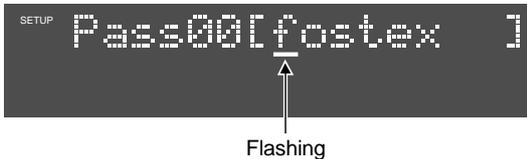
1. Select "Login Name Admin?" and press the [ENTER/YES] key.

The current login name for the administrator is shown (the default is "DV40"). The leftmost character of the name is flashing.



2. Press the [ENTER/YES] key again.

The current password is shown (the default is "fostex").



Tips:

To check the user login name and password, first select a desired user number (between "Usr01" and "Usr15") by rotating the jog dial (or pressing the [SKIP/CURSOR >>] key) when the display shows "Login Name Admin?".

The display shows something like the example below.

When the desired user number is shown, press the [ENTER/YES] key once or twice to check the login name or password of the selected user menu.



Setting the log-in names and passwords

1. While the login name is shown, enter the desired login name.

You can enter up to 8 characters for a login name.

- Press the [MARGIN RESET/CLR] key repeatedly to erase the current login name completely.
- Enter characters using the jog dial or numeric keys.

2. After entering the name, press the [ENTER/YES] key.

The entered login name is now valid, while the display shows the password (the default is "fostex").

3. Enter the desired password using the same method as step 1 above.

You can enter up to 8 characters for a passwords.

4. After entering the password, press the [ENTER/YES] key.

"Wait!" flashes on the display for a while until the new login name and password are valid, and the display returns to show "Login Name Admin?".

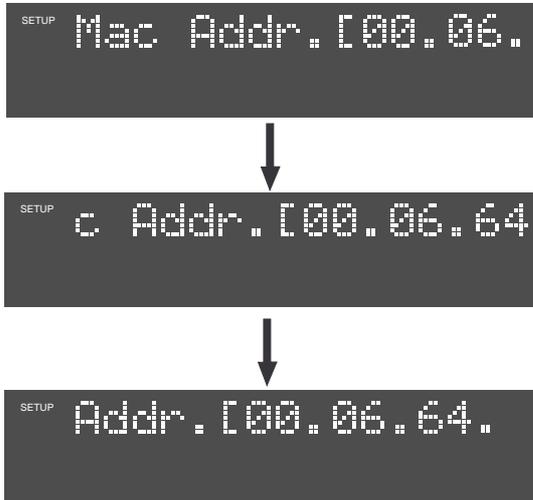
5. Press the [EXIT/NO] or [STOP] key to exit the Setup mode.

• Showing the MAC address

1. Select "MAC Addr.?" and press the **[SKIP/CURSOR >>]** key repeatedly.

The assigned MAC address shown on the display scrolls left.

Pressing the **[SKIP/CURSOR <<]** key scrolls right.



2. To exit the Setup mode, press the **[EXIT/NO]** key or **[STOP]** key.

Showing the main software version

You can check the main software version of the unit by selecting "Version Main".

When you have any trouble or question and contact our service section, you may be asked the main software version.



Showing the ethernet software version

You can check the ethernet software version of the unit by selecting "Version Ethernet".

When you have any trouble or question and contact our service section, you may be asked the ethernet software version.



Chapter 16

Utility mode

This chapter describes details about the Utility mode.

This mode deals with preference menus, as well as execution menus for disc formatting, optimizing, etc.

<Note>

There are 11 menus in the Utility mode, however, this chapter describes details about only "Menu 1" through "Menu 6". See the appropriate sections indicated in parentheses for details about menu items 7 through 11.

1. Selecting Rec protect On or Off
2. Renumbering CUE points
3. Releasing undo files
4. Selecting On or Off of the resume function
5. Editing a Volume label
6. Setting User Bit data
7. Editing a file name (See "**Chapter 9: Audio file management**")
8. Deleting an audio file (See "**Chapter 9: Audio file management**")
9. Restoring a deleted file (See "**Chapter 9: Audio file management**")
10. Formatting a disk (See "**Chapter 3: Reformatting/optimizing a disk**")
11. Optimizing a disk (See "**Chapter 3: Reformatting/optimizing a disk**")

How to select a Utility menu

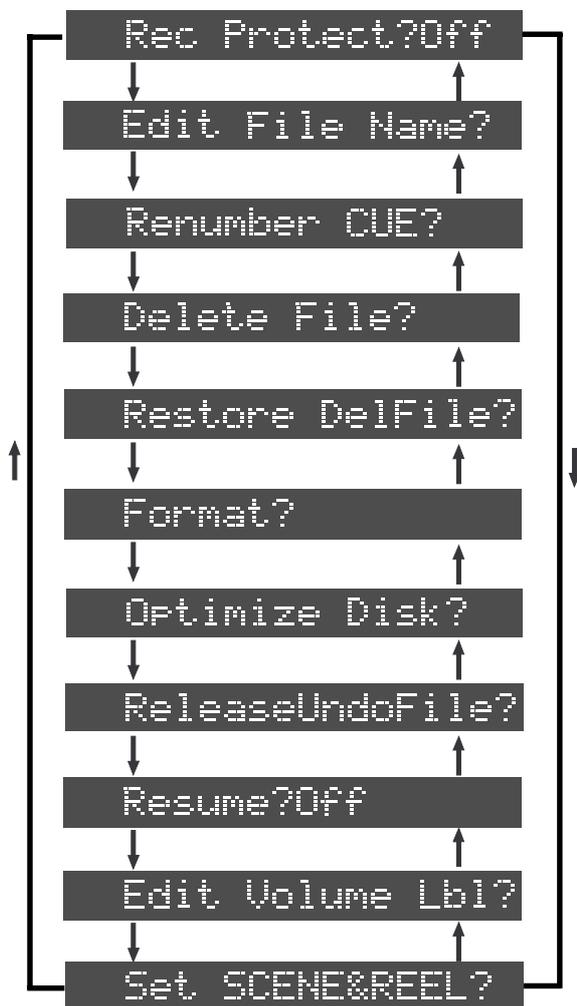
<Note>

You can enter the Utility mode while the unit is stopped and is not in the Setup or TC Setup mode.

1. While the unit is stopped, press the [SHIFT] key to enter the shift mode (the SHIFT indicator lights up).
2. Press the [SETUP] key (the SHIFT indicator turns off). The unit enters the Utility mode. The first time the unit enters the Utility mode after turning on the power, the first level of the "Rec Protect?" menu appears. Or if it is not the first time the unit enters the Utility mode after turning on the power, the first level of the previously selected menu appears.



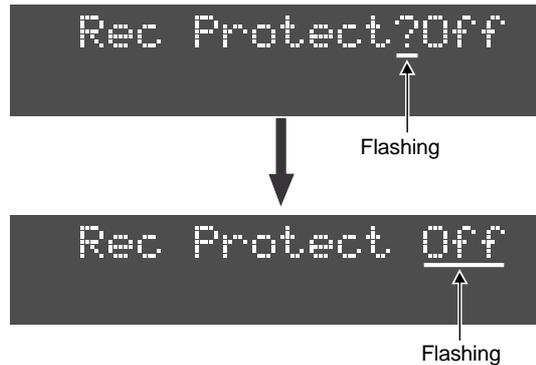
3. Rotate the jog dial (or use the [SKIP/CURSOR <<] / [SKIP/CURSOR >>] keys) to select a desired menu item and press the [ENTER/YES] key. Now you can edit the menu item. Rotating the jog dial or pressing the [SKIP/CURSOR <<] (or [>>]) key cycles through the Utility menu items in the following order. See the following description for details about each Utility menu item.



Selecting Rec Protect On or Off

You can protect a file from being recorded or edited. This setting is dependent on files and is maintained after you turn off the power.

1. Select the first level of the "Rec Protect?" menu, and press the [ENTER/YES] key. The current option (On or Off) flashes. You can now select the desired one.



2. Use the jog dial to select On or Off and press the [ENTER/YES] key. The setting is completed and the display returns to show the first level.

"On"	The current file is protected. You cannot make recording or edit (copy, paste, insert, erase and cut) track data.
"Off" (default)	You can make recording or edit track data.

Tips:

You can also use the [SKIP/CURSOR <<] / [SKIP/CURSOR >>] keys to select an option, instead of the jog dial.

3. Press the [EXIT/NO] or [STOP] key to exit the Utility mode.

Tips:

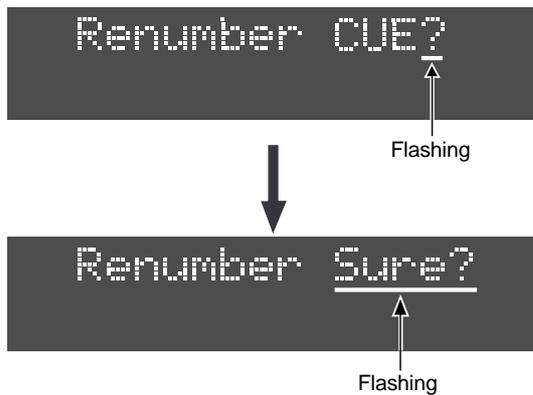
When the Rec Protect menu is set to On, if you try to make recording or edit track data, "Rec Protected!" is shown and the operation is ignored.

Renumbering CUE points

This menu allows renumbering CUE points. When CUE points are renumbered, CUE points are numbered in order of time. This function is useful after deleting a CUE point or the current CUE points are not stored in order of time.

You can renumber CUE points of the currently selected file.

1. Select the first level of the "Renumber CUE?" menu, and press the [ENTER/YES] key. "Sure?" flashes.



2. Press the [ENTER/YES] key again.

The unit starts renumbering CUE points. While executing renumbering, "Please Wait!" is shown. When completed, "RNM Completed!" appears momentarily and the display returns to the previous screen before entering the Utility mode.



Releasing undo files

You can release all undo files of the currently selected file to keep more recording space of the disk. You can release undo files by file.

1. Select the first level of the "Release Undo File?" menu, and press the [ENTER/YES] key.

The following warning message scrolls horizontally, while the remaining space value is shown.



<Message>

If you push ENTER key will be unable to undo for current file! Are you sure?

2. Press the [ENTER/YES] key again.

"Release Undo File" appears momentarily followed by "Completed!", showing that all the undo files have been released.



3. Press the [EXIT/NO] or [STOP] key to exit the Utility mode.

The display returns to the previous screen before entering the Utility mode.

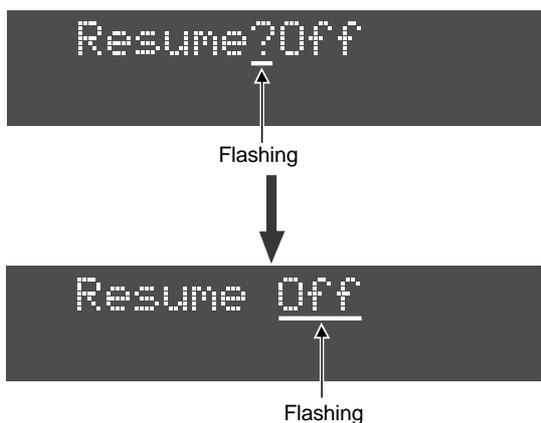
Selecting On or Off of the resume function

This menu selects On or Off of the resume function. If it is set to On, the file that was selected when turning off the power last time is selected when starting up the unit.

This menu is global and the setting is maintained after you turn off the power.

1. Select the first level of the "Resume?" menu, and press the [ENTER/YES] key.

The current option (On or Off) flashes. You can now select the desired one.



2. Use the jog dial to select On or Off and press the [ENTER/YES] key.

The setting is completed and the display returns to show the first level.

"On"	The file that was selected when turning off the power last time is selected when turning on the unit.
"Off" (default)	The "01" file in the "bwff" or "sd2f" directory is selected when turning on the unit.

Tips:
You can also use the [SKIP/CURSOR] |<</>| keys to select an option, instead of the jog dial.

<Note>
When turning on the power, if the setting of the [AUDIO FILE], [TR MODE] or [SAMPLING FREQ] switch does not match the selected audio file, the currently selected option flashes in the "FORMAT", "BIT" or "FS" section on the display.
In such a case, set the corresponding switch to the appropriate position.

3. Press the [EXIT/NO] or [STOP] key to exit the Utility mode.

Editing a Volume Label

The "Volume Label" is name which is used to identify a disk. It is normally named when formatting a disk. As mentioned in the DV40 owner's manual page 1-5, the default name of Volume Label to be attached to the DVD-RAM disk is "DV40-DVD". This menu allows you to edit the volume label of a DVD-RAM disk and rename it.

This menu is global and the setting is maintained after you turn off the power.

Tips:

By entering a volume label in the following format, the unit can recognize it as a Reel number. If you set the "TC UBIT Sel?" menu in the TC Setup mode to "SRNo" (Scene number/Reel number), you can output the Reel number in the lower three digits of the User Bits.

Example: *****-XXX

- *****: Volume name
- XXX: a three-digit numeral between 000 through 999. It must end with a Null character. The unit recognizes a three-digit ASCII BCD that follows to "-" as a Reel number.

A Windows 98/NT computer supports up to 10 characters for a volume label, while a Macintosh computer supports up to 27 characters and UDF format supports up to 127 characters. To maintain the compatibility among computers, we recommend to set a volume label within 10 characters.

<Note>
You can also set a Reel number in the "Set SCENE & REEL?" menu described later. Therefore, if you edit a Volume label with the format above so that the unit can recognize it as a Reel number, the Reel number is automatically rewritten.

<CAUTION>

- Due to the limitation of the number of alphanumeric characters used for VOLUME LABEL recognized on Windows OS, using up to 10 alphanumeric characters including the 3-digit REEL NUMBER are recommended.
- The REEL NUMBER XXX is just a character string. Please remember that it does not roll over to the next digit or roll back to the previous digit.

1. Select the first level of the "Edit Volume Lbl?" menu, and press the [ENTER/YES] key.

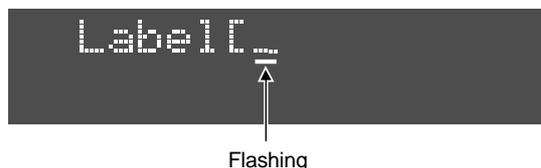
The leftmost character of the current volume label flashes. You can now edit it.

The following example shows the default volume label.



2. Press the [MARGIN RESET/CLR] key repeatedly until the current volume label is all erased.

Each press of the key erases the rightmost character.



3. Enter a new volume label.

You can use either of the following two methods.

- Rotate the jog dial to select a desired character at the flashing point, then press the [SKIP/CURSOR >>] key to move the flashing point to right. Repeat this procedure until the desired volume label is entered.
- Use an appropriate numeric key to enter a desired character directly at the flashing point. Pressing an other numeric key move the flashing point to right.

4. After entering the desired volume label, press the [ENTER/YES] key.

The entered volume label is stored and the display shows "Edit Volume Lbl?".

5. Press the [EXIT/NO] or [STOP] key to exit the Utility mode.

<Note>

When formatting the DVD-RAM disk, renaming the VOLUME LABEL with 3-digit number (e.g. DV40-005) from the default name (DV40-DVD) is possible, so that the 3-digit number can be recognized as a REEL NUMBER which allows to output as a TC UBIT information.

Setting User bit data

You can make settings for the user bit which is output when the "TC UBIT Sel?" menu in the TC Setup mode is set to "SRNo" (Scene number/Reel number).

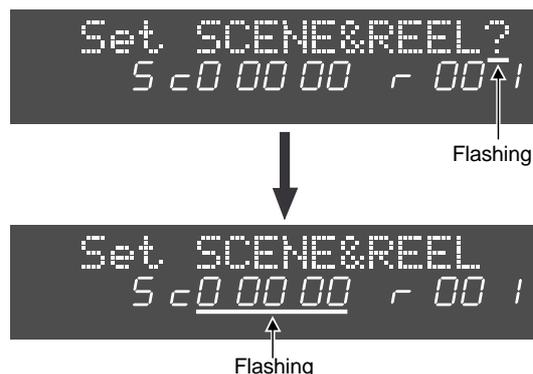
This menu is global and the setting is maintained after you turn off the power.

<Notes>

- The Reel number can be also set in the "Edit Volume Lbl?" menu described earlier, whose setting is reflected here.
- The setting here is stored in the RESUME file regardless of the "RESUME ON/OFF" setting in the Setup mode.
- If the Scene number exceeds 99999, the lower five digits are output.
- The values set in this menu affect all files.

1. Select the first level of the "Set SCENE & REEL?" menu, and press the [ENTER/YES] key.

The Scene number offset currently set flashes (the default value is "00000"). You can now edit it.



Tips:

The screen displayed when selecting the "Set SCENE & REEL?" menu shows the following (the examples below shows the default settings).

Sc00000: Scene number offset (in five digits)
The Scene number to be output via TC UBIT data is "00000 + File number".

r001: Reel number (in three digits)

2. Use the [SKIP/CURSOR <</>>] keys to move the edit point (scene number or reel number) and use the jog dial to select a desired Scene number offset or Reel number.

3. After entering the desired values, press the [ENTER/YES] key.

The entered values are stored and the display shows "Set SCENE & REEL?". Also these values can be sent out as TC UBIT information.

4. Press the [EXIT/NO] or [STOP] key to exit the Utility mode.

Chapter 17

Specifications

Specifications

<Inputs/Outputs>

*0 dBu - 0.775 Vrms, 0 dBV = 1 Vrms.

- Reference level : -12 dB/-18 dB/-20 dB (default: -18 dB, selectable from the "Reference Level?" menu in the Setup mode)
- Nominal input level : +4 dBu/-10 dBV (balanced), selectable using the input level select switch on the rear panel

ANALOG INPUTs (TR 1 through TR 4)

- Connector : XLR-3-31 type (balanced, pin 2: hot)
- Input impedance : 10k Ω or more
- Nominal input level : +4 dBu
- Maximum input level : +24 dBu

ANALOG OUTPUTs (TR 1 through TR 4)

- Connector : XLR-3-32 type (balanced, pin 2: hot)
- Applicable load impedance : 600 Ω or more
- Nominal output level : +4 dBu
- Maximum output level : +24 dBu

Monitor OUTPUTs (TR 1 through TR 4)

- Connector : 1/4" phone jack (unbalanced)
- Applicable load impedance : 10k Ω or more
- Nominal output level : -10 dBV
- Maximum output level : +10 dBV

PHONES output

- Connector : 1/4" phone jack
- Applicable load impedance : 8 Ω or more
- Maximum output level : 100 mW (into 32 ohms)
- * Monitor track(s) selectable using the [PHONES] switches on the front panel.

DIGITAL INPUTs (TR 1-2, TR 3-4)

- Connector : XLR-3-31 type
- Format : IEC 60958 (S/PDIF) or IEC 60958 (AES/EBU), automatically detected

DIGITAL OUTPUTs (TR 1-2, TR 3-4)

- Connector : XLR-3-32 type
- Format : IEC 60958 (S/PDIF) or IEC 60958 (AES/EBU), selectable by the "D. OUT?" menu in the Setup mode

* When dealing with a digital signal at 176.4 kHz or 192 kHz sampling rate, channels L and R are assigned to TR 1-2 and TR 3-4 respectively.

GPI IN/OUT

- Connector : DIN 5-pin
- * ON or OFF selectable by the "GPI?" setting menu in the Setup mode.

GPI IN

- Pin 1: GND
- Pin 2: STOP
The "low" pulse activates the function equivalent to the [STOP] key.
- Pin 3: PLAY
The "low" pulse activates the function equivalent to the [PLAY] key.
- Pin 4: >>
The "low" pulse activates the function equivalent to the [>>] key.

Pin 5: <<

The "low" pulse activates the function equivalent to the [||<<] key.

- * The minimum effective input pulse width is 15 milliseconds (except Pin 2 [PLAY] whose minimum pulse width is 5 milliseconds).

GPI OUT

Pin 1: GND

Pin 2: EVENT 1

Outputs the event of CUE POINT 1

Pin 3: EVENT 0

Outputs the event of CUE POINT 0

Pin 4: EVENT 2

Outputs the event of CUE POINT 2

Pin 5: EVENT 3

Outputs the event of CUE POINT 3

- * A 60-msec width low level pulse can be output from each event output during play back or recording.

TIME CODE INPUT

- Connector : XLR-3-31 type (balanced, pin 2: hot)
- Format : SMPTE/EBU
- Nominal input : 2 V p-p
- Transmission rate : 2.4 kbit/sec (SMPTE)
- Input impedance : 20k Ω or more
- Minimum input level : 0.25 V p-p

TIME CODE OUTPUT

- Connector : XLR-3-32 type (balanced, pin 2: hot)
- Format : SMPTE/EBU
- Nominal input : 2 V p-p
- Output impedance : 1k Ω or less
- Applicable load impedance : 600 Ω or more

TIME CODE THRU

- Connector : XLR-3-32 type (balanced, pin 2: hot)
- * Directly feeds the timecode received from the TIME CODE INPUT connector.

VIDEO INPUT

- Connector : BNC type
- Nominal input level : 1 V p-p (* with 75 Ω termination switch)

VIDEO THRU

- Connector : BNC type
- * Directly feeds the video signal received from the VIDEO INPUT connector.

WORD INPUT

- Connector : BNC type
- Nominal input level : TTL level (* with 75 Ω termination switch)

WORD OUTPUT

- Connector : BNC type
- Nominal output level : TTL level

WORD THRU

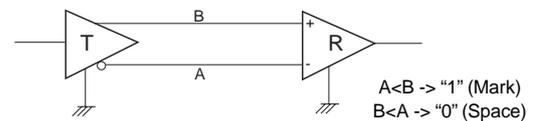
- Connector : BNC type
- * Directly feeds the word clock received from the WORD INPUT connector.

9P-REMOTE/15P-REMOTE

- Connectors : D-sub 9-pin (9P-REMOTE)
D-sub 15-pin (15P-REMOTE)
 - Protocol : RS-232C, conformed to the Sony 9-pin (P2) protocol
(The DV40 is a controlled device.)
- * The 9P-REMOTE and 15P-REMOTE connectors are connected in parallel.

Pin No	Controller Out DATA OUT	D-sub 9P DATA IN	D-sub 15P DATA IN
1	Frame Ground	Frame Ground	Frame Ground
2	Receive A	Transmit A	Transmit A
3	Transmit B	Receive B	Receive B
4	Transmit Common	Receive Common	Receive Common
5	Spare	Spare	Spare
6	Receive Common	Transmit Common	Transmit Common
7	Receive B	Transmit B	Transmit B
8	Transmit A	Receive A	Receive A
9	Frame Ground	Frame Ground	Frame Ground
10			NC
11			NC
12			NC
13			NC
14			NC
15			+12V

A and B are defined as shown below.



A<B -> "1" (Mark)
B<A -> "0" (Space)

Use a straight type cable.

ETHERNET

- Connector : RJ-45
- * Conformed to IEEE 802.3, 10BASE-T and 100BASE-TX standards.

<Recording/playback>

- Recording drives : E-IDE standard, DVD-RAM drive installed as a standard.
2.5-inch hard disk drive also can be installed as an option.
- Fs/quantization: : 44.1/48kHz 16bit
44.1/48/88.2/96/176.4/192kHz 24bit
- Recording/playback freq. range: 20Hz~20kHz +/-1dB (FS 44.1/48kHz)
20Hz~40kHz +/-2dB (FS 88.2/96kHz)
20Hz~80kHz +/-3dB (FS 176.4/192kHz)
- S/N ratio : 150 dB or more, 110 dB (typically)
- Dynamic range : 105 dB or more, 110 dB (typically)
- Pitch control : +/-6% in 0.1 % steps
- Crossfade : default: 10 msec.
- Locate memories : MEMORY points: 100, CUE points: 99

<General>

- External dimensions : 141 (H) x 482 (W) x 381 (D) mm
- Weight : Approx. 7.4kg
- Power requirement : 120VAC 60Hz, 230V~ 50/60Hz (AC inlet type)
- Power consumption : 50W

* Specifications and appearance are subject to change without notice for product improvement.

Memo

Declaration of EC Directive

This equipment is compatible with the EMC Directive (89/336/EEC) - Directive on approximation of member nation's ordinance concerning the electromagnetic compatibility and with the Low Voltage Directive (73/23/EEC) - Directive on approximation of member nation's ordinance concerning electric equipment designed to be used within the specified voltage range.

The Affect of Immunity on This Equipment

The affect of the European Specification EN50082-1 (coexistence of electromagnetic waves - common immunity specification) on this equipment are as shown below.

In the electrical fast transient/burst requirements, surge, conducted disturbances by radio-frequency fields, power frequency magnetic field, radiate electromagnetic field requirements and static electricity discharging environment, this could be affected by generation of noise in some cases.

FOSTEX DISTRIBUTORS LIST IN EUROPE

* Including non-EU countries (as of January, 2002)

<AUSTRIA>

NAME: ATEC Audio-u. Videogeraete VertriebsgesmbH.
ADD: Im Winkel 5, A-2325 Velm, Austria
TEL: (+43) 2234-74004, FAX: (+43) 2234-74074

<BELGIUM>

NAME: EML Sound Industries NV
ADD: Bijvenestraat 1A, B3500 Hasselt, Belgium
TEL: (+32) 11-232355, FAX: (+32) 11-232172

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NAME: SC Sound ApS
ADD: Malervej 2, DK-2630 Taastrup, Denmark
TEL: (+45) 4399-8877, FAX: (+45) 4399-8077

<FINLAND>

NAME: Noretron Oy Audio
ADD: P. O. Box 22, FIN-02631 Espoo, Finland
TEL: (+358) 9-5259330, FAX: (+358) 9-52593352

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NAME: Guillard Musiques
ADD: ZAC de Folliouses, B. P. 609, Les Echets, 01706 Miribel, France
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NAME: Studiosound & Music GmbH
ADD: Industriestrasse 20, D-35041 Marburg, F. R. Germany
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ADD: 6 Zaimi Street, Exarchia, 106.83 Athens, Greece
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<ICELAND>

NAME: I. D. elrf. electronic Ltd.
ADD: ARMULA 38 108 REYKJAVIK, ICELAND
TEL: (+354) 588 5010, FAX: (+354) 588 5011

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NAME: Proel S. p. A.
ADD: Zona Artigianale 64047 - Sant'Omero (Teramo), Italy
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ADD: P. O. Box 145 Vinderen, 0319 Oslo 3, Norway
TEL: (+47) 22-139900, FAX: (+47) 22-148259

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NAME: Caius - Tecnologias Audio e Musica, Lda.
ADD: Rua de Santa Catarina, 131 4000 Porto, Portugal
TEL: (+351) 2-2086009/2001394,
FAX: (+351) 2-2054760/2087488

<SPAIN>

NAME: Multitracker, S. A.
ADD: C/Garcilaso No.9, Madrid 28010, Spain
TEL: (+34) 91-4470700, 91-4470898, FAX: (+34) 91-5930716

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NAME: TTS Scandinavia AB
ADD: Kavallerivagen 24, 172 48 Sundbyberg, Sweden
TEL: (+46) 8-59798000, FAX: (+46) 8-59798001

<SWITZERLAND>

NAME: Audio Bauer Pro AG
ADD: Bernerstrasse-Nord 182, CH-8064 Zurich, Switzerland
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NAME: SCV London
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